



SYSTEMS CATALOG

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TC / AMERICAN

Crane and Monorail **SYSTEMS CATALOG**

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TC/American Crane Company equipment is designed and manufactured to the following codes and specifications where applicable:

- **AISC** American Institute of Steel Construction
- **ANSI** American National Standards Institute B30 Code
- **AWS** American Welding Society
- **MMA** Monorail Manufacturers Association
- **NEC** National Electrical Code
- **OSHA** Occupational Safety and Health Administration
- **HMI** Hoist Manufacturers Institute

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All TC/American Crane equipment must be installed and serviced by persons who are experienced with crane and monorail systems and are knowledgeable of their requirements.



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Specifications

Specifications are subject to change without notice. Contact Ergonomic Partners (314) 884-8884 to verify specifications that are critical to your application.

Catalog Revisions

Each page includes a revision date.



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Rail

The backbone of any monorail or crane system is the rail. At TC/American Crane Company, we manufacture rails specifically designed to provide the maximum in strength, flexibility and durability.

Our rail uses high carbon-manganese steel tee sections which are rolled to close tolerances for maximum strength and long life while keeping weight to a minimum. These special alloy steel tee sections provide many years of dependable service, as compared to common structural steel beams which are mild steel and not precision made.

TC/American Crane offers patented track in numerous standard rail configurations for a variety of applications up to 20-ton or more capacity. All rails, splices and end stops are furnished with TC/American Crane high quality gray-green enamel.

200 Series Rail

For a variety of applications up to and including two ton. Unique Twin-Section design with narrow flange and lap splices results in remarkable ease of trolley propulsion and makes it ideal for manual systems. Twin section rail is lightweight, easy to handle and, if necessary, curves can be bent in the field. This rail series has a flat operating flange.

325 Series Rail

TC/American Crane 325 Series Girder Rail is manufactured by unique welding and fabricating methods. The Flange, Web and Tee Section are joined together by a continuous submerged arc automatic welding process and computer designed to assure minimum weight and maximum strength. To obtain minimum tread wear, TC/American Crane 325 Series Girder Rail utilizes a specially rolled Tee Section with a high carbon-manganese alloy steel, raised, flat operating flange.

400 Series Rail

"Railmaster II" is a three-piece welded rail, similar in construction to the 325 and 450 Series rail. This rail series has a flat operating flange.

400 Series Rail is used for replacement of existing Twin City Monorail "R-1" and American Monorail "MD-1" or "Railmaster" wide flange rail systems. It is not recommended for new systems.

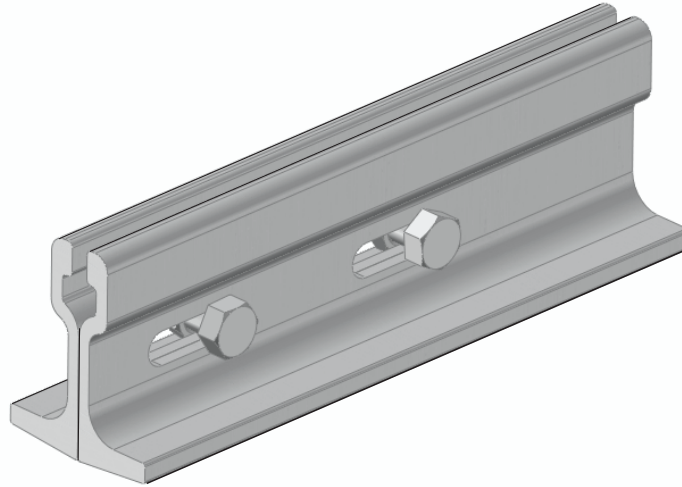
450 Series Rail

TC/American Crane 450 Series Girder Rail, like the 325 Series Rail, is manufactured by unique welding and fabricating methods. TC/American Crane 450 Series Girder Rail utilizes a specially rolled Tee Section with a high carbon-manganese alloy steel, raised, flat operating flange to assure long life in the heaviest applications.

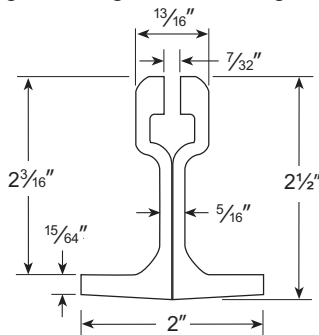
200 Series Rail

2R3-5T Rail

10-2139-00



The assembled 2R3-5T rail is made of twin sections bolted together back-to-back to form a solid unit. The exceptional strength of the rail is due to the design, high quality of steel, lap splice and the added strength provided by hangers. The rail has a balanced section, the head of the rail being a mass of steel equaling the weight of the flanges.



- 1000 lb. max. wheel loading
- Weight of rail allowed for — need not be deducted
- Max. hanger spacing for electrified systems = 4' – 0"

Specifications

Rail	2R3-5T 10-2139-00
Weight	4.9 lbs./ft.
Finish	TC/American gray-green enamel
Metallurgical Data	
Carbon	.67 – .76%
Manganese	.50 – .80%
Phosphorous	.04% Max.
Sulphur	.04% Max.
Silicon	.15 – .35%
Aluminum	.04% Max.
Physical Properties	
Tensile Strength	125,000 P.S.I. Min.
Yield Strength	65,000 P.S.I. Min.
Brinell Hardness	235 Bhn.

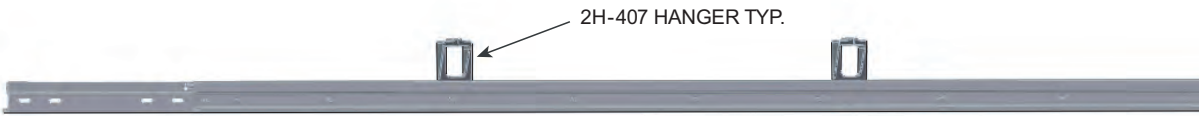
Equivalent Center Load Table (ECL) – 1/450th Deflection

Span (ft.)	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
ECL (pounds)	2500	1996	1660	1422	1237	974	785	645	537
Span (ft.)	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10	
ECL (pounds)	454	387	334	289	252	221	194	171	

Assembled Rail

2R3-5T Rail is assembled and cut to lengths as required. Hangers may be assembled into the rail during fabrication and are easily repositioned by loosening the bolts that hold the twin rail sections together. Slotted holes for bolts allow the rail to be field bent. Shown below

is a length of 2R3-5T rail with hangers, with a lap splice end preparation for attaching to a mating piece of rail. An alignment lug at the lap splice assures alignment of the rail ends.

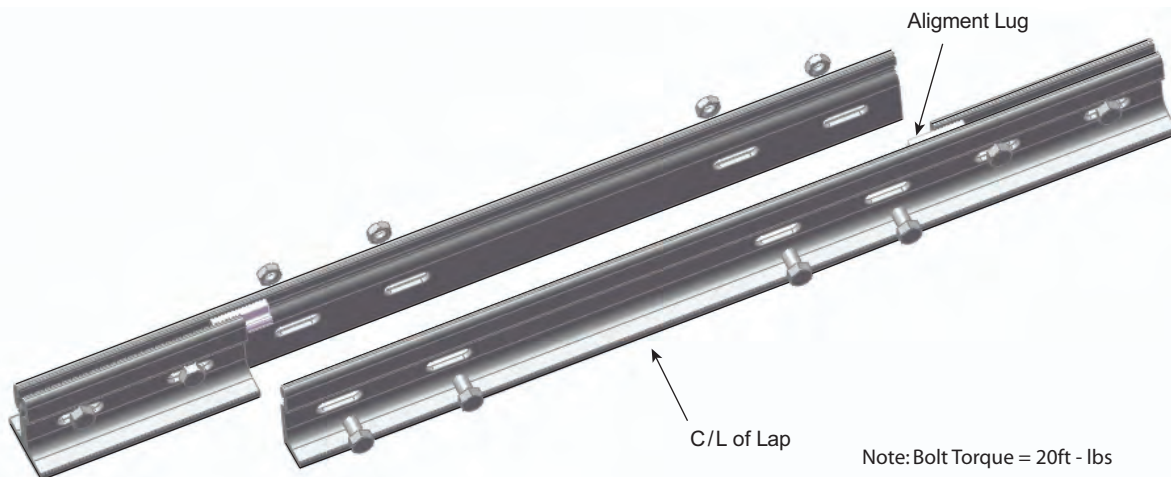


Splicing

Lap splices eliminate the use of splice clamps, staggers the joints, gives the splice the strength of a continuous rail and does away completely with the roughness of a "butt" joint. Trolley wheels pass over the splice on one side of the rail at a time without jolt, jar or vibration.

Lap ends of two assembled rail sections are brought together to form the rail splice. Alignment lugs at the joint bring the treads of the rail into vertical alignment.

Lap ends of the twin-section 2R3-5T rail are 18" long, with the centerline of the lap joint at 9".

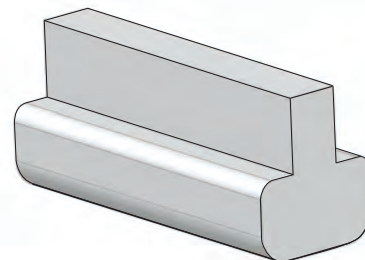


Alignment Lug 2L-436

23-1313-00

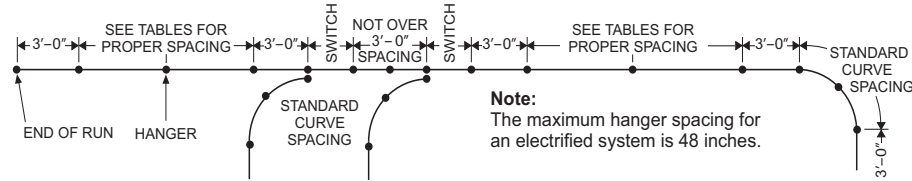
Alignment lugs are provided at each lap joint in lengths of 2R3-5T rail, to assure that rail treads are in vertical alignment.

Tread alignment at end stop ends, switch ends, interlock ends and intermediate lengths are provided by the similar shape of the lower shoulder on 2H407, 2H407C and 2H470 hangers, as well as the special switch and interlock hangers.





Hanger Spacing in 200 Series, 2R3-5T Monorail



The above figure shows suggested locations of hangers to assure proper support for the loads to be carried. With these support locations deflection in the rail between hangers will not exceed $\frac{1}{450}$ of the span, nor will the load on any hanger exceed 2500 pounds.

The table below provides spacing information for hangers in 2R3-5T rail, based upon combinations of one, two, three or four trolleys on the rail; trolleys bumper-to-bumper. Hangers must be located within 12" either side of lap joint centerline. For straight sections where hangers are less than 3 feet, consider using 200 Series Girder Rail.

Trolley Type	Trolley Model Number	Wheelbase (inches)	Load (lbs.)	Maximum Hanger Spacing (feet)			
				1 Trolley	2 Trolleys	3 Trolleys	4 Trolleys
Two-Wheel Trolleys	2T-750-2 2T-850-2 2T-2000-2 2T-2000-2SR	N/A	250	8½	6¼	5¼	4¼
			350	7	5¼	4½	3½
			750	5	3¼	2¼	1½
			1000	4	2½	1½	1
			2000	2¼	—	—	—
			2500	2¼	—	—	—
Four-Wheel Trolleys	2T-1150-4 2T-1200-4	7½	250	8½	6½	5¾	5½
			500	6	4¾	4¼	4
			700	5½	4	3½	3
			750	5¼	4	3½	3
			1000	4¼	3	3	2½
			1150	4¼	2¾	2½	2½
	2T-2800-4 2T-2800-4SR	11	1200	4	2¾	2½	2½
			500	6½	5	4¾	4½
			1000	4¾	3½	3½	3½
			1500	3¾	2¾	2¼	2
			2000	3	1¾	1½	1½
			2500	2½	1	1	1
	2T-3100-4CC	6	2800	2¼	1	1	1
			1000	4½	3¼	3	2½
			1500	3½	2½	1½	1½
			2000	2¾	1¾	1¼	1¼
			2500	2¼	1	1	1
			3000	1	—	—	—
	2T-3100-4 2T-3100-4SR	15	3100	1	—	—	—
			1000	5	4	3¼	3½
			1500	4	3¼	3	2¾
			2000	3¼	2	2	2
			2500	2¾	1½	1½	1½
			3000	2½	1	1	1
Eight-Wheel Trolleys	2T-5600-8 2T-5600-8SR	15-15-15	3100	2½	1	1	1
			2000	4½	4	4	4
			2500	4	3½	3½	3½
			3000	3½	3¼	3¼	3¼
			3500	3¼	2½	2½	2½
			4000	3	2¼	2¼	2¼
			4500	2¾	1¾	1¾	1¾
			5000	2¼	1½	1½	1½
			5600	2	1½	1½	1½
	2T-5600-8CC	6-6-6	2000	3	2½	2¼	2¼
			2500	2½	2	2	2
			3000	2¼	1½	1½	1½
			3500	1¾	1¼	1¼	1¼
			4000	1¾	1	1	1
			4500	1	1	1	1
			5000	1	1	1	1
			5600	1	1	1	1

End Stops

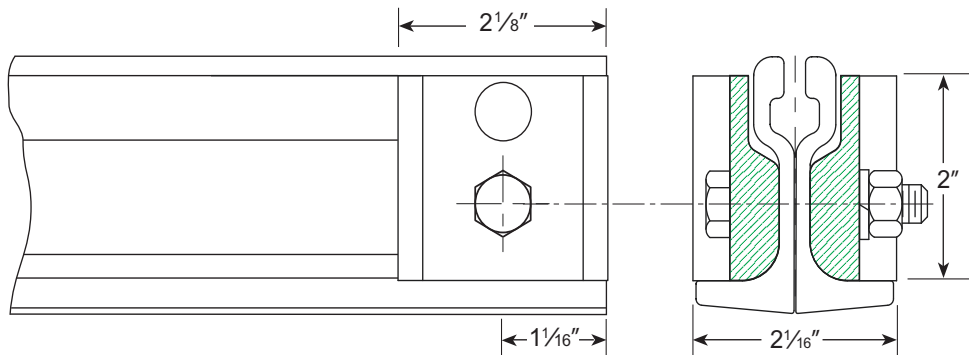
2ES-414 Wheel End Stop

10-1609-00

End stops bolted to both sides of the rail prevent trolleys from running off track ends. Furnished bolted in place when ordered with rail.

- Weight = 1 lb.

Note For hand-pushed monorail and hand-pushed crane systems only.



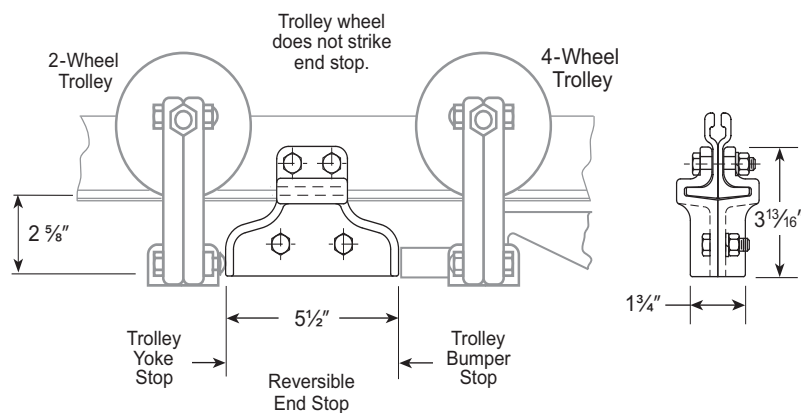
2ES-416 End Stop

10-1613-00

Where motor driven units are used, this end stop furnishes extra strength for a hard stop jolt and at the same time keeps the current collectors in proper alignment with the conductor bars.

- Weight = 3 1/4 lbs.

Note For motor driven systems.



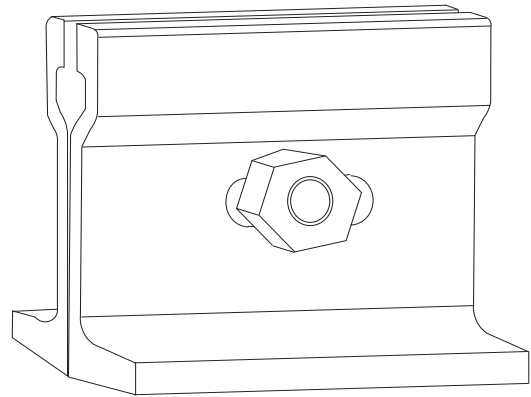
2R-401-BN Rail Clamping Bolt & Nut

10-1996-00

The positive locking feature of the nuts and heads of the clamping bolts is unique. The bolt head and nut bind against the fillet or swell of the rail head. This does not prevent drawing the nuts tight with a wrench, but the binding resistance is sufficient to lock the bolt and nut securely in place. The bolts are special steel, heat treated, having a tensile strength of 125,000 lbs. P.S.I.

The bolts are seated in slotted holes and are not subject to shear stress in service or when rail is bent.

The clamping bolts are on 12-inch centers except at splicing points where additional bolts are used.

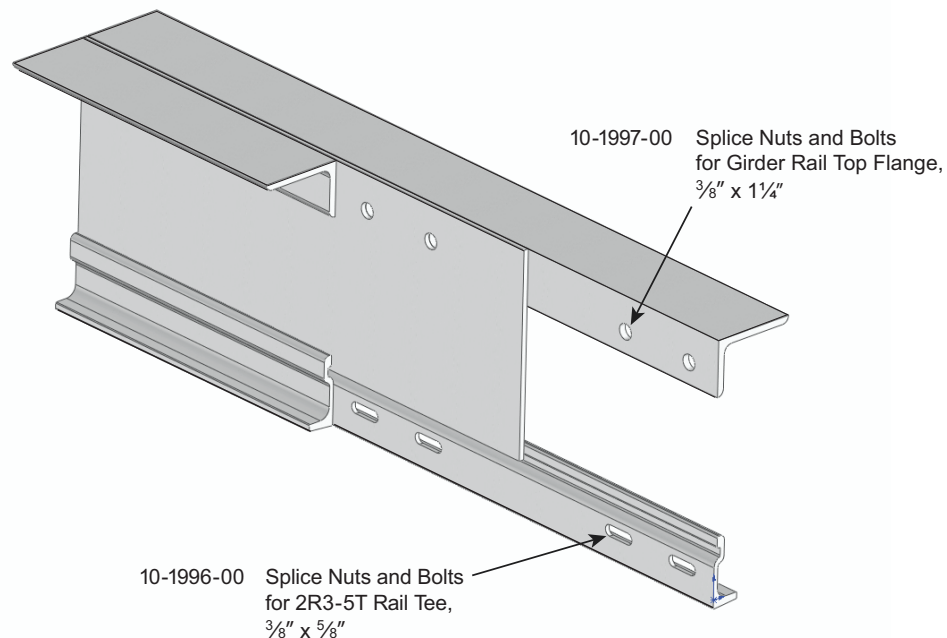


2R3-5T Assembled Rail
Rail clamping bolts in place in rail

Splice Nuts & Bolts for 200 Series Girder Rail

10-1997-00

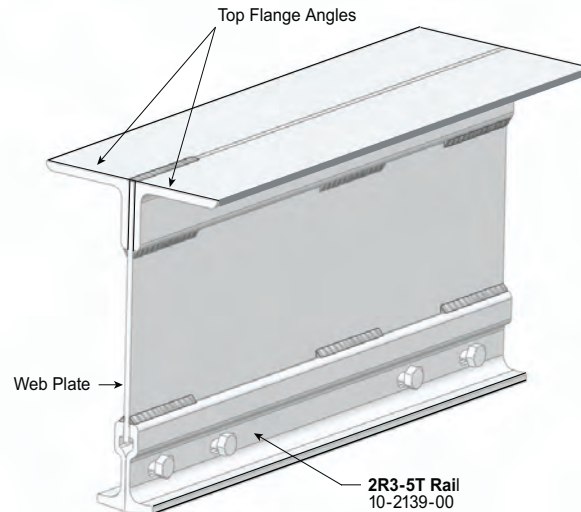
10-1996-00



200 Series Girder Rail

TC/American girder rail is made from ASTM A36 top flange angles and web plate, plus the 2R3-5T rail section joined together by a special automatic electrical welding process, forming a solid rail with exceptional strength.

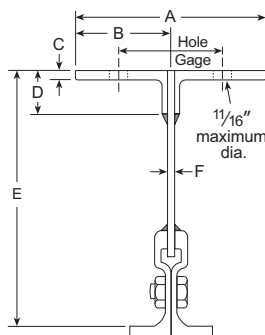
- See “200 Series Girder Rail End Preparations” on page B-12.



200 Series Girder Rail Specifications

Part #	Number	A	B	C	D	E	F	Max.* Hole Gage	Weight (lbs./ft.)	Top Flange
10-2140-00	2GR7-15	5 ³ / ₁₆ "	2 ¹ / ₂ "	1/4"	2"	7"	3/16"	2 ¹ / ₂ "	15.7	2 ¹ / ₂ " x 2" x 1/4"
10-2141-00	2GR7-17	6 ³ / ₁₆ "	3"	1/4"	2"	7"	3/16"	2 ¹ / ₂ "	16.6	3" x 2" x 1/4"
10-2142-00	2GR9-18	6 ³ / ₁₆ "	3"	1/4"	2"	9"	3/16"	2 ¹ / ₂ "	17.9	3" x 2" x 1/4"
10-2143-00	2GR9-22	7 ³ / ₁₆ "	3 ¹ / ₂ "	5/16"	2 ¹ / ₂ "	9"	3/16"	2 ¹ / ₂ "	21.9	3 ¹ / ₂ " x 2 ¹ / ₂ " x 5/16"
10-2144-00	2GR11-16	4 ³ / ₁₆ "	2"	1/4"	2"	11"	3/16"	2 ¹ / ₂ "	17.4	2" x 2" x 1/4"
10-2145-00	2GR11-23	7 ³ / ₁₆ "	3 ¹ / ₂ "	5/16"	2 ¹ / ₂ "	11"	3/16"	2 ¹ / ₂ "	23.2	3 ¹ / ₂ " x 2 ¹ / ₂ " x 5/16"
10-2146-00	2GR11-26	8 ³ / ₁₆ "	4"	5/16"	3"	11"	3/16"	2 ¹ / ₂ "	25.4	4" x 3" x 5/16"
10-2147-00	2GR13-27	8 ³ / ₁₆ "	4"	5/16"	3"	13 ¹ / ₂ "	3/16"	2 ³ / ₄ "	27.0	4" x 3" x 5/16"
10-2148-00	2GR13-29	10 ³ / ₁₆ "	5"	5/16"	3"	13 ¹ / ₂ "	3/16"	2 ³ / ₄ "	29.0	5" x 3" x 5/16"

* All top flanges need to be evaluated for proposed loading conditions.



Maximum load per trolley wheel for all “200” Series Rail is 1000 pounds (2,000 lbs. per two-wheel trolley).

Note Total load on each trolley wheel includes its share of the Live Load, Impact, Hoist Weight, Crane Weight if applicable, plus any handling equipment weights.

Standard Top Flange Hole and Top Flange Slot size for 200 Series Girder Rail:

Round: 11/16"
Slot: 11/16" x 11/8"



Equivalent Center Load Table (ECL) — 1/450th Deflection

Span (ft.)	2GR7-15 10-2140-00	2GR7-17 10-2141-00	2GR9-18 10-2142-00	2GR9-22 10-2143-00	2GR11-16 10-2144-00	2GR11-23 10-2145-00	2GR11-26 10-2146-00	2GR13-27 10-2147-00	2GR13-29 10-2148-00
6	8953	9085							
7	7660	7772							
8	6689	6785	9825						
9	5932	6016	8717	8965					
10	5326	5399	7829	8048	5432				
11	4828	4893	7100	7296	4467	9833	9918		
12	4412	4470	6492	6668	3731	8992	9068		
13	3817	4110	5711	6134	3157	8278	8437		
14	3270	3530	4900	5675	2700	7665	7726		
15	2828	3047	4244	5276	2329	7132	7187	9785	9971
16	2464	2649	3705	4926	2025	6664	6714	9148	9320
17	2162	2318	3258	4615	1771	6250	6295	8584	8744
18	1907	2039	2881	4242	1557	5881	5921	7938	8231
19			2561	3769	1374	5269	5585	7087	7770
20			2286	3364	1217	4723	5282	6358	7354
21			2049	3013		4251	5006	5729	6976
22			1842	2707		3841	4682	5182	6631
23			1660	2438		3482	4239	4704	6315
24						3165	3849	4282	6024
25						2884	3502	3908	5635
26						2634	3193	3575	5169
27						2410	2916	3277	4752
28						2208	2667	3009	4378
29						2026	2441	2767	4040
30								2547	3734
31								2347	3456
32								2164	3202
33								1997	2969
34								1843	2756
35								1700	2559

Note This table was developed for allowable Equivalent Center Loads (ECL) in pounds, with rail deflection limited to no more than 1/450 of the span or unsupported length, or 1¼", whichever is less. The weight of the rail is included in the allowable ECL.

Maximum 60:1 Span to Top Flange ratio on spans or unsupported lengths over 16 ft.
Maximum 32:1 Span to Depth ratio.



Additional Information for Rail Load Table

200 Series Rail Properties & Sections

Part #	Model #	Depth In Inches	Weight (lbs./ft.)	I* In. ⁴	Sc† In. ³	St‡ In. ³
10-2139-00	2R3-5T	2½	4.7	.93	.60	.97
10-2140-00	2GR7-15	7	15.4	31.58	11.20	7.04
10-2141-00	2GR7-17	7	16.1	33.50	12.79	7.15
10-2142-00	2GR9-18	9	17.4	60.79	17.79	10.33
10-2143-00	2GR9-22	9	21.4	67.62	22.73	10.64
10-2144-00	2GR11-16	11	16.0	86.67	17.89	13.40
10-2145-00	2GR11-23	11	22.6	109.33	29.73	14.29
10-2146-00	2GR11-26	11	24.8	113.19	32.71	14.43
10-2147-00	2GR13-27	13½	26.4	185.32	42.72	19.53
10-2148-00	2GR13-29	13½	28.4	195.27	48.74	19.93

* I = Moment of inertia

† Sc = Section in compression

‡ St = Section in tension

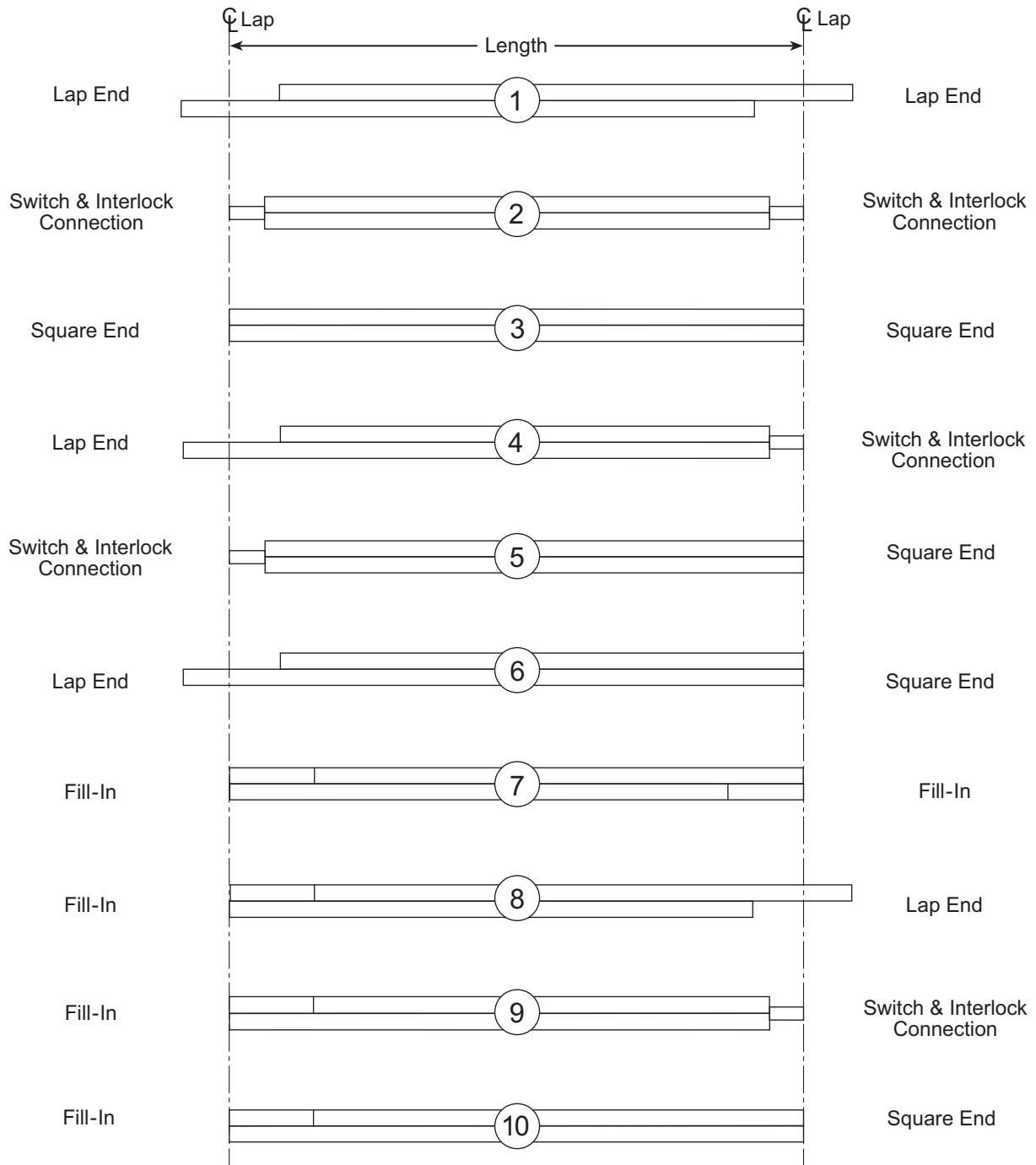


2R3-5T and Girder Rail End Preparation Combinations

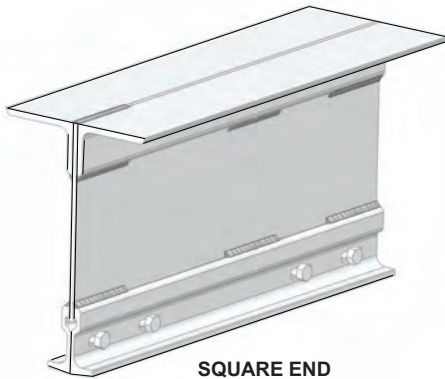
The figures below show the available rail assemblies and their corresponding end preparations. Order rail by reference: i.e., two pieces 10'-0", Type 1. Lengths of rail are measured as shown.

2R3-5T rail and Girder Rail are best supported at the centerline of lap joints, plus intermediate locations as necessary. However, due to the lap joint design, supports may also be located up to 12" off-center of the lap joint centerline, either direction. For special support applications, contact the factory.

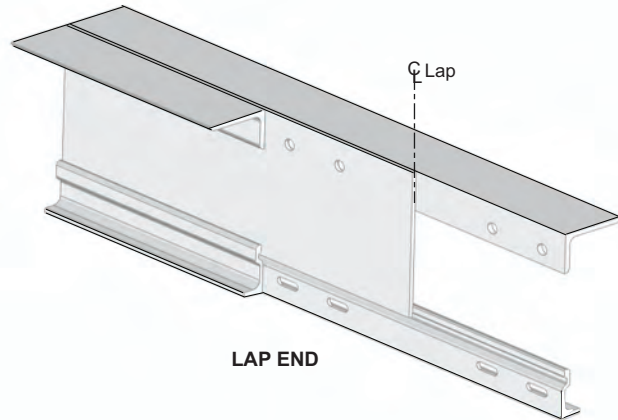
Note We recommend that fillers be used wherever possible for future extension of Monorail or Crane Systems.



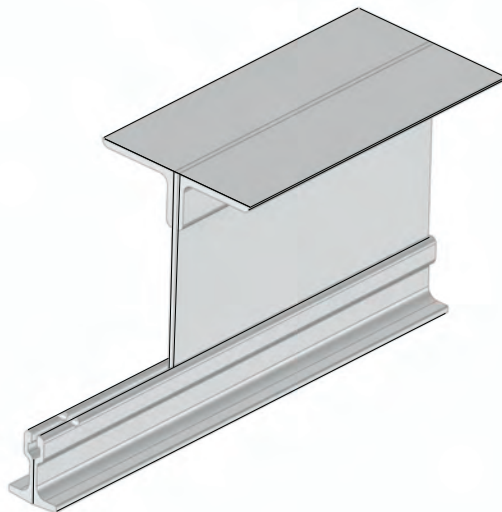
200 Series Girder Rail End Preparations



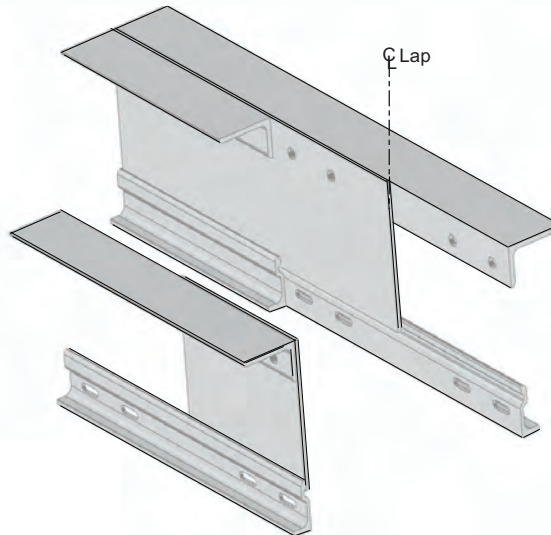
SQUARE END



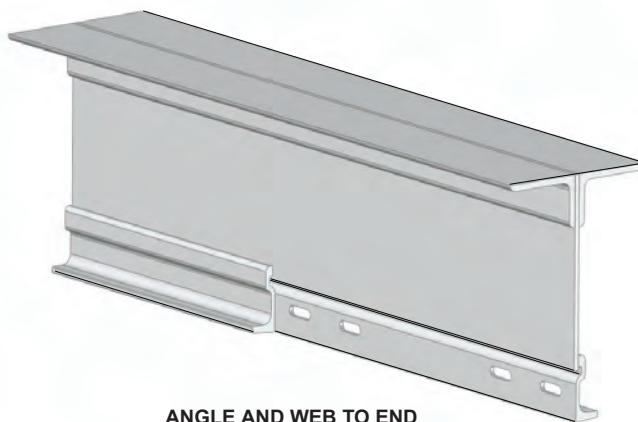
LAP END



SWITCH & INTERLOCK CONNECTION END
(See Page D-5 for dimensions.)



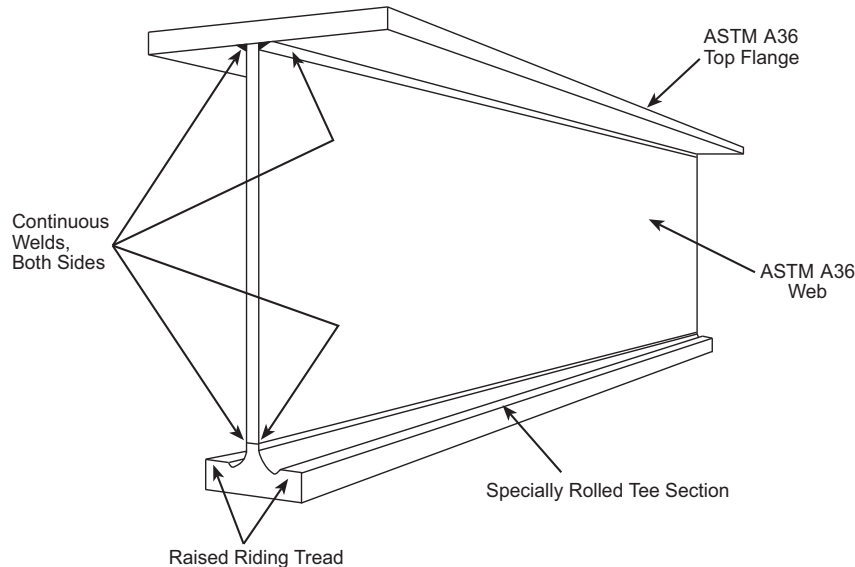
LAP END WITH END FILLER



ANGLE AND WEB TO END
(for splice to 2R3-5T rail or curve with girder
rail top flange and web past centerline of lap)

325 Series Rail

“325L” and “325H” Series Rail



TC/American “325L” and “325H” Series Patented Track Rails are 3-piece composite beams consisting of an ASTM A36 Top Flange, ASTM A36 Web and a load carrying Tee Section rolled from high carbon-manganese alloy steel. All 325 Series Tee Sections are 3¼" wide with a raised riding tread. The 325L Tee Section is 7/16" thick, measured at the riding tread; the 325H Tee Section is 11/16" thick.

The rail components are simultaneously joined together in TC/American's fabrication shop by an automatic, continuous submerged arc welding process to provide uniformly strong sections. Standard rail sizes are available from 8" to 40" depth.

See the 325L and 325H Series Specification Sheets and the Equivalent Center Load (ECL) Tables for the load capacity of each size rail, as based upon distances between supports (span) and allowable deflection criteria. Also see the “General Engineering” section of this Systems Catalog for more information about ECL's. Contact the factory for special rail sizes.

All rail, splice assemblies and end stops are factory cleaned to SSPC-SP2 (solvent and hand tool cleaned), and painted with one coat of TC/American high quality, dark green (gray-green) low luster industrial enamel. Contact the factory for primer and special paint options.

Tee Section Specifications

Metallurgical Data

Carbon	0.48–0.55
Manganese	0.60–0.90
Phosphorous	0.04 Max.
Sulphur	0.05 Max.
Silicon	0.15–0.30
Vanadium	0.05–0.10

Physical Properties

Tensile Strength	125,000 P.S.I. Min.
Yield Strength	65,000 P.S.I. Nom.
Brinell Hardness	235 Avg.

Maximum Wheel Loading

“L” Series Rail	2750 Pounds Per Wheel
“H” Series Rail	5000 Pounds Per Wheel

Note Total load on each trolley wheel includes its share of the Live Load, Impact, Hoist Weight, Crane Weight if applicable, plus any handling equipment weights.

For rail ends with diagonal cuts (i.e., in switches), the allowable wheel loading is reduced.

See the Switches and Curves section of this catalog for limitations.

“325L” Series Data

“325L” Series Specifications

Part #	Model	Weight (lbs./ft.)	A	a	B	C	D	Max.* E	Ix† In. ⁴	Sc‡ In. ³	St§ In. ³	Iy† In. ⁴
10-2651-01	3RL8-16#	16.3	7 ¹³ / ₁₆ "	7 ³ / ₈ "	4"	3/8"	1/4"	2 1/2"	48.6	12.43	12.43	3.11
10-2652-01	3RL8-18	17.6	7 ¹³ / ₁₆ "	7 ³ / ₈ "	5"	3/8"	1/4"	2 3/4"	53.4	14.67	12.78	5.02
10-3725-01	3RL11-19	19.0	10 ¹³ / ₁₆ "	10 ³ / ₈ "	4"	3/8"	1/4"	2 1/2"	102.8	18.97	19.03	3.11
10-2653-01	3RL11-21	21.4	10 ¹³ / ₁₆ "	10 ³ / ₈ "	6"	3/8"	1/4"	3"	120.8	25.21	20.06	7.86
10-2654-01	3RL11-24	24.0	10 ¹⁵ / ₁₆ "	10 1/2"	6"	1/2"	1/4"	3"	136.6	31.04	20.89	10.11
10-2655-01	3RL13-22#	22.3	12 ¹⁵ / ₁₆ "	12 1/2"	4"	1/2"	1/4"	2 1/2"	171.9	28.42	24.96	3.78
10-2656-01	3RL13-27	27.4	12 ¹⁵ / ₁₆ "	12 1/2"	7"	1/2"	1/4"	5 1/2"	213.0	42.88	26.72	15.41
10-2657-01	3RL14-35	35.0	13 ¹⁵ / ₁₆ "	13 1/2"	8"	1/2"	3/8"	5 1/2"	286.0	53.89	33.13	22.49

* All top flanges need to be evaluated for proposed loading conditions.

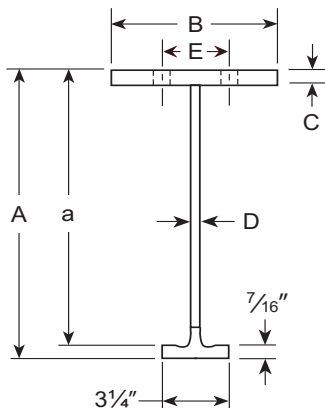
† Ix = Moment of inertia (*Vertical*)

‡ Sc = Section in compression

§ St = Section in tension

† Iy = Moment of inertia (*Lateral*)

Standard curve rail



Maximum Wheel Loading

“L” Series Rail = 2750 Pounds Per Wheel

Note Total load on each trolley wheel includes its share of the Live Load, Impact, Hoist Weight, Crane Weight if applicable, plus any handling equipment weights.

For rail ends with diagonal cuts (i.e., in switches), the allowable wheel loading is reduced.

See the Switches and Curves section of this catalog for limitations.

Note A suffix of “C”, “T” or “D” denotes whether the ECL is limited by Compression Tension or Deflection.



“L” Series Equivalent Center Load Table (ECL)—1/450th Deflection

Span (ft.)	3RL8-18 10-2652-01	3RL11-21 10-2653-01	3RL11-24 10-2654-01	3RL13-27 10-2656-01	3RL14-35 10-2657-01
6	17,553 C	27,802 T	28,947 T	37,034 T	45,916 T
7	15,029 C	23,810 T	24,790 T	31,718 T	39,324 T
8	13,134 C	20,814 T	21,669 T	27,727 T	34,375 T
9	11,658 C	18,481 T	19,238 T	24,621 T	30,523 T
10	10,475 C	16,613 T	17,292 T	22,133 T	27,437 T
11	9476 D	14,330 C	15,697 T	20,095 T	24,910 T
12	7963 D	12,012 C	14,366 T	18,394 T	22,800 T
13	6785 D	10,205 C	13,238 T	16,953 T	21,013 T
14	5850 D	8770 C	12,269 T	15,715 T	19,478 T
15	5083 C	7609 C	11,428 T	14,641 T	18,146 T
16	4443 C	6658 C	10,691 T	13,700 T	16,978 T
17	3911 C	5867 C	9615 C	12,867 T	15,945 T
18	3463 C	5203 C	8543 C	11,685 C	15,025 T
19	3083 C	4639 C	7633 C	10,449 C	13,947 C
20	2758 C	4156 C	6855 C	9391 C	12,537 C
21		3739 C	6183 C	8479 C	11,321 C
22		3377 C	5599 C	7686 C	10,265 C
23		3059 C	5089 C	6993 C	9342 C
24		2778 C	4639 C	6383 C	8529 C
25		2530 C	4241 C	5843 C	7810 C
26		2308 C	3886 C	5363 C	7170 C
27		2109 C	3569 C	4934 C	6598 C
28		1930 C	3284 C	4548 C	6085 C
29			3027 C	4200 C	5622 C
30				3885 C	5202 C
31				3599 C	4821 C
32				3338 C	4474 C
33				3098 C	4156 C
34				2879 C	3864 C
35					3595 C
36					3347 C
37					3118 C

Note This table was developed for allowable Equivalent Center Loads (ECL) in pounds, with rail deflection limited to no more than 1/450 of the span or unsupported length, or 1¼", whichever is less. The weight of the rail is included in the allowable ECL.

Maximum 60:1 Span to Top Flange ratio on spans or unsupported lengths over 16 ft.
Maximum 32:1 Span to Depth ratio.

A suffix of “C”, “T” or “D” denotes whether the ECL is limited by Compression, Tension or Deflection.

“L” Series Equivalent Center Load Table (ECL)—1/600th Deflection

Span (ft.)	3RL8-18 10-2652-01	3RL11-21 10-2653-01	3RL11-24 10-2654-01	3RL13-27 10-2656-01	3RL14-35 10-2657-01
6	17,553 C	27,802 T	28,947 T	37,034 T	45,916 T
7	15,029 C	23,810 T	24,790 T	31,718 T	39,324 T
8	13,134 C	20,814 T	21,669 T	27,727 T	34,375 T
9	10,617 D	18,481 T	19,238 T	24,621 T	30,523 T
10	8600 D	16,613 T	17,292 T	22,133 T	27,437 T
11	7107 D	14,330 C	15,697 T	20,095 T	24,910 T
12	5972 D	12,012 C	14,366 T	18,394 T	22,800 T
13	5089 D	10,205 C	13,025 D	16,953 T	21,013 T
14	4388 D	8770 C	11,230 D	15,715 T	19,478 T
15	3822 D	7609 C	9783 D	14,641 T	18,146 T
16	3359 D	6658 C	8598 D	13,407 D	16,978 T
17	2976 D	5867 C	7616 D	11,876 D	15,945 T
18	2654 D	5203 C	6794 D	10,593 D	14,223 D
19	2382 D	4639 C	6097 D	9507 D	12,766 D
20	2150 D	4156 C	5503 D	8580 D	11,521 D
21		3739 C	4991 D	7783 D	10,450 D
22		3377 C	4548 D	7091 D	9521 D
23		3059 C	4161 D	6488 D	8711 D
24		2778 C	3821 D	5959 D	8001 D
25		2530 C	3522 D	5491 D	7373 D
26		2308 C	3256 D	5077 D	6817 D
27		2109 C	3019 D	4708 D	6321 D
28		1930 C	2808 D	4378 D	5878 D
29			2617 D	4081 D	5480 D
30				3813 D	5120 D
31				3571 D	4795 D
32				3338 C	4474 C
33				3098 C	4156 C
34				2879 C	3864 C
35					3595 C
36					3347 C
37					3118 C

Note This table was developed for allowable Equivalent Center Loads (ECL) in pounds, with rail deflection limited to no more than 1/600 of the span or unsupported length, or 1¼", whichever is less. The weight of the rail is included in the allowable ECL.

Maximum 60:1 Span to Top Flange ratio on spans or unsupported lengths over 16 ft.
Maximum 32:1 Span to Depth ratio.

A suffix of “C”, “T” or “D” denotes whether the ECL is limited by Compression, Tension or Deflection.



“L” Series Equivalent Center Load Table (ECL)—1/1000th Deflection

Span (ft.)	3RL8-18 10-2652-01	3RL11-21 10-2653-01	3RL11-24 10-2654-01	3RL13-27 10-2656-01	3RL14-35 10-2657-01
6	14,333 D	27,802 T	28,947 T	37,034 T	45,916 T
7	10,530 D	23,810 T	24,790 T	31,718 T	39,324 T
8	8062 D	18,249 D	20,636 D	27,727 T	34,375 T
9	6370 D	14,419 D	16,305 D	24,621 T	30,523 T
10	5160 D	11,680 D	13,207 D	20,593 D	27,437 T
11	4264 D	9653 D	10,915 D	17,019 D	22,851 D
12	3583 D	8111 D	9172 D	14,301 D	19,202 D
13	3053 D	6911 D	7815 D	12,185 D	16,361 D
14	2633 D	5959 D	6738 D	10,507 D	14,107 D
15	2293 D	5191 D	5870 D	9152 D	12,889 D
16	2016 D	4562 D	5159 D	8044 D	10,801 D
17	1785 D	4041 D	4570 D	7126 D	9568 D
18	1593 D	3605 D	4076 D	6356 D	8534 D
19	1429 D	3235 D	3658 D	5704 D	7659 D
20	1290 D	2920 D	3302 D	5148 D	6913 D
21		2648 D	2995 D	4670 D	6270 D
22		2413 D	2729 D	4255 D	5713 D
23		2208 D	2497 D	3893 D	5227 D
24		2028 D	2293 D	3575 D	4800 D
25		1869 D	2113 D	3295 D	4424 D
26		1728 D	1954 D	3046 D	4090 D
27		1602 D	1812 D	2825 D	3793 D
28		1490 D	1685 D	2627 D	3527 D
29			1570 D	2449 D	3288 D
30				2288 D	3072 D
31				2143 D	2877 D
32				2011 D	2700 D
33				1891 D	2539 D
34				1781 D	2392 D
35					2257 D
36					2134 D
37					2020 D

Note This table was developed for allowable Equivalent Center Loads (ECL) in pounds, with rail deflection limited to no more than 1/1000 of the span or unsupported length, or 1¼", whichever is less. The weight of the rail is included in the allowable ECL.

Maximum 60:1 Span to Top Flange ratio on spans or unsupported lengths over 16 ft.
Maximum 32:1 Span to Depth ratio.

A suffix of “C”, “T” or “D” denotes whether the ECL is limited by Compression, Tension or Deflection.

“325H” Series Data

“H” Series Specifications

Part #	Model	Weight (lbs./ft.)	A	a	B	C	D	Max.* E	Ix† In. ⁴	Sc‡ In. ³	St§ In. ³	Iy† In. ⁴
10-2658-01	3RH13-30#	29.6 lbs.	13 3/16"	12 1/2"	4"	1/2"	3/8"	2 1/2"	221.0	33.11	33.92	4.36
10-2659-01	3RH13-36	36.4 lbs.	13 3/16"	12 1/2"	8"	1/2"	3/8"	5 1/2"	288.2	52.64	37.35	23.03
10-2778-01	3RH14-33#	32.6 lbs.	14 5/16"	13 5/8"	4"	5/8"	3/8"	2 1/2"	240.5	41.69	39.53	5.03
10-2660-01	3RH14-41	41.1 lbs.	14 5/16"	13 5/8"	8"	5/8"	3/8"	5 1/2"	374.9	67.45	42.81	28.36
10-2661-01	3RH16-47	46.8 lbs.	16"	15 5/16"	12"	1/2"	3/8"	5 1/2"	525.8	90.47	51.61	73.71
10-2662-01	3RH18-52	52.2 lbs.	18"	17 5/16"	11"	5/8"	3/8"	5 1/2"	721.4	113.78	61.87	71.04
10-2663-01	3RH20-67	66.5 lbs.	20"	19 5/16"	13"	5/8"	1/2"	5 1/2"	1054.3	150.75	81.06	116.26
10-2664-01	3RH22-74	74.1 lbs.	22"	21 5/16"	15"	5/8"	1/2"	5 1/2"	1398.3	188.64	95.86	177.63
10-2665-01	3RH24-84	83.7 lbs.	24"	23 5/16"	15"	3/4"	1/2"	5 1/2"	1828.1	237.67	112.10	212.81
10-2666-01	3RH26-90	89.6 lbs.	26"	25 5/16"	16"	3/4"	1/2"	5 1/2"	2277.8	275.36	128.49	257.89
10-2667-01	3RH28-93	93.0 lbs.	28"	27 5/16"	16"	3/4"	1/2"	5 1/2"	2739.2	301.55	144.80	257.91
10-2668-01	3RH30-110	110.0 lbs.	30"	29 5/16"	16"	1"	1/2"	5 1/2"	3531.7	400.30	166.77	343.26
10-2669-01	3RH32-120	119.8 lbs.	32"	31 5/16"	18"	1"	1/2"	5 1/2"	4312.6	475.04	188.14	487.95
10-2670-01	3RH34-130	130.0 lbs.	34"	33 5/16"	20"	1"	1/2"	5 1/2"	5194.2	555.75	210.69	668.69
10-2671-01	3RH36-140	140.2 lbs.	36"	35 5/16"	22"	1"	1/2"	5 1/2"	6182.7	642.45	234.40	889.33
10-2672-01	3RH38-144	143.6 lbs.	38"	37 5/16"	22"	1"	1/2"	5 1/2"	7098.4	685.57	256.76	889.39
10-2673-01	3RH40-154	153.8 lbs.	40"	39 5/16"	24"	1"	1/2"	5 1/2"	8307.6	781.63	282.85	1154.03

* All top flanges need to be evaluated for proposed loading conditions.

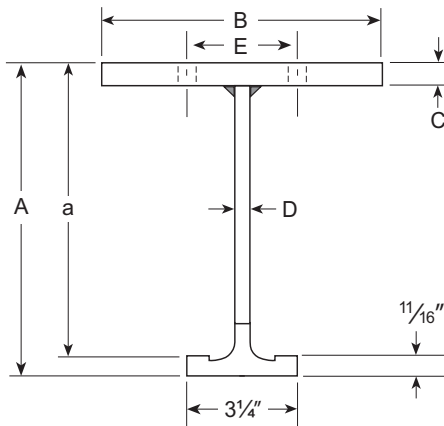
† Ix = Moment of inertia (*Vertical*)

‡ Sc = Section in compression

§ St = Section in tension

† Iy = Moment of inertia (*Lateral*)

Standard curve rail



Maximum Wheel Loading

“M” Series Rail = 5000 Pounds Per Wheel

Note Total load on each trolley wheel includes its share of the Live Load, Impact, Hoist Weight, Crane Weight if applicable, plus any handling equipment weights.

For rail ends with diagonal cuts (i.e., in switches), the allowable wheel loading is reduced.

See the Switches and Curves section of this catalog for limitations.



“H” Series Equivalent Center Load Table (ECL)—1/450th Deflection

Span (ft.)	3RH13-36 10-2659-01	3RH14-41 10-2660-01	3RH16-47 10-2661-01	3RH18-52 10-2662-01	3RH20-67 10-2663-01	3RH22-74 10-2664-01	3RH24-84 10-2665-01
10	30,946 T	35,469 T	42,776 T	51,298 T	67,217 T		
11	28,098 T	32,205 T	38,843 T	46,585 T	61,043 T		
12	25,721 T	29,482 T	35,561 T	42,653 T	55,893 T	66,122 T	
13	23,708 T	27,174 T	32,780 T	39,322 T	51,529 T	60,964 T	
14	21,979 T	25,194 T	30,394 T	36,463 T	47,784 T	56,538 T	66,140 T
15	20,479 T	23,475 T	28,322 T	33,981 T	44,535 T	52,697 T	61,650 T
16	19,164 T	21,968 T	26,507 T	31,807 T	41,687 T	49,332 T	57,716 T
17	18,001 T	20,635 T	24,902 T	29,885 T	39,170 T	46,358 T	54,240 T
18	16,095 C	19,449 T	23,473 T	28,174 T	36,929 T	43,711 T	51,145 T
19	14,393 C	18,385 T	22,192 T	26,641 T	34,921 T	41,338 T	48,372 T
20	12,936 C	17,426 T	21,037 T	25,258 T	33,110 T	39,199 T	45,871 T
21	11,683 C	16,556 T	19,990 T	24,004 T	31,469 T	37,260 T	43,605 T
22	10,593 C	15,764 T	19,035 T	22,862 T	29,973 T	35,494 T	41,541 T
23	9640 C	14,372 C	18,162 T	21,817 T	28,605 T	33,878 T	39,653 T
24	8801 C	13,140 C	17,359 T	20,857 T	27,348 T	32,394 T	37,919 T
25	8058 C	12,051 C	16,619 T	19,972 T	26,189 T	31,025 T	36,321 T
26	7398 C	11,082 C	15,934 T	19,152 T	25,116 T	29,759 T	34,841 T
27	6807 C	10,217 C	14,881 C	18,392 T	24,121 T	28,585 T	33,469 T
28	6277 C	9441 C	13,769 C	17,684 T	23,194 T	27,491 T	32,191 T
29	5799 C	8742 C	12,768 C	16,469 C	22,329 T	26,470 T	30,999 T
30	5366 C	8109 C	11,863 C	15,313 C	21,519 T	25,515 T	29,884 T
31	4972 C	7535 C	11,042 C	14,266 C	20,213 C	24,619 T	28,837 T
32	4614 C	7011 C	10,295 C	13,312 C	18,872 C	23,777 T	27,854 T
33	4285 C	6533 C	9612 C	12,442 C	17,649 C	22,983 T	26,927 T
34	3984 C	6095 C	8987 C	11,645 C	16,529 C	21,920 C	26,053 T
35	3706 C	5691 C	8413 C	10,913 C	15,502 C	20,577 C	25,226 T
36		5320 C	7883 C	10,239 C	14,555 C	19,341 C	24,443 T
37		4976 C	7395 C	9617 C	13,682 C	18,202 C	23,699 T
38		4658 C	6942 C	9041 C	12,874 C	17,148 C	22,993 T
39			6522 C	8507 C	12,125 C	16,172 C	22,321 T
40			6132 C	8011 C	11,430 C	15,265 C	21,536 C
41			5768 C	7548 C	10,781 C	14,421 C	20,376 C
42			5428 C	7117 C	10,177 C	13,634 C	19,295 C
43				6713 C	9612 C	12,898 C	18,285 C
44				6335 C	9082 C	12,210 C	17,341 C
45				5980 C	8586 C	11,565 C	16,456 C
46				5646 C	8119 C	10,958 C	15,625 C
47				5332 C	7679 C	10,388 C	14,845 C
48				5036 C	7265 C	9851 C	14,110 C
49					6874 C	9344 C	13,417 C
50					6504 C	8865 C	12,762 C
51					6154 C	8412 C	12,144 C
52					5821 C	7982 C	11,558 C
53					5506 C	7575 C	11,003 C
54						7188 C	10,476 C
55						6820 C	9975 C
56	Note	A suffix of “C”, “T” or “D” denotes whether the ECL is limited by Compression Tension or Deflection.				6469 C	9499 C
57						6135 C	9045 C
58						5816 C	8612 C
59							8199 C
60							7805 C

Note This table was developed for Equivalent Center Loads (ECL) in pounds, with rail deflection limited to no more than 1/450 of the span or unsupported length, or 1¼", whichever is less. The weight of the rail is included in the allowable ECL. Contact the factory for rail lengths over 60 ft. Maximum 60:1 Span to Top Flange ratio on spans or unsupported lengths over 16 feet. Maximum 32:1 Span to Depth ratio.

“H” Series Equivalent Center Load Table (ECL)—1/450th Deflection

Span (ft.)	3RH26-90 10-2666-01	3RH28-93 10-2667-01	3RH30-110 10-2668-01	3RH32-120 10-2669-01	3RH34-130 10-2670-01	3RH36-140 10-2671-01	3RH38-144 10-2672-01	3RH40-154 10-2673-01
16	66,203 T							
17	62,222 T							
18	58,678 T	66,202 T						
19	55,502 T	62,627 T						
20	52,640 T	59,405 T	68,390 T					
21	50,046 T	56,485 T	65,027 T					
22	47,683 T	53,827 T	61,964 T	69,949 T				
23	45,522 T	51,395 T	59,162 T	66,790 T				
24	43,538 T	49,163 T	56,590 T	63,890 T				
25	41,709 T	47,105 T	54,219 T	61,217 T	68,604 T			
26	40,017 T	45,202 T	52,026 T	58,745 T	65,837 T			
27	38,446 T	43,437 T	49,992 T	56,452 T	63,271 T			
28	36,985 T	41,794 T	48,099 T	54,318 T	60,884 T	67,799 T		
29	35,622 T	40,261 T	46,332 T	52,327 T	58,657 T	65,324 T		
30	34,346 T	38,828 T	44,680 T	50,465 T	56,574 T	63,008 T	69,169 T	
31	33,150 T	37,484 T	43,131 T	48,719 T	54,621 T	60,838 T	66,796 T	
32	32,026 T	36,221 T	41,675 T	47,079 T	52,786 T	58,799 T	64,567 T	
33	30,967 T	35,032 T	40,304 T	45,534 T	51,058 T	56,879 T	62,469 T	68,888 T
34	29,968 T	33,910 T	39,011 T	44,077 T	49,429 T	55,068 T	60,490 T	66,710 T
35	29,024 T	32,849 T	37,788 T	42,699 T	47,888 T	53,356 T	58,621 T	64,653 T
36	28,129 T	31,565 C	36,631 T	41,395 T	46,430 T	51,736 T	56,851 T	62,705 T
37	27,280 T	29,746 C	35,532 T	40,158 T	45,047 T	50,199 T	55,172 T	60,859 T
38	26,474 T	28,065 C	34,489 T	38,983 T	43,733 T	48,740 T	53,579 T	59,105 T
39	25,707 T	26,508 C	33,497 T	37,865 T	42,483 T	47,352 T	52,063 T	57,438 T
40	24,684 C	25,063 C	32,551 T	36,800 T	41,293 T	46,029 T	50,620 T	55,850 T
41	23,363 C	23,719 C	31,649 T	35,785 T	40,157 T	44,768 T	49,243 T	54,336 T
42	22,133 C	22,467 C	30,787 T	34,814 T	39,073 T	43,564 T	47,929 T	52,890 T
43	20,984 C	21,298 C	29,963 T	33,886 T	38,035 T	42,412 T	46,672 T	51,508 T
44	19,910 C	20,204 C	29,173 T	32,997 T	37,042 T	41,310 T	45,470 T	50,186 T
45	18,903 C	19,180 C	28,417 T	32,146 T	36,091 T	40,253 T	44,317 T	48,918 T
46	17,959 C	18,219 C	27,690 T	31,328 T	35,177 T	39,239 T	43,212 T	47,703 T
47	17,071 C	17,315 C	26,993 T	30,543 T	34,300 T	38,266 T	42,150 T	46,536 T
48	16,235 C	16,464 C	26,322 T	29,788 T	33,457 T	37,330 T	41,130 T	45,414 T
49	15,448 C	15,663 C	25,676 T	29,062 T	32,646 T	36,429 T	40,148 T	44,335 T
50	14,704 C	14,905 C	25,054 T	28,362 T	31,864 T	35,562 T	39,203 T	43,296 T
51	14,001 C	14,190 C	24,454 T	27,687 T	31,110 T	34,725 T	38,292 T	42,295 T
52	13,336 C	13,512 C	23,468 C	27,036 T	30,383 T	33,919 T	37,414 T	41,329 T
53	12,706 C	12,870 C	22,430 C	26,407 T	29,681 T	33,140 T	36,566 T	40,397 T
54	12,107 C	12,261 C	21,445 C	25,800 T	29,003 T	32,387 T	35,746 T	39,496 T
55	11,539 C	11,682 C	20,511 C	25,212 T	28,347 T	31,660 T	34,954 T	38,626 T
56	10,999 C	11,132 C	19,623 C	24,643 T	27,712 T	30,955 T	34,187 T	37,784 T
57	10,484 C	10,607 C	18,779 C	23,449 D	27,097 T	30,273 T	33,445 T	36,968 T
58	9993 C	10,108 C	17,976 C	22,257 D	26,501 T	29,612 T	32,726 T	36,178 T
59	9525 C	9631 C	17,210 C	21,144 D	25,466 D	28,971 T	32,029 T	35,413 T
60	9078 C	9175 C	16,464 D	20,104 D	24,214 D	28,349 T	31,353 T	34,670 T

Note A suffix of “C”, “T” or “D” denotes whether the ECL is limited by Compression Tension or Deflection.

Note This table was developed for Equivalent Center Loads (ECL) in pounds, with rail deflection limited to no more than 1/600 of the span or unsupported length, or 1¼", whichever is less. The weight of the rail is included in the allowable ECL. Contact the factory for rail lengths over 60 ft. Maximum 60:1 Span to Top Flange ratio on spans or unsupported lengths over 16 feet. Maximum 32:1 Span to Depth ratio.



“H” Series Equivalent Center Load Table (ECL) — 1/600th Deflection

Span (ft.)	3RH13-36 10-2659-01	3RH14-41 10-2660-01	3RH16-47 10-2661-01	3RH18-52 10-2662-01	3RH20-67 10-2663-01	3RH22-74 10-2664-01	3RH24-84 10-2665-01
10	30,946 D	35,469 T	42,776 T	51,298 T	67,217 T		
11	28,098 D	32,205 T	36,843 T	46,585 T	61,043 T		
12	25,721 D	29,482 T	35,561 T	42,653 T	55,893 T	66,122 T	
13	23,708 D	27,174 T	32,780 T	39,322 T	51,529 T	60,964 T	
14	21,979 D	25,194 T	30,394 T	36,463 T	47,784 T	56,538 T	66,140 T
15	20,479 D	23,475 T	28,322 T	33,981 T	44,535 T	52,697 T	61,650 T
16	18,136 D	21,968 T	26,507 T	31,807 T	41,687 T	49,332 T	57,716 T
17	16,065 D	20,635 T	24,902 T	29,885 T	39,170 T	46,358 T	54,240 T
18	14,330 D	18,641 D	23,473 T	28,174 T	36,929 T	43,711 T	51,145 T
19	12,861 D	16,730 D	22,192 T	28,641 T	34,921 T	41,338 T	48,372 T
20	11,607 D	15,099 D	21,037 T	25,258 T	33,110 T	39,199 T	45,871 T
21	10,528 D	13,695 D	19,210 D	24,004 T	31,469 T	37,260 T	43,605 T
22	9593 D	12,479 D	17,503 D	22,862 T	29,973 T	35,494 T	41,541 T
23	8777 D	11,417 D	16,014 D	21,817 T	28,605 T	33,878 T	39,653 T
24	8061 D	10,485 D	14,707 D	20,178 D	27,348 T	32,394 T	37,919 T
25	7429 D	9663 D	13,554 D	18,596 D	26,189 T	31,025 T	36,321 T
26	6868 D	8934 D	12,532 D	17,193 D	25,116 T	29,759 T	34,841 T
27	6369 D	8285 D	11,621 D	15,943 D	23,300 D	28,585 T	33,469 T
28	5922 D	7704 D	10,805 D	14,825 D	21,666 D	27,491 T	32,191 T
29	5521 D	7182 D	10,073 D	13,820 D	20,197 D	26,470 T	30,999 T
30	5159 D	6711 D	9413 D	12,914 D	18,873 D	25,031 D	29,884 T
31	4831 D	6285 D	8815 D	12,094 D	17,675 D	23,442 D	28,837 T
32	4534 D	5898 D	8273 D	11,350 D	16,588 D	22,000 D	27,854 T
33	4263 D	5546 D	7779 D	10,673 D	15,598 D	20,687 D	26,927 T
34	3984 C	5225 D	7328 D	10,054 D	14,694 D	19,488 D	25,479 D
35	3706 C	4930 D	6915 D	9488 D	13,866 D	18,390 D	24,044 D
36		4660 D	6537 D	8968 D	13,106 D	17,383 D	22,726 D
37		4412 D	6188 D	8490 D	12,408 D	16,456 D	21,515 D
38		4183 D	5867 D	8049 D	11,763 D	15,601 D	20,397 D
39			5570 D	7641 D	11,168 D	14,811 D	19,364 D
40			5295 D	7264 D	10,616 D	14,080 D	18,408 D
41			5040 D	6914 D	10,105 D	13,402 D	17,521 D
42			4802 D	6589 D	9629 D	12,771 D	16,697 D
43				6286 D	9187 D	12,184 D	15,929 D
44				6003 D	8774 D	11,636 D	15,214 D
45				5740 D	8388 D	11,125 D	14,545 D
46				5493 D	8027 D	10,647 D	13,919 D
47				5261 D	7679 C	10,198 D	13,333 D
48				5036 D	7265 C	9778 D	12,784 D
49					6874 C	9344 C	12,267 D
50					6504 C	8865 C	11,781 D
51					6154 C	8412 C	11,324 D
52					5821 C	7982 C	10,893 D
53					5506 C	7575 C	10,485 D
54						7188 C	10,101 D
55						6820 C	9737 D
56	Note A suffix of “C”, “T” or “D” denotes whether the ECL is limited by Compression Tension or Deflection.					6469 C	9392 D
57						6135 C	9045 C
58						5816 C	8612 C
59							8199 C
60							7805 C

Note This table was developed for Equivalent Center Loads (ECL) in pounds, with rail deflection limited to no more than 1/600 of the span or unsupported length, or 1¼”, whichever is less. The weight of the rail is included in the allowable ECL. Contact the factory for rail lengths over 60 ft. Maximum 60:1 Span to Top Flange ratio on spans or unsupported lengths over 16 feet. Maximum 32:1 Span to Depth ratio.

“H” Series Equivalent Center Load Table (ECL)—1/600th Deflection

Span (ft.)	3RH26-90 10-2666-01	3RH28-93 10-2667-01	3RH30-110 10-2668-01	3RH32-120 10-2669-01	3RH34-130 10-2670-01	3RH36-140 10-2671-01	3RH38-144 10-2672-01	3RH40-154 10-2673-01
16	66,203 T							
17	62,222 T							
18	58,678 T	66,202 T						
19	55,502 T	62,627 T						
20	52,640 T	59,405 T	68,390 T					
21	5,0046 T	56,485 T	65,027 T					
22	47,683 T	53,827 T	61,964 T	69,949 T				
23	45,522 T	51,395 T	59,162 T	66,790 T				
24	43,538 T	49,163 T	56,590 T	63,890 T				
25	41,709 T	47,105 T	54,219 T	61,217 T	68,604 T			
26	40,017 T	45,202 T	52,026 T	58,745 T	65,837 T			
27	38,446 T	43,437 T	49,992 T	56,452 T	63,271 T			
28	36,985 T	41,794 T	48,099 T	54,318 T	60,884 T	67,799 T		
29	35,622 T	40,261 T	46,332 T	52,327 T	58,657 T	65,324 T		
30	34,346 T	38,828 T	44,680 T	50,465 T	56,574 T	63,008 T	69,169 T	
31	33,150 T	37,484 T	43,131 T	48,719 T	54,621 T	60,838 T	66,796 T	
32	32,026 T	36,221 T	41,675 T	47,079 T	52,786 T	58,799 T	64,567 T	
33	30,967 T	35,032 T	40,304 T	45,534 T	51,058 T	56,879 T	62,469 T	68,888 T
34	29,968 T	33,910 T	39,011 T	44,077 T	49,429 T	55,068 T	60,490 T	66,710 T
35	29,024 T	32,849 T	37,788 T	42,699 T	47,888 T	53,356 T	58,621 T	64,653 T
36	28,129 T	31,565 C	36,631 T	41,395 T	46,430 T	51,736 T	56,851 T	62,705 T
37	26,808 D	29,746 C	35,532 T	40,158 T	45,047 T	50,199 T	55,172 T	60,859 T
38	25,414 D	28,065 C	34,489 T	38,983 T	43,733 T	48,740 T	53,579 T	59,105 T
39	24,128 D	26,508 C	33,497 T	37,865 T	42,483 T	47,352 T	52,083 T	57,438 T
40	22,936 D	25,063 C	32,551 T	36,800 T	41,293 T	46,029 T	50,620 T	55,850 T
41	21,831 D	23,719 C	31,649 T	35,785 T	40,157 T	44,768 T	49,243 T	54,336 T
42	20,804 D	22,467 C	30,787 T	34,814 T	39,073 T	43,564 T	47,929 T	52,890 T
43	19,847 D	21,298 C	29,963 T	33,886 T	38,035 T	42,412 T	46,672 T	51,508 T
44	18,956 D	20,204 C	29,173 T	32,997 T	37,042 T	41,310 T	45,470 T	50,186 T
45	18,122 D	19,180 C	28,098 D	32,146 T	36,091 T	40,253 T	44,317 T	48,918 T
46	17,343 D	18,219 C	26,890 D	31,328 T	35,177 T	39,239 T	43,212 T	47,703 T
47	16,613 D	17,315 C	25,758 D	30,543 T	34,300 T	38,266 T	42,150 T	46,536 T
48	15,028 D	16,464 C	24,696 D	29,788 T	33,457 T	37,330 T	41,130 T	45,414 T
49	15,284 D	15,663 C	23,698 D	28,938 D	32,646 T	36,429 T	40,148 T	44,335 T
50	14,679 D	14,905 C	22,760 D	27,792 D	31,864 T	35,562 T	39,203 T	43,296 T
51	14,001 C	14,190 C	21,876 D	26,713 D	31,110 T	34,725 T	38,292 T	42,295 T
52	13,336 C	13,512 C	21,043 D	25,695 D	30,383 T	33,919 T	37,414 T	41,329 T
53	12,706 C	12,870 C	20,256 D	24,735 D	29,681 T	33,140 T	36,566 T	40,397 T
54	12,107 C	12,261 C	19,513 D	23,827 D	28,698 D	32,387 T	35,746 T	39,496 T
55	11,539 C	11,682 C	18,810 D	22,989 D	27,664 D	31,660 T	34,954 T	38,626 T
56	10,999 C	11,132 C	18,144 D	22,156 D	26,685 D	30,955 T	34,187 T	37,784 T
57	10,484 C	10,607 C	17,513 D	21,385 D	25,757 D	30,273 T	33,445 T	36,968 T
58	9993 C	10,108 C	16,914 D	20,654 D	24,876 D	29,610 D	32,726 T	36,178 T
59	9525 C	9631 C	16,346 D	19,960 D	24,040 D	28,615 D	32,029 T	35,413 T
60	9078 C	9175 C	15,805 D	19,300 D	23,246 D	27,669 D	31,353 T	34,670 T

Note A suffix of “C”, “T” or “D” denotes whether the ECL is limited by Compression Tension or Deflection.

Note This table was developed for Equivalent Center Loads (ECL) in pounds, with rail deflection limited to no more than 1/600 of the span or unsupported length, or 1¼”, whichever is less. The weight of the rail is included in the allowable ECL. Contact the factory for rail lengths over 60 ft. Maximum 60:1 Span to Top Flange ratio on spans or unsupported lengths over 16 feet. Maximum 32:1 Span to Depth ratio.



“H” Series Equivalent Center Load Table (ECL)—1/1000th Deflection

Span (ft.)	3RH13-36 10-2659-01	3RH14-41 10-2660-01	3RH16-47 10-2661-01	3RH18-52 10-2662-01	3RH20-67 10-2663-01	3RH22-74 10-2664-01	3RH24-84 10-2665-01
10	27,858 D	35,469 T	42,776 T	51,298 T	67,217 T		
11	23,023 D	29,949 D	38,843 T	46,585 T	61,043 T		
12	19,346 D	25,165 D	35,298 D	42,653 T	55,893 T	66,122 T	
13	16,484 D	21,443 D	30,076 D	39,322 T	51,529 T	60,964 T	
14	14,213 D	18,489 D	25,933 D	35,579 D	47,784 T	56,538 T	66,140 T
15	12,381 D	16,106 D	22,591 D	30,994 D	44,535 T	52,697 T	61,650 T
16	10,882 D	14,155 D	19,855 D	27,240 D	39,811 D	49,332 T	57,716 T
17	9639 D	12,539 D	17,588 D	24,130 D	35,265 D	46,358 T	54,240 T
18	8598 D	11,185 D	15,688 D	21,523 D	31,455 D	41,719 D	51,145 T
19	7717 D	10,038 D	14,080 D	19,317 D	28,231 D	37,443 D	48,372 T
20	6964 D	9059 D	12,707 D	17,434 D	25,479 D	33,792 D	44,180 D
21	6317 D	8217 D	11,526 D	15,813 D	23,110 D	30,651 D	40,073 D
22	5756 D	7487 D	10,502 D	14,408 D	21,057 D	27,928 D	36,512 D
23	5266 D	6850 D	9608 D	13,182 D	19,266 D	25,552 D	33,406 D
24	4836 D	6291 D	8824 D	12,107 D	17,694 D	23,467 D	30,681 D
25	4457 D	5798 D	8133 D	11,158 D	16,306 D	21,627 D	28,275 D
26	4121 D	5361 D	7519 D	10,316 D	15,076 D	19,995 D	26,142 D
27	3821 D	4971 D	6972 D	9566 D	13,980 D	18,542 D	24,241 D
28	3553 D	4622 D	6483 D	8895 D	12,999 D	17,241 D	22,541 D
29	3312 D	4309 D	6044 D	8292 D	12,118 D	16,072 D	21,013 D
30	3095 D	4026 D	5648 D	7748 D	11,324 D	15,019 D	19,636 D
31	2899 D	3771 D	5289 D	7257 D	10,605 D	14,065 D	18,389 D
32	2720 D	3539 D	4964 D	6810 D	9953 D	13,200 D	17,258 D
33	2558 D	3328 D	4667 D	6404 D	9359 D	12,412 D	16,228 D
34	2410 D	3135 D	4397 D	6032 D	8816 D	11,693 D	15,287 D
35	2274 D	2958 D	4149 D	5693 D	8320 D	11,034 D	14,426 D
36		2796 D	3922 D	5381 D	7864 D	10,430 D	13,636 D
37		2647 D	3713 D	5094 D	7445 D	9874 D	12,909 D
38		2510 D	3520 D	4829 D	7058 D	9361 D	12,238 D
39			3342 D	4585 D	6701 D	8887 D	11,619 D
40			3177 D	4358 D	6370 D	8448 D	11,045 D
41			3024 D	4148 D	6063 D	8041 D	10,513 D
42			2881 D	3953 D	5778 D	7663 D	10,018 D
43				3772 D	5512 D	7310 D	9558 D
44				3602 D	5264 D	6982 D	9128 D
45				3444 D	5033 D	6675 D	8727 D
46				3296 D	4816 D	6388 D	8352 D
47				3157 D	4614 D	6119 D	8000 D
48				3027 D	4423 D	5867 D	7670 D
49					4245 D	5630 D	7360 D
50					4077 D	5407 D	7069 D
51					3918 D	5197 D	6794 D
52					3769 D	4999 D	6536 D
53					3628 D	4812 D	6291 D
54						4635 D	6060 D
55						4468 D	5842 D
56	Note A suffix of “C”, “T” or “D” denotes whether the ECL is limited by Compression Tension or Deflection.					4310 D	5635 D
57						4160 D	5439 D
58						4018 D	5253 D
59							5077 D
60							4909 D

Note This table was developed for Equivalent Center Loads (ECL) in pounds, with rail deflection limited to no more than 1/1000 of the span or unsupported length, or 1¼", whichever is less. The weight of the rail is included in the allowable ECL. Contact the factory for rail lengths over 60 ft. Maximum 60:1 Span to Top Flange ratio on spans or unsupported lengths over 16 feet. Maximum 32:1 Span to Depth ratio.

“H” Series Equivalent Center Load Table (ECL)—1/1000th Deflection

Span (ft.)	3RH26-90 10-2666-01	3RH28-93 10-2667-01	3RH30-110 10-2668-01	3RH32-120 10-2669-01	3RH34-130 10-2670-01	3RH36-140 10-2671-01	3RH38-144 10-2672-01	3RH40-154 10-2673-01
16	66,203 T							
17	62,222 T							
18	58,678 T	66,202 T						
19	55,502 T	62,627 T						
20	52,640 T	59,405 T	68,390 T					
21	49,929 D	56,485 T	65,027 T					
22	45,493 D	53,827 T	61,964 T	69,949 T				
23	41,623 D	50,054 D	59,162 T	66,790 T				
24	38,227 D	45,970 D	56,590 T	63,890 T				
25	35,230 D	42,366 D	54,219 T	61,217 T	68,604 T			
26	32,572 D	39,170 D	50,502 D	58,745 T	65,837 T			
27	30,204 D	36,322 D	46,831 D	56,452 T	63,271 T			
28	28,085 D	33,774 D	43,545 D	53,174 D	60,884 T	67,799 T		
29	26,182 D	31,485 D	40,594 D	49,570 D	58,657 T	65,324 T		
30	24,465 D	29,421 D	37,933 D	46,320 D	55,790 D	63,008 T	69,169 T	
31	22,912 D	27,553 D	35,525 D	43,380 D	52,248 D	60,838 T	66,796 T	
32	21,503 D	25,858 D	33,340 D	40,711 D	49,034 D	58,365 D	64,567 T	
33	20,219 D	24,315 D	31,350 D	38,281 D	46,107 D	54,881 D	62,469 T	68,888 T
34	19,047 D	22,905 D	29,533 D	36,062 D	43,435 D	51,700 D	59,358 D	66,710 T
35	17,974 D	21,615 D	27,869 D	34,031 D	40,988 D	48,788 D	56,015 D	64,653 T
36	16,990 D	20,431 D	26,342 D	32,167 D	38,743 D	46,116 D	52,946 D	61,965 D
37	16,084 D	19,342 D	24,938 D	30,452 D	36,677 D	43,657 D	50,123 D	58,661 D
38	15,248 D	18,337 D	23,642 D	28,870 D	34,772 D	41,389 D	47,519 D	55,614 D
39	14,477 D	17,409 D	22,446 D	27,408 D	33,012 D	39,294 D	45,114 D	52,799 D
40	13,762 D	16,549 D	21,337 D	26,055 D	31,382 D	37,354 D	42,886 D	50,192 D
41	13,099 D	15,752 D	20,309 D	24,800 D	29,870 D	35,554 D	40,820 D	47,773 D
42	12,482 D	15,011 D	19,354 D	23,633 D	28,464 D	33,881 D	38,899 D	45,526 D
43	11,908 D	14,321 D	18,464 D	22,546 D	27,156 D	32,323 D	37,111 D	43,433 D
44	11,373 D	13,677 D	17,634 D	21,533 D	25,935 D	30,871 D	35,443 D	41,481 D
45	10,873 D	13,076 D	16,859 D	20,587 D	24,795 D	29,514 D	33,885 D	39,658 D
46	10,406 D	12,514 D	16,134 D	19,701 D	23,729 D	28,245 D	32,428 D	37,952 D
47	9968 D	11,987 D	15,455 D	18,872 D	22,730 D	27,056 D	31,063 D	36,354 D
48	9557 D	11,492 D	14,818 D	18,094 D	21,793 D	25,940 D	29,782 D	34,855 D
49	9171 D	11,028 D	14,219 D	17,363 D	20,912 D	24,892 D	28,579 D	33,447 D
50	8808 D	10,591 D	13,656 D	16,675 D	20,084 D	23,906 D	27,447 D	32,123 D
51	8465 D	10,180 D	13,126 D	16,028 D	19,304 D	22,978 D	26,381 D	30,875 D
52	8143 D	9792 D	12,626 D	15,417 D	18,569 D	22,103 D	25,376 D	29,699 D
53	7839 D	9426 D	12,154 D	14,841 D	17,875 D	21,277 D	24,428 D	28,589 D
54	7551 D	9080 D	11,708 D	14,296 D	17,219 D	20,496 D	23,532 D	27,540 D
55	7279 D	8753 D	11,286 D	13,781 D	16,599 D	19,757 D	22,684 D	26,548 D
56	7021 D	8443 D	10,886 D	13,293 D	16,011 D	19,058 D	21,881 D	25,608 D
57	6777 D	8150 D	10,508 D	12,831 D	15,454 D	18,395 D	21,120 D	24,717 D
58	6545 D	7871 D	10,149 D	12,392 D	14,926 D	17,766 D	20,398 D	23,872 D
59	6325 D	7607 D	9807 D	11,976 D	14,424 D	17,169 D	19,712 D	23,070 D
60	6116 D	7355 D	9483 D	11,580 D	13,947 D	16,602 D	19,061 D	22,307 D

Note A suffix of “C”, “T” or “D” denotes whether the ECL is limited by Compression Tension or Deflection.

Note This table was developed for Equivalent Center Loads (ECL) in pounds, with rail deflection limited to no more than 1/1000 of the span or unsupported length, or 1¼", whichever is less. The weight of the rail is included in the allowable ECL. Contact the factory for rail lengths over 60 ft. Maximum 60:1 Span to Top Flange ratio on spans or unsupported lengths over 16 feet. Maximum 32:1 Span to Depth ratio.

Top Flange Holes or Slots & End Preparations

325L, 325H & 400 Series Rail

TC/American Crane Patented Track rail can be provided with holes or slots in the top flange of the rail as required for supporting the rail at the ends and any intermediate points. Holes may also be field drilled or punched.

Top Flange Holes for Single Rod Hangers at Splices*

Hanger Model	E Gauge	F Nom. Hole Size	G Dim.
H-4600-S	2½"	11/16"	3 13/16"
H-6900-S	2½"	11/16"	3 13/16"
H-8000-FS	2½"	11/16"	3½"
H-12000-FS	2½"	11/16"	3½"
H-20000-FS	3½"	15/16"	4 3/16"

* Top-flange locations for various hangers at rail ends (splice point)

Holes or slots may also be provided at rail ends at other dimensions and at intermediate support points as required. See Suspension Section for hole size and gauge for Intermediate Hangers. Specify holes or slots and location with order.

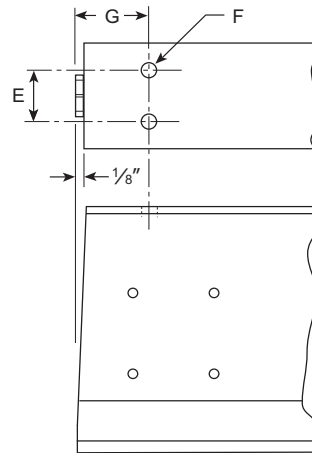
TC/A Standard Top Flange Holes or Top Flange Slots are available as follows:

Round	11/16"	13/16"	15/16"	1 1/16"	1 5/16"
	11/16" x 1 1/8"	13/16" x 1 7/16"			
Slots	15/16" x 1 7/16"	1 1/16" x 1 7/16"			
	1 3/16" x 1 7/16"	1 5/16" x 1 7/16"			

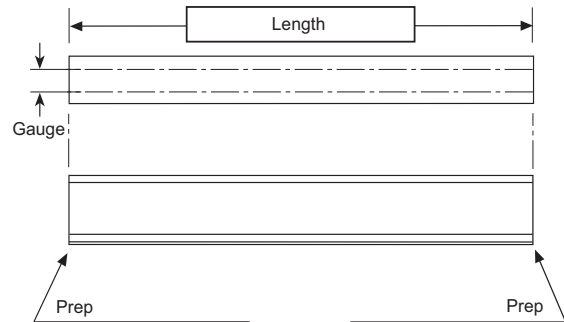
Not all hole or slot sizes are appropriate for all rails. Contact factory for special holes or slots.

Note:

- Maximum top flange width for punched holes is 15" with a 3½" gauge. Rails with wider flanges or narrower gauge must have holes or slots drilled.
- Maximum top flange thickness for punched holes is 1" with a 1 1/16" x 1 7/16" slot. Rails with thicker flanges must have holes or slots drilled. Larger slot sizes must be drilled.
- Rail with 4" wide top flange (curves), maximum hole gauge is 2½" with 11/16" holes or slots.
- Hole gauge should be kept to the minimum dimension possible. (see rail specification pages).



Note:
Rail end shown with typical "cut-back" provided on rails with splice preparation.



TO ORDER RAIL—Specify the following information for each piece of rail on a drawing similar to that shown above (show all dimensions from one end):

- Length
- Hole or Slot Size
- Hole or Slot Location
- Hole Gauge
- End Preparations
 - Splice Assemblies (*identify model*)
 - End cut with taper or "cut-back."
 - End Stop (*identify model*)
 - Specify if end stop is not to be located at end of rail.
 - Interlock (*identify model*)
 - Switch Connection (*identify model*)
 - Square or Plain (*straight cut, no holes*)





Splice Assemblies

TC/American Splice assemblies for 325 Series and 400 Series Rail are mounted on each side of the rail web with the use of high-strength countersunk $\frac{3}{8}$ " socket head screws and lockwashers. Tighten screws until the lockwashers (star type) are compressed.

Splice Plate Holes ($\frac{1}{2}$ " dia.) in rail web are provided when Splice Plate Assemblies are ordered with rail. Rail may also be ordered with ends provided for "Future Splice" (holes only provided).

Note Splice assemblies are designed for alignment only.

Rail must be supported at the centerline of the rail joint, or at each end of the adjoining rails. See Suspension Section for options.

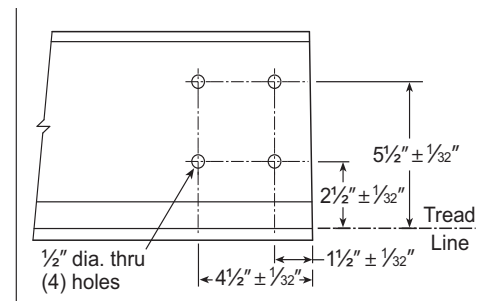
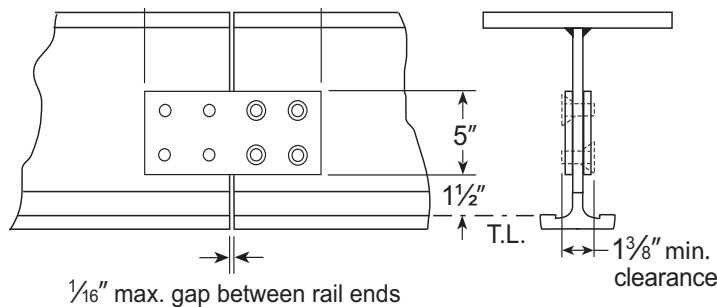
- Weight = 11 lbs.
- Finish = TC/American gray-green enamel

3AS-16 Splice

10-2374-00

Rail Models

325 Series: 3RL8-16 through 3RH16-47
400 Series: 4R13-27 through 4R15-42



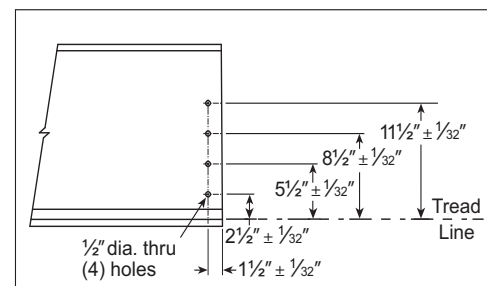
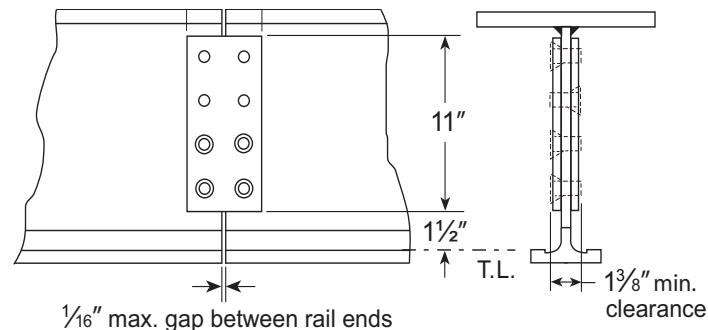
Hole Detail for 3AS-16 End Prep

3AS-18 Splice

10-2375-00

Rail Models

325 Series: 3RH18-52 through 3RH40-154
400 Series: 4R17-53 through 4R37-142



Hole Detail for 3AS-18 End Prep

End Stops

End stops must be provided at the ends of crane runways, monorail systems and crane rails, except where a crane interlock, connecting interlock or switch

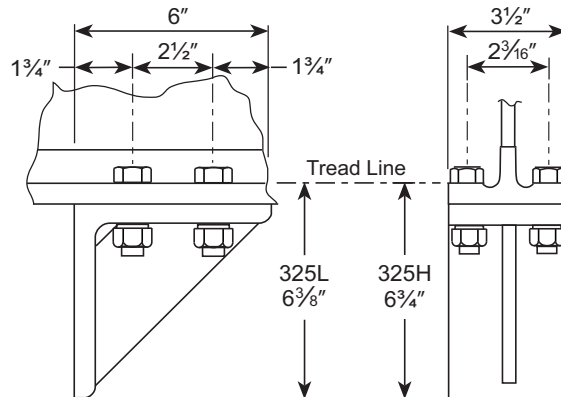
is mounted. TC/American end stops are manufactured from heavy steel shapes or castings and are provided with bolts, nuts and lockwashers for assembly to rails.

3ES-03 End Stop

9229F1261F1

Load bar type end stop for up to 6½-inch trolley wheel assemblies on 325L or 325H Series rail. Also may be used on 400 Series rail.

- Weight = 10 lbs.
- End stop assembly = four 5/8-inch dia. Grade 5 cap screws with nut & lockwasher

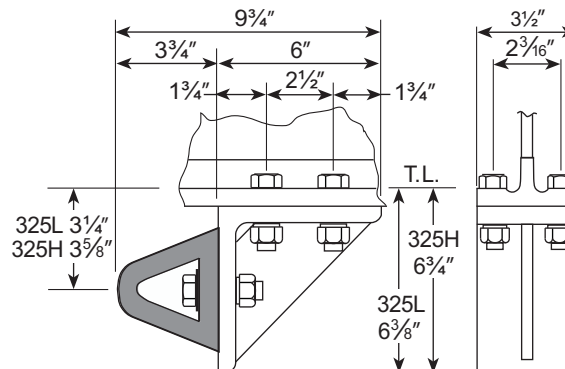


3ES-06 End Stop

9229F1262F1

Load bar type end stop with rubber bumper for up to 6½-inch trolley wheel assemblies on 325L or 325H Series rail. Also may be used on 400 Series rail.

- Weight = 12 lbs.
- End stop assembly = four 5/8-inch dia. Grade 5 cap screws with nut & lockwasher

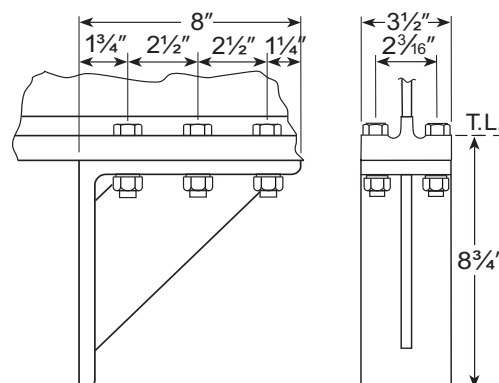


3ES-07 End Stop

9229F1976F1

Load bar type end stop for up to 9-inch trolley wheel assemblies on 325H series rail only.

- Weight = 18 lbs.
- End stop assembly = six 5/8-inch dia. Grade 5 cap screws with nut and lockwasher

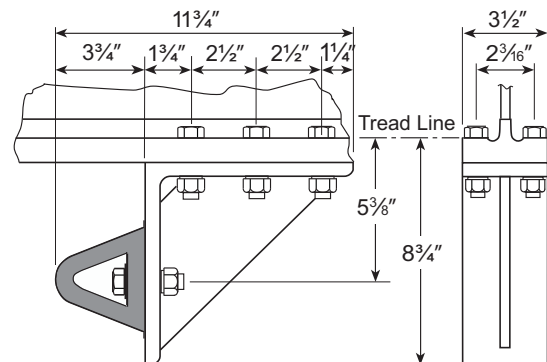


3ES-08 End Stop

9229F1977F1

Load bar type end stop with rubber bumper for up to 9-inch trolley wheel assemblies on 325H Series rail only.

- Weight = 20 lbs.
- End stop assembly = six $\frac{5}{8}$ -inch dia. Grade 5 cap screws with nut and lockwasher

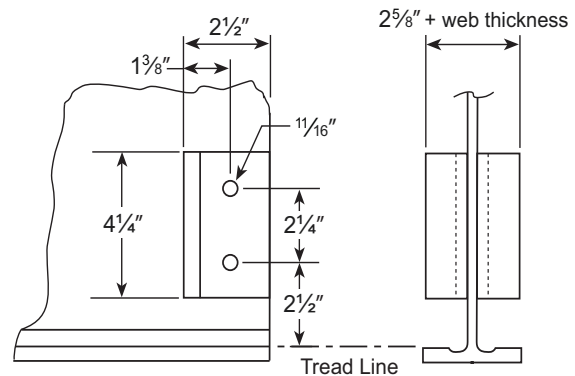


3ES-09 End Stop

9229F1265F1

Web mounted trolley wheel type end stop for up to 5-inch trolley wheel assemblies on hand push systems on 325L on 325H Series rail.

- Weight = 6 lbs.
- End stop assembly = two $\frac{5}{8}$ -inch dia. Grade 5 cap screws with nut & lockwasher

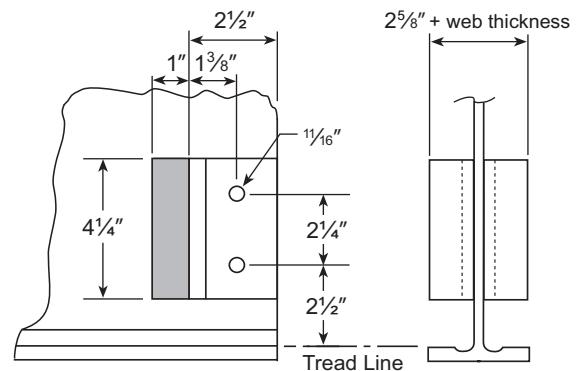


3ES-10 End Stop

9229F1266F1

Web mounted trolley wheel type end stop with rubber bumper for up to 5-inch trolley wheel assemblies on hand push systems on 325L on 325H Series rail.

- Weight = $6\frac{1}{4}$ lbs.
- End stop assembly = two $\frac{5}{8}$ -inch dia. Grade 5 cap screws with nut & lockwasher

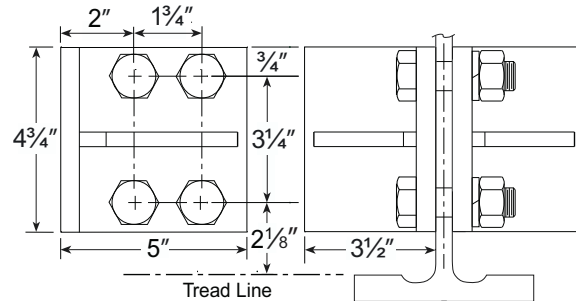


3ES-11 End Stop

10-2997-00

End Stop, web mounted, wheel type or for hoist manufacturer's trolleys, through 10-ton capacity.

- Weight = 13½ lbs.
- End stop assembly = four ¾-inch dia.
Grade 5 cap screws with nut & lockwasher

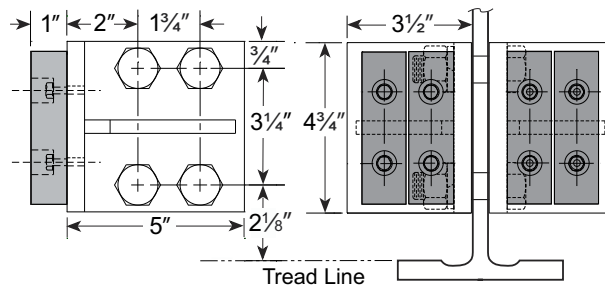


3ES-12 End Stop

10-3459-00

End Stop with Rubber Bumper, web mounted, wheel type or for hoist manufacturer's trolleys, through 10-ton capacity.

- Weight = 16 lbs.
- End stop assembly = four ¾-inch dia.
Grade 5 cap screws with nut & lockwasher

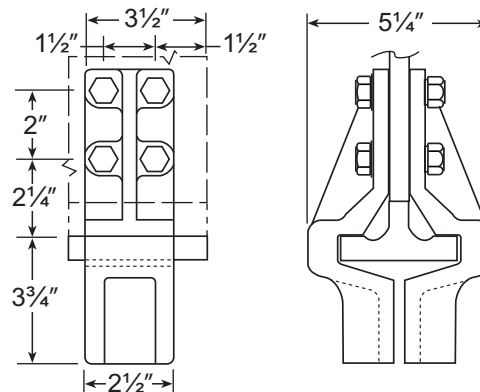


3ES-613C End Stop

10-613-C

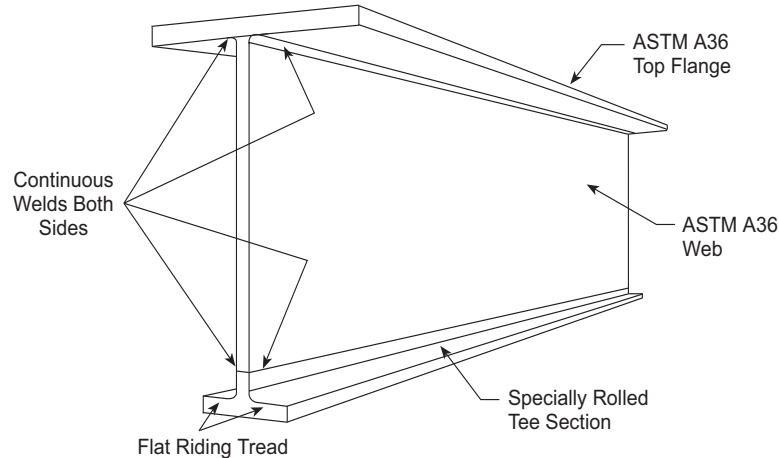
Web mounted load bar type end stop for up to 6½-inch trolley wheel assemblies on 325L on 325H Series rail.

- Weight = 10 lbs.
- End stop assembly = four ½-inch dia.
Grade 5 cap screws with nut & lockwasher



400 Series Rail

Railmaster II Rail



TC/American “400” Series Railmaster II Patented Track Rail is a 3-piece composite beam consisting of an ASTM A36 Top Flange, ASTM A36 Web and a load carrying Tee Section rolled from high carbon-manganese alloy steel. The Tee Section is $4\frac{1}{16}$ " wide with a flat riding tread.

The rail components are simultaneously joined together in TC/American's fabrication shop by an automatic, continuous submerged arc welding process to provide uniformly strong sections. Rail sizes are available from 13" to 37" depth.

Railmaster II rail replaces all previously available rails rolled as a one-piece beam. Railmaster II rail is used to replace worn rail in existing systems or to extend existing systems.

See the 400 Series Specification Sheets and the Equivalent Center Load (ECL) tables for the load capacity of each size rail, as based upon distances between supports (span) and allowable deflection criteria. See the “General Engineering” section of this Systems Catalog for more information about ECL's.

All rail, splice assemblies and end stops are factory cleaned to SSPC-SP2 (solvent and hand tool cleaned), and painted with one coat of TC/American high quality, dark green (gray-green) low luster industrial enamel. Contact the factory for primer and special paint options.

Splices and End Stops

Splices 400 Series Railmaster II rail uses the same splices as used on 325 Series rail, Part #10-2374-00 (3AS-16) and 10-2375-00 (3AS-18). See the 325 Series section of this TC/American Crane Systems Catalog for data on these splices.

End Stops The following 325 Series End Stops may be used on 400 Series Railmaster II rail: Part #9229F1261F1 (3ES-03) and 9229F1262F1 (3ES-06). See the 325 Series section of this Systems Catalog for data on these end stops. For web mounted end stops or other special applications, contact the factory.

Contact the factory for special rail sizes.

Specifications

Metallurgical Data

Carbon	0.48–0.55
Manganese	0.60–0.90
Phosphorous	0.04 Max.
Sulphur	0.05 Max.
Silicon	0.15–0.30
Vanadium	0.05–0.10

Physical Properties

Tensile Strength	125,000 P.S.I. Min.
Yield Strength	65,000 P.S.I. Nom.
Brinell Hardness	235 Avg.

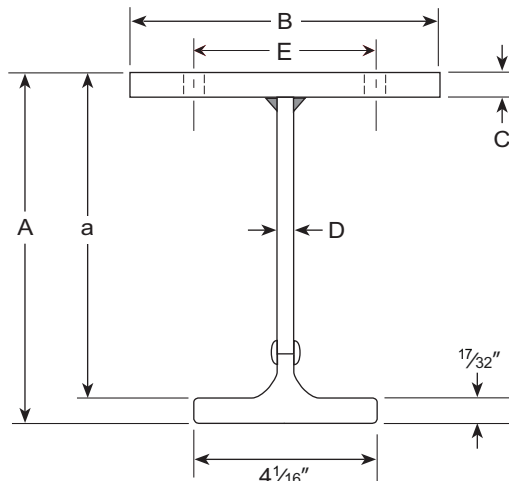
Railmaster II Data

“400” Series Specifications

Part #	Model	Weight (lbs./ft.)	A	a	B	C	D	Max. E*
10-3376-01	4R13-27†	27.17	12 ^{17/32} "	12"	4"	½"	5/16"	2½"
10-3377-01	4R13-29	28.88	12 ^{17/32} "	12"	5"	½"	5/16"	3"
10-3460-01	4R13-37	37.36	12 ^{17/32} "	12"	10"	½"	5/16"	3"
10-3461-01	4R15-42	42.14	14 ^{17/32} "	14"	10"	½"	3/8"	3"
10-3462-01	4R17-53	53.22	16 ^{17/32} "	16 ^{1/8} "	12"	5/8"	3/8"	5½"
10-3463-01	4R19-63	62.79	18 ^{17/32} "	18 ^{1/8} "	12"	5/8"	½"	5½"
10-3464-01	4R21-73	72.55	20 ^{17/32} "	20 ^{1/8} "	15"	5/8"	½"	5½"
10-3465-01	4R23-76	75.95	22 ^{17/32} "	22 ^{1/8} "	15"	5/8"	½"	5½"
10-3466-01	4R25-86	85.71	24 ^{25/32} "	24 ^{1/4} "	15"	¾"	½"	5½"
10-3467-01	4R27-92	91.65	26 ^{25/32} "	26 ^{1/4} "	16"	¾"	½"	5½"
10-3468-01	4R29-95	95.06	28 ^{25/32} "	28 ^{1/4} "	16"	¾"	½"	5½"
10-3469-01	4R31-112	112.06	31 ^{1/32} "	30½"	16"	1"	½"	5½"
10-3470-01	4R33-122	121.83	32 ^{25/32} "	32 ^{1/4} "	18"	1"	½"	5½"
10-3471-01	4R35-132	132.03	34 ^{25/32} "	34 ^{1/4} "	20"	1"	½"	5½"
10-3472-01	4R37-142	142.23	36 ^{25/32} "	36 ^{1/4} "	22"	1"	½"	5½"

* All top flanges need to be evaluated for proposed loading conditions.

† Standard curve rail



Maximum load per trolley wheel for all “400” Series rail is 2600 pounds (5200 lbs. per two-wheel trolley), based upon “Square Cut” ends. For higher wheel loads or to match existing rails, contact the factory for information about addition of a Tension Strip welded under the tee section which allows the maximum load per trolley wheel to be increased up to 3300 pounds (6600 pounds per two-wheel trolley).

Note Total load on each trolley wheel includes its share of the Live Load, Impact, Hoist Weight, Crane Weight if applicable, plus any handling equipment weights. For rail ends with diagonal cuts (i.e., in switches), the allowable wheel loading is reduced to correspond to the capacity of the switch being used.

See page B-25 for top flange holes or slots and end proportions and page B-26 for splice assemblies.



Equivalent Center Load Table (ECL) — 1/450th Deflection

Span (ft.)	4R13-29 10-3377-01	4R13-37 10-3460-01	4R15-42 10-3461-01	4R17-53 10-3462-01	4R19-63 10-3463-01	4R21-73 10-3464-01	4R23-76 10-3465-01
8	31,265	38,041	48,150	60,746	78,150	93,936	108,400
10	23,045	30,365	38,444	48,501	62,407	75,019	86,583
12	15,930	25,236	31,959	40,320	51,891	62,382	72,013
14	11,629	21,561	27,315	34,461	43,361	53,336	61,585
16	8827	18,796	23,822	30,054	38,698	46,533	53,744
18	6897	16,637	21,095	26,614	34,280	41,226	47,629
20	5508	14,902	18,906	23,852	30,733	36,965	42,722
22	4473	12,845	16,367	21,582	27,819	33,466	38,693
24	3679	10,541	13,637	19,681	25,380	30,538	35,323
26		8982	11,502	18,065	23,307	28,050	32,460
28		7744	9800	16,672	21,521	25,906	29,995
30		6746	8419	15,301	18,724	24,039	27,848
32		5929	7281	13,448	16,280	22,396	25,449
34			6330	11,913	14,244	20,938	22,328
36			5527	10,626	12,527	19,338	19,701
38				9537	11,064	17,149	17,465
40				8607	9807	15,270	15,546
42				7806	8715	13,643	13,883
44				7113	7761	12,223	12,432
46					6921	10,975	11,157
48					6176	9871	10,028
50						8888	9023

Note This table was developed for allowable Equivalent Center Loads (ECL) in pounds, with rail deflection limited to no more than 1/450 of the span or unsupported length, or 1¼", whichever is less. The weight of the rail is included in the allowable ECL.

Maximum 60:1 Span to Top Flange ratio on spans or unsupported lengths over 16 feet.

Maximum 32:1 Span to Depth ratio.

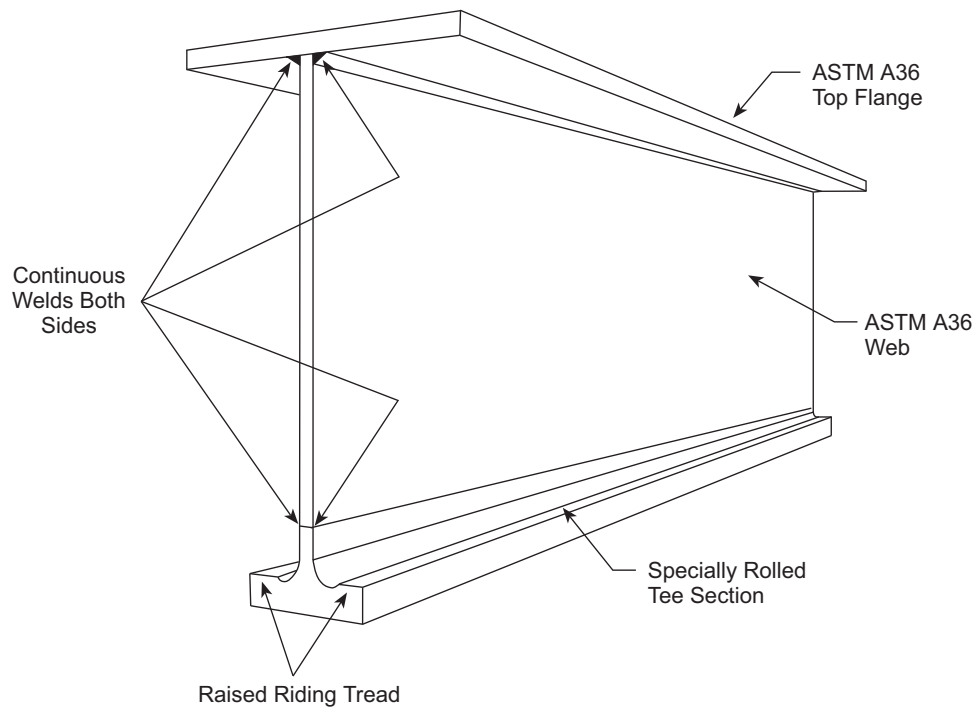
Equivalent Center Load Table (ECL) — 1/450th Deflection

Span (ft.)	4R25-86 10-3466-01	4R27-92 10-3467-01	4R29-95 10-3468-01	4R31-113 10-3469-01	4R33-122 10-3470-01	4R35-132 10-3471-01	4R37-142 10-3472-01
8	127,104	144,917	162,569	188,961	209,608	233,938	259,487
10	101,529	115,769	129,884	150,967	167,467	186,913	207,333
12	84,450	96,306	108,062	125,600	139,322	155,519	172,517
14	72,227	82,377	92,448	107,449	119,201	133,056	147,607
16	63,038	71,908	80,714	93,808	104,073	116,177	128,890
18	55,871	63,745	71,566	83,173	92,279	103,019	114,300
20	50,121	57,197	64,229	74,643	82,819	92,466	102,600
22	45,401	51,822	58,208	67,643	75,058	83,808	93,001
24	41,454	47,328	53,175	61,791	68,569	76,571	84,978
26	38,100	43,511	48,902	56,823	63,061	70,427	78,168
28	35,213	40,226	45,226	52,548	58,321	65,142	72,310
30	32,700	37,367	42,027	48,828	54,198	60,544	67,214
32	30,490	34,854	39,216	45,559	50,574	56,504	62,738
34	28,530	32,626	36,289	42,622	47,363	52,924	58,771
36	26,779	30,635	32,099	40,074	44,495	49,727	55,230
38	24,576	28,118	28,539	37,746	41,915	46,852	52,046
40	21,935	25,115	25,485	35,640	39,582	44,252	49,166
42	19,650	22,518	22,844	33,724	37,459	41,887	46,547
44	17,659	20,255	20,542	31,973	35,519	39,725	44,154
46	15,911	18,269	18,521	30,363	33,736	37,740	41,956
48	14,366	16,514	16,737	28,750	32,092	35,909	39,929
50	12,993	14,955	15,151	26,173	30,569	34,214	38,053

Note This table was developed for allowable Equivalent Center Loads (ECL) in pounds, with rail deflection limited to no more than 1/450 of the span or unsupported length, or 1¼", whichever is less. The weight of the rail is included in the allowable ECL.

Maximum 60:1 Span to Top Flange ratio on spans or unsupported lengths over 16 feet.
Maximum 32:1 Span to Depth ratio.

450 Series Rail



TC/American "450" Series Patented Track Rail is a 3-piece composite beam consisting of an ASTM A36 Top Flange, ASTM A36 Web and a load carrying Tee Section rolled from high carbon-manganese alloy steel. The Tee Section is 4½" wide with a raised riding tread.

The rail components are simultaneously joined together in TC/American's fabrication shop by an automatic, continuous submerged arc welding process to provide uniformly strong sections. Rail sizes are available from 14" to 40" depth.

See the 450 Series Specification Sheets and the Equivalent Center Load (ECL) tables for the load capacity of each size rail, as based upon distances between supports (span) and allowable deflection criteria. See the "General Engineering" section of this Systems Catalog for more information about ECL's.

All rail, splice assemblies and end stops are factory cleaned to SSPC-SP2 (solvent and hand tool cleaned), and painted with one coat of TC/American high quality, dark green (gray-green) low luster industrial enamel. Contact the factory for primer and special paint options.

Contact the factory for special rail sizes.

Specifications

Metallurgical Data

Carbon	0.55 – 0.65
Manganese	0.80 – 1.10
Phosphorous	0.04 Max.
Sulphur	0.05 Max.
Silicon	0.15 – .30

Physical Properties

Tensile Strength	115,000–125,000 P.S.I.
Yield Strength	70,000 P.S.I. Min.
Brinell Hardness	210–230 Bhn.

450 Series Rail Data

Part #	Model	Weight (lbs./ft.)	A	a	B	C	D	Max.* E	Ix† In.⁴	Sc‡ In.³	St§ In.⁴	Iy† In.⁴
10-2624-01	45R14-57	57.29 lbs.	14 3/8"	13 1/4"	9"	3/4"	3/8"	5 1/2"	598.6	92.08	76.03	54.12
10-2625-01	45R14-46#	45.78 lbs.	14 3/8"	13 1/4"	4 1/2"	3/4"	3/8"	2 1/2"	417.41	50.56	68.20	12.56
10-2626-01	45R16-62	62.39 lbs.	16 3/8"	15 1/4"	10"	3/4"	3/8"	5 1/2"	841.9	117.62	91.34	71.06
10-2627-01	45R18-73	72.96 lbs.	18 1/4"	17 1/8"	10"	1"	3/8"	5 1/2"	1,186.9	164.35	107.63	91.90
10-2628-01	45R20-79	78.91 lbs.	20 1/4"	19 1/8"	11"	1"	3/8"	5 1/2"	1,561.1	201.41	124.90	119.50
10-2629-01	45R22-81	81.46 lbs.	22 1/4"	21 1/8"	11"	1"	3/8"	5 1/2"	1,937.2	225.51	141.82	119.51
10-2630-01	45R24-101	100.85 lbs.	24 1/4"	23 1/8"	13 1/2"	1"	1/2"	5 1/2"	2,631.2	299.03	170.30	213.75
10-2631-01	45R26-109	109.35 lbs.	26 1/4"	25 1/8"	15"	1"	1/2"	5 1/2"	3,288.7	357.24	192.95	289.99
10-2632-01	45R28-129	129.33 lbs.	28 1/4"	27 1/8"	16"	1 1/4"	1/2"	**	4,256.5	480.06	219.60	435.42
10-2633-01	45R30-141	141.23 lbs.	30 1/4"	29 1/8"	18"	1 1/4"	1/2"	**	5,200.3	572.74	245.65	616.28
10-2634-01	45R32-145	144.63 lbs.	32 1/4"	31 1/8"	18"	1 1/4"	1/2"	**	6,061.5	617.61	270.17	616.30
10-2635-01	45R36-166	166.30 lbs.	36 1/4"	35 1/8"	18"	1 1/2"	1/2"	**	8,418.1	807.12	326.03	737.84
10-2636-01	45R40-183	183.30 lbs.	40 1/4"	39 1/8"	20"	1 1/2"	1/2"	**	11,202.7	994.93	386.43	1008.88

* All top flanges need to be evaluated for proposed loading conditions.

† Ix = Moment of inertia (Vertical)

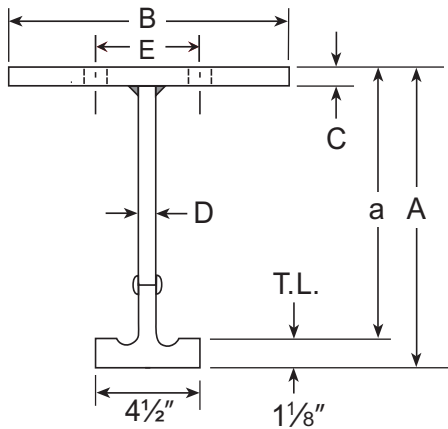
‡ Sc = Section in compression

§ St = Section in tension

† Iy = Moment of inertia (Lateral)

Standard curved rail

** Contact Factory



Maximum load per trolley wheel for all "450" Series rail is 9000 pounds (18000 lbs. per two-wheel trolley), based upon "Square Cut" ends.

Note Total load on each trolley wheel includes its share of the Live Load, Impact, Hoist Weight, Crane Weight if applicable, plus any handling equipment weights.



Equivalent Center Load Table (ECL) — 1/450th Deflection

Span (ft.)	45R14-57 10-2624-01	45R16-62 10-2626-01	45R18-73 10-2627-01	45R20-79 10-2628-01	45R22-81 10-2629-01	45R24-101 10-2630-01
6	105,425 T					
8	78,969 T					
10	63,072 T	75,805 T	89,327 T	103,689 T	117,776 T	141,412 T
12	52,455 T	63,056 T	74,307 T	86,263 T	97,997 T	117,659 T
14	44,855 T	53,932 T	63,555 T	73,793 T	83,846 T	100,663 T
16	39,141 T	47,074 T	55,474 T	64,421 T	73,213 T	87,891 T
18	34,683 T	41,726 T	49,172 T	57,114 T	64,924 T	77,935 T
20	31,106 T	37,434 T	44,116 T	51,253 T	58,277 T	69,950 T
22	26,568 D	33,912 T	39,966 T	46,443 T	52,824 T	63,398 T
24	22,324 D	30,475 C	36,496 T	42,421 T	48,266 T	57,922 T
26	19,022 D	25,794 C	33,548 T	39,006 T	44,396 T	53,272 T
28	16,402 D	22,066 C	31,011 T	36,068 T	41,068 T	49,273 T
30	14,288 D	19,047 C	28,329 D	33,511 T	38,173 T	45,793 T
32	12,557 D	16,565 C	24,899 D	31,263 T	35,037 C	42,735 T
34	11,124 D	14,497 C	22,056 D	29,009 D	30,806 C	40,026 T
36	9922 D	12,754 C	19,673 D	25,876 D	27,247 C	37,606 T
38	8891 C	11,269 C	17,657 D	23,224 D	24,223 C	35,430 T
40		9993 C	15,935 D	20,959 D	21,629 C	32,593 C
42		8885 C	14,454 D	19,011 D	19,385 C	29,274 C
44			13,170 D	17,111 C	17,429 C	26,385 C
46			12,114 D	15,429 C	15,713 C	23,851 C
48			12,049 D	13,943 C	14,196 C	21,614 C
50			10,807 D	12,576 D	12,849 C	19,629 C
52				11,180 D	11,644 C	17,857 C
54				9983 D	10,562 C	16,267 C
56						14,834 C
58						13,537 C
60						12,266 D
62						11,117 D
64						10,107 D

Note This table was developed for allowable Equivalent Center Loads (ECL) in pounds, with rail deflection limited to no more than 1/450 of the span or unsupported length, or 1¼", whichever is less. The weight of the rail is included in the allowable ECL. Contact the factory for rail lengths over 64 ft.

Maximum 60:1 Span to Top Flange ratio on spans or unsupported lengths over 16 feet.

Maximum 32:1 Span to Depth ratio.

A suffix of "C", "T" or "D" denotes whether the ECL is limited by Compression, Tension or Deflection.

Equivalent Center Load Table (ECL) — 1/450th Deflection

Span (ft.)	45R26-109 10-2631-01	45R28-129 10-2632-01	45R30-141 10-2633-01	45R32-145 10-2634-01	45R36-166 10-2635-01	45R40-183 10-2636-01
10	160,245 T	182,353 T	204,002 T	224,419 T	270,860 T	321,109 T
12	133,337 T	151,724 T	169,743 T	186,750 T	225,412 T	267,254 T
14	114,086 T	129,809 T	145,232 T	159,803 T	192,901 T	228,735 T
16	99,620 T	113,340 T	126,813 T	139,557 T	168,477 T	199,799 T
18	88,345 T	100,503 T	112,456 T	123,777 T	149,443 T	177,253 T
20	79,302 T	90,207 T	100,942 T	111,125 T	134,183 T	159,180 T
22	71,884 T	81,759 T	91,496 T	100,746 T	121,667 T	144,359 T
24	65,684 T	74,698 T	83,600 T	92,073 T	111,209 T	131,977 T
26	60,421 T	68,703 T	76,898 T	84,713 T	102,335 T	121,473 T
28	55,895 T	63,547 T	71,133 T	78,383 T	94,705 T	112,443 T
30	51,957 T	59,060 T	68,118 T	72,878 T	88,069 T	104,592 T
32	48,498 T	55,118 T	61,712 T	68,043 T	82,243 T	97,700 T
34	45,433 T	51,626 T	57,807 T	63,759 T	77,082 T	91,597 T
36	42,696 T	48,505 T	54,321 T	59,936 T	72,477 T	86,152 T
38	40,236 T	45,701 T	51,187 T	56,500 T	68,338 T	81,261 T
40	38,011 T	43,163 T	48,352 T	53,393 T	64,597 T	76,840 T
42	35,987 T	40,856 T	45,774 T	50,568 T	61,196 T	72,823 T
44	32,742 C	38,746 T	43,418 T	47,987 T	58,090 T	69,155 T
46	29,643 C	36,808 T	41,254 T	45,617 T	55,239 T	65,790 T
48	26,909 C	35,021 T	39,258 T	43,433 T	52,611 T	62,689 T
50	24,485 C	33,367 T	37,411 T	41,413 T	50,181 T	59,823 T
52	22,322 C	30,482 D	35,695 T	39,536 T	47,925 T	57,162 T
54	20,383 C	27,219 D	33,255 D	37,788 T	45,823 T	54,685 T
56	18,636 C	24,406 D	29,817 D	34,755 D	43,860 T	52,372 T
58	16,973 D	21,967 D	26,838 D	31,283 D	42,021 T	50,206 T
60	15,331 D	19,843 D	24,243 D	28,257 D	39,243 D	48,172 T
62	13,895 D	17,984 D	21,971 D	25,610 D	35,567 D	46,257 T
64	12,633 D	16,350 D	19,975 D	23,283 D	32,336 D	43,032 D
66	11,519 D	14,908 D	18,214 D	21,230 D	29,484 D	39,237 D
68	10,532 D	13,631 D	16,654 D	19,411 D	26,958 D	35,876 D
70	9655 D	12,496 D	15,267 D	17,795 D	24,713 D	32,888 D
72		11,483 D	14,029 D	16,353 D	22,710 D	30,223 D

Note This table was developed for allowable Equivalent Center Loads (ECL) in pounds, with rail deflection limited to no more than 1/450 of the span or unsupported length, or 1¼", whichever is less. The weight of the rail is included in the allowable ECL. Contact the factory for rail lengths over 72 ft.

Maximum 60:1 Span to Top Flange ratio on spans or unsupported lengths over 16 feet.
Maximum 32:1 Span to Depth ratio.

A suffix of "C", "T" or "D" denotes whether the ECL is limited by Compression, Tension or Deflection.



Equivalent Center Load Table (ECL) — 1/600th Deflection

Span (ft.)	45R14-57 10-2624-01	45R16-62 10-2626-01	45R18-73 10-2627-01	45R20-79 10-2628-01	45R22-81 10-2629-01	45R24-101 10-2630-01
6	105,425 T	126,674 T	149,267 T	173,235 T	196,728 T	236,225 T
8	78,969 T	94,896 T	111,823 T	129,789 T	147,403 T	176,992 T
10	63,072 T	75,805 T	89,327 T	103,689 T	117,776 T	141,412 T
12	52,455 T	63,056 T	74,307 T	86,263 T	97,997 T	117,659 T
14	44,855 T	53,932 T	63,555 T	73,793 T	83,846 T	100,663 T
16	37,672 D	47,074 T	55,474 T	64,421 T	73,213 T	87,891 T
18	29,766 D	41,726 T	49,172 T	57,114 T	64,924 T	77,935 T
20	24,110 D	33,910 D	44,116 T	51,253 T	58,277 T	69,950 T
22	19,926 D	28,025 D	39,509 D	46,443 T	52,824 T	63,398 T
24	16,743 D	23,549 D	33,198 D	42,421 T	48,266 T	57,922 T
26	14,266 D	20,065 D	28,287 D	37,206 D	44,396 T	53,272 T
28	12,301 D	17,301 D	24,391 D	32,080 D	39,809 D	49,273 T
30	10,716 D	15,071 D	21,247 D	27,946 D	34,678 D	45,793 T
32	9418 D	13,246 D	18,674 D	24,562 D	30,479 D	41,398 D
34	8343 D	11,734 D	16,542 D	21,757 D	26,999 D	36,671 D
36	7441 D	10,466 D	14,755 D	19,407 D	24,082 D	32,710 D
38	6679 D	9393 D	13,243 D	17,418 D	21,614 D	29,357 D
40		8477 D	11,951 D	15,719 D	19,507 D	26,495 D
42		7689 D	10,840 D	14,258 D	17,693 D	24,031 D
44			9877 D	12,991 D	16,121 D	21,896 D
46			9085 D	11,886 D	14,750 D	20,034 D
48			9037 D	10,916 D	13,546 D	18,399 D
50			8300 D	10,060 D	12,484 D	16,957 D
52				9301 D	11,542 D	15,677 D
54				8625 D	10,562 C	14,538 D
56						13,518 D
58						12,602 D
60						11,775 D
62						11,028 D
64						10,107 D

Note This table was developed for allowable Equivalent Center Loads (ECL) in pounds, with rail deflection limited to no more than 1/600 of the span or unsupported length, or 1¼", whichever is less. The weight of the rail is included in the allowable ECL. Contact the factory for rail lengths over 64 ft.

Maximum 60:1 Span to Top Flange ratio on spans or unsupported lengths over 16 feet. Maximum 32:1 Span to Depth ratio.
A suffix of "C", "T" or "D" denotes whether the ECL is limited by Compression, Tension or Deflection.

Equivalent Center Load Table (ECL) — 1/600th Deflection

Span (ft.)	45R26-109 10-2631-01	45R28-129 10-2632-01	45R30-141 10-2633-01	45R32-145 10-2634-01	45R36-166 10-2635-01	45R40-183 10-2636-01
10	160,245 T	182,353 T	204,002 T	224,419 T	270,860 T	321,109 T
12	133,337 T	151,724 T	169,743 T	186,750 T	225,412 T	267,254 T
14	114,086 T	129,809 T	145,232 T	159,803 T	192,901 T	228,735 T
16	99,620 T	113,340 T	126,813 T	139,557 T	168,477 T	199,799 T
18	88,345 T	100,503 T	112,456 T	123,777 T	149,443 T	177,253 T
20	79,302 T	90,207 T	100,942 T	111,125 T	134,183 T	159,180 T
22	71,884 T	81,759 T	91,496 T	100,746 T	121,667 T	144,359 T
24	65,684 T	74,698 T	83,600 T	92,073 T	111,209 T	131,977 T
26	60,421 T	68,703 T	76,898 T	84,713 T	102,335 T	121,473 T
28	55,895 T	63,547 T	71,133 T	78,383 T	94,705 T	112,443 T
30	51,957 T	59,060 T	66,118 T	72,878 T	88,069 T	104,592 T
32	48,498 T	55,118 T	61,712 T	68,043 T	82,243 T	97,700 T
34	45,433 T	51,625 T	57,807 T	63,759 T	77,082 T	91,597 T
36	40,883 D	48,505 T	54,321 T	59,936 T	72,477 T	86,152 T
38	36,693 D	45,701 T	51,187 T	56,500 T	68,338 T	81,261 T
40	33,115 D	42,861 D	48,352 T	53,393 T	64,597 T	76,840 T
42	30,037 D	38,876 D	45,774 T	50,568 T	61,196 T	72,823 T
44	27,368 D	35,422 D	43,276 D	47,987 T	58,090 T	69,155 T
46	25,040 D	32,409 D	39,595 D	45,617 T	55,239 T	65,790 T
48	22,997 D	29,764 D	36,364 D	42,386 D	52,611 T	62,689 T
50	21,194 D	27,431 D	33,513 D	39,063 D	50,181 T	59,823 T
52	19,595 D	25,361 D	30,985 D	36,116 D	47,925 T	57,162 T
54	18,170 D	23,517 D	28,732 D	33,490 D	45,823 T	54,685 T
56	16,896 D	21,868 D	26,716 D	31,141 D	43,248 D	52,372 T
58	15,750 D	20,386 D	24,906 D	29,030 D	40,317 D	50,206 T
60	14,718 D	19,049 D	23,273 D	27,127 D	37,674 D	48,172 T
62	13,784 D	17,840 D	21,796 D	25,405 D	35,282 D	46,257 T
64	12,633 D	16,350 D	19,975 D	23,283 D	32,336 D	43,032 D
66	11,519 D	14,908 D	18,214 D	21,230 D	29,484 D	39,237 D
68	10,532 D	13,631 D	16,654 D	19,411 D	26,958 D	35,876 D
70	9655 D	12,496 D	15,267 D	17,795 D	24,713 D	32,888 D
72		11,483 D	14,029 D	16,353 D	22,710 D	30,223 D

Note This table was developed for allowable Equivalent Center Loads (ECL) in pounds, with rail deflection limited to no more than 1/600 of the span or unsupported length, or 1/4", whichever is less. The weight of the rail is included in the allowable ECL. Contact the factory for rail lengths over 72 ft.

Maximum 60:1 Span to Top Flange ratio on spans or unsupported lengths over 16 feet.
Maximum 32:1 Span to Depth ratio.

A suffix of "C", "T" or "D" denotes whether the ECL is limited by Compression, Tension or Deflection.



Equivalent Center Load Table (ECL) — 1/1000th Deflection

Span (ft.)	45R14-57 10-2624-01	45R16-62 10-2626-01	45R18-73 10-2627-01	45R20-79 10-2628-01	45R22-81 10-2629-01	45R24-101 10-2630-01
6	105,425 T	126,674 T	149,287 T	173,235 T	196,728 T	236,225 T
8	78,969 T	94,896 T	111,823 T	129,789 T	147,403 T	176,992 T
10	57,865 D	75,805 T	89,327 T	103,689 T	117,776 T	141,412 T
12	40,184 D	56,516 D	74,307 T	86,263 T	97,997 T	117,659 T
14	29,523 D	41,522 D	58,538 D	73,793 T	83,846 T	100,663 T
16	22,603 D	31,790 D	44,818 D	58,948 D	73,149 D	87,891 T
18	17,859 D	25,118 D	35,412 D	46,576 D	57,797 D	77,935 T
20	14,466 D	20,346 D	28,683 D	37,727 D	46,816 D	63,587 D
22	11,956 D	16,815 D	23,705 D	31,179 D	38,691 D	52,552 D
24	10,046 D	14,129 D	19,919 D	26,199 D	32,511 D	44,158 D
26	8650 D	12,039 D	16,972 D	22,323 D	27,702 D	37,626 D
28	7381 D	10,381 D	14,634 D	19,248 D	23,886 D	32,443 D
30	6429 D	9043 D	12,748 D	16,767 D	20,807 D	28,261 D
32	5651 D	7948 D	11,204 D	14,737 D	18,287 D	24,839 D
34	5006 D	7040 D	9925 D	13,054 D	16,199 D	22,003 D
36	4465 D	6280 D	8853 D	11,644 D	14,449 D	19,626 D
38	4007 D	5636 D	7946 D	10,451 D	12,968 D	17,614 D
40		5086 D	7171 D	9432 D	11,704 D	15,897 D
42		4614 D	6504 D	8555 D	10,616 D	14,419 D
44			5926 D	7795 D	9673 D	13,138 D
46			5422 D	7132 D	8850 D	12,020 D
48			4980 D	6550 D	8128 D	11,039 D
50				6036 D	7491 D	10,174 D
52				5581 D	6925 D	9406 D
54				5175 D	6422 D	8723 D
56						8111 D
58						7561 D
60						7065 D
62						6617 D
64						6210 D

Note This table was developed for allowable Equivalent Center Loads (ECL) in pounds, with rail deflection limited to no more than 1/1000 of the span or unsupported length, or 1¼", whichever is less. The weight of the rail is included in the allowable ECL. Contact the factory for rail lengths over 64 ft.

Maximum 60:1 Span to Top Flange ratio on spans or unsupported lengths over 16 feet.
Maximum 32:1 Span to Depth ratio.

A suffix of "C", "T" or "D" denotes whether the ECL is limited by Compression, Tension or Deflection.

Equivalent Center Load Table (ECL) — 1/1000th Deflection

Span (ft.)	45R26-109 10-2631-01	45R28-129 10-2632-01	45R30-141 10-2633-01	45R32-145 10-2634-01	45R36-166 10-2635-01	45R40-183 10-2636-01
10	160,245 T	182,353 T	204,002 T	224,419 T	270,860 T	321,109 T
12	133,337 T	151,724 T	169,743 T	186,750 T	225,412 T	267,254 T
14	114,086 T	129,809 T	145,232 T	159,803 T	192,901 T	228,735 T
16	99,620 T	113,340 T	126,813 T	139,557 T	168,477 T	199,799 T
18	88,345 T	100,503 T	112,456 T	123,777 T	149,443 T	177,253 T
20	79,302 T	90,207 T	100,942 T	111,125 T	134,183 T	159,180 T
22	65,683 D	81,759 T	91,496 T	100,746 T	121,667 T	144,359 T
24	55,192 D	71,434 D	83,600 T	92,073 T	111,209 T	131,977 T
26	47,028 D	60,867 D	74,363 D	84,713 T	102,335 T	121,473 T
28	40,549 D	52,482 D	64,119 D	74,738 D	94,705 T	112,443 T
30	35,323 D	45,718 D	55,855 D	65,105 D	88,069 T	104,592 T
32	31,046 D	40,182 D	49,091 D	57,221 D	79,468 D	97,700 T
34	27,501 D	35,594 D	43,486 D	50,687 D	70,394 D	91,597 T
36	24,530 D	31,749 D	38,788 D	45,212 D	62,789 D	83,559 D
38	22,016 D	28,495 D	34,813 D	40,578 D	56,354 D	74,995 D
40	19,869 D	25,716 D	31,418 D	36,622 D	50,859 D	67,683 D
42	18,022 D	23,325 D	28,497 D	33,217 D	46,131 D	61,390 D
44	16,421 D	21,253 D	25,966 D	30,266 D	42,033 D	55,936 D
46	15,024 D	19,445 D	23,757 D	27,691 D	38,457 D	51,178 D
48	13,798 D	17,859 D	21,818 D	25,432 D	35,319 D	47,002 D
50	12,716 D	16,458 D	20,108 D	23,438 D	32,550 D	43,317 D
52	11,757 D	15,217 D	18,591 D	21,670 D	30,094 D	40,049 D
54	10,902 D	14,110 D	17,239 D	20,094 D	27,906 D	37,137 D
56	10,137 D	13,121 D	16,030 D	18,684 D	25,949 D	34,532 D
58	9450 D	12,231 D	14,943 D	17,418 D	24,190 D	32,192 D
60	8831 D	11,429 D	13,964 D	16,276 D	22,604 D	30,081 D
62	8270 D	10,704 D	13,077 D	15,243 D	21,169 D	28,172 D
64	7761 D	10,045 D	12,273 D	14,305 D	19,867 D	26,439 D
66	7298 D	9446 D	11,540 D	13,451 D	18,681 D	24,861 D
68	6875 D	8898 D	10,871 D	12,672 D	17,598 D	23,420 D
70	6488 D	8397 D	10,259 D	11,958 D	16,607 D	22,101 D
72		7937 D	9897 D	11,303 D	15,697 D	20,890 D

Note This table was developed for allowable Equivalent Center Loads (ECL) in pounds, with rail deflection limited to no more than 1/1000 of the span or unsupported length, or 1¼", whichever is less. The weight of the rail is included in the allowable ECL. Contact the factory for rail lengths over 72 ft.

Maximum 60:1 Span to Top Flange ratio on spans or unsupported lengths over 16 feet.
Maximum 32:1 Span to Depth ratio.

A suffix of "C", "T" or "D" denotes whether the ECL is limited by Compression, Tension or Deflection.

450 Series Rail

Top Flange Holes or Slots & End Preparations

TC/American Crane Patented Track Rail can be provided with holes or slots in the top flange of the rail as required for supporting the rail at the ends and any intermediate points.

Holes may also be field drilled or punched.

Top Flange Holes or Single Rod Hangers at Splices*

Hanger Model	E Gauge	F Hole Size	G Dim.
H-12000-FS	2½"	11/16"	3½"
H-20000-FS	3½"	15/16"	4 3/16"
H-33000-LFS	3½"	15/16"	4 5/16"

* Top-flange locations for various hangers at rail ends (splice point).

Holes or slots may also be provided at rail ends at other dimensions, and at intermediate support points as required. See Suspension Section for hole size and gauge for Intermediate Hangers. Specify holes or slots and location with order.

TC/A Standard Top Flange Holes or Top Flange Slots are available as follows:

Round	11/16"	13/16"	15/16"	1 1/16"	1 5/16"
	11/16" x 11/8"	13/16" x 1 7/16"			
Slots	15/16" x 1 7/16"	1 1/16" x 1 7/16"	1 5/16" x 1 7/16"		

Not all hole or slot sizes are appropriate for all rails. Contact factory for special holes or slots.

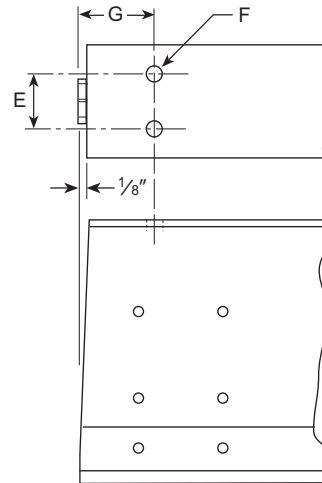
Note Maximum top flange width for punched holes is 15" with a 3½" gauge. Rails with wider flanges or narrower gauge must have holes or slots drilled.

Maximum top flange thickness for punched holes is 1" with a 1 1/16" x 1 7/16" slot.

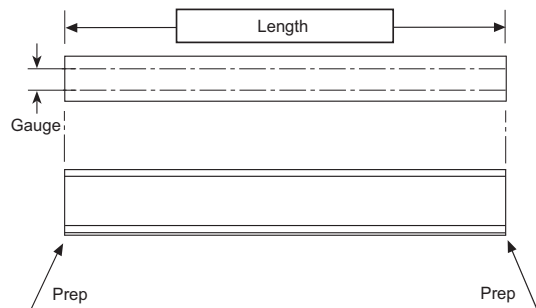
Rails with thicker flanges must have holes or slots drilled.

See Suspension Section for other means of suspension:

- Double Rod
- Direct Bolt
- Clamp



Note:
Rail end shown with typical "cut-back" provided on rails with splice preparation.



TO ORDER RAIL—Specify the following information for each piece of rail on a drawing similar to that shown above (show all dimensions from one end):

- Length
- Hole or Slot Size
- Hole or Slot Location
- Hole Gauge
- End Preparations
 - Splice Assemblies (*identify model*)
 - End cut with taper or "cut-back."
 - End Stop (*identify model*)
 - Specify if end stop is not to be located at end of rail.
 - Interlock (*identify model*)
 - Switch Connection (*identify model*)
 - Square or Plain (*straight cut, no holes*)

Splice Assemblies

TC/American splice assemblies for 450 Series Rail are mounted on each side of the rail web with the use of high-strength, countersunk 1/2-inch socket head screws and lockwashers.

Tighten screws to 60–70 ft-lbs., then stake threaded ends at 3 places, 120° apart.

- Weight = 14 lbs.
- Finish = TC/American gray-green enamel

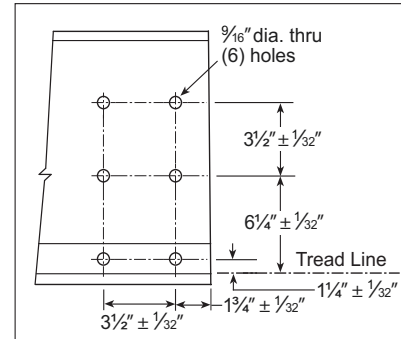
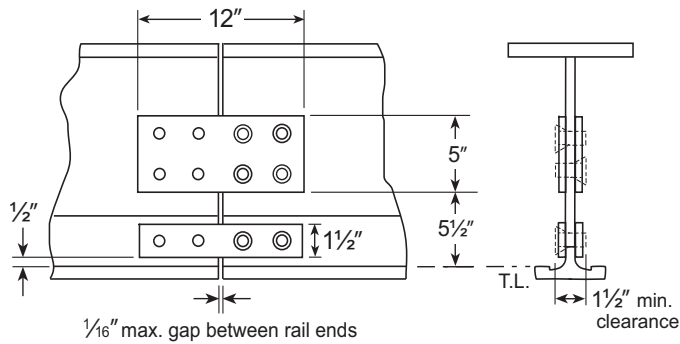
Note Splice assemblies are designed for alignment only. Rail must be supported at the centerline of the rail joint, or at each end of the adjoining rails. See Suspension Section for options.

45AS-22 Splice

9229F1007F3

Rail Models

45R14-46	45R18-73
45R14-57	45R20-79
45R16-62	



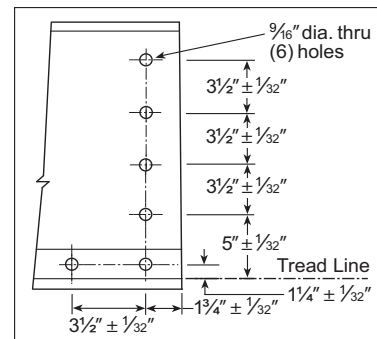
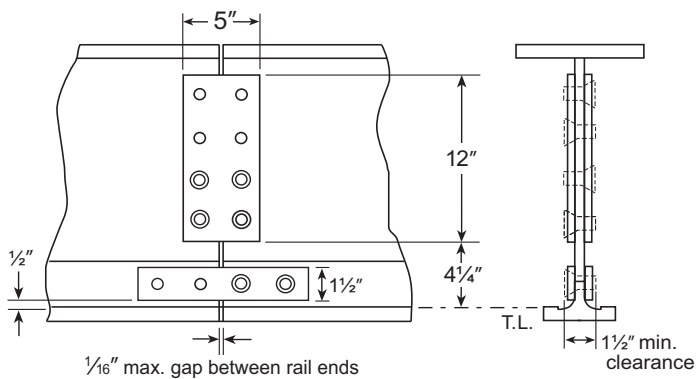
Hole Detail for 45AS-24 End Prep

45AS-24 Splice

9229F1007F4

Rail Models

45R22-81	45R28-129	45R36-166
45R24-101	45R30-141	45R40-183
45R26-109	45R32-145	



Hole Detail for 45AS-24 End Prep

End Stops

End stops must be provided at the ends of crane runways, monorail systems, and crane rails, except where a crane interlock, connecting interlock or switch is mounted.

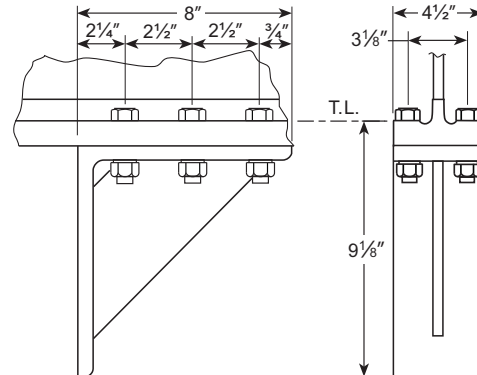
TC/American end stops are manufactured from heavy steel and are provided with bolts, nuts and lockwashers for assembly on rails.

45ES-04 End Stop

9229F1783F1

Load bar type end stop for up to 9-inch trolley wheel assemblies on 450 Series rail.

- Weight = 18 lbs.
- End stop assembly = six $\frac{3}{4}$ -inch diameter Grade 5 cap screws with nut & lockwasher

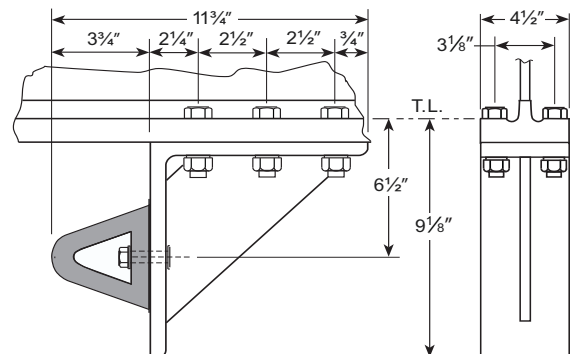


45ES-05 End Stop

9229F1636F1

Load bar type end stop with rubber bumper for up to 9-inch trolley wheel assemblies on 450 Series rail.

- Weight = 20 lbs.
- End stop assembly = six $\frac{3}{4}$ -inch diameter Grade 5 cap screws with nut & lockwasher

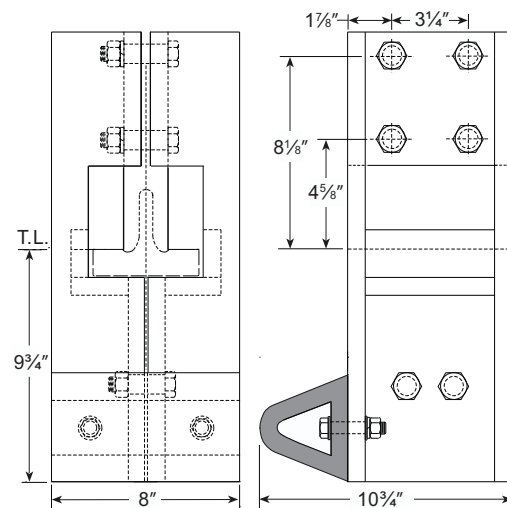


45ES-06 End Stop

10-3327-00

Load bar type end stop with rubber bumper for up to 9-inch trolley wheel assemblies on 450 Series rail. Web mounted.

- Weight = 123 lbs.
- End stop assembly = four $\frac{3}{4}$ -inch diameter Grade 5 cap screws with nut & lockwasher



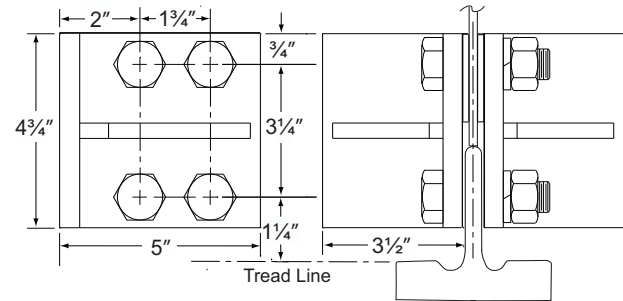
45ES-13 End Stop

10-3727-00 (for $\frac{3}{8}$ " web)

10-3727-01 (for $\frac{1}{2}$ " web)

Web mounted End Stop for hoist manufacturers' trolleys, through 10-ton capacity.

- Weight = 14 lbs.
- End stop assembly = four $\frac{3}{4}$ -inch dia.
Grade 5 cap screws with nut & lockwasher



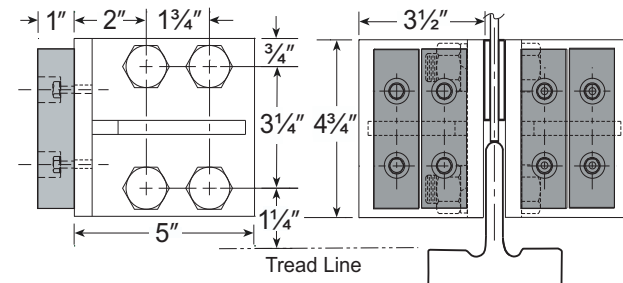
45ES-14 End Stop

10-3728-00 (for $\frac{3}{8}$ " web)

10-3728-01 (for $\frac{1}{2}$ " web)

Web mounted trolley wheel type end stop with rubber bumper for hoist manufacturers' trolleys, through 10-ton capacity.

- Weight = 17 lbs.
- End stop assembly = four $\frac{3}{4}$ -inch dia.
Grade 5 cap screws with nut & lockwasher





Standard Allowable Rail Notching (Step Cutting) Depth

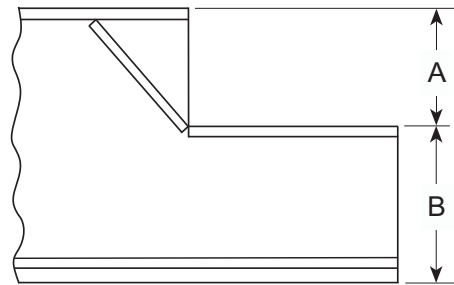
The chart below shows the maximum standard allowable depth for notching (Step Cutting) of Bridge Beams, Runway Rail and Monorails (dimension relates to the neutral axis location). For rails requiring deeper notches, please contact your Sales Representative. Deeper notches may require bracing or structural ties for stabilization.

325 Series

Rail Model	"B" Depth of Rail with Maximum Step Cut	"A" Notch Depth
3RL8-16	4 7/16"	3 3/8"
3RL8-18	4 11/16"	3 1/8"
3RL11-21	6 1/2"	4 5/16"
3RL11-24	7 1/16"	3 7/8"
3RL13-22	7 3/8"	5 9/16"
3RL13-27	8 1/2"	4 7/16"
3RL14-35	9 1/8"	4 13/16"
3RH13-30	7"	6 3/16"
3RH13-36	8 1/4"	4 15/16"
3RH14-33	8 1/16"	6 1/4"
3RH14-41	9 1/4"	5 1/16"
3RH16-47	10 5/8"	4 11/16"
3RH18-52	12 3/16"	5 1/8"
3RH20-67	13 1/2"	5 13/16"
3RH22-74	15 1/16"	6 1/4"
3RH24-84	16 7/8"	6 7/16"
3RH26-90	18 1/4"	7 1/16"
3RH28-93	19 7/16"	7 7/8"
3RH30-110	21 11/16"	7 5/8"
3RH32-120	23 7/16"	7 7/8"
3RH34-130	25 3/16"	8 1/8"
3RH36-140	26 7/8"	8 7/16"
3RH38-144	28 3/16"	9 1/8"
3RH40-154	29 7/8"	9 7/16"

450 Series

Rail Model	"B" Depth of Rail with Maximum Step Cut	"A" Notch Depth
45R14-57	8 3/8"	6"
45R16-62	9 3/4"	3 5/8"
45R18-73	11 1/2"	6 3/4"
45R20-79	13"	7 1/4"
45R22-81	14 1/8"	8 1/8"
45R24-101	15 15/16"	8 5/16"
45R26-109	17 1/2"	8 3/4"
45R28-129	19 7/8"	8 3/8"
45R30-141	21 11/16"	8 9/16"
45R32-145	22 15/16"	9 5/16"
45R36-166	26 5/16"	9 15/16"
45R40-183	29 1/2"	10 3/4"



Note For 200 and 400 Series Rail information, please contact a TC/American Sales Representative.



Suspension

Rigid Suspension

Rigid Suspension	C-3	C-40 Clamp Assembly	C-7
2H-407 Hanger	C-3	C-47-2 Beam Clamp	C-8
2H-407C Hanger	C-3	Direct Bolt Assembly	C-9
2H-470 Hanger	C-3	Brackets and Fittings	C-10
C-479 Beam Flange Clamp	C-4	B-404 Wood Beam Bracket	C-10
C-480 Beam Flange Clamp	C-4	B-487 Wood Bracket	C-10
C-482 Beam Flange Clamp	C-5	B-488 Wood Bracket	C-10
C-4600 Adjustable Flange Clamp	C-5	B-419A Side Beam Bracket	C-10
C-6900 Adjustable Flange Clamp	C-5	B-455 Suspension Buckle	C-11
H-4600 Intermediate Support Hanger	C-6	B-562 Pipe Brace Fitting	C-11
H-6900 Intermediate Support Hanger	C-6	B-562-B Pipe Brace Fitting	C-11
H-4600-S Splice Hanger	C-6	C-550 Ceiling Cleat	C-12
H-6900-S Splice Hanger	C-6	Suspension Details	C-13
R-4600 Rigid Suspension Hanger Rod	C-7	Typical Suspension Methods	C-14
R-6900 Rigid Suspension Hanger Rod	C-7		

Flexible Suspension

Flexible Suspension	C-17	SCP-24000 Splice Cover Plate	C-24
Single-Rod Flexible Suspension (8000#, 12000# and 20000# Capacity)	C-17	SCP-40000 Splice Cover Plate	C-24
Single-Rod with Top Hanger, Flexible Suspension Dimensions	C-18	Flexible Suspension Hardware (8000#, 12000# and 20000# Capacity)	C-25
Single-Rod with Top Adjustable Beam Clamp, Flexible Suspension Dimensions	C-18	Rod Assembly	C-25
Single-Rod Flexible Suspension (33000# Capacity)	C-19	Hanger Nut	C-25
Double-Rod Flexible Suspension	C-20	Hanger Spherical Washer	C-25
Hangers	C-21	Hanger Spherical Seat	C-25
H-8000 Hanger	C-21	Flexible Suspension Hardware (33000# Capacity)	C-26
H-12000 Hanger	C-21	Rod Assembly	C-26
H-20000 Hanger	C-21	Hanger Nut	C-26
H-33000 Hanger	C-21	Rocker Washer	C-26
Clamps	C-22	Hanger Seat (included in standard hanger)	C-26
C-8000 Adjustable Beam Clamp	C-22		
C-12000 Adjustable Beam Clamp	C-22		
Double-Rod Flexible Suspension Top Spreader Brackets	C-23		
FSB-16000 Top Spreader Bracket	C-23		
FSB-24000 Top Spreader Bracket	C-23		
FSB-40000 Top Spreader Bracket	C-23		
Splice Cover Plates	C-24		
SCP-16000 Splice Cover Plate	C-24		



Suspension

All methods of suspension of crane and monorail systems from overhead support structures may be generally grouped into two categories: Rigid and Flexible Suspension. Each method has its own merits when properly applied.

Rigid Suspension

Methods of Rigid Suspension are:

- Direct Bolt
- Flush Clamps
- Rigid Hangers, Clamps and Rods (threaded rods provided with nuts and lockwashers)
 - A. Single Rigid Rod Hanger Systems
 - B. Double Rigid Rod Hanger Systems
- Specially designed Stools and Brackets

Flexible Suspension

Methods of Flexible Suspension are:

- Special Flexible Hangers, Clamps and Rods (hangers have spherical seats, threaded rods have spherical washers and nuts)
 - A. Single Flexible Rod Hanger System
 - B. Double Flexible Rod Hanger Systems

Notes:

1. Systems must include provision for vertical adjustments to accommodate possible future structural settling.
2. Rod suspended systems must be sway braced to withstand all horizontal forces and maintain alignment.

Rigid Suspension

Hangers and Clamps

2H-407 Hanger

25-1393-00

2H-407C Hanger

25-2392-00 (for curves)

2H-470 Hanger

25-1382-00

2H407, 2H407C and 2H470 Hangers are one-piece ductile steel castings. A shoulder on the lower part of the hanger clamps tightly into the upper head of the 2R3-5T rail as shown. Hangers may be easily repositioned by loosening the clamp bolts and sliding the hanger as needed. Note the following:

- 2H-407 & 2H-407C — used with single $\frac{5}{8}$ " rod or bolt & C-479 or C-480 Beam Clamps or other devices for suspension of 2R3-5T rail
- 2H-470 Hangers designed to bolt directly to overhead support structure (hanger drilled for two $\frac{1}{2}$ " bolts; $2\frac{1}{2}$ " on center); hardware not included
- 2H-407 & 2H-470 Hangers — for installation only in straight rail sections
- 2H-407C Hangers — for installation in curved rail sections; manufactured with slight bend in lower part of hanger to fit into curved rail
- For Electrified Systems using 2H-407 & 2H-407C Hangers — Conductor Bar Mounting Brackets clamped onto rod/bolt

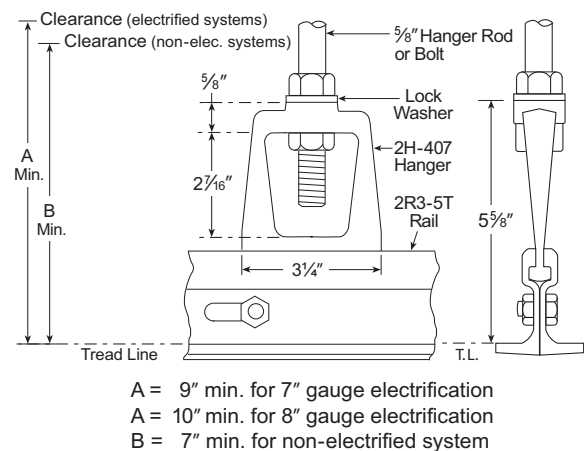
Requires minimum clearance as shown.
Also see Electrification Section.

- 2H-470 Hangers not designed for mounting electrical conductors

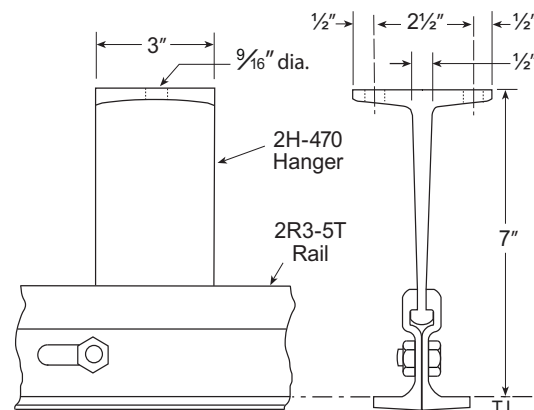
2H-407 Hanger



2H-407 and 2H-407C Hanger



2H-470 Hanger



Specifications

Capacity	2500 lbs.
Weight	
2H-407/2H-407C	1 lb.
2H-470	2½ lb.
Finish	TC/American gray-green enamel

C-479 Beam Flange Clamp

10-1614-00

C-480 Beam Flange Clamp

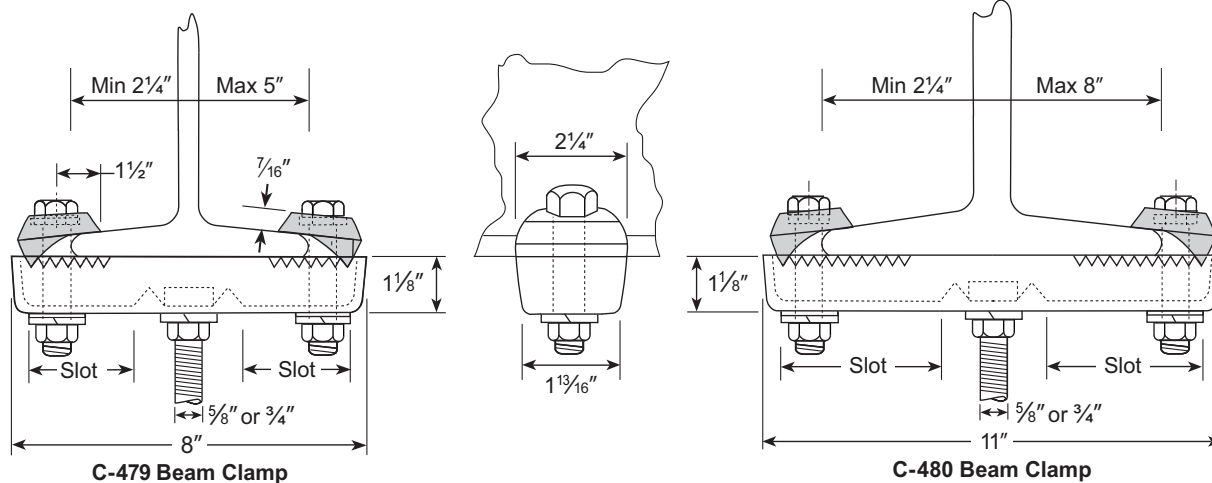
10-1615-00

C-479 and C-480 Beam Clamps are designed to fit various sizes of building trusses and I beams. Clamping toes are adjustable to the clamp body to fit up to a maximum 8" flange width and $\frac{7}{16}$ " flange thickness; hanger rod is suspended from centerline of the supporting structure.

Note Hanger rod must be centered under the supporting structure. Systems must be rigidly braced to limit flexing of hanger rod assemblies.

To avoid support member flange failure

(due to clamping reaction of hanger clamps)—special attention must be given to bottom flange width and thickness when designing a superstructure for crane and monorail systems.



Beam Clamp Capacities

Clamps	Hanger Rod Size	Flange Thickness at Toe	Flange Width				
			4"	5"	6"	7"	8"
Single Clamp	5/8"	1/4"	2400 lbs.	2400 lbs.	2400 lbs.	—	—
		5/16"	2400 lbs.	2400 lbs.	2400 lbs.	2400 lbs.	2400 lbs.
	3/4"	1/4"	3400 lbs.	2750 lbs.	2600 lbs.	—	—
		5/16"	3600 lbs.	3400 lbs.	3300 lbs.	3200 lbs.	2800 lbs.
Double Clamps spaced 6" or more center-to-center	5/8"	1/4"	4800 lbs.	4800 lbs.	4600 lbs.	—	—
		5/16"	4800 lbs.	4800 lbs.	4800 lbs.	4800 lbs.	4800 lbs.
	3/4"	1/4"	5000 lbs.	4800 lbs.	4600 lbs.	—	—
		5/16"	5500 lbs.	5500 lbs.	5500 lbs.	5500 lbs.	4800 lbs.

C-482 Beam Flange Clamp

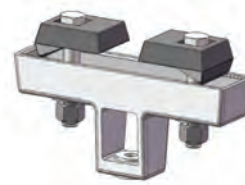
10-1574-01 for use with 5/8" Hanger Rod

10-1574-02 - for use with 3/4" Hanger Rod

Designed to fit various flange sizes of 4" through 10" wide and 1/2" thick. Accommodates hanger rods up to 3/4" diameter.

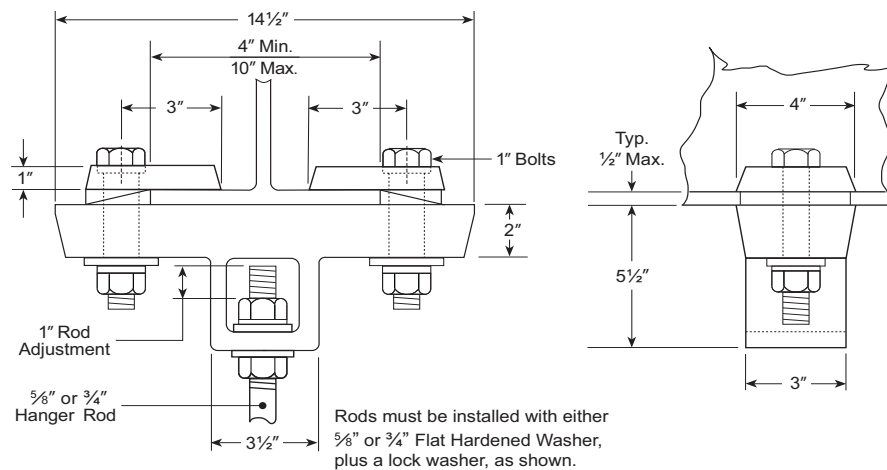
Note Systems must be rigidly braced to limit flexing of hanger rod assemblies

To avoid support member flange failure (due to clamping reaction of hanger clamps)—special attention must be given to bottom flange width and thickness when designing a superstructure for crane and monorail systems.



Specifications

Capacity	7500 lbs. max.
Weight	28 lbs.
Finish	TC/American gray-green enamel



C-4600 Adjustable Flange Clamp

10-1322-00

C-6900 Adjustable Flange Clamp

10-1321-00

The adjustable flange clamp is designed for rigid suspension to fit support steel or rail with 4" through 9 1/2" flange width.

Features

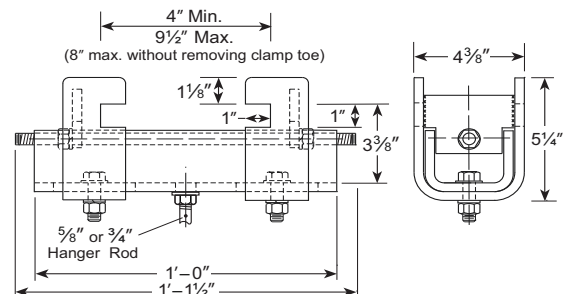
- Capacities based on using TC/American high strength hanger rod assemblies
- Max. flange thickness = 1"

Note Systems must be rigidly braced to limit flexing of hanger rod assemblies.

To avoid support member flange failure (due to clamping reaction of hanger clamps)—special attention should be given to bottom flange width and thickness when designing a superstructure for crane and monorail systems.

Specifications

Capacity	
C-4600	4600 lbs.
C-6900	6900 lbs.
Hanger Rod Size	
C-4600	5/8" hanger rod (R-4600)
C-6900	3/4" hanger rod (R-6900)
Weight	17 lbs.
Finish	TC/American gray-green enamel



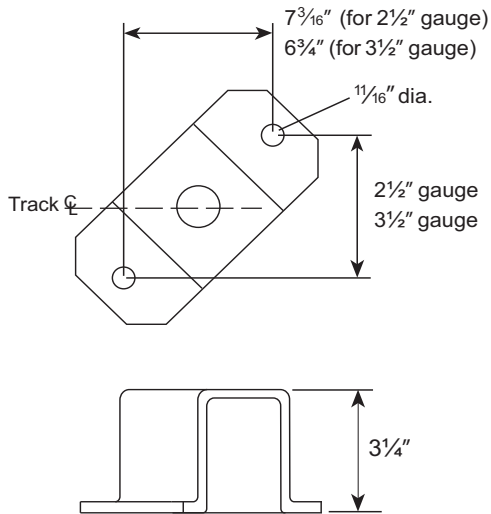
H-4600 Intermediate Support Hanger

10-1309-00

H-6900 Intermediate Support Hanger

10-1310-00

Designed for rigid suspension and direct bolting to support steel or rail, at locations other than rail splices.



Features

- Aligns to fit hole gauges
- Furnished = two 5/8" Grade 5 bolts, nuts, lockwashers & flat washers
- Capacities = based on TC/American high strength hanger rod assemblies
- Finish = TC/American gray-green enamel

Note Systems must be rigidly braced to limit flexing of hanger rod assemblies.

Part #	Hanger Rod Size	Capacity	Weight
10-1309-00 H-4600	5/8" (R-4600)	4600 lbs.	8 1/2 lbs.
10-1310-00 H-6900	3/4" (R-6900)	6900 lbs.	8 1/2 lbs.

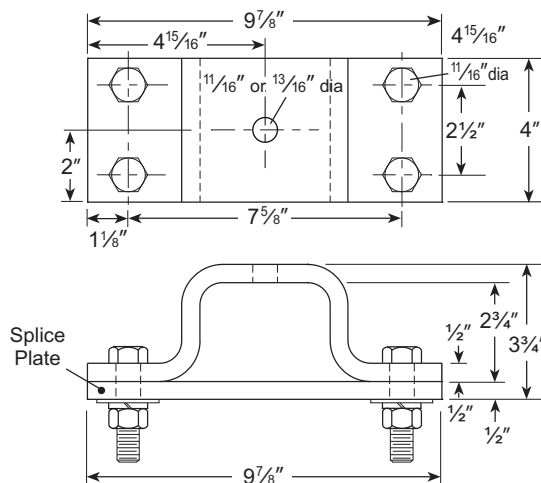
H-4600-S Splice Hanger

10-1303-00

H-6900-S Splice Hanger

10-1304-00

Designed for rigid suspension and direct bolting to the top flange of TC/American rail, at a splice connection.



Features

- Furnished = four 5/8" Grade 5 bolts, nuts, lockwashers, flat washers & rail splice cover plate
- Capacities = based on TC/American high strength hanger rod assemblies
- Finish = TC/American gray-green enamel

Note Systems must be rigidly braced to limit flexing of hanger rod assemblies.

Part #	Hanger Rod Size	Capacity	Weight
10-1303-00 H-4600-S	5/8" (R-4600)	4600 lbs.	13 lbs.
10-1304-00 H-6900-S	3/4" (R-6900)	6900 lbs.	13 lbs.



R-4600 Rigid Suspension Hanger Rod

10-3065-XX* (6"–36")

10-3066-XX* (37"–144")

R-6900 Rigid Suspension Hanger Rod

10-3067-XX*(6"–36")

10-3068-XX*(37"–144")

* XX = Hanger rod length in 1" increments

Special high strength rigid hanger rods are supplied with (4) Grade 5 hex nuts and (2) lockwashers. Structural flat washers required for slotted holes; not included.

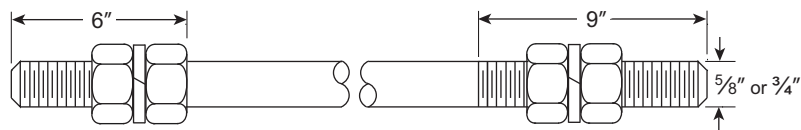
Capacity in table at right refers to TC/American high strength hanger rod assemblies only.

Note Systems must be rigidly braced to limit flexing.

Features

- R-4600 hanger rods furnished with 6" top thread & 9" length bottom thread
- R-6900 hanger rods furnished with 6" thread both ends

Model	Dia.	Thread	Capacity
R-4600	5/8"	5/8 -11 NC	4600 lbs.
R-6900	3/4"	3/4 -10 NC	6900 lbs.



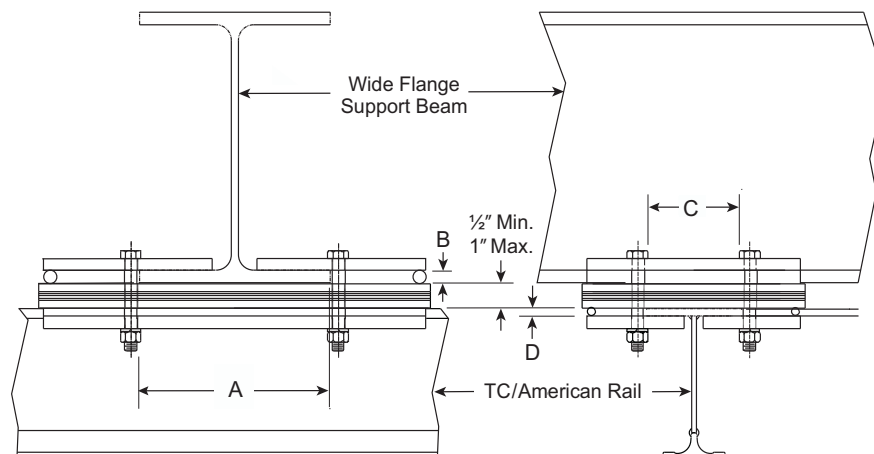
C-40 Clamp Assembly

C-40 hanger clamps are used as shown where rail hangs at right angle to the support steel. The clamp allows 1/2" for shimming so that runways and monorails can be installed level and parallel.

Note To avoid support member flange failure (due to clamping reaction of hanger clamps)—special attention must be given to bottom flange width and thickness when designing a superstructure for crane and monorail systems.

Features

- Capacity = 12,000 lbs. max.
- Flange width = 8" max./4" min.
- Capacities determined by thinner of 2 flanges clamped
- Used on flat flange beams only
- Must be designed to fit application
- When ordering specify:
 - capacity
 - support beam size and weight (dimension A)
 - flange thickness (dimension B)
 - TC/A model number or Top flange width (dimension C)
 - Top flange thickness (dimension D)



C-47-2 Beam Clamp

The C-47-2 beam clamps are used where rails hang at a right angle below the support steel. The clamp allows for leveling of crane and monorail systems.

Features

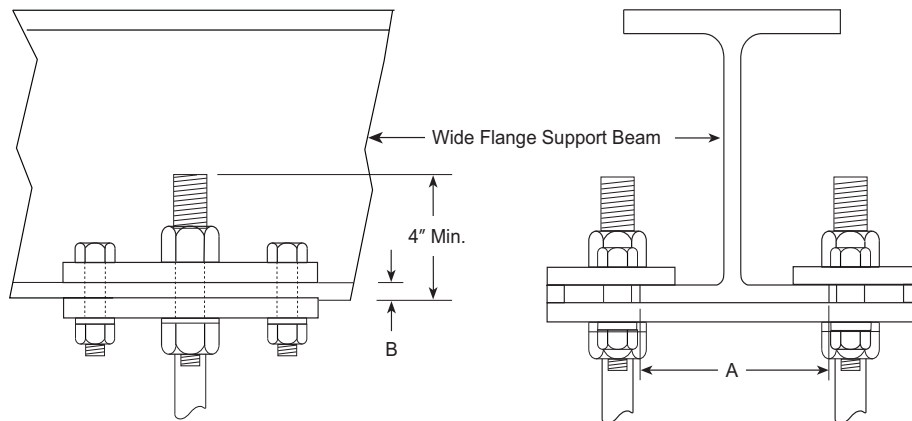
- Capacity = 12,000 lbs. max.
- Capacities determined by thickness of support beam flange, hanger rod size & lower hanger assembly
- Application designed to loading & dimensions of support steel

- When ordering specify:
capacity
support beam size
flange width (dimension A)
flange thickness (dimension B)

Note Systems must be rigidly braced to limit flexing of hanger rod assemblies.

Adjust hanger rods so loading is equal (on 2 hanger rods of clamp assembly).

To avoid support member flange failure (due to clamping restriction of hanger clamps)—special attention should be given to bottom flange width and thickness when designing a superstructure for crane and monorail systems.





Direct Bolt Assembly

Either round or slotted holes in the top flange may be used for suspension of rail. For ease of alignment and spacing of rails, TC/American Crane recommends the use of slotted holes when possible.

Support hardware is not included. Flat washers must be used with slotted holes. See the Hanger Bolt Capacity chart below.

- TC/American Crane recommends use of Grade 5 or equal hardware for direct bolt support.
- Rail with 4" wide top flange (curves), maximum hole gauge is 2 1/2" with 11/16" holes or slots.
- Hole gauge should be kept to the minimum dimension possible. (see rail specifications pages).

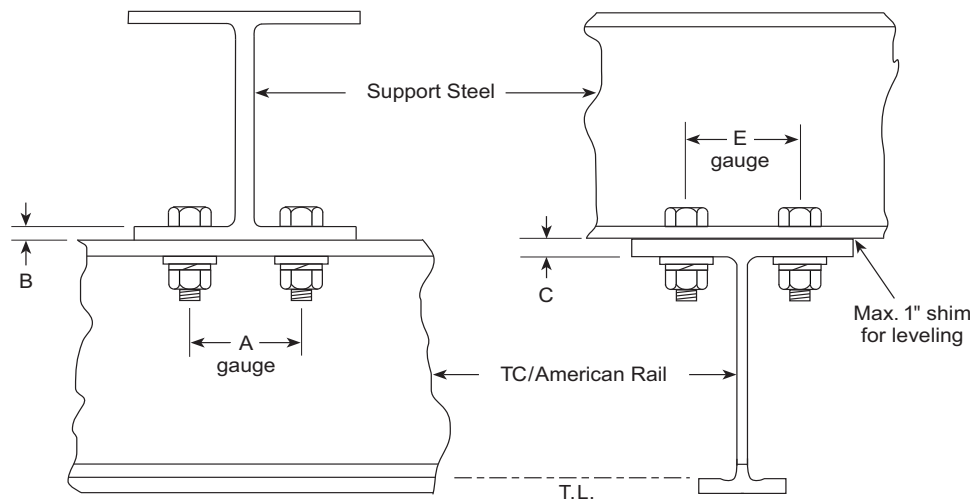
When ordering top flange holes or slots, specify the following:

- Support steel gauge (dim. A)
- Support steel flange thickness (dim. B)

Refer to AISC manual (American Institute of Steel Construction) current edition for hole gauge (dim. A) and flange thickness (dim. B)

- TC/American flange thickness (dim. C)
- TC/American rail gauge (dim. E)

Refer to dimensions of TC/American rail (see "200 Series Girder Rail" on page B-8, "Top Flange Holes or Slots & End Preparations" on page B-25, and "450 Series Rail" on page B-43).



Hanger Bolt Capacity*

Bolt Size	Hole Diameter	SAE Grade 2 Bolts		SAE Grade 5 Bolts	
		Number of Bolts	Capacity (lbs.)	Number of Bolts	Capacity (lbs.)
5/8 -11 N/C	11/16"	2	5,000	2	9,600
		4	10,000	4	19,200
3/4 -10 N/C	13/16"	2	7,600	2	14,000
		4	15,200	4	28,000
7/8 -9 N/C	15/16"	2	9,200	2	19,200
		4	18,400	4	38,400
1 -8 N/C	1 1/16"	2	12,000	2	25,200
		4	24,000	4	50,400

* MMA specifications are based on: $Bolt Load = \left(\frac{Ultimate}{5} \right) \times Thd. root area$

** All top flanges need to be evaluated for proposed loading conditions.

Brackets and Fittings

B-404 Wood Beam Bracket

10-1610-00

B-487 Wood Bracket

10-1611-00

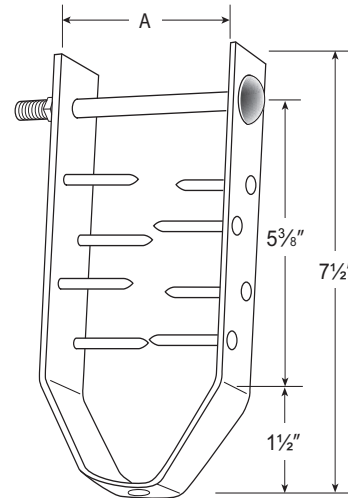
B-488 Wood Bracket

10-1608-00

Brackets to support rail from wood beams, attached with $\frac{3}{8}$ " bolts and lag screws (furnished).

Use with TC/American R-4600, $\frac{5}{8}$ " Hanger Rods.

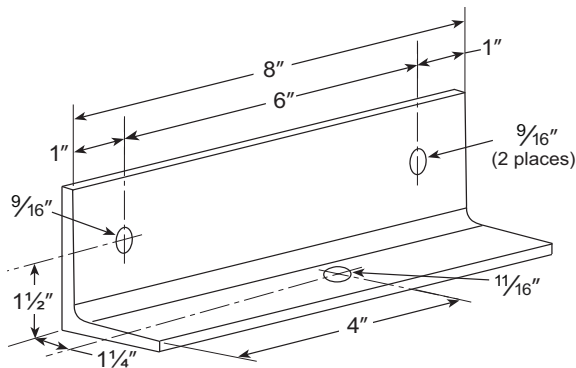
Specifications		
Capacity	2500 lbs.	
Size		A
B-488	2" bracket	1 ⁵ / ₈ "
B-404	4" bracket	3 ⁵ / ₈ "
B-487	6" bracket	5 ⁵ / ₈ "
Weight		
B-488	1 lb.	
B-404	1 lb.	
B-487	1¼ lbs.	
Finish	TC/American gray-green enamel	



B-419A Side Beam Brackets

25-2920-00

For use when the bracket must be mounted on the side of beams.



Features

- For $\frac{5}{8}$ " bolt or hanger rod suspension
- 2 attachment bolts supplied
(when beam size specified)

Specifications	
Capacity	2500 lbs.
Weight	1 lb.
Finish	TC/American gray-green enamel

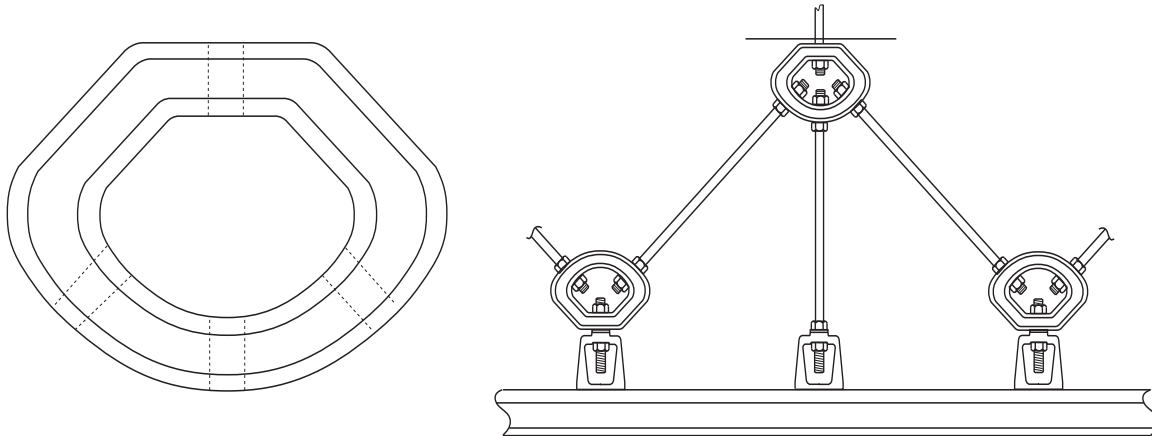
B-455 Suspension Buckle

25-1659-00

Used for diagonal support and for bracing against track sway.

Note Systems must be rigidly braced to limit flexing of hanger rod assemblies.

Specifications	
Capacity	2500 lbs.
Weight	2½ lbs.
Finish	TC/American gray-green enamel



Monorail suspension using B-455 with hanger rods for trussing long spans.

B-562 Pipe Brace Fitting

10-2757-00

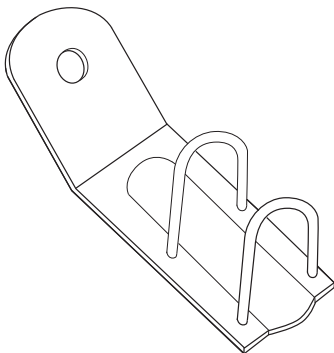
B-562-B Pipe Brace Fitting

10-2758-00

This adjustable clamp permits easy bracing with 1" standard pipe. The fitting firmly clamps the end of the pipe which is cut to approximate length. It can be adjusted to exact length at erection, making close measurement unnecessary.

Features

- Clamping "U" bolts included
- Flange drilled 11/16" for mounting bolt



Specifications		
Size		
B-562	10-2757-00	5/8" hanger rod
B-562-B	10-2758-00	3/4" hanger rod
Weight		¾ lb.
Finish		TC/American gray-green enamel

C-550 Ceiling Cleat

25-1358-00

This cleat permits track suspension from $\frac{5}{8}$ " hanger bolts with 2" of possible adjustment of track height.

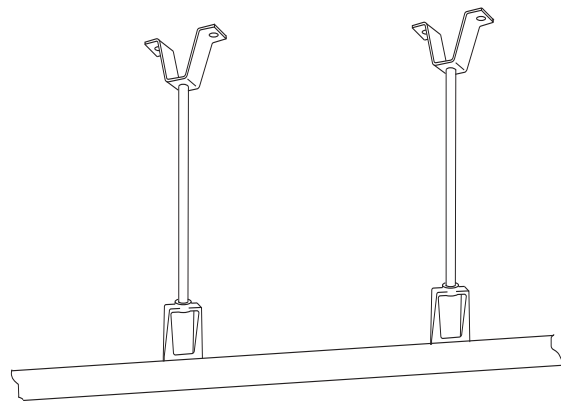
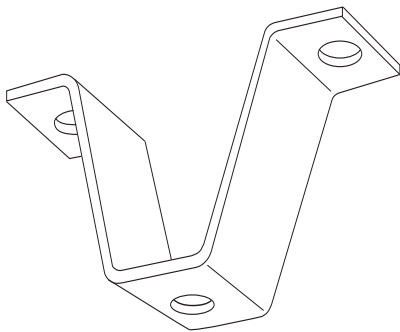
Features

- Holes drilled $\frac{9}{16}$ " dia. on 5" centers
- Monorail suspension using this cleat offers adjustable rod suspension

Note Systems must be rigidly braced to limit flexing of hanger rod assemblies.

Specifications

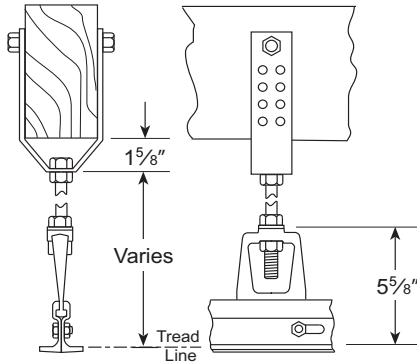
Capacity	2500 lbs.
Weight	1½ lbs.
Finish	TC/American gray-green enamel



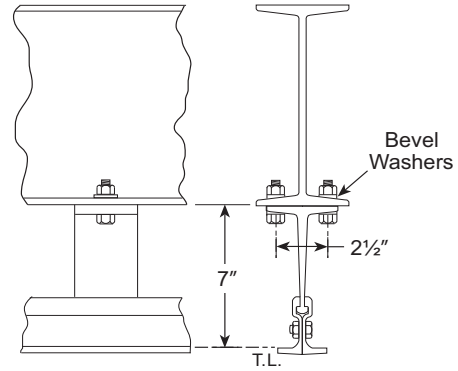
Suspension Details

Shown are typical methods of suspension employing most of the standard suspension fittings.

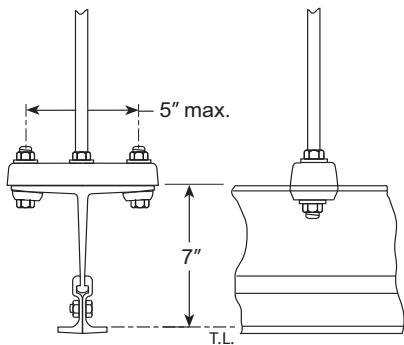
Note Systems must be rigidly braced to limit flexing of the hanger rod assemblies.



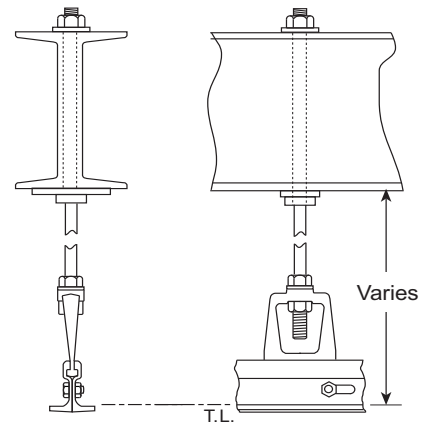
B-404 Bracket



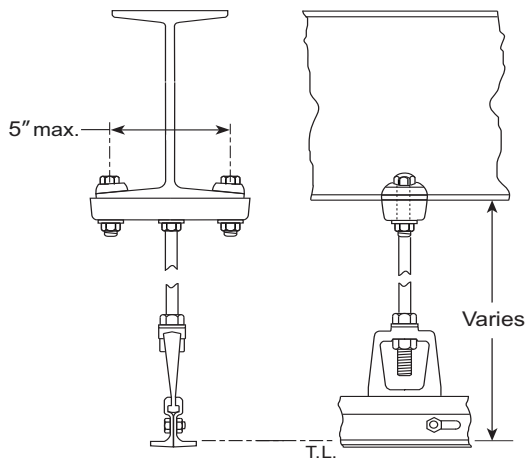
2H-470 Hanger



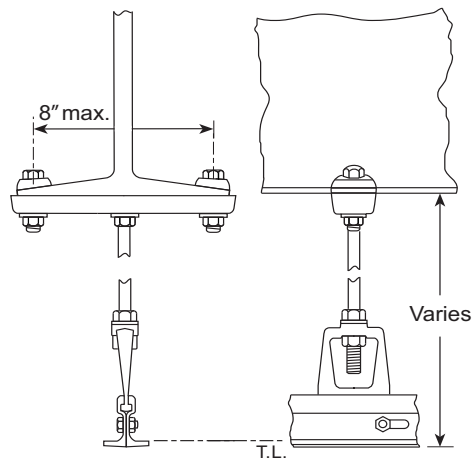
C-479 Clamp



2H-407 Hanger



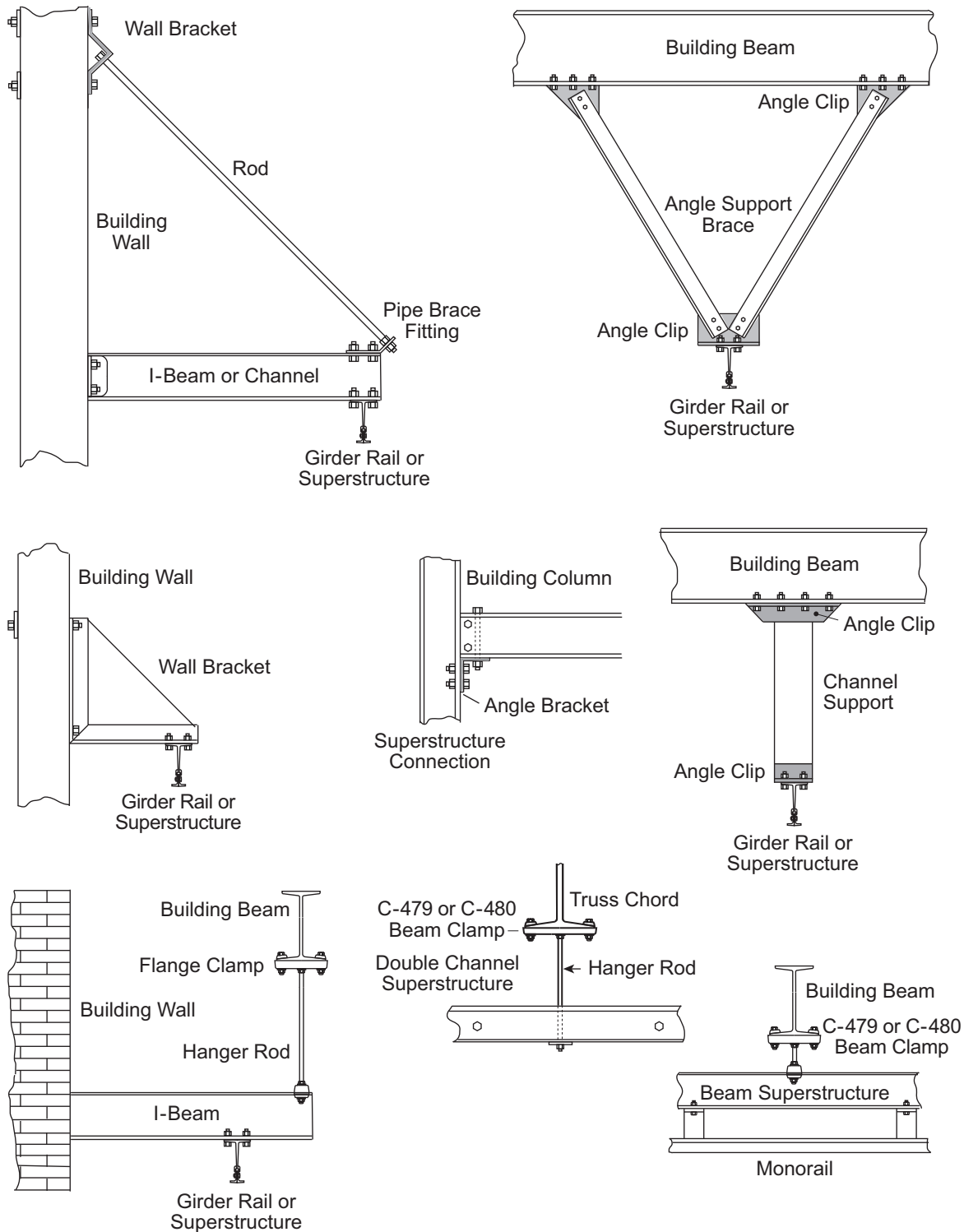
C-479 Clamp



C-480 Clamp

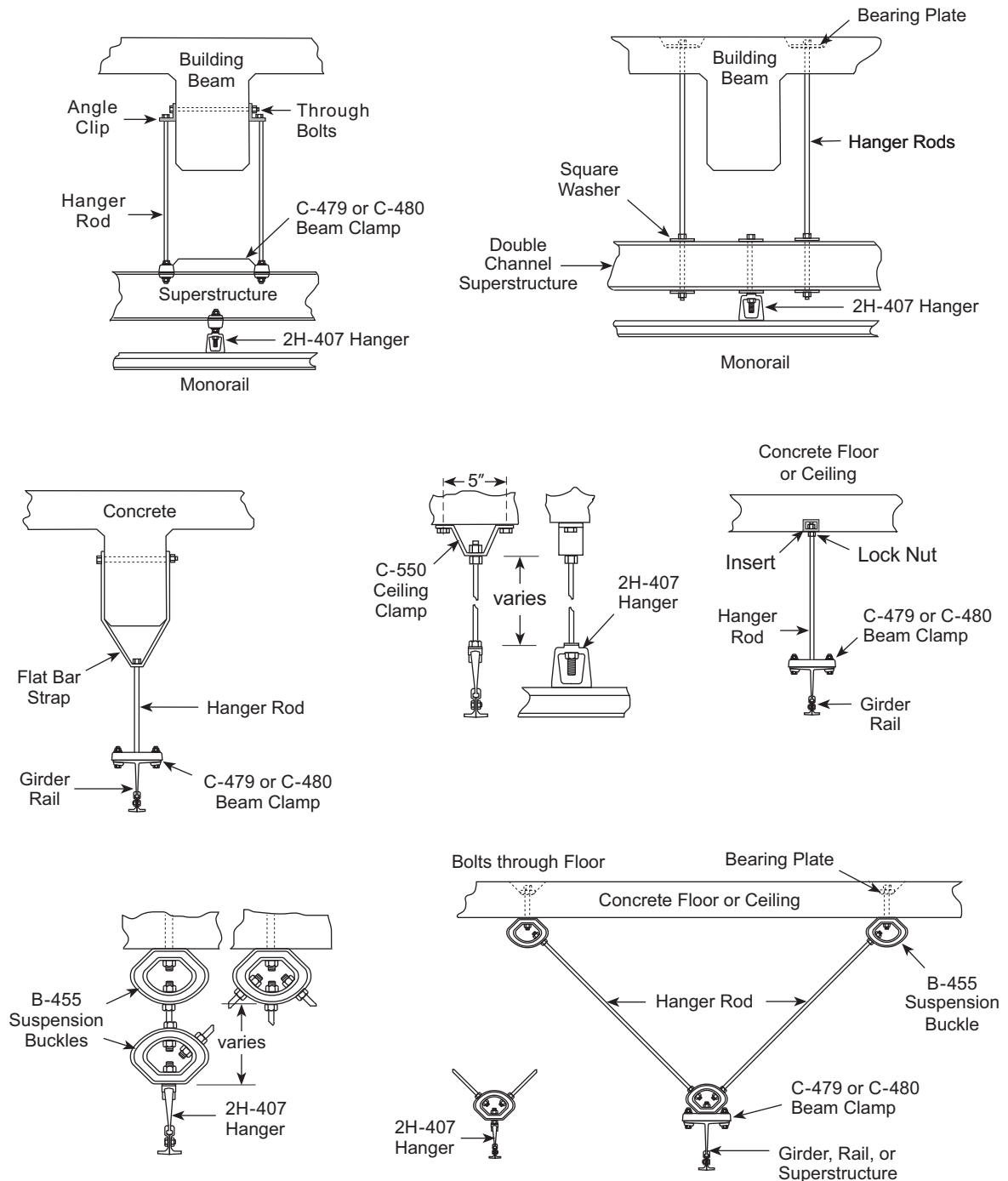
Typical Suspension Methods

Note Systems must be rigidly braced to limit flexing of the hanger rod assemblies.



Typical Suspension Methods (continued)

Note Systems must be rigidly braced to limit flexing of the hanger rod assemblies.







Flexible Suspension

The suspension hanger model number suffix represents the following:

-F1 – for use at intermediate points

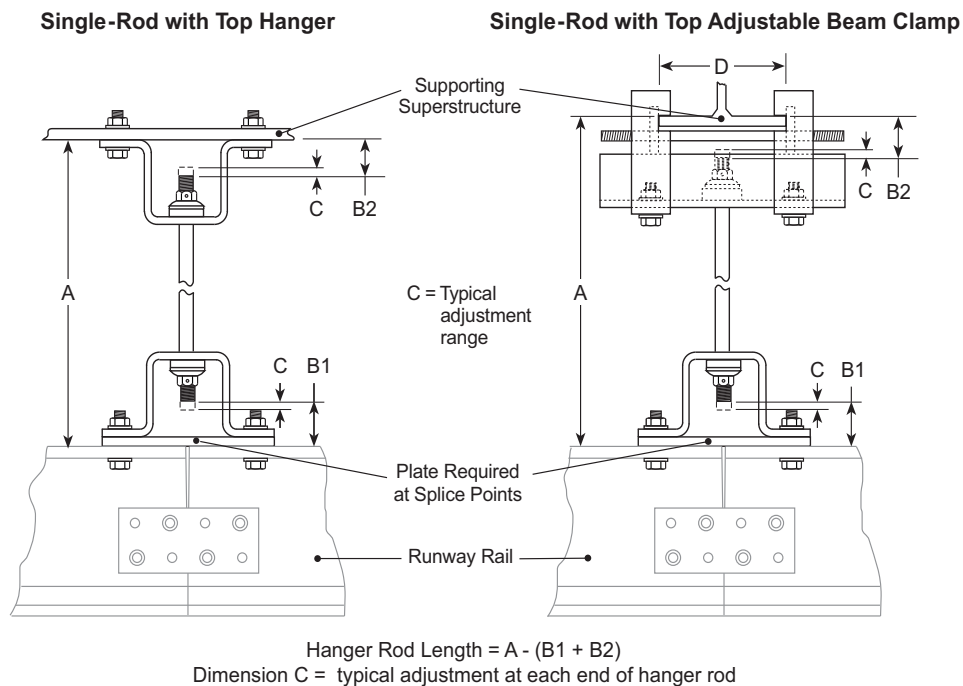
-F2 – for use at intermediate points

-FS – for use at splice points
(splice cover plate required)

All hangers and clamps include a spherical seat (installed) for the spherical washer on the hanger rod.

- Installation — top hanger or clamp aligned with supporting superstructure
 - “Flexible suspension” components may be bolted or clamped to support steel or rail without shimming for “out-of-level” conditions, within limitations, up to 5°. See Suspension Systems in the General Engineering Section of this catalog for more information.
 - Systems must be properly braced.
 - Standard rod lengths sold in 1-inch increments
(fractional lengths available on request)
 - Standard rod lengths up to 12'.
- Longer lengths available upon special order; may use longer rod or couplings.

Single-Rod Flexible Suspension (8000#, 12000# and 20000# Capacity)



Note Dimension tables are on the following page.

Hangers with splice cover plates at rail splices shown.

Hangers at intermediate (non-splice) points do not require splice cover plates.



Single-Rod with Top Hanger, Flexible Suspension Dimensions

Model	Capacity	Rod Diameter	A (min)	B1	B2	C
H-8000-F1	8000 lbs.	3/4"	10 1/2"	1/2"	1/2"	±1/2"
H-8000-F2	8000 lbs.	3/4"	10 1/2"	1 3/16"	1 3/16"	±7/8"
H-8000-FS	8000 lbs.	3/4"	11"	1 11/16"	1 3/16"	±7/8"
H-12000-F2	12,000 lbs.	1"	10 1/2"	1"	1"	±3/4"
H-12000-FS	12,000 lbs.	1"	11"	1 1/2"	1"	±3/4"
H- 20000-F2	20,000 lbs.	1 1/4"	13"	1 3/8"	1 3/8"	±1"
H- 20000-FS	20,000 lbs.	1 1/4"	13 5/8"	2"	1 3/8"	±1"

Note Hanger models with the "FS" suffix are for use at splice points; the B1 dimension for these hangers includes the splice cover plate.

Single-Rod with Top Adjustable Beam Clamp, Flexible Suspension Dimensions

Model	Capacity	Rod Diameter	A (min)	B1	B2	C	D
H-8000-F1	8000 lbs.	3/4"	11"	1/2"	3 3/16"	±1/2"	4"-8" or 8"-12"
H-8000-F2	8000 lbs.	3/4"	11"	1 3/16"	3 3/16"	±7/8"	4"-8" or 8"-12"
H-8000-FS	8000 lbs.	3/4"	11 1/2"	1 11/16"	3 3/16"	±7/8"	4"-8" or 8"-12"
H-12000-F2	12,000 lbs.	1"	11"	1"	2 3/4"	±3/4"	4"-8" or 8"-11"
H-12000-FS	12,000 lbs.	1"	11 1/2"	1 1/2"	2 3/4"	±3/4"	4"-8" or 8"-11"

Note Hanger models with the "FS" suffix are for use at splice points; the B1 dimension for these hangers includes the splice cover plate.



Single-Rod Flexible Suspension (33000# Capacity)

33,000 lbs. capacity assemblies have:

H-33000-UF 33,000# capacity Upper Hanger

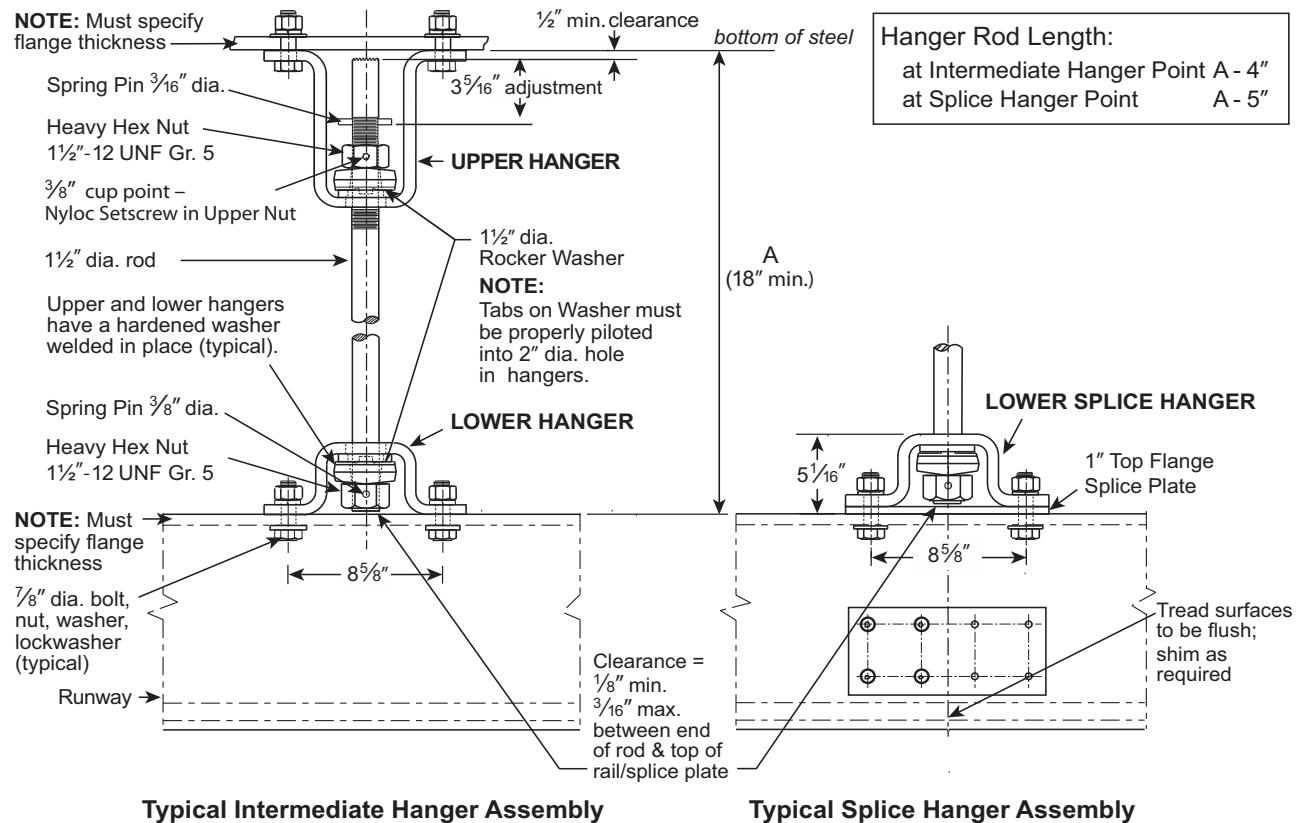
H-33000-LF 33,000# capacity Lower Hanger

H-33000-LFS 33,000# capacity Lower Splice Hanger

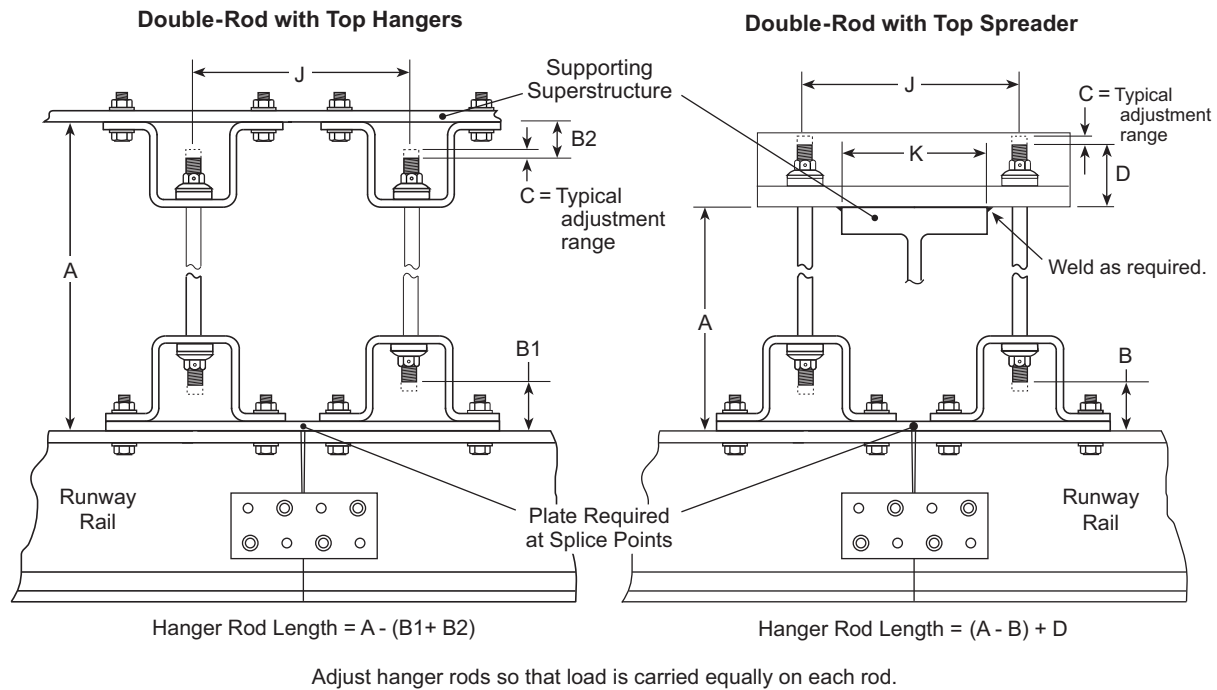
Hangers include a hardened hanger seat (installed) for the rocker washer on the hanger rod.

- Orient top hanger to align with support structure
“Flexible suspension” components may be bolted or clamped to support steel or rail without shimming for “out-of-level” conditions, within limitations, up to 5°. See Suspension Systems in the General Engineering Section of this catalog for more information.
- Systems must be properly braced.
- Standard rod lengths sold in 1-inch increments
(fractional lengths available on request)
- Standard rod lengths up to 12'

Longer lengths available upon special order;
may use longer rod or couplings.



Double-Rod Flexible Suspension



Note Rail hangers shown are four-bolt intermediate type with double-rod splice cover plates at rail splice point. intermediate points do not require splice cover plates.

Double-Rod with Top Hangers, Flexible Suspension Dimensions

Model	Capacity	Rod Diameter	Splice Cover	A (min)	B1	B2	C	J
H-8000	16,000 lbs.	¾"	SCP-16000	11"	1 11/16"	1 3/16"	±1"	10"
H-12000	24,000 lbs.	1"	SCP-24000	11"	1 ½"	1"	±1 1/16"	10"
H-20000	40,000 lbs.	1 ¼"	SCP-40000	13 5/8"	2"	1 3/8"	±1 5/16"	12"

Double-Rod with Top Spreader, Flexible Suspension Dimensions

Model	Capacity	Rod Diameter	Splice Cover	A (min)	B	C	D	J	K
H-8000	16,000 lbs.	¾"	SCP-16000	6"	1 3/8"	±1"	3 11/16"	10"	8 ½"
H-12000	24,000 lbs.	1"	SCP-24000	6"	1 3/8"	±1 1/16"	4 1/8"	10"	8"
H-20000	40,000 lbs.	1 ¼"	SCP-40000	7"	1 7/8"	±1 5/16"	5 5/16"	12"	9 ½"

Hangers

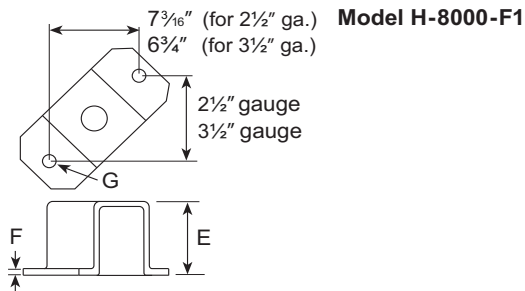
H-8000 Hanger

H-12000 Hanger

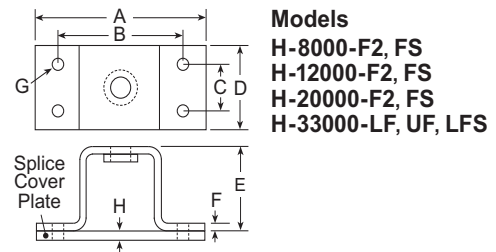
H-20000 Hanger

H-33000 Hanger

- Order hangers with appropriate "-01" or "-02" suffix.
-01 = flanges $\frac{3}{8}$ " through $\frac{13}{16}$ " thick
-02 = flanges $\frac{7}{8}$ " through $1\frac{1}{2}$ " thick
Bolt length varies.



- Only models with -FS suffix used at rail splice points.
- "Flexible suspension" components may be bolted or clamped to support steel or rail without shimming for "out-of-level" conditions, within limitations, up to 5°. See Suspension Systems in the General Engineering Section of this catalog for more information.
- Systems must be properly braced.
- Hanger includes spherical seat or hanger seat installed.



Hanger Specifications

Part #	Model*	Hanger Rod	Bolt Size	Weight	Capacity
10-2768-01/02	H-8000-F1	$\frac{3}{4}$ " FR-8000	$\frac{5}{8}$ " Grade 5	6½ lbs.	8000 lbs.
10-3190-01/02	H-8000-F2	$\frac{3}{4}$ " FR-8000	$\frac{5}{8}$ " Grade 5	8 lbs.	8000 lbs.
10-3187-01/02	H-8000-FS	$\frac{3}{4}$ " FR-8000	$\frac{5}{8}$ " Grade 5	14 lbs.	8000 lbs.
10-3191-01/02	H-12000-F2	1" FR-12000	$\frac{5}{8}$ " Grade 5	8 lbs.	12,000 lbs.
10-3188-01/02	H-12000-FS	1" FR-12000	$\frac{5}{8}$ " Grade 5	14 lbs.	12,000 lbs.
10-3192-01/02	H-20000-F2	1¼" FR-20000	$\frac{7}{8}$ " Grade 5	17 lbs.	20,000 lbs.
10-3189-01/02	H-20000-FS	1¼" FR-20000	$\frac{7}{8}$ " Grade 5	26 lbs.	20,000 lbs.
10-2882-01/02	H-33000-LF	1½" FR-33000	$\frac{7}{8}$ " Grade 5	23 lbs.	33,000 lbs.
10-2883-01/02	H-33000-UF	1½" FR-33000	$\frac{7}{8}$ " Grade 5	33 lbs.	33,000 lbs.
10-3383-01/02	H-33000-LFS	1½" FR-33000	$\frac{7}{8}$ " Grade 5	42 lbs.	33,000 lbs.

Hanger Dimensions

Part #	Model*	A	B	C	D	E	F	G	H
10-2768-01/02	H-8000-F1	—	—	—	—	3¼"	½"	11/16"	—
10-3190-01/02	H-8000-F2	9½"	7"	2½"	4½"	4½"	3/8"	11/16"	—
10-3187-01/02	H-8000-FS								½"
10-3191-01/02	H-12000-F2	9½"	7"	2½"	4½"	4½"	3/8"	11/16"	—
10-3188-01/02	H-12000-FS								½"
10-3192-01/02	H-20000-F2	11 3/8"	8 3/8"	3½"	5 3/4"	5 3/4"	½"	15/16"	—
10-3189-01/02	H-20000-FS								5/8"
10-2882-01/02	H-33000-LF	11 3/8"	8 5/8"	3½"	6"	4 1/16"	5/8"	15/16"	—
10-2883-01/02	H-33000-UF	11 3/8"	8 5/8"	3½"	6"	9"	5/8"	15/16"	—
10-3383-01/02	H-33000-LFS	11 3/8"	8 5/8"	3½"	6"	4 1/16"	5/8"	15/16"	1"

* The F1 and F2 designations are for use at intermediate points; the FS designation is for use at splice points.

Clamps

C-8000 Adjustable Beam Clamp

9216E1284F1

9216E1284F3

C-12000 Adjustable Beam Clamp

9216E1284F2

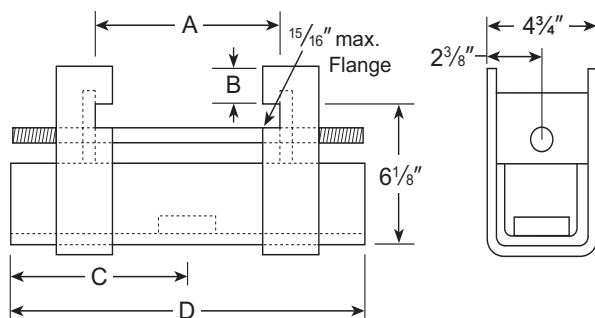
9216E1284F4

- Includes spherical seat for hanger rod assembly
- Specify flange width & thickness when ordering clamps

- Designed for horizontal beams with flat flanges
- Beam flange thickness must be verified by support beam supplier.
- “Flexible suspension” components may be bolted or clamped to support steel or rail without shimming for “out-of-level” conditions, within limitations, up to 5°. See Suspension Systems in the General Engineering Section of this catalog for more information.
- Systems must be properly braced.

Specifications

Model	Max Capacity	Weight	Load Restrictions		
			Flange Width	Min Support Beam	Flange Thickness
C-8000-8F 9216E1284F1	8,000 lbs.	27 lbs.	4	½" (6000 lbs.)	⅝" (8000 lbs.)
			8	1⅛" (6000 lbs.)	13/16" (8000 lbs.)
C-8000-12F 9216E1284F3	8,000 lbs.	31 lbs.	8	1⅛" (6000 lbs.)	13/16" (8000 lbs.)
			12	¾" (6000 lbs.)	7/8" (8000 lbs.)
C-12000-8F 9216E1284F2	12,000 lbs.	27 lbs.	4	⅝" (10,000 lbs.)	1⅛" (12,000 lbs.)
			8	1⅛" (10,000 lbs.)	¾" (12,000 lbs.)
C-12000-11F 9216E1284F4	12,000 lbs.	31 lbs.	8	1⅛" (10,000 lbs.)	¾" (12,000 lbs.)
			11	7/8" (10,000 lbs.)	15/16" (12,000 lbs.)



Dimensions

Model	A Min	A Max	B	C	D
C-8000-8F 9216E1284F1	4"	8"	7/8"	6"	12"
C-8000-12F 9216E1284F3	8"	12"	17/8"	8"	16"
C-12000-8F 9216E1284F2	4"	8"	17/8"	6"	12"
C-12000-11F 9216E1284F4	8"	11"	17/8"	8"	16"



Double-Rod Flexible Suspension Top Spreader Brackets

Brackets

FSB-16000 Top Spreader Bracket

10-2948-00

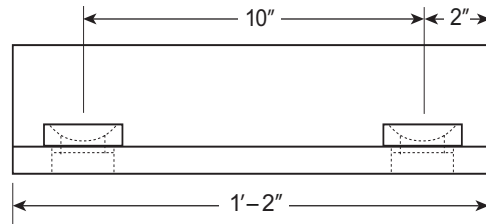
FSB-24000 Top Spreader Bracket

10-2947-00

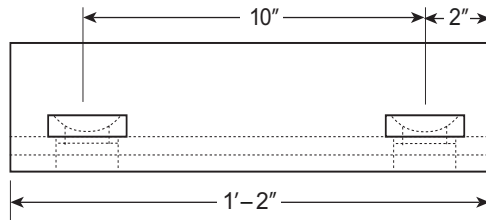
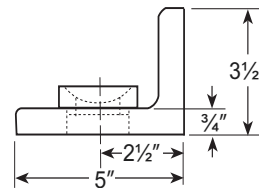
FSB-40000 Top Spreader Bracket

10-2946-00

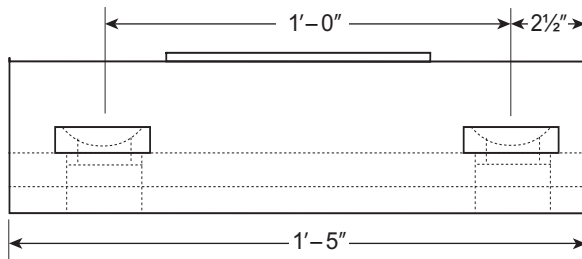
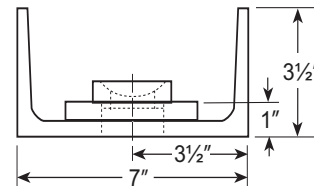
Note: Top Spreader Brackets must be welded to support steel as required.



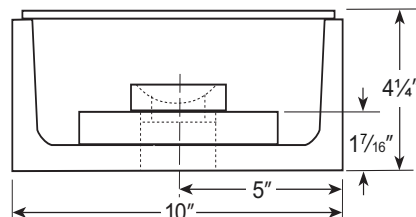
Model FSB-16000



Model FSB-24000



Model FSB-40000



Top Spreader Bracket Specifications

Part #	Model	Use with Hanger Rods	Rod Size	Weight	Capacity
10-2948-00	FSB-16000	FR-8000 (2)	3/4"	26 lbs.	16,000 lbs.
10-2947-00	FSB-24000	FR-12000 (2)	1"	27 lbs.	24,000 lbs.
10-2946-00	FSB-40000	FR-20000 (2)	1 1/4"	78 lbs.	40,000 lbs.

Splice Cover Plates

SCP-16000 Splice Cover Plate

SCP-24000 Splice Cover Plate

216F1289D1

SCP-40000 Splice Cover Plate

216F1290D1

When using double suspension hanger assemblies to support monorail or crane systems, Splice Cover Plates are required at rail splice points.

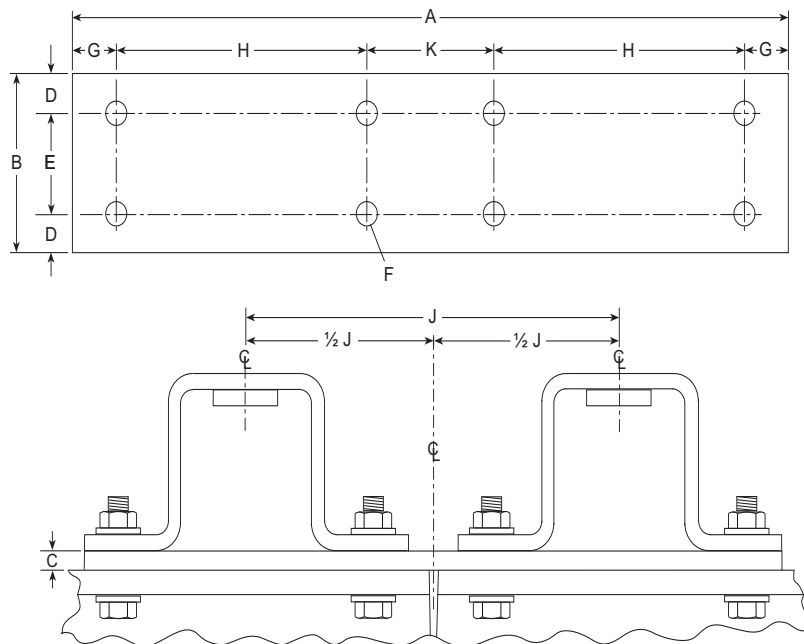
- Rail Splice Cover Plate not required with intermediate hangers
- When flexible hanger rod distance (J) exceeds what is shown, contact factory

- Hanger capacities based on TC/American high strength flexible hanger rod assemblies
- Finish = TC/American gray-green enamel

Note Adjust hanger rods so loading is equal on both hanger rods of the clamp assembly.

"Flexible suspension" components may be bolted or clamped to support steel or rail without shimming for "out-of-level" conditions, within limitations, up to 5°. See Suspension Systems in the General Engineering Section of this catalog for more information.

Systems must be properly braced.



Splice Cover Plate Specifications

Part #	Model	Weight	Bolt Size	Dimensions									
				A	B	C	D	E	F	G	H	J	K
216F1289D1	SCP-16000 SCP-24000	9 lbs.	5/8"	20"	7 1/2"	3/8"	1"	2 1/2"	11/16"	1 1/2"	7"	10"	3"
216F1290D1	SCP-40000	20 lbs.	7/8"	24"	10"	1/2"	1 1/4"	3 1/2"	15/16"	1 13/16"	8 3/8"	12"	3 5/8"

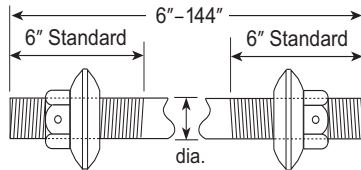


Flexible Suspension Hardware (8000#, 12000# and 20000# Capacity)

Rod Assembly

- Flexible hanger rod assemblies include:
(2) spherical washers, (2) spring pins and lock nuts
- Standard hanger rods 6" to 144" long

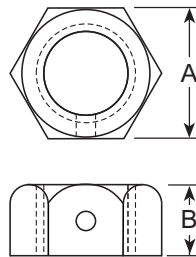
- "Flexible suspension" components may be bolted or clamped to support steel or rail without shimming for "out-of-level" conditions, within limitations, up to 5°. See Suspension Systems in the General Engineering Section of this catalog for more information.
- Systems must be properly braced.



Part #	Model	Capacity	Spring Pins	Rod Size	Weight*
10-3069-xx (6"-36") 10-3070-xx (37"-144")	FR-8000	8000 lbs.	3/16 x 1 1/2"	3/4"	0.2 lbs./in.
10-3071-xx (6"-36") 10-3072-xx (37"-144")	FR-12000	12,000 lbs.	3/16 x 1 1/2"	1"	0.3 lbs./in.
10-3073-xx (6"-36") 10-3074-xx (37"-144")	FR-20000	20,000 lbs.	3/16 x 1 1/2"	1 1/4"	0.4 lbs./in.

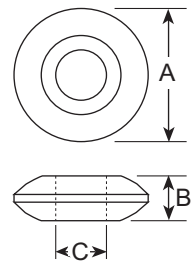
* Weight for rod only

Hanger Nut



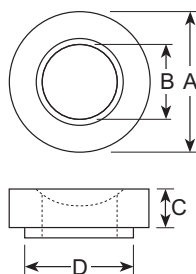
Part #	Model	Capacity	Thread	Weight	A	B
9220F1318F1	FLN-8000	8,000 lbs.	3/4-16 NF	0.5 lbs.	1 1/8"	5/8"
9220F1319F1	FLN-12000	12,000 lbs.	1-14 NF	0.75 lbs.	1 1/2"	7/8"
9220F1320F1	FLN-20000	20,000 lbs.	1 1/4-12 NF	1.0 lbs.	1 7/8"	1 1/16"

Hanger Spherical Washer



Part #	Model	Capacity	Rod Size	Weight	A	B	C
216F1277M10	FSW-8000	8,000 lbs.	3/4"	0.15 lbs.	2"	5/8"	13/16"
216F1278M10	FSW-12000	12,000 lbs.	1"	0.25 lbs.	2 5/16"	3/4"	1 1/16"
216F1279M10	FSW-20000	20,000 lbs.	1 1/4"	0.5 lbs.	2 1/2"	1"	1 5/16"

Hanger Spherical Seat



Part #	Model	Capacity	Rod Size	Weight	A	B	C	D*
216F1274M10	FSS-8000	8,000 lbs.	3/4"	0.15 lbs.	1 7/8"	1 1/8"	1/2"	1.503" 1.498"
216F1275M10	FSS-12000	12,000 lbs.	1"	0.25 lbs.	2 3/8"	1 3/8"	5/8"	1.881" 1.871"
216F1276M10	FSS-20000	20,000 lbs.	1 1/4"	0.5 lbs.	2 7/8"	1 5/8"	3/4"	2.255" 2.245"

* Dimension is the hole size for a press fit.

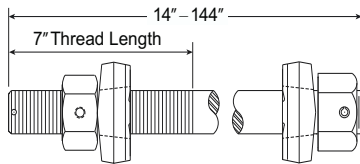
Flexible Suspension Hardware (33000# Capacity)

Rod Assembly

- FR-33000 Hanger Rod Assemblies include one 1½" diameter rod, two nuts, two rocker washers, two spring pins & one set screw.

(Upper end of rod has 7" thread for length adjustment at Upper Hanger—nut on this end has set screw to hold nut in place after final adjustments; and lower end of rod has threads only long enough for nut, which is factory fixed to rod, with spring pin.)

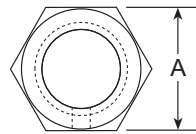
- Standard hanger rods—14" to 144" long
- "Flexible Suspension" components may be bolted or clamped to support steel or rail without shimming for "out-of-level" conditions, within limitations, up to 5°.
- Systems must be properly braced. See Suspension Systems in the General Engineering Section of this catalog for more information.



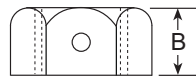
Part #	Model	Capacity	Spring Pins	Rod Size	Weight*
10-3729-xx (14"–144")	FR-33000	33000 lbs.	¾ x 2"	1½"	0.5 lbs./in.

* Weight for rod only

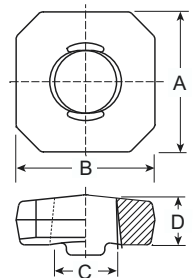
Hanger Nut



Part #	Model	Capacity	Thread	Weight	A	B
25-3285-00	upper nut	33,000 lbs.	1½–12 NF	1.3 lbs.	2⅜"	1⅕"
21-2002-00	lower nut	33,000 lbs.	1½–12 NF	1.3 lbs.	2⅜"	1⅕"



Rocker Washer

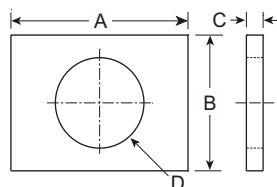


Part #	Model	Capacity	Rod Size	Weight	A	B	C	D
25-3186-00	–	33,000 lbs.	1½"	1.2 lbs.	3½"	3½"	1⅞"	1¼"

Hanger Seat (included in standard hanger)

Used only when rods are suspended directly through holes in the building or support steel.

Hardened Seat is placed between the upper rocker washer and the supporting steel. Seat must be tack-welded in place.



Part #	Model	Capacity	Rod Size	Weight	A	B	C	D
25-3284-00	–	33,000 lbs.	1½"	0.9 lbs.	4"	3"	¾"	2"



Switches and Curves

200 Series Switches

200 Series Switches D-5

Track Locking Lug D-5

Tongue Switches D-6

Non-electrified:

2S-260 Two-Way Tongue Switch D-8

2S-261 Three-Way Tongue Switch D-8

Electrified:

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2ES-209-T Three-Way Tongue Switch D-9

2ES-210-T Wye Tongue Switch D-9

Glide Switches D-10

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2S-294 Three-Way Glide Switch D-11

2S-295 Wye Glide Switch D-11

Electrified:

2ES-296 Two-Way Glide Switch D-12

2ES-297 Three-Way Glide Switch D-12

2ES-298 Wye Glide Switch D-12

Non-Electrified Rotary Switches D-13

2S-204 Three-Way Rotary Switch D-13

2S-303 Three-Way Rotary Switch D-13

Cross Track Switches D-14

2S-317 Cross Track Switch (non-elec.) D-14

2ES-320-T Cross Track Switch (electrified) D-14

600 Series Switches

600 Series Glide Switches D-27

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Electrified:

Electrified Glide Switches D-30

Cross Track Switches D-31

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3ES-625-2 Cross Track Switch D-31

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Typical Layout for Short Radius Curves, Non-Electrified Tongue Switches D-18

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Standard Radius Curves for Non-Electrified Glide

Switches D-20

Typical Layout for Standard Curves, Non-Electrified Glide Switches D-20

Layout for Non-Electrified Glide Switch Curves D-21

Typical Minimum Spacing Layout for Non-Electrified Tongue & Glide Switches D-22

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Typical Layout for Standard Curves, Electrified Tongue Switches D-23

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Typical Layout for Standard Curves, Electrified Glide

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Straight Rail to Switch D-33

Curve Rail to Switch D-33

Typical Switch Connection D-33

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3S-830-RH Two-Way Glide Switch	D-39	Non-electrified:	
3S-831-L Two-Way Glide Switch	D-39	3S-826 Cross Track Switch	D-43
3S-831-LH Two-Way Glide Switch	D-39	3S-826-H Cross Track Switch	D-43
3S-832 Wye Glide Switch	D-40	Electrified:	
3S-832-H Wye Glide Switch	D-40	3ES-826 Cross Track Switch	D-43
3S-833 Three-Way Glide Switch	D-41	3ES-826-H Cross Track Switch	D-43
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Non-electrified:		Non-electrified:	
3S-2690-R12	D-53	3S-2710-12	D-55
3S-2690-L12	D-53	3S-2710-12H	D-55
3S-2690-R12H	D-53	3S-2710-14H	D-55
3S-2690-L12H	D-53	Electrified:	
3S-2690-R14H	D-53	3ES-2710-12	D-55
3S-2690-L14H	D-53	3ES-2710-12H	D-55
Electrified:		3ES-2710-14H	D-55
3ES-2690-R12	D-53	Layout for 2000 Series Glide Switch and Curves	
3ES-2690-L12	D-53	D-57
3ES-2690-R12H	D-53	Typical Rail Connections to 2000 Series Switches	D-58
3ES-2690-L12H	D-53	Straight Rail to Switch	D-58
3ES-2690-R14H	D-53	Curve Rail to Switch	D-58
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Electrified:			
3ES-2700-12	D-54		
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Switches and Curves

Monorails are custom designed to meet the customer's exact layout and capacity requirements by selecting from the TC/American Switches and pre-engineered curves shown in this catalog section. Special curves with different radii, bends and reverse curves are available by request for other situations. Switch capacities are based on use of TC/American trolleys.

TC/American Crane switches are available in Right Hand, Left Hand, Wye and Three-Way configurations, either Electrified or Non-Electrified. The 200 Series Switches also include Cross-Track and Rotary configurations. Standard switch operation is manual (optional electric or air operation). Other specialized switches can be custom designed for rotating or turntable operations. Contact the factory for more information on these applications.

TC/American Crane switches are designed to maintain accurate alignment. The inner tongue or sliding frame assembly is contained in a rigid outer stationary frame. This outer frame has suspension points for hanger rods or for direct bolting to support steel. Incoming rails and hangers are bolted to the outer switch frame to allow for shimming to provide accurate rail tread alignment. Monorail systems may require additional support steel for switches and curves. Switches and curves must be adequately braced for longitudinal and lateral support.

Positive, spring-loaded latch mechanisms hold the inner frame in its correct position to provide maximum protection to operators, loads and trolleys. Open ends of tracks are protected by trolley stops.

Note *Trolleys with optional safety lugs are not compatible with 200 and 600 Series Switches (lugs will not clear switch trolley stops or baffles). Some trolley and lug combinations will clear the 800 and 2000 Series Switches. Consult factory for application.*

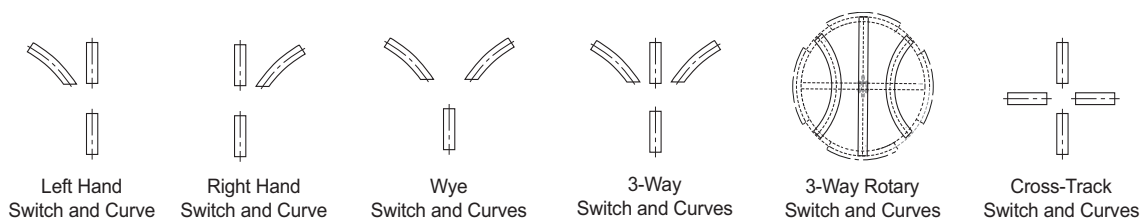
Electrical

Electrified switches are provided with a power supply junction box mounted on the outer switch frame, with factory wiring from the junction box to the conductor bars that have been mounted on the switch. This wiring only provides power to the conductor bars within the switch. Building power must be separately run to each switch location, in addition to the lengths of conductor bar on the straight monorail sections. Contact the factory for more information about switch wiring or for options such as motorized switch operation. Standard Electrification – Shielded Channel-Bar; Optional – Shielded Figure 8.

Options

Optional equipment for switches includes electric or pneumatic (air) operators, signal lights to indicate switch position, electric baffles to prevent motorized carriers from running into a switch, and special electrical enclosures.

Types of Standard Switches



Monorail Layout Dictates which Configuration will be Required at each Junction Point

Crossover and turntable switches – used to cross two tracks at the same elevation at right angles

Lift sections – used to raise or lower a trolley and load without using a hoist or to connect two monorail tracks at different elevations

Track openers – used at doorways to provide for closing of fire doors if necessary



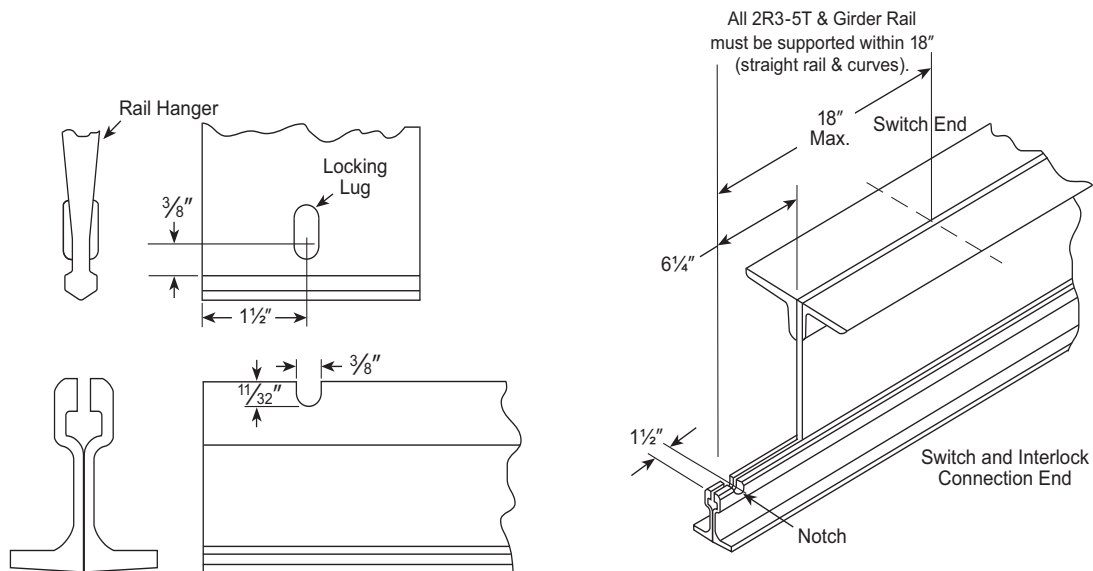
200 Series Switches

Track Locking Lug

All TC/American Crane 200 Series Switches have special rail hangers to support the rail at the incoming (heel) end of the switch and for each outgoing curve or straight rail. A "Track Locking Lug" is integral to these hangers, which are clamped into the head of the rail, and fits into a notch cut into the head of the rail.

This creates a positive lock of the incoming and outgoing rails to the switch and prevents these rails from crowding into or pulling away from the switch. This assures free operation of the switch and smooth travel of trolleys over the track joints, where straight and curved rails join to the switch.

A rail locking lug is also used with crane and connecting interlocks.



Standard Locking Lug and Notch for 200 Series, 2R3-5T & Girder Rails

Tongue Switches

200 Series Tongue Switch Description and Features

- Rigid Outer Frame Plate for support to building steel or auxiliary structure via hanger rods or bolted connections
- Incoming & outgoing rails supported by special hangers on Outer Frame (w/locking lugs—to securely hold rails in position)
- Inner Frame with straight section pivots at incoming end; outer end slides in support channel
- Manually operated switch movement via pull ropes connected to Inner Frame & Latch Mechanism (12' rope included, unless otherwise specified)
- Positive Latch Mechanism holds moving switch section securely in place until released by pull rope

Note: 3-Way Switches latch at center position when shifting from left or right; requires a second pull to shift completely across.

- Right Hand (RH) Switches align with incoming & outgoing straight rail, & with outgoing switch curve to right
- Left Hand (LH) Switches align with incoming & outgoing straight rail & with outgoing switch curve to left
- Three-Way (3-Way) Switches align with incoming & outgoing straight rail, & with outgoing switch curves to left & right
- Wye Switches align with incoming straight rail & outgoing switch curves to left & right
- Open ends of rails protected by guards/baffles attached to switch to prevent trolleys from coming off
- Switches may be ordered Electrified or Non-Electrified (with/without conductor bars)
- Electrified switches wired per National Electric code with NEMA 1 type enclosures

Standard conductor bar = TC/American Shielded Channel-Bar, 4-bar, side contact, 7" gauge

Shop wired with power feeds on each bar, with leads to junction box mounted on switch frame.

Wire connectors in junction box provided by others; switch circuit protection by others.

Proper phasing is the responsibility of the electrical installer.

- Standard finish = TC/American gray-green enamel

Specifications

Part #	Model	Weight	Max Load on Switch*
Non-Electrified			
10-1006-00	2S-260-L (Left Hand)	75 lbs.	3100 lbs.
10-1007-00	2S-260-R (Right Hand)	75 lbs.	3100 lbs.
10-1076-00	2S-260-Y (Wye)	75 lbs.	3100 lbs.
10-1011-00	2S-261 (3-Way)	84 lbs.	3100 lbs.
Electrified			
10-1127-01	2ES-208-RT (Right Hand)	122 lbs.	3100 lbs.
10-1125-01	2ES-208-LT (Left Hand)	122 lbs.	3100 lbs.
10-1123-01	2ES-209-T (3-Way)	129 lbs.	3100 lbs.
10-1129-01	2ES-210-T (Wye)	126 lbs.	3100 lbs.

* 1000 lbs. per wheel

Notes:

- Maximum Trolley wheel diameter = 4" (all TC/A 200 Series trolleys, excluding crane trolleys)
- Switches are not to be operated with a trolley or load on the moving section.
- Caution: Do not use these switches on systems with trolleys that have optional safety lugs (safety lugs will not clear switch baffles).



Options

(Non-Electrified Switches)

- 3-Way Tongue Switches may be ordered with RH or LH configuration.

Switch assembled for field installation with one switch position straight ahead and both others either to right or left (modified switch top plate).

2S-261-R	RH Configuration	10-2888-00
2S-261-L	LH Configuration	10-2889-00

- Tongue Switches may be ordered without pull ropes, arms and latch mechanism for field conversion (by others) to remote operation (usually air operation).

2S-260-L	No Latching Parts	10-1006-03
2S-260-R	No Latching Parts	10-1007-03
2S-260-Y	No Latching Parts	10-1076-03
2S-261	No Latching Parts	10-1011-03
2S-261-R	No Latching Parts	10-2888-03
2S-261-L	No Latching Parts	10-2889-03

- Tongue Switches may be ordered with both pull ropes on one side.

2S-260-R	Both Ropes Right	10-3355-00
2S-260-R	Both Ropes Left	10-3356-00
2S-260-L	Both Ropes Right	10-3357-00
2S-260-L	Both Ropes Left	10-3358-00
2S-260-Y	Both Ropes Right	10-3359-00
2S-260-Y	Both Ropes Left	10-3360-00
2S-261	Both Ropes Right	10-3361-00
2S-261	Both Ropes Left	10-3362-00
2S-261-R	Both Ropes Right	10-3363-00
2S-261-R	Both Ropes Left	10-3364-00
2S-261-L	Both Ropes Right	10-3365-00
2S-261-L	Both Ropes Left	10-3366-00

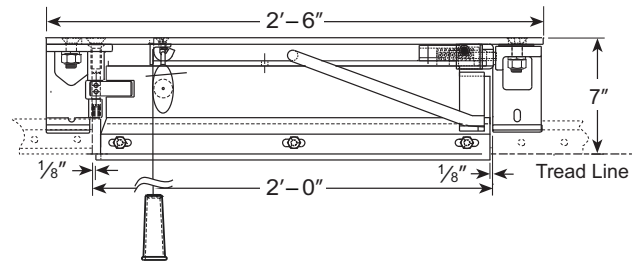
Options

(All)

- Air Operated (*see page D-60*)
- Motor Operated (*special order: see page D-60*)
- Spark Resistant

Non-Electrified Tongue Switches

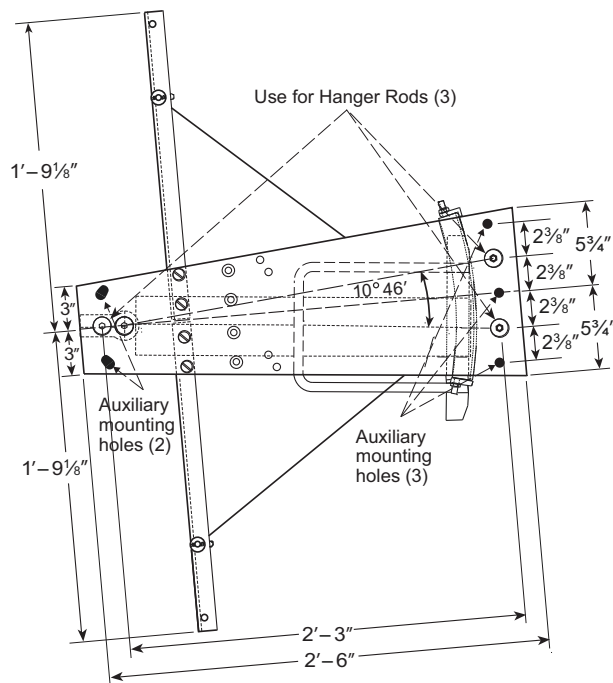
- Rod suspended switches must use hanger rods at all locations shown. Remove existing hardware through top plate & rail hangers.
- If hanger rods cannot be used at primary support location—use auxiliary support mounting holes provided in top plate.
- Rod suspended systems must be sway braced—use auxiliary mounting holes to attach braces to switch.
- All Top Plate Hanger holes —11/16" for 5/8" dia. rods or bolts



Side View (same for all models)

2S-260 Two-Way Tongue Switch

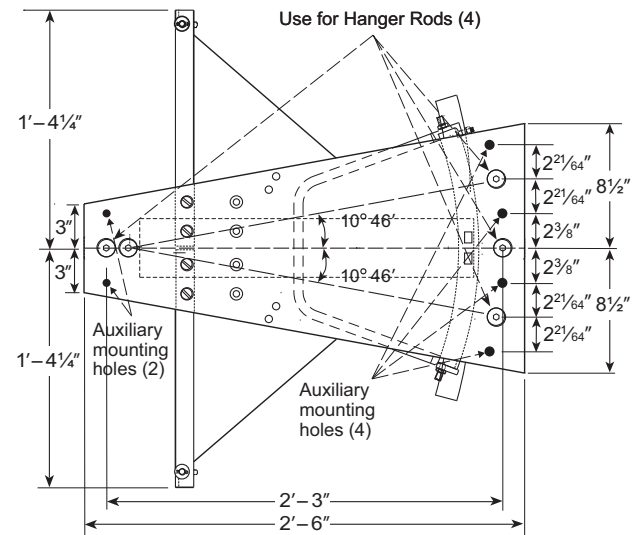
10-1006-00 (Left)
10-1007-00 (Right)
10-1076-00 (Wye)



2S-260 Two-Way (left hand version)

2S-261 Three-Way Tongue Switch

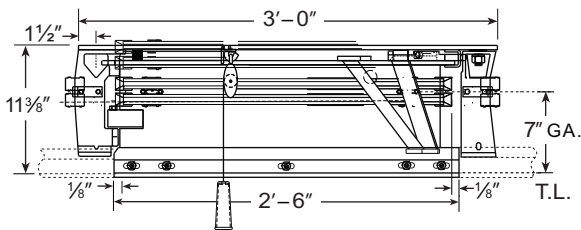
10-1011-00



2S-261 Three-Way

Electrified Tongue Switches

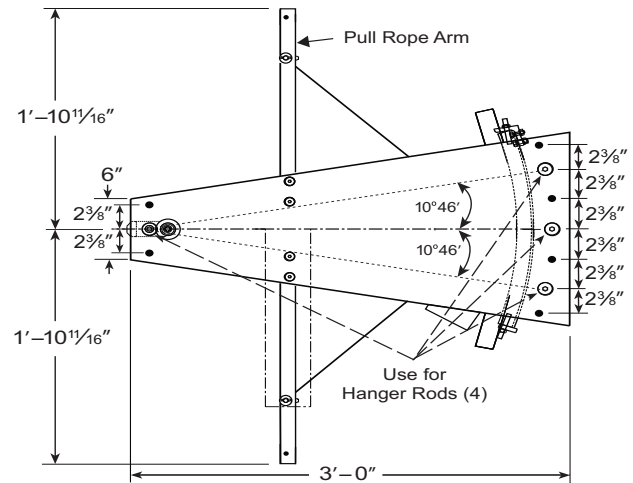
- Rod suspended switches must use hanger rods at all locations shown. Remove existing hardware through top plate & rail hangers.
- If hanger rods cannot be used at primary support location—use auxiliary support mounting holes provided in top plate.
- Rod suspended systems must be sway braced—use auxiliary mounting holes to attach braces to switch.
- All Top Plate Hanger holes —11/16" for 5/8" dia. rods or bolts



Side View (all models)

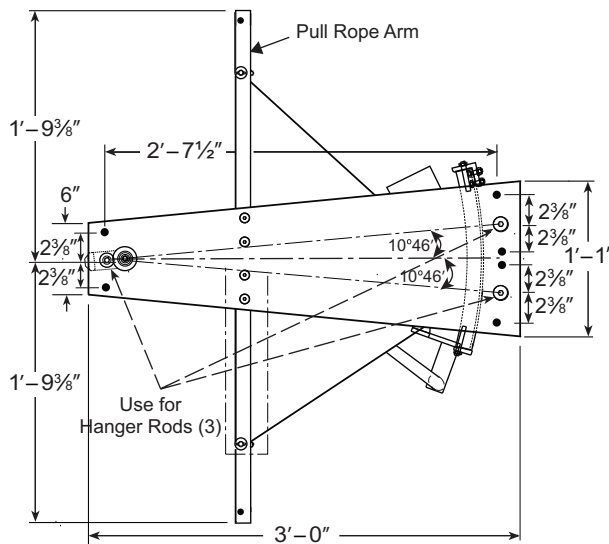
2ES-209-T Three-Way Tongue Switch

10-1123-01



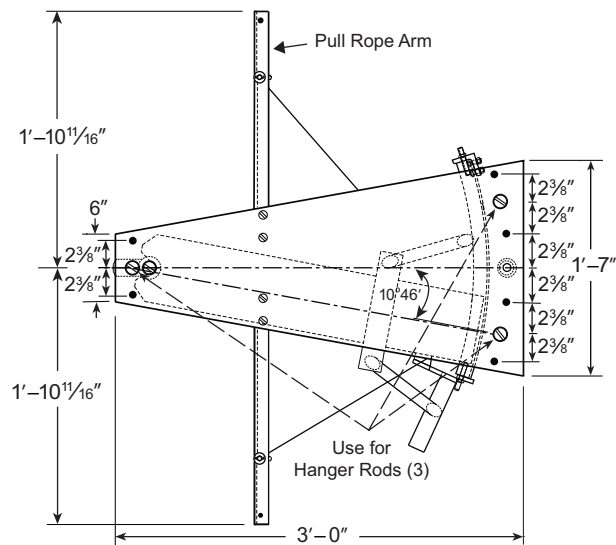
2ES-208-T Two-Way Tongue Switch

10-1127-01, 10-1125-01



2ES-210-T Wye Tongue Switch

10-1129-01



Glide Switches

200 Series Glide Switch Description and Features

- Right Hand (RH) Switches align with incoming & outgoing straight rail & outgoing curve to right
- Left Hand (LH) Switches align with incoming & outgoing straight rail & outgoing curve to left
- Three-Way (3-Way) Switches align with incoming & outgoing straight rail & outgoing curves to left & right
- Wye Switches align with incoming straight rail and outgoing curves to left & right
- Outer Frame supported from building or auxiliary structure via hanger rods or bolted connections
- Incoming & outgoing rails supported by special hangers on Outer Frame (locking lugs securely hold rails in position)
- Moveable (sliding) Inner Frame with straight and/or curved rail sections
- Manually operated switch movement—pull ropes connected to Inner Frame (12' standard rope length)
- Positive Latch Mechanism holds moving switch section securely in place until released by pull rope
Note: 3-Way Switches latch at center position when shifting from left or right; requires a second pull to shift completely across.
- Trolleys travel more smoothly & easily through curved section of Glide Switches
- Open ends of rails protected by guards/baffles attached to switch to prevent trolleys from coming off
- Glide Switches allow closer spacing of spur rails than Tongue Switches
- Switches may be ordered Electrified or Non-Electrified (with/without conductor bars)
- Electrified switches wired per National Electric code with NEMA 1 type enclosures
(Standard conductor bar = TC/American Shielded Channel-Bar, 4-bar, side contact, 7" gauge)
Shop wired with power feeds on each bar, with leads to junction box mounted on switch frame.
Wire connectors in junction box provided by others; switch circuit protection by others. Proper phasing is the responsibility of the electrical installer.
- Standard finish = TC/American gray-green enamel

Specifications

Part #	Model	Weight	Max Load on Switch*
Non-Electrified			
10-1023-00	2S-293-L (Left Hand)	154 lbs.	3100 lbs.
10-1028-00	2S-293-R (Right Hand)	154 lbs.	3100 lbs.
10-1032-00	2S-294 (3-Way)	181 lbs.	3100 lbs.
10-1036-00	2S-295 (Wye)	165 lbs.	3100 lbs.
Electrified			
10-1114-01	2ES-296-LT (Left Hand)	174 lbs.	3100 lbs.
10-1116-01	2ES-296-RT (Right Hand)	174 lbs.	3100 lbs.
10-1112-01	2ES-297-T (3-Way)	226 lbs.	3100 lbs.
10-1119-01	2ES-298-T (Wye)	192 lbs.	3100 lbs.

* 1000 lbs. per wheel

Notes:

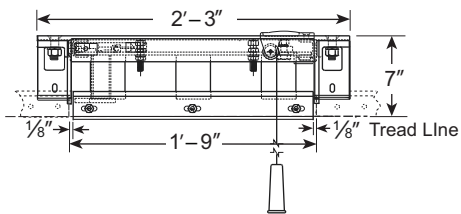
- Maximum Trolley wheel diameter = 4" (all TC/A 200 Series trolleys, excluding crane trolleys)
- Switches are not to be operated with a trolley or load on the moving section.
- Not for use with trolleys with optional safety lugs (lugs will not clear switch baffles).

Options

- Air Operated (*see page D-60*)
- Motor Operated (*special order: see page D-60*)
- Spark Resistant

Non-Electrified Glide Switches

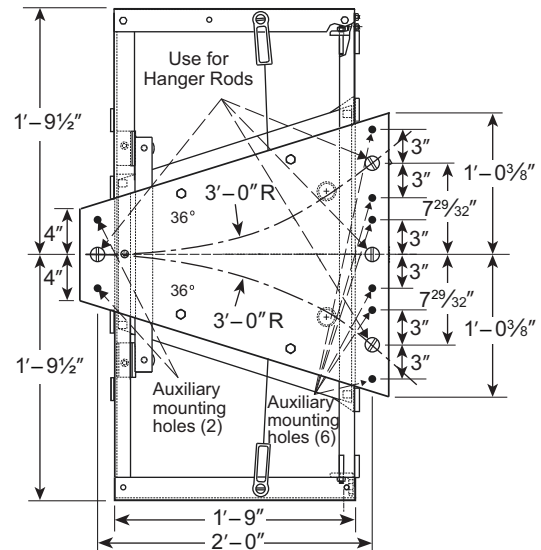
- Rod suspended switches must use hanger rods at all locations shown. Remove existing hardware through top plate & rail hangers.
- If hanger rods cannot be used at primary support location—use auxiliary support mounting holes provided in top plate.
- Rod suspended systems must be sway braced—use auxiliary mounting holes to attach braces to switch.
- All Top Plate Hanger holes —11/16" for 5/8" dia. rods or bolts.



Side View (all models)

2S-294 Three-Way Glide Switch

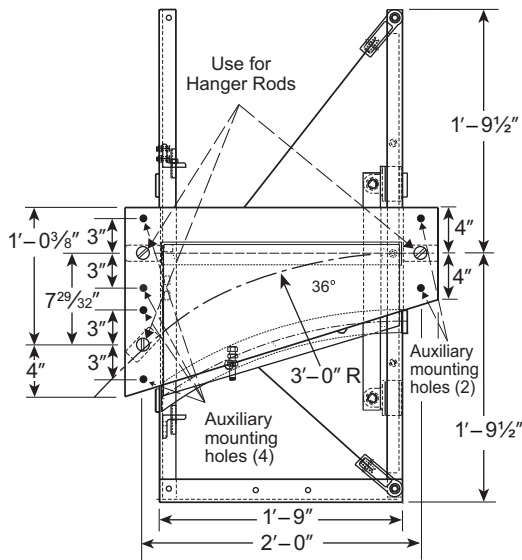
10-1032-00



2S-293 Two-Way Glide Switch

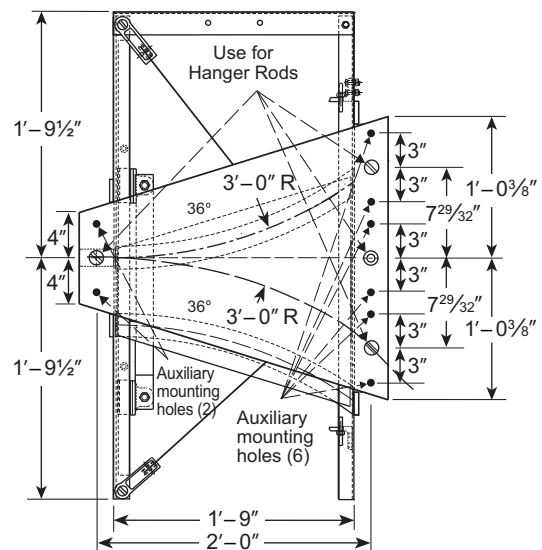
10-1023-00 (Left)

10-1028-00 (Right)



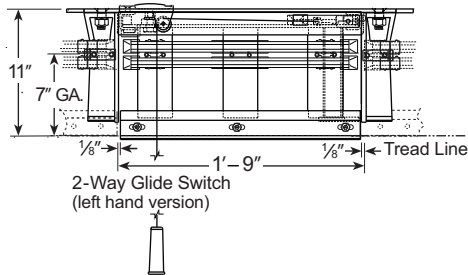
2S-295 Wye Glide Switch

10-1036-00



Electrified Glide Switches

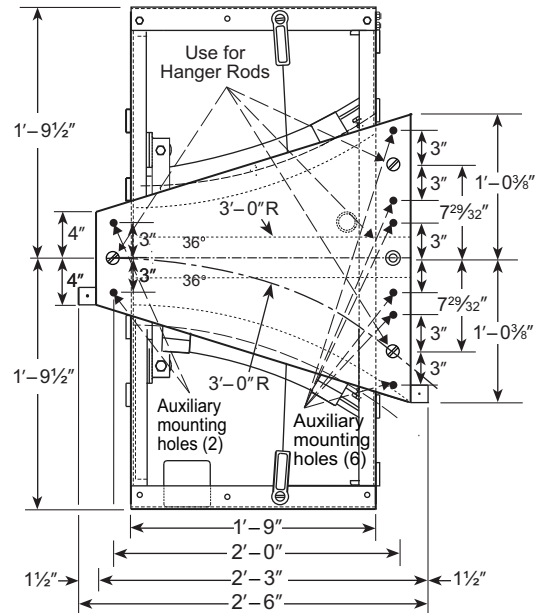
- Rod suspended switches must use hanger rods at all locations shown. Remove existing hardware through top plate & rail hangers.
- If hanger rods cannot be used at primary support location—use auxiliary support mounting holes provided in top plate.
- Rod suspended systems must be sway braced—use auxiliary mounting holes to attach braces to switch.
- All Top Plate Hanger holes —11/16" for 5/8" dia. rods or bolts.



Side View (all models)

2ES-297 Three-Way Glide Switch

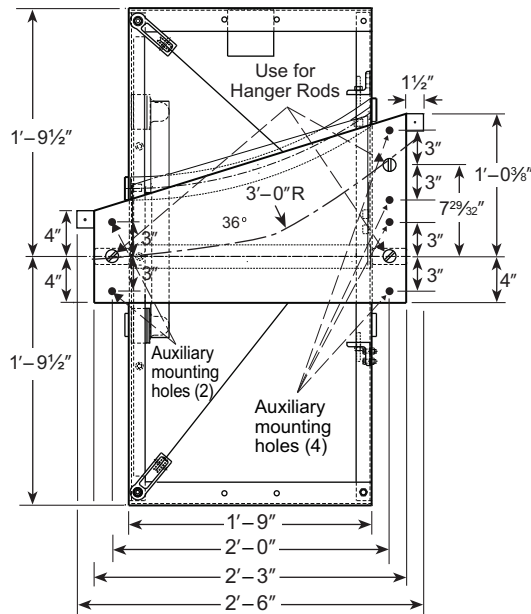
10-1112-01



2ES-296 Two-Way Glide Switch

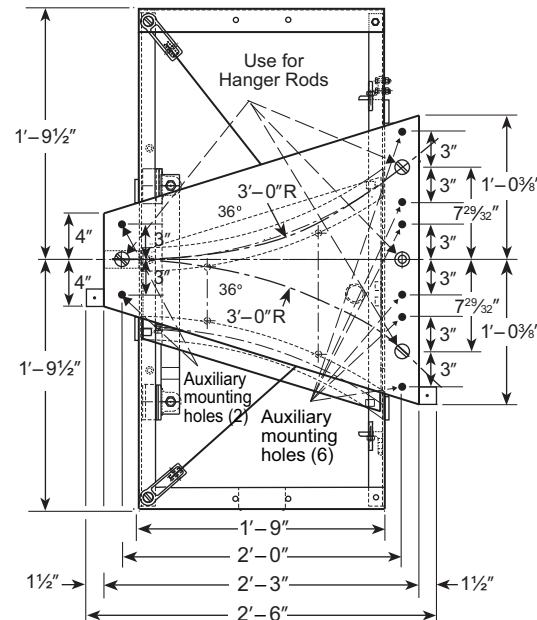
10-1116-01 (Right)

10-1114-01 (Left)



2ES-298 Wye Glide Switch

10-1119-01





Non-Electrified Rotary Switches

2S-204 Three-Way Rotary Switch

91-5061-00

2S-303 Three-Way Rotary Switch

10-2203-00

For extremely compact track arrangements, these rotary switches permit direct passage of trolleys to the right, left, or straight ahead from any approach when tracks cross at right angles. Inner frame rotates on a precision ball bearing. Positive four-position latching and 135° total rotation are standard features. Open tracks are protected in latched positions by guards attached to the switch.

- Three-Way Rotary Switches allow trolleys to pass straight through or to the left or right
- Not designed to be used as turntable—do not operate with trolley or load on moving section
- Maximum trolley wheelbase = 1'-3"
- Maximum TC/American Crane Trolley Wheel Dia. = 4"
- Switch Curves are 1'-6" radius
- Rigid Top Mounting Plate for support to building steel or auxiliary structure via hanger rods or bolted connections

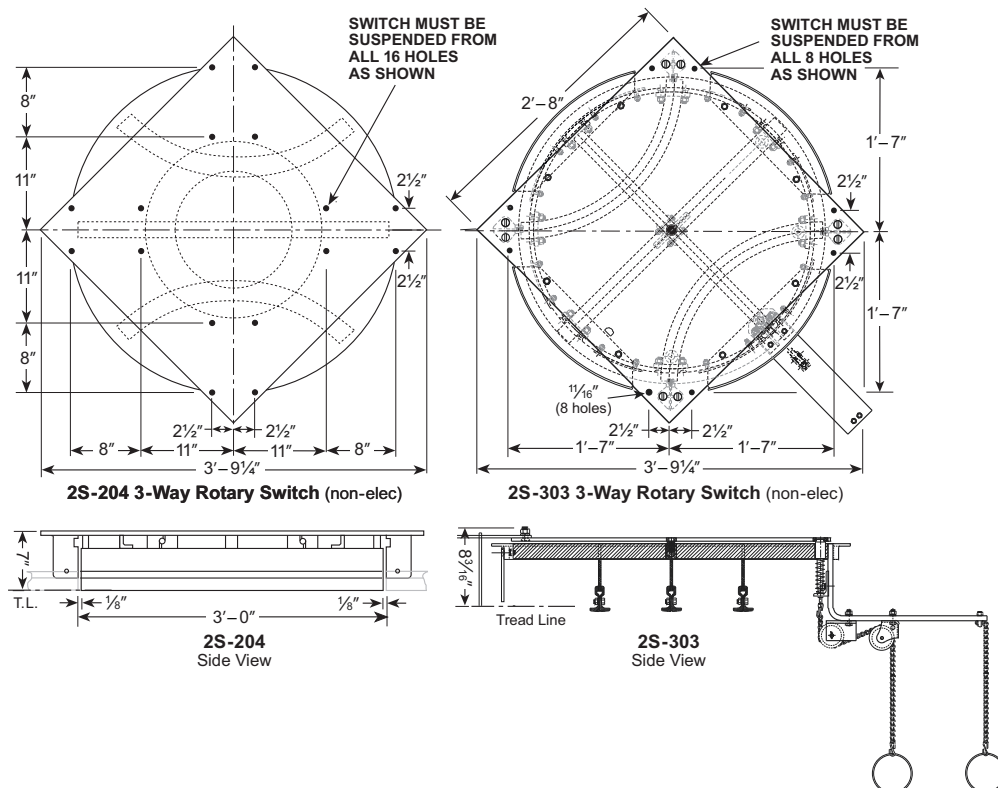
- Incoming and outgoing rails supported by hangers with locking lugs to hold rails in position
- Rotating Center Rail Section supported by thrust bearing; 2S-204 uses large diameter multiple ball bearing, 2S-303 uses single ball center support & sliding frame
- Manually operated switch rotation via pull chains connected to Rotating center Rail Section, with spring-loaded locking pin for accurate positioning (12-foot pull chain included, unless other length requested)
- Open ends of rails protected by circular guard assembly
- Standard finish = one coat TC/American gray-green enamel

Specifications

Part #	Model	Weight	Max Load*
91-5061-00	2S-204	391 lbs.	5600 lbs.
10-2203-00	2S-303	375 lbs.	1150 lbs.

* 1000 lbs. per wheel

Note Do not use these switches with trolleys with optional safety lugs (safety lugs will not clear switch guard). Rod suspended systems must be sway braced.





Switch Layout

200 Series Curves

TC/American Crane offers a wide variety of standard curves to meet most monorail layouts. Special curves are easily provided to meet almost any radius and degree of bend.

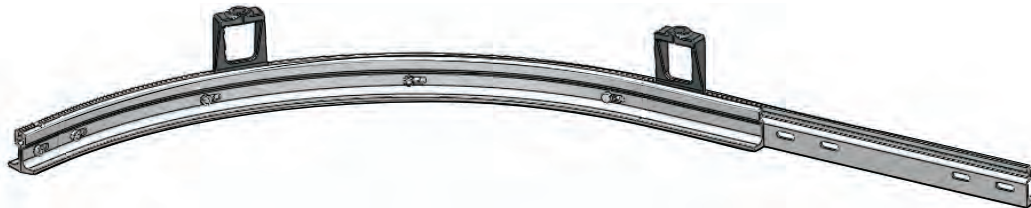
Standard curves are shown in this catalog; special curves are made to order. The following table applies to all 200 Series 2R3-5T girder rails:

Minimum Radius for Standard and Special Curves		
Curve Type	Conductor Bar	Min. Radius
Non-Electrified	None	1' – 2"
Electrified*	Shielded Channel-Bar	2' – 6"
	Shielded Channel-Bar, Hi-Temp	4' – 0"
	Figure-8	2' – 0"
	Figure-8, Hi-Temp	4' – 0"
Electrified, Bottom Contact	Shielded Channel-Bar	4' – 0"
	Shielded Channel-Bar, Hi-Temp	4' – 0"
	Figure-8	3' – 0"
	Figure-8, Hi-Temp	4' – 0"

* Reinforced curves must be minimum 11" deep



**Curve for use in either left or right turns
with lap splice preparation on each end.**



**Right hand curve (rail runs to the right from a switch)
with a switch connection preparation on one end and lap splice preparation on the other end.**

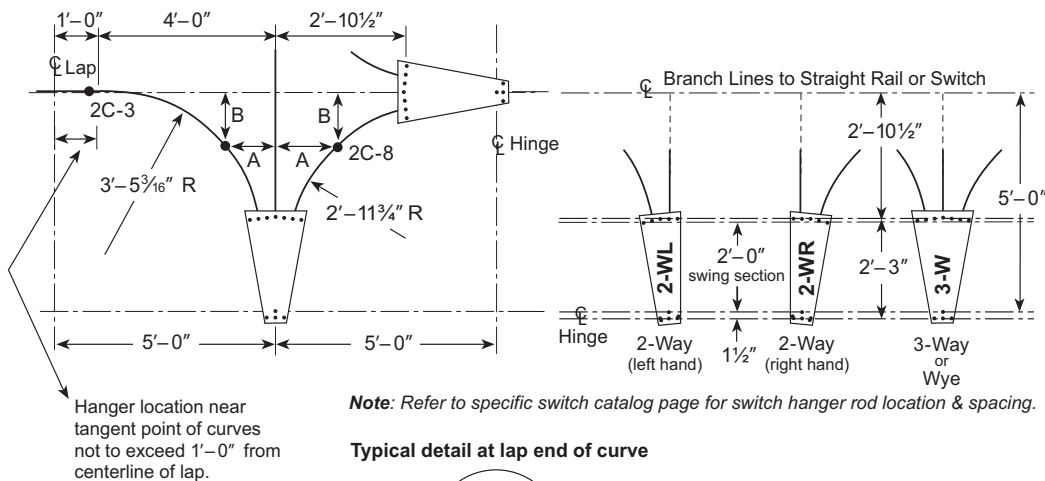
Standard Radius Curves for Non-Electrified Tongue Switches

These standard curves are used in monorail layouts that permit spacing of five feet (60") from the intersection of the tangent lines to the center of the lap splice or to the switch hinge point.

Note See curve/figures layout on following page (p. D-17)

Standard Radius Curves for Non-Electrified Tongue Switches

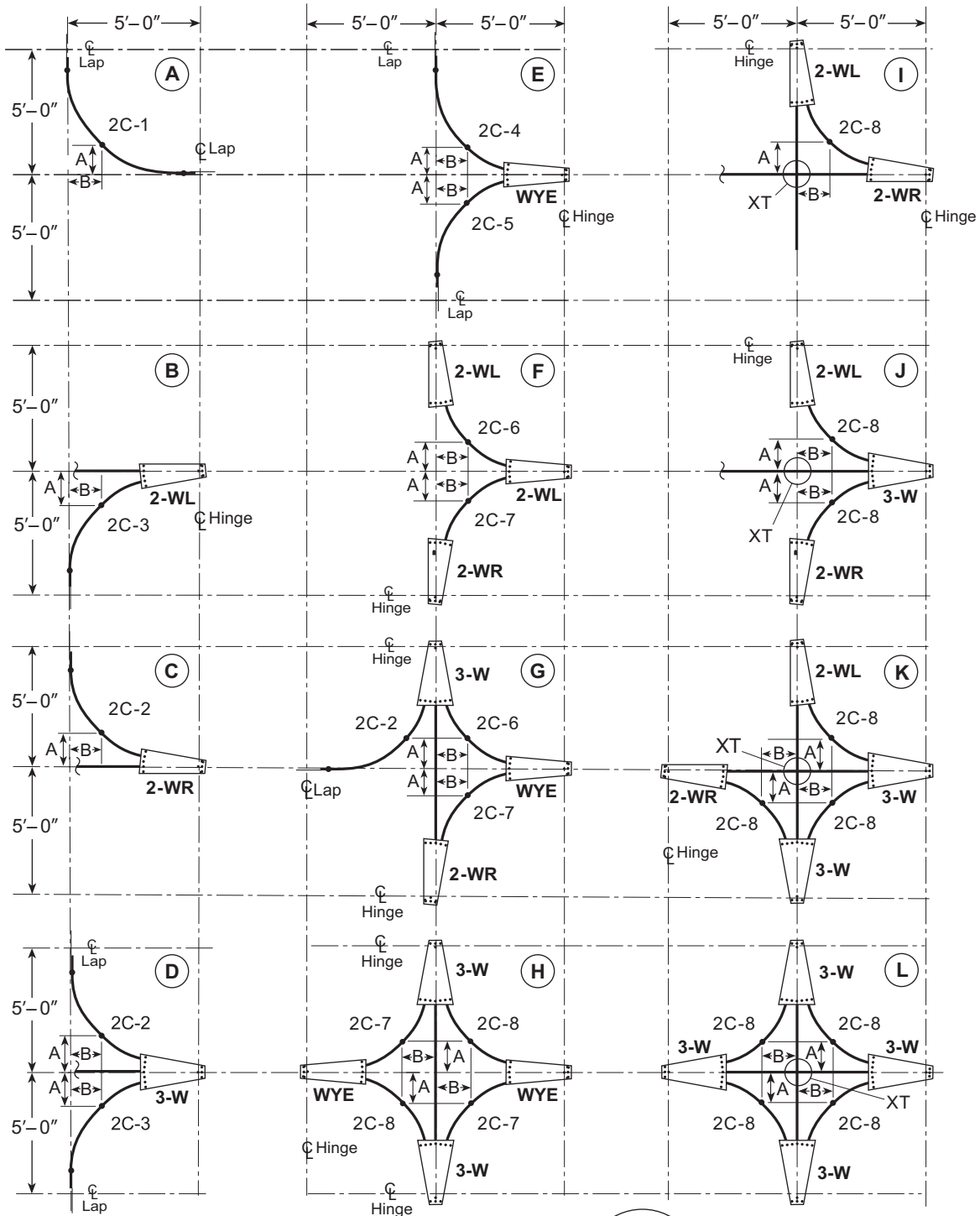
Part #	Curve #	Radius	Weight (lbs.)	Curve Type (see layouts)	Curve Support Points		
					Figure	A	B
10-2175-00	2C-1	3'-9"	40	90 degree	A	1'-13 ¹ / ₁₆ "	1'-13 ¹ / ₁₆ "
10-2176-00	2C-2	3'-5 ³ / ₁₆ "	30	Switch Curve, RH	B	1'-4 ¹ / ₈ "	1'-0 ³ / ₈ "
10-2177-00	2C-3	3'-5 ³ / ₁₆ "	30	Switch Curve, LH	C	1'-4 ¹ / ₈ "	1'-0 ³ / ₈ "
10-2178-00	2C-4	3'-0 ⁹ / ₁₆ "	31	Switch Curve, RH Wye	D	1'-1 ¹ / ₁₆ "	10 ¹¹ / ₁₆ "
10-2179-00	2C-5	3'-0 ⁹ / ₁₆ "	31	Switch Curve, LH Wye	E	1'-1 ¹ / ₁₆ "	10 ¹¹ / ₁₆ "
10-2180-00	2C-6	2'-6 ¹ / ₄ "	16	Switch-to-Switch, RH Wye	F	1'-1"	1'-1"
10-2181-00	2C-7	2'-6 ¹ / ₄ "	16	Switch-to-Switch, LH Wye	G	1'-1"	1'-1"
10-2182-00	2C-8	2'-11 ³ / ₄ "	20	Switch-to-Switch, RH/LH, Wye	H	1'-3"	1'-3"
10-2182-00	2C-8	2'-11 ³ / ₄ "	20	Switch-to-Switch, RH/LH, Wye	I	1'-3"	1'-3"
10-2182-00	2C-8	2'-11 ³ / ₄ "	20	Switch-to-Switch, RH/LH, Wye	J	1'-3"	1'-3"
10-2182-00	2C-8	2'-11 ³ / ₄ "	20	Switch-to-Switch, RH/LH, Wye	K	1'-3"	1'-3"
10-2182-00	2C-8	2'-11 ³ / ₄ "	20	Switch-to-Switch, RH/LH, Wye	L	1'-3"	1'-3"



Typical Layout for Standard Radius Curves, Non-Electrified Tongue Switches



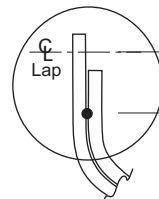
Layout for Non-Electrified Tongue Switch Curves

**Switch Abbreviations**

2-WL = 2-Way Left-Hand
 2-WR = 2-Way Right-Hand
 WYE = 2-Way Wye
 3-W = 3-Way
 XT = Crosstrack

● curve support point

Note: See page D-16 for switch curve support locations.



Hanger location
 near tangent point
 of curves not to
 exceed 1'-0" from
 centerline of lap.

Typical detail at lap end of curve

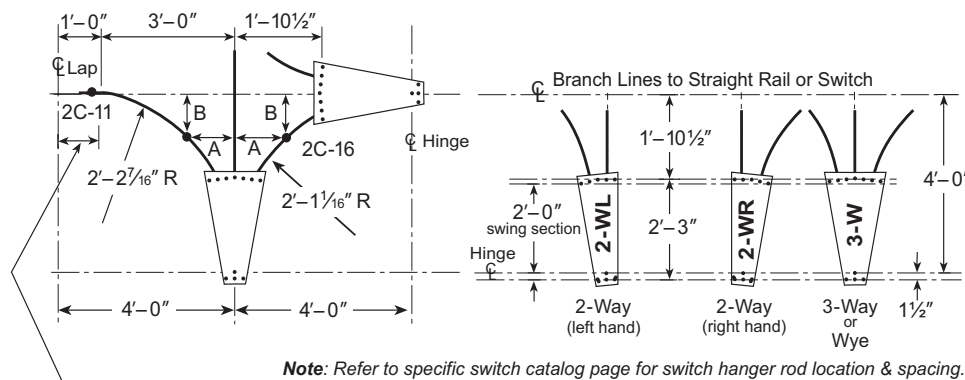
Short Radius Curves for Non-Electrified Tongue Switches

These short radius curves are used in monorail layouts that permit spacing of four feet (48") from the intersection of the tangent lines to the center of the lap splice or to the switch hinge point.

Note See curve/figures layout on following page (p. D-19)

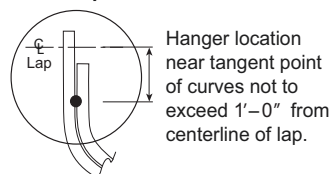
Short Radius Curves for Non-Electrified Tongue Switches

Part #	Curve Number	Radius	Weight (lbs.)	Curve Type (see layouts)	Curve Support Points		
					Figure	A	B
10-2183-00	2C-9	2'-6"	33	90 degree	A	8 ²⁵ / ₃₂ "	8 ²⁵ / ₃₂ "
10-2184-00	2C-10	2'-2 ⁷ / ₁₆ "	22	Switch Curve, RH	B	1'-0"	8 ¹ / ₈ "
10-2185-00	2C-11	2'-2 ⁷ / ₁₆ "	22	Switch Curve, LH	C	1'-0"	8 ¹ / ₈ "
10-2186-00	2C-12	1'-11 ⁵ / ₁₆ "	25	Switch Curve, RH Wye	D	1'-0"	8 ¹ / ₈ "
10-2187-00	2C-13	1'-11 ⁵ / ₁₆ "	25	Switch Curve, LH Wye	E	9 ¹ / ₈ "	7"
10-2188-00	2C-14	1'-8 ¹⁵ / ₁₆ "	14	Switch-to-Switch, RH Wye	F	9 ⁷ / ₈ "	9 ⁷ / ₈ "
10-2189-00	2C-15	1'-8 ¹⁵ / ₁₆ "	14	Switch-to-Switch, LH Wye	G	9 ⁷ / ₈ "	9 ⁷ / ₈ "
10-2190-00	2C-16	2'-11 ¹ / ₁₆ "	12	Switch-to-Switch, RH/LH, Wye	H	9 ⁷ / ₈ "	9 ⁷ / ₈ "
					I	11 ³ / ₈ "	11 ³ / ₈ "
					J	11 ³ / ₈ "	11 ³ / ₈ "
					K	11 ³ / ₈ "	11 ³ / ₈ "
					L	11 ³ / ₈ "	11 ³ / ₈ "



Hanger location near tangent point of curves not to exceed 1'-0" from centerline of lap.

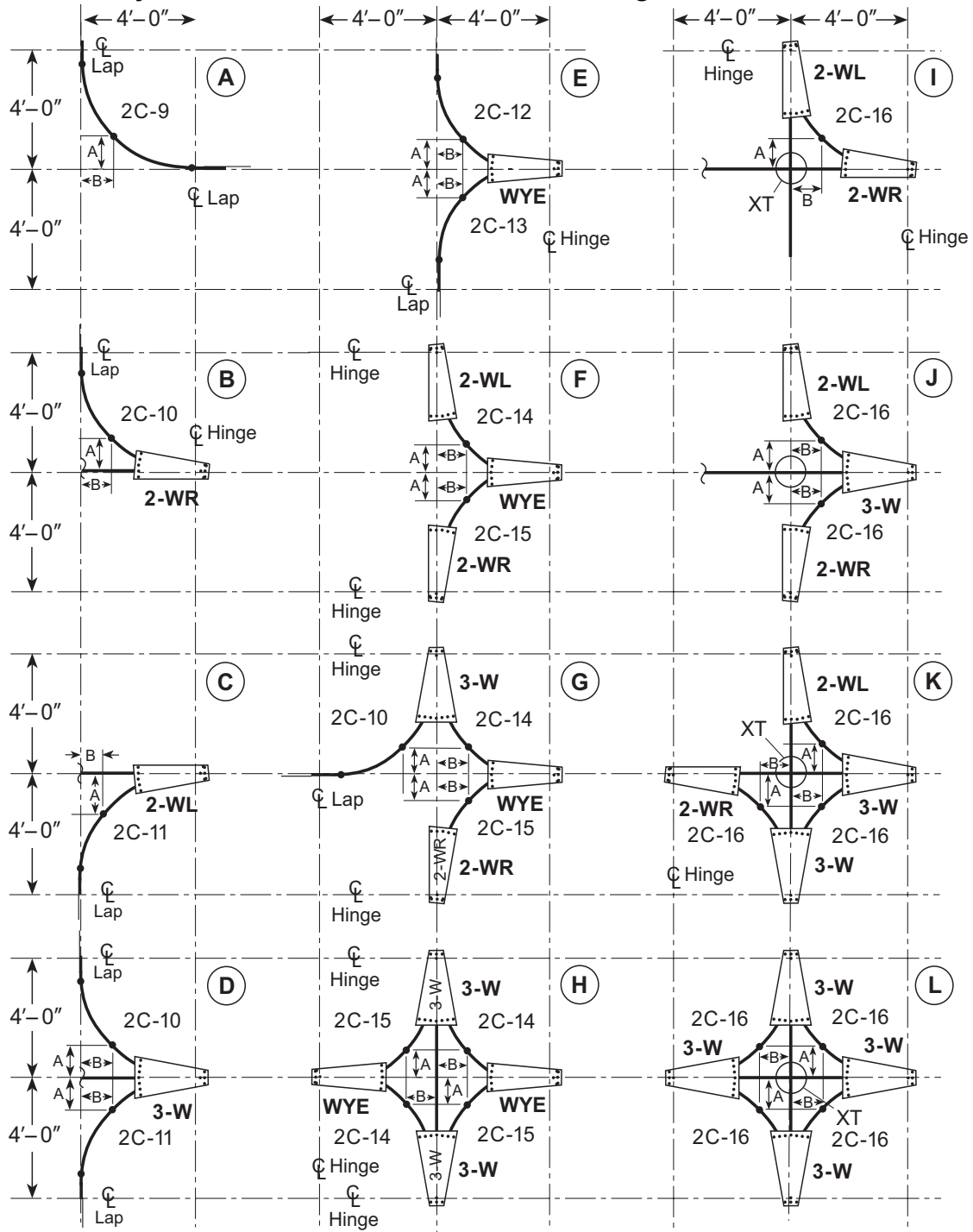
Typical detail at lap end of curve



Typical Layout for Short Radius Curves, Non-Electrified Tongue Switches



Layout for Short Radius Non-Electrified Tongue Switch Curves

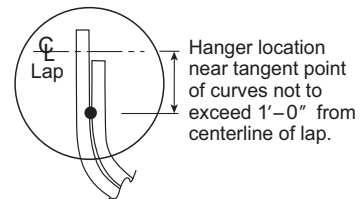


Switch Abbreviations

2-WL = 2-Way Left-Hand
 2-WR = 2-Way Right-Hand
 WYE = 2-Way Wye
 3-W = 3-Way
 XT = Crosstrack

● curve support point

Note: See page D-18 for switch curve support locations.



Typical detail at lap end of curve

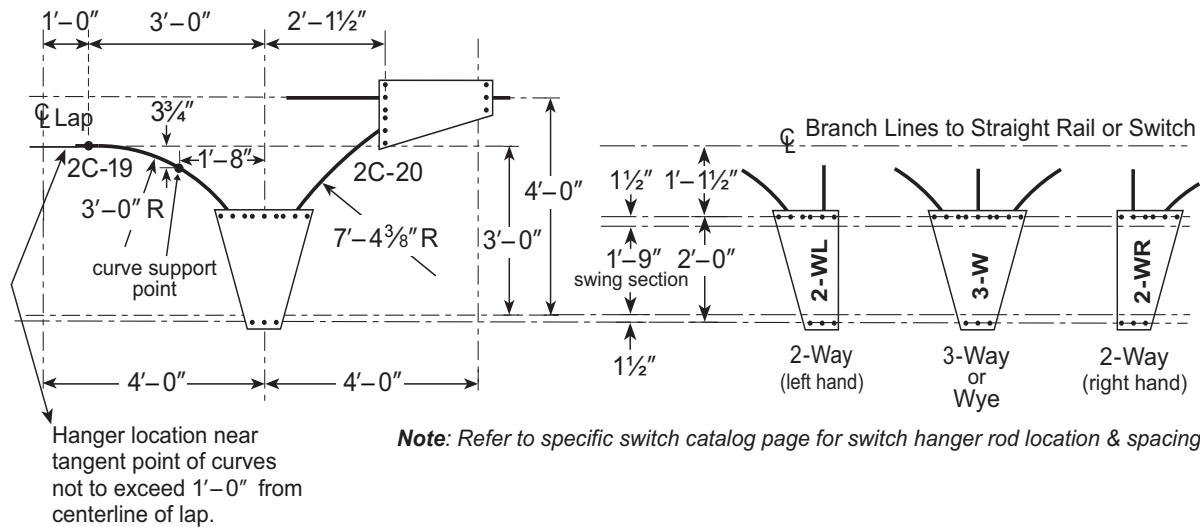
Standard Radius Curves for Non-Electrified Glide Switches

Standard Glide Switch curves have a 3-foot radius (except for switch-to-switch curves). This allows a 3-foot spacing from the entrance of the switch to the tangent line of the curve.

Note See curve/figures layout on following page (p. D-21)

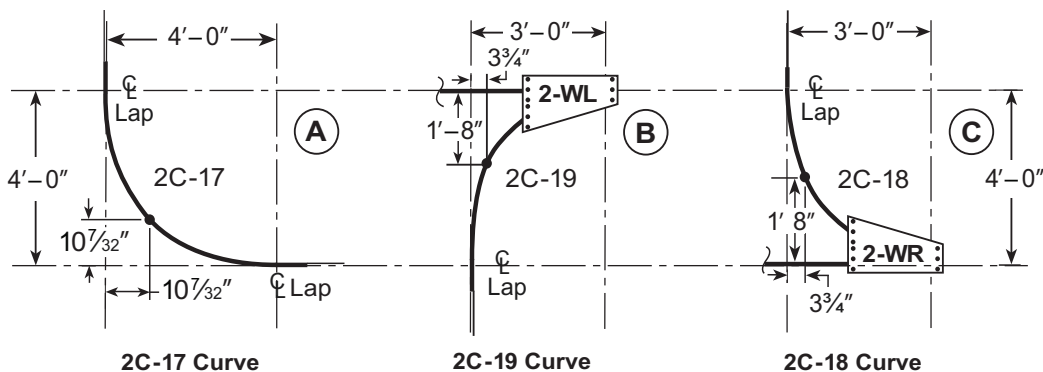
Standard Radius Curves for Non-Electrified Glide Switches

Part #	Curve Number	Radius	Weight (lbs.)	Curve Type (see layouts)
10-2191-00	2C-17	3'-0"	34	90 degree
10-2192-00	2C-18	3'-0"	19	Switch Curve, RH
10-2193-00	2C-19	3'-0"	19	Switch Curve, LH
10-2194-00	2C-20	7'-4 ³ / ₈ "	12	Switch-to-Switch



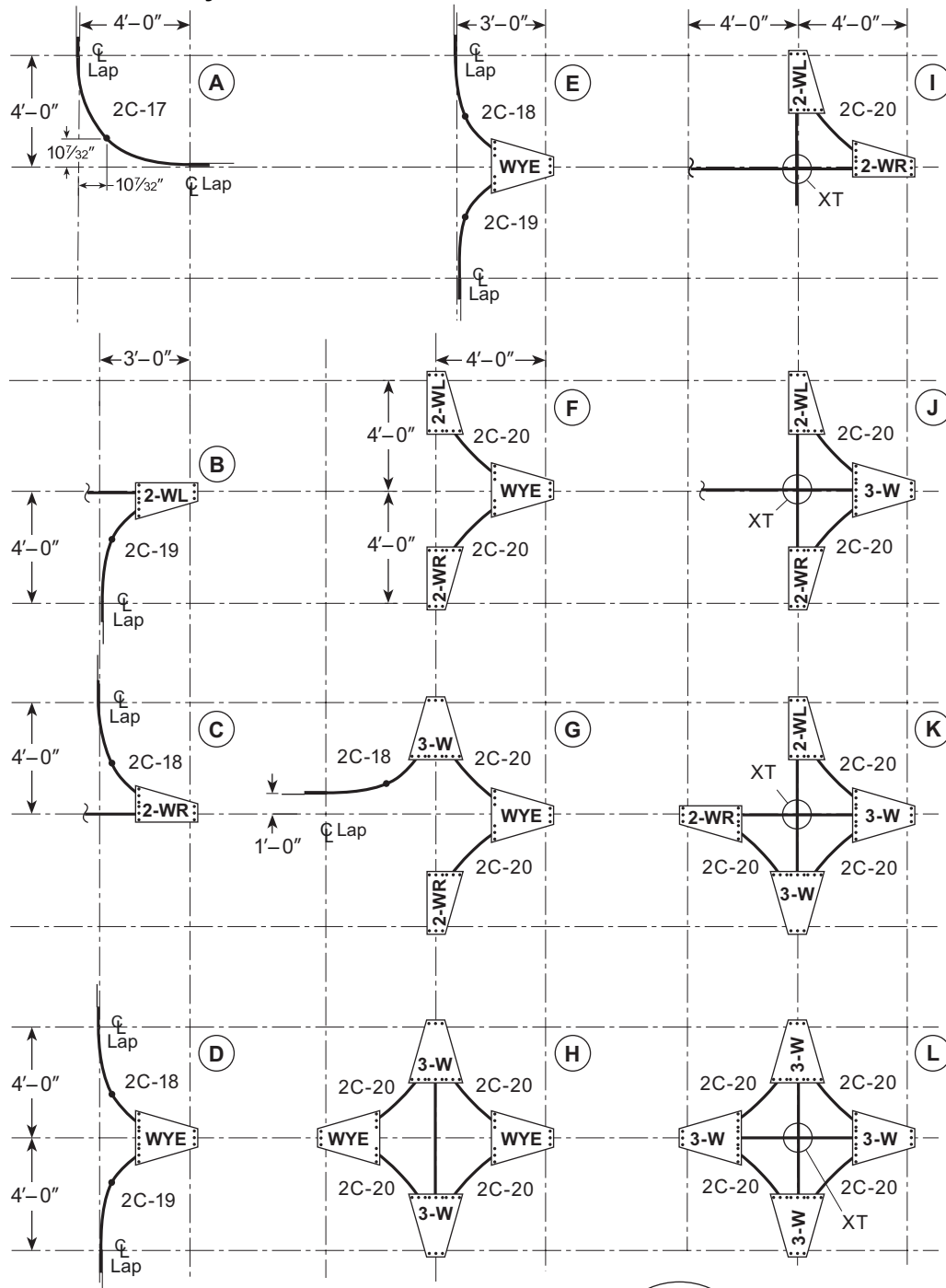
Typical Layout for Standard Curves, Non-Electrified Glide Switches

Note 2C-20 Curves are supported only at the switch ends; do not require a mid-point support.





Layout for Non-Electrified Glide Switch Curves

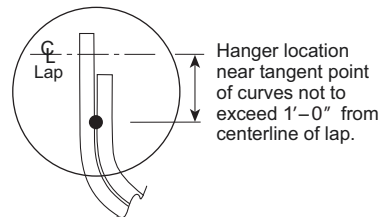


Switch Abbreviations

- 2-WL = 2-Way Left-Hand
- 2-WR = 2-Way Right-Hand
- WYE = 2-Way Wye
- 3-W = 3-Way
- XT = Crosstrack
- curve support point

Note: See page D-20 for switch curve support locations.

2C-20 Curves are supported only at the switch ends;
do not require a mid-point support.



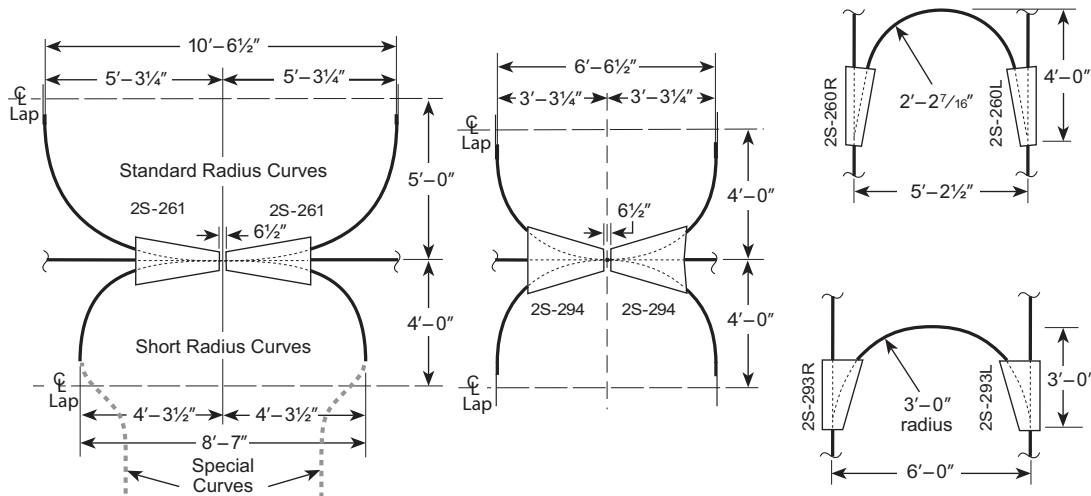
Typical detail at lap end of curve

Typical Minimum Spacing Layout for Non-Electrified Tongue & Glide Switches

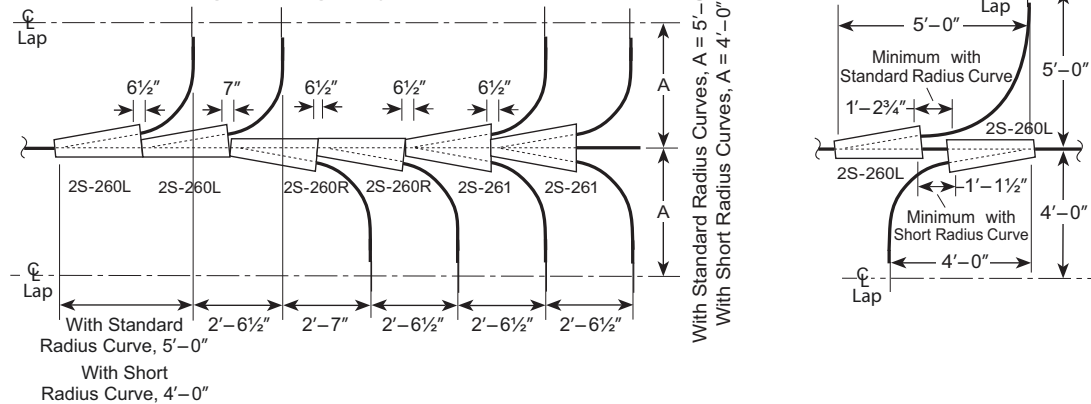
The dimension shown between switches (end-to-end) is the minimum length of a piece of 2R3-5T, 200 Series Rail, Type 2 (switch connection on each end) used to connect the switches together. It is also the minimum distance required for adequate clearance between switches.

For tongue and glide switch dimensions (and switch and curve support locations) see appropriate catalog pages.

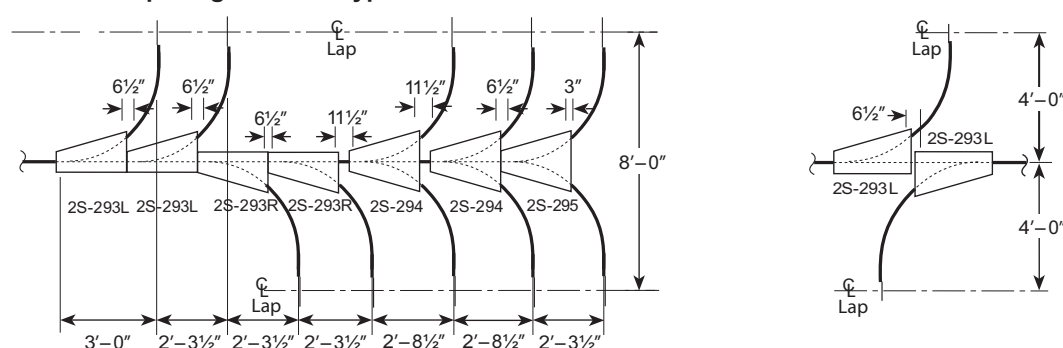
Note Support arms for the switch pull ropes normally extend to both sides of a switch which, in some of the layouts shown, may cause interference with an adjacent switch and curve. Switches may be ordered with both pull ropes on one side of the switch (see Price List for part #s). Alternatively, the pull ropes may need to be field mounted to avoid interference or for operator accessibility.



Minimum Spacing for Tongue Type Switches and Curves



Minimum Spacing for Glide Type Switches and Curves



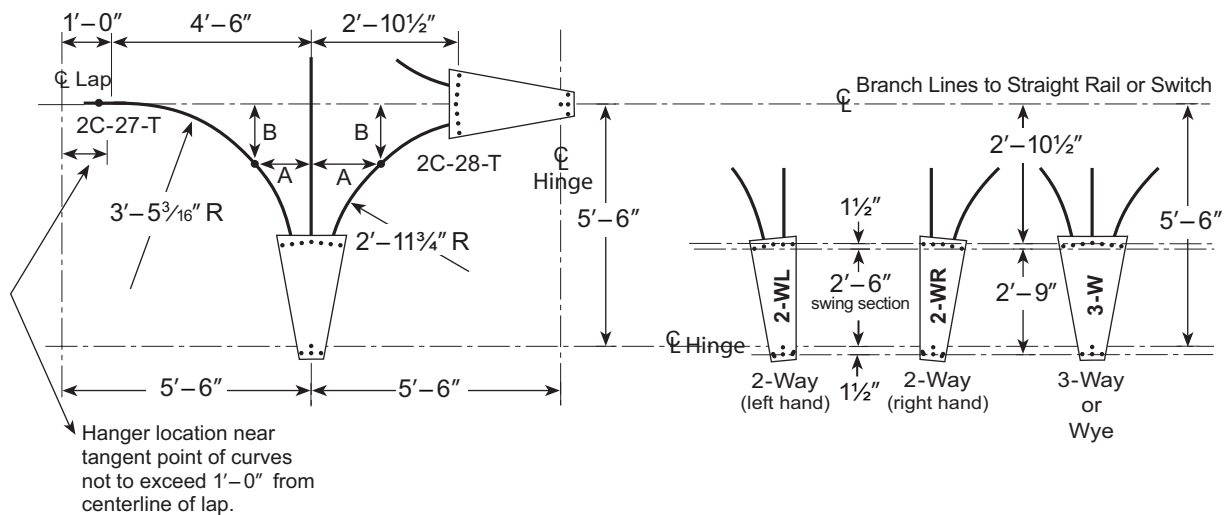
Standard Curves for Electrified Tongue Switches

Standard curves for Electrified Tongue Switches are provided with 4 bars of TC/American. Shielded Channel-Bar conductor bars. Optional Figure-8 conductor bars are available.

Note See curve/figures layout on following page (p. D-24).

Standard Curves for Electrified Tongue Switches

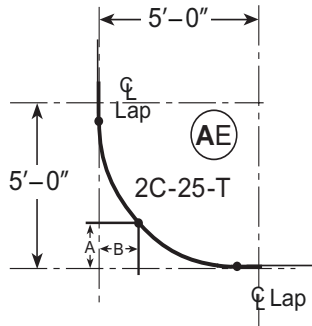
Part #	Curve Number	Radius	Weight (lbs.)	Curve Type (see layouts)	Curve Support Points		
					Figure	A	B
10-2199-01	2C-25-T	3'-9"	105	90 degree	AE	1'-3 ²³ / ₃₂ "	1'-1 ²⁹ / ₃₂ "
10-2200-01	2C-26-T	3'-5 ³ / ₁₆ "	77	Switch Curve, RH	BE	1'-3 ²³ / ₃₂ "	1'-1 ²⁹ / ₃₂ "
10-2201-01	2C-27-T	3'-5 ³ / ₁₆ "	77	Switch Curve, LH	CE	1'-3 ²³ / ₃₂ "	1'-1 ²⁹ / ₃₂ "
10-2202-01	2C-28-T	2'-10 ⁷ / ₁₆ "	55	Switch-to-Switch	DE	1'-3 ²³ / ₃₂ "	1'-1 ²⁹ / ₃₂ "
					EE	1'-3 ²¹ / ₃₂ "	1'-1 ²¹ / ₃₂ "



Typical Layout for Standard Curves, Electrified Tongue Switches

Layout for Electrified Tongue Switch Curves

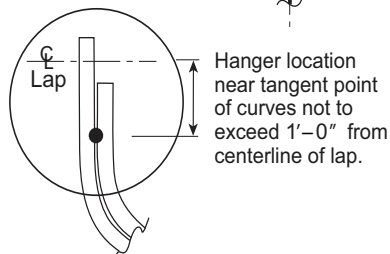
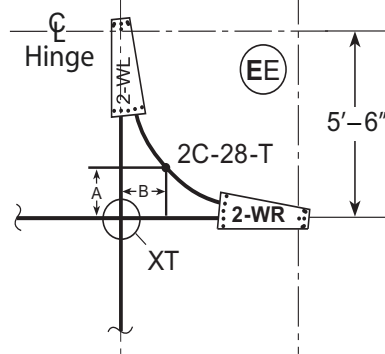
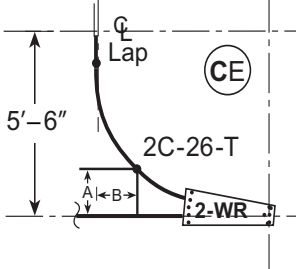
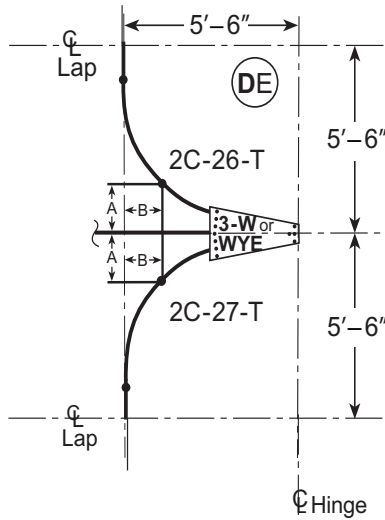
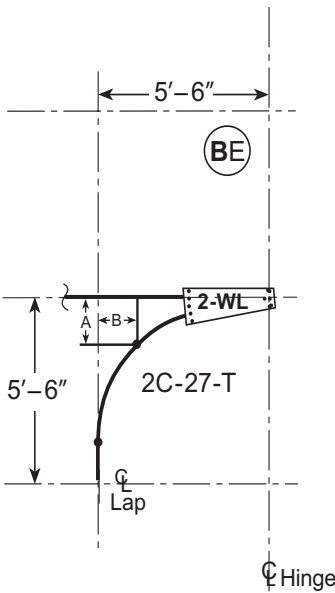
Note Use caution when laying out a monorail with multiple Electrified Switches to avoid the possibility of electrical phase reversal.



Switch Abbreviations

2-WL = 2-Way Left-Hand
 2-WR = 2-Way Right-Hand
 WYE = 2-Way Wye
 3-W = 3-Way
 XT = Crosstrack
 ● curve support point

Note: See page D-23 for switch curve support locations.



Typical detail at end of curve



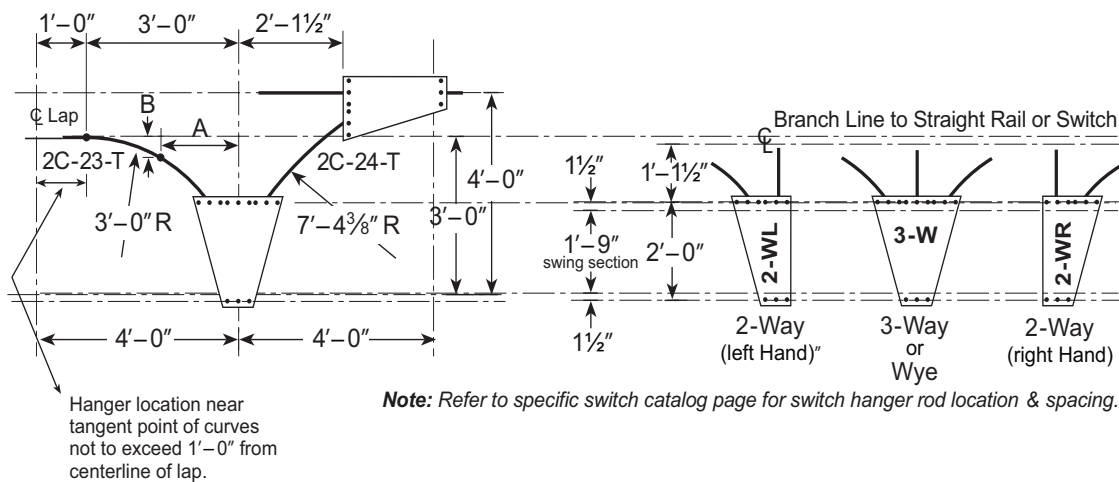
Standard Curves for Electrified Glide Switches

Standard curves for Electrified Glide Switches are provided with 4 bars of TC/American. Shielded Channel-Bar conductor bars. Optional Figure-8 conductor bars are available.

Note See curve/figures layout on following page (p. D-26)

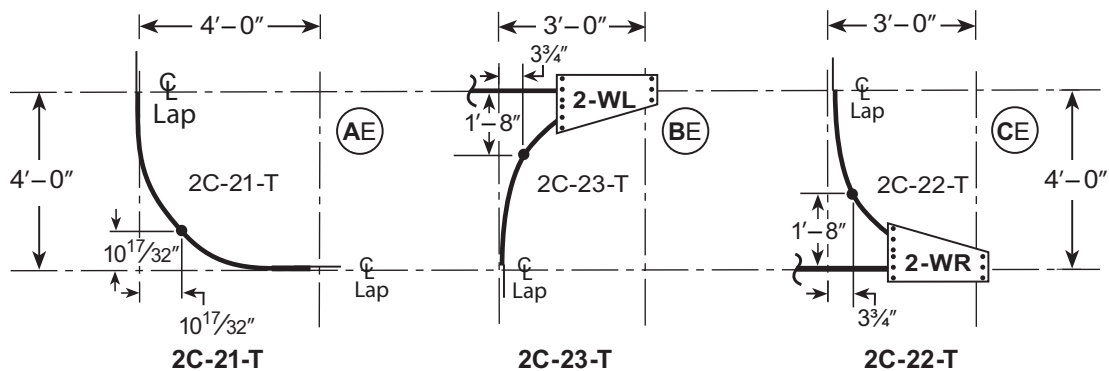
Curves for Glide Switches

Part #	Curve #	Radius	Weight (lbs.)	Curve Type (see layouts)
10-2195-01	2C-21-T	3'-0"	79	90 degree
10-2196-01	2C-22-T	3'-0"	58	Switch Curve, RH
10-2197-01	2C-23-T	3'-0"	58	Switch Curve, LH
10-2198-01	2C-24-T	7'-4 ³ / ₈ "	34	Switch-to-Switch



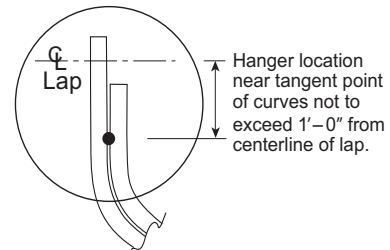
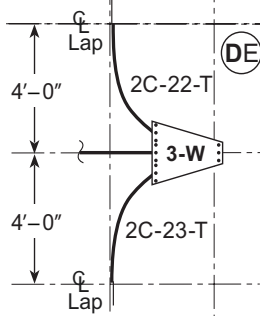
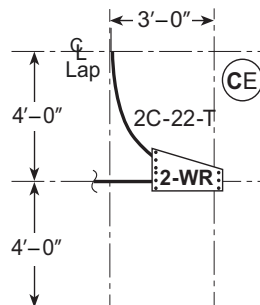
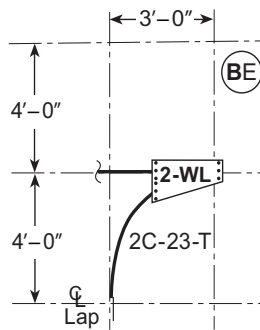
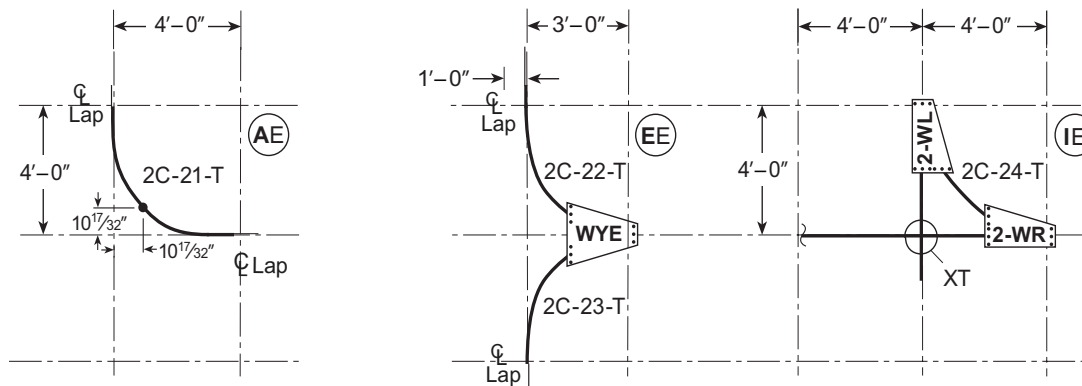
Typical Layout for Standard Curves, Electrified Glide Switches

Note 2C-24-T Curves are supported only at the switch ends; do not require a mid-point support.

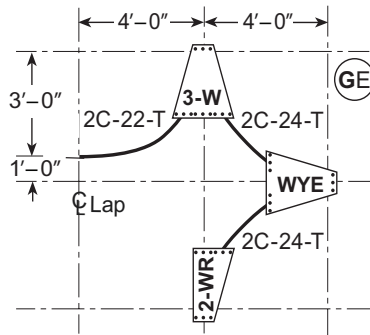


Layout for Electrified Glide Switch Curves

Note Use caution when laying out a monorail with multiple Electrified Switches to avoid the possibility of electrical phase reversal)



Typical detail at lap end of curve



Switch Abbreviations

- 2-WL = 2-Way Left-Hand
- 2-WR = 2-Way Right-Hand
- WYE = 2-Way Wye
- 3-W = 3-Way
- XT = Crosstrack
- curve support point

Note: See page D-25 for switch curve support locations.
2C-24-T Curves are supported only at the switch ends;
do not require a mid-point support.



600 Series Glide Switches

600 Series Glide Switch Description and Features

600 Series Glide Switches are for use with "L" Series Rail only. Rail within the switch is either 3RL8-16 (non-electrified) or 3RL13-22 (electrified).

Standard curves are 3' – 0" radius.

- Rigid Outer Frame for support to building steel or auxiliary structure via hanger rods or bolted connections
- Incoming & outgoing rails bolted directly to Switch Outer Frame; shim as required for tread alignment to switch rails (*shims provided*)
- Moveable (sliding) Inner Frame with straight and/or curved rail sections (*eccentric adjusting nuts provide alignment of inner frame*)
- Manually operated switch movement via pull ropes connected to Inner Frame & Latch mechanism; 12' rope included (*other lengths available*)
- Positive Latch Mechanism holds moving switch section securely in place until released by pull rope
Note: 3-Way Switches latch at center position when shifting from Left or Right and require a second pull to shift completely from one side to other.
- Open ends of rails protected by guards/baffles attached to switch to prevent trolleys from coming off
- Switches may be ordered Electrified or Non-Electrified (*with/without conductor bars*)
- Electrified switches wired per National Electric code with NEMA 1 type enclosures

(Standard conductor bar = TC/American Shielded Channel-Bar, 4-bar, side contact, at 7½" gauge)
Switches shop wired with power feeds on each bar, with leads to junction box mounted on switch frame. Wire connectors in junction box provided by others; switch circuit protection by others. Proper phasing is the responsibility of the electrical installer.

- Standard finish = TC/American gray-green enamel

Options

- Air Operated (*see page D-60*)
- Motor Operated (*special order: see page D-60*)
- Spark Resistant

Note Switches are **not** to be operated with trolley or load on the moving section.

*Maximum Trolley Wheel Diameter = 4½"
(up to 3T-5400-4 / -4SR trolleys)*

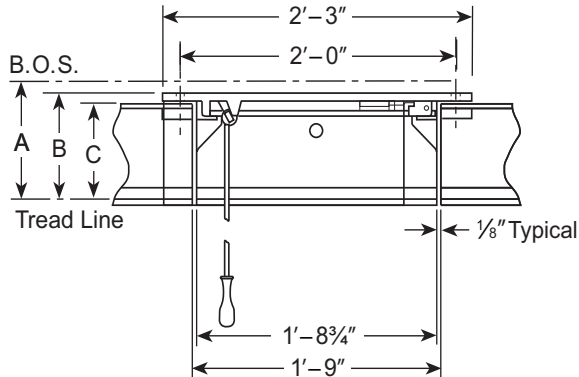
Use with drivetractors with 4" dia. trolley wheels only.

See Section "H", Single Girder Hoist Carriers, for information regarding hoist carrier wheelbase to curve radius ratio.

Glide Switches

See "600 Series Glide Switches" on page D-27 for overview information.

Specifications



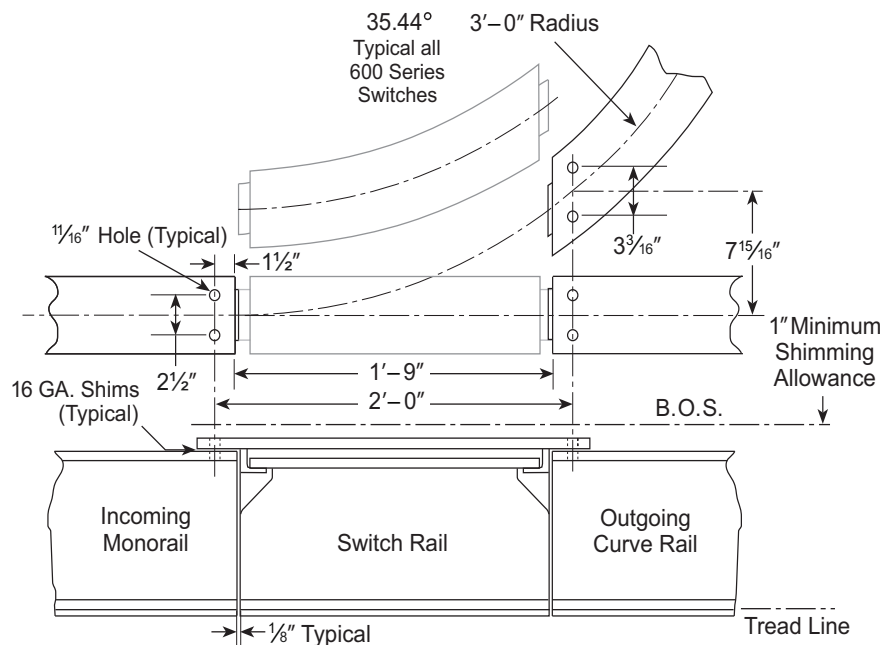
2-Way, 3-Way and Wye Side View

Dimensions

Dimensions	Electrified	Non-Electrified
A	1' - 2 3/8"	9 1/4"
B	1' - 1 3/8"	8 1/4"
C	1' - 0 1/2"	7 3/8"

Part #	Model	Weight	Max Load on Switch*
Non-Electrified			
10-2957-01	3S-693-L2 (Left Hand)	246 lbs.	5000 lbs.
10-2941-01	3S-693-R2 (Right Hand)	246 lbs.	5000 lbs.
10-2981-00	3S-694-2 (3-Way)	241 lbs.	5000 lbs.
10-2982-01	3S-695-2 (Wye)	253 lbs.	5000 lbs.
10-1298-00	3S-625-2 (Cross Track)	150 lbs.	5000 lbs.
Electrified			
10-2985-11	3ES-696-L2 (Left Hand)	295 lbs.	5000 lbs.
10-2984-11	3ES-696-R2 (Right H)	295 lbs.	5000 lbs.
10-2986-01	3ES-697-2 (3-Way)	317 lbs.	5000 lbs.
10-2987-11	3ES-698-2 (Wye)	304 lbs.	5000 lbs.
10-2206-00	3ES-625-2 (Cross Track)	166 lbs.	5000 lbs.

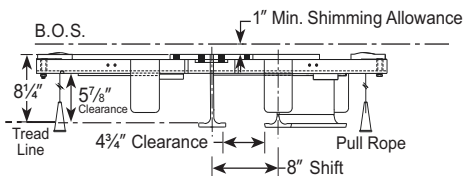
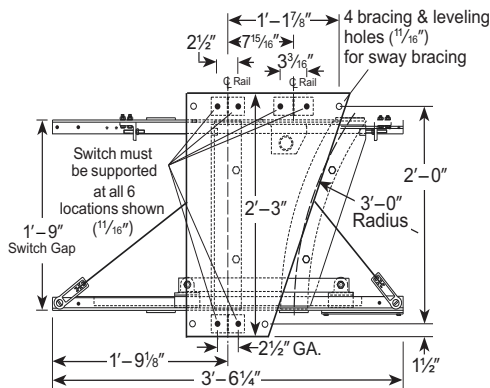
* 1000 lb. load per 4" wheel with 6" min. wheelbase;
1250 lb. load per 4 1/2" wheel with 14" min. wheelbase



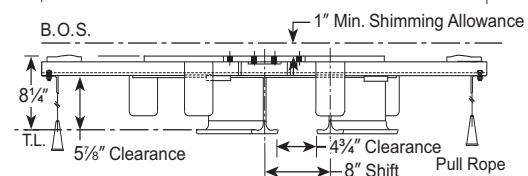
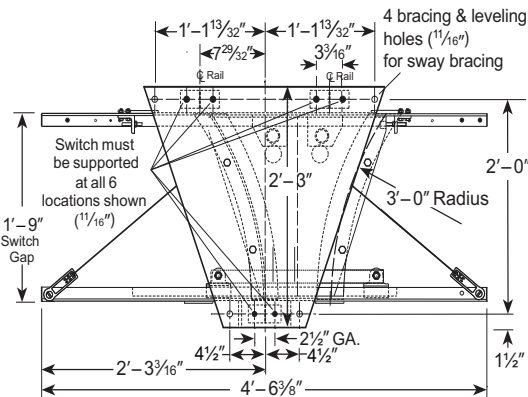
Typical 600 Series Switch Connection



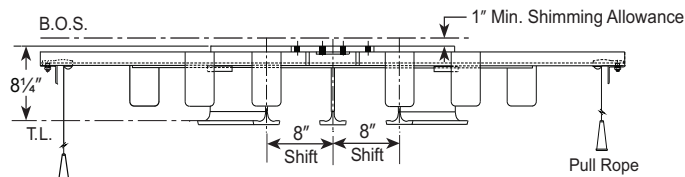
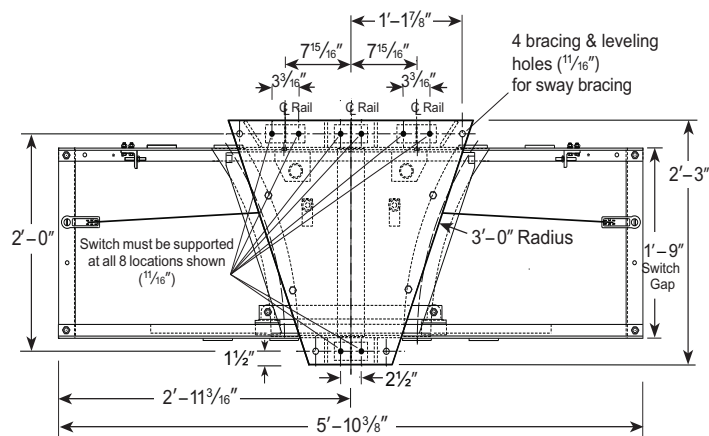
Non-Electrified Glide Switches



3S-693-2 Two-Way
(right hand view shown)
10-2957-01 (Left, Non-Electrified)
10-2941-01 (Right, Non-Electrified)

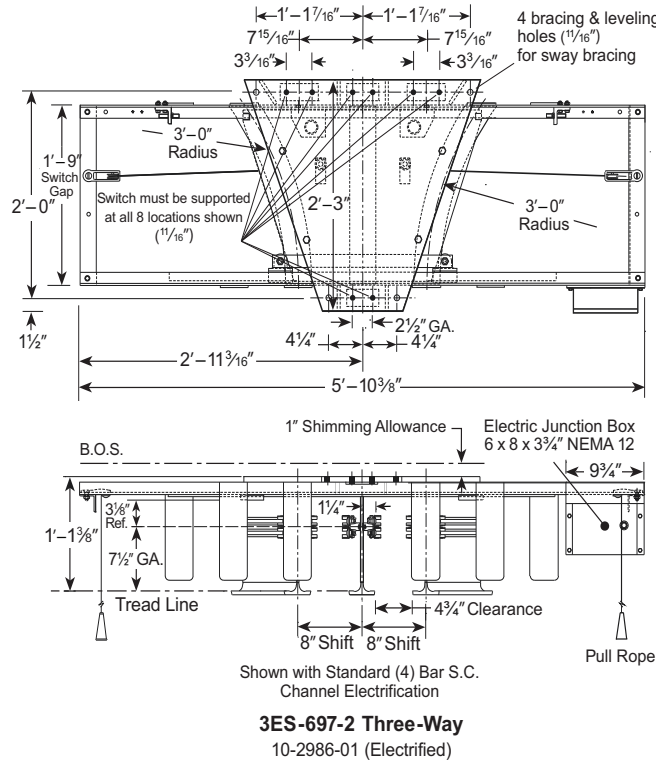
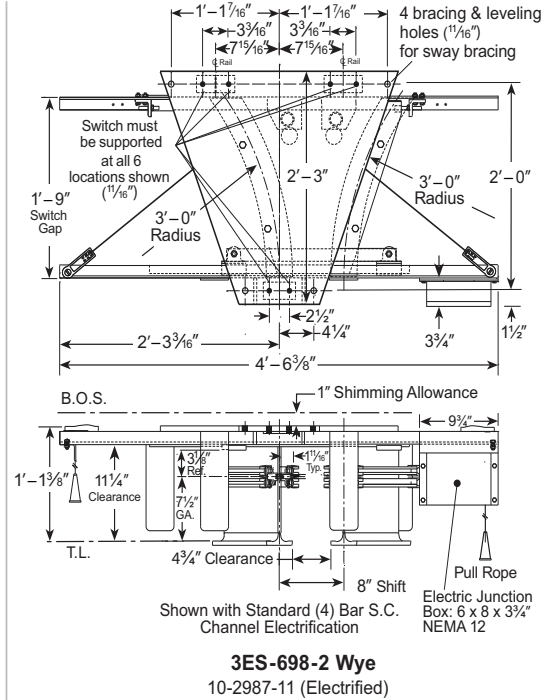
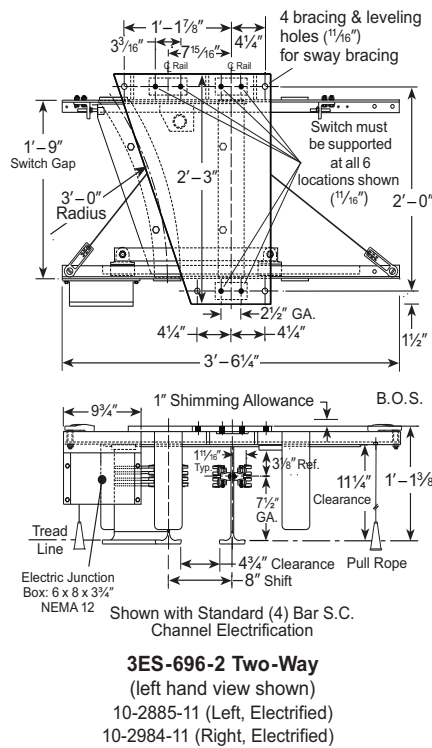


3S-695-2 Wye
10-2982-01 (Non-Electrified)



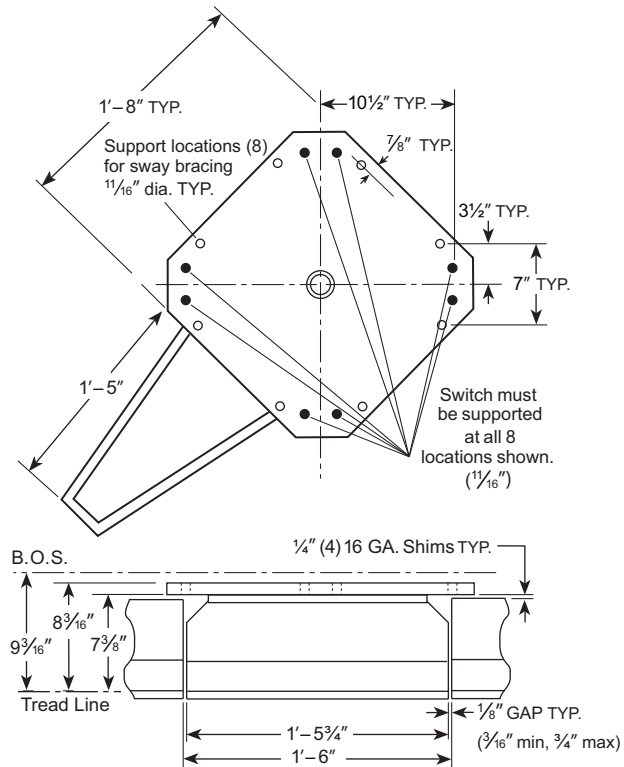
3S-694-2 Three-Way
10-2982-01 (Non-Electrified)

Electrified Glide Switches



**3S-625-2 Cross Track Switch**

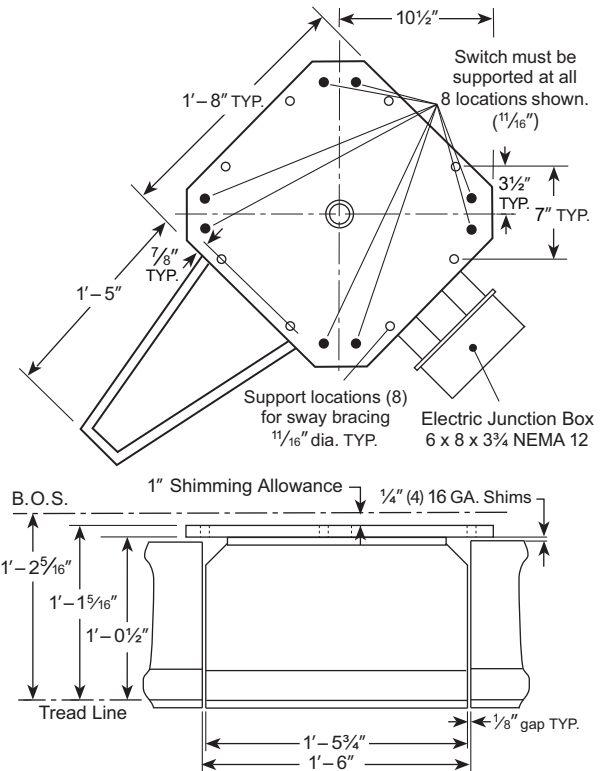
10-1298-00 (Non-Electrified)



Note Cross Track Switches are not designed to be operated with a load on the switch.

3ES-625-2 Cross Track Switch

10-2206-00 (Electrified)



Note Cross Track Switches are not designed to be operated with a load on the switch.

Switch Layout

600 Series Curves

Features

- All curves = 3'-0" radius
- "L" Series Rail only
- Top flanges = 4" wide
- Top flange holes in 600 Series curves provided only at switch connection end — for bolting to switch frame

All other top flange holes must be ordered — specify type, size & location (*add to curve price*)

- Splice holes in web provided at curve ends with splice preparation
- Standard Electrified Curves include:
4-bar Shielded Channel-Bar electrification, mounting holes in web, mounting brackets & power feeds

See "Layout for 600 Series Glide Switches and Curves" on page D-34 and page D-35.

See "Typical Rail Connections to 600 Series Switches" on page D-33.

Note See Section "H", Single Girder Hoist Carriers, for information regarding hoist carrier wheelbase to curve radius ratio.

Non-Electrified Glide Switch Curves

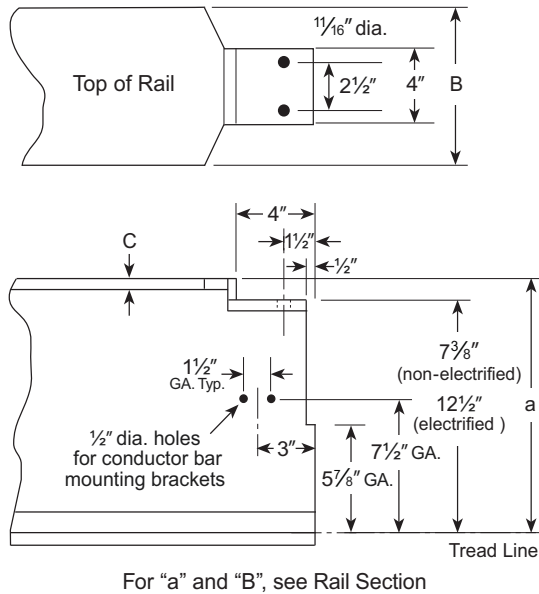
Part #	Curve	Type	Rail	Weight
10-2211-00	3C-600-2	90 Degree Curve	3RL8-16	109 lbs.
25-3356-00	3C-611-2	Switch Curve, LH	3RL8-16	90 lbs.
25-3337-00	3C-612-2	Switch Curve, RH	3RL8-16	90 lbs.
10-2992-00	3C-613-2	Switch-to-Switch	3RL8-16	72 lbs.

Electrified Glide Switch Curves

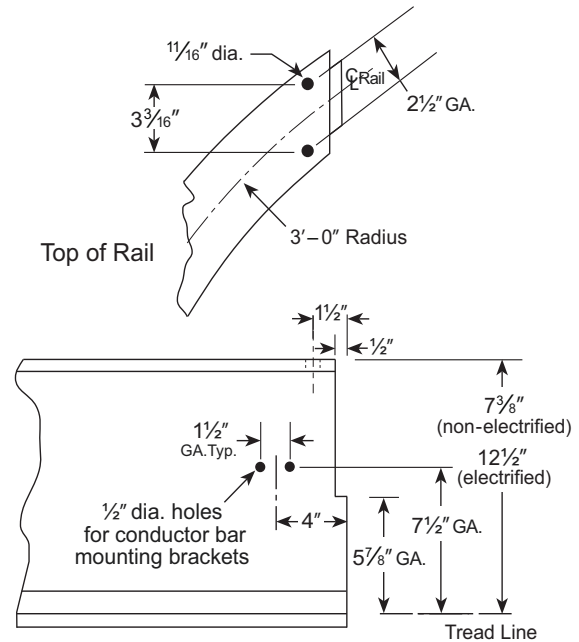
Part #	Curve	Type	Rail	Weight
10-2215-01	3EC-600-2	90 Degree Curve	3RL13-22	197 lbs.
10-2994-01	3EC-611-2	Switch Curve, LH	3RL13-22	130 lbs.
10-2995-01	3EC-612-2	Switch Curve, RH	3RL13-22	130 lbs.
10-2996-01	3EC-613-2	Switch-to-Switch	3RL13-22	106 lbs.



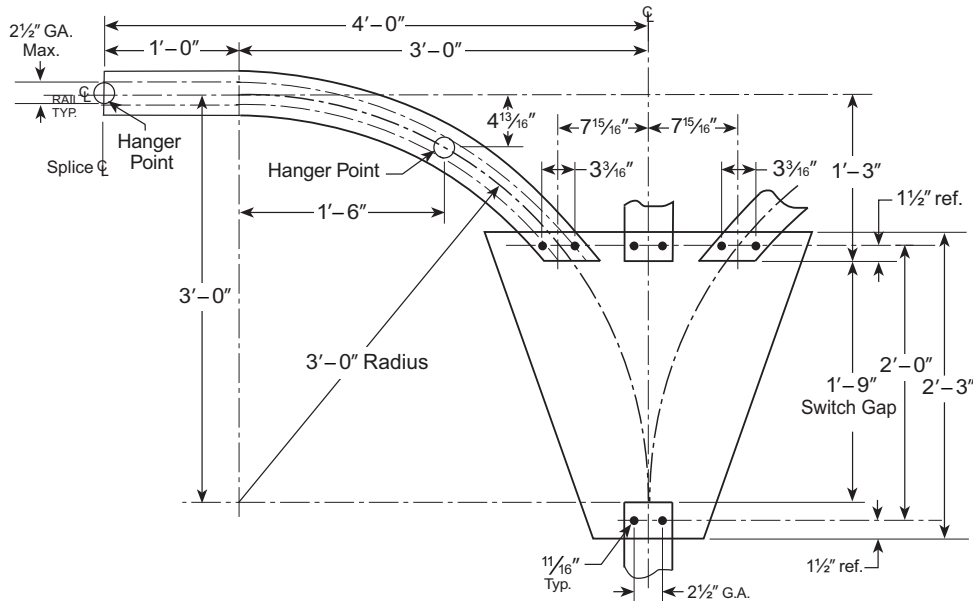
Typical Rail Connections to 600 Series Switches



Straight Rail to Switch



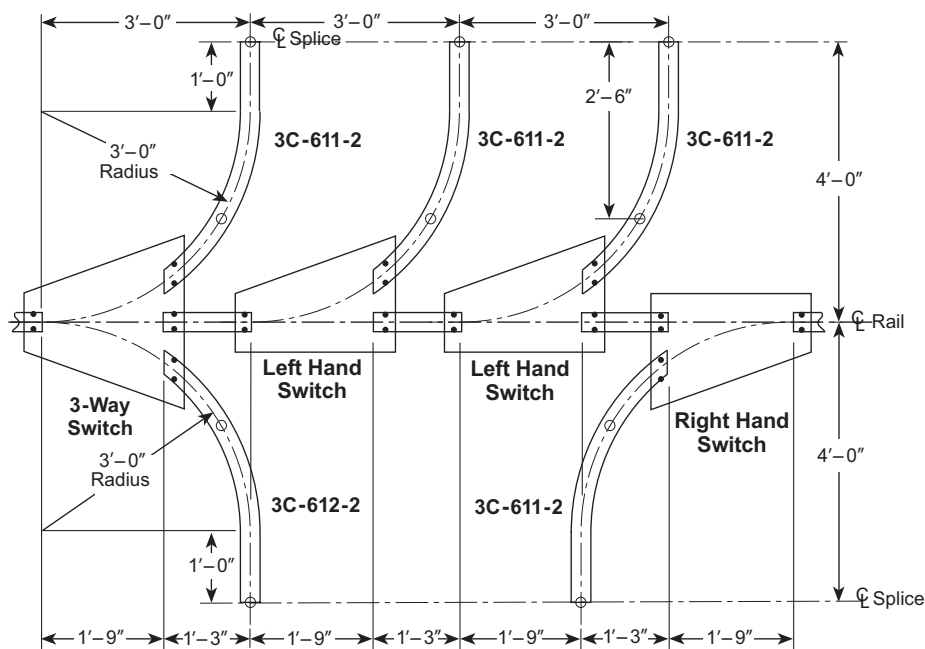
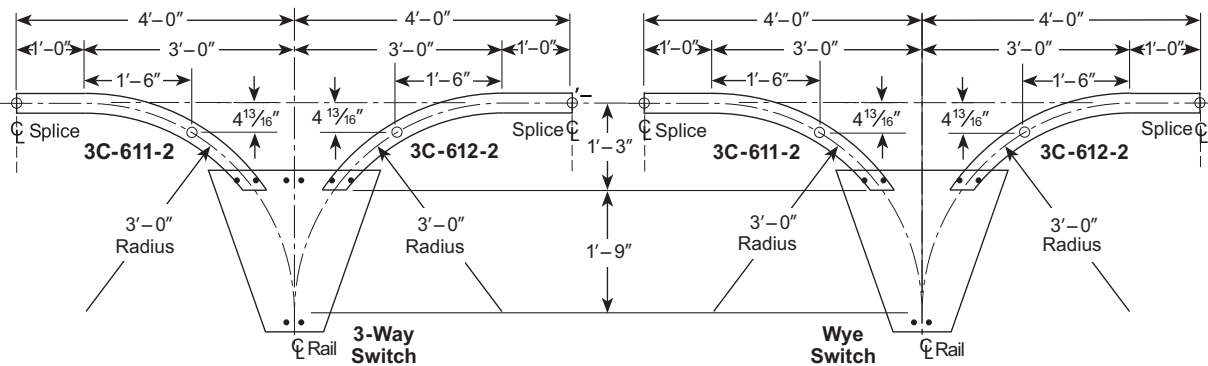
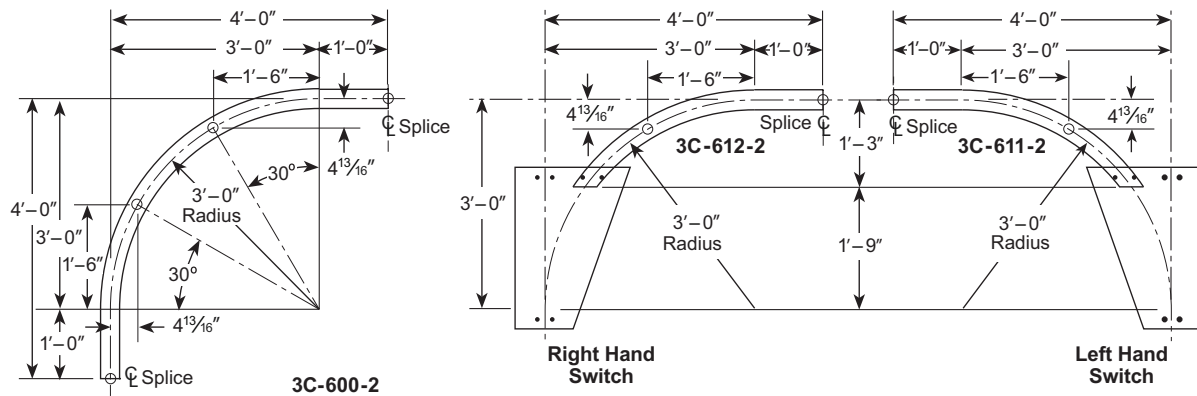
Curve Rail to Switch



Typical Switch Connection

Layout for 600 Series Glide Switches and Curves

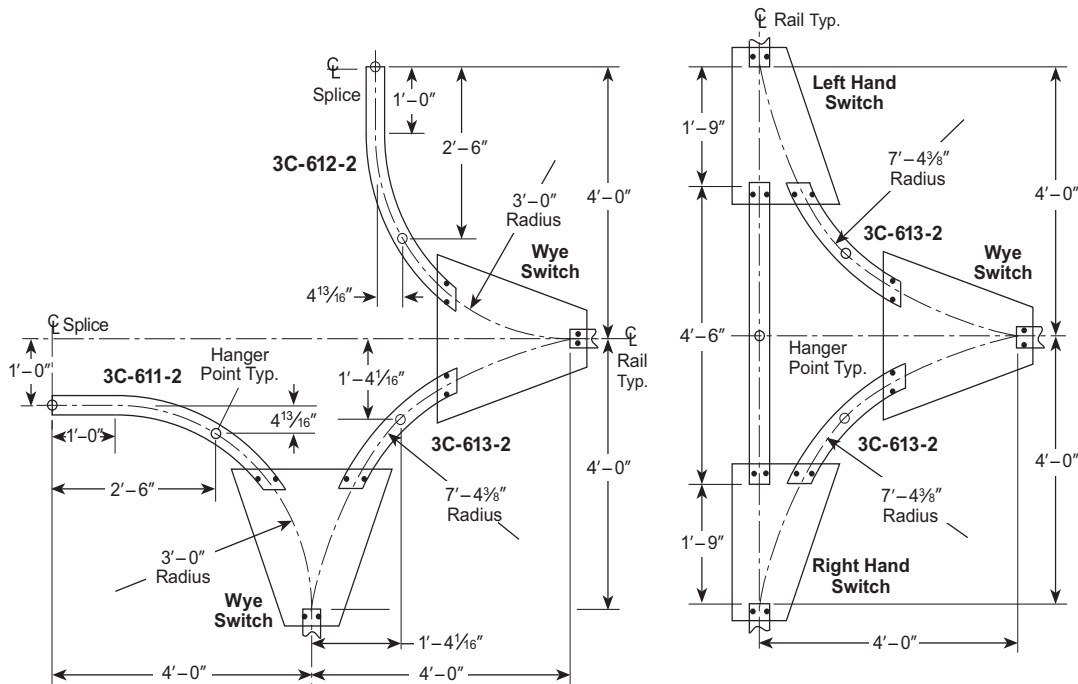
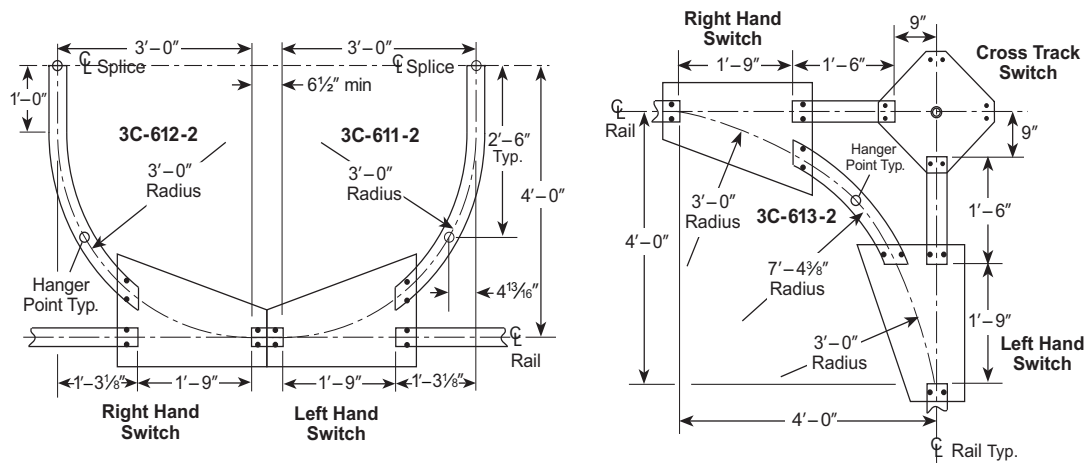
Note Use caution when laying out a monorail with multiple Electrified Switches to avoid the possibility of electrical phase reversal.





Layout for 600 Series Glide Switches and Curves (cont'd)

Note Use caution when laying out a monorail with multiple Electrified Switches to avoid the possibility of electrical phase reversal.



* Not applicable with electrified switches due to phase reversal





800 Series Glide Switches

800 Series Glide Switches may be used with either "L" or "H" Series Rail. Rail within the switch is either 3RL13-22 or 3RH13-30.

Standard curves are 4' – 0" radius.

- Rigid Outer Frame for support to building steel or auxiliary structure via hanger rods or bolted connections
- Incoming & outgoing rails bolt directly to Switch Outer Frame; shim as required for tread alignment to switch rails (*shims provided*)
- Moveable Inner Frame with straight and/or curved rail sections mounted on rollers with eccentric bushings for adjusting alignment of inner frame
- Manually operated switch movement via pull chain connected to Inner Frame & Latch Mechanism; 12' pull chain included (*other lengths available*)
- Positive latch Mechanism holds moving switch section securely in place until released by pull chain
Note: 3-Way Switches latch at center position when shifting from Left or Right; require a second pull to shift completely from one side to the other.
- Open ends of rails are protected by guards/baffles attached to switch to prevent trolleys from coming off
- Switches may be Electrified or Non-Electrified (with/without conductor bars)
- Electrified switches wired per National Electric code with NEMA 1 type enclosures

Standard conductor bar = TC/American Shielded Channel-Bar, 4-bar, side contact, at 7½" gauge

Switches shop wired with power feeds on each bar, with electrical leads back to junction box mounted on switch frame.

Wire connectors in junction box provided by others; switch circuit protection by others.

Proper phasing is responsibility of electrical installer.

- Standard finish = TC/American gray-green enamel

Options

- Air Operated (*see page D-60*)
- Motor Operated (*special order: see page D-60*)
- Spark Resistant

Note Switches are not to be operated with a trolley or load on the moving section.

*Maximum Trolley Wheel diameter = 5"
(up to 3T-12400-4/-4SR or 3T-24800-8/-8SR trolleys) on electrified switches; 6½" diameter on non-electrified switches
(up to 3T-16000-4/-4SR trolleys)*

*Use with all TC/American Crane drive-tractors with up to 5" diameter trolley wheels. Not compatible with Motorized Trolleys
(i.e., "AT" Drives, "A" Drives).*

See Section "H", Single Girder Hoist Carriers, for information regarding hoist carrier wheelbase to curve radius ratio.

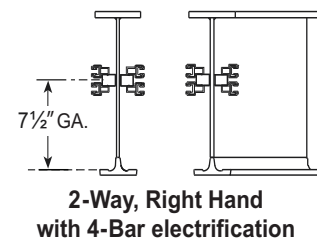
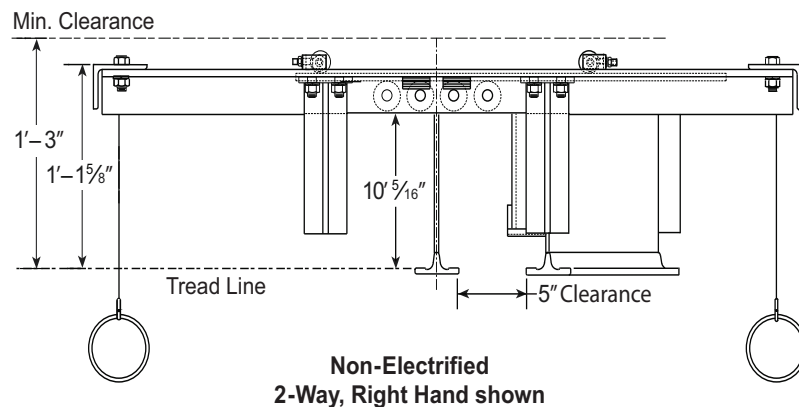
Some TC/A trolleys with optional safety lugs will pass through these switches. Consult the factory for application.

Glide Switch Table

Specifications

Part #	Model	Type	Rail within Switch	Weight	Max Load on Switch*
Non-Electrified					
10-2427-00	3S-830-R	2-Way, RH	3RL13-22	437 lbs.	13,500 lbs.
10-2469-00	3S-830-RH	2-Way, RH	3RH13-30	474 lbs.	13,500 lbs.
10-2430-00	3S-831-L	2-Way, LH	3RL13-22	437 lbs.	13,500 lbs.
10-2301-00	3S-831-LH	2-Way, LH	3RH13-30	474 lbs.	13,500 lbs.
10-2394-00	3S-832	Wye	3RL13-22	454 lbs.	13,500 lbs.
10-2471-00	3S-832-H	Wye	3RH13-30	492 lbs.	13,500 lbs.
10-2433-00	3S-833	3-Way	3RL13-22	602 lbs.	13,500 lbs.
10-2468-00	3S-833-H	3-Way	3RH13-30	658 lbs.	13,500 lbs.
10-2207-00	3S-826	Cross Track	3RL13-22	220 lbs.	13,500 lbs.
10-2209-00	3S-826-H	Cross Track	3RH13-30	226 lbs.	13,500 lbs.
Electrified					
10-2448-01	3ES-830-R	2-Way, RH	3RL13-22	442 lbs.	13,500 lbs.
10-2454-01	3ES-830-RH	2-Way, RH	3RH13-30	479 lbs.	13,500 lbs.
10-2445-01	3ES-831-L	2-Way, LH	3RL13-22	442 lbs.	13,500 lbs.
10-2451-01	3ES-831-LH	2-Way, LH	3RH13-30	479 lbs.	13,500 lbs.
10-2443-01	3ES-832	Wye	3RL13-22	463 lbs.	13,500 lbs.
10-2449-01	3ES-832-H	Wye	3RH13-30	501 lbs.	13,500 lbs.
10-2441-01	3ES-833	3-Way	3RL13-22	614 lbs.	13,500 lbs.
10-2455-01	3ES-833-H	3-Way	3RH13-30	670 lbs.	13,500 lbs.
10-2208-01	3ES-826	Cross Track	3RL13-22	230 lbs.	13,500 lbs.
10-2210-01	3ES-826-H	Cross Track	3RH13-30	236 lbs.	13,500 lbs.

* 1250 lb. load per wheel for 325 Series "L" Series rail; 3500 lb. load per wheel for 325 Series "H" rail



**3S-830-R Two-Way Glide Switch**

10-2427-00 (shown) (non-electrified)

3S-830-RH Two-Way Glide Switch

10-2469-00 (non-electrified)

3ES-830-R Two-Way Glide Switch

10-2448-01 (electrified)

3ES-830-RH Two-Way Glide Switch

10-2454-01 (electrified)

3S-831-L Two-Way Glide Switch

10-2430-00 (non-electrified)

3S-831-LH Two-Way Glide Switch

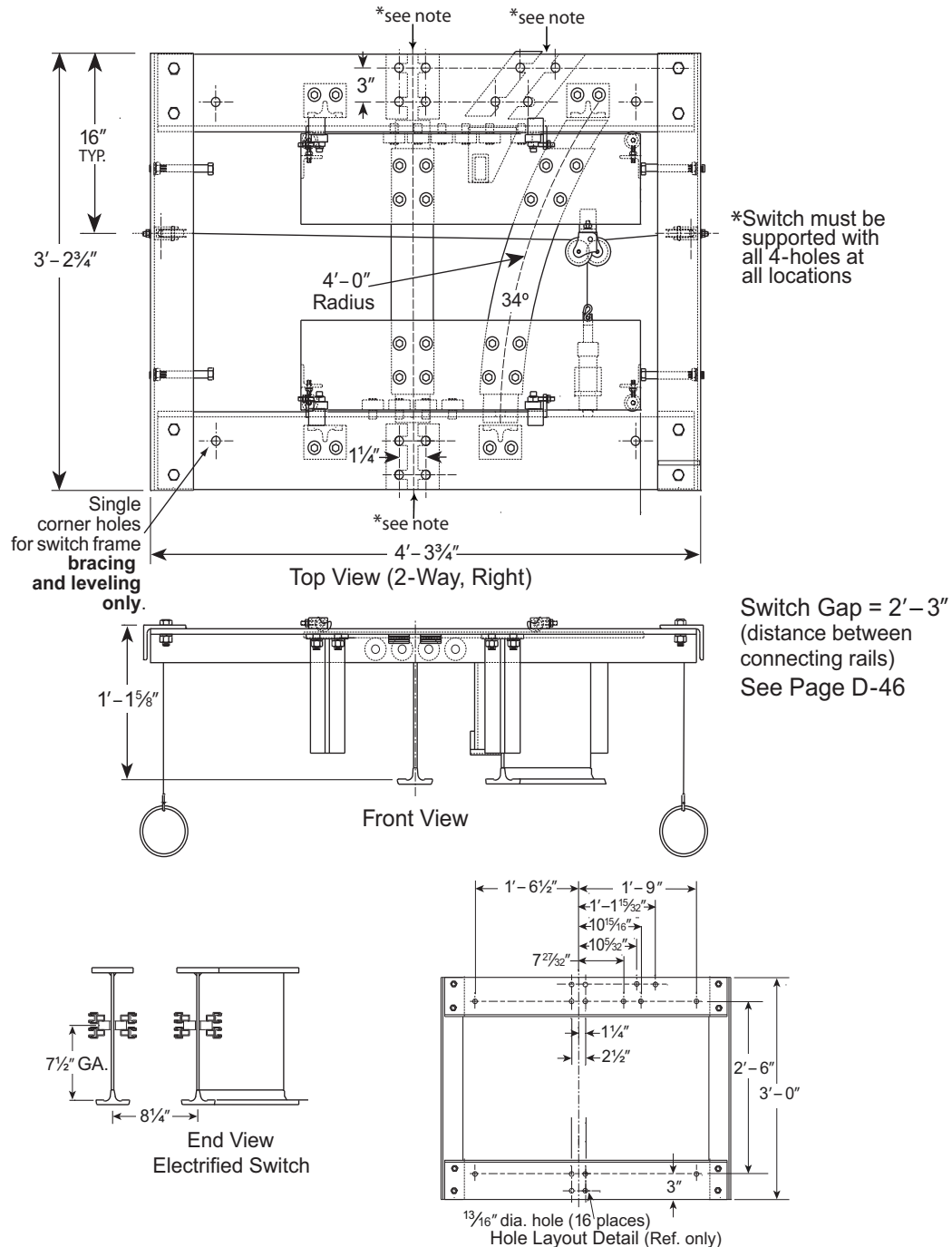
10-2301-00 (non-electrified)

3ES-831-L Two-Way Glide Switch

10-2445-01 (electrified)

3ES-831-LH Two-Way Glide Switch

10-2451-01 (electrified)



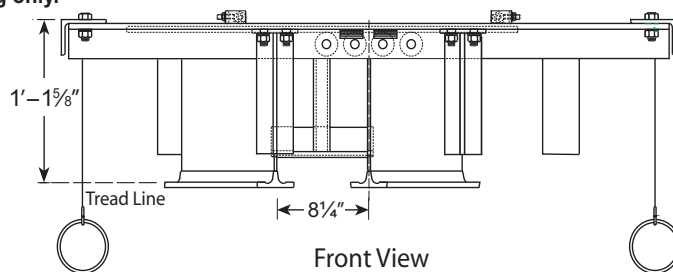
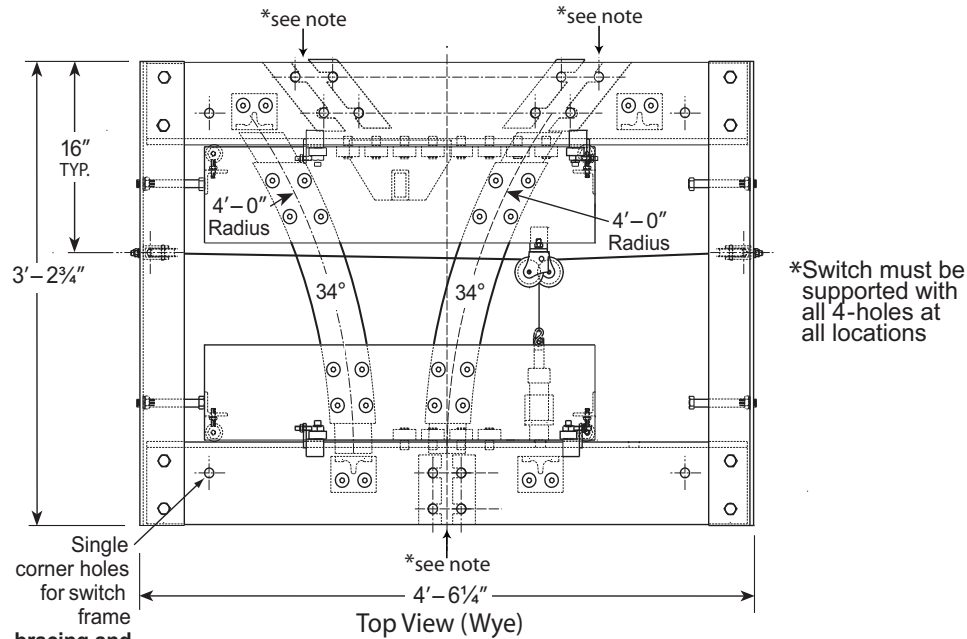


3S-832 Wye Glide Switch

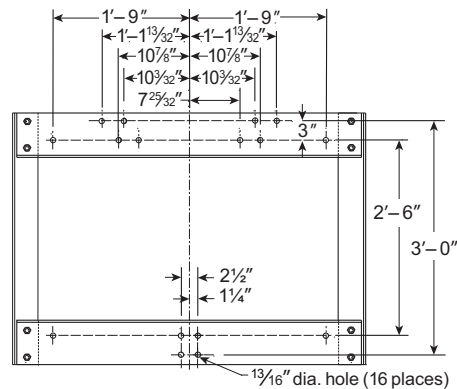
10-2394-00 (shown) (non-electrified)

3S-832-H Wye Glide Switch

10-2471-00 (non-electrified)



Switch Gap = 2' - 3"
(distance between connecting rails)
See Page D-46

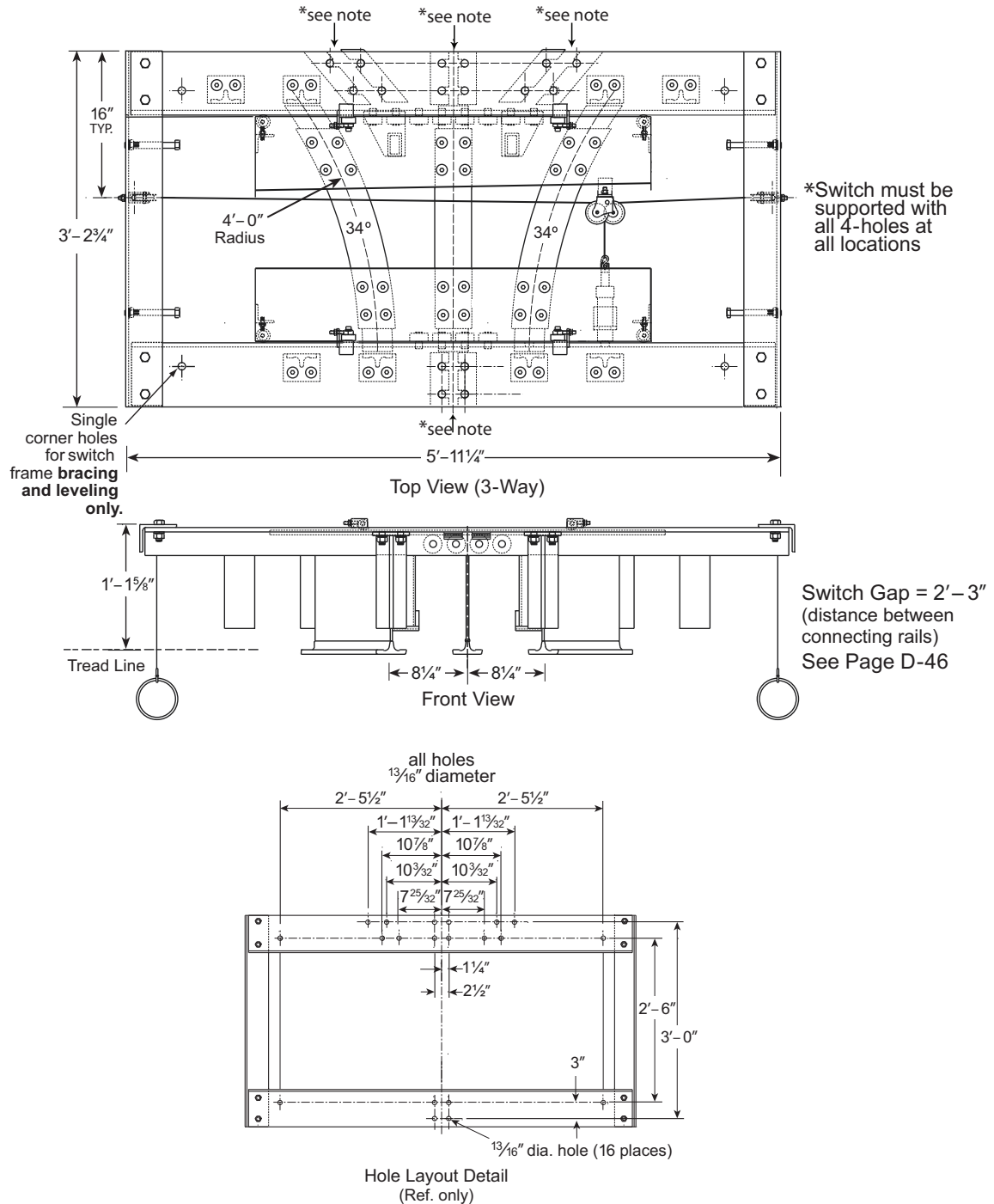


**3S-833 Three-Way Glide Switch**

10-2433-00 (shown) (non-electrified)

3S-833-H Three-Way Glide Switch

10-2468-00 (non-electrified)

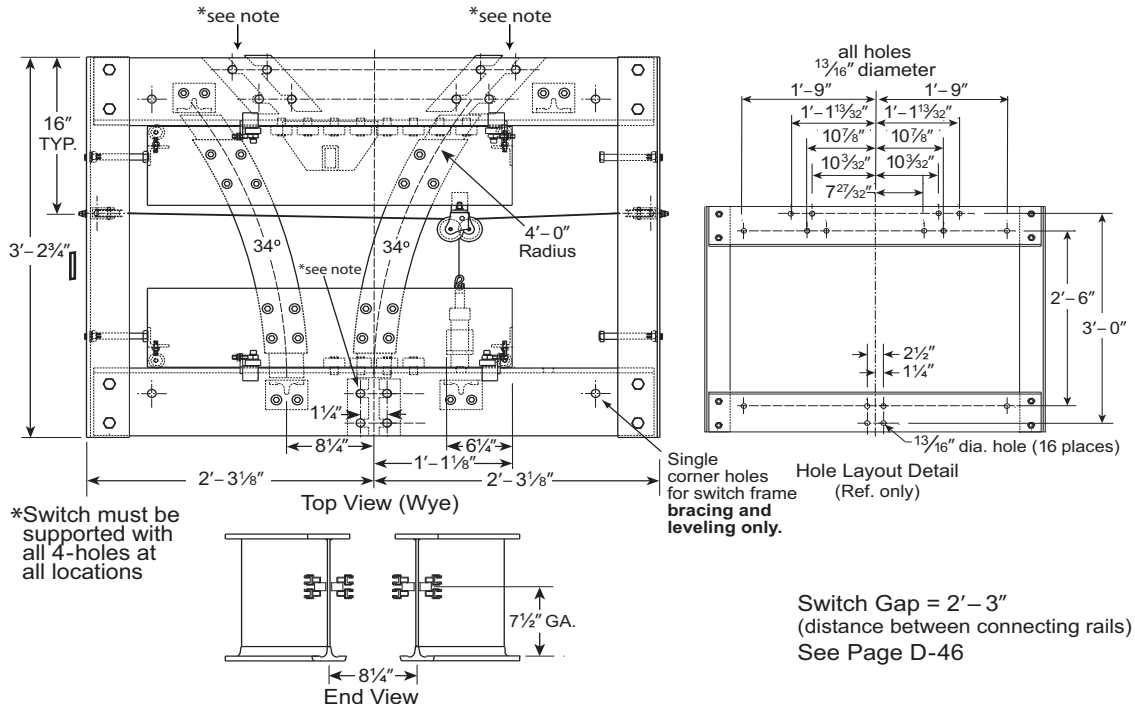


3ES-832 Wye Glide Switch

10-2443-01 (electrified)

3ES-832-H Wye Glide Switch

10-2449-01 (electrified)

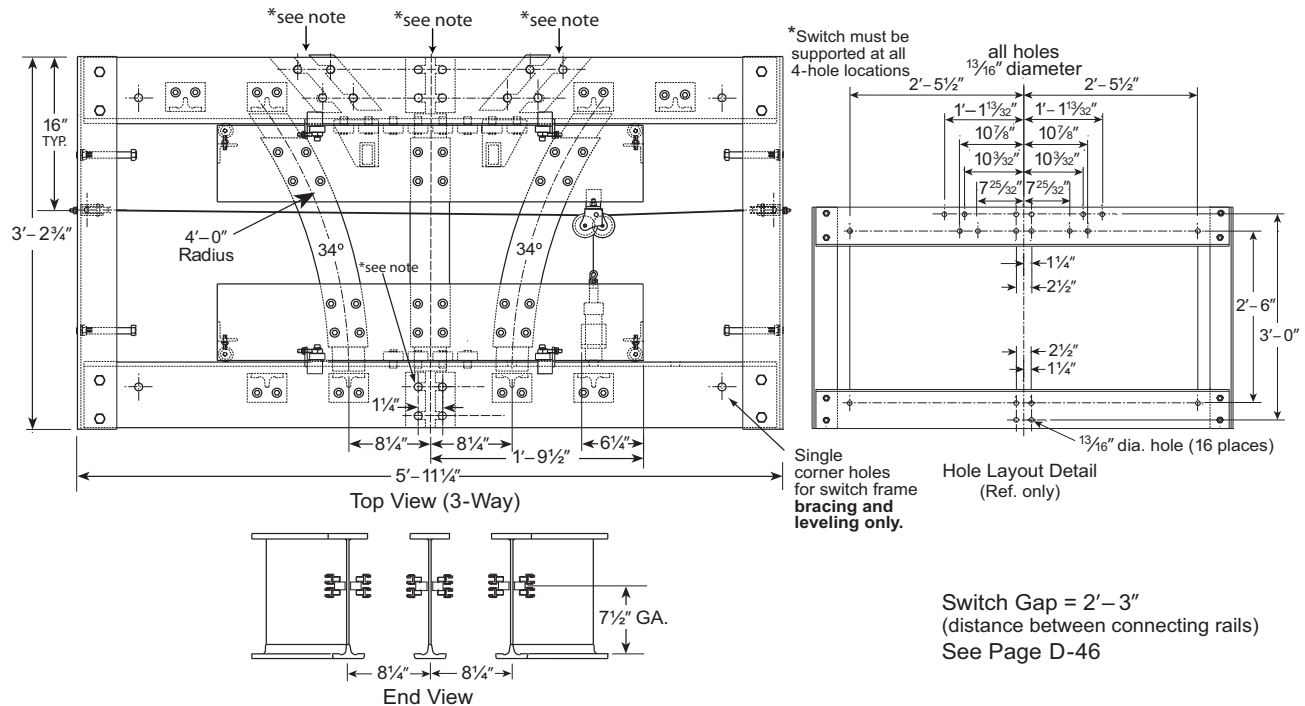


3ES-833 Three-Way Glide Switch

10-2441-01 (electrified)

3ES-833-H Three-Way Glide Switch

10-2455-01 (electrified)





Cross Track Switches

3S-826 Cross Track Switch

10-2207-00 (non-electrified)

3S-826-H Cross Track Switch

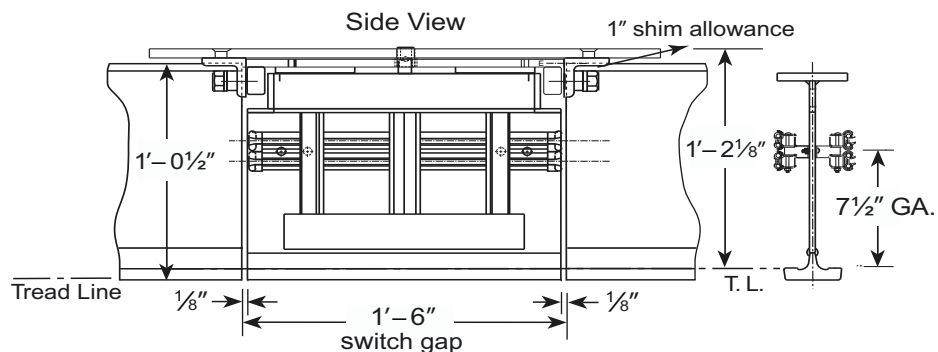
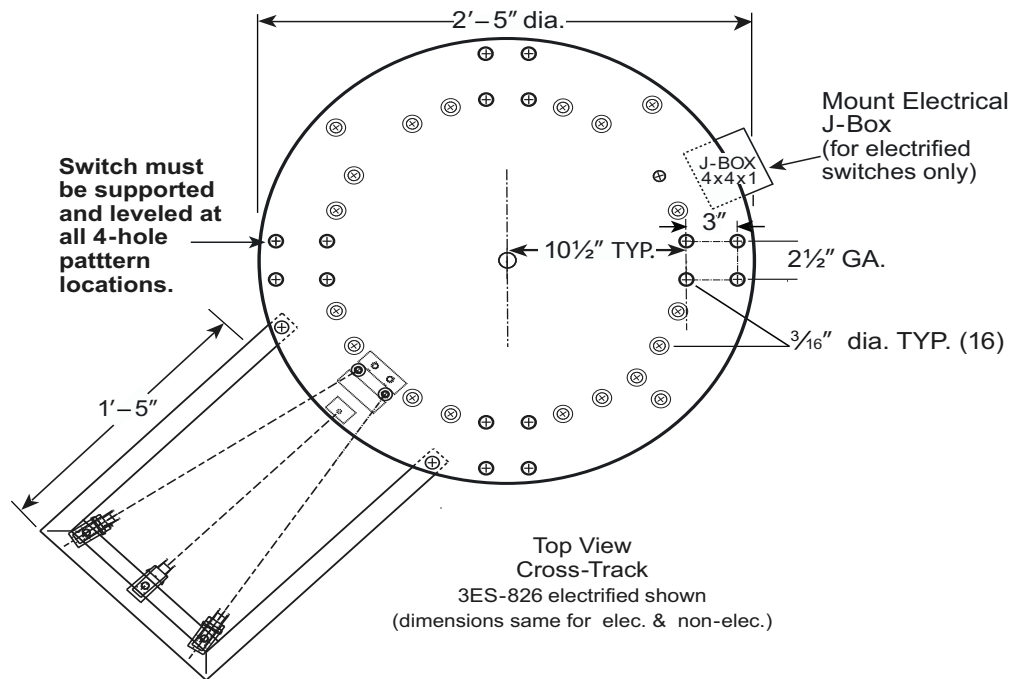
10-2209-00 (non-electrified)

3ES-826 Cross Track Switch

10-2208-01 (electrified shown)

3ES-826-H Cross Track Switch

10-2210-01 (electrified)



Turntable Switches

3S-1010-L Turntable Switch

Standard Turntable Switches provided with "L" Series Rail. Designed to rotate with load on the rotating section. Turntables are very adaptable in application. *See the typical configurations shown on the following page.*

TC/American Turntable Switch Features

Holes are provided in the heavy steel switch frame so that approaching rails are mounted directly to the switch frame for alignment to the rotating section of the turntable. Features include:

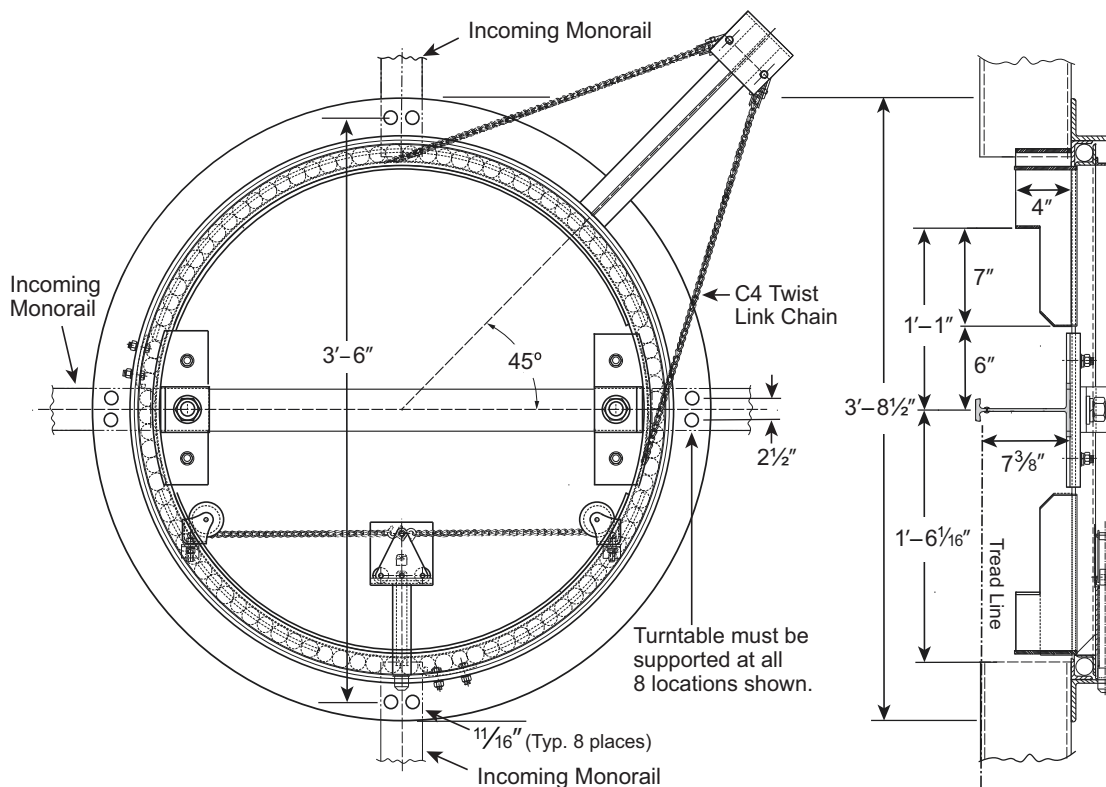
- Designed to rotate with load on rotating section
- Manual operation (pull chain)— 12' chain included (*unless otherwise specified*)

- Non-electrified
- Steel mounting plate
- Rolled steel supporting members— with full floating ball bearing support
- Positive latch— to hold rotating track in position
- Hanger holes = $\frac{11}{16}$ " (for $\frac{5}{8}$ " dia. rods)
- Capacity = One ton
- For trolleys with up to $4\frac{1}{2}$ " dia. wheels
- Standard finish = TC/American gray-green enamel

Options

- Electrified

Contact TC/American for a solution for any special switch configurations.



Typical Turntable Configurations

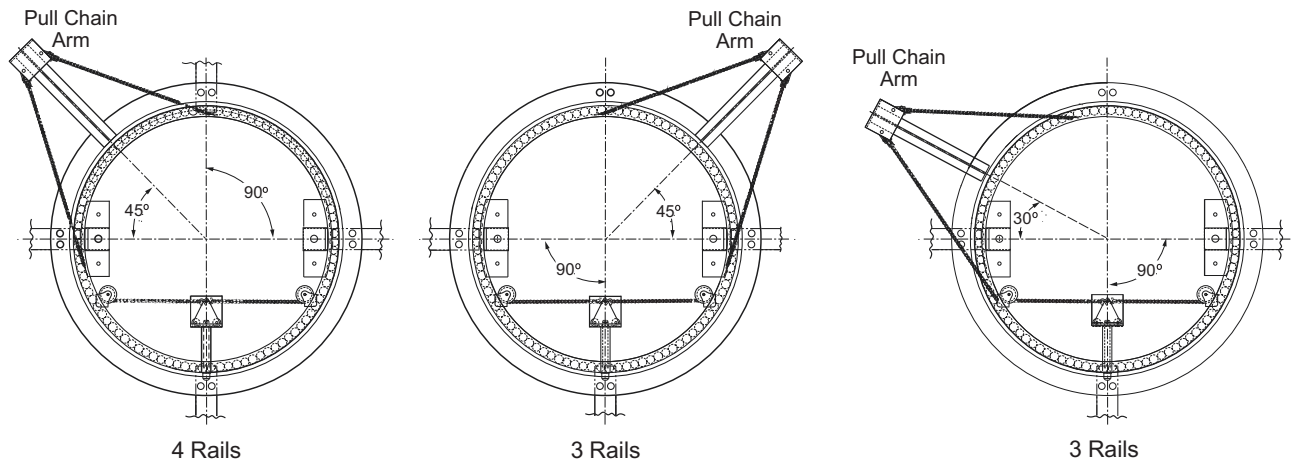
The basic turntable can be configured with the Incoming/Outgoing rails and the Pull Chain Arm positioned as required to meet the system layout. Latch pin engages to indexing holes in outer ring to align with rails.

Incoming/Outgoing rails will usually be at 90 degree spacing, but other increments may be provided. The

Pull Chain Arm will usually be at 45 degrees to one of the Incoming/Outgoing rails, but may be spaced as close as 30 degrees. Indexing stops are positioned to limit rotation.

Shown below are some typical examples.

Typical Turntable Configurations



Switch Layout 800 Series

Features

- All curves = 4'-0" radius
- Top flanges = 4" wide
- Top flange holes in 800 Series Curves provided at switch connection end — for bolting to switch frame — and other holes
(as shown on p. D-47 & D-48)
- Splice holes in web provided where required
- Electrified Curves include 4-bar Shielded Channel-Bar electrification and mounting holes in web

See "Typical Rail Connections to 800 Series Switches" on page D-47.

See "Minimum Spacing for 800 Series Glide Switches" on page D-49.

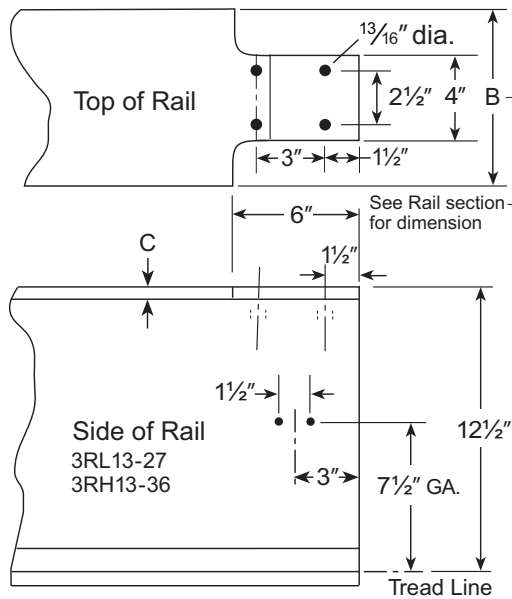
Note See Section "H", Single Girder Hoist Carriers, for information regarding hoist carrier wheelbase to curve radius ratio.

800 Series Curves

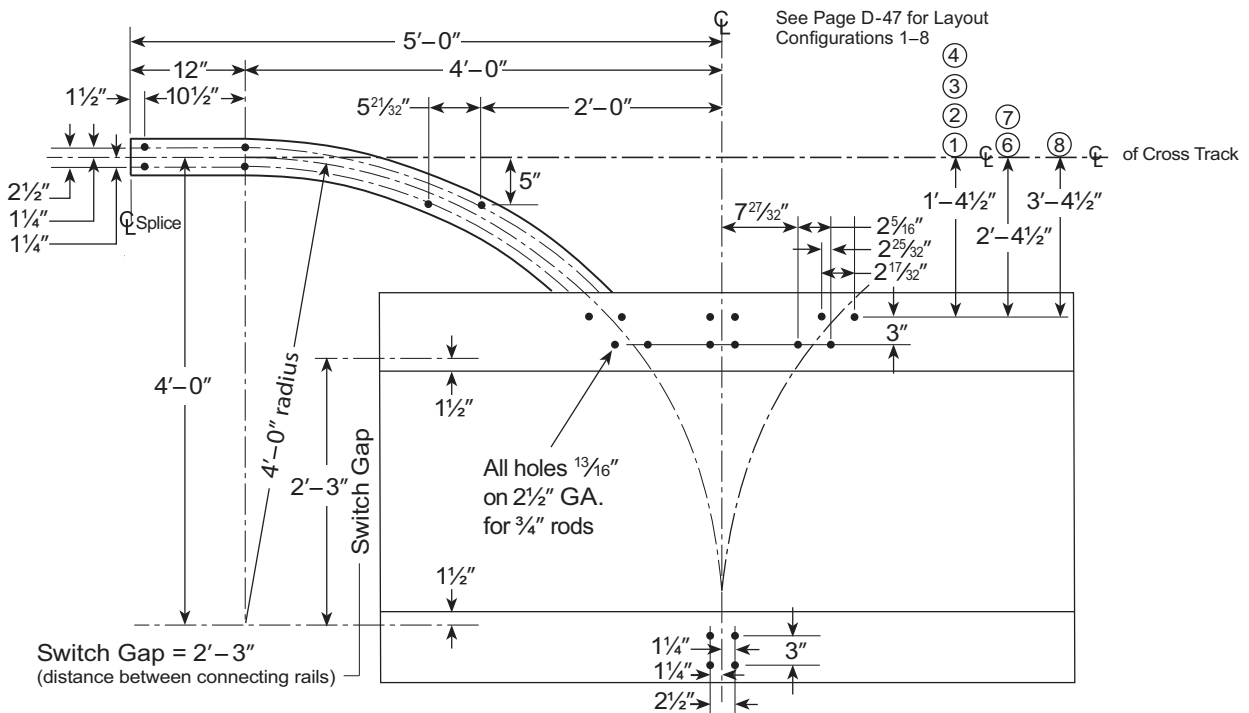
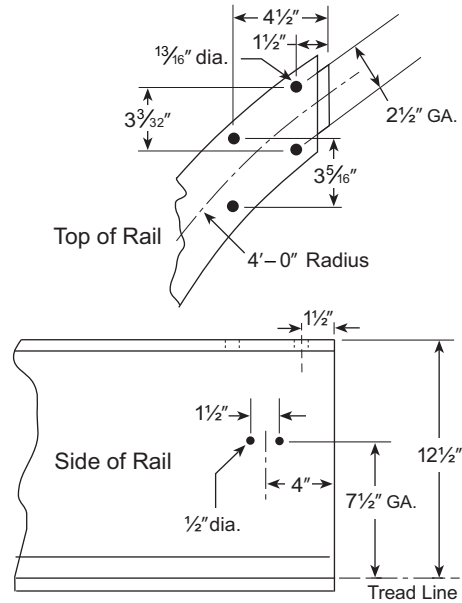
Part #	Curve	Type	Rail	Weight
Non-Electrified				
10-2219-00	3C-89	90 Degree	3RL13-22	185 lbs.
10-2220-00	3C-89-H	90 Degree	3RH13-30	245 lbs.
10-2221-00	3C-813	Switch, RH	3RL13-22	132 lbs.
10-2222-00	3C-813-H	Switch, RH	3RH13-30	175 lbs.
10-2223-00	3C-814	Switch, LH	3RL13-22	132 lbs.
10-2224-00	3C-814-H	Switch, LH	3RH13-30	175 lbs.
10-2225-00	3C-815	Switch-to-Switch	3RL13-22	66 lbs.
10-2226-00	3C-815-H	Switch-to-Switch	3RH13-30	87 lbs.
10-2227-00	3C-816	Switch-to-Switch	3RL13-22	97 lbs.
10-2228-00	3C-815-H	Switch-to-Switch	3RH13-30	129 lbs.
Electrified				
10-2229-01	3EC-89	90 Degree	3RL13-22	199 lbs.
10-2230-01	3EC-89-H	90 Degree	3RH13-30	259 lbs.
10-2231-01	3EC-813	Switch, RH	3RL13-22	150 lbs.
10-2232-01	3EC-813-H	Switch, RH	3RH13-30	193 lbs.
10-2233-01	3EC-814	Switch, LH	3RL13-22	150 lbs.
10-2234-01	3EC-814-H	Switch, LH	3RH13-30	193 lbs.
10-2235-01	3EC-815	Switch-to-Switch	3RL13-22	83 lbs.
10-2236-01	3EC-815-H	Switch-to-Switch	3RH13-30	104 lbs.
10-2237-01	3EC-816	Switch-to-Switch	3RL13-22	115 lbs.
10-2238-01	3EC-816-H	Switch-to-Switch	3RH13-30	146 lbs.

Typical Rail Connections to 800 Series Switches

Straight Rail to Switch



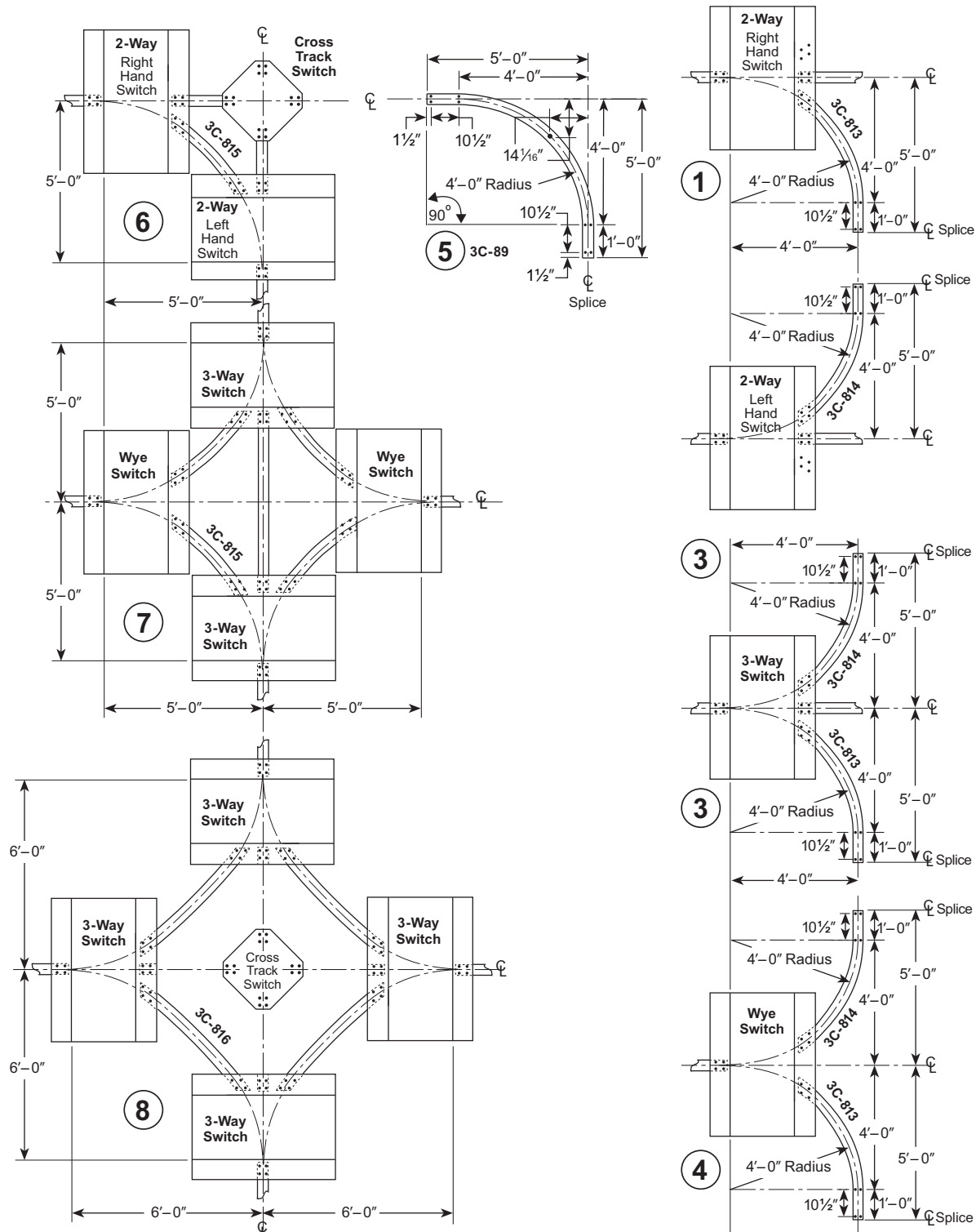
Curve Rail to Switch



Typical Switch Connection

Layout for 800 Series Glide Switches and Curves

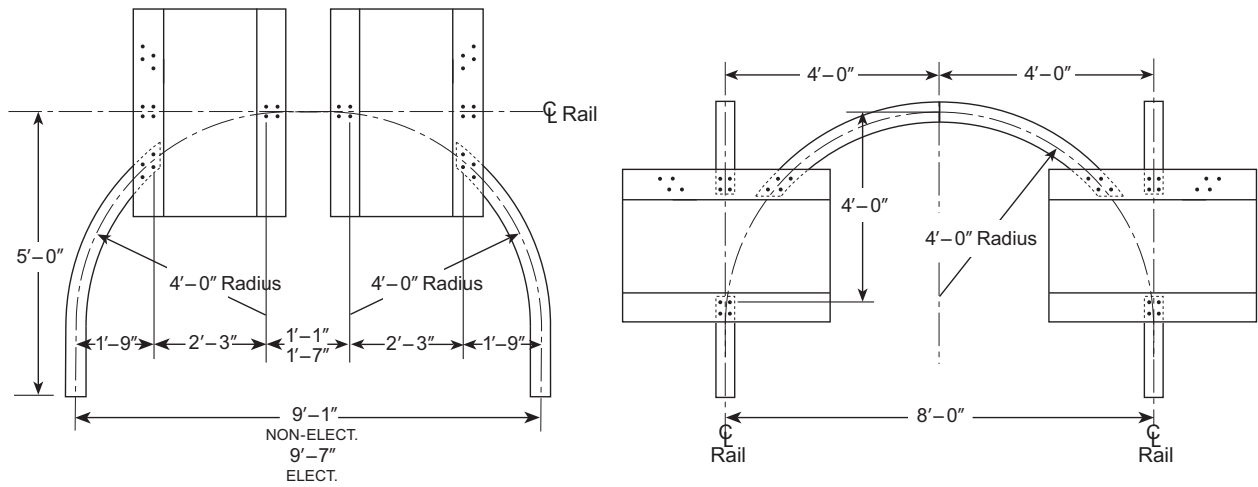
Note (Use caution when laying out a monorail with multiple Electrified Switches to avoid the possibility of electrical phase reversal)





Minimum Spacing for 800 Series Glide Switches

“L” & “H” Series Rail

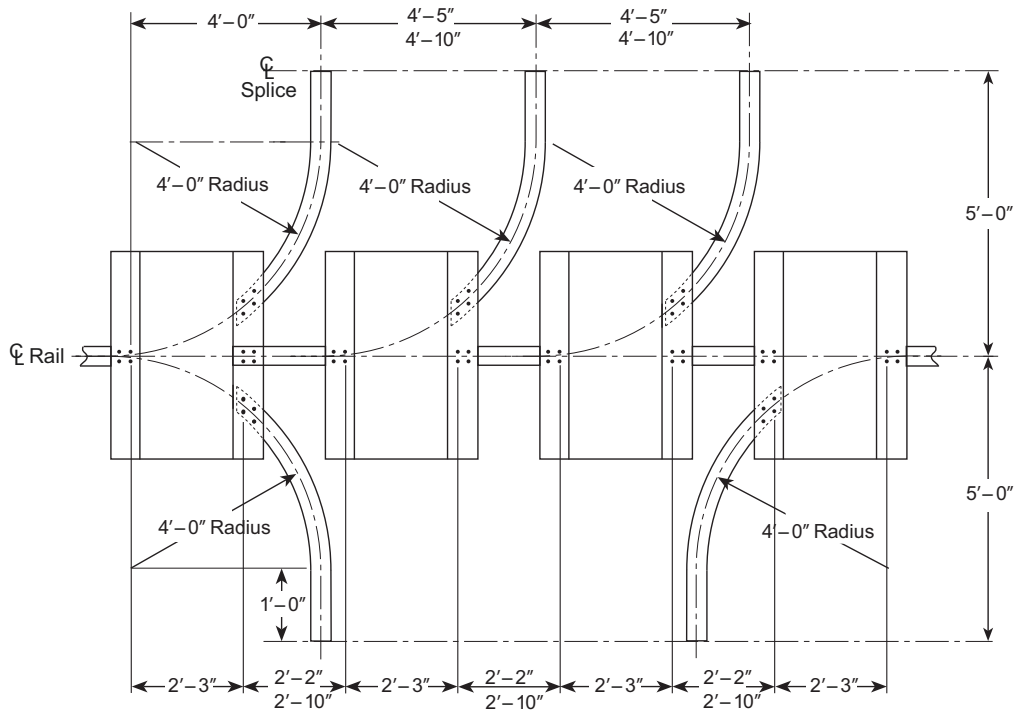


Note:

Dimensions with 2 values

Top value = NON-ELECTRIFIED

Bottom value = ELECTRIFIED







2000 Series Glide Switches

Description and Features

2000 Series Glide Switches are available with 3RL13-22, 3RH13-30 or 3RH14-33 Rail. Straight stub rails mounted on the Outer Frame splice onto the incoming straight rail, outgoing straight rail and outgoing curve rails. Interior curves (moveable part of the switch) are 4'-0" radius. Outgoing switch curves are formed to the radius and degree of bend as required.

- Order quantity of splice plate assemblies as required (*not included with switch*)
- Rigid Outer frame for support to building steel or auxiliary structure via hanger rods/bolted connections
- Incoming & outgoing rails bolted directly to (and suspended from) Switch Outer Frame— shim as required for tread alignment to switch stub rails (*shims provided*).
- Moveable Inner Frame mounted on guide rollers on adjustable plates for frame alignment
- Manually operated switch movement via pull chains; 12' pull chain included (*other lengths available*)
- Positive Latch Mechanism holds moving switch section securely in place & aligned until released by pull chain
- Note: 3-Way Switches latch at center position when shifting from Left or Right; may require a second pull to shift completely from one side to the other.
- Open ends of rails protected by guards/baffles
- Electrified switches wired per National Electric code with NEMA 1 type enclosures
(Standard conductor bar = TC/American Shielded Channel-Bar, 4-bar, side contact, at 7½" or 9" gauge— depending upon rail within switch)
Switches wired with power feeds on each bar on the moveable Inner Frame, with leads to terminal strip in junction box on switch frame. Switch circuit protection by others.
- Proper phasing is responsibility of electrical installer.
- 2000 Series Switches can be fitted with 2 bars of Bottom Contact conductor bars on each side of rails (also possible to mount 2 bottom & 2 side contact for installations requiring additional conductors)
- Standard finish = TC/American gray-green enamel

Options

- Air Operated (*see page D-60*)
- Motor Operated (*special order: see page D-60*)
- Bottom Contact Electrification
- Spark Resistant

Note Switches are not to be operated with a trolley or load on the moving section.

Use with all TC/American Crane Company Drivetractors and Carriers with "AT" or "A" Motorized Trolley drives.

TC/A Trolleys with optional safety lugs will pass through these switches. Consult factory for specific applications.

Maximum Trolley Wheel Diameter

Rail	Electrified	Non-Electrified
3RL13-22 3RH13-30	5" dia. wheels	6½" dia. wheels*
3RH13-30 3RH14-33	6½" dia. wheels	9" dia. wheels†

* up to 3T-16000-4//4SR.trolleys

† up to 3T-20000-4//4SR trolleys



2000 Series Glide Switches

Model	Part #*	Rail Size within Switch	Weight (lbs.)	Operation
2-Way, Right Hand (Non-electrified)				
3S-2690-R12	10-3139-101	3RL13-22	875	Manual
3S-2690-R12H	10-3139-102	3RH13-30	915	Manual
3S-2690-R14H	10-3139-103	3RH14-33	930	Manual
2-Way, Right Hand (Electrified)				
3ES-2690-R12	10-3139-111	3RL13-22	955	Manual
3ES-2690-R12H	10-3139-112	3RH13-30	995	Manual
3ES-2690-R14H	10-3139-113	3RH14-33	1010	Manual
2-Way, Left Hand (Non-electrified)				
3S-2690-L12	10-3138-101	3RL13-22	875	Manual
3S-2690-L12H	10-3138-102	3RH13-30	915	Manual
3S-2690-L14H	10-3138-103	3RH14-33	930	Manual
2-Way, Left Hand (Electrified)				
3ES-2690-L12	10-3138-111	3RL13-22	955	Manual
3ES-2690-L12H	10-3138-112	3RH13-30	995	Manual
3ES-2690-L14H	10-3138-113	3RH14-33	1010	Manual
3-Way (Non-electrified)				
3S-2700-12	10-3148-101	3RL13-22	1445	Manual
3S-2700-12H	10-3148-102	3RH13-30	1540	Manual
3S-2700-14H	10-3148-103	3RH14-33	1575	Manual
3-Way (Electrified)				
3ES-2700-12	10-3148-111	3RL13-22	1545	Manual
3ES-2700-12H	10-3148-112	3RH13-30	1640	Manual
3ES-2700-14H	10-3148-113	3RH14-33	1675	Manual
Wye (Non-electrified)				
3S-2710-12	10-3147-101	3RL13-22	1100	Manual
3S-2710-12H	10-3147-102	3RH13-30	1165	Manual
3S-2710-14H	10-3147-103	3RH14-33	1190	Manual
Wye (Electrified)				
3ES-2710-12	10-3147-111	3RL13-22	1175	Manual
3ES-2710-12H	10-3147-112	3RH13-30	1240	Manual
3ES-2710-14H	10-3147-113	3RH14-33	1265	Manual

*Part numbers above are for manually operated (pull chain) switches, either non-electrified or electrified with 4 bars of Side Contact Shielded Channel-Bar. Order other configurations based upon the part number code shown below.

Part numbers for Model 2000 Switches are typically as: 10-3139-XYZ

X: 1 = Manual Operation; 2 = Air Operation; 3 = Motorized Operation

Y: 0= Non-Electrified; 1 = Side Contact Channel-Bar; 2 = Side Contact Figure 8; 3 = Bottom Contact Channel-Bar; 4 = Bottom Contact Fig. 8

Z: 1 = 3RL13-22 Rail; 2 = 3RH13-30 Rail; 3 = 3RH14-33 Rail



2000 Series, 2-Way Glide Switches

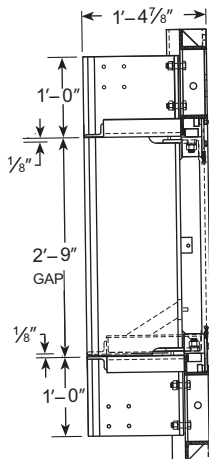
Non-Electrified

3S-2690-R12	10-3139-101 (shown)
3S-2690-L12	10-3138-101
3S-2690-R12H	10-3139-102
3S-2690-L12H	10-3138-102
3S-2690-R14H	10-3139-103
3S-2690-L14H	10-3138-103

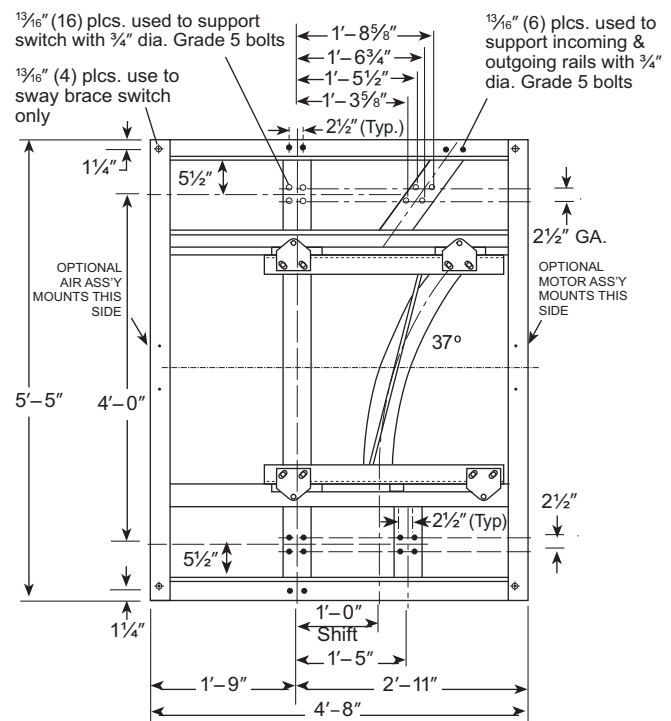
Electrified

3ES-2690-R12	10-3139-111
3ES-2690-L12	10-3138-111
3ES-2690-R12H	10-3139-112
3ES-2690-L12H	10-3138-112
3ES-2690-R14H	10-3139-113
3ES-2690-L14H	10-3138-113

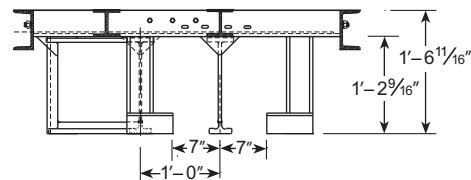
- ⊕ SWAY BRACE CONNECTION
 ○ SWITCH HANGER
 ● TRACK HANGER
 Note: Switch must be supported at all four (4) locations shown.



(3RL13-22, 3RH13-30)
 1'-6"
 (3RH14-33)
 Side View



Top View



End View

Note Notes: Maximum load on all switches is 14,000 lbs. (limited to 1250 lbs./wheel for "L" Series Rail; 3500 lbs./wheel for "H" Series Rail).

Maximum Hanger Load at support points of incoming/outgoing rails & curves to switch = 14,000 lbs. (based upon two Grade 5 bolts).

2000 Series, 3-Way Glide Switches

Non-Electrified

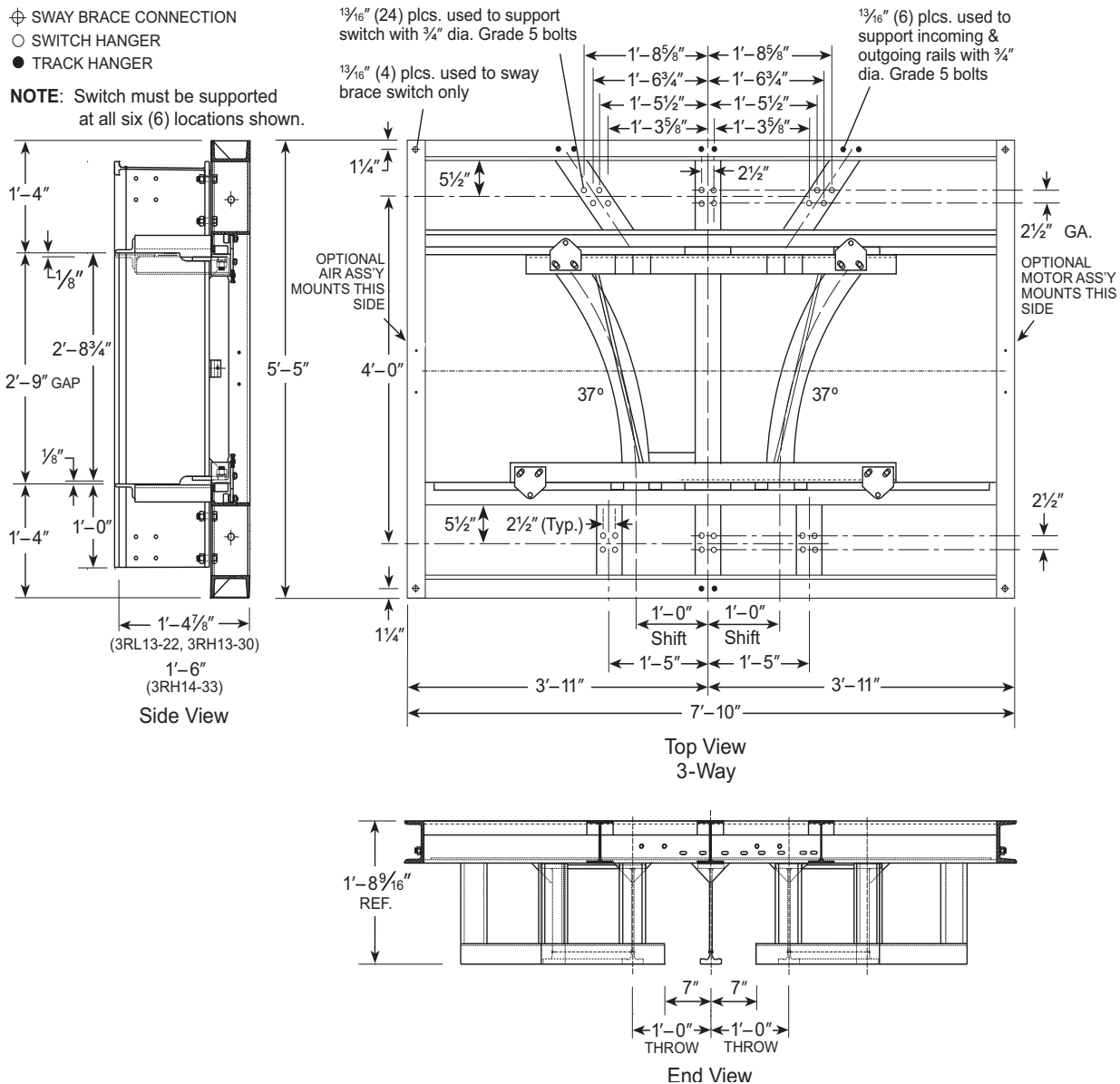
3S-2700-12	10-3148-101
3S-2700-12H	10-3148-102
3S-2700-14H	10-3148-103

Electrified

3ES-2700-12	10-3148-111
3ES-2700-12H	10-3148-112
3ES-2700-14H	10-3148-113

- ⊕ SWAY BRACE CONNECTION
 ○ SWITCH HANGER
 ● TRACK HANGER

NOTE: Switch must be supported at all six (6) locations shown.



Note Maximum load on all switches is 14,000 lbs. (limited to 1250 lbs./wheel for "L" Series Rail; 3500 lbs./wheel for "H" Series Rail).

Maximum Hanger Load at support points of incoming/outgoing rails & curves to switch = 14,000 lbs. (based upon two Grade 5 bolts).



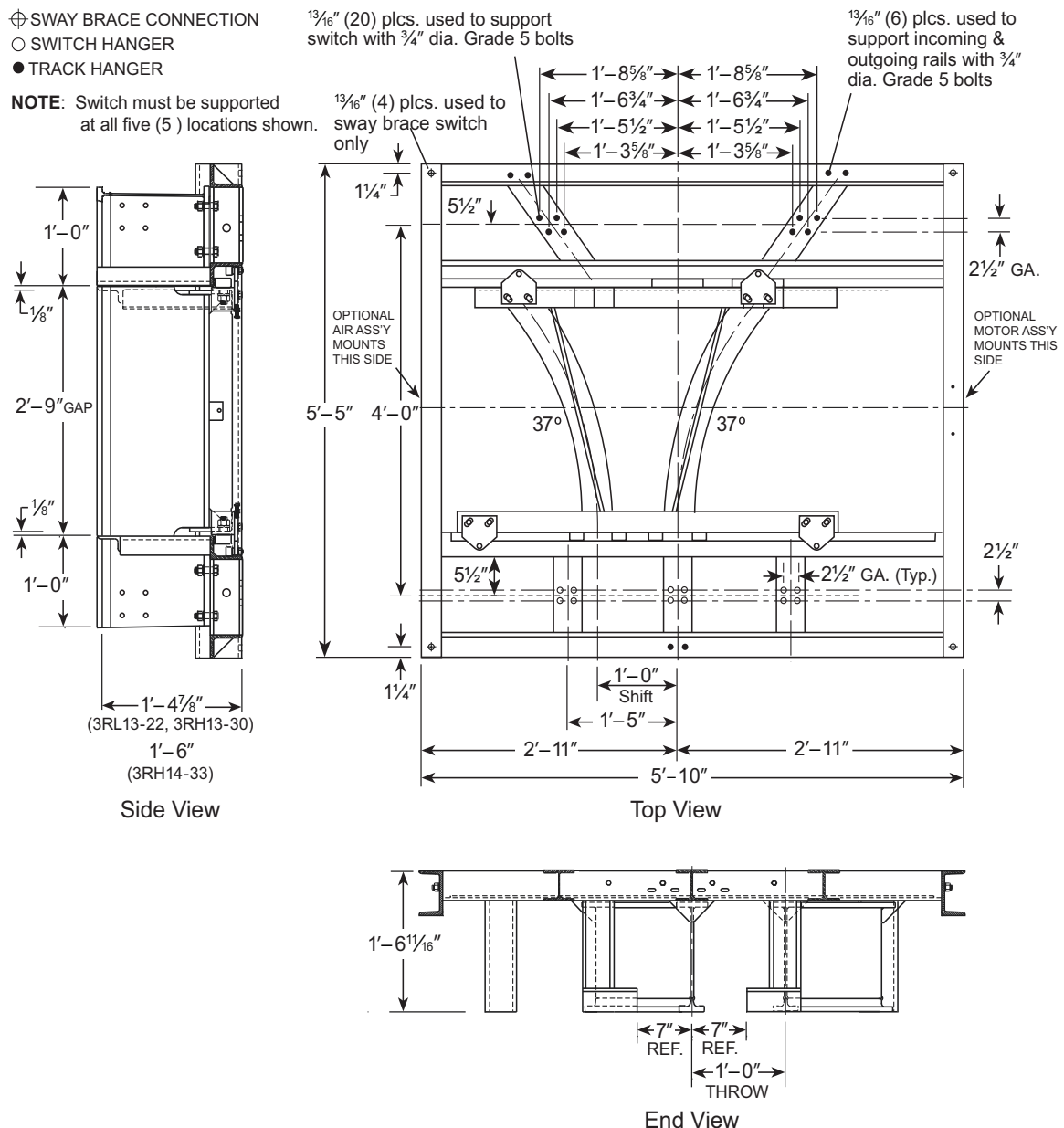
2000 Series, Wye Glide Switches

Non-Electrified

3S-2710-12	10-3147-101
3S-2710-12H	10-3147-102
3S-2710-14H	10-3147-103

Electrified

3ES-2710-12	10-3147-111
3ES-2710-12H	10-3147-112
3ES-2710-14H	10-3147-113



Note Maximum load on all switches is 14,000 lbs. (limited to 1250 lbs./wheel for “L” Series Rail; 3500 lbs./wheel for “H” Series Rail).

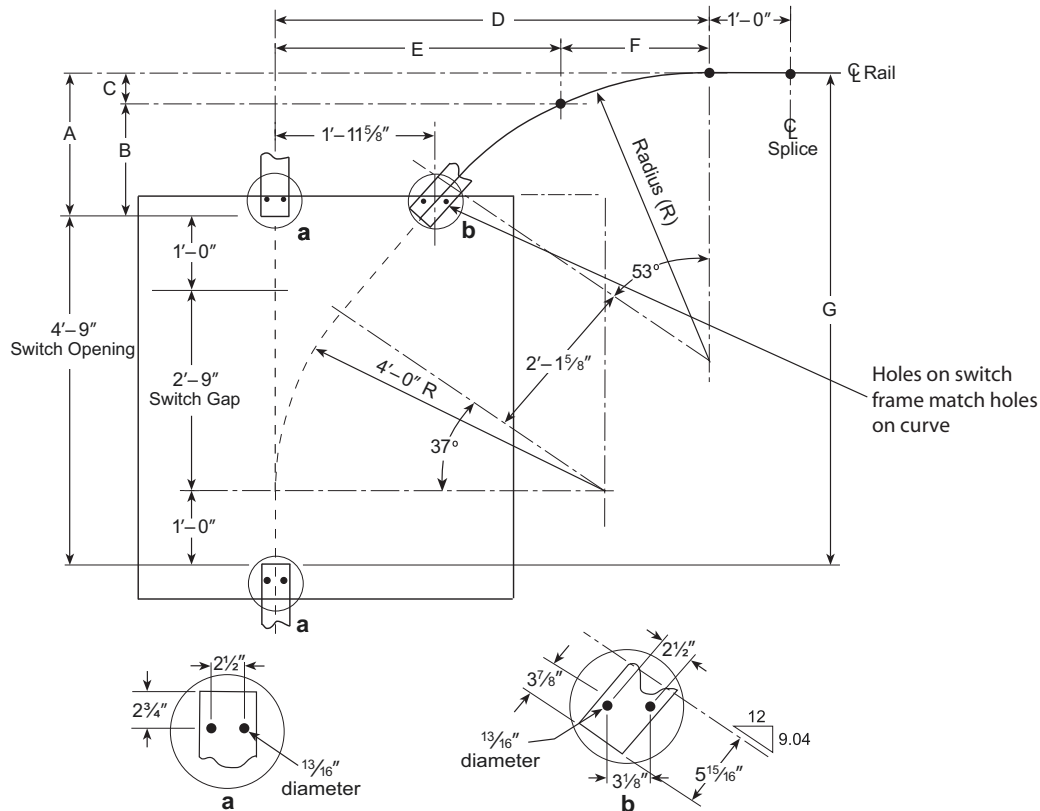
Maximum Hanger Load at support points of incoming/outgoing rails & curves to switch = 14,000 lbs. (based upon two Grade 5 bolts).





Layout for 2000 Series Glide Switch and Curves

Note Use caution when laying out a monorail with multiple Electrified switches to avoid the possibility of electrical phase reversal.



Switch Curve Layout Dimensions

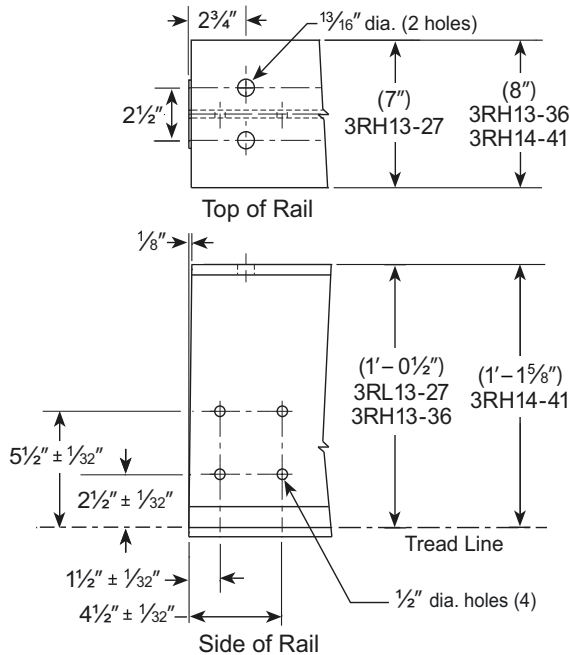
Part #	Radius (R)	A	B	C	D	E	F	G
10-3594-01	4'-0"	2'-0"	1'-6 15/16"	5'-1/8"	5'-3 3/8"	3'-6"	1'-9 7/16"	6'-9"
10-3595-01	5'-0"	2'-4 13/16"	1'-10 7/16"	6'-3/8"	6'-0 15/16"	3'-10 3/16"	2'-2 3/4"	7'-11 3/16"
10-3596-01	6'-0"	2'-9 5/8"	2'-11 5/16"	7'-11/16"	6'-10 9/16"	4'-2 7/16"	2'-8 1/8"	7'-6 5/8"
10-3597-01	7'-0"	3'-2 7/16"	2'-5 1/2"	8'-15/16"	7'-8 1/8"	4'-6 5/8"	3'-1 7/16"	7'-11 7/16"
10-3598-01	8'-0"	3'-7 3/16"	2'-9"	10'-3/16"	8'-5 11/16"	4'-10 7/8"	3'-6 13/16"	8'-4 3/16"
10-3599-01	9'-0"	4'-0"	3'-0 9/16"	11'-7/16"	9'-3 1/4"	5'-3 1/16"	4'-0 3/16"	8'-9"
10-3600-01	10'-0"	4'-4 13/16"	3'-4 1/16"	1'-0 3/4"	10'-0 13/16"	5'-7 5/16"	4'-5 1/2"	9'-11 3/16"

Note See Section "H", Single Girder Hoist Carriers, for information regarding hoist carrier wheelbase to curve radius ratio.

Typical Rail Connections to 2000 Series Switches

Straight Rail to Switch

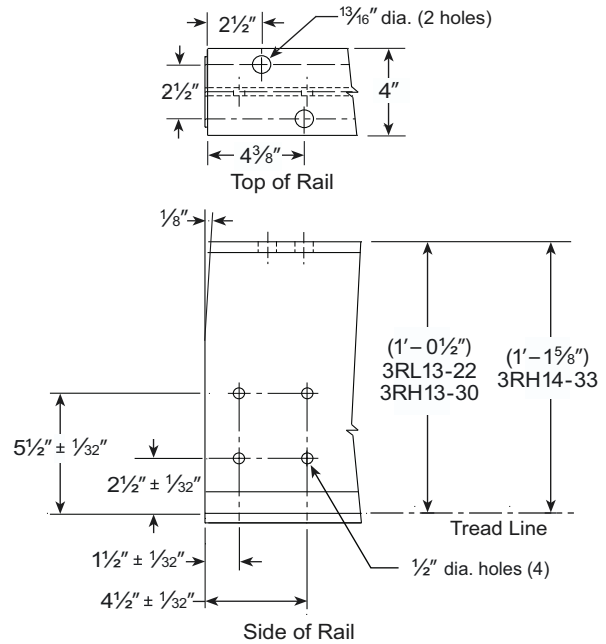
(3RL13-27, 3RH13-36, 3RH14-41)



Note For all 2000 Series Switches, order #10-2374-00 Splice Plate Assembly for each switch to curve or switch to straight rail connection.

Curve Rail to Switch

(3RL13-22, 3RH13-30, 3RH14-33)



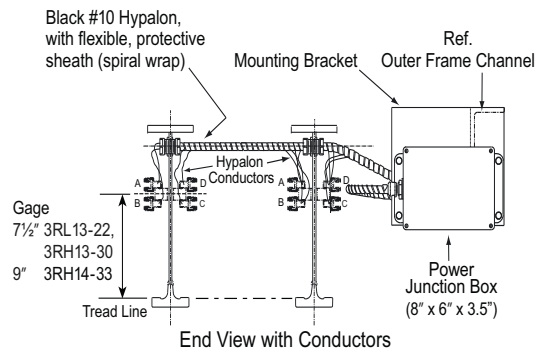
Right Hand Shown
Left Hand Opposite (Top Flange Holes)

2000 Series Glide Switch Electrification

Shown below are typical views of 2000 Series Glide Switch conductor bars as installed on the switches in our shop. Switches are pre-wired with power feed leads to a junction box with a terminal strip provided. All views with Side contact, Shielded Channel-Bar electrical conductors. Bottom Contact and Figure 8 conductor bars also available. 2000 Series switches have enough internal clearance to allow two bars of bottom contact and two bars of side contact conductors on each side of rails for special electrification requirements. Building power must be provided by others to the junction box at each switch location.

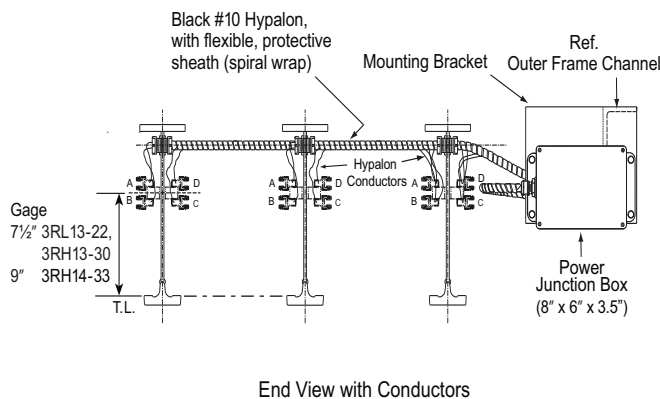
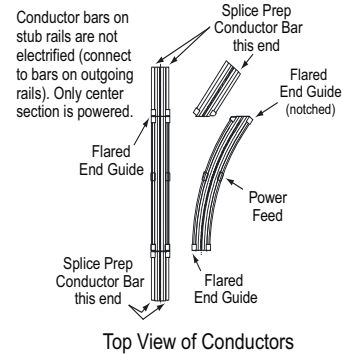
Note Conductor bars on stub rails—provided with splice preparations to connect to conductor bars on straight rails/curves..

SIDE CONTACT ELECTRIFICATION SHOWN

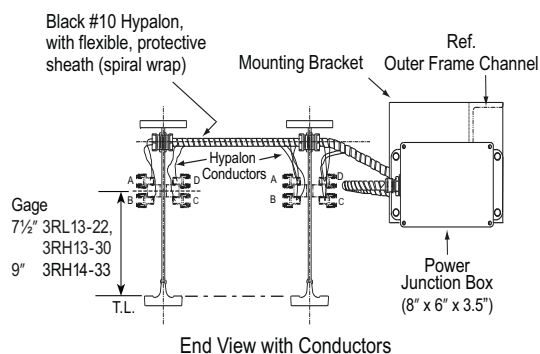
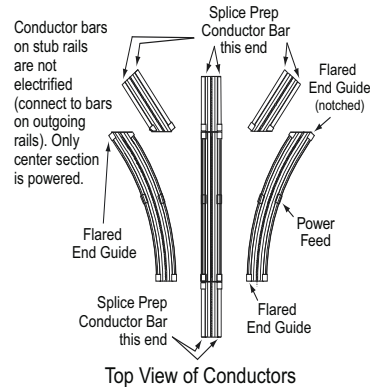


2-WAY SWITCH & CURVES

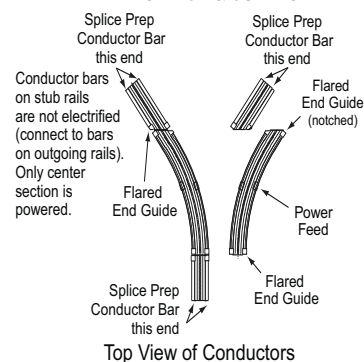
Right Hand Shown (left hand opposite)



3-WAY SWITCH & CURVES



WYE SWITCH & CURVES



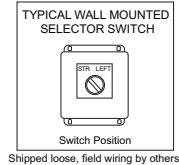


Switch Options

Manual operation is standard (*includes pull rope or chain to move switch into position*). Optional operation by air cylinder or electric operators. Other options include: signal lights to indicate switch position, electric baffles to prevent motorized carriers from running into a switch, special electrical enclosures, and spark resistance.

Operation

Motorized Operation: electric actuator controlled



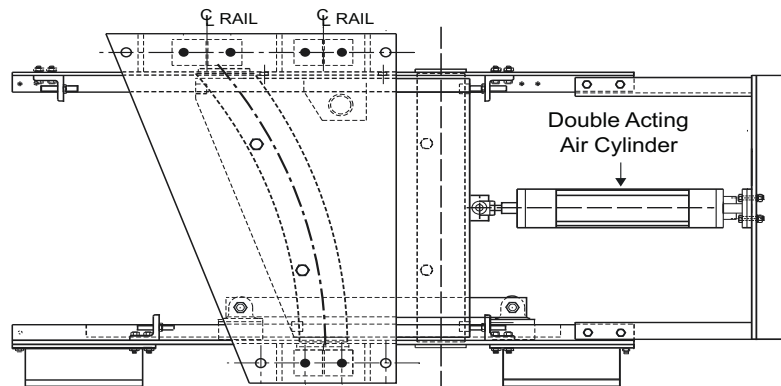
Air Operation: air cylinder with either manual (pull ropes) air valve or solenoid controlled air valve

Spark Resistance

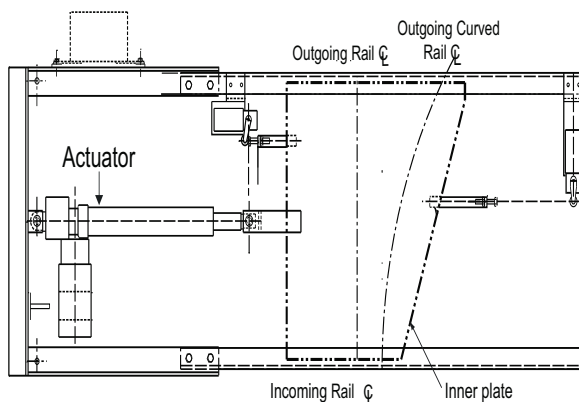
Switches used in environments where sparks generated by metal contact could be hazardous (i.e., dust or gases in the air) can be supplied with non-sparking materials at sliding or rolling contact points, and at latches and operating mechanisms.

Also, trolleys on the system can be supplied with wheels, side rollers and bumpers made of non-sparking materials (i.e., bronze).

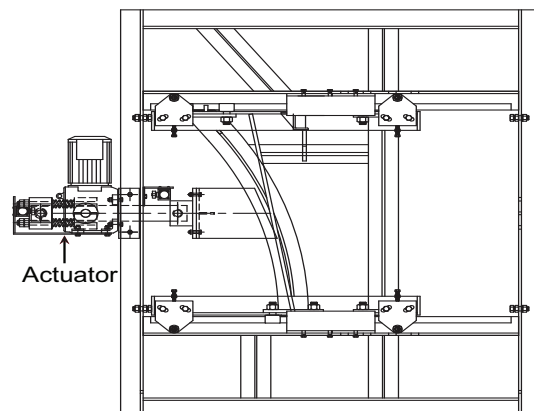
Air Operated, Electric Control



Motor Operated, Electric Control



Typical, 200, 600 and 800 Series



Typical, 2000 Series



Hanger Support Locations

90 Degree Curve Layout Dimensions

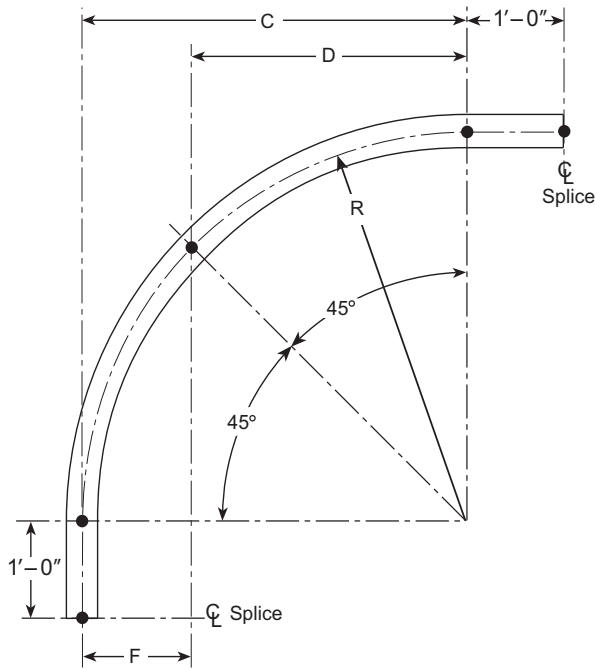


Figure 1

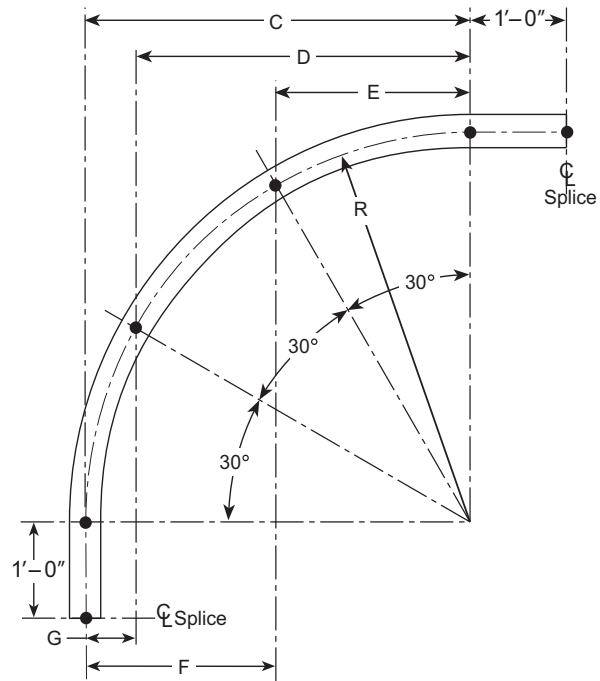


Figure 2

Curve supported at splices, tangents and 45° points

Curve supported at splices, tangents and 30° points

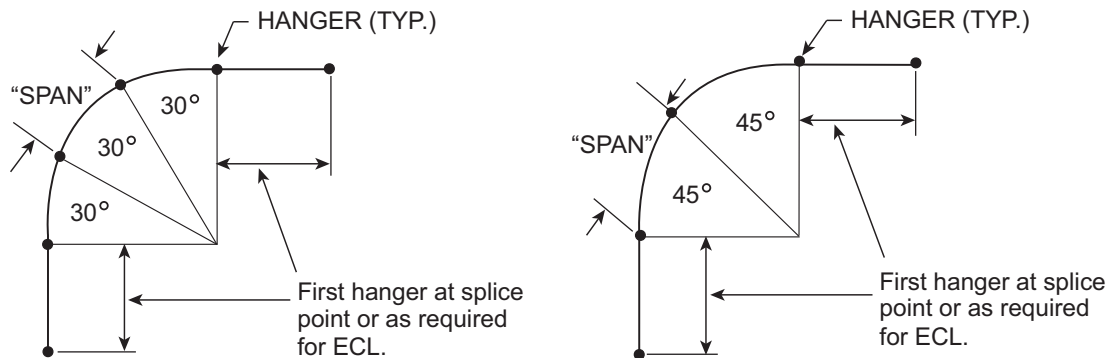
90 Degree Curve Layout Dimensions

(R) Radius	C	D	E	F	G	Figure
4'-0"	4'-0"	2'-9 ¹⁵ / ₁₆ "	—	1'-2 ¹ / ₁₆ "	—	1
5'-0"	5'-0"	3'-6 ⁷ / ₁₆ "	—	1'-5 ⁹ / ₁₆ "	—	1
6'-0"	6'-0"	4'-2 ⁷ / ₈ "	—	1'-9 ¹ / ₈ "	—	1
7'-0"	7'-0"	4'-11 ³ / ₈ "	—	2'-0 ⁵ / ₈ "	—	1
8'-0"	8'-0"	6'-11 ¹ / ₈ "	4'-0"	4'-0"	1'-0 ⁷ / ₈ "	2
9'-0"	9'-0"	7'-9 ¹ / ₂ "	4'-6"	4'-6"	1'-2 ¹ / ₂ "	2
10'-0"	10'-0"	8'-7 ¹³ / ₁₆ "	5'-0"	5'-0"	1'-4 ¹ / ₁₆ "	2

Note For top flange hole layout at support points, see Section "C" Suspension.

See Section "H", Single Girder Hoist Carriers, for information regarding hoist carrier wheelbase to curve radius ratio.

With Hangers at Tangent Points

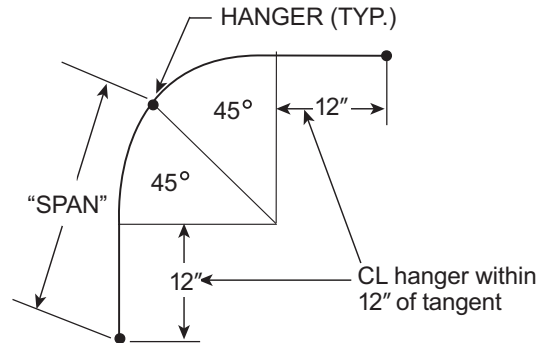
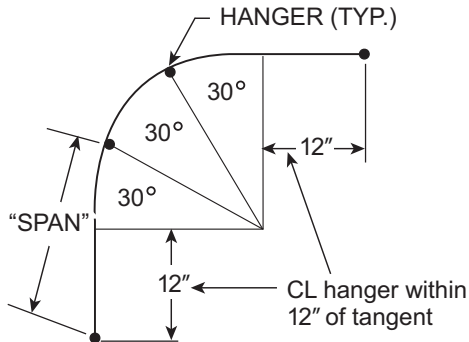


With Hangers At Tangent Points

Radius (R)	Span	3RL8-16	3RL11-19	3RL13-22	3RH13-30	3RH14-33	45R14-46
30 Degrees							
3	18.6	19,744	28,900	34,733	N/A	N/A	N/A
4	24.9	12,483	17,901	21,885	26,421	29,920	N/A
6	37.3	6,580	9,180	10,885	13,844	17,074	33,680
8	49.7	4,287	5,897	6,817	9,011	10,120	21,746
10	62.1	3,150	4,025	4,832	6,635	7,564	15,822
12	74.5	N/A	N/A	N/A	N/A	N/A	12,723
14	87.0	N/A	N/A	N/A	N/A	N/A	10,550
45 Degrees							
3	27.5	7,695	10,568	12,928	N/A	N/A	N/A
4	36.7	4,821	6,770	7,871	9,970	12,195	N/A
6	55.1	2,618	3,488	4,035	5,431	6,189	13,212
8	73.5	1,783	2,132	2,618	3,720	4,060	9,166
10	91.8	1,363	1,562	1,933	2,859	3,059	7,204
12	110.2	N/A	N/A	N/A	N/A	N/A	5,894
14	128.6	N/A	N/A	N/A	N/A	N/A	4,875

Note To select an appropriate curve rail and adequate hanger support location: determine the ECL required by selecting a "curve span: from the charts and apply either a "point load weight value" or a total weight load "W" distributed over the wheelbase of a carrier. Calculate as you would for a straight piece of rail. For a motorized carrier, the wheelbase of the carrier should be no greater than approximately 80% of the radius of the smallest radius curve in the system.

No Hangers at Tangent Points (first hanger on straight rail must be within 12" of tangent)



No Hangers At Tangent Points

Radius (R)	Span	3RL8-16	3RL11-19	3RL13-22	3RH13-30	3RH14-33	45R14-46
30 Degrees							
3	30.4	7,975	10,808	13,389	N/A	N/A	N/A
4	36.6	5,917	8,466	9,737	12,337	15,234	N/A
6	49.0	3,849	5,235	6,094	8,036	9,200	19,159
8	61.4	2,850	3,604	4,356	5,973	6,636	14,332
10	73.8	2,276	2,762	3,376	4,789	5,250	11,630
12	86.2	N/A	N/A	N/A	N/A	N/A	9,719
14	98.6	N/A	N/A	N/A	N/A	N/A	8,432
45 Degrees							
3	38.9	3,800	5,333	6,126	N/A	N/A	N/A
4	49.0	2,776	3,793	4,350	5,718	6,633	N/A
6	66.4	1,805	2,189	2,687	3,746	4,246	9,047
8	84.7	1,355	1,592	1,938	2,830	3,175	7,081
10	103.0	1,098	1,219	1,529	2,302	2,444	5,795
12	121.4	N/A	N/A	N/A	N/A	N/A	4,797
14	139.7	N/A	N/A	N/A	N/A	N/A	4,130

Note To select an appropriate curve rail and adequate hanger support location: determine the ECL required by selecting a "curve span" from the charts and apply either a "point load weight value" or a total weight load "W" distributed over the wheelbase of a carrier. Calculate as you would for a straight piece of rail. For a motorized carrier, the wheelbase of the carrier should be no greater than approximately 80% of the radius of the smallest radius curve in the system.

Track Openers

Track Openers are devices to allow a gate section of a monorail to swing out of the way and provide clear passage for a door through the monorail line. Track Openers can be provided with or without electrical conductor bar (Electrified or Non-Electrified).

Originally designed for use with fire doors, these Track Openers automatically swing open (spring loaded actuator) when struck by a kick plate on the door. Doors can be either horizontal or vertical operation. The Track Opener may be manually closed when the door is returned to open.

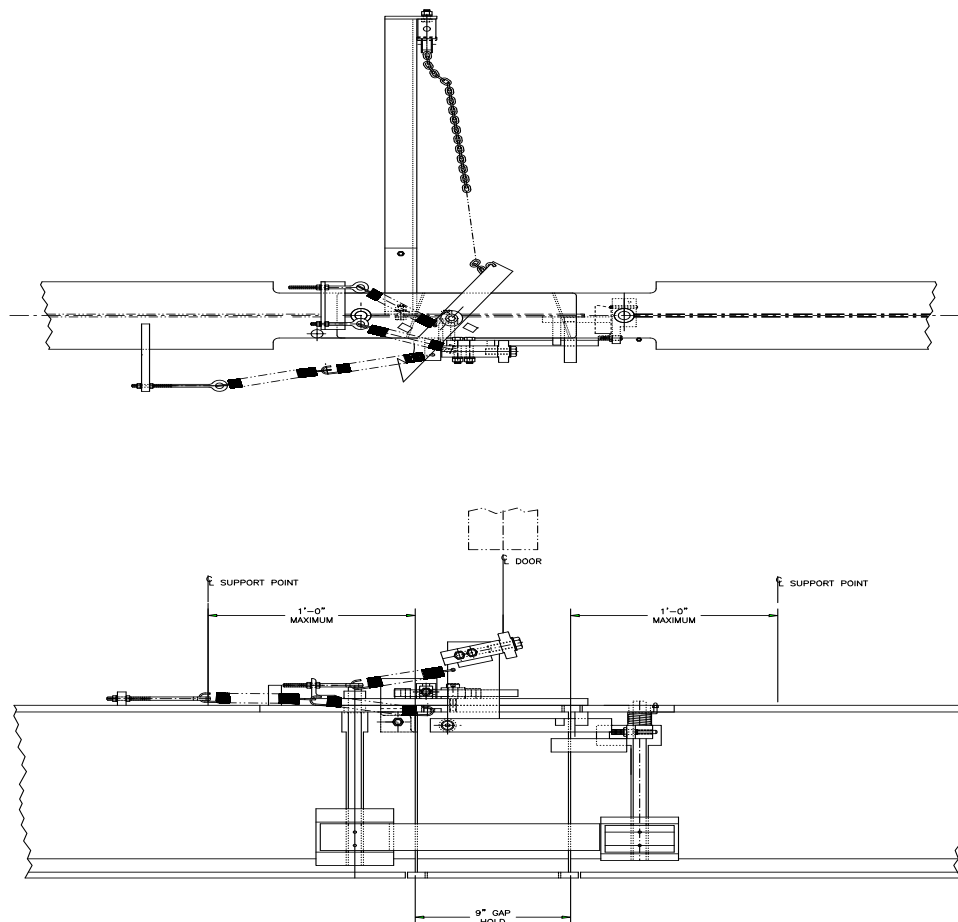
Applications for Track Openers at other than fire doors may use manual open and manual close via a pull chain that is field routed as required for easy access and also to clear building obstructions. Standard gap opening is 9 inches. Standard capacity is 2 ton.

Options include: air cylinder or electric actuator operated open/close; longer gap for thick doors or swinging doors; spark resistant components; special paint; and greater than 2 ton capacity. Contact the factory for other options. Electric operated doors to be field wired by others to a limit switch to prevent the door being closed when the track opener is closed.

Contact the factory for information about Rotating Track Openers, designed to be installed between parallel doors in a Jet Engine Test Cell.

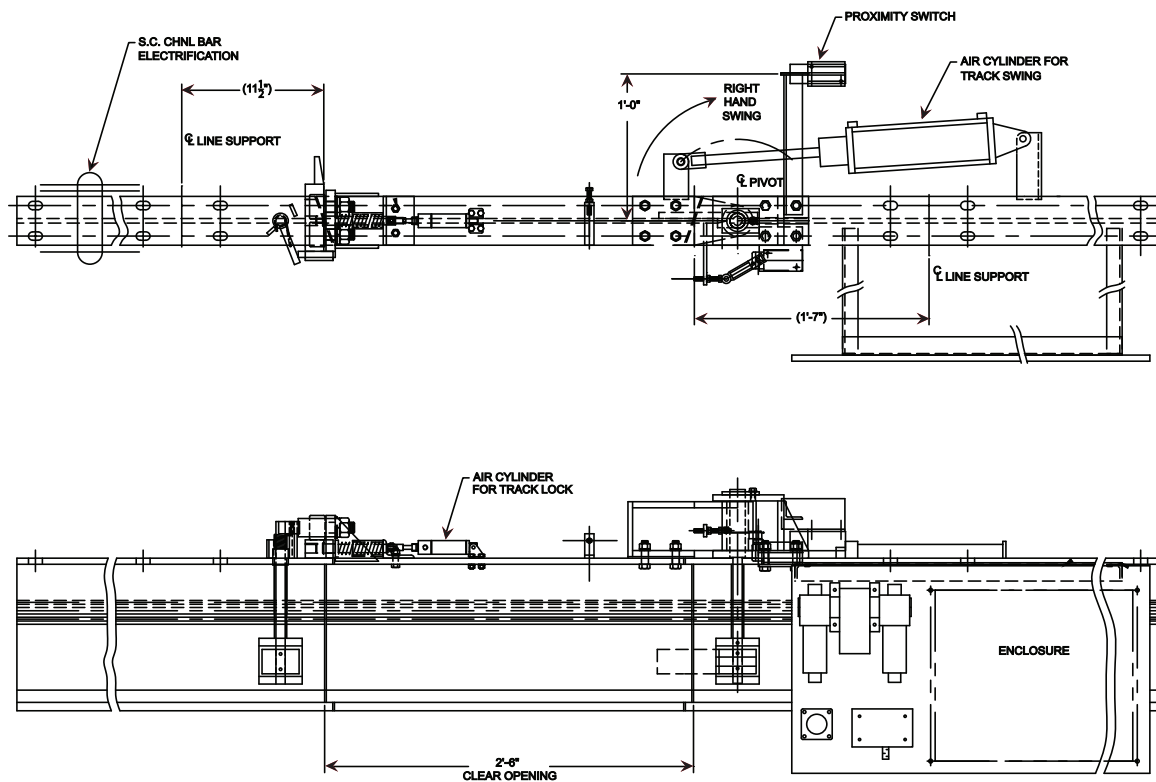
Available for 200 or 325 series monorails.

Typical Fire Door Track Opener - Automatic Open, Manual Close





Typical Air Operated Track Opener







Trolleys

200 Series Trolleys

200 Series Trolleys	E-5	Model 2T-2800-4 Trolley	E-7
Model 2T-750-2 Trolley	E-5	Model 2T-2000-2SR Trolley	E-8
Model 2T-750-2L Trolley	E-5	Model 2T-2800-4SR Trolley	E-8
Model 2T-1150-4 Trolley	E-5	Model 2T-3100-4 Trolley	E-9
Model 2T-1150-4L Trolley	E-5	Model 2T-3100-4SR Trolley	E-10
Model 2T-850-2 Trolley	E-6	Model 2T-3100-4CC Trolley	E-11
Model 2T-850-2L Trolley	E-6	Model 2T-5600-8 Trolley	E-12
Model 2T-850-2C (Crane Trolley)	E-6	Model 2T-5600-8SR Trolley	E-13
Model 2T-1200-4 Trolley	E-6	Model 2T-5600-8CC Trolley	E-14
Model 2T-1200-4L Trolley	E-6	Model 2T-3000-2 Trolley	E-15
Model 2T-2000-2 Trolley	E-7	Model 2T-4000-4 Trolley	E-15

325 Series Trolleys

325 Series Trolleys	E-17	Model 3T-5400-4 Trolley	E-24
Model 3T-750-2 Trolley	E-17	Model 3T-2700-2SR Trolley	E-25
Model 3T-750-2L Trolley	E-17	Model 3T-2700-2SRC Trolley	E-25
Model 3T-1150-4 Trolley	E-17	Model 3T-5400-4SR Trolley	E-25
Model 3T-1150-4L Trolley	E-17	Model 3T-6200-2 Trolley	E-26
Model 3T-850-2 Trolley	E-18	Model 3T-12400-4 Trolley	E-26
Model 3T-850-2L Trolley	E-18	Model 3T-6200-2SR Trolley	E-27
Model 3T-850-2C Trolley	E-18	Model 3T-12400-4SR Trolley	E-27
Model 3T-1200-4 Trolley	E-18	Model 3T-8000-2 Trolley	E-28
Model 3T-1200-4L Trolley	E-18	Model 3T-16000-4 Trolley	E-28
Model 3T-2000-2 Trolley	E-19	Model 3T-8000-2SR Trolley	E-29
Model 3T-2800-4 Trolley	E-19	Model 3T-16000-4SR Trolley	E-29
Model 3T-2000-2SR Trolley	E-20	Model 3T-10000-2SR Trolley	E-30
Model 3T-2800-4SR Trolley	E-20	Model 3T-20000-4SR Trolley	E-30
Model 3T-3100-4 Trolley	E-21	Model 3T-20000-4SRL Trolley	E-30
Model 3T-3100-4SR Trolley	E-22	Model 3T-24800-8 Trolley	E-31
Model 3T-3100-4CC Trolley	E-23	Model 3T-24800-8L Trolley	E-31
Model 3T-2700-2 Trolley	E-24	Model 3T-24800-8SR Trolley	E-32
Model 3T-2700-2C Trolley	E-24	Model 3T-24800-8SRL Trolley	E-32

400 Series Trolleys

400 Series Trolleys	E-33	Model 4T-6600-2SR Trolley	E-33
Model 4T-4200-2SR Trolley	E-33		

450 Series Trolleys

450 Series Trolleys	E-34	Model 45T-30000-4SRL Trolley	E-34
Model 45T-15000-2SR Trolley	E-34	Loadbar Details	E-35
Model 45T-30000-4SR Trolley	E-34	Articulated Trolley Component Assembly	E-36

Trolley Fittings

Trolley Fittings E-37

Load Eyes

E-31 Load Eye	E-37
E-41-2B Load Eye	E-37
E-41-4B Load Eye	E-37
E-42 Load Eye	E-37
E-104 Load Eye	E-37
E-121 Load Eye	E-37
E-159 Load Eye	E-38
E-173 Load Eye	E-38

Load Hooks

H-32 Load Hook	E-38
H-103 Load Hook	E-38
H-120 Load Hook	E-38
H-158 Load Hook	E-38
H-160 Load Hook	E-39

Swivels

FS-113F Flat Swivel	E-39
FS-119A Flange Swivel	E-39
S-193 Stud Swivel	E-39
S-194 Stud Swivel, with Nut	E-39
SW-43-2 Flat Swivel	E-40
SW-43-4 Flat Swivel	E-40
SW-44-2 Clevis Swivel	E-40
SW-44-4 Clevis Swivel	E-40
SW-45-2 Flange Swivel	E-40
SW-45-4 Flange Swivel	E-41
FS-30000 Flange Swivel	E-41
SW-48-2 Stud Swivel	E-41
SW-48-4 Stud Swivel	E-41
TS-106A Clevis Swivel	E-42

Miscellaneous Fittings

HB-118 Hook Bearing	E-42
HB-217 Hook Bearing	E-42
SB-213 Swivel Bushing	E-42
FF-8000 Flanged Fitting	E-42

Trolley Wheels

W-123 Wheel	E-43
W-124A Wheel	E-43
W-163F Wheel	E-44
W-164F Wheel	E-44
W-164FA Wheel	E-45
W-284F Wheel	E-45
W-284FA Wheel	E-46
W-539 Wheel	E-46
3W-8017 Wheel	E-47
3W-8033-F Wheel	E-47
3W-8035 Wheel	E-48
3W-8037-F Wheel	E-48
3W-8039 Wheel	E-49
45W-8025 Wheel	E-49
Wheel	E-50

Trolleys

Wheels

TC/American wheels are high strength machined steel, with the treads and flanges of over 3" dia. wheels heat treated to a minimum hardness of 425 Brinell. Wheels are available in 3" to 9" dia. tread sizes, both flanged and flangeless style. Wheel treads and bearing bore are machined after heat treating to assure concentricity. Wheel assemblies are suitable for use in temperatures up to 150° F. Bronze wheels, sealed bearings, high temperature bearings, etc. are available from TC/American. Axles are made of high strength, machined steel.

Bearings

TC/American trolley wheels use top quality precision ball or roller bearings. All wheel bearings have a minimum B-10 life of 5,000 hours. Standard wheel bearings are regreaseable with sealed type as an option.

Guide Rollers

Trolleys are available with lubricated and shielded ball bearing side guide rollers. These side roller trolleys are recommended for use on high speed, heavy service and monorail systems with curves. This type of trolley can extend the wheel life and flanges on the edge of the rail. They also serve to guide the trolleys into and out of curves, switches, and when operating at high speeds.

Yokes

Trolley yokes are forgings, ductile castings or fabricated steel for generous capacity. All yokes are of compact design to reduce bearing stress and gain maximum headroom.

Loadbars

Loadbars are forgings, ductile castings or fabricated steel. Load bars are used to couple two-wheel trolleys to make four-wheel trolleys and four-wheel trolleys to make eight-wheel trolleys. The load bars are captured inside the yokes to gain maximum headroom clearance, capacity and free wheeling around curves.

Trolley Retaining Bolts

Trolleys provided with Retaining Bolts must have these bolts installed to prevent a loadbar or saddle from disengaging from the trolley. This could happen in extreme circumstances that would cause the loadbar to lift upward in the trolley yoke. Retaining bolts are shoulder bolts. When properly installed they allow clearance for trolley articulation.

Adapters

Trolleys can be furnished with a variety of standard load eyes, hooks, swivels and adapters. Two-wheeled trolleys can be used as single units or in units or in pairs for carrying racks, hoists or special carriers. However, a single two-wheel unit is not recommended for carrying a hook or lug mounted hoist. Other types of fittings can be furnished for special applications.

Trolley Capacities

Trolley capacities are based on travel speed, bearing life, total live load, impact and accessories. All trolley capacity specifications include live load, impact and handling equipment weights.

Paint

Wheels – zinc-plated

Monorail trolleys – TC/American alert orange enamel

Crane trolleys – TC/American alert yellow enamel





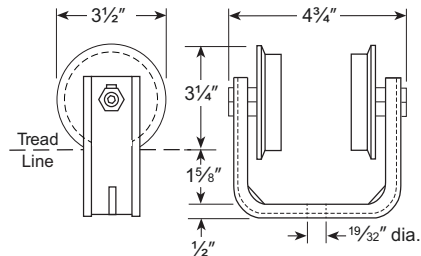
200 Series Trolleys

Model 2T-750-2 Trolley

10-1231-00

Model 2T-750-2L Trolley

10-1791-00



Specifications

Weight

2T-750-2, 2T-750-2L*	4 1/8 lbs.
2T-1150-4, 2T-1150-4L*	11 1/4 lbs.

Total Load Capacity†

2T-750-2	750 lbs.
2T-1150-4	1150 lbs.
Gravity Systems	350 lbs.
2T-750-2L*	500 lbs.
2T-1150-4L*	

Yoke

Y-186
25-1249-00

Wheel and Bearing Assembly

See "W-123 Wheel" on page E-43.

W-123
10-1230-00

Axle

With grease fitting	W-123-1 25-1246-00
With oil port.	W-123-1L 25-2148-00

Loadbar

2T-1150-4, 2T-1150-4L	LB-155-1 25-1244-01
-----------------------	------------------------

* Trolley model with "L" indicates trolley wheel bearings with light oil only and an oil port in the axle in place of a grease fitting—used for gravity systems.

† Includes live load, impact & handling equip. weights

Collectors & Mounting Bracket

Part #	Shielded Channel Bar* & Bracket
10-1872-00	E-988-SA Short Arm, 35 amp (fig. 1)
10-1873-00	E-989-LA Long Arm, 35 amp (fig. 1)
10-2125-00	E-189-1 Side Mnt Brkt, one required per collector

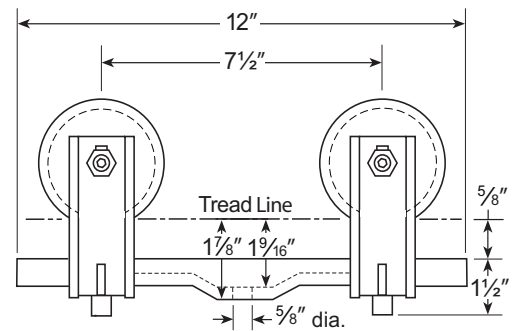
* For collector details and other options, see "Figure 1" on page I-11.

Model 2T-1150-4 Trolley

10-1232-00

Model 2T-1150-4L Trolley

10-1792-00

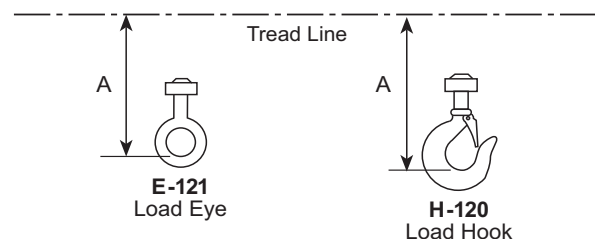


Consists of two 2T-750-2 trolleys coupled by LB-155-1 Loadbar.

Fittings

Part #	Fittings*	Dimension from Tread Line "A"	
		2T-750-2	2T-1150-4
10-1426-00	E-121 Load Eye	4 1/8"	4 1/16"
10-1429-00	H-120 Load Hook	4 5/8"	4 9/16"

* See Section "Trolley Fittings" on page E-37.



Model 2T-850-2 Trolley

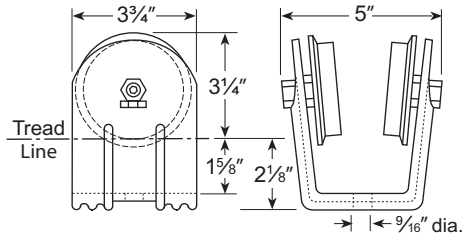
10-1357-00

Model 2T-850-2L Trolley

10-1793-00

Model 2T-850-2C (Crane Trolley)

10-2239-00



Note Model 2T-850-2C is the same as Model 2T-850-2 except it has an 11/16" diameter hole in the yoke— for use with crane end trucks.

Specifications

Weight

2T-850-2, 2T-850-2L*, 2T-850-2C	6 lbs.
2T-1200-4, 2T-1200-4L*	15 lbs.

Total Load Capacity†

2T-850-2	850 lbs.
2T-850-2C (Crane Trolley)	850 lbs.
2T-1200-4	1200 lbs.
Gravity Systems*	
2T-850-2L*	350 lbs.
2T-1200-4L*	700 lbs.

Yoke

2T-850-2	Y-686
	25-1417-00
2T-850-2C (Crane Trolley)	25-1417-01

Wheel and Bearing Assembly

See **"W-123 Wheel"** on page E-43.

W-123

10-1230-00

Axle

With grease fitting	W-123-1
	25-1246-00
With oil port	W-123-1L
	25-2148-00

Loadbar

2T-1150-4, 2T-1150-4L	LB-155-1
	25-1244-01

* Trolley model with "L" indicates trolley wheel bearings with light oil only and an oil port in the axle in place of a grease fitting— used for gravity systems.

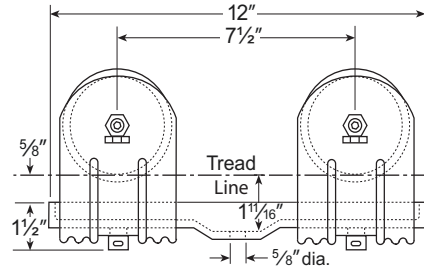
† Includes live load, impact & handling equip. weights.

Model 2T-1200-4 Trolley

10-1358-00

Model 2T-1200-4L Trolley

10-2240-00

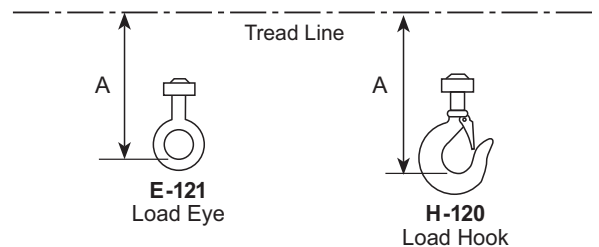


Consists of two 2T-850-2 trolleys coupled by LB-155-1 Loadbar.

Fittings

Part #	Fittings†	Dimension from Tread Line "A"	
		2T-850-2	2T-1200-4
10-1426-00	E-121 Load Eye	4 1/8"	4 3/16"
10-1429-00	H-120 Load Hook	4 5/8"	4 11/16"

† See Section **"Trolley Fittings"** on page E-37.

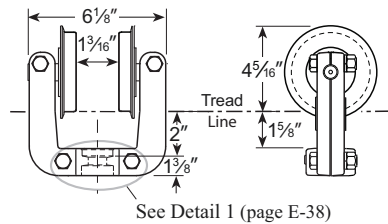


Collectors

These trolleys are not designed to mount collectors on the trolley yoke

**Model 2T-2000-2 Trolley**

10-1095-00

**Specifications**

Weight	
2T-2000-2	11 lbs.
2T-2800-4	29 lbs.
Total Load Capacity*	
2T-2000-2	2000 lbs.
2T-2800-4	2800 lbs.
Yoke	
	Y-145 10-1837-00
Wheel, Bearing and Axle Assembly†	
With grease fitting	W-164-F 10-1092-00
With oil port	W-164-F2 10-1818-00
Loadbar 2T-2800-4	
	LB-167 25-1210-01
Bumper 2T-2800-4	
	B-141 25-1211-00
Hook Bearing	
2T-2800-4	HB-118 10-2491-00
Swivel Bushing	
2T-2000-2	SB-213
2T-2800-4	10-2345-00

* Includes live load, impact & handling equip. weights.

† See "W-164F Wheel" on page E-44.

Collectors

Part #	Shielded Channel Bar*
10-1872-00	E-988-SA Short Arm, 35 amp (fig. 1)
10-1873-00	E-989-LA Long Arm, 35 amp (fig. 1)

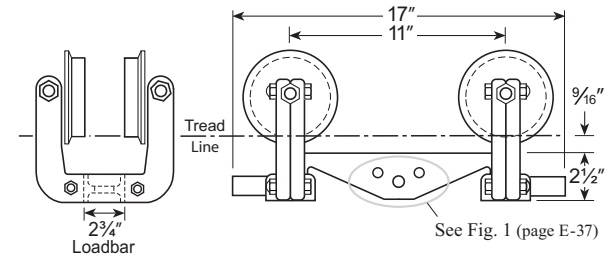
* For collector details and other options, see "Figure 1" on page I-11.

Model 2T-2800-4 Trolley

10-1825-00 Plain (shown)

10-1180-00 with Swivel Bushing

10-1184-00 with Hook Bearing

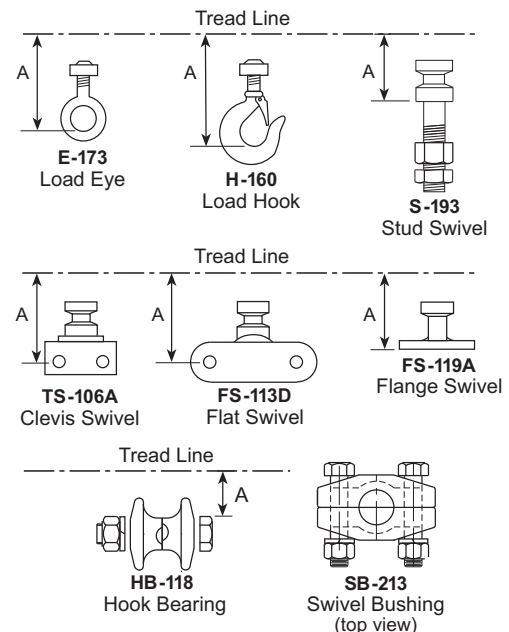


Consists of two Model 2T-2000-2SR trolleys coupled by an LB-167 Loadbar with Hook Bearing or Swivel Bushing.

Fittings

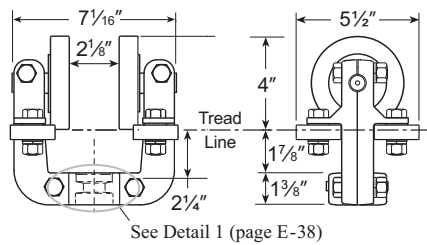
Part #	Fittings*†	Dimension from Tread Line "A"	
		2T-2000-2	2T-2800-4
10-1428-00	E-173 Load Eye	5 1/16"	5 11/16"
10-1439-00	H-160 Load Hook	5 13/16"	6 7/16"
10-2130-00	TS-106A Clevis Swivel	4 1/8"	4 3/4"
25-1440-00	FS-113D Flat Swivel	4 3/8"	5"
10-2637-00	FS-119A Flange Swivel	3 1/2"	4 1/8"
10-2423-00	S-193A Stud Swivel	3 3/16"	3 13/16"
10-2424-00	S-193B Stud Swivel	3 3/16"	3 13/16"
10-2425-00	S-193C Stud Swivel	3 3/16"	3 13/16"
10-2491-00	HB-118 Hook Bearing	—	1 9/16"

* See Section "Trolley Fittings" on page E-37.



Model 2T-2000-2SR Trolley

10-1121-00



Specifications

Weight

2T-2000-4SR	13 lbs.
2T-2800-4SR	33 lbs.

Total Load Capacity*

2T-2000-2SR	2000 lbs.
2T-2800-4SR	2800 lbs.

Yoke

Y-145R3
10-1839-00

Wheel, Bearing and Axle Assembly†

W-164-FA
10-1378-00

Side Rollers

SR-7095
23-1017-00

Loadbar 2T-2800-4SR

LB-167
25-1210-01

Bumper 2T-2800-4SR

B-141
25-1211-00

Hook Bearing

2T-2800-4SR	HB-118 10-2491-00
-------------	----------------------

Swivel Bushing

2T-2000-2SR	integral
2T-2800-4SR	SB-213 10-2345-00

* Includes live load, impact & handling equip. weights.

† See "W-164FA Wheel" on page E-45.

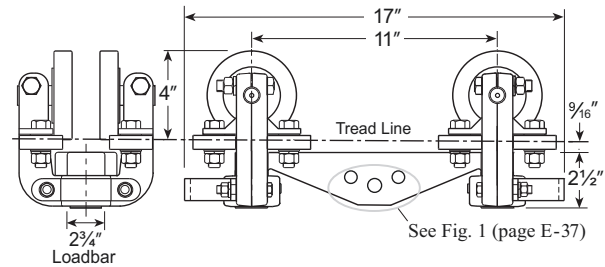
Collectors

Part #	Shielded Channel Bar*
10-1872-00	E-988-SA Short Arm, 35 amp (fig. 1*)
10-1873-00	E-989-LA Long Arm, 35 amp (fig. 1*)

* For collector details and other options, see Figure 1 on page I-11.

Model 2T-2800-4SR Trolley

10-1147-00

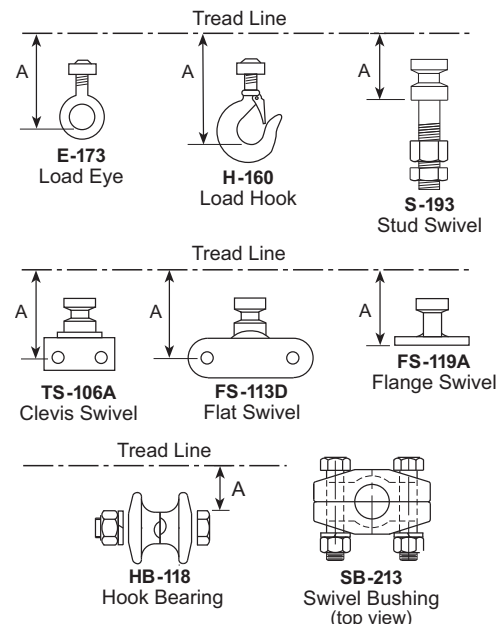


Consists of two Model 2T-2000-2SR trolleys coupled by an LB-167 Loadbar with Hook Bearing or Swivel Bushing.

Fittings

Part #	Fittings*	Dimension from Tread Line "A"	
		2T-2000-2SR	2T-2800-4SR
10-1428-00	E-173 Load Eye	5 1/16"	5 11/16"
10-1439-00	H -160 Load Hook	5 13/16"	6 7/16"
10-2130-00	TS-106A Clevis Swivel	4 1/8"	4 3/4"
25-1440-00	FS-113D Flat Swivel	4 3/8"	5"
10-2637-00	FS-119A Flange Swivel	3 1/2"	4 1/8"
10-2423-00	S-193A Stud Swivel	3 3/16"	3 13/16"
10-2424-00	S-193B Stud Swivel	3 3/16"	3 13/16"
10-2425-00	S-193C Stud Swivel	3 3/16"	3 13/16"
10-2491-00	HB-118 Hook Bearing	—	19/16"

* See Section "Trolley Fittings" on page E-37.

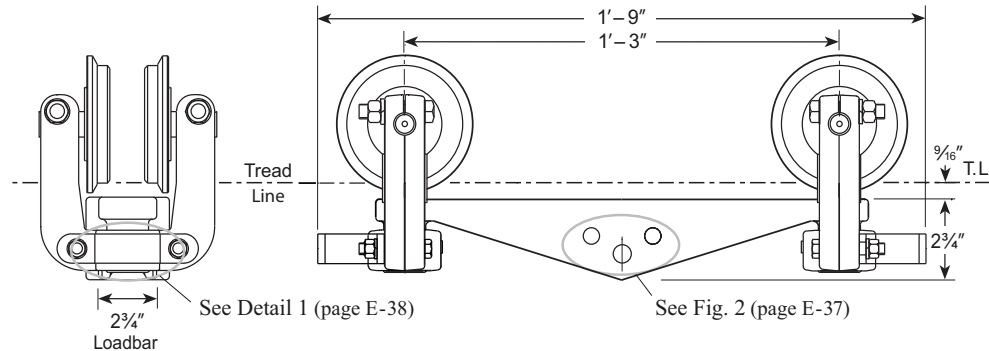


Model 2T-3100-4 Trolley

10-1826-00 Plain (shown)

10-1209-00 with Hook Bearing

10-1211-00 with Swivel Bushing



Consists of two Model 2T-2000-2 trolleys coupled by an LB-212 Loadbar.

Specifications

Weight	33 lbs.
Total Load Capacity*	3100 lbs.
2-Wheel Trolley†	
Loadbar	LB-212 25-1243-01
Hook Bearing	HB-118 10-2491-00
Swivel Bushing	SB-213 10-2345-00

* Includes live load, impact & handling equip. weights.

† For components of 2T-2000-2 Trolley, see [page E-7](#).

Collectors

Part #	Shielded Channel Bar*
10-1872-00	E-988-SA Short Arm, 35 amp (fig. 1*)
10-1873-00	E-989-LA Long Arm, 35 amp (fig. 1*)

* For collector details and other options, see .

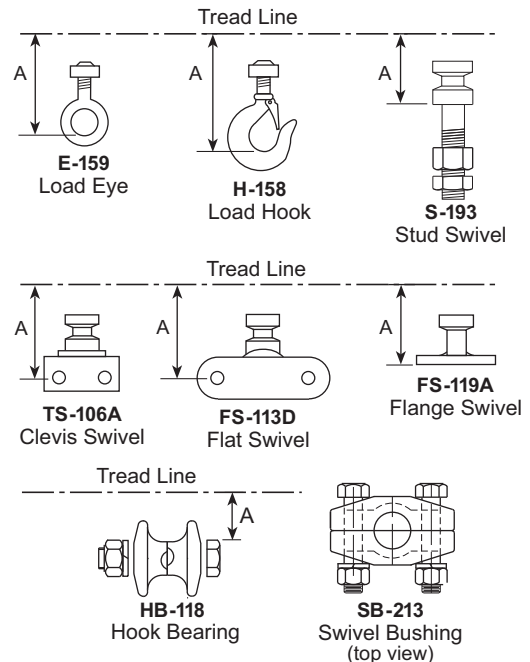
Fittings

Part #	Fittings*	Dimension from Tread Line "A"
10-1425-00	E-159 Load Eye	6 3/4"
10-1437-00	H-158 Load Hook	7 3/8"
10-2130-00	TS-106A Clevis Swivel	4 7/8"
25-1440-00	FS-113D Flat Swivel	5 1/8"

Fittings

Part #	Fittings*	Dimension from Tread Line "A"
10-2637-00	FS-119A Flange Swivel	4 1/4"
10-2423-00	S-193A Stud Swivel	3 15/16"
10-2424-00	S-193B Stud Swivel	3 15/16"
10-2425-00	S-193C Stud Swivel	3 15/16"
10-2491-00	HB-118 Hook Bearing	1 15/16"

* See Section "Trolley Fittings" on page E-37

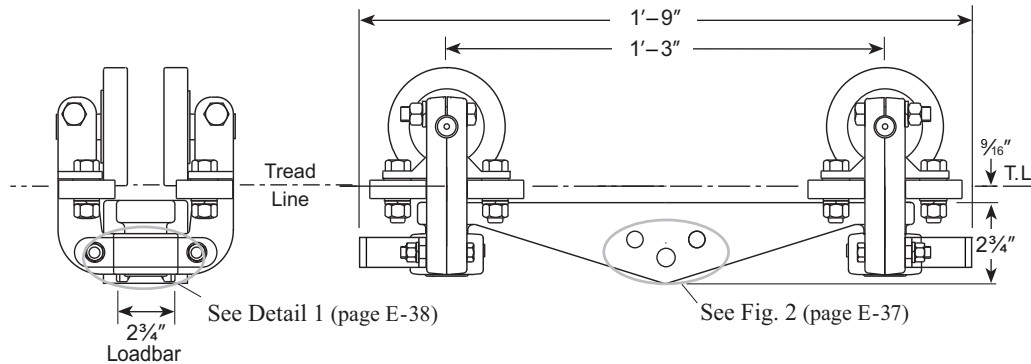


Model 2T-3100-4SR Trolley

10-2315-00 Plain (shown)

10-1216-00 with Hook Bearing

10-1218-00 with Swivel Bearing



Consists of two Model 2T-2000-2SR trolleys coupled by an LB-212 Loadbar.

Specifications

Weight	37 lbs.
Total Load Capacity*	3100 lbs.
2-Wheel Trolley†	
Loadbar	LB-212 25-1243-01
Hook Bearing	HB-118 10-2491-00
Swivel Bushing	SB-213 10-2345-00

* Includes live load, impact & handling equip. weights.

† For components of 2T-2000-2SR Trolley, see [page E-8](#).

Collectors

Part #	Shielded Channel Bar*
10-1872-00	E-988-SA Short Arm, 35 amp (fig. 1*)
10-1873-00	E-989-LA Long Arm, 35 amp (fig. 1*)

* For collector details and other options, see [Figure 1](#) on page I-11.

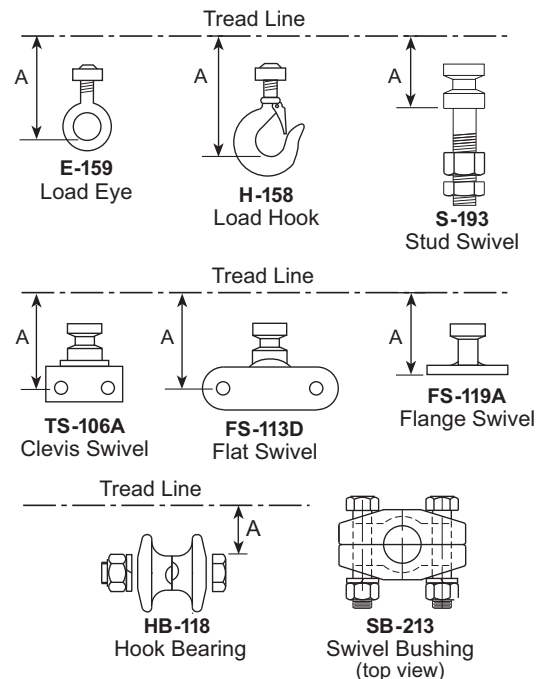
Fittings

Part #	Fittings*†	Dimension from Tread Line "A"
10-1425-00	E-159 Load Eye	6 5/8"
10-1437-00	H-158 Load Hook	7 3/8"
10-2130-00	TS-106A Clevis Swivel	5"

Fittings

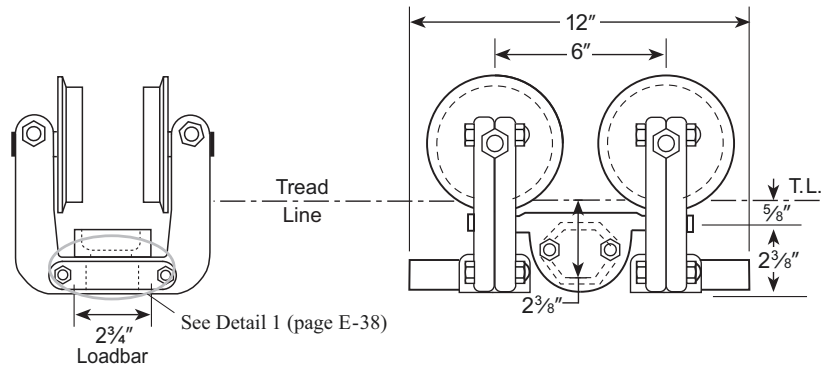
Part #	Fittings*†	Dimension from Tread Line "A"
25-1440-00	FS-113D Flat Swivel	5 1/8"
10-2637-00	FS-119A Flange Swivel	4 3/8"
10-2423-00	S-193A Stud Swivel	3 7/8"
10-2424-00	S-193B Stud Swivel	3 7/8"
10-2425-00	S-193C Stud Swivel	3 7/8"
10-2491-00	HB-118 Hook Bearing	1 15/16"

* See Section "Trolley Fittings" on page E-37.



Model 2T-3100-4CC Trolley

10-1334-00 with Swivel Bushing (shown)

**Consists of two Model 2T-2000-2 trolleys, coupled by an LB-114 Loadbar.****Specifications**

Weight	29 lbs.
Total Load Capacity*	3100 lbs.
2-Wheel Trolley†	
Loadbar	LB-114 25-1404-01
Swivel Bushing	SB-213 10-2345-00

* Includes live load, impact & handling equip. weights.

† For components of 2T-2000-2 Trolley, see [page E-7](#).**Collectors**

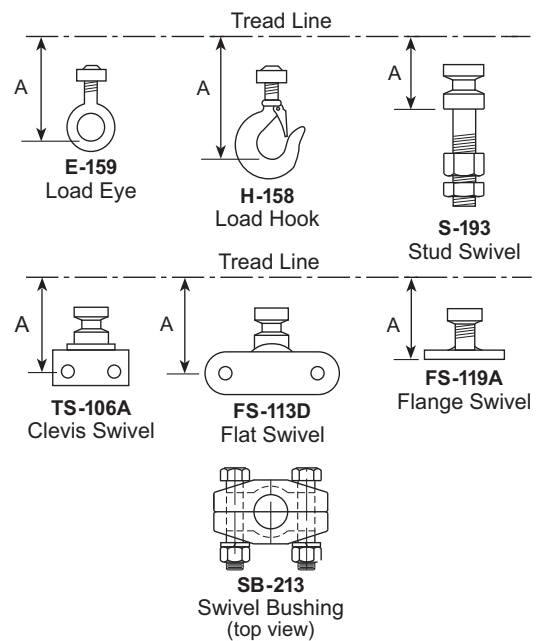
Part #	Shielded Channel Bar*
10-1872-00	E-988-SA Short Arm, 35 amp (fig. 1*)
10-1873-00	E-989-LA Long Arm, 35 amp (fig. 1*)

* For collector details and other options, see [Figure 1](#) on page I-11.**Fittings**

Part #	Fittings†	Dimension from Tread Line "A"
10-1425-00	E-159 Load Eye	7"
10-1437-00	H-158 Load Hook	7 3/8"
10-2130-00	TS-106A Clevis Swivel	5 1/8"
25-1440-00	FS-113D Flat Swivel	5 3/8"

Fittings

Part #	Fittings†	Dimension from Tread Line "A"
10-2637-00	FS-119A Flange Swivel	4 1/2"
10-2423-00	S-193A Stud Swivel	4 3/16"
10-2424-00	S-193B Stud Swivel	4 3/16"
10-2425-00	S-193C Stud Swivel	4 3/16"

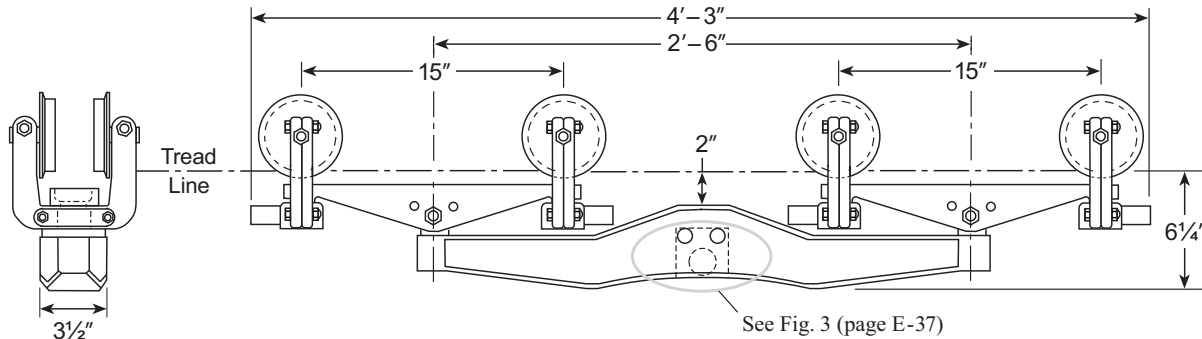
† See Section **"Trolley Fittings"** on page E-37.

Model 2T-5600-8 Trolley

10-2241-00 Plain (shown)

10-1224-00 with Hook Bearing

Part number not assigned: Trolley with Adapter and Thrust Bearing



Consists of two Model 2T-3100-4 trolleys with Swivel Bushings, coupled by an LB-215 Loadbar.

Specifications

Weight	96 lbs.
Total Load Capacity*	5600 lbs.
4-Wheel Trolley†	
Loadbar (Lower)	LB-215 10-1717-00
Hook Bearing	HB-217 10-3491-00
259 Adapter, Thrust Bearing and Mounting Hardware	
For 1 1/8"	10-2619-01
For 1 1/4"	10-2619-02

* Includes live load, impact & handling equip. weights.

† For components of 2T-3100-2 Trolley, see [page E-9](#).

Collectors

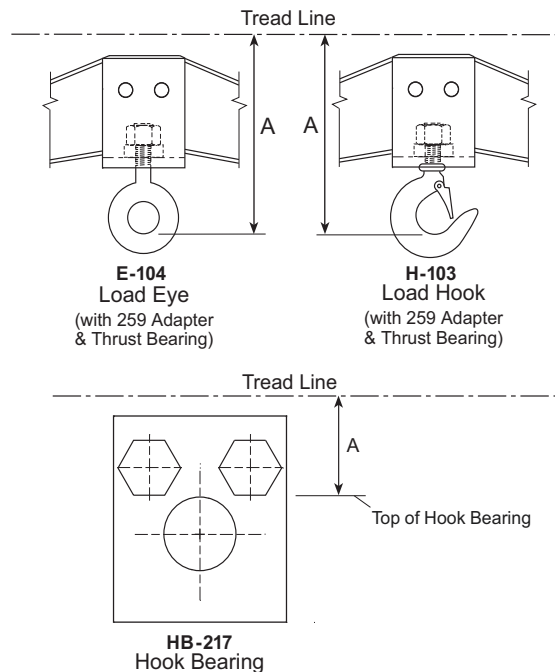
Part #	Shielded Channel Bar*
10-1872-00	E-988-SA Short Arm, 35 amp (fig. 1*)
10-1873-00	E-989-LA Long Arm, 35 amp (fig. 1*)

* For collector details and other options, see [Figure 1](#) on page I-11.

Fittings

Part #	Fitting*s†	Dimension from Tread Line "A"
10-1441-00	E-104 Load Eye	12 1/4"
10-1455-00	H-103 Load Hook	contact factory for dimensions
10-1241-00	HB-217 Hook Bearing	4 1/4"

* See Section "Trolley Fittings" on page E-37.



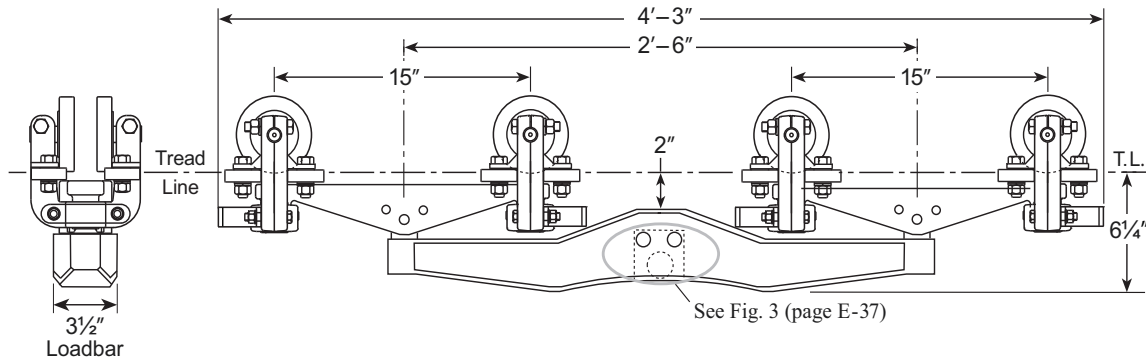


Model 2T-5600-8SR Trolley

10-2242-00 Plain

10-1226-00 with Hook Bearing

Part number not assigned: Trolley with Adapter and Thrust Bearing



Consists of two Model 2T-3100-4SR trolleys with Swivel Bushings, coupled by an LB-215 Load Bar.

Specifications

Weight	104 lbs.
Total Load Capacity*	5600 lbs.
4-Wheel Trolley†	
Loadbar (Lower)	LB-215 10-1717-00
Hook Bearing	HB-217 10-3491-00
259 Adapter, Thrust Bearing and Mounting Hardware	
For 1 1/8"	10-2619-01
For 1 1/4"	10-2619-02

* Includes live load, impact & handling equip. weights.

† For components of 2T-3100-2SR Trolley, see [page E-10](#).

Collectors

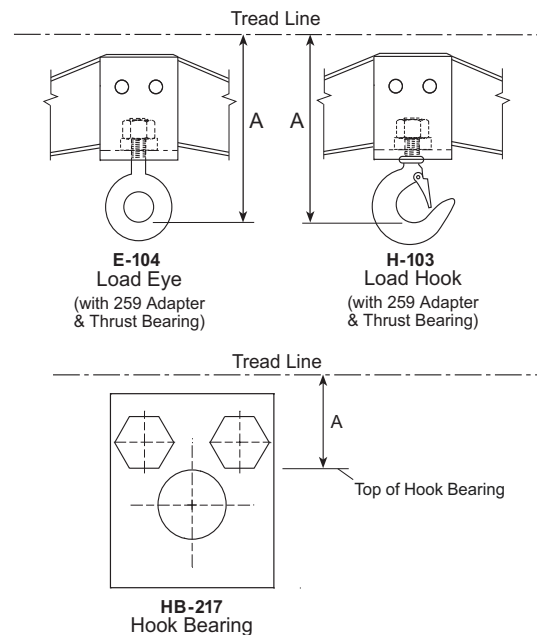
Part #	Shielded Channel Bar*
10-1872-00	E-988-SA Short Arm, 35 amp (fig. 1*)
10-1873-00	E-989-LA Long Arm, 35 amp (fig. 1*)

* For collector details and other options, see [Figure 1](#) on page I-11.

Fittings

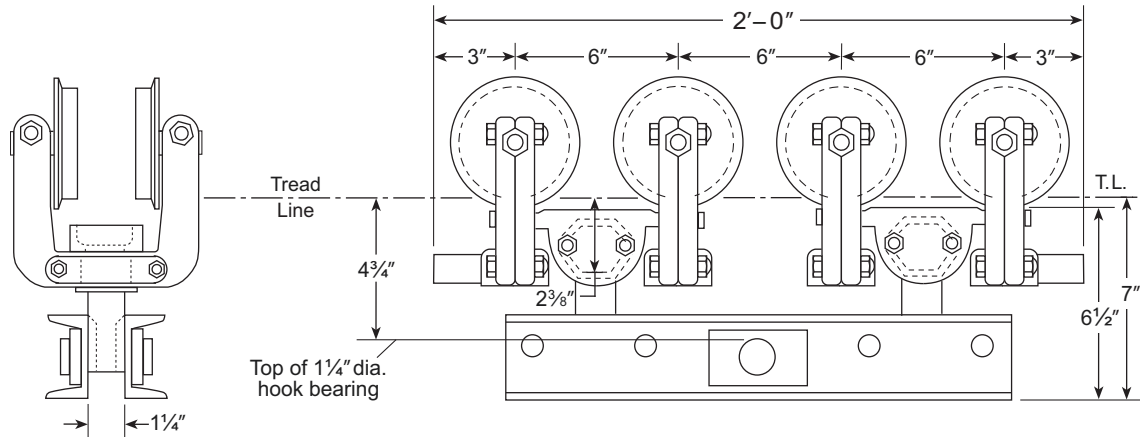
Part #	Fittings*	Dimension from Tread Line "A"
10-1441-00	E-104 Load Eye	12 1/4"
10-1455-00	H-103 Load Hook	contact factory for dimensions
10-1241-00	HB-217 Hook Bearing	4 1/4"

* See Section "Trolley Fittings" on page E-37.



Model 2T-5600-8CC Trolley

10-1380-00 with Hook Bearing



Consists of two Model 2T-3100-4CC trolleys, coupled by an LB-126-1 Loadbar.

Specifications

Weight	80 lbs.
Total Load Capacity*	5600 lbs.
4-Wheel Trolley†	
Loadbar (Lower)	LB-126-1
<i>Loadbar with Hook Bearing</i>	10-1374-00

* Includes live load, impact & handling equip. weights.

† For components of 2T-3100-4CC Trolley, see [page E-11](#).

Collectors

Part #	Shielded Channel Bar*
10-1872-00	E-988-SA Short Arm, 35 amp (fig. 1*)
10-1873-00	E-989-LA Long Arm, 35 amp (fig. 1*)

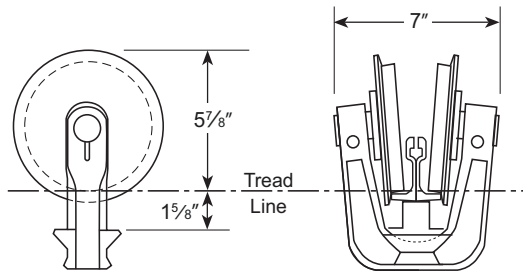
* For collector details and other options, see [Figure 1](#) on page I-11.

Fittings

Hook Bearing only

**Model 2T-3000-2 Trolley**

10-1364-00

**Note** These are crane trolleys only.**Specifications**

Weight	
2T-3000-2	15 lbs.
2T-4000-4	41 lbs.
Total Load Capacity*	
2T-3000-2	3000 lbs.
2T-4000-4	4000 lbs.
Yoke	
	Y-561 25-1425-01
Wheel, Bearing and Axle Assembly†	
	W-539 10-1361-00
Spherical Washer	
	CR600-1 25-1426-00
Pin	
	CR600-2 25-1427-00
Loadbar 2T-4000-4	
	LB-519 25-1424-01

* Includes live load, impact & handling equip. weights.

† See "W-539 Wheel" on page E-46.

Collectors

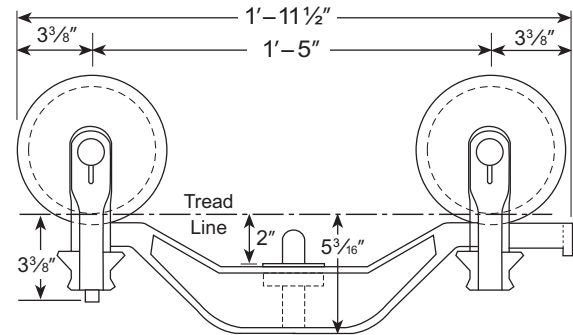
These trolleys are not designed to mount collectors on the trolley yoke.

Fittings

None

Model 2T-4000-4 Trolley

10-1368-00



Consists of two 2T-3000-2 trolleys coupled by LB-519 Loadbar.





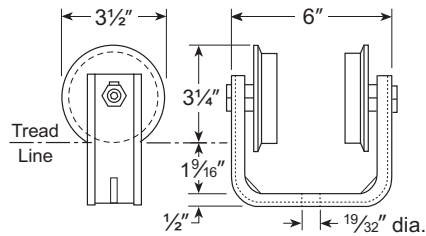
325 Series Trolleys

Model 3T-750-2 Trolley

10-1246-00

Model 3T-750-2L Trolley

10-2243-00



Specifications

Weight	
3T-750-2, 3T-750-2L*	4 1/4 lbs.
3T-1150-4, 3T-1150-4L*	11 1/2 lbs.
Total Load Capacity†	
3T-750-2	750 lbs.
3T-1150-4	1150 lbs.
Gravity Systems*	
3T-750-2L	350 lbs.
3T-1150-4L	500 lbs.
Yoke	
Y-586	
	25-1254-00
Wheel and Bearing Assembly‡	
W-124A	
	10-1235-00
Axle	
W-123-1	
	25-1246-00
Loadbar 3T-1150-4, 3T-1150-4L	
LB-155-1	
	25-1244-01

* Trolley model with "L" indicates trolley wheel bearings with light oil only and an oil port in the axle in place of a grease fitting—used for gravity systems.

† Includes live load, impact & handling equip. weights.

‡ See "W-124A Wheel" on page 43.

Collectors & Mounting Bracket

Part #	Shielded Channel Bar & Bracket*
10-1854-00	E-6988-SA Short Arm, 35 amp (fig. 2*)
10-1855-00	E-6989-LA Long Arm, 35 amp (fig. 2*)
10-2125-00	E-189-1 Side Mnt Brkt, one required per collector

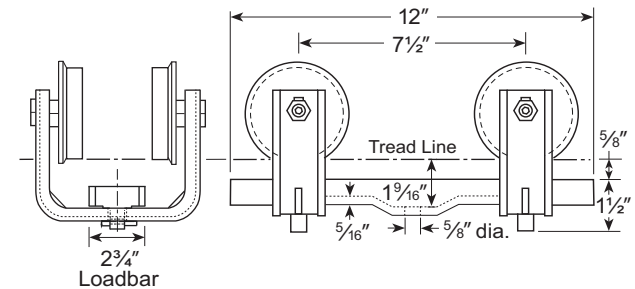
* For collector details and other options, see Figure 2 on page I-11.

Model 3T-1150-4 Trolley

10-1247-00

Model 3T-1150-4L Trolley

10-2244-00



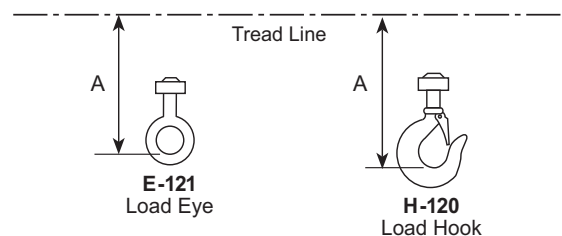
Consists of two 3T-750-2 trolleys coupled by an LB-155-1 Loadbar.

Note Do not use 4-wheel trolley on "H" series rail (no clearance between loadbar and rail).

Fittings

Part #	Fittings*	Dimension from Tread Line "A"	
		3T-750-2	3T-1150-4
10-1426-00	E-121 Load Eye	4 1/16"	4"
10-1429-00	H-120 Load Hook	4 9/16"	4 1/2"

* See Section "Trolley Fittings" on page E-37.



Model 3T-850-2 Trolley

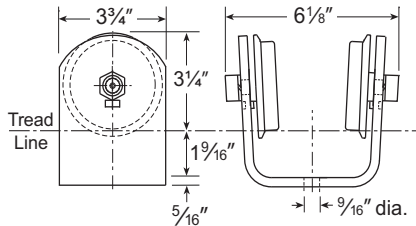
10-1513-00

Model 3T-850-2L Trolley

10-2246-00

Model 3T-850-2C Trolley

10-2245-00



Note Model 3T-850-2C is the same as Model 3T-850-2 except it has an 11/16" diameter hole in the yoke—for use with crane end trucks.

Specifications

Weight	
3T-850-2, 3T-850-2L, 3T-850-2C	6¼ lbs.
3T-1200-4, 3T-1200-4L*	15½ lbs.
Total Load Capacity†	
3T-850-2, 3T-850-2C	850 lbs.
3T-1200-4	1200 lbs.
Gravity Systems*	
3T-850-2L*	350 lbs.
3T-1200-4L*	700 lbs.
Yoke	
	Y-578
	25-1581-00
Wheel and Bearing Assembly‡	
	W-124A
	10-1235-00
Axle	
	W-123-1
	25-1246-00
Loadbar 3T-1200-4, 3T-1200-4L	
	LB-155-1
	25-1244-01

* Trolley model with "L" indicates trolley wheel bearings with light oil only and an oil port in the axle in place of a grease fitting—used for gravity systems.

† Includes live load, impact & handling equip. weights.

‡ See "W-124A Wheel" on page 43.

Collectors

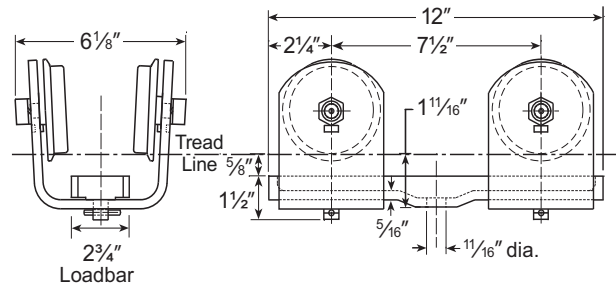
These trolleys are not designed to mount collectors on the trolley yoke.

Model 3T-1200-4 Trolley

10-1722-00

Model 3T-1200-4L Trolley

10-2247-00



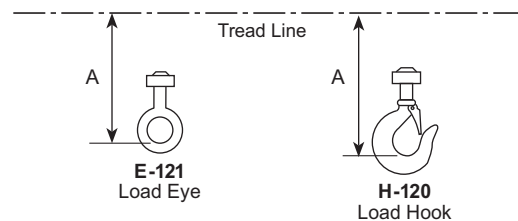
Consists of two 3T-850-2 trolleys coupled by an LB-155-1 Loadbar.

Note Do not use 4-wheel trolley on "H" series rail (no clearance between loadbar and rail).

Fittings

Part #	Fittings*	Dimension from Tread Line "A"	
		3T-850-2	3T-1200-4
10-1426-00	E-121 Load Eye	4 1/16"	4"
10-1429-00	H-120 Load Hook	4 9/16"	4 1/2"

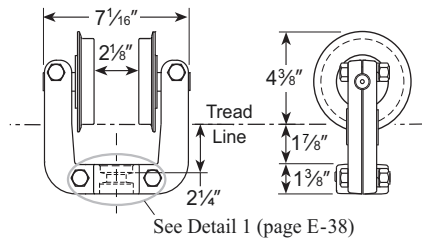
* See Section "Trolley Fittings" on page E-37.





Model 3T-2000-2 Trolley

10-1178-00



Specifications

Weight	11 lbs.
3T-2000-2	32 lbs.
3T-2800-4	
Total Load Capacity*	
3T-2000-2	2000 lbs.
3T-2800-4	2800 lbs.
Yoke	Y-149-D
	10-1840-00
Wheel and Bearing Assembly†	W-163-F
	10-1168-00
Loadbar	LB-167
3T-2800-4	25-1210-01
Bumper	B-141
3T-2800-4	25-1211-00
Hook Bearing	HB-118
3T-2800-4	10-2491-00
Swivel Bushing	included
3T-2000-2	SB-213
3T-2800-4	10-2345-00

* Includes live load, impact & handling equip. weights.

† See "W-163F Wheel" on page E-44.

Collectors

Part #	Shielded Channel Bar*
10-1854-00	E-6988-SA Short Arm, 35 amp (fig. 2*)
10-1855-00	E-6989-LA Long Arm, 35 amp (fig. 2*)

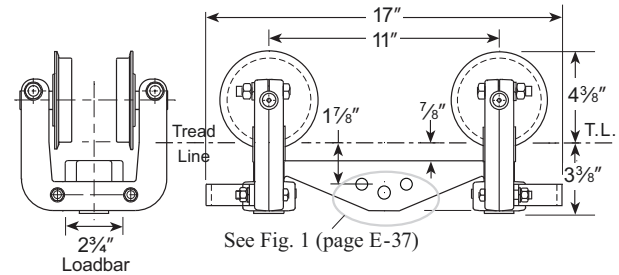
* For collector details and other options, see Figure 2 on page I-11.

Model 3T-2800-4 Trolley

10-2336-00 Plain (shown)

10-1185-00 with Hook Bearing

10-1183-00 with Swivel Bushing

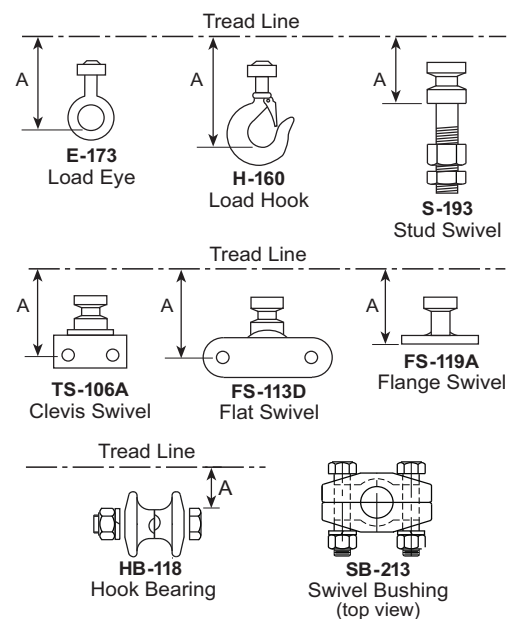


Consists of two Model 3T-2000-2 trolleys coupled by an LB-167 Loadbar.

Fittings

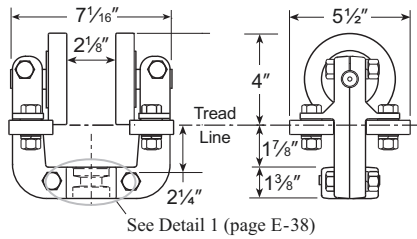
Part #	Fittings*	Dimension from Tread Line "A"	
		3T-2000-2	3T-2800-4
10-1428-00	E-173 Load Eye	5 1/4"	5 15/16"
10-1439-00	H-160 Load Hook	5 1/4"	5 15/16"
10-2130-00	TS-106A Clevis Swivel	4 5/16"	5"
25-1440-00	FS-113D Flat Swivel	4 9/16"	5 1/4"
10-2637-00	FS-119A Flange Swivel	3 3/4"	4 7/16"
10-2423-00	S-193A Stud Swivel	3 3/8"	4"
10-2424-00	S-193B Stud Swivel	3 3/8"	4"
10-2425-00	S-193C Stud Swivel	3 3/8"	4"
10-2491-00	HB-118 Hook Bearing	—	1 7/8"

* See Section "Trolley Fittings" on page E-37



Model 3T-2000-2SR Trolley

10-1120-00



Specifications

Weight	13 lbs.
3T-2000-2SR	36 lbs.
3T-2800-4SR	
Total Load Capacity*	
3T-2000-2SR	2000 lbs.
3T-2800-4SR	2800 lbs.
Yoke	Y-149-R3 10-1838-00
Wheel and Bearing Assembly†	W-164-FA 10-1378-00
Side Rollers	SR-7095 23-1017-00
Loadbar	LB-167 25-1210-01
3T-2800-4SR	
Bumper	B-141 25-1211-00
3T-2800-4SR	
Hook Bearing	HB-118 10-2491-00
3T-2800-4SR	
Swivel Bushing	
3T-2000-2SR	included
3T-2800-4SR	SB-213 10-2345-00

* Includes live load, impact & handling equip. weights.

† See "W-164FA Wheel" on page E-45.

Collectors

Part #	Shielded Channel Bar*
10-1854-00	E-6988-SA Short Arm, 35 amp (fig. 2*)
10-1855-00	E-6989-LA Long Arm, 35 amp (fig. 2*)

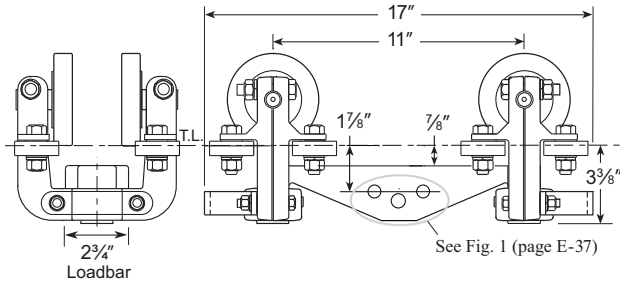
* For collector details and other options, see Figure 2 on page I-11.

Model 3T-2800-4SR Trolley

10-2501-00 Plain (shown)

10-1154-00 with Hook Bearing

10-1155-00 with Swivel Bushing

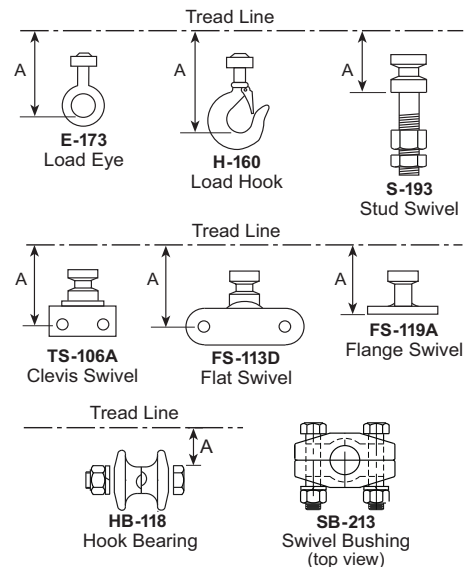


Consists of two Model 3T-2000-2SR trolleys coupled by an LB-167 Loadbar.

Fittings

Part #	Fittings*	Dimension from Tread Line "A"	
		3T-2000-2SR	3T-2800-4SR
10-1428-00	E-173 Load Eye	5 1/4"	5 15/16"
10-1439-00	H-160 Load Hook	5 1/4"	5 15/16"
10-2130-00	TS-106A Clevis Swivel	4 5/16"	5"
25-1440-00	FS-113D Flat Swivel	4 9/16"	5 1/4"
10-2637-00	FS-119A Flange Swivel	3 3/4"	4 7/16"
10-2423-00	S-193A Stud Swivel	3 3/8"	4"
10-2424-00	S-193B Stud Swivel	3 3/8"	4"
10-2425-00	S-193C Stud Swivel	3 3/8"	4"
10-2491-00	HB-118 Hook Bearing	—	1 7/8"

* See "Trolley Fittings" on page E-37.

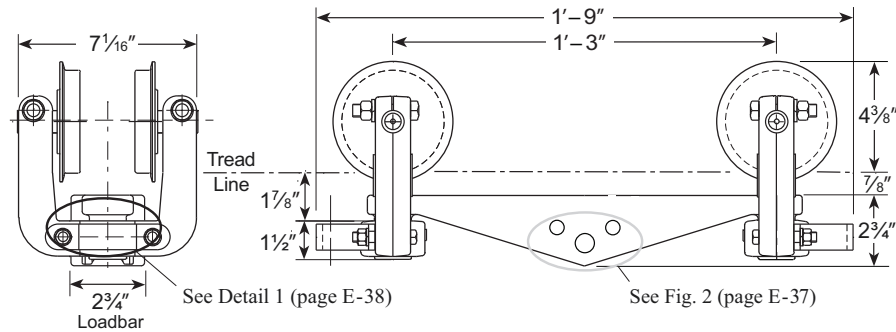


Model 3T-3100-4 Trolley

10-2584-00 Plain (shown)

10-1214-00 with Hook Bearing

10-1213-00 with Swivel Bushing



Consists of two Model 3T-2000-2 trolleys coupled by an LB-212 Loadbar.

Specifications

Weight	35 lbs.
Total Load Capacity*	3100 lbs.
Yoke	Y-149D 10-1840-00
Wheel and Bearing Assembly†	W-163-F 10-1168-00
Loadbar	LB-212 25-1243-01
Bumper	B-141 25-1211-00
Hook Bearing	HB-118 10-2491-00
Swivel Bushing‡	SB-213 10-2345-00

* Includes live load, impact & handling equip. weights.

† See "W-163F Wheel" on page E-44.

‡ For use with compatible fittings

Collectors

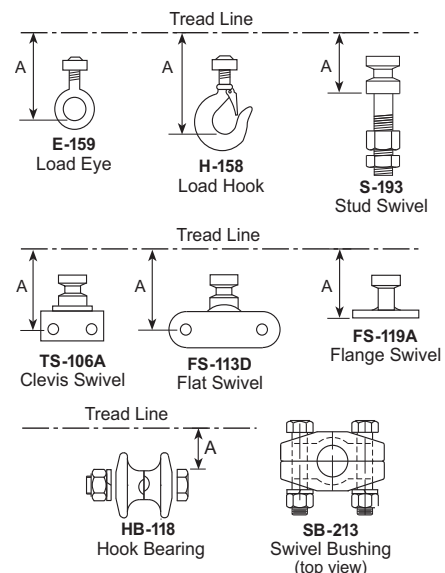
Part #	Shielded Channel Bar*
10-1854-00	E-6988-SA Short Arm, 35 amp (fig. 2*)
10-1855-00	E-6989-LA Long Arm, 35 amp (fig. 2*)

* For collector details and other options, see Figure 2 on page I-11.

Fittings

Part #	Fittings*	Dimension from Tread Line "A"
10-1425-00	E-159 Load Eye	6 13/16"
10-1437-00	H-158 Load Hook	7 5/8"
10-2130-00	TS-106A Clevis Swivel	4 3/16"
25-1440-00	FS-113D Flat Swivel	5 3/8"
10-2637-00	FS-119A Flange Swivel	4 9/16"
10-2423-00	S-193A Stud Swivel	4 3/16"
10-2424-00	S-193B Stud Swivel	4 3/16"
10-2425-00	S-193C Stud Swivel	4 3/16"
10-2491-00	HB-118 Hook Bearing	2 1/4"

* See Section "Trolley Fittings" on page E-37.

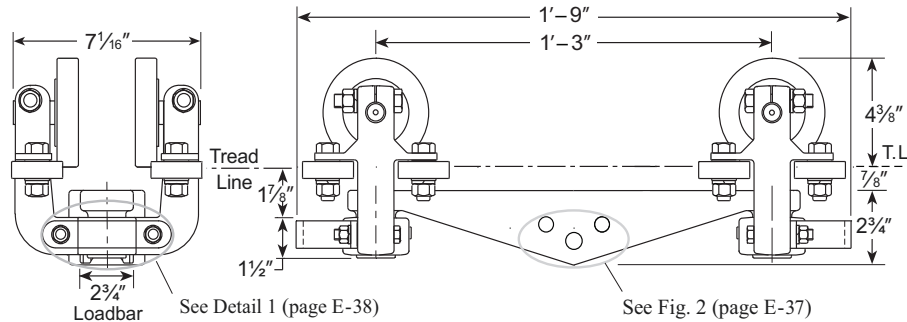


Model 3T-3100-4SR Trolley

10-2529-00 Plain (shown)

10-1219-00 with Hook Bearing

10-1220-00 with Swivel Bushing



Consists of two Model 3T-2000-2SR trolleys coupled by an LB-212 Loadbar.

Specifications

Weight	37 lbs.
Total Load Capacity*	3100 lbs.
Yoke	Y-149R3 10-1838-00
Wheel and Bearing Assembly†	W-164-FA 10-1378-00
Loadbar	LB-212 25-1243-01
Side Rollers	SR-7095 23-1017-00
Bumper	B-141 25-1211-00
Hook Bearing	HB-118 10-2491-00
Swivel Bushing‡	SB-213 10-2345-00

* Includes live load, impact & handling equip. weights.

† See "W-164FA Wheel" on page E-45

‡ Optional, for use with the Compatible fittings.

Collectors

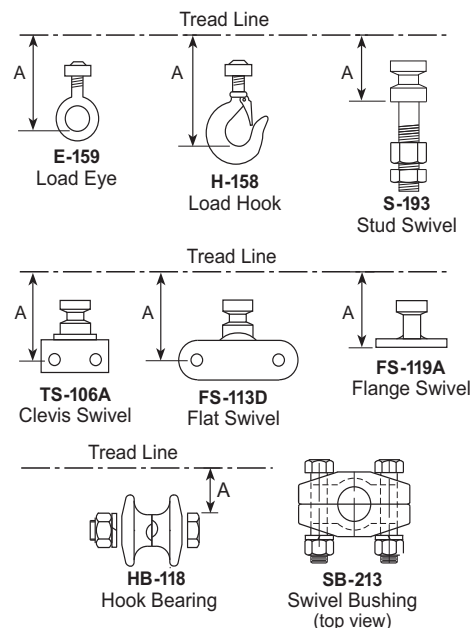
Part #	Shielded Channel Bar*
10-1854-00	E-6988-SA Short Arm, 35 amp (fig. 2*)
10-1855-00	E-6989-LA Long Arm, 35 amp (fig. 2*)

* For collector details and other options, see Figure 2 on page I-11.

Fittings

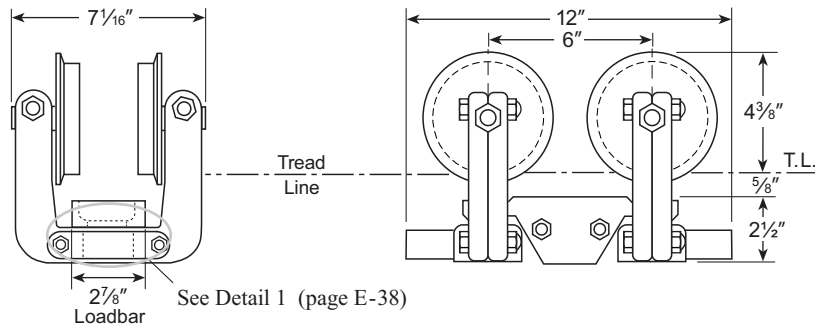
Part #	Fittings*	Dimension from Tread Line "A"
10-1425-00	E-159 Load Eye	6 13/16"
10-1437-00	H-158 Load Hook	7 5/8"
10-2130-00	TS-106A Clevis Swivel	4 3/16"
25-1440-00	FS-113D Flat Swivel	5 3/8"
10-2637-00	FS-119A Flange Swivel	4 9/16"
10-2423-00	S-193A Stud Swivel	4 3/16"
10-2424-00	S-193B Stud Swivel	4 3/16"
10-2425-00	S-193C Stud Swivel	4 3/16"
10-2491-00	HB-118 Hook Bearing	2 1/4"

* See Section "Trolley Fittings" on page E-37.



Model 3T-3100-4CC Trolley

10-1384-00 with Swivel Bushing

Note Do not use on "H" Series rail (no clearance between loadbar and rail).

Consists of two Model 3T-2000-2 trolleys coupled by an LB-114 Loadbar.

Specifications

Weight	33 lbs.
Total Load Capacity*	3100 lbs.
Yoke	Y-149D 10-1840-00
Wheel and Bearing Assembly†	W-163-F 10-1168-00
Loadbar	LB-114 25-1404-01
Swivel Bushing	SB-213 10-2345-00
Bumper	B-141 25-1211-00

* Includes live load, impact & handling equip. weights.

† See "W-163F Wheel" on page E-44.

Collectors

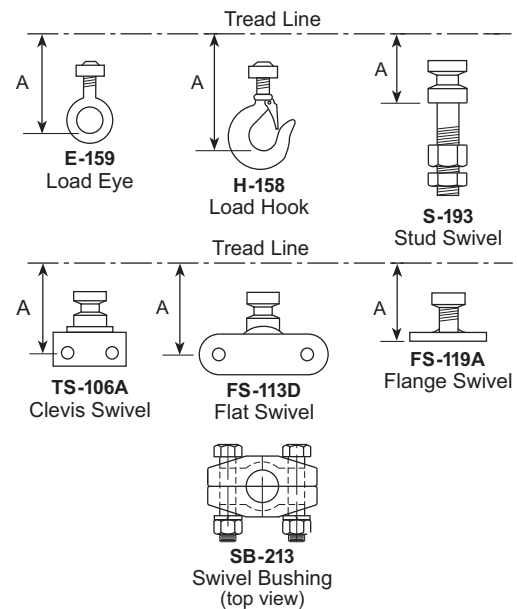
Part #	Shielded Channel Bar* & Bracket
10-1854-00	E-6988-SA Short Arm, 35 amp (fig. 2*)
10-1855-00	E-6989-LA Long Arm, 35 amp (fig. 2*)

* For collector details and other options, see Figure 2 on page I-11.

Fittings

Part #	Fittings†	Dimension from Tread Line "A"
10-1425-00	E-159 Load Eye	$6\frac{3}{8}"$
10-1437-00	H-158 Load Hook	$7\frac{3}{4}"$
10-2130-00	TS-106A Clevis Swivel	$4\frac{7}{16}"$
25-1440-00	FS-113D Flat Swivel	$4\frac{11}{16}"$
10-2637-00	FS-119A Flange Swivel	$3\frac{7}{8}"$
10-2423-00	S-193A Stud Swivel	$2\frac{11}{16}"$
10-2424-00	S-193B Stud Swivel	$2\frac{11}{16}"$
10-2425-00	S-193C Stud Swivel	$2\frac{11}{16}"$

† See Section "Trolley Fittings" on page E-37.

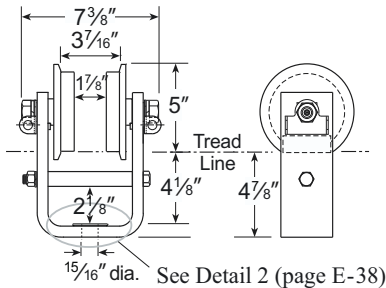


Model 3T-2700-2 Trolley

10-1244-00 Trolley, less Collector Mounting Brackets
10-3392-00 Trolley, with Collector Mnt. Brackets (shown)

Model 3T-2700-2C Trolley

10-1504-00 (for 3ET-5400-4 End Truck only)



Specifications

Weight	
3T-2700-2, -2C	24 lbs.
3T-5400-4	68 lbs.
Total Load Capacity*	
3T-2700-2, -2C	2700 lbs.
3T-5400-4	5400 lbs.
Yoke (plain)	Y-383
	10-1243-00
with collector brackets	10-1243-01
for 3T-2700-2C only, w/collector brkts	10-1503-00
yoke spacer	Y-284-A
	25-1260-00
Wheel and Bearing Assembly†	W-284-F
	10-1721-00
Axle	W-284-F4B
	25-1259-00
Spherical Washer	
3T-2700-2	25-1174-01
3T-2700-2C	25-1174-00
Swivel Pin	
3T-2700-2C (only)	25-1568-00
Loadbar	LB-287
3T-5400-4	25-1266-01
Hook Bearing	HB-217
3T-5400-4	10-1241-00
"259 Adapter" with Thrust Bearing	
3T-5400-4	10-2619-xx‡

* Includes live load, impact & handling equip. weights.

† See "W-284F Wheel" on page E-45.

‡ Variable suffix, to match shaft dia. of fitting.

Collectors

Part #	Shielded Channel Bar*
10-1867-00	E-7988-SA Short Arm, 35 amp (fig. 3*)
10-1866-00	E-7989-LA Long Arm, 35 amp (fig. 3*)

* For collector details and other options, see Figure 3 on page I-12.

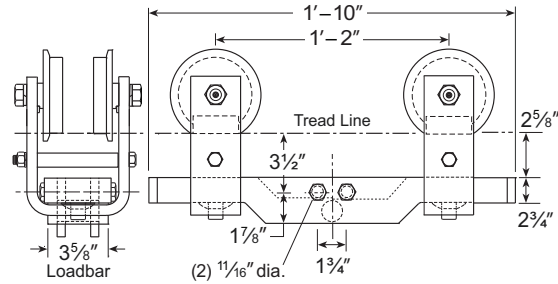
Model 3T-5400-4 Trolley

10-2248-00 with Plain Loadbar (shown)
10-1245-00 with Loadbar with Hook Bearing,
less Collector Mounting Brackets
10-3394-00 with Loadbar with Hook Bearing,
with Collector Mounting Brackets

Consists of two 3T-2700-2 trolleys coupled by an LB-287 Loadbar.

Trolleys with Fitting

Order by Description, i.e., 3T-5400-4 with Adapter and Thrust Bearing for E-104 Load Eye. (Order fitting separately—adapter is provided to match fitting.)

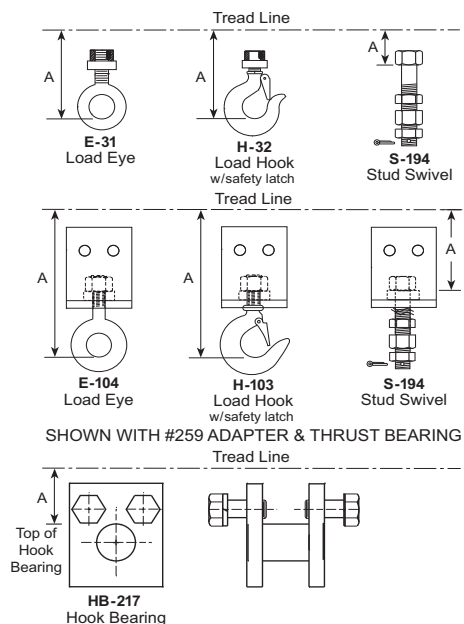


Fittings

Part #	Fittings*	Dimension from Tread Line "A"	
		3T-2700-2	3T-5400-4
10-1438-00	E-31 Load Eye	7 1/2"	—
10-1441-00	E-104 Load Eye	—	12 1/4"
10-1447-00	H-32 Load Hook	8 1/8"	—
10-1455-00	H-103 Load Hook	†	†
—	S-194 Stud Swivel	4 1/8"	7 1/2"
10-1241-00	HB-217 Hook Bearing	—	4"

* See Section "Trolley Fittings" on page E-37.

† Contact factory for dimensions.

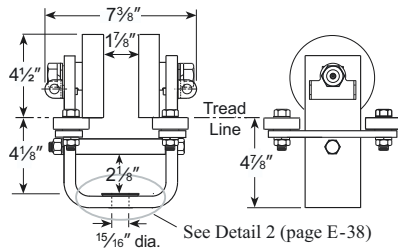


Model 3T-2700-2SR Trolley

10-1249-00 Trolley, less Collector Mounting Brackets
 10-2508-00 Trolley, with Collector Mntg. Brackets (shown)

Model 3T-2700-2SRC Trolley

10-1499-00 (for 3ET-5400-4SR End Truck only)

**Specifications**

Weight	
3T-2700-2SR, -2SRC	28 lbs.
3T-5400-4SR	76 lbs..
Total Load Capacity*	
3T-2700-2SR, -2SRC	2700 lbs.
3T-5400-4SR	5400 lbs.
Yoke (plain)	
	Y-683
	10-1248-00
with collector brackets	10-1248-01
for 3T-2700-2C only, w/collector brkts	10-1448-00
yoke spacer	Y-284-A
	25-1260-000
Wheel and Bearing Assembly†	
	W-284-FA
	10-1239-00
Axle	
	W-284-F4B
	25-1259-00
Spherical Washer	
3T-2700-2	25-1174-01
3T-2700-2C	25-1174-00
Swivel Pin	
3T-2700-2C (only)	25-1568-00
Loadbar	
	LB-287
3T-5400-4	25-1266-01
Hook Bearing	
3T-5400-4	10-1241-00
"259 Adapter" with Thrust Bearing	
3T-5400-4SR	10-2619-xx‡

* Includes live load, impact & handling equip. weights.

† See "W-284FA Wheel" on page E-46.

‡ Variable suffix, to match shaft dia. of fitting.

Collectors

Part #	Shielded Channel Bar*
10-1867-00	E-7988-SA Short Arm, 35 amp (fig. 3*)
10-1866-00	E-7989-LA Long Arm, 35 amp (fig. 3*)

* For collector details and other options, see Figure 3 on page I-12.

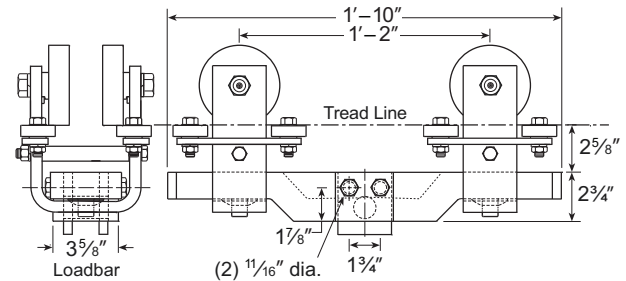
Model 3T-5400-4SR Trolley

10-2249-00 with Plain Loadbar
 10-1250-00 with Loadbar with Hook Bearing, less Collector Mounting Brackets (shown)
 10-3393-00 with Loadbar with Hook Bearing, with Collector Mounting Brackets

Consists of two 3T-2700-2SR trolleys coupled by LB-287 Loadbar.

Trolleys with Fitting

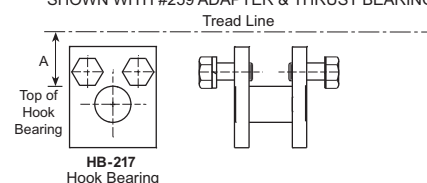
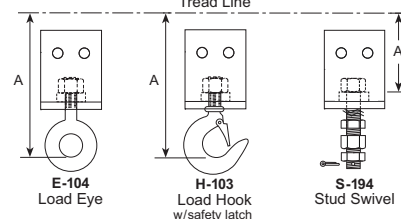
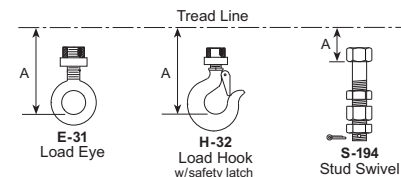
Order by Description, i.e., 3T-5400-4SR with Adapter and Thrust Bearing for E-104 Load Eye. (Order fitting separately—adapter is provided to match fitting.)

**Fittings**

Part #	Fittings*	Dimension from Tread Line "A"	
		3T-2700-2SR	3T-5400-4SR
10-1438-00	E-31 Load Eye	7 1/2"	—
10-1441-00	E-104 Load Eye	—	12 1/4"
10-1447-00	H-32 Load Hook	8 1/8"	—
10-1455-00	H-103 Load Hook	†	†
—	S-194 Stud Swivel	4 1/8"	7 1/2"
10-1241-00	HB-217 Hook Bearing	—	4"

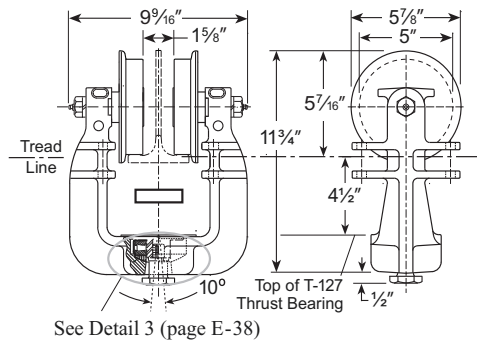
* See Section "Trolley Fittings" on page E-37.

† Contact factory for dimensions.



Model 3T-6200-2 Trolley

10-2727-00



Specifications

Weight	
3T-6200-2	30 lbs.
3T-12400-4	84 lbs.
Total Load Capacity*	
3T-6200-2	6200 lbs.
3T-12400-4	12,400 lbs.
Yoke	
	Y-3116
	25-3116-01
Wheel and Bearing Assembly†	
	3W-8033-F
	10-2736-00
Axle Bolt	
	10-2765-00
Felt Washer	
	TR-21-2
	23-1025-00
Thrust Bearing	
	T-127
	(Yoke and Loadbar)
	23-1026-00
Spherical Washer	
	TR-56-2A
	(Yoke and Loadbar)
	25-3142-00
Retaining Bolt	
	RB-62
	25-3148-00
Loadbar 3T-12400-4	
	25-3322-01

* Includes live load, impact & handling equip. weights.

† 2750 lbs. per wheel when used on "L" series rail.

‡ See "3W-8033-F Wheel" on page E-47.

Collectors

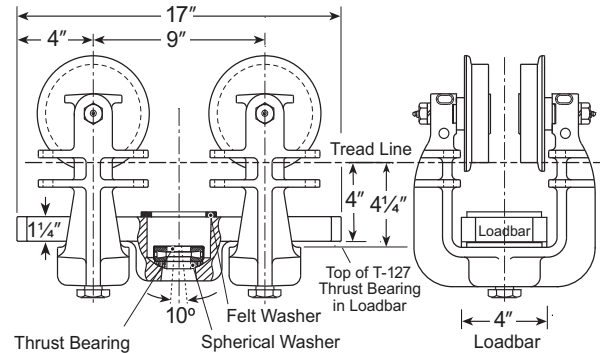
Part #	Shielded Channel Bar*
10-1846-00	E-83-SA Short Arm, 35 amp (fig. 4*)
10-1847-00	E-84-LA Long Arm, 35 amp (fig. 4*)

* For collector details and other options, see Figure 4 on page I-12.

Model 3T-12400-4 Trolley

10-2936-00

Consists of two Model 3T-6200-2 trolleys coupled by a cast loadbar.

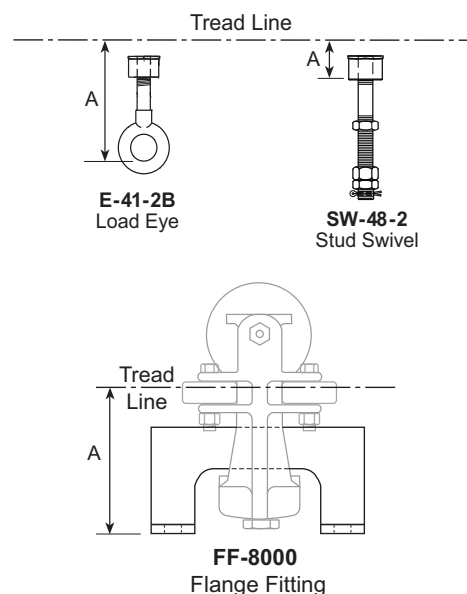


Note Loadbar does not accept a motorized trolley—use drive tractor.

Fittings

Part #	Fittings*	Dimension from Tread Line "A"	
		3T-6200-2	3T-12400-4
10-3407-01	E-41-2B Load Eye used on (4) whl trolley only		12"
10-3407-00	used on (2) whl trolley	12 1/4"	
varies	SW-48-2 Stud Swivel	4 1/2"	4 1/4"
10-2831-00	FF-8000 Flange Fitting	7"	—

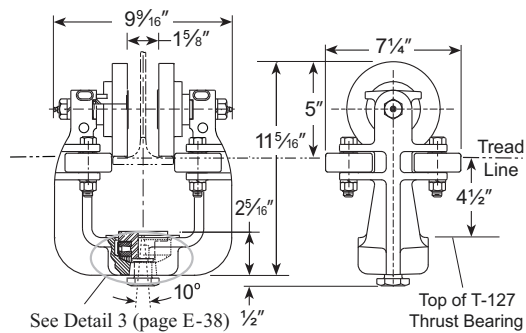
* See Section "Trolley Fittings" on page E-37.





Model 3T-6200-2SR Trolley

10-2728-00



Specifications

Weight

3T-6200-2SR	37 lbs.
3T-12400-4SR	92 lbs.
Total Load Capacity*	†
3T-6200-2SR	6200 lbs.
3T-12400-4SR	12,400 lbs.
Yoke	Y-3116 25-3116-01
Wheel and Bearing Assembly‡	3W-8035-F 10-2735-00
Axle Bolt	10-2765-00
Felt Washer	TR-21-2 23-1025-00
Thrust Bearing (Yoke and Loadbar)	T-127 23-1026-00
Spherical Washer (Yoke and Loadbar)	TR-56-2A 25-3142-00
Side Roller	CT-204-17 23-1021-00
Retaining Bolt	RB-62 25-3148-00
Loadbar 3T-12400-4SR	25-3322-01

* Includes live load, impact & handling equip. weights.

† 2750 lbs. per wheel when used on "L" series rail.

‡ See “3W-8035 Wheel” on page E-48.

Collectors

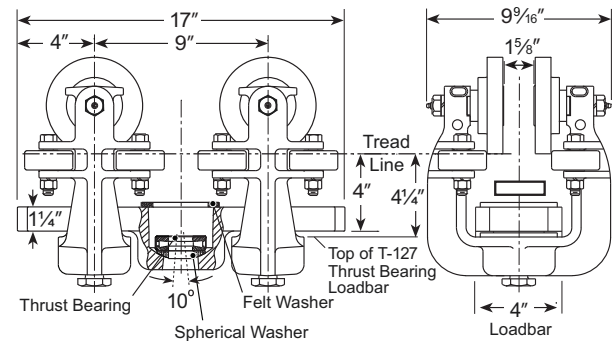
Part #	Shielded Channel Bar*
10-1846-00	E-83-SA Short Arm, 35 amp (fig. 4*)
10-1847-00	E-84-LA Long Arm, 35 amp (fig. 4*)

* For collector details and other options, see [Figure 4](#) on page I-12.

Model 3T-12400-4SR Trolley

10-2937-00

Consists of two Model 3T-6200-2SR trolleys coupled by a cast loadbar.

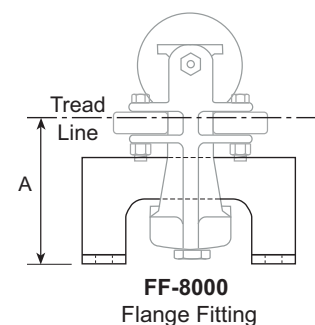
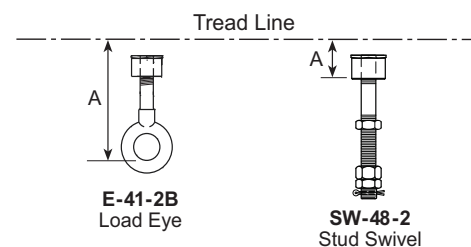


Note Loadbar does not accept a motorized trolley—use drivetractor.

Fittings

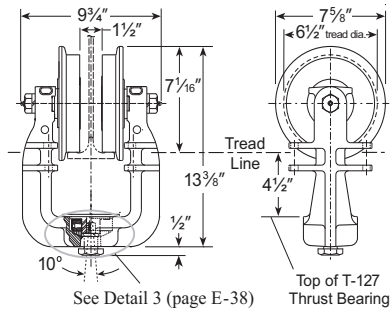
Part #	Fittings*	Dimension from Tread Line "A"	
		3T-6200-2SR	3T-12400-4SR
10-3407-01	E-41-2B Load Eye used on (4) whl trolley only		12"
10-3407-00	used on (2) whl trolley	12¼"	
varies	SW-48-2 Stud Swivel	4½"	4¼"
10-2831-00	FF-8000 Flange Fitting	7"	—

* See Section “Trolley Fittings” on page E-37.



Model 3T-8000-2 Trolley

10-2729-00



Specifications

Weight	
3T-8000-2	43 lbs.
3T-16000-4	110 lbs.
Total Load Capacity*	
3T-8000-2	8,000 lbs.
3T-16000-4	16,000 lbs.
Yoke	
	Y-3117
	25-3117-01
Wheel and Bearing Assembly†	
	3W-8037-F
	10-2738-00
Axle Bolt	10-2766-00
Felt Washer	
	TR-21-2
	23-1025-00
Thrust Bearing	
3T-8000-2 (Yoke)	T-127
	23-1026-00
3T-16000-4 (Loadbar)	T-151
	23-1031-00
Spherical Washer	
3T-8000-2 (Yoke)	TR-56-2A
	25-3142-00
3T-16000-4 (Loadbar)	TR-55-2
	25-1396-01
Retaining Bolt	
	RB-62
	25-3148-00
Loadbar 3T-16000-4	
	25-3322-02

- * Includes live load, impact & handling equip. weights.
† 2750 lbs. per wheel when used on "L" series rail.
‡ See "3W-8037-F Wheel" on page E-48.

Collectors

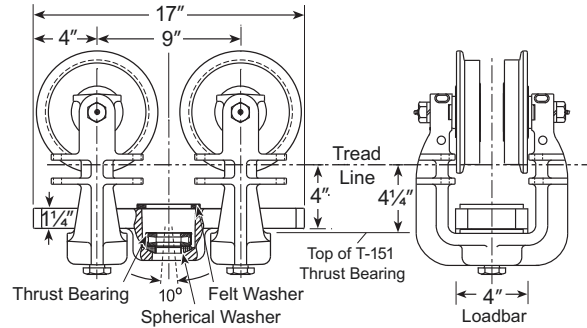
Part #	Shielded Channel Bar*
10-3419-00	E-85-SA Short Arm, 35 amp (fig. 5*)
10-3420-00	E-86-LA Long Arm, 35 amp (fig. 5*)

- * For collector details and other options, see Figure 5 on page I-12.

Model 3T-16000-4 Trolley

10-2938-00

Consists of two Model 3T-8000-2 trolleys coupled by a cast loadbar.

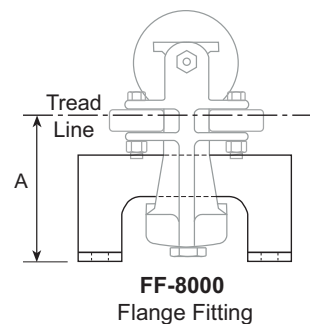
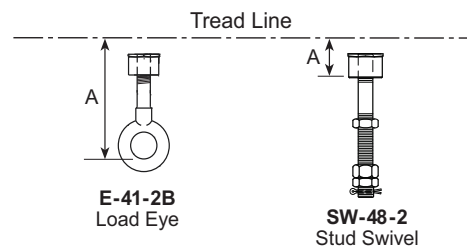


Note Loadbar does not accept a motorized trolley—use drivetractor.

Fittings

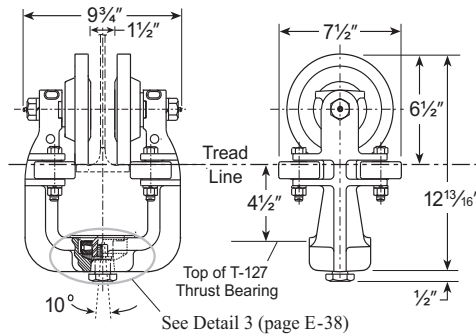
Part #	Fittings*	Dimension from Tread Line "A"
10-3407-00	E-41-2B Load Eye	12 5/8"
10-3408-00	used on (4) whl trolley only used on (2) whl trolley	12 1/2"
varies	SW-48-4 Stud Swivel	4 1/4"
10-2831-00	FF-8000 Flange Fitting	7"

- * See Section "Trolley Fittings" on page E-37.



**Model 3T-8000-2SR Trolley**

10-2730-00

**Specifications**

Weight	
3T-8000-2SR	47 lbs.
3T-16000-4SR	118 lbs.
Total Load Capacity*	
3T-8000-2SR	8000 lbs.
3T-16000-4SR	16,000 lbs.
Yoke	
	Y-3117
	25-3117-01
Wheel and Bearing Assembly†	
	3W-8039
Axle Bolt	10-2737-00
	10-2766-00
Felt Washer	
	TR-21-A
	23-1025-00
Thrust Bearing	
3T-8000-2SR (Yoke)	T-127
3T-16000-4SR (Loadbar)	23-1026-00
	T-151
	23-1031-00
Spherical Washer	
3T-8000-2SR (Yoke)	TR-56-2A
3T-16000-4SR (Loadbar)	25-3142-00
	TR-55-2
	25-1396-01
Side Roller	
	CT-204-17
	23-1021-00
Retaining Bolt	
	RB-62
	25-3148-00
Loadbar 3T-16000-4SR	
	25-3322-02

* Includes live load, impact & handling equip. weights.

† 2750 lbs. per wheel when used on "L" series rail.

‡ See "3W-8039 Wheel" on page E-49.

Collectors

Part #	Shielded Channel Bar*
10-3419-00	E-85-SA Short Arm, 35 amp (fig. 5*)
10-3420-00	E-86-LA Long Arm, 35 amp (fig. 5*)

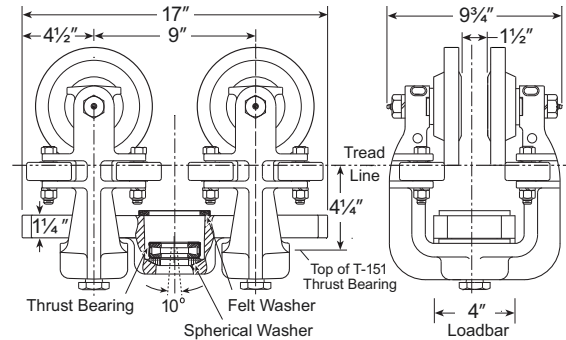
* For collector details and other options, see

Figure 5 on page I-12.

Model 3T-16000-4SR Trolley

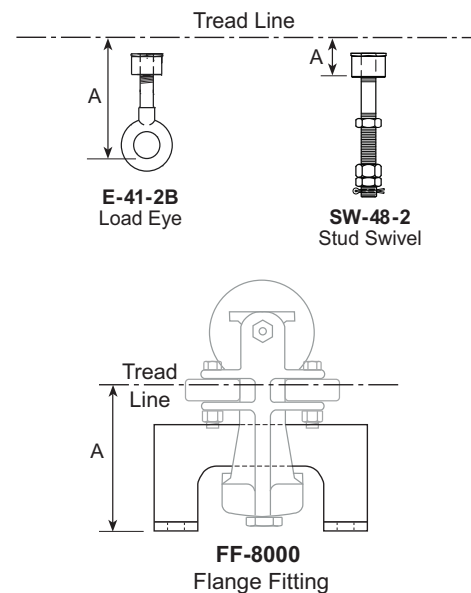
10-2939-00

Consists of two Model 3T-8000-2SR trolleys coupled by a cast loadbar.

**Note** Loadbar does not accept a motorized trolley—use drivetractor.**Fittings**

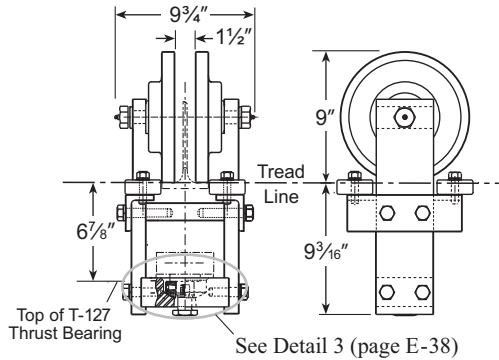
Part #	Fittings*	Dimension from Tread Line "A"
10-3407-00	E-41-2B Load Eye	12 ⁵ / ₈ "
10-3408-00	used on (4) whl trolley only used on (2) whl trolley	12 ¹ / ₂ "
varies	SW-48-4 Stud Swivel	4 ¹ / ₄ "
10-2831-00	FF-8000 Flange Fitting	7"

* See Section "Trolley Fittings" on page E-37.



Model 3T-10000-2SR Trolley

10-2829-00



Specifications

Weight	
3T-10000-2SR	132 lbs.
3T-20000-4SR	322 lbs.
3T-20000-4SRL	357 lbs.
Total Load Capacity*	
3T-10000-2SR	10,000 lbs.
3T-20000-4SR	20,000 lbs.
3T-20000-4SRL	20,000 lbs.
Yoke	Fabricated
Wheel and Bearing Assembly†	
	3W-8017
	10-2776-00
Axle Bolt	10-2779-00
Felt Washer	
In two-wheel trolley yoke	TR-21-2
	23-1025-00
In four-wheel trolley loadbar	—
	23-3060-00
Thrust Bearing	
In two-wheel trolley yoke	T-127
	23-1026-00
In four-wheel trolley loadbar	T-151
	23-1031-00
Spherical Washer	
In two-wheel trolley yoke	TR-56-2A
	25-3142-00
In four-wheel trolley loadbar	n/a
Loadbar	
3T-20000-4SR	10-3053-00
3T-20000-4SRL	10-3054-00
Retaining Bolt	
	RB-62
	25-3148-00
Side Roller	
	CT-204-17
	23-1021-00

* Includes live load, impact & handling equip. weights.

† See "3W-8017 Wheel" on page E-47.

Model 3T-20000-4SR Trolley

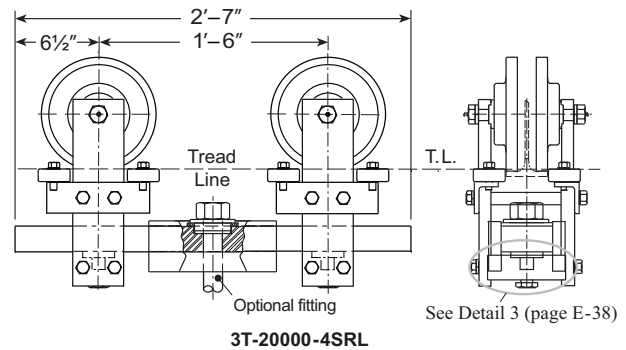
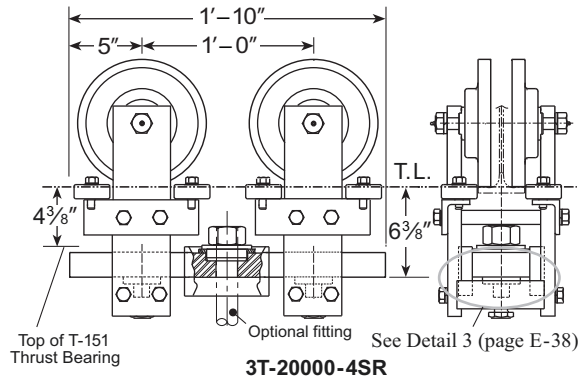
10-3396-00 w/12" wheelbase

Consists of two Model 3T-10000-2SR trolleys coupled by a fabricated loadbar.

Model 3T-20000-4SRL Trolley

10-3379-00 w/18" wheelbase

Consists of two Model 3T-10000-2SR trolleys coupled by a fabricated loadbar.



Fittings

Custom fittings such as Load Eyes and Stud Swivels are available. Contact the factory for applications.

Motorized Trolley Option

A 3MT9-10000-B Motorized Trolley may be mounted only on the 3T-20000-4SRL. Order 3T-20000-4SRLB with appropriate information for horsepower and speed.

Collectors

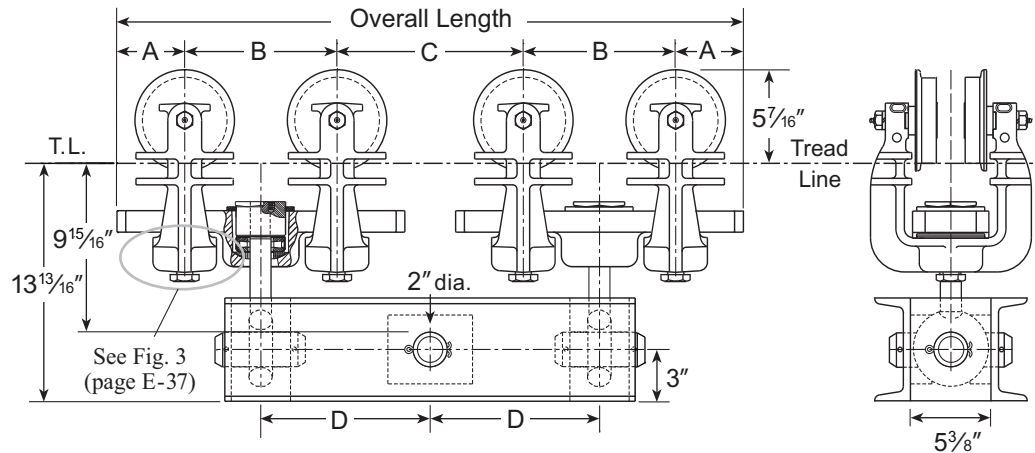
These trolleys are not designed to mount collectors on the trolley yoke.

**Model 3T-24800-8 Trolley**

10-3056-00

Model 3T-24800-8L Trolley

Part number not assigned



3T-24800-8 consists of two Model 3T-12400-4 trolleys coupled by a fabricated loadbar with a hook bearing.

See [“Model 3T-12400-4 Trolley”](#) on page 26. for trolley parts.

3T-24800-8L has a special fabricated loadbar on one of the 3T-12400-4 trolleys to allow mounting a Motorized Trolley.

Motorized Trolley Option

A 3MT5-6200-A2 or 3MT5-6200-AT Motorized Trolley may be mounted only on the 3T-24800-8L. Order 3T-24800-8LA or -8LAT with appropriate information for horsepower and speed.

Specifications

Weight	
3T-24800-8	302 lbs.
3T-24800-8L	343 lbs.
Total Load Capacity*	
	†
3T-24800-8	24,800 lbs.
3T-24800-8L	24,800 lbs.
* Includes live load, impact & handling equip. weights.	
† 2750 lbs. per wheel when used on “L” series rail.	

Dimension	3T-24800-8	3T-24800-8L
Overall Length	37"	56"
A	4"	6½"
B	9"	18"
C	11"	14"
D	10"	16"

Collectors

Part #	Shielded Channel Bar*
10-1846-00	E-83-SA Short Arm, 35 amp (fig. 4*)
10-1847-00	E-84-LA Long Arm, 35 amp (fig. 4*)

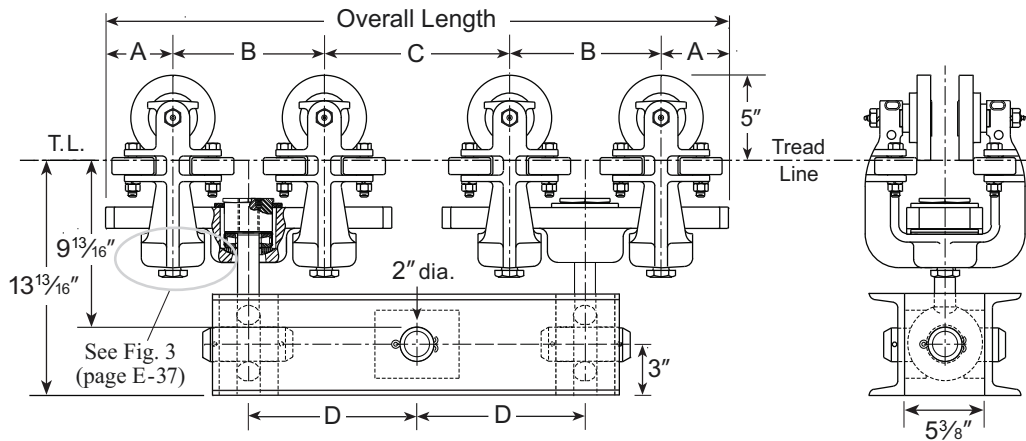
* For collector details and other options, see [Figure 4](#) on page I-12.

Model 3T-24800-8SR Trolley

10-3057-00 (shown)

Model 3T-24800-8SRL Trolley

Part number not assigned



3T-24800-8SR consists of two Model 3T-12400-4SR trolleys coupled by a fabricated loadbar with a hook bearing.

See “[Model 3T-12400-4SR Trolley](#)” on page 27. for trolley parts.

3T-24800-8SRL has a special fabricated loadbar on one of the 3T-12400-4SR trolleys to allow mounting a Motorized Trolley.

Motorized Trolley Option

A 3MT5-6200-A2 or 3MT5-6200-AT Motorized Trolley may be mounted only on the 3T-24800-8SRL.

Order 3T-24800-8SRLA or -8SRLAT with appropriate information for horsepower and speed.

Specifications

Weight

3T-24800-8SR	330 lbs.
3T-24800-8SRL	370 lbs.

Total Load Capacity*

	†
3T-24800-8SR	24,800 lbs.
3T-24800-8SRL	24,800 lbs.

* Includes live load, impact & handling equip. weights.

† 2750 lbs. per wheel when used on “L” series rail.

Dimension	3T-24800-8SR	3T-24800-8SRL
Overall Length	37"	56"
A	4"	6½"
B	9"	18"
C	11"	14"
D	10"	16"

Collectors

Part #	Shielded Channel Bar*
10-1846-00	E-83-SA Short Arm, 35 amp (fig. 4*)
10-1847-00	E-84-LA Long Arm, 35 amp (fig. 4*)

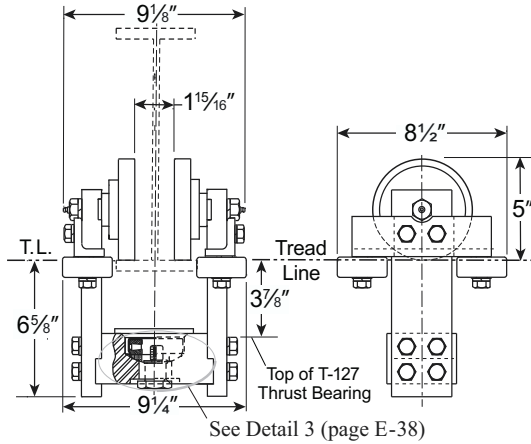
* For collector details and other options, see [Figure 4](#) on page I-12.



400 Series Trolleys

Model 4T-4200-2SR Trolley

10-3086-00



Specifications

Weight	
4T-4200-2SR	54 lbs.
4T-6600-2SR	68 lbs.
Total Load Capacity*	
4T-4200-2SR	4200 lbs.
4T-6600-2SR	6600 lbs.
Yoke	Steel Fab.
Wheel and Bearing Assembly†	
4T-4200-2SR	10-2735-00
4T-6600-2SR	10-3252-00
Axle	
4T-4200-2SR	10-3091-00
4T-6600-2SR	10-2766-00
Thrust Bearing	
	T-127
	23-1026-00
Spherical Washer	
	TR-56-2A
	25-3142-00
Felt Washer	
	TR-21-2
	23-1025-00
Retaining Screw	
	25-3148-00
Side Rollers	
4T-4200-2SR	23-1021-00
4T-6600-2SR	23-2886-00

* Includes live load, impact & handling equip. weights.

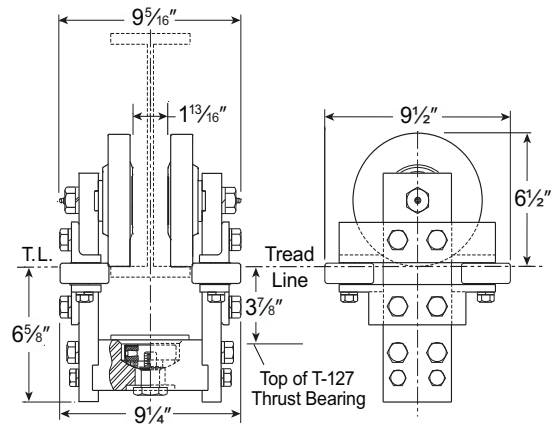
† See Section "Trolley Wheels" on page E-43.

Collectors

These trolleys are not designed to mount collectors on the trolley yoke.

Model 4T-6600-2SR Trolley

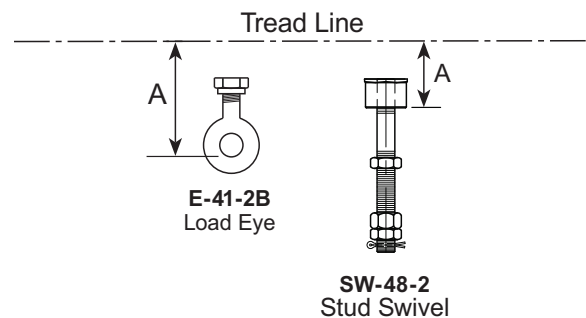
10-3088-00



Fittings

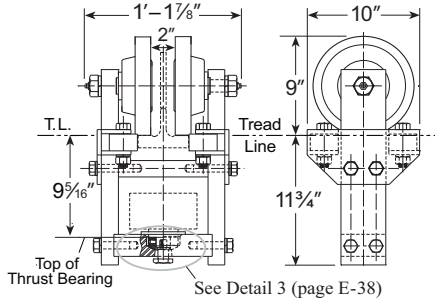
Part #	Fittings*	Dimension from Tread Line "A"
10-3407-00	E-41-2B Load Eye	12"
varies	SW 48-2 Stud Swivel	3 7/8"

* See Section "Trolley Fittings" on page E-37.



450 Series Trolleys

Model 45T-15000-2SR Trolley 10-2869-00



Specifications

Weight	
45T-15000-2SR	151 lbs.
45T-30000-4SR	454 lbs.
45T-30000-4SRL	513 lbs.
Total Load Capacity*	
45T-15000-2SR	15,000 lbs.
45T-30000-4SR	30,000 lbs.
45T-30000-4SRL	30,000 lbs.
Yoke	Fabricated
Wheel, Bearing & Axle Assembly†	45W-8025 9213F1384F1
Axle	10-2827-00
Felt Washer	
In two-wheel trolley yoke	TR-21-2 23-1025-00
In four-wheel trolley loadbar	—
Thrust Bearing	
In two-wheel trolley yoke	23-1026-00
In four-wheel trolley loadbar	23-2851-00
Spherical Washer	
In two-wheel trolley yoke	TR-56-2A 23-3142-00
In four-wheel trolley loadbar	(part of thrust bearing)
Loadbar 45T-30000-4SR	10-3706-00
Retaining Bolt	RB-62 25-3148-00
Side Roller	23-1999-00

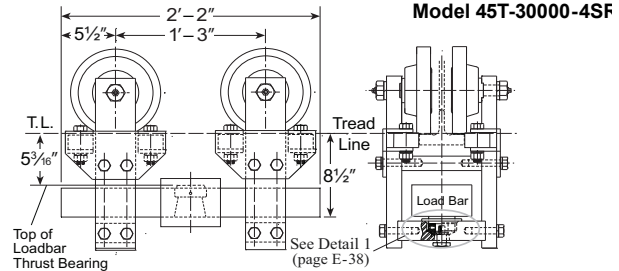
* Includes live load, impact & handling equip. weights.

† See "45W-8025 Wheel" on page E-49.

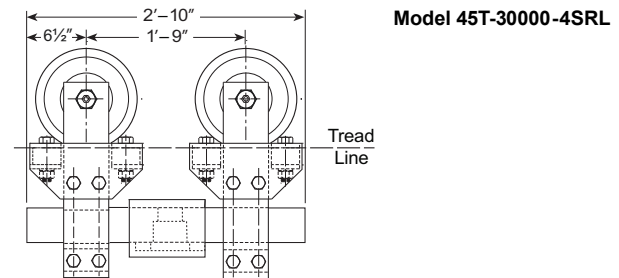
Collectors

These trolleys are not designed to mount collectors on the trolley yoke.

Model 45T-30000-4SR Trolley 10-3705-00



Model 45T-30000-4SRL Trolley (Part number not assigned)



45T-30000-4SR and 45T-30000-4SRL consists of two 45T-15000-2SR trolleys coupled by a fabricated loadbar.

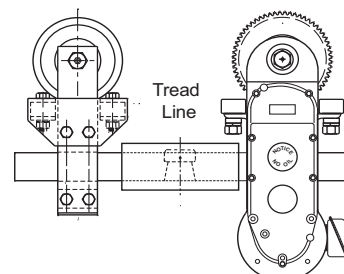
Fittings

Part #	Fittings*	Dimension from Tread Line "A"	
		45T-15000-2SR	45T-30000-4SR
10-3708-00	Load Eye	—	16 3/16"

* Other custom fittings are available. Contact factory for applications. For illustration, see "Trolley Fittings" on page E-37

Motorized Trolley Option

A 45MT-15000-C Motorized Trolley may be mounted only on the 45T-30000-4SRL. Order 45T-30000-4SRLC with appropriate information for horsepower and speed.



#10-3711-00 Trolley Assembly 45T-30000-4SRL with 45MT-15000-C with 1 1/2 HP motor with brake, 100 FPM

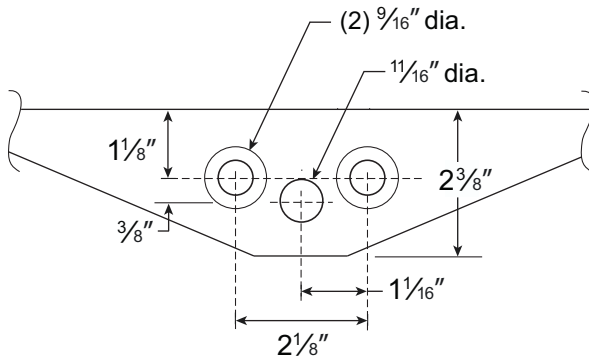
Loadbar Details

Figure 1

LB-167

25-1210-01

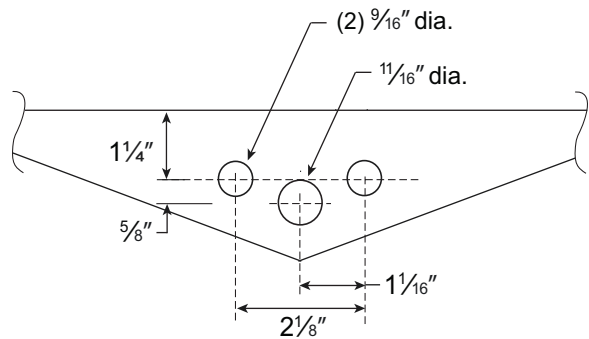
Used on Trolleys: 2T-2800-4, 2T-2800-4SR, 3T-2800-4, 3T-2800-4SR

**Figure 2**

LB-212

25-1243-01

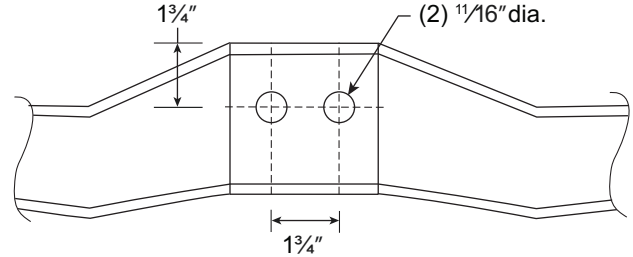
Used on Trolleys: 2T-3100-4, 2T-3100-4SR, 3T-3100-4, 3T-3100-4SR

**Figure 3**

LB-215

25-1717-01

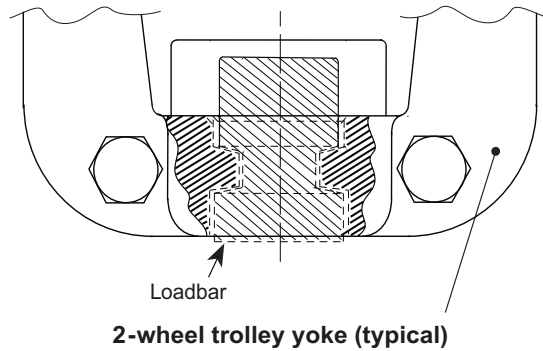
Used on Trolleys: 2T-5600-8, 2T-5600-8SR



Articulated Trolley Component Assembly

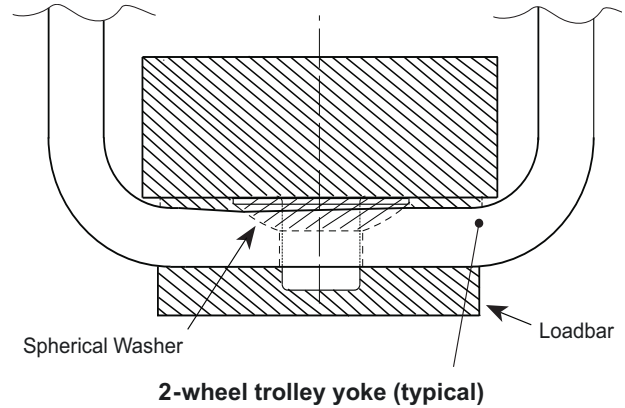
Detail 1

2T-2000-2/-2SR	2T-2800-4/-4SR
2T-3100-4/-4SR	2T-3100-4CC
3T-2000-2/-2SR	3T-2800-4/-4SR
3T-3100-4/-4SR	3T-3100-4CC



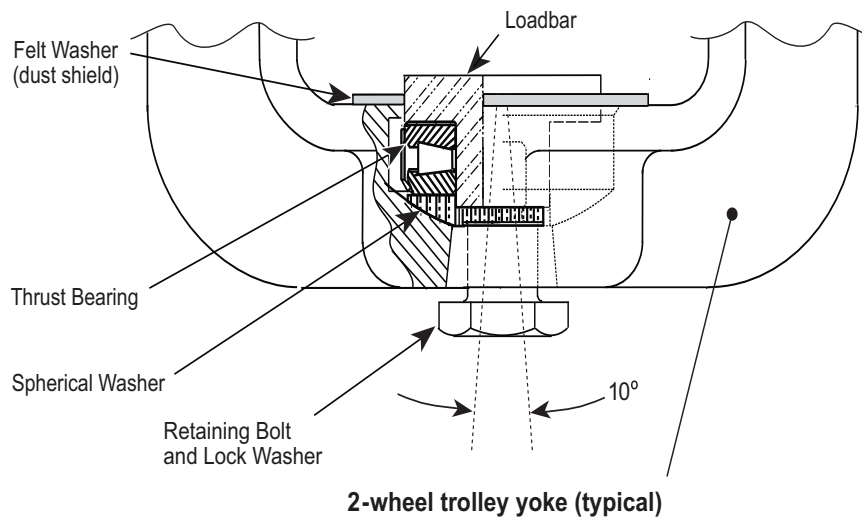
Detail 2

3T-2700-2/-2SR	3T-5400-4/-4SR
----------------	----------------



Detail 3

3T-6200-2/-2SR	3T-12400-4/-4SR	3T-24800-8/-8SR
3T-8000-2/-2SR	3T-16000-4/-4SR	3T-10000-2SR
3T-20000-4SR	4T-4200-2SR	4T-6600-2SR
45T-15000-2SR	45T-30000-4SR	



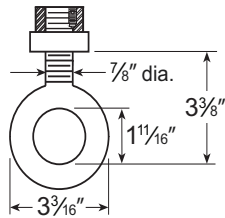
Trolley Fittings

Note Load capacities listed are for fittings used with TC/American trolleys.

E-31 Load Eye

10-1438-00

- Weight = 2 lbs.
- Load Capacity = 2700 lbs.



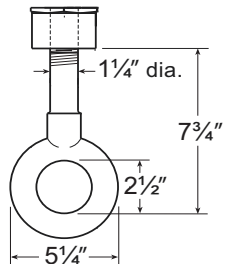
E-41-2B Load Eye

10-3407-00 Load Eye for 2-wheel trolleys-
3T-6200 / 3T-8000 / 4T-4200 / 4T-6600

Capacity is greater than trolley capacity

10-3407-01 Load Eye for 3T-12400 Trolleys

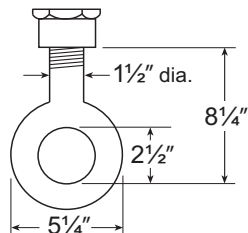
- Weight = 15 lbs.
- Capacity = 12400 lb



E-41-4B Load Eye

10-3408-00

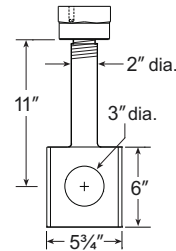
- Weight = 15 lbs.
- Load Capacity = 16,000 lbs.



E-42 Load Eye

10-3708-00

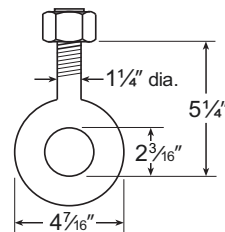
- Weight = 36 lbs.
- Load Capacity = 30,000 lbs.



E-104 Load Eye

10-1441-00

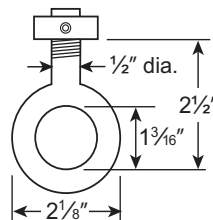
- Weight = 5 lbs.
- Load Capacity = 5600 lbs.



E-121 Load Eye

10-1426-00

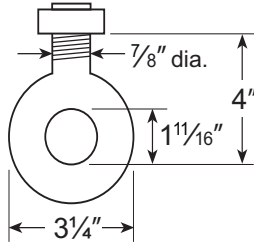
- Weight = 1/2 lb.
- Load Capacity = 1200 lbs.



E-159 Load Eye

10-1425-00

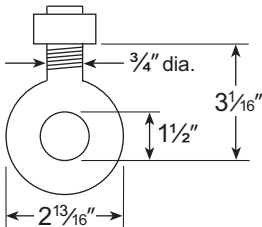
- Weight = 2 lbs.
- Load Capacity = 3100 lbs.



E-173 Load Eye

10-1428-00

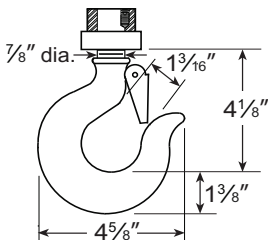
- Weight = 1 1/2 lbs.
- Load Capacity = 2800 lbs.



H-32 Load Hook

10-1447-00

- Weight = 4 lbs.
- Load Capacity = 2700 lbs.

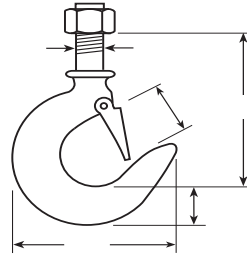


H-103 Load Hook

10-1455-00

Consult factory for availability and dimensions.

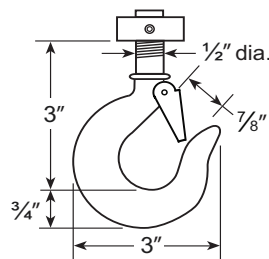
- Weight = To be advised
- Load Capacity = 5400 lbs.



H-120 Load Hook

10-1429-00

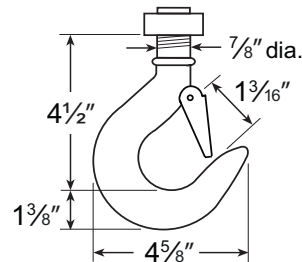
- Weight = 3/4 lb.
- Load Capacity = 1200 lbs.



H-158 Load Hook

10-1437-00

- Weight = To be advised
- Load Capacity = 3100 lbs.

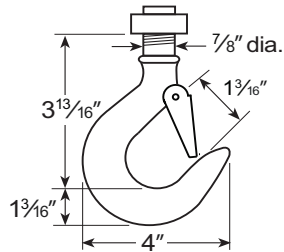




H-160 Load Hook

10-1439-00

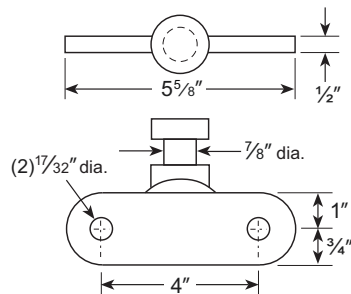
- Weight = 1½ lbs.
- Load Capacity = 2800 lbs.



FS-113F Flat Swivel

25-1440-00

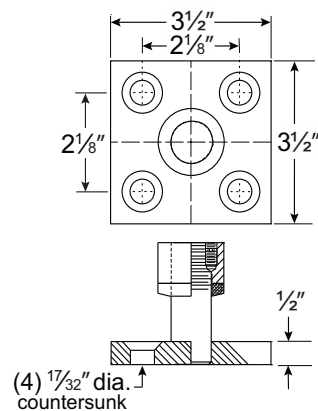
- Weight = 1¾ lbs.
- Load Capacity = 3100 lbs.



FS-119A Flange Swivel

10-2637-00

- Weight = 4 lbs.
- Load Capacity = 3100 lbs.



S-193 Stud Swivel

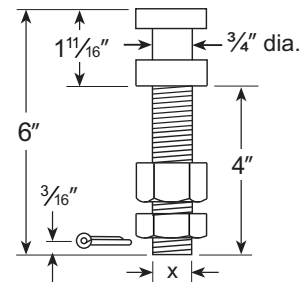
S-193A 10-2423-00

S-193B 10-2424-00

S-193C 10-2425-00

- Load Capacity = 3100 lbs.

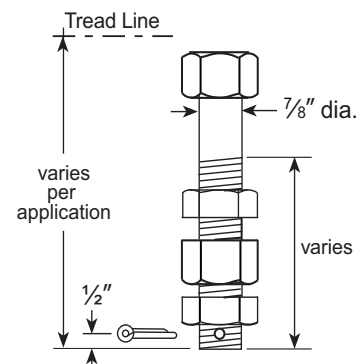
	"X"	Weight (lbs.)
S-193A	¾"	2
S-193B	7/8"	2¼
S-193C	1"	2½



S-194 Stud Swivel, with Nut

May be provided with Thrust Bearing, depending upon trolley. Part number varies.

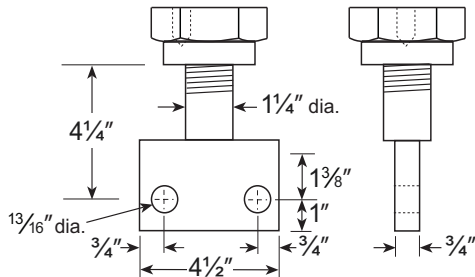
- Weight = varies
- Load Capacity = 5400 lbs.



SW-43-2 Flat Swivel

10-1436-00

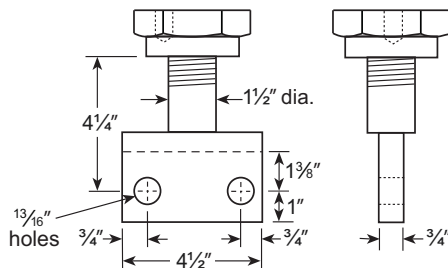
- Weight = 4½ lbs.
- Load Capacity = 4200 lbs.



SW-43-4 Flat Swivel

10-1440-00

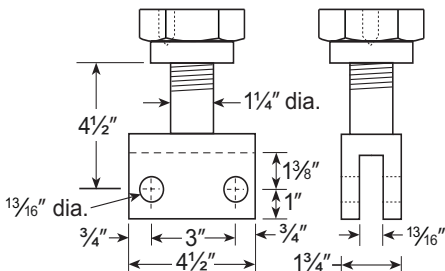
- Weight = 5 lbs.
- Load Capacity = 8400 lbs.



SW-44-2 Clevis Swivel

10-1446-00

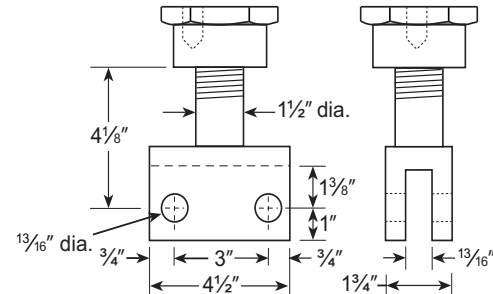
- Weight = 5 lbs.
- Load Capacity = 4200 lbs.



SW-44-4 Clevis Swivel

10-1459-00

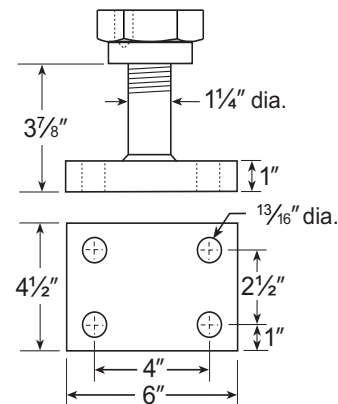
- Weight = 5½ lbs.
- Load Capacity = 8400 lbs.



SW-45-2 Flange Swivel

10-1467-00

- Weight = 10 lbs.
- Load Capacity = 4200 lbs.

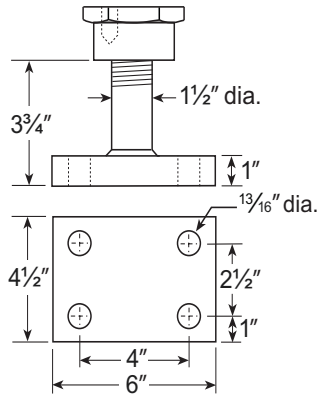




SW-45-4 Flange Swivel

10-1466-00

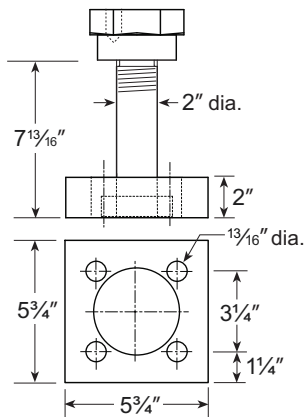
- Weight = 10½ lbs.
- Load Capacity = 8400 lbs.



FS-30000 Flange Swivel

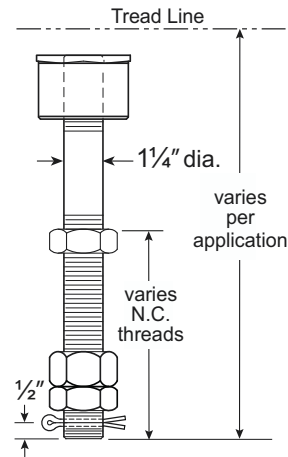
A7065-003

- Weight = 33 lbs.
- Load Capacity = 30,000 lbs.



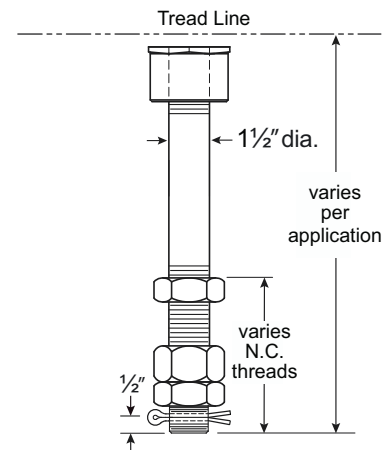
SW-48-2 Stud Swivel

- Weight = varies
- Load Capacity = 12,400 lbs.



SW-48-4 Stud Swivel

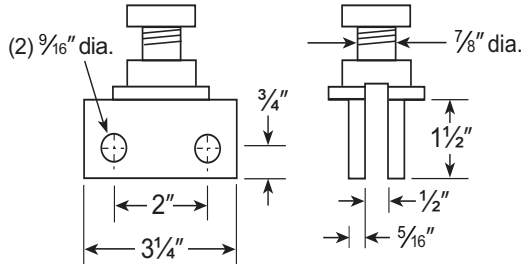
- Weight = varies
- Load Capacity = 16,000 lbs.



TS-106A Clevis Swivel

10-2130-00

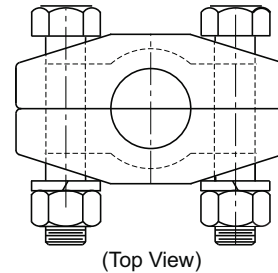
- Weight = 1¼ lbs.
- Load Capacity = 3100 lbs.



SB-213 Swivel Bushing

10-2345-00

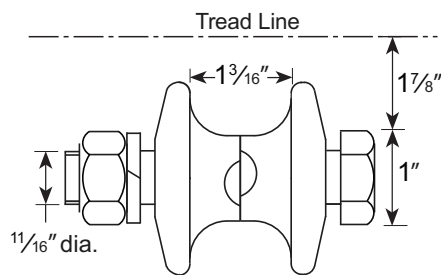
- Weight = 1½ lbs.
- Load Capacity = 3100 lbs.



HB-118 Hook Bearing

10-2491-00

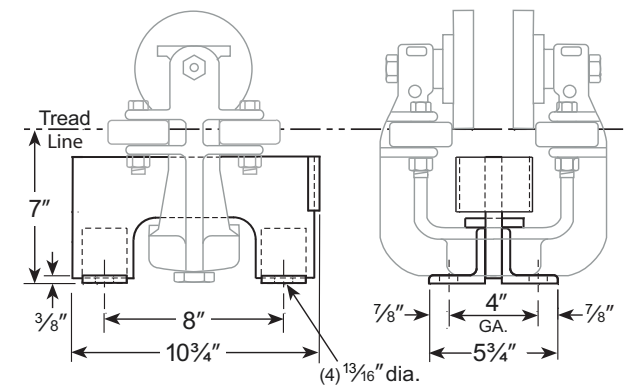
- Weight = 2½ lbs.
- Load Capacity = 3100 lbs.



FF-8000 Flanged Fitting

10-2831-00

- Weight = 20 lbs.
- Load Capacity = 8000 lbs.

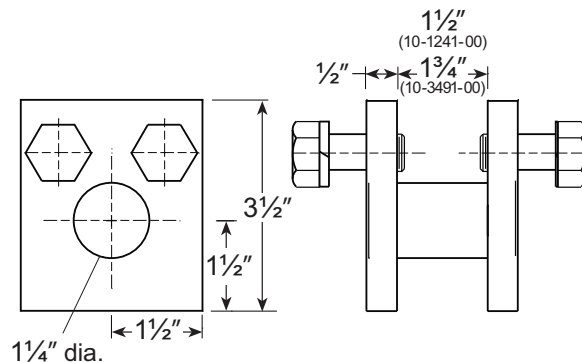


HB-217 Hook Bearing

10-3491-00 (for 2T-5600-8/-8SR Trolley)

10-1241-00 (for 3T-5400-4/-4SR Trolley)

- Weight = 4 lbs.
- Load Capacity = 5400 lbs.

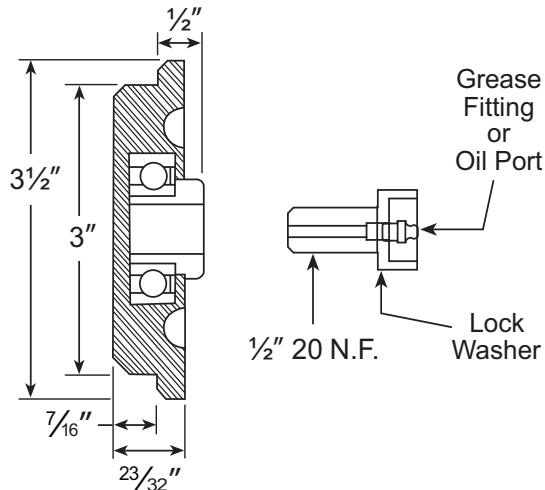




Trolley Wheels

W-123 Wheel

10-1230-00



Specifications

Flanged Wheel; Machined Steel; 3" Riding Tread Diameter; Single Row Ball Bearing. Tread on this wheel is not hardened.

"Threaded Axle, 1/2-20 UNF" available either with grease fitting or oil port (light oil used in trolleys on monorails with slight incline for "gravity powered" movement). Order axle separately. Axle inserted through trolley yoke into wheel.

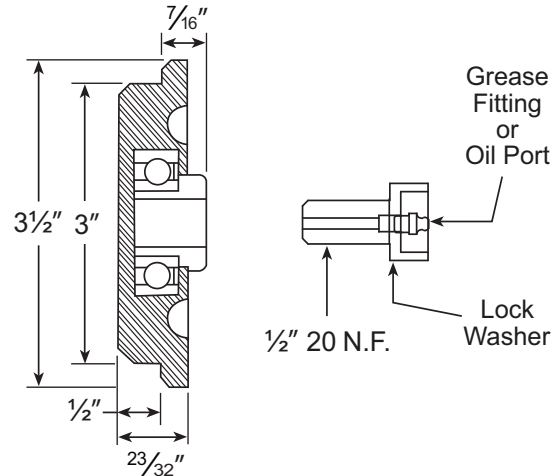
Lockwasher for axle required, order separately. Head of wheel hub is hex shaped for wrench.

Used with these trolleys:

- Model 2T-750-2 Trolley (Page E-5)
- Model 2T-750-2L Trolley (Page E-5)
- Model 2T-1150-4 Trolley (Page E-5)
- Model 2T-1150-4L Trolley (Page E-5)
- Model 2T-850-2 Trolley (Page E-6)
- Model 2T-850-2L Trolley (Page E-6)
- Model 2T-850-2C (Crane Trolley) (Page E-6)
- Model 2T-1200-4 Trolley (Page E-6)
- Model 2T-1200-4L Trolley (Page E-6)

W-124A Wheel

10-1235-00



Specifications

Flanged Wheel; Machined Steel; 3" Riding Tread Diameter; Single Row Ball Bearing. Tread on this wheel is not hardened.

"Threaded Axle, 1/2-20 UNF" available either with grease fitting or oil port (light oil used in trolleys on monorails with slight incline for "gravity powered" movement). Order axle separately. Axle inserted through trolley yoke into wheel.

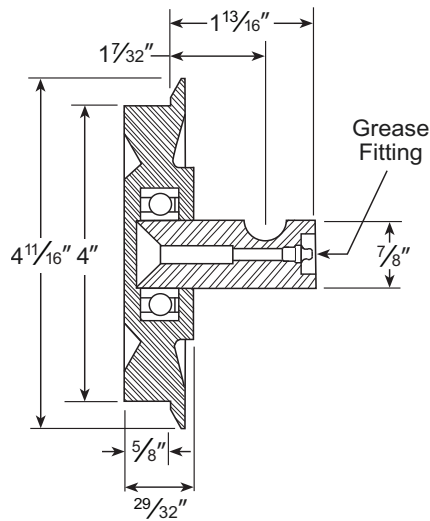
Lockwasher for axle required, order separately. Head of wheel hub is hex shaped for wrench.

Used with these trolleys:

- Model 3T-750-2 Trolley (Page E-17)
- Model 3T-750-2L Trolley (Page E-17)
- Model 3T-1150-4 Trolley (Page E-17)
- Model 3T-1150-4L Trolley (Page E-17)
- Model 3T-850-2 Trolley (Page E-18)
- Model 3T-850-2L Trolley (Page E-18)
- Model 3T-850-2C Trolley (Page E-18)
- Model 3T-1200-4 Trolley (Page E-18)
- Model 3T-1200-4L Trolley (Page E-18)

W-163F Wheel

10-1168-00



Specifications

Flanged Wheel; Machined Steel; 4" Riding Tread Diameter; Single Row Ball Bearing. Axle, $\frac{7}{8}$ " diameter, staked into wheel bearing. Wheel tread hardened to 425 Brinell, minimum.

Axle inserted into trolley yoke and secured with cross bolt. Grease fitting in head of axle.

Used with these trolleys:

Model 3T-2000-2 Trolley (Page E-19)

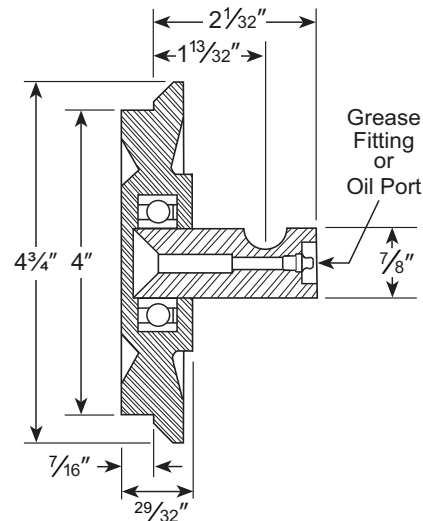
Model 3T-2800-4 Trolley (Page E-19)

Model 3T-3100-4 Trolley (Page E-21)

W-164F Wheel

10-1092-00 (wheel assembly with grease fitting)

10-1818-00 (wheel assembly with oil port)



Specifications

Flanged Wheel; Machined Steel; 4" Riding Tread Diameter; Single Row Ball Bearing. Axle, $\frac{7}{8}$ " diameter, staked into wheel bearing. Wheel tread hardened to 425 Brinell, minimum.

Wheel and axle available either with grease fitting or oil port (light oil used in trolleys on monorails with slight incline for "gravity powered" movement). Axle inserted into trolley yoke and secured with cross bolt.

Used with these trolleys:

Model 2T-2000-2 Trolley (Page E-7)

(Page E-7)

Model 2T-2800-4 Trolley (Page E-7)

Model 2T-3100-4 Trolley (Page E-9)

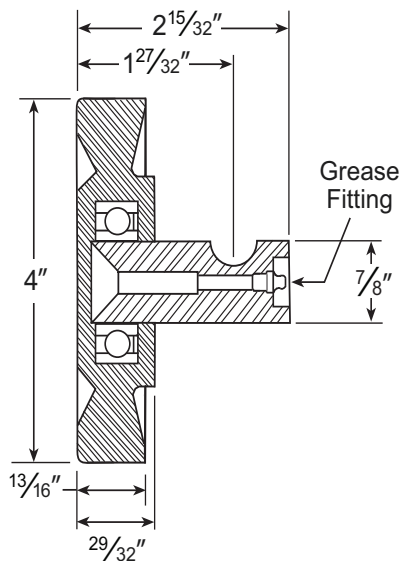
Model 2T-3100-4CC Trolley (Page E-11)

Model 2T-5600-8 Trolley (Page E-12)

Model 2T-5600-8CC Trolley (Page E-14)

**W-164FA Wheel**

10-1378-00

**Specifications**

Flangeless Wheel; Machined Steel; 4" Riding Tread Diameter; Single Row Ball Bearing. Axle, $\frac{7}{8}$ " diameter, staked into wheel bearing. Wheel tread hardened to 425 Brinell, minimum.

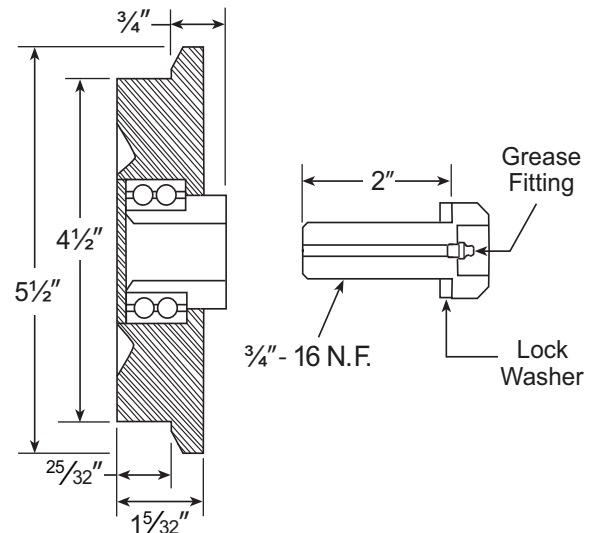
Axle inserted into trolley yoke and secured with cross bolt. Grease fitting in head of axle.

Used with these trolleys:

- Model 2T-2000-2SR Trolley (Page E-8)
- Model 2T-2800-4SR Trolley (Page E-8)
- Model 2T-3100-4SR Trolley (Page E-10)
- Model 2T-5600-8SR Trolley (Page E-13)

W-284F Wheel

10-1721-00

**Specifications**

Flanged Wheel; Machined Steel; $4\frac{1}{2}$ " Riding Tread Diameter; Double Row Ball Bearing. Wheel tread hardened to 425 Brinell, minimum.

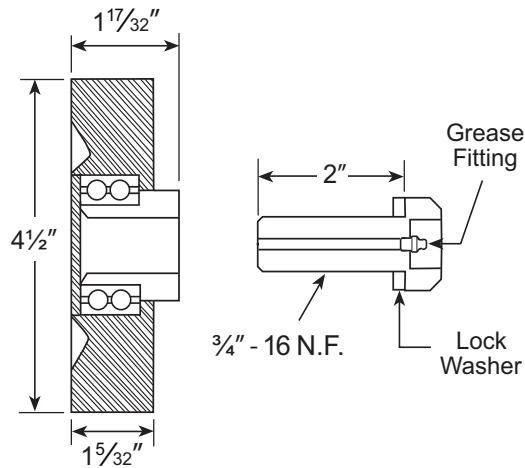
"Threaded Axle, $\frac{3}{4}$ -16 NF" with grease fitting in head of axle. Axle inserted through trolley yoke into wheel. Lockwasher for axle required, order separately. Head of wheel hub has flat notch to hold it from turning.

Used with these trolleys:

- Model 3T-2700-2 Trolley (Page E-24)
- Model 3T-2700-2C Trolley (Page E-24)
- Model 3T-5400-4 Trolley (Page E-24)

W-284FA Wheel

10-1239-00



Specifications

Flangeless Wheel; Machined Steel; 4 1/2" Riding Tread Diameter; Double Row Ball Bearing. Wheel tread hardened to 425 Brinell, minimum.

"Threaded Axle, 3/4"-16 NF" with grease fitting in head of axle. Axle inserted through trolley yoke into wheel. Lockwasher for axle required, order separately. Head of wheel hub has flat notch to hold it from turning.

Used with these trolleys:

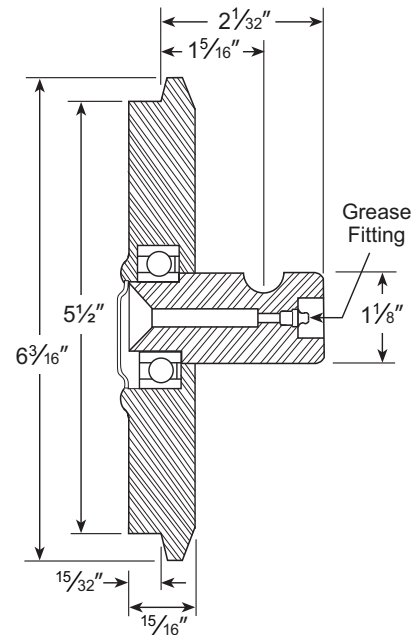
Model 3T-2700-2SR Trolley (Page E-25)

Model 3T-2700-2SRC Trolley (Page E-25)

Model 3T-5400-4SR Trolley (Page E-25)

W-539 Wheel

10-1361-00



Specifications

Flanged Wheel; Machined Steel; 5 1/2" Riding Tread Diameter; Single Row Ball Bearing. Axle, 1 1/8" diameter, staked into wheel bearing. Wheel tread hardened to 425 Brinell, minimum.

Axle inserted into trolley yoke and secured with cross bolt. Grease fitting in head of axle.

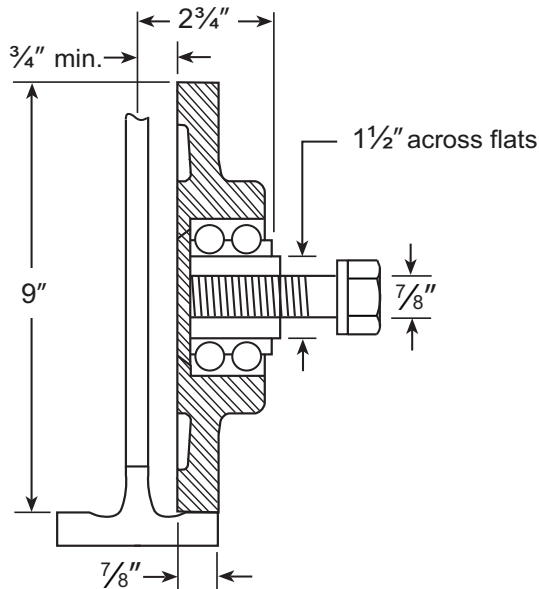
Used with these trolleys:

Model 2T-3000-2 Trolley (Page E-15)

Model 2T-4000-4 Trolley (Page E-15)

**3W-8017 Wheel**

10-2776-00

**Specifications**

Flangeless Wheel; Machined Steel; 9" Riding Tread Diameter; Double Row Ball Bearing. Wheel tread hardened to 425 Brinell, minimum.

"Threaded Axle, 7/8-14 UNF" with grease fitting in head of axle. Axle inserted through trolley yoke into wheel. Flats on hub of wheel engage a machined slot in the yoke to prevent the hub from turning.

Lockwasher for axle required, order separately.

Used with these trolleys:

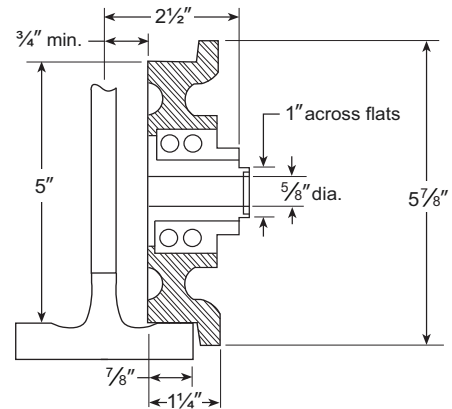
[Model 3T-10000-2SR Trolley](#) (Page E-30)

[Model 3T-20000-4SR Trolley](#) (Page E-30)

[Model 3T-20000-4SRL Trolley](#) (Page E-30)

3W-8033-F Wheel

10-2736-00

**Specifications**

Flanged Wheel; Machined Steel; 5" Riding Tread Diameter; Double Row Ball Bearing. Wheel tread hardened to 425 Brinell, minimum.

"Threaded Axle, 5/8-18 UNF" with grease fitting in head of axle. Axle inserted through trolley yoke into wheel. Flats on hub of wheel engage a machined slot in the yoke to prevent the hub from turning.

Lockwasher for axle required, order separately.

Used with these trolleys:

[Model 3T-6200-2 Trolley](#) (Page E-26)

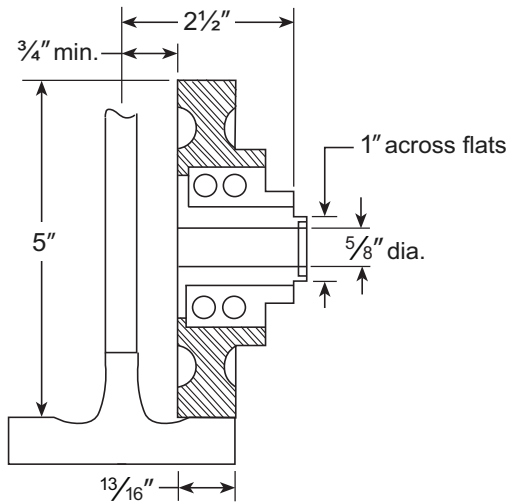
[Model 3T-12400-4 Trolley](#) (Page E-26)

[Model 3T-24800-8 Trolley](#) (Page E-31)

[Model 3T-24800-8L Trolley](#) (Page E-31)

3W-8035 Wheel

10-2735-000



Specifications

Flangeless Wheel; Machined Steel; 5" Riding Tread Diameter; Double Row Ball Bearing. Wheel tread hardened to 425 Brinell, minimum.

"Threaded Axle, 5/8-18 UNF" with grease fitting in head of axle. Axle inserted through trolley yoke into wheel. Flats on hub of wheel engage a machined slot in the yoke to prevent the hub from turning.

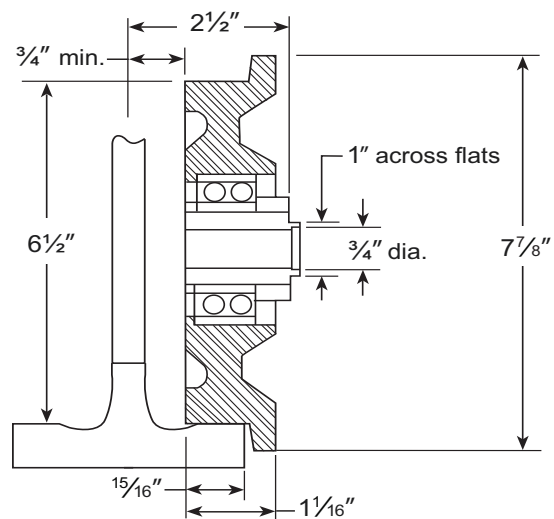
Lockwasher for axle required, order separately.

Used with these trolleys:

- Model 3T-6200-2SR Trolley (Page E-27)
- Model 3T-12400-4SR Trolley (Page E-27)
- Model 3T-24800-8SR Trolley (Page E-32)
- Model 3T-24800-8SRL Trolley (Page E-32)
- Model 4T-4200-2SR Trolley (Page E-33)

3W-8037-F Wheel

10-2738-00



Specifications

Flanged Wheel; Machined Steel; 6 1/2" Riding Tread Diameter; Double Row Ball Bearing. Wheel tread hardened to 425 Brinell, minimum.

"Threaded Axle, 3/4-16 UNF" with grease fitting in head of axle. Axle inserted through trolley yoke into wheel. Flats on hub of wheel engage a machined slot in the yoke to prevent the hub from turning.

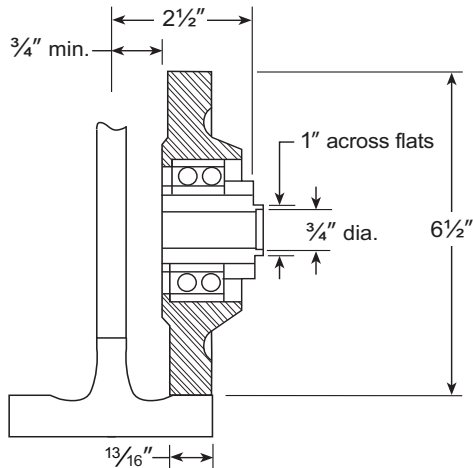
Lockwasher for axle required, order separately.

Used with these trolleys:

- Model 3T-8000-2 Trolley (Page E-28)
- Model 3T-16000-4 Trolley (Page E-28)

**3W-8039 Wheel**

10-2737-00

**Specifications**

Flangeless Wheel; Machined Steel; 6 1/2" Riding Tread Diameter; Double Row Ball Bearing. Wheel tread hardened to 425 Brinell, minimum.

"Threaded Axle, 3/4-16 UNF" with grease fitting in head of axle. Axle inserted through trolley yoke into wheel. Flats on hub of wheel engage a machined slot in the yoke to prevent the hub from turning.

Lockwasher for axle required, order separately.

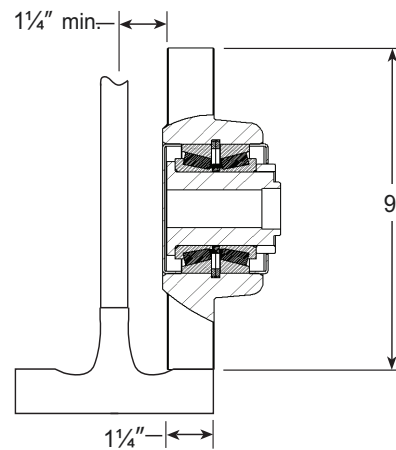
Used with these trolleys:

[Model 3T-8000-2SR Trolley](#) (Page E-29)

[Model 3T-16000-4SR Trolley](#) (Page E-29)

45W-8025 Wheel

9213F1384F1

**Specifications**

Flangeless Wheel; Machined Steel; 9" Riding Tread Diameter; Tapered Roller Bearing. Wheel tread hardened to 425 Brinell, minimum.

"Threaded Axle, 1 1/8-12 UNF" with grease fitting in head of axle. Axle inserted through trolley yoke into wheel. Flats on hub of wheel engage a machined slot in the yoke to prevent the hub from turning.

Lockwasher for axle required, order separately.

Used with these trolleys:

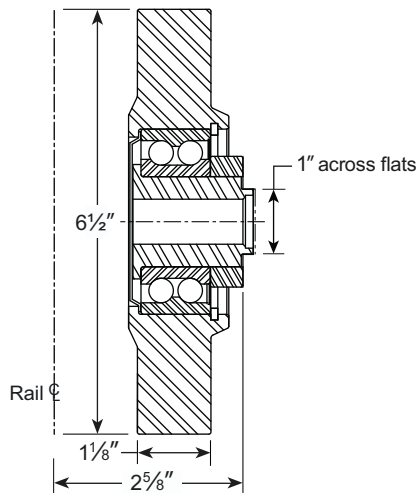
[Model 45T-15000-2SR Trolley](#) (Page E-34)

[Model 45T-30000-4SR Trolley](#) (Page E-34)

[Model 45T-30000-4SRL Trolley](#) (Page E-34)

Wheel

10-3252-00



Specifications

Flangeless Wheel; Machined Steel; 6½" Riding Tread Diameter; Double Row Ball Bearing. Wheel tread hardened to 425 Brinnel, minimum.

"Threaded Axle, ¾-16 UNF" with grease fitting in head of axle. Axle inserted through trolley yoke into wheel. Flats on hub of wheel engage a machined slot in the yoke to prevent the hub from turning.

Lockwasher for axle required, order separately.

Used with these trolleys:

[Model 4T-6600-2SR Trolley](#) (Page E-33)



Cranes

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Cranes

TC/American Crane Company provides the highest quality patented track, under-running cranes available.

Bridge Beams

200 Series Cranes: 200 Series Girder Rail
325 Series Cranes: 325 Series "L" and "H" Rail
450 Series Cranes: 450 Series Rail

All Models:

- Standard bridge beams—maximum allowable deflection with rated load is $\frac{1}{450}$ of span
- Maximum span to top flange ratio does not exceed 60:1.

End Trucks

All end truck frames are steel weldments, except 2ET-1300-4 and 3ET-1300-4, which are castings.

200 Series Cranes:

All standard crane end trucks have flanged wheel trolleys.

325 Series Cranes:

All standard crane end trucks through 3ET-28000-8 have flanged wheel trolleys. 3ET-38000-8 has flangeless wheels and side rollers. Motorized trolleys have geared flange wheels and side rollers. Optional end trucks, 3ET-2600-4SR through 3ET-28000-8SR available with flangeless wheels and side rollers.

450 Series Cranes

All standard end trucks have flangeless wheels and side rollers. Motorized trolleys have geared flange wheels and side rollers.

All Models:

- Ratio of crane span to end truck wheelbase does not exceed 10:1.
- All end trucks are furnished with restraining lugs.
- Designed for minimum deflection for use with interlocks.
- Wheel bearings, minimum B-10 life of 5000 hours.
- Standard wheel assemblies provided with regreasable bearings.
- See catalog End Truck section and Trolley Section for details.

Trolleys

Crane end trucks furnished with TC/American Crane articulating two- or four-wheel trolleys, either flanged wheel or flangeless wheel with side rollers, as described above.

All Models:

- Wheel treads heat treated to 425 Brinnell minimum hardness, except 3" diameter, low capacity wheels.

Bridge Electrification

Electrified cranes can be furnished with TC/American Crane electrical conductor bars, Electrification either Shielded Channel-Bar or Figure-8, Side Contact or Bottom Contact,

mounted on the bridge beam. See catalog Electrification Section for details.

Interlocks

All models of cranes may be provided with interlocks to allow transfer of a load from one crane to another, or from crane to monorail. One or both ends of all cranes can be fitted with interlocks. Interlocks on both ends of cranes up to 2-ton capacity, through 22-foot span, can be operated by one operating mechanism. Longer spans and higher capacity cranes require interlocks with individual operating mechanisms. Manual operation is standard; motorized operation is optional.

Service

Class "C" per MMA Specifications (for indoor operation).

Options

Optional crane speeds, motors, control enclosures, bridge conductors, long span cranes, extended wheelbase end trucks, special finishes and other features are available upon request

Paint

One coat of TC/American Crane alert yellow enamel. Material surface prepared to SSPC-SP2 minimum.



Standard Cranes

The following types of standard cranes are shown in this Systems Catalog:

Single girder, Hand Pushed

200 Series — $\frac{1}{4}$ -ton through 2-ton capacity
325 Series — $\frac{1}{4}$ -ton through 3-ton capacity

For economical intermittent or standby service, moderate loads and low elevations.

Single girder, Hand Chain Driven

325 Series —Up to 10-ton capacity

For short runways and where loads must be spotted closely. Drive is a hand chain pocket wheel and roller chain reduction drive, connected to a line shaft with under-the-end truck drive tires on each end truck.

Single girder, Center Motor Driven

200 Series —Up to 2-ton capacity
325 Series —Up to 10-ton capacity

For frequent handling of heavy loads. Drive is via a single motor and reducer mounted near the crane

center, connected to a line shaft with under-the-end truck drive tires on each end truck.

Single girder, Dual Motor Driven

325 Series —Up to 10-ton capacity
450 Series —Up to 15-ton capacity

For frequent handling of heavy loads. Drive is via motorized trolleys on each end truck.

Double girder, Dual Motor Driven

325 Series —Up to 20-ton capacity

For frequent handling of heavy loads. For maximum hook height with minimum headroom.

Single girder, Double Truss, Dual Motor Driven

325 Series —Up to 15-ton capacity. Up to 100-foot span or more.

For long span applications where building construction will not support center runways; where standard bridge beams are not suitable due to excessive bridge weight or clearance requirements.

Special Cranes

TC/American Crane provides special cranes designed to meet almost any material handling need. Contact our Dealers and our Sales Office for a proposal on special applications. Some examples are:

Multiple Runway Cranes

Cranes for three, four, five, six or more runways as required.

For buildings requiring a long crane for maximum hook height with minimum headroom required.

Building truss members must be designed to accommodate multiple support locations.

Capacities as required, based upon building support capability.

Air Motor Driven Cranes

For applications where an electric motor drive is not usable or desired.

Crane configuration is as a standard Center Motor Driven Crane.

Dipping Cranes

Specialized cranes designed to pick up, transport and set down loads in tanks for various cleaning and

plating operations. May be manually operated or integrated into a programmed operating sequence.

Cranes with Lifting Beams

Cranes with the bridge beam mounted on a lifting device to allow vertical movement of a load.

Stacker Cranes

Special cranes fitted with a forklift-type mast and fork carriage.

Cranes with Fixed or Telescoping Masts with Maintenance, Inspection or Painting Platforms

Special cranes used in aircraft maintenance and other industries for maintenance, servicing and overhaul work. Allows complete access to an aircraft or other products without the need for floor mounted platforms.

Cranes with Telescoping Bridge Beams

Special cranes with a bridge beam that may be extended horizontally, either manually or powered, to allow a load to be set off or picked up to the side.



TC/American Crane Company equipment is designed to be used with TC/American Crane Company products. TC/American provides no warranty, expressed or implied, for compatibility of other manufacturers' equipment.

TC/American cranes are designed and manufactured to the following codes and specifications where applicable.

- AISC** – American Institute of Steel Construction
- ANSI** – American National Standards Institute B30 Code
- AWS** – American Welding Society
- MMA** – Monorail Manufacturers Association
- NEC** – National Electrical Code
- OSHA** – Occupational Safety and Health
- HMI** – Hoist Manufacturers Institute





200 Series Cranes

Model 2C-500-HP Hand Push Crane

500 lb. capacity

Crane design load = 1075 lbs.

(Live load 500 lbs. + 75 lbs. impact + 500 lbs. hoist & trolley)

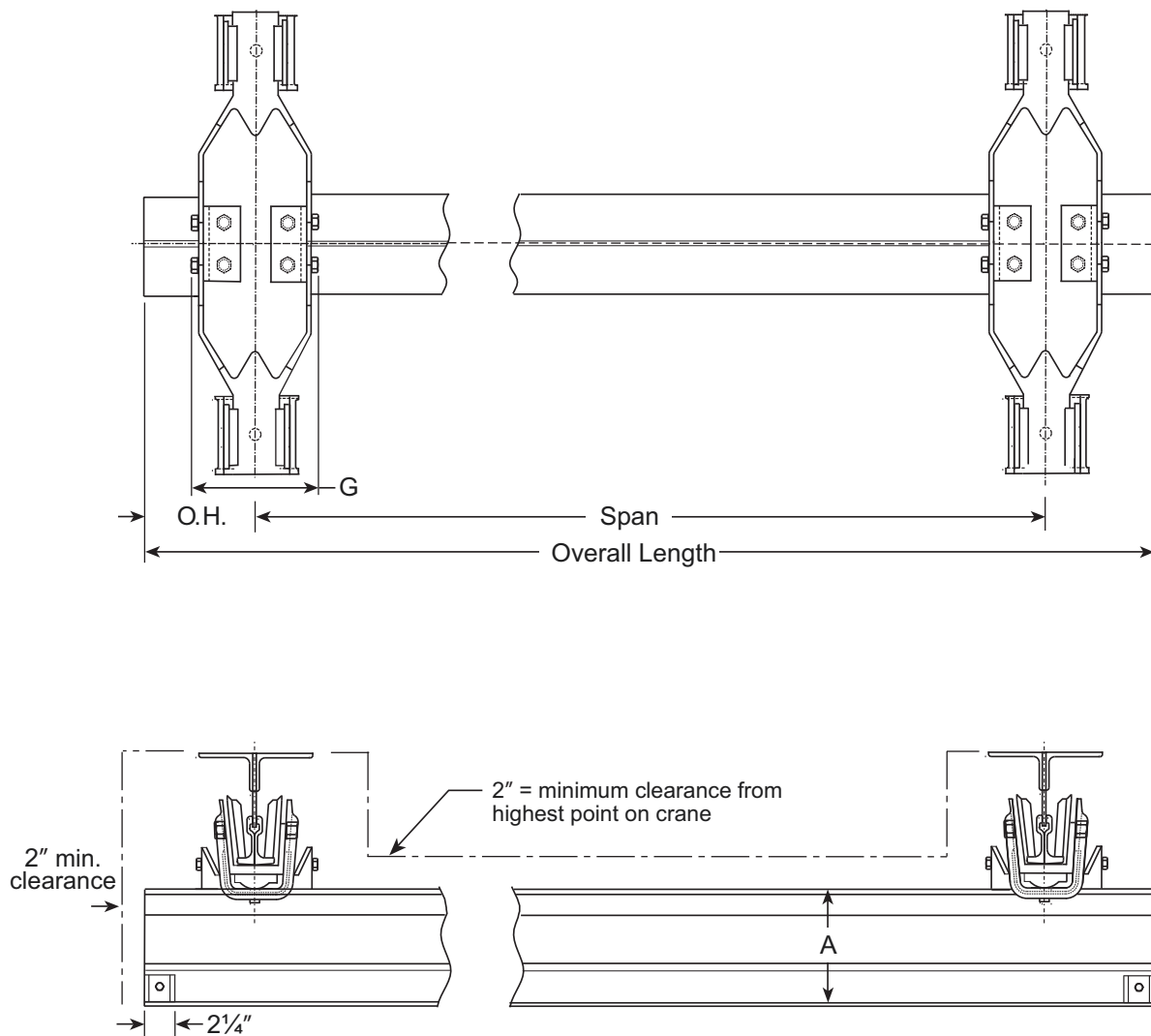
Crane Conductor Bars

- Bottom Contact conductor bars can be mounted on all cranes, including those with 7" deep bridge beams.
- Side Contact conductor bars require min. 11" deep bridge beam (7" gage on conductor bars).

Crane Interlocks

- Non-electrified cranes: Model 2I-515 (for cranes with bridge depth greater than 7": add for step cuts)
- Electrified cranes w/bottom contact conductor bar: Model 2I-515 (for cranes with bridge depth greater than 7": add for step cuts)
- Electrified cranes w/side contact conductor bar: Model 2I-930 (for cranes with bridge depth greater than 11": add for step cuts)

See "Crane Interlocks" on page F-99 for more information.



2C-500-HP Cranes

Span (feet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		Estimated Crane Weight
		Model No.	A	B	O.H. (min)	B	O.H.	
10	2ET-1300-4	2GR7-15*	7"	7"	4"	7"	12"	250 lbs.
12	2ET-1300-4	2GR7-15*	7"	7"	4"	7"	12"	280 lbs.
14	2ET-1300-4	2GR7-15*	7"	7"	4"	7"	12"	310 lbs.
16	2ET-2600-4	2GR7-15*	7"	7"	4"	7"	12"	402 lbs.
18	2ET-2600-4	2GR7-15*	7"	7"	4"	7"	12"	432 lbs.
20	2ET-2600-4	2GR9-18*	9"	9"	4"	7"	12"	528 lbs.
22	2ET-2600-4	2GR9-18*	9"	9"	4"	7"	12"	564 lbs.
24	2ET-2600-4	2GR11-23	11"	11"	4"	7"	12"	730 lbs.
26	2ET-2600-4	2GR11-23	11"	11"	4"	7"	12"	776 lbs.
28	2ET-2600-4	2GR11-23	11"	11"	4"	7"	12"	822 lbs.

* For crane with side contact conductors, minimum bridge size is 2GR11-16. Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops). Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail.

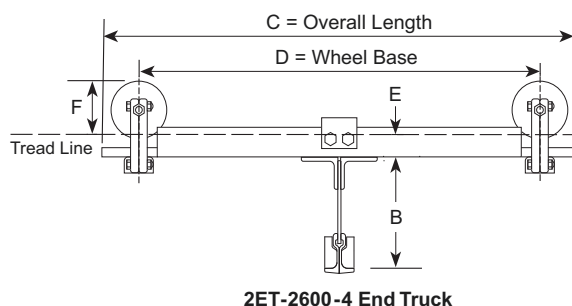
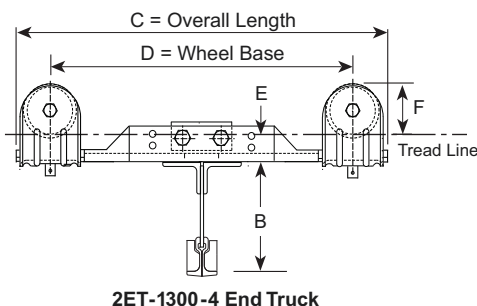
Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with 2I-515 or 2I-930 Interlocks = 12". Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

2C-500-HP End Truck Specifications*

Model Number	Dimensions					# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G			
2ET-1300-4	24¼"	20"	1½"	3¼"	67/8"	2	1300 lbs.	34 lbs.
2ET-2600-4	40"	34"	1½"	43/8"	73/8"	2	2600 lbs.	65 lbs.

* See "200 Series Crane End Trucks" on page G-3 for more information.

† Maximum load on 2-wheel trolley cannot exceed 2000 pounds (1000 lbs. per wheel on 200 Series Rail).





Model 2C-1000-HP Hand Push Crane

1000 lb. capacity

Crane design load = 1650 lbs.

(Live load 1000 lbs. + 150 lbs. impact + 500 lbs. hoist & trolley)

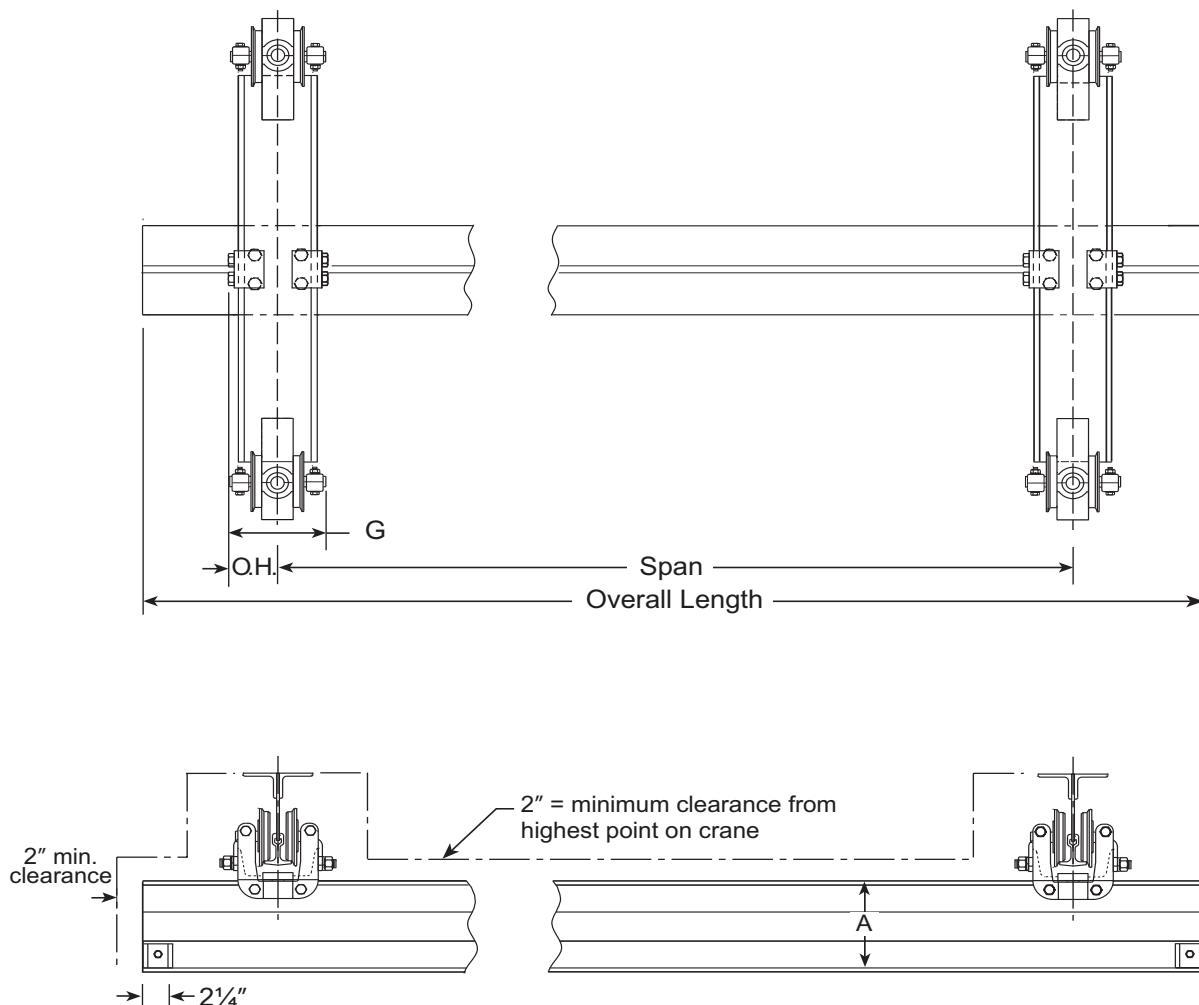
Crane Conductor Bars

- Bottom Contact conductor bars can be mounted on all cranes, including those with 7" deep bridge beams.
- Side Contact conductor bars require min. 11" deep bridge beam (7" gage on conductor bars).

Crane Interlocks

- Non-electrified cranes: Model 2I-515 (for cranes with bridge depth greater than 7": add for step cuts)
- Electrified cranes w/bottom contact conductor bar: Model 2I-515 (for cranes with bridge depth greater than 7": add for step cuts)
- Electrified cranes w/side contact conductor bar: Model 2I-930 (for cranes with bridge depth greater than 11": add for step cuts)

See "Crane Interlocks" on page F-99 for more information.



2C-1000-HP Cranes

Span (feet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		Estimated Crane Weight
		Model No.	A	B	O.H. (min)	B	O.H.	
10	2ET-2600-4	2GR7-15*	7"	7"	4"	7"	12"	312 lbs.
12	2ET-2600-4	2GR7-15*	7"	7"	4"	7"	12"	342 lbs.
14	2ET-2600-4	2GR7-15*	7"	7"	4"	7"	12"	372 lbs.
16	2ET-2600-4	2GR7-15*	7"	7"	4"	7"	12"	402 lbs.
18	2ET-2600-4	2GR7-15*	7"	7"	4"	7"	12"	432 lbs.
20	2ET-2600-4	2GR9-18*	9"	9"	4"	7"	12"	528 lbs.
22	2ET-2600-4	2GR9-18*	9"	9"	4"	7"	12"	564 lbs.
24	2ET-2600-4	2GR11-23	11"	11"	4"	7"	12"	730 lbs.
26	2ET-2600-4	2GR11-23	11"	11"	4"	7"	12"	776 lbs.
28	2ET-2600-4	2GR11-23	11"	11"	4"	7"	12"	822 lbs.

* For crane with side contact conductors, minimum bridge size is 2GR11-16. Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops) plus standard controls and motorized drive. Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail.

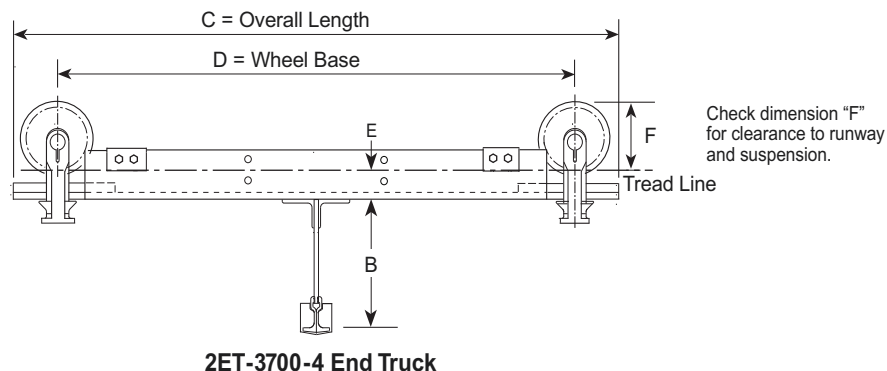
Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with 2I-515 or 2I-930 Interlocks = 12". Minimum O.H. shown allows for width of end truck. Consult factory for overhangs not shown.

2C-1000-HP End Truck Specifications*

Model Number	Dimensions					# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G			
2ET-2600-4	40"	34"	1½"	4¾"	7¾"	2	2600 lbs.	65 lbs.

* See "200 Series Crane End Trucks" on page G-3 for more information.

† Maximum load on 2-wheel trolley cannot exceed 2000 pounds (1000 lbs. per wheel on 200 Series Rail).



Model 2C-2000-HP Hand Push Crane

2000 lb. capacity

Crane design load= 2900 lbs.

(Live load 2000 lbs. + 300 lbs. impact + 600 lbs. hoist & trolley)

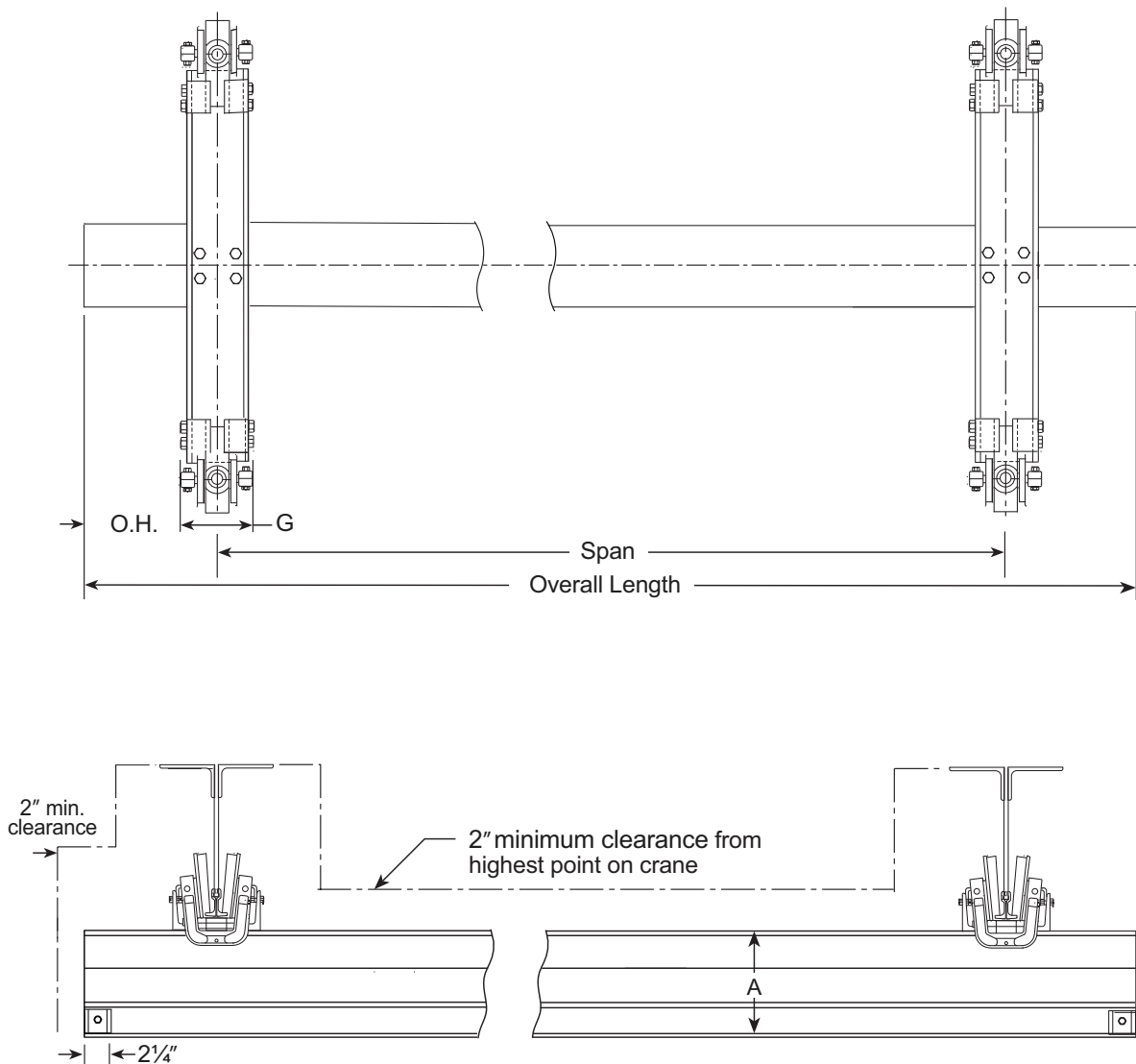
Crane Conductor Bars

- Bottom Contact conductor bars can be mounted on all cranes, including those with 7" deep bridge beams.
- Side Contact conductor bars require min. 11" deep bridge beam (7" gage on conductor bars).

Crane Interlocks

- Non-electrified cranes: Model 2I-515 (for cranes with bridge depth greater than 7": add for step cuts)
- Electrified cranes w/bottom contact conductor bar: Model 2I-515 (for cranes with bridge depth greater than 7": add for step cuts)
- Electrified cranes w/side contact conductor bar: Model 2I-930 (for cranes with bridge depth greater than 11": add for step cuts)

See "Crane Interlocks" on page F-99 for more information.



2C-2000-HP Cranes

Span (feet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		Estimated Crane Weight
		Model No.	A	B	O.H. (min)	B	O.H.	
10	2ET-3700-4	2GR7-15*	7"	7"	4"	11"	12"	422 lbs.
12	2ET-3700-4	2GR7-15*	7"	7"	4"	11"	12"	452 lbs.
14	2ET-3700-4	2GR7-15*	7"	7"	4"	11"	12"	482 lbs.
16	2ET-3700-4	2GR7-17*	7"	7"	4"	11"	12"	548 lbs.
18	2ET-3700-4	2GR9-18*	9"	9"	4"	11"	12"	602 lbs.
20	2ET-3700-4	2GR9-22*	9"	9"	4"	11"	12"	726 lbs.
22	2ET-3700-4	2GR9-22*	9"	9"	4"	11"	12"	770 lbs.
24	2ET-3700-4	2GR11-23	11"	11"	4"	11"	12"	840 lbs.
26	2ET-3700-4	2GR11-23	11"	11"	4"	11"	12"	886 lbs.
28	2ET-3700-4	2GR11-26	11"	11"	4"	11"	12"	1022 lbs.
30	2ET-3700-4	2GR13-29	13½"	13½"	4"	13½"	12"	1170 lbs.

* For crane with side contact conductors, minimum bridge size is 2GR11-16. Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops) plus standard controls and motorized drive. Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail.

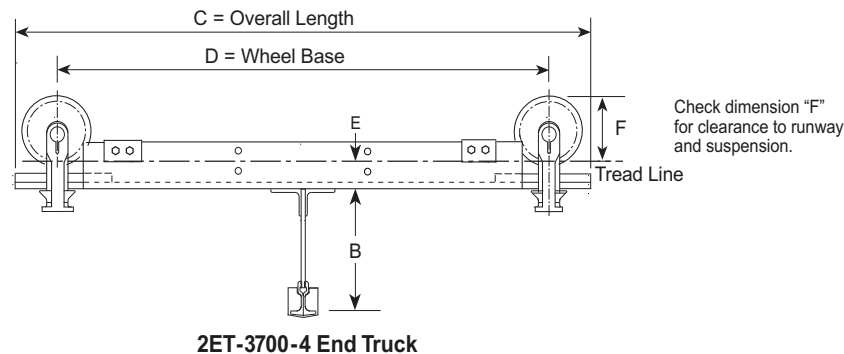
Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with 2I-515 or 2I-930 Interlocks = 12". Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

2C-2000-HP End Truck Specifications*

Model Number	Dimensions					# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G			
2ET-3700-4	45¾"	39"	1½"	57/8"	8¾"	2	3700 lbs.	120 lbs.

* See "200 Series Crane End Trucks" on page G-3 for more information.

† Maximum load on 2-wheel trolley cannot exceed 2000 pounds (1000 lbs. per wheel on 200 Series Rail).



Model 2C-4000-HP Hand Push Crane

4000 lb. capacity

Crane design load = 5400 lbs.

(Live load 4000 lbs. + 600 lbs. impact + 800 lbs. hoist & trolley)

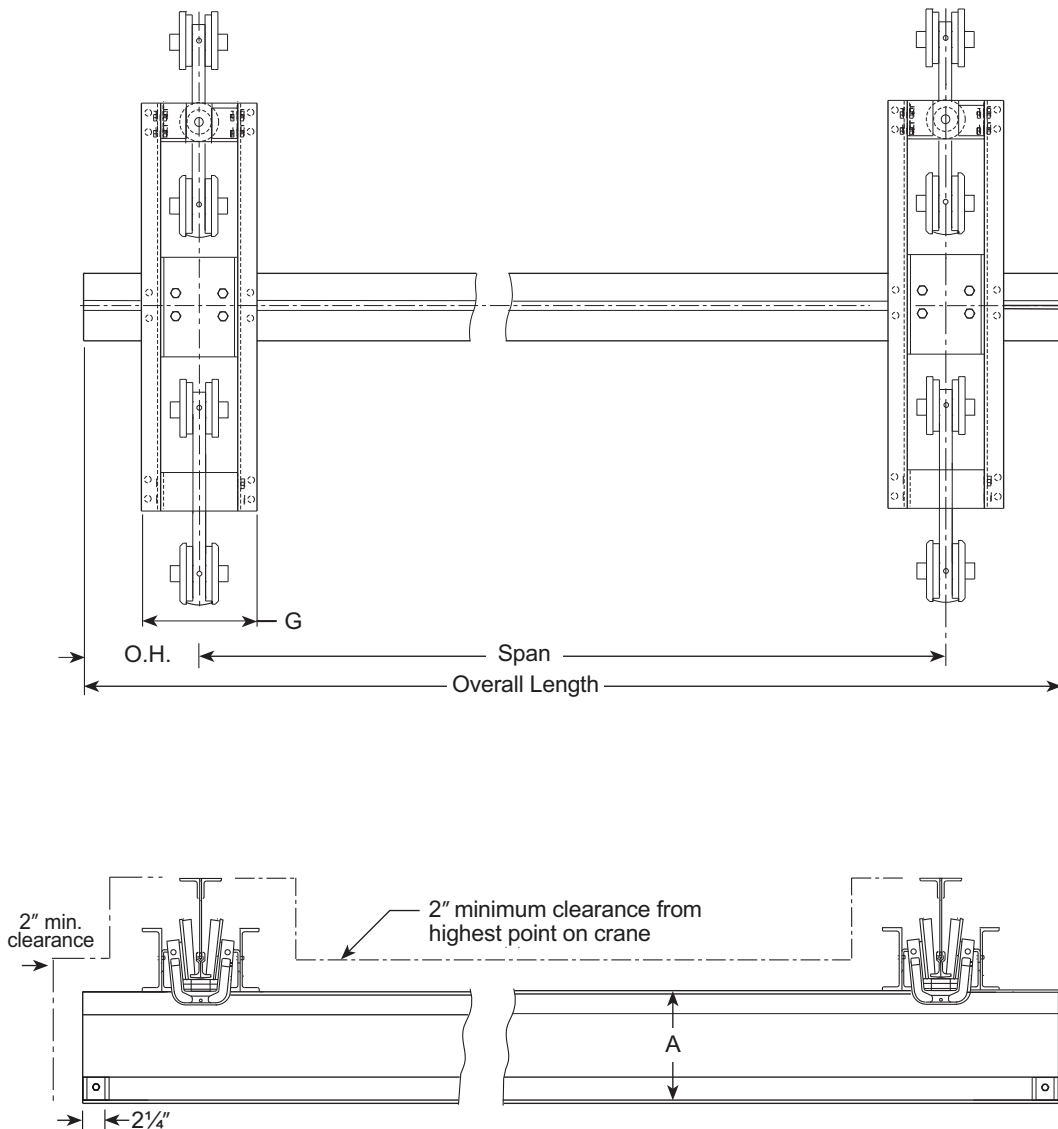
Crane Conductor Bars

- Bottom Contact conductor bars can be mounted on all cranes, including those with 7" deep bridge beams.
- Side Contact conductor bars require min. 11" deep bridge beam (7" gage on conductor bars).

Crane Interlocks

- Non-electrified cranes: Model 2I-515 (for cranes with bridge depth greater than 7": add for step cuts)
- Electrified cranes w/bottom contact conductor bar: Model 2I-515 (for cranes with bridge depth greater than 7": add for step cuts)
- Electrified cranes w/side contact conductor bar: Model 2I-930 (for cranes with bridge depth greater than 11": add for step cuts)

See "[Crane Interlocks](#)" on page F-99 for more information.



2C-4000-HP Cranes

Span (feet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		Estimated Crane Weight
		Model No.	A	B	O.H (min)	B	O.H.	
10	2ET-7700-8	2GR7-15*	7"	7"	6"	7"	12"	602 lbs.
12	2ET-7700-8	2GR9-18*	9"	9"	6"	7"	12"	674 lbs.
14	2ET-7700-8	2GR9-22*	9"	9"	6"	7"	12"	774 lbs.
16	2ET-7700-8	2GR11-23	11"	11"	6"	7"	12"	836 lbs.
18	2ET-7700-8	2GR11-23	11"	11"	6"	7"	12"	882 lbs.
20	2ET-7700-8	2GR11-26	11"	11"	6"	7"	12"	994 lbs.
22	2ET-7700-8	2GR13-29	13½"	13½"	6"	7"	12"	1118 lbs.
24	2ET-7700-8	2GR13-29	13½"	13½"	6"	7"	12"	1176 lbs.

* For crane with side contact conductors, minimum bridge size is 2GR11-16. Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops). Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail.

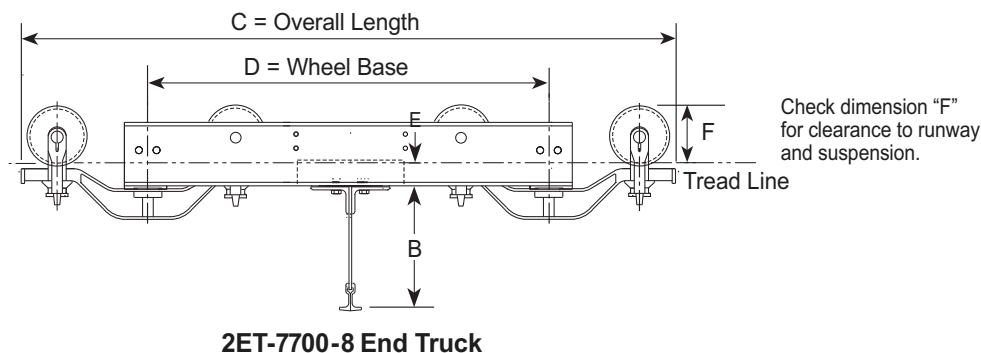
Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with 2I-515 or 2I-930 Interlocks = 12". Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

2C-4000-HP End Truck Specifications*

Model Number	Dimensions					# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G			
2ET-7700-8	61¾"	38"	1½"	5⅞"	11¾"	4	7700 lbs.	180 lbs.

* See "200 Series Crane End Trucks" on page G-3 for more information.

† Maximum load on 2-wheel trolley cannot exceed 2000 pounds (1000 lbs. per wheel on 200 Series Rail).





Model 2C-2000-MD Motor Driven Crane

2000 lb. capacity

Crane design load = 3300 lbs.

(Live load 2000 lbs. + 300 lbs. impact + 1000 lbs. hoist & trolley)

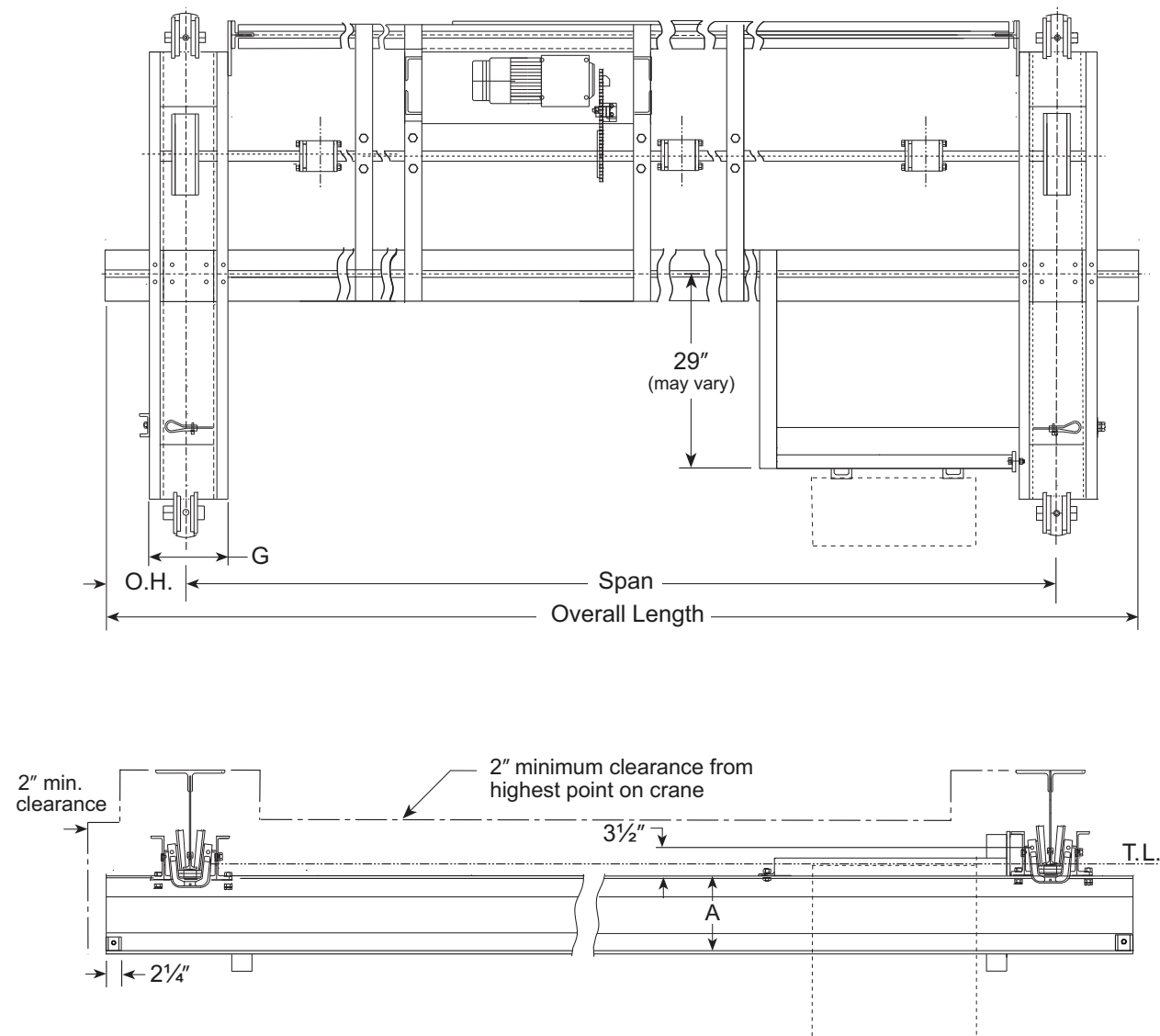
Crane Conductor Bars

- Bottom Contact conductor bars can be mounted on all cranes, including those with 7" deep bridge beams.
- Side Contact conductor bars require min. 11" deep bridge beam (7" gage on conductor bars).

Crane Interlocks

- Non-electrified cranes: Model 2I-515 (add for step cuts)
- Electrified cranes w/bottom contact conductor bar: Model 2I-515 (for cranes with bridge depth greater than 7": add for step cuts)
- Electrified cranes w/side contact conductor bar: Model 2I-930 (for cranes with bridge depth greater than 11": add for step cuts)

See "[Crane Interlocks](#)" on page F-99 for more information.



2C-2000-MD Cranes

Span (feet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		H.P. 100 FPM	EstimatedCr ane Weight
		Model No.	A	B	O.H. (min)	B	O.H.		
10	2ET-3800-4	2GR11-16	11"	11"	6"	11"	12"	½	985 lbs.
12	2ET-3800-4	2GR11-23	11"	11"	6"	11"	12"	½	1132 lbs.
14	2ET-3800-4	2GR11-23	11"	11"	6"	11"	12"	½	1195 lbs.
16	2ET-3800-4	2GR11-23	11"	11"	6"	11"	12"	½	1258 lbs.
18	2ET-3800-4	2GR11-23	11"	11"	6"	11"	12"	½	1321 lbs.
20	2ET-3800-4	2GR11-23	11"	11"	6"	11"	12"	½	1384 lbs.
22	2ET-3800-4	2GR11-23	11"	11"	6"	11"	12"	½	1447 lbs.
24	2ET-3800-4	2GR11-23	11"	11"	6"	11"	12"	½	1510 lbs.
26	2ET-3800-4	2GR11-26	11"	11"	6"	11"	12"	½	1657 lbs.
28	2ET-3800-4	2GR13-27	13½"	13½"	6"	11"	12"	½	1756 lbs.
30	2ET-3800-4	2GR13-29	13½"	13½"	6"	11"	12"	½	1827 lbs.
32	2ET-3800-4	2GR13-29	13½"	13½"	6"	11"	12"	½	1898 lbs.

For crane with side contact conductors, minimum bridge size is 2GR11-16. Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops). Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail.

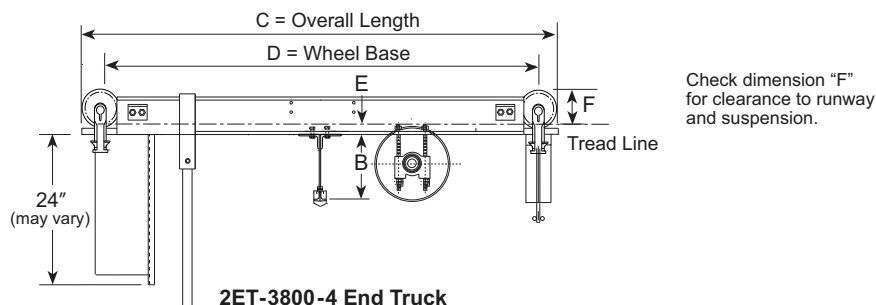
Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with 2I-515 or 2I-930 Interlocks = 12". Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

2C-2000-MD End Truck Specifications*

Model Number	Dimensions					# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G			
2ET-3800-4	76¼"	69½"	1½"	57⁄8"	11¾"	2	3800 lbs.	160 lbs.

* See "200 Series Crane End Trucks" on page G-3 for more information.

† Maximum load on 2-wheel trolley cannot exceed 2000 pounds (1000 lbs. per wheel on 200 Series Rail).



Model 2C-4000-MD Motor Driven Crane

4000 lb. capacity

Crane design load = 6100 lbs.

(Live load 4000 lbs. + 600 lbs. impact + 1500 lbs. hoist & trolley)

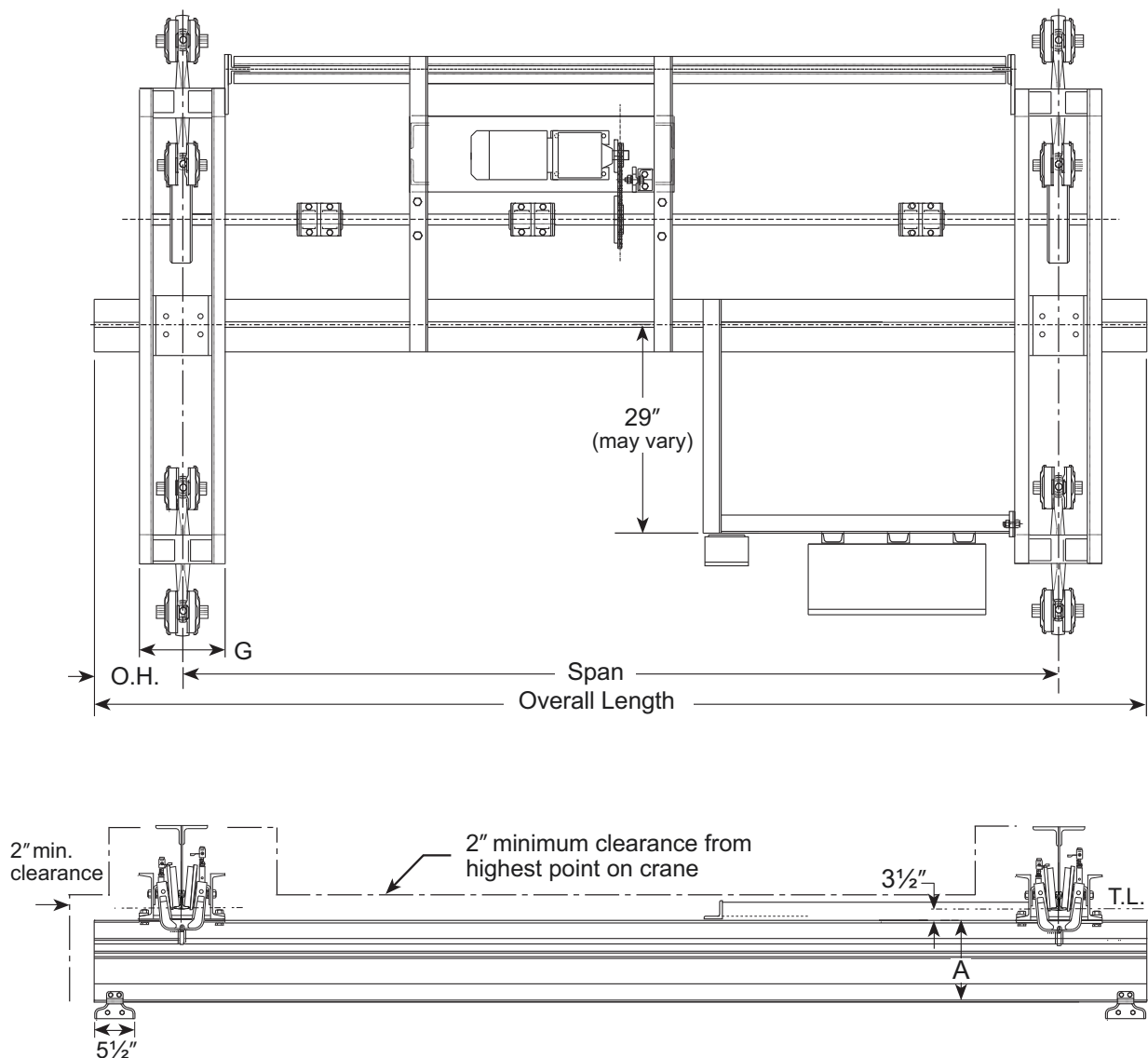
Crane Conductor Bars

- Bottom Contact conductor bars can be mounted on all cranes, including those with 7" deep bridge beams.
- Side Contact conductor bars require min. 11" deep bridge beam (7" gage on conductor bars).

Crane Interlocks

- Non-electrified cranes: Model 2I-515 (add for step cuts)
- Electrified cranes w/bottom contact conductor bar: Model 2I-515 (for cranes with bridge depth greater than 7": add for step cuts)
- Electrified cranes w/side contact conductor bar: Model 2I-930 (for cranes with bridge depth greater than 11": add for step cuts)

See "[Crane Interlocks](#)" on page F-99 for more information.



2C-4000-MD Cranes

Span (feet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		H.P. 100 FPM	Estimated Crane Weight
		Model No.	A	B	O.H. (min)	B	O.H.		
10	2ET-7800-8	2GR11-23	11"	11"	6"	11"	12"	½	1169 lbs.
12	2ET-7800-8	2GR11-23	11"	11"	6"	11"	12"	½	1232 lbs.
14	2ET-7800-8	2GR11-23	11"	11"	6"	11"	12"	½	1295 lbs.
16	2ET-7800-8	2GR11-23	11"	11"	6"	11"	12"	½	1358 lbs.
18	2ET-7800-8	2GR11-23	11"	11"	6"	11"	12"	½	1421 lbs.
20	2ET-7800-8	2GR13-27	13½"	13½"	6"	11"	12"	½	1572 lbs.
22	2ET-7800-8	2GR13-29	13½"	13½"	6"	11"	12"	½	1691 lbs.
24	2ET-7800-8	2GR13-29	13½"	13½"	6"	11"	12"	½	1766 lbs.

For crane with side contact conductors, minimum bridge size is 2GR11-16. Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops). Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail.

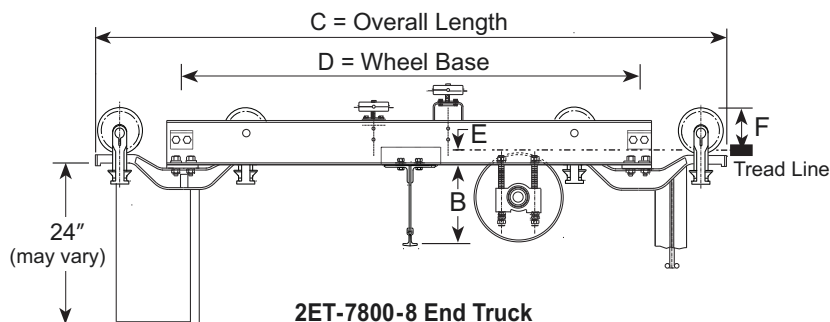
Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with 2I-515 or 2I-930 Interlocks = 12". Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

2C-4000-MD End Truck Specifications*

Model Number	Dimensions					# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G			
2ET-7800-8	84¾"	61"	1½"	5⅞"	11¾"	4	7800 lbs.	210 lbs.

* See "200 Series Crane End Trucks" on page G-3 for more information.

† Maximum load on 2-wheel trolley cannot exceed 2000 pounds (1000 lbs. per wheel on 200 Series Rail).



325 Series Cranes

Model 3C-500-HP Hand Push Crane

500 lb. capacity

Crane design load = 1075 lbs.

(Live load 500 lbs. + 75 lbs. impact + 500 lbs. hoist & trolley)

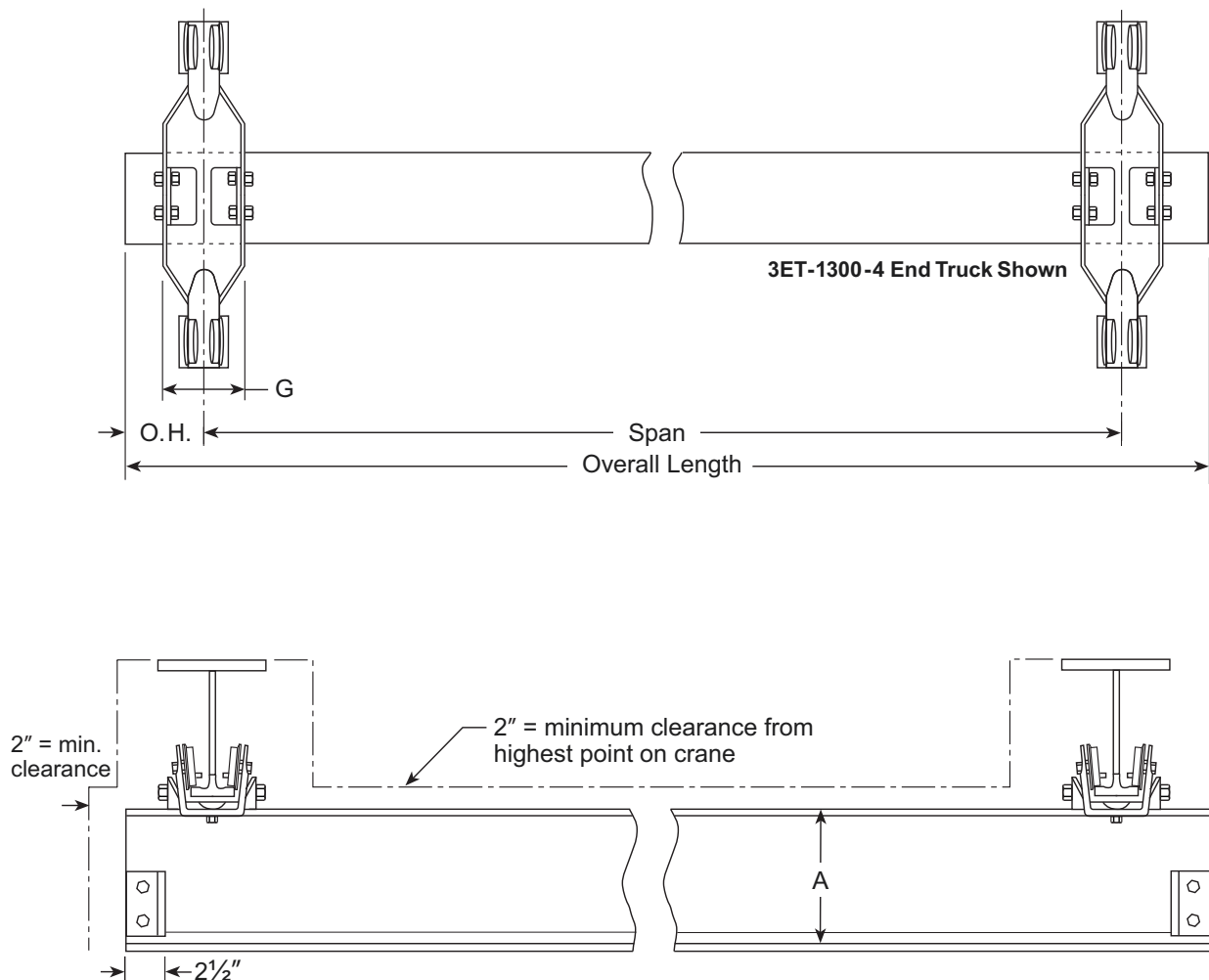
Crane Conductor Bars

- Bottom Contact conductor bars can mount on all cranes and all bridge beams
- Side Contact conductor bars require min. 3RL11-21 bridge beam (7½" gage, through 5" dia. hoist carrier trolley wheels)

Crane Interlocks ("L" Series Rail)

- Non-electrified cranes: Model 3I-615, mounted in 3RL8-18 bridge (For cranes w/bridges other than 3RL8-18, add for step cuts.)
- Electrified cranes with bottom contact conductor bar: Model 3I-615, mounted in 3RL8-18 bridge (For cranes w/bridges other than 3RL8-18, add for step cuts.)
- Electrified cranes with side contact conductor bar: Model 3I-430 Requires minimum 3RL13-27 (For cranes with larger bridge, add for step cuts.)

See "Crane Interlocks" on page F-99 for more information.





3C-500-HP Hand Push Crane

Span (feet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		Estimated Crane Weight
		Model No.	A	B	O.H. (min)	B	O.H.	
10	3ET-1300-4	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	4"	7 ³ / ₈ "	12"	296 lbs.
12	3ET-1300-4	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	4"	7 ³ / ₈ "	12"	332 lbs.
14	3ET-1300-4	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	4"	7 ³ / ₈ "	12"	368 lbs.
16	3ET-2600-4	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	4"	7 ³ / ₈ "	12"	466 lbs.
18	3ET-2600-4	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	4"	7 ³ / ₈ "	12"	502 lbs.
20	3ET-2600-4	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	4"	7 ³ / ₈ "	12"	538 lbs.
22	3ET-2600-4	3RL11-21	10 ³ / ₈ "	10 ³ / ₈ "	4"	7 ³ / ₈ "	12"	646 lbs.
24	3ET-2600-4	3RL11-21	10 ³ / ₈ "	10 ³ / ₈ "	4"	7 ³ / ₈ "	12"	688 lbs.
26	3ET-2600-4	3RL11-21	10 ³ / ₈ "	10 ³ / ₈ "	4"	7 ³ / ₈ "	12"	730 lbs.
28	3ET-2600-4	3RL11-21	10 ³ / ₈ "	10 ³ / ₈ "	4"	7 ³ / ₈ "	12"	772 lbs.
30	3ET-5400-4	3RL13-27	12 ¹ / ₂ "	12 ¹ / ₂ "	5"	7 ³ / ₈ "	12"	1152 lbs.
32	3ET-5400-4	3RL13-27	12 ¹ / ₂ "	12 ¹ / ₂ "	5"	7 ³ / ₈ "	12"	1206 lbs.

* For crane with side contact conductors, minimum bridge size is 3RL11-21. Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops). Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

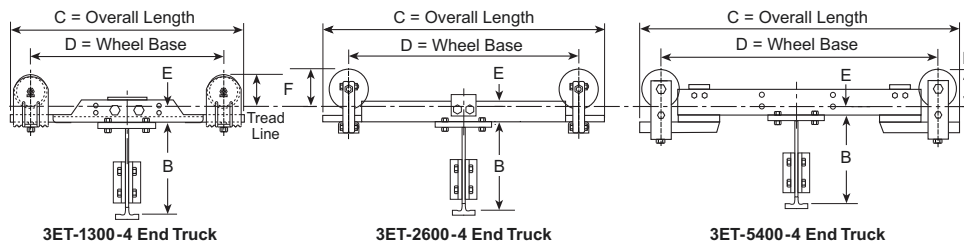
After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail. Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with 3I-615 or 3I-430 Interlocks = 12". Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

3C-500-HP End Truck Specifications*

Model Number	Dimensions					# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G			
3ET-1300-4	24 ¹ / ₄ "	20"	1 ¹ / ₂ "	3 ¹ / ₄ "	7 ¹ / ₄ "	2	1300 lbs.	34 lbs.
3ET-2600-4	40"	34"	1 ¹ / ₂ "	4 ³ / ₈ "	7 ¹ / ₁₆ "	2	2600 lbs.	65 lbs.
3ET-5400-4	45 ³ / ₄ "	39"	1 ¹ / ₂ "	5"	9 ¹ / ₄ "	2	5400 lbs.	138 lbs.

* For use on "L" Series rail only. See "325 Series Crane End Trucks" on page G-9 for more information

† Max. load per 2-wheel trolley cannot exceed 5500 pounds (2750 pound per wheel maximum on 325 "L" Series Rail).



Check dimension "F" for clearance to runway and suspension.

Model 3C-1000-HP Hand Push Crane

1000 lb. capacity

Crane design load = 1650 lbs.

(Live load 1000 lbs. + 150 lbs. impact + 500 lbs. hoist & trolley)

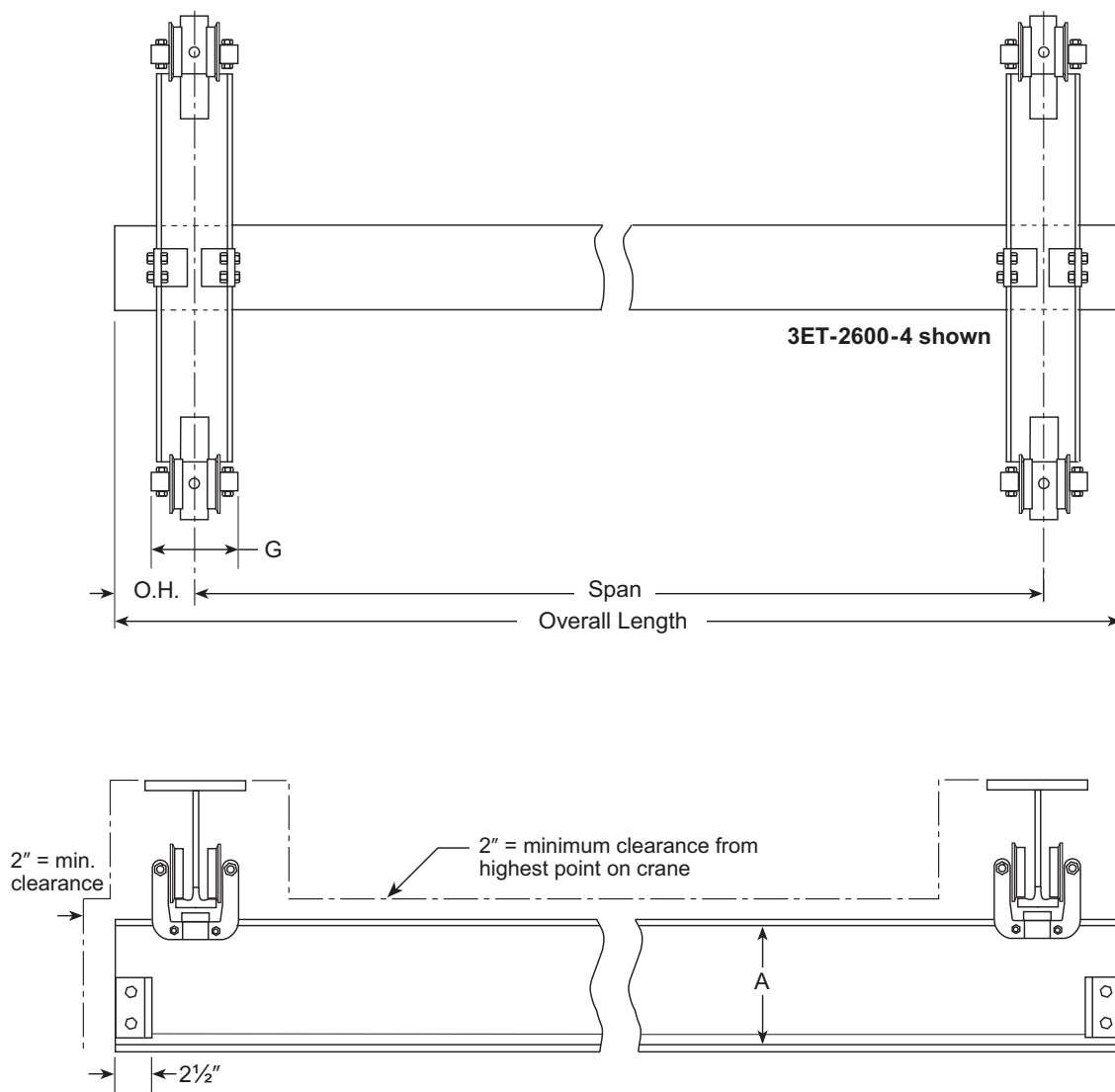
Crane Conductor Bars

- Bottom Contact conductor bars can mount on all cranes and all bridge beams
- Side Contact conductor bars require min. 3RL11-21 bridge beam (7½" gage, through 5" dia. hoist carrier trolley wheels)

Crane Interlocks "L" Series Rail

- Non-electrified cranes: Model 3I-615, mounted in 3RL8-18 bridge (For cranes w/bridges other than 3RL8-18, add for step cuts.)
- Electrified cranes with bottom contact conductor bar: Model 3I-615, mounted in 3RL8-18 bridge (For cranes w/bridges other than 3RL8-18, add for step cuts.)
- Electrified cranes with side contact conductor bar: Model 3I-430 Requires minimum 3RL13-27 (For cranes with larger bridge, add for step cuts.)

See "[Crane Interlocks](#)" on page F-99 for more information.





3C-1000-HP Hand Push Crane

Span (feet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		Estimated Crane Weight
		Model No.	A	B	O.H. (min)	B	O.H.	
10	3ET-2600-4	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	4"	7 ³ / ₈ "	12"	358 lbs.
12	3ET-2600-4	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	4"	7 ³ / ₈ "	12"	394 lbs.
14	3ET-2600-4	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	4"	7 ³ / ₈ "	12"	430 lbs.
16	3ET-2600-4	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	4"	7 ³ / ₈ "	12"	466 lbs.
18	3ET-2600-4	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	4"	7 ³ / ₈ "	12"	502 lbs.
20	3ET-2600-4	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	4"	7 ³ / ₈ "	12"	538 lbs.
22	3ET-2600-4	3RL11-21	10 ³ / ₈ "	10 ³ / ₈ "	4"	7 ³ / ₈ "	12"	646 lbs.
24	3ET-2600-4	3RL11-21	10 ³ / ₈ "	10 ³ / ₈ "	4"	7 ³ / ₈ "	12"	688 lbs.
26	3ET-2600-4	3RL11-21	10 ³ / ₈ "	10 ³ / ₈ "	4"	7 ³ / ₈ "	12"	730 lbs.
28	3ET-2600-4	3RL11-21	10 ³ / ₈ "	10 ³ / ₈ "	4"	7 ³ / ₈ "	12"	772 lbs.
30	3ET-5400-4	3RL13-27	12 ¹ / ₂ "	12 ¹ / ₂ "	5"	7 ³ / ₈ "	12"	1152 lbs.
32	3ET-5400-4	3RL13-27	12 ¹ / ₂ "	12 ¹ / ₂ "	5"	7 ³ / ₈ "	12"	1206 lbs.

* For crane with side contact conductors, minimum bridge size is 3RL11-21. Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops). Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

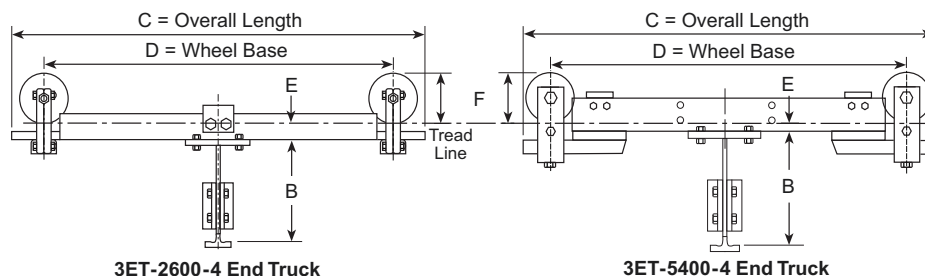
After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail. Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with 3I-615 or 3I-430 Interlocks = 12". Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

3C-1000-HP End Truck Specifications*

Model Number	Dimensions					# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G			
3ET-2600-4	40"	34"	1 ¹ / ₂ "	4 ³ / ₈ "	7 ¹ / ₁₆ "	2	2600 lbs.	65 lbs.
3ET-5400-4	45 ³ / ₄ "	39"	1 ¹ / ₂ "	5"	9 ¹ / ₄ "	2	5400 lbs.	138 lbs.

* For use on "L" Series rail only. See "325 Series Crane End Trucks" on page G-9 for more information

† Max. load per 2-wheel trolley cannot exceed 5500 pounds (2750 pound per wheel maximum on 325 "L" Series Rail).



Check dimension "F" for clearance to runway and suspension.



Model 3C-2000-HP Hand Push Crane

2000 lb. capacity

Crane design load = 2900 lbs.

(Live load 2000 lbs. + 300 lbs. impact + 600 lbs. hoist & trolley)

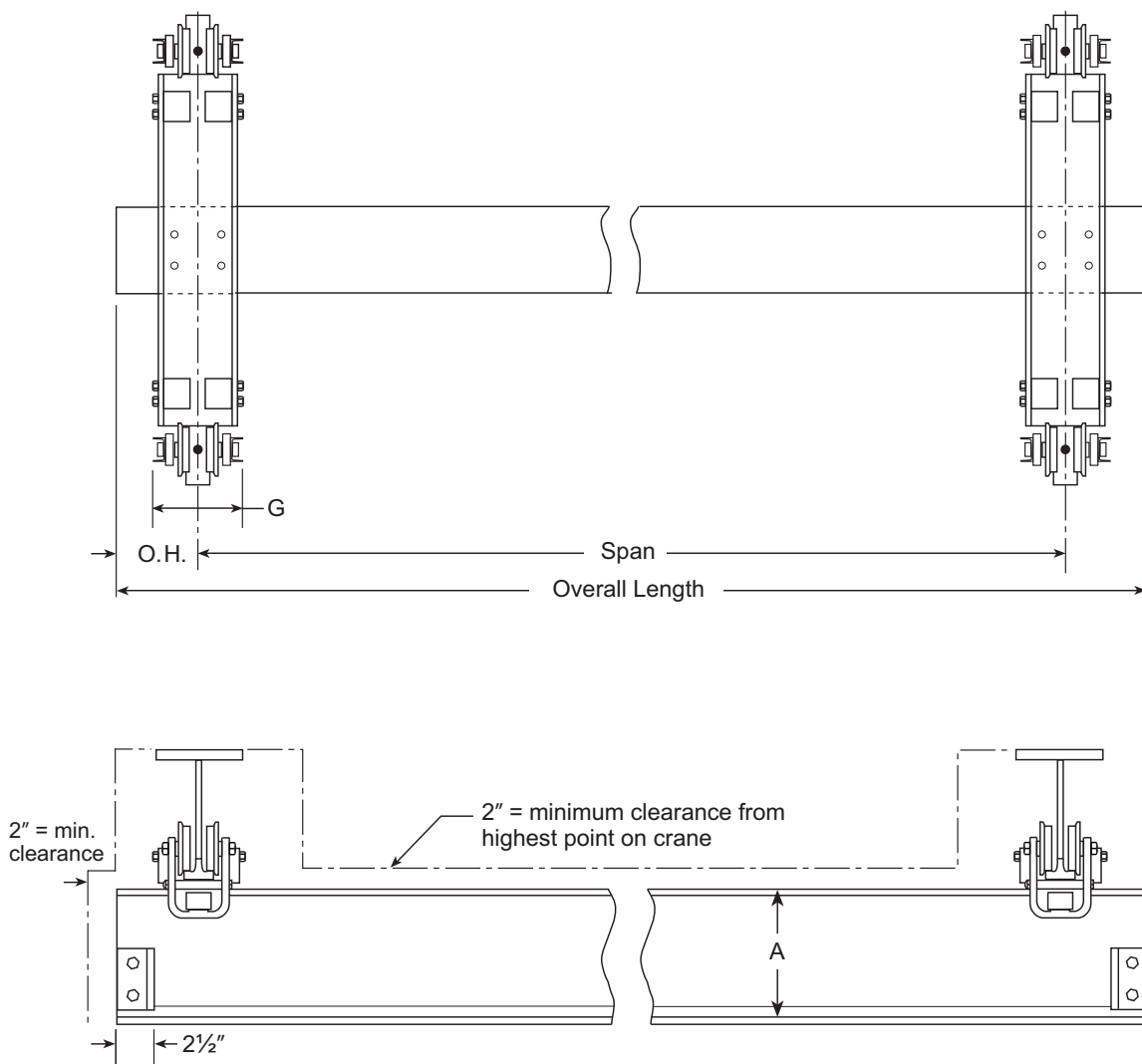
Crane Conductor Bars

- Bottom Contact conductor bars—can mount on all cranes and all bridge beams
- Side Contact conductor bars—require min. 3RL11-21 bridge beam (7½" gage, through 5" dia. hoist carrier trolley wheels)

Crane Interlocks "L" Series Rail

- Non-electrified cranes: Model 3I-615, mounted in 3RL8-18 bridge (For cranes w/bridges other than 3RL8-18, add for step cuts.)
- Electrified cranes with bottom contact conductor bar: Model 3I-615, mounted in 3RL8-18 bridge (For cranes w/bridges other than 3RL8-18, add for step cuts.)
- Electrified cranes with side contact conductor bar: Model 3I-430 Requires minimum 3RL13-27 (For cranes with larger bridge, add for step cuts.)

See "[Crane Interlocks](#)" on page F-99 for more information.





3C-2000-HP Hand Push Crane

Span (feet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		Estimated Crane Weight
		Model No.	A	B	O.H. (min)	B	O.H.	
10	3ET-5400-4	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	5"	7 ³ / ₈ "	12"	504 lbs.
12	3ET-5400-4	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	5"	7 ³ / ₈ "	12"	540 lbs.
14	3ET-5400-4	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	5"	7 ³ / ₈ "	12"	576 lbs.
16	3ET-5400-4	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	5"	7 ³ / ₈ "	12"	612 lbs.
18	3ET-5400-4	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	5"	7 ³ / ₈ "	12"	648 lbs.
20	3ET-5400-4	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	5"	7 ³ / ₈ "	12"	684 lbs.
22	3ET-5400-4	3RL11-21	10 ³ / ₈ "	10 ³ / ₈ "	5"	7 ³ / ₈ "	12"	792 lbs.
24	3ET-5400-4	3RL11-21	10 ³ / ₈ "	10 ³ / ₈ "	5"	7 ³ / ₈ "	12"	834 lbs.
26	3ET-5400-4	3RL11-24	10 ¹ / ₂ "	10 ¹ / ₂ "	5"	7 ³ / ₈ "	12"	960 lbs.
28	3ET-5400-4	3RL11-24	10 ¹ / ₂ "	10 ¹ / ₂ "	5"	7 ³ / ₈ "	12"	1008 lbs.
30	3ET-5400-4	3RL13-27	12 ¹ / ₂ "	12 ¹ / ₂ "	5"	7 ³ / ₈ "	12"	1152 lbs.
32	3ET-5400-4	3RL13-27	12 ¹ / ₂ "	12 ¹ / ₂ "	5"	7 ³ / ₈ "	12"	1206 lbs.

* For crane with side contact conductors, minimum bridge size is 3RL11-21. Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops). Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

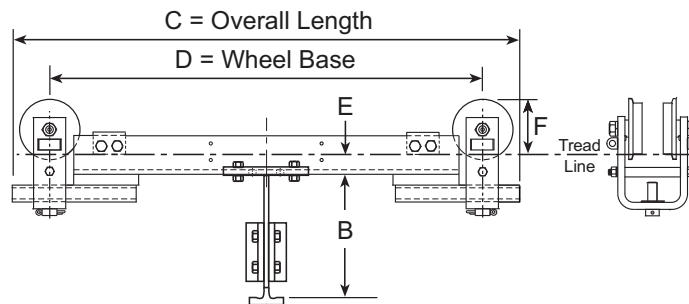
After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail. Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with 3I-615 or 3I-430 Interlocks = 12". Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

3C-2000-HP End Truck Specifications*

Model Number	Dimensions					# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G			
3ET-5400-4	45 ³ / ₄ "	39"	1 ¹ / ₂ "	5"	9 ¹ / ₄ "	2	5400 lbs.	138 lbs.

* For use on "L" Series rail only. See "325 Series Crane End Trucks" on page G-9 for more information

† Max. load per 2-wheel trolley cannot exceed 5500 pounds (2750 pound per wheel maximum on 325 "L" Series Rail).



3ET-5400-4 End Truck

Check dimension "F" for clearance to runway and suspension.

Model 3C-4000-HP Hand Push Crane

4000 lb. capacity

Crane design load = 5400bs.

(Live load 4000 lbs. + 600 lbs. impact + 800 lbs. hoist & trolley)

Crane Conductor Bars

- Bottom Contact conductor bars—can mount on all cranes and all bridge beams only if end trucks changed to 3ET-9000-4 with 6ft. wheelbase.
- Side Contact conductor bars—require min. 3RL11-21 bridge beam (7½" gage, through 5" dia. hoist carrier trolley wheels).

See "Crane Interlocks" on page F-99 for more information.

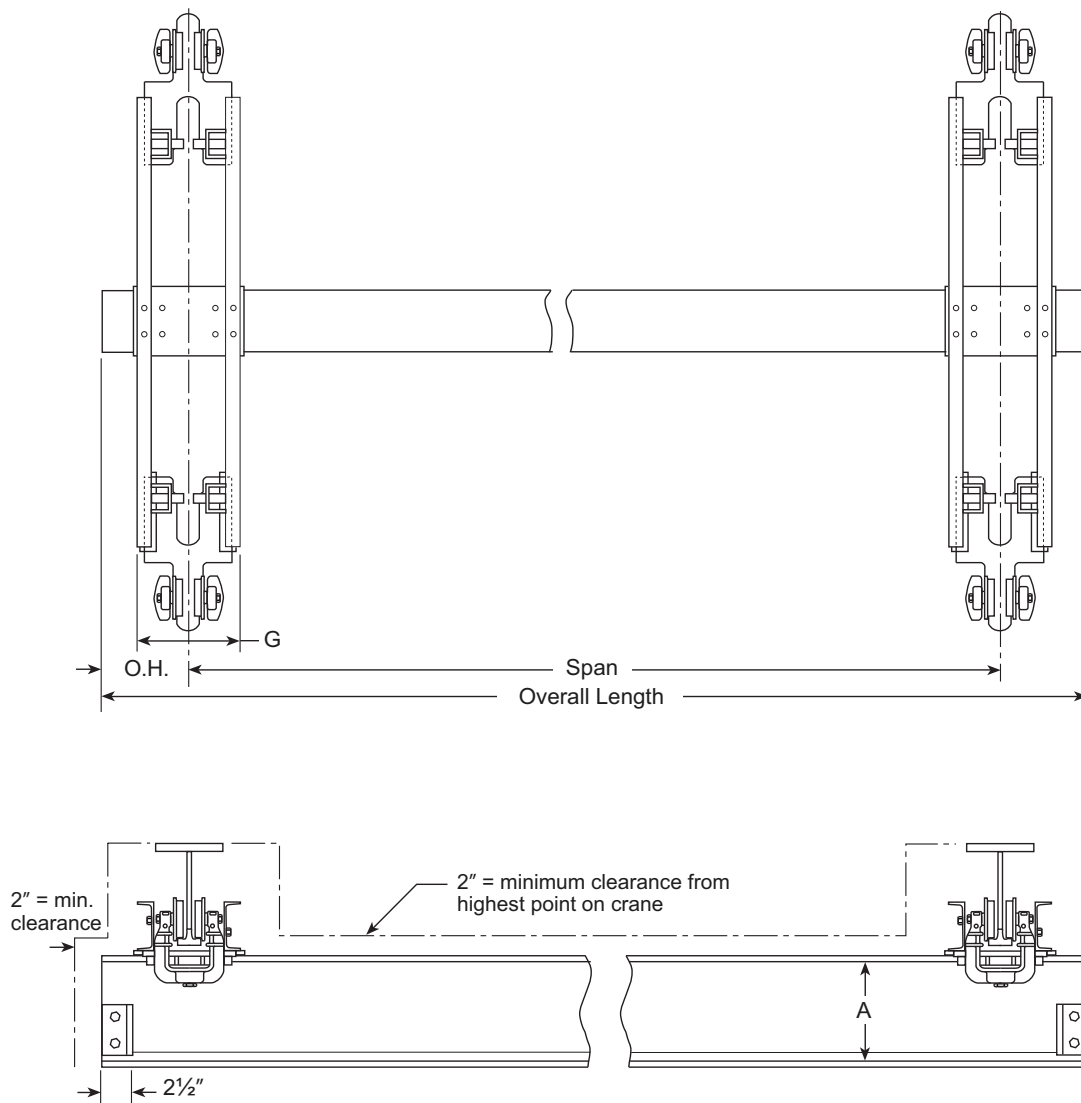
Crane Interlocks

"L" Series Rail

- Non-electrified cranes: Model 3I-615, mounted in 3RL8-18 bridge (For cranes with bridges other than 3RL8-18, add for step cuts.)
- Electrified cranes with bottom contact conductor bar: Model 3I-615, mounted in 3RL8-18 bridge. (For cranes w/bridges other than 3RL8-18, add for step cuts.)
- Electrified cranes with side contact conductor bar: Model 3I-430 Requires minimum 3RL13-27.

"H" Series Rail

- Electrified or Non-electrified cranes: Model 3I-9A Interlock Requires minimum 3RH14-41.





3C-4000-HP Hand Push Crane

Span (feet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		Estimated Crane Wt.
		Model No.	A	B	O.H. (min)	B	O.H.	
10	3ET-9000-4X	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	8"	7 ³ / ₈ "	15"	728 lbs.
12	3ET-9000-4X	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	8"	7 ³ / ₈ "	15"	764 lbs.
14	3ET-9000-4X	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	8"	7 ³ / ₈ "	15"	800 lbs.
16	3ET-9000-4X	3RL11-21	10 ³ / ₈ "	10 ³ / ₈ "	8"	7 ³ / ₈ "	15"	890 lbs.
18	3ET-9000-4X	3RL11-24	10 ¹ / ₂ "	10 ¹ / ₂ "	8"	7 ³ / ₈ "	15"	992 lbs.
20	3ET-9000-4X	3RL11-24	10 ¹ / ₂ "	10 ¹ / ₂ "	8"	7 ³ / ₈ "	15"	1040 lbs.
22	3ET-9000-4X	3RL11-24	10 ¹ / ₂ "	10 ¹ / ₂ "	8"	7 ³ / ₈ "	15"	1088 lbs.
24	3ET-9000-4X	3RL13-27	12 ¹ / ₂ "	12 ¹ / ₂ "	8"	7 ³ / ₈ "	15"	1214 lbs.
26	3ET-9000-4X	3RL13-27	12 ¹ / ₂ "	12 ¹ / ₂ "	8"	7 ³ / ₈ "	15"	1268 lbs.
28	3ET-9000-4X	3RL14-35	13 ¹ / ₂ "	13 ¹ / ₂ "	8"	7 ³ / ₈ "	15"	1562 lbs.
30	3ET-9000-4X	3RH14-41	13 ⁵ / ₈ "	13 ⁵ / ₈ "	8"	13 ⁵ / ₈ "	14"	1824 lbs.
32	3ET-9000-4X	3RH14-41	13 ⁵ / ₈ "	13 ⁵ / ₈ "	8"	13 ⁵ / ₈ "	14"	1906 lbs.

* For crane with side contact conductors, minimum bridge size is 3RL11-21. Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops). Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail.

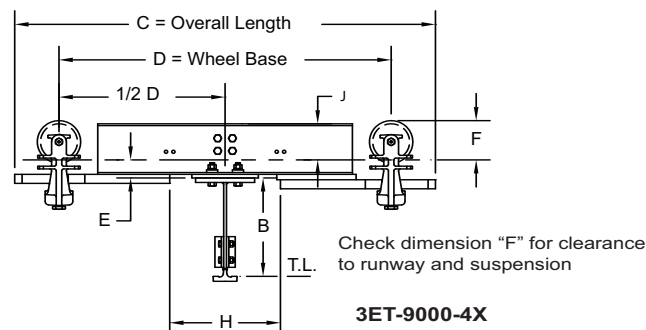
Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with these end trucks = 15" with 3I-615 or 3I-430 Interlocks in "L" Series rail, or 14" with 3I-9A interlock in "H" Series rail. Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

3C-4000-HP End Truck Specifications*

Model Number	Dimensions							# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G	H	J			
3ET-9000-4X	57"	45"	2 ¹ / ₂ "	57/16"	15 ¹ / ₄ "	15"	5"	2	9000 lbs.	250 lbs.

* For use on "L" Series rail only. See "325 Series Crane End Trucks" on page G-9 for more information

† Maximum load on 2-wheel trolley on 325 "L" Series Rail cannot exceed 5500 pounds (2750 pounds per wheel). Maximum load on 2-wheel trolley on 325 "H" Series Rail cannot exceed 10000 pounds (5000 pounds per wheel). Contact use Bottom bridge electrification with 3ET-9000-4Z; substitute 3ET-9000-4 (6ft. wheelbase).





Model 3C-6000-HP Hand Push Crane

6000 lb. capacity

Crane design load = 8400 lbs.

(Live load 6000 lbs. + 900 lbs. impact + 1500 lbs. hoist & trolley)

Crane Conductor Bars

- Bottom Contact conductor bars can mount on all cranes and all bridge beams only if end trucks have 6ft. wheelbase.
- Side Contact conductor bars require min. 3RL11-21 bridge beam (7½" gage, through 5" dia. hoist carrier trolley wheels)

See "Crane Interlocks" on page F-99 for more information.

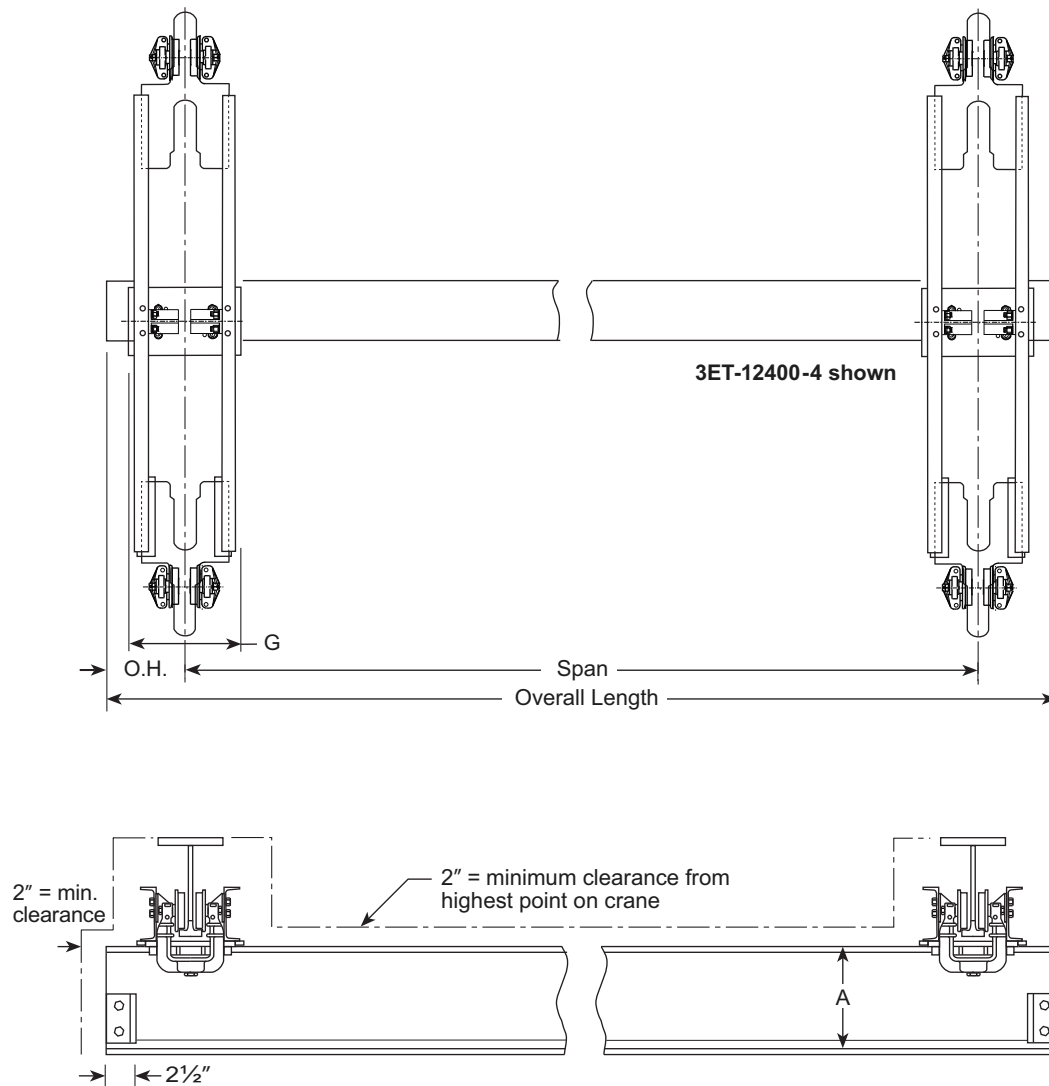
Crane Interlocks

"L" Series Rail

- Non-electrified cranes: Model 3I-615, mounted in 3RL8-18 bridge (For cranes with bridges other than 3RL8-18, add for step cuts.)
- Electrified cranes with bottom contact conductor bar: Model 3I-615, mounted in 3RL8-18 bridge (For cranes w/bridges other than 3RL8-18, add for step cuts.)
- Electrified cranes with side contact conductor bar: Model 3I-430 Requires minimum 3RL13-27 (For cranes with 3RL14-35, add for step cuts.)

"H" Series Rail

- Electrified or Non-electrified cranes: 3I-9A Standard - requires 3RH14-41 bridge rail (for larger rail , add for step cut) 3I-9B Optional - requires 3RH16-47 bridge rail (for larger rail , add for step cut)





3C-6000-HP Hand Push Crane

Span (feet)	End Truck Model	Bridge Beam		Non-Interlocking			Interlocking		Estimated Crane Wt.
		Model No.	A	B	O.H. (min)		B	O.H.	
10	3ET-9000-4X	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	8"		7 ³ / ₈ "	15"	728 lbs.
12	3ET-9000-4X	3RL11-21	10 ³ / ₈ "	10 ³ / ₈ "	8"		7 ³ / ₈ "	15"	806 lbs.
14	3ET-9000-4X	3RL11-21	10 ³ / ₈ "	10 ³ / ₈ "	8"		7 ³ / ₈ "	15"	848 lbs.
16	3ET-9000-4X	3RL11-24	10 ¹ / ₂ "	10 ¹ / ₂ "	8"		7 ³ / ₈ "	15"	944 lbs.
18	3ET-9000-4X	3RL11-24	10 ¹ / ₂ "	10 ¹ / ₂ "	8"		7 ³ / ₈ "	15"	992 lbs.
20	3ET-12400-4	3RL13-27	12 ¹ / ₂ "	12 ¹ / ₂ "	8"		7 ³ / ₈ "	15"	1262 lbs.
22	3ET-12400-4	3RL14-35	13 ¹ / ₂ "	13 ¹ / ₂ "	8"		7 ³ / ₈ "	15"	1508 lbs.
24	3ET-12400-4	3RL14-35	13 ¹ / ₂ "	13 ¹ / ₂ "	8"		7 ³ / ₈ "	15"	1578 lbs.
26	3ET-12400-4	3RH14-41	13 ⁵ / ₈ "	13 ⁵ / ₈ "	8"		13 ⁵ / ₈ "	14"	1816 lbs.
28	3ET-12400-4	3RH14-41	13 ⁵ / ₈ "	13 ⁵ / ₈ "	8"		13 ⁵ / ₈ "	14"	1898 lbs.
30	3ET-12400-4	3RH16-47	15 ⁵ / ₁₆ "	15 ⁵ / ₁₆ "	8"		13 ⁵ / ₈ "	14"	2172 lbs.
32	3ET-12400-4	3RH16-47	15 ⁵ / ₁₆ "	15 ⁵ / ₁₆ "	8"		13 ⁵ / ₈ "	14"	2266 lbs.

* For crane with side contact conductors, minimum bridge size is 3RL11-21. Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops). Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

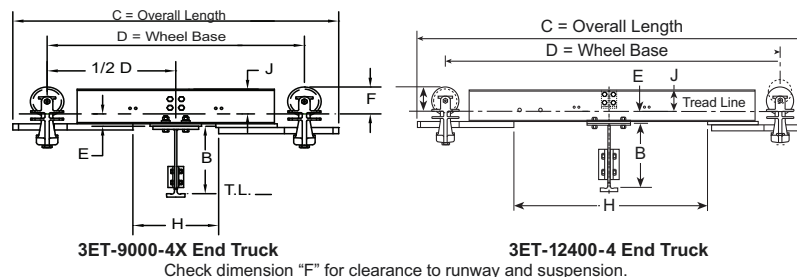
After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail. Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with these end trucks = 15" with 3I-615 or 3I-430 Interlocks in "L" Series rail, or 14" with 3I-9A interlock in "H" Series rail. Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

End Truck Specifications*

Model Number	Dimensions							# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G	H	J			
3ET-9000-4X	57"	45"	2 ¹ / ₂ "	57/16"	15 ¹ / ₄ "	15"	5"	2	9000 lbs.	250 lbs.
3ET-12400-4	84"	72"	2 ¹ / ₂ "	57/16"	15 ¹ / ₂ "	42"	6"	2	12,400 lbs.	328 lbs.

* For use on "L" Series rail only. See "325 Series Crane End Trucks" on page G-9 for more information

† Maximum load on 2-wheel trolley on 325 "L" Series Rail cannot exceed 5500 pounds (2750 pounds per wheel).
Maximum load on 2-wheel trolley on 325 "H" Series Rail cannot exceed 10000 pounds (5000 pounds per wheel).



Check dimension "F" for clearance to runway and suspension.



Model 3C-6000-HC Hand Chain Crane

6000 lb. capacity

Crane design load = 8400 lbs.

(Live load 6000 lbs. + 900 lbs. impact + 1500 lbs. hoist & trolley)

Crane Conductor Bars

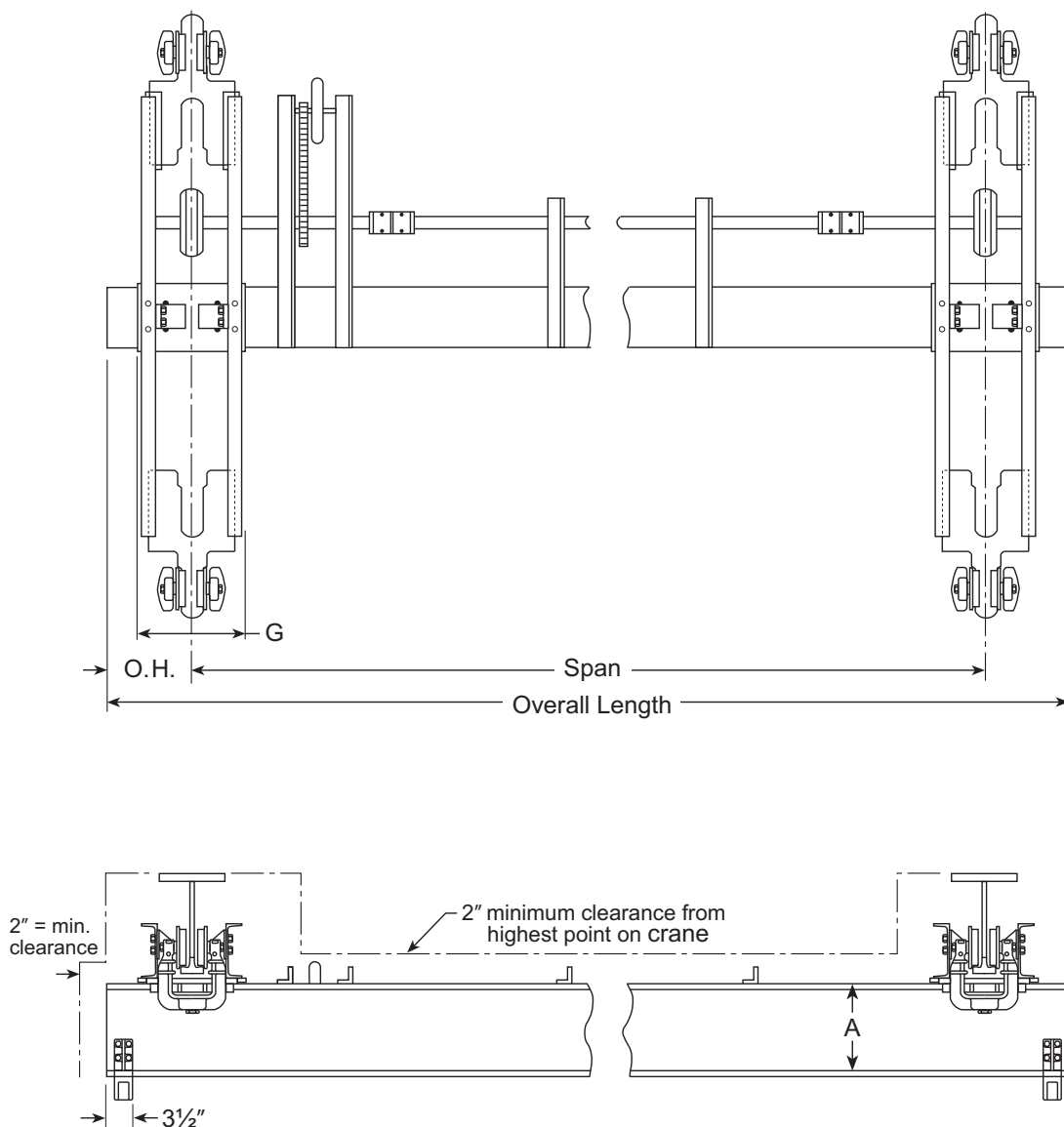
- Bottom Contact conductor bars can mount on all cranes and all bridge beams
- Side Contact conductor bars
7½" gauge, through 5" dia. hoist carrier trolley wheels
9" gauge for 6½" dia. wheels

Crane Interlocks

For Electrified or Non-electrified cranes

- 3I-9A Standard requires 3RH14-41 Bridge Rail
(For larger rail, add for step cut.)
- 3I-9B Optional requires 3RH16-47 Bridge Rail
(For larger rail, add for step cut.)

See "[Crane Interlocks](#)" on page F-99 for more information.





3C-6000-HC Hand Chain Crane

Span (feet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		Estimated Crane Weight
		Model No.	A	B	O.H.(min.)	B	O.H.	
10	3ET-12400-4	3RH13-36*	12½"	12½"	8"	13⅝"	14"	1392 lbs.
12	3ET-12400-4	3RH13-36*	12½"	12½"	8"	13⅝"	14"	1480 lbs.
14	3ET-12400-4	3RH13-36*	12½"	12½"	8"	13⅝"	14"	1568 lbs.
16	3ET-12400-4	3RH13-36*	12½"	12½"	8"	13⅝"	14"	1656 lbs.
18	3ET-12400-4	3RH13-36*	12½"	12½"	8"	13⅝"	14"	1744 lbs.
20	3ET-12400-4	3RH13-36*	12½"	12½"	8"	13⅝"	14"	1832 lbs.
22	3ET-12400-4	3RH13-36*	12½"	12½"	8"	13⅝"	14"	1920 lbs.
24	3ET-12400-4	3RH13-36*	12½"	12½"	8"	13⅝"	14"	2008 lbs.
26	3ET-12400-4	3RH14-41	13⅝"	13⅝"	8"	13⅝"	14"	2236 lbs.
28	3ET-12400-4	3RH14-41	13⅝"	13⅝"	8"	13⅝"	14"	2334 lbs.
30	3ET-12400-4	3RH16-47	15⅝"	15⅝"	8"	13⅝"	14"	2624 lbs.
32	3ET-12400-4	3RH16-47	15⅝"	15⅝"	8"	13⅝"	14"	2734 lbs.
34	3ET-12400-4	3RH16-47	15⅝"	15⅝"	8"	13⅝"	14"	2844 lbs.
36	3ET-12400-4	3RH18-52	17⅝"	17⅝"	8"	13⅝"	14"	3144 lbs.
38	3ET-12400-4	3RH18-52	17⅝"	17⅝"	8"	13⅝"	14"	3264 lbs.
40	3ET-12400-4	3RH20-67	19⅝"	19⅝"	8"	13⅝"	14"	4014 lbs.
42	3ET-12400-4	3RH20-67	19⅝"	19⅝"	8"	13⅝"	14"	4164 lbs.
44	3ET-12400-4	3RH20-67	19⅝"	19⅝"	8"	13⅝"	14"	4314 lbs.
46	3ET-12400-4	3RH22-74	21⅝"	21⅝"	8"	13⅝"	14"	4800 lbs.
48	3ET-12400-4	3RH22-74	21⅝"	21⅝"	8"	13⅝"	14"	4964 lbs.
50	3ET-12400-4	3RH22-74	21⅝"	21⅝"	8"	13⅝"	14"	5128 lbs.
52	3ET-12400-4	3RH24-84	23⅝"	23⅝"	8"	13⅝"	14"	5832 lbs.
54	3ET-12400-4	3RH24-84	23⅝"	23⅝"	8"	13⅝"	14"	6016 lbs.
56	3ET-12400-4	3RH24-84	23⅝"	23⅝"	8"	13⅝"	14"	6200 lbs.
58	3ET-12400-4	3RH24-84	23⅝"	23⅝"	8"	13⅝"	14"	6384 lbs.
60	3ET-12400-4	3RH26-90	25⅝"	25⅝"	8"	13⅝"	14"	6940 lbs.

* Replace 3RH13-36 with 3RH14-41 if adding interlock. Step cut larger rails to 14" or 16". Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops). Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail.

Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with these end trucks = 14" with 3I-9A interlock in "H" Series rail. Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

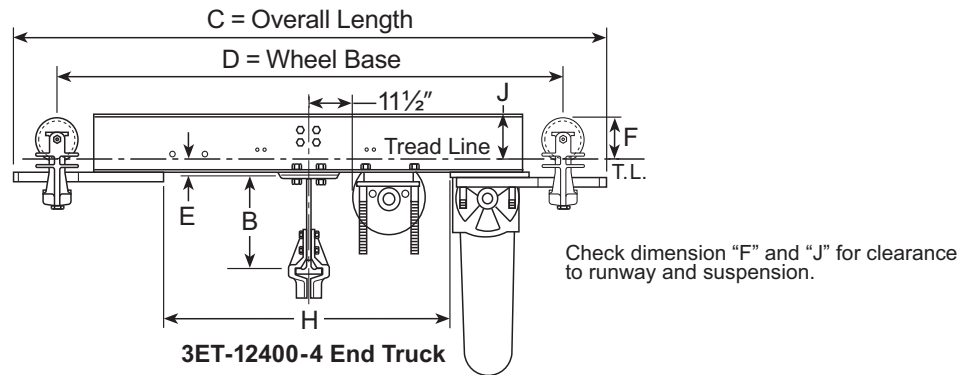


3C-6000-HC End Truck Specifications*

Model Number	Dimensions							# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G	H	J			
3ET-12400-4	84"	72"	2½"	57/16"	15½"	42"	5"	2	12,400 lbs.	328 lbs.

* See "325 Series Crane End Trucks" on page G-9 for more information.

† Maximum load on 2-wheel trolley on 325 "L" Series Rail cannot exceed 5500 pounds (2750 pounds per wheel).
Maximum load on 2-wheel trolley on 325 "H" Series Rail cannot exceed 10000 pounds (5000 pounds per wheel)



Model 3C-10000-HC Hand Chain Crane

10000 lb. capacity

Crane design load = 14,000 lbs.

(Live load 10000 lbs.+1500 lbs. impact+2500 lbs. hoist & trolley)

Crane Conductor Bars

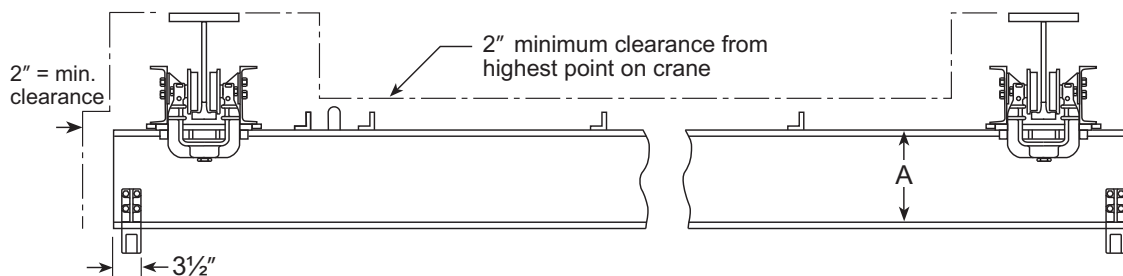
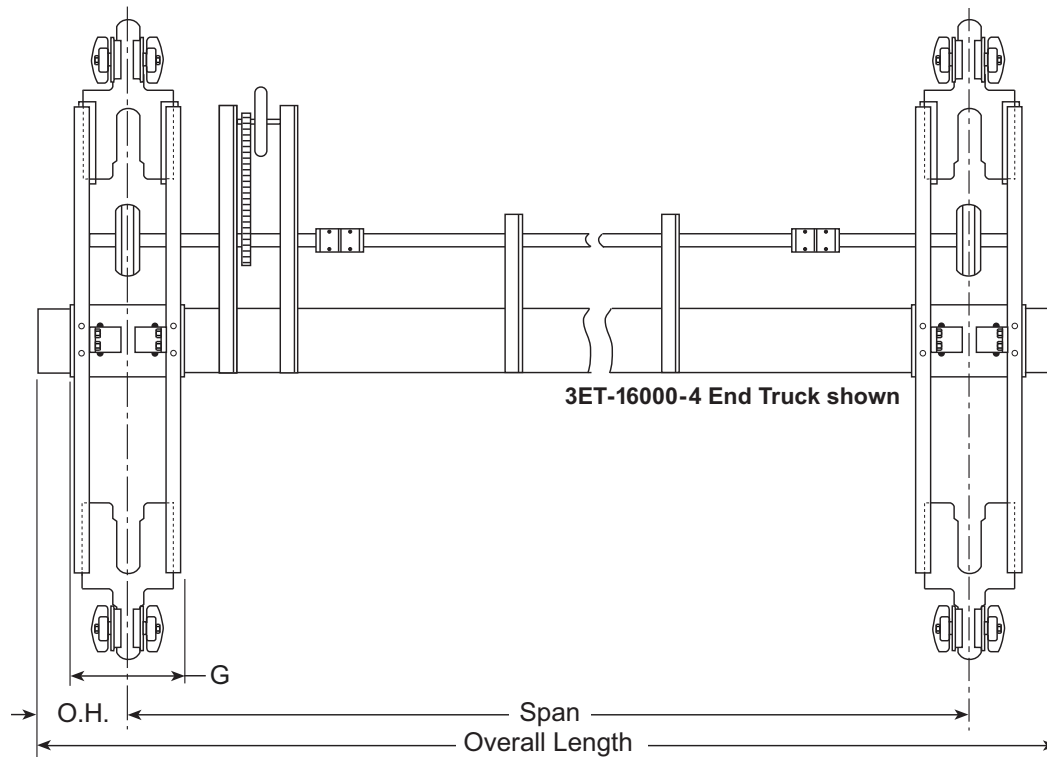
- Bottom Contact conductor bars—can mount on all cranes and all bridge beams
- Side Contact conductor bars
7½" gauge, through 5" dia. hoist carrier trolley wheels
9" gauge for 6½" dia. wheels

Crane Interlocks

For Electrified or Non-electrified cranes

- 3I-9A Standard requires 3RH14-41 Bridge Rail
(For larger rail, add for step cut.)
- 3I-9B Optional requires 3RH16-47 Bridge Rail
(For larger rail, add for step cut.)

See "Crane Interlocks" on page F-99 for more information.





3C-10000-HC Hand Chain Crane

Span(f eet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		Estimated Crane Weight
		Model No.	A	B	O.H.(min.)	B	O.H.	
10	3ET-16000-4	3RH13-36*	12½"	12½"	9"	13 5/8"	14"	1522 lbs.
12	3ET-16000-4	3RH13-36*	12½"	12½"	9"	13 5/8"	14"	1610 lbs.
14	3ET-16000-4	3RH13-36*	12½"	12½"	9"	13 5/8"	14"	1698 lbs.
16	3ET-16000-4	3RH13-36*	12½"	12½"	9"	13 5/8"	14"	1786 lbs.
18	3ET-16000-4	3RH13-36*	12½"	12½"	9"	13 5/8"	14"	1874 lbs.
20	3ET-16000-4	3RH14-41	13 5/8"	13 5/8"	9"	13 5/8"	14"	2072 lbs.
22	3ET-16000-4	3RH14-41	13 5/8"	13 5/8"	9"	13 5/8"	14"	2170 lbs.
24	3ET-16000-4	3RH16-47	15 5/16"	15 5/16"	9"	13 5/8"	14"	2424 lbs.
26	3ET-16000-4	3RH16-47	15 5/16"	15 5/16"	9"	13 5/8"	14"	2534 lbs.
28	3ET-16000-4	3RH18-52	17 5/16"	17 5/16"	9"	13 5/8"	14"	2794 lbs.
30	3ET-16000-4	3RH18-52	17 5/16"	17 5/16"	9"	13 5/8"	14"	2914 lbs.
32	3ET-24800-8	3RH20-67	19 5/16"	19 5/16"	10"	13 5/8"	18"	3998 lbs.
34	3ET-24800-8	3RH20-67	19 5/16"	19 5/16"	10"	13 5/8"	18"	4148 lbs.
36	3ET-24800-8	3RH20-67	19 5/16"	19 5/16"	10"	13 5/8"	18"	4298 lbs.
38	3ET-24800-8	3RH22-74	21 5/16"	21 5/16"	10"	13 5/8"	18"	4728 lbs.
40	3ET-24800-8	3RH22-74	21 5/16"	21 5/16"	10"	13 5/8"	18"	4892 lbs.
42	3ET-24800-8	3RH24-84	23 5/16"	23 5/16"	10"	13 5/8"	18"	5496 lbs.
44	3ET-24800-8	3RH24-84	23 5/16"	23 5/16"	10"	13 5/8"	18"	5680 lbs.
46	3ET-24800-8	3RH24-84	23 5/16"	23 5/16"	10"	13 5/8"	18"	5864 lbs.
48	3ET-24800-8	3RH24-84	23 5/16"	23 5/16"	10"	13 5/8"	18"	6048 lbs.
50	3ET-24800-8	3RH26-90	25 5/16"	25 5/16"	10"	13 5/8"	18"	6544 lbs.
52	3ET-24800-8	3RH30-110	29 5/16"	29 5/16"	10"	13 5/8"	18"	7820 lbs.
54	3ET-24800-8	3RH30-110	29 5/16"	29 5/16"	10"	13 5/8"	18"	8056 lbs.
56	3ET-24800-8	3RH30-110	29 5/16"	29 5/16"	10"	13 5/8"	18"	8292 lbs.
58	3ET-24800-8	3RH30-110	29 5/16"	29 5/16"	10"	13 5/8"	18"	8528 lbs.
60	3ET-24800-8	3RH30-110	29 5/16"	29 5/16"	10"	13 5/8"	18"	8764 lbs.

* Replace 3RH13-36 with 3RH14-41 if adding interlock. Step cut larger rails to 14" or 16". Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops). Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail.

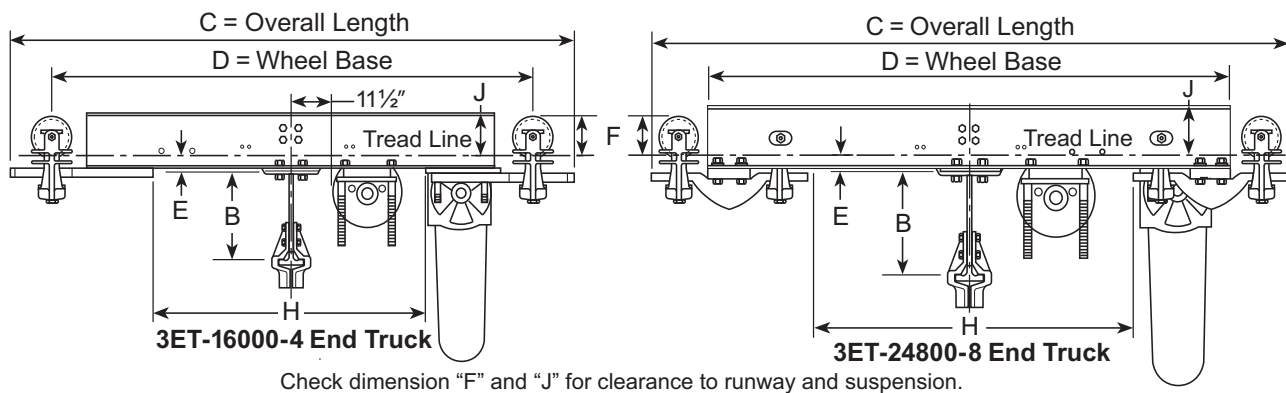
Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with these end trucks = 14" with 3I-9A interlock in "H" Series rail. Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

3C-10000-HC End Truck Specifications*

Model Number	Dimensions							# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G	H	J			
3ET-16000-4	84"	72"	12½"	7 1/16"	15½"	42"	7"	2	16,000 lbs.	393 lbs.
3ET-24800-8	95"	72"	12½"	5 7/16"	18¼"	49"	7"	4	24,800 lbs.	620 lbs.

* See "325 Series Crane End Trucks" on page G-9 for more information.

† Maximum load on 2-wheel trolley on 325 "L" Series Rail cannot exceed 5500 pounds (2750 pounds per wheel).
Maximum load on 2-wheel trolley on 325 "H" Series Rail cannot exceed 10000 pounds (5000 pounds per wheel)





Model 3C-15000-HC Hand Chain Crane

15000 lb. capacity

Crane design load = 20,250 lbs.

(Live load 15000 lbs.+2250 lbs. impact+3000 lbs. hoist & trolley)

Crane Conductor Bars

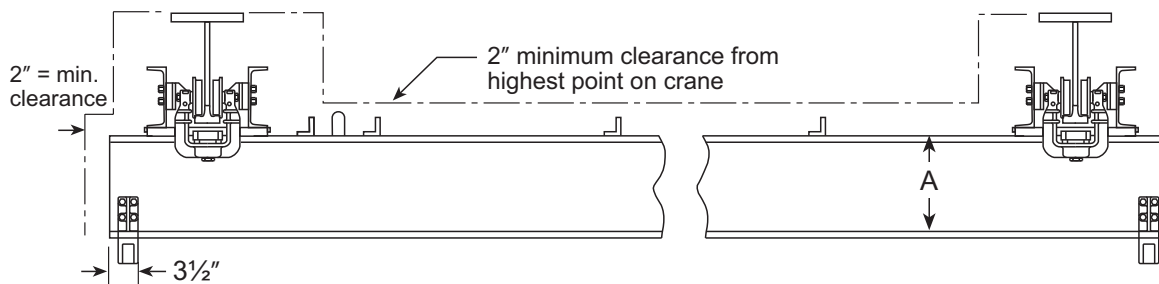
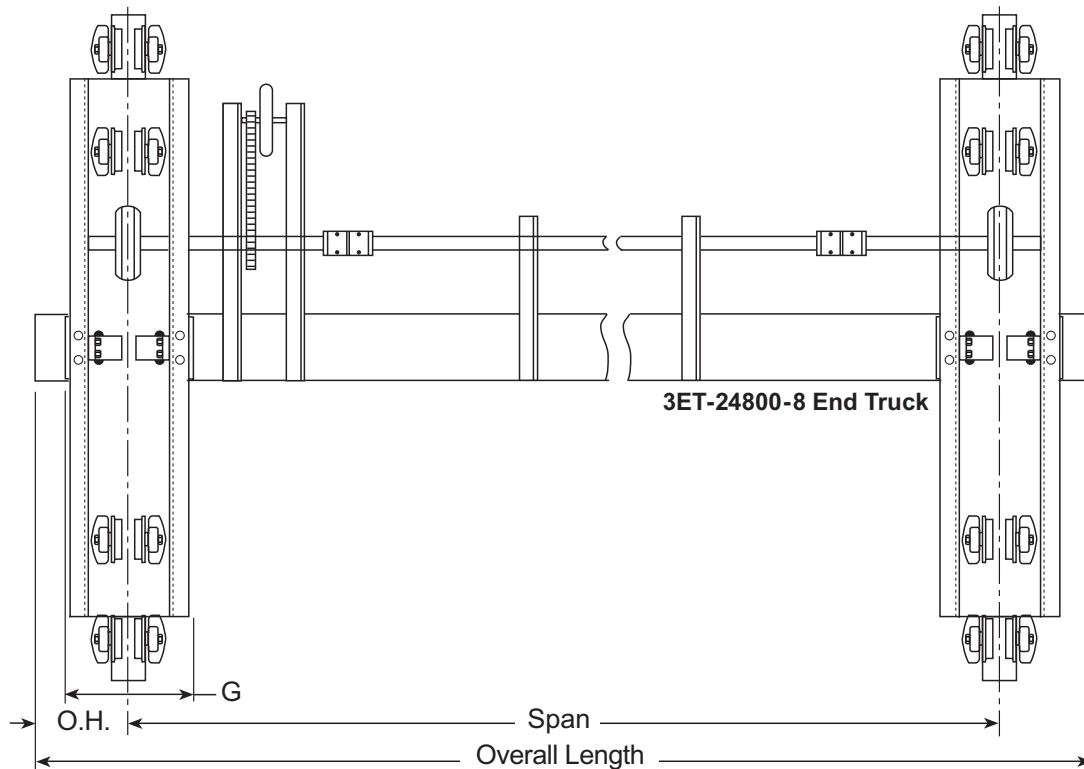
- Bottom Contact conductor bars can mount on all cranes and all bridge beams
- Side Contact conductor bars
7½" gauge, through 5" dia. hoist carrier trolley wheels
9" gauge for 6½" dia. wheels

Crane Interlocks

For Electrified or Non-electrified cranes

- 3I-9A Standard requires 3RH14-41 Bridge Rail
(For larger rail, add for step cut.)
- 3I-9B Optional requires 3RH16-47 Bridge Rail
(For larger rail, add for step cut.)

See "Crane Interlocks" on page F-99 for more information.





3C-15000-HC Hand Chain Crane

Span (feet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		Estimated Crane Weight
		Model No.	A	B	O.H.(min.)	B	O.H.	
10	3ET-24800-8	3RH13-36*	12½"	12½"	10"	13⅝"	18"	1976 lbs.
12	3ET-24800-8	3RH13-36*	12½"	12½"	10"	13⅝"	18"	2064 lbs.
14	3ET-24800-8	3RH13-36*	12½"	12½"	10"	13⅝"	18"	2152 lbs.
16	3ET-24800-8	3RH14-41	13⅝"	13⅝"	10"	13⅝"	18"	2330 lbs.
18	3ET-24800-8	3RH18-52	17⅝"	17⅝"	10"	13⅝"	18"	2648 lbs.
20	3ET-24800-8	3RH18-52	17⅝"	17⅝"	10"	13⅝"	18"	2768 lbs.
22	3ET-24800-8	3RH18-52	17⅝"	17⅝"	10"	13⅝"	18"	2888 lbs.
24	3ET-24800-8	3RH18-52	17⅝"	17⅝"	10"	13⅝"	18"	3008 lbs.
26	3ET-24800-8	3RH20-67	17⅝"	17⅝"	10"	13⅝"	18"	3548 lbs.
28	3ET-24800-8	3RH20-67	17⅝"	17⅝"	10"	13⅝"	18"	3698 lbs.
30	3ET-24800-8	3RH20-67	19⅝"	19⅝"	10"	13⅝"	18"	3848 lbs.
32	3ET-24800-8	3RH22-74	21⅝"	21⅝"	10"	13⅝"	18"	4236 lbs.
34	3ET-24800-8	3RH22-74	21⅝"	21⅝"	10"	13⅝"	18"	4400 lbs.
36	3ET-24800-8	3RH24-84	23⅝"	23⅝"	10"	13⅝"	18"	4944 lbs.
38	3ET-24800-8	3RH24-84	23⅝"	23⅝"	10"	13⅝"	18"	5128 lbs.
40	3ET-24800-8	3RH24-84	23⅝"	23⅝"	10"	13⅝"	18"	5312 lbs.
42	3ET-24800-8	3RH26-90	25⅝"	25⅝"	10"	13⅝"	18"	5760 lbs.
44	3ET-24800-8	3RH30-110	29⅝"	29⅝"	10"	13⅝"	18"	6876 lbs.
46	3ET-24800-8	3RH30-110	29⅝"	29⅝"	10"	13⅝"	18"	7112 lbs.
48	3ET-24800-8	3RH30-110	29⅝"	29⅝"	10"	13⅝"	18"	7348 lbs.
50	3ET-24800-8	3RH30-110	29⅝"	29⅝"	10"	13⅝"	18"	7584 lbs.
52	3ET-24800-8	3RH30-110	29⅝"	29⅝"	10"	13⅝"	18"	7820 lbs.
54	3ET-24800-8	3RH30-110	29⅝"	29⅝"	10"	13⅝"	18"	8056 lbs.
56	3ET-28000-8	3RH32-120	31⅝"	31⅝"	10"	13⅝"	18"	8872 lbs.
58	3ET-28000-8	3RH32-120	31⅝"	31⅝"	10"	13⅝"	18"	9128 lbs.
60	3ET-28000-8	3RH34-130	33⅝"	33⅝"	10"	13⅝"	18"	10,004 lbs.

* Replace 3RH13-36 with 3RH14-41 if adding interlock. Step cut larger rails to 14" or 16". Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops). Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail.

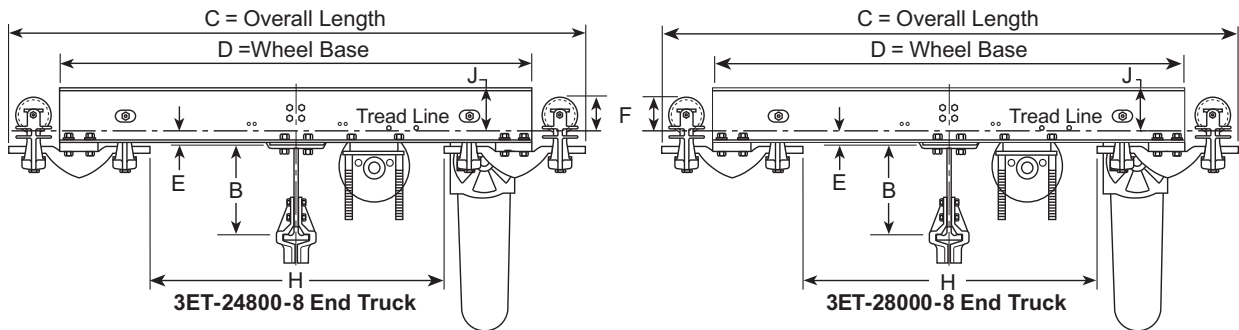
Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with these end trucks = 14" with 3I-9A interlock in "H" Series rail. Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

3C-15000-HC End Truck Specifications*

Model Number	Dimensions							# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G	H	J			
3ET-24800-8	95"	72"	2½"	57/16"	18¼"	49"	7"	4	24,800 lbs.	620 lbs.
3ET-28000-8	95"	72"	2½"	71/16"	18½"	48"	8"	4	28,000 lbs.	713 lbs.

* See "325 Series Crane End Trucks" on page G-9 for more information.

† Maximum load on 2-wheel trolley on 325 "L" Series Rail cannot exceed 5500 pounds (2750 pounds per wheel).
Maximum load on 2-wheel trolley on 325 "H" Series Rail cannot exceed 10000 pounds (5000 pounds per wheel)



Check dimension "F" and "J" for clearance to runway and suspension.

Model 3C-20000-HC Hand Chain Crane

20000 lb. capacity

Crane design load = 27,050 lbs.

(Live load 20000 lbs.+3050 lbs. impact+4000 lbs. hoist & trolley)

Crane Conductor Bars

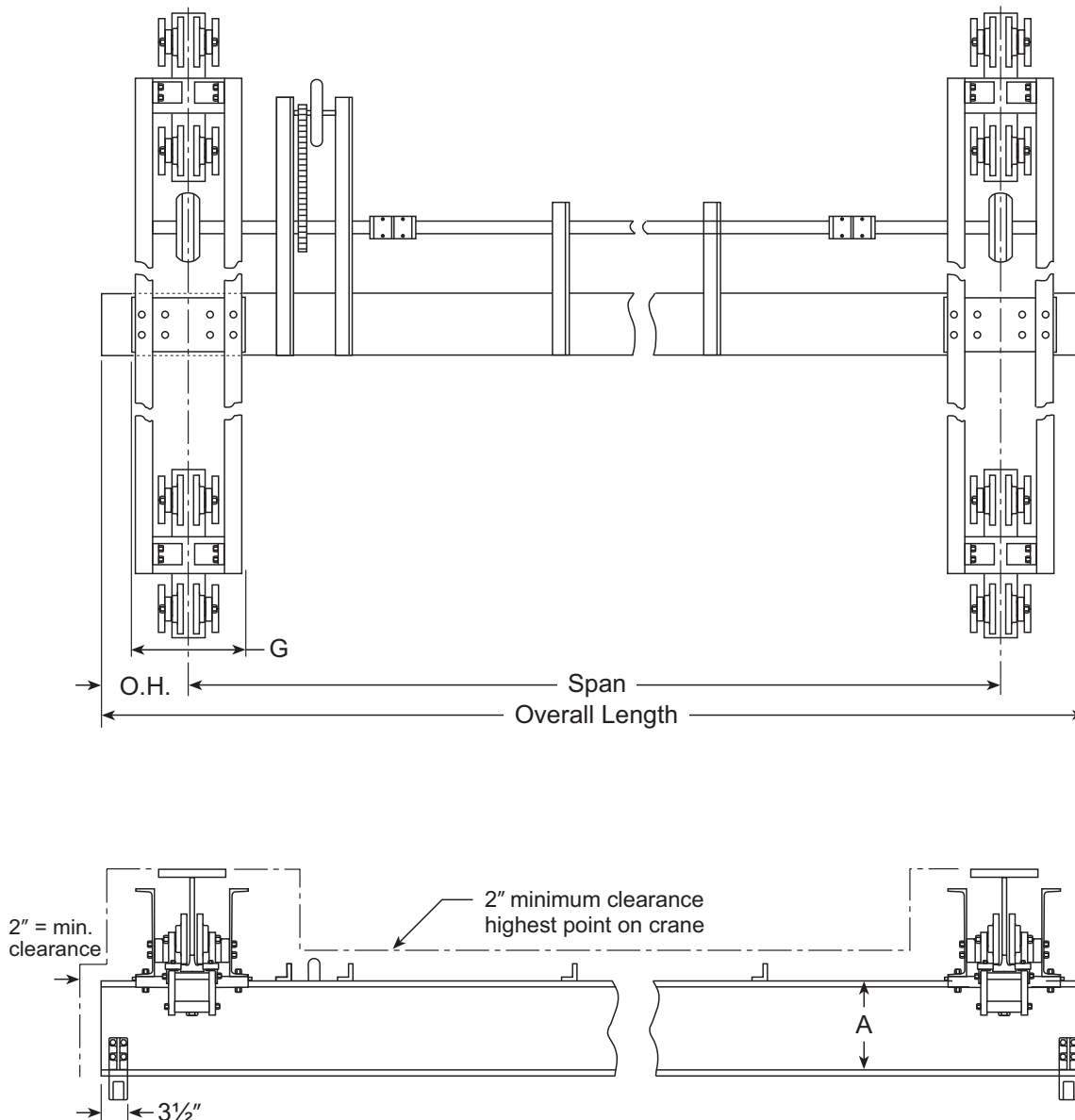
- Bottom Contact conductor bars can mount on all cranes and all bridge beams
- Side Contact conductor bars
7½" gauge, through 5" dia. hoist carrier trolley wheels
9" gauge for 6½" dia. wheels

Crane Interlocks

For Electrified or Non-electrified cranes

- 3I-9A Standard requires 3RH14-41 Bridge Rail
(For larger rail, add for step cut.)
- 3I-9B Optional requires 3RH16-47 Bridge Rail
(For larger rail, add for step cut.)

See "Crane Interlocks" on page F-99 for more information.





3C-20000-HC Hand Chain Crane

Span (feet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		Estimated Crane Weight
		Model No.	A	B	O.H.(min.)	B	O.H.	
10	3ET-38000-8SRL	3RH13-36*	12½"	12½"	11"	13⅝"	18"	3244 lbs.
12	3ET-38000-8SRL	3RH14-41	13 ⅝"	13⅝"	11"	13⅝"	18"	3402 lbs.
14	3ET-38000-8SRL	3RH18-52	17 ⅝ ¹⁶ "	17 ⅝ ¹⁶ "	11"	13⅝"	18"	3676 lbs.
16	3ET-38000-8SRL	3RH18-52	17 ⅝ ¹⁶ "	17 ⅝ ¹⁶ "	11"	13⅝"	18"	3796 lbs.
18	3ET-38000-8SRL	3RH18-52	17 ⅝ ¹⁶ "	17 ⅝ ¹⁶ "	11"	13⅝"	18"	3916 lbs.
20	3ET-38000-8SRL	3RH20-67	19 ⅝ ¹⁶ "	19 ⅝ ¹⁶ "	11"	13⅝"	18"	4366 lbs.
22	3ET-38000-8SRL	3RH20-67	19 ⅝ ¹⁶ "	19 ⅝ ¹⁶ "	11"	13⅝"	18"	4516 lbs.
24	3ET-38000-8SRL	3RH20-67	19 ⅝ ¹⁶ "	19 ⅝ ¹⁶ "	11"	13⅝"	18"	4666 lbs.
26	3ET-38000-8SRL	3RH22-74	21 ⅝ ¹⁶ "	21 ⅝ ¹⁶ "	11"	13⅝"	18"	5012 lbs.
28	3ET-38000-8SRL	3RH22-74	21 ⅝ ¹⁶ "	21 ⅝ ¹⁶ "	11"	13⅝"	18"	5176 lbs.
30	3ET-38000-8SRL	3RH24-84	23 ⅝ ¹⁶ "	23 ⅝ ¹⁶ "	11"	13⅝"	18"	5660 lbs.
32	3ET-38000-8SRL	3RH24-84	23 ⅝ ¹⁶ "	23 ⅝ ¹⁶ "	11"	13⅝"	18"	5844 lbs.
34	3ET-38000-8SRL	3RH26-90	25 ⅝ ¹⁶ "	25 ⅝ ¹⁶ "	11"	13⅝"	18"	6244 lbs.
36	3ET-38000-8SRL	3RH26-90	25 ⅝ ¹⁶ "	25 ⅝ ¹⁶ "	11"	13⅝"	18"	6440 lbs.
38	3ET-38000-8SRL	3RH28-93	27 ⅝ ¹⁶ "	27 ⅝ ¹⁶ "	11"	13⅝"	18"	6796 lbs.
40	3ET-38000-8SRL	3RH30-110	29 ⅝ ¹⁶ "	29 ⅝ ¹⁶ "	11"	13⅝"	18"	7672 lbs.
42	3ET-38000-8SRL	3RH30-110	29 ⅝ ¹⁶ "	29 ⅝ ¹⁶ "	11"	13⅝"	18"	7908 lbs.
44	3ET-38000-8SRL	3RH30-110	29 ⅝ ¹⁶ "	29 ⅝ ¹⁶ "	11"	13⅝"	18"	8144 lbs.
46	3ET-38000-8SRL	3RH30-110	29 ⅝ ¹⁶ "	29 ⅝ ¹⁶ "	11"	13⅝"	18"	8380 lbs.
48	3ET-38000-8SRL	3RH32-120	31 ⅝ ¹⁶ "	31 ⅝ ¹⁶ "	11"	13⅝"	18"	9116 lbs.
50	3ET-38000-8SRL	3RH32-120	31 ⅝ ¹⁶ "	31 ⅝ ¹⁶ "	11"	13⅝"	18"	9372 lbs.
52	3ET-38000-8SRL	3RH32-120	31 ⅝ ¹⁶ "	31 ⅝ ¹⁶ "	11"	13⅝"	18"	9628 lbs.
54	3ET-38000-8SRL	3RH34-130	33 ⅝ ¹⁶ "	33 ⅝ ¹⁶ "	11"	13⅝"	18"	10,444 lbs.
56	3ET-38000-8SRL	3RH34-130	33 ⅝ ¹⁶ "	33 ⅝ ¹⁶ "	11"	13⅝"	18"	10,720 lbs.
58	3ET-38000-8SRL	3RH36-140	35 ⅝ ¹⁶ "	35 ⅝ ¹⁶ "	11"	13⅝"	18"	11,596lbs.
60	3ET-38000-8SRL	3RH36-140	35 ⅝ ¹⁶ "	35 ⅝ ¹⁶ "	11"	13⅝"	18"	11,892 lbs.

* Replace 3RH13-36 with 3RH14-41 if adding interlock. Step cut larger rails to 14" or 16". Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops). Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail.

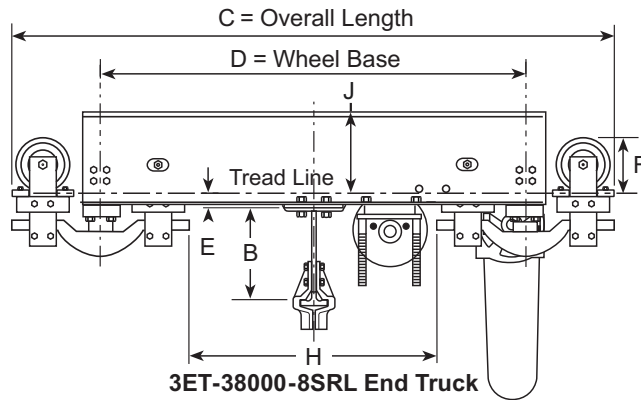
Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with these end trucks = 14" with 3I-9A interlock in "H" Series rail. Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

3C-20000-HC End Truck Specifications*

Model Number	Dimensions							# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G	H	J			
3ET-38000-8SRL	123½"	96"	2½"	9"	19"	68½"	13"	4	38,000 lbs.	1271 lbs.

* See "325 Series Crane End Trucks" on page G-9 for more information.

† Maximum load on 2-wheel trolley on 325 "L" Series Rail cannot exceed 5500 pounds (2750 pounds per wheel).
Maximum load on 2-wheel trolley on 325 "H" Series Rail cannot exceed 10000 pounds (5000 pounds per wheel)



Check dimension "F" and "J" for clearance to runway and suspension.

Model 3C-2000-MD Motor Driven Crane

2000 lb. capacity

Crane design load = 3300 lbs.

(Live load 2000 lbs.+300 lbs. impact+1000 lbs. hoist & trolley)

Crane Conductor Bars

- **Bottom Contact** conductor bars can mount on all cranes and all bridge beams
- **Side Contact** conductor bars 7½" gauge, through 5" dia. hoist carrier trolley wheels requires minimum 3RL11-21 bridge beam 9" gauge for 6½" dia. wheels

See "Crane Interlocks" on page F-99 for more information.

Crane Interlocks

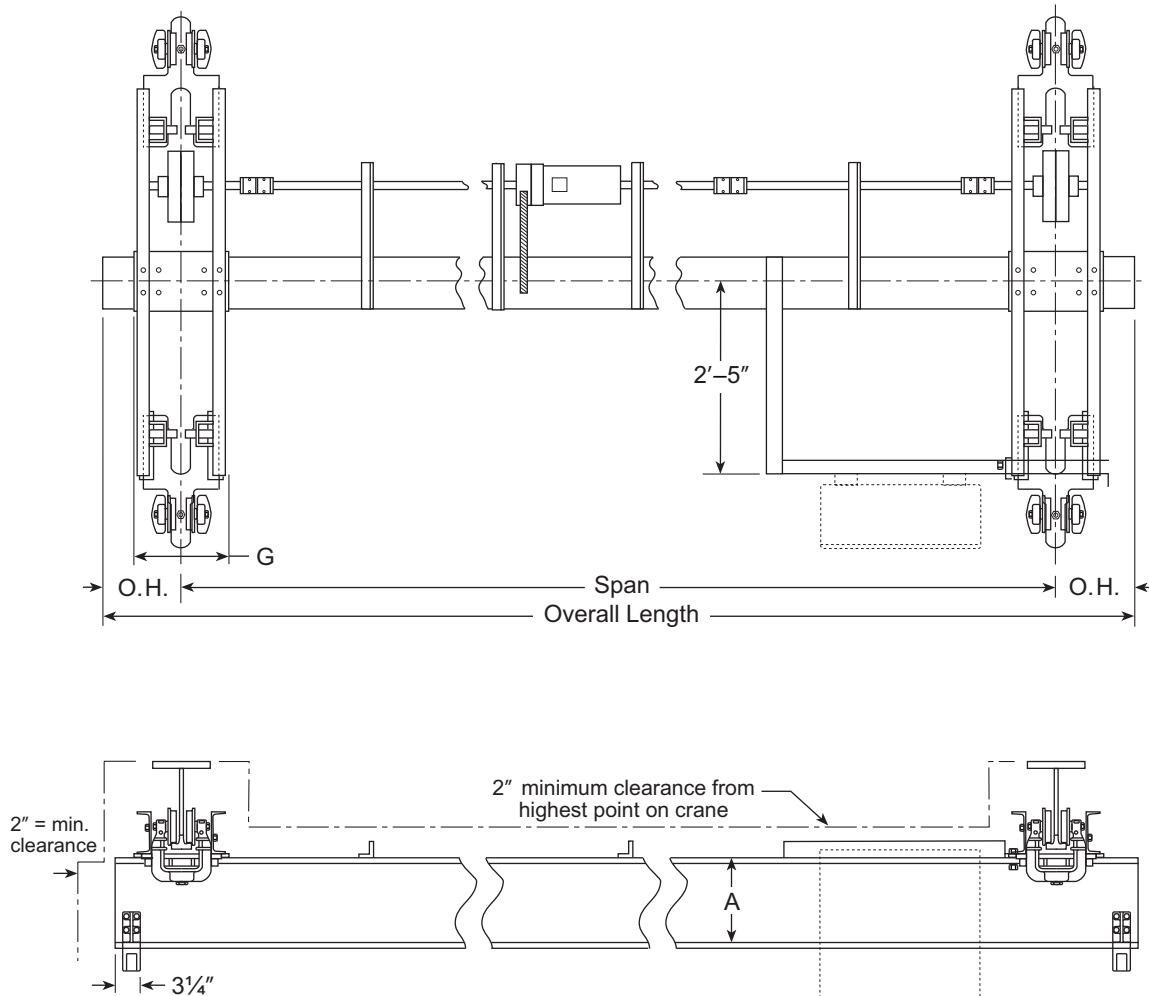
"L" Series Rail

- Non-electrified cranes: Model 3I-615, mounted in 3RL8-18 bridge (For cranes with bridges other than 3RL8-18, add for step cuts.)
- Electrified cranes with bottom contact conductor bar: Model 3I-615, mounted in 3RL8-18 bridge (For cranes with bridges other than 3RL8-18, add for step cuts.)
- Electrified cranes with side contact conductor bar: Model 3I-430 Requires minimum 3RL13-27 (For cranes with 3RL14-35, add for step cuts.)

"H" Series Rail

Electrified or Non-electrified cranes

- 3I-9A Standard requires 3RH14-41 Bridge Rail (For larger rail, add for step cut.)
- 3I-9B Optional requires 3RH16-47 Bridge Rail (For larger rail, add for step cut.)





3C-2000-MD Motor Driven Crane

Span (feet)	End Truck Model	Bridge Beam		Non-Interlocking			Interlocking		Motor (hp)	Estimated Crane Weight
		Model No.	A	B	O.H. (min)		B	O.H.		
10	3ET-9000-4	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	8"		7 ³ / ₈ "	15"	½	1261 lbs.
12	3ET-9000-4	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	8"		7 ³ / ₈ "	15"	½	1314 lbs.
14	3ET-9000-4	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	8"		7 ³ / ₈ "	15"	½	1367 lbs.
16	3ET-9000-4	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	8"		7 ³ / ₈ "	15"	½	1420 lbs.
18	3ET-9000-4	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	8"		7 ³ / ₈ "	15"	½	1473 lbs.
20	3ET-9000-4	3RL11-21	10 ³ / ₈ "	10 ³ / ₈ "	8"		7 ³ / ₈ "	15"	½	1592 lbs.
22	3ET-9000-4	3RL11-21	10 ³ / ₈ "	10 ³ / ₈ "	8"		7 ³ / ₈ "	15"	½	1651 lbs.
24	3ET-9000-4	3RL11-24	10½"	10½"	8"		7 ³ / ₈ "	15"	½	1788 lbs.
26	3ET-9000-4	3RL11-24	10½"	10½"	8"		7 ³ / ₈ "	15"	½	1853 lbs.
28	3ET-9000-4	3RL13-27	12½"	12½"	8"		7 ³ / ₈ "	15"	½	2008 lbs.
30	3ET-9000-4	3RL13-27	12½"	12½"	8"		7 ³ / ₈ "	15"	½	2079 lbs.
32	3ET-9000-4	3RL13-27	12½"	12½"	8"		7 ³ / ₈ "	15"	¾	2160 lbs.
34	3ET-9000-4	3RL14-35	13½"	13½"	8"		7 ³ / ₈ "	15"	¾	2519 lbs.
36	3ET-9000-4	3RL14-35	13½"	13½"	8"		7 ³ / ₈ "	15"	¾	2606 lbs.
38	3ET-9000-4	3RH14-41	13 ⁵ / ₈ "	13 ⁵ / ₈ "	8"		7 ³ / ₈ "	14"	¾	2933 lbs.
40	3ET-9000-4	3RH16-47	15 ⁵ / ₁₆ "	15 ⁵ / ₁₆ "	8"		7 ³ / ₈ "	14"	¾	3284 lbs.
42	3ET-9000-4	3RH16-47	15 ⁵ / ₁₆ "	15 ⁵ / ₁₆ "	8"		7 ³ / ₈ "	14"	¾	3395 lbs.
44	3ET-9000-4	3RH18-52	17 ⁵ / ₁₆ "	17 ⁵ / ₁₆ "	8"		7 ³ / ₈ "	14"	¾	3736 lbs.
46	3ET-9000-4	3RH18-52	17 ⁵ / ₁₆ "	17 ⁵ / ₁₆ "	8"		7 ³ / ₈ "	14"	¾	3857 lbs.
48	3ET-9000-4	3RH18-52	17 ⁵ / ₁₆ "	17 ⁵ / ₁₆ "	8"		7 ³ / ₈ "	14"	¾	3978 lbs.
50	3ET-9000-4	3RH20-67	19 ⁵ / ₁₆ "	19 ⁵ / ₁₆ "	8"		13 ⁵ / ₈ "	14"	¾	4879 lbs.
52	3ET-9000-4	3RH20-67	19 ⁵ / ₁₆ "	19 ⁵ / ₁₆ "	8"		13 ⁵ / ₈ "	14"	¾	5030 lbs.
54	3ET-9000-4	3RH22-74	21 ⁵ / ₁₆ "	21 ⁵ / ₁₆ "	8"		13 ⁵ / ₈ "	14"	¾	5573 lbs.
56	3ET-9000-4	3RH22-74	21 ⁵ / ₁₆ "	21 ⁵ / ₁₆ "	8"		13 ⁵ / ₈ "	14"	¾	5738 lbs.
58	3ET-9000-4	3RH22-74	21 ⁵ / ₁₆ "	21 ⁵ / ₁₆ "	8"		13 ⁵ / ₈ "	14"	¾	5903 lbs.
60	3ET-9000-4	3RH24-84	23 ⁵ / ₁₆ "	23 ⁵ / ₁₆ "	8"		13 ⁵ / ₈ "	14"	¾	6688 lbs.

* For crane with side contact conductors, minimum bridge size is 3RL11-21. Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops) plus standard controls and motorized drives. Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail.

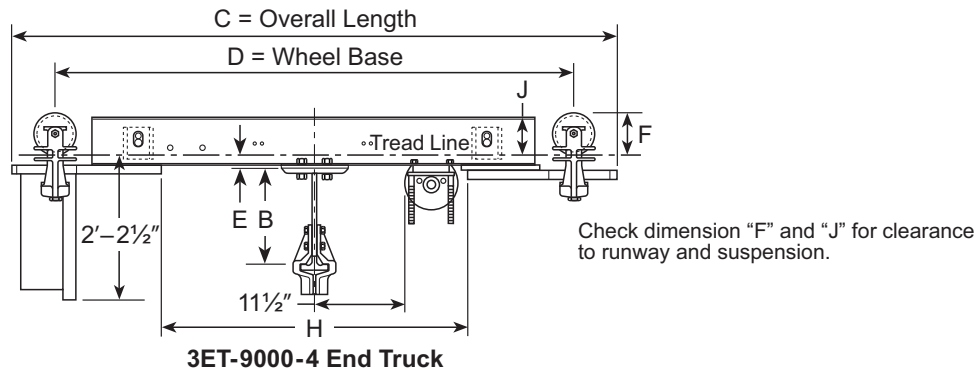
Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with these end trucks = 15" with 3I-615 or 3I-430 Interlocks in "L" Series rail, or 14" with 3I-9A interlock in "H" Series rail. Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

3C-2000-MD End Truck Specifications*

Model Number	Dimensions							# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G	H	J			
3ET-9000-4	84"	72"	2½"	57/16"	15¼"	36"	5"	2	9000 lbs.	255 lbs.

* See "325 Series Crane End Trucks" on page G-9 for more information.

† Maximum load on 2-wheel trolley on 325 "L" Series Rail cannot exceed 5500 pounds (2750 pounds per wheel)
Maximum load on 2-wheel trolley on 325 "H" Series Rail cannot exceed 10000 pounds (5000 pounds per wheel).



Model 3C-4000-MD Motor Driven Crane

4000 lb. capacity

Crane design load = 6100 lbs.

(Live load 4000 lbs.+600 lbs. impact+1500 lbs. hoist & trolley)

Crane Conductor Bars

- Bottom Contact conductor bars can mount on all cranes and all bridge beams
- Side Contact conductor bars
7½" gauge, through 5" dia. hoist carrier trolley wheels requires minimum 3RL11-21 bridge beam
9" gauge for 6½" dia. wheels

See "Crane Interlocks" on page F-99 for more information.

Crane Interlocks

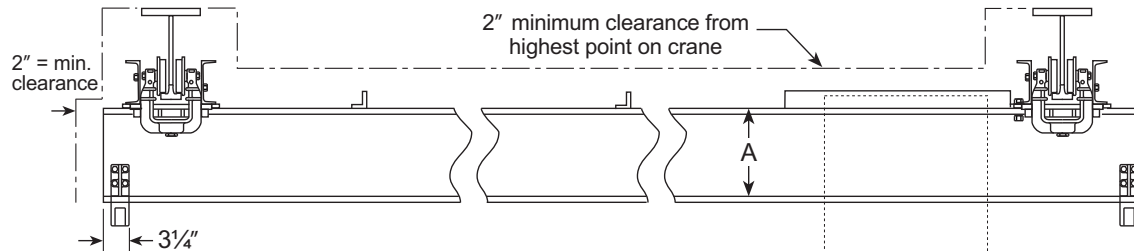
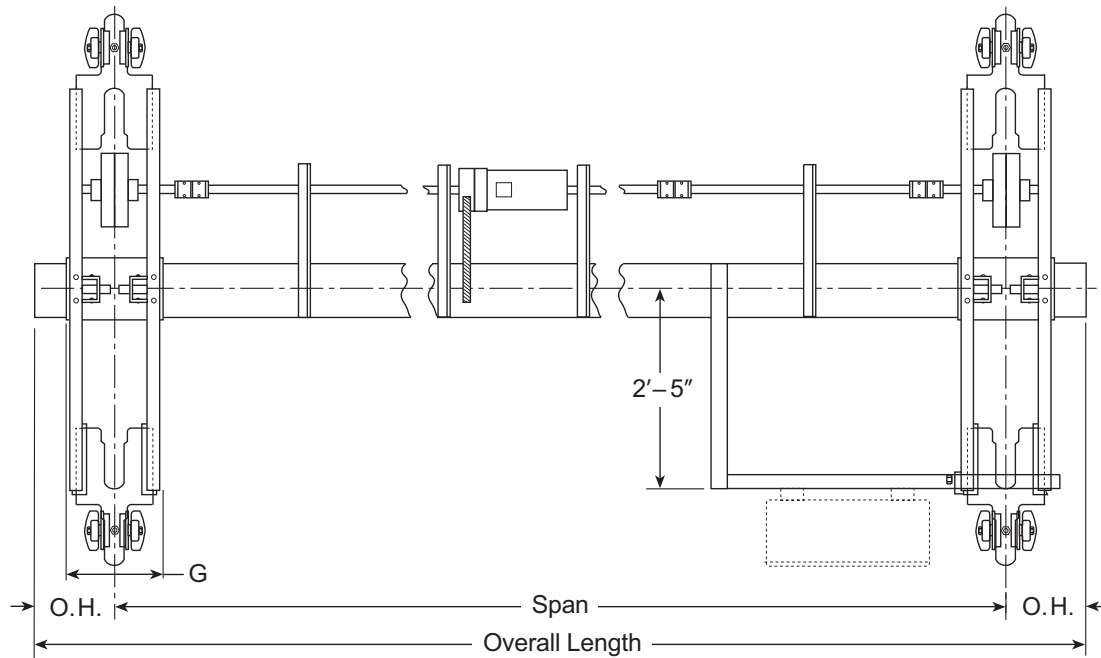
"L" Series Rail

- Non-electrified cranes: Model 3I-615, mounted in 3RL8-18 bridge (For cranes with bridges other than 3RL8-18, add for step cuts.)
- Electrified cranes with bottom contact conductor bar: Model 3I-615, mounted in 3RL8-18 bridge (For cranes with bridges other than 3RL8-18, add for step cuts.)
- Electrified cranes with side contact conductor bar: Model 3I-430 Requires minimum 3RL13-27 (For cranes with 3RL14-35, add for step cuts.)

"H" Series Rail

Electrified or Non-electrified cranes

- 3I-9A Standard requires 3RH14-41 Bridge Rail (for larger rail, add for step cut.)
- 3I-9B Optional requires 3RH16-47 Bridge Rail (for larger rail, add for step cut.)





3C-4000-MD Motor Driven Crane

Span (feet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		Motor (hp)	Estimated Crane Weight
		Model No.	A	B	O.H. (min)	B	O.H.		
10	3ET-9000-4	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	8"	7 ³ / ₈ "	15"	³ / ₄	1271 lbs.
12	3ET-9000-4	3RL8-18*	7 ³ / ₈ "	7 ³ / ₈ "	8"	7 ³ / ₈ "	15"	³ / ₄	1324 lbs.
14	3ET-9000-4	3RL11-21	10 ³ / ₈ "	10 ³ / ₈ "	8"	7 ³ / ₈ "	15"	³ / ₄	1425 lbs.
16	3ET-9000-4	3RL11-21	10 ³ / ₈ "	10 ³ / ₈ "	8"	7 ³ / ₈ "	15"	³ / ₄	1484 lbs.
18	3ET-9000-4	3RL11-24	10 ¹ / ₂ "	10 ¹ / ₂ "	8"	7 ³ / ₈ "	15"	³ / ₄	1603 lbs.
20	3ET-9000-4	3RL11-24	10 ¹ / ₂ "	10 ¹ / ₂ "	8"	7 ³ / ₈ "	15"	³ / ₄	1668 lbs.
22	3ET-9000-4	3RL13-27	12 ¹ / ₂ "	12 ¹ / ₂ "	8"	7 ³ / ₈ "	15"	³ / ₄	1805 lbs.
24	3ET-9000-4	3RL13-27	12 ¹ / ₂ "	12 ¹ / ₂ "	8"	7 ³ / ₈ "	15"	³ / ₄	1876 lbs.
26	3ET-9000-4	3RL14-35	13 ¹ / ₂ "	13 ¹ / ₂ "	8"	7 ³ / ₈ "	15"	³ / ₄	2171 lbs.
28	3ET-9000-4	3RL14-35	13 ¹ / ₂ "	13 ¹ / ₂ "	8"	7 ³ / ₈ "	15"	³ / ₄	2258 lbs.
30	3ET-9000-4	3RH14-41	13 ⁵ / ₈ "	13 ⁵ / ₈ "	8"	13 ⁵ / ₈ "	14"	³ / ₄	2537 lbs.
32	3ET-9000-4	3RH14-41	13 ⁵ / ₈ "	13 ⁵ / ₈ "	8"	13 ⁵ / ₈ "	14"	³ / ₄	2636 lbs.
34	3ET-9000-4	3RH14-41	13 ⁵ / ₈ "	13 ⁵ / ₈ "	8"	13 ⁵ / ₈ "	14"	³ / ₄	2735 lbs.
36	3ET-9000-4	3RH16-47	15 ⁵ / ₁₆ "	15 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	³ / ₄	3062 lbs.
38	3ET-9000-4	3RH16-47	15 ⁵ / ₁₆ "	15 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	³ / ₄	3173 lbs.
40	3ET-9000-4	3RH16-47	15 ⁵ / ₁₆ "	15 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	³ / ₄	3284 lbs.
42	3ET-9000-4	3RH18-52	17 ⁵ / ₁₆ "	17 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	³ / ₄	3615 lbs.
44	3ET-9000-4	3RH18-52	17 ⁵ / ₁₆ "	17 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	³ / ₄	3736 lbs.
46	3ET-9000-4	3RH20-67	19 ⁵ / ₁₆ "	19 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	³ / ₄	4577 lbs.
48	3ET-9000-4	3RH20-67	19 ⁵ / ₁₆ "	19 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	³ / ₄	4728 lbs.
50	3ET-9000-4	3RH20-67	19 ⁵ / ₁₆ "	19 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	³ / ₄	4879 lbs.
52	3ET-9000-4	3RH22-74	21 ⁵ / ₁₆ "	21 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	³ / ₄	5408 lbs.
54	3ET-9000-4	3RH22-74	21 ⁵ / ₁₆ "	21 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	1	5603 lbs.
56	3ET-9000-4	3RH22-74	21 ⁵ / ₁₆ "	21 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	1	5768 lbs.
58	3ET-9000-4	3RH22-74	21 ⁵ / ₁₆ "	21 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	1	5933 lbs.
60	3ET-9000-4	3RH24-84	23 ⁵ / ₁₆ "	23 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	1	6718 lbs.

* For crane with side contact conductors, minimum bridge size is 3RL11-21. Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops) plus standard controls and motorized drives. Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

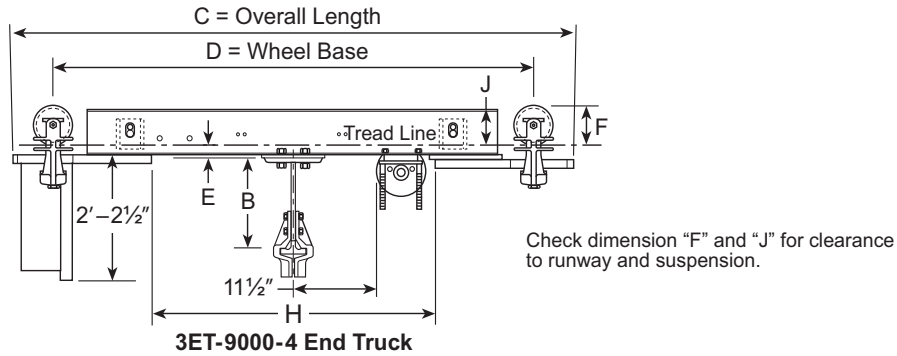
After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail.

Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with these end trucks = 15" with 3I-615 or 3I-430 Interlocks in "L" Series rail, or 14" with 3I-9A interlock in "H" Series rail. Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

3C-4000-MD End Truck Specifications*

Model Number	Dimensions							# of 2-Wheel Trolleys	Max E.T. Loading	End Truck Weight
	C	D	E	F	G	H	J			
3ET-9000-4	84"	72"	2½"	5⅞"	15¼"	35"	5"	2	9000 lbs.	310 lbs.

* See "325 Series Crane End Trucks" on page G-9 for more information.





Model 3C-6000-MD Motor Driven Crane

6000 lb. capacity

Crane design load = 8400 lbs. (Live load 6000 lbs.+900 lbs. impact+1500 lbs. hoist & trolley)

Crane Conductor Bars

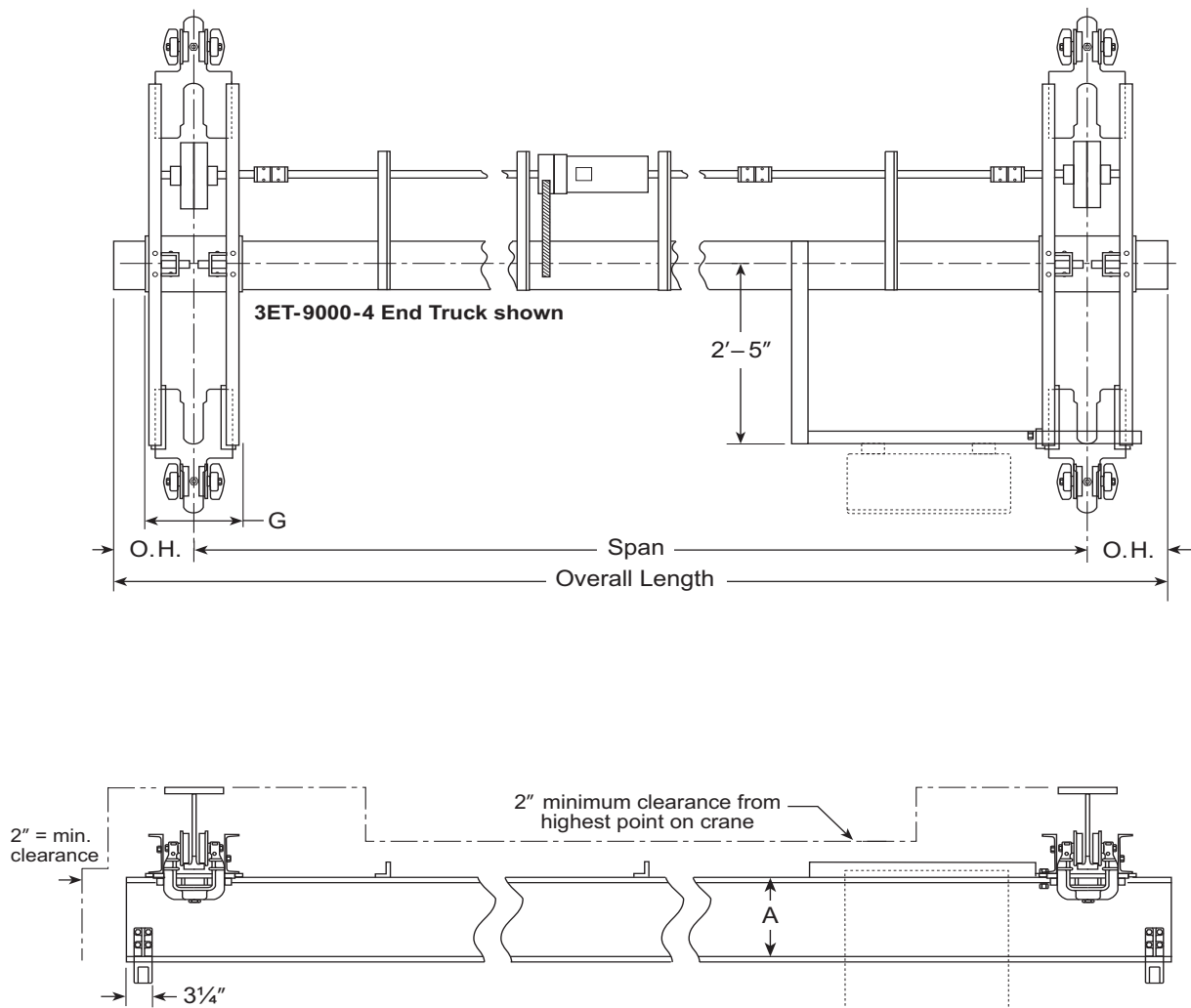
- Bottom Contact conductor bars can mount on all cranes and all bridge beams
- Side Contact conductor bars
7½" gauge, through 5" dia. hoist carrier trolley wheels
9" gauge for 6½" dia. wheels

Crane Interlocks

For Electrified or Non-electrified cranes

- 3I-9A Standard requires 3RH14-41 Bridge Rail (For larger rail, add for step cut.)
- 3I-9B Optional requires 3RH16-47 Bridge Rail (For larger rail, add for step cut.)

See "Crane Interlocks" on page F-99 for more information.





3C-6000-MD Motor Driven Crane

Span (feet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		Motor (hp)	Estimated Crane Weight
		Model No.	A	B	O.H. (min)	B	O.H.		
10	3ET-9000-4	3RH13-36*	12½"	12½"	8"	13 5/8"	14"	¾	1487 lbs.
12	3ET-9000-4	3RH13-36*	12½"	12½"	8"	13 5/8"	14"	¾	1576 lbs.
14	3ET-12400-4	3RH13-36*	12½"	12½"	8"	13 5/8"	14"	¾	1701 lbs.
16	3ET-12400-4	3RH13-36*	12½"	12½"	8"	13 5/8"	14"	¾	1790 lbs.
18	3ET-12400-4	3RH13-36*	12½"	12½"	8"	13 5/8"	14"	¾	1879 lbs.
20	3ET-12400-4	3RH13-36*	12½"	12½"	8"	13 5/8"	14"	¾	1968 lbs.
22	3ET-12400-4	3RH13-36*	12½"	12½"	8"	13 5/8"	14"	¾	2057 lbs.
24	3ET-12400-4	3RH13-36*	12½"	12½"	8"	13 5/8"	14"	¾	2146 lbs.
26	3ET-12400-4	3RH14-41	13 5/8"	13 5/8"	8"	13 5/8"	14"	¾	2375 lbs.
28	3ET-12400-4	3RH14-41	13 5/8"	13 5/8"	8"	13 5/8"	14"	¾	2474 lbs.
30	3ET-12400-4	3RH16-47	15 5/16"	15 5/16"	8"	13 5/8"	14"	¾	2765 lbs.
32	3ET-12400-4	3RH16-47	15 5/16"	15 5/16"	8"	13 5/8"	14"	¾	2876 lbs.
34	3ET-12400-4	3RH16-47	15 5/16"	15 5/16"	8"	13 5/8"	14"	¾	2987 lbs.
36	3ET-12400-4	3RH18-52	17 5/16"	17 5/16"	8"	13 5/8"	14"	¾	3288 lbs.
38	3ET-12400-4	3RH18-52	17 5/16"	17 5/16"	8"	13 5/8"	14"	¾	3439 lbs.
40	3ET-12400-4	3RH20-67	19 5/16"	19 5/16"	8"	13 5/8"	14"	1	4190 lbs.
42	3ET-12400-4	3RH20-67	19 5/16"	19 5/16"	8"	13 5/8"	14"	1	4341 lbs.
44	3ET-12400-4	3RH20-67	19 5/16"	19 5/16"	8"	13 5/8"	14"	1	4492 lbs.
46	3ET-12400-4	3RH22-74	21 5/16"	21 5/16"	8"	13 5/8"	14"	1	4979 lbs.
48	3ET-12400-4	3RH22-74	21 5/16"	21 5/16"	8"	13 5/8"	14"	1	5144 lbs.
50	3ET-12400-4	3RH22-74	21 5/16"	21 5/16"	8"	13 5/8"	14"	1	5309 lbs.
52	3ET-12400-4	3RH24-84	23 5/16"	23 5/16"	8"	13 5/8"	14"	1	6014 lbs.
54	3ET-12400-4	3RH24-84	23 5/16"	23 5/16"	8"	13 5/8"	14"	1	6199 lbs.
56	3ET-12400-4	3RH24-84	23 5/16"	23 5/16"	8"	13 5/8"	14"	1	6384 lbs.
58	3ET-12400-4	3RH24-84	23 5/16"	23 5/16"	8"	13 5/8"	14"	1	6569 lbs.
60	3ET-12400-4	3RH26-90	25 5/16"	25 5/16"	8"	13 5/8"	14"	1	7126 lbs.

* Replace 3RH13-36 with 3RH14-41 if adding interlock. Step cut larger rails to 14" or 16". Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops) plus standard controls and motorized drives. Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail.

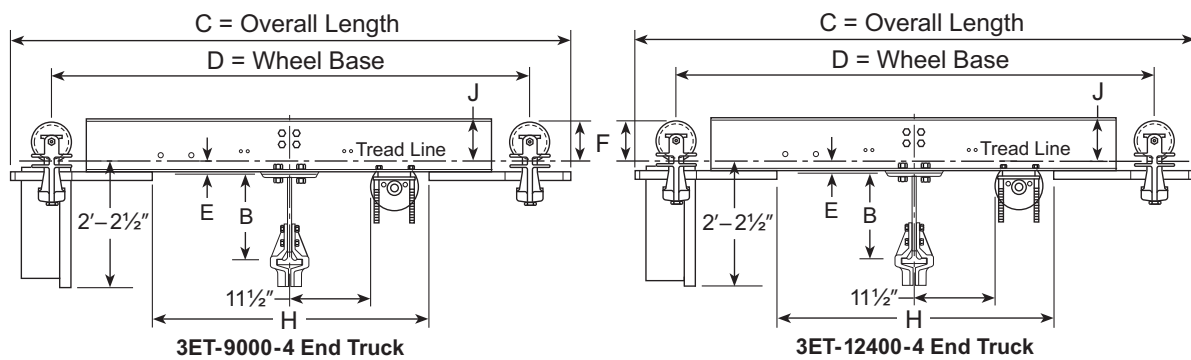
Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with these end trucks = 14" with 3I-9A interlock in "H" Series rail. Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

3C-6000-MD End Truck Specifications*

Model Number	Dimensions							# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G	H	J			
3ET-9000-4	84"	72"	2½"	57/16"	15¼"	35"	5"	2	9000 lbs.	310 lbs.
3ET-12400-4	84"	72"	2½"	57/16"	15½"	42"	6"	2	12,400 lbs.	328 lbs.

* See "325 Series Crane End Trucks" on page G-9 for more information.

† Maximum load on 2-wheel trolley on 325 "L" Series Rail cannot exceed 5500 pounds (2750 pounds per wheel)
Maximum load on 2-wheel trolley on 325 "H" Series Rail cannot exceed 10000 pounds (5000 pounds per wheel).



Check dimension "F" and "J" for clearance to runway and suspension.

Model 3C-10000-MD Motor Driven Crane

10000 lb. capacity

Crane design load = 14,000 lbs. (Live load 10,000 lbs. 1500 lbs. impact + 2500 lbs. hoist & trolley)

Crane Conductor Bars

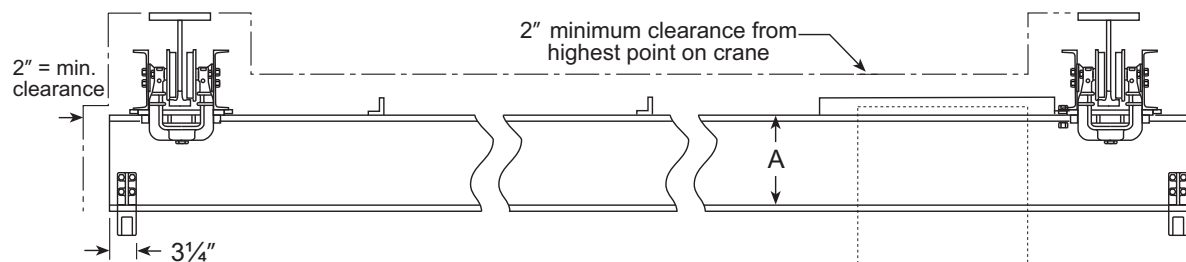
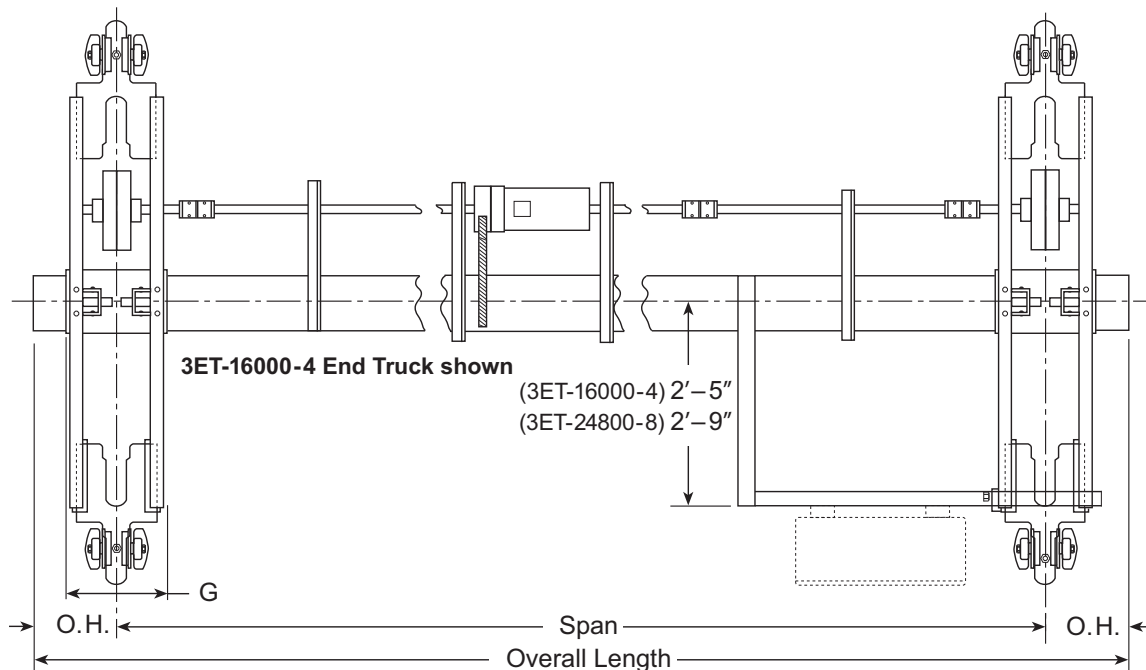
- Bottom Contact conductor bars can mount on all cranes and all bridge beams
- Side Contact conductor bars
7½" gauge, through 5" dia. hoist carrier trolley wheels
9" gauge for 6½" dia. wheels

Crane Interlocks

For Electrified or Non-electrified cranes

- 3I-9A Standard requires 3RH14-41 Bridge Rail (for larger rail, add for step cut.)
- 3I-9B Optional requires 3RH16-47 Bridge Rail (for larger rail, add for step cut.)

See "Crane Interlocks" on page F-99 for more information.





3C-10000-MD Motor Driven Crane

Span (feet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		Motor (hp)	Estimated Crane Weight
		Model No.	A	B	O.H. (min)	B	O.H.		
10	3ET-16000-4	3RH13-36*	12½"	12½"	9"	13⅝"	14"	1	1683 lbs.
12	3ET-16000-4	3RH13-36*	12½"	12½"	9"	13⅝"	14"	1	1772 lbs.
14	3ET-16000-4	3RH13-36*	12½"	12½"	9"	13⅝"	14"	1	1861 lbs.
16	3ET-16000-4	3RH13-36*	12½"	12½"	9"	13⅝"	14"	1	1950 lbs.
18	3ET-16000-4	3RH13-36*	12½"	12½"	9"	13⅝"	14"	1	2039 lbs.
20	3ET-16000-4	3RH14-41	13⅝"	13⅝"	9"	13⅝"	14"	1	2238 lbs.
22	3ET-16000-4	3RH14-41	13⅝"	13⅝"	9"	13⅝"	14"	1	2337 lbs.
24	3ET-16000-4	3RH16-47	15⅝"	15⅝"	9"	13⅝"	14"	1	2592 lbs.
26	3ET-16000-4	3RH16-47	15⅝"	15⅝"	9"	13⅝"	14"	1	2703 lbs.
28	3ET-16000-4	3RH18-52	17⅝"	17⅝"	9"	13⅝"	14"	1	2964 lbs.
30	3ET-16000-4	3RH18-52	17⅝"	17⅝"	9"	13⅝"	14"	1	3085 lbs.
32	3ET-24800-8	3RH20-67	19⅝"	19⅝"	10"	13⅝"	18"	1	4170 lbs.
34	3ET-24800-8	3RH20-67	19⅝"	19⅝"	10"	13⅝"	18"	1	4321 lbs.
36	3ET-24800-8	3RH20-67	19⅝"	19⅝"	10"	13⅝"	18"	1	4472 lbs.
38	3ET-24800-8	3RH22-74	21⅝"	21⅝"	10"	13⅝"	18"	1	4903 lbs.
40	3ET-24800-8	3RH22-74	21⅝"	21⅝"	10"	13⅝"	18"	1	5068 lbs.
42	3ET-24800-8	3RH24-84	23⅝"	23⅝"	10"	13⅝"	18"	1	5673 lbs.
44	3ET-24800-8	3RH24-84	23⅝"	23⅝"	10"	13⅝"	18"	1½	5868 lbs.
46	3ET-24800-8	3RH24-84	23⅝"	23⅝"	10"	13⅝"	18"	1½	6053 lbs.
48	3ET-24800-8	3RH24-84	23⅝"	23⅝"	10"	13⅝"	18"	1½	6238 lbs.
50	3ET-24800-8	3RH26-90	25⅝"	25⅝"	10"	13⅝"	18"	1½	6735 lbs.
52	3ET-24800-8	3RH30-110	29⅝"	29⅝"	10"	13⅝"	18"	1½	8012 lbs.
54	3ET-24800-8	3RH30-110	29⅝"	29⅝"	10"	13⅝"	18"	1½	8249 lbs.
56	3ET-24800-8	3RH30-110	29⅝"	29⅝"	10"	13⅝"	18"	1½	8486 lbs.
58	3ET-24800-8	3RH30-110	29⅝"	29⅝"	10"	13⅝"	18"	1½	8723 lbs.
60	3ET-24800-8	3RH30-110	29⅝"	29⅝"	10"	13⅝"	18"	1½	8960 lbs.

* Replace 3RH13-36 with 3RH14-41 if adding interlock. Step cut larger rails to 14" or 16". Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops) plus standard controls and motorized drives. Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail.

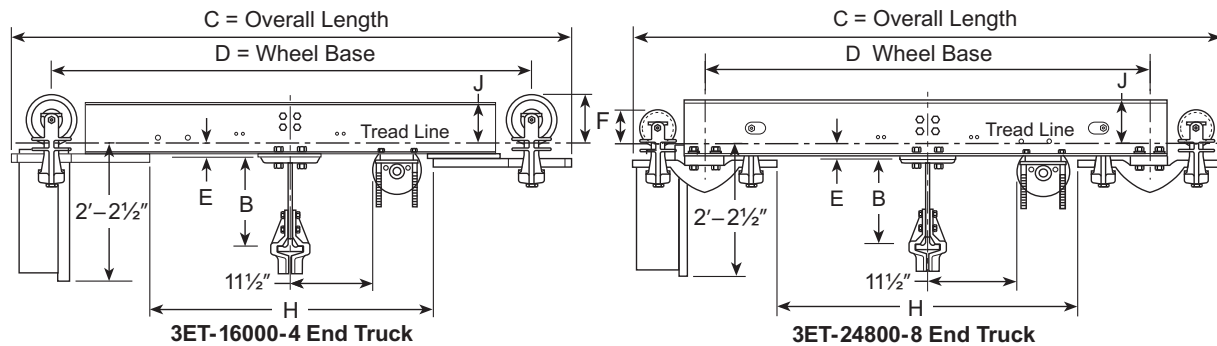
Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with these end trucks = 14" or 18" with 3I-9A or 3I-9B interlock in "H" Series rail. Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

3C-10000-MD End Truck Specifications*

Model Number	Dimensions							# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G	H	J			
3ET-16000-4	84"	72"	2½"	7 1/16"	15½"	42"	7"	2	16,000 lbs.	393 lbs.
3ET-24800-8	95"	7"	2½"	5 7/16"	18¼"	49"	7"	4	24,800 lbs.	620 lbs.

* See "325 Series Crane End Trucks" on page G-9 for more information.

† Maximum load on 2-wheel trolley on 325 "L" Series Rail cannot exceed 5500 pounds (2750 pounds per wheel)
Maximum load on 2-wheel trolley on 325 "H" Series Rail cannot exceed 10000 pounds (5000 pounds per wheel).



Check dimension "F" and "J" for clearance to runway and suspension.



Model 3C-15000-MD Motor Driven Crane

15000 lb. capacity

Crane design load = 20,250 lbs. (Live load 15,000 lbs.
2250 lbs. impact+3000 lbs. hoist & trolley)

Crane Conductor Bars

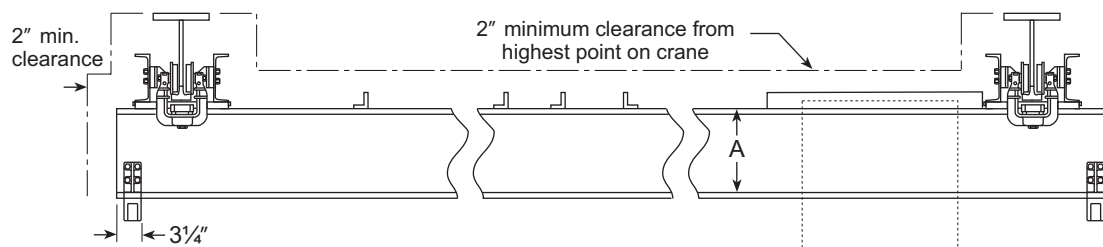
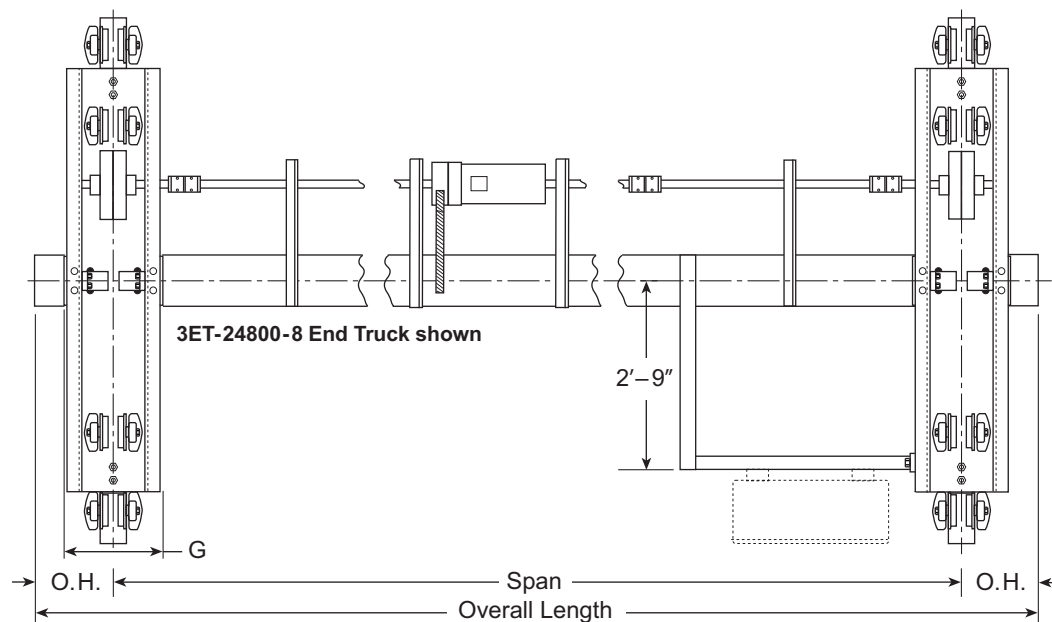
- Bottom Contact conductor bars can mount on all cranes and all bridge beams
- Side Contact conductor bars
7½" gauge, through 5" dia. hoist carrier trolley wheels
9" gauge for 6½" dia. wheels

Crane Interlocks

For Electrified or Non-electrified cranes

- 3I-9A Standard requires 3RH14-41 Bridge Rail
(For larger rail, add for step cut.)
- 3I-9B Optional requires 3RH16-47 Bridge Rail
(For larger rail, add for step cut.)

See "Crane Interlocks" on page F-99 for more information.





3C-15000-MD Motor Driven Crane

Span (feet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		Motor (hp)	Estimated Crane Weight
		Model No.	A	B	O.H. (min)	B	O.H.		
10	3ET-24800-8	3RH13-36*	12½"	12½"	10"	13⅝"	18"	1½	2147 lbs.
12	3ET-24800-8	3RH13-36*	12½"	12½"	10"	13⅝"	18"	1½	2236 lbs.
14	3ET-24800-8	3RH13-36*	12½"	12½"	10"	13⅝"	18"	1½	2325 lbs.
16	3ET-24800-8	3RH14-41	13⅝"	13⅝"	10"	13⅝"	18"	1½	2504 lbs.
18	3ET-24800-8	3RH18-52	17⅝"	17⅝"	10"	13⅝"	18"	1½	2823 lbs.
20	3ET-24800-8	3RH18-52	17⅝"	17⅝"	10"	13⅝"	18"	1½	2944 lbs.
22	3ET-24800-8	3RH18-52	17⅝"	17⅝"	10"	13⅝"	18"	1½	3065 lbs.
24	3ET-24800-8	3RH18-52	17⅝"	17⅝"	10"	13⅝"	18"	1½	3186 lbs.
26	3ET-24800-8	3RH20-67	19⅝"	19⅝"	10"	13⅝"	18"	1½	3727 lbs.
28	3ET-24800-8	3RH20-67	19⅝"	19⅝"	10"	13⅝"	18"	1½	3878 lbs.
30	3ET-24800-8	3RH20-67	19⅝"	19⅝"	10"	13⅝"	18"	1½	4029 lbs.
32	3ET-24800-8	3RH22-74	21⅝"	21⅝"	10"	13⅝"	18"	1½	4418 lbs.
34	3ET-24800-8	3RH22-74	21⅝"	21⅝"	10"	13⅝"	18"	1½	4583 lbs.
36	3ET-24800-8	3RH24-84	23⅝"	23⅝"	10"	13⅝"	18"	1½	5128 lbs.
38	3ET-24800-8	3RH24-84	23⅝"	23⅝"	10"	13⅝"	18"	1½	5313 lbs.
40	3ET-24800-8	3RH24-84	23⅝"	23⅝"	10"	13⅝"	18"	1½	5498 lbs.
42	3ET-24800-8	3RH26-90	25⅝"	25⅝"	10"	13⅝"	18"	1½	5947 lbs.
44	3ET-24800-8	3RH30-110	29⅝"	29⅝"	10"	13⅝"	18"	1½	7064 lbs.
46	3ET-24800-8	3RH30-110	29⅝"	29⅝"	10"	13⅝"	18"	1½	7301 lbs.
48	3ET-24800-8	3RH30-110	29⅝"	29⅝"	10"	13⅝"	18"	1½	7538 lbs.
50	3ET-24800-8	3RH30-110	29⅝"	29⅝"	10"	13⅝"	18"	1½	7775 lbs.
52	3ET-24800-8	3RH30-110	29⅝"	29⅝"	10"	13⅝"	18"	1½	8012 lbs.
54	3ET-24800-8	3RH30-110	29⅝"	29⅝"	10"	13⅝"	18"	1½	8249 lbs.
56	3ET-28000-8	3RH32-120	31⅝"	31⅝"	10"	13⅝"	18"	1½	9066 lbs.
58	3ET-28000-8	3RH32-120	31⅝"	31⅝"	10"	13⅝"	18"	1½	9323 lbs.
60	3ET-28000-8	3RH34-130	33⅝"	33⅝"	10"	13⅝"	18"	1½	10,200 lbs.

* Replace 3RH13-36 with 3RH14-41 if adding interlock. Step cut larger rails to 14" or 16". Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops) plus standard controls and motorized drives. Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail.

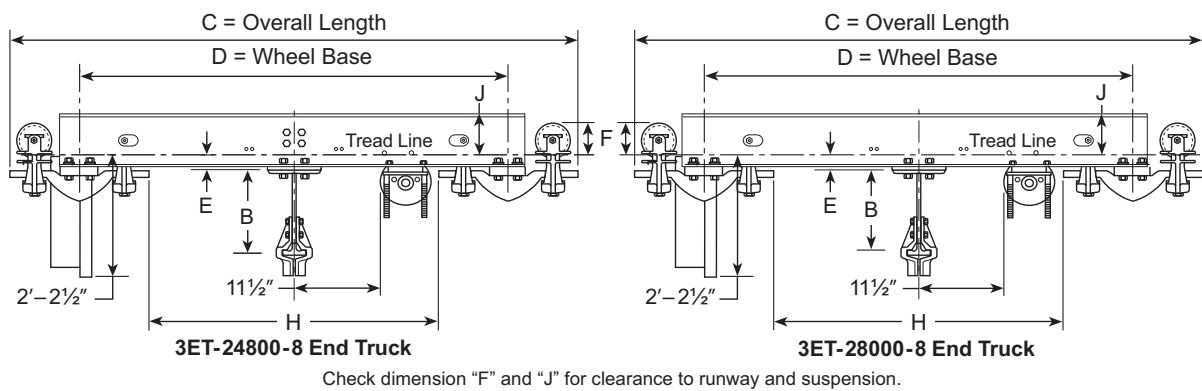
Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with these end trucks = 18" with 3I-9A or 3I-9B interlock in "H" Series rail. Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

3C-15000-MD End Truck Specifications*

Model Number	Dimensions							# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G	H	J			
3ET-24800-8	95"	72"	2½"	5⅞"	18¼"	49"	7"	4	24,800 lbs.	620 lbs.
3ET-28000-8	95"	72"	2½"	7⅞"	18½"	49"	8"	4	28,000 lbs.	713 lbs.

* See "325 Series Crane End Trucks" on page G-9 for more information.

† Maximum load on 2-wheel trolley on 325 "L" Series Rail cannot exceed 5500 pounds (2750 pounds per wheel)
Maximum load on 2-wheel trolley on 325 "H" Series Rail cannot exceed 10000 pounds (5000 pounds per wheel).



Model 3C-20000-MD Motor Driven Crane

20000 lb. capacity

Crane design load = 27,000 lbs.

(Live load 20,000 lbs. 3050 lbs. impact+4000 lbs. hoist & trolley)

Crane Conductor Bars

- Bottom Contact conductor bars can mount on all cranes and all bridge beams

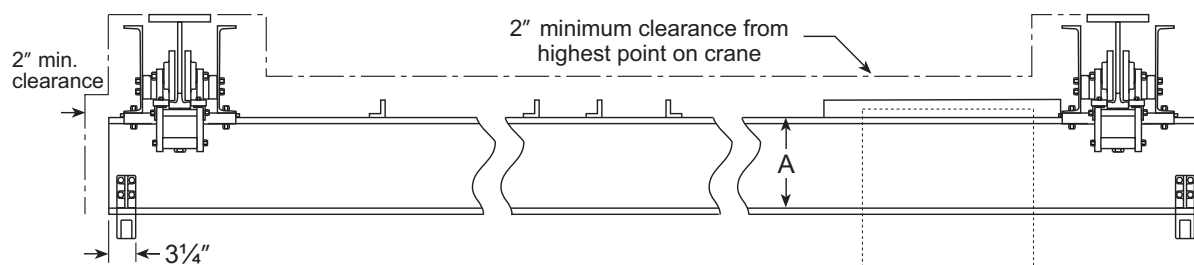
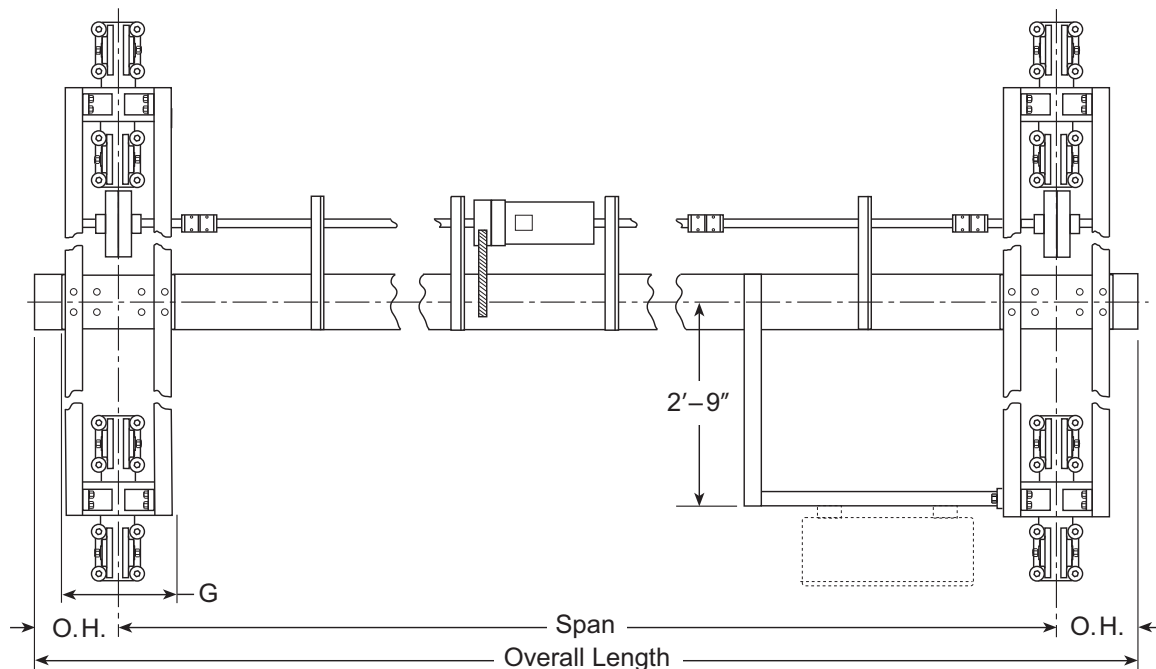
- Side Contact conductor bars
7½" gauge, through 5" dia. hoist carrier trolley wheels
9" gauge for 6½" dia. wheels

Crane Interlocks

For Electrified or Non-electrified cranes

- 3I-9A Standard requires 3RH14-41 Bridge Rail
(For larger rail, add for step cut.)
- 3I-9B Optional requires 3RH16-47 Bridge Rail
(For larger rail, add for step cut.)

See "Crane Interlocks" on page F-99 for more information.





3C-20000-MD Motor Driven Crane

Span (feet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		Motor (hp)	Estimated Crane Weight
		Model No.	A	B	O.H. (min)	B	O.H.		
10	3ET-38000-8SRL	3RH13-36*	12½"	12½"	11"	13⅝"	18"	1½	3415 lbs.
12	3ET-38000-8SRL	3RH14-41	13⅝"	13⅝"	11"	13⅝"	18"	1½	3574 lbs.
14	3ET-38000-8SRL	3RH18-52	15⅝"	15⅝"	11"	13⅝"	18"	1½	3849 lbs.
16	3ET-38000-8SRL	3RH18-52	17⅝"	17⅝"	11"	13⅝"	18"	1½	3970 lbs.
18	3ET-38000-8SRL	3RH18-52	17⅝"	17⅝"	11"	13⅝"	18"	1½	4091 lbs.
20	3ET-38000-8SRL	3RH20-67	19⅝"	19⅝"	11"	13⅝"	18"	1½	4542 lbs.
22	3ET-38000-8SRL	3RH20-67	19⅝"	19⅝"	11"	13⅝"	18"	1½	4693 lbs.
24	3ET-38000-8SRL	3RH20-67	19⅝"	19⅝"	11"	13⅝"	18"	1½	4844 lbs.
26	3ET-38000-8SRL	3RH22-74	21⅝"	21⅝"	11"	13⅝"	18"	1½	5191 lbs.
28	3ET-38000-8SRL	3RH22-74	21⅝"	21⅝"	11"	13⅝"	18"	1½	5356 lbs.
30	3ET-38000-8SRL	3RH24-84	23⅝"	23⅝"	11"	13⅝"	18"	2	5856 lbs.
32	3ET-38000-8SRL	3RH24-84	23⅝"	23⅝"	11"	13⅝"	18"	2	6041 lbs.
34	3ET-38000-8SRL	3RH26-90	25⅝"	25⅝"	11"	13⅝"	18"	2	6442 lbs.
36	3ET-38000-8SRL	3RH26-90	25⅝"	25⅝"	11"	13⅝"	18"	2	6639 lbs.
38	3ET-38000-8SRL	3RH28-93	27⅝"	27⅝"	11"	13⅝"	18"	2	6996 lbs.
40	3ET-38000-8SRL	3RH30-110	29⅝"	29⅝"	11"	13⅝"	18"	2	7873 lbs.
42	3ET-38000-8SRL	3RH30-110	29⅝"	29⅝"	11"	13⅝"	18"	2	8110 lbs.
44	3ET-38000-8SRL	3RH30-110	29⅝"	29⅝"	11"	13⅝"	18"	2	8347 lbs.
46	3ET-38000-8SRL	3RH30-110	29⅝"	29⅝"	11"	13⅝"	18"	2	8584 lbs.
48	3ET-38000-8SRL	3RH32-120	31⅝"	31⅝"	11"	13⅝"	18"	2	9321 lbs.
50	3ET-38000-8SRL	3RH32-120	31⅝"	31⅝"	11"	13⅝"	18"	2	9578 lbs.
52	3ET-38000-8SRL	3RH32-120	31⅝"	31⅝"	11"	13⅝"	18"	2	9835 lbs.
54	3ET-38000-8SRL	3RH34-130	33⅝"	33⅝"	11"	13⅝"	18"	2	10,652 lbs.
56	3ET-38000-8SRL	3RH34-130	33⅝"	33⅝"	11"	13⅝"	18"	2	10,929 lbs.
58	3ET-38000-8SRL	3RH36-140	35⅝"	35⅝"	11"	13⅝"	18"	2	11,806 lbs.
60	3ET-38000-8SRL	3RH36-140	35⅝"	35⅝"	11"	13⅝"	18"	2	12,103 lbs.

* Replace 3RH13-36 with 3RH14-41 if adding interlock. Step cut larger rails to 14" or 16". Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops) plus standard controls and motorized drives. Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail.

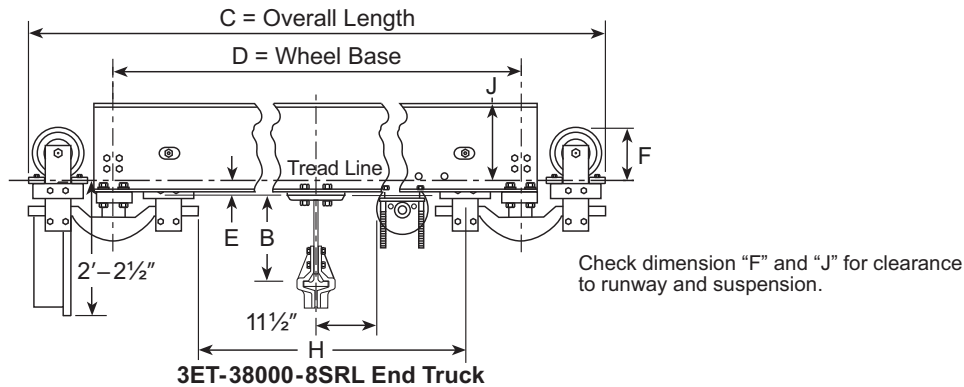
Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with these end trucks = 18" with 3I-9A or 3I-9B interlock in "H" Series rail. Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

3C-20000-MD End Truck Specifications*

Model Number	Dimensions							# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G	H	J			
3ET-38000-8SRL	123½"	96"	2½"	9"	19"	68½"	13"	4	38,000 lbs.	1454 lbs.

* See "325 Series Crane End Trucks" on page G-9 for more information.

† Maximum load on 2-wheel trolley on 325 "L" Series Rail cannot exceed 5500 pounds (2750 pounds per wheel)
Maximum load on 2-wheel trolley on 325 "H" Series Rail cannot exceed 10000 pounds (5000 pounds per wheel).



Model 3C-2000-DM Dual Motor Crane

2000 lb. capacity

Crane design load = 3300 lbs. (Live load 2000 lbs.+300 lbs. impact+1000 lbs. hoist & trolley)

Crane Conductor Bars

- Bottom Contact conductor bars can mount on all cranes and all bridge beams
- Side Contact conductor bars
7½" gauge, through 5" dia. hoist carrier trolley wheels requires minimum 3RL11-21 bridge beam
9" gauge for 6½" dia. wheels

Crane Interlocks

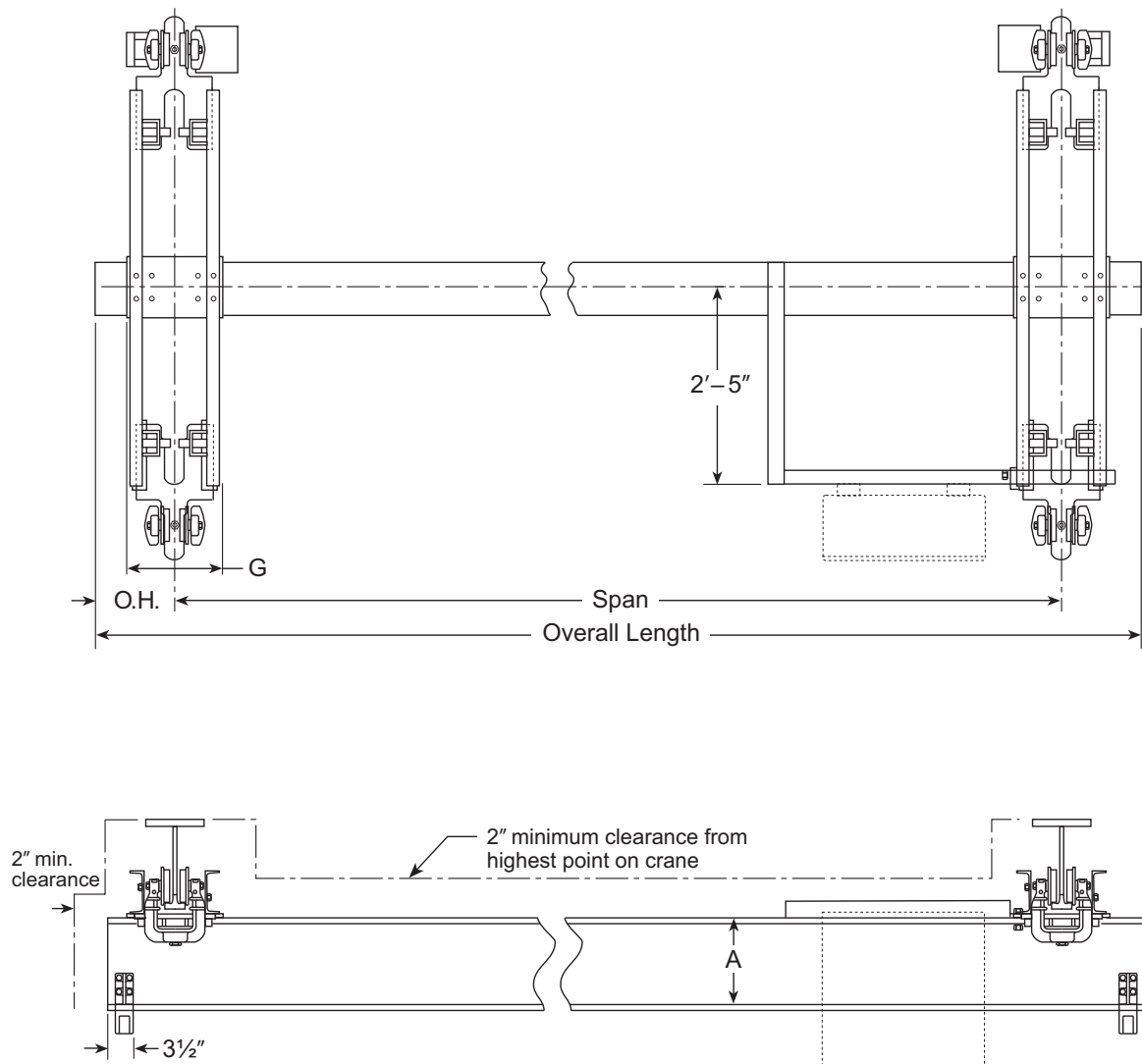
"L" Series Rail

- Non-electrified cranes: Model 3I-615, mounted in 3RL8-18 bridge (For cranes with bridges other than 3RL8-18, add for step cuts.)
- Electrified cranes with bottom contact conductor bar: Model 3I-615, mounted in 3RL8-18 bridge (For cranes with bridges other than 3RL8-18, add for step cuts.)
- Electrified cranes with side contact conductor bar: Model 3I-430 Requires minimum 3RL13-27 (For cranes with 3RL14-35, add for step cuts.)

"H" Series Rail

- Electrified or Non-electrified cranes:
Model 3I-9A Interlock, requires 3RH14-41 (add for step cuts if larger rail) Model 3I-9B Interlock, requires 3RH16-47 (add for step cuts if larger rail)

See "Crane Interlocks" on page F-99 for more information.





3C-2000-DM Dual Motor Driven Crane

Span (feet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		HP each Motor @ 100FPM*	Estimated Crane Weight
		Model No.	A	B	O.H. (min)	B	O.H.		
10	3ET-9000-4AT	3RL8-18†	7 ³ / ₈ "	7 ³ / ₈ "	8"	7 ³ / ₈ "	15"	½	1134 lbs.
12	3ET-9000-4AT	3RL8-18†	7 ³ / ₈ "	7 ³ / ₈ "	8"	7 ³ / ₈ "	15"	½	1171 lbs.
14	3ET-9000-4AT	3RL8-18†	7 ³ / ₈ "	7 ³ / ₈ "	8"	7 ³ / ₈ "	15"	½	1208 lbs.
16	3ET-9000-4AT	3RL8-18†	7 ³ / ₈ "	7 ³ / ₈ "	8"	7 ³ / ₈ "	15"	½	1245 lbs.
18	3ET-9000-4AT	3RL8-18†	7 ³ / ₈ "	7 ³ / ₈ "	8"	7 ³ / ₈ "	15"	½	1282 lbs.
20	3ET-9000-4AT	3RL11-21	10 ³ / ₈ "	10 ³ / ₈ "	8"	7 ³ / ₈ "	15"	½	1385 lbs.
22	3ET-9000-4AT	3RL11-21	10 ³ / ₈ "	10 ³ / ₈ "	8"	7 ³ / ₈ "	15"	½	1428 lbs.
24	3ET-9000-4AT	3RL11-24	10½"	10½"	8"	7 ³ / ₈ "	15"	½	1549 lbs.
26	3ET-9000-4AT	3RL11-24	10½"	10½"	8"	7 ³ / ₈ "	15"	½	1598 lbs.
28	3ET-9000-4AT	3RL13-27	12½"	12½"	8"	7 ³ / ₈ "	15"	½	1737 lbs.
30	3ET-9000-4AT	3RL13-27	12½"	12½"	8"	7 ³ / ₈ "	15"	½	1792 lbs.
32	3ET-9000-4AT	3RL13-27	12½"	12½"	8"	7 ³ / ₈ "	15"	½	1847 lbs.
34	3ET-9000-4AT	3RL14-35	13½"	13½"	8"	7 ³ / ₈ "	15"	½	2190 lbs.
36	3ET-9000-4AT	3RL14-35	13½"	13½"	8"	7 ³ / ₈ "	15"	½	2261 lbs.
38	3ET-9000-4AT	3RH14-41	13 ⁵ / ₈ "	13 ⁵ / ₈ "	8"	13 ⁵ / ₈ "	14"	½	2572 lbs.
40	3ET-9000-4AT	3RH16-47	15 ⁵ / ₁₆ "	15 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	2907 lbs.
42	3ET-9000-4AT	3RH16-47	15 ⁵ / ₁₆ "	15 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	3002 lbs.
44	3ET-9000-4AT	3RH18-52	17 ⁵ / ₁₆ "	17 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	3327 lbs.
46	3ET-9000-4AT	3RH18-52	17 ⁵ / ₁₆ "	17 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	3432 lbs.
48	3ET-9000-4AT	3RH18-52	17 ⁵ / ₁₆ "	17 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	3537 lbs.
50	3ET-9000-4AT	3RH20-67	19 ⁵ / ₁₆ "	19 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	4422 lbs.
52	3ET-9000-4AT	3RH20-67	19 ⁵ / ₁₆ "	19 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	4557 lbs.
54	3ET-9000-4AT	3RH22-74	21 ⁵ / ₁₆ "	21 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	5084 lbs.
56	3ET-9000-4AT	3RH22-74	21 ⁵ / ₁₆ "	21 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	5233 lbs.
58	3ET-9000-4AT	3RH22-74	21 ⁵ / ₁₆ "	21 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	5382 lbs.
60	3ET-9000-4AT	3RH24-84	23 ⁵ / ₁₆ "	23 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	6151 lbs.

* For more than 100 FPM, or for higher horsepower, use "A" drive.

† For crane with side contact conductors, minimum bridge size is 3RL11-21. Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops) plus standard controls and motorized drives. Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail.

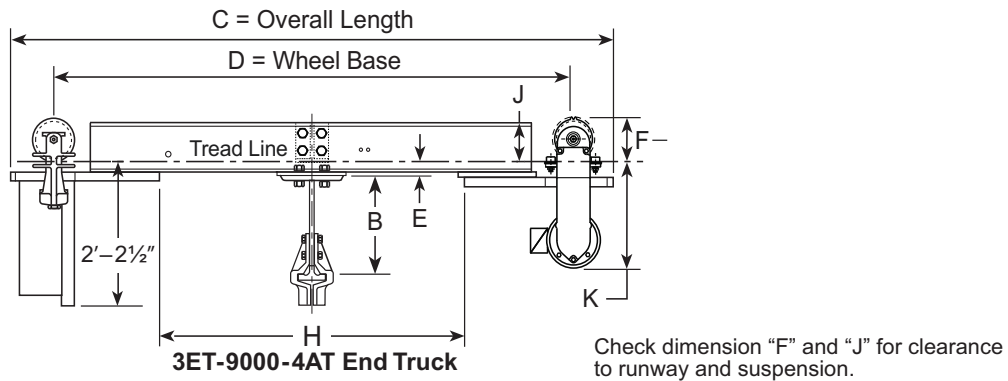
Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with these end trucks = 15" with 3I-615 or 3I-430 Interlocks in "L" Series rail, or 14" with 3I-9A interlock in "H" Series rail. Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

3C-2000-DM End Truck Specifications*

Model Number	Dimensions (inches)								# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G	H	J	K			
3ET-9000-4AT	84"	72"	2½"	5 7/16"	15¼"	36"	5"	16 7/8"	2	9000 lbs.	395 lbs.

* See "325 Series Crane End Trucks" on page G-9 for more information.

† Maximum load on 2-wheel trolley on 325 "L" Series Rail cannot exceed 5500 pounds (2750 pounds per wheel)
Maximum load on 2-wheel trolley on 325 "H" Series Rail cannot exceed 10000 pounds (5000 pounds per wheel).



Model 3C-4000-DM Dual Motor Crane

4000 lb. capacity

Crane design load = 6100 lbs. (Live load 4000 lbs.+600 lbs. impact +1500 lbs. hoist & trolley)

Crane Conductor Bars

- Bottom Contact conductor bars can mount on all cranes and all bridge beams
- Side Contact conductor bars
7½" gauge, through 5" dia. hoist carrier trolley wheels requires minimum 3RL11-21 bridge beam
9" gauge for 6½" dia. wheels

Crane Interlocks

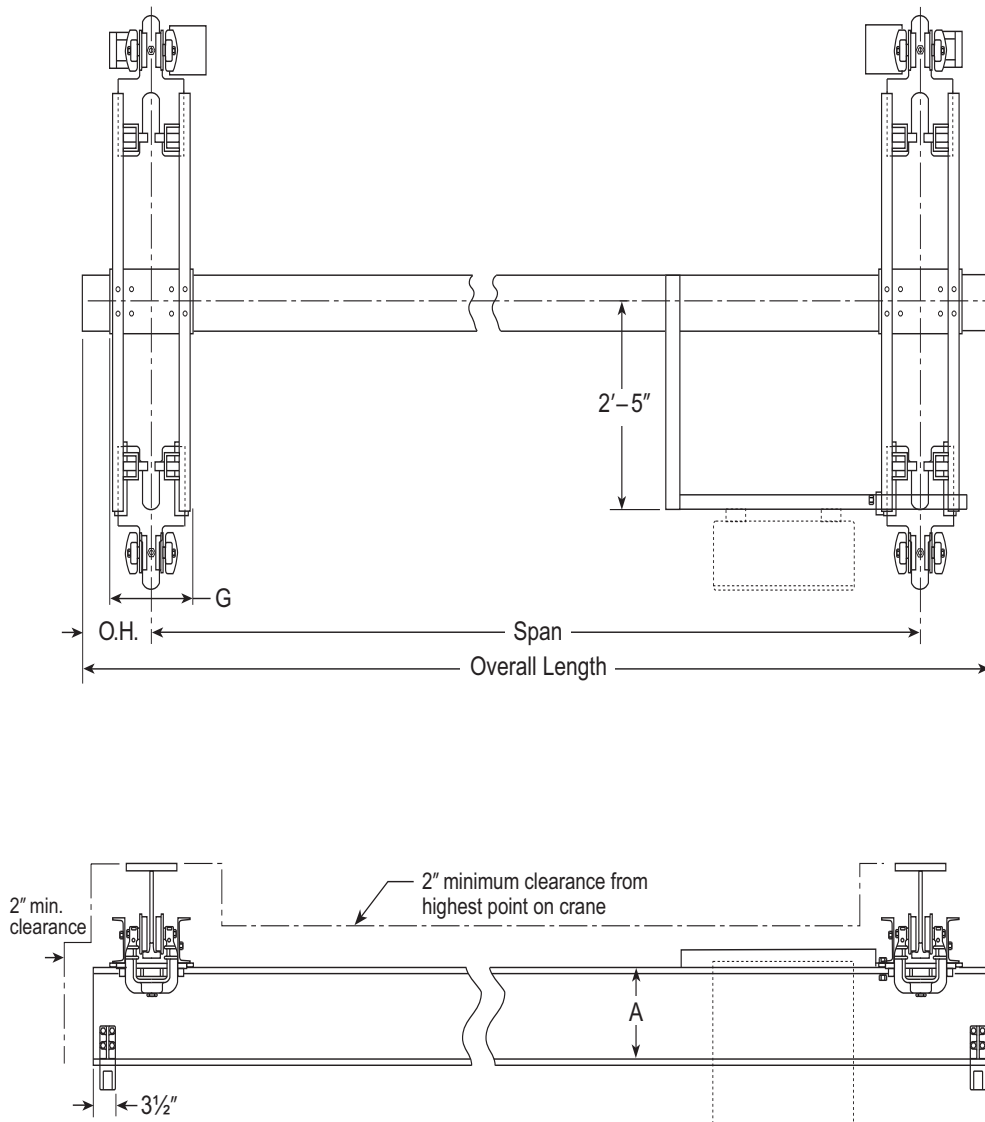
"L" Series Rail

- Non-electrified cranes: Model 3I-615, mounted in 3RL8-18 bridge (For cranes with bridges other than 3RL8-18, add for step cuts.)
- Electrified cranes with bottom contact conductor bar: Model 3I-615, mounted in 3RL8-18 bridge (For cranes with bridges other than 3RL8-18, add for step cuts.)
- Electrified cranes with side contact conductor bar: Model 3I-430 Requires minimum 3RL13-27 (For cranes with 3RL14-35, add for step cuts.)

"H" Series Rail

- Electrified or Non-electrified cranes:
Model 3I-9A Interlock, requires 3RH14-41 (add for step cuts if larger rail)
Model 3I-9B Interlock, requires 3RH16-47 (add for step cuts if larger rail)

See "Crane Interlocks" on page F-99 for more information.





3C-4000-DM Dual Motor Driven Crane

Span (feet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		HP each Motor @ 100 FPM*	Estimated Crane Weight
		Model No.	A	B	O.H. (min)	B	O.H.		
10	3ET-9000-4AT	3RL8-18†	7 ³ / ₈ "	7 ³ / ₈ "	8"	7 ³ / ₈ "	15"	½	1134 lbs.
12	3ET-9000-4AT	3RL8-18†	7 ³ / ₈ "	7 ³ / ₈ "	8"	7 ³ / ₈ "	15"	½	1171 lbs.
14	3ET-9000-4AT	3RL11-21	10 ³ / ₈ "	10 ³ / ₈ "	8"	7 ³ / ₈ "	15"	½	1256 lbs.
16	3ET-9000-4AT	3RL11-21	10 ³ / ₈ "	10 ³ / ₈ "	8"	7 ³ / ₈ "	15"	½	1299 lbs.
18	3ET-9000-4AT	3RL11-24	10½"	10½"	8"	7 ³ / ₈ "	15"	½	1402 lbs.
20	3ET-9000-4AT	3RL11-24	10½"	10½"	8"	7 ³ / ₈ "	15"	½	1451 lbs.
22	3ET-9000-4AT	3RL13-27	12½"	12½"	8"	7 ³ / ₈ "	15"	½	1572 lbs.
24	3ET-9000-4AT	3RL13-27	12½"	12½"	8"	7 ³ / ₈ "	15"	½	1627 lbs.
26	3ET-9000-4AT	3RH13-36	13½"	13½"	8"	13 ⁵ / ₈ "	14"	½	1934 lbs.
28	3ET-9000-4AT	3RH13-36	13½"	13½"	8"	13 ⁵ / ₈ "	14"	½	2007 lbs.
30	3ET-9000-4AT	3RH14-41	13 ⁵ / ₈ "	13 ⁵ / ₈ "	8"	13 ⁵ / ₈ "	14"	½	2240 lbs.
32	3ET-9000-4AT	3RH14-41	13 ⁵ / ₈ "	13 ⁵ / ₈ "	8"	13 ⁵ / ₈ "	14"	½	2323 lbs.
34	3ET-9000-4AT	3RH14-41	13 ⁵ / ₈ "	13 ⁵ / ₈ "	8"	13 ⁵ / ₈ "	14"	½	2406 lbs.
36	3ET-9000-4AT	3RH16-47	15 ⁵ / ₁₆ "	15 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	2717 lbs.
38	3ET-9000-4AT	3RH16-47	15 ⁵ / ₁₆ "	15 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	2812 lbs.
40	3ET-9000-4AT	3RH16-47	15 ⁵ / ₁₆ "	15 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	2907 lbs.
42	3ET-9000-4AT	3RH18-52	17 ⁵ / ₁₆ "	17 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	3222 lbs.
44	3ET-9000-4AT	3RH18-52	17 ⁵ / ₁₆ "	17 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	3327 lbs.
46	3ET-9000-4AT	3RH20-67	19 ⁵ / ₁₆ "	19 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	4152 lbs.
48	3ET-9000-4AT	3RH20-67	19 ⁵ / ₁₆ "	19 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	4287 lbs.
50	3ET-9000-4AT	3RH20-67	19 ⁵ / ₁₆ "	19 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	4422 lbs.
52	3ET-9000-4AT	3RH22-74	21 ⁵ / ₁₆ "	21 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	4935 lbs.
54	3ET-9000-4AT	3RH22-74	21 ⁵ / ₁₆ "	21 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	5084 lbs.
56	3ET-9000-4AT	3RH22-74	21 ⁵ / ₁₆ "	21 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	5233 lbs.
58	3ET-9000-4AT	3RH24-84	23 ⁵ / ₁₆ "	23 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	5982 lbs.
60	3ET-9000-4AT	3RH24-84	23 ⁵ / ₁₆ "	23 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	6151 lbs.

* For more than 100 FPM, or for higher horsepower, use "A" drive.

† For crane with side contact conductors, minimum bridge size is 3RL11-21. Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops) plus standard controls and motorized drives. Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight. After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail.

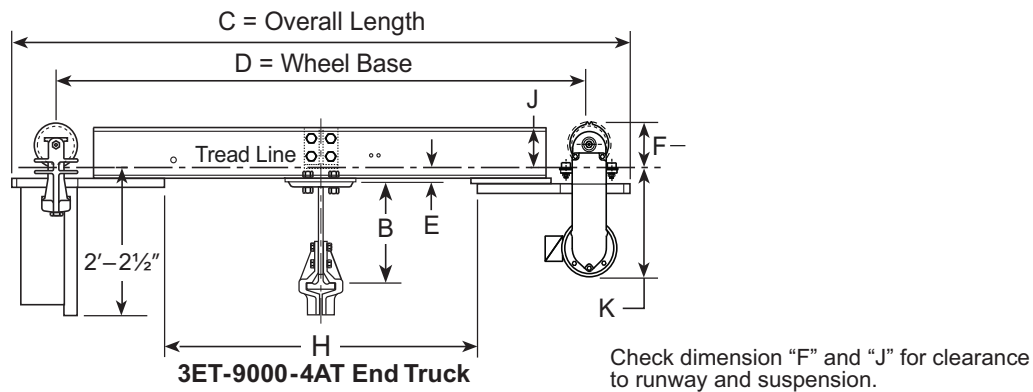
Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with these end trucks = 15" with 3I-615 or 3I-430 Interlocks in "L" Series rail, or 14" with 3I-9A interlock in "H" Series rail. Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

3C-4000-DM End Truck Specifications*

Model Number	Dimensions (inches)								# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G	H	J	K			
3ET-9000-4AT	84"	72"	2½"	57/16"	15¼"	36"	5"	167/8"	2	9000 lbs.	395 lbs.

* See "325 Series Crane End Trucks" on page G-9 for more information.

† Maximum load on 2-wheel trolley on 325 "L" Series Rail cannot exceed 5500 pounds (2750 pounds per wheel)
Maximum load on 2-wheel trolley on 325 "H" Series Rail cannot exceed 10000 pounds (5000 pounds per wheel).





Model 3C-6000-DM Dual Motor Crane

6000 lb. capacity

Crane design load = 8400 lbs.

(Live load 6000 lbs.+900 lbs. impact +1500 lbs. hoist & trolley)

Crane Conductor Bars

- Bottom Contact conductor bars can mount on all cranes and all bridge beams

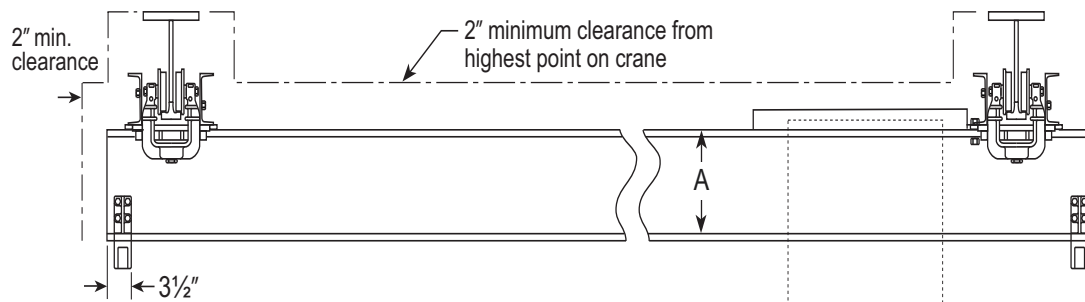
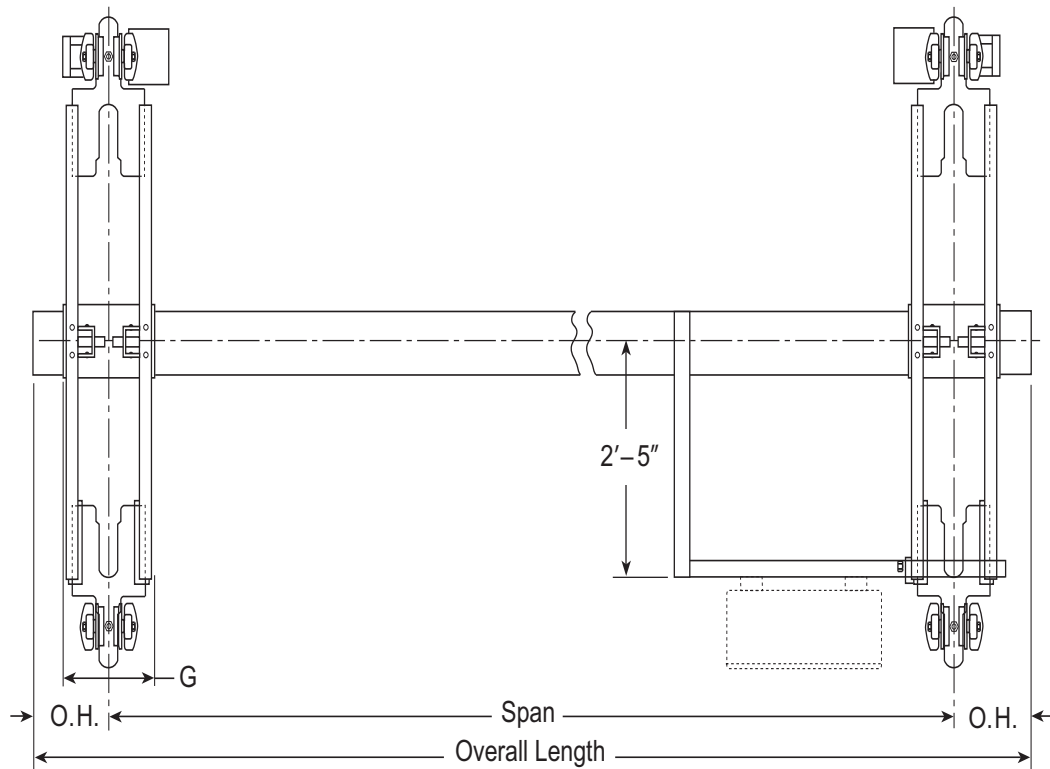
- Side Contact conductor bars
7½" gauge, through 5" dia. hoist carrier trolley wheels
9" gauge for 6½" dia. wheels

Crane Interlocks

For Electrified or Non-electrified cranes

- 3I-9A Standard requires 3RH14-41 Bridge Rail
(For larger rail, add for step cut.)
- 3I-9B Optional requires 3RH16-47 Bridge Rail
(For larger rail, add for step cut.)

See "Crane Interlocks" on page F-99 for more information.





3C-6000-DM Dual Motor Driven Crane

Span (feet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		HP each Motor @ 100 FPM*	Estimated Crane Weight
		Model No.	A	B	O.H. (min)	B	O.H.		
10	3ET-12400-4AT	3RH13-36†	12½"	12½"	9"	13⅝"	14"	½	1386 lbs.
12	3ET-12400-4AT	3RH13-36†	12½"	12½"	9"	13⅝"	14"	½	1459 lbs.
14	3ET-12400-4AT	3RH13-36†	12½"	12½"	9"	13⅝"	14"	½	1532 lbs.
16	3ET-12400-4AT	3RH13-36†	12½"	12½"	9"	13⅝"	14"	½	1605 lbs.
18	3ET-12400-4AT	3RH13-36†	12½"	12½"	9"	13⅝"	14"	½	1678 lbs.
20	3ET-12400-4AT	3RH13-36†	12½"	12½"	9"	13⅝"	14"	½	1751 lbs.
22	3ET-12400-4AT	3RH13-36†	12½"	12½"	9"	13⅝"	14"	½	1824 lbs.
24	3ET-12400-4AT	3RH13-36†	12½"	12½"	9"	13⅝"	14"	½	1897 lbs.
26	3ET-12400-4AT	3RH14-41	13⅝"	13⅝"	9"	13⅝"	14"	½	2110 lbs.
28	3ET-12400-4AT	3RH14-41	13⅝"	13⅝"	9"	13⅝"	14"	½	2193 lbs.
30	3ET-12400-4AT	3RH16-47	15⅝"	15⅝"	9"	13⅝"	14"	½	2468 lbs.
32	3ET-12400-4AT	3RH16-47	15⅝"	15⅝"	9"	13⅝"	14"	½	2563 lbs.
34	3ET-12400-4AT	3RH16-47	15⅝"	15⅝"	9"	13⅝"	14"	½	2658 lbs.
36	3ET-12400-4AT	3RH18-52	17⅝"	17⅝"	9"	13⅝"	14"	½	2943 lbs.
38	3ET-12400-4AT	3RH18-52	17⅝"	17⅝"	9"	13⅝"	14"	½	3048 lbs.
40	3ET-12400-4AT	3RH20-67	19⅝"	19⅝"	9"	13⅝"	14"	½	3783 lbs.
42	3ET-12400-4AT	3RH20-67	19⅝"	19⅝"	9"	13⅝"	14"	½	3918 lbs.
44	3ET-12400-4AT	3RH20-67	19⅝"	19⅝"	9"	13⅝"	14"	½	4053 lbs.
46	3ET-12400-4AT	3RH22-74	21⅝"	21⅝"	9"	13⅝"	14"	½	4524 lbs.
48	3ET-12400-4AT	3RH22-74	21⅝"	21⅝"	9"	13⅝"	14"	½	4673 lbs.
50	3ET-12400-4AT	3RH22-74	21⅝"	21⅝"	9"	13⅝"	14"	½	4822 lbs.
52	3ET-12400-4AT	3RH24-84	23⅝"	23⅝"	9"	13⅝"	14"	½	5511 lbs.
54	3ET-12400-4AT	3RH24-84	23⅝"	23⅝"	9"	13⅝"	14"	½	5680 lbs.
56	3ET-12400-4AT	3RH24-84	23⅝"	23⅝"	9"	13⅝"	14"	½	5849 lbs.
58	3ET-12400-4AT	3RH24-84	23⅝"	23⅝"	9"	13⅝"	14"	½	6018 lbs.
60	3ET-12400-4AT	3RH26-90	25⅝"	25⅝"	9"	13⅝"	14"	½	6559 lbs.

* For more than 100 FPM, or for higher horsepower, use "A" drive.

† Replace 3RH13-36 with 3RH14-41 if adding interlock. Step cut larger rails to 14" or 16". Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops) plus standard controls and motorized drives. Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail.

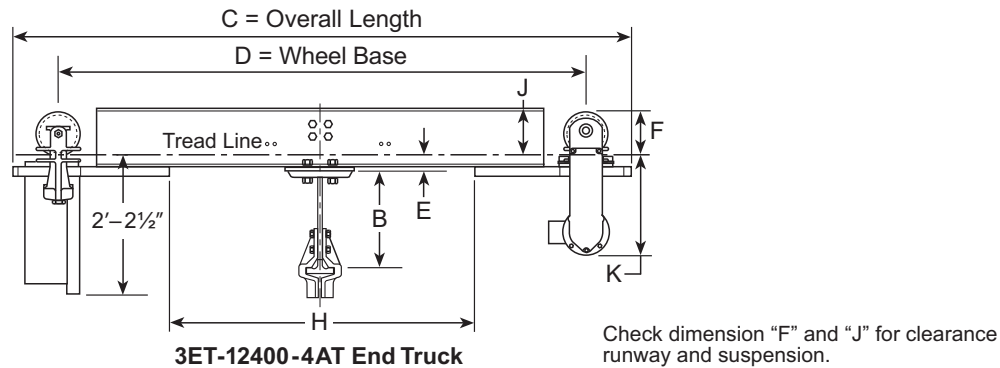
Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with these end trucks = 14" with 3I-9A or 3I-9B interlock in "H" Series rail. Minimum O.H. shown allows for width of end truck. Consult factory for overhangs not shown.

3C-6000-DM End Truck Specifications*

Model Number	Dimensions (inches)							# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G	H	J			
3ET-12400-4AT	84"	72"	2½"	57/16"	15½"	42"	5"	2	12,400 lbs.	413 lbs.

* See "325 Series Crane End Trucks" on page G-9 for more information.

† Maximum load on 2-wheel trolley on 325 "L" Series Rail cannot exceed 5500 pounds (2750 pounds per wheel)
Maximum load on 2-wheel trolley on 325 "H" Series Rail cannot exceed 10000 pounds (5000 pounds per wheel).



Model 3C-10000-DM Dual Motor Crane

10000 lb. capacity

Crane design load = 14,000 lbs. (Live load 10,000 lbs.+1500lbs. impact +2500 lbs. hoist & trolley)

Crane Conductor Bars

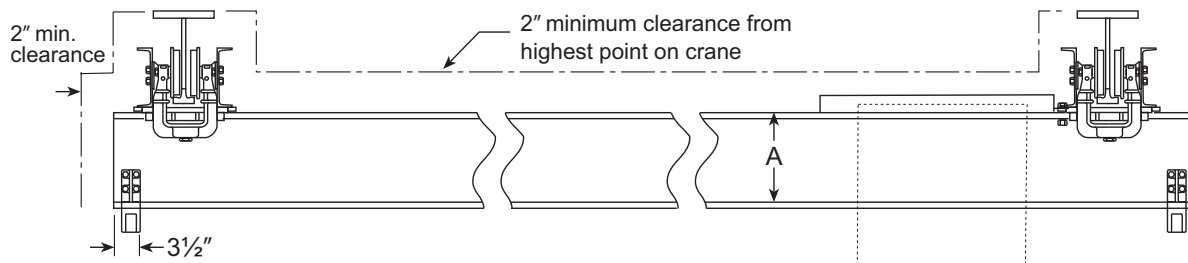
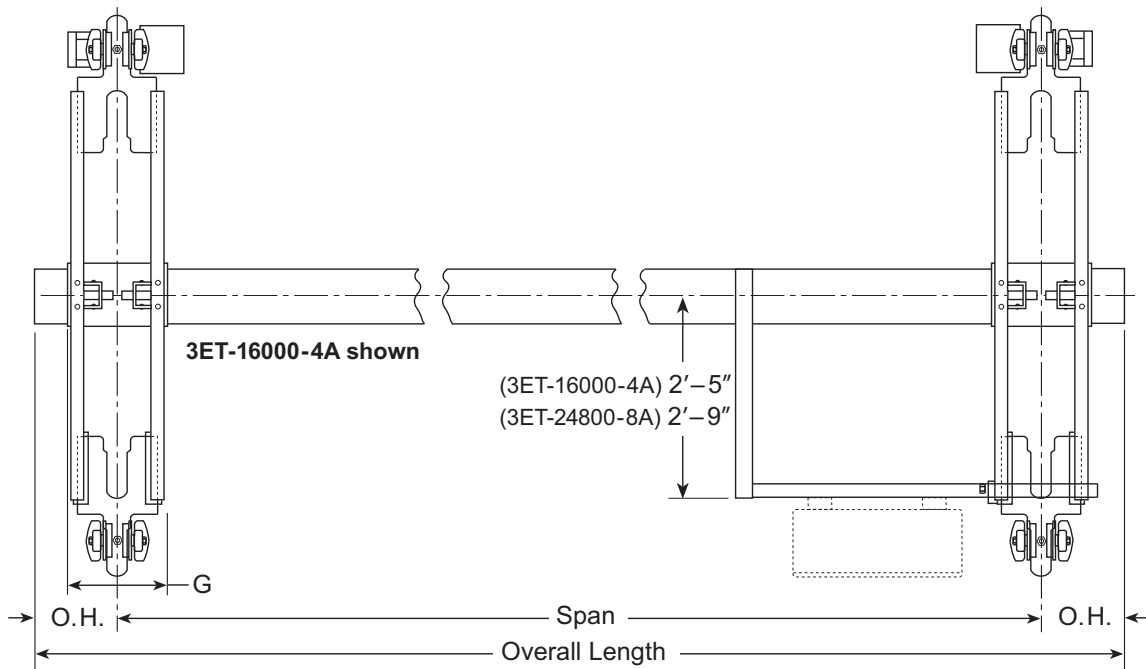
- Bottom Contact conductor bars can mount on all cranes and all bridge beams
- Side Contact conductor bars
7½" gauge, through 5" dia. hoist carrier trolley wheels
9" gauge for 6½" dia. wheels

Crane Interlocks

For Electrified or Non-electrified cranes

- 3I-9A Standard requires 3RH14-41 Bridge Rail
(For larger rail, add for step cut.)
- 3I-9B Optional requires 3RH16-47 Bridge Rail
(For larger rail, add for step cut.)

See "Crane Interlocks" on page F-99 for more information.





3C-10000-DM Dual Motor Driven Crane

Span (feet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		HP each Motor @ 100FPM	Estimated Crane Weight
		Model No.	A	B	O.H. (min)	B	O.H.		
10	3ET-16000-4A	3RH13-36*	12½"	12½"	9"	13⅝"	14"	½	1546 lbs.
12	3ET-16000-4A	3RH13-36*	12½"	12½"	9"	13⅝"	14"	½	1619 lbs.
14	3ET-16000-4A	3RH13-36*	12½"	12½"	9"	13⅝"	14"	½	1692 lbs.
16	3ET-16000-4A	3RH13-36*	12½"	12½"	9"	13⅝"	14"	½	1765 lbs.
18	3ET-16000-4A	3RH13-36*	12½"	12½"	9"	13⅝"	14"	½	1838 lbs.
20	3ET-16000-4A	3RH14-41	13⅝"	13⅝"	9"	13⅝"	14"	½	2021 lbs.
22	3ET-16000-4A	3RH14-41	13⅝"	13⅝"	9"	13⅝"	14"	½	2104 lbs.
24	3ET-16000-4A	3RH16-47	15⅝"	15⅝"	9"	13⅝"	14"	½	2343 lbs.
26	3ET-16000-4A	3RH16-47	15⅝"	15⅝"	9"	13⅝"	14"	½	2438 lbs.
28	3ET-16000-4A	3RH18-52	17⅝"	17⅝"	9"	13⅝"	14"	½	2683 lbs.
30	3ET-16000-4A	3RH18-52	17⅝"	17⅝"	9"	13⅝"	14"	½	2788 lbs.
32	3ET-16000-4A	3RH20-67	19⅝"	19⅝"	9"	13⅝"	14"	¾	3403 lbs.
34	3ET-24800-8A	3RH20-67	19⅝"	19⅝"	10"	13⅝"	18"	¾	4098 lbs.
36	3ET-24800-8A	3RH20-67	19⅝"	19⅝"	10"	13⅝"	18"	¾	4233 lbs.
38	3ET-24800-8A	3RH22-74	21⅝"	21⅝"	10"	13⅝"	18"	¾	4648 lbs.
40	3ET-24800-8A	3RH22-74	21⅝"	21⅝"	10"	13⅝"	18"	¾	4797 lbs.
42	3ET-24800-8A	3RH24-84	23⅝"	23⅝"	10"	13⅝"	18"	¾	5386 lbs.
44	3ET-24800-8A	3RH24-84	23⅝"	23⅝"	10"	13⅝"	18"	¾	5555 lbs.
46	3ET-24800-8A	3RH24-84	23⅝"	23⅝"	10"	13⅝"	18"	¾	5724 lbs.
48	3ET-24800-8A	3RH24-84	23⅝"	23⅝"	10"	13⅝"	18"	¾	5893 lbs.
50	3ET-24800-8A	3RH26-90	25⅝"	25⅝"	10"	13⅝"	18"	¾	6374 lbs.
52	3ET-24800-8A	3RH30-110	29⅝"	29⅝"	10"	13⅝"	18"	¾	7635 lbs.
54	3ET-24800-8A	3RH30-110	29⅝"	29⅝"	10"	13⅝"	18"	¾	7856 lbs.
56	3ET-24800-8A	3RH30-110	29⅝"	29⅝"	10"	13⅝"	18"	¾	8077 lbs.
58	3ET-24800-8A	3RH30-110	29⅝"	29⅝"	10"	13⅝"	18"	¾	8298 lbs.
60	3ET-24800-8A	3RH30-110	29⅝"	29⅝"	10"	13⅝"	18"	¾	8519 lbs.

* Replace 3RH13-36 with 3RH14-41 if adding interlock. Step cut larger rails to 14" or 16". Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops) plus standard controls and motorized drives. Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail.

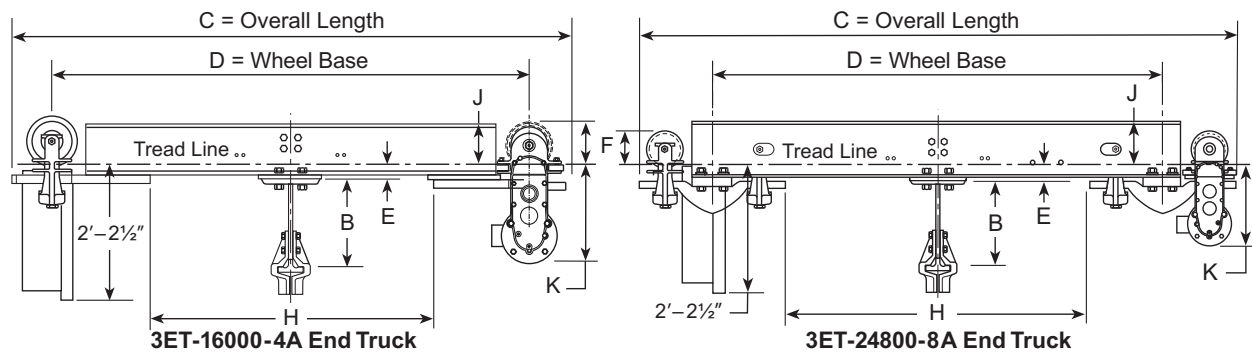
Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with these end trucks = 18" with 3I-9A or 3I-9B interlock in "H" Series rail. Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

3C-10000-DM End Truck Specifications*

Model Number	Dimensions (inches)								# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G	H	J	K			
3ET-16000-4A	84"	72"	2½"	7⅛"	15½"	42"	7"	15⅜"	2	16,000 lbs.	493 lbs.
3ET-24800-8A	95"	72"	2½"	5⅞"	18¼"	49"	7"	16⅜"	4	24,800 lbs.	773 lbs.

* See "325 Series Crane End Trucks" on page G-9 for more information.

† Maximum load on 2-wheel trolley on 325 "L" Series Rail cannot exceed 5500 pounds (2750 pounds per wheel)
Maximum load on 2-wheel trolley on 325 "H" Series Rail cannot exceed 10000 pounds (5000 pounds per wheel).



Check dimension "F" and "J" for clearance to runway and suspension.



Model 3C-15000-DM Dual Motor Crane

15000 lb. capacity

Crane design load = 20,500 lbs.

(Live load 15,000lbs.+2250lbs. impact+3000 lbs. hoist & trolley)

Crane Conductor Bars

- Bottom Contact conductor bars can mount on all cranes and all bridge beams

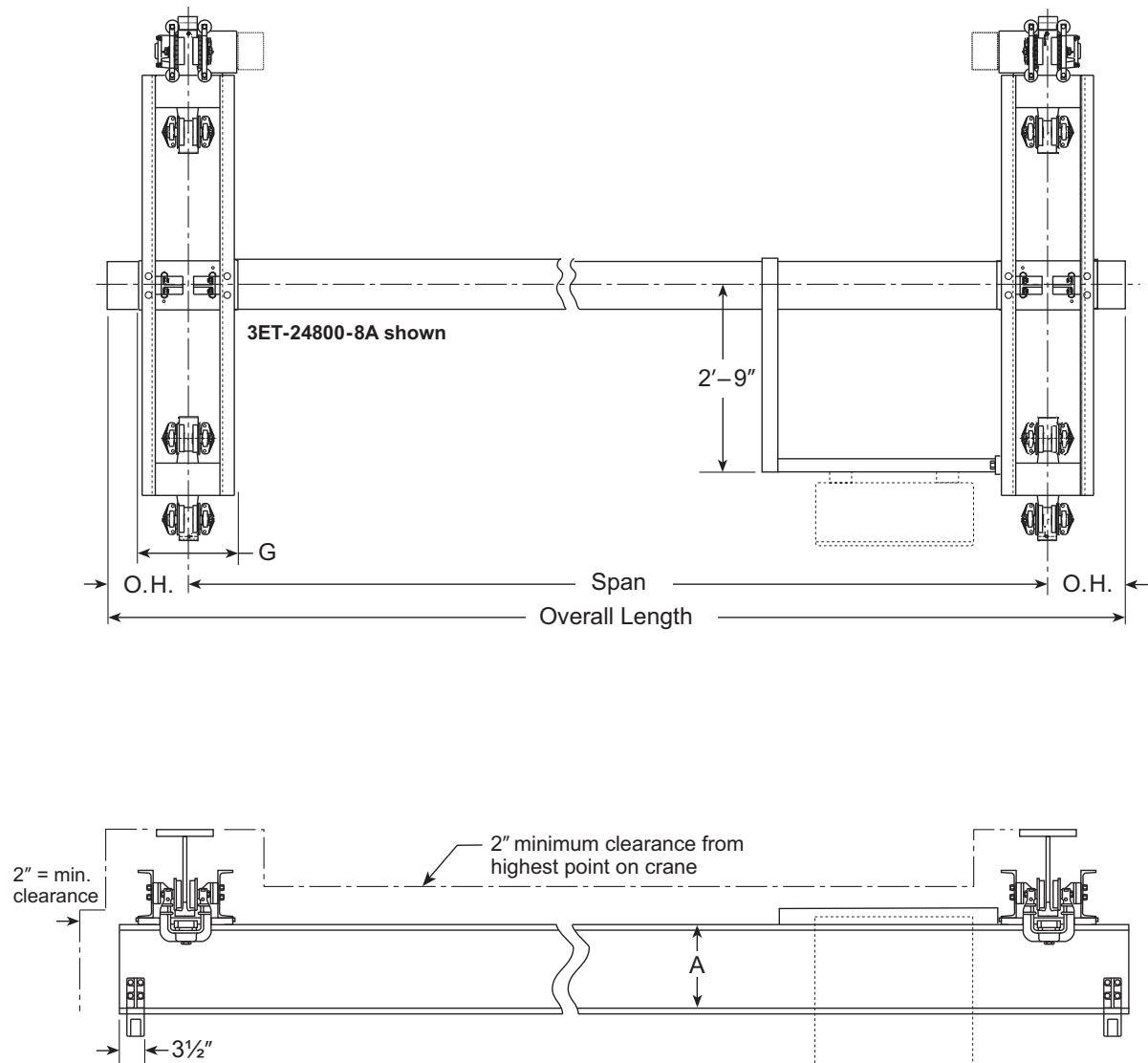
- Side Contact conductor bars
7½" gauge, through 5" dia. hoist carrier trolley wheels
9" gauge for 6½" dia. wheels

Crane Interlocks

For Electrified or Non-electrified cranes

- 3I-9A Standard—requires 3RH14-41 Bridge Rail
(For larger rail, add for step cut.)
- 3I-9B Optional—requires 3RH16-47 Bridge Rail
(For larger rail, add for step cut.)

See "Crane Interlocks" on page F-99 for more information.





3C-15000-DM Dual Motor Driven Crane

Span (feet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		HP each Motor @ 100FPM	Estimated Crane Weight
		Model No.	A	B	O.H. (min)	B	O.H.		
10	3ET-24800-8A	3RH13-36*	12½"	12½"	10"	13⅝"	18"	½	2106 lbs.
12	3ET-24800-8A	3RH13-36*	12½"	12½"	10"	13⅝"	18"	½	2179 lbs.
14	3ET-24800-8A	3RH13-36*	12½"	12½"	10"	13⅝"	18"	½	2252 lbs.
16	3ET-24800-8A	3RH14-41	13⅝"	13⅝"	10"	13⅝"	18"	½	2415 lbs.
18	3ET-24800-8A	3RH18-52	15⅝"	15⅝"	10"	13⅝"	18"	½	2718 lbs.
20	3ET-24800-8A	3RH18-52	17⅝"	17⅝"	10"	13⅝"	18"	½	2823 lbs.
22	3ET-24800-8A	3RH18-52	17⅝"	17⅝"	10"	13⅝"	18"	½	2928 lbs.
24	3ET-24800-8A	3RH18-52	17⅝"	17⅝"	10"	13⅝"	18"	½	3033 lbs.
26	3ET-24800-8A	3RH20-67	19⅝"	19⅝"	10"	13⅝"	18"	½	3558 lbs.
28	3ET-24800-8A	3RH20-67	19⅝"	19⅝"	10"	13⅝"	18"	½	3693 lbs.
30	3ET-24800-8A	3RH20-67	19⅝"	19⅝"	10"	13⅝"	18"	¾	3828 lbs.
32	3ET-24800-8A	3RH22-74	21⅝"	21⅝"	10"	13⅝"	18"	¾	4201 lbs.
34	3ET-24800-8A	3RH22-74	21⅝"	21⅝"	10"	13⅝"	18"	¾	4350 lbs.
36	3ET-24800-8A	3RH24-84	23⅝"	23⅝"	10"	13⅝"	18"	¾	4879 lbs.
38	3ET-24800-8A	3RH24-84	23⅝"	23⅝"	10"	13⅝"	18"	¾	5048 lbs.
40	3ET-24800-8A	3RH24-84	23⅝"	23⅝"	10"	13⅝"	18"	¾	5217 lbs.
42	3ET-24800-8A	3RH26-90	25⅝"	25⅝"	10"	13⅝"	18"	¾	5650 lbs.
44	3ET-24800-8A	3RH30-110	29⅝"	29⅝"	10"	13⅝"	18"	¾	6751 lbs.
46	3ET-24800-8A	3RH30-110	29⅝"	29⅝"	10"	13⅝"	18"	¾	6972 lbs.
48	3ET-24800-8A	3RH30-110	29⅝"	29⅝"	10"	13⅝"	18"	¾	7193 lbs.
50	3ET-24800-8A	3RH30-110	29⅝"	29⅝"	10"	13⅝"	18"	¾	7414 lbs.
52	3ET-24800-8A	3RH30-110	29⅝"	29⅝"	10"	13⅝"	18"	¾	7635 lbs.
54	3ET-24800-8A	3RH30-110	29⅝"	29⅝"	10"	13⅝"	18"	¾	7856 lbs.
56	3ET-24800-8A	3RH32-120	31⅝"	31⅝"	10"	13⅝"	18"	¾	8657 lbs.
58	3ET-28000-8A	3RH32-120	31⅝"	31⅝"	10"	13⅝"	18"	¾	8986 lbs.
60	3ET-28000-8A	3RH34-130	33⅝"	33⅝"	10"	13⅝"	18"	¾	9847 lbs.

* Replace 3RH13-36 with 3RH14-41 if adding interlock. Step cut larger rails to 14" or 16". Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops) plus standard controls and motorized drives. Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail.

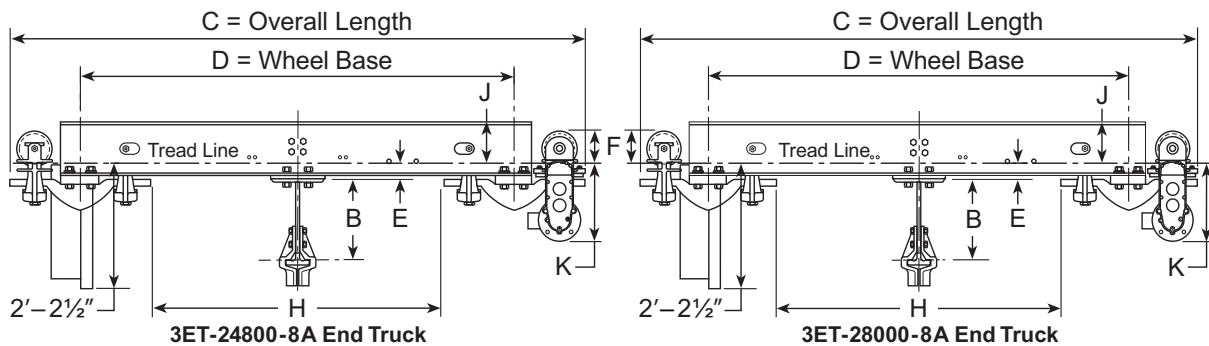
Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with these end trucks = 18" with 3I-9A or 3I-9B interlock in "H" Series rail. Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

3C-15000-DM End Truck Specifications*

Model Number	Dimensions (inches)								# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G	H	J	K			
3ET-24800-8A	95"	72"	2½"	5⅞"	18¼"	49"	7"	16⅓/₁₆"	4	24,800 lbs.	773 lbs.
3ET-28000-8A	95"	72"	2½"	7⅞"	18½"	49"	8"	16⅓/₁₆"	4	28,000 lbs.	817 lbs.

* See "325 Series Crane End Trucks" on page G-9 for more information.

† Maximum load on 2-wheel trolley on 325 "L" Series Rail cannot exceed 5500 pounds (2750 pounds per wheel)
Maximum load on 2-wheel trolley on 325 "H" Series Rail cannot exceed 10000 pounds (5000 pounds per wheel).



Check dimension "F" and "J" for clearance to runway and suspension.

Model 3C-20000-DM Dual Motor Crane

20000 lb. capacity

Crane design load = 27,000lbs.

(Live load 20,000 lbs.+3050 lbs. impact+4000 lbs. hoist & trolley)

Crane Conductor Bars

- Bottom Contact conductor bars can mount on all cranes and all bridge beams

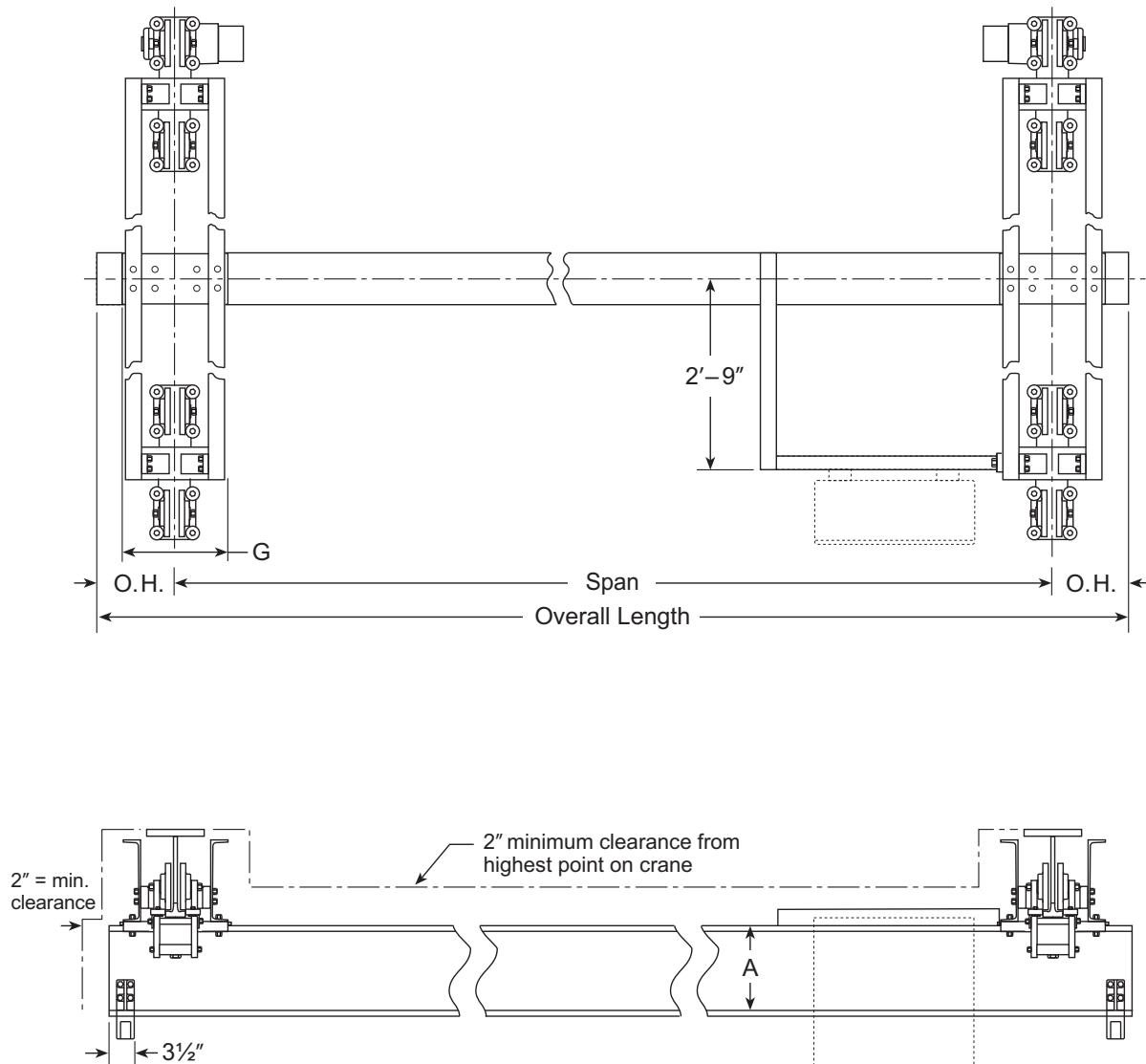
- Side Contact conductor bars
7½" gauge, through 5" dia. hoist carrier trolley wheels
9" gauge for 6½" dia. wheels

Crane Interlocks

For Electrified or Non-electrified cranes

- 3I-9A Standard—requires 3RH14-41 Bridge Rail
(For larger rail, add for step cut.)
- 3I-9B Optional—requires 3RH16-47 Bridge Rail
(For larger rail, add for step cut.)

See "Crane Interlocks" on page F-99 for more information.





3C-20000-DM Dual Motor Driven Crane

Span (feet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		HP each Motor @ 100FPM	Estimated Crane Weight
		Model No.	A	B	O.H. (min)	B	O.H.		
10	3ET-38000-8SRB	3RH13-36*	12½"	12½"	11"	13⅝"	18"	¾	3172 lbs.
12	3ET-38000-8SRB	3RH14-41	13⅝"	13⅝"	11"	13⅝"	18"	¾	3315 lbs.
14	3ET-38000-8SRB	3RH18-52	17⅝"	17⅝"	11"	13⅝"	18"	¾	3574 lbs.
16	3ET-38000-8SRB	3RH18-52	17⅝"	17⅝"	11"	13⅝"	18"	¾	3679 lbs.
18	3ET-38000-8SRB	3RH18-52	17⅝"	17⅝"	11"	13⅝"	18"	¾	3784 lbs.
20	3ET-38000-8SRB	3RH20-67	19⅝"	19⅝"	11"	13⅝"	18"	¾	4219 lbs.
22	3ET-38000-8SRB	3RH20-67	19⅝"	19⅝"	11"	13⅝"	18"	¾	4354 lbs.
24	3ET-38000-8SRB	3RH20-67	19⅝"	19⅝"	11"	13⅝"	18"	¾	4489 lbs.
26	3ET-38000-8SRB	3RH22-74	21⅝"	21⅝"	11"	13⅝"	18"	¾	4624 lbs.
28	3ET-38000-8SRB	3RH22-74	21⅝"	21⅝"	11"	13⅝"	18"	¾	4977 lbs.
30	3ET-38000-8SRB	3RH24-84	23⅝"	23⅝"	11"	13⅝"	18"	1	5446 lbs.
32	3ET-38000-8SRB	3RH24-84	23⅝"	23⅝"	11"	13⅝"	18"	1	5615 lbs.
34	3ET-38000-8SRB	3RH26-90	25⅝"	25⅝"	11"	13⅝"	18"	1	6000 lbs.
36	3ET-38000-8SRB	3RH26-90	25⅝"	25⅝"	11"	13⅝"	18"	1	6181 lbs.
38	3ET-38000-8SRB	3RH28-93	27⅝"	27⅝"	11"	13⅝"	18"	1	6482 lbs.
40	3ET-38000-8SRB	3RH30-110	29⅝"	29⅝"	11"	13⅝"	18"	1	7383 lbs.
42	3ET-38000-8SRB	3RH30-110	29⅝"	29⅝"	11"	13⅝"	18"	1	7604 lbs.
44	3ET-38000-8SRB	3RH30-110	29⅝"	29⅝"	11"	13⅝"	18"	1	7825 lbs.
46	3ET-38000-8SRB	3RH30-110	29⅝"	29⅝"	11"	13⅝"	18"	1	8052 lbs.
48	3ET-38000-8SRB	3RH32-120	31⅝"	31⅝"	11"	13⅝"	18"	1½	8773 lbs.
50	3ET-38000-8SRB	3RH32-120	31⅝"	31⅝"	11"	13⅝"	18"	1½	9014 lbs.
52	3ET-38000-8SRB	3RH32-120	31⅝"	31⅝"	11"	13⅝"	18"	1½	9255 lbs.
54	3ET-38000-8SRB	3RH34-130	33⅝"	33⅝"	11"	13⅝"	18"	1½	10,056 lbs.
56	3ET-38000-8SRB	3RH34-130	33⅝"	33⅝"	11"	13⅝"	18"	1½	10,317 lbs.
58	3ET-38000-8SRB	3RH36-140	35⅝"	35⅝"	11"	13⅝"	18"	1½	11,178 lbs.
60	3ET-38000-8SRB	3RH36-140	35⅝"	35⅝"	11"	13⅝"	18"	1½	11,459 lbs.

* Replace 3RH13-36 with 3RH14-41 if adding interlock. Step cut larger rails to 14" or 16". Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops) plus standard controls and motorized drives. Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail.

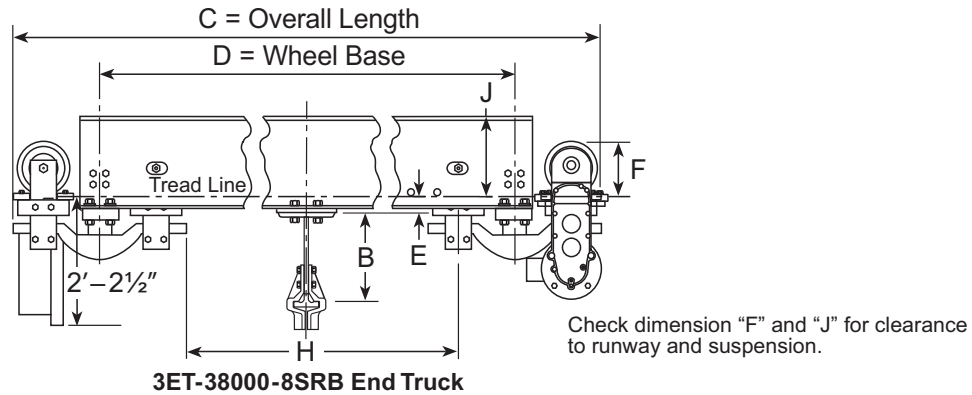
Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with these end trucks = 18" with 3I-9A or 3I-9B interlock in "H" Series rail. Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

3C-20000-DM End Truck Specifications*

Model Number	Dimensions (inches)								# of 2-Wheel Trolley	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G	H	J	K			
3ET-38000-8SRB	99½"	72"	2½"	9"	19"	44½"	8"	19"	4	38,000 lbs.	1306 lbs.

* See "325 Series Crane End Trucks" on page G-9 for more information.

† Maximum load on 2-wheel trolley on 325 "L" Series Rail cannot exceed 5500 pounds (2750 pounds per wheel)
Maximum load on 2-wheel trolley on 325 "H" Series Rail cannot exceed 10000 pounds (5000 pounds per wheel).





Double Girder Cranes

Standard double girder cranes have two bridge beams, laced together with cross braces to assure a rigid structure and maintain the bridge gauge, supported by standard wheelbase end trucks. Standard 2-ton through 10-ton capacity double girder cranes have two motorized and two non-motorized end trucks. Standard 15- and 20-ton double girder cranes have 4 motorized end trucks.

Typical crane configuration shown below. See the following pages for specifications by capacity and span. For multiple run-way cranes, or cranes with special long wheelbase end trucks and two bridges mounted on each end truck, contact TC/A sales.

Crane Conductor Bars

- 7½" gauge, through 5" dia. hoist carrier trolley wheels, requires minimum 3RL11-21 bridge beam
- 9" gauge for 6½" dia. wheels

Crane Interlocks

Note 3I-9A or 3I-9B Interlocks are recommended on all interlocking double girder cranes, which require "H" Series bridge beams.

- Electrified or Non-electrified cranes:
Model 3I-9A Interlock—requires 3RH14-41 bridge beam
(add for step cuts if larger rail)
Model 3I-9B Interlock—requires 3RH16-47 bridge beam
(add for step cuts if larger rail)
- See "Crane Interlocks" on page F-99 for more information.

Maximum Load on 2 Wheel Trolley

- 325 "L" Series Rail cannot exceed 5500 pounds (2750 pounds per wheel)
- 325 "H" Series Rail cannot exceed 10000 pounds (5000 pounds per wheel)

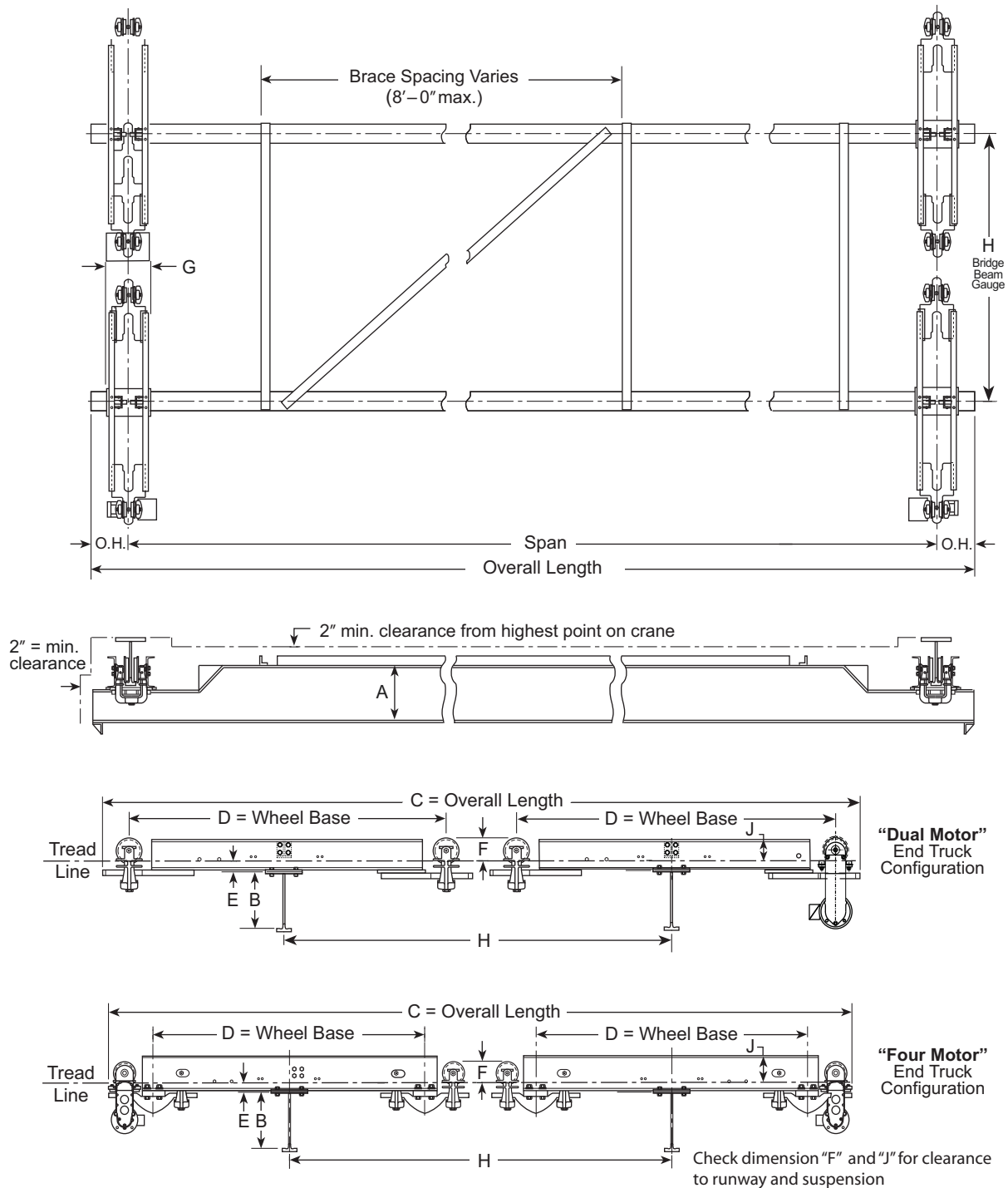
Double Girder Specifications

Model	Capacity	Crane End Load*	Impact	Hoist	Carrier
3C-2000-DGDM	2000 lbs..	5000 lbs.	300 lbs.	800 lbs.	1900 lbs.
3C-4000-DGDM	4000 lbs..	7600 lbs.	600 lbs.	1000 lbs.	2000 lbs.
3C-6000-DGDM	6000 lbs..	10,100 lbs.	900 lbs.	1100 lbs.	2100 lbs.
3C-10000-DGDM	10,000 lbs..	15,600 lbs.	1500 lbs.	1600 lbs.	2500 lbs.
3C-15000-DGDM	15,000 lbs..	22,650 lbs.	2250 lbs.	2400 lbs.	3000 lbs.
3C-20000-DGDM	20,000 lbs..	29,000 lbs.	3000 lbs.	2900 lbs.	3500 lbs.
3C-30000-DGDM	30,000 lbs..	42,200 lbs.	4500 lbs.	3200 lbs.	4500 lbs.
3C-40000-DGDM	40,000 lbs..	56,000 lbs.	6000 lbs.	4500 lbs.	5500 lbs.

* Capacity (live load) + impact + hoist + carrier

Total End Load

After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail.



Double Girder Crane Clearance Drawing



Model 3C-2000-DGDM Double Girder Dual Motor Crane

Span (feet)	End Truck Models	Bridge Beam*		Non-Interlocking		Interlocking		HP each Motor @ 100 FPM†	Estimated Crane Weight
		Model No.	A	B	O.H. (min)	B	O.H.		
20	3ET-9000-4/-4AT	3RL8-18**	7 ³ / ₈ "	7 ³ / ₈ "	8"	13 ⁵ / ₈ "	14"	½	2907 lbs.
22	3ET-9000-4/-4AT	3RL11-21	10 ³ / ₈ "	10 ³ / ₈ "	8"	13 ⁵ / ₈ "	14"	½	3174 lbs.
24	3ET-9000-4/-4AT	3RL11-21	10 ³ / ₈ "	10 ³ / ₈ "	8"	13 ⁵ / ₈ "	14"	½	3309 lbs.
26	3ET-9000-4/-4AT	3RL11-24	10½"	10½"	8"	13 ⁵ / ₈ "	14"	½	3612 lbs.
28	3ET-9000-4/-4AT	3RL11-24	10½"	10½"	8"	13 ⁵ / ₈ "	14"	½	3759 lbs.
30	3ET-9000-4/-4AT	3RL13-27	12½"	12½"	8"	13 ⁵ / ₈ "	14"	½	4098 lbs.
32	3ET-9000-4/-4AT	3RL13-27	12½"	12½"	8"	13 ⁵ / ₈ "	14"	½	4257 lbs.
34	3ET-9000-4/-4AT	3RL13-27	12½"	12½"	8"	13 ⁵ / ₈ "	14"	½	4416 lbs.
36	3ET-9000-4/-4AT	3RL14-35	13½"	13½"	8"	13 ⁵ / ₈ "	14"	½	5183 lbs.
38	3ET-9000-4/-4AT	3RH16-47	15 ⁵ / ₁₆ "	15 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	6334 lbs.
40	3ET-9000-4/-4AT	3RH16-47	15 ⁵ / ₁₆ "	15 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	6573 lbs.
42	3ET-9000-4/-4AT	3RH18-52	17 ⁵ / ₁₆ "	17 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	7252 lbs.
44	3ET-9000-4/-4AT	3RH18-52	17 ⁵ / ₁₆ "	17 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	7511 lbs.
46	3ET-9000-4/-4AT	3RH18-52	17 ⁵ / ₁₆ "	17 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	7770 lbs.
48	3ET-9000-4/-4AT	3RH20-67	19 ⁵ / ₁₆ "	19 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	9529 lbs.
50	3ET-9000-4/-4AT	3RH20-67	19 ⁵ / ₁₆ "	19 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	9848 lbs.
52	3ET-9000-4/-4AT	3RH20-67	19 ⁵ / ₁₆ "	19 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	10,167 lbs.
54	3ET-9000-4/-4AT	3RH22-74	21 ⁵ / ₁₆ "	21 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	11,270 lbs.
56	3ET-9000-4/-4A	3RH22-74	21 ⁵ / ₁₆ "	21 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	¾	11,617 lbs.
58	3ET-9000-4/-4A	3RH22-74	21 ⁵ / ₁₆ "	21 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	¾	11,964 lbs.
60	3ET-9000-4/-4A	3RH24-84	23 ⁵ / ₁₆ "	23 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	¾	13,551 lbs.

* Minimum Bridge Beam 3RH14-41 for interlocks. Step cut larger rails to 14" or 16". Add weight and cost for change.

** For crane with side contact conductors, minimum bridge size is 3RL11-21. Add weight and cost for change.

† For more than 100 FPM, or for higher horsepower, use "A" drive.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam, cross bracing and end stops) plus standard controls and motorized drives. Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with these end trucks = 14" with 3I-9A or 3I-9B interlock in "H" Series rail. Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

Clearance Dimensions*

Crane	C	D	E	F	G	H	J
3C-2000-DGDM	180"	72"	2½"	5 ⁷ / ₁₆ "	15¼"	96"	5"

* See "325 Series Crane End Trucks" on page G-9 for more information.

See "Double Girder Crane Clearance Drawing" on page F-78.



Model 3C-4000-DGDM Double Girder Dual Motor Crane

Span(f eet)	End Truck Models	Bridge Beam*		Non-Interlocking		Interlocking		HP each Motor @ 100 FPM†	Estimated Crane Weight
		Model No.	A	B	O.H. (min)	B	O.H.		
20	3ET-9000-4/-4AT	3RL11-21	10 ³ / ₈ "	10 ³ / ₈ "	8"	13 ⁵ / ₈ "	14"	½	3039 lbs.
22	3ET-9000-4/-4AT	3RL11-24	10 ¹ / ₂ "	10 ¹ / ₂ "	8"	13 ⁵ / ₈ "	14"	½	3318 lbs.
24	3ET-9000-4/-4AT	3RL11-24	10 ¹ / ₂ "	10 ¹ / ₂ "	8"	13 ⁵ / ₈ "	14"	½	3465 lbs.
26	3ET-9000-4/-4AT	3RL11-24	10 ¹ / ₂ "	10 ¹ / ₂ "	8"	13 ⁵ / ₈ "	14"	½	3612 lbs.
28	3ET-9000-4/-4AT	3RL13-27	12 ¹ / ₂ "	12 ¹ / ₂ "	8"	13 ⁵ / ₈ "	14"	½	3939 lbs.
30	3ET-9000-4/-4AT	3RL13-27	12 ¹ / ₂ "	12 ¹ / ₂ "	8"	13 ⁵ / ₈ "	14"	½	4098 lbs.
32	3ET-9000-4/-4AT	3RL13-27	12 ¹ / ₂ "	12 ¹ / ₂ "	8"	13 ⁵ / ₈ "	14"	½	4257 lbs.
34	3ET-9000-4/-4AT	3RL13-27	12 ¹ / ₂ "	12 ¹ / ₂ "	8"	13 ⁵ / ₈ "	14"	½	4416 lbs.
36	3ET-9000-4/-4AT	3RH14-41	13 ⁵ / ₈ "	13 ⁵ / ₈ "	8"	13 ⁵ / ₈ "	14"	½	5639 lbs.
38	3ET-9000-4/-4AT	3RH16-47	15 ⁵ / ₁₆ "	15 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	6334 lbs.
40	3ET-9000-4/-4AT	3RH16-47	15 ⁵ / ₁₆ "	15 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	6573 lbs.
42	3ET-9000-4/-4AT	3RH18-52	17 ⁵ / ₁₆ "	17 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	7252 lbs.
44	3ET-9000-4/-4AT	3RH18-52	17 ⁵ / ₁₆ "	17 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	7511 lbs.
46	3ET-9000-4/-4AT	3RH18-52	17 ⁵ / ₁₆ "	17 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	½	7770 lbs.
48	3ET-9000-4/-4A	3RH20-67	19 ⁵ / ₁₆ "	19 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	¾	9655 lbs.
50	3ET-9000-4/-4A	3RH20-67	19 ⁵ / ₁₆ "	19 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	¾	9974 lbs.
52	3ET-9000-4/-4A	3RH20-67	19 ⁵ / ₁₆ "	19 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	¾	10,293 lbs.
54	3ET-9000-4/-4A	3RH22-74	21 ⁵ / ₁₆ "	21 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	¾	11,396 lbs.
56	3ET-9000-4/-4A	3RH22-74	21 ⁵ / ₁₆ "	21 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	¾	11,743 lbs.
58	3ET-9000-4/-4A	3RH22-74	21 ⁵ / ₁₆ "	21 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	¾	12,090 lbs.
60	3ET-9000-4/-4A	3RH24-84	23 ⁵ / ₁₆ "	23 ⁵ / ₁₆ "	8"	13 ⁵ / ₈ "	14"	¾	13,677 lbs.

* Minimum Bridge Beam 3RH14-41 for interlocks. Step cut larger rails to 14" or 16". Add weight and cost for change.

† For more than 100 FPM, or for higher horsepower, use "A" drive.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam, cross bracing and end stops) plus standard controls and motorized drives. Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with these end trucks = 14" with 3I-9A or 3I-9B interlock in "H" Series rail. Minimum O.H. shown allows for width of end truck. Consult factory for overhangs not shown.

Clearance Dimensions*

Crane	C	D	E	F	G	H	J
3C-4000-DGDM	180"	72"	2½"	5 ⁷ / ₁₆ "	15¼"	96"	5"

* See "325 Series Crane End Trucks" on page G-9 for more information.
See "Double Girder Crane Clearance Drawing" on page F-78.



Model 3C-6000-DGDM Double Girder Dual Motor Crane

Span(f eet)	End Truck Models	Bridge Beam*		Non-Interlocking		Interlocking		HP each Motor @ 100 FPM†	Estimated Crane Weight
		Model No.	A	B	O.H. (min)	B	O.H.		
20	3ET-9000-4/-4AT	3RL11-24	10½"	10½"	8"	13⅝"	14"	½	3171 lbs.
22	3ET-9000-4/-4AT	3RL11-24	10½"	10½"	8"	13⅝"	14"	½	3318 lbs.
24	3ET-9000-4/-4AT	3RL13-27	12½"	12½"	8"	13⅝"	14"	½	3621 lbs.
26	3ET-9000-4/-4AT	3RL13-27	12½"	12½"	8"	13⅝"	14"	½	3780 lbs.
28	3ET-9000-4/-4AT	3RL13-27	12½"	12½"	8"	13⅝"	14"	½	3939 lbs.
30	3ET-9000-4/-4AT	3RH14-41	13⅝"	13⅝"	8"	13⅝"	14"	½	4994 lbs.
32	3ET-9000-4/-4AT	3RH14-41	13⅝"	13⅝"	8"	13⅝"	14"	½	5209 lbs.
34	3ET-9000-4/-4AT	3RH14-41	13⅝"	13⅝"	8"	13⅝"	14"	½	5424 lbs.
36	3ET-9000-4/-4AT	3RH16-47	15⅝"	15⅝"	8"	13⅝"	14"	½	6095 lbs.
38	3ET-9000-4/-4AT	3RH16-47	15⅝"	15⅝"	8"	13⅝"	14"	½	6334 lbs.
40	3ET-9000-4/-4AT	3RH16-47	15⅝"	15⅝"	8"	13⅝"	14"	½	6573 lbs.
42	3ET-9000-4/-4A	3RH18-52	17⅝"	17⅝"	8"	13⅝"	14"	¾	7252 lbs.
44	3ET-9000-4/-4A	3RH18-52	17⅝"	17⅝"	8"	13⅝"	14"	¾	7511 lbs.
46	3ET-9000-4/-4A	3RH18-52	17⅝"	17⅝"	8"	13⅝"	14"	¾	7770 lbs.
48	3ET-9000-4/-4A	3RH20-67	19⅝"	19⅝"	8"	13⅝"	14"	¾	9655 lbs.
50	3ET-9000-4/-4A	3RH20-67	19⅝"	19⅝"	8"	13⅝"	14"	¾	9974 lbs.
52	3ET-9000-4/-4A	3RH20-67	19⅝"	19⅝"	8"	13⅝"	14"	¾	10,293 lbs.
54	3ET-9000-4/-4A	3RH22-74	21⅝"	21⅝"	8"	13⅝"	14"	¾	11,396 lbs.
56	3ET-9000-4/-4A	3RH22-74	21⅝"	21⅝"	8"	13⅝"	14"	¾	11,743 lbs.
58	3ET-9000-4/-4A	3RH22-74	21⅝"	21⅝"	8"	13⅝"	14"	¾	12,090 lbs.
60	3ET-9000-4/-4A	3RH24-84	23⅝"	23⅝"	8"	13⅝"	14"	¾	13,677 lbs.

* Minimum Bridge Beam 3RH14-41 for interlocks. Step cut larger rails to 14" or 16". Add weight and cost for change.

† For more than 100 FPM, or for higher horsepower, use "A" drive.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam, cross bracing and end stops) plus standard controls and motorized drives. Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with these end trucks = 14" with 3I-9A or 3I-9B interlock in "H" Series rail. Minimum O.H. shown allows for width of end truck. Consult factory for overhangs not shown.

Clearance Dimensions*

Crane	C	D	E	F	G	H	J
3C-6000-DGDM	180"	72"	2½"	57/16"	15¼"	96"	5"

* See "325 Series Crane End Trucks" on page G-9 for more information.
See "Double Girder Crane Clearance Drawing" on page F-78.



Model 3C-10000-DGDM Double Girder Dual Motor Crane

Span (feet)	End Truck Models	Bridge Beam*		Non-Interlocking		Interlocking		HP each Motor @ 100 FPM†	Estimated Crane Weight
		Model No.	A	B	O.H. (min)	B	O.H.		
20	3ET-9000-4/-4AT	3RH13-36	12½"	12½"	9"	13⅝"	14"	½	3699 lbs.
22	3ET-9000-4/-4AT	3RH13-36	12½"	12½"	9"	13⅝"	14"	½	3894 lbs.
24	3ET-9000-4/-4AT	3RH13-36	12½"	12½"	9"	13⅝"	14"	½	4089 lbs.
26	3ET-9000-4/-4AT	3RH14-41	13⅝"	13⅝"	9"	13⅝"	14"	½	4564 lbs.
28	3ET-12400-4/-4A	3RH14-41	13⅝"	13⅝"	9"	13⅝"	14"	½	4977 lbs.
30	3ET-12400-4/-4A	3RH16-47	15⅝"	15⅝"	9"	13⅝"	14"	½	5576 lbs.
32	3ET-12400-4/-4A	3RH16-47	15⅝"	15⅝"	9"	13⅝"	14"	¾	5815 lbs.
34	3ET-12400-4/-4A	3RH18-52	17⅝"	17⅝"	9"	13⅝"	14"	¾	6414 lbs.
36	3ET-12400-4/-4A	3RH18-52	17⅝"	17⅝"	9"	13⅝"	14"	¾	6673 lbs.
38	3ET-12400-4/-4A	3RH18-52	17⅝"	17⅝"	9"	13⅝"	14"	¾	6932 lbs.
40	3ET-12400-4/-4A	3RH20-67	19⅝"	19⅝"	9"	13⅝"	14"	¾	8451 lbs.
42	3ET-12400-4/-4A	3RH20-67	19⅝"	19⅝"	9"	13⅝"	14"	¾	8770 lbs.
44	3ET-12400-4/-4A	3RH20-67	19⅝"	19⅝"	9"	13⅝"	14"	¾	9089 lbs.
46	3ET-12400-4/-4A	3RH20-67	19⅝"	19⅝"	9"	13⅝"	14"	¾	9408 lbs.
48	3ET-12400-4/-4A	3RH22-74	21⅝"	21⅝"	9"	13⅝"	14"	1	10,427 lbs.
50	3ET-12400-4/-4A	3RH22-74	21⅝"	21⅝"	9"	13⅝"	14"	1	10,774 lbs.
52	3ET-12400-4/-4A	3RH24-84	23⅝"	23⅝"	9"	13⅝"	14"	1	12,201 lbs.
54	3ET-12400-4/-4A	3RH24-84	23⅝"	23⅝"	9"	13⅝"	14"	1	12,588 lbs.
56	3ET-12400-4/-4A	3RH26-90	25⅝"	25⅝"	9"	13⅝"	14"	1	13,671 lbs.
58	3ET-12400-4/-4A	3RH26-90	25⅝"	25⅝"	9"	13⅝"	14"	1	14,082 lbs.
60	3ET-12400-4/-4A	3RH26-90	25⅝"	25⅝"	9"	13⅝"	14"	1	14,865 lbs.

* Minimum Bridge Beam 3RH14-41 for interlocks. Step cut larger rails to 14" or 16". Add weight and cost for change.

† For more than 100 FPM, or for higher horsepower, use "A" drive.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam, cross bracing and end stops) plus standard controls and motorized drives. Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with these end trucks = 14" with 3I-9A or 3I-9B interlock in "H" Series rail. Minimum O.H. shown allows for width of end truck. Consult factory for overhangs not shown.

Clearance Dimensions*

Crane	C	D	E	F	G	H	J
3C-10000-DGDM	180"	72"	2½"	5⅞"	15½"	96"	6"

* See "325 Series Crane End Trucks" on page G-9 for more information.
See "Double Girder Crane Clearance Drawing" on page F-78.



Model 3C-15000-DGDM Double Girder Dual Motor Crane

Span (feet)	End Truck Models	Bridge Beam*		Non-Interlocking		Interlocking		HP each Motor @ 100 FPM	Estimated Crane Weight
		Model No.	A	B	O.H.(min)	B	O.H.		
20	3ET-16000-4/-4A	3RH13-36	12½"	12½"	9"	13⅝"	14"	¾	4061 lbs.
22	3ET-16000-4/-4A	3RH14-41	13⅝"	13⅝"	9"	13⅝"	14"	¾	4496 lbs.
24	3ET-16000-4/-4A	3RH14-41	13⅝"	13⅝"	9"	13⅝"	14"	¾	4711 lbs.
26	3ET-16000-4/-4A	3RH16-47	15⅝"	15⅝"	9"	13⅝"	14"	¾	5262 lbs.
28	3ET-16000-4/-4A	3RH18-52	17⅝"	17⅝"	9"	13⅝"	14"	¾	5801 lbs.
30	3ET-16000-4/-4A	3RH18-52	17⅝"	17⅝"	9"	13⅝"	14"	¾	6060 lbs.
32	3ET-16000-4/-4A	3RH18-52	17⅝"	17⅝"	9"	13⅝"	14"	1	6319 lbs.
34	3ET-16000-4/-4A	3RH20-67	19⅝"	19⅝"	9"	13⅝"	14"	1	7658 lbs.
36	3ET-16000-4/-4A	3RH20-67	19⅝"	19⅝"	9"	13⅝"	14"	1	7977 lbs.
38	3ET-16000-4/-4A	3RH20-67	19⅝"	19⅝"	9"	13⅝"	14"	1	8296 lbs.
40	3ET-16000-4/-4A	3RH22-74	21⅝"	21⅝"	9"	13⅝"	14"	1	9203 lbs.
42	3ET-16000-4/-4A	3RH22-74	21⅝"	21⅝"	9"	13⅝"	14"	1	9550 lbs.
44	3ET-16000-4/-4A	3RH22-74	21⅝"	21⅝"	9"	13⅝"	14"	1	9897 lbs.
46	3ET-16000-4/-4A	3RH24-84	23⅝"	23⅝"	9"	13⅝"	14"	1	11,204 lbs.
48	3ET-16000-4/-4A	3RH24-84	23⅝"	23⅝"	9"	13⅝"	14"	1	11,591 lbs.
50	3ET-16000-4/-4A	3RH26-90	25⅝"	25⅝"	9"	13⅝"	14"	1½	12,602 lbs.
52	3ET-16000-4/-4A	3RH26-90	25⅝"	25⅝"	9"	13⅝"	14"	1½	13,013 lbs.
54	3ET-16000-4/-4A	3RH28-93	27⅝"	27⅝"	9"	13⅝"	14"	1½	13,760 lbs.
56	3ET-16000-4/-4A	3RH28-93	27⅝"	27⅝"	9"	13⅝"	14"	1½	14,183 lbs.
58	3ET-16000-4/-4A	3RH30-110	29⅝"	29⅝"	9"	13⅝"	14"	1½	16,646 lbs.
60	3ET-16000-4/-4A	3RH30-110	29⅝"	29⅝"	9"	13⅝"	14"	1½	17,137 lbs.

* Minimum Bridge Beam 3RH14-41 for interlocks. Step cut larger rails to 14" or 16". Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam, cross bracing and end stops) plus standard controls and motorized drives. Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with these end trucks = 14" with 3I-9A or 3I-9B interlock in "H" Series rail. Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

Clearance Dimensions*

Crane	C	D	E	F	G	H	J
3C-15000-DGDM	180"	72"	2½"	7 1/16"	15¾"	96"	7"

* See "325 Series Crane End Trucks" on page G-9 for more information.
See "Double Girder Crane Clearance Drawing" on page F-78.



Model 3C-20000-DGDM Double Girder Dual Motor Crane

Span (feet)	End Truck Models	Bridge Beam		Non-Interlocking		Interlocking		HP each Motor @ 100 FPM	Estimated Crane Weight
		Model No.	A	B	O.H. (min)	B	O.H.		
20	3ET-20000-4SR/-4SRB	3RH14-41	13 5/8"	13 5/8"	10"	13 5/8"	14"	3/4	4779 lbs.
22	3ET-20000-4SR/-4SRB	3RH16-47	15 5/16"	15 5/16"	10"	13 5/8"	14"	3/4	5282 lbs.
24	3ET-20000-4SR/-4SRB	3RH16-47	15 5/16"	15 5/16"	10"	13 5/8"	14"	3/4	5521 lbs.
26	3ET-20000-4SR/-4SRB	3RH18-52	17 5/16"	17 5/16"	10"	13 5/8"	14"	3/4	6040 lbs.
28	3ET-20000-4SR/-4SRB	3RH18-52	17 5/16"	17 5/16"	10"	13 5/8"	14"	3/4	6307 lbs.
30	3ET-20000-4SR/-4SRB	3RH20-67	19 5/16"	19 5/16"	10"	13 5/8"	14"	1	7518 lbs.
32	3ET-20000-4SR/-4SRB	3RH20-67	19 5/16"	19 5/16"	10"	13 5/8"	14"	1 1/2	7851 lbs.
34	3ET-20000-4SR/-4SRB	3RH22-74	21 5/16"	21 5/16"	10"	13 5/8"	14"	1 1/2	8674 lbs.
36	3ET-20000-4SR/-4SRB	3RH22-74	21 5/16"	21 5/16"	10"	13 5/8"	14"	1 1/2	9021 lbs.
38	3ET-20000-4SR/-4SRB	3RH22-74	21 5/16"	21 5/16"	10"	13 5/8"	14"	1 1/2	9368 lbs.
40	3ET-20000-4SR/-4SRB	3RH24-84	23 5/16"	23 5/16"	10"	13 5/8"	14"	1 1/2	10,639 lbs.
42	3ET-20000-4SR/-4SRB	3RH24-84	23 5/16"	23 5/16"	10"	13 5/8"	14"	1 1/2	11,030 lbs.
44	3ET-20000-4SR/-4SRB	3RH26-90	25 5/16"	25 5/16"	10"	13 5/8"	14"	1 1/2	11,881 lbs.
46	3ET-20000-4SR/-4SRB	3RH26-90	25 5/16"	25 5/16"	10"	13 5/8"	14"	1 1/2	12,292 lbs.
48	3ET-20000-4SR/-4SRB	3RH26-90	25 5/16"	25 5/16"	10"	13 5/8"	14"	1 1/2	12,703 lbs.
50	3ET-20000-4SR/-4SRB	3RH28-93	27 5/16"	27 5/16"	10"	13 5/8"	14"	1 1/2	13,426 lbs.
52	3ET-20000-4SR/-4SRB	3RH30-110	29 5/16"	29 5/16"	10"	13 5/8"	14"	1 1/2	15,685 lbs.
54	3ET-20000-4SR/-4SRB	3RH30-110	29 5/16"	29 5/16"	10"	13 5/8"	14"	1 1/2	16,176 lbs.
56	3ET-20000-4SR/-4SRB	3RH32-120	31 5/16"	31 5/16"	10"	13 5/8"	14"	1 1/2	17,827 lbs.
58	3ET-20000-4SR/-4SRB	3RH32-120	31 5/16"	31 5/16"	10"	13 5/8"	14"	1 1/2	18,358 lbs.
60	3ET-20000-4SR/-4SRB	3RH34-130	33 5/16"	33 5/16"	10"	13 5/8"	14"	1 1/2	20,129 lbs.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam, cross bracing and end stops) plus standard controls and motorized drives. Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with these end trucks = 14" with 3I-9A or 3I-9B interlock in "H" Series rail. Minimum O.H. shown allows for width of end truck. Consult factory for overhangs not shown.

Clearance Dimensions*

Crane	C	D	E	F	G	H	J
3C-20000-DGDM	206"	72"	2 1/2"	9"	10 3/4"	120"	7"

- * See "325 Series Crane End Trucks" on page G-9 for more information.
See "Double Girder Crane Clearance Drawing" on page F-78.



Model 3C-30000-DGFM Double Girder Four Motor Crane

Span(f eet)	End Truck Models	Bridge Beam		Non-Interlocking		Interlocking		HP each Motor @ 100FPM	Estimated Crane Weight
		Model No.	A	B	O.H. (min)	B	O.H.		
20	3ET-24800-8A	3RH18-52	17 ⁵ / ₁₆ "	17 ⁵ / ₁₆ "	10"	13 ⁵ / ₈ "	18"	½	5779 lbs.
22	3ET-24800-8A	3RH20-67	19 ⁵ / ₁₆ "	19 ⁵ / ₁₆ "	10"	13 ⁵ / ₈ "	18"	½	6758 lbs.
24	3ET-24800-8A	3RH20-67	19 ⁵ / ₁₆ "	19 ⁵ / ₁₆ "	10"	13 ⁵ / ₈ "	18"	½	7077 lbs.
26	3ET-24800-8A	3RH20-67	19 ⁵ / ₁₆ "	19 ⁵ / ₁₆ "	10"	13 ⁵ / ₈ "	18"	½	7396 lbs.
28	3ET-24800-8A	3RH22-74	21 ⁵ / ₁₆ "	21 ⁵ / ₁₆ "	10"	13 ⁵ / ₈ "	18"	¾	8135 lbs.
30	3ET-24800-8A	3RH22-74	21 ⁵ / ₁₆ "	21 ⁵ / ₁₆ "	10"	13 ⁵ / ₈ "	18"	¾	8482 lbs.
32	3ET-24800-8A	3RH22-74	21 ⁵ / ₁₆ "	21 ⁵ / ₁₆ "	10"	13 ⁵ / ₈ "	18"	¾	8829 lbs.
34	3ET-24800-8A	3RH24-84	25 ⁵ / ₁₆ "	25 ⁵ / ₁₆ "	10"	13 ⁵ / ₈ "	18"	¾	9896 lbs.
36	3ET-24800-8A	3RH26-90	25 ⁵ / ₁₆ "	25 ⁵ / ₁₆ "	10"	13 ⁵ / ₈ "	18"	¾	10,739 lbs.
38	3ET-24800-8A	3RH26-90	25 ⁵ / ₁₆ "	25 ⁵ / ₁₆ "	10"	13 ⁵ / ₈ "	18"	¾	11,164 lbs.
40	3ET-24800-8A	3RH26-90	25 ⁵ / ₁₆ "	25 ⁵ / ₁₆ "	10"	13 ⁵ / ₈ "	18"	1	11,575 lbs.
42	3ET-24800-8A	3RH28-93	27 ⁵ / ₁₆ "	27 ⁵ / ₁₆ "	10"	13 ⁵ / ₈ "	18"	1	12,250 lbs.
44	3ET-24800-8A	3RH28-93	27 ⁵ / ₁₆ "	27 ⁵ / ₁₆ "	10"	13 ⁵ / ₈ "	18"	1	12,673 lbs.
46	3ET-24800-8A	3RH30-110	29 ⁵ / ₁₆ "	29 ⁵ / ₁₆ "	10"	13 ⁵ / ₈ "	18"	1	14,728 lbs.
48	3ET-24800-8A	3RH30-110	29 ⁵ / ₁₆ "	29 ⁵ / ₁₆ "	10"	13 ⁵ / ₈ "	18"	1	15,219 lbs.
50	3ET-24800-8A	3RH32-120	31 ⁵ / ₁₆ "	31 ⁵ / ₁₆ "	10"	13 ⁵ / ₈ "	18"	1	16,750 lbs.
52	3ET-24800-8A	3RH34-130	33 ⁵ / ₁₆ "	33 ⁵ / ₁₆ "	10"	13 ⁵ / ₈ "	18"	1	18,361 lbs.
54	3ET-24800-8A	3RH34-130	33 ⁵ / ₁₆ "	33 ⁵ / ₁₆ "	10"	13 ⁵ / ₈ "	18"	1	18,932 lbs.
56	3ET-28000-8A	3RH36-140	35 ⁵ / ₁₆ "	35 ⁵ / ₁₆ "	10"	13 ⁵ / ₈ "	18"	1	20,931 lbs.
58	3ET-28000-8A	3RH36-140	35 ⁵ / ₁₆ "	35 ⁵ / ₁₆ "	10"	13 ⁵ / ₈ "	18"	1	21,542 lbs.
60	3ET-28000-8A	3RH38-144	37 ⁵ / ₁₆ "	37 ⁵ / ₁₆ "	10"	13 ⁵ / ₈ "	18"	1	22,649 lbs.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam, cross bracing and end stops) plus standard controls and motorized drives. Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with these end trucks = 18" with 3I-9A or 3I-9B interlock in "H" Series rail. Minimum O.H. shown allows for width of end truck. Consult factory for overhangs not shown.

Clearance Dimensions*

Crane	C	D	E	F	G	H	J
3C-30000-DGFM (w/3ET-24800-8A)	215"	72"	2½"	57/16"	18¼"	120"	7"
3C-30000-DGFM (w/3ET-28000-8A)	215"	72"	2½"	71/16"	18½"	120"	8"

- * See "325 Series Crane End Trucks" on page G-9 for more information.
See "Double Girder Crane Clearance Drawing" on page F-78.



Model 3C-40000-DGFM Double Girder Four Motor Crane

Span(f eet)	End Truck Models	Bridge Beam		Non-Interlocking		Interlocking		HP each Motor @ 100FPM	Estimated Crane Weight
		Model No.	A	B	O.H. (min)	B	O.H.		
20	3ET-38000-8SRB	3RH20-67	19 ⁵ / ₁₆ "	19 ⁵ / ₁₆ "	11"	13 ⁵ / ₈ "	18"	³ / ₄	8807 lbs
22	3ET-38000-8SRB	3RH22-74	21 ⁵ / ₁₆ "	21 ⁵ / ₁₆ "	11"	13 ⁵ / ₈ "	18"	³ / ₄	9462 lbs
24	3ET-38000-8SRB	3RH22-74	21 ⁵ / ₁₆ "	21 ⁵ / ₁₆ "	11"	13 ⁵ / ₈ "	18"	³ / ₄	9809 lbs
26	3ET-38000-8SRB	3RH24-84	23 ⁵ / ₁₆ "	23 ⁵ / ₁₆ "	11"	13 ⁵ / ₈ "	18"	³ / ₄	10,716 lbs
28	3ET-38000-8SRB	3RH24-84	23 ⁵ / ₁₆ "	23 ⁵ / ₁₆ "	11"	13 ⁵ / ₈ "	18"	³ / ₄	11,103 lbs
30	3ET-38000-8SRB	3RH26-90	25 ⁵ / ₁₆ "	25 ⁵ / ₁₆ "	11"	13 ⁵ / ₈ "	18"	³ / ₄	11,882 lbs
32	3ET-38000-8SRB	3RH26-90	25 ⁵ / ₁₆ "	25 ⁵ / ₁₆ "	11"	13 ⁵ / ₈ "	18"	1	12,293 lbs
34	3ET-38000-8SRB	3RH28-93	27 ⁵ / ₁₆ "	27 ⁵ / ₁₆ "	11"	13 ⁵ / ₈ "	18"	1	12,920 lbs
36	3ET-38000-8SRB	3RH28-93	27 ⁵ / ₁₆ "	27 ⁵ / ₁₆ "	11"	13 ⁵ / ₈ "	18"	1	13,349 lbs
38	3ET-38000-8SRB	3RH30-110	29 ⁵ / ₁₆ "	29 ⁵ / ₁₆ "	11"	13 ⁵ / ₈ "	18"	1½	15,132 lbs
40	3ET-38000-8SRB	3RH30-110	29 ⁵ / ₁₆ "	29 ⁵ / ₁₆ "	11"	13 ⁵ / ₈ "	18"	1½	15,632 lbs
42	3ET-38000-8SRB	3RH32-120	31 ⁵ / ₁₆ "	31 ⁵ / ₁₆ "	11"	13 ⁵ / ₈ "	18"	1½	16,994 lbs
44	3ET-38000-8SRB	3RH32-120	31 ⁵ / ₁₆ "	31 ⁵ / ₁₆ "	11"	13 ⁵ / ₈ "	18"	1½	17,525 lbs
46	3ET-38000-8SRB	3RH34-130	33 ⁵ / ₁₆ "	33 ⁵ / ₁₆ "	11"	13 ⁵ / ₈ "	18"	1½	19,016 lbs
48	3ET-38000-8SRB	3RH34-130	33 ⁵ / ₁₆ "	33 ⁵ / ₁₆ "	11"	13 ⁵ / ₈ "	18"	1½	19,587 lbs
50	3ET-38000-8SRB	3RH36-140	35 ⁵ / ₁₆ "	35 ⁵ / ₁₆ "	11"	13 ⁵ / ₈ "	18"	1½	21,198 lbs
52	3ET-38000-8SRB	3RH36-140	35 ⁵ / ₁₆ "	35 ⁵ / ₁₆ "	11"	13 ⁵ / ₈ "	18"	1½	21,809 lbs
54	3ET-38000-8SRB	3RH38-144	37 ⁵ / ₁₆ "	37 ⁵ / ₁₆ "	11"	13 ⁵ / ₈ "	18"	1½	22,868 lbs
56	3ET-38000-8SRB	3RH40-154	39 ⁵ / ₁₆ "	39 ⁵ / ₁₆ "	11"	13 ⁵ / ₈ "	18"	1½	24,655 lbs
58	3ET-38000-8SR	3RH40-154	39 ⁵ / ₁₆ "	39 ⁵ / ₁₆ "	11"	13 ⁵ / ₈ "	18"	1½	25,322 bs

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam, cross bracing and end stops) plus standard controls and motorized drives. Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

Standard Crane Bridge Overhang (O.H.) = 12". Overhang required for Interlocking Cranes with these end trucks = 18" with 3I-9A or 3I-9B interlock in "H" Series rail. Minimum O.H. shown allows for width of end truck. Consult factory for overhangs not shown.

Clearance Dimensions*

Crane	C	D	E	F	G	H	J
3C-40000-DGFM	219½"	72"	2½"	9"	19"	120"	8"

* See "325 Series Crane End Trucks" on page G-9 for more information.
See "Double Girder Crane Clearance Drawing" on page F-78.



450 Series Cranes

Model 45C-10000-DM Dual Motor Crane

10000 lb. capacity

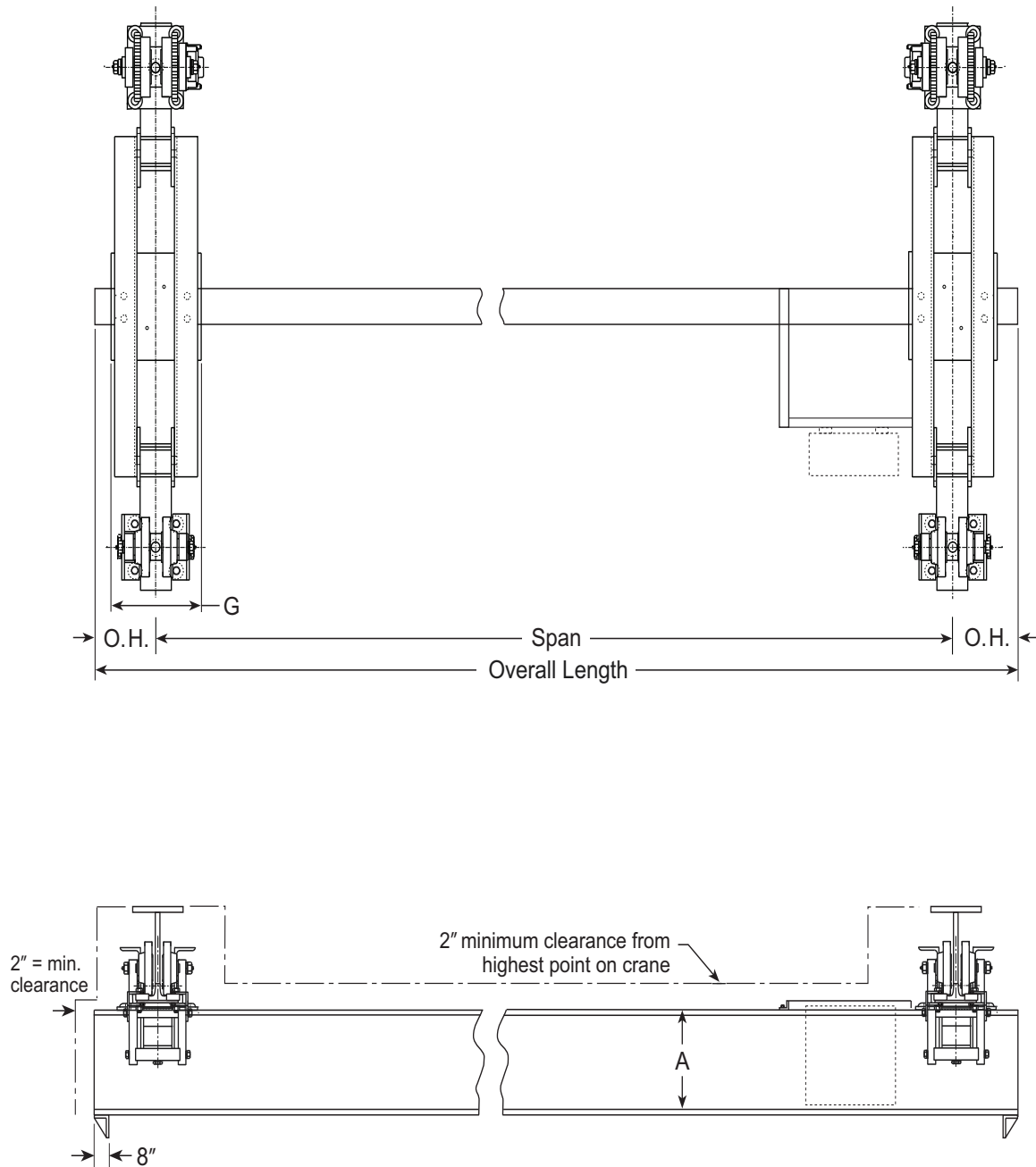
Crane design load = 14,000 lbs. (Live Load 10,000 lbs.
+ 1500 lb. impact + 2500 lb. hoist & trolley)

Crane Conductor Bars

- Use Bottom Contact Shielded Channel-Bar

Crane Interlocks

- Standard Motor Operated Interlock 45I-9C. Requires minimum 45R20-79 Bridge. Add for this size rail if required. Add step cuts for deeper rail.
- See "Crane Interlocks" on page F-99 for more information.





45C-10000-DM Dual Motor Crane

Span(f eet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		HP each Motor @ 100 FPM	Estimated Crane Weight
		Model No.	A	B	O.H.(min.)	B	O.H.		
20	45ET-30000-4SRC	45R14-57*	13¼"	13¼"	8"	19½"	24"	¾	3482 lbs.
22	45ET-30000-4SRC	45R14-57*	13¼"	13¼"	8"	19½"	24"	¾	3598 lbs.
24	45ET-30000-4SRC	45R14-57*	13¼"	13¼"	8"	19½"	24"	¾	3713 lbs.
26	45ET-30000-4SRC	45R14-57*	13¼"	13¼"	8"	19½"	24"	¾	3829 lbs.
28	45ET-30000-4SRC	45R14-57*	13¼"	13¼"	8"	19½"	24"	¾	3944 lbs.
30	45ET-30000-4SRC	45R14-57*	13¼"	13¼"	8"	19½"	24"	¾	4060 lbs.
32	45ET-30000-4SRC	45H16-62*	15¼"	15¼"	8"	19½"	24"	¾	4350 lbs.
34	45ET-30000-4SRC	45R16-62*	15¼"	15¼"	8"	19½"	24"	¾	4476 lbs.
36	45ET-30000-4SRC	45R18-73*	17½"	17½"	8"	19½"	24"	¾	5030 lbs.
38	45ET-30000-4SRC	45R18-73*	17½"	17½"	8"	19½"	24"	¾	5178 lbs.
40	45ET-30000-4SRC	45R18-73*	17½"	17½"	8"	19½"	24"	¾	5325 lbs.
42	45ET-30000-4SRC	45R18-73*	17½"	17½"	8"	19½"	24"	¾	5473 lbs.
44	45ET-30000-4SRC	45R20-79	19½"	19½"	8"	19½"	24"	¾	5902 lbs.
46	45ET-30000-4SRC	45R20-79	19½"	19½"	8"	19½"	24"	¾	6062 lbs.
48	45ET-30000-4SRC	45R20-79	19½"	19½"	8"	19½"	24"	¾	6221 lbs.
50	45ET-30000-4SRC	45R24-101	23½"	23½"	8"	19½"	24"	¾	7547 lbs.
52	45ET-30000-4SRC	45R24-101	23½"	23½"	8"	19½"	24"	¾	7750 lbs.
54	45ET-30000-4SRC	45R24-101	23½"	23½"	8"	19½"	24"	¾	7954 lbs.
56	45ET-30000-4SRC	45R24-101	23½"	23½"	8"	19½"	24"	¾	8157 lbs.
58	45ET-30000-4SRC	45R26-109	25½"	25½"	8"	19½"	24"	¾	8849 lbs.
60	45ET-30000-4SRC	45R26-109	25½"	25½"	8"	19½"	24"	¾	9068 lbs.
62	45ET-30000-4SRLC	45R26-109	25½"	25½"	8"	19½"	24"	¾	9820 lbs.
64	45ET-30000-4SRLC	45R28-129	27½"	27½"	8"	19½"	24"	¾	11,379 lbs.
66	45ET-30000-4SRLC	45R28-129	27½"	27½"	8"	19½"	24"	¾	11,639 lbs.
68	45ET-30000-4SRLC	45R28-129	27½"	27½"	8"	19½"	24"	1	11,908 lbs.
70	45ET-30000-4SRLC	45R30-141	29½"	29½"	8"	19½"	24"	1	13,044 lbs.

* Minimum Bridge Beam 45R20-79 for interlock .Step cut larger rails to 20". Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops) plus standard controls and motorized drives. Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail.

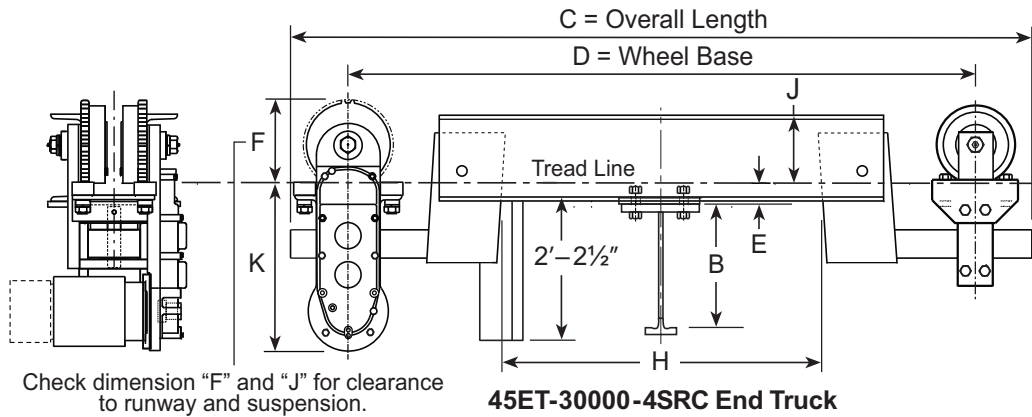
Standard Crane Bridge Overhang (O.H.) = 18". Overhang required for Interlocking Cranes with these end trucks = 24" with 45I-9A interlock in 450 Series rail. Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown*

45C-10000-DM End Truck Specifications*

Model Number	Dimensions (inches)								# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G	H	J	K			
45ET-30000-4SRC	85"	72"	2½"	9 11/16"	15½"	38"	8"	19 3/16"	2	30,000 lbs.	1006 lbs.
45ET-30000-4SRLC	121"	108"	2½"	9 11/16"	15½"	74"	10"	19 3/16"	2	30,000 lbs.	1272 lbs.

* See "450 Series Crane End Trucks" on page G-23 for more information.

† Maximum load on 2-wheel trolley on 450 Series Rail cannot exceed 18000 pounds (9000 lbs. per wheel)



Model 45C-15000-DM Dual Motor Crane

15000 lb. capacity

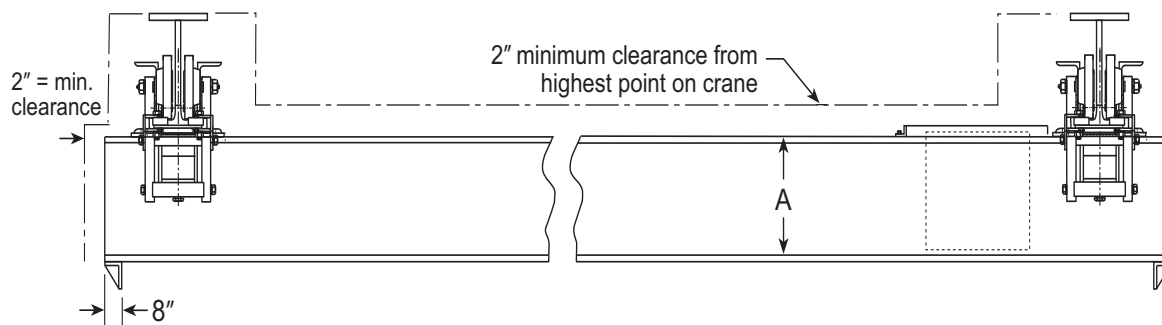
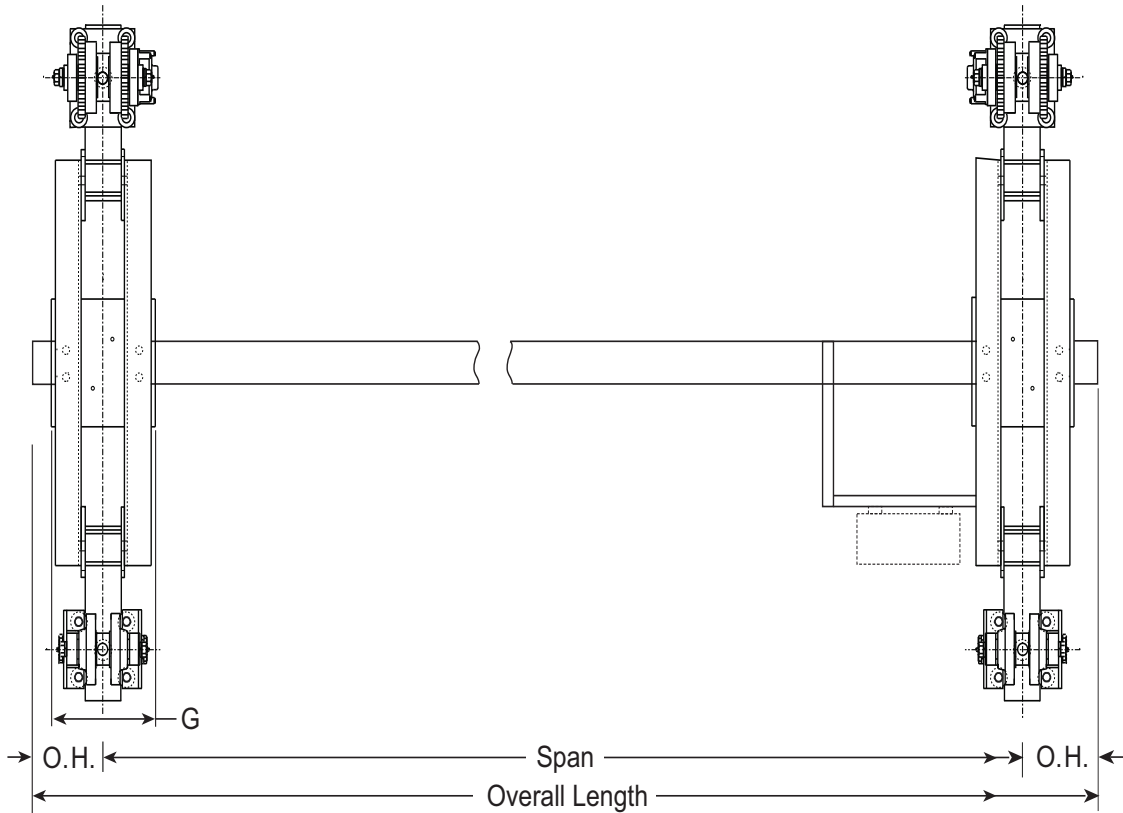
Crane design load = 20,250 lbs. (Live Load 15,000 lbs.
+ 2250 lb. impact + 3000 lb. hoist & trolley)

Crane Conductor Bars

- Use Bottom Contact Shielded Channel-Bar

Crane Interlocks

- Standard Motor Operated Interlock 45I-9C. Requires minimum 45R20-79 Bridge. Add for this size rail if required. Add step cuts for deeper rail.
- See "Crane Interlocks" on page F-99 for more information.





45C-15000-DM Dual Motor Crane

Span(f eet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		HP each Motor @ 100 FPM	Estimated Crane Weight
		Model No.	A	B	O.H. (min.)	B	O.H.		
20	45ET-30000-4SRC	45R14-57*	13¼"	13¼"	8"	19⅞"	24"	¾	3482 lbs.
22	45ET-30000-4SRC	45R14-57*	13¼"	13¼"	8"	19⅞"	24"	¾	3598 lbs.
24	45ET-30000-4SRC	45R14-57*	13¼"	13¼"	8"	19⅞"	24"	¾	3713 lbs.
26	45ET-30000-4SRC	45R16-62*	15¼"	15¼"	8"	19⅞"	24"	¾	3974 lbs.
28	45ET-30000-4SRC	45R16-62*	15¼"	15¼"	8"	19⅞"	24"	¾	4099 lbs.
30	45ET-30000-4SRC	45R18-73*	17⅞"	17⅞"	8"	19⅞"	24"	¾	4588 lbs.
32	45ET-30000-4SRC	45R18-73*	17⅞"	17⅞"	8"	19⅞"	24"	¾	4735 lbs.
34	45ET-30000-4SRC	45R18-73*	17⅞"	17⅞"	8"	19⅞"	24"	¾	4883 lbs.
36	45ET-30000-4SRC	45R20-79	19⅞"	19⅞"	8"	19⅞"	24"	¾	5264 lbs.
38	45ET-30000-4SRC	45R20-79	19⅞"	19⅞"	8"	19⅞"	24"	¾	5424 lbs.
40	45ET-30000-4SRC	45R20-79	19⅞"	19⅞"	8"	19⅞"	24"	¾	5583 lbs.
42	45ET-30000-4SRC	45R24-101	23⅞"	23⅞"	8"	19⅞"	24"	1	6743 lbs.
44	45ET-30000-4SRC	45R24-101	23⅞"	23⅞"	8"	19⅞"	24"	1	6946 lbs.
46	45ET-30000-4SRC	45R24-101	23⅞"	23⅞"	8"	19⅞"	24"	1	7150 lbs.
48	45ET-30000-4SRC	45R24-101	23⅞"	23⅞"	8"	19⅞"	24"	1	7353 lbs.
50	45ET-30000-4SRC	45R26-109	23⅞"	23⅞"	8"	19⅞"	24"	1	7981 lbs.
52	45ET-30000-4SRC	45R26-109	25⅞"	25⅞"	8"	19⅞"	24"	1	8200 lbs.
54	45ET-30000-4SRC	45R28-129	27⅞"	27⅞"	8"	19⅞"	24"	1	9560 lbs.
56	45ET-30000-4SRC	45R28-129	27⅞"	27⅞"	8"	19⅞"	24"	1	9819 lbs.
58	45ET-30000-4SRC	45R28-129	27⅞"	27⅞"	8"	19⅞"	24"	1	10,079 lbs.
60	45ET-30000-4SRC	45R30-141	29⅞"	29⅞"	8"	19⅞"	24"	1	11,094 lbs.
62	45ET-30000-4SRLC	45R30-141	29⅞"	29⅞"	8"	19⅞"	24"	1	11,910 lbs.
64	45ET-30000-4SRLC	45R32-145	31⅞"	31⅞"	8"	19⅞"	24"	1	12,461 lbs.
66	45ET-30000-4SRLC	45R32-145	31⅞"	31⅞"	8"	19⅞"	24"	1½	12,753 lbs.
68	45ET-30000-4SRLC	45R36-166	35⅞"	35⅞"	8"	19⅞"	24"	1½	14,535 lbs.
70	45ET-30000-4SRLC	45R36-166	35⅞"	35⅞"	8"	19⅞"	24"	1½	14,869 lbs.

* Minimum Bridge Beam 45R20-79 for interlock .Step cut larger rails to 20". Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops) plus standard controls and motorized drives. Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail.

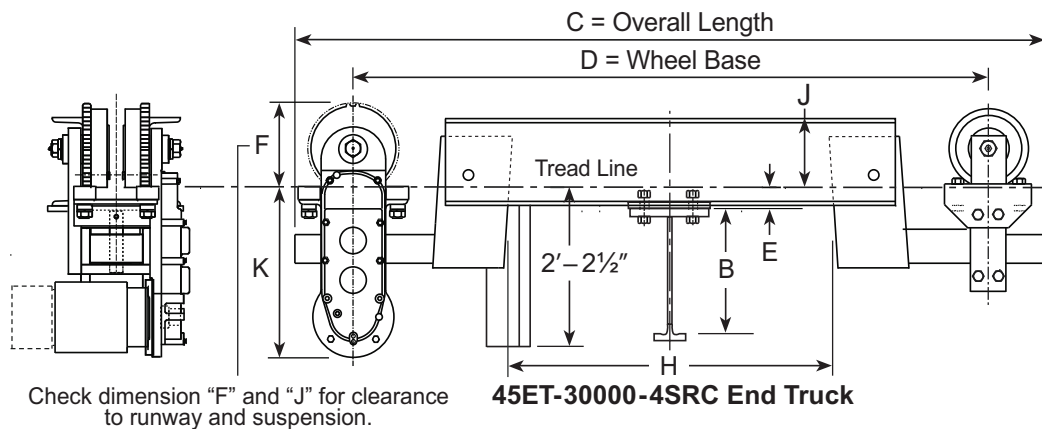
Standard Crane Bridge Overhang (O.H.) = 18". Overhang required for Interlocking Cranes with these end trucks = 24" with 45I-9A interlock in 450 Series rail. Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

45C-15000-DM End Truck Specifications*

Model Number	Dimensions (inches)								# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G	H	J	K			
45ET-30000-4SRC	108"	72"	2½"	9 11/16"	15½"	38"	8"	19 3/16"	2	30,000 lbs.	1006 lbs.
45ET-30000-4SRLC	144"	108"	2½"	9 11/16"	15½"	74"	10"	19 3/16"	2	30,000 lbs.	1272 lbs.

* See "450 Series Crane End Trucks" on page G-23 for more information.

† Maximum load on 2-wheel trolley on 450 Series Rail cannot exceed 18000 pounds (9000 lbs. per wheel)





Model 45C-20000-DM Dual Motor Crane

20000 lb. capacity

Crane design load = 27,000 lbs.

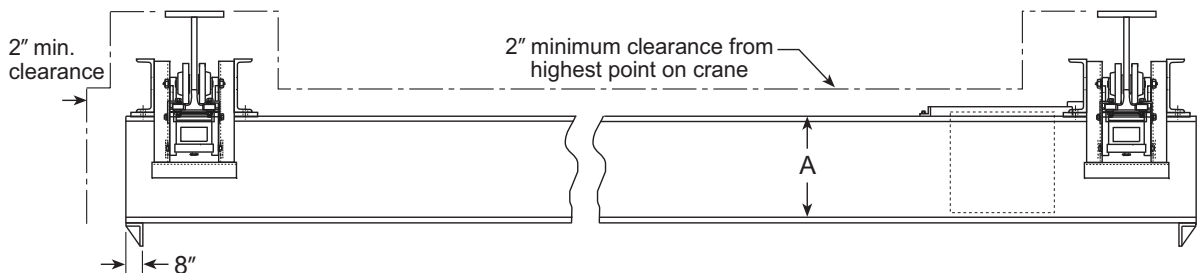
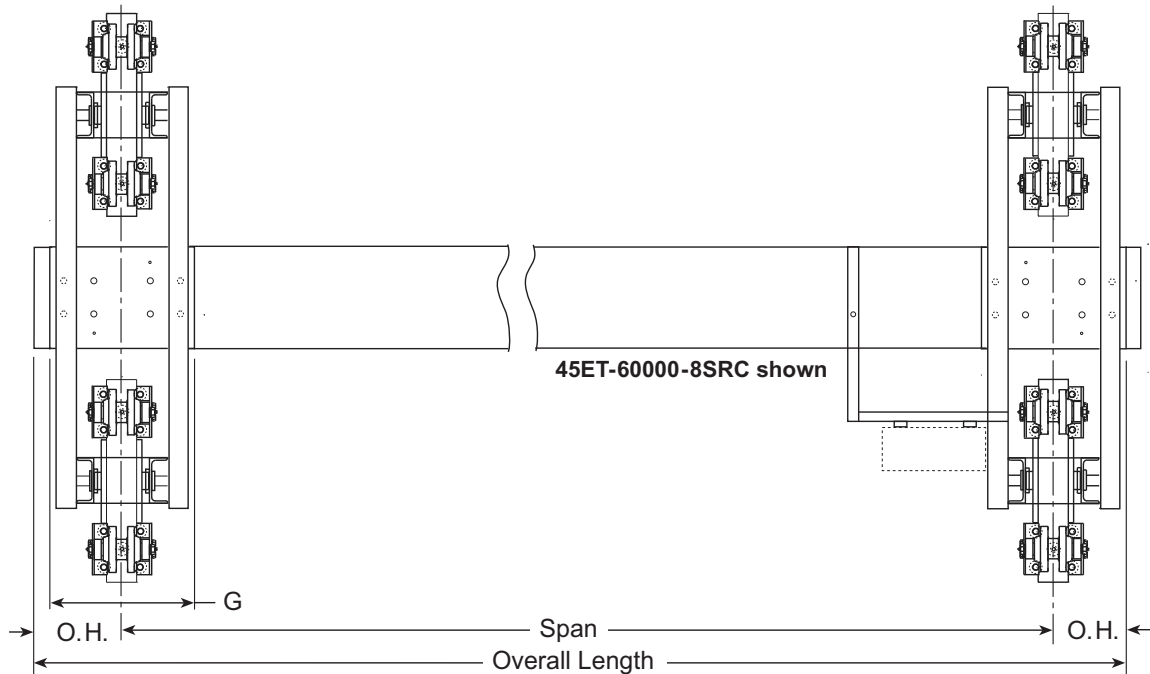
(Live Load 20,000 lbs. + 3000 lb. impact + 4000 lb. hoist & trolley)

Crane Conductor Bars

- Use Bottom Contact Shielded Channel-Bar

Crane Interlocks

- Standard Motor Operated Interlock 45I-9C. Requires minimum 45R20-79 Bridge. Add for this size rail if required. Add step cuts for deeper rail.
- See "Crane Interlocks" on page F-99 for more information.





45C-20000-DM Dual Motor Crane

Span(f eet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		HP each Motor @ 100 FPM	Estimated Crane Weight
		Model No.	A	B	O.H. (min.)	B	O.H.		
20	45ET-30000-4SRC	45R14-57*	13¼"	13¼"	8"	19½"	24"	¾	3482 lbs.
22	45ET-30000-4SRC	45R16-62*	15¼"	15¼"	8"	19½"	24"	¾	3723 lbs.
24	45ET-30000-4SRC	45R16-62*	15¼"	15¼"	8"	19½"	24"	¾	3848 lbs.
26	45ET-60000-8SRC	45R18-73*	17½"	17½"	15"	19½"	24"	¾	7255 lbs.
28	45ET-60000-8SRC	45R18-73*	17½"	17½"	15"	19½"	24"	¾	7402 lbs.
30	45ET-60000-8SRC	45R18-73*	17½"	17½"	15"	19½"	24"	1	7560 lbs.
32	45ET-60000-8SRC	45R20-79	19½"	19½"	15"	19½"	24"	1	7917 lbs.
34	45ET-60000-8SRC	45R20-79	19½"	19½"	15"	19½"	24"	1	8077 lbs.
36	45ET-60000-8SRC	45R22-81	21½"	21½"	15"	19½"	24"	1	8314 lbs.
38	45ET-60000-8SRC	45R24-101	23½"	23½"	15"	19½"	24"	1½	9298 lbs.
40	45ET-60000-8SRC	45R24-101	23½"	23½"	15"	19½"	24"	1½	9501 lbs.
42	45ET-60000-8SRC	45R24-101	23½"	23½"	15"	19½"	24"	1½	9705 lbs.
44	45ET-60000-8SRC	45R26-109	25½"	25½"	15"	19½"	24"	1½	10,284 lbs.
46	45ET-60000-8SRC	45R26-109	25½"	25½"	15"	19½"	24"	1½	10,504 lbs.
48	45ET-60000-8SRC	45R28-129	27½"	27½"	15"	19½"	24"	1½	10,723 lbs.
50	45ET-60000-8SRC	45R28-129	27½"	27½"	15"	19½"	24"	1½	12,003 lbs.
52	45ET-60000-8SRC	45R28-129	27½"	27½"	15"	19½"	24"	1½	12,262 lbs.
54	45ET-60000-8SRC	45R28-129	27½"	27½"	15"	19½"	24"	1½	12,522 lbs.
56	45ET-60000-8SRC	45R30-141	29½"	29½"	15"	19½"	24"	1½	13,489 lbs.
58	45ET-60000-8SRC	45R32-145	31½"	31½"	15"	19½"	24"	1½	14,017 lbs.
60	45ET-60000-8SRC	45R32-145	31½"	31½"	15"	19½"	24"	1½	14,308 lbs.
62	45ET-60000-8SRLC	45R36-166	35½"	35½"	15"	19½"	24"	1½	15,760 lbs.
64	45ET-60000-8SRLC	45R36-166	35½"	35½"	15"	19½"	24"	1½	17,458 lbs.
66	45ET-60000-8SRLC	45R36-166	35½"	35½"	15"	19½"	24"	1½	17,792 lbs.
68	45ET-60000-8SRLC	45R40-183	39½"	39½"	15"	19½"	24"	1½	19,332 lbs.
70	45ET-60000-8SRLC	45R40-183	39½"	39½"	15"	19½"	24"	1½	19,700 lbs.

* Minimum Bridge Beam 45R20-79 for interlock .Step cut larger rails to 20". Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops) plus standard controls and motorized drives. Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail.

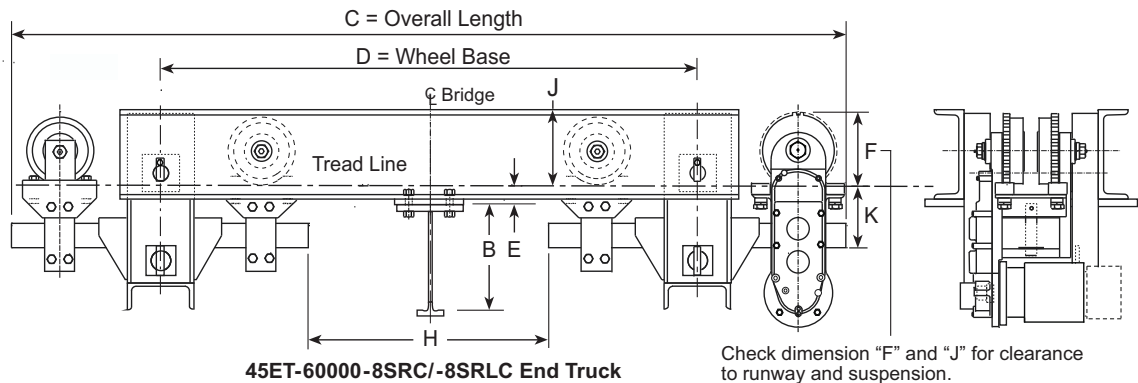
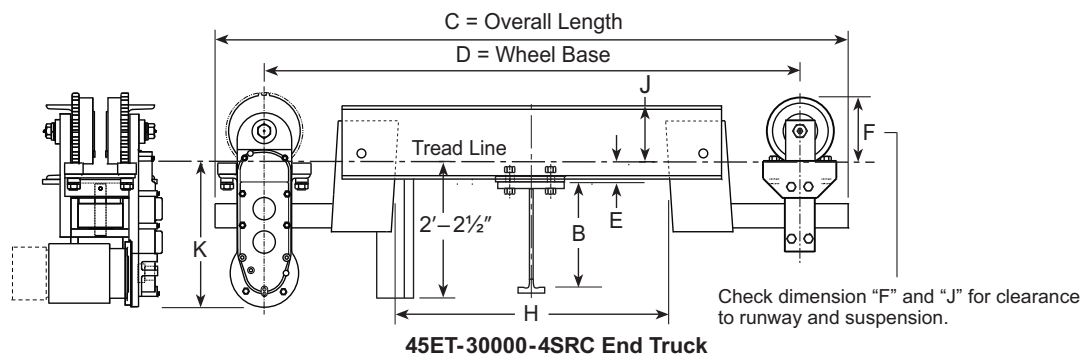
Standard Crane Bridge Overhang (O.H.) = 18". Overhang required for Interlocking Cranes with these end trucks = 24" with 45I-9A interlock in 450 Series rail. Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

45C-20000-DM End Truck Specifications*

Model Number	Dimensions (inches)								# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G	H	J	K			
45ET-30000-4SRC	85"	72"	2½"	9 11/16"	15½"	38"	8"	19 3/16"	2	30,000 lbs.	1006 lbs.
45ET-60000-8SRC	112	72"	3"	9 11/16"	28½"	32"	10"	19 3/16"	4	60,000 lbs.	2494 lbs.
45ET-60000-8SRLC	144"	108"	3"	9 11/16"	28½"	68"	16"	19 3/16"	4	60,000 lbs.	3074 lbs.

* See "450 Series Crane End Trucks" on page G-23 for more information.

† Maximum load on 2-wheel trolley on 450 Series Rail cannot exceed 18000 pounds (9000 lbs. per wheel)



Model 45C-30000-DM Dual Motor Crane

30000 lb. capacity

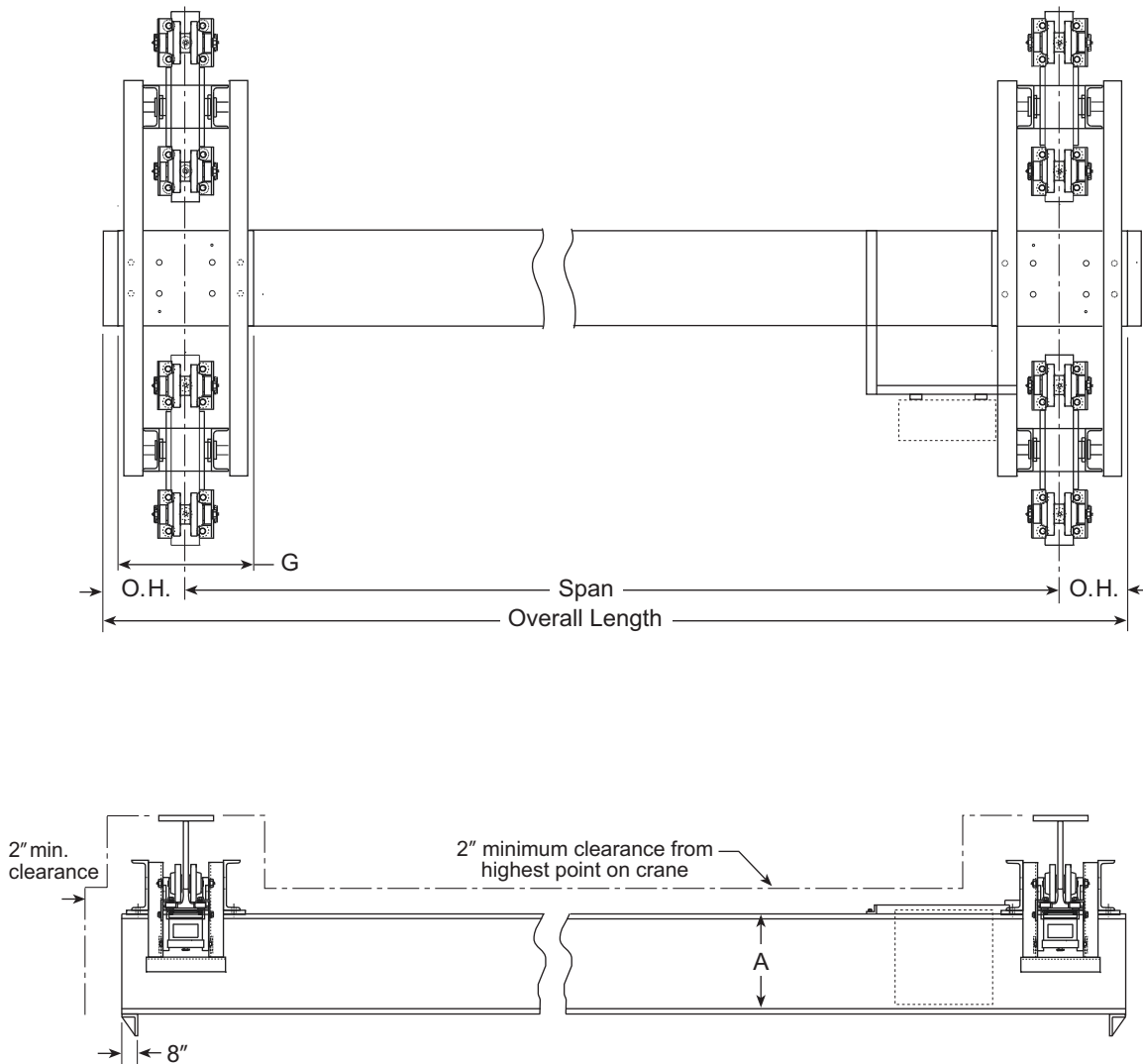
Crane design load = 42,200 lbs. (Live Load 30,000 lbs.
+ 4500 lb. impact + 6000 lb. hoist & trolley)

Crane Conductor Bars

- Use Bottom Contact Shielded Channel-Bar

Crane Interlocks

- Standard Motor Operated Interlock 45I-9C.
Requires minimum 45R20-79 Bridge.
Add for this size rail if required. Add step cuts for deeper rail.
- See "Crane Interlocks" on page F-99 for more information.





45C-30000-DM Dual Motor Crane

Span(feet)	End Truck Model	Bridge Beam		Non-Interlocking		Interlocking		HP each Motor @ 100 FPM	Estimated Crane Weight
		Model No.	A	B	O.H. (min.)	B	O.H.		
20	45ET-60000-8SRC	45R18-73*	17 ¹ / ₈ "	17 ¹ / ₈ "	15"	19 ¹ / ₈ "	24"	1	6822 lbs.
22	45ET-60000-8SRC	45R20-79	19 ¹ / ₈ "	19 ¹ / ₈ "	15"	19 ¹ / ₈ "	24"	1	7120 lbs.
24	45ET-60000-8SRC	45R20-79	19 ¹ / ₈ "	19 ¹ / ₈ "	15"	19 ¹ / ₈ "	24"	1	7279 lbs.
26	45ET-60000-8SRC	45R22-81	21 ¹ / ₈ "	21 ¹ / ₈ "	15"	19 ¹ / ₈ "	24"	1	7660 lbs.
28	45ET-60000-8SRC	45R22-81	21 ¹ / ₈ "	21 ¹ / ₈ "	15"	19 ¹ / ₈ "	24"	1	8484 lbs.
30	45ET-60000-8SRC	45R24-101	23 ¹ / ₈ "	23 ¹ / ₈ "	15"	19 ¹ / ₈ "	24"	1½	8687 lbs.
32	45ET-60000-8SRC	45R24-101	23 ¹ / ₈ "	23 ¹ / ₈ "	15"	19 ¹ / ₈ "	24"	1½	9187 lbs.
34	45ET-60000-8SRC	45R26-109	25 ¹ / ₈ "	25 ¹ / ₈ "	15"	19 ¹ / ₈ "	24"	1½	9406 lbs.
36	45ET-60000-8SRC	45R26-109	25 ¹ / ₈ "	25 ¹ / ₈ "	15"	19 ¹ / ₈ "	24"	1½	9406 lbs.
38	45ET-60000-8SRC	45R28-129	27 ¹ / ₈ "	27 ¹ / ₈ "	15"	19 ¹ / ₈ "	24"	1½	10,446 lbs.
40	45ET-60000-8SRC	45R28-109	27 ¹ / ₈ "	27 ¹ / ₈ "	15"	19 ¹ / ₈ "	24"	1½	10,705 lbs.
42	45ET-60000-8SRC	45R28-109	27 ¹ / ₈ "	27 ¹ / ₈ "	15"	19 ¹ / ₈ "	24"	1½	10,965 lbs.
44	45ET-60000-8SRC	45R30-141	29 ¹ / ₈ "	29 ¹ / ₈ "	15"	19 ¹ / ₈ "	24"	1½	11,788 lbs.
46	45ET-60000-8SRC	45R30-141	29 ¹ / ₈ "	29 ¹ / ₈ "	15"	19 ¹ / ₈ "	24"	1½	12,072 lbs.
48	45ET-60000-8SRC	45R32-145	31 ¹ / ₈ "	31 ¹ / ₈ "	15"	19 ¹ / ₈ "	24"	1½	12,559 lbs.
50	45ET-60000-8SRC	45R32-145	31 ¹ / ₈ "	31 ¹ / ₈ "	15"	19 ¹ / ₈ "	24"	2	12,851 lbs.
52	45ET-60000-8SRC	45R36-166	35 ¹ / ₈ "	35 ¹ / ₈ "	15"	19 ¹ / ₈ "	24"	2	14,297 lbs.
54	45ET-60000-8SRC	45R36-166	35 ¹ / ₈ "	35 ¹ / ₈ "	15"	19 ¹ / ₈ "	24"	2	14,631 lbs.

* Minimum Bridge Beam 45R20-79 for interlock .Step cut larger rails to 20". Add weight and cost for change.

Crane Weight is estimated and includes only the basic crane structure (end trucks, bridge beam and end stops) plus standard controls and motorized drives. Does not include conductor bars, collectors, festoon systems, pendants, interlocks or other options. Add weight of options to basic crane weight. Add 10% for estimated total shipping weight.

After selecting the crane, hoist and options, determine Total Load (pounds) on Bridge Beam and End Truck. Verify standard components are adequate (see Engineering Section of catalog for procedures to determine Bridge Beam ECL and End Truck Load). Verify that trolley wheel loads do not exceed the maximum allowed for the rail used for Bridge Beam and Runway Rail.

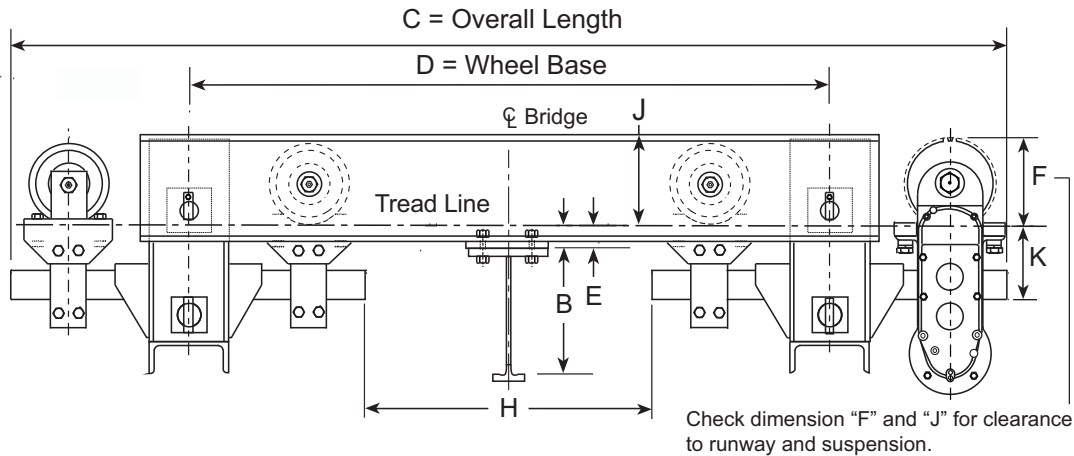
Standard Crane Bridge Overhang (O.H.) = 18". Overhang required for Interlocking Cranes with these end trucks = 24" with 45I-9A interlock in 450 Series rail. Minimum O.H. shown allows for width of end truck. *Consult factory for overhangs not shown.*

45C-30000-DM End Truck Specifications*

Model Number	Dimensions (inches)								# of 2-Wheel Trolleys	Max E.T. Loading†	End Truck Weight
	C	D	E	F	G	H	J	K			
45ET-60000-8SRC	112"	72"	3"	9 ¹¹ / ₁₆ "	28 ¹ / ₂ "	32"	10"	19 ³ / ₁₆ "	4	60,000 lbs.	2494 lbs.

* See "450 Series Crane End Trucks" on page G-23 for more information.

† Maximum load on 2-wheel trolley on 450 Series Rail cannot exceed 18000 pounds (9000 lbs. per wheel)



45ET-60000-8SRC/-8SRLC End Truck

Crane Interlocks

Interlocks allow a crane to mechanically connect to one or more spur rails, to a crossover rail section between parallel runways, or directly from one crane to another on parallel runways. Interlocking reduces handling time and effort by allowing the load on a crane to be transferred to a spur rail or another crane without re-handling the load.

The following are some descriptions and definitions of the interlock components:

Crane Interlock

The components of an interlock system that are typically installed on an end of a crane bridge beam, including a manually operated mechanism to mechanically engage or disengage the Crane Interlock to a Connecting Interlock on a Spur Rail or the bridge of an adjacent crane for crane-to-crane interlocking. May be installed on one or both ends of a crane bridge. Standard operation is by manually pulling an operating rope or chain after visually aligning the crane to the spur rail or adjacent crane bridge. Some short span cranes with interlocks on each end of the bridge beam may be provided with a single operating mechanism (not appropriate for longer span cranes). Some interlocks may be provided with an optional motor driven operating mechanism. For some applications, the “crane interlock” might be installed on a spur rail, and the “connecting interlock” on the crane. Double girder cranes must have interlock components installed on both crane bridges.

Connecting Interlock

The components of an interlock system that are typically installed on the end of a spur rail or an adjacent crane, and designed to mechanically engage or disengage with the Crane Interlock as desired. Double girder crane systems must have a Connecting Interlock installed on both spur rails or the double bridges of the adjacent crane.

Spur Rail

A length of monorail perpendicular to the crane runway and aligned with the crane bridge. The end of the monorail adjacent to the runway is supported by the runway with a Spur Support Bracket; other monorail supports are typical suspension components. Spur rails may extend on to include curves and switches as required for the system layout.

Spur Support Bracket

A uniquely designed support bracket for a Spur Rail. Also known as a “gooseneck” bracket. One end of the bracket is bolted to the top flange of a runway rail, the other end to the top flange of the monorail. Use of a Spur Support Bracket assures that alignment of the crane bridge treadline to the monorail treadline is maintained, even

when the runway or spur rail deflects under the load of the hoist and carrier. If the connecting interlock end of a spur rail is supported from building steel, deflection of the crane runway will cause the crane bridge to move out of alignment, relative to the spur rail, and make the interlock operation difficult if not impossible. Note: if the runway and monorail are both supported at a building column where there will be no differential deflection of the runway and monorail, a spur support bracket may not be required. For all other locations of a spur rail relative to a runway rail span, a Spur Support Bracket is required. Note: runway rails where spur support brackets are mounted should be sized for minimum deflection, typically 1/1000.

Crossover Section

A short section of monorail (or double rails for double girder cranes) located perpendicular between adjacent crane runway systems. Each end of the monorail is supported by a bracket similar to a Spur Support Bracket, with the same criteria for design. Each end of the monorail is typically provided with a Connecting Interlock mechanism. Crossover sections are used when “crane-to-crane” interlocking is not possible, due to building column interference or other restrictions along the runway.

Runway Deflection

Runway rail at spans where interlocking to a spur rail or an adjacent crane is planned should be sized for minimum deflection. For runway rail spans where the interlock operation will take place at mid-span, the runway rail is typically sized to provide the required ECL at 1/1000 deflection. This minimizes the differential deflection of the crane bridge to the spur rail. Only the length of runway rail within these spans need be sized for this deflection limit; rail in other spans may be sized for greater deflection allowance.

Motorized Operation

Some interlocks may be provided with an electric motor operator in place of the standard manual pull chain operating mechanism. Requires additional buttons on the crane pendant or controller. TC/American provides a system of sensors and lights for indication of crane to spur alignment. When the motorized interlock system is engaged, a limit switch disables crane travel. Interlock systems in excess of 5 ton are recommended to be provided with motorized operation.

Gap Spacer

Some interlocks are provided with components on the Crane Interlock and the Connecting Interlock to mechanically engage and provide horizontal spacing of the end of the crane bridge to the end of the spur rail.



200 Series Interlocks—2I-513/2I-515 and 2I-850/2I-930 325 Series Interlocks—3I-613/3I-615 and 3I-430/3I-450

General Description

- These models of 200 and 325 Series Interlocks and Connecting Interlocks have very similar construction, are easy to operate and make a positive rail-to-rail connection.
- The Crane Interlock has two ropes with pull handles extending from the Operating Mechanism. Pull one rope to latch interlock; pull other to unlatch.
- Mechanical Operation
 - A. When the Crane Interlock is unlatched and not aligned with a connecting interlock, a “keeper” gate hangs over the end of the interlock mechanism. The keeper is a safety device to prevent the operating mechanism from rotating the trolley stop to create an open rail end.
 - B. When the crane comes into alignment with a spur rail, the keeper on the Crane Interlock rides over a nose piece on the body of the Connecting Interlock, raising the keeper to expose the Interlock Bolt.
 - C. When the Operating Mechanism rope is pulled, a lever mechanism extends an Interlock Bolt on the crane to engage the Connecting Interlock.
 - D. When the Crane Interlock Bolt enters the Connecting Interlock, a head in the Connecting Interlock rotates and turns a shaft connected to the interlock stop (the “butterfly”). This rotates the stop in line with the crane bridge and allows trolley wheels to pass. Simultaneously, an Interlock Bolt on the connecting interlock is extended to engage the Crane Interlock and rotate the crane interlock stop (“butterfly”) to allow trolley wheels to pass.
 - E. Interlocks are unlatched by pulling the opposite rope. This returns the Interlock Bolts and the Trolley Stops to their original positions (butterfly perpendicular to the bridge rail). The interlock cannot be unlatched if a trolley wheel obstructs the stop from turning.

Interlock Alignment and Operation

Standard Operation

- A. Move the crane into alignment with a spur rail or adjacent bridge beam; verify visually.
- B. Pull rope to latch the interlocks.
- C. Complete transfer of load.
- D. After assuring that carrier is clear of the end stop areas, pull rope to unlatch the interlocks.

Optional Operation

- A. While the crane is not aligned to a spur rail, the Operating Mechanism rope can be pulled to “pre-set” the Crane Interlock for operation. A spring on the operating mechanism rod is compressed which “loads” the Crane Interlock.
- B. Because the keeper gate is down over the end of the interlock, the Interlock Bolts cannot extend nor will the Interlock Stop (“butterfly”) pivot to allow trolley passage.
- C. As the Crane Interlock contacts a Connecting Interlock on a spur rail, the keeper gate raises and releases the interlock mechanism to complete the crane-to-spur rail connection.
- D. This feature allows an operator to make a quick and easy interlock latch.



Interlocks for 200 Series Rail

Model 2I-513 Connecting Interlock

10-1732-00

Model 2I-515 Crane Interlock

10-1649-00 (with operating mechanism)

Model 2I-850 Connecting Interlock

10-1734-00

Model 2I-930 Crane Interlock

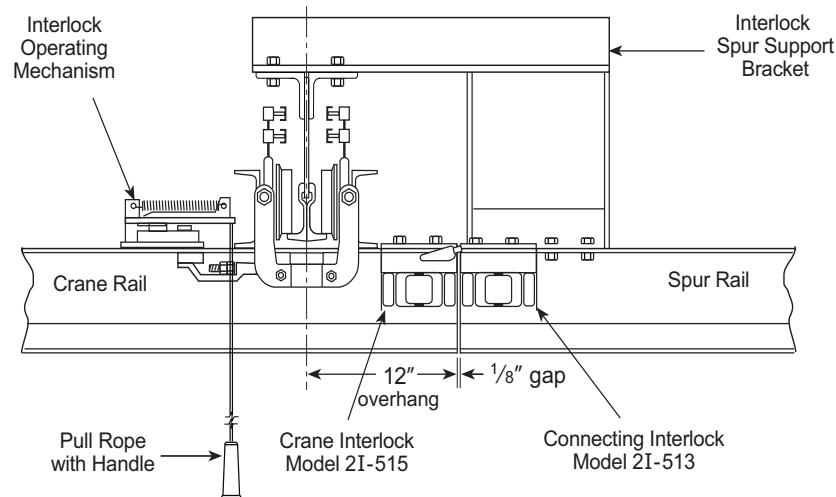
10-1909-00 (with operating mechanism)

- Interlocks may be mounted on one or both ends of a crane bridge.
- Standard Crane Interlocks are each provided with an operating mechanism.
- For cranes of 22' span and less, Crane Interlocks mounted on both ends may be provided with one operating mechanism.
- Motorized operation not recommended.
- Use only with TC/American Crane 200 Series trolleys with 4" diameter wheels (2T-2000 up to 2T-5600).

Part #	Model	Description	Weight
Non Electrified and Bottom Contact Conductor*			
10-1732-00	2I-513	Connecting Interlock	8 lbs.
10-1649-00	2I-515	Crane Interlock with operating mechanism	44 lbs.
Electrified with Side Contact Conductor†			
10-1734-00	2I-850	Connecting Interlock	8 lbs.
10-1909-00	2I-930	Crane Interlock with operating mechanism	46 lbs.

* Standard for 2GR7-15 and 2GR7-17 rail. For deeper rails, add for step cutting (rail notches).

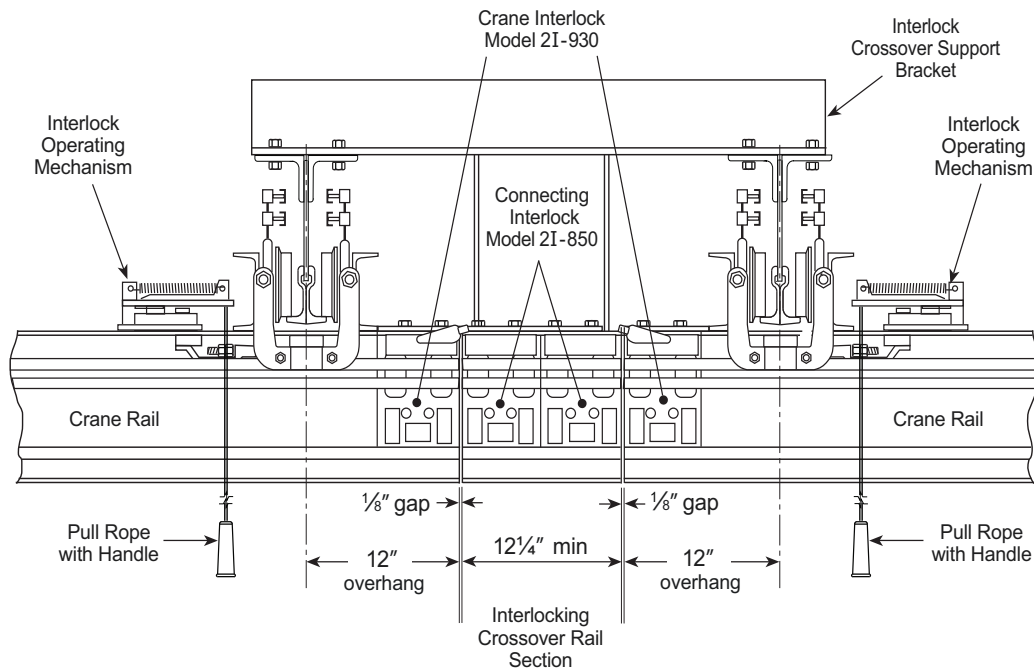
† Standard for 2GR11-16, 2GR11-23 and 2GR11-26 rail. For deeper rails, add for step cutting (rail notches).



Interlocking Cranes to Spur Rail (Typical)

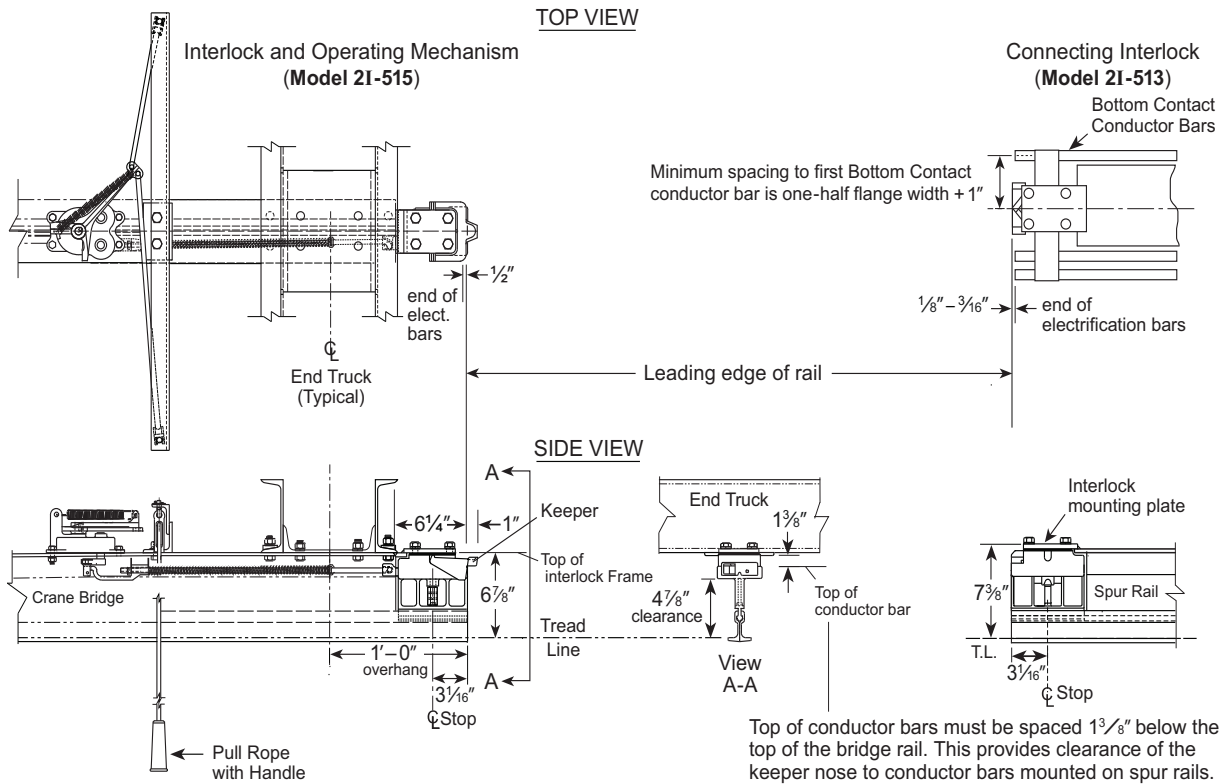
Non-electrified crane and spur rail shown.

Note Spur rails must be supported from the crane runway by an Interlock Spur Support Bracket as shown to assure alignment of the spur rail treadline to the crane bridge treadline during runway deflection.

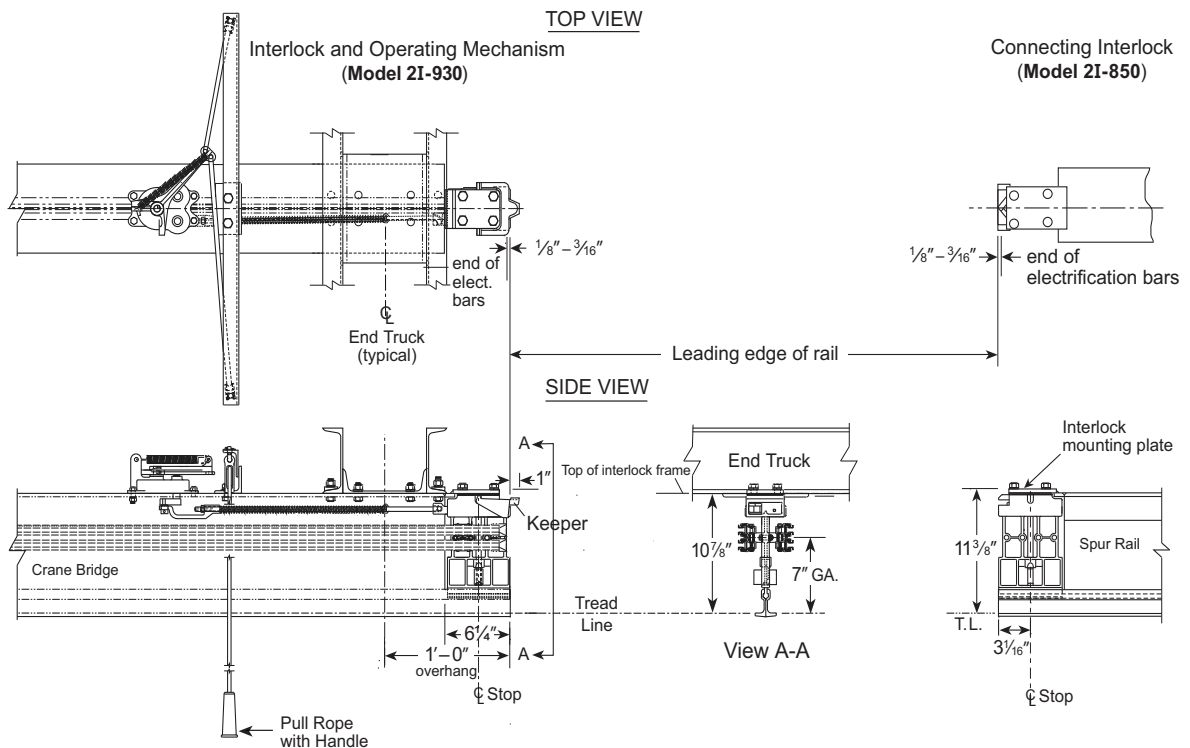


Interlocking Cranes to Crossover (Typical)

Shown with 2I-930 Crane Interlocks and 2I-850 Connecting Interlocks with Side Contact Conductor Bars on the Cranes and Crossover.



Bottom Contact Electrification (or Non-Electrified)



Side Contact Electrification



Interlocks for 325 “L” Series Rail

Model 3I-450 Connecting Interlock

10-1733-00

Model 3I-430 Crane Interlock

10-1919-00 (with operating mechanism)

Model 3I-613 Connecting Interlock

10-1663-00

Model 3I-615 Crane Interlock

10-1912-00 (with operating mechanism)

These interlocks are used in 3RL8-18 rail, or larger rail if the rail is step cut. Systems may be non-electrified (no conductor bar) or electrified with Bottom Contact conductor bar only.

These interlocks are used only in 3RL13-27 or 3RL14-35 rail. Systems may be non-electrified (no conductor bar) or electrified with Bottom Contact or Side Contact conductor bar. Rail requires step cut.

Model Part #	Description	Weight
3I-613 10-1663-00	Connecting Interlock Use in 3RL8-18 rail. For rail deeper than 3RL8-18: add for step cutting (rail notches)	15 lbs.
3I-615 10-1912-00	Crane Interlock with operating mechanism Use on cranes with 3RL8-18 Bridge Rail. For cranes with larger rail, add for step cutting (rail notching) each end of bridge.	46 lbs.

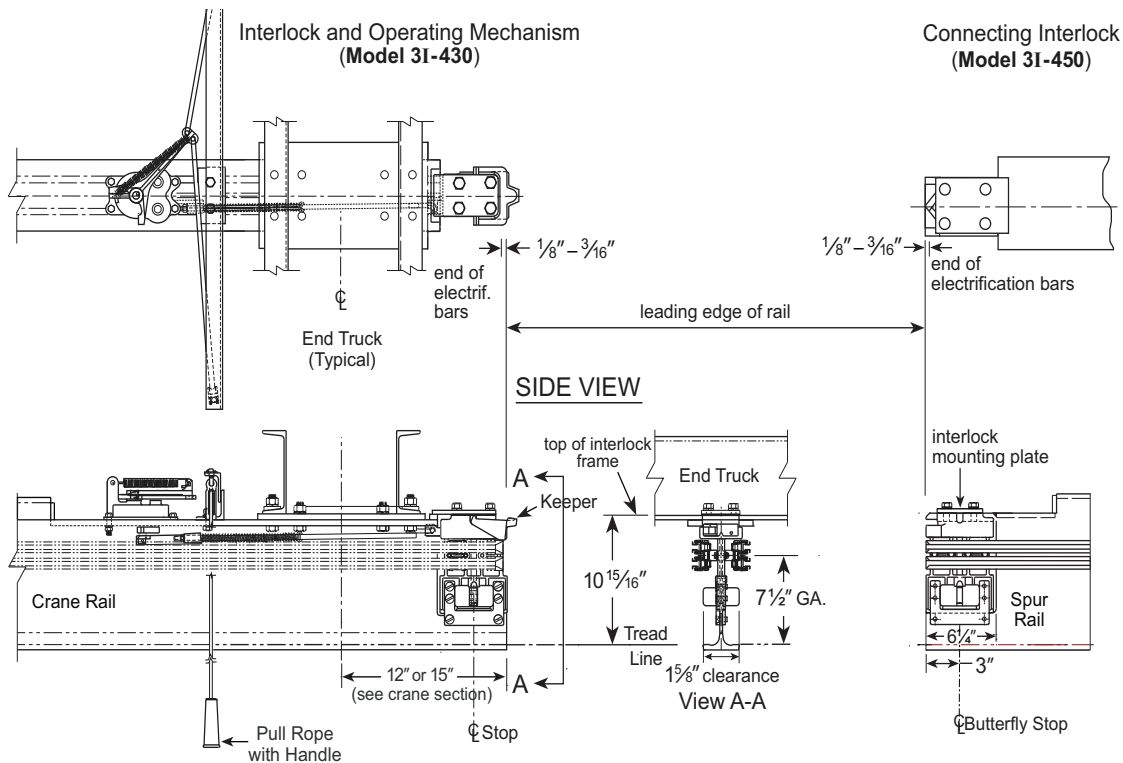
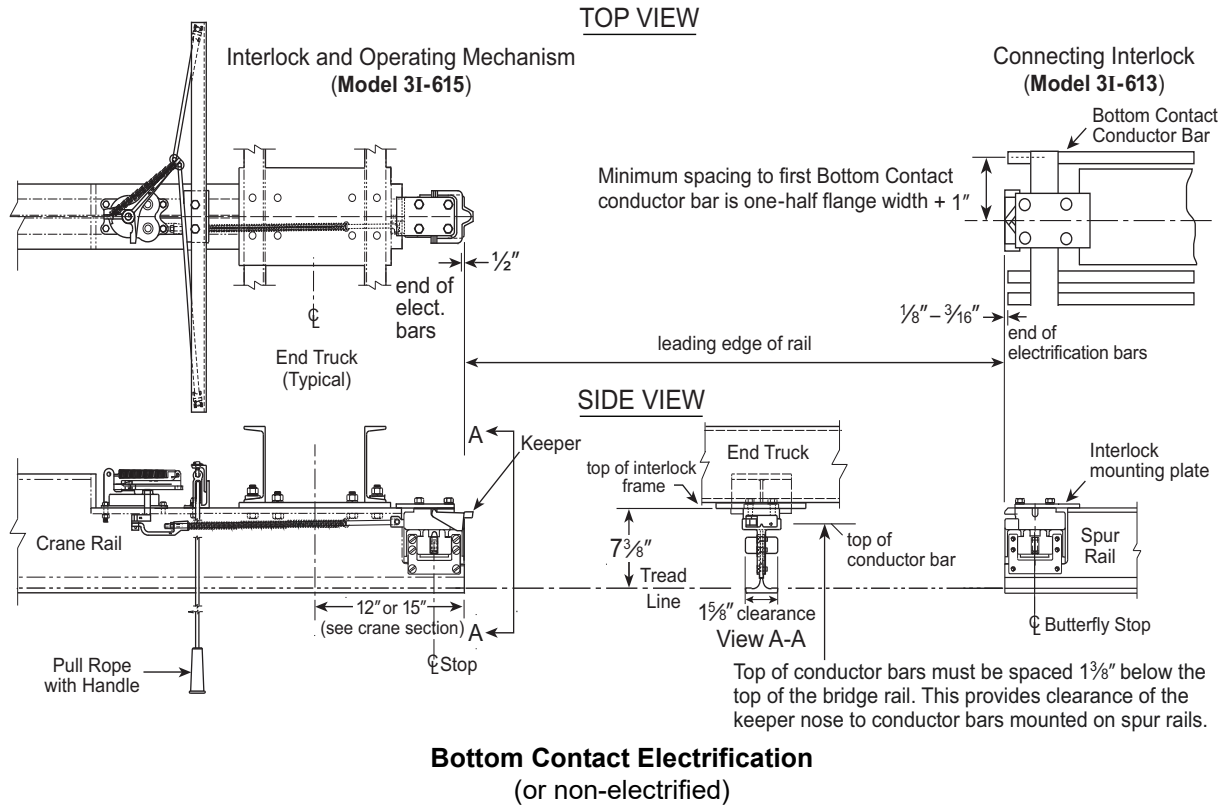
Note Current non-electrified interlocks may not be compatible with similar existing interlocks installed on old rail with “long stem” tee. If adding on to an existing system, provide crane serial number and dimension from tread-line to top of interlock frame for engineering review. “Old” dimension = 75/8”; “New” dimension = 73/8”

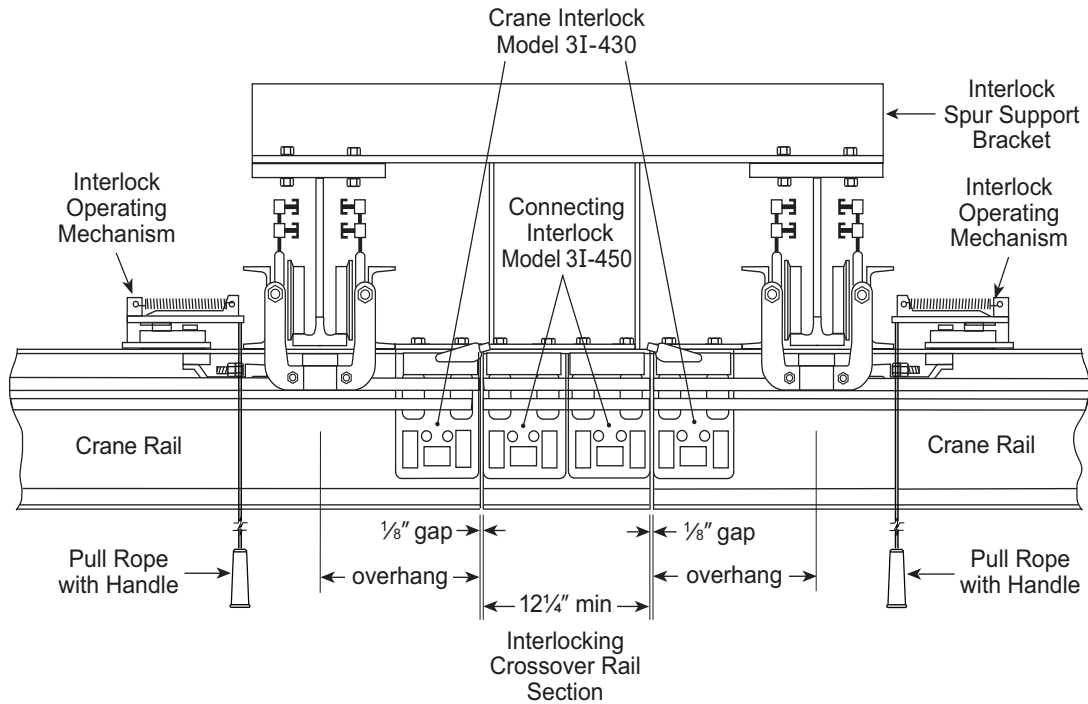
- Use on “L” Series rail only
- Standard bridge rail overhang:
12” – for cranes w/end trucks 3ET-1300, 3ET-2600-4, 3ET-5400-4
15” – for cranes w/end trucks 3ET-9000-4X or 3ET-9000-4
- Use only with TC/American Crane 325 series trolleys with 4” or 4½” dia. wheels (3T-2000 through 3T-5400)
- For cranes up to 6000 lb. capacity (if crane bridge is “L” Series rail)

Model Part #	Description	Weight
3I-450 10-1733-00	Connecting Interlock Use only on monorail, 3RL13-27 or 3RL14-35. Add for step cutting (rail notches).	17 lbs.
3I-430 10-1919-00	Crane Interlock with operating mechanism Use only on cranes with 3RL13-27 or 3RL14-35 Bridge Rail. Add for proper bridge rail on crane if required. Add for step cutting (rail notching) each end of bridge.	48 lbs.

Note Current electrified interlocks should be compatible with similar existing interlocks installed on old rail with “long stem” tee. Verify that dimension from treadline to top of interlock frame is 1015/16”.

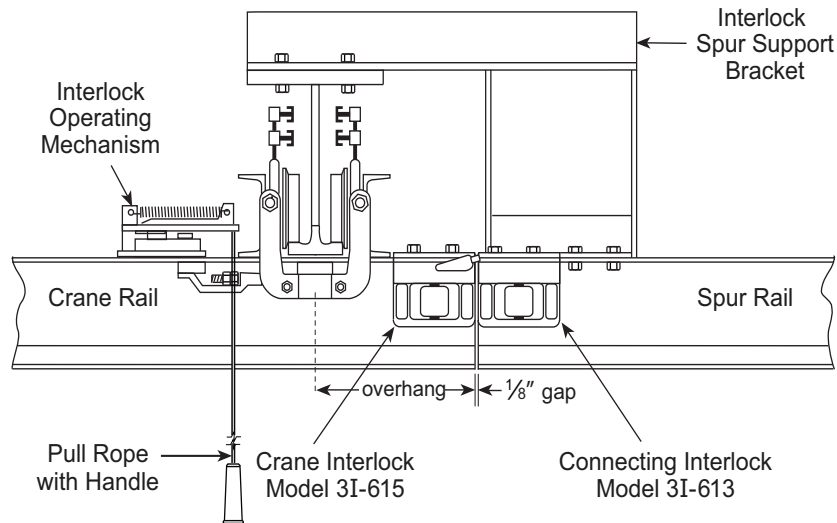
- Side Contact Electrified Interlocking Systems — require min. 13” deep rail for installation of 3I-430 and 3I-450 Interlocks
- Bottom Contact Electrified Systems may be mounted on any depth rail
- Interlocks may be mounted on one or both ends of crane bridge
- Standard Crane Interlocks provided with operating mechanism
- For cranes of 22’ span and less:
Crane Interlocks mounted on both ends may be provided with one operating mechanism
- Motorized operation *not* recommended





Interlocking Crane to Crossover (Typical)

Shown with 3I-430 Crane Interlocks and 3I-450 Connecting Interlocks with Side Contact Conductor Bars on the Cranes and Crossover.



Interlocking Crane to Spur Rail (Typical)

Non-electrified crane and spur rail shown.

Note Spur rails must be supported from the crane runway by an Interlock Spur Support Bracket as shown to assure alignment of the spur rail treadline to the crane bridge treadline during runway deflection.



Interlocks for 325 “H” Series Rail

Model 3I-9 Crane Interlock

10-3110-XX (3I-9A)

10-3112-XX (3I-9B) (with operating mechanism)

Model 3I-10 Connecting Interlock

10-3111-XX (3I-10A)

10-3113-XX (3I-10B)

Model Part # *	Description	Weight	Interlock Applications		
			Trolley/Wheel Size	3I-9A/3I-10A	3I-9B/3I-10B
3I-9A 10-3110-xx	Crane Interlock with operating mechanism Standard on cranes with 3RH14-41 Bridge Rail. Add for step cutting (rail notching) for deeper rails.	143 lbs.	Plain and motorized trolleys with wheel dia. up to 5"	7½" gage Side Contact and/or Bottom Contact Electrification	7½" gage Side Contact and/or Bottom Contact Electrification
3I-9B 10-3112-xx	Crane Interlock with operating mechanism Standard on cranes with 3RH16-47 Bridge Rail. Add for step cutting (rail notching) for deeper rails.	144 lbs.	Plain and motorized trolleys with wheel dia. of 6½"	Bottom Contact Electrification	9" gage Side Contact and/or Bottom Contact Electrification
3I-10A 10-3111-xx	Connecting Interlock Standard on 3RH14-41 spur rail. Add for step cutting (rail notching) for deeper rails.	55 lbs.	Plain and motorized trolleys with wheel dia. of 9"	Bottom Contact Electrification	Bottom Contact Electrification
3I-10B 10-3113-xx	Connecting Interlock Standard on 3RH16-47 spur rail. Add for step cutting (rail notching) for deeper rails.	56 lbs.			

* Last 2 digits of interlock part numbers vary with end truck and rail size.

Note the following:

- Use on “H” Series rail only; minimum 3RH14-41.
- 3I-9A and 3I-10A designed for direct installation in 3RH14-41 rail.
(If either the bridge rail or the spur rail is deeper, add for step cutting as required.)
- 3I-9B and 3I-10B designed for 3RH16-47 rail.
(If either the bridge rail or the spur rail is deeper, add for step cutting as required.)
- May be used with either Side- or Bottom-Contact electrification bars, or with non-electrified systems.
- Standard interlocking bridge rail overhang:
14"– for cranes with end trucks 3ET-9000 through 3ET-20000
18"– for cranes with end trucks 3ET-24800 through 3ET-38000
- Interlocks may be mounted on one or both ends of a crane bridge.
- Motorized operation
 - a. .Optional for crane capacity through 5 ton
 - b. .Required for crane capacity greater than 5 ton
- See Interlock applications chart for trolleys and conductor bar used with these interlocks.

Interlocks for 325 “H” Series Rail

325 Series Interlocks

Model 3I-9A/3I-10A

Model 3I-9B/3I-10B

General Description

- These models of 325 Series Interlocks and Connecting Interlocks make a positive rail-to-rail connection for the heaviest crane loads.
- Use with “H” Series rail.
- For manual operation, the Crane Interlock has two chains with pull rings extending from arms of the Operating Mechanism. Pull one chain to latch the interlock, pull the other to unlatch.
- Optional motorized operation is available.
- Manual Mechanical Operation:
 - A. When the Crane Interlock is unlatched and not aligned with a connecting interlock, a “keeper” gate hangs over the end of the interlock mechanism. The keeper is a safety device to prevent the operating mechanism and interlock levers from raising the Safety Stop and creating an open rail end.
 - B. When the crane is aligned to a spur rail, a roller on the nose of the keeper rides over a ramp above the Connecting Interlock, raising the Keeper to expose the Latch Pin and allow the interlock to be actuated.
 - C. When the Operating Mechanism chain is pulled, a lever mechanism extends a Latch Pin from the Crane Interlock to engage the Latch Pin Guide (receiver or socket) of the Connecting Interlock. The tapered end of the Latch Pin easily enters the Guide to align the crane and spur rail.
 - D. As the Crane Interlock Latch Pin is pushed into the Connecting Interlock guide (receiver or socket), the nose of this Latch Pin pushes against a Connecting Interlock Latch Pin, moving it rearward. Bell Crank arms attached to the Latch Pins and Levers simultaneously pivot to raise the Safety Stop on both the Crane Bridge Rail and the Spur Rail, allowing clearance for trolleys to pass by.
 - E. When the Crane Interlock Latch Pin enters the connecting interlock, a Hook Latch on the Connecting Interlock Latch Pin pivots to engage a hole on the end of the Crane Interlock Latch Pin. This locks the Crane Latch Pin to the Connecting Interlock Latch Pin and keeps the interlock mechanically secure.
 - F. A horizontal Gap Spacer assures bridge rail-to-spur rail clearance on interlocking cranes and spur rails. As the crane approaches a spur rail, a guide roller on an arm mounted on the spur rail engages a ramp and channel guide on the crane. This gap spacer device positions the crane properly in relation to the spur rail so that proper rail gap at the treadline is maintained. The gap spacer arm must be shimmed and adjusted at installation to fit properly at each spur rail. It is not intended to compensate for installation errors.
 - G. When the Operating Mechanism chain is pulled to disengage the interlocks, the Latch Pins remain locked together until they are retracted, and the Safety Stops on both the crane and the spur rail are fully lowered.
 - H. Safety Stops are designed to contact trolley load bars or hoist lugs only, not the trolley wheels.



Interlock Alignment & Operation—3I-9A/3I-10A and 3I-9B/3I-10B

Standard Manual Operation

1. Move the crane into alignment with a spur rail or adjacent bridge beam, verify visually.
2. Pull chain to latch the interlocks.
3. Complete transfer of load.
4. After assuring the carrier is clear of the end stop areas, pull chain to unlatch the interlocks.
5. Disengage the interlock by pressing and holding the “Disengage Interlock” button until the interlock is fully disengaged. The Green “Interlock Engaged” light will turn off when the interlock starts to disengage, and the Red “Interlock Disengaged” light will turn on when the interlock is fully disengaged. The Amber “Aligned” light remains on. Crane motion is now allowed.

Optional Motorized Operation

1. Indicator lights are provided on a box near the crane interlock end (may be a separate enclosure or mounted on the bottom of the crane electrical enclosure) to show when the crane bridge rail is aligned with the spur rail, when the interlock is fully engaged and when the interlock is fully disengaged.
 - A. Red: Crane Interlock stop is down and interlock is not latched (normal condition during crane movement).
 - B. Amber: Interlock is aligned with a spur rail or another crane bridge.
 - C. Green: Crane Interlock (and Connecting Interlock) stops are raised and transfer of the carrier may begin.
2. Drive the crane to a spur rail and align the crane bridge to the spur rail. When aligned, the Amber “Aligned” light will turn on. Interlock latching may now be initiated by pressing the “Engage Interlock” button on the crane controller.

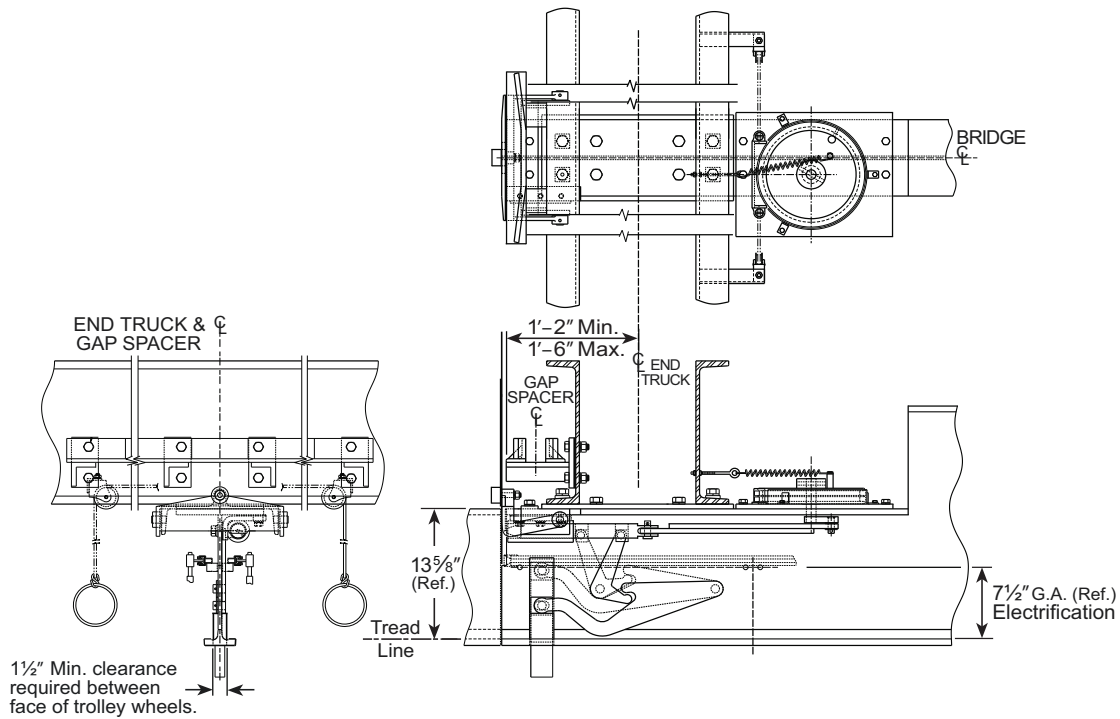
Note *A limit switch in the electrical controls prevents the interlock from being actuated unless the crane interlock is aligned (Amber light is on) with a connecting interlock.*

3. Engage the interlock by pressing and holding the “Engage Interlock” button until the interlock is fully latched. When the interlock starts to engage, the Red “Interlock Disengaged” light will turn off. When the interlock is fully engaged, the Green “Interlock Engaged” light will turn on. The Amber “Aligned” light remains on.

Note *A limit switch in the electrical controls disables crane motion until the interlocks are disengaged.*

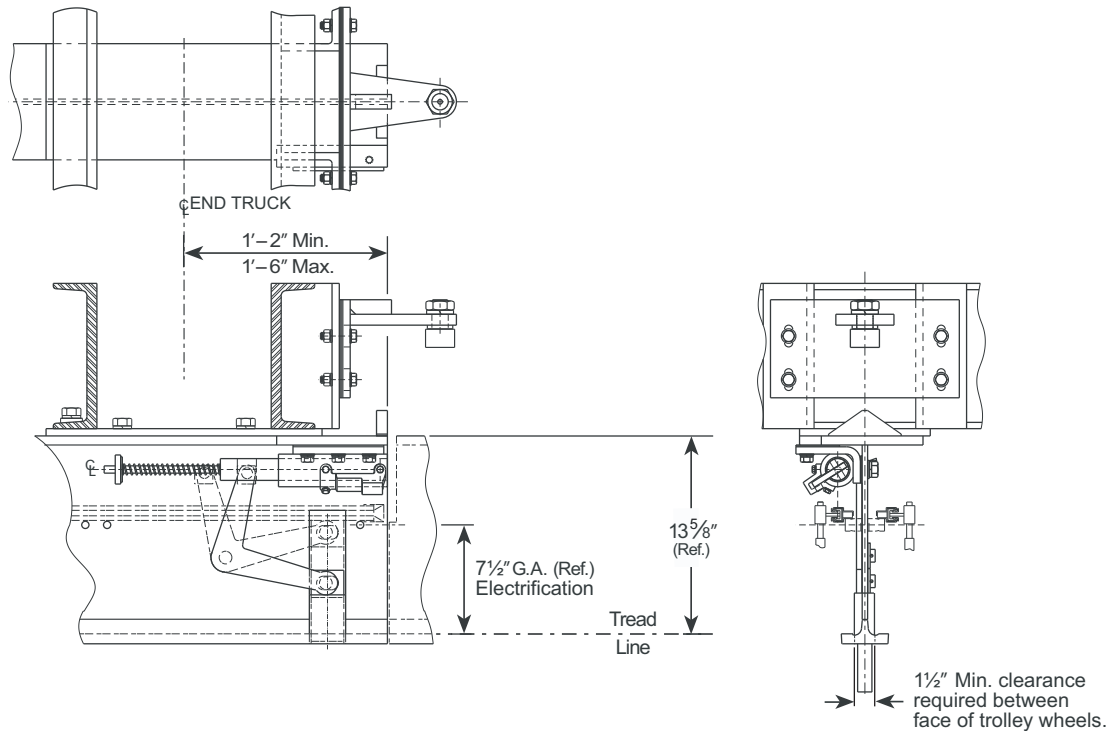
4. Move the carrier across the interlocked crane and spur rail section as required.

6. When the crane is moved away from the spur rail, the Amber “Aligned” light will turn off, leaving only the Red “Interlock Disengaged” light showing.



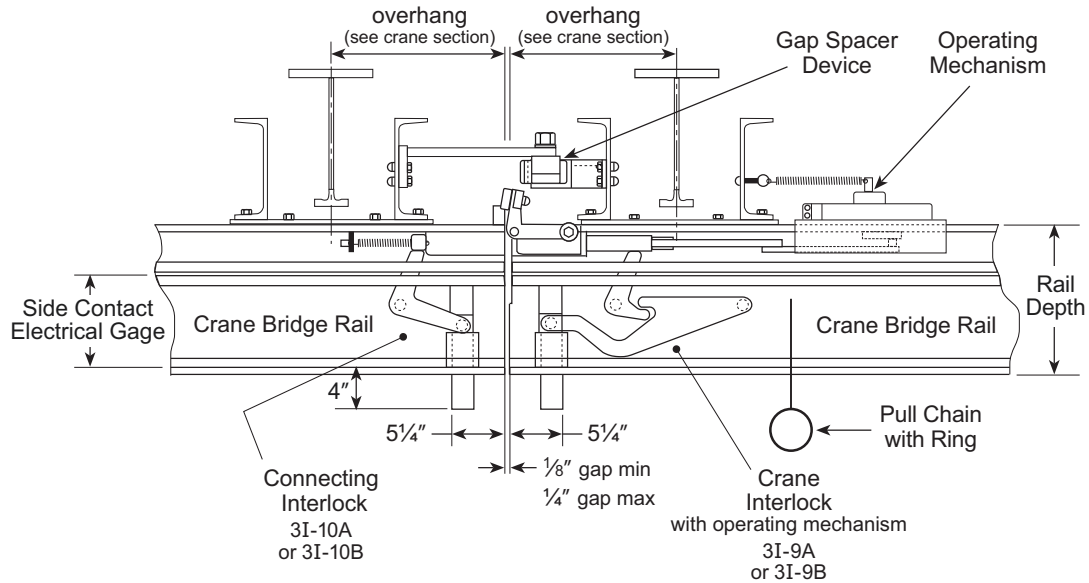
3I-9A Crane Interlock

Manual Operation, Shown in Crane Bridge with Step Cut and Side Contact Conductors



3I-10A Connecting Interlock

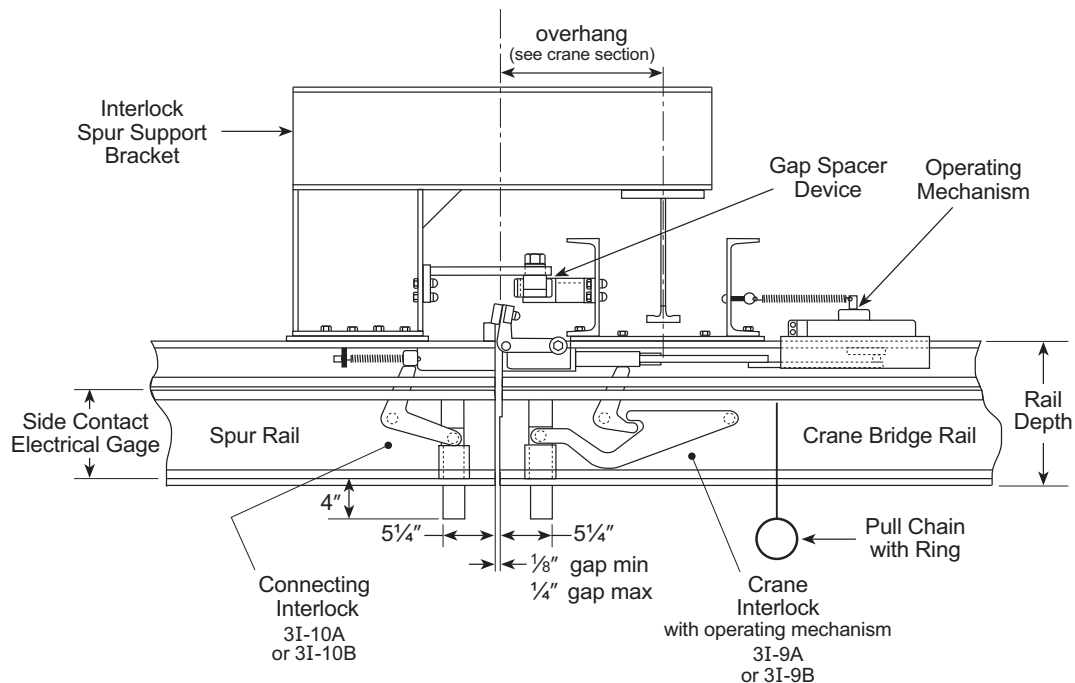
Manual Operation, Shown in Crane Bridge without Step Cut, with Side Contact Conductors



Interlocking Crane to Crane (325 "H" Series)

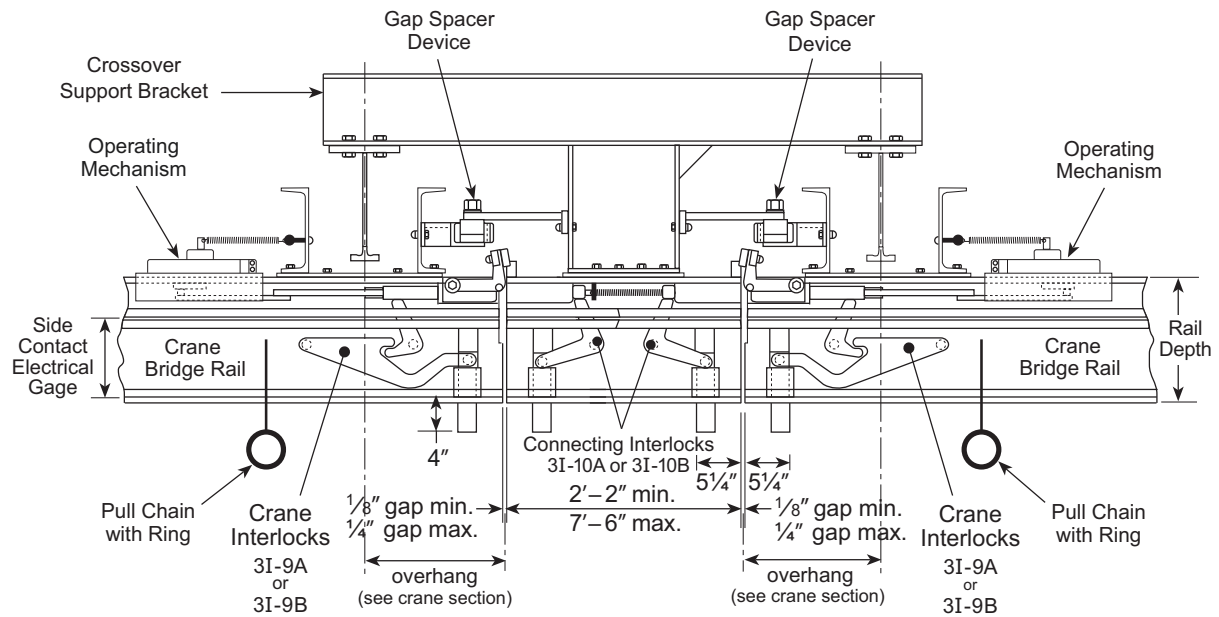
Cranes may be latched or interlocked directly to each other for bridge-to-bridge carrier transfer.

Note Operations at the mid-point of runway spans may be difficult due to differential deflection of loaded versus unloaded runways. The Interlock Gap Spacer Device provides horizontal alignment only, to prevent ends of crane bridges from hitting; it does not provide vertical alignment.



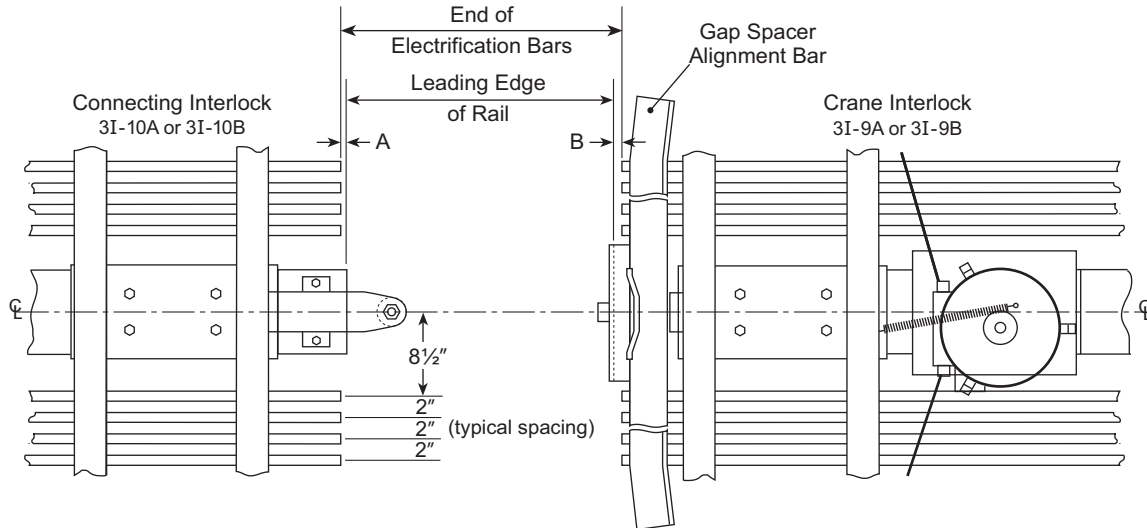
Interlocking Crane to Spur (325 Series) (Typical)

Note Spur rails must be supported from the crane runway by an Interlock Spur Support Bracket as shown to assure alignment of the spur rail treadline to the crane bridge treadline during runway deflection.



Interlocking Cranes to Crossover

Note Where building obstructions prevent latching or interlocking of one crane bridge directly to another, carriers can be transferred bridge-to-bridge via an Interlocking Crossover as shown.



Set-Back of Conductor Bars from End of Rail with Interlock

Bottom Contact Bars Shown

A = 1/8" - 3/16" for either Bottom or Side Contact

B = 1/8" - 3/16" if Side Contact, 1/2" if Bottom Contact



Interlocks for 450 Series Cranes and Spur Rails

Model 45I-9C Crane Interlock

10-3302-00 (with motorized operating mechanism)

Model 45I-10C Connecting Interlock

10-3303-00

General Description

- Positive rail-to-rail connection for the very heaviest loads
- For use on 450 Series rail only
- 45I-9C and 45I-10C designed for 45R20-79 rail minimum (due to clearance required to raise the Safety Stop)

Note *If either the bridge rail or spur rail is deeper, add for step cutting as required.*

- Motorized operation only
- For use with Bottom Contact electrification bars
- Standard bridge rail overhang = 24"
- Interlocks may be mounted on one or both ends of a crane bridge.

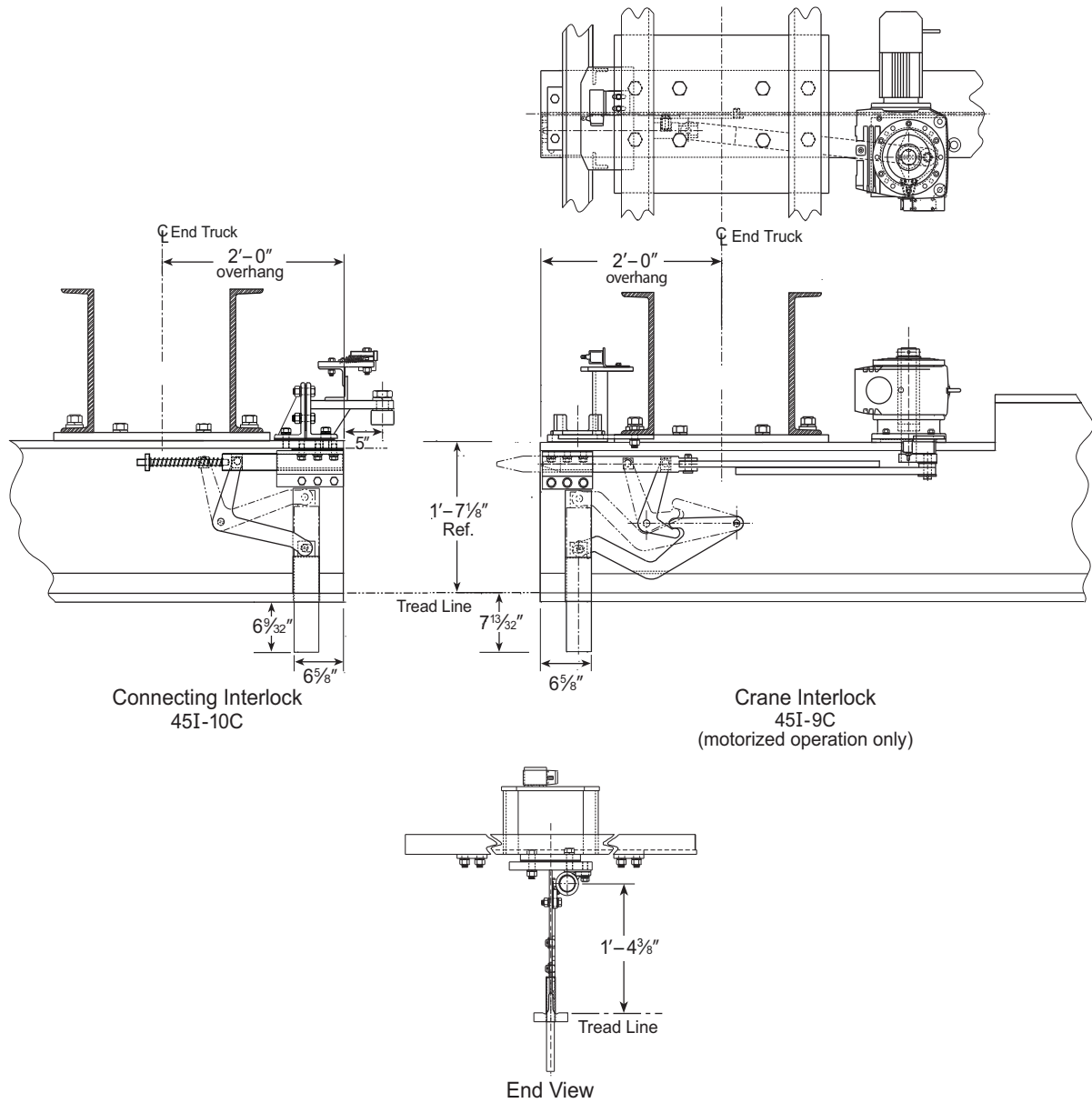
General Mechanical Operation

1. When the Crane Interlock is unlatched and not aligned with a Connecting Interlock, an Alignment Limit Switch is electrically open. This serves as a safety device to prevent an operator from inadvertently energizing the motorized operating mechanism, causing the interlock levers to raise the Safety Stop and create an open rail end.
2. When the crane is aligned to a spur rail, the Alignment Limit Switch is closed and enables the circuit to the motorized operating mechanism to be completed and the interlock to be actuated.
3. When the Engage Interlock button on the pendant or controller is pressed, the motor and reducer on the operating mechanism extends a Latch Pin from the Crane Interlock to engage the Latch Pin Guide (receiver or socket) of the Connecting Interlock. The tapered end of the Latch Pin easily enters the Guide to align the crane and spur rail.
4. As the Crane Interlock Latch Pin is pushed into the Connecting Interlock guide (receiver or socket), the nose of this Latch Pin pushes against a Connecting Interlock Latch Pin, moving it rearward. Bell Crank arms attached to the Latch Pins and Levers simultaneously pivot to raise the Safety Stop on both the Crane Bridge Rail and the Spur Rail, allowing clearance for trolleys to pass by.
5. A horizontal Gap Spacer assures bridge rail-to-spur rail clearance on interlocking cranes and spur rails. As the crane approaches a spur rail, a guide roller on an arm mounted on the spur rail engages a ramp and channel guide on the crane. This gap spacer device positions the crane properly in relation to the spur rail so that proper rail gap at the treadline is maintained. The gap spacer arm must be shimmed and adjusted at installation to fit properly at each spur rail. It is not intended to compensate for installation errors.
6. When the Disengage Interlock button on the pendant or controller is pressed to disengage the interlocks, the motorized interlock operator retracts the latch pins to disengage the interlock. The crane interlock latch pin does not fully retract from the connecting interlock until the Safety Stops on both the crane and the spur rail are fully lowered.
7. Safety Stops are designed to contact trolley load bars or hoist lugs only, not the trolley wheels.

Motorized Operation

1. Indicator lights are provided on a box near the crane interlock end (may be a separate enclosure or mounted on the bottom of the crane electrical enclosure) to show when the crane bridge rail is aligned with the spur rail, when the interlock is fully engaged and when the interlock is fully disengaged.
 - A. Red: Crane Interlock stop is down and interlock is not latched (normal condition during crane movement).
 - B. Amber: Interlock is aligned with a spur rail or another crane bridge.
 - C. Green: Crane Interlock (and Connecting Interlock) stops are raised and transfer of the carrier may begin.
2. Drive the crane to a spur rail and align the crane bridge to the spur rail. When aligned, the Amber "Aligned" light will turn on. Interlock latching may now be initiated by pressing the "Engage Interlock" button on the crane controller.
Note: A limit switch in the electrical controls prevents the interlock from being actuated unless the crane interlock is aligned (Amber light is on) with a connecting interlock.
3. Engage the interlock by pressing and holding the "Engage Interlock" button until the interlock is fully latched. When the interlock starts to engage, the Red "Interlock Disengaged" light will turn off. When the interlock is fully engaged the Green "Interlock Engaged" light will turn on. The Amber "Aligned" light remains on.
Note: A limit switch in the electrical controls disables crane motion until the interlocks are disengaged.
4. Move the carrier across the interlocked crane and spur rail section as required.
5. Disengage the interlock by pressing and holding the "Disengage Interlock" button until the interlock is fully disengaged. The Green "Interlock Engaged" light will turn off when the interlock starts to disengage, and the Red "Interlock Disengaged" light will turn on when the interlock is fully disengaged. The Amber "Aligned" light remains on. Crane motion is now allowed.
6. When the crane is moved away from the spur rail, the Amber "Aligned" light will turn off, leaving only the Red "Interlock Disengaged" light showing.

Model Part #	Description	Weight
45I-9C 10-3302-00	Crane Interlock with Motorized operating mechanism For minimum 45R20-79 Bridge Rail. Add for step cutting (rail notching) for deeper rails.	415 lbs.
45I-10C 10-3303-00	Connecting Interlock For minimum 45R20-79 Spur Rail. Add for step cutting (rail notching) for deeper rails.	150 lbs.

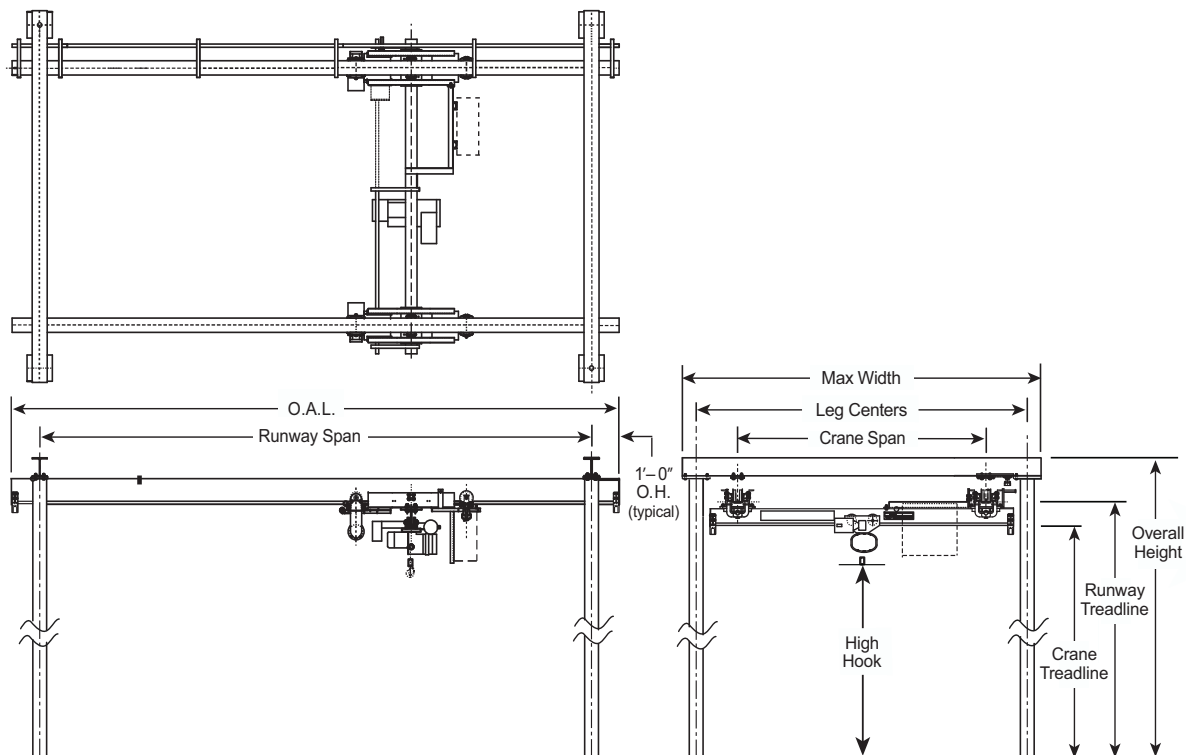
**Crane to Crane Interlock Shown**

Self-Supported Crane Systems

TC/American Crane Self-Supported Crane Systems are ideal for “work-center cranes” or installations where a crane runway cannot be supported from overhead building steel. Self-Supported Crane Systems are custom designed to meet the exact needs of the customer, using TC/American Crane standard patented track crane and runway components.

Features and Options

- Capacity as required
- Runway as required: Patented Track 200 Series Girder Rail, 325 Series or 450 Series rail to meet exact load requirements, from lightest to heaviest duty work
- Cranes as required: 200 Series, 325 Series or 450 Series of the exact capacity to meet application requirements
- Single or Double Girder Cranes
- Cranes may be Hand Pushed, Hand Chain Drive or Motorized; Air drive optional
- Support Stands for the crane span, runway span and hoist high hook dimension as required
- (Headers, Legs, Base Plates and bolted connections sized per A.I.S.C. for a completely free standing system, or for a system braced to building steel.)
- Cranes and Runways meet ANSI MH27.1 and ASME/ANSI B30.1
- Crane and Runway Electrification from standard TC/American Crane components, either Shielded Channel-Bar Conductors, Figure-8 Conductors, festoon or tagline
- Hoist Trolleys and Motorized Trolleys or Drivetractors selected from standard TC/American Crane products
- Multiple Options for Crane, Runway, Suspension, Controls, Trolleys & Drives available (as shown in other sections of catalog, including Interlocking to Spur Rails)



Typical Self-Supported Crane

Shown above is a typical motor driven self-supported crane, with just one runway span. Self-Supported Crane Systems are designed for the crane capacity, span and hook height required, and the number of runway spans and supports are provided as required. Cranes and Runway may be 200, 325 or 450 Series standard products, as shown elsewhere in this catalog. Cranes may be Hand Pushed, Hand Chain Driven or Motorized. All standard crane options are available.

Truss Cranes

A TC/American Crane Truss Crane may be the solution for an application that cannot be met with a multiple-runway crane or a special long span single girder crane. Truss cranes provide the ability to span long distances with a minimum of headroom.

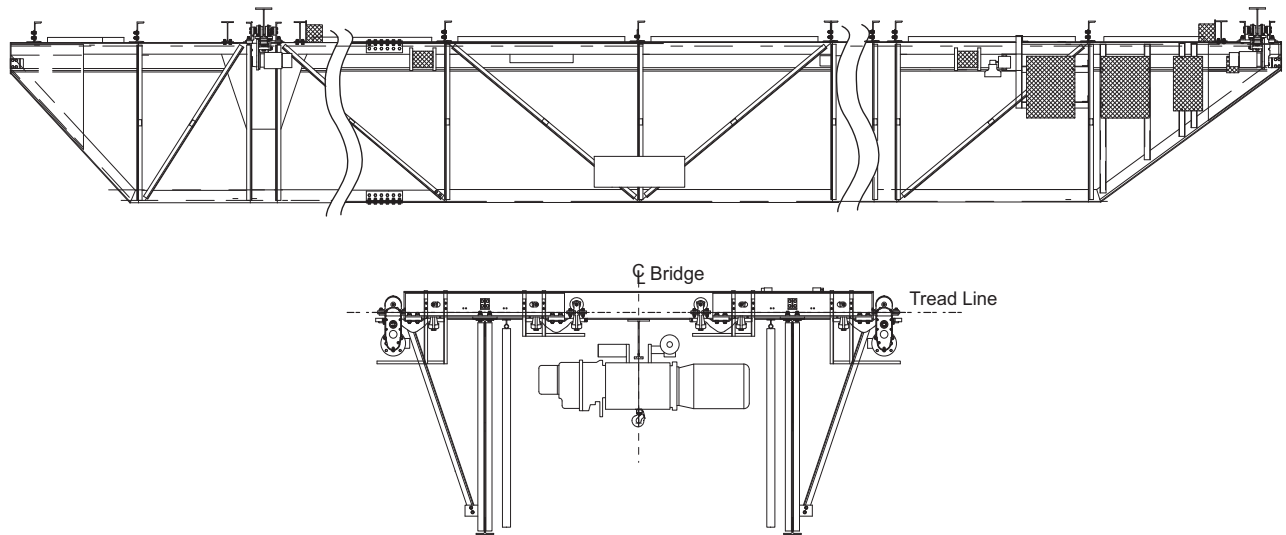
Two parallel trusses with cross-members form a rigid crane structure. Elevated within the trusses, and supported by the trusses, is a bridge beam rail for supporting a hoist and carrier. Since the trusses carry the load, the bridge beam rail size can be minimized. In many cases the hoist high hook elevation is above the bottom of the trusses.

Each Truss Crane is custom designed to the particular application. Shown below is a “typical” truss crane designed and constructed by TC/American Crane. For more information, please contact your sales representative with all application parameters.

Features

- Long span (up to 100+ ft.)
- Trusses spliced at center for easy shipment & assembly

- Single or Double Bridge Girder
- Single Bridge for Monorail Hoists
- Double Bridge for Double Girder Hoist Carrier
- Truss & Bridge Gauge as required for hoist & load clearance
- 325 or 450 Series Patented Track Rail for Runway & Bridge
- TC/American Crane CPatented Track End Trucks with Motorized Trolleys
- TC/American Crane Patented Track Runways
- Up to 15-ton capacity
- Double Truss with cross bracing
- Multiple Speed Options
- Pushbutton or Remote Control
- Festooned power and control conductors
- Optional Maintenance Walkways
- Interlocking option
- Minimum headroom
- Maximum hook coverage
- Top running optional



Typical Truss Crane, Single Girder, Double Truss





End Trucks

200 Series Crane End Trucks

200 Series Crane End Trucks G-3

Model 2ET-1300-4 End Truck	G-3
Model 2ET-2600-4 End Truck	G-4
Model 2ET-2600-4SR End Truck	G-4
Model 2ET-3700-4 End Truck	G-4

Model 2ET-3800-4 End Truck	G-5
Model 2ET-7700-8 End Truck	G-5
Model 2ET-7800-8 End Truck	G-6
End Truck to Bridge Beam Connection Detail	G-7

325 Series Crane End Trucks

325 Series Crane End Trucks G-9

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450 Series Crane End Trucks

450 Series Crane End Trucks G-23

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End Truck to Bridge Beam Connection Detail	G-25
450 Series End Truck Trolley Component Assembly ...	G-26



End Trucks

All end truck frames are steel weldments (except for Models 2ET-1300-4 and 3ET-1300-4, which are castings). Ratio of crane span to end truck wheelbase must not exceed 10:1. All end trucks are furnished with restraining lugs.

Trolleys

End Trucks are furnished with TC/American Crane articulating two-wheel or four-wheel trolleys. See Trolley section for specific Trolley information. Treads of trolley wheels are heat treated to a minimum hardness of 425 Brinnel. Wheel bearings have a minimum B-10 life of 5,000 hours. Standard wheel assemblies are greasable.

Capacity

The total load capacity includes live load, impact, hoist and trolleys, handling equipment and applicable crane weights.

Paint

One coat TC/American alert yellow enamel.

Service

Class "C" per MMA specifications (for indoor operation).

Options

- Longer than standard wheelbase
- Shorter than standard wheelbase
- Double bridge mounting pads
- Special speeds on motorized end trucks



200 Series Crane End Trucks

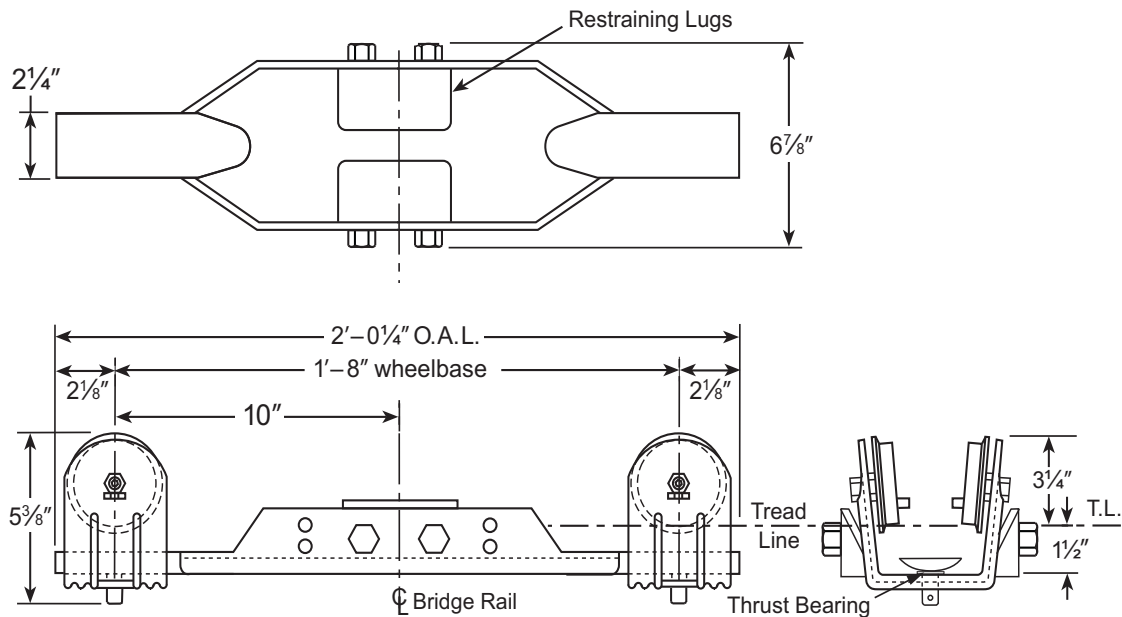
Model 2ET-1300-4 End Truck

10-1993-00

See “[End Truck to Bridge Beam Connection Detail](#)” on page G-7. For additional information, see “[Model 2T-850-2C \(Crane Trolley\)](#)” on page E-6.

Weight	34 lbs.
Total Load Capacity*	1300 lbs.
Trolleys	2T-850-2C 10-2239-00
Thrust Bearing (washer)	23-1054-00

* Includes live load, impact & handling equip. weights.



Model 2ET-2600-4 End Truck

10-1525-00 (shown)

Model 2ET-2600-4SR End Truck

10-3380-01

See “End Truck to Bridge Beam Connection Detail” on page G-7. For additional information see “Model 2T-2000-2 Trolley” on page E-7 and “Model 2T-2000-2SR Trolley” on page E-8.

Weight

2ET-2600-4	65 lbs.
2ET-2600-4SR	68 lbs.

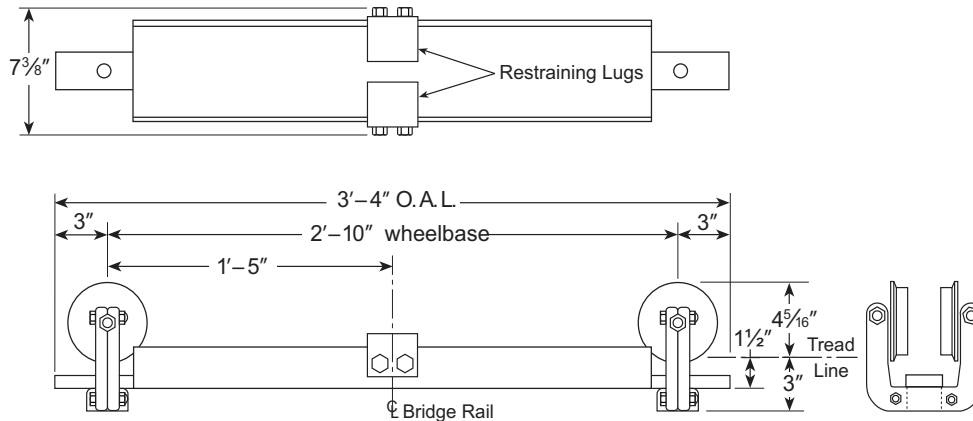
Total Load Capacity*

2600 lbs.

Trolleys

2ET-2600-4	2T-2000-2 10-1095-00
2ET-2600-4SR	2T-2000-2SR 10-1121-00

* Includes live load, impact & handling equip. weights.



Model 2ET-3700-4 End Truck

10-1521-00

See “End Truck to Bridge Beam Connection Detail” on page G-7. For additional information see “Model 2T-3000-2 Trolley” on page E-15.

Weight

120 lbs.

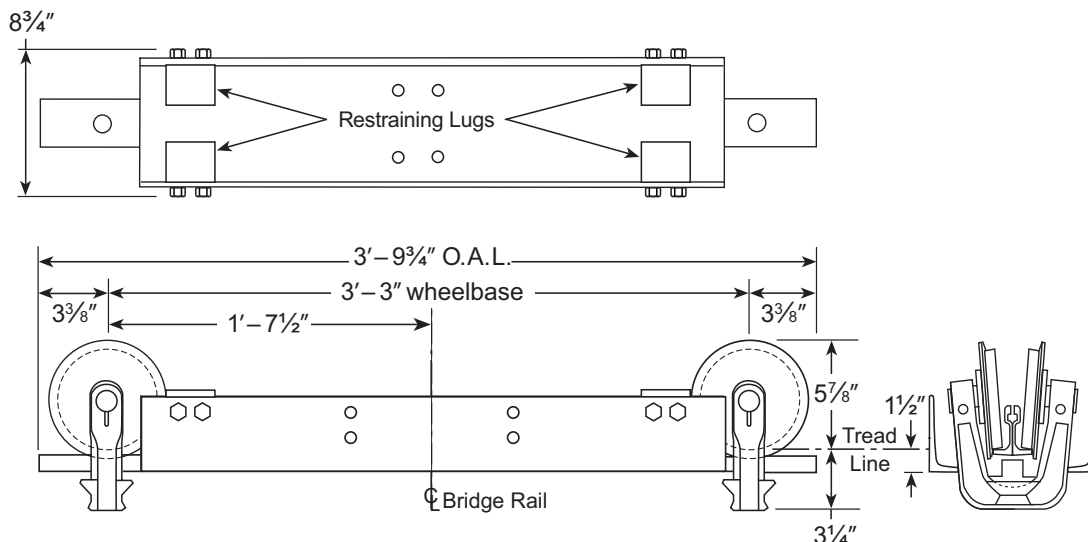
Total Load Capacity*

3700 lbs.

Trolleys

2T-3000-2
10-1364-00

* Includes live load, impact & handling equip. weights.





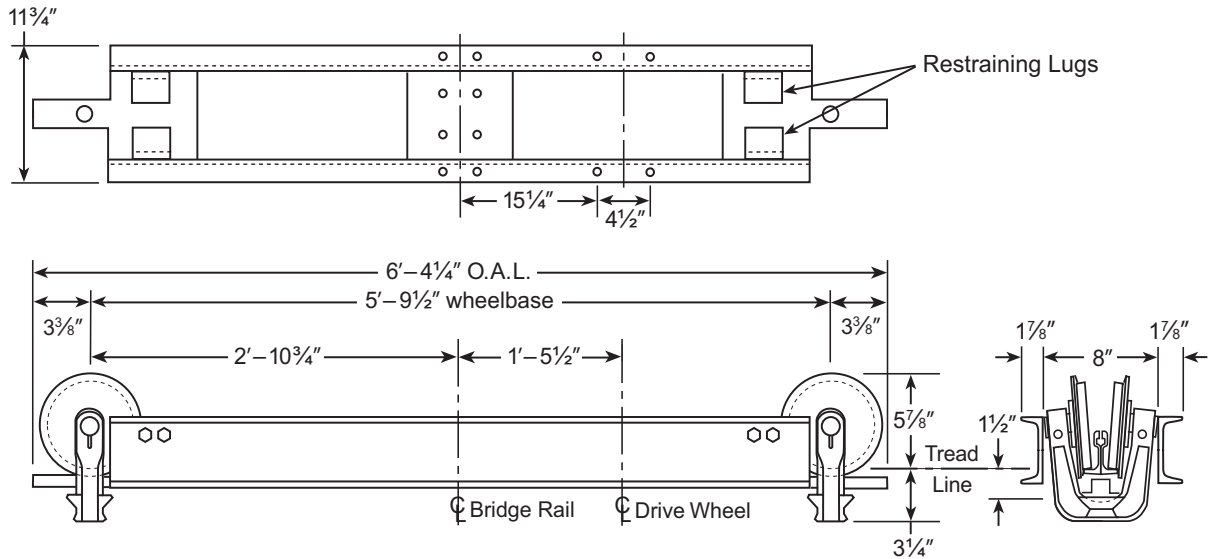
Model 2ET-3800-4 End Truck

10-1518-00

See "End Truck to Bridge Beam Connection Detail" on page G-7. For additional information see "Model 2T-3000-2 Trolley" on page E-15.

Weight	160 lbs.
Total Load Capacity*	3800 lbs.
Trolleys	2T-3000-2 10-1364-00

* Includes live load, impact & handling equip. weights.



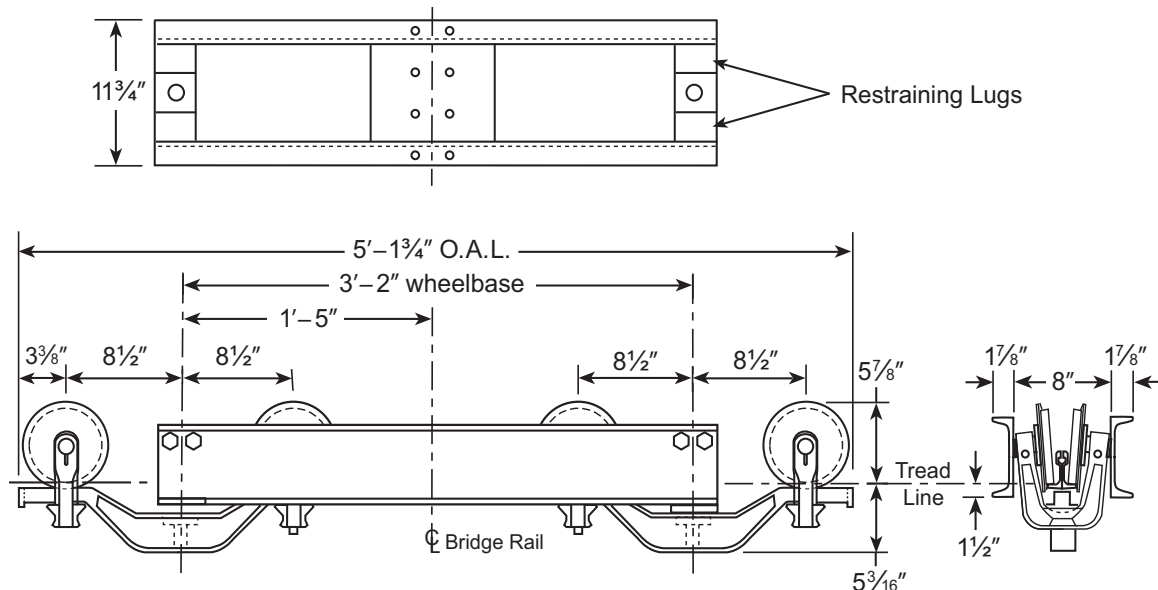
Model 2ET-7700-8 End Truck

10-1544-00

See "End Truck to Bridge Beam Connection Detail" on page G-7. For additional information see "Model 2T-4000-4 Trolley" on page E-15.

Weight	180 lbs.
Total Load Capacity*	7700 lbs.
Trolleys	2T-4000-4 10-1368-00

* Includes live load, impact & handling equip. weights.





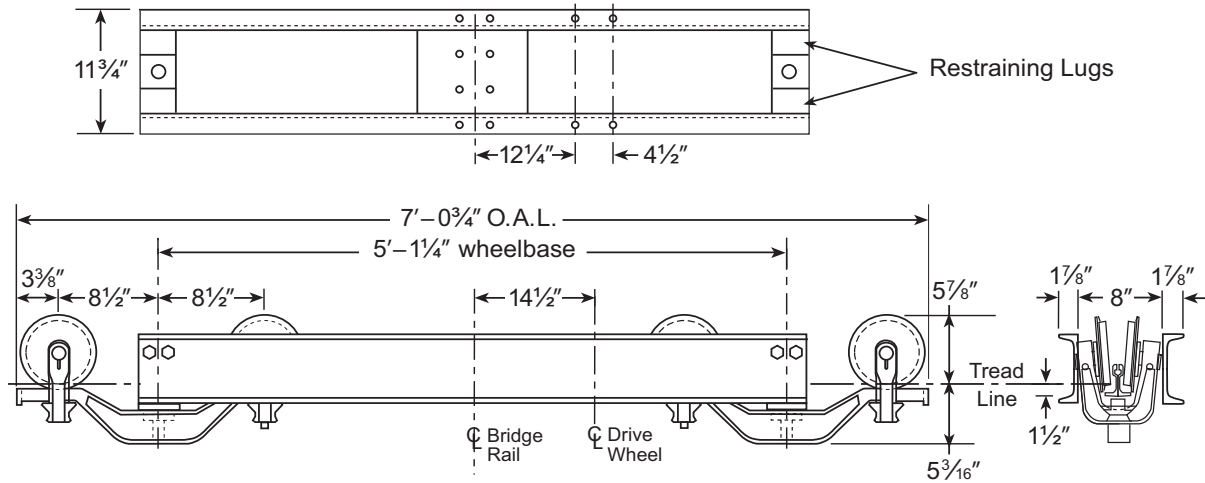
Model 2ET-7800-8 End Truck

10-1529-00

See "End Truck to Bridge Beam Connection Detail" on page G-7. For additional information see "Model 2T-4000-4 Trolley" on page E-15.

Weight	210 lbs.
Total Load Capacity*	7800 lbs.
Trolleys	2T-4000-4 10-1368-00

* Includes live load, impact & handling equip. weights.



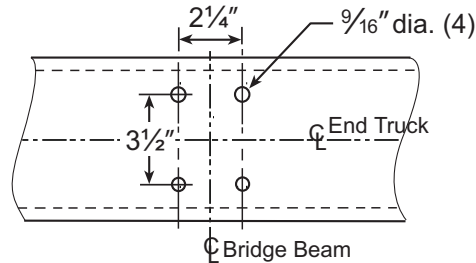


200 Series Crane End Trucks

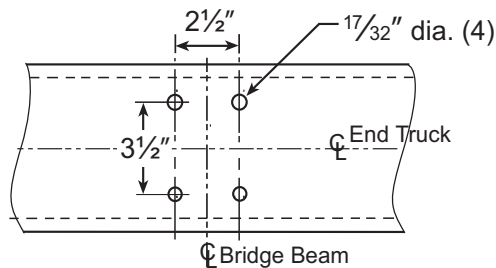
End Truck to Bridge Beam Connection Detail

Note Mounting Holes in bridge beam must be “match-drilled” to each end truck. Assure that crane span and squareness are properly set before drilling. Shims may be required to level the end truck to the bridge beam. Hardware to mount end trucks not included. Use Grade 5. Bevel washers may be required for end trucks with channel frames.

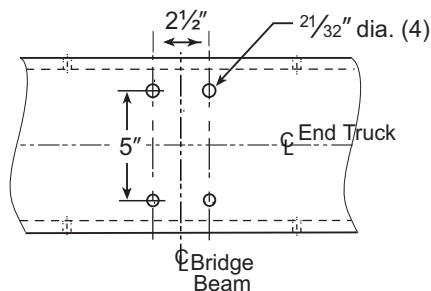
2ET-1300-4



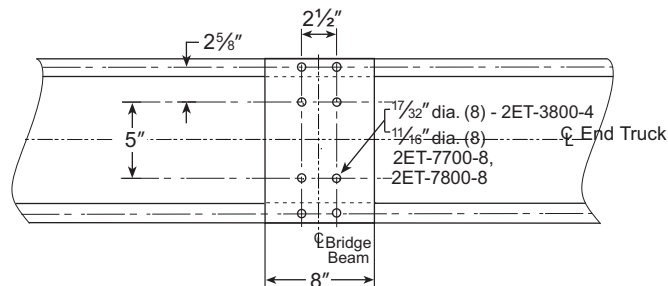
2ET-2600-4/-4SR..



2ET-3700-4



2ET-3800-4, 2ET-7700-8 & 2ET-7800-8







325 Series Crane End Trucks

Model 3ET-1300-4 End Truck

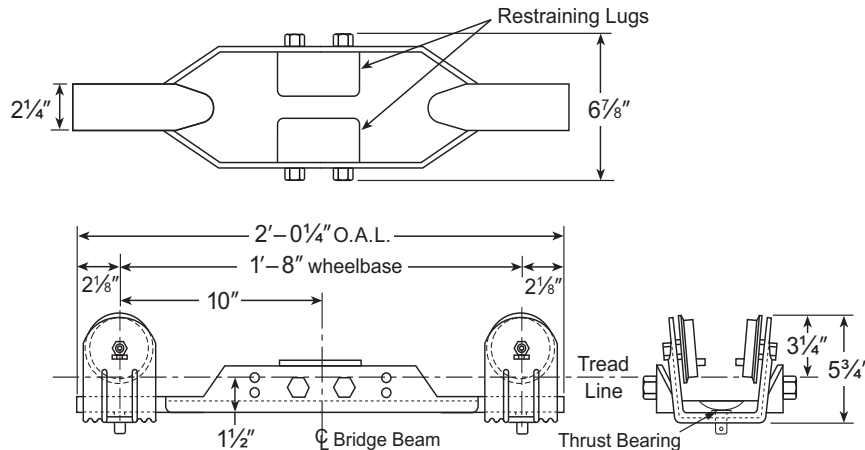
10-1715-00

See "End Truck to Bridge Beam Connection Detail" on page G-19. For additional information see "Model 3T-850-2 Trolley" on page E-18.

Note For use with "L" series rail ONLY!

Weight	34 lbs.
Total Load Capacity*	1300 lbs.
Trolleys	3T-850-2C 10-2245-00

* Includes live load, impact & handling equip. weights.



Model 3ET-2600-4 End Truck

10-1497-00 (shown)

Model 3ET-2600-4SR End Truck

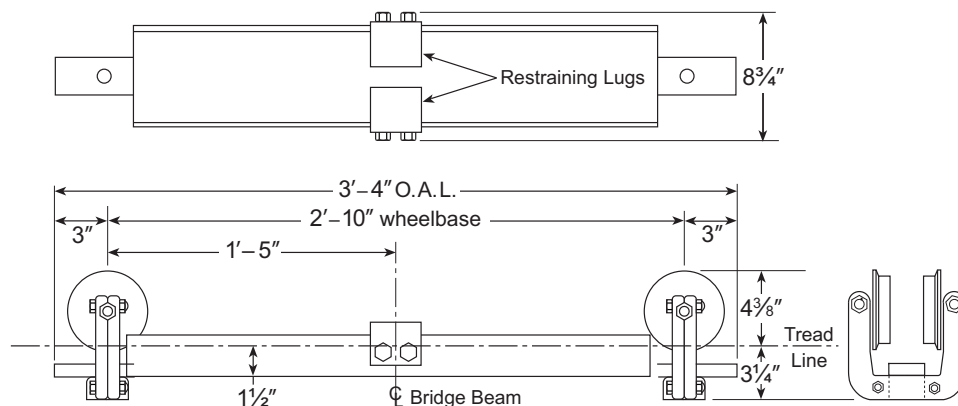
10-3380-00

See "End Truck to Bridge Beam Connection Detail" on page G-19. For additional information see "Model 3T-2000-2 Trolley" on page E-19 and "Model 3T-2000-2SR Trolley" on page E-20.

Note For use with "L" series rail ONLY!

Weight	
3ET-2600-4	65 lbs.
3ET-2600-4SR	68 lbs.
Total Load Capacity*	2600 lbs.
Trolleys	
3ET-2600-4	3T-2000-2 10-1178-0)
3ET-2600-4SR	3T-2000-2SR 10-1120-0)

* Includes live load, impact & handling equip. weights.



Model 3ET-5400-4 End Truck

10-1714-00 (3'-3" wheelbase)

Model 3ET-5400-4SR End Truck

10-3390-00 (3'-3" wheelbase)

Model 3ET-5400-4SR End Truck

10-1713-00 (6'-0" wheelbase)

See "End Truck to Bridge Beam Connection Detail" on page G-19. For additional information see "Model 3T-2700-2 Trolley" on page E-24 and "Model 3T-2700-2SR Trolley" on page E-25.

Note For use with "L" series rail ONLY!

Weight

3ET-5400-4 (3'-3" wheelbase)	138 lbs.
3ET-5400-4SR (3'-3" wheelbase)	143 lbs.
3ET-5400-4SR (6'-0" wheelbase)	259 lbs.

Total Load Capacity*

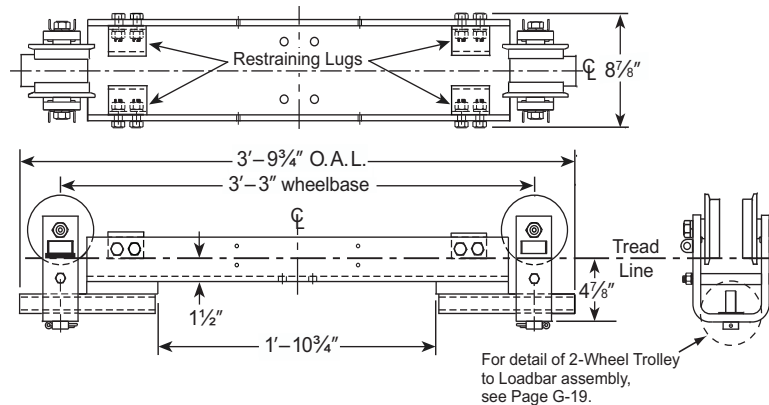
5400 lbs.

Plain Trolleys

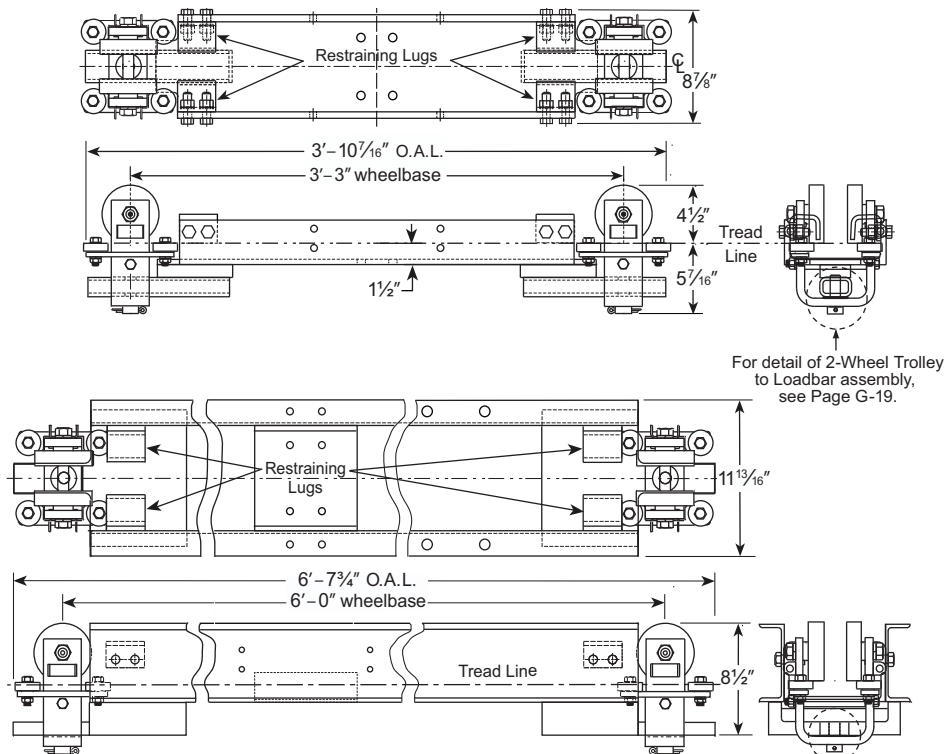
3ET-5400-4	3T-2700-2C
3ET-5400-4SR	10-1504-00
	3T-2700-2SRC
	10-1499-00

* Includes live load, impact & handling equip. weights.

Model 3ET-5400-4



Model 3ET-5400-4SR



**Model 3ET-9000-4 End Truck**

10-3193-0000 (shown, 6'-0" wheelbase)

Model 3ET-9000-4L End Truck

10-3424-0000 (not shown, 8'-0" wheelbase)

Model 3ET-9000-4SR End Truck

10-3193-1000 (not shown, 6'-0" wheelbase)

Model 3ET-9000-4SRL End Truck

10-3424-1000 (not shown, 8'-0" wheelbase)

See "End Truck to Bridge Beam Connection Detail" on page G-19. For additional information see

"Model 3T-6200-2 Trolley" on page E-26 and

"Model 3T-6200-2SR Trolley" on page E-27.

Weight

3ET-9000-4 (6'-0" wheelbase)	310 lbs.
3ET-9000-4L (8'-0" wheelbase)	477 lbs.
3ET-9000-4SR (6'-0" wheelbase)	320 lbs.
3ET-9000-4SRL (8'-0" wheelbase)	487 lbs.

Total Load Capacity*

9000 lbs.

Plain Trolleys

3ET-9000-4(L)	3T-6200-2
3ET-9000-4SR(L)	10-2727-00
	3T-6200-2SR
	10-2728-00

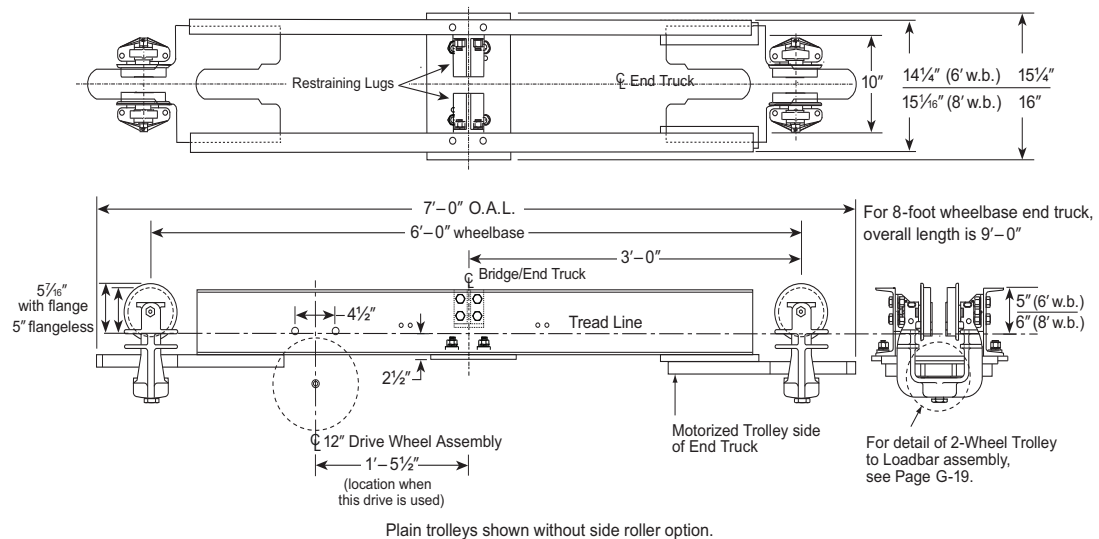
Motorized Trolleys

3ET-9000-4AT/-4SRAT (½ HP, with brake, 100 FPM)	3MT5-6200-AT 10-3367-00
3ET-9000-4A/-4(L)/-4SRA/- 4SRA(L) (part # varies with speed)	3MT5-6200-A2 10-2907-xx

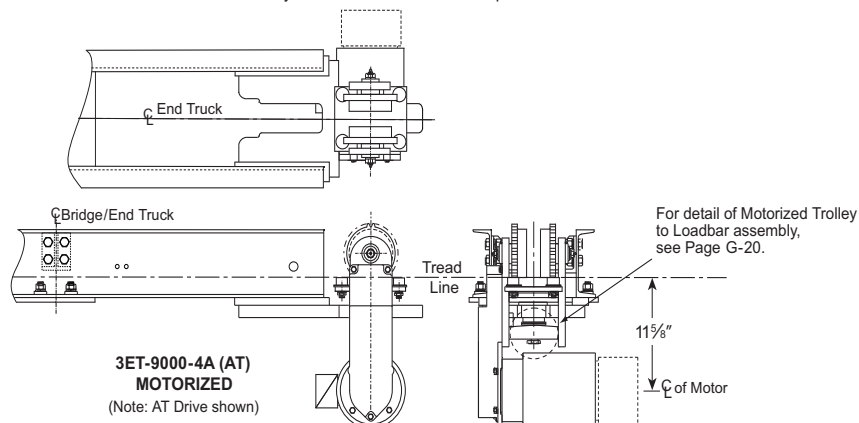
Motor

With brake (part # varies with HP)	24-1646-xx
Without brake (part # varies with HP)	24-1647-xx

* Includes live load, impact & handling equip. weights.



Plain trolleys shown without side roller option.



**3ET-9000-4A (AT)
MOTORIZED**
(Note: AT Drive shown)



Model 3ET-9000-4X End Truck

10-3326-01 (shown, 45" wheelbase)

Model 3ET-9000-4XSR End Truck

10-3326-02 (not shown, 45" wheelbase)

These end trucks are used only on certain models of hand pushed cranes. Cannot use motorized trolley.

See "End Truck to Bridge Beam Connection Detail" on page G-19. For additional information see "Model 3T-6200-2 Trolley" on page E-26 and "Model 3T-6200-2SR Trolley" on page E-27.

Note This end truck is too short to allow use of Bottom Contact Bridge Conductor bars.

Weight

3ET-9000-4X	250 lbs.
3ET-9000-4XSR	265 lbs.

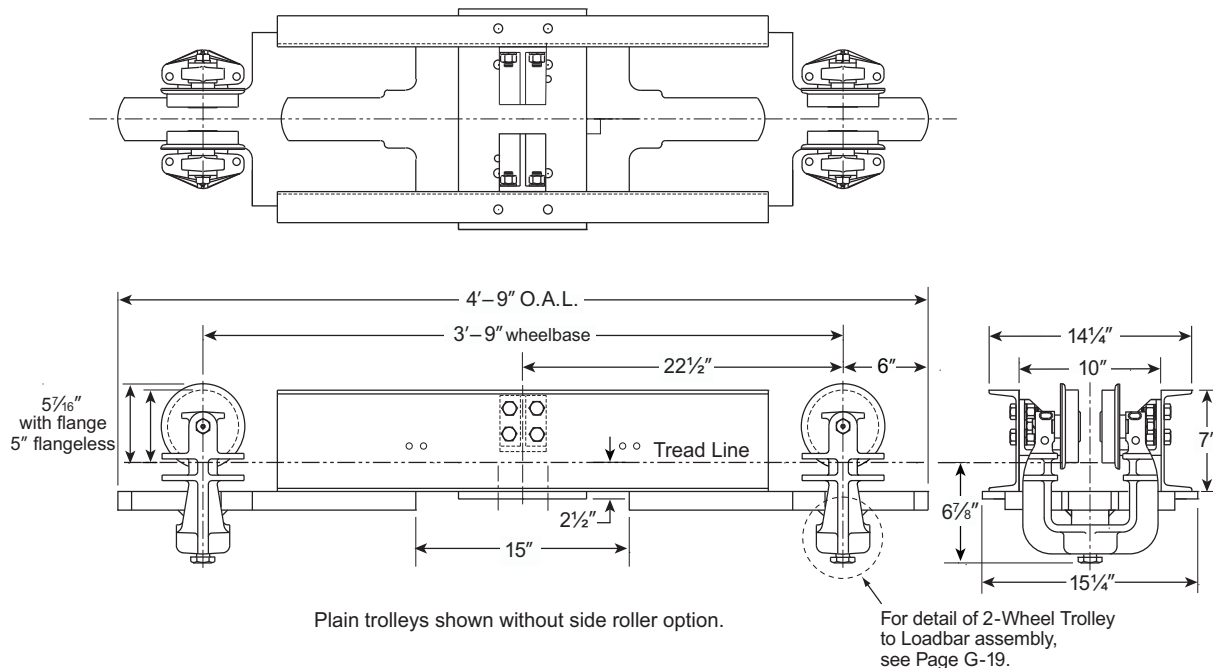
Total Load Capacity*

9000 lbs.

Trolleys

3ET-9000-4	3T-6200-2 10-2727-00
3ET-9000-4SR	3T-6200-2SR 10-2728-00

* Includes live load, impact & handling equip. weights.



**Model 3ET-12400-4 End Truck**

10-3183-0000 (shown, 6'-0" wheelbase)

Model 3ET-12400-4L End Truck

10-3425-0000 (not shown, 8'-0" wheelbase)

Model 3ET-12400-4SR End Truck

10-3183-1000 (not shown, 6'-0" wheelbase)

Model 3ET-12400-4SRL End Truck

10-3425-1000 (not shown, 8'-0" wheelbase)

See "End Truck to Bridge Beam Connection Detail" on page G-19. For additional information see

"Model 3T-6200-2 Trolley" on page E-26 and

"Model 3T-6200-2SR Trolley" on page E-27.

Weight

3ET-12400-4 (6'-0" wheelbase)	328 lbs.
3ET-12400-4L (8'-0" wheelbase)	496 lbs.
3ET-12400-4SR (6'-0" wheelbase)	338 lbs.
3ET-12400-4SRL (8'-0" wheelbase)	506 lbs.

Total Load Capacity*	12,400 lbs.
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Plain Trolleys

3ET-12400-4(L)	3T-6200-2
3ET-12400-4SR(L)	10-2727-00
	3T-6200-2SR
	10-2728-00

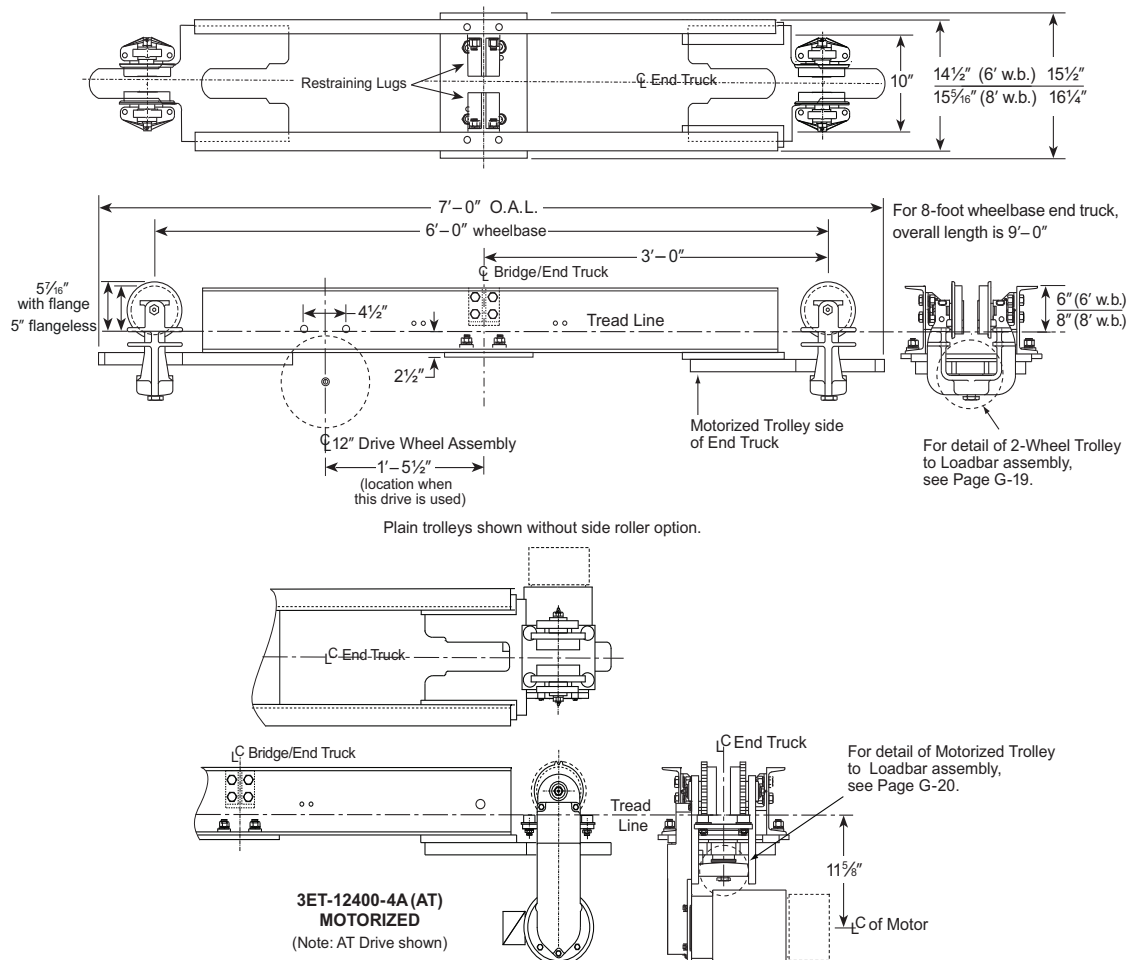
Motorized Trolleys

3ET-12400-4AT(L)/-4SRAT(L) (½ HP, with brake, 100 FPM)	3MT5-6200-AT 10-3367-00
3ET-12400-4A(L)/-4SRA(L) (part # varies with speed)	3MT5-6200-A2 10-2907-xx

Motor

With brake (part # varies with HP)	24-1646-xx
Without brake (part # varies with HP)	24-1647-xx

* Includes live load, impact & handling equip. weights.



Model 3ET-16000-4 End Truck

10-3184-0000 (shown, 6'-0" wheelbase)

Model 3ET-16000-4L End Truck

10-3426-0000 (not shown, 8'-0" wheelbase)

Model 3ET-16000-4SR End Truck

10-3184-1000 (not shown, 6'-0" wheelbase)

Model 3ET-16000-4SRL End Truck

10-3426--1000 (not shown, 8'-0" wheelbase)

See "End Truck to Bridge Beam Connection Detail" on page G-19. For additional information see

"Model 3T-8000-2 Trolley" on page E-28 and

"Model 3T-8000-2SR Trolley" on page E-29.

Weight

3ET-16000-4 (6'-0" wheelbase)	393 lbs.
3ET-16000-4L (8'-0" wheelbase)	616 lbs.
3ET-16000-4SR (6'-0" wheelbase)	401 lbs.
3ET-16000-4SRL (8'-0" wheelbase)	720 lbs.

Total Load Capacity*

16,000 lbs.

Plain Trolleys

3ET-16000-4(L)	3T-8000-2 10-2729-00
3ET-16000-4SR(L)	3T-8000-2SR 10-2730-00

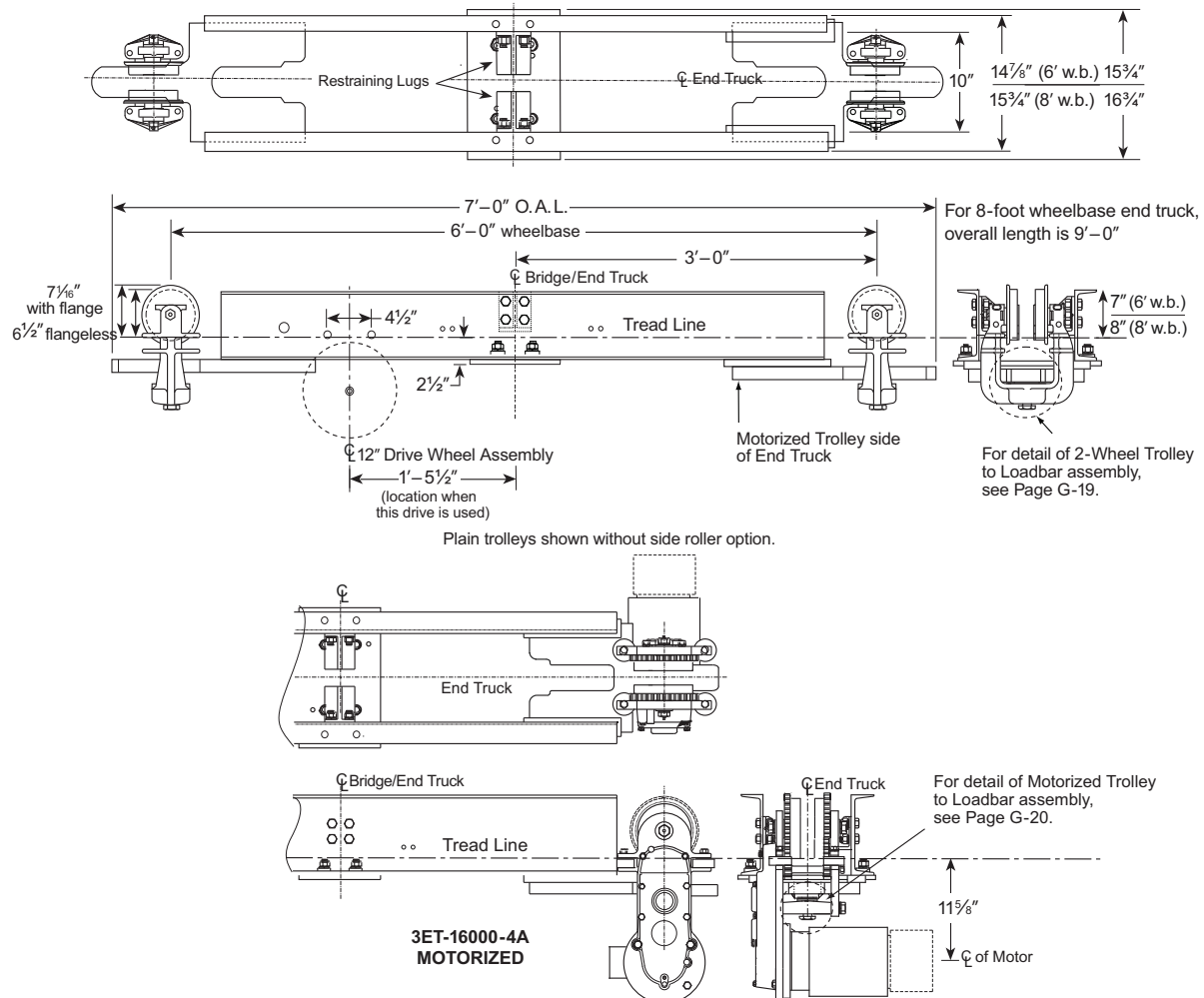
Motorized Trolleys

3ET-16000-4A(L)/-4SRA(L) (part # varies with speed)	3MT6-8000-A2 10-2890-xx
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Motor

With brake (part # varies with HP)	24-1646-xx
Without brake (part # varies with HP)	24-1647-xx

* Includes live load, impact & handling equip. weights.





Model 3ET-20000-4SR End Truck

10-3691-1000 (non-motorized shown)

See "End Truck to Bridge Beam Connection Detail" on page G-19. For additional information see "Model 3T-10000-2SR Trolley" on page E-30.

Weight

3ET-20000-4SR, 6' wb. 552 lbs.

Total Load Capacity*

20,000 lbs.

Plain Trolley

3ET-20000-4SR

3T-10000-2SR
10-2829-00

Motorized Trolleys

3ET-20000-4SRB

(part # varies with speed)

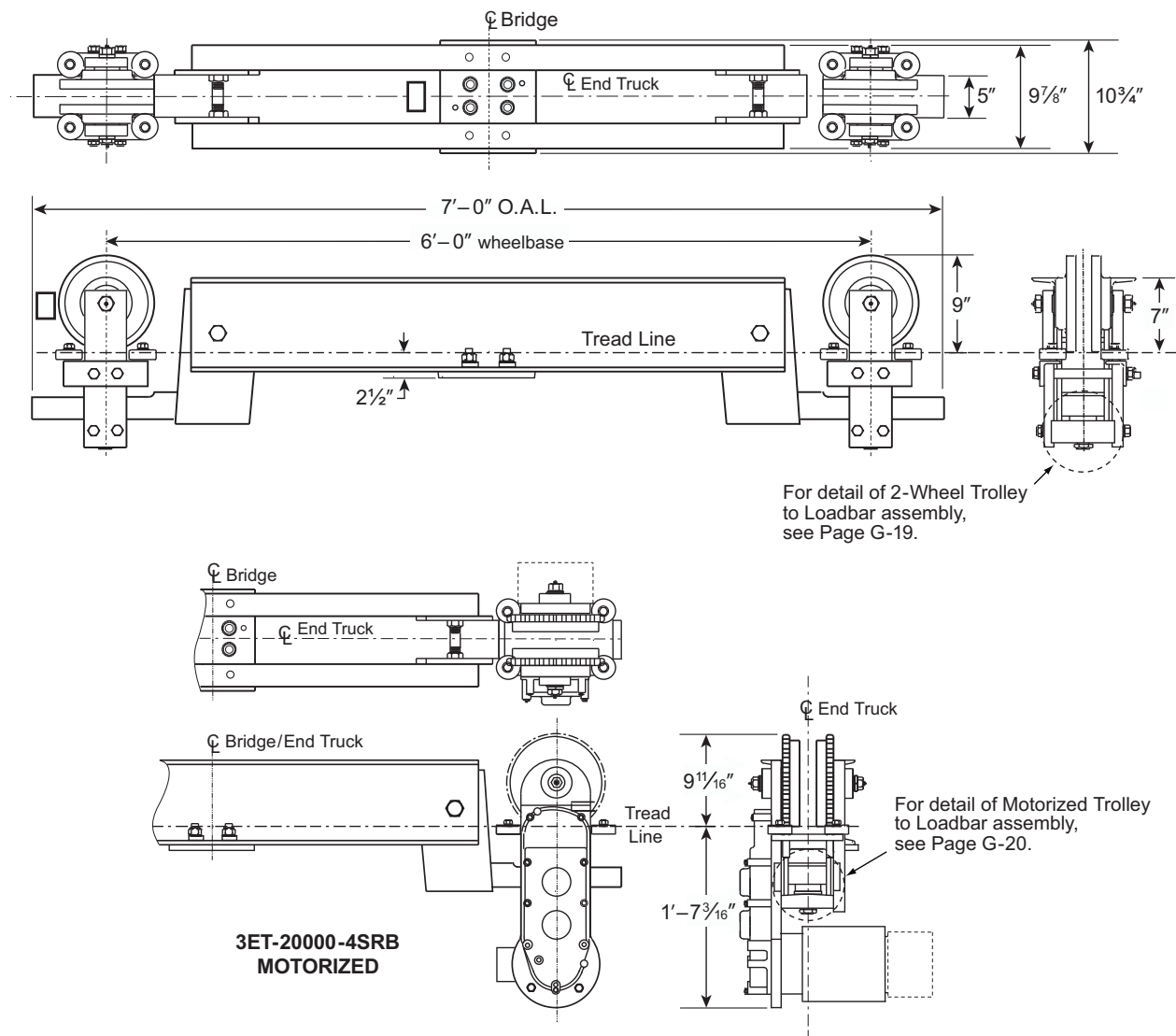
3MT9-10000-B
10-3352-xx

Motor

With brake (part # varies with HP) 24-1646-xx

Without brake (part # varies with HP) 24-1647-xx

* Includes live load, impact & handling equip. weights.
Bottom contact electrification only.



Model 3ET-24800-8 End Truck

10-3185-0000 (shown, 6'-0" wheelbase)

Model 3ET-24800-8L End Truck

10-3423-0000 (not shown, 8'-0" wheelbase)

Model 3ET-24800-8SR End Truck

10-3185-1000 (not shown, 6'-0" wheelbase)

Model 3ET-24800-8SRL End Truck

10-3423-1000 (not shown, 8'-0" wheelbase)

See "End Truck to Bridge Beam Connection Detail" on page G-19. For additional information see "Model 3T-6200-2 Trolley" on page E-26 and "Model 3T-6200-2SR Trolley" on page E-27.

Weight

3ET-24800-8 (6'-0" wheelbase)	620 lbs.
3ET-24800-8L (8'-0" wheelbase)	713 lbs.
3ET-24800-8SR (6'-0" wheelbase)	640 lbs.
3ET-24800-8SRL (8'-0" wheelbase)	733 lbs.

Total Load Capacity*

24,800 lbs.

Plain Trolleys

3ET-24800-8(L)	3T-6200-2 10-2727-00
3ET-24800-8SR(L)	3T-6200-2SR 10-2728-00

Motorized Trolleys

3ET-24800-8AT(L)/-8SRAT(L) (½ HP, with brake, 100 FPM)	3MT5-6200-AT 10-3367-00
3ET-24800-8A(L)/-8SRA(L) (part # varies with speed)	3MT5-6200-A2 10-2907-xx

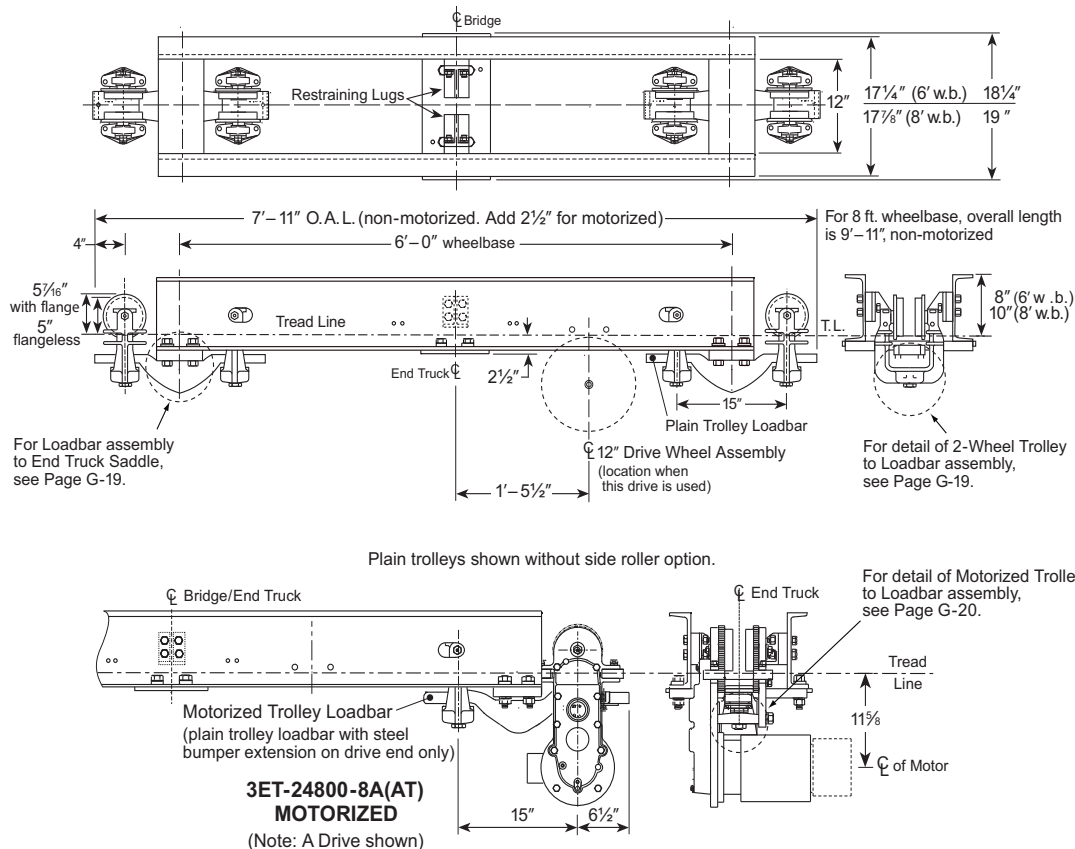
Motor

With brake (part # varies with HP)	24-1646-xx
Without brake (part # varies with HP)	24-1647-xx

Loadbar

Plain Trolley Loadbar	25-3179-01
Motorized Trolley Loadbar	10-2977-00

* Includes live load, impact & handling equip. weights.



**Model 3ET-28000-8 End Truck**

10-3186-0000 (shown, 6'-0" wheelbase)

Model 3ET-28000-8L End Truck

10-3427-0000 (not shown, 8'-0" wheelbase)

Model 3ET-28000-8SR End Truck

10-3186-1000 (not shown, 6'-0" wheelbase)

Model 3ET-28000-8SRL End Truck

10-3427-1000 (not shown, 8'-0" wheelbase)

See "End Truck to Bridge Beam Connection Detail" on page G-19. For additional information see

"Model 3T-8000-2 Trolley" on page E-28 and

"Model 3T-8000-2SR Trolley" on page E-29.

Weight

3ET-24800-8 (6'-0" wheelbase)	620 lbs.
3ET-24800-8L (8'-0" wheelbase)	713 lbs.
3ET-24800-8SR (6'-0" wheelbase)	640 lbs.
3ET-24800-8SRL (8'-0" wheelbase)	733 lbs.

Total Load Capacity* 28,000 lbs.

Plain Trolleys

3ET-28000-8(L)	3T-8000-2 10-2729-00
3ET-28000-8SR(L)	3T-8000-2SR 10-2730-00

Motorized Trolleys

3ET-28000-8(L)A/8SR(L)A (part # varies with speed)	3MT6-8000-A2 10-2890-xx
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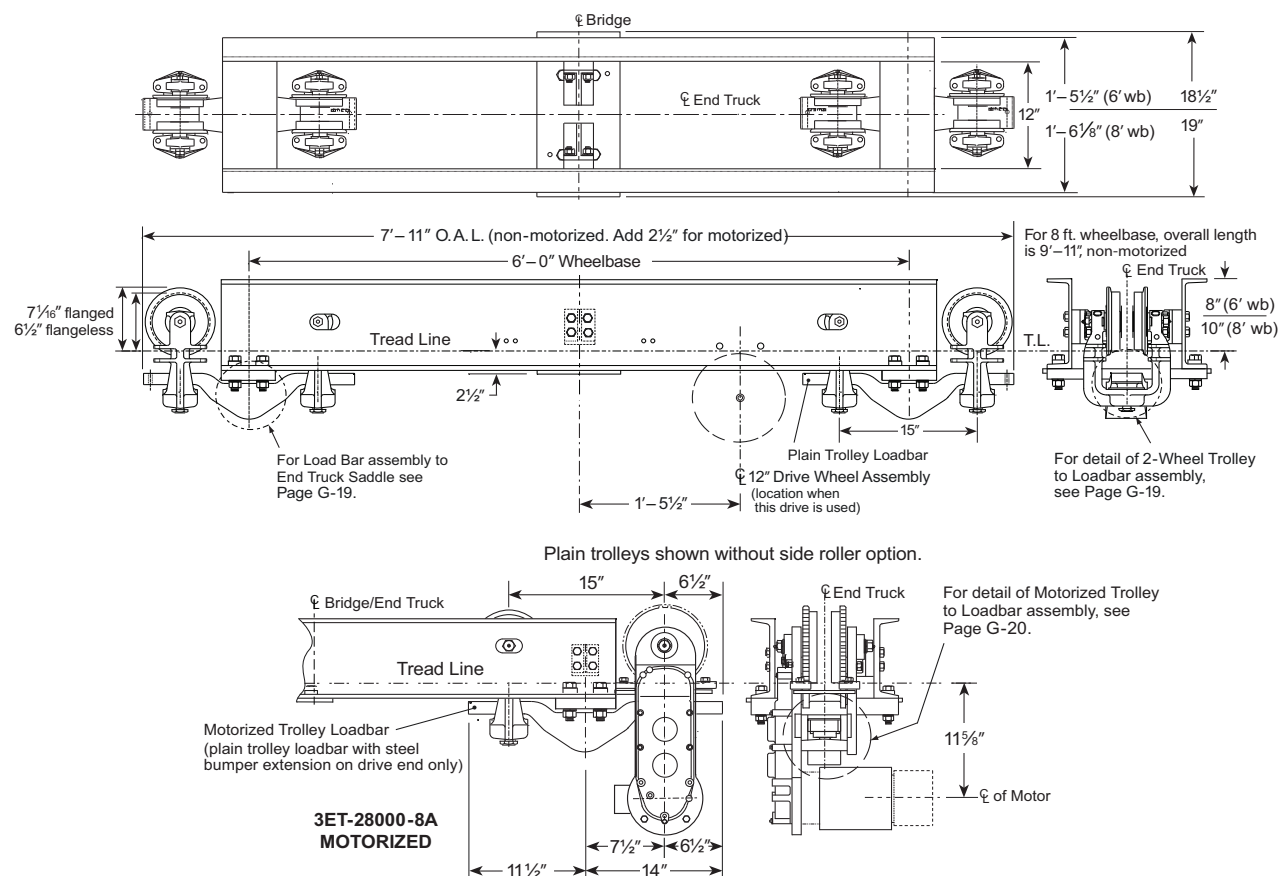
Motor

With brake (part # varies with HP)	24-1646-xx
Without brake (part # varies with HP)	24-1647-xx

Loadbar

Plain Trolley Loadbar	25-3179-01
Motorized Trolley Loadbar	10-2977-00

* Includes live load, impact & handling equip. weights.



Model 3ET-38000-8SR End Truck

10-3354-1000 (shown, 6'-0" wheelbase)

Model 3ET-38000-8SRL End Truck

10-3688-1000 (not shown, 8'-0" wheelbase)

Note Motorized Cranes with 6' wheelbase
End Trucks use Motorized Trolley drives only.

Center Drive Cranes with under-end-truck drive wheel assemblies must use 8' wheelbase End Trucks. Centerline of 12" Drive Wheel is 1'-5½" from CL of End Truck.

Weight

3ET-38000-8SR	1271 lbs.
3ET-38000-8SRL	1454 lbs.

Total Load Capacity*

38,000 lbs.

Plain Trolleys

3T-10000-2SR
10-2829-00

Motorized Trolley

3ET-38000-8SRB/-8SRLB (part number varies with speed)	3MT9-10000-B 10-3352-xx
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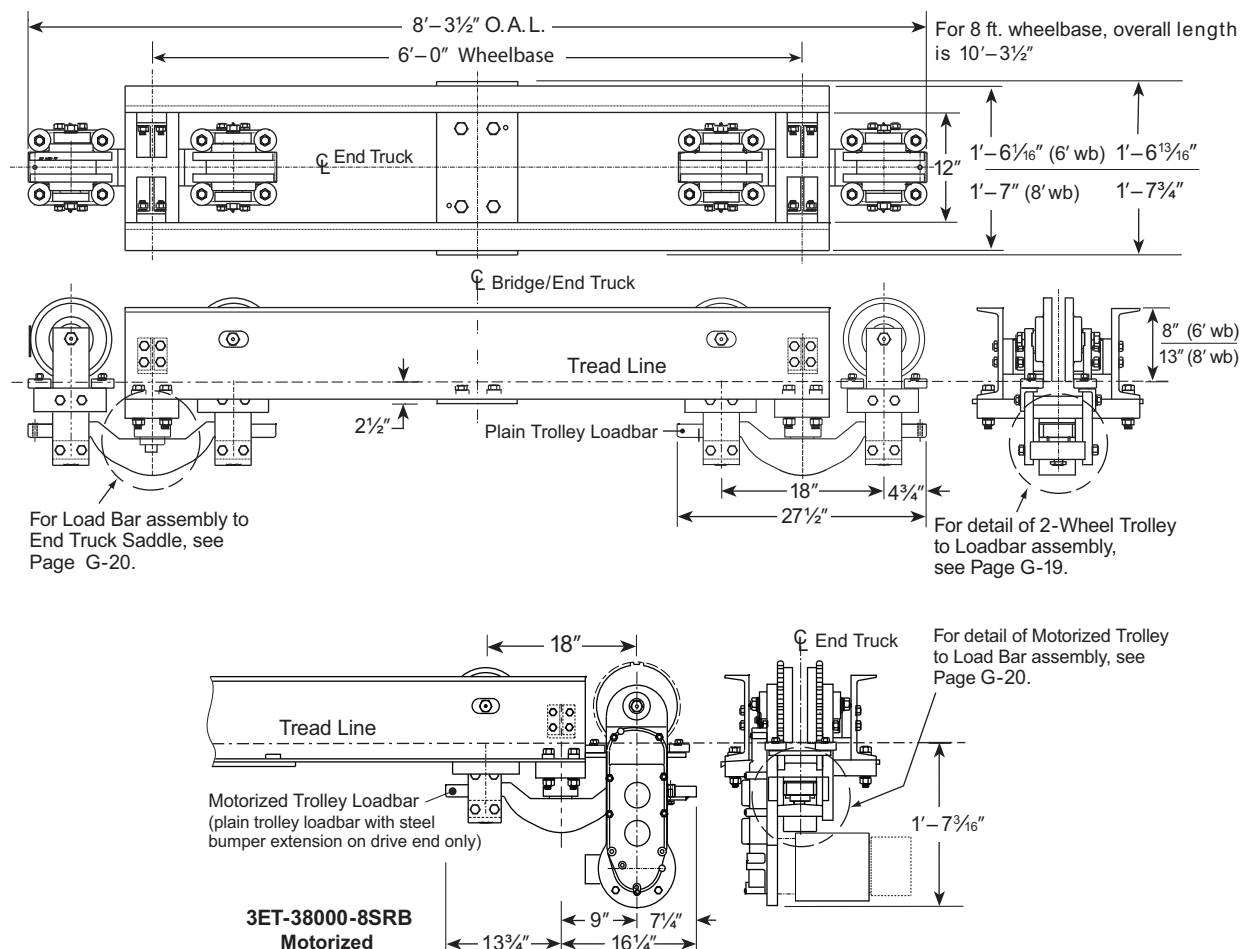
Motor

With brake (part # varies with HP)	24-1646-xx
Without brake (part # varies with HP)	24-1647-xx

Loadbar

Plain Trolley Loadbar	25-3180-01
Motorized Trolley Loadbar	10-2978-00

* Includes live load, impact & handling equip. weights.





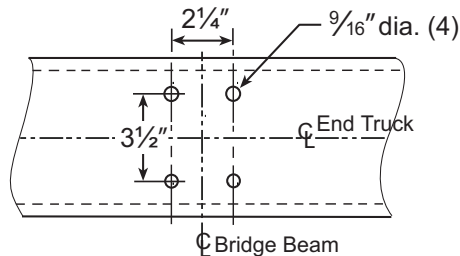
325 Series Crane End Trucks

End Truck to Bridge Beam Connection Detail

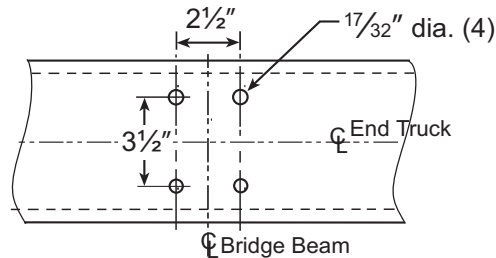
Note Mounting Holes in bridge beam must be “match-drilled” to each end truck. Assure that crane span and squareness are properly set before drilling. Shims may be required to level the end truck to the bridge beam. Hardware to mount end trucks not included. Use Grade 5. Bevel washers may be required for end trucks with channel frames.

Some end truck bridge mounting plates also have two 15/32" holes provided for minimum 1/2" x 1" spring pins. After end trucks are properly located and temporarily positioned, drill spring pin holes into bridge beam top flange. Pins are used to relocate end trucks after other holes are drilled.

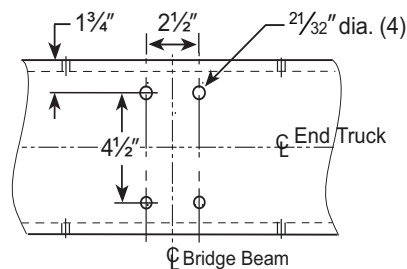
3ET-1300-4 (with 3'-3" wheelbase)



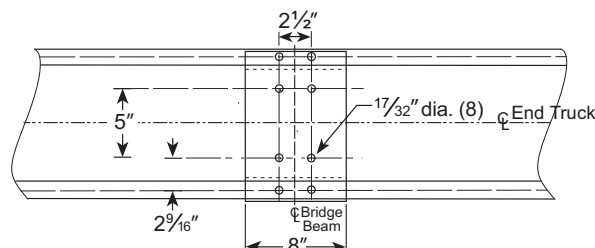
3ET-2600-4/-4SR (with 3'-3" wheelbase)

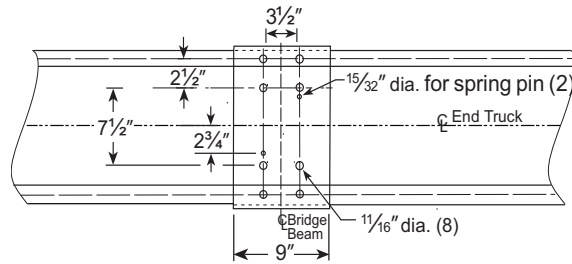
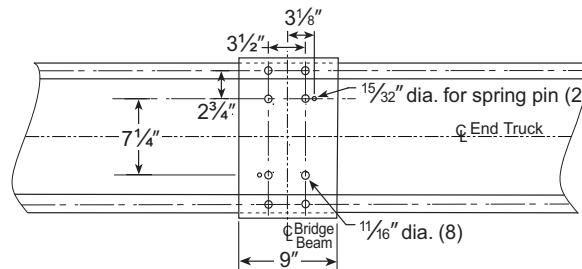
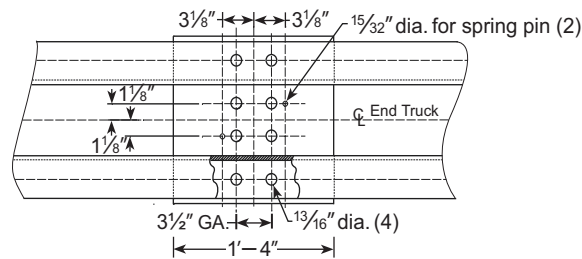
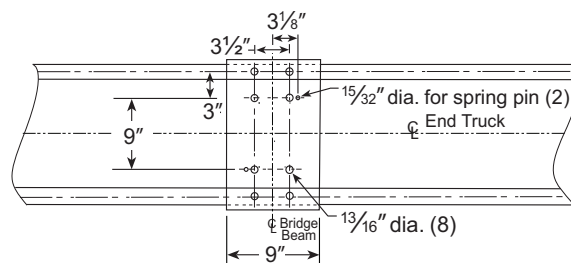
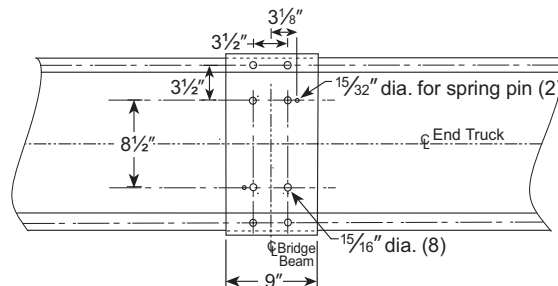


3ET-5400-4/-4SR (with 3'-3" wheelbase)



3ET-5400-4SR (with 6'-0" wheelbase)



3ET-9000-4/-4SR

3ET-12400-4/-4SR/-4X/-4XSR
3ET-16000-4/-4SR

3ET-20000-4SR

3ET-24800-8/-8L/-8SR/-8SRL
3ET-28000-8/-8L/-8SR/-8SRL

3ET-38000-8SR/-8SRL


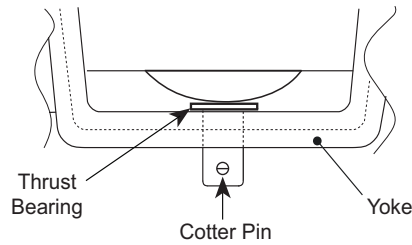


325 Series End Truck Trolley Component Assembly

Two-Wheel Trolley Assembly to End Truck Saddle or Load Bar

End Truck Model

3ET-1300-4



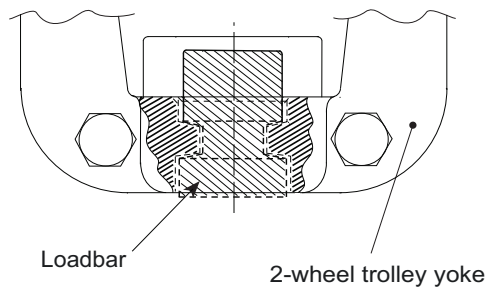
Thrust Bearing (washer)

23-1054-00

Two-Wheel Trolley Assembly to End Truck Saddle or Load Bar

End Truck Model

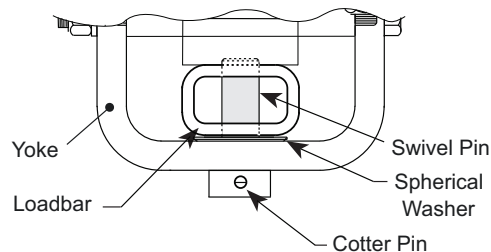
3ET-2600-4/-4SR



Two-Wheel Trolley Assembly to End Truck Saddle or Load Bar

End Truck Models

3ET-5400-4/-4SR



Spherical Washer

25-1174-00

Swivel Pin

25-1568-00

Two-Wheel Trolley Assembly to End Truck Saddle or Load Bar

End Truck Models

3ET-9000-4/-4SR/-4X/-4XSR

3ET-12400-4/-4SR

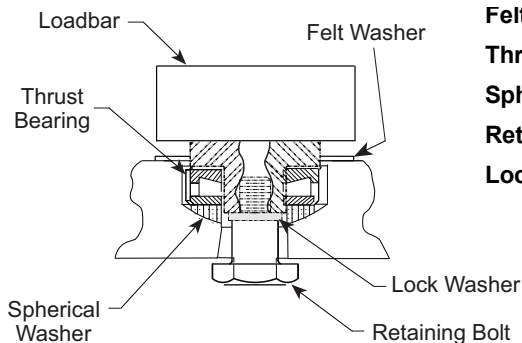
3ET-16000-4/-4SR

3ET-20000-4SR

3ET-24800-8/-8SR

3ET-28000-8/-8SR

3ET-38000-8SR



Felt Washer

23-1025-00

Thrust Bearing

23-1026-0025-

Spherical Washer

25-25-3142-00

Retaining Bolt

25-3148-00

Lock Washer

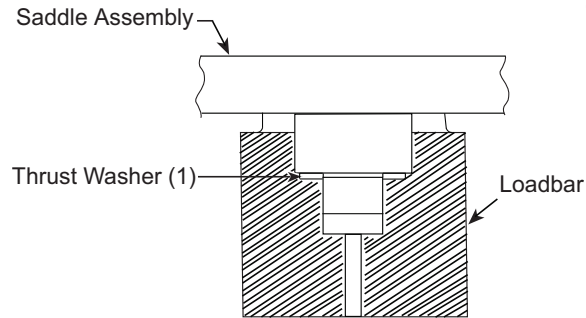
21-1005-00

325 Series End Truck Trolley Component Assembly

Load Bar Assembly to End Truck Saddle (Typical)

End Truck Models

3ET-24800-8/-8SR
3ET-28000-8/-8SR
3ET-38000-8SR

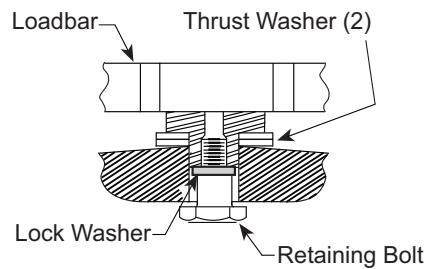


Thrust Washer 25-3101-00
(1 req'd)

Motorized Trolley to Loadbar (Typical)

End Truck Models

3ET-9000-4/-4SR
3ET-12400-4/-4SR
3ET-16000-4/-4SR
3ET-20000-4SR
3ET-24800-8/-8SR
3ET-28000-8/-8SR
3ET-38000-8SR



Thrust Washer 25-3101-00
(2 req'd)
Retaining Bolt 25-3148-00
Lock Washer 21-1005-00



450 Series Crane End Trucks

Model 45ET-30000-4SR End Truck

10-3712-00 (shown, non-motorized, 6'-0" wheelbase)

Model 45ET-30000-4SRL End Truck

10-3715-00 (not shown, non-motorized, 9'-0" wheelbase)

Model 45ET-30000-4SRC End Truck

10-3712-01 (shown, motorized, 100 FPM, ¾ hp, 6'-0" wb)

Model 45ET-30000-4SRLC End Truck

10-3715-01 (not shown, motorized, 100 FPM, ¾ hp, 9'-0" wb)

See "End Truck to Bridge Beam Connection Detail" on page G-25. For additional information see "Model 45T-15000-2SR Trolley" on page E-34.

Note Motorized Cranes with 6' wheelbase End Trucks use Motorized Trolley drives only. Center Drive cranes with under-end-truck drive wheel assemblies must use 9' wheelbase End Trucks.

Weight

45ET-30000-4SR (6'-0" wheelbase)	890 lbs.
45ET-30000-4SRL (9'-0" wheelbase)	1156 lbs
45ET-30000-4SR (6'-0" wheelbase)	1006 lbs.
45ET-30000-4SR (9'-0" wheelbase)	1272 lbs.

Total Load Capacity*

30,000 lbs.

Plain Trolley

45ET-30000-4SR/-4SRL

45T-15000-2SR

10-2869-00

Motorized Trolley

45ET-30000-4SRC/-4SRLC

45MT-15000-C

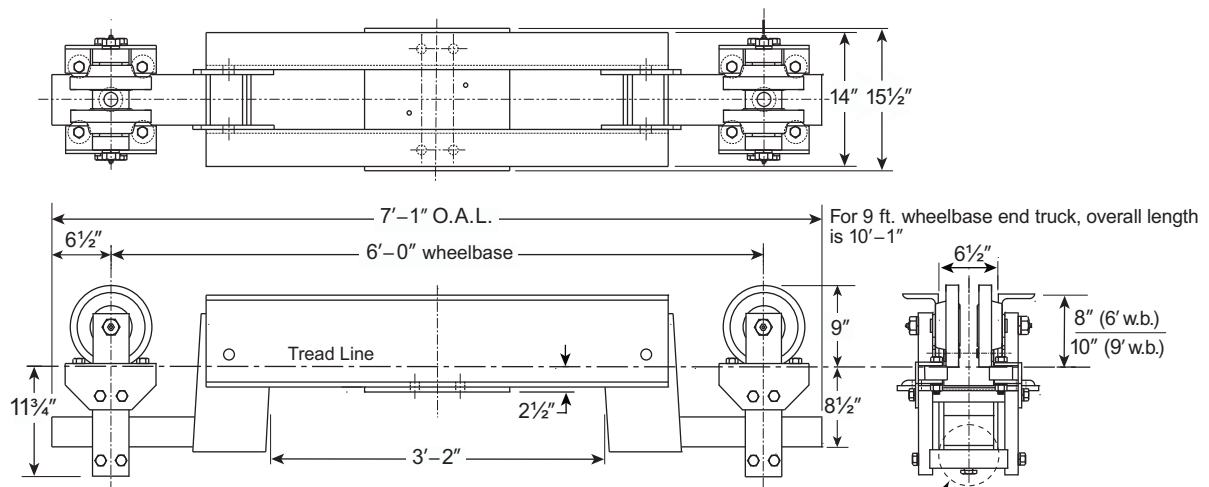
10-3723-xx

Motor†

With brake (part # varies with HP)	24-1646-xx
Without brake (part # varies with HP)	24-1647-xx

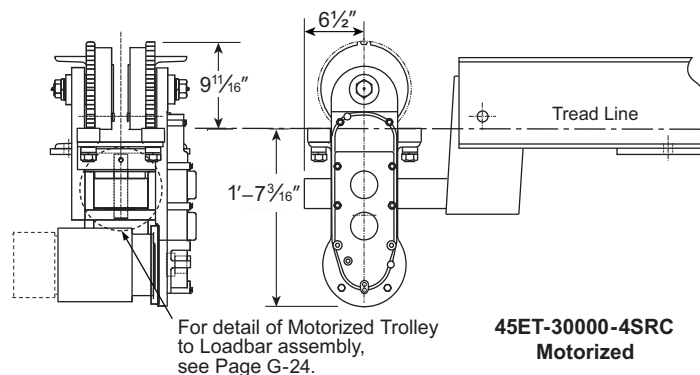
* Includes live load, impact & handling equip. weights.

† Standard motor is 30 minute Crane & Hoist Duty, TEFC, NEMA Design B. Contact the factory for options.



45ET-30000-4SR

For detail of 2-Wheel Trolley to Loadbar assembly, see Page G-24.



45ET-30000-4SRC
Motorized

For detail of Motorized Trolley to Loadbar assembly, see Page G-24.

Model 45ET-60000-8SR End Truck

10-3714-00 (shown, non-motorized, 6'-0" wheelbase)

Model 45ET-60000-8SRL End Truck

10-2872-00 (not shown, non-motorized, 9'-0" wheelbase)

Model 45ET-60000-8SRC End Truck

10-3714-01 (shown, motorized, 100 FPM, ¾ hp, 6'-0" wb)

Model 45ET-60000-8SRLC End Truck

10-2872-01 (not shown, motorized, 100 FPM, ¾ hp, 9'-0" wb)

See "End Truck to Bridge Beam Connection Detail" on page G-25. For additional information see "Model 45T-15000-2SR Trolley" on page E-34.

Note Motorized Cranes with 6' wheelbase End Trucks use Motorized Trolley drives only. Center Drive Cranes with under-truck drive wheel assemblies must use 9' wheelbase End Trucks.

Weight

45ET-60000-8SR (6'-0" wheelbase)	2371 lbs.
45ET-60000-8SRL (9'-0" wheelbase)	2951 lbs
45ET-60000-8SRC (9'-0" wheelbase)	2494 lbs.
45ET-60000-8SRLC (9'-0" wheelbase)	3074 lbs.

Total Load Capacity*

60,000 lbs.

Plain Trolley

45T-15000-2SR

45ET-60000-8SR/-8SRL

10-2869-00

Motorized Trolley

45T-15000-C

45ET-60000-8SRC/-8SRLC

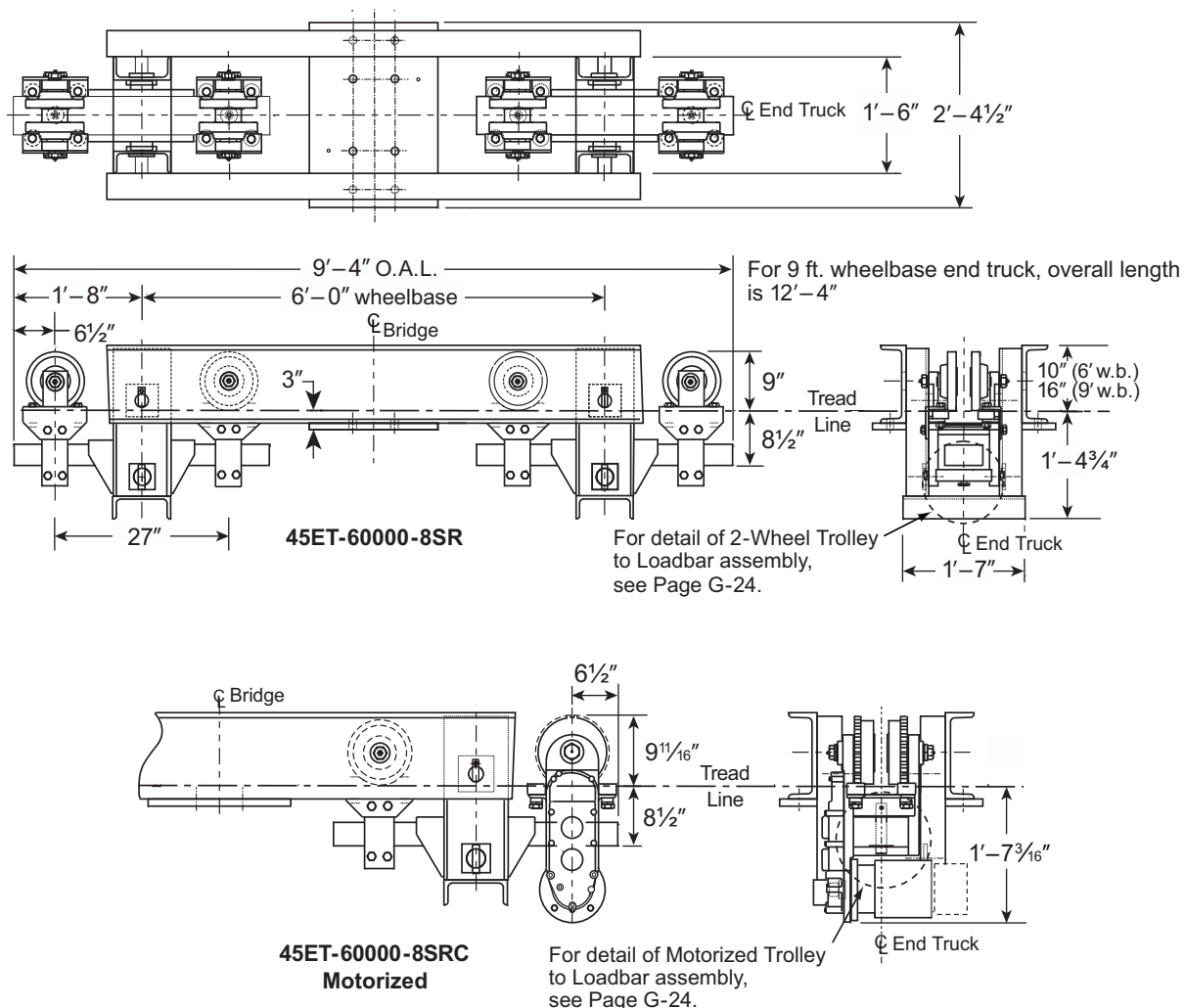
10-3723-xx

Motor†

With brake (part # varies with HP)	24-1646-xx
Without brake (part # varies with HP)	24-1647-xx

* Includes live load, impact & handling equip. weights.

† Standard motor is 30 minute Crane & Hoist Duty, TEFC, NEMA Design B. Contact the factory for options.





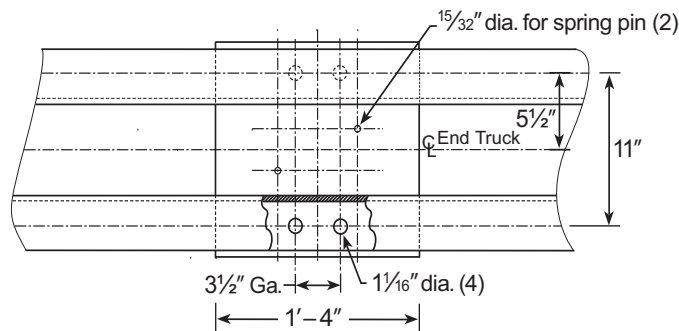
450 Series Crane End Trucks

End Truck to Bridge Beam Connection Detail

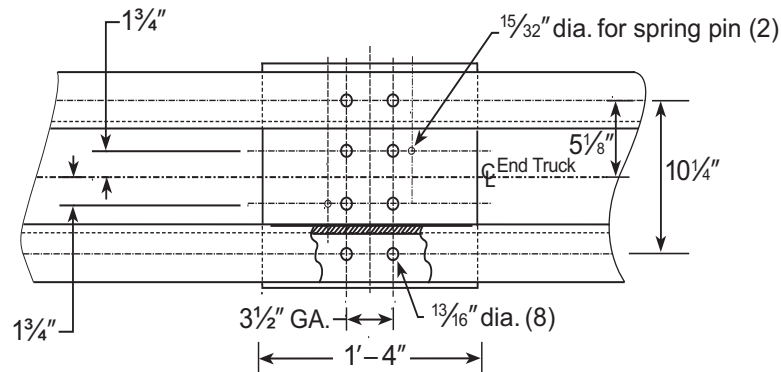
Note Mounting Holes in bridge beam must be "match-drilled" to each end truck. Assure that crane span and squareness are properly set before drilling. Shims may be required to level the end truck to the bridge beam. Hardware to mount end trucks not included. Use Grade 5.

Bridge mounting plates have two $1\frac{5}{32}$ " holes provided for minimum $\frac{1}{2}$ " x 1" spring pins. After end trucks are properly located and temporarily positioned, drill spring pin holes into bridge beam top flange. Pins are used to relocate end trucks after other holes are drilled.

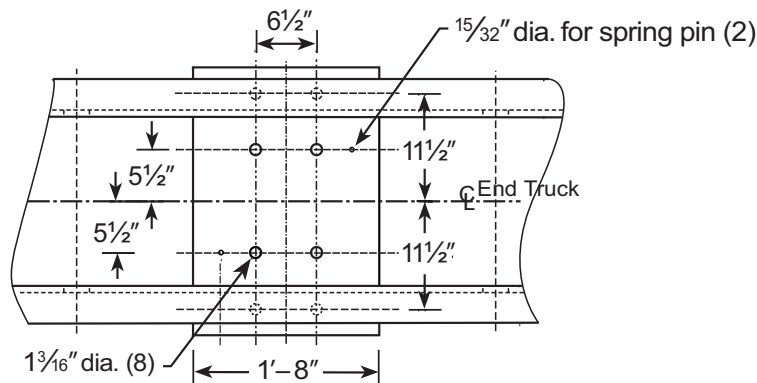
45ET-30000-4SR



45ET-30000-4SRL



45ET-60000-8SR / -8SRL



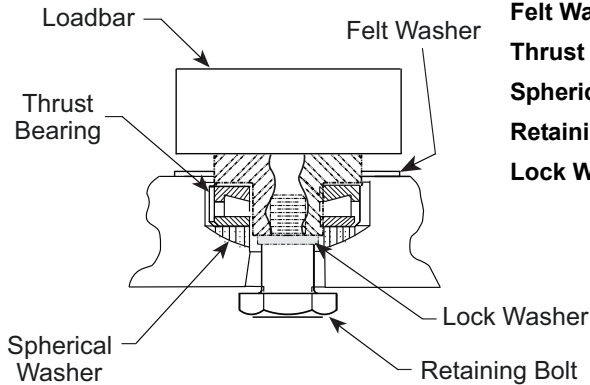
450 Series End Truck Trolley Component Assembly

Two-Wheel Trolley Assembly to End Truck Load Bar

End Truck Models

45ET-30000-4SR/-4SRL

45ET-60000-8SR/-8SRL



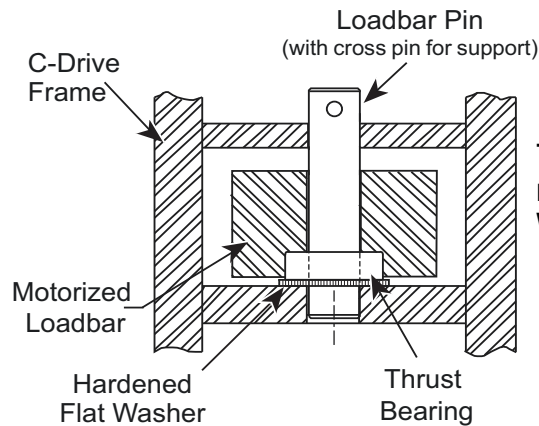
Felt Washer	23-1025-00
Thrust Bearing	23-1026-0025-
Spherical Washer	25-25-3142-00
Retaining Bolt	25-3148-00
Lock Washer	21-1005-00

Motorized Trolley to Loadbar (Typical)

End Truck Models

45ET-30000-4SR/-4SRL

45ET-60000-8SR/-8SRL



Thrust Bearing	23-1031-00
Hardened Flat Washer	18Q308D2



Drivetractors and Motorized Trolleys

Drivetractors

Model 2D-231 Hand Chain Drivetractor	H-3	Model 2D-2256-SR Drivetractor	H-6
Model 3D-231 Hand Chain Drivetractor	H-3	Model 3D-6256-SR Drivetractor	H-6
Model 4D-231 Hand Chain Drivetractor	H-3	Model 4D-2256-SR Drivetractor	H-6
Model 3D-631 Hand Chain Drivetractor	H-4	Model 3D-28-300 Drivetractor	H-7
Model 4D-31 Hand Chain Drivetractor	H-4	Model 3D-622 Drivetractor	H-8
Model 2D-4000 Drivetractor	H-5	Model 4D-22 Drivetractor	H-8
Model 2D-4000-SR Drivetractor	H-5	Model 3D-630 Drivetractor	H-9
Model 3D-4000 Drivetractor	H-5	Model 4D-30 Drivetractor	H-9
Model 3D-4000-SR Drivetractor	H-5		

325 Series Motorized Trolleys

Model 3MT5-6200-AT Motorized Trolley	H-10	Model 3MT6-8000-A2 Motorized Trolley	H-11
Model 3MT5-6200-A2 Motorized Trolley	H-11	Model 3MT9-10000-B Motorized Trolley	H-12

450 Series Motorized Trolleys

Model 45MT-15000-C Motorized Trolley	H-13
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Carriers

Single Girder Carriers	H-14
Typical Hoist Carriers	H-15
Double Girder Carriers	H-17
Load Capacities & Typical Clearance Dimensions	H-18



Drivetractors

Model 2D-231 Hand Chain Drivetractor

10-1924-00 (for 200 Series Rail)

Model 3D-231 Hand Chain Drivetractor

10-1922-00 (for 325 Series Rail)

Model 4D-231 Hand Chain Drivetractor

10-1923-00 (for 400 Series Rail)

Drive Assembly

Hand chain with pocket wheel, to roller chain reduction. Threaded stud swivel connection to each trolley for drive wheel pressure adjustments. Horizontal travel ration is 3.6" per 12" of chain travel

Tractor Drawbar

Provided with tractor unless as noted. Specify standard drawbar preference on order.

When TC/A trolleys and adaptors are ordered with a drive-tractor, and certified drawings of the hoist are provided with the order, TC/A will furnish a special drawbar and attachment to suit.

Paint

TC/American Alert Yellow or Orange enamel. Specify on order.

Weight

All models

200 lbs.
(approximate)

Trolleys

See "450 Series Trolleys" on page E-34 for descriptions.

2D-231

2T-2000-2\
10-1095-00

3D-231

3T-2000-2
10-1178-00

4D-231

Part # to be
assigned

Drive Wheel

12 x 3
23-4846-00

Tractor Drawbar

9/16" holes on 6" centers

25-2254-00

13/16" holes on 12" centers

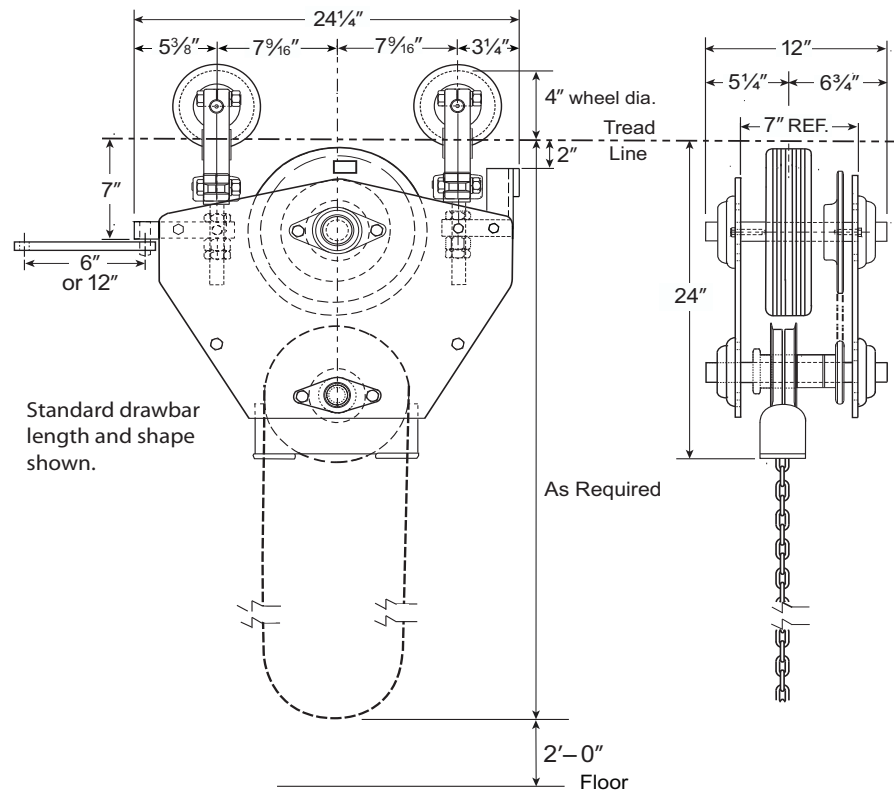
25-1667-00

Drawbar pull capacity

2-ton Live Load

Service

Class "B", indoor



Typical D-231 Drivetractor

Model 3D-631 Hand Chain Drivetractor

For 325 Series rail (shown).

Model 4D-31 Hand Chain Drivetractor

For 400 Series rail.

Specifications

Weight	245 lbs.
All models	(approximate)
Trolleys 4" diameter, flanged wheels. See Trolley Section for descriptions.	
3D-631	3T-2000-2 10-1178-00
4D-31	Part # to be assigned.
Tractor Drawbar	
9/16" holes on 6" centers	25-2254-00
13/16" holes on 12" centers	25-1667-00
Drawbar pull capacity	5-ton Live Load
Drive Wheel	12 x 3 23-4846-00
Service	Class "B", indoor

Drive Assembly

Hand chain with pocket wheel, to roller chain double reduction. Approximate chain pull force required for maximum load is 13 pounds. Horizontal travel ratio is 1.69" per 12" of chain travel. Threaded stud swivel connection to each trolley for drive wheel pressure adjustments.

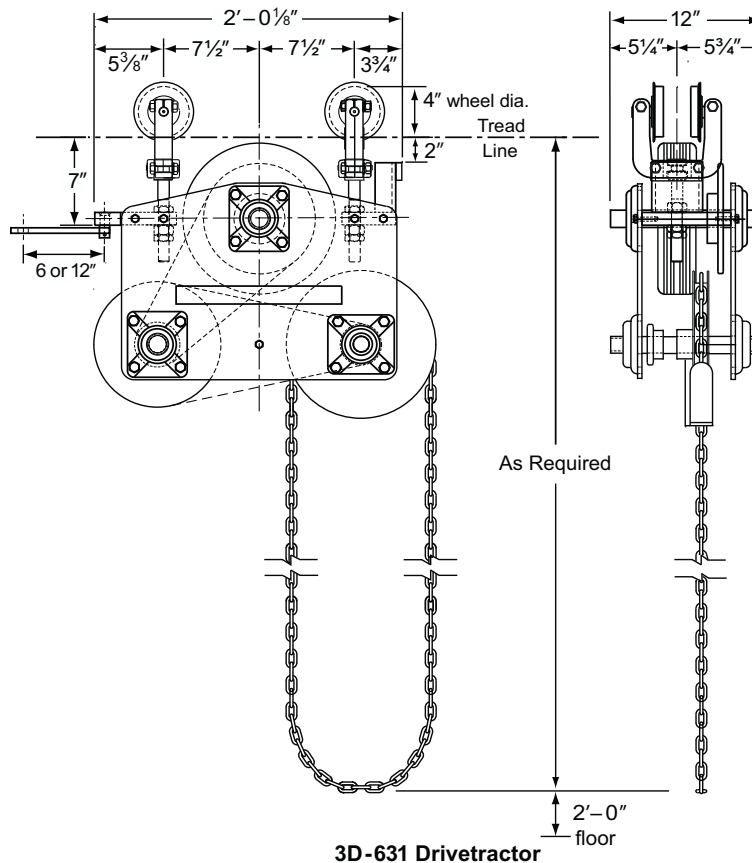
Tractor Drawbar

Provided with tractor unless as noted. Specify standard drawbar preference on order. When TC/A trolleys and adaptors are ordered with a drive-tractor, and certified drawings of the hoist are provided with the order, TC/A will furnish a special drawbar and attachment to suit.

Higher capacities are possible, but the effort to move and stop the load increases and may be objectionable to the user.

Paint

TC/American Alert Yellow or Orange enamel. Specify on order.



**Model 2D-4000 Drivetractor**

10-3167-1xxx

Model 2D-4000-SR Drivetractor

10-3167-2xxx

("xxx" qualifier for type of controls, voltage and brake)

Model 3D-4000 Drivetractor

10-3167-3xxx

Model 3D-4000-SR Drivetractor

10-3167-4xxx

Specifications**Weight**

All models with single speed controls,
less brake

with flanged wheel trolleys	318 lbs.
with side roller trolleys	322 lbs.

All models: deduct 40 lbs. for less controls.

Trolleys

See Trolley Section for descriptions.

2D-4000-4	2T-2000-2 10-1095-00
2D-4000-4SR	2T-2000-2SR 10-1121-00
3D-4000-4	3T-2000-2 10-1178-00
3D-4000-4SR	3T-2000-2SR 10-1120-00

*Note: cannot mount tandem head collectors
on this drivetractor — wheelbase is too short*

Controls

Standard variable frequency drive for single or multiple travel speeds, UL508A labeled, NEMA 12 enclosure, IEC contactors, 115 volt control transformer with fused secondary, motor branch circuit fusing.

Does not include a pushbutton station.

Speeds Available

Standard 75 FPM, Single Speed

Other speeds available with sprocket changes.

25, 35, 37, 40 FPM for straight rail only

50, 75, 90, 100, 120 FPM for curves and straight

Verify drawbar pull capacity is compatible with ½ HP motor
— see Engineering Section.

Motor

½ HP standard; optional ¾

Without brake--standard; with brake--optional

*Verify HP required and drawbar pull capacity--see
Engineering Section.*

208V /230V /460V-3ph -60 Hz, 30-minute crane & hoist duty, 1800 rpm, TEFC, NEMA Design "B", Class "F" insulation, with thermal protection. Suitable for use with TC/A supplied inverter, 6 to 60 Hz, with minimal operation at low Hz.

Tractor Drawbar

Standard drawbar length and shape shown. Provided with tractor unless as noted below.

with 9/16" hole on end for attachment to equipment **25-3129-00**

with 13/16" hole on end for attachment to equipment **25-3130-00**

Specify standard drawbar preference on order.

When TC/A trolleys and adaptors are ordered with a drive-tractor, and certified drawings of the hoist are provided with the order, TC/A will furnish a special drawbar and attachment to suit.

Drawbar Pull Capacity: All models **2-Ton Live Load**

Drive Wheel (6" dia. 1¼" bore) **23-4634-00**

Drive Assembly

Right angle gearbox with #50 roller chain to drive wheel sprocket. Spring loaded stud swivel attached to one trolley for maximum drive wheel pressure adjustment.

Service

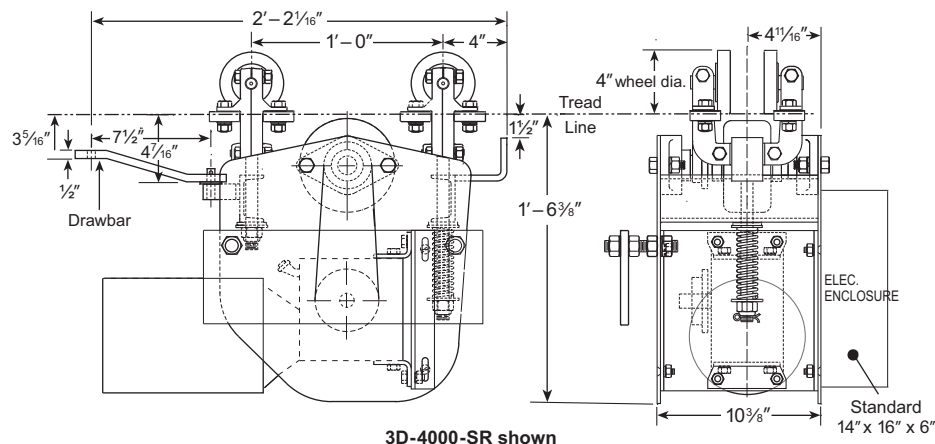
Class "C", indoor

Paint

TC/American Alert Yellow or Orange enamel. Specify on order. Wheels are zinc plated.

Options

Other options not listed are available. Contact TC/American Crane Company sales for information.



3D-4000-SR shown



Model 2D-2256-SR Drivetractor

For 200 Series rail. Part number not assigned.

Model 3D-6256-SR Drivetractor

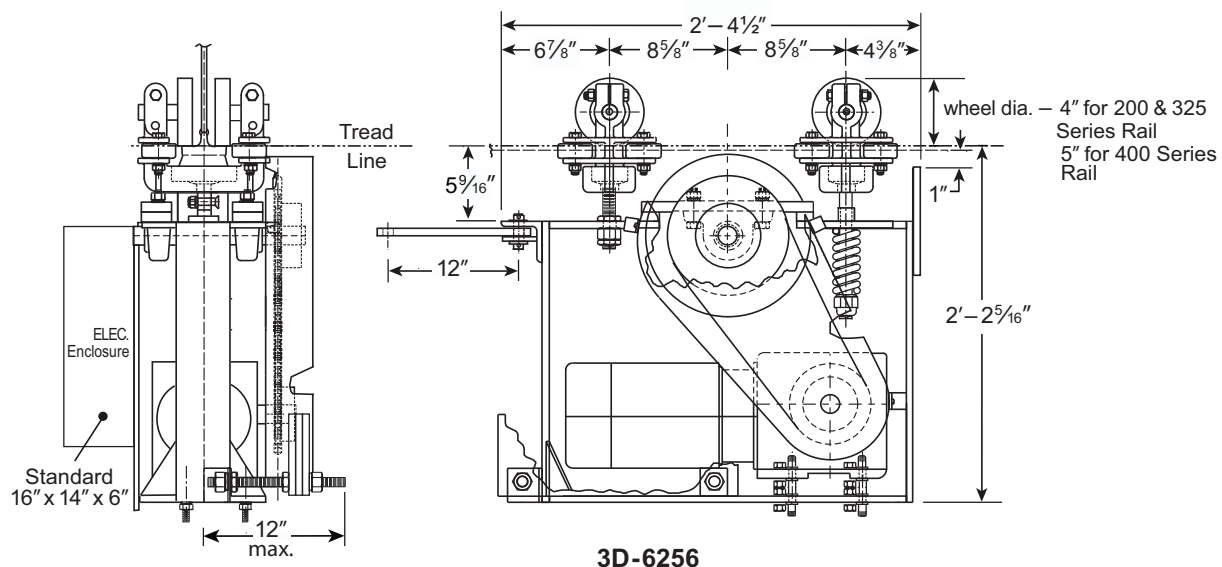
For 325 Series rail (shown). Part number not assigned.

Model 4D-2256-SR Drivetractor

For 400 Series rail. Part number not assigned.

Specifications

Weight	400 lbs.	Motor	½ HP standard; optional ¾, 1 and 1½ HP
All models	(approximately, with	Without brake—standard; with brake—optional	
(All models: deduct 40 lbs. for less controls)	controls, less brake	Verify HP required and drawbar pull capacity—see	
Trolleys		Engineering Section.	
See Trolley Section for descriptions.		208V/230V/460V-3ph -60 Hz, 30-minute crane & hoist duty, 1800	
2D-2256-SR	2T-2000-2SR	rpm, TEFC, NEMA Design "B", Class "F" insulation, with thermal	
	10-1095-00	protection. Suitable for use with TC/A supplied inverter, 6 to 60	
3D-6256-SR	3T-2000-2SR	Hz, with minimal operation at low Hz.	
	10-1120-00	Optional motor brake is magnetic disk type, external manual	
4D-2256-SR	4T-4100-2SR	release with automatic reset, Class "B" insulation.	
	10-1237-00		
Controls		Tractor Drawbar	
Standard variable frequency drive for single or multiple travel		Standard drawbar length and shape shown. Provided with	
speeds, UL508A labeled, NEMA 12 enclosure, IEC		tractor unless as noted below.	
contactors, 115 volt control transformer with fused		3/16" Holes on 12" centers - 25-1667-00	
secondary, motor branch circuit fusing.		When TC/A trolleys and adaptors are ordered with a drive-	
Does not include a pushbutton station.		tractor, and certified drawings of the hoist are provided with the	
		order, TC/A will furnish a special drawbar and attachment to suit.	
Speed Available		Drawbar Pull Capacity	
Standard 75 FPM, Single Speed		All models	5-Ton Live Load
Other optional speeds 50, 100, 120, 150 FPM available		Service	Class "C", indoor
with gearbox and sprocket changes.		Paint	
		TC/American Alert Yellow or Orange enamel. Specify on	
Drive Assembly		order. Wheels are zinc plated.	
Right angle worm gearbox and motor assembly with #60 roller		Options	
chain to drive wheel sprocket. Spring loaded stud swivel attached		Other options not listed are available. Contact TC/	
to one trolley for maximum drive wheel pressure adjustment.		American Crane Company sales for information.	
Drive Wheel	W 1240 (12 x 4)		
	10-3665-00		





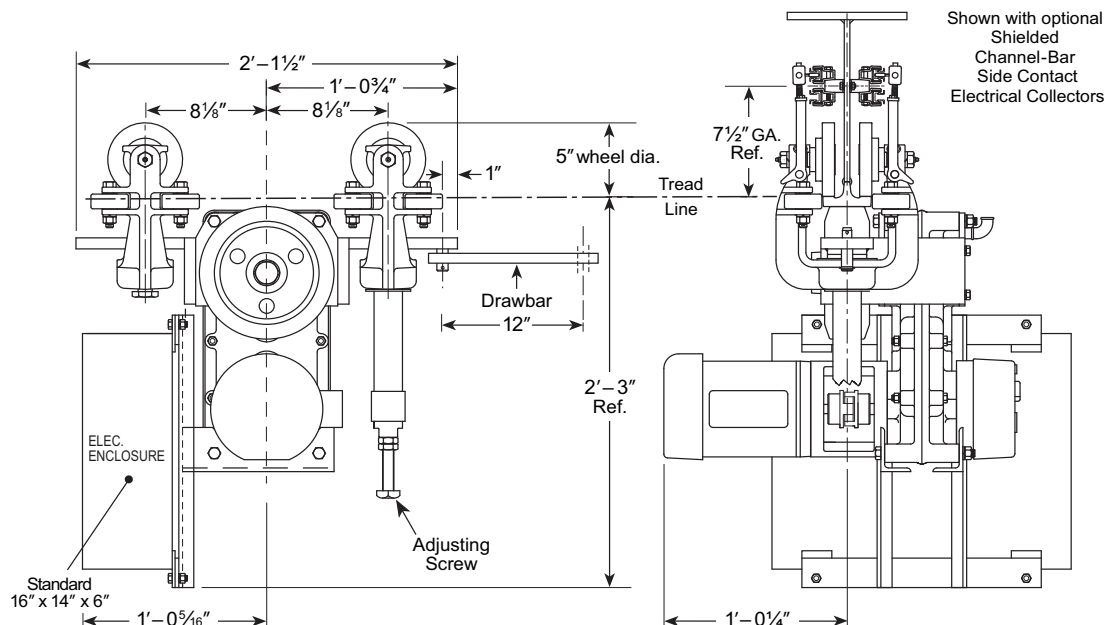
Model 3D-28-300 Drivetractor

For 325 Series rail

10-3271-xxxx ("xxxx" qualifier for type of controls, "L" or "H", controls, voltage and brake)

Specifications

Weight	approximate	Motor	½ HP standard; optional ¾, 1, 1½ and 2 HP Without brake—standard; with brake—optional
With controls, less brake	300 lbs.		
Less controls	deduct 40 lbs.		
Trolleys			<i>Verify HP required and drawbar pull capacity — see Engineering Section.</i>
See Trolley Section for descriptions.			
"400 Series Trolleys" on page E-33			
3D-28-00	3T-6200-2SR 10-2728-00		208V /230V /460V-3ph -60 Hz, 30-minute crane & hoist duty, 1800 rpm, TEFC, NEMA Design "B", Class "F" insulation, with thermal protection. Suitable for use with TC/ A supplied inverter, 6 to 60 Hz, with minimal operation at low Hz. Optional motor brake is magnetic disk type, external manual release with automatic reset, Class "B" insulation.
Controls		Tractor Drawbar	
Standard variable frequency drive for single or multiple travel speeds, UL508A labeled, NEMA 12 enclosure, IEC contactors, 115 volt control transformer with fused secondary, motor branch circuit fusing.			Standard drawbar length and shape shown. Provided with tractor unless as noted below.
<i>Does not include a pushbutton station.</i>			13/16" holes on 12" centers 25 -1667- 00
Speed Available			<i>When TC/A trolleys and adaptors are ordered with a drive- tractor, and certified drawings of the hoist are provided with the order, TC/A will furnish a special drawbar and attachment to suit.</i>
Standard 75 FPM, Single Speed		Drawbar Pull Capacity	10-Ton Live Load
<i>Other optional speeds 50, 100, 125 & 150 FPM available with gear changes.</i>		Service	Class "C", indoor
Drive Assembly		Paint	
Spur gears in enclosed gear case. Single spring cartridge located under one trolley for maximum drive wheel pressure adjustment.			TC/American Alert Yellow or Orange enamel. Specify on order.
Drive Wheel	9 x 3 26-100-C	Options	
			Other options not listed are available. Contact TC/American Crane Company sales for information.



**Model 3D-622 Drivetractor**

For 325 Series rail (shown). Part number not assigned.

Model 4D-22 Drivetractor

For 400 Series rail (shown). Part number not assigned.

Specifications

Weight	approximate
With controls, less brake	570 lbs.
Less controls	deduct 50 lbs.

Trolley

"450 Series Trolleys" on page E-34	
3D-622	3T-4100-2SR (modified)
4D-22	4T-4100-2SR (modified)

Controls

Standard variable frequency drive for single or multiple travel speeds, UL508A labeled, NEMA 12 enclosure, IEC contactors, 115 volt control transformer with fused secondary, motor branch circuit fusing.
Does not include a pushbutton station.

Speed Available

Standard 75 FPM, Single Speed

Other optional speeds 50, 100, 125 & 150 FPM available with gearbox and sprocket changes.

Drive Assembly

Helical gearbox with #80 roller chain to drive wheel sprocket. Spring pair located under one trolley for maximum drive wheel pressure adjustment.

Drive Wheel	W 12 x 4 10-2082-00
--------------------	-------------------------------

Motor

½ HP standard; optional ¾ up to 5 HP without brake - standard; with brake - optional
Verify HP required and drawbar pull capacity — see Engineering Section.

208V/230V/460V-3ph -60 Hz, 30-minute crane & hoist duty, 1800 rpm, TEFC, NEMA Design "B", Class "F" insulation, with thermal protection. Suitable for use with TC/A supplied inverter, 6 to 60 Hz, with minimal operation at low Hz.

Optional motor brake is magnetic disk type, external manual release with automatic reset, Class "B" insulation.

Tractor Drawbar

Standard drawbar length and shape shown. Provided with tractor unless as noted below.

13/16" holes on 12" centers - **25-1667-00**

When TC/A trolleys and adaptors are ordered with a drive-tractor, and certified drawings of the hoist are provided with the order, TC/A will furnish a special drawbar and attachment to suit.

Drawbar Pull Capacity	Up to 10-Ton Live Load
All Models	

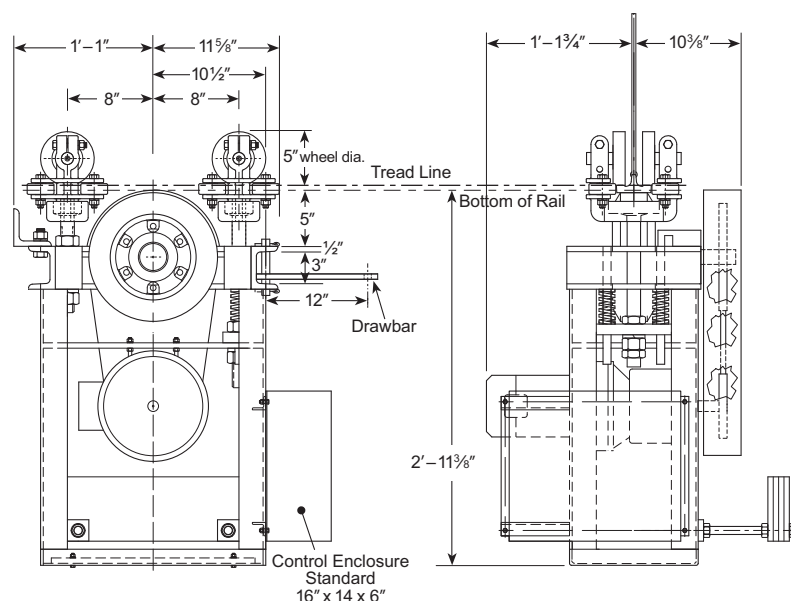
Service	Class "C", indoor
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Paint

TC/American Alert Yellow or Orange enamel. Specify on order.

Options

Other options not listed are available. Contact TC/American Crane Company sales for information.





Model 3D-630 Drivetractor

For 325 Series rail. Part number not assigned.

Model 4D-30 Drivetractor

For 400 Series rail (shown). Part number not assigned.

Specifications

Weight	approximate
With controls, less brake	925 lbs.
Less controls	deduct 50 lbs.
Trolleys	modified
"450 Series Trolleys" on page E-34	
3D-630	3T-4100-2SR
4D-30	4T-4100-2SR
Controls	
Standard variable frequency drive for single or multiple travel speeds, UL508A labeled, NEMA 12 enclosure, IEC contactors, 115 volt control transformer with fused secondary, motor branch circuit fusing.	
<i>Does not include a pushbutton station.</i>	
Speed Available	
Standard 75 FPM, Single Speed	
<i>Other optional speeds 50, 100, 125 & 150 FPM available with gearbox changes.</i>	
Drive Assembly	
Helical gearbox with #60-2 double roller chain to drive wheel sprockets. Tandem drive wheels for maximum pulling capacity. Dual spring cartridges for balanced tire-to-rail pressure adjustment.	
Drive Wheels (two)	W 12 x 4
	10-2082-00
Minimum Radius Curves	
8-foot minimum radius for lighter loads, 10-foot radius for heavier loads (due to the trolley wheelbase, on a curve the contact points of the 2 wheels departs from the center line of the rail tee section).	

Motor

2 HP standard; optional up to 5 HP

Without brake—standard; with brake—optional
Verify HP required and drawbar pull capacity—see Engineering Section.

208V/230V/460V-3ph -60 Hz, 30-minute crane & hoist duty, 1800 rpm, TEFC, NEMA Design "B", Class "F" insulation, with thermal protection. Suitable for use with TC/A supplied inverter, 6 to 60 Hz, with minimal operation at low Hz.

Optional motor brake is magnetic disk type, external manual release with automatic reset, Class "B" insulation.

Tractor Drawbar

Standard drawbar length and shape shown. Provided with tractor unless as noted below.

13/16" holes on 12" centers

25-1667-00

When TC/A trolleys and adaptors are ordered with a drive-tractor, and certified drawings of the hoist are provided with the order, TC/A will furnish a special drawbar(s) and attachment to suit.

Drawbar Pull Capacity

All Models

Up to 20-Ton Live Load

Service

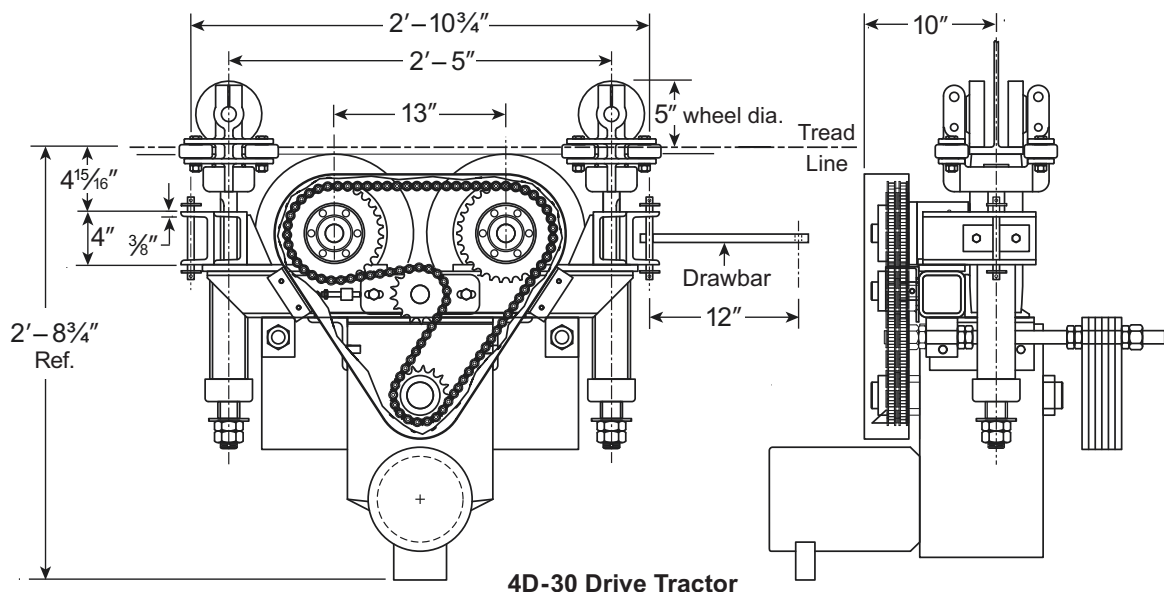
Class "C", indoor

Paint

TC/American Alert Yellow or Orange enamel. Specify on order. Wheels are zinc plated.

Options

Other options not listed are available. Contact TC/American Crane Company sales for information.

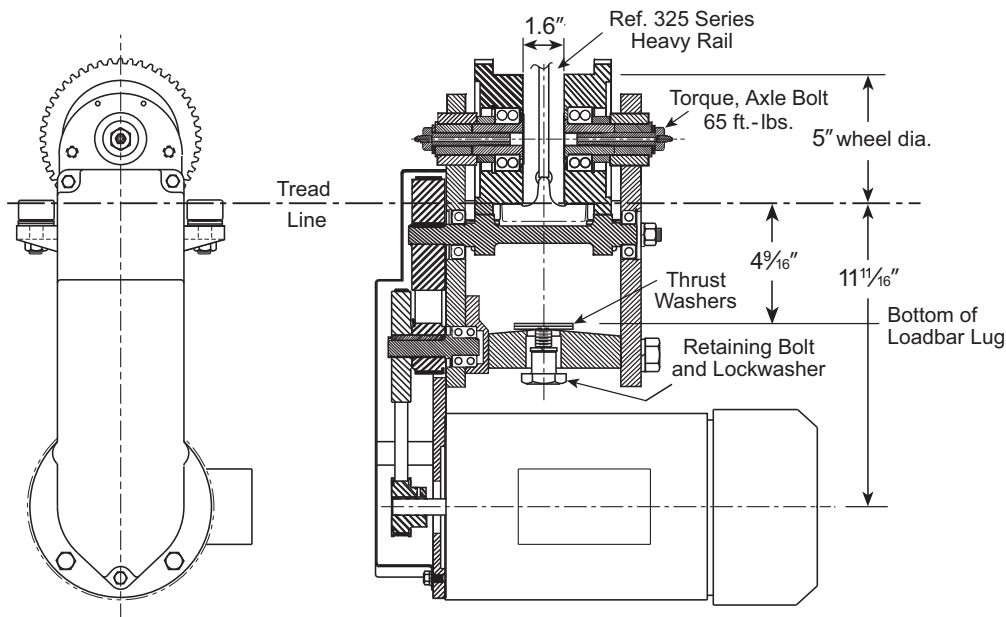


Model 3MT5-6200-AT Motorized Trolley

10-3268-00

Specifications

Capacity	6200 lbs.	Weight	105 lbs. (approximate, with motor and brake)
Design		Motor	
Use on 325 Series end trucks for multi-drive cranes or on hoist carriers, in combination with other trolleys. Verify total load on end truck or carrier. Use on "L" or "H" 325 Series rail; minimum 4' radius curve. May be used with 2000 Series switches only.		½ HP with brake, standard 24-1646-00 208V/230V/460V-3ph -60 Hz, 30-minute crane & hoist duty, 1800 rpm, TEFC, NEMA Design "B", Class "F" insulation, with thermal protection. Suitable for use with TC/A supplied inverter, 6 to 60 Hz, with minimal operation at low Hz. Motor brake is magnetic disk type, external manual release with automatic reset, Class "B" insulation.	
Trolley to Loadbar Connection		Wheel Assembly, 5" dia.	
TC/American Crane motorized trolleys feature a specially designed, articulated load connection. This allows the trolleys to self-align for easier rolling, compensates for minor changes in runway span, equalizes wheel loading, and reduces rail and wheel wear.		Side Rollers 33-950-0-37 Timing Belt, Upper 7Z455D3 Timing Belt, Lower 7Z454D5 Thrust Washers (2 req'd) 25-3101-00 Retaining Bolt 25-3148-00	
Speeds Available		Always refer to equipment parts manual, with serial number, for correct parts identification	
Standard 100 FPM, Single Speed Optional speed 50 FPM with addition of 2:1 reducer between motor and trolley frame. <i>For other speeds use "A" drive or VFD.</i> <i>For multiple speeds, use with VFD controls.</i>		Service	
Drive Assembly		Class "C", indoor	
"Bolt together" frame with timing belt and gear reduction drive. Drive cover is high impact ABS material. No lubrication required except for regreasable bearings in wheel assemblies. Wheel assemblies have double row ball bearings, regreasable, minimum B-10 life of 5000 hours; use high quality multi-purpose extreme pressure (EP) lithium grease. Wheel tread and teeth hardened to minimum 425 Brinell. Spur gear teeth induction hardened to RC 50-55.		Paint	
		TC/American Alert Yellow or Orange enamel. Specify on order. Wheels are bright zinc plated.	
		Options	
		Other options not listed are available. Contact TC/American Crane Company sales for information.	



**Model 3MT5-6200-A2 Motorized Trolley**

10-2907-xx

Model 3MT6-8000-A2 Motorized Trolley

10-2890-xx

Specifications

Capacity	6200 and 8000 lbs.
Design	<p>Use on 325 Series end trucks for multi-drive cranes or on hoist carriers, in combination with other trolleys.</p> <p>Verify total load on end truck or carrier.</p> <p>Use on "L" or "H" 325 Series rail; minimum 4' radius curve. May be used with 2000 Series switches only.</p>
Trolley to Loadbar Connection	<p>TC/American Crane motorized trolleys feature a specially designed, articulated load connection. This allows the trolleys to self-align for easier rolling, compensates for minor changes in runway span, equalizes wheel loading, and reduces rail and wheel wear.</p>
Speeds Available	<p>Standard 100 FPM, Single Speed</p> <p>Other optional speeds 50, 75, 125, 150 and 200 FPM with gear changes, using a standard single speed motor.</p> <p><i>For slower speed, or multiple speeds, use with VFD controls.</i></p>
Drive Assembly	<p>"Bolt together" frame with enclosed oil splash spur gear reduction drive. Gearboxes shipped dry; fill with high quality SAE 90 gearlube to level of check plug, approximately 1 pint.</p> <p>Wheel assemblies have regreasable double row ball bearings; use high quality multi-purpose extreme pressure (EP) lithium grease for wheels and drive pinion gear.</p> <p>Wheel tread and teeth hardened to minimum 425 Brinell. Spur gear teeth induction hardened to RC 50-55.</p>
Weight	<p>With ½ HP motor:</p> <p>3MT5-6200-A2 185 lbs. approximate</p> <p>3MT6-8000-A2 195 lbs. approximate</p> <p>Add 10lbs. for motor with brake.</p>

Motor½ HP with brake, standard **24-1646-01**

Optional ¾, 1 and 1.5 HP motors, with or without brake

208V/230V/460V-3ph -60 Hz, 30-minute crane & hoist duty, 1800 rpm, TEFC, NEMA Design "B", Class "F" insulation, with thermal protection. Suitable for use with TC/A supplied inverter, 6 to 60 Hz, with minimal operation at low Hz.

Motor brake is magnetic disk type, external manual release with automatic reset, Class "B" insulation.

Wheel Assembly

5" dia.	10-2908-00
6½" dia.	10-2891-00
Side Rollers	23-1021-00
Cover Gasket	20U49D1
Drive Pinion Bearing Gasket	20Q213D1
O-Ring, Motor Adapter Plate	45Z91D6
Seal, Motor Shaft	18Z2585D44
Thrust Washers (2 req'd)	25-3101-00
Retaining Bolt	25-3148-00

Always refer to equipment parts manual, with serial number, for correct parts identification.

Service

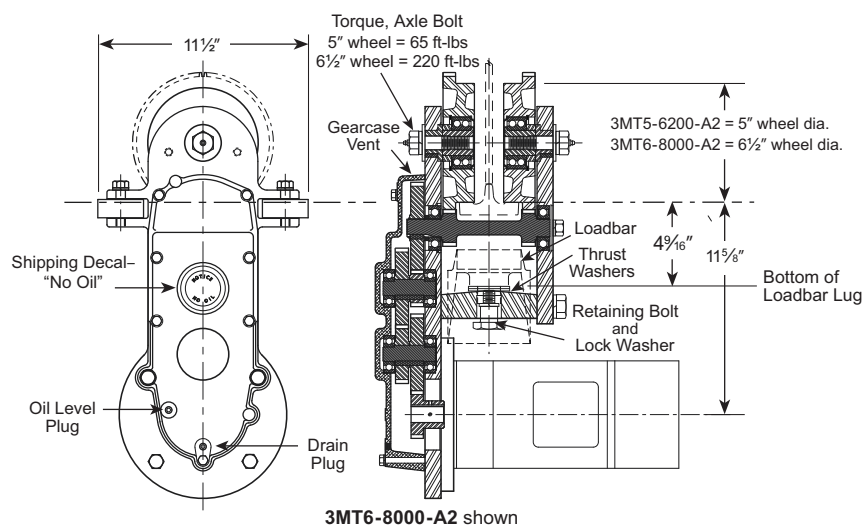
Class "C", indoor

Paint

TC/American Alert Yellow or Orange enamel. Specify on order. Wheels are bright zinc plated.

Options

See Electrical Section for electrical collectors. Order control package separately.





Model 3MT9-10000-B Motorized Trolley

10-3352-xx

Specifications

Capacity 10,000 lbs.**Design**

Use on 325 Series end trucks for multi-drive cranes or on hoist carriers used on straight rail only, in combination with other trolleys. Verify total load on end truck or carrier.

Use on 325 Series "H" rail. *Not for use with curves or switches.*

Trolley to Loadbar Connection

TC/American Crane motorized trolleys feature a specially designed, articulated load connection. This allows the trolleys to self-align for easier rolling, compensates for minor changes in runway span, equalizes wheel loading, minor changes in runway span, equalizes wheel loading, and reduces rail and wheel wear.

Speed Available

Standard nominal 100 FPM, Single Speed

Optional nominal speeds 75, 150, 175, 200, 250, 300 and 350 FPM with gear changes, using a standard single speed motor. Verify HP required.

For slower speed, or multiple speeds, use with VFD controls or a speed reducer.

Drive Assembly

Welded frame with enclosed oil splash spur gear reduction drive. Gearbox shipped dry; fill with high quality SAE 90 gearlube to level of check plug, approximately 1 pint.

Wheel assemblies have double row ball bearings, regreasable, minimum B-10 life of 5000 hours; use high quality multi-purpose extreme pressure (EP) lithium grease for wheels and drive pinion gear.

Wheel tread and teeth hardened to minimum 425 Brinell. Spur gear teeth induction hardened to RC 50-55.

Weight 340 lbs.
3MT9-1000-B (approximate, with ¾ motor and brake)**Motor**

¾ HP with brake, standard **24-1646-02**

Optional: motors, with brake, up to 5 HP

208V/230V/460V-3ph -60 Hz, 30-minute crane & hoist duty, 1800 rpm, TEFC, NEMA Design "B", Class "F" insulation, with thermal protection. Suitable for use with TC/A supplied inverter, 6 to 60 Hz, with minimal operation at low Hz.

Motor brake is magnetic disk type, external manual release with automatic reset, Class "B" insulation.

Wheel Assembly,

9" dia.	9213E1144F10
Side Rollers	23-1021-00
Gasket, Cover	20U50D1
Gasket, Final Drive Pinion Bearing	20Q212D1
O-Ring, Motor Adapter Plate	45Z91D6
Seal, Motor Pinion	23-2770-00
Thrust Washers (2 req'd)	25-3101-00
Retaining Bolt	25-3148-00

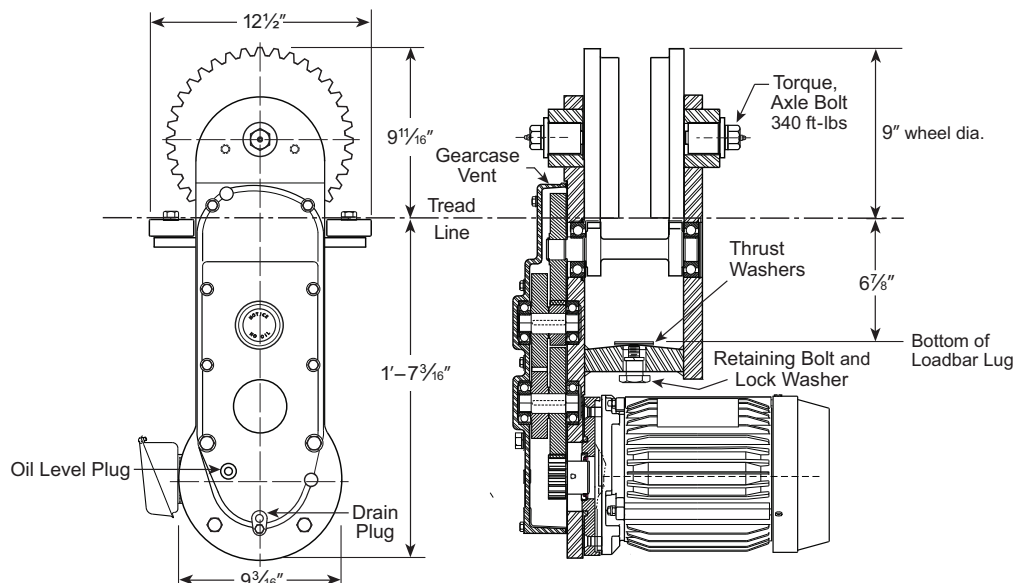
Always refer to equipment parts manual, with serial number, for correct parts identification

Service Class "C", indoor**Paint**

TC/American Alert Yellow or Orange enamel. Specify on order. Wheels are bright zinc plated.

Options

See Electrical Section for electrical collectors. Order control package separately.



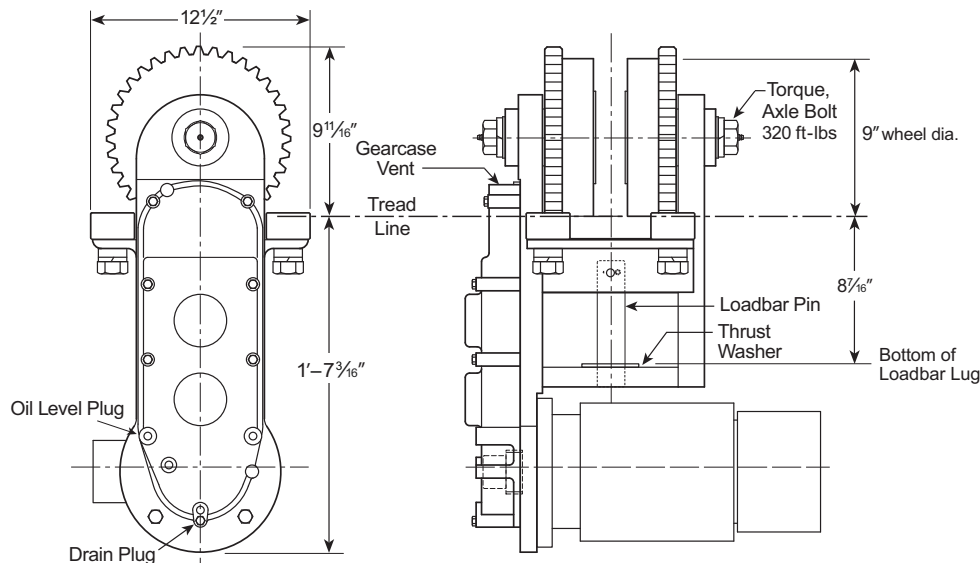


Model 45MT-15000-C Motorized Trolley

10-3723-xx

Specifications

Capacity	15000 lbs.	Weight	approximate
Design	45MT-15000-C (with 1½ HP motor) 390 lbs.		
<p>Use on 450 Series end trucks for multi-drive cranes or on hoist carriers used on straight rail only, in combination with other trolleys. Verify total load on end truck or carrier.</p> <p>Use on 450 Series rail. Contact the Sales Department for applications with switches and curves.</p>			
Trolley to Loadbar Connection			
<p>The 45MT-15000-C motorized trolley has a loadbar pin connection for maximum strength and durability. A hardened, flat thrust washer included with the motorized trolley supports a thrust bearing (part of the trolley loadbar), allowing the trolley to easily pivot about the loadbar pin.</p>			
Speed Available			
<p>Standard nominal 100 FPM, Single Speed</p> <p>Optional nominal speeds 75, 150, 175, 200, 250, 300 and 350 FPM with gear changes, using a standard single speed motor. Verify HP required.</p> <p><i>For slower speed, or multiple speeds, use with VFD controls or a speed reducer.</i></p>			
Drive Assembly			
<p>Welded frame with enclosed oil splash spur gear reduction drive. Gearbox shipped dry; fill with high quality SAE 90 gearlube to level of check plug, approximately 1 pint.</p> <p>Wheel assemblies have double row tapered roller bearings, regreasable, minimum B-10 life of 10000 hours; use high quality multi-purpose extreme pressure (EP) lithium grease for wheels and drive pinion gear.</p> <p>Wheel tread and teeth hardened to minimum 425 Brinell. Spur gear teeth induction hardened to RC 50-55.</p>			
Motor			
<p>¾HP with brake, standard 24-1646- 02</p> <p>Optional: 2, 3 and 5 HP motors, with brake</p> <p>208V/230V /460V-3ph -60 Hz, 30-minute crane & hoist duty, 1800 rpm, TEFC, NEMA Design “B”, Class “F” insulation, with thermal protection. Suitable for use with TC/A supplied inverter, 6 to 60 Hz, with minimal operation at low Hz.</p> <p>Motor brake is magnetic disk type, external manual release with automatic reset, Class “B” insulation.</p>			
Wheel Assembly			
9" dia.		9213F1382F1	
Side Rollers		23-4796-00	
Cover Gasket		20U49D1	
O-Ring, Motor Adapter Plate		45Z91D6	
Seal, Motor Pinion		23-2770-00	
Thrust Washer (1 req'd)		18Q308D2	
Loadbar Pin		219F1114D3	
<p>Always refer to equipment parts manual, with serial number, for correct parts identification</p>			
Service		Class “C”, indoor	
Paint			
<p>TC/American Alert Yellow or Orange enamel. Specify on order. Wheels are bright zinc plated.</p>			
Options			
<p>See Electrical Section for electrical collectors. Order control package separately.</p>			



Single Girder Carriers

Single Girder Hoist Carriers are designed to operate on monorails and bridge beams of single girder cranes.

All carriers are custom designed for the hoist being used, the capacity and the application (straight rail, curves, switches, etc.).

Verify total load on carrier and on individual trolleys (note the effect of hook travel on trolley loads).

Carriers with drivetractors or motorized trolleys may be provided with a TC/A control package, or controls may be provided within the hoist control package.

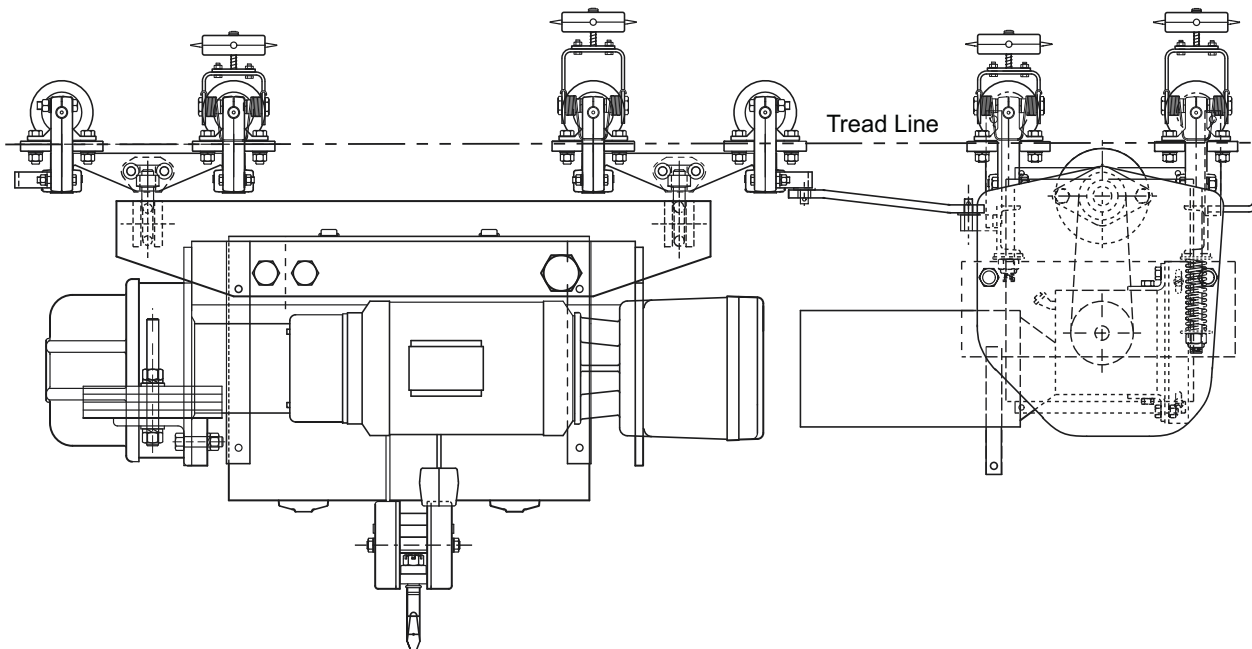
In general, the wheelbase (distance between trolleys) of a *motorized trolley hoist carrier* should be no greater than approximately 80% of the radius of the smallest radius curve in a monorail system. Other factors to consider are: clearances of the trolley components (i.e., trolley yoke to loadbar clearance on short radius curves); clearance of the hoist to the trolleys; and the tractive effort required to move a given load through a particular curve. Consult the factory for specific applications.

In general, the wheelbase (distance between trolleys) of a *hoist carrier* pulled or pushed by a drivetractor may be approximately equal to the radius of the smallest radius curve in a monorail system. However, some other factors to consider are: clearances of trolley components (i.e., trolley yoke to loadbar clearance on short radius curves); clearance of the hoist to the drivetractor; length of the drawbar required; and the tractive effort required to move a given load through a particular curve. Consult the factory for specific applications.

The wheelbase (distance between trolleys) of a *hand pushed hoist carrier* may be greater than the curve radius, but the carrier may need to be “worked” around the curve.

Orders for TC/A hoist carriers must include a certified hoist drawing.

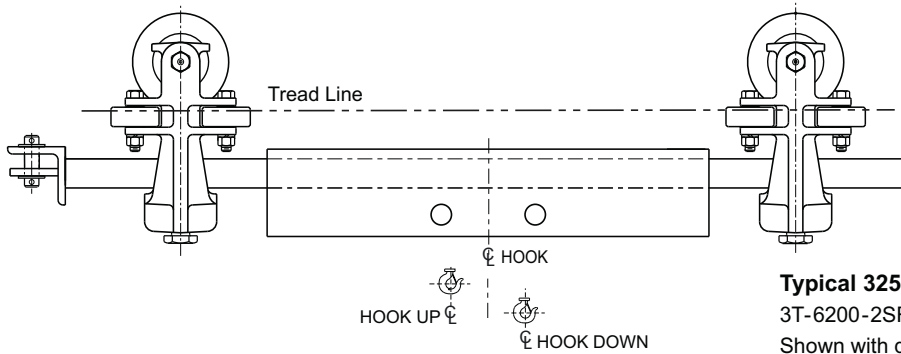
Shown here and on the following page are several examples of typical hoist carriers.



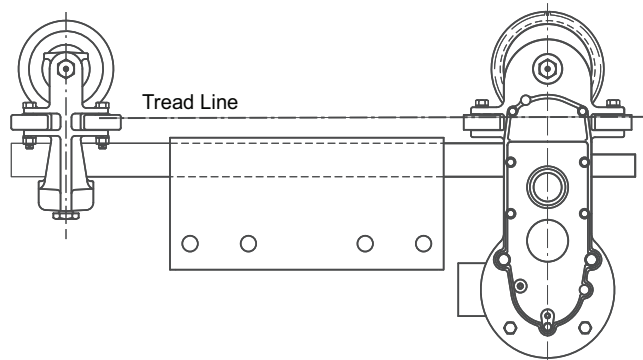
Typical 200 Series, 2-Ton Hoist Carrier

2D-4000-SR Drivetractor, 2T-2800-4SR Trolleys and special loadbar.
Shown with “tandem” Side Contact Shielded Channel-Bar Conductors.
(Control enclosures not shown for clarity.)

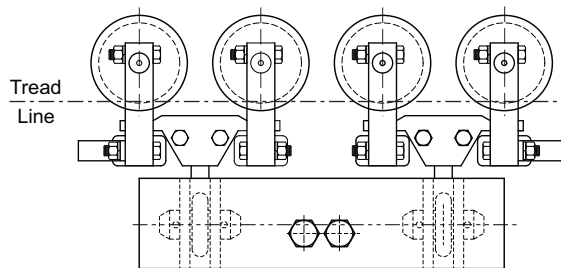
Typical Hoist Carriers



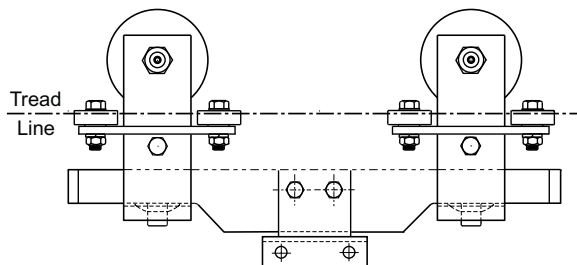
Typical 325 Series Hoist Carrier:
3T-6200-2SR Trolleys and special loadbar.
Shown with drivetractor towbar attachment.



Typical 325 Series Hoist Carrier:
3T-8000-2SR Trolley, 3MT6-8000-A2,
and special loadbar.



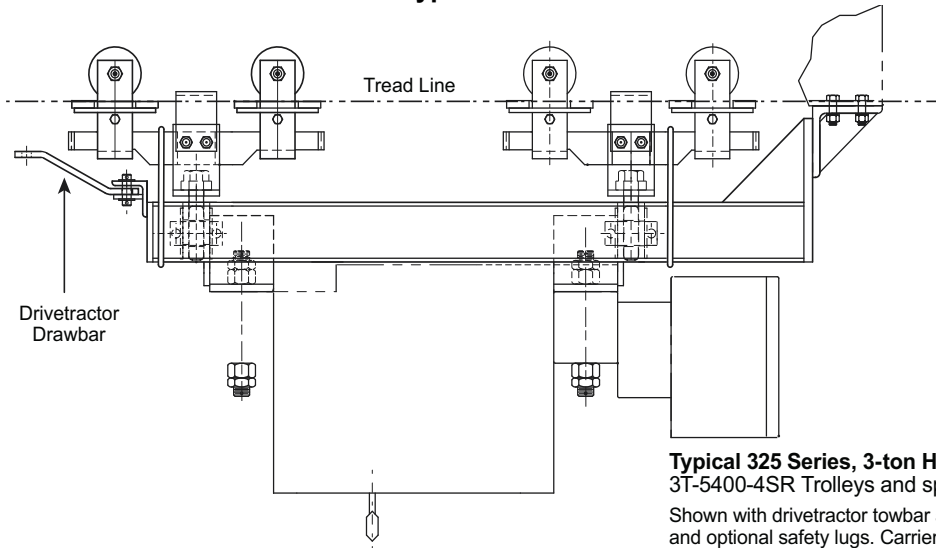
Typical 200 Series Hoist Carrier:
Two 2T-3100-4CC Trolleys connected
to a special loadbar for a lug mounted
hoist. May be "hand pushed" or pulled
by a drivetractor.



Typical Trolley with "258 Adapter"
Shown is a 3T-5400-4SR trolley with an
adapter for a lug mounted hoist. Adapter
is engineered to conform to hoist lug.
Provide hoist information with order.
Hardware to mount adapter to trolley
and to hoist is included.

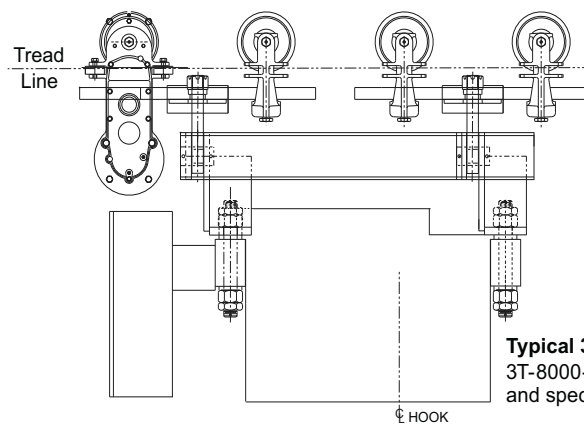


Typical Hoist Carriers

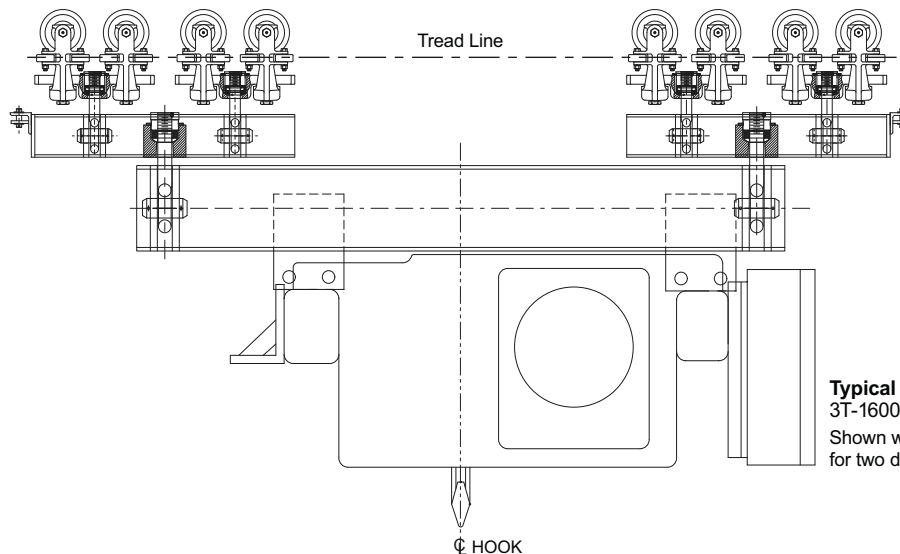


Typical 325 Series, 3-ton Hoist Carrier:
3T-5400-4SR Trolleys and special loadbar.

Shown with drivetractor towbar attachment and optional safety lugs. Carriers with these trolleys are compatible with Series 600 Switches.



Typical 325 Series, 7.5-ton Hoist Carrier:
3T-8000-2 Trolleys, 3MT6-8000-A2, and special loadbars.



Typical 325 Series 25-ton Hoist Carrier:
3T-16000-4SR Trolleys and special loadbars.
Shown with drivetractor towbar attachments for two drivetractors and special loadbar.

Double Girder Carriers

Double Girder Hoist Carriers are designed to operate with TC/American Double Girder Cranes. All carriers are custom designed for the crane, the hoist being used, the capacity and the application.

Double Girder Cranes with Double Girder Hoist Carriers carry heavy loads with improved headroom and greater load handling stability than single girder cranes, through at the cost of reduced end approach. Since the load is shared by two bridge beams and their end trucks, the beam and end truck size is reduced from those on single girder applications.

Double Girder Hoist Carriers are designed with the hoist positioned between the bridge beams to maximize the high hook elevation. On interlocking or multiple runway cranes, the top of the hoist must clear the bottom of the end trucks.

Many options may be included on double girder hoist carriers, including: radio controls, drip pans, travel warning lights and horns, special control enclosures, special paints, etc. Contact TC/American sales for other requirements.

Note Orders for TC/A double girder hoist carriers must include a certified hoist drawing.

Controls

Standard single speed with "soft start" solid state acceleration control, NEMA 12 enclosure, IEC contactors, 115 volt control transformer with fused secondary, motor branch circuit fusing.

Does not include a pushbutton station.

Standard Motor

208V/230V/460V-3ph-60Hz, 30-minute crane & hoist duty, 1800 rpm, TEFC, NEMA Design "B", Class "F" insulation, with thermal protection. Suitable for use with TC/A supplied inverter, 6 to 60 Hz, with minimal operation at low Hz.

Motor brake is magnetic disk type, external manual release with automatic reset, Class "B" insulation.

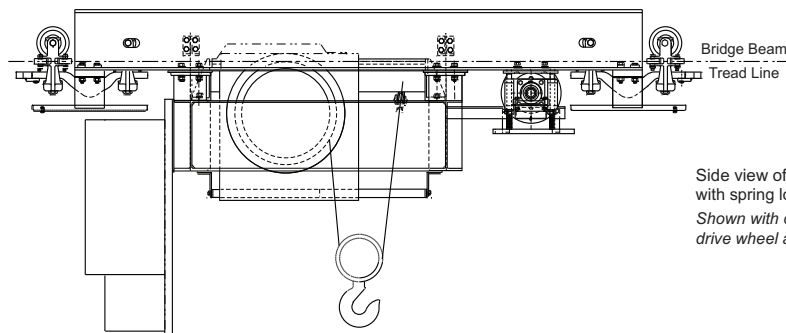
Speeds Available

- Standard travel speed 100 FPM
- Other speeds from 30 to 150 FPM. Multiple speeds available with use of variable frequency drives.

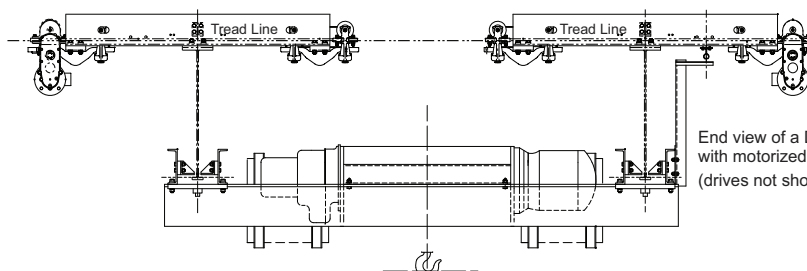
Trolleys and Drives

Double Girder Hoist Carriers may have either motorized trolley or rubber tire drives. Motorized trolley drives may provide closer end approach. Standard trolleys and drives are as described in the trolleys, cranes and drivetractor sections of this catalog.

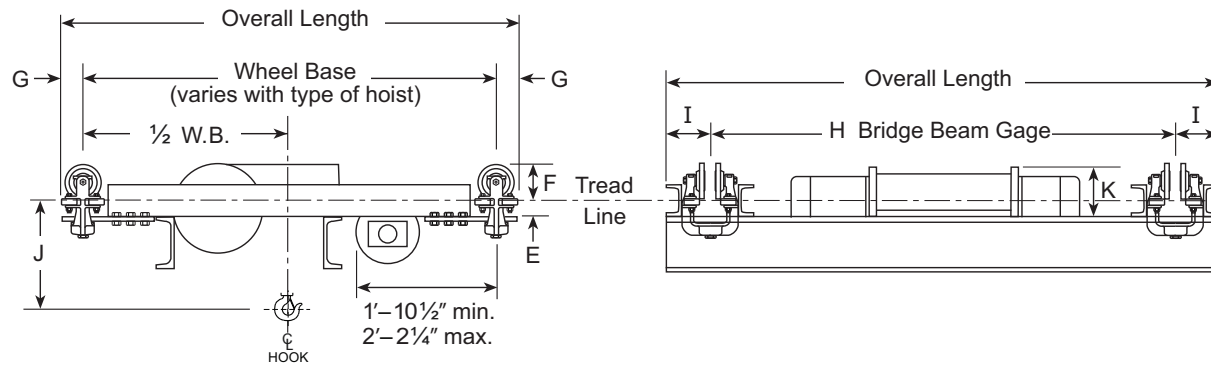
Shown below is an example of a typical Double Girder Hoist Carrier.



Side view of a Double Girder Hoist Carrier with spring loaded rubber tire drive. Shown with optional drip pans under drive wheel and trolleys.



End view of a Double Girder Crane and Hoist Carrier with motorized trolley drives. (drives not shown on carrier)



Side View End View
3DGC Double Girder Carrier
Rubber Tire Drive shown

Load Capacities & Typical Clearance Dimensions*

Model	Capacity (pounds)	No. Trolley Wheels	Hoist Weight (pounds)	Carrier Weight (pounds)	15% Impact Ld. (pounds)	Design Load (pounds)	BridgeGage				
							E	F	G	H	I
3DGC-2000	2000	8	800	1900	300 lbs.	5000	2½"	5"	6"	8'	8"
3DGC-4000	4000	8	1000	2000	600 lbs.	7600	2½"	5"	6"	8'	8"
3DGC-6000	6000	8	1100	2100	900 lbs.	10,100	2½"	5"	6"	8'	8"
3DGC-10000	10,000	8	1600	2500	1500 lbs.	15,600	2½"	5"	6"	8'	8"
3DGC-15000	15,000	16	2400	3000	2250 lbs.	22,650	2½"	6½"	11½"	8'	10"
3DGC-20000	20,000	16	2900	3500	3000 lbs.	29,400	2½"	6½"	11½"	10'	10"
3DGC-30000	30,000	16	3200	4500	5000 lbs.	42,700	2½"	6½"	11½"	10'	10"
3DGC-40000	40,000	16	4500	5500	6000 lbs.	56,000	2½"	9"	13¾"	10'	11"

* Refer to hoist manufacturer's catalog for dimensions J & K.



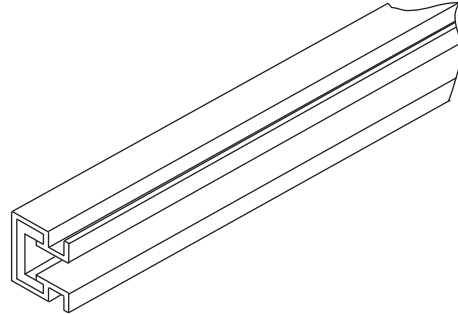
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Electrification

TC/American Crane Shielded Channel-Bar electrification is a highly versatile power delivery system for cranes and monorails and is noted for years of trouble-free service.

Standard sections are available from stock and can be bent on-site. Heavy-duty sliding-shoe collectors furnish power to moving equipment in monorail or crane systems. Conductor bars are easily installed on brackets for existing and new installations.



Features

- Versatile—easy electrification of existing non-powered systems
- Use with any manufacturer of rail or track
- Easily installed, easily moved or modified
- Eliminates exposed or open conductors
- High degree of protection—provided by almost totally enclosed current-carrying surface
- Spring-loaded collector—assures continuous & sure electrical contact
- Electro-galvanized—to increase conductivity & prevent corrosion
- Two temperature ranges available:

Standard – for ambient up to 150° F

Hi-Temp – for ambient up to 265° F

Conductor Bar and Cover

TC/American Crane Shielded Channel-Bar conductor bars are rated for 105 ampere continuous duty.

The conductor bars are steel, roll-formed sections $\frac{3}{4}$ -inch wide by $\frac{3}{8}$ -inch deep by $\frac{1}{8}$ -inch thick and are electro-galvanized to prevent corrosion. Straight sections are available in 20-foot, 10-foot and 5-foot lengths, with a cover (insulation shielding) in place over the bars. Ends of bars are prepared for E70-95 splices.

Conductor bar systems may be ordered as straight sections and as factory curved sections to match monorail curves, with some field cutting as required. Systems are provided with brackets as required for standard TC/American electrification gauge (distance, treadline to center of conductor-bar group). The proper brackets may also be specific to the trolley model being used and if the system has switches. Maximum support bracket spacing is 48" on straight rail and 24" on curves. Straight sections only may also be purchased and field cut and bent to fit curves of 3-foot radius or larger. Select the proper brackets from the chart in this section.

TC/American Crane Shielded Channel-Bar cover (insulation shielding) is extruded PVC. It has high physical and dielectric strength, high resistance to chemical attack and will not support combustion. Cover is available as "Standard" or "Hi-Temp."

Standard Cover – Red color, for use in ambient temperatures up to 150° F

Green color, for use as ground in ambient temperatures up to 150° F **(by request)**

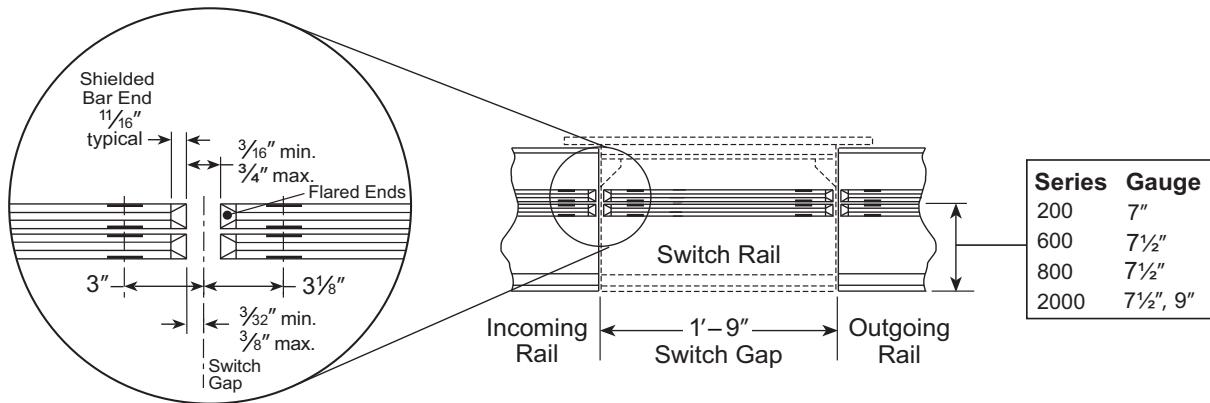
Hi-Temp Cover – Orange color, for use in ambient temperatures up to 265° F

Electrified Switches

TC/American switches are furnished with four electrical conductor bars mounted on the movable section of the switch. Electrified switches are pre-wired to the shift sections. Electrical connections to incoming and outgoing rail are enclosed in a NEMA 12 junction box mounted on the switch frame.

Note Proper phasing is the responsibility of the electrical installer.

There should be at least two support brackets between a conductor bar splice and the end of the bar at a switch or interlock.

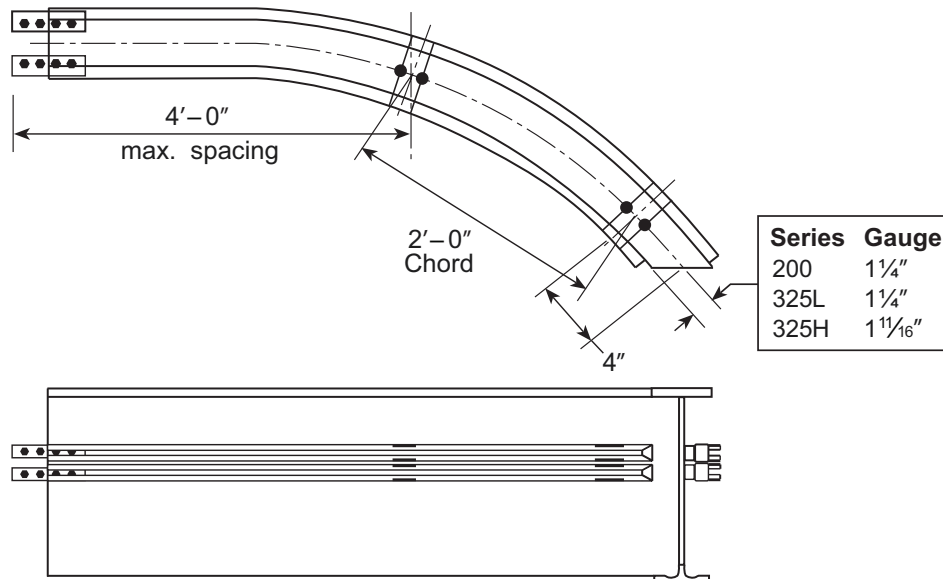


Electrified Curves

All TC/American Rail curves can be equipped with Shielded Channel-Bar electrification. Standard curves are finished with four web-mounted conductor bars and shipped loose with mounting brackets for field installation. The ends are cut and prepped to splice into a straight shielded conductor bar or to enter a switch, as

specified. Curves are constructed from one continuous length of shielded conductor bar.

Non-standard radius shielded Channel-Bar conductor can be factory ordered or can be bent on-site to a minimum radius of 36 inches.



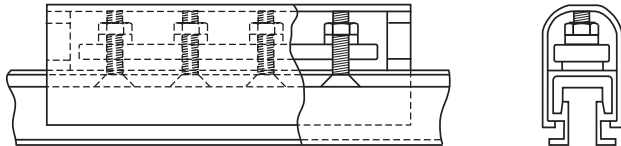
Electrification Components

E70-95 Splice Assembly

10-2722-00 Assembly with Standard Cover

10-3124-00 Assembly with Hi-Temp Cover

Standard length Shielded Channel-Bar conductor bars are pre-drilled at each end for bolted splice assemblies which hold the bars firmly aligned and provide electrical continuity. The splice bolts are enclosed by a PVC insulating cover that snaps over the connection.

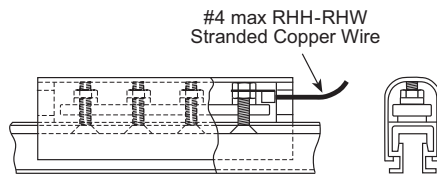


E70-94 Power Feed Assembly

10-2723-00 Assembly with Standard Cover

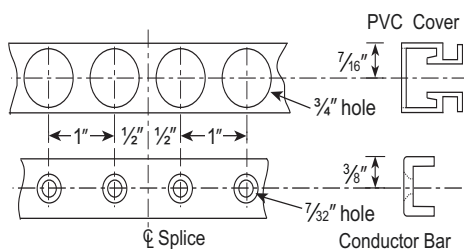
10-3125-00 Assembly with Hi-Temp Cover

Used for electrical power feed at a conductor bar splice point. Same parts as E70-95 Splice Assembly, except one splice bolt is longer (to allow for ring terminal) and has two brass nuts.



Field Prep Detail for Conductor Bar & Cover

- E70-94 Power Feed Splice Assembly
- E70-95 Splice Assembly

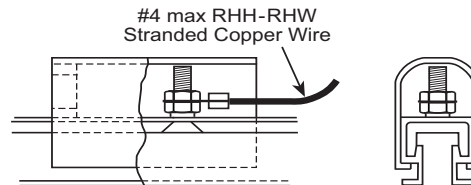


E70-7 Intermediate Power Feed Assembly

10-2726-00 Assembly with Standard Cover

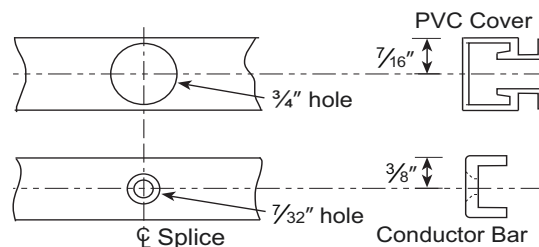
10-3126-00 Assembly with Hi-Temp Cover

Intermediate power feed is used for electric power connection to the conductor bar locations other than a splice point. The conductor bar and cover must be field prepped: drilled and countersink bar for 10-24 flat head screw; cover must have 1/2 inch round or square hole.



Field Prep Detail for Conductor Bar & Cover

- E70-7 Intermediate Power Feed



E85-53B Insulating Section (x 5 1/2)

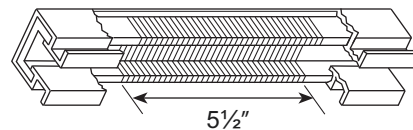
25-3455-00 (shown)

E85-53A Insulating Section (x 4 1/2)

25-3146-00

E85-53 Insulating Section (x 3 3/4)

25-1122-00



Insulating Sections are made of non-conductive material and replace a piece of conductor bar to provide an "isolated" section of conductor bar. Insulation Section length must be greater than the length of the electrical collector shoe. Used in various system dispatch controls or to electrically isolate a length conductor bar. Confirm compatibility with control components. (i.e., variable frequency drives).

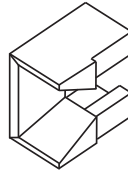
Remove conductor bar from cover and field cut to position the insulating section where needed. Assembly insulating section and conductor bar pieces into the cover and mount on rail. Do not cut cover.

Note: must have a mounting bracket approximately 6" - 8" to either side of the Insulating Sections.

E70-98 Transfer Guide

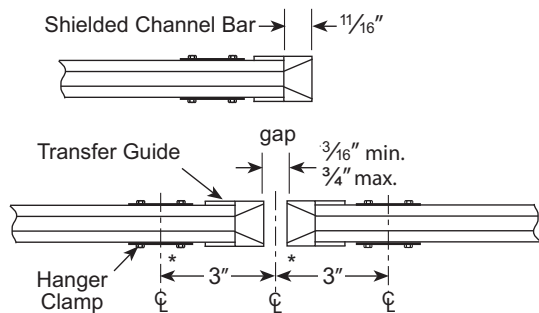
23-1879-00

The flared guide is used at ends of conductor bar at crane interlocks, crossovers and switch ends. The guide is made of extruded PVC. It fits securely outside the insulation cover and facilitates smooth entrance of the collector sliding shoe.



After final installation adjustments, secure transfer guide to insulation cover with PVC cement.

Prep for E70-98 Transfer Guides

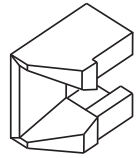


*Spacing is 4 inches on inside radius of curved sections.

E70-100 Transfer Guide

25-3145-00

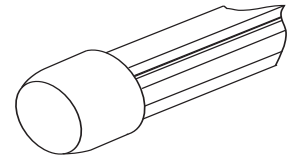
The tapered transfer guide is used at ends of conductor bar on the inside radius of curves



E85-67 End Caps

23-1318-00

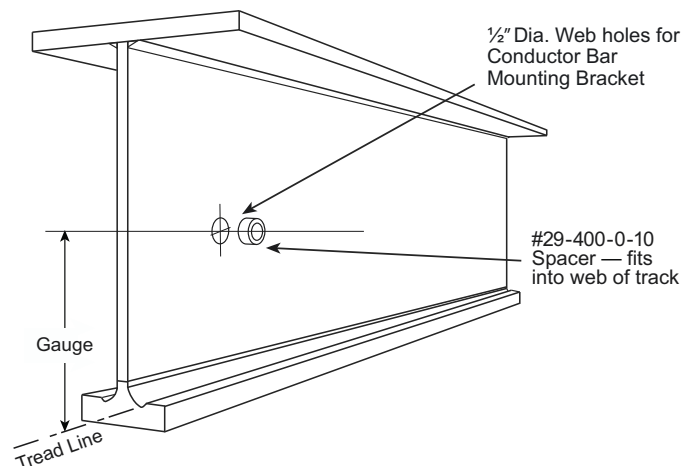
End caps protect the ends of the conductor from accidental contact. These durable neoprene caps snap securely over the insulation cover.



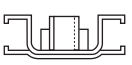
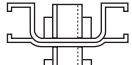
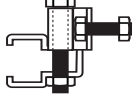
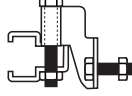

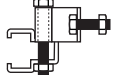
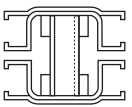
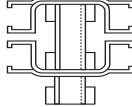
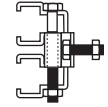
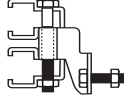
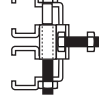
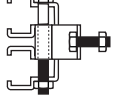
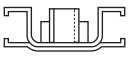

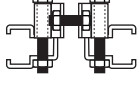
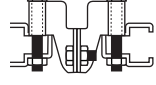
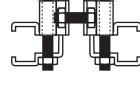
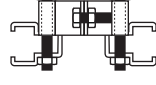
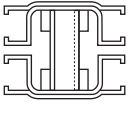
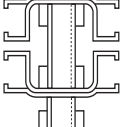
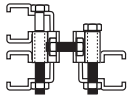
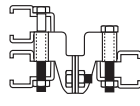
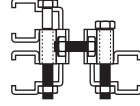
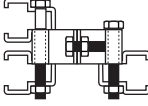
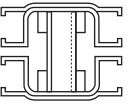
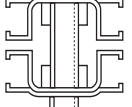
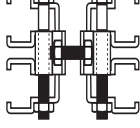
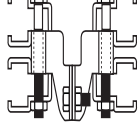
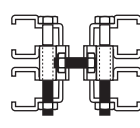
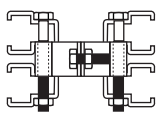
Bushings in Rail Web Holes for Electrical Conductor Bar Mounting Brackets

29-400-0-10

Bolts used to secure conductor bar brackets to the web of 325, 400 and 450 Series rail are 1/4" diameter. However, the minimum hole that can be punched in the rail web is 1/2" diameter. Therefore, all electrical conductor bar systems provided by TC/American Crane have nylon spacers or bushings included. Spacers are not required if the mounting holes are field drilled at 1/4". Not required for 200 Series Girder Rail; web mounting holes are drilled to 1/4".



Electrification Mounting Brackets (side contact)

Number of Bars	200 Series 2R3-5T Rail		200 Series Girder Rail		325 Series	
	7" Gage	8" Gage	7" Gage	8" Gage*	3", 4", 4½" Wheel Diameter	5", 6½" Wheel Diameter
One	E985-23 10-1930-00 	E985-25 10-2135-00 	E985-61 10-1932-00 	E985-62 10-1944-00 	E985-61 10-1932-00 	E85-52 10-1937-00 
Two 1 Side	E985-24 10-1931-00 	E985-26 10-2134-00 	E985-27 10-1933-00 	E985-30 10-1945-00 	E985-27 10-1933-00 	E85-19 10-1938-00 
Two Both Sides	E985-23 10-1930-00 	E985-25 10-2135-00 	E985-59 10-1934-00 	E985-60 10-1946-00 	E985-59 10-1934-00 	E85-51 10-1939-00 
Three	E985-24 10-1931-00 	E985-26 10-2134-00 	E985-28 10-1935-00 	E985-31 10-1947-00 	E985-28 10-1935-00 	E85-20 10-1940-00 
Four	E985-24 10-1931-00 	E985-26 10-2134-00 	E985-29 10-1936-00 	E985-32 10-1948-00 	E985-29 10-1936-00 	E85-21 10-1941-00 
Collectors	E-988S & E-989L	E-988S & E-989L	E-988S & E-989L	E-988S & E-989L		

* For all 8" gage brackets (200 series girder rail), drill rail at 7" gage.

Brackets shown above are for mounting Shielded Channel-Bar electrification on straight and curved rails.

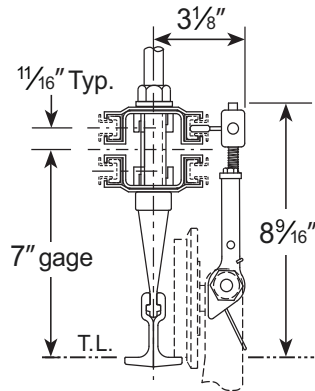
- Other brackets or modifications that may be needed are:
 - 10-1054-00 (E-985—28A), 3-Bar Mounting Bracket assembly, used on 200 Series Crane & Connecting Interlocks
 - 10-1055-00 (E-985—29A), 4-Bar Mounting Bracket assembly, used on 200 Series Crane & Connecting Interlocks
 - 229F1507R10 (E-970—68), "offset web mounting bracket" only, replaces the standard web brackets of assemblies shown above when used on 200 Series Switches
 - 10-2915-00, 4-Bar Mounting Bracket assembly, used at the interlock end on 325 & 450 Series Crane & Connecting Interlocks (3I-9A&B, 3I-10A&B, 45I-9C and 45I-10C)
- When ordering electrification—specify rail series, gage & trolley wheels diameter
- Max. mounting bracket hanger spacing = 48" for straight & 24" for curves
- Chart only applicable to trolleys contained in this catalog
- See "Rail Web Holes" on page I-5 for rail web hole spaces



Shielded Channel-Bar Clearance Dimensions — for “Side Contact” (Web Mounted) Electrification

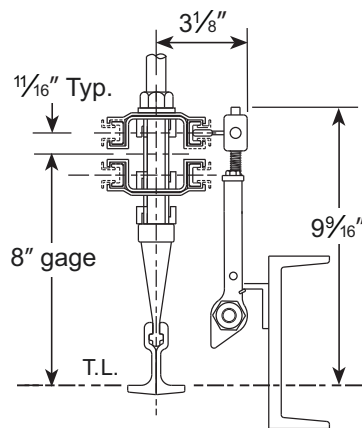
200 Series 2R3-5T Rail

(with 2H407 Hanger and Hanger Rod)



Monorails

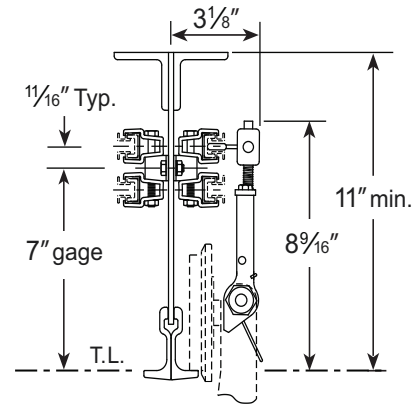
Trolleys with 3" and 4" Dia. Wheels,
Trolley Mounted Collector



Crane Runways

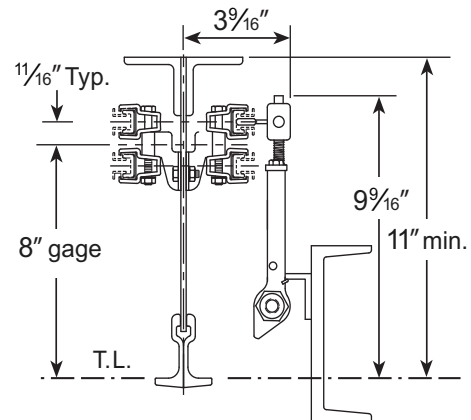
Trolleys with 3", 4" and 5 1/2" Dia. Wheels,
End Truck Frame Mounted Collector

200 Series Girder Rail



Monorails and Bridges

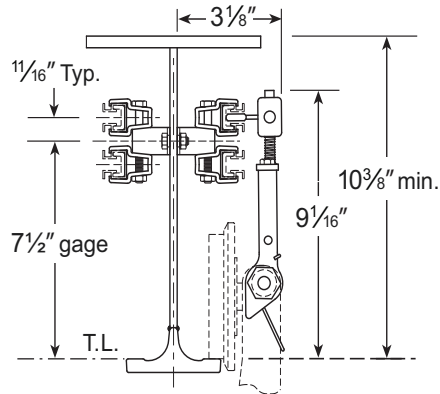
Trolleys with 3" and 4" Dia. Wheels,
Trolley Mounted Collector
Minimum Rail Depth Req'd:
2GR11-16



Crane Runways

Trolleys with 3", 4" and 5 1/2" Dia. Wheels,
End Truck Mounted Collector
Minimum Rail Depth Req'd:
2GR11-16

325L Series Rail



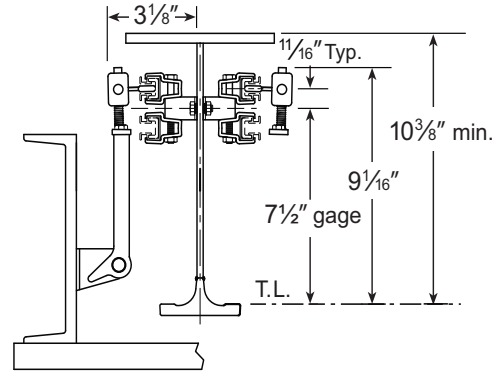
3", 4" and 4 1/2" Wheel

Trolleys with 5" Dia. wheels may be used if non-interlocking and wheel loads are OK.

Trolley Mounted Collector

Minimum Rail Depth Req'd:

3RL11-19, 3RL11-21



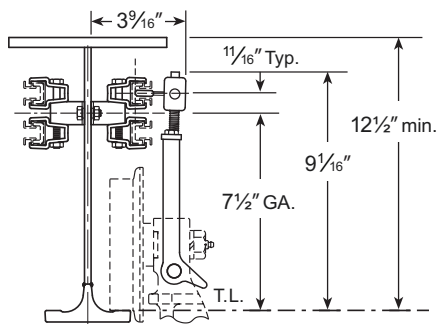
3" and 4 1/2" Wheel

Trolleys with 3" and 4 1/2" Dia. Wheels, End Truck Frame Mounted Collector

Minimum Rail Depth Req'd:

3RL11-19, 3RL11-21

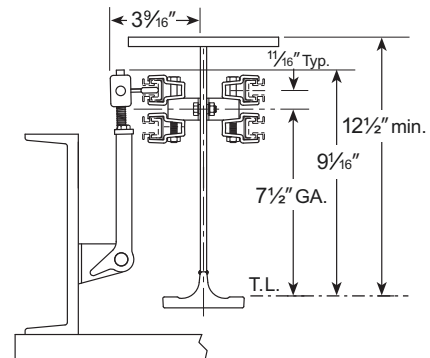
325H Series Rail



Trolleys with 5" Dia. Wheels, Trolley Mounted Collector

Minimum Rail Depth Req'd:

3RH13-30, 3RH13-36

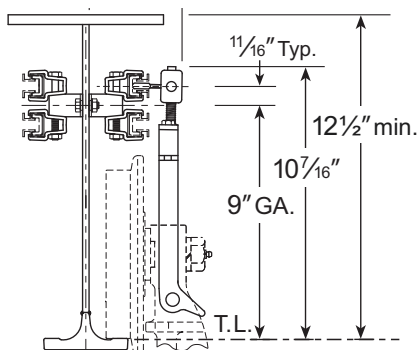


Trolleys with 5" Dia. Wheels, End Truck Frame Mounted Collector

Minimum Rail Depth Req'd:

3RH13-30, 3RH13-36

325 Series Rail

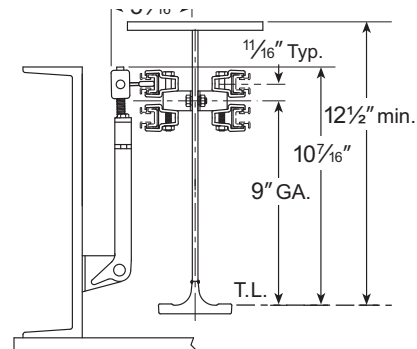


Trolleys with 6 1/2" Dia. Wheels

Trolley Mounted Collector

Minimum Rail Depth Req'd:

3RH13-30, 3RH13-36



Trolleys with 6 1/2" Dia. Wheels, End Truck Frame Mounted Collector

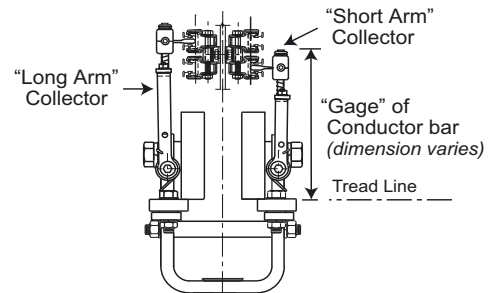
Minimum Rail Depth Req'd:

3RH13-30, 3RH13-36

Trolley Side Contact Electrification Chart

Applications shown for current TC/American trolleys only. (For old or obsolete trolleys, contact the factory.)

Note Order collectors by part number only.



Typical Web Mounted Conductor Bar
with Side Contact Collectors

Trolleys	Channel-Bar				Figure-8				Elec Gage	Trolley Wheel Dia.
	Single Head 35 amp		Dual Head 70 amp		Single Head 100 amp		Dual Head 200 amp			
	short arm	long arm	short arm	long arm	short arm	long arm	short arm	long arm		
200 Series										
2T-750-2 2T-1150-4	10-1872-00 E-988-SA See "Figure 1" on page I-11	10-1873-00 E-989-LA	10-3500-00 E-988-SAD	10-3501-00 E-989-LAD	10-1880-00 8E-988-SA	10-1879-00 8E-989-LA	10-3534-00 8E-988-SAD	10-3535-00 8E-989-LAD	7"	3"
These require one #10-2125-00 collector mounting bracket per collector.										
2T-850-2 2T-1200-4	none		none		none		none		—	3"
2T-2000- 2/2SR 2T-2800- 4/4SR 2T-3100-4/SR - 4CC 2T-5600-8/8S - 8CC	10-1872-00 E-988-SA See "Figure 1" on page I-11	10-1873-00 E-989-LA	10-3500-00 E-988-SAD	10-3501-00 E-989-LAD	10-1880-00 8E-988-SA	10-1879-00 8E-989-LA	10-3534-00 8E-988-SAD	10-3535-00 8E-989-LAD	7"	4"
See "Figure 8" on page I-14										
2T-3000-2 2T-4000-4	none		none		none		none		—	5½"
325 Series										
3T-750-2 3T-1150-4	10-1854-00 E-6988-SA See "Figure 2" on page I-11	10-1855-00 E-6989-LA	10-3502-01 E-6988-SAD	10-3503-01 E-6989-LAD	10-1883-00 8E-6988-SA	10-1885-00 8E-6989-LA	10-3536-01 8E-6988-SAD	10-3537-01 8E-6989-LAD	7½"	3"
These require one #10-2125-00 collector mounting bracket per collector.										
3T-850-2 3T-1200-4	none		none		none		none		—	3"
3T-2000-2/2SR 3T-2800-4/4SR 3T-3100- 4/SR - 4CC	10-1854-00 E-6988-SA See "Figure 2" on page I-11	10-1855-00 E-6989-LA	10-3502-01 E-6988-SAD	10-3503-01 E-6989-LAD	10-1883-00 8E-6988-SA	10-1885-00 8E-6989-LA	10-3536-01 8E-6988-SAD	10-3537-01 8E-6989-LAD	7½"	4"
See "Figure 9" on page I-14										
3T-2700-2/2SR 3T-5400-4/4SR	10-1867-00 E-7988-SA See "Figure 3" on page I-12	10-1866-00 E-7989-LA	10-3504-00 E-7988-SAD	10-3505-00 E-7989-LAD	10-1882-00 8E-7988-SA	10-1881-00 8E-7989-LA	10-3538-00 8E-7988-SAD	10-3539-00 8E-7989-LAD	7½"	4½"
See "Figure 10" on page I-15										

Trolleys	Channel-Bar								Figure-8		Elec Gage	Trolley Wheel Dia.
	Single Head 35 amp		Dual Head 70 amp		Single Head 100 amp		Dual Head 200 amp					
	short arm	long arm	short arm	long arm	short arm	long arm	short arm	long arm				
325 Series												
*3T-6200-2/2SR	10-1846-00 E-83-SA See "Figure 4" on page I-12	10-1847-00 E-84-LA	10-3506-00 E-83-SAD See "Figure 11" on page I-15	10-3507-00 E-84-LAD	10-1884-00 8E-83-SA	10-1886-00 8E-84-LA	10-3540-00 8E-83-SAD	10-3541-00 8E-84-LAD	7½"	5"		
†3T-12400-4/4SR	10-3494-00 E-783-SA See "Figure 6" on page I-13	10-3495-00 E-784-LA	10-3544-00 E-783-SAD See "Figure 13" on page I-16	10-3545-00 E-784-LAD	10-3498-00 8E-783-SA	10-3499-00 8E-784-LA	10-3548-00 8E-783-SAD	10-3549-00 8E-784-LAD	7½"	5"		
3T-24800-8/8SR	10-1846-00 E-83-SA See "Figure 4" on page I-12	10-1847-00 E-84-LA	10-3506-00 E-83-SAD See "Figure 11" on page I-15	10-3507-00 E-84-LAD	10-1884-00 8E-83-SA	10-1886-00 8E-84-LA	10-3540-00 8E-83-SAD	10-3541-00 8E-84-LAD	7½"	5"		
3T-8000-2/2SR 3T-16000-4/4SR	10-3419-00 E-85-SA See "Figure 5" on page I-12	10-3420-00 E-86-LA	10-3510-00 E-85-SAD See "Figure 12" on page I-15	10-3511-00 E-86-LAD	10-3532-00 8E-85-SA	10-3533-00 8E-86-LA	10-3542-00 8E-85-SAD	10-3543-00 8E-86-LAD	9"	6½"		
3T-10000-2SR 3T-20000-4SR	none		none		none		none		—	9"		
400 Series												
4T-4100-2SR (drivetractors)	10-1846-00 E-83-SA See "Figure 4" on page I-12	10-1847-00 E-84-LA	10-3506-00 E-83-SAD See "Figure 11" on page I-15	10-3507-00 E-84-LAD	10-1884-00 8E-83-SA	10-1886-00 8E-84-LA	10-3540-00 8E-83-SAD	10-3541-00 8E-84-LAD	7½"	5"		
4T-4200-2SR (bolted yoke)	none		none		none		none		—	5"		
4T-6600-2SR (bolted yoke)	none		none		none		none		—	6½"		
450 Series												
45T-15000-2SR 45T-30000-4SR	none		none		none		none		—	9" 9"		
Motorized Trolleys												
3MT5-6200-AT	10-3508-00 E-84-LAT		10-3553-00 E-84-LATD		10-3550-00 8E-84-LAT		10-3555-00 8E-84-LATD		7½"	5"		
3MT5-6200-A2	10-3509-00 E-84-LAMT		10-3556-00 E-84-LAMTD		10-3551-00 8E-84-LAMT		10-3558-00 8E-84-LAMTD		7½"	5"		
3MT6-8000-A2	10-3512-00 E-86-LAMT See "Figure 7" on page I-13		10-3559-00 E-86-LAMTD See "Figure 14" on page I-16		10-3552-00 8E-86-LAMT		10-3561-00 8E-86-LAMTD		9"	6½"		
3MT9-10000-B	none		none		none		none		—	9"		
45MT-15000-C	none		none		none		none		—	9"		

* For 3T-6200-2/2SR and 3T-12400-4/4SR Trolleys used with 325H or 400 Series Rail (including Switches with 325H or 400 Series Rail), use E-83SA/E-84LA or 8E-83SA/8E-84LA collectors.

† For 3T-6200-2/2SR and 3T-12400-4/4SR Trolleys used with 325L Series Rail (including Switches with 325L Series Rail), use E-783SA/E-784LA or 8E-783SA/8E-784LA collectors.

Side Contact Collectors

See Application Chart on Pages I-9 and I-10

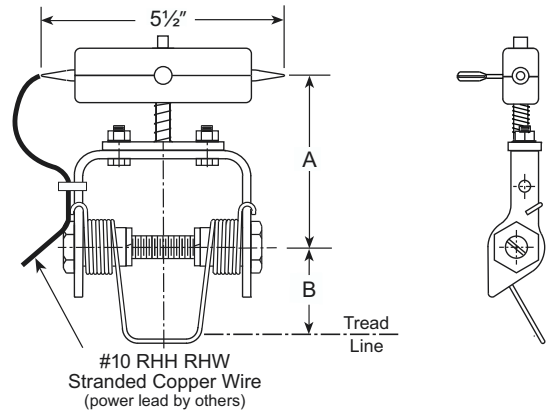
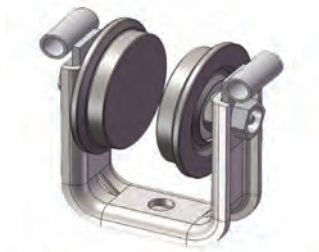
Figure 1

Part #	Collector	A	B
10-1872-00*	E988-SA	3 ⁷ / ₈ "	2 ⁷ / ₁₆ "
10-1873-00*	E989-LA	5 ¹ / ₄ "	2 ⁷ / ₁₆ "

* Also order one 10-2125-00 Collector Mounting Bracket for each collector to be mounted on 2T-750-2 and 2T-1150-4 Trolleys.

35 amp; for amp not shown, contact factory.

Collector Mounting Bracket on 2T-750 Trolley



Shown are two 10-2125-00 Collector Mounting Brackets installed on a 2T-750-2 Trolley (bracket bolts to trolley yoke under the axle bolt). Order one bracket for each collector to be mounted on 2T-750-2, 2T-1150-4, 3T-750-2 and 3T-1150-4 Trolleys

Figure 2

Part #	Collector	A	B
10-1854-00*	E6988-SA	4 ³ / ₈ "	2 ⁷ / ₁₆ "
10-1855-00*	E6989-LA	5 ³ / ₄ "	2 ⁷ / ₁₆ "

* Also order one 10-2125-00 Collector Mounting Bracket for each collector to be mounted on 3T-750-2 and 3T-1150-4 Trolleys.

35 amp; for amp not shown, contact factory.

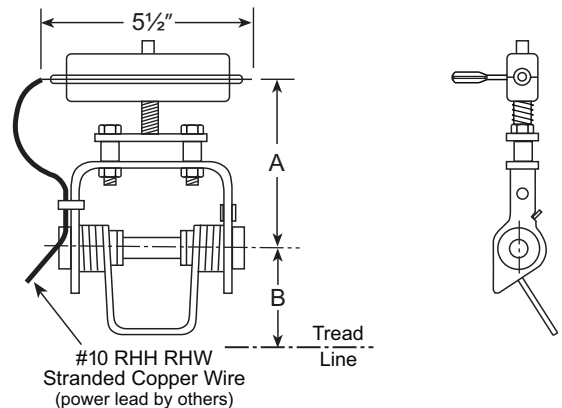


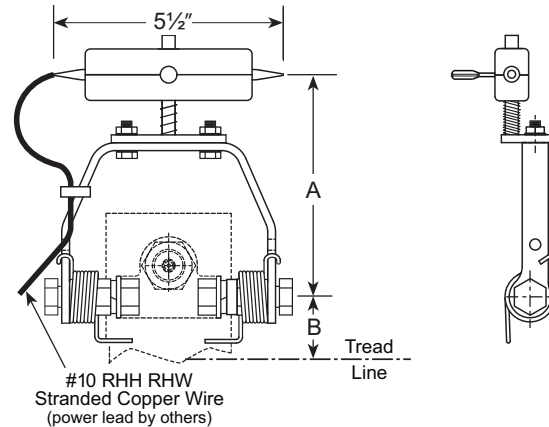
Figure 3

Part #	Collector	A	B
10-1867-00	E7988-SA	5 ⁵ / ₁₆ "	1 ¹ / ₂ "
10-1866-00	E7989-LA	6 ¹¹ / ₁₆ "	1 ¹ / ₂ "

35 amp; for amp not shown, contact factory.

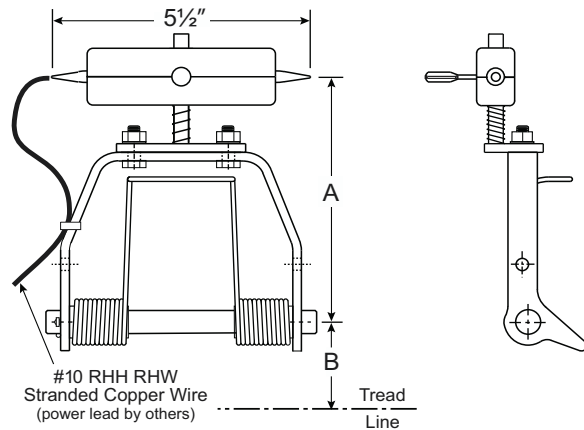
If monorail system has 600 series switches, contact factory for collector to use.

Note Mounting bracket on trolley yoke not included with collector. Order trolley with collector mounting bracket installed.


Figure 4

Part #	Collector	A	B
10-1846-00	E83-SA	5 ⁵ / ₁₆ "	1 ¹ / ₂ "
10-1847-00	E84-LA	6 ¹¹ / ₁₆ "	1 ¹ / ₂ "

35 amp; for amp not shown, contact factory.


Figure 5

Part #	Collector	A	B
10-3419-00	E85-SA	6 ¹³ / ₁₆ "	1 ¹ / ₂ "
10-3420-00	E86-LA	8 ³ / ₁₆ "	1 ¹ / ₂ "

35 amp; for amp not shown, contact factory.

Note 10-3420-00 shown. Part #10-3419-00 has 1/8" spacer between collector bracket and collector stem; spacer on #10-3420-00 is 1 1/2".

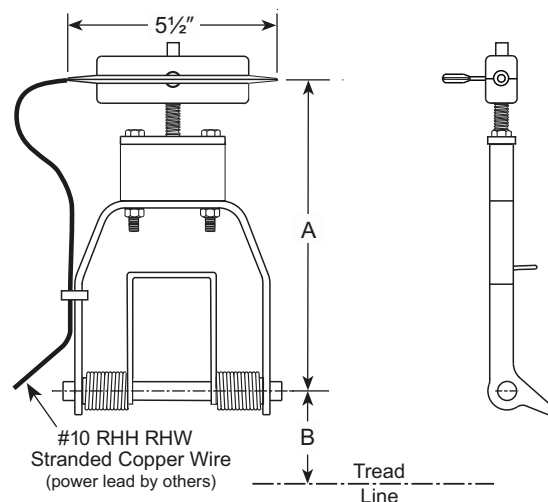
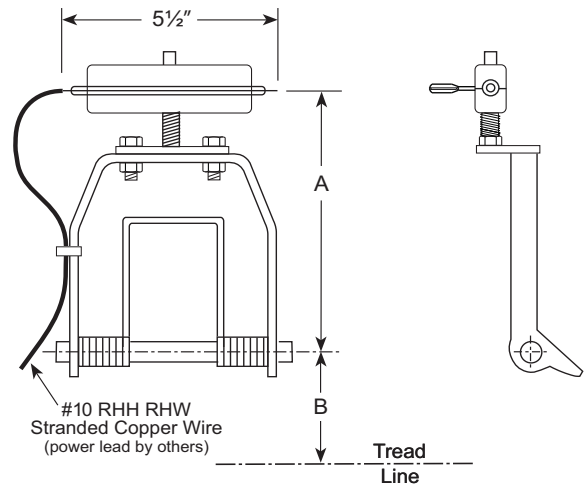


Figure 6

Part #	Collector	A	B
10-3494-00	E783-SA	5 ⁵ / ₁₆ "	1 ¹ / ₂ "
10-3495-00	E784-LA	6 ¹¹ / ₁₆ "	1 ¹ / ₂ "

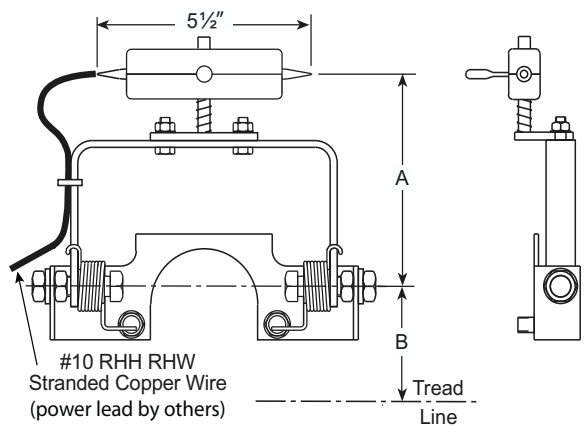
35 amp; for amp not shown, contact factory.

**Figure 7**

Part #	Collector	A	B	Part #
10-3508-00	E84-LAT	7 ¹ / ₂ "	5 ¹ / ₄ "	2 ¹⁵ / ₁₆ "
10-3509-00	E84-LAMT	7 ¹ / ₂ "	5 ¹ / ₄ "	2 ¹⁵ / ₁₆ "
10-3512-00	E86-LAMT	9"	6"	3 ¹¹ / ₁₆ "

35 amp; for amp not shown, contact factory.

Note Includes required mounting bracket for motorized trolley.



Side Contact Dual Head Collectors

Figure 8

Part #	Collector	A	B
10-3500-00*	E988-SAD	3 ⁷ / ₈ "	2"
10-3501-00*	E989-LAD	5 ¹ / ₄ "	2"

* Also order one 10-2125-00 Collector Mounting Bracket for each collector to be mounted on 2T-750-2 and 2T-1150-4 Trolleys.

70 amp; for amp not shown contact factory.

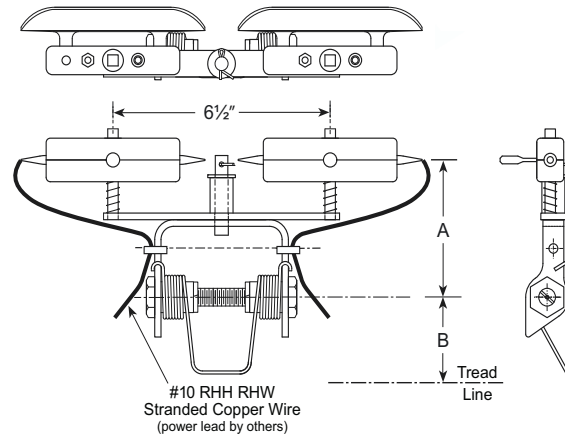
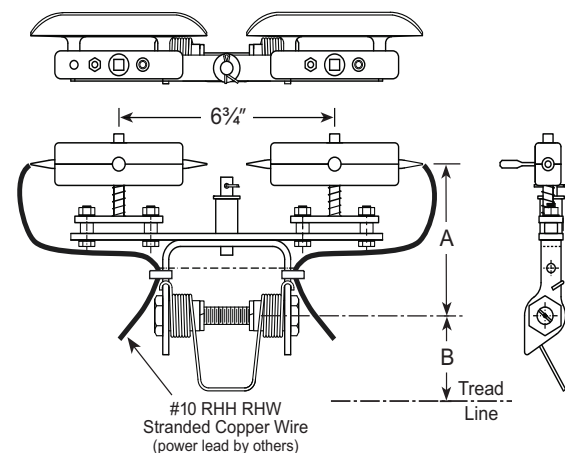


Figure 9

Part #	Collector	A	B
10-3502-01*	E6988-SAD	4 ³ / ₈ "	2 ⁷ / ₁₆ "
10-3503-01*	E6989-LAD	5 ⁹ / ₁₆ "	2 ⁷ / ₁₆ "

* Also order one 10-2125-00 Collector Mounting Bracket for each collector to be mounted on 3T-750-2 and 3T-1150-4 Trolleys.

70 amp; for amp not shown contact factory



Collector Mounting Bracket on 2T-750 Trolley



Shown are two 10-2125-00 Collector Mounting Brackets installed on a 2T-750-2 Trolley (bracket bolts to trolley yoke under the axle bolt). Order one bracket for each collector to be mounted on 2T-750-2, 2T-1150-4, 3T-750-2 and 3T-1150-4 Trolleys.

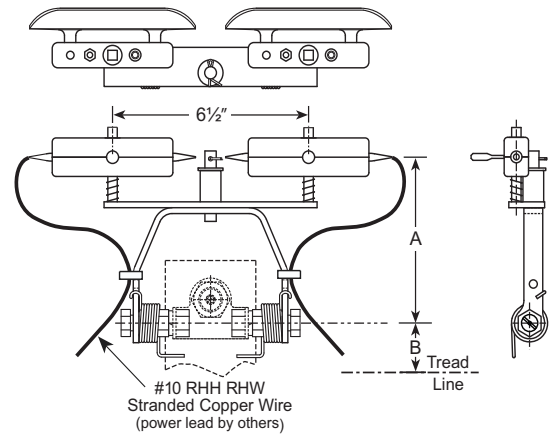
Figure 10

Part #	Collector	A	B
10-3504-00	E7988-SAD	5 ⁵ / ₁₆ "	1 ¹ / ₂ "
10-3505-00	E7989-LAD	6 ¹¹ / ₁₆ "	1 ¹ / ₂ "

70 amp

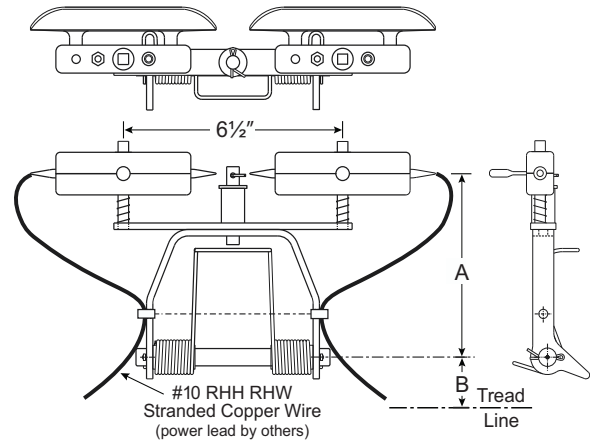
If monorail system has 600 series switches, contact factory for collector to use.

Note Mounting bracket on trolley yoke not included with collector. Order trolley with collector mounting bracket installed.

**Figure 11**

Part #	Collector	A	B
10-3506-00	E83-SAD	5 ⁵ / ₁₆ "	1 ¹ / ₂ "
10-3507-00	E84-LAD	6 ¹¹ / ₁₆ "	1 ¹ / ₂ "

70 amp

**Figure 12**

Part #	Collector	A	B
10-3510-00	E85-SAD	6 ¹³ / ₁₆ "	1 ¹ / ₂ "
10-3511-00	E86-LAD	8 ³ / ₁₆ "	1 ¹ / ₂ "

70 amp

Note 10-3511-00 shown. Part #10-3510-00 does not have spacer between collector bracket and dual head mounting bar.

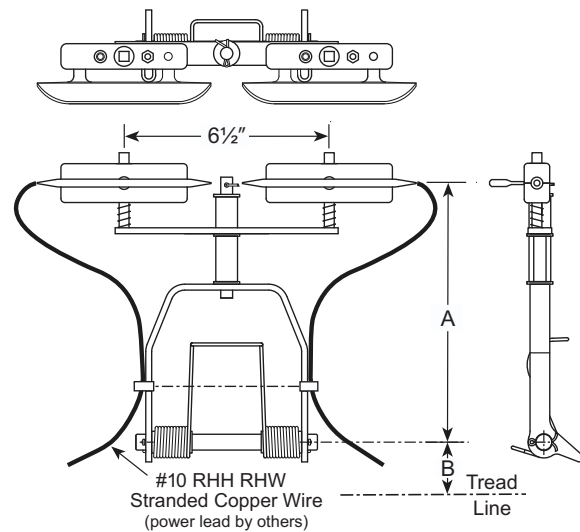


Figure 13

Part #	Collector	A	B
10-3544-00	E783-SAD	5 ⁵ / ₁₆ "	1 ¹ / ₂ "
10-3545-00	E784-LAD	6 ¹¹ / ₁₆ "	1 ¹ / ₂ "

70 amp

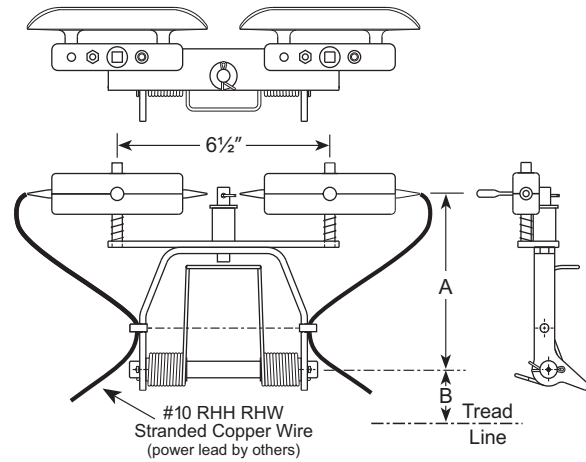
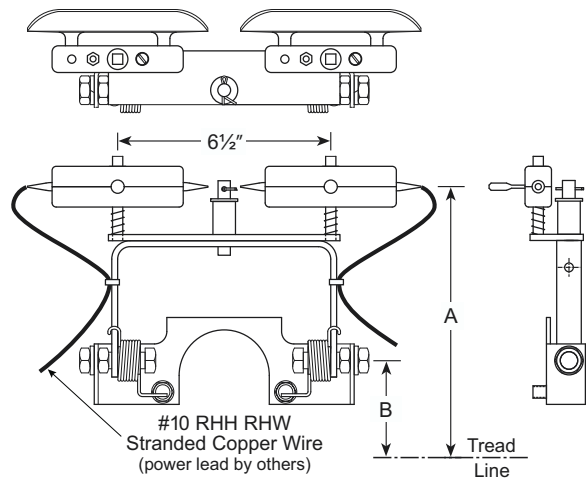


Figure 14

Part #	Collector	Gage	A	B
10-3553-00	E84-LATD	7 ¹ / ₂ "	8 ³ / ₁₆ "	2 ¹⁵ / ₁₆ "
10-3556-00	E84-LAMTD	7 ¹ / ₂ "	8 ³ / ₁₆ "	2 ¹⁵ / ₁₆ "
10-3559-00	E86-LAMTD	9"	9 ¹¹ / ₁₆ "	3 ¹¹ / ₁₆ "

70 amp; for amp not shown, contact factory

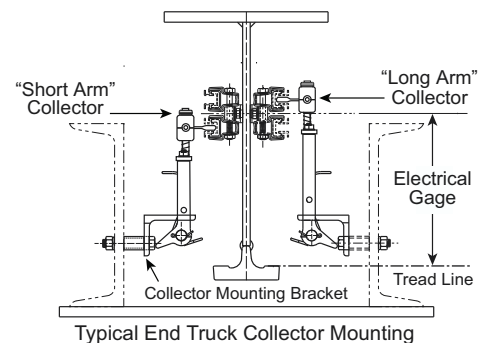
Note Includes required mounting brackets for motorized trolley.



End Truck Side Contact Collector Application Chart

Side Contact Collectors may also be used on TC/American Crane End Trucks. Collectors are mounted on the inside of the End Truck Frame members or sometimes on the End Truck Trolleys. Collectors mounted on the frame require a mounting bracket (and sometimes spacers) which is included at no charge when collectors are ordered with the crane or end trucks.

Note: Order collectors by part number only.





End Truck Side Contact Collector Application Chart

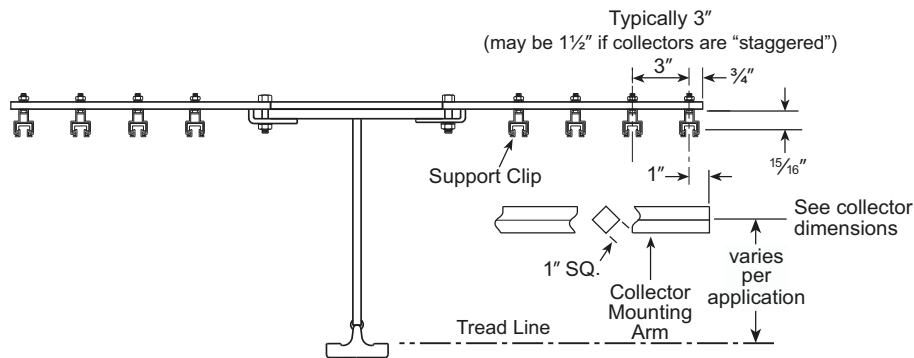
End Truck #	End Truck Part #	Channel-Bar		Figure-8		Gage/ Mounting Location	Mounting Bracket (one per collector as noted)	Spacer (one pre bracket as noted)
		Single Head 35 amp		Single Head 100 amp				
		short arm	long arm	short arm	long arm			
200 Series								
2ET-1300-4	10-1993-00	10-1872-00 E-988-SA	10-1873-00 E-989-LA	10-1880-00 8E-988-SA	10-1879-00 8E-989-LA	8" Gage/Frame	10-2112-00	25-3269-00
2ET-2600-4/-4SR	10-1525-00 10-3380-01					7" Gage/Trolley	—	—
2ET-3700-4	10-1521-00					8" Gage/Frame	10-2112-00	25-2413-00
2ET-3800-4	10-1518-00					8" Gage/Frame	10-1999-00	25-2413-00
2ET-7700-8	10-1544-00					8" Gage/Frame	10-1999-00	25-2413-00
2ET-7800-8	10-1529-00					8" Gage/Frame	10-1999-00	25-2413-00
325 Series								
3ET-1300-4	10-1715-00	10-1854-00 E-6988-SA	10-1855-00 E-6989-LA	10-1883-00 8E-6988-SA	10-1885-00 8E-6989-SA	7½" Gage/Frame	10-2112-00	25-3269-00
3ET-2600-4/-4SR	10-1497-00 10-3380-00					7½" Gage/Trolley	—	—
3ET-5400-4/-4SR	10-1714-00 10-3390-00 (3'-3" wheelbase)					7½" Gage/Frame	10-2866-00	25-2413-00
3ET-5400-4SR	10-1713-00 (6' wheelbase)						10-1999-00	25-2413-00
3ET-9000-4X/4XSR	10-3326-01 10-3326-02	10-1846-00 E-83-SA	10-1847-00 E-84-LA	10-1884-00 8E-83-SA	10-1886-00 8E-84-LA	7½" Gage/Frame	278E2456F1	—
3ET-9000-4/-4SR	10-3193-0000 10-3193-1000					7½" Gage/Frame	278E2456F1	—
3ET-12400-4/-4SR	10-3183-0000 10-3183-1000					7½" Gage/Frame	278E2456F1	—
3ET-16000-4/-4SR	10-3184-0000 10-3184-1000	10-3419-00 E-85-SA	10-3420-00 E-86-LA	10-3532-00 8E-85-SA	10-3533-00 8E-86-LA	9" Gage/Frame	278E2456F1	—
3ET-24800-8/-8SR	10-3185-0000 10-3185-1000	10-1846-00 E-83-SA	10-1847-00 E-84-LA	10-1884-00 8E-83-SA	10-1886-00 8E-84-LA	7½" Gage/Frame	278E2456F2	—
3ET-28000-8/-8SR	10-3186-0000 10-3186-1000	10-3419-00 E-85-SA	10-3420-00 E-86-LA	10-3532-00 8E-85-SA	10-3533-00 8E-86-LA	9" Gage/Frame	278E2456F2	—

Bottom Contact Electrification

Bottom contact conductor bars are used for crane and monorail electrification when the application requires more conductor bars than can be installed in a Side Contact configuration, or for applications where

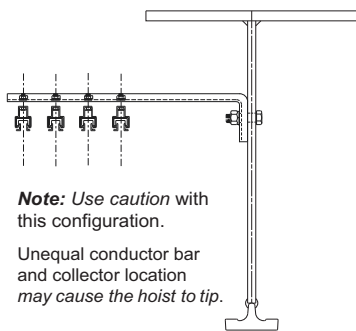
TC/American Crane Side Contact Collectors cannot be mounted on a trolley or crane. May also be used on Series 2000 Switches.

- Typical conductor bar spacing = 3" for collectors mounted side-by-side (may space at 1½" if collectors are staggered)
- Maximum mounting bracket spacing = 4' – 0" on straight rail; 2' – 0" on curved rail (typical conductor bar mounting brackets shown)
- Mounting Brackets supplied as required with order of conductor bar system
- Bottom Contact Shielded Channel-Bar Support Clip = 10-1949-00 (E990-17)
- Shielded Channel-Bar shown below

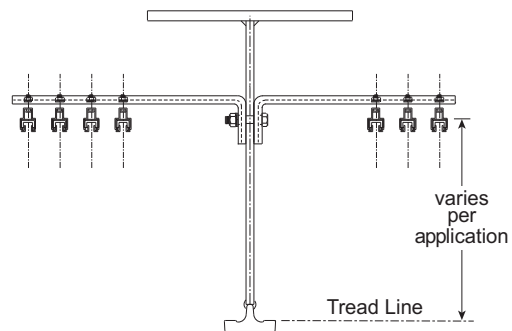


Typical Configuration for Crane or Monorail

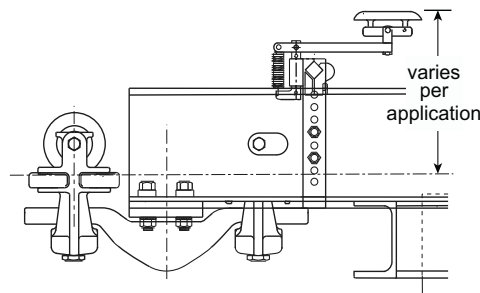
(with mounting brackets clamped to top flange of rail) Typical for 3RL8-16 through 3RH14-41



Typical Bottom Contact, Web Mounted Bracket
(for conductor bar on one side of rail) For Rail Over 14" Deep



Typical Bottom Contact, Web Mounted Bracket
(for conductor bar on both sides of rail) For Rail Over 14" Deep



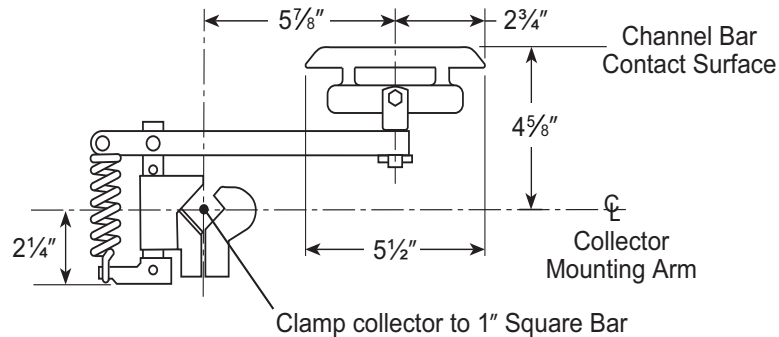
Typical Bottom Contact Collector Mounting (shown on crane end truck or hoist carrier)



Shielded Channel-Bar Bottom Contact Collector E990-LMA

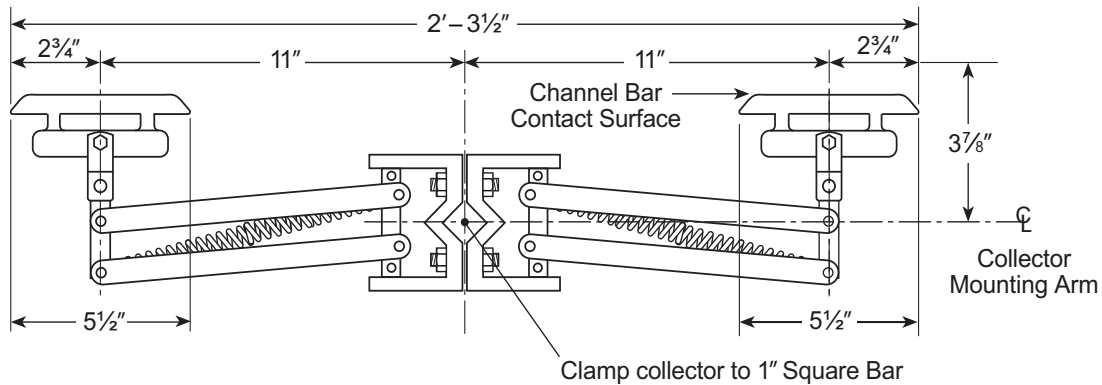
10-2833-00 (w/35 amp.* collector head – 1 wire to collector head)

10-2833-01 (w/35 amp.* collector head – 2 wires to collector head)



Shielded Channel-Bar Bottom Contact Double Arm Collector E990-TSA

10-3001-00 (with two 35 amp.* and two collector heads - 1 wire to each collector head)



*Contact factory for recommendations on applications exceeding 35 amp.

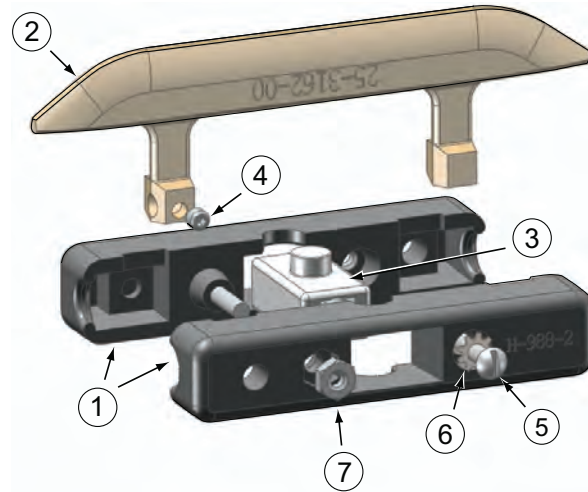
Shielded Channel-Bar Electrification

Collector Head Components

Collector Shoe Assembly

10-2756-01

Item #	Description	Qty. Req'd	Part Number
1	Collector Head	2	25-3163-00
2	Collector Shoe	1	25-3162-01
3	Collector Trunnion	1	23-2850-00
4	Set Screw Soc. Hd. 10-24 x 3/16"	1	21-1927-00
5	Machine Screw, Zinc Plated Round Head, Slotted, 8-32 x 1	2	21-1888-00
6	Lock Washer Ext. Tooth, #8	2	21-1547-00
7	Nut, Hex 8-32, Zinc Plated	2	21-1878-00

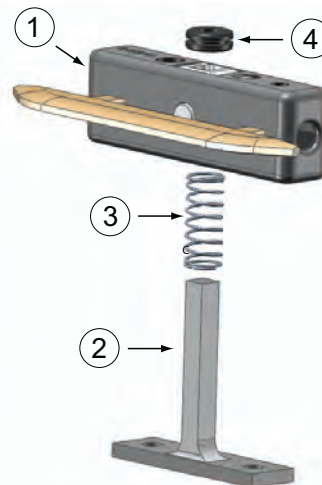


Note Collector Shoe #25-3162-01 has one post drilled for one collector wire. For Collector Shoe with both posts For Collector Shoe Assembly with both posts drilled, order #10-2756-02drilled for wire, order #25-3162-02.

Side Contact Collector Head Assembly

10-2756-00

Item #	Description	Qty. Req'd	Part Number
1	Collector Shoe Assembly	1	10-2756-01
2	Collector Stem	1	25-2183-00
3	Compression Spring	1	25-2186-00
4	Rubber Grommet (see note)	1	—



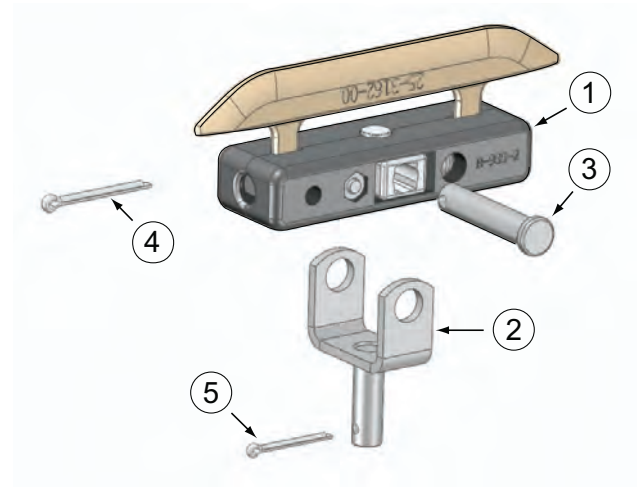
Note:
Grommet used for shipping only. Discard after installation.

Bottom Contact Collector Head Assembly

10-2796-00

Item #	Description	Qty. Req'd	Part Number
1	Collector Shoe Assembly	1	10-2756-01
2	Mounting Fork	1	10-2797-00
3	Pin, Machine $\frac{3}{8}$ " x $1\frac{3}{4}$ "	1	21-1972-00
4	Cotter Pin $\frac{3}{8}$ " x $1\frac{1}{4}$ " Plated	1	21-1146-00
5	Cotter Pin $\frac{3}{32}$ " x 1" Plated	1	21-1602-00

See "TC/American Crane Company to Twin City Monorail; American Monorail; P&H" on page I-22.





Collector Heads and Parts Cross Reference

TC/American Crane Company to Twin City Monorail; American Monorail; P&H

Part No.	Model No.	Description	Replaces
10-2756-00		Side Contact Collector Head Assembly	AMI 820988019 TCM 10-2306-00, E-980 P&H 9278F1552F1
10-2756-01		Collector Shoe Assembly Note <i>Twin City Monorail Collector Shoe #25-2187-00 is obsolete. For Side Contact, replace with #10-2756-01 Collector Shoe Assembly. For Bottom Contact, replace with #10-2796-00 Collector Shoe Assembly.</i>	AMI All Series TCM Saf-Tee
25-3163-00	H988-2	Collector Head	AMI 820988023 P&H 278E1516M10
25-3162-01	H988-3	Collector Shoe	AMI 820973043 AMI 820988035 P&H 278F1876D1 P&H 278F1515D1
25-2183-00	E988-23AB	Stem (when ordered with trunnion #23-2850-00)	AMI 820988053 P&H 278F1512D1
25-2186-00	E988-20	Compression Spring	AMI 820988063 P&H 17Z8 5D1
23-2850-00		Collector Trunnion	AMI 820988043 P&H 278F1517M10
10-2796-00		Bottom Contact Collector Head Assembly	AMI All Series TCM 10-1877-00, E-981



General System Design & Engineering

An efficient, economical and productive TC/American Crane Company material handling system, utilizing cranes and monorails, begins with a thorough evaluation of the customer's needs and requirements. This allows the appropriate selection of TC/American pre-engineered equipment and components to provide the highest value and customer satisfaction for each installation.

For unique applications, custom-built specialty equipment may be required. TC/American Crane Company is a leader in providing products specifically designed and manufactured to meet customer needs.

The design and engineering information in this section provides a guide for rail and suspension selection, horsepower calculation, drivetractor selection and other considerations. Specific product information in each equipment section of the Systems Catalog is then used to match a TC/American Crane product to the requirements of the project.

Note Dealers may access our computer-generated Equivalent Center Load (ECL), Maximum Hanger Load (MHL) and End Hanger Load (EHL) calculation program on the TC/American website (generates ECL, MHL and EHL from monorail or crane system data input).

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Rail and Hanger Selection

Rail for monorail and crane runway applications is selected by converting the Monorail Trolley Load or Crane End Truck Load (*Total Load value expressed as "W" in the ECL and MHL formulas*) to an Equivalent Center Load (ECL) concentrated at the middle of the span.

Methods to convert the Monorail Trolley or Crane End Truck to an ECL

1. A simplified procedure may be used on applications where one trolley or crane operates within a single span, see ["Rail and Hanger Selection Example"](#) on page J-4.
2. Another procedure is to calculate the ECL, using the ["Equivalent Center Load \(ECL\) Formulas for Rail Selection"](#) on page J-6.

The appropriate rail size is then selected from the tables in catalog section "B" Rail & Fittings.

Methods to calculate the Maximum Hanger Load (MHL)

1. A simplified procedure may be used on applications where one trolley or crane operates within a single span, see ["Typical Example Using an MHL Formula"](#) on page J-10.
2. Another procedure is to calculate the MHL, using the ["Maximum Hanger Load \(MHL\) Formulas for Hanger Selection"](#) on page J-9.

After determining the MHL, suspension assemblies are selected from the catalog section "C", Suspension.

Considerations for determining ECL and MHL

The Total Load ("W") on the Monorail Trolley or Crane End Truck includes:

1. Live Load (including weight of Miscellaneous Equipment, i.e., Grabs, etc.)
2. Impact Allowance
3. Weight of Hoist
4. Weight of Trolleys and Adaptors
5. Weight of Drivetractor
6. $\frac{1}{2}$ weight of Crane (for 2-runway crane systems)
(*Not applicable for monorails.*)

Other considerations for determining ECL and MHL

- Impact allowance on systems using hoists is $\frac{1}{2}\%$ of the rated load for each foot per minute of hoisting speed, with a minimum allowance of 15% and a maximum of 50%. For bucket and magnet applications, the impact allowance is 50% of the rated load.
- The number of trolleys or cranes operating on the system must be considered. Unless otherwise specified, ECL and MHL are calculated for one carrier or crane in a single span.
- For a monorail, a hoist and trolley positioned at mid-span will generate the largest ECL requirement. Increasing the trolley (carrier) wheelbase may decrease the ECL required and allow selection of a smaller size monorail beam. A hoist and trolley positioned under a monorail hanger point will generate the highest MHL.
- For a crane, with the weight of a hoist and trolley positioned between end trucks, the total load is proportionately shared by the end trucks. Unless the hoist is fixed in one location, the End Truck Load calculation assumes that the hoist and trolley can be located directly under one end truck, and this end truck bears the full weight of the hoist and trolley. If the hoist and trolley are located outboard of an end truck (cantilevered load), the total load on that end truck will be increased. In some cases the opposite end truck may be subject to "kick-up" and may require "anti-kick-up" rollers.
- Extended wheelbase trucks will occasionally reduce ECL sufficiently to permit the use of a smaller size runway rail. Before deciding on extended wheelbase end trucks, the cost reduction for the runway material should be compared with the additional cost of extended wheelbase trucks, and the most economical application selected.
- Monorail systems with switches and drivetractors may require a heavy rail section to be used throughout the system, regardless of size selected for straight rail. Wheel loadings for switch applications are reduced because of the angular cuts on curved tracks. See the Switch Section for maximum loads when operating through switches.
- Wheel clearances and wheel loads may require use of larger rail size than that selected by ECL. *See appropriate catalog section for information.*



Rail and Hanger Selection Example

This simplified procedure for selection of rail and hanger assemblies is used for monorail and crane applications where one trolley or one crane with equal wheel loads operates in a single span.

The example for this procedure uses the following:

- (1) 2C-2000-HP Crane
- 18' – 0" Crane Span
- 25' – 0" (300-inch) Runway Span
- 3-Bar Shielded Channel-Bar
- Hoist trolley center of gravity located directly under one end truck

Step 1 Determine the Total Load (W).

Live Load (including weight of Miscellaneous Equipment, i.e. Grabs, etc.)

Impact Allowance

Weight of Hoist

Weight of Trolleys and Adaptors

Weight of Drive Tractor

½ Weight of Crane (for two-rail crane runways)

For example:

$$\begin{aligned}
 & 2000 \text{ lbs. Live Load} \\
 & + 300 \text{ lbs. Impact} \\
 & + 300 \text{ lbs. Hoist Weight} \\
 & + 100 \text{ lbs. Trolleys, Adaptor Weight} \\
 & \quad \text{(no drivetractor)} \\
 & + 376 \text{ lbs. Half Crane Weight} \\
 & = 3076 \text{ lbs. Total Load (W)}
 \end{aligned}$$

Step 2 Determine the wheel base (B) in inches from the trolley or crane section. Determine runway span (S) in inches.

For example:

$$\begin{aligned}
 B &= 39 \text{ inches} \\
 S &= 300 \text{ inches}
 \end{aligned}$$

Step 3 Determine span to wheelbase ratio (see the figures on page J-5).

For example:

$$\frac{S}{B} = \frac{300 \text{ inches}}{39 \text{ inches}} = 7.7$$

Step 4 Select conversion factors from the "Equivalent Center Load & Maximum Hanger Load" on page J-5.

For example:

For one trolley or crane operating in a single span and $S/B = 7.7$, the chart lists:

$$\begin{aligned}
 M &= 0.874 \text{ inches} \\
 M_1 &= 0.935 \text{ inches}
 \end{aligned}$$

Step 5 Calculate the Equivalent Center Load (ECL) by multiplying Total Load (W) by (M) factor.

For example;

$$\begin{aligned}
 ECL &= M \times W \\
 ECL &= 0.874 \times 3076 \text{ lbs.} \\
 ECL &= 2689 \text{ lbs.}
 \end{aligned}$$

Step 6 Select rail size from the tables in Rail and Fittings section "B".

For example:

From the ECL rail charts, at 25' (300") support centers for 200 Series Girder Rail, 2GR11-23 has an ECL capacity of 2884# (exceeds the 2689# required). Use 2GR11-23 Rail.

Step 7 Calculate the Maximum Hanger Load (MHL) by multiplying the trolley or end truck load by the M_1 factor and adding the weight of the rail and electrification, in pounds per foot per span of rail.

For example:

$$\begin{aligned}
 MHL &= M_1 \times W + \text{Rail Weight} \\
 MHL &= 0.935 \times 3076 \text{ lbs.} + (25' \times 23 \text{ lbs/ft}) + (25' \times 5 \text{ lbs/ft}) \\
 MHL &= 2876 \text{ lbs.} + 575 \text{ Lbs.} + 125 \text{ lbs.} \\
 MHL &= 3576 \text{ lbs.}
 \end{aligned}$$

Step 8 Select suspension fittings from catalog section "C".

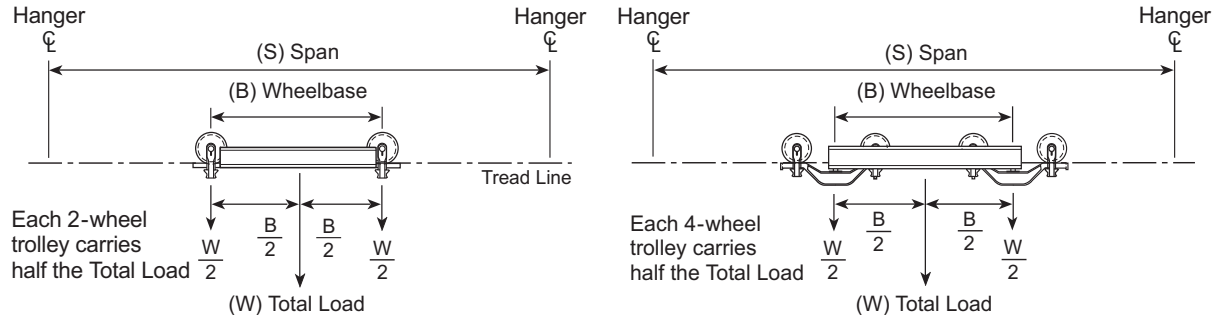
For example:

From the Suspension Section, Rigid Hangers, H-4600 has a capacity of 4600# (exceeds the 3576# required). Use H-4600 Hangers.



Equivalent Center Load & Maximum Hanger Load

S = Span (inches)
M = ECL Multiplier
B = Wheelbase (inches)
ECL = Equivalent Center Load
MHL = Maximum Hanger Load
M₁ = MHL Multiplier



Multiplier Chart

S/B	M	M ₁	S/B	M	M ₁	S/B	M	M ₁	S/B	M	M ₁	S/B	M	M ₁
1.0	.500	.500	2.8	.674	.824	4.6	.794	.891	6.4	.850	.922	8.2	.882	.939
1.1	.500	.545	2.9	.686	.828	4.7	.799	.894	6.5	.852	.923	8.3	.883	.940
1.2	.500	.583	3.0	.694	.833	4.8	.803	.896	6.6	.854	.924	8.4	.885	.941
1.3	.500	.615	3.1	.703	.839	4.9	.807	.898	6.7	.856	.925	8.5	.886	.941
1.4	.500	.643	3.2	.712	.844	5.0	.810	.900	6.8	.858	.926	8.6	.887	.942
1.5	.500	.687	3.3	.720	.848	5.1	.814	.902	6.9	.860	.928	8.7	.888	.943
1.6	.500	.688	3.4	.727	.853	5.2	.817	.904	7.0	.862	.929	8.8	.890	.943
1.7	.500	.706	3.5	.735	.857	5.3	.820	.906	7.1	.884	.930	8.9	.891	.944
1.8	.523	.722	3.6	.742	.861	5.4	.823	.907	7.2	.866	.931	9.0	.892	.944
1.9	.543	.737	3.7	.748	.865	5.5	.827	.909	7.3	.868	.982	9.1	.893	.946
2.0	.582	.750	3.8	.754	.868	5.6	.829	.911	7.4	.869	.932	9.2	.894	.946
2.1	.581	.762	3.9	.760	.872	5.7	.832	.912	7.5	.871	.933	9.3	.895	.946
2.2	.596	.773	4.0	.766	.875	5.8	.835	.914	7.6	.873	.934	9.4	.896	.947
2.3	.612	.783	4.1	.771	.878	5.9	.838	.915	7.7	.874	.935	9.5	.897	.947
2.4	.627	.792	4.2	.776	.881	6.0	.840	.917	7.8	.876	.936	9.6	.899	.948
2.5	.640	.800	4.3	.781	.884	6.1	.843	.918	7.9	.877	.937	9.7	.900	.949
2.6	.652	.808	4.4	.785	.886	6.2	.845	.919	8.0	.879	.938	9.8	.901	.949
2.7	.684	.815	4.5	.790	.889	6.3	.848	.921	8.1	.880	.938	9.9	.902	.949

Note This chart only applies to a single end truck or trolley per span with equal wheel loads. See additional formulas for two end trucks or trolleys per span. For three or more end trucks or trolleys and unequal wheel loads, consult factory.

This chart is derived from the 4-wheel formula, "Maximum Hanger Load (MHL) Formulas for Hanger Selection" on page J-9.

Equivalent Center Load (ECL) Formulas for Rail Selection

These formulas are used to calculate the Equivalent Center Load (ECL) required for a length of monorail or crane runway.

After the ECL is determined, select a rail size by referring to the appropriate Rail Load Tables in the TC/American Systems Catalog. Note that 325 and 450 Series Rail Load Tables are developed for 1/450, 1/600 and 1/1000 Deflection allowances. The 200 and 400 Series Rail Load Tables are only for 1/450 Deflection allowance.

These formulas assume that the Total Load is equally distributed under all trolleys.

For unequal trolley loads, unequal spacing or a larger number of wheels, use the TC/American Crane computer-based ECL calculation program. This program is available to all TC/American dealers.

Note Do not use the result of these formulas if the calculated ECL is less than half of the Total Load. Under certain conditions (long crane wheelbase and short runway support centers) the formulas for calculating ECL may result in a value that is less than half of the Total Load. Thus the load on one trolley would exceed the calculated ECL and, if a rail is selected based only upon calculated ECL, the rail could be undersized. The TC/American Crane computer-based ECL calculation program takes this condition into account and does not report an ECL which is less than half of the total load.

4-Wheel Formula:

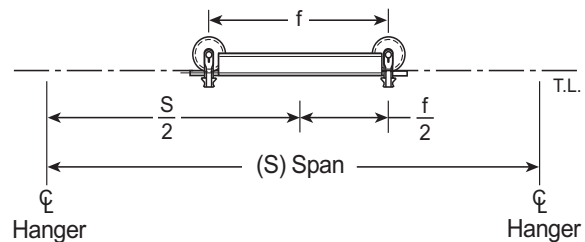
Use for:

- one 4-wheel trolley on a monorail or crane bridge
- one crane with 4-wheel end trucks on runway

$$ECL = \left[\left(1 - \frac{f}{2S} \right)^2 - \frac{e}{S} \right] \times W$$

Where:

ECL = Equivalent Center Load (pounds)
 f = Distance Between Trolleys (inches)
 S = Span, Distance Between Supports (inches)
 W = Total Load (pounds)
 See page K-6 for calculation of Total Load.



8-Wheel Formula:

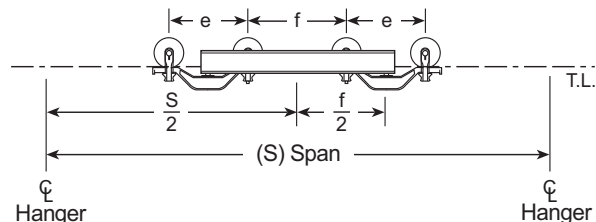
Use for:

- two 4-wheel trolleys on a monorail or crane bridge
- one 8-wheel trolley on a monorail or crane bridge
- two cranes with 4-wheel end trucks on a runway
- one crane with 8-wheel end trucks on a runway

$$ECL = \left(1 - \frac{f}{2S} \right)^2 \times W$$

Where:

ECL = Equivalent Center Load (pounds)
 f = Distance Between Trolleys (inches)
 S = Span, Distance Between Supports (inches)
 W = Total Load (pounds)
 See page K-6 for calculation of Total Load.





16-Wheel Formula:

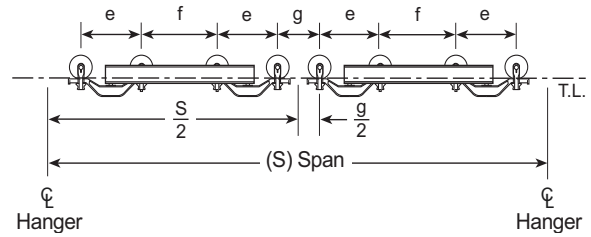
Use for:

- two 8-wheel trolleys on a monorail or crane bridge
- two cranes with 8-wheel end trucks on a runway

$$ECL = \left[\left(1 - \frac{g}{2S} \right)^2 - \frac{f}{S} - \frac{2e}{S} \right]$$

Where:

- ECL = Equivalent Center Load (pounds)
 e = Distance Between Trolleys (inches)
 f = Distance Between Trolleys (inches)
 g = Distance Between Trolleys (inches)
 S = Span, Distance Between Supports (inches)
 W = Total Load (pounds)
 See page K-6 for calculation of Total Load.





Typical Example Using an ECL Formula

Crane equipment for consideration:

Cranes, two on the same runway: 3C-15000-MD, 22'-0" Span, 24'-0" OAL, with 3ET-24800-8 End Trucks
Estimated crane weight, per the Systems Catalog, with bridge electrification = 3196 pounds

Runway Span: 20'-0" (240")

Runway Electrification: 4-Bar Shielded Channel-Bar, @7 pounds/foot

Hoist and Trolley: 7.5-ton Capacity, 1000 pound weight each
Hoist trolley center of gravity may be positioned directly under one end truck.

Note The motor driven (MD) cranes in this example have slightly unequal wheel loadings due to the additional weight of the motor, drive shaft, supports and the crane controls on one side of the crane bridge. Dual motor driven (DM) cranes will have the same slight unequal loading due to the weight of the motorized trolleys. However, the "equal wheel loading formulas" shown can be used with TC/A catalogued cranes to produce reasonable accuracy for estimating purposes. When wheel loads are unequal or greater accuracy is needed, use the TC/American Crane computer-based ECL calculation program.

Step 1 Determine the Hoist and Trolley Load for each Crane

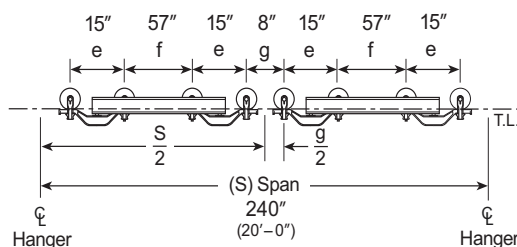
Live Load	=	15,000 pounds
(including weight of Miscellaneous Equipment, i.e., Grabs, etc.)		
Impact Allowance (15%)	=	2,250 pounds
Hoist Weight	=	1,000 pounds
Trolley and Adapter	=	included in hoist weight
Drivetractor Weight	=	N/A
Total	=	18,250 pounds

Step 2 Determine the Crane End Truck Load

Hoist and Trolley Load	=	18,250 pounds
Half Crane Weight	=	1,598 pounds
Total	=	19,848 pounds
All Cranes in one Runway Span	=	x 2 Cranes
Total	=	39,696 pounds Total Load (W)

Step 3 Determine End Truck Wheelbase Dimensions

- See Crane or End Truck Section of TC/American Systems Catalog.
- Distribute cranes on runway span.



Step 4 Calculate ECL (for appropriate formula see "Equivalent Center Load & Maximum Hanger Load" on page J-5)

For the condition shown, use the 16-Wheel Formula:

$$ECL = [(1 - g/2S)^2 - f/S - 2e/S] \times W$$

$$ECL = [(1 - 8/2 \times 240)^2 - (57/240) - (2 \times 15/240)] \times 39,696$$

pounds

$$ECL = [(1 - 0.017)^2 - 0.238 - 0.125] \times 39,696 \text{ pounds}$$

$$ECL = [(0.983)^2 - 0.238 - 0.125] \times 39,696 \text{ pounds}$$

$$ECL = (0.966 - 0.238 - 0.125) \times 39,696 \text{ pounds}$$

$$ECL = 23,937 \text{ pounds}$$

Step 5 Select Rail Size from Rail Load Tables in Rail Section of TC/American Systems Catalog

The crane is a 325 Series unit. From the 325 Series Load Tables, at 20' runway support center spans, find a rail that meets or exceeds the ECL requirement of 23,937 pounds.

Use 3RH18-52 Rail for Runway (Maximum ECL Capacity per the Load Table = 25,258 pounds @ 1/450 deflection).

Maximum Hanger Load (MHL) Formulas for Hanger Selection

These formulas are used to calculate the Maximum Hanger Load (MHL) required for monorails or crane runways.

After the MHL is determined, select the appropriate support system (direct bolt, clamps, rigid or flexible hangers and rods, or a combination of supports) as required by the hanger load and the available building support steel. *Note that additional support steel may need to be added to the building for switches and curves.*

Also, by adding intermediate support steel to reduce the rail support center spans, it may be possible to reduce the rail size required for a given span, or to reduce the hanger load at the support locations.

These formulas assume that the Total Load is equally distributed under all trolleys.

For unequal trolley loads, unequal spacing or a larger number of wheels, use the TC/American Crane computer-based MHL calculation program. This program is available to all TC/American dealers.

4-Wheel Formula:

Use for:

- one 4-wheel trolley on a monorail or crane bridge
- one crane with 4-wheel end trucks on runway

$$\text{MHL} = \left(1 - \frac{f}{2S}\right) \times W + \text{Rail Weight} + \text{Elect. Weight}$$

Where:

MHL = Maximum Hanger Load (pounds)

f = Distance Between Trolleys (inches)

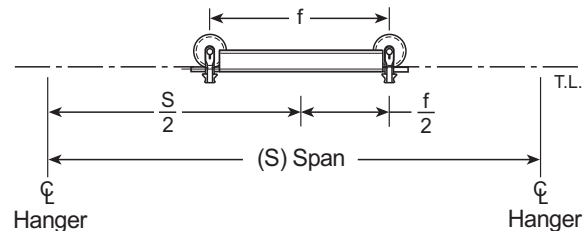
S = Span, Distance Between Supports (inches)

W = Total Load (pounds)

See page K-6 for calculation of Total Load.

Rail Weight = Total Weight of rail (pounds/foot x length)

Elec. Weight = Total Weight of monorail or runway



8-Wheel Formula:

Use for:

- two 4-wheel trolleys on a monorail or crane bridge
- one 8-wheel trolley on a monorail or crane bridge
- two cranes with 4-wheel end trucks on a runway
- one crane with 8-wheel end trucks on a runway

$$\text{MHL} = \left(1 - \frac{e}{2S} - \frac{f}{2S}\right) \times W + \text{Rail Weight} + \text{Elect. Weight}$$

Where:

MHL = Maximum Hanger Load (pounds)

e = Distance Between Trolleys (inches)

f = Distance Between Trolleys (inches)

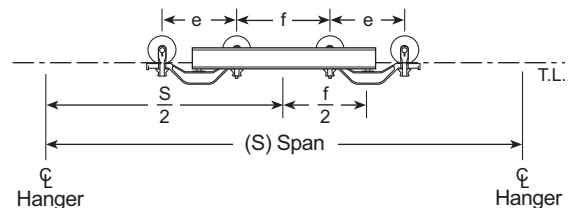
S = Span, Distance Between Supports (inches)

W = Total Load (pounds)

See page K-6 for calculation of Total Load.

Rail Weight = Total Weight of rail (pounds/foot x length)

Elec. Weight = Total Weight of monorail or runway





16-Wheel Formula:

Use for:

- two 8-wheel trolleys on a monorail or crane bridge
- two cranes with 8-wheel end trucks on a runway

$$HL = \left(1 - \frac{g}{2S} - \frac{f}{2S} - \frac{e}{S}\right) \times W + \text{Rail Weight} + \text{Elect. Weight}$$

Where:

MHL = Maximum Hanger Load (pounds)

e = Distance Between Trolleys (inches)

f = Distance Between Trolleys (inches)

g = Distance Between Trolleys (inches)

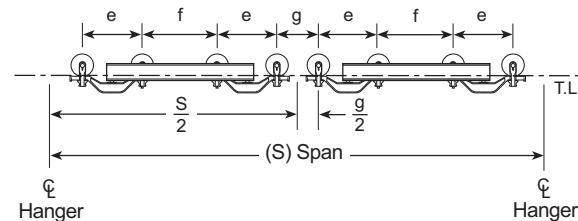
S = Span, Distance Between Supports (inches)

W = Total Load (pounds)

See page K-7 for calculation of Total Load.

Rail Weight = Total Weight of rail (pounds/foot x length)

Elec. Weight = Total Weight of monorail or runway



Typical Example Using an MHL Formula

Crane equipment for consideration:

Cranes, two on the same runway; 3C-15000-MD, 22'-0" Span, 24'-0" OAL, with 3ET-24800-8 End Trucks

Estimated crane weight, per the Systems Catalog, with bridge electrification = 3196 pounds

Runway Span: 20'-0" (240")

Runway Electrification: 4-Bar Shielded Channel-Bar, @7 pounds/foot

Hoist and Trolley: 7.5-ton Capacity, 1000 pound weight each

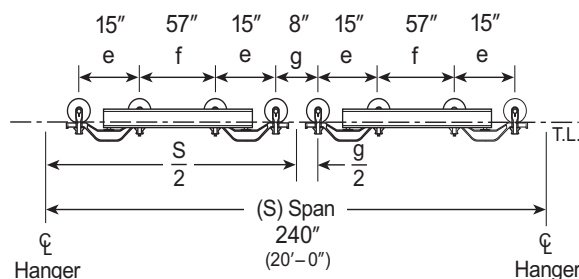
Hoist trolley center of gravity must be positioned directly under one end truck.

Note The motor driven (MD) cranes in this example have slightly unequal wheel loadings due to the additional weight of the motor, drive shaft, supports and the crane controls on one side of the crane bridge. Dual motor driven (DM) cranes will have the same slight unequal loading due to the weight of the motorized trolleys. However, the "equal wheel loading formulas" shown can be used with TC/A catalogued cranes to produce reasonable accuracy for estimating purposes. When wheel loads are unequal or greater accuracy is needed, use the TC/American Crane computer-based MHL calculation program.

Step 1 Refer to the values, weight distribution on the rail span, and the rail selection as determined during the ECL calculation exercise.

Per the ECL example shown, with

W = 39,696 pounds:



Step 2

Calculate MHL (use appropriate formula)

For the condition shown, use the 16-Wheel Formula:

MHL = $1 - \frac{e}{S} - \frac{f}{2S} - \frac{g}{2S}$ x W + Rail Weight + Elect. Weight

MHL = $1 - \frac{15}{240} - \frac{57}{240} - \frac{8}{480}$ x 39,696 + (52.16 lbs/foot x 20 feet) + (7 lbs/foot x 20 feet)

MHL = $1 - 0.063 - 0.019 - 0.017$ x 39,696 pounds + 1043 pounds + 140 pounds

MHL = 32,979 pounds

Step 3 Select Hangers from Suspension Section "C" of TC/American Systems Catalog

Select direct bolt connections, clamps or flexible hangers and rods with a minimum of 32,979 pounds capacity.

Use H-33000 hangers and FR-33000 rods.

Alternatively, increase the space between cranes, "g", with crane spacers or other devices to keep the crane separated, or even limit the crane positions to one crane per runway span to reduce the hanger load.



Horsepower Requirements for TC/American Crane and Monorail Systems

Horsepower:

The procedures on this page are used to determine the horsepower required for cranes, drivetractors, hoist carriers and other motorized equipment. This chart assumes Class "C" service duty and an acceleration rate of 0.35 ft/sec². For any other service duties or other acceleration rates, please contact your sales representative for service.

Also note that other factors may affect the horsepower required, such as: multiple runways, high speed applications and high acceleration applications, such as cab controlled cranes and automatic dispatch systems.

Acceleration/Deceleration:

An acceleration rate of 0.35 ft/sec² works well for most applications, including cranes or drivetractors with rubber tire drives and a maximum load on the equipment, or steel wheel drive cranes and drivetractors with a minimum load.

A "soft start" electronic acceleration control device typically controls only the acceleration portion of operation. Deceleration is a factor of the load and the brake (if equipped) effectiveness. Without a brake, deceleration is a factor of the gearbox and reduction drive ratios, and the crane or drivetractor "coasts" to a stop. The acceleration rate of equipment with a soft start may be adjustable but actual acceleration will be dependent upon the amount of load (a lightly loaded crane will accelerate to top speed much more quickly than a heavily loaded crane).

A Variable Frequency Drive (VFD) allows adjustment of both acceleration and deceleration rates. While the acceleration and deceleration with a VFD will still be dependent upon the amount of load, it is much more controllable and consistent than a soft start. With a VFD, the deceleration is a controlled function and the brakes are not given a signal to set until motion of the crane or drivetractor has stopped. A VFD provides better control for most applications. Operators must understand the differences in operation of a system with a soft start and a system with a VFD.

Calculating Horsepower Required

To determine the horsepower required, find the Total Effective Load (pounds) using the procedure below. Then select the horsepower required from Chart "A".

1. Determine Live Load, Crane Weight, Hoist and Carrier Weight, Drivetractor Weight and Weight of any Accessories or Handling Devices (pounds).
2. Determine Drive Tire Load. (For rubber tire drive units only. Use 2,500 pounds times the number of _____ drive tires. Not applicable for motorized trolleys with steel wheel drives.)
3. Add the values of Step 1 and Step 2 to find the Total Moving Load (pounds).
4. Determine the "C" Factor from the "C Factor Chart" and multiply times the Total Moving Load to find the "Total Effective Load."
5. Read the Horsepower Required from Chart "A".

**Chart "A": Horsepower Requirements For Crane and Monorail Systems**

Speed	Total Effective Load in Lbs.						
	50 FPM	75 FPM	100 FPM	125 FPM	150 FPM	175 FPM	200 FPM
Horsepower	½	22,900	15,300	11,400	9,100	7,600	6,500
	¾	34,400	22,900	17,200	13,700	11,400	9,800
	1	45,900	30,600	22,900	18,300	15,300	13,100
	1½	68,900	45,900	34,400	27,500	22,900	19,700
	2	—	61,300	45,900	36,700	30,600	26,200
	3	—	—	68,900	55,100	45,900	39,400

Note The "multipliers" used in the "C Factor Chart" are general values for most applications. However, the multipliers for curved monorails may not be adequate if the application has a long wheelbase in relation to the curve radius, or if a long drawbar is used between the drivetractor and the carrier. For applications such as these, please contact your sales representative for assistance.

"C" Factors

Cranes	Multiplier	Monorails	Multiplier
Dual motor (DM) cranes thru 30' span	.50	Helical or spur gear drive—straight rail	1.00
Dual motor (DM) cranes over 30' span	.70	Helical or spur gear drive—curved rail	1.33
Single motor squaring shaft (MD) cranes	1.00	Right angle worm gear drive—straight rail	1.15
		Right angle worm gear drive—curved rail	1.53

- When horsepower falls between two values, use the larger value.
- For speeds above 200 FPM, cab controlled, automatic dispatch, multiple runways or other than class "C" service, contact factory.
- All horsepower information is for estimating purposes and applicable to products manufactured by TC/American only. Consult factory for assistance if questions on the loading conditions.

Example

3C-6000-DM30' span, 32' OAL, 100 FPM=2542#

8-Bar conductors, 32' x 12#/ft= 384

Hoist = 1200# 2926#

Step 1 _____ Live Load
 _____ Crane Weight
 (include conductors
 controls and options)

Step 2 _____ Drive Tire Load
 (if applicable)

Step 3 _____ Total Moving Load
 (sum of above)

Step 4 x _____ "C" Factor (from chart)

Step 5 _____ Read Horsepower Required
 Chart "A"

Step 1 6000 Live Load
 2926 Crane Weight
 (include conductors
 controls and options)

Step 2 - Drive Tire Load
 (if applicable)

Step 3 10126 Total Moving Load
 (sum of above)

Step 4 x 0.5 "C" Factor (from chart)

Step 5 5063 Read Horsepower Required
 Chart "A"



TC/American Crane Drivetractors

Drawbar Pull Capacities

Maximum total load the motorized drivetractor can move, including the Live Load and all Dead Loads such as the weight of hoists, trolleys, carrier frame, adapters and accessories such as grabs or other lifting devices. The weight of the drivetractor and drive tire load has already been included in the calculation.

The charts below for each TC/American Crane Drivetractor are typical straight rail drawbar pulling capacities, based upon level, dry rail and a typical industrial environment. Drawbar pull capacity will be decreased if the rail slopes, is subject to condensation or weather (wind, rain, ice, snow), has short radius curves, etc.

On monorails, refer to the "C Factor Chart" to select the multiplier for standard radius curves.

For drivetractors used as crane pullers, use the multipliers for "DM" cranes.

2D-4000/2D-4000SR/3D-4000/3D-4000SR

Maximum Total Load Drivetractor Can Move (DL + LL)

Motor	50 FPM	75 FPM	100 FPM	125 FPM	150 FPM
½ hp	5000 lbs.	5000 lbs.	5000 lbs.	4300 lbs.	3100 lbs.
¾ hp	NA	NA	NA	5000 lbs.	5000 lbs.

2D-2256/3D-6256/4D-2256

Maximum Total Load Drivetractor Can Move (DL + LL)

Motor	50 FPM	75 FPM	100 FPM	125 FPM	150 FPM
½ hp	12,500 lbs.	7400 lbs.	NA	NA	NA
¾ hp	NA	12,500 lbs.	8700 lbs.	6400 lbs.	4800 lbs.
1	NA	NA	12,500 lbs.	9500 lbs.	7400 lbs.
1½ hp	NA	NA	NA	12,500 lbs.	12,500 lbs.

3D28-300

Maximum Total Load Drivetractor Can Move (DL + LL)

Motor	50 FPM	75 FPM	100 FPM	125 FPM	150 FPM
½ hp	14,300 lbs.	8,600 lbs.	5,700 lbs.	NA	NA
¾ hp	21,300 lbs.	14,300 lbs.	10,000 lbs.	7,400 lbs.	5,700 lbs.
1 hp	NA	20,100 lbs.	14,300 lbs.	10,900 lbs.	8,600 lbs.
1½ hp	NA	21,300 lbs.	21,300 lbs.	17,800 lbs.	14,300 lbs.
2 hp	NA	NA	NA	21,300 lbs.	20,100 lbs.

DL = Dead Load (weight of hoist, trolleys, adapters and any accessories.)

LL = Live Load

- For these examples, tire load and drivetractor weight has already been included in the calculation.
- For drivetractors other than shown above, contact factory with application information.

**3D-622/4D-22****Maximum Total Load Drivetractor Can Move (DL + LL)**

Motor	50 FPM	75 FPM	100 FPM	125 FPM	150 FPM
½ hp	14,100 lbs.	NA	NA	NA	NA
¾ hp	22,700 lbs.	14,100 lbs.	NA	NA	NA
1 hp	25,000 lbs.	19,900 lbs.	14,100 lbs.	10,700 lbs.	8,400 lbs.
1½ hp	NA	25,000 lbs.	22,700 lbs.	17,600 lbs.	14,100 lbs.
2 hp	NA	NA	25,000 lbs.	24,400 lbs.	19,900 lbs.
3 hp	NA	NA	NA	25,000 lbs.	25,000 lbs.

3D-630/4D-30**Maximum Total Load Drivetractor Can Move (DL + LL)**

Motor	50 FPM	75 FPM	100 FPM	125 FPM	150 FPM
1 hp	28,500 lbs.	NA	NA	NA	NA
1½ hp	45,700 lbs.	28,500 lbs.	NA	NA	NA
2 hp	50,000 lbs.	40,000 lbs.	25,000 lbs.	25,000 lbs.	15,400 lbs.
3 hp	NA	50,000 lbs.	45,700 lbs.	35,400 lbs.	28,500 lbs.
5 hp	NA	NA	50,000 lbs.	50,000 lbs.	50,000 lbs.

DL = Dead Load (weight of hoist, trolleys, adapters and any accessories.)

LL = Live Load

- For these examples, tire load and drivetractor weight has already been included in the calculation.
- For drivetractors other than shown above, contact factory with application information.



Determining Runway Power Feed Spacing

The total amperage load determines if a conductor bar is suitable for a particular application. The total amperage load is also used to calculate the voltage drop along the conductor bars—which determines the number and spacing of the power feeds.

Note The following procedures and example are based on TC/American Shielded Channel-Bar electrification, rated for 105 amps of continuous current.

The directions below apply to class “C” crane systems. Calculations are based on an ambient temperature of 40 degrees C (104 degrees F). For other operating temperatures and/or service classifications consult the factory.

Calculating Total Amperage Load of the Conductor Bar

Step 1 Compute motor load for each crane.

- A. Find the full load amperage of the largest motor, or group of motors, for any single crane motion or hoist.
- B. Find 50% of the full load amperage of the second largest motor, or group of motors, for a single crane motion or hoist.
- C. Add the values of Steps A and B together to compute the motor load for each crane. Use Table 1: Full Load Currents, shown at right, as a guide for calculating amperage loads.

Note Always verify actual motor full load amperages.

Step 2 To the motor load of each crane, add 100% of any other loads on the crane which will be operated while the motors are running such as lights, heating, air conditioning, etc. For magnet loads consult with TC/American.

Step 3 If there are multiple cranes/trolleys/hoists running off of the same conductor bars, find the amperage load of each unit and add the amperages together. Multiply the sum by the demand factor from Table 2, shown below, to obtain the total amperage load for a multiple crane/hoist/trolley system.

Table 2

Number of Units	2	3	4	5	6	7
Demand Factor	0.95	0.91	0.87	0.84	0.81	0.78

Note Table 2 taken from Table 610-14(e) of the 1996 NEC®

Table 1: Full Load Currents for Induction Type Squirrel-Cage Three-Phase 1800 RPM Alternating Current Motors

HP	208 Volts	230 Volts	480 Volts	575 Volts
½	2.4	2.2	1.1	.9
¾	3.5	3.2	1.6	1.3
1	4.6	4.2	2.1	1.7
1½	6.6	6.0	3.0	2.4
2	7.5	6.8	3.4	2.7
3	10.6	9.6	4.8	3.9
5	16.7	15.2	7.6	6.1
7½	24.2	22	11	9
10	30.8	28	14	11
15	46.2	42	21	17
20	59.4	54	27	22
25	74.8	68	34	27
30	88	80	40	32
40	114	104	52	41
50	143	130	65	52

These full load current values are typical for motors running at usual speeds with normal torque characteristics. Motors built for low speed (1200 FPM or less) or high torque may require more running current. The full-load current of multi-speed motors will vary with speed. In these cases the nameplate current rating shall be used.

The voltages listed in Table 1 are rated motor voltages. The currents listed shall be permitted for system voltage ranges of 208, 220 to 249, 440 to 480, and 550 to 600 volts.

Note Full load current chart from NEC®, 1996 Table 430-150. Reprinted with permission from NFPA 70-1997, the National Electrical Code®, Copyright© 1995, National Fire Protection Association, Quincy, MA 02289.

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Calculating the Percent of Voltage Drop

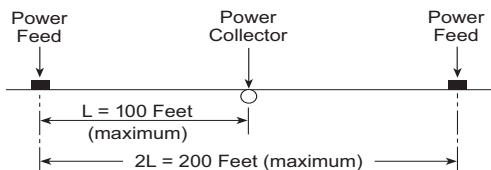
The following example uses: 460VAC, 8 phase, 60 Hz system. 200 feet long, with normal ambient temperature and no other leads. The power feed is to be located in the center of the run, so the maximum distance from the power feed to the load is 100 feet.

The example for this procedure uses the following motors:

- One 10 hp hoist motor @ 14 full load amps
- Two 1/3 hp trolley motor @ 0.7 full load amps (for each motor)
- Two 1/2 hp bridge motors @ 1.1 full load amps (for each motor)

Step 1 The recommended maximum distance from a power feed to the end of the conductor bar 100 feet and the maximum recommended distance between power feeds is 200 feet (*see drawing below*). At these recommended distances a crane system with up to a 75 amp load at 460VAC can be operated without exceeding a 3% voltage drop.

If more current carrying capacity is needed refer to the steps below.



Step 2 Use the following equation to determine the voltage drop along runway conductor bars from a power feed to the position the runway furthest from a power feed.

$$\text{Voltage Drop} = L \times I \times Z \times 1.73$$

Where:

L = Maximum distance in feet from the nearest runway power feed to the crane collectors. (Power feeds should always be installed in the middle of a conductor bar run if possible.)

I = Current load (calculated from ["Calculating Total Amperage Load of the Conductor Bar"](#) on page J-15).

Z = Impedance per foot of the conductor bar = 0.0011 ohms/foot (Based on tests on conductor bar number 10-2725-00)

For Example:

$$\text{Voltage Drop} = 100 \times 15.1 \times 0.0011 \times 1.73$$

$$\text{Voltage Drop} = 2.9 \text{ volts}$$

Step 3 Use the formula to calculate the percent voltage drop: The percent voltage drop along runway conductor bars should not exceed 3%, and the total drop from power feeds to farthest motor or a crane should be no greater than 5% (per NEC).

$$\text{Voltage Drop Percentage} = \frac{\text{Voltage Drop}}{\text{System Voltage}} \times 100$$

Note The total drop from the power feeds to the furthest motor on the crane should be no greater than 5% (per NEC).

For example:

$$\text{Voltage Drop Percentage} = \frac{2.9}{460} \times 100$$

$$\text{Voltage Drop Percentage} = 0.63$$

0.63% is below the 3% maximum.

Step 4 If the voltage drop percentage exceeds 3%, add an additional power feed to the conductor bar spaced so that the maximum distance to power feeds are nearly equal and repeat the calculations of steps two and three of this section using the greatest distance from the collector to the power feed for "L".

If the percent voltage drop is still greater than 3% add power feeds until the voltage drop percentage drop is 3% or less.



TC/American Crane Suspension Systems

Crane and Monorail Systems are suspended from overhead support structures by two general methods:

Rigid Suspension

- direct bolting of rail through the top flange to the support
- flush clamps (i.e., C-40 clamp) where the top flange of the rail is clamped directly to the support
- “rigid” hangers and rods (*hanger rods with plain nuts and lockwashers only*)
- “rigid” clamps (i.e., C-479, C-480) and rods (*hanger rods with plain nuts and lockwashers only*)
- specially designed and fabricated “stools” or supports (*bolted between the rail and the overhead support*)
- combinations of the above

Flexible Suspension

6. single-rod “flexible” hangers and rods (*hangers and rods with spherical washer, spherical seat and special nut*)
7. double-rod “flexible” hangers and rods (*hangers and rods with spherical washer, spherical seat and special nut*)
8. single-rod “flexible” clamps and rods (*hangers and rods with spherical washer, spherical seat and special nut*)

Rigid Suspension

TC/American Crane Rigid Suspension systems must have the hangers or clamps directly in line and must be shimmed level. The rod must be plumb, to within 1° of vertical, and square to the hangers or clamps to avoid bending stress in the rod where it is secured to the hanger or clamp.

Slotted holes in the top flange of rails allow some provision for alignment adjustment. Clamps also allow easy positioning along the length of the support steel or rail. In extreme cases, additional overhead support steel may be required to reposition the hangers or clamps and bring everything into proper alignment.

Vertical adjustment of direct bolted systems is by shimming. Rod suspended systems allow easy initial and future adjustment through the available thread length.

Rigid suspension systems do not compensate for building movement due to thermal expansion/contraction and varying roof loads. If the overhead supports are subject to building fluctuations, consider flexible suspension for the best installation performance.

Rail alignment and elevation and runway spans should be monitored as part of a regular inspection process. Make adjustments as necessary.

Flexible Suspension

The use of what are called “flexible suspension” components allows the installer some latitude in locating hangers and clamps relative to the runway rail and the support steel. As compared to “rigid suspension” components, these flexible suspension components may be directly bolted or clamped to overhead support steel or the runway top flange without shimming for “out-of-level” conditions, within some limitations.

TC/American Crane Flexible Suspension components are designed to accommodate variations in support steel (i.e., building support member flanges not parallel to the top flange of the rail) and minor tippage of the top flange of a monorail or runway (top flange not perpendicular to the rail web), plus building movement due to thermal expansion/contraction and varying roof loads.

Note *Flexible Suspension components are not intended to provide a “free-swinging” system.*

Flexible Suspension should not be used to compensate for an inaccurate installation of a crane or monorail system. Good installation practices require hanger rods to be installed “plumb,” meaning that hangers or clamps on the rail must be directly under and in line with hangers or clamps on the overhead support steel, with the rod within 1° of vertical.



TC/American Crane Flexible Suspension allows hangers to be directly bolted to the rail and support steel without shimming for “out-of-level” conditions. However, though the hangers can accommodate up to 5° variation from plumb, installers must provide allowance for monorail, runway and support steel movements caused by crane and hoist movement (loads caused by acceleration/deceleration and impact against end stops), thermal changes, roof loads and other events. Therefore, if a hanger is near the 5° limit, it should be shimmed to level or near-level.

Flexible hanger clamps provide the same accommodation, but shimming a clamp to compensate for out-of-level can be difficult.

Slotted holes in the top flange of rails allow some provision for alignment adjustment. Clamps also allow easy positioning along the length of the support steel or rail. In extreme cases, additional overhead support steel may be required to reposition the hangers or clamps and bring everything into proper alignment. Vertical adjustment of flexible rod suspension systems allows for easy initial and future adjustment through the available thread length.

Rail alignment and elevation and runway spans should be monitored as part of a regular inspection process. Make adjustments as necessary.

System Alignment

A properly aligned crane runway will provide better crane performance and less wear. Poor alignment can cause crane skewing, binding, uneven rail wear, uneven wheel wear, and puts excessive stress on crane drive components. It can also cause excessive stress to the runway rail and the support structure.

For crane systems that interlock to spur rails, the crane must be aligned and leveled before the spur rails are installed. Each spur rail must be individually adjusted to the crane.

For crane systems that interlock to other cranes or to a cross-over, all cranes must be aligned and leveled relative to each other.

Monorails must be aligned for smooth transition from one rail section to the next.

System Bracing

After a monorail or runway system is installed, leveled and aligned (and runways are spaced at the proper span), both “rigid” and “flexible” suspension systems must be braced securely. Sway brace materials must be able to withstand all horizontal forces and still maintain alignments.

TC/American Crane Installation Instructions recommend the following for rod-suspended systems:

Monorails

- Straight rails must be side braced at each splice point.
- Curves must be rigidly braced.
- Switches in system must be rigidly braced.
- End bracing required for systems with powered carriers (*curve or switch bracing may provide this depending on layout*).

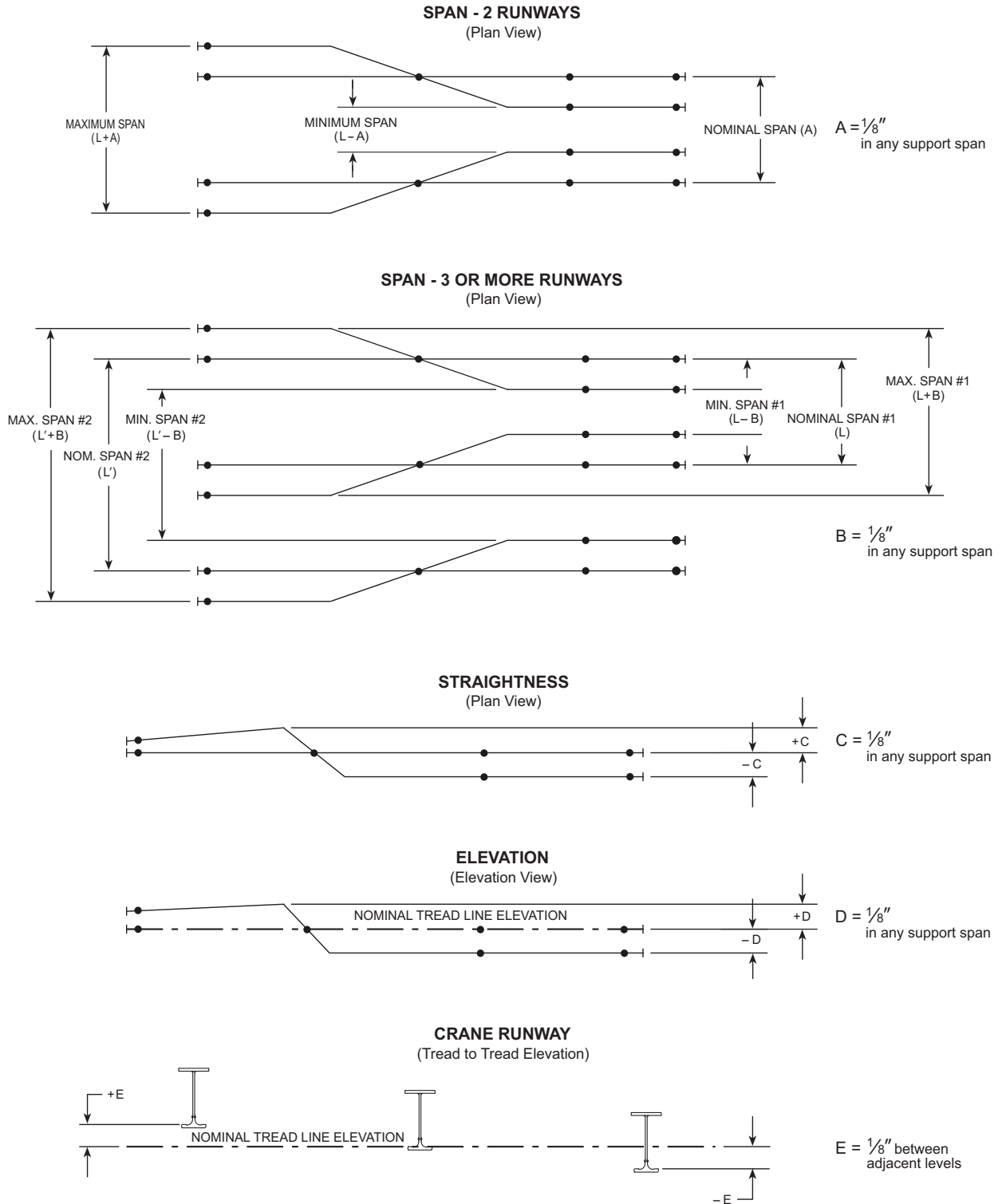
Crane Runways

- One runway must be side braced (*typically runway rail on which electrical conductor bars are installed*).
- Both runways must be end braced.

After a system is securely braced there should be minimal rail movement due to crane or hoist movements.

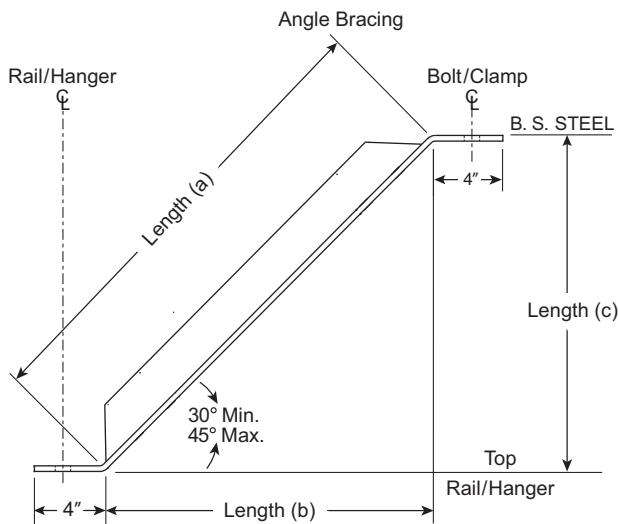
The TC/American Crane Installation Manual recommends that patented track crane runway alignment tolerances be held to $\pm 1/8$ " (see the diagram below)

Crane Runway Alignment Tolerances





Suspension Bracing Worksheet



$$\text{Length (a)} = \sqrt{b^2 + c^2}$$

$$\text{Overall Angle Length} = \sqrt{b^2 + c^2} + 8 \text{ inches}$$

$$\text{Overall Angle Length} = \underline{\hspace{2cm}}$$

Angle Bracing Data:

No. Angle Braces Req.

No. Pcs. Angle x Length (a) = Total Length

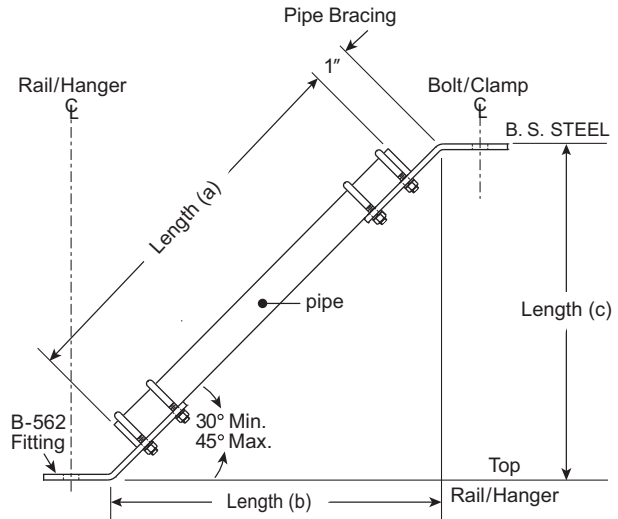
Mtg. Clamps/Bolts Cat. No.

No. Clamps/Bolts Req.

Angle Size Wgt./Ft.

Total Wgt. Angle lbs.

Total Wgt. Clamps/Bolts lbs.



$$\text{Pipe Length (a)} = \sqrt{b^2 + c^2} - 2 \text{ inches}$$

$$\text{Pipe Length (a)} = \underline{\hspace{2cm}}$$

Pipe Bracing Data:

No. Braces Req.

No. Pcs. Pipe x Length (a) = Total Length

No. B-562 Pipe Fittings Req.

No. Clamps/Bolts Req.

Pipe Size Wgt./Ft.

Total Wgt. Pipe lbs.

Total Wgt. Clamps/Bolts lbs.



Additional Suspension Data





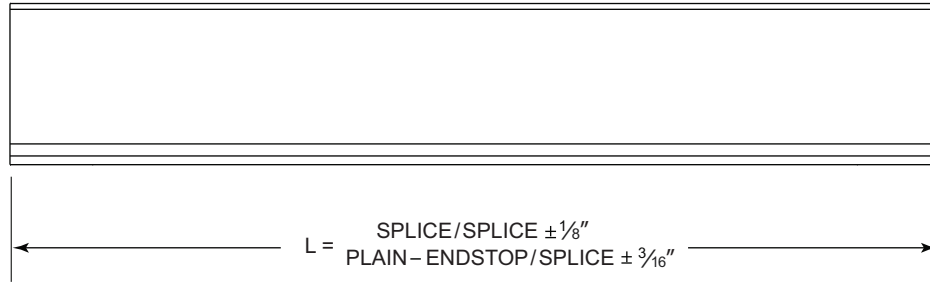
Rail Manufacturing Standards

TC/American Crane patented track rail is expertly manufactured to the highest possible shop standards. However, fabrication and material tolerances may result in slight variation from design dimensions.

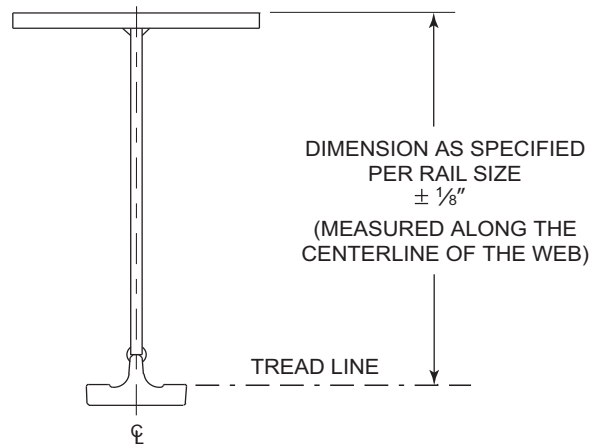
Sales personnel must be aware and understand the possibility of these variations in the rail and be able to advise customers. Installers must adjust accordingly to compensate for minor irregularities in rails (for example, shimming at hanger points to align riding treads).

TC/American Crane patented track rail will conform to these tolerances:

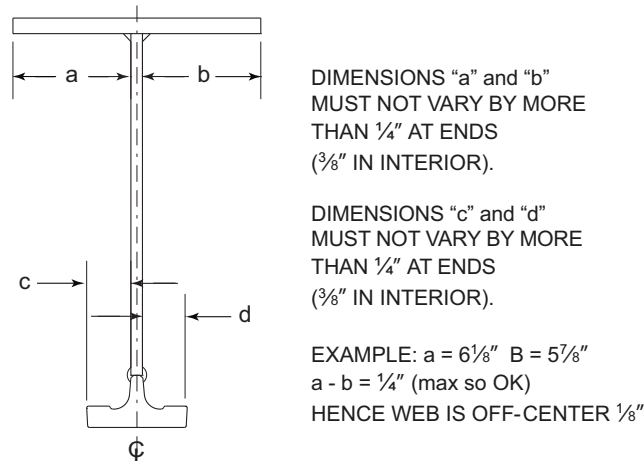
Length



Depth of Rail Section

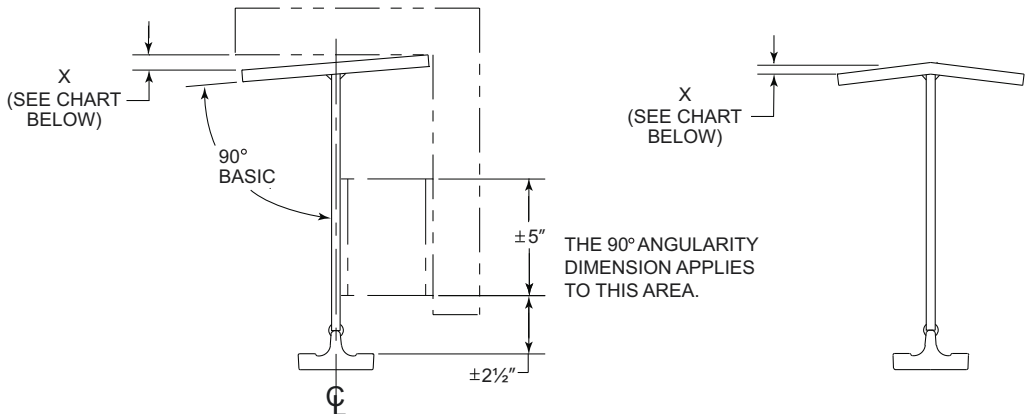


Symmetry



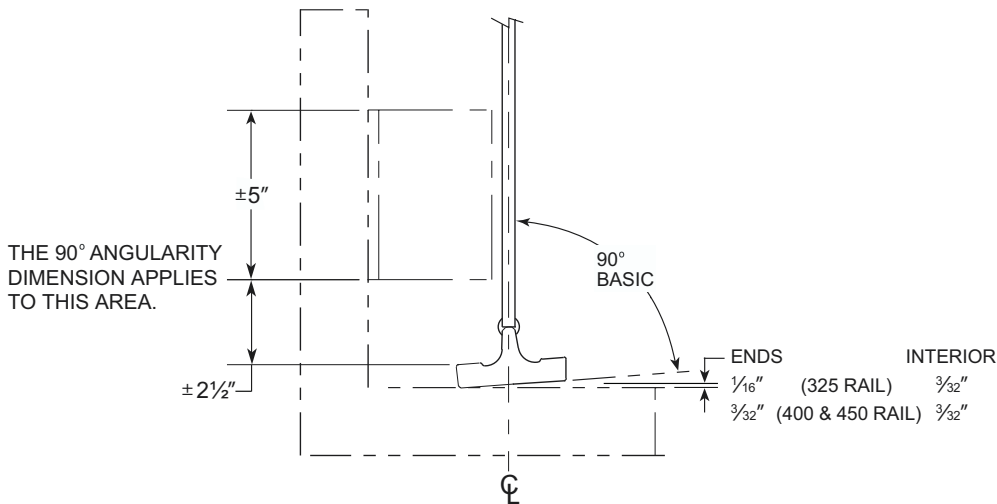


Squareness of Top Plate



TOP FLANGE WIDTH	MAX. DEV. "X" ENDS		TOP FLANGE WIDTH	MAX. DEV. "X" ENDS		TOP FLANGE WIDTH	MAX. DEV. "X" ENDS	
5"	5/32"	5/64"	12"	3/8"	3/16"	18"	9/16"	9/32"
7"	7/32"	7/64"	13"	13/32"	13/64"	20"	5/8"	5/16"
11"	11/32"	11/64"	13 1/2"	27/64"	7/32"	22"	11/16"	11/32"
			15"	15/32"	15/64"	24"	3/4"	3/8"
			16"	1/2"	1/4"			

Squareness of Tee Section



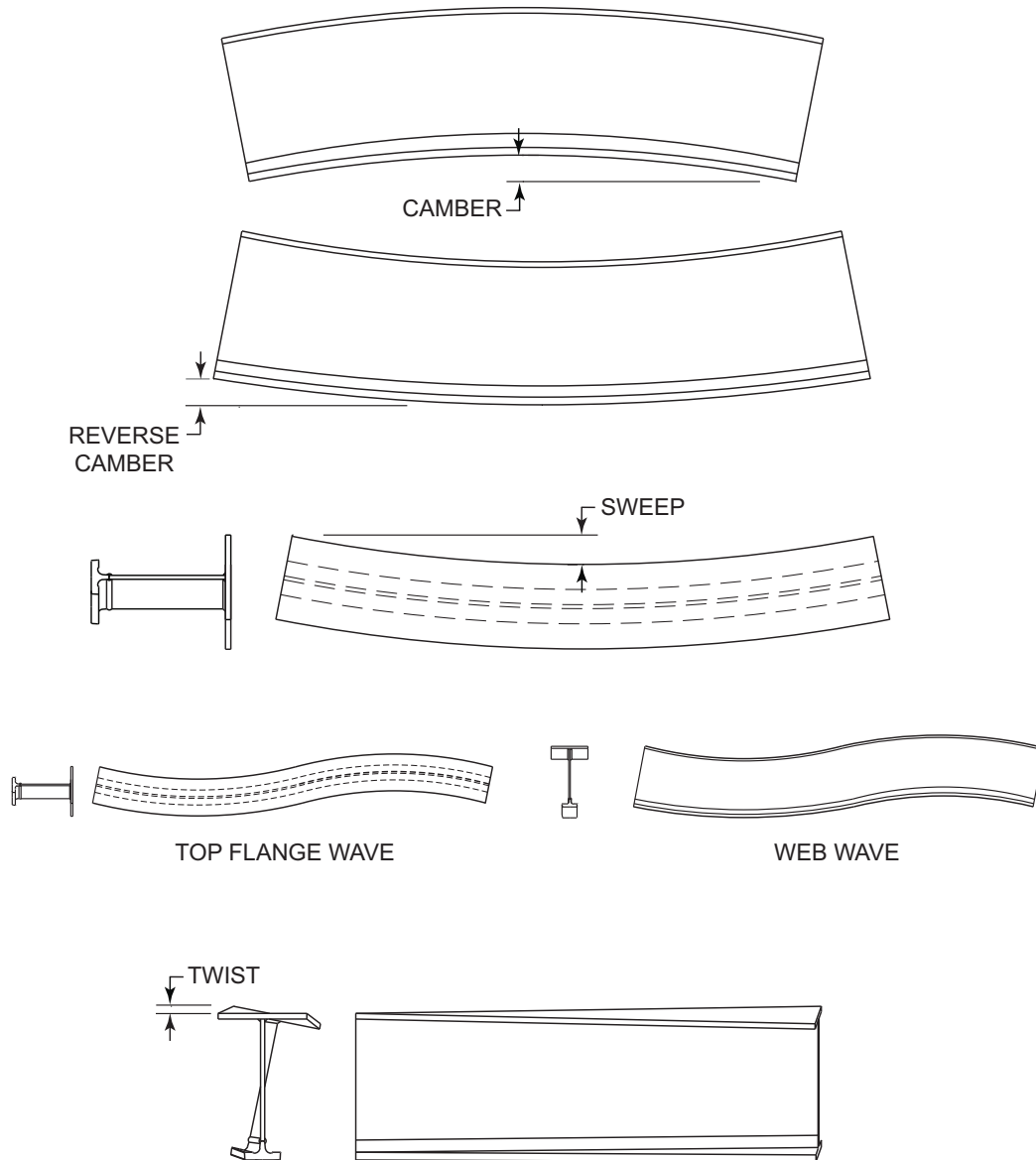
Straightness

(camber, sweep, wave and twist)

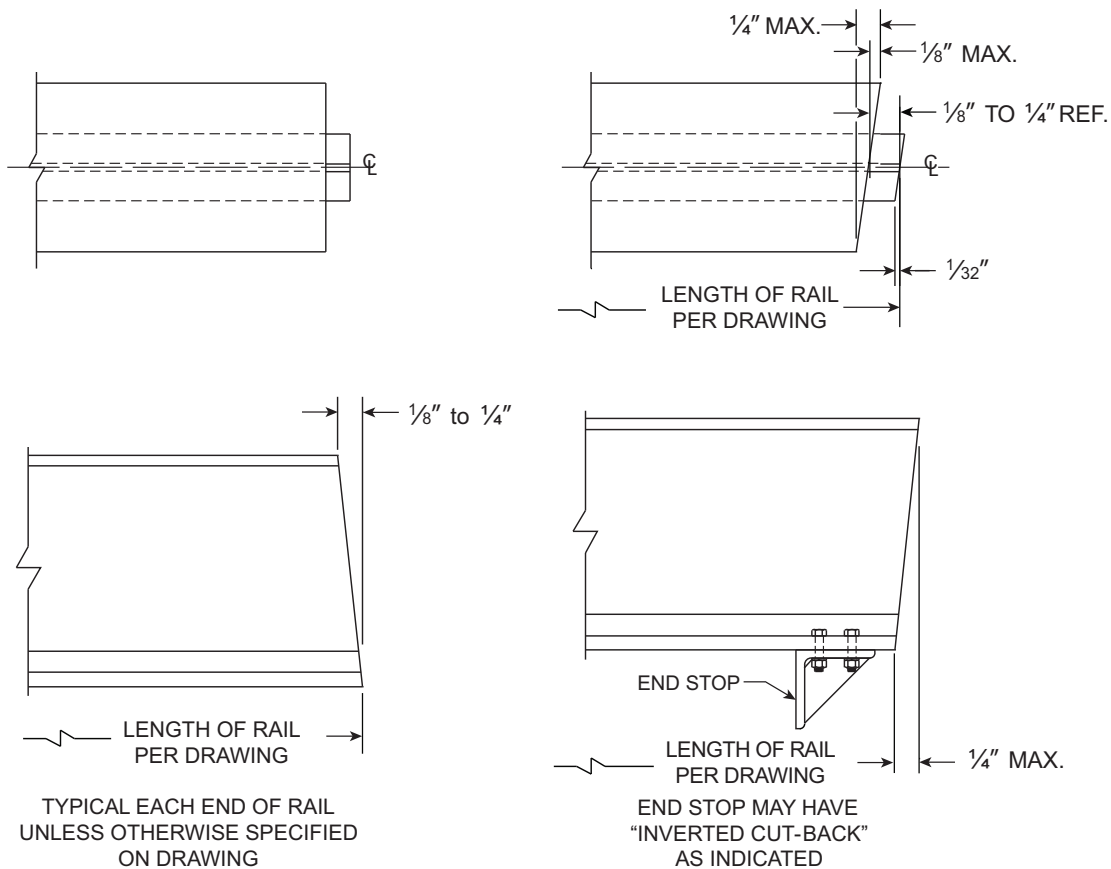
Any longitudinal element of the finished cut length of rail (Top Flange, Web or Tee) shall be straight within:

- $\frac{1}{8}$ " per 10 feet of length (reverse camber shall not exceed $\frac{1}{8}$ " on any rail).
- Rate of change of straightness shall not exceed $\frac{1}{16}$ " over any one foot of length ($\frac{3}{64}$ " per foot for camber only).

Straightness is measured with the use of a string pulled tight parallel to the surface in question; measurement taken from inside of the string to the surface.



End Preparations



Definitions

Patented Track: A composite rail manufactured by welding together a tee, web and top flange.

Tee: The lower, riding flange of a rail; the high-carbon rolled shape.

Web: Plate portion of a rail, welded to the tee and the top flange.

Top Flange: The flange of a rail opposite the tee.

Ends: The area within 2" of the end of the Tee and Top Flange section of the finished cut length of rail.

Interior: Any area within a length of rail other than the ends.

Camber: Deviation from straightness, in the form of an arc along the finished cut length of the rail. Measured while supported from the ends (hanger points) in the upright position. May be "positive" or "negative" (reverse) camber.

Sweep: Deviation from straightness of the web, in the form of an arc along the finished cut length of rail, viewed from the top of the rail.

Wave: Deviation from flatness of the rail.

Twist: Warpage that results in the ends of the rail not being in alignment with each other.

End Preparation: Shop prepared ends of rail sections fabricated to a specified length: plain end, splice end, endstop, interlock or switch. Specify model number of component number to be mounted at end of rail.



Standard Paint and Material Preparation

Material Preparation

The standard material preparation for all TC/American Crane products prior to paint is equivalent to the standard for "Hand Tool Cleaning," as identified by the Society for Protective Coatings (SSPC-SP2). This includes removing visible oil, grease, cutting compounds and other soluble contaminants from the surface with solvents or commercial cleaners by wiping. It also includes the removal of loose mill scale, rust, paint and other loose foreign matter by the use of non-power hand tools.

Optional material preparations may be quoted, including power tool cleaning or blast cleaning. The Society for Protective Coatings identifies various grades of blast cleaning. The general TC/American Crane standard for "sandblasting" is equivalent to SSPC-SP6, Commercial Blast Cleaning. TC/American requires this material preparation in conjunction with requests for non-standard coatings such as "epoxy paint."

Requests for non-standard coatings must include a complete specification of the requirements of the coating, including minimum coat dry-film thickness (DFT) requirements and any specified coating manufacturers.

Other coatings such as galvanizing or plating may be quoted at additional cost.

Standard Paint

TC/American Crane standard equipment paint colors are referenced to the Federal Standard 595 color system.

Product	Color	TC/American Part Number	Federal Standard Color Number
Cranes	Yellow	23-3110-00	23655
Monorail Trolleys	Orange	23-3111-00	22246
Rail and Fittings	Gray-Green	23-3112-00	Same as 16165 except low luster instead of gloss type

Color Samples:

The Federal Standard color system, officially named *Federal Standard 595B - Colors used in Government Procurement*, is a United States Federal Standard and provides a means of comparing colors visually. Each Fed-STD-595 color is identified by a five-digit code.

The Federal Standard 595 comes as a set of color chips which can be used for exact color matching and color quality control. Color chips may be ordered through various sources.

However, for most industrial equipment applications a digital representation of the color is satisfactory, though all parties must recognize the difficulty of reproducing actual colors to a computer display. One Internet site that provides such a view is: www.colorserver.net



Checklist For System Estimating & Ordering

Use the following checklists or questionnaires as an aid and guide to assure that all elements of a system are considered, from estimating to quoting to order to installation.

Crane System Checklist

1. Hoist	13. Rail hanger bracket
2. Hoist accessories	14. Hanger rods
3. Hoist trolleys	15. Support steel hanger brackets
4. Hoist trolley adaptors	16. Clamp assemblies
5. Drivetractor	17. Electrification
6. Drivetractor accessories	18. Support steel
7. Crane	19. Sway and thrust bracing
8. Crane accessories	20. Miscellaneous equipment
9. Rail	21. Engineering (special)
10. Rail splice assemblies	22. Labor to install and test
11. Rail top flange holes	23. Freight cost
12. Rail end stops	

Monorail System Checklist

1. Hoist	15. Special rail sections
2. Hoist accessories	16. Crane connecting interlocks
3. Hoist trolleys	17. Interlock support brackets
4. Hoist trolley adaptors	18. Rail hanger brackets
5. Drivetractor & motorized trolleys	19. Hanger rods
6. Drivetractor & motorized trolley accessories	20. Support steel hanger brackets
7. Rail	21. Clamp assemblies
8. Rail splice assemblies	22. Electrification
9. Rail top flange holes	23. Support steel
10. Rail end stops	24. Sway bracing
11. Curves	25. Miscellaneous equipment
12. Special curves	26. Engineering (special)
13. Switches	27. Labor to install and test
14. Lift sections	28. Freight costs



Crane Questionnaire

1. Catalog No. _____
 2. Capacity _____
 3. O.A.L. _____ Span _____
 4. Overhang A _____ Overhang B _____
 5. Mainline volt _____ Control volt _____
 6. FPM _____ Is it single speed? _____
 - A. If more than single speed, then state different speeds required _____
 - B. Describe multiple speeds. _____
 - C. Are timers required? _____
 7. Any special acceleration feature? _____
 8. Is brake required? _____
 9. Any special step cut in bridge beam under end trucks? _____
 10. Any interlock required? _____
- If so and if the overhangs are different, which end should interlock be mounted?
 A _____ B _____
11. Any special end truck wheelbase other than standard? _____
 If so, what? _____
 12. Any clearance problem lower than top of runway? _____ If so, describe with dimensions.

 13. Describe runway electrification. _____
 If other than TC/A standard, describe. _____
 14. If collectors for other electrification bars are to be mounted by TC/A, describe make and catalog number of collectors _____
 15. If bars are existing, describe and dimension fully from tread to contact surface and rail centerline to each bar.

 16. Bridge electrification by _____
 If by TC/A, do you want bars or festoon? _____
 17. If electrification bars are other than Shielded Channel-Bar, specify manufacturer and catalog number.

 18. If festoon, do you want flat or round cable? _____



19. If festoon, we must have hoist catalog number and manufacturer for hoist to clear cable:

20. Do you want festoon on cable or separate track? _____
21. If pushbutton by TC/A, describe functions and sequence of P.B. _____

22. If pushbutton by TC/A, describe location. _____
23. If pushbutton by TC/A on festoon, it should be on separate track. _____
24. If pushbutton by TC/A, give bridge tread to floor dimension. _____
25. If pushbutton on festoon, we need hoist catalog number and manufacturer for clearance.

26. Who furnishes hoist? _____
27. Where is hoist being shipped to? _____
28. Do you want hoist frame within ends of crane bridge? _____
29. Is runway new and by TC/A? _____
30. Give TC/A catalog number of runway. _____
31. If runway is existing, describe with manufacturer and catalog number. _____
32. Are there any items you want to leave off crane that are price book standards?
33. State each item separately. _____
34. If crane service is other than "C" service, state what service is required. _____
35. If paint is other than TC/A standard yellow, describe with paint manufacturer, color and number.

36. If atmosphere of crane is other than standard, describe fully the:
Ambient Temperature _____ Dust _____ Moisture _____
Explosion Proof _____ Outside Exposure _____ and etc. _____
37. Was crane quoted by TC/A? _____ If so, what is the quote number? _____
38. Send confirming purchase order on all verbal orders.
39. If there are any special features required, each item must be specified and described fully, especially hi-temp or exposure- or spark-proof. _____
40. Specifications on method of shipping. _____
41. Send hoist certified drawings. _____



Drivetractor Questionnaire

1. Catalog No. _____ Model No. _____ Rail Model _____ Are side rollers required? _____
2. Mainline voltage _____ Control voltage _____
3. FPM _____ Is it single speed? _____ Horsepower _____
4. If more than single speed, then state different speeds required. _____
5. Describe multiple speed. _____
6. Is timer required between speeds? _____
7. Any automatic feature required? _____
8. Any special acceleration feature? _____
9. Is brake required? _____
10. If collectors other than TC/A, standard are required, state: _____
 Catalog Number _____ Manufacturer _____
 Furnished by whom _____
11. If tractors are used on existing crane or monorail, state rail's manufacturer and catalog number.
 Rail Manufacturer _____ Rail's Catalog Number _____
12. If tractor is used on existing crane or monorail, state manufacturer and catalog number of
 electrification bar. State Catalog Number _____
 Manufacturer _____
13. State what the hoist catalog number is. _____
 Hoist Manufacturer _____ Capacity _____
14. Who is to furnish hoist and where is hoist shipped to? _____
15. Is pushbutton required? _____ If required, give rail tread to floor dimension _____
16. If tractor is other than "C" service, state what service is required. _____
17. If atmosphere of crane is other than standard, describe fully the Ambient Temperature _____
 Dust _____ Moisture _____
18. If paint is other than TC/A standard orange, state color and manufacturer number.

19. Any items not required that are standard price book items. _____
20. If there are any special features required, each item must be specified and described fully.

21. Was tractor quoted by TC/A? If so, give quote number. _____
22. Send confirming purchase order on all verbal orders. _____
23. Specifications on method of shipping. _____



Trolley Questionnaire

1. Catalog Number _____
2. Are any fittings required (eye bolt, hooks, swivels)? _____

If so, state catalog number. _____

If so, state if fittings are mounted. _____
3. Are any hoist adaptors required? _____

If so, state hoist manufacturer and catalog number. _____
4. Will trolley be manual push or power driven? _____
5. Do you need tow bar attachment? _____
6. Are any collectors required? _____
7. Will hoist be shipped to TC/A to mount? _____
8. If paint is other than TC/A standard orange, state manufacturer and number.

9. If any special feature is required, itemize each item and describe

10. Send confirming purchase order on all verbal orders. _____
11. If trolley was quoted, state quote number. _____
12. Specification on method of shipping. _____
13. Send certified hoist drawing if hoist adapter is ordered. _____



Crane Runway Questionnaire

1. Rail Catalog Number _____
2. Overall length of runway _____
3. Number of pieces per each side of runway _____
4. Supply end prep type per each piece of rail _____
5. What end stops are required? _____ Splices _____
6. What type of electrification is to be used on runway? _____
7. If other than TC/A standard electrification, state catalog number and manufacturer.
Catalog number _____ Manufacturer _____
8. If other than TC/A standard electrification, who is to furnish? _____
9. If the runway electrification and crane collectors are to be on specific end, it must be stated.

10. What is the capacity of the runway? _____
11. What is E.C.L.? _____ M.H.L. _____
12. How many cranes per span? _____ Now or in future? _____
13. How is the runway going to be hung? _____
14. If hangers by TC/A, give catalog number. _____
15. If any Top Flange holes by TC/A, they must be described and dimensioned per each piece.

16. Either round holes or slotted must be specified. _____
17. Is runway totally new or will it tie into existing system? _____
If so, describe existing rail and method to be used to extend at splice.

18. Is any special step cut required on any end of any rail? _____
19. If paint is other than TC/A standard gray-green, specify color and manufacturer number.

20. If other than "C" service, state what service it is used for _____
21. If runway is to be used for cranes other than those manufactured by TC/A, state manufacturer and catalog number. _____
22. If runway was quoted, give TC/A quote number. _____



23. Send confirming purchase order on all verbal orders.

24. If runway rail is 2R3-5T, all of the above applies. Also state rail end types.

25. If any special feature is required, each item must be itemized and described.

26. Specifications on method of shipping. _____



Monorail Questionnaire

1. Capacity of monorail system. _____
2. What is the longest hanger span of system? _____
3. Give all straight rail lengths. _____
4. State catalog numbers of all rail and curves. _____
5. State end preps of all rails and curves. _____
6. What end stops are required? _____
7. What and how many splice assemblies? _____
8. What type curves are required? _____
9. If curves are special, a sketch or print must be sent with confirming order stating
configuration of curve _____ radius _____ degrees _____
How much straight on each end? _____
How many hangers if 2R3-5T? _____ End preps? _____
10. If system is 2R3-5T rail, state how many hangers per each rail and curve.

11. If Top Flange holes are required, give hole diameters whether round or slotted; locate and dimension each set. _____
12. If system is electrified, state TC/A catalog number. _____
If other than TC/A standard, state manufacturer and catalog number and number of bars.
_____ Are collectors required? _____
13. Was system checked so there is no phase reversal situation? _____
14. What type of trolley used on system? _____
15. What type of hoist used on system? _____
16. If trolley other than TC/A standard is used, state manufacturer and catalog number.

Note TC/A does not accept responsibility for compatibility of hoist manufacturers' trolleys with TC/A equip.

17. If hangers are TC/A standard, state catalog number.
18. How many hoists on system? _____ How many hoists per span?
19. Are there any switches in system? _____
A. State catalog number of each switch. _____



- B. State whether L.H., R.H., 3-way or wye. _____
- C. State glides or tongue switches. _____
- D. State if any special switches. _____
- E. Give tread to floor elevation. _____
20. Is system new or ties into existing system? _____
21. If system attaches to existing, state catalog number and manufacturer of both rail and electrification bar and method of splicing. Catalog # (rail) _____ (electrif. bar) _____
Manufacturer (rail) _____ (electrif. bar) _____
Method of splicing _____
22. Is there any special step cut on any piece? If so, describe and dimension.

23. If paint is other than TC/A standard gray-green, state color and manufacturer number.

24. If other than "C" service, state what service it is used for. _____
25. If system was quoted, state TC/A quote number. _____
26. Send confirming purchase order with all verbal orders. _____
27. Send any print available with confirming. _____
28. If there are any special features required, each item must be itemized and described.

29. Specification on method of shipping. _____



Electrification Questionnaire

1. Catalog number. _____
2. Total footage. _____
3. Number of bars. _____
4. What type system used on. _____
(monorail, runway, other) _____
5. Are the bars for a new system? _____ If so, state Side Contact or Bottom Contact. _____
6. Are the bars for existing rail, on which the conductor bar will be, totally new? _____
If so, state type of rail and gauges. _____
7. Are the bars to be connected into existing electrification bars? _____
If so, state manufacturer and catalog number. _____
8. If there are any switches, state catalog number and manufacturer of switch.

9. If Side Contact and less than standard 4-Bar System, state which side the bars are on both switches and curves. _____
10. If collectors are required, state what trolleys the collectors will be mounted to. _____

11. Are there any special features? _____
If so, state each item and describe. _____
12. If electrification was quoted, give TC/A quote number. _____
13. Send confirming purchase order on all verbal orders. _____
14. Specifications on method of shipping. _____
15. Was system checked so there is no phase reversal situation? _____



Suspension Questionnaire

1. Crane runway suspension selection

- A. Spans between hangers on each side of runway. _____
- B. Overhang each end. _____
- C. Number of cranes on runway. _____
- D. If more than one crane, state crane catalog number and bridge centers.

- E. Total load at one end of truck. _____
- F. One-half crane weight _____ Total load at hoist hook _____
Hoist weight _____ Impact _____ lbs. @ _____ of hook load.
- G. Rail size and weight of runway per span. _____
- H. With above information, what is maximum hanger load? _____
- I. Does customer require flexible suspension? _____
- J. Does customer require rigid suspension? _____
- K. Can it be direct bolted? _____
- L. Can it be flush clamped? _____
- M. If flush clamps are furnished by TC/A, we must have the beam size _____
and weight _____ and degree of rail to steel _____
- N. If Top Flange holes are required by TC/A, advise hole gauges in both directions _____
Number of holes _____ Hole dia. _____ Slotted or round _____
Size of steel that the rail is directly bolted to _____
- O. If paint other than TC/A standard gray-green, state manufacturer, manufacturing spec. number and color.

2. Monorail suspension selection

- A. Must establish all hanger spans on total system.
- B. Must determine total load using hook load. _____ Hoist Weight _____
Impact _____ lbs. @ _____ % of hook load.
- C. With above information, determine rail size. _____
- D. With above information, determine MHL. _____
- E. Switches must be hung as shown in TC/A Catalog, Section "D". _____



- F. All standard curves as shown in Switch Section "D" indicate hanger points. These hanger points are established using standard TC/A trolleys. If other trolleys are used on these standard curves, state hoist and trolley used. _____
- G. If special curves are required, state whose hoist and trolley are used. _____
- H. If standard flexible or rigid hangers are required, see suspension Section "C".
- I. State if flexible suspension is used. _____
- J. State if rigid suspension is used. _____
- K. State if direct bolt method is used. _____
- L. If direct bolting, state beam size the rail is bolted to. _____
- M. If Top Flange holes are required by TC/A, advise hole gauges in both directions _____
 Number of holes _____ Hole dia. _____ Slotted or round _____
 Size of steel that the rail is directly bolted to _____
- N. State if flush clamp is used. _____
- O. If using flush clamp, give beam size _____
 and at what degree the rail is top steel. _____
- P. If any special hanger is required for top structure, give full dimension of steel _____
 Give degree of slope to steel, if any _____ Give degree of rail to steel _____
 and any other pertinent information data available. _____
- Q. If a hanger is required for a building joist, all dimensions are required for the joist specifically used, including the panel point design and location. _____
- R. If paint is other than TC/A standard, state manufacturer
 manufacturing spec. number _____ and color _____
3. Notes _____
- A. Hangers must be provided at all splice points. _____
- B. Select type of suspension from Catalog Section "C" ("Suspension").
- C. A written statement should be made that neither the dealer nor TC/A is responsible for any structure used as support of the system that was not furnished by us. _____
- D. A written statement to customer that all systems using hanger rods require sway bracing for a safe and good operation system. _____



Parts Order Questionnaire

1. State what equipment it is used on. _____
2. Serial number or job number of original shipment. _____
3. Drawing number, item number and part number of part(s) required .

4. Paint color if other than standard. _____
5. Electrical components or packages for existing system must have the serial number or job number or both.

6. If quoted, get TC/A quote number. _____
7. Specifications on method of shipping _____



Order Information Checklist

Please Note Information For Job on Order Instruction Form #S-50A and accompany with drawings as required.

- | | Yes | No |
|--|--|-----|
| 1. Is Information | | |
| A. Complete and final for engineering | () | () |
| B. Preliminary for registry only; (specify when final information is to be furnished.) | () | () |
| C. Is material to be furnished EXACTLY per List of Materials on order instruction form? | () | () |
| D. Or is TC/A to furnish all items necessary to meet layout requirements shown on drawings? | () | () |
| 2. Have all clearances and approaches been shown? | () | () |
| 3. Have all minimum headroom requirements been shown? | () | () |
| 4. Are type of rail end preparations specified? | () | () |
| 5. If rail supports and/or top flange holes are to be furnished by TC/A, are details given? | () | () |
| 6. Where fabricated clamps are used, are dimensions given for: | | |
| A. Width of truss or beam flange | () | () |
| B. Thickness of flange | () | () |
| 7. Are there special atmospheric or operating conditions? | () | () |
| 8. Have rails been checked for proper loading, including sufficient capacity if more than one crane on same runway? | () | () |
| 9. Is runway height tread from floor specified? | () | () |
| 10. Is electric service and control voltage listed? | () | () |
| A. Is electrification to be furnished by TC/A on: | | |
| Monorail: Side entry () or Bottom entry () | | |
| Bridge: Side entry () or Bottom entry () | | |
| Runway: Side entry () or Bottom entry () | | |
| B. Is a diagram of number of bars, locations, and kind of electrification included? () | | |
| 11. If order includes tractors () or cranes (), have the following been specified? | | |
| A. Catalog number () | F. Type push buttons and location () | |
| B. Travel speeds () | G. Clearance over crane bridge or drive motor and control panel () | |
| C. Speed control () | H. Overall length, span and overhang () | |
| D. Acceleration control () | I. Interlock: (specify type & one or both ends () | |
| E. Type collectors and location () | J. Type mainline disconnects and where located () | |
| 12. For hoist, specify the following and send certified prints and wiring diagrams for clearance verification and wiring compatibility . | | |
| A. Hoist being shipped to job site () or to TC/A for mtg.() | F. Supplier of collectors and mtg. brackets () | |
| B. Make and catalog number () | G. Are marking instructions shown on your order to hoist manufacturer for TC/A's reference () | |
| C. Type of trolley () | H. Hoist ship date () | |
| D. Supplier of PB station () | I. Date we can expect to receive hoist prints (prints must be received in advance to process order). () | |
| E. Type mainline disconnects and where located () | J. End stop type and location () | |
| 13. If this order is an extension or addition to existing system, has the following been furnished? | | |
| A. Original job number or drawings for reference () | | |
| B. Complete detailed information () | | |
| 14. Paint - Standard colors as follows: | | |
| A. Track, fittings and switches - TC/A Gray-green () | | |
| B. Cranes, all types - TC/A Alert Yellow () | | |
| C. Carriers (except hoists, etc.) - TC/A Focal Orange () | | |
| D. Are other finishes at extra cost specified? () | | |
| 15. Is all other information necessary to process, engineer and fabricate job specified? () | | |

Dealer Name _____ Purchase Order Number _____

Authorized Signature _____ Date _____



ORDER INFORMATION CHECKLIST #S-50C
(Please Note Information For Job
on Order Instruction Form #S-50A
and accompany with drawings as required)

- | | Yes | No |
|---|---|-----|
| 1. Is Information | () | () |
| a. Complete and final for engineering | () | () |
| b. Preliminary for registry only; (specify when final information is to be furnished.) | () | () |
| 2. a. Is material to be furnished EXACTLY per List of Materials on order instruction form? | () | () |
| b. Or is TC/A to furnish all items necessary to meet layout requirements shown on drawings? | () | () |
| 3. Have all clearances and approaches been shown? | () | () |
| 4. Have all minimum headroom requirements been shown? | () | () |
| 5. Are type of rail end preparations specified? | () | () |
| 6. If rail supports and/or top flange holes are to be furnished by TC/A, are details given? | () | () |
| 7. Where fabricated clamps are used, are dimensions given for: | | |
| a. Width of truss or beam flange | () | () |
| b. Thickness of flange | () | () |
| 8. Are there special atmospheric or operating conditions? | () | () |
| 9. Have rails been checked for proper loading, including sufficient capacity if more than one crane on same runway? | () | () |
| 10. Is runway height tread from floor specified? | () | () |
| 11. Is electric service and control voltage listed? | () | () |
| 12. a. Is electrification to be furnished by TC/A on: | | |
| Monorail: Side entry () or Bottom entry () | | |
| Bridge: Side entry () or Bottom entry () | | |
| Runway: Side entry () or Bottom entry () | | |
| b. Is a diagram of number of bars, locations, and kind of electrification included? | () | |
| 13. If order includes tractors () or cranes (), have the following been specified? | | |
| a. Catalog number () | f. Type push buttons and location () | |
| b. Travel speeds () | g. Clearance over crane bridge () | |
| c. Speed control () | for drive motor and control panel () | |
| d. Acceleration control () | h. Overall length, span and overhang () | |
| e. Type collectors and location () | i. Interlock: (specify type & one or both ends () | |
| | j. Type mainline disconnects and where located () | |
| 14. For hoist, specify the following and send certified prints and wiring diagrams for clearance verification and wiring compatibility. | | |
| a. Hoist being shipped to job site () | f. Are marking instructions shown on your order to () | |
| or to TC/A for mtg. () | hoist manufacturer for TC/A's reference () | |
| b. Make and catalog number () | g. Hoist ship date () | |
| c. Type of trolley () | h. Date we can expect to receive hoist prints (prints () | |
| d. Supplier of PB station () | must be received in advance to () | |
| e. Supplier of collectors and () | process order). () | |
| mtg. brackets () | i. End stop type and location () | |
| 15. If this order is an extension or addition to existing system, has the following been furnished? | | |
| a. Original job number or drawings for reference () | | |
| b. Complete detailed information () | | |
| 16. Paint - Standard colors as follows: | | |
| a. Track, fittings and switches - TC/A Gray-green () | | |
| b. Cranes, all types - TC/A Alert Yellow () | | |
| c. Carriers (except hoists, etc.) - TC/A Focal Orange () | | |
| d. Are other finishes at extra cost specified? () | | |
| 17. Is all other information necessary to process, engineer and fabricate job specified? () | | |

Dealer Name _____ Purchase Order Number _____

Authorized Signature _____ Date _____