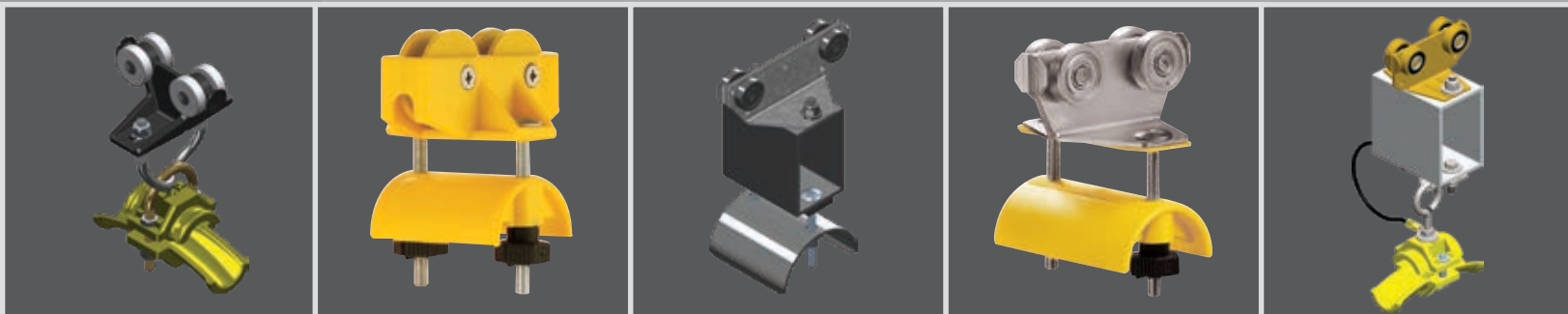


Cable Festoon Systems

C-Track | Stretch Wire Rope



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C-Track and Stretch Wire Rope Festoon Systems

Conductix-Wampfler is the leading global manufacturer of high-performance cable festoon systems for supporting, protecting, and managing cables. We make them for hoses as well. Our festoon brands Conductix-Wampfler, Wampfler, and Insul 8 are used in demanding industrial applications all over the world. You can count on us to provide the right system for the job from among our several cable festoon lines.

C-Track Cable Festoon systems are suitable for standard overhead cranes, small gantry cranes, water treatment plants, car wash systems, plating lines, and many other types of moving equipment. Choose from a complete array of trolleys, track, cable, junction boxes, and connectors. Push button pendants or radio remote controls are available to operate your crane systems.

Our **Stretch Wire Rope Festoon** systems work well for lighter duty applications and installations where a C-Track cannot be installed.

Conductix-Wampfler **I-Beam Festoon** systems and **Square Bar Festoon** systems are ideal for very demanding environments, such as steel mills, bulk handling facilities, and for port container cranes. These are featured in the separate catalogs listed below.

If you don't see exactly what you need, contact us. We specialize in custom-engineered systems to match your application.

Conductix-Wampfler manufacturing facilities are ISO 9001:2008 certified and we are proud members of:



I-Beam Festoon Systems

Please refer to Conductix-Wampfler I-Beam Festoon System catalogs:

KAT0300-0101 I-Beam Engineering Guide
KAT0300-0001 I-Beam Festoon Overview
KAT0320-0001 I-Beam 314/320/325/330 Series

KAT0350-0001 I-Beam 350/360/364 Series
KAT0365-0001 I-Beam 365/370/375 Series
PBL7059 I-Beam 225 Series

C-Track Cable Festoon

C-Track Festoon is an economical and dependable system when the cable required can be supported by a "C" channel.

Heavy Duty C-Track features a heavier gauge track channel for higher capacity.



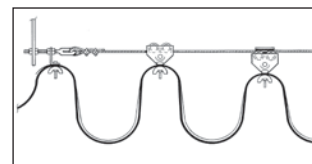
Preassembled C-Track Systems

Save time and money at the job site. Let our experienced personnel preassemble your C-track Cable Festoon system under ideal factory conditions. The complete system comes with cables already clamped to the trolleys at the specified loop depth and trolleys mounted to a C-track section. Installation is quick and easy - just hang the full length of track and transfer the system from the shipping track to the system track. Make your end connections, and you're done!



Stretch Wire Rope Festoon Kits

Stretch Wire systems are well suited for light duty applications. It is economical and dependable for small cranes, moving hoists, and other equipment.



Square Bar Festoon Systems

Please refer to Conductix-Wampfler's 270 Series Festoon Catalog KAT0270-0001 for more information.

Festoon Specification Data Sheet

To choose the correct Festoon System, we recommend that you collect the following application data.

Request Date	_____	Sales Person	_____
Company	_____	Contact	_____
	_____	Title	_____
	_____	Telephone	_____
	_____	Fax	_____
	_____	E-Mail	_____

System Parameters (circle units of measure used)

Crane type _____

CMAA crane class (see pg. 30) _____

Travel speed _____ ft/min m/min

Acceleration _____ ft/s² m/s²

Duty cycle (hr/day) _____

Type of Festoon System(s) Required:

☐ Power ☐ Control ☐ Power & Control

Operating Conditions (circle units of measure used)

Environment ☐ Indoor ☐ Outdoor

Temperature range (F° C°) _____ Min _____ Max

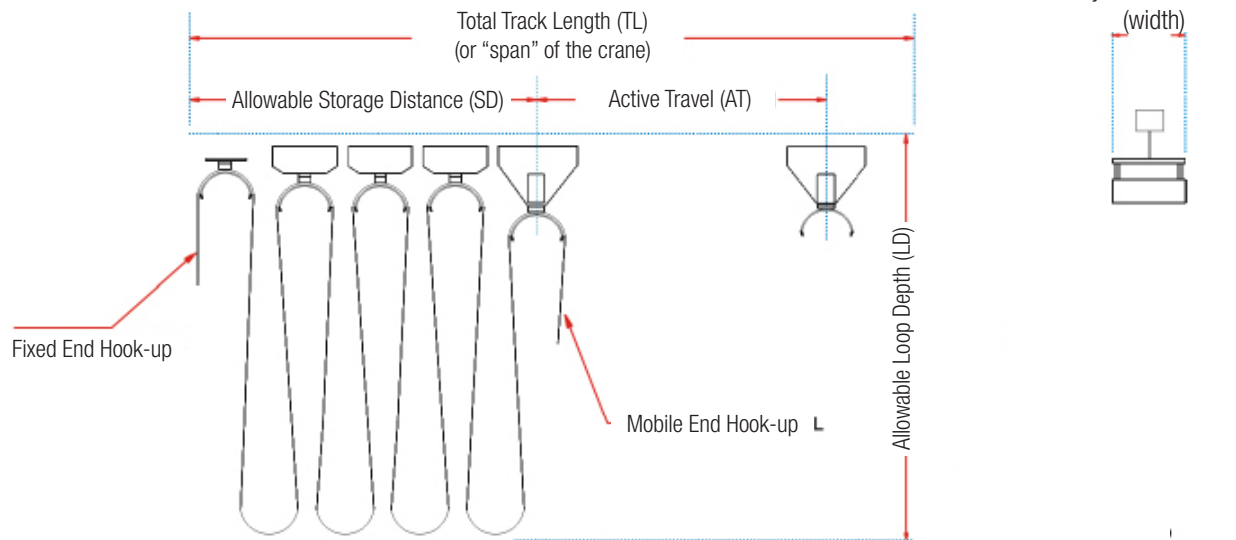
Humidity (%) _____

Corrosives? (please list) _____

Hazardous location? _____

Class, Division, Group _____

System Dimensions



System Dimensions - Refer to dwg above (circle units of measure used):

TL	_____	ft	m	System Window	_____	in.	mm
AT	_____	ft	m	Fixed End Hook-up	_____	ft	m
LD	_____	ft	m	Mobile End Hook-up	_____	ft	m
SD	_____	ft	m				

Type of "Lead" Trolley Req'd: ☐ Tow trolley ☐ Tow clamp ☐ Control Trolley

Festoon Specification Data Sheet

Festoon Cable Requirement

Cable Specification: ☐ Flat ☐ Round Cable Jacket: ☐ Neoprene ☐ PVC

Item	Qty	Cable Type/Description	AWG	# Cond	Dimensions (in)	Wt (lb/ft)
1						
2						
3						
4						
5						
6						
7						
8						

Accessories / Options Required

Want Factory Pre-assembly? ☐ Yes ☐ No

Need Cable Cord Grips? ☐ Yes ☐ No

Need Electrical J-Boxes? ☐ Yes ☐ No

J-Box NEMA Rating (if req'd) _____

Want Factory Pre-Wiring, Fixed End? ☐ Yes ☐ No

Want Factory Pre-Wiring, Mobile End? ☐ Yes ☐ No

Need Control Trolley? ☐ Yes, with J-box ☐ Yes, w/o J-box ☐ Yes, W/Quick disconnect ☐ No

Do You Require Individual Tagging of ☐ Cables? ☐ Conductors?

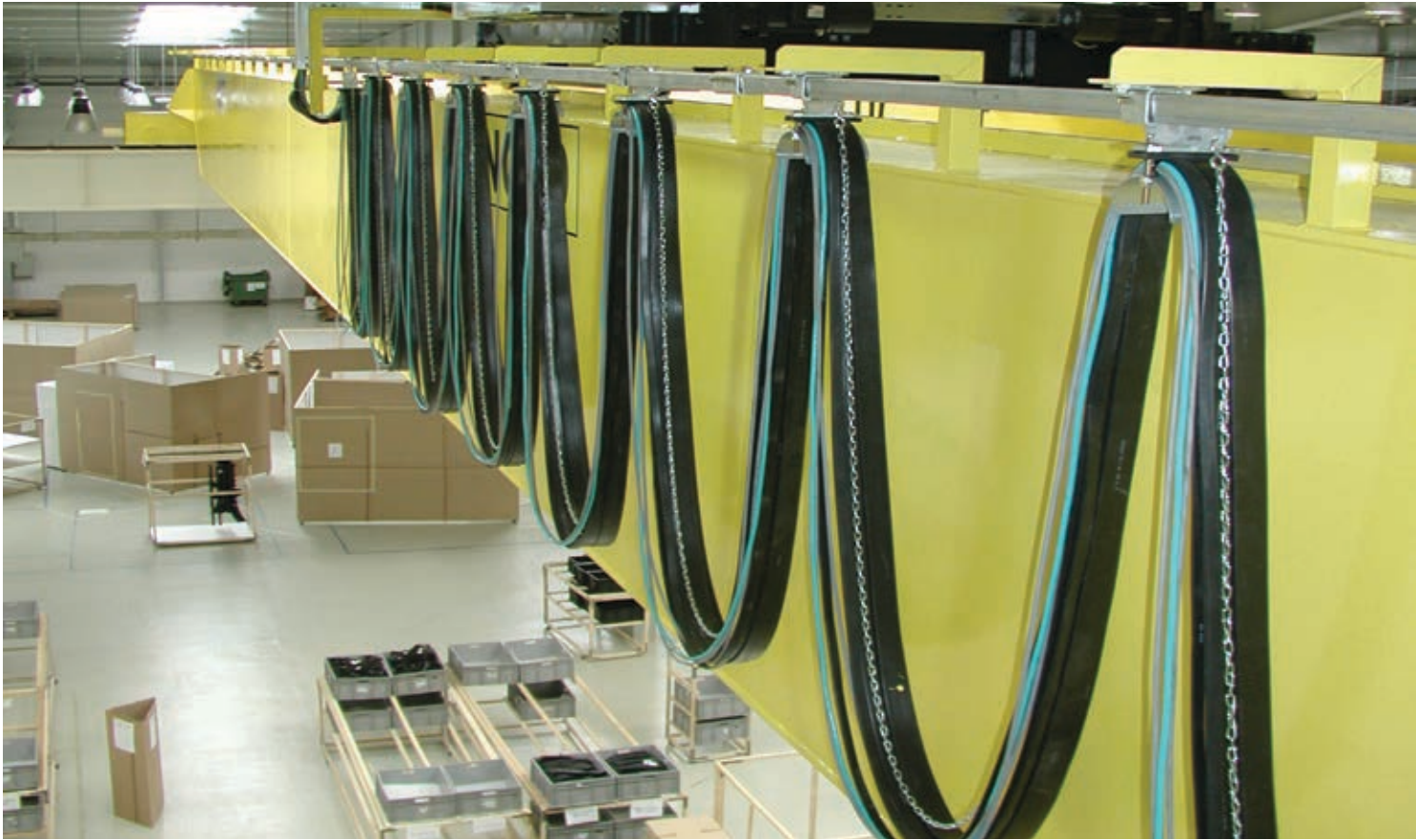
Style of Tagging (check one, if applicable) ☐ Standard ☐ Laminated ☐ Stainless Steel

Please add any other information below that might help specify the correct festoon system. See Pg. 11 for details on how cable festoons are typically mounted to overhead cranes.

Distributed by Ergonomic Partners
Sales@ErgonomicPartners.com
www.ErgonomicPartners.com
Tel: (314) 884-8884



C-Track Festoon Installations



Flat cable is available in either yellow or black.

PVC Flat Cable

Standard flat cable has a yellow PVC jacket. Black cable jacket is also available by request - contact Conductix-Wampfler. Rip cords are provided with cables from 16 AWG to 10 AWG to assist with removing the outside jacket.

Flat cable is sold by the foot. To calculate required festoon cable length, add 10% to the track length, then add the desired hookup lengths for both fixed end and mobile end connections.

For Neoprene flat cables, see page 10. For Round Cables, see Pg. 32.

Cable Size		Part No.		Continuous Duty Rating (amps) *	Short Duration Rating (amps) **		Strands per Conductor	Unshielded Cable Nominal Dimensions +		Wt lb/ft (kg/m)
# of Cond	AWG	PVC Jacket	Shielded +		60 min	30 min		Height in. (mm)	Width in. (mm)	
4	2	23958Y		120	148	173	665	0.56 (14)	1.96 (50)	1.33 (1.98)
4	4	26550Y		90	111	130	420	0.49 (12)	1.70 (43)	0.92 (1.37)
4	6	21814Y		70	83	94	266	0.44 (11)	1.45 (37)	0.65 (0.97)
4	8	26698Y		50	63	69	168	0.37 (9)	1.19 (30)	0.41 (0.61)
4	10	22542Y		40	49	52	105	0.27 (7)	0.88 (22)	0.25 (0.37)
4	12	22994Y		30	36	40	65	0.23 (6)	0.75 (18)	0.17 (0.25)
4	14	21815Y		25	31	32	41	0.21 (5)	0.63 (16)	0.13 (0.19)
4	16	-	31734	n/a	n/a	n/a	65	0.24 (6)	0.76 (19)	0.16 (0.24)
8	12	26005Y		21	n/a	n/a	65	0.23 (6)	1.34 (34)	0.32 (0.48)
8	14	26110Y		17	n/a	n/a	41	0.21 (5)	1.18 (30)	0.27 (0.40)
8	16	22607Y	31772	15	n/a	n/a	65	0.20 (5)	1.11 (28)	0.23 (0.34)
12	14	21813Y	34819	17	n/a	n/a	41	0.21 (5)	1.90 (48)	0.41 (0.61)
12	16	23324Y	31580	15	n/a	n/a	65	0.20 (5)	1.61 (41)	0.32 (0.48)

NOTES:

* At 30° C (86° F) ambient temperature. Refer to correction factors in NEC Table 16.14 (A) for temperatures above 30°C.

PVC Cable is not suitable for festoon applications below -10° C

** For crane and hoist motors, in accordance with 2008 National Electric Code, Article 610 for 90° C cables

+ Dimensions may vary - contact Conductix-Wampfler

We sell flat cable in full spools as well as by the foot - contact the factory for details.

Cable Connectors - For Flat PVC Cable

Cable Connectors for Flat PVC Cable are used to terminate the cable at the power source or junction box. Connector has an aluminum body and rubber bushing. Some of the connectors listed have a dual slot to accommodate a second cable - see Cable # 2 columns below.



PN: 35835 (1" NPT, single slot)



PN: 35837 (1" NPT, dual slot)



PN: 35838 (2.0" NPT single slot)

Cable # 1			Cable # 2 (if required)			Connector	
No. of Cond.	AWG	Cable Part No. *	No. of Cond.	AWG	Cable Part No. *	NPT in. (mm)	Part No.
4	4	26550Y	-	-	-	2.0 (51)	35838
4	6	21814Y	-	-	-	2.0 (51)	35838B
4	8	26698Y	-	-	-	1.5 (38)	35837
4	10	22542Y	-	-	-	1.0 (25)	35835C
4	12	22994Y	-	-	-	1.0 (25)	35835B
4	14	21815Y	-	-	-	1.0 (25)	35835
8	12	26005Y	-	-	-	1.5 (38)	35837B
8	12	26005Y	8	12	26005Y	2.0 (51)	35838G
8	14	26110Y	-	-	-	1.5 (38)	35837C
8	14	26110Y	4	10	22542Y	1.5 (38)	35837K
8	14	26110Y	4	12	22994Y	1.5 (38)	35837M
8	14	26110Y	4	14	21815Y	1.5 (38)	35837H
8	14	26110Y	8	14	26110Y	1.5 (38)	35837E
8	16	22607Y	-	-	-	1.5 (38)	35837D
8	16	22607Y	4	10	22542Y	1.5 (38)	35837J
8	16	22607Y	4	12	22994Y	1.5 (38)	35837L
8	16	22607Y	4	14	21815Y	1.5 (38)	35837G
8	16	22607Y	8	16	22607Y	1.5 (38)	35837F
12	14	21813Y	-	-	-	2.0 (51)	35838C
12	14	21813Y	4	10	22542Y	2.0 (51)	35838H
12	14	21813Y	12	14	21813Y	2.0 (51)	35838E
12	16	23324Y	-	-	-	2.0 (51)	35838D
12	16	23324Y	12	16	23324Y	2.0 (51)	35838F

* For details on PVC flat cables, see Pg. 8.

Heat Shrinkable Connectors For Flat or Round Cable



These connectors are for single cable and multiple cable groups and are corrosion resistant and flame retardant. They exceed US Navy requirements for tightness and integrity when used with one flat cable or multiple flat cables of the same size.

Cable Opening in. (mm)	Knockout Dia. in. (mm)	Part No.	Dimension "A"	Wt lb (kg)
1.60 (41)	2.00 (51)	03147	6.17 (157)	0.16 (0.07)
1.10 (28)	1.37 (35)	03146	4.50 (114)	0.16 (0.07)
0.75 (19)	1.00 (25)	03145	4.09 (104)	0.07 (0.03)

Neoprene Flat Cable

Neoprene Flat Cables are used for festoon systems when one or more of these conditions exist:

- The lateral and transverse motions of the host machine vary substantially.
- The cables will be exposed to oil.
- The minimum temperatures will be exceptionally low.

The Neoprene jacket is rated at -40° C to 90° C * and includes a UV inhibitor for outdoor use. The conductor insulation is ethylene propylene rubber (EPR) and rated at 90° C.

UL and CSA listed.

Conductix -Wampfler Part No.	Number of Cond.	Conductor Size AWG)	Stranding	Nominal Cable O.D. in (mm)	Minimum Bend Diameter in (mm)	Ampacity @ 40°C 1	Approximate Cable Weight Lbs/Mft (kg/Km)	Flat Cable Cord Grip
All-Temp (K) Flat Cable (600V)								
XA-579762	8	16	26/30	0.240 x 1.130 (6.1 x 28.7)	1.93 (49)	14	235 (350)	XA-35837C
XA-579765	12	16	26/30	0.240 x 1.662 (6.1 x 42.2)	1.93 (49)	14	340 (506)	XA-35838C
XA-579766	4	14	41/30	0.288 x 0.792 (7.3 x 20.1)	2.32 (59)	18	185 (275)	XA-35835C
XA-579767	8	14	41/30	0.288 x 1.509 (7.3 x 38.3)	2.32 (59)	16	361 (537)	XA-35838B
XA-579768	12	14	41/30	0.288 x 2.226 (7.3 x 56.5)	2.32 (59)	16	526 (783)	XA-562447
XA-579769	4	12	65/30	0.310 x 0.880 (7.9 x 22.4)	2.52 (64)	23	240 (357)	XA-35837
XA-579770	8	12	65/30	0.320 x 1.695 (8.1 x 43.1)	2.56 (65)	20	463 (689)	XA-580527
XA-579771	12	12	65/30	0.320 x 2.500 (8.1 x 63.5)	2.56 (65)	20	707 (1052)	XA-580529
XA-579772	4	10	105/30	0.335 x 0.980 (8.5 x 24.9)	2.72 (69)	29	314 (467)	XA-35837
XA-579776	4	8	168/30	0.451 x 1.354 (11.5 x 4.3)	4.53 (115)	41	565 (841)	XA-35838B
XA-579777	4	6	266/30	0.485 x 1.490 (12.3 x 37.8)	4.85 (123)	55	728 (1083)	XA-35838
XA-579778	4	4	420/30	0.545 x 1.730 (13.8 x 43.9)	5.43 (138)	71	974 (1449)	XA-562685
XA-579779	4	2	665/30	0.608 x 1.982 (15.4 x 50.3)	6.06 (154)	95	1.442 (2146)	020612-20
XA-579780	4	1/0	1045/30	0.778 x 2.542 (19.8 x 64.6)	7.80 (198)	132	2.259 (3362)	020612-20
XA-579781	4	2/0	2107/30	0.824 x 2.726 (20.9 x 69.2)	8.23 (209)	149	2.702 (4021)	020612-202

Neoprene Flat Cable is available in cut lengths and in full spools. Contact the Factory.

Cable Connectors

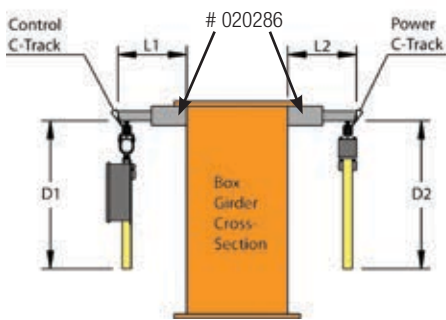
Cable Connectors for Flat Neoprene Cable are used to terminate the cable at the power source or junction box. Connector has an aluminum body and rubber bushing.



# of cond	AWG	Cable Part No.	NPT Size (in)	Connector Part No.
4	2	131120-F4G35UL	2.50	XA-562685
4	4	131120-F4G25UL	2.50	XA-562685
4	6	131120-F4G16UL	2.00	XA-35838
4	8	131120-F4G10UL	1.50	XA-35838B
4	10	131120-F4G6UL	1.50	XA-562683
4	12	131120-F4G4UL	1.50	XA-35837
4	14	131220-F4G2,5UL	1.00	XA-35835C
8	14	131220-F8G2,5UL	2.00	XA-35838B
8	16	131220-F8G1,5UL	1.25	XA-35837
12	14	131220-F12G2,5UL	2.50	XA-562447
12	16	131220-F12G1,5UL	2.00	XA-35838

C-Track Festoon Mounting Styles

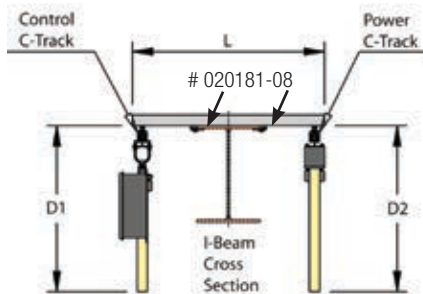
STYLE A Box Girder Crane - Control and Power Festoon on Opposite Sides



To quote this layout, we will need the information on Pg. 4-5, plus:

- Lengths L1 and L2, if Conductix-Wampfler is to supply the Cross Arm Support Channels (Pg. 13 and 21). These are attached with welded-on Suspension Support Brackets, 020286, Pg. 14.
- Maximum loop depths D1 and D2 from top of C-Track to the bottom of the loop

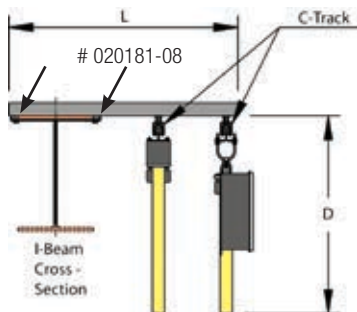
STYLE B I-Beam Crane - Control and Power Festoon on Opposite Sides



To quote this layout, we will need the information on Pg. 4-5, plus:

- Length L, if Conductix-Wampfler is to supply the Cross Arm Support Channels (Pg. 13 and 21). These are attached with Cross Arm Support Beam Clamps, 020181-08, see Pg. 14.
- Maximum loop depths D1 and D2 from top of C-Track to the bottom of the loop
- If a beam cap is present, the 020181-08 beam clamps will not work- contact Conductix-Wampfler for options.

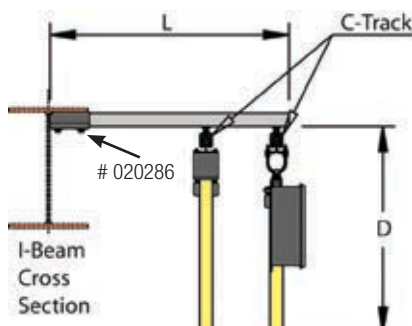
STYLE C I-Beam Crane - Control and Power Festoon on Same Side, Clamped Cross Supports



To quote this layout, we will need the information on Pg. 4-5, plus:

- Length L, if Conductix-Wampfler is to supply the Cross Arm Support Channels (Pgs. 13 and 21). These are attached with Cross Arm Support Beam Clamps, 020181-08, see Pg. 14.
- The maximum loop depth D from top of C-Track.
- If the I-beam has a cap, the 020181-08 beam clamps will not work- contact Conductix-Wampfler for options.

STYLE D I-Beam Crane - Control and Power Festoon on Same Side, Welded Cross Supports

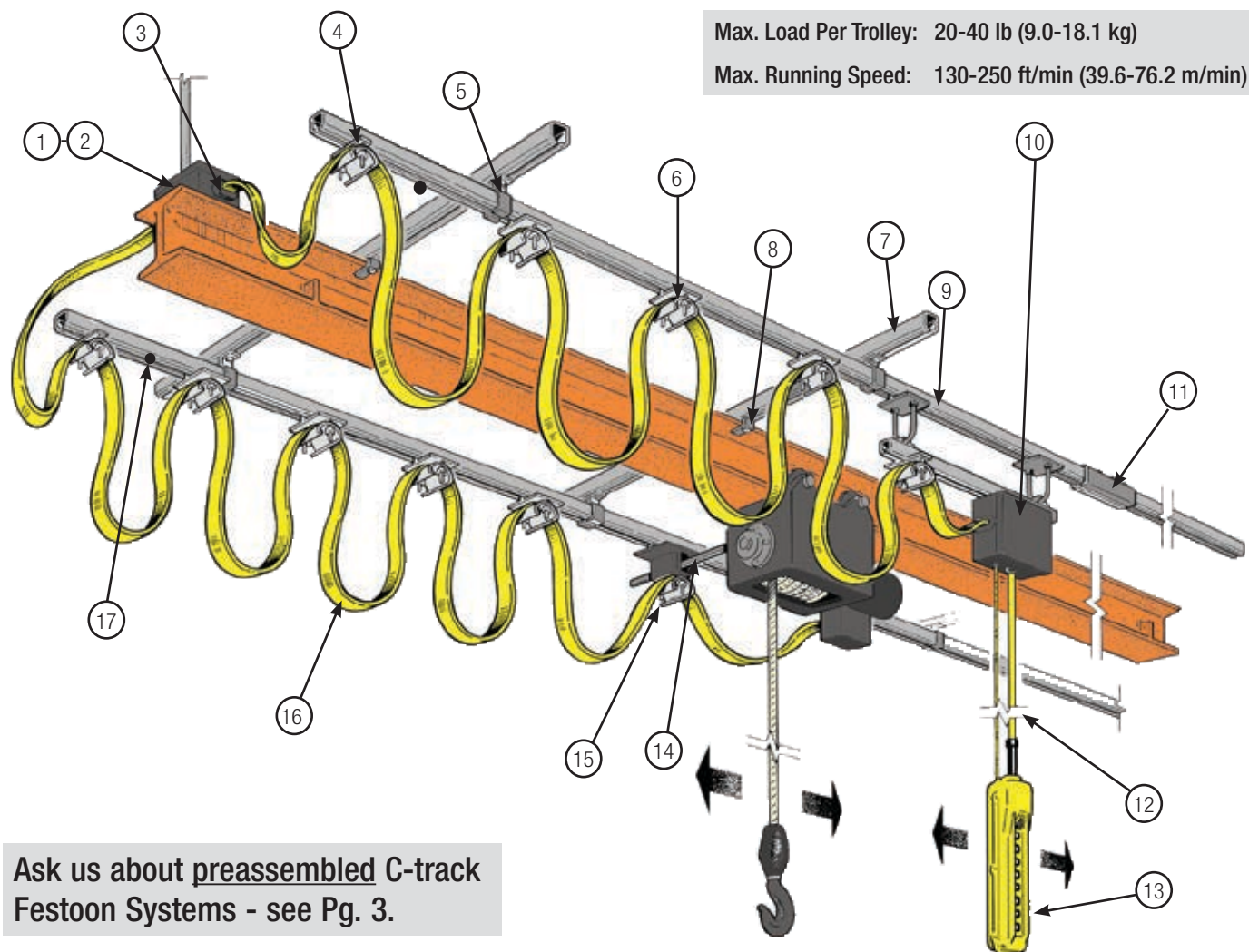


To quote this layout, we will need the information on Pg. 4-5, plus:

- Length L, if Conductix-Wampfler is to supply the Cross Arm Support Channels. These are attached with welded-on Suspension Support Bracket, 020286, Pg. 14.
- The maximum loop depth D from top of C-Track.

Standard Duty C-Track

The C-Track Festoon components needed for an overhead crane system depend upon how the system is to be mounted. Four typical mounting styles are shown on Pg. 11. The one shown below is "STYLE B". For all mounting styles, choose the types and lengths of cable (Pg. 8 and 10) using the formula (track length x 1.10) + hook-up lengths for both ends. For control systems, choose the type of control trolley you want - Junction Box or Quick-Disconnect - and whether you want to use a push button pendant (catalog CAT1001) or radio remote control (catalog CAT1002) to operate the crane. Please use the Specification Data Sheets on Pg. 4-5 to record your system parameters.



Max. Load Per Trolley: 20-40 lb (9.0-18.1 kg)

Max. Running Speed: 130-250 ft/min (39.6-76.2 m/min)

Ask us about preassembled C-track Festoon Systems - see Pg. 3.

- | | |
|---|--|
| ① Fixed End Junction Box | ⑩ Control Unit Trolley with Junction Box; or Quick Disconnect Control Unit Trolley (not shown) |
| ② Terminal Strips (inside junction box) | ⑪ Track Joint Assembly |
| ③ Cable Connectors | ⑫ Pendant Cable |
| ④ End Clamp | ⑬ Push-Button Pendant Station |
| ⑤ Track Hanger | ⑭ Tow Arm |
| ⑥ Cable Trolley | ⑮ Tow Trolley |
| ⑦ Cross Arm Support Channels | ⑯ Flat PVC Cable |
| ⑧ Beam Clamp (for cross arm support channels) | ⑰ End Stop |
| ⑨ C-Track Channel | |

Standard Duty C-Track - Track, Cross Arm Channels

C-Track



C-Track trolleys are designed to run in steel formed C-track sections. For curved track sections, please contact Conductix-Wampfler.

Available in either galvanized or stainless steel and in 10 and 20 foot lengths.

Minimum curve radius: 48" (Galvanized) 72" (Stainless)

Channel Length ft (m)	Part No.		Wt lb (kg)
	Galvanized	Stainless	
10 (3.0)	530754	535633	8 (3.6)
20 (6.1)	534176	535634	15 (6.8)

End Caps



Black plastic end cap trim off the ends of the C-track sections above. Two required per run.

Part No.	Wt lb [kg]
020662-31	0.008 (0.004)

Clips With Cable Tie



Black plastic clip provides a way to tie cables to the C-track. Includes plastic cable tie. Order as many as needed.

Part No.	Wt lb [kg]
023790-1	0.02 (0.009)

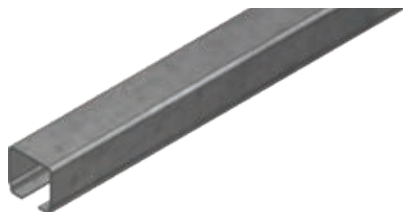
Track Joint



The bolted Track Joint securely connects track sections together end-to-end. One required at each track joint. Includes four bolts, lock washers, and nuts.

Part No.		Wt lb (kg)
Galvanized	Stainless	
023210	023410	0.65 (0.29)

Cross Arm Support Channels



Cross Arm Support Channels are mounted perpendicular to the I-beam or girder every 5 ft to support the main C-track channel. See Pg. 11 for mounting options. Made from heavy channel for added rigidity.

Cross Arm Support Channels can be replaced by customer-supplied angle iron or other structural member sufficient to carry the total load of the festoon system. Make sure to order the correct hanger for the type of cross member used - see Pg. 14-15.

Length in. (mm)	Part No		Wt lb (kg)
	Galvanized	Stainless	
16.54 (420)	KC-020276-0420		2.20 (1.00)
25.59 (650)	020276-0650	534148B	3.25 (1.47)
39.37 (1000)	020276-1000	020475-1000	5.19 (2.35)
52.76 (1340)	020276-1340	534148	7.25 (3.29)
59.84 (1520)	020276-1520		8.00 (3.63)
70.87 (1800)	020276-1800		9.00 (4.08)
78.74 (2000)	020276-2000		6.56 (2.98)

Standard Duty C-Track - Track Hanger Brackets

Cross Arm Support Channel Beam Clamps



This clamp attaches Cross Arm Support Channels (Pg. 13) to the I-beam flange - for Mounting Styles B or C - see Pg. 11. Two required per Cross Arm Support Channel.

Clamp bolt is an M8 x 50 mm long and will clamp to beam flange thicknesses between 0.24" and 0.98" (6 mm and 25 mm).

Part No.		Wt lb (kg)
Zinc Plated	Stainless Steel	
020181-08	534469	0.39 (0.18)

Suspension Support Bracket



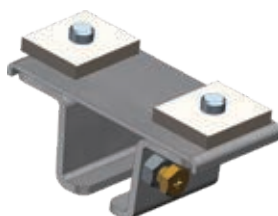
This bracket is welded to your runway beam, cross-bridge beam, or girder in the field to support the Cross Arm Support Channels when mounting styles A or D are preferred - see Pg. 11.

Galvanized finish only.

Part No.	Wt lb (kg)
020286	1.77 (0.80)

Track Hanger Brackets

To mount C-Track to Cross Arm Support Channels



This bracket mounts to Cross Arm Support Channels (Pg. 13) at two points to hang the C-Track. The separate "Z" clamps allow mounting of the C-Track Channel without needing to feed it through the hangers from the end. The clamping action of the support bracket eliminates the need for a separate anchor.

Available in either galvanized or stainless steel finishes.

Part No.		Wt lb (kg)
Galvanized	Stainless	
023222-1	023422-1	0.53 (0.24)

Track Hanger Brackets

To mount C-Track to Angle Iron Cross Supports



This bracket mounts to a customer-supplied angle iron at two points to hang the C-Track. The separate "Z" clamps allow mounting of the C-Track Channel without needing to feed it through the hangers from the end. The clamping action of the support bracket eliminates the need for a separate anchor.

Available in either galvanized or stainless steel finishes. Top bolts are M8 size and have an available length range between top of bracket and bottom of flat washer of 0.98" (20 mm).

Part No.		Wt lb (kg)
Galvanized	Stainless	
023223	023423-1	0.47 (0.21)

Standard Duty C-Track - Hangers/Anchors, End Stop

Track Hanger and Anchor

To mount C-Track to Cross
Arm Support Channels



PN: 35707



PN: 35706

A single-point hanger designed to hang C-Track (Pg. 13) from the Cross Arm Support Channels (also Pg. 13). One Hanger is required at each Cross Arm Support Channel for each track run. One of the Hangers (per run) should be replaced with an Anchor that has a set screw to keep the channel from sliding.

With this Hanger/Anchor style, the C-Track channel is fed through each Hanger from the end.

Type	Part No.		Wt lb (kg)
	Galvanized	Stainless	
Hanger	35707	50308	0.48 (0.22)
Anchor	35706	50307	0.47 (0.21)

Track Hanger and Anchor

To mount C-Track to Angle
Iron Cross Arms



PN: 28510



PN: 28511

A single-bolt hanger design to support C-Track from customer-supplied angle iron cross supports. One "hanger" required at each support channel for each track run. Replace one of the Hangers per run with an Anchor that has a set screw to keep the channel from sliding.

With this Hanger/Anchor style, the C-Track channel is fed through each Hanger from the end.

Top bolts are 3/8-16 x 1 1/4" long.

Type	Part No.		Wt lb (kg)
	Galvanized	Stainless	
Hanger	28510	28741	0.43 (0.20)
Anchor	28511	28742	0.42 (0.19)

End Stop



PN: 023215

One required for power system, two required for control systems with control trolley.

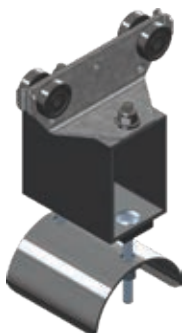
Part No.		Wt lb (kg)
Galvanized	Stainless	
023215	27727	0.13 (0.06)

Standard Duty C-Track - Flat Cable Trolleys, Tow Bar

These trolleys accommodate **Flat Cable** - see Pg. 8 and 10. For round cable/hose trolleys, see Pg. 17-18.

Max. Load Per Trolley: 20-40 lb (9.0-18.1 kg)
Max. Running Speed: 130-250 ft/min (39.6-76.2 m/min)

Tow Trolley



PN: 22168

One Tow Trolley is required for each track run. The unit has an opening in the body to accommodate the Tow Bar - see below. Stainless steel trolleys have stainless steel body/saddle and stainless steel sealed rollers and hardware. Spark-resistant trolley designs are available for hazardous locations.

Style (cap. lb)	Saddle in. (mm)		Part No.	Wt lb (kg)
	Dia	Width		
Plastic body/saddle (20)	2.00 (51)	3.0 (76)	28614	0.78 (0.35)
Plated Steel (40)	2.75 (70)	3.0 (76)	22168	1.49 (0.68)
Stainless Steel (40)	2.75 (70)	3.0 (76)	39274	1.12 (0.51)
Spark Resistant/Brass (40)	2.75 (70)	3.0 (76)	37042	1.49 (0.68)

Tow Bar



Tow Bar mounts on the moving equipment to move the festoon system. One required for each Tow Trolley. Square bar is 16" long.

Part No.	Metal Type	Post Size in. (mm)	Wt lb (kg)
39618	Plated Steel	0.50 (12.7)	1.56 (0.71)
50142	Stainless Steel	1.0 (25.4)	2.63 (1.19)

Cable Trolleys



PN: 023571



PN: 39227

A Cable Trolley is required for each flat cable loop between the End Clamp and Tow Trolley. Stainless steel trolleys have stainless steel body/saddle and stainless steel sealed rollers and hardware. Spark-resistant trolleys are available for hazardous locations.

Style (cap. lb)	Saddle in. (mm)		Part No.	Wt lb (kg)
	Dia	Width		
Plastic Body/Saddle (20)	2.00 (51)	3.0 (76)	023941	0.40 (0.18)
Steel Body/Plastic Saddle (20)	2.00 (51)	3.0 (76)	023261	0.52 (0.24)
Plated Steel (40)	2.75 (70)	3.0 (76)	21991	0.80 (0.36)
Stainless Steel (40)	3.00 (76)	3.0 (76)	39227	0.70 (0.32)
Spark Resistant/Brass (40)	2.75 (70)	3.0 (76)	37047	1.06 (0.48)
Plated Steel - 5" Body (40)	2.75 (70)	3.0 (76)	023571	1.06 (0.48)
Stainless Steel - 5" Body (40)	2.75 (70)	3.0 (76)	39275	0.97 (0.44)

End Clamps



PN: KC-023579/551

One End Clamp is required at the fixed end of the system. Includes clamp and hardware to secure the cable.

Style (cap. lb)	Saddle in. (mm)		Part No.	Wt lb (kg)
	Dia	Width		
Steel Body/Plastic Saddle (20)	2.00 (51)	3.0 (76)	KC-023269/551	0.50 (0.23)
Plated Steel (40)	2.75 (70)	3.0 (76)	21957	0.64 (0.29)
Plated Steel (40)	3.00 (76)	3.0 (76)	KC-023579/551	0.64 (0.29)
Stainless Steel (40)	2.75 (70)	3.0 (76)	39226	0.56 (0.25)

Standard Duty C-Track - Round Cable Trolleys

Round Cable Trolleys are used to carry round cables or hoses. A Tow Trolley is used at the mobile end, an End Clamp at the fixed end, and Cable Trolleys at each cable loop between. The trolleys have four rollers with shielded ball bearings. Stainless steel version has stainless steel body, saddle, sealed rollers, and hardware. Spark-resistant trolleys designs are available for hazardous locations - Contact Conductix-Wampfler.

For Round Cables - see Pg. 32

Max. Load Per Trolley: 20-40 lb (9.0-18.1 kg)
Max. Running Speed: 130-250 ft/min (39.6-76.2 m/min)

Tow Trolley



PN: 50591

One Tow Trolley is required for each track run. The unit has an opening in the body to accommodate the Tow Bar - see below. Stainless steel trolleys have stainless steel body, stainless steel sealed rollers, and stainless steel hardware. Spark-resistant trolleys designs are available for hazardous locations.

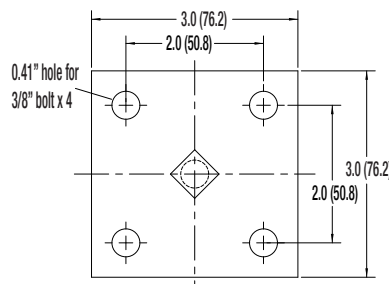
Max. Cable Dia. in. (mm)	Style (cap. lb)	Part No.	Wt lb (kg)
0.63 (16)	Plastic (20)	35741	0.70 (0.32)
0.63 (16)	Plated Steel (40)	35744	1.12 (0.51)
0.63 (16)	Stainless Steel (40)	51214B	1.12 (0.51)
0.63 (16)	Spark Resistant/Brass (40)	50591B	1.12 (0.51)
0.98 (25)	Plastic (20)	35488	0.74 (0.34)
0.98 (25)	Plated Steel (40)	35494	1.16 (0.53)
0.98 (25)	Stainless Steel (40)	51214	1.16 (0.53)
0.98 (25)	Spark Resistant/Brass (40)	50591	1.16 (0.53)
1.42 (36)	Plastic (20)	35491	0.87 (0.38)
1.42 (36)	Plated Steel (40)	35495	1.29 (0.57)
1.42 (36)	Stainless Steel (40)	51214C	1.29 (0.57)
1.42 (36)	Spark Resistant/Brass (40)	50591C	1.29 (0.57)

Tow Bar



Tow Bar mounts on moving equipment to move the festoon system. One required for each Tow Trolley. Square bar is 16" long.

Part No.	Metal Type	Post Size in (mm)	Wt lb (kg)
39618	Plated Steel	0.50 (12.7)	1.56 (0.71)
50142	Stainless Steel	1.0 (25.4)	2.63 (1.19)



Standard Duty C-Track - Round Cable Trolleys

Cable Trolleys

A Cable Trolley is required for each cable loop between the End Clamp and Tow Trolley. Stainless steel trolleys have stainless steel body, stainless steel sealed rollers, and stainless steel hardware.

Spark-resistant trolleys designs are available for hazardous locations.

For Round Cables - see Pg. 32



PN: 35487

PN: 50589

Max. Cable Dia. in. (mm)	Style (cap. lb)	Part No.	Wt lb (kg)
0.63 (16)	Plastic (20)	35740	0.41 (0.19)
0.63 (16)	Plated Steel (40)	35743	0.70 (0.32)
0.63 (16)	Stainless Steel (40)	51216B	0.70 (0.32)
0.63 (16)	Spark Resistant/Brass (40)	50589B	0.70 (0.32)
0.98 (25)	Plastic (20)	35487	1.56 (0.71)
0.98 (25)	Plated Steel (40)	35496	0.74 (0.34)
0.98 (25)	Stainless Steel (40)	51216	0.74 (0.34)
0.98 (25)	Spark Resistant/Brass (40)	50589	0.74 (0.34)
1.42 (36)	Plastic (20)	35490	0.57 (0.26)
1.42 (36)	Plated Steel (40)	35497	0.87 (0.40)
1.42 (36)	Stainless Steel (40)	51216C	0.87 (0.40)
1.42 (36)	Spark Resistant/Brass (40)	50589C	0.87 (0.40)

End Clamps

One End Clamp is required at the fixed end of the system.



PN: 35489

PN: 50590

Max. Cable Dia. in. (mm)	Style (cap. lb)	Part No.	Wt lb (kg)
0.63 (16)	Plated Steel (40)	35742	0.56 (0.25)
0.63 (16)	Stainless Steel (40)	51215B	0.56 (0.25)
0.63 (16)	Spark Resistant (40)	50590B	0.56 (0.25)
0.98 (25)	Plated Steel (40)	35489	0.60 (0.27)
0.98 (25)	Stainless Steel (40)	51215	0.60 (0.27)
0.98 (25)	Spark Resistant (40)	50590	0.60 (0.27)
1.42 (36)	Plated Steel (40)	35492	0.73 (0.33)
1.42 (36)	Stainless Steel (40)	51215C	0.73 (0.33)
1.42 (36)	Spark Resistant (40)	50590C	0.73 (0.33)

Standard Duty C-Track - Control Unit Trolleys

J-Box Control Unit Trolley



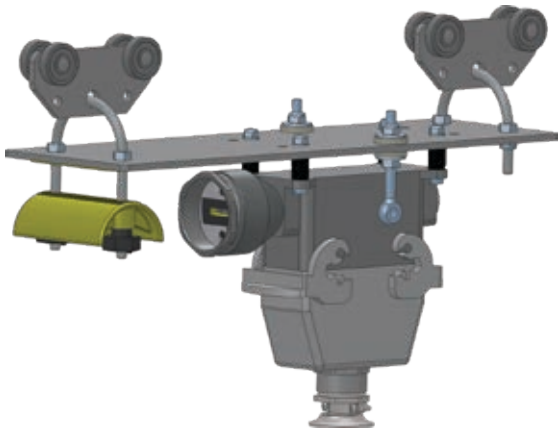
The Control Unit Trolley accommodates a control junction box, ordered separately, see Pg. 28. One flat cable saddle and two trolleys are suspended from a steel “T” section. Unit includes hardware to attach the junction box to the bracket.

Stainless steel version has stainless steel body and saddle, with stainless steel sealed rollers and hardware.

For hazardous locations, trolleys with spark-resistant bronze rollers are available - Contact Conductix-Wampfler.

Style	Saddle Dia in. (mm)	Part No.	Wt lb (kg)
Plated Steel	2.75 (70)	22203B	3.70 (1.68)
Stainless Steel	2.75 (70)	32166	3.00 (1.36)

Quick Disconnect Control Unit Trolley



Push Button Pendants working in tough industrial environments could easily be damaged. Rewiring a replacement pendant adds downtime and risk to personnel. The solution is the “Quick Disconnect” Pin Connector set, which is included with this style of Control Unit Trolley.

The connector set includes a positive latch mechanism to keep the pendant plugged in until you’re ready to disconnect it. The upper half of the connector accepts the incoming flat cable; the lower half accepts the pendant cable. Pendants are ordered separately - see CAT1001. Trolley and hardware are zinc plated.

Connector Electrical Rating: 16A maximum, 600 VAC

No. of Connector Pins	Saddle Dia in. (mm)	Part No.	Wt lb (kg)
16	2.75 (70)	KC-023178-16/554	5.28 (2.39)
24	2.75 (70)	KC-023178-24/554	5.59 (2.54)



Close-up of Pin Connector Set



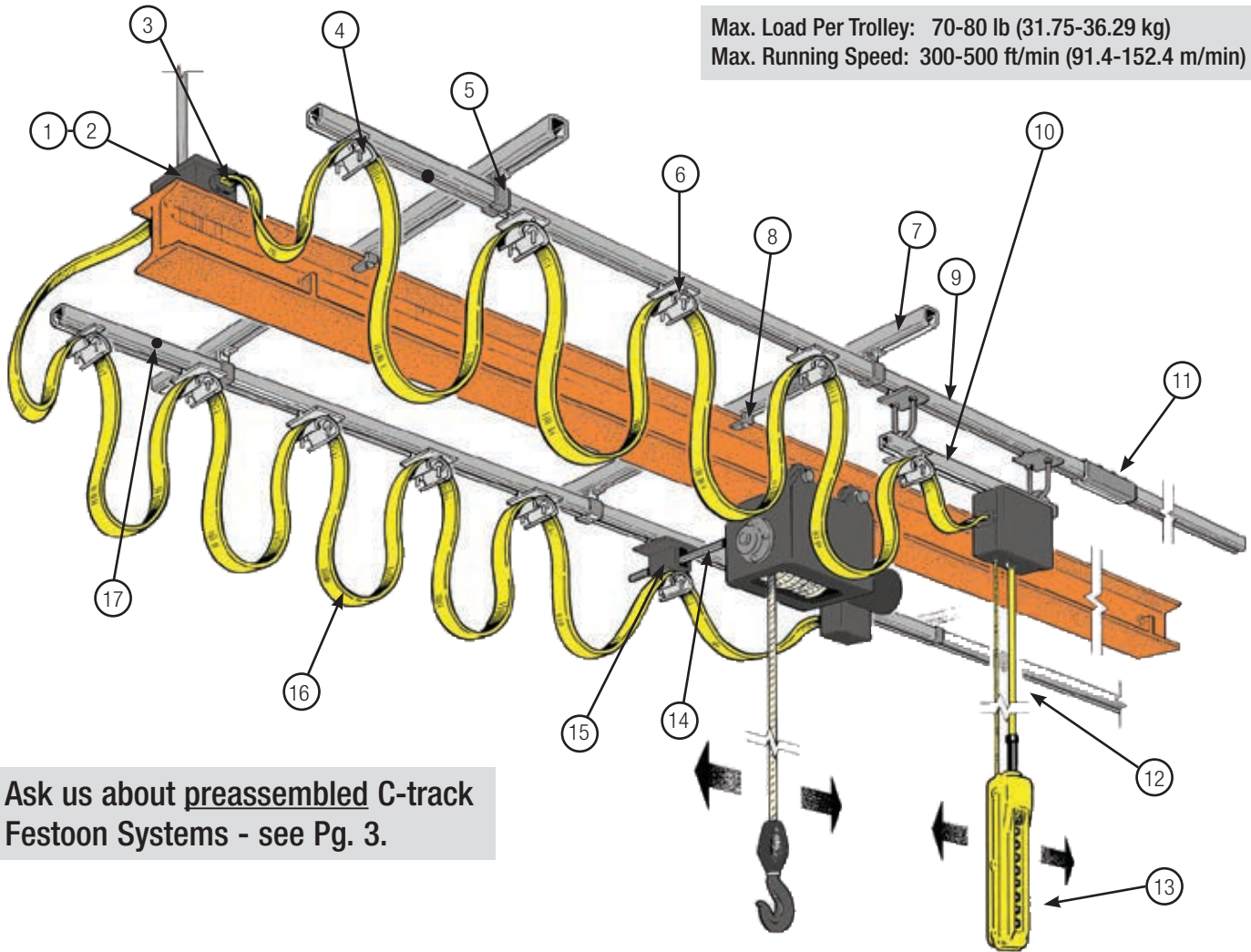
Quick Disconnects are commonly used with pendants, as shown at the far left, but they can also be used with radio controls. This allows a quick switch from radio control to a standard pendant.

Contact Conductix-Wampfler for more information about the possible uses for the Quick Disconnect.

Heavy Duty C-Track

To handle heavier cable loads and faster speeds, Heavy Duty C-Track features a thicker walled track versus Standard Duty C-Track. Order the appropriate HD C-Track components to assure they will fit the heavier track. The components needed for a system depend upon how the system is to be mounted - see Pg. 11 for examples. The system below is a "STYLE B" setup. For all mounting styles, choose the types and lengths of cable (Pgs. 8 & 10) using the formula (track length x 1.10) + hook-up lengths for both ends. Please use the Specification Data Sheets on Pg. 4-5 to record your system parameters.

Max. Load Per Trolley: 70-80 lb (31.75-36.29 kg)
Max. Running Speed: 300-500 ft/min (91.4-152.4 m/min)

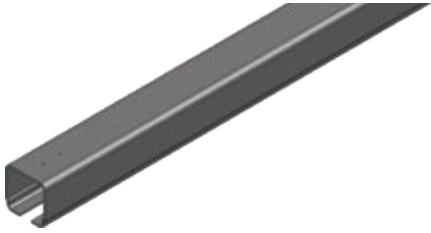


Ask us about preassembled C-track Festoon Systems - see Pg. 3.

- | | |
|---|---|
| ① Fixed End Junction Box | ⑩ Control Unit Trolley with Junction Box - or Quick Disconnect Control Unit Trolley (not shown) |
| ② Terminal Strips (inside junction box) | ⑪ Track Joint |
| ③ Flat Cable Connector | ⑫ Pendant Cable |
| ④ End Clamp | ⑬ Push Button Pendant |
| ⑤ Track Hanger | ⑭ Tow Arm |
| ⑥ Cable Trolley | ⑮ Tow Trolley |
| ⑦ Cross Arm Support Channels | ⑯ Flat PVC Cable |
| ⑧ Beam Clamp (for Cross Arm Channels) | ⑰ End Stop |
| ⑨ C-Track Channel | |

Heavy Duty C-Track - Galvanized Track and Fittings

C-Track



Heavy Duty galvanized track channel sections accommodate all the trolleys listed on Pgs. 24-25 except the stainless steel trolleys. For stainless steel C-track, see Pg. 23.

Channel Length ft (m)	Part No. Galvanized	Wt lb (kg)
10 (3.0)	22210	18.26 (8.28)
20 (6.1)	21805	38.0 (17.24)

Track Joint

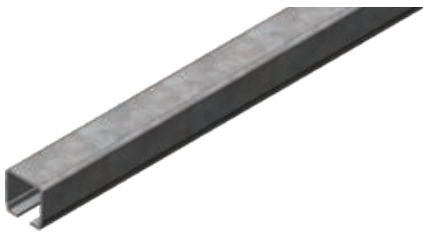


The galvanized Track Joint securely bolt track sections end-to-end. One required between each track joint. Includes four bolts, lock washers, and nuts.

Works only with track part numbers 22210 and 21805.

Part No.	Wt lb (kg)
21806	1.1 (0.50)

Cross Arm Support Channels



These channels are mounted perpendicular to the I-beam or girder every 10 ft to support the main C-track channel - see Pg. 11 for examples of mounting options.

Cross Arm Support Channels can be replaced by customer-supplied angle iron or other structural member sufficient to carry the total load of the festoon system. Make sure to order the correct hanger for the type of cross member used - see Pg. 22-23.

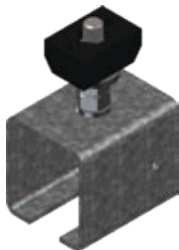
Length in. (mm)	Part No. Galvanized	Wt lb (kg)
16.54 (420)	KC-020276-0420	2.20 (1.00)
25.59 (650)	020276-0650	3.00 (1.36)
52.76 (1340)	020276-1340	7.25 (3.29)
59.84 (1520)	020276-1520	8.00 (3.63)
70.87 (1800)	020276-1800	9.00 (4.08)
78.74 (2000)	020276-2000	6.56 (2.98)

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Heavy Duty C-Track - Galvanized Hangers, End Stop

Track Hanger and Anchor

To mount C-Track to Cross Arm Support Channels



PN: 37465



PN: 37466

A single-point hanger designed to hang Heavy Duty C-Track (Pg. 21) from the Cross Arm Support Channels (Pg. 21). One Hanger is required at each Cross Arm Support Channel for each track run. One of the Hangers (per run) should be replaced with an anchor. The anchor has a set screw to keep the channel from sliding.

With this style Hanger/Anchor, the C-Track is feed through each Hanger from the end.

Type	Part No. Galvanized	Wt lb (kg)
Hanger	37465	0.51 (0.23)
Anchor	37466	0.45 (0.021)

Track Hanger and Anchor

To mount C-Track to Angle Iron Cross Arms



PN: 28512



PN: 28513

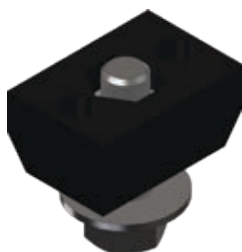
A single-bolt hanger designed to support Heavy Duty C-Track from customer-supplied angle iron cross supports. One “hanger” required at each support angle for each track run. One of the Hangers (per run) should be replaced with an Anchor that has a set screw to keep the channel from sliding.

With this style Hanger/Anchor, the C-Track channel is feed through each Hanger from the end.

Top carriage bolts are 3/8"-16 x 1 1/4" long.

Type	Part No. Galvanized	Wt lb (kg)
Hanger	28512	0.58 (0.26)
Anchor	28513	0.45 (0.21)

End Stop



One required for per system at storage end of track.

Part No. Galvanized	Wt lb (kg)
28508	0.20 (0.09)

Heavy Duty C-Track - Stainless Steel Track and Fittings

Stainless Steel Heavy Duty C-Track



Heavy Duty stainless steel C-Track sections are available in either 13.12 ft (4 meter) or 19.68 ft (6 meter) lengths.

This track only works with the 024186 stainless steel Track Joint shown below, and the stainless steel trolleys shown on Pg. 24.

Channel Length ft (m)	Part No.	Wt lb (kg)
13.12 (4.0)	024109-4	20.0 (9.07)
19.68 (6.0)	024109-6	40.0 (10.14)

Stainless Steel Track Joint



Stainless steel Track Joint securely joins and properly aligns stainless steel track sections. One required between each track joint. Includes four bolts, lock washers, and nuts. Works only with stainless steel HD C-track 024109-4 and 024109-6.

Type	Part No.	Wt lb (kg)
Stainless	024186	1.54 (0.70)

Stainless Steel Cross-arm Support Channel

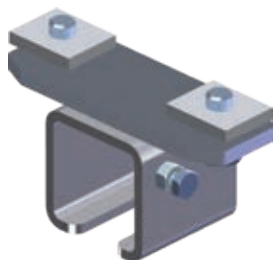


Mounted perpendicular to the I-beam or girder every 5 ft to support the stainless steel C-track (see above). See Pg. 11 for system mounting examples.

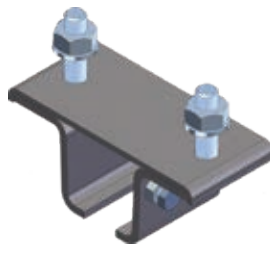
Cross Arm Support Channels can be replaced by customer-supplied angle iron or other structural member sufficient to carry the total load of the festoon system. Make sure to order the correct hanger for the type of cross member used.

Length in. (mm)	Part No. Stainless Steel	Wt lb (kg)
25.59 (650)	534148B	3.25 (1.47)
39.37 (1000)	020475-1000	3.28 (1.49)
52.76 (1340)	534148	4.40 (2.00)

Stainless Steel Track Hanger



PN: 024192



PN: 024177

A stainless steel two-point hanger designed to support stainless steel C-Track Channels from either the cross support above or from customer supplied cross members. One "hanger" required at each support channel for each track run.

The C-Track is feed through the 024192 Hanger from the end. The "Z" clamps on the 024177 hanger allows the C-track to be insert from the side of the bracket.

024177 mounting bolts are M8 and handle material thicknesses of up to 20 mm.

Part No.		Wt lb (kg)
For Cross Arm Channel	For Angle Iron	
024192	024177	0.51 (0.23)

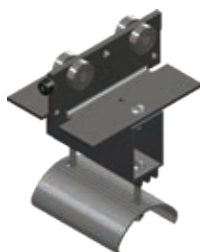
**** Only for 024109 track shown above**

Heavy Duty C-Track - Flat Cable Trolleys

Stainless Steel Heavy Duty C-Track Trolleys only run in the Stainless Steel Heavy Duty C-Track (PN: 024109-4 and 024109-6, see Pg. 23.)

Max. Load Per Trolley: 70-80 lb (31.75-36.29 kg)
Max. Running Speed: 300-500 ft/min (91.4-152.4 m/min)

Tow Trolley



PN: 22169

One Tow Trolley is required for each flat cable run. The unit has an opening in the body to accommodate the Tow Bar - see Pg. 25. Aluminum style has aluminum body and saddle. Stainless steel trolleys have stainless steel body/saddle, stainless steel sealed rollers, and stainless steel hardware.

Style (cap lb)	Saddle in. (mm)		Part No.	Wt lb (kg)
	Dia	Width		
Aluminum (80)	2.75 (70)	3.0 (76)	38646	1.90 (0.86)
Aluminum (80)	4.0 (102)	5.0 (127)	22169	4.75 (2.15)
Stainless Steel (70)	5.0 (127)	7.0 (180)	024822-200x160	6.0 (2.72)

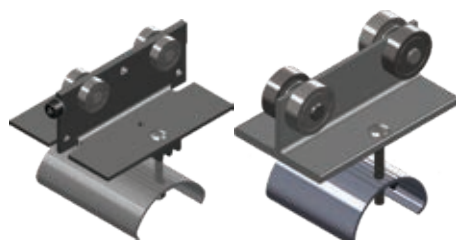
Control Unit Trolley for J-Box



Two trolleys and one 4" (102 mm) diameter aluminum saddle for flat cable, mounted on a 22" (559 mm) long galvanized or stainless steel bracket. Includes fittings to attach control box. Junction box sold separately - see Pg. 28.

Style	Part No.	Wt lb (kg)
Galvanized Steel	22350	12.5 (5.67)
Stainless Steel	024107-NB-SS	12.5 (5.67)

Cable Trolley



PN: 21802

PN: 38641

A Cable Trolley is required for each flat cable loop between the End Clamp and Tow Trolley. Aluminum style has aluminum body and saddle. Stainless steel trolleys have stainless steel body/saddle and stainless steel sealed rollers and hardware.

Style (cap. lb)	Saddle in. (mm)		Part No.	Wt lb (kg)
	Dia	Width		
Aluminum (80)	2.75 (70)	3.0 (76)	38641	1.49 (0.68)
Aluminum (80)	4.0 (102)	5.0 (127)	21802	2.45 (1.11)
Stainless Steel (70)	5.0 (127)	6.3 (160)	024812-160x160	4.00 (1.81)

End Clamp



PN: 24767

One End Clamp is required at the fixed end of the system. Includes zinc plated clamp and hardware to secure the cable. Stainless steel end clamp has stainless steel saddle and hardware.

Style (cap. lb)	Saddle in. (mm)		Part No.	Wt lb (kg)
	Dia	Width		
Aluminum (80)	2.75 (70)	3.0 (76)	24767	0.49 (0.22)
Aluminum (80)	4.0 (102)	5.0 (127)	21932	1.34 (0.61)
Stainless Steel (70)	5.0 (127)	6.3 (160)	024832-160x062	2.0 (0.90)

Heavy Duty C-Track - Round Cable/Hose Trolleys

Tow Trolley



One Tow Trolley is required for each track run and has a cutout in the body to accommodate the Tow Bar - see below. Trolley has aluminum body. Cable/Hose clip not included - order separately from the table below.

Cap. per Trolley (lb)	Part No.	Wt lb (kg)
80	38823	4.75 (2.15)

Cable Trolley



A Cable Trolley is required for each round cable (or hose) loop between the End Clamp and Tow Trolley. Trolley has aluminum body. Cable/Hose clip not included - order separately from the table below.

Cap. per Trolley (lb)	Part No.	Wt lb (kg)
80	38824	3.00 (1.36)

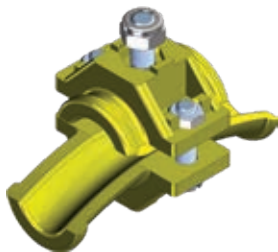
End Clamp



One End Clamp is required at the fixed end of the system. Includes aluminum body, clamp and hardware to secure the cable. Cable/Hose clip not included - order separately from the table below.

Cap. per End Clamp (lb)	Part No.	Wt lb (kg)
80	38825	1.63 (0.74)

Round Cable / Hose Clips



Order the appropriate cable clip for the diameter of the cable or hose. Cable clips can be combined in multiple variations.

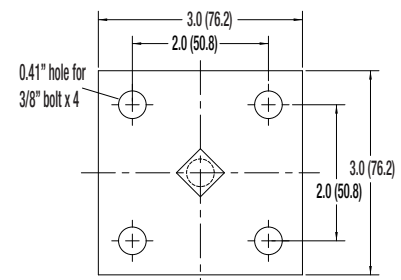
For Cable/Hose Diameter in. (mm)	Part No.	Wt lb (kg)
0.39 - 0.63 (10 - 16)	020131-16	0.08 (0.04)
0.67 - 0.98 (17 - 25)	020131-25	0.14 (0.06)
1.02 - 1.42 (26 - 36)	020131-36	0.24 (0.11)

Tow Bar



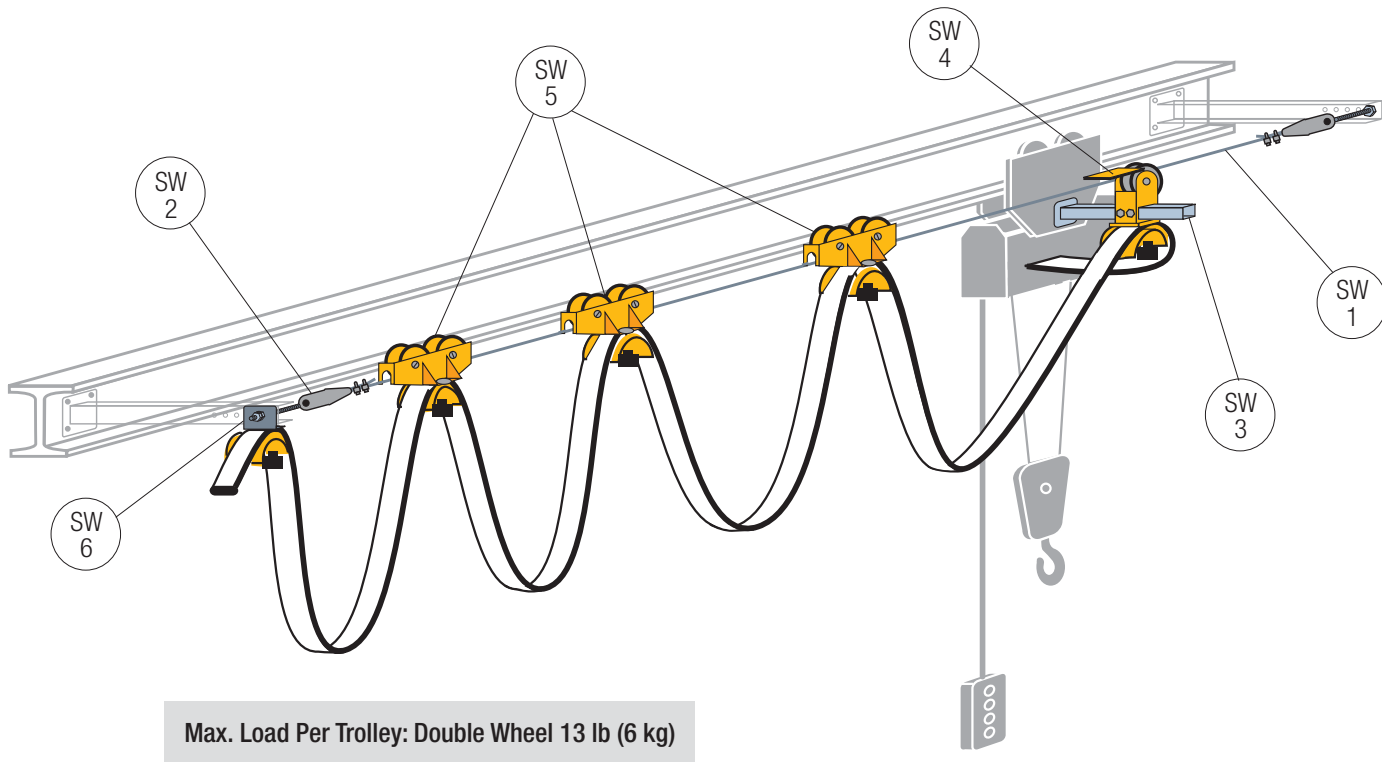
24 in. (610 mm) long. For mounting on moving equipment. One required for each tow trolley. Galvanized finish.

Part No.	Wt lb (kg)
39617C	2.63 (1.19)



Stretch Wire Rope Festoon Kits - For Flat Cable

Stretch Wire Rope Festoon Kits for flat cable are suited for light duty applications where an intermediate support structure is not available. Economical and dependable, stretch wire rope systems provide electrification to small cranes, moving hoists, and jib cranes. The kits below include standard zinc plated hardware.



Max. Load Per Trolley: Double Wheel 13 lb (6 kg)

Stretch Wire Rope Festoon Kits Include Parts Listed Below:

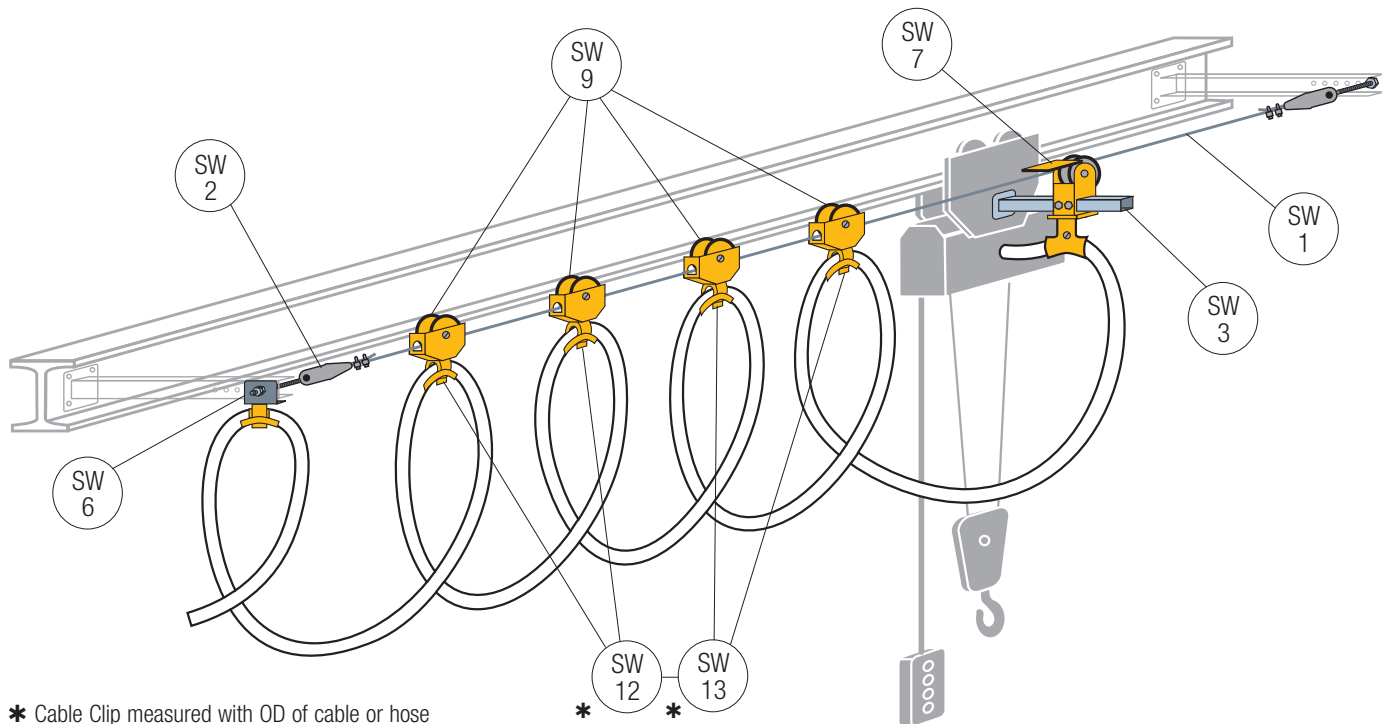
Dwg ID	Component	Part No.
SW1	Nylon-coated Wire Rope, 1/4" (6mm) Dia.	22950
SW2	Hardware Kit	23288
SW3	Tow Bar	39617C
SW4	Tow Trolley	021123
SW5	Trolley	021113
SW6	Anchor Bracket	021163

Kits with Double-Wheel Trolleys

Max. Span ft (m)	Kit Part No.	Max Flat Cable Width	Max. Load Per Trolley lb (kg)	No. of Trolleys in Kit
20 (6.1)	24867	1.75 (44.45)	13 (5.90)	3
40 (12.2)	24868			6
60 (18.3)	24869			9
80 (24.4)	24870			13
100 (30.5)	24871			17

Stretch Wire Rope Festoon Kits - For Round Cable or Hose

Stretched Wire Rope Festoon Kits for round cable or hose are suited for light duty applications where an intermediate support structure is not available. Economical and dependable, stretched wire rope systems provide electrification to small cranes, moving hoists, and jib cranes. The kits below include standard zinc plated hardware.



Max. Load Per Trolley: Double wheel 13 lb (6 kg)

Stretch Wire Festoon Kits Include Parts Listed Below:

Dwg ID	Component	Part No.	Dwg ID	Component	Part No.
SW1	Nylon-coated Wire Rope, 1/4" (6 mm) Dia.	22950	SW9	Trolley	021117
SW2	Hardware Kit	23288	SW12	Cable Clip 3/8" to 9/16" (10 to 15 mm)	020131-16
SW3	Tow Bar	39617C	SW13	Cable Clip 9/16" to 3/4" (15 to 20 mm)	020131-25
SW6	Anchor Bracket	021164			
SW7	Tow Trolley	021124			

Kits with Double-Wheel Trolleys

Max. Span ft (m)	Kit Part No.		No. of Trolleys in Kit
	Dia. Range 3/8" to 9/16" (10-15 mm)	Dia. Range 9/16" to 3/4" (15-20 mm)	
20 (6.1)	24892	24897	3
40 (12.2)	24893	24898	6
60 (18.3)	24894	24899	9
80 (24.4)	24895	24900	13
100 (30.5)	24896	24901	17

Control Trolley Junction Boxes and Terminal Strips



Listed below is an array of standard junction boxes with the listed terminal strip combinations included. These are for use with Control Unit Trolleys - see Pg. 19 and 24. See Pg. 19 for “Quick Disconnect connectors”, which can be used instead of hard-wired junction box.

If you don't see the junction box or terminal arrangement you need, please contact Conductix-Wampfler.

Terminal Strips Included	NEMA*	Size in. (mm)	Material	Part No.	Wt lb (kg)
4 Pole Power (45A)	12	10 x 8 x 4 (254 x 203 x 101)	Painted Steel	52394	10.2 (4.63)
4 Pole Power (45A)	4	10 x 8 x 4 (254 x 203 x 101)	Painted Steel	52394B	10.2 (4.63)
4 Pole Power (45A)	4X	10 x 8 x 4 (254 x 203 x 101)	Stainless Steel	52394C	9.5 (4.31)
4 Pole Power (85A)	12	10 x 8 x 4 (254 x 203 x 101)	Painted Steel	51018	10.3 (4.67)
4 Pole Power (85A)	4	10 x 8 x 4 (254 x 203 x 101)	Painted Steel	51018B	10.3 (4.67)
4 Pole Power (85A)	4X	10 x 8 x 4 (254 x 203 x 101)	Stainless Steel	51018C	9.6 (4.35)
8 Pole Power (85A)	12	10 x 8 x 4 (254 x 203 x 101)	Painted Steel	39415	10.4 (4.72)
8 Pole Power (85A)	4	10 x 8 x 4 (254 x 203 x 101)	Painted Steel	39415B	10.4 (4.72)
8 Pole Power (85A)	4X	10 x 8 x 4 (254 x 203 x 101)	Stainless Steel	39415C	9.7 (4.0)
12 Pole Control (20A)	12	10 x 8 x 4 (254 x 203 x 101)	Painted Steel	28314	10.5 (4.76)
12 Pole Control (20A)	4	10 x 8 x 4 (254 x 203 x 101)	Painted Steel	28314B	10.5 (4.76)
12 Pole Control (20A)	4X	10 x 8 x 4 (254 x 203 x 101)	Stainless Steel	28314N	9.8 (4.45)
24 Pole Control (20A)	12	10 x 8 x 4 (254 x 203 x 101)	Painted Steel	28314C	10.7 (4.85)
24 Pole Control (20A)	4	10 x 8 x 6 (254 x 203 x 152)	Painted Steel	28314D	10.7 (4.85)
24 Pole Control (20A)	4X	10 x 8 x 6 (254 x 203 x 152)	Stainless Steel	28314M	9.8 (4.45)
36 Pole Control (20A)	12	12 x 12 x 6 (305 x 305 x 152)	Painted Steel	36412	14.5 (6.58)
36 Pole Control (20A)	12	14 x 12 x 6 (356 x 305 x 152)	Painted Steel	39109	16.4 (7.44)
36 Pole Control (20A)	4	12 x 12 x 6 (305 x 305 x 152)	Painted Steel	36412B	14.9 (6.76)
36 Pole Control (20A)	4X	12 x 12 x 6 (305 x 305 x 152)	Stainless Steel	36412C	13.5 (6.12)
48 Pole Control (20A)	12	14 x 12 x 6 (356 x 305 x 152)	Painted Steel	35527	16.4 (7.44)
48 Pole Control (20A)	4	14 x 12 x 6 (356 x 305 x 152)	Painted Steel	35527B	16.9 (7.67)
48 Pole Control (20A)	4X	14 x 12 x 6 (356 x 305 x 152)	Stainless Steel	35527C	15.0 (6.80)
12 Pole Control (20A) + 4 Pole Power (85A)	12	10 x 8 x 4 (254 x 203 x 101)	Painted Steel	39362	10.5 (4.76)
12 Pole Control (20A) + 4 Pole Power (85A)	4	10 x 8 x 4 (254 x 203 x 101)	Painted Steel	39362B	10.5 (4.54)
12 Pole Control (20A) + 4 Pole Power (85A)	4X	10 x 8 x 4 (254 x 203 x 101)	Stainless Steel	39362C	10.0 (4.31)
24 Pole Control (20A) + 8 Pole Power (85A)	12	12 x 12 x 6 (305 x 305 x 152)	Painted Steel	39388	14.5 (6.58)
24 Pole Control (20A) + 8 Pole Power (85A)	4	12 x 12 x 6 (305 x 305 x 152)	Painted Steel	39388B	14.9 (6.76)
24 Pole Control (20A) + 8 Pole Power (85A)	4X	12 x 12 x 6 (305 x 305 x 152)	Stainless Steel	39388C	13.5 (6.12)

* For a description of NEMA enclosure ratings, see Pg. 34. As noted above, NEMA 4X boxes are stainless steel. All others are painted steel.

Appendix I CMAA Crane Classifications & NEMA Ratings

CMAA Crane Classifications

Provided for general information only. Refer to CMAA Section 78-6 for full definitions.

Class A (Standby or Infrequent Service): Performs precise lifts at slow speed, with long idle period between lifts. Performs lifts at full or near rated capacity. Power houses, public utilities, turbine rooms.

Class B (Light Service): Light service requirements at slow speed. Performs 2 to 5 lifts/hour, light to occasional full loads, at 10 feet average height. Repair shops, light assembly, service buildings, light warehousing.

Class C (Moderate Service): Moderate service requirement with loads averaging 50% of capacity. 5 to 10 lifts per hour at 15 feet average lift height. Not more than 50% of lifts at rated capacity. Machine shops, paper mill machine rooms, etc.

Class D (Heavy Service): Bucket/magnet duty, where heavy duty production is required. Loads of 50% capacity handled constantly. 10 to 20 lifts per hour averaging 15 feet lift height. Not over 65% of the lifts at rated capacity. Heavy machine shops, foundries, fabricating plants, steel warehouses, container yards, lumber mills, etc.

Class E (Severe Service): Loads approaching capacity throughout the life of the crane. 20 or more lifts per hour at or near rated capacity. Magnet/bucket cranes for scrap yards, cement mills, lumber mills, fertilizer plants, container handling.

Class F (Continuous Severe Service): Handles loads approaching capacity continuously under severe service conditions throughout the life of the crane. Includes custom designed specialty cranes performing work critical to the total production facility. Needs to have the highest reliability and ease of maintenance.

NEMA Enclosure Ratings

Provided for general information only. Refer to NEMA Standard 250 and IP AS 1939-1986 for full definitions.

Note: All enclosure types provide a degree of protection to personnel against incidental contact with the enclosed equipment.

NEMA 1 (IP10): Enclosures constructed for indoor use to provide a degree of protection against falling dirt

NEMA 2 (IP11): Enclosures constructed for indoor use to provide a degree of protection against falling dirt, and to provide a degree of protection against dripping and light splashing of liquids

NEMA 3 (IP54): Enclosures constructed for either indoor or outdoor use to provide a degree of protection against falling dirt, rain, sleet, snow, and windblown dust; and that will be undamaged by external formation of ice on the enclosure

NEMA 3R (IP14): Enclosures constructed for either indoor or outdoor use to provide a degree of protection against falling dirt, rain, sleet, and snow; and that will be undamaged by external formation of ice on the enclosure. (Enclosure can be vented.)

NEMA 4 (IP56): Enclosures constructed for either indoor or outdoor use to provide a degree of protection against falling dirt, rain, sleet, snow, windblown dust, splashing water, and hose-directed water, and that will be undamaged by the external formation of ice on the enclosure

NEMA 4X (IP56): Enclosures constructed for either indoor or outdoor use to provide a degree of protection against falling dirt, rain, sleet, snow, windblown dust, splashing water, hose-directed water, and corrosion and that will be undamaged by the external formation of ice on the enclosure

NEMA 6 (IP67): Enclosures constructed for either indoor or outdoor use to provide a degree of protection against damage by the external formation of ice on the enclosure.

NEMA 12 (IP52): Enclosures constructed (without knockouts) for indoor use to provide a degree of protection against falling dirt; against circulating dust, lint, fibers, and flying debris and against dripping and light splashing of liquids.

NEMA 13 (IP54): Enclosures constructed for indoor use to provide a degree of protection against falling dirt, circulating dust, lint, fibers, and flying debris and against the spraying, splashing, and seepage of water, oil, and non-corrosive coolants.

For information on hazardous location specifications, please contact Conductix-Wampfler.

Appendix II Motor Amperage and Electrical Formulas

The chart below lists the most common combinations of motor HP (horsepower) in relation to voltage used and the resulting amperage draw. To use the chart, determine amperage draw based on horsepower and voltage. Then use the Cable Data Chart in Appendix III to determine cable gauge and number of conductors required for your application. Direct Current requires two conductors. Single phase requires three conductors. Three-phase requires four conductors.

MOTOR AMPERAGE DRAW (AT FULL LOAD OF 60 Hz)															
3 PHASE AC Induction Type - Squirrel Cage & Wound Rotor								Single Phase			Direct Current				
HP	115V	200V	230V	460V	575V	2300V	4160V	HP	115V	230V	HP	120V	240V	HP	240V
1/2	4.0	2.3	2.0	1.0	.8			1/6	4.4	2.2					
3/4	5.6	3.2	2.8	1.4	1.1			1/4	5.8	2.9	1/4	2.9	1.5	15	55
1	7.2	4.15	3.6	1.8	1.4			1/3	7.2	3.6	1/3	3.6	1.8	20	72
1 1/2	10.4	6.0	5.2	2.6	2.1			1/2	9.8	4.9	1/2	5.2	2.6	25	89
2	13.6	7.8	6.8	3.4	2.7			3/4	13.8	6.9	3/4	7.4	3.7	30	106
3		11.0	9.6	4.8	3.9			1	16.0	8.0	1	9.4	4.7	40	140
5		17.5	15.2	7.6	6.1			1 1/2	20.0	10.0	1 1/2	13.2	6.6	50	173
7 1/2	25.0	22.0	11.0	9.0				2	24.0	12.0	2	17.0	8.5	60	206
10		32.0	28.0	14.0	11.0			3	34.0	17.0	3	25.0	12.5	75	225
15		48.0	42.0	21.0	17.0			5	56.0	28.0	5	40.0	20.0	100	341
20		62.0	54.0	27.0	22.0			7 1/2	80.0	40.0	7 1/2	58.0	29.0	125	425
25		78.0	68.0	34.0	27.0			10	100.0	50.0	10	76.0	38.0	150	506
30		92.0	80.0	40.0	32.0										
40		120.0	104.0	52.0	41.0										
50		150.0	130.0	65.0	52.0										
60		177.0	154.0	77.0	62.0	16.0	8.9								
75		221.0	192.0	96.0	77.0	20.0	11.0								
100		285.0	248.0	124.0	99.0	26.0	14.4								
125		358.0	312.0	156.0	125.0	31.0	17.0								
150		415.0	360.0	180.0	144.0	37.0	20.5								
200		550.0	480.0	240.0	192.0	49.0	27.0								

Ohms Law

$$\text{Ohms} = \frac{\text{Volts}}{\text{Amperes}} \quad \text{Amperes} = \frac{\text{Volts}}{\text{Ohms}}$$

$$\text{Volts} = \text{Amperes} \times \text{Ohms}$$

Speed Formulas

$$\text{Synchronous RPM} = \frac{F \times 120}{\# \text{ of poles}}$$

$$\text{Percent Slip} = \frac{\text{Synchronous RPM} - \text{Full Load RPM}}{\text{Synchronous RPM}} \times 100$$

Power Formulas

$$\text{Watts} = \text{Amperes} \times \text{Volts}$$

$$\text{Amperes} = \frac{\text{Watts}}{\text{Volts}}$$

$$\text{HP} = \frac{\text{Volts} \times \text{Amperes} \times \text{Efficiency}}{746}$$

$$\text{Power Factor} = \frac{\text{Watts}}{\text{Amperes} \times \text{Volts}}$$

$$\text{Single-Phase Kilowatts} = \frac{\text{Volts} \times \text{Amperes} \times \text{Power Factor}}{1000}$$

$$\text{Single-phase Amperes} = \frac{746 \times \text{HP (Horsepower)}}{\text{Volts} \times \text{Efficiency} \times \text{Power Factor}}$$

$$\text{Three Phase Kilowatts} = \frac{\text{Volts} \times \text{Amperes} \times \text{Power Factor} \times 1.732}{1000}$$

$$\text{Three Phase Amperes} = \frac{746 \times \text{HP (Horsepower)}}{1.732 \times \text{Volts} \times \text{Efficiency} \times \text{Power Factor}}$$

$$\text{Volts-Amperes} = \text{Volts} \times \text{Amperes}$$

Appendix III Round Cable Data (AWG)

The data on this page is for **general information only** applicable to cable sold by Conductix-Wampfler for use with round cable festoon systems. Nominal diameters and weights shown will vary with different manufacturers.

If you don't see the cable types and sizes you need - please Contact Conductix-Wampfler.

Type SOW-A or SOOW-A (90° C Insulation)					
AWG	# of Con.	Amps	Dia. in. (mm)	Wt lb/ft (kg/m)	Part No.
16	2	10	0.41 (10.24)	0.08 (0.04)	33017
16	3	10	0.43 (10.92)	0.09 (0.04)	33018
16	4	8	0.49 (12.32)	0.12 (0.05)	33019
16	6	8	0.57 (14.35)	0.18 (0.08)	33020
16	7	7	0.61 (15.37)	0.20 (0.09)	35158
16	8	7	0.65 (16.38)	0.22 (0.10)	33021
16	10	5	0.72 (18.29)	0.28 (0.13)	33022
16	12	5	0.74 (18.80)	0.31 (0.14)	33023
16	14	5	0.78 (19.69)	0.35 (0.16)	33024
16	16	5	0.83 (20.96)	0.39 (0.18)	33025
16	20	5	0.90 (22.86)	0.47 (0.21)	33026
16	24	5	1.02 (25.78)	0.57 (0.26)	33027
14	2	15	0.53 (13.46)	0.14 (0.06)	33029
14	3	15	0.56 (14.22)	0.17 (0.08)	33030
14	4	12	0.61 (15.37)	0.21 (0.10)	33031
14	6	12	0.74 (18.80)	0.31 (0.14)	33032
14	8	10.5	0.85 (21.46)	0.36 (0.16)	33033
14	10	7.5	0.91 (22.99)	0.43 (0.20)	33034
14	12	7.5	0.93 (23.62)	0.35 (0.16)	33035
14	14	7.5	0.98 (24.89)	0.56 (0.25)	33036
14	16	7.5	1.08 (27.31)	0.66 (0.30)	33037
14	20	7.5	1.18 (29.97)	0.79 (0.36)	33038
14	24	7.5	1.29 (32.77)	0.92 (0.42)	33039
12	2	20	0.61 (15.34)	0.17 (0.08)	33041
12	3	20	0.64 (16.26)	0.23 (0.10)	33042
12	4	16	0.67 (17.02)	0.28 (0.13)	33043
12	6	16	0.80 (20.32)	0.37 (0.17)	33044
12	8	14	0.92 (23.24)	0.45 (0.20)	33045
12	10	10	1.02 (25.78)	0.56 (0.25)	33046
12	12	10	1.05 (26.54)	0.64 (0.29)	33047
12	16	10	1.16 (29.34)	0.84 (0.38)	33048
12	20	10	1.29 (32.64)	1.00 (0.45)	33049
10	2	25	0.64 (16.26)	0.22 (0.10)	33052
10	3	25	0.69 (17.53)	0.28 (0.13)	33053
10	4	20	0.75 (19.05)	0.38 (0.17)	33054
10	6	20	0.88 (22.35)	0.48 (0.22)	33645
10	7	17.5	0.98 (24.89)	0.59 (0.27)	35667
10	8	17.5	1.05 (26.67)	0.65 (0.29)	33055
10	10	12.5	1.13 (28.58)	0.76 (0.34)	33056
10	12	12.5	1.16 (29.34)	0.85 (0.39)	33057

Type W (90° C Insulation)					
AWG	# of Con.	Amps	Dia. in. (mm)	Wt lb/ft (kg/m)	Part No.
8	2	50	0.81 (20.57)	0.42 (0.19)	33058
8	3	50	0.91 (23.11)	0.60 (0.27)	33059
8	4	45	0.99 (25.15)	0.68 (0.31)	33060
6	2	65	0.93 (23.62)	0.57 (0.26)	33061
6	3	65	1.01 (25.65)	0.75 (0.34)	33062
6	4	55	1.10 (27.94)	0.88 (0.40)	33063
4	2	75	1.08 (27.43)	0.79 (0.36)	33064
4	3	75	1.17 (29.72)	0.98 (0.44)	33065
4	4	65	1.27 (32.26)	1.22 (0.55)	33066
2	2	110	1.27 (32.26)	1.14 (0.52)	33067
2	3	110	1.34 (34.04)	1.41 (0.64)	33068

* Amp ratings are based on an ambient temperature of 30°C, derated for cables with more than 3 current carrying conductors per NEC. Ampacity requirements are solely dependent on applicable local codes. Conductix-Wampfler cannot specifically recommend required ampacity.

Appendix IV Metric Conversion Tables

AWG / Metric Conductor Size Conversion			
AWG or MCM	Circular Mils	Cross-Sectional Area (mm ²)	Metric Conductor Size
	987	.50	.50
20 AWG	1020	.52	
	1480	.75	.75
18	1620	.82	
	1970	1.0	1.0
16	2580	1.31	
	2960	1.50	1.5
14	4110	2.08	
	4930	2.50	2.5
12	6530	3.31	
	7890	4.00	4.0
10	10380	5.26	
	11800	6.00	6.0
8	16510	8.37	
	19700	10.00	10.0
6	26240	13.30	
	31600	16.00	16.0
4	41740	21.15	
	49300	25.00	25.0
2	66360	33.63	
	69100	35.00	35.0
1	83690	42.41	
	98700	50.00	50.0
1/0	105600	53.48	
2/0	133100	67.43	
	138000	70.00	70.0
3/0	167800	85.03	
	187000	95.00	95.0
4/0	211600	107.20	
	237000	120.00	120.0
250 MCM	250000	126.64	
	296000	150.00	150.0
300	300000	152.00	
350	350000	177.35	
	365000	185.00	185.0
400	400000	202.71	
	474000	240.00	240.0
500	500000	253.35	
	592000	300.00	300.0
600	600000	303.96	
750	750000	379.95	
	789000	400.00	400.0
	987000	500.00	500.0
1000	1000000	506.60	

Celsius / Fahrenheit Temperature Conversion								
1. Locate known temperature in °C/°F column.								
2. Read converted temperature in either the °C or °F column.								
°C	°C / F	°F	°C	°C / F	°F	°C	°C / F	°F
-45.4	-50	-58	15.5	60	140	76.5	170	338
-42.7	-45	-49	18.3	65	149	79.3	175	347
-40.0	-40	-40	21.1	70	158	82.1	180	356
-37.2	-35	-31	23.9	75	167	85.0	185	365
-34.4	-30	-22	26.6	80	176	87.6	190	374
-32.2	-25	-13	29.4	85	185	90.4	195	383
-29.4	-20	-4	32.2	90	194	93.2	200	392
-26.6	-15	5	35.0	95	203	96.0	205	401
-23.8	-10	14	37.8	100	212	98.8	210	410
-20.5	-5	23	40.5	105	221	101.6	215	419
-17.8	0	32	43.4	110	230	104.4	220	428
-15.0	5	41	46.1	115	239	107.2	225	437
-12.2	10	50	48.9	120	248	110.0	230	446
-9.4	15	59	51.6	125	257	112.8	235	455
-6.7	20	68	54.4	130	266	115.6	240	464
-3.9	25	77	57.1	135	275	118.2	245	473
-1.1	30	86	60.0	140	284	120.9	250	482
1.7	36	95	62.7	145	293	123.7	255	491
4.4	40	104	65.5	150	302	126.5	260	500
7.2	45	113	68.3	155	311	129.3	265	509
10.0	50	122	71.0	160	320	132.2	270	518
12.8	55	131	73.8	165	329	135.0	275	527

Temperature Conversion Formula

$$^{\circ}\text{F} = (9/5 \times ^{\circ}\text{C}) + 32 \quad ^{\circ}\text{C} = 5/9 (^{\circ}\text{F} - 32)$$

To Obtain	Multiply
Millimeters	Inches x 25.4
Inches	Millimeters x 0.0394
Meters	Feet x .3048
Feet	Meters x 3.281
Square Centimeters	Square Inches x 6.45
Square Inches	Square Centimeters x 0.155
Kilograms	Pounds x 0.4536
Pounds	Kilograms x 2.205
Pounds per Foot	Newtons per Meter x 1.356
Newtons per Meter	Lbs per ft x 0.738
Kilowatts	Horse Power x 1.341
Horse Power	Kilowatts x 0.746

Appendix V Terms, Conditions, and Warranty

The technical data and images which appear in this catalog are for informational purposes only. NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE CREATED BY THE DESCRIPTIONS AND DEPICTIONS OF THE PRODUCTS SHOWN IN THIS CATALOG. Conductix-Wampfler ("seller") makes no warranty and assumes no liability as to the function of equipment or the operation of systems built according to customer design or of the ability of any of its products to interface, operate or function with any portions of customer systems not provided by Conductix-Wampfler.

Seller agrees to repair or exchange the goods sold hereunder necessitated by reason of defective workmanship, and material discovered and reported to Seller within one year after shipment of such goods to Buyer. Except where the nature of the defect is such that it is appropriate in Seller's judgement to effect repairs on site, the seller's obligation hereunder to remedy defects shall be limited to repairing or replacing (at Seller's option), FOB point of original shipment by Seller, any part returned to Seller at the risk and cost of Buyer. Defective parts replaced by Seller shall become the property of Seller.

Seller shall only be obligated to make such repair or replacement of the goods which have been used by Buyer in service recommended by Seller and altered only as authorized by Seller. Seller is not responsible for defects which arise from improper installation, neglect, or improper use or from normal wear and tear.

Additionally, Seller's obligation shall be limited by the manufacturer's warranty (and shall not be further warranted by Seller) for all parts procured from others according to published data, specifications, or performance information not designed by or for Seller.

Seller further agrees to replace, or at Seller's option to provide a refund of the sales price of any goods that did not conform to applicable specifications or which differ from that agreed to be supplied which non-conformity is discovered and forthwith reported to Seller within thirty (30) days after shipment to Buyer. Seller's obligation to replace or refund the purchase price for non-conforming goods shall arise once Buyer returns such good FOB point of original shipment by Seller at the risk and cost of Buyer. Goods replaced by Seller shall be come property of Seller.

There is no guarantee or warranty as to anything made or sold by Seller, or any service performed, except as to title and freedom from encumbrances, and except as herein expressly stated and particularly without limiting the foregoing. There is no guarantee or warranty, express or implied, of merchantability or of fitness for any particular purpose or against claim of infringement or the like.

Seller makes no warranty (and assumes no liability) as to function of equipment or operation of systems built to Buyer's design or of the ability of any goods to interface, operate or function with any portions of Buyer's system not provided by Seller.

Seller's liability on any claim; whether in contract (including negligence) or otherwise, for any loss or damage arising out of, connected with, or resulting from the manufacture, sale, delivery, resale, repair, replacement or use of any products or, services shall in no case exceed the price paid for the product or services or any part thereof which give rise to the claim. In no event shall Seller be liable for consequential, special, incidental or other damages, nor shall Seller be liable in respect to personal injury or damage to property on the subject matter hereof unless attributable to gross misconduct of Seller, which shall mean an act of omission by Seller demonstrating reckless disregard of the foreseeable consequences thereof.

Seller is not responsible for incorrect choice of models or where products are used in excess of their rated and recommended capacities and design functions or under abnormal conditions. Seller assumes no liability for loss of time, damage or injuries to property or persons resulting from the use of Seller's products. Buyer shall hold Seller harmless from all liability, claims, suits and expenses in connection with loss or damage resulting from operation of products or utilization of services, respectively, of Seller and shall defend any suit or action which might arise there from Buyer's name, provided that Seller shall have the right to elect to defend any such suit or action for the account of Buyer. The foregoing shall be the exclusive remedies of the buyer and all persons and entitles claiming through the Buyer.

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Festoon Systems for Square Rails

Program 0270 | 0280



CONDUCTIX
wampfler

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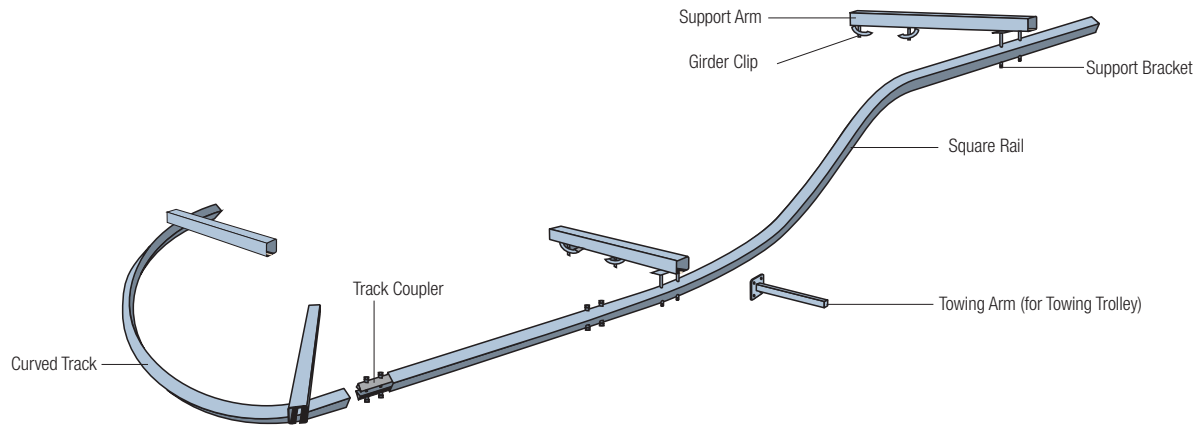
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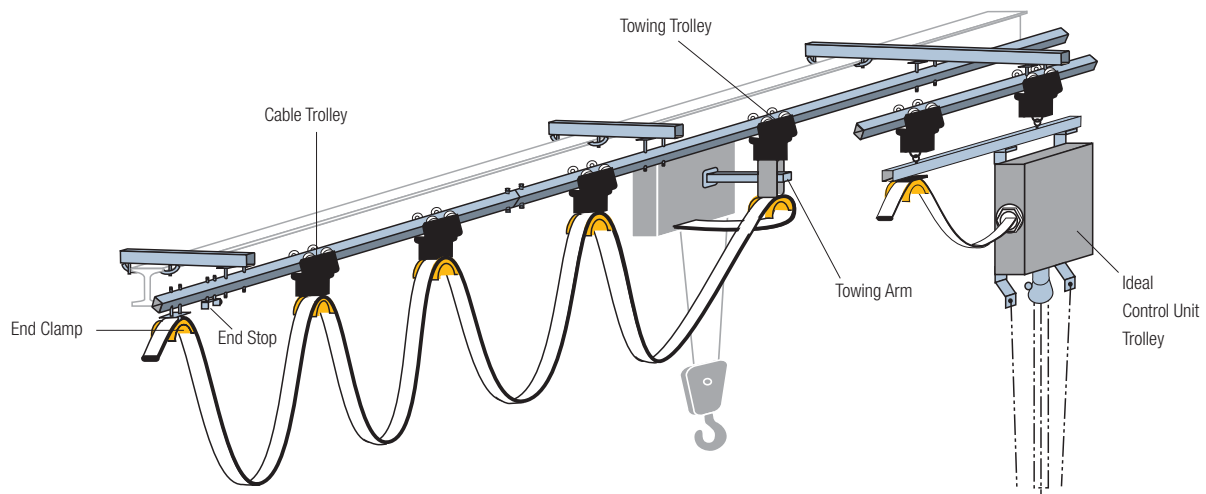


System Arrangement

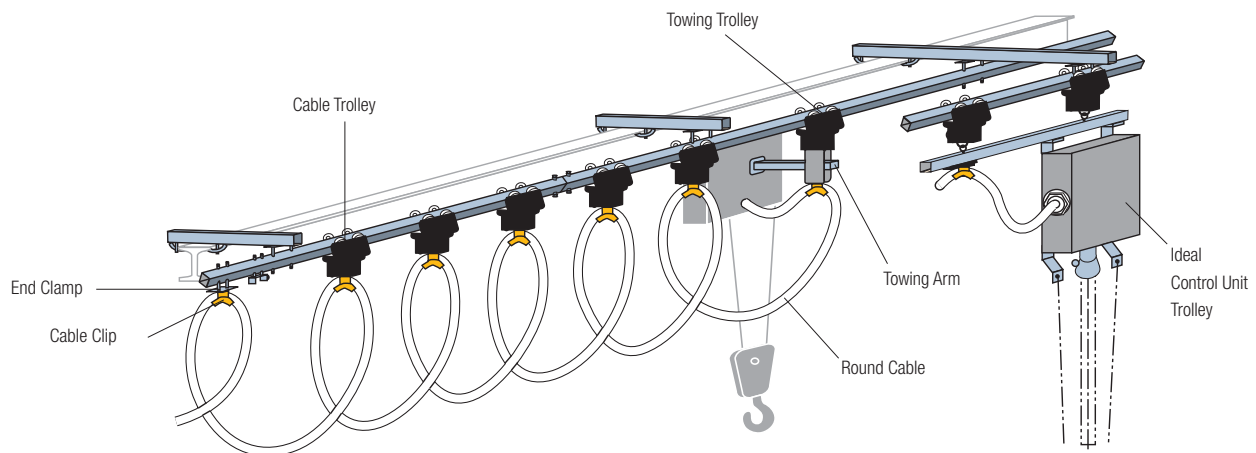
Square Rails for Curved Track



Cable Trolley System for Flat Cables



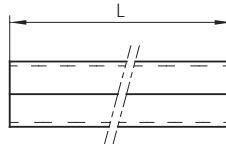
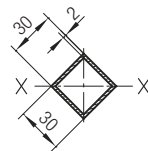
Cable Trolley System for Round Cables



Square Rails and Accessories for Curved Tracks

Program 0270

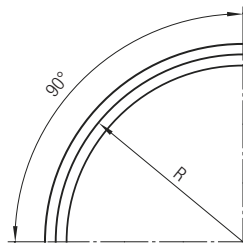
Square Rails 30 x 30



Part No.	Material	L [mm]	Static Values	Weight [kg/m]
027200-6	Galvanized Steel	6000	$I_x = 2.95 \text{ cm}^4$ $W_x = 1.39 \text{ cm}^3$	1.77
027200-4*	Steel	4000		
027400-6	Stainless Steel	6000		
027400-4	Steel (V4A)	4000		

* Standard range

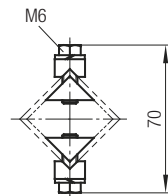
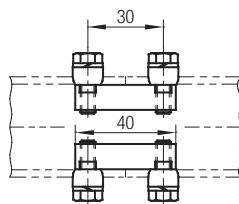
90° Curves



Part No.	Material	R [mm]	Stretched Length [mm]	Cable Loop max. 0.7 x R	Weight [kg]
027203-00400*	Galvanized Steel	400	630	280	1.10
027203-00600*		600	945	420	1.70
027203-00800*		800	1260	560	2.25
027203-01000*		1000	1570	700	2.80
027203-01200*		1200	1885	840	3.35
027203-01400*		1400	2200	980	3.90
027203-01600*		1600	2510	1120	4.45
027203-01800*		1800	2890	1260	5.00
027203-02000*	Stainless Steel (V4A)	2000	3140	1400	5.55
027403-01000		1000	1570	700	2.80
027403-01200		1200	1885	840	3.35
027403-01400		1400	2200	980	3.90
027403-01600		1600	2510	1120	4.45
027403-01800		1800	2890	1260	5.00
027403-02000		2000	3140	1400	5.55

* Standard range

Track Couplers



Part No.	Material	Weight [kg]
027210*	Galvanized Steel	0.10
027410	Stainless Steel (V4A)	0.10

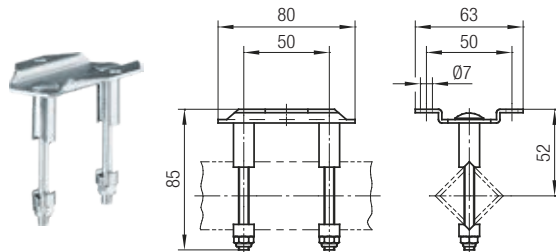
* Standard range

Square Rails and Accessories for Curved Tracks

Program 0270

Track Support Brackets

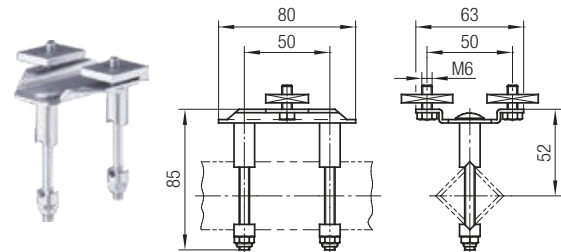
For ceiling mounting



Part No.	Material	Max. Load [kg]	Weight [kg]
027220*	Galv. Steel	125	0.14
027420	SST (V4A)	125	0.14

* Standard range

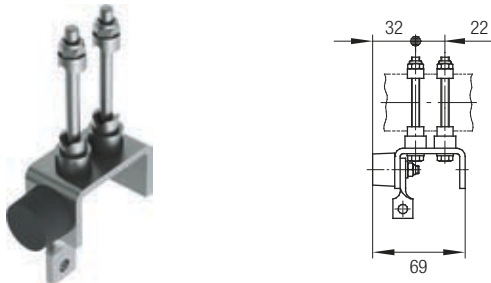
For mounting on Support Arms 30 x 32 x 2 and 40 x 40 x 2.5 mm



Part No.	Material	Max. Load [kg]	Weight [kg]
027222*	Galv. Steel	125	0.14
027422	SST (V4A)	125	0.14

* Standard range

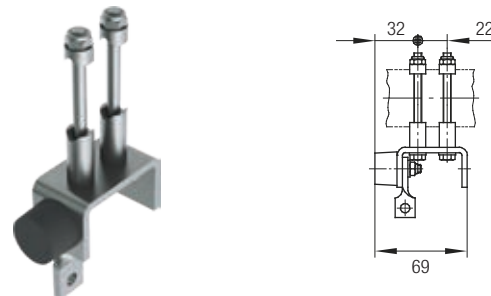
End Stops for Plastic Cable Trolleys



Part No.	Material	Weight [kg]
027112*	Galvanized Steel; Rubber Buffer	0.21
027408	Stainless Steel (V4A); Rubber Buffer	0.21

* Standard range

End Stop for Steel Cable Trolleys

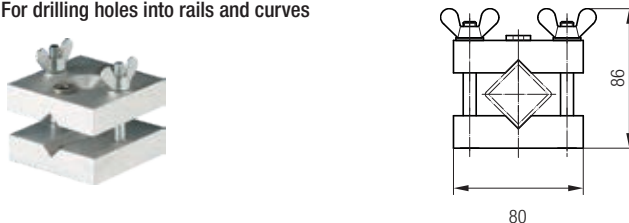


Part No.	Material	Weight [kg]
027111*	Galvanized Steel; Rubber Buffer	0.21

* Standard range

Drilling Fixture

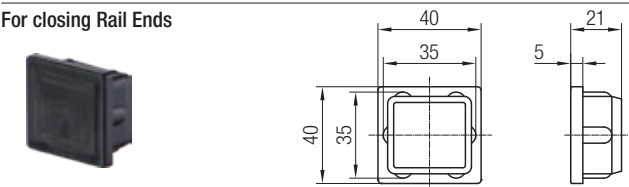
For drilling holes into rails and curves



Part No.	Material	Weight [kg]
027211	Body: Aluminum Drill Sleeve: Hardened Steel Fasteners: Galvanized Steel	1.00

End Cap

For closing Rail Ends



Part No.	Material	Weight [kg]
020662-31*	Plastic	0.004

* Standard range

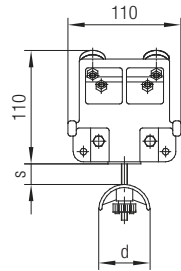
Cable Trolleys for Flat Cables

Program 0270

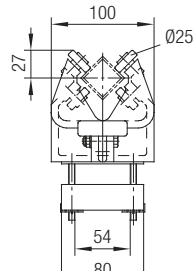
Plastic Cable Trolley and Cable Support



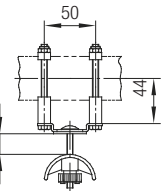
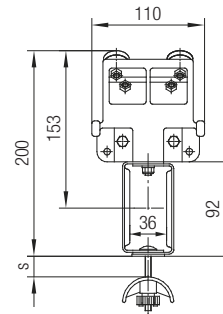
Rollers:
Ball Bearings, galvanized;
Cover Plate ZZ.
Max. Load Capacity: 16 kg



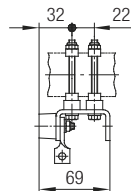
Cable Trolley



Towing Trolley



End Clamp



End Stop
Part No. 027112

Cable Trolley Part No.	[kg]	Towing Trolley Part No.	[kg]	End Clamp Part No.	[kg]	d [mm]	s [mm]
027261*	0.60	027267*	1.01	027268*	0.21	50	25
027271*	0.62	027277*	1.03	027278*	0.23	80	15
027461 ¹⁾	0.60	027467 ¹⁾	1.01	027468 ¹⁾	0.21	50	25
027471 ¹⁾	0.62	027477 ¹⁾	1.03	027478 ¹⁾	0.23	80	15

* Standard range

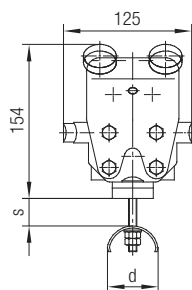
¹⁾ Stainless Steel (V4A) / Acid-resistant plastic

Galvanized Steel Cable Trolley and Cable Support; Light Series

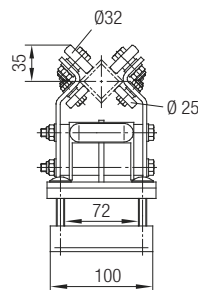


Cable Trolley Part No.	[kg]	Towing Trolley Part No.	[kg]	End Clamp Part No.	[kg]	d [mm]	s [mm]
027339-125x100*	2.10	027349-125x100*	2.63	027329-100x042*	0.54	50	30
027340-125x100*	2.15	027350-125x100*	2.68	027330-100x068*	0.61	80	15

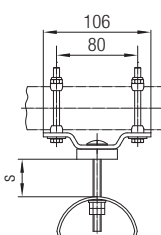
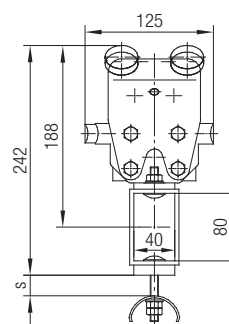
* Standard range



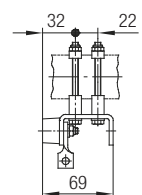
Cable Trolley



Towing Trolley



End Clamp



End Stop
Part No. 027111

Cable Trolleys for Flat Cables

Program 0270

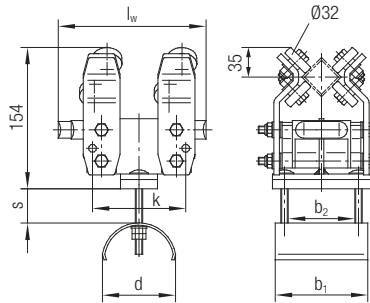
Galvanized Steel Cable Trolley and Cable Support; Heavy Duty Series



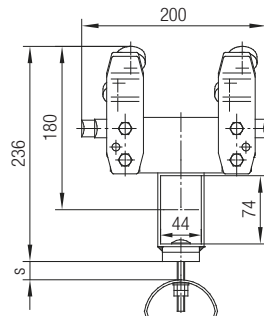
Rollers:
Ball Bearings, galvanized;
Cover Plate ZZ.
Max. Load Capacity: 25 kg

Cable Trolley Part No.	[kg]	Towing Trolley Part No.	[kg]	End Clamp Part No.	[kg]	d_a [mm]	l_w [mm]	b_1 [mm]	b_2 [mm]	s [mm]	k [mm]
027310-160x100*	2.87	027320-200x100*	3.52	027330-100x068*	0.68	80	160	100	72	38	101
027310-160x160*	3.11	027320-200x160*	4.03	027330-160x068*	0.92			160	132		
027310-200x100	2.99	027320-200x100*	3.52	027330-100x068*	0.68		200	100	72	58	141
027310-200x160	3.23	027320-200x160*	4.03	027330-160x068*	0.92			160	132		
027312-200x100*	3.09	027322-200x100*	3.69	027332-100x048*	0.78	125	200	100	72	35	141
027312-200x160*	3.42	027322-200x160*	4.22	027332-160x048*	1.11			160	132		
027313-250x100*	3.34	027323-250x100*	3.94	027333-100x048*	0.98	160	250	115	72	42	181
027313-250x160*	3.76	027323-250x160*	4.56	027333-160x048*	1.38			175	132		

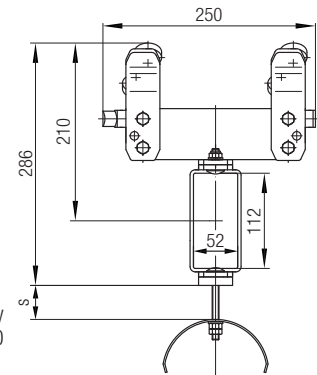
* Standard range



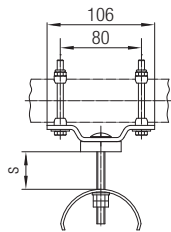
Cable Trolley



Towing Trolley
 $l_w \leq 200$



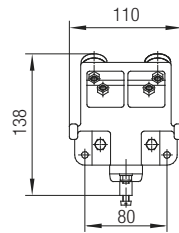
Towing Trolley
 $l_w \geq 250$



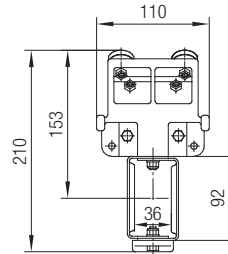
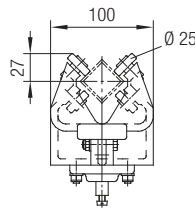
End Clamp

Cable Trolleys for Round Cable and Hose Program 0270

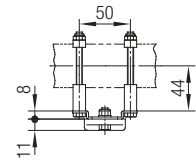
Plastic Cable Trolleys with Ball Joints for Cable Clips (Part No. 020131 below)



Cable Trolley
Part No. 027291



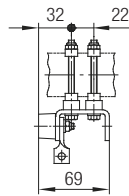
Towing Trolley
Part No. 027297



End Clamp
Part No. 027298

Rollers:
Ball Bearings, galvanized;
Cover Plate ZZ.
Max. Load Capacity: 16 kg

Several Cable Clips
can be combined



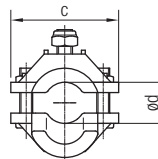
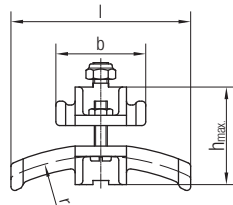
End Stop
Part No. 027112

Cable Trolley Part No.	[kg]	Towing Trolley Part No.	[kg]	End Clamp Part No.	[kg]
027291*	0.59	027297*	0.97	027298*	0.18
027491 ¹⁾	0.59	027497 ¹⁾	0.97	027498 ¹⁾	0.18

* Standard range

¹⁾ Stainless Steel (V4A) / Acid-resistant plastic

Cable Clips - to be connected to the Trolley Ball Joint

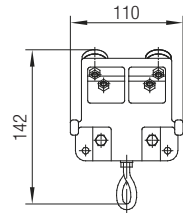


Part No.	for Cables ø d [mm]	r [mm]	l [mm]	h [mm]	b [mm]	c [mm]	Body Material	Hardware Finish	Weight [kg]
020131-16*	10...16	80	70	38	35	42	Plastic	Galvanized Steel	0.04
020131-25*	17...25	125	100	47	50	50			0.06
020131-36*	26...36	180	140	58	70	64			0.12
020431-16	10...16	80	70	38	35	42	Acid-resistant Plastic	Stainless Steel V4A	0.04
020431-25	17...25	125	100	47	50	50			0.06
020431-36	26...36	180	140	58	70	64			0.12

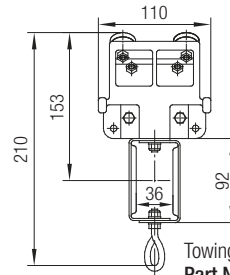
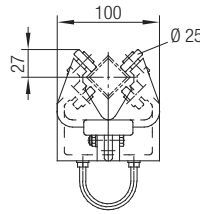
* Standard range

Cable Trolleys for Round Cable and Hose Program 0270

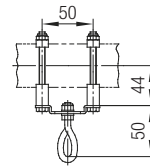
Plastic Cable Trolleys with Brackets for Cable Clips (Part No. 020133 below)



Cable Trolley
Part No. 027281



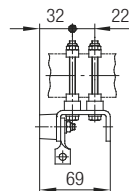
Towing Trolley
Part No. 027287



End Clamp
Part No. 027288

Rollers:
Ball Bearings, galvanized;
Cover Plate ZZ.
Max. Load Capacity: 16 kg

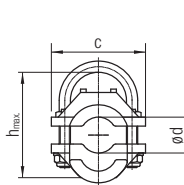
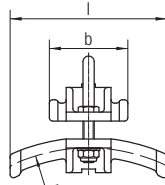
End Stop
Part No. 027112



Cable Trolley Part No.	[kg]	Towing Trolley Part No.	[kg]	End Clamp Part No.	[kg]
027281*	0.57	027287*	0.99	027288*	0.21

* Standard range

Cable Clips - to be connected to the Trolley Bracket



Part No.	for Cables Ø d [mm]	r [mm]	l [mm]	h [mm]	b [mm]	c [mm]	Weight [kg]
020133-16*	10...16	80	70	48	35	42	0.05
020133-25*	17...25	125	100	60	50	50	0.07
020133-36*	26...36	180	140	78	70	64	0.14

* Standard range

Material: Plastic;
Fasteners:
Galvanized Steel

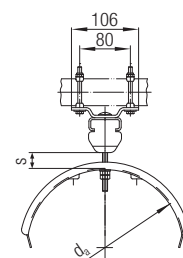
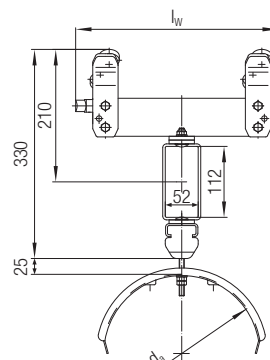
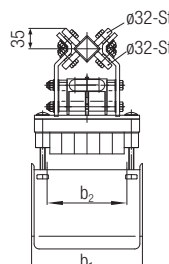
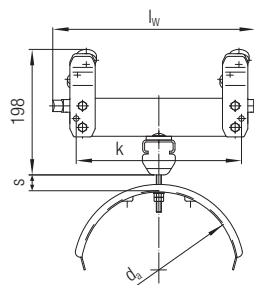
Cable Clips 020131 can be mounted
underneath Cable Clips with Brackets 020133

Galvanized Steel Cable Trolleys; Heavy Duty Series



Cable Trolley Part No.	[kg]	Towing Trolley Part No.	[kg]	End Clamp Part No.	[kg]	d _a [mm]	l _w [mm]	b ₁ [mm]	b ₂ [mm]	s [mm]	k [mm]
027873-200x100	3.44	027883-200x100	4.21	027893-100	1.06	160	200	115	65	16	141
027873-200x160	3.86	027883-200x160	4.75	027893-160	1.18			175	125		
027874-250x160	4.21	027884-250x160	5.10	027894-160	1.83	200	250	175	125	20	181
027874-250x200	4.61	027884-250x200	5.38	027894-200	2.23			215	165		
027875-320x160	4.66	027885-320x160	5.55	027895-160	2.08	250	320	175	125	25	251
027875-320x200	5.06	027885-320x200	5.83	027895-200	2.48			215	165		

Rollers:
Ball Bearings, galvanized;
Cover Plate ZZ.
Max. Load Capacity: 25 kg



Ideal Control Unit Trolley Program 0270

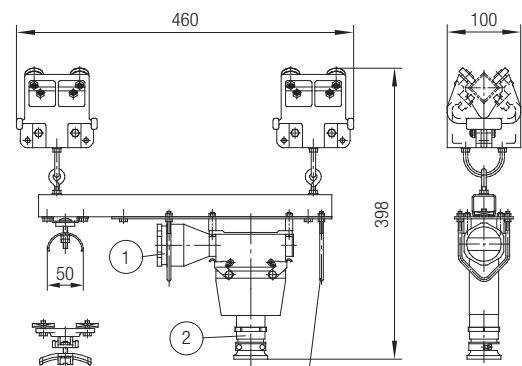
Ideal Control Unit Trolley with Plug and Socket Connection



Rated Voltage 400 V; Rated Current 16 A;
Protection Type IP55 as defined by DIN 40050;
Screw Connection 2.5 mm²

Part No.	Number of poles	Fittings		Weight [kg]
		①	②	
027178-16*	16 + PE	25x42	25x21	3.72
027178-24*	24 + PE	25x42	32x29	4.10

* Standard range



Strain Relief for Control Unit

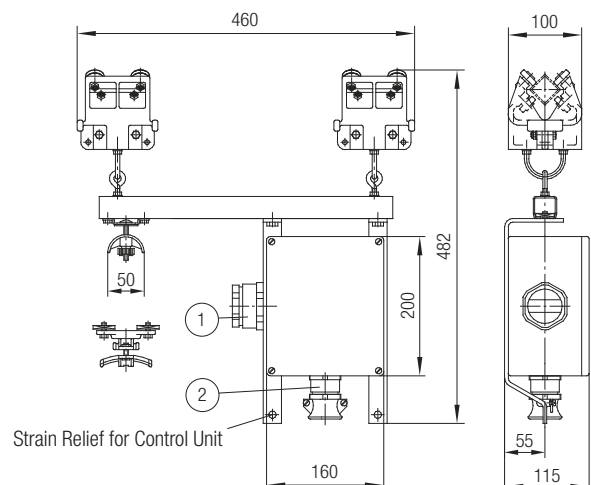
Ideal Control Unit Trolley with Plastic Terminal Box



Rated Voltage 400 V; Rated Current 16 A;
Protection Type IP55 as defined by DIN 40050;
Terminal Block 4 mm²

Part No.	Number of poles	Fittings		Weight [kg]
		①	②	
027174-16*	16 + PE	50x42	25x21	5.46
027174-24	24 + PE	50x42	32x29	5.86

* Standard range

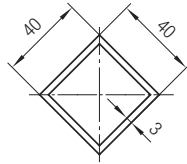


Strain Relief for Control Unit

Square Rails and Accessories for Curved Tracks

Program 0280

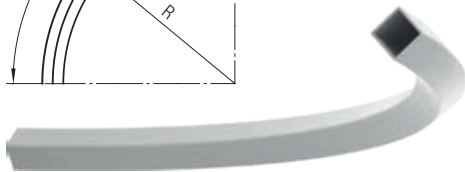
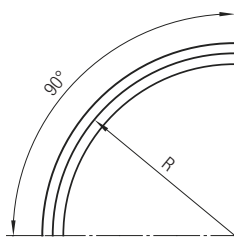
Square Rail 40 x 40



Part No.	Material	L [mm]	Static Values	Weight [kg/m]
028100-6*	Galvanized Steel	6000	$I_x = 9.91 \text{ cm}^4$ $W_x = 3.66 \text{ cm}^3$	3.32

* Standard range

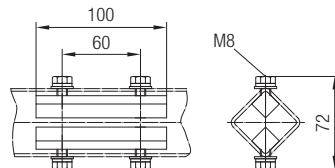
90° Curves



Part No.	Material	R [mm]	Stretched Length [mm]	Cable Loop max. 0.7 x R	Weight [kg]
028102-01000*	Galvanized Steel	1000	1570	700	5.20
028102-01200*		1200	1885	840	6.25
028102-01400*		1400	2200	980	7.30
028102-01600*		1600	2510	1120	8.30
028102-01800*		1800	2890	1260	9.60
028102-02000*		2000	3140	1400	10.40

* Standard range

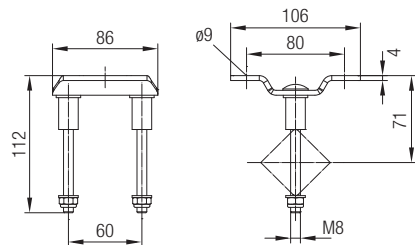
Track Coupler



Part No.	Material	Weight [kg]
028105*	Galvanized Steel	0.33

* Standard range

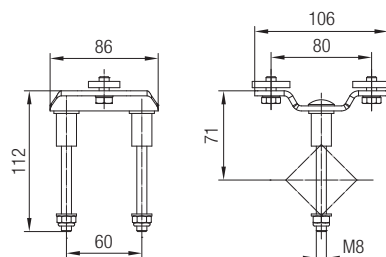
Track Support Bracket for Ceiling Mounting



Part No.	Material	Max. Load [kg]	Weight [kg]
028120*	Galvanized Steel	250	0.33

* Standard range

Track Support Bracket for mounting on Support Arm 40 x 40 x 2.5 mm

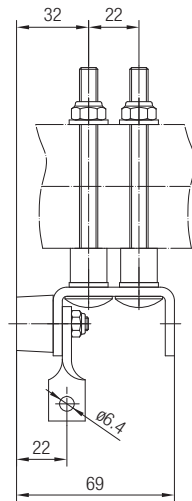


Part No.	Material	Max. Load [kg]	Weight [kg]
028121*	Galvanized Steel	250	0.39

* Standard range

Accessories for Program 0280

End Stop

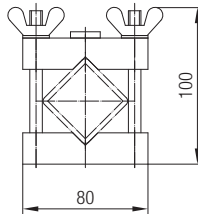


Part No.	Material	Weight [kg]
028111*	Galvanized Steel; Rubber Buffer	0.22

* Standard range

Drilling Fixture

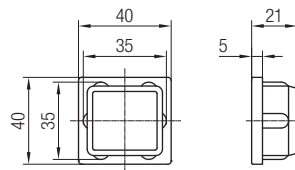
For drilling holes into rails and curves



Part No.	Materials	Weight [kg]
028107	Body: Aluminum Drill Sleeve: Hardened Steel Fasteners: Galvanized Steel	1.09

End Cap

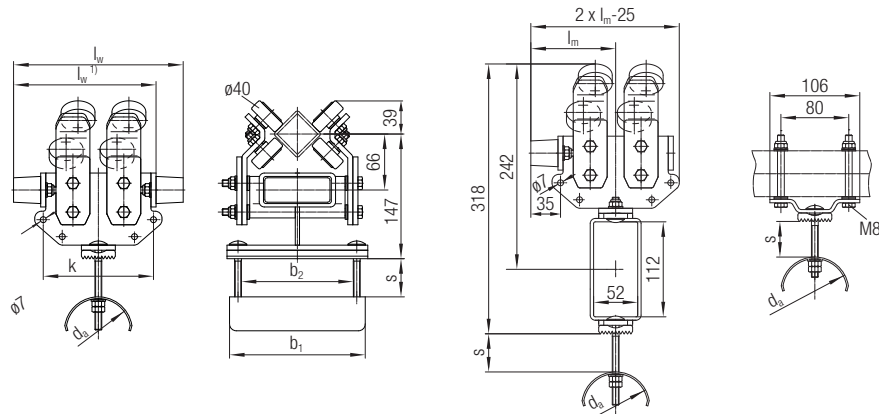
For closing Rail Ends



Part No.	Material	Weight [kg]
020662-40*	Plastic	0.004

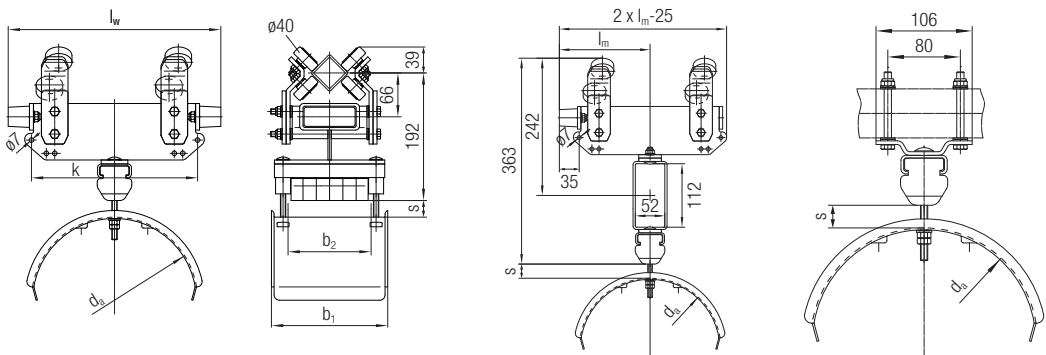
* Standard range

Galvanized Steel Cable Trolleys; for Flat Cables



Cable Trolley Part No.		Towing Trolley Part No.		End Clamp Part No.		d _a [mm]	l _w [mm]	b ₁ [mm]	b ₂ [mm]	s [mm]	k [mm]	l _m [mm]
028464-250x100	5.15	028474-250x100*	5.92	028394-100*	1.38	200	250	115	65	20	180	125
028464-250x160*	5.72	028474-250x160*	6.61	028394-160*	1.93			175	125			
028465-320x160*	6.17	028475-320x160*	7.10	028395-160*	2.18	250	320	175	125	25	250	160
028465-320x250	6.87	028475-320x250*	7.76	028395-250*	2.88			265	215			
028467-400x160*	7.03	028477-400x160*	7.92	028397-160*	2.78	320	400	175	132	32	330	200
028467-400x250	7.83	028477-400x250	8.72	028397-250	3.58			265	215			

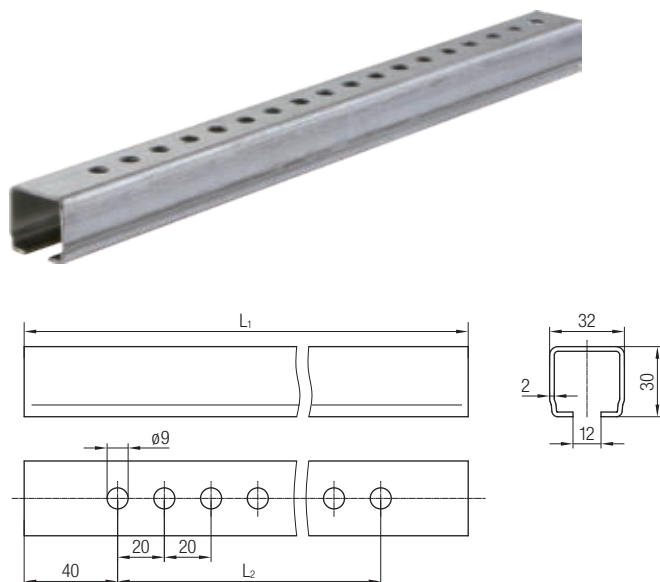
* Standard range



Accessories for Cable Trolleys

Program 0270/0280

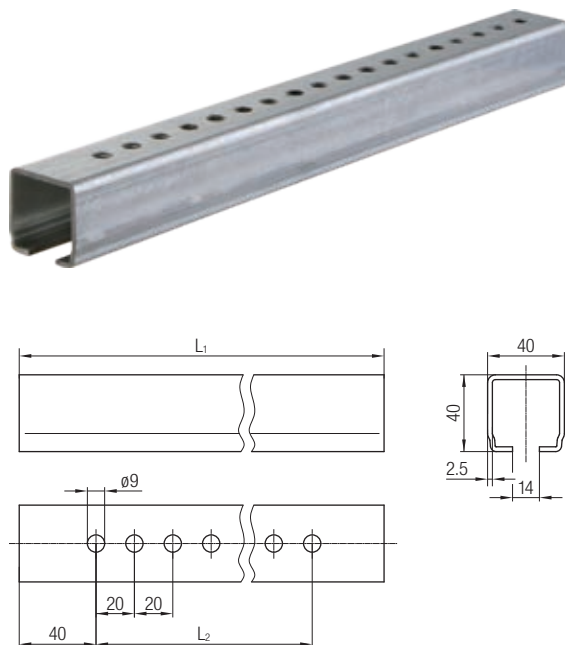
Perforated Support Arms 30 x 32 x 2 mm for Program 0270



Part No.	L ₁ [mm]	L ₂ [mm]	Material	Weight [kg]
020185-0250	250	200	Galvanized Steel	0.39
020185-0315	315	260		0.50
020185-0400	400	340		0.63
020185-0500*	500	340		0.78
020185-0630	630	340		0.98
020185-0800	800	340		1.25
020185-1000*	1000	340		1.55
020185-1250	1250	340		1.95

* Standard range

Perforated Support Arms 40 x 40 x 2.5 mm for Program 0270/0280



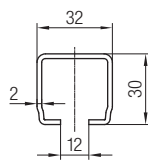
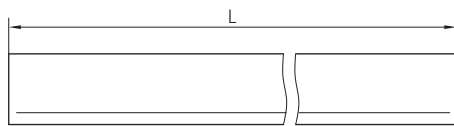
Part No.	L ₁ [mm]	L ₂ [mm]	Material	Weight [kg]
020186-0250	250	200	Galvanized Steel	0.63
020186-0315	315	260		0.79
020186-0400	400	340		1.00
020186-0500*	500	340		1.25
020186-0630	630	340		1.58
020186-0800	800	340		2.00
020186-1000*	1000	340		2.50
020186-1250	1250	340		3.13

* Standard range

Accessories for Cable Trolleys

Program 0270/0280

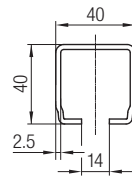
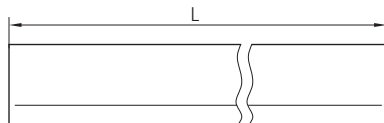
Non-Perforated Support Arms 30 x 32 x 2 mm for Program 0270



Part No.	L [mm]	Material	Weight [kg]
020275-0250	250	Galvanized Steel	0.39
020275-0400	400		0.63
020275-0500*	500		0.78
020275-0630	630		0.98
020275-0800	800		1.25
020275-1000*	1000		1.55
020275-1250	1250		1.95

* Standard range

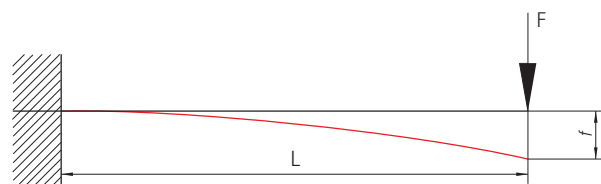
Non-Perforated Support Arms 40 x 40 x 2.5 mm for Program 0270/0280



Part No.	L [mm]	Material	Weight [kg]
020276-0450	450	Galvanized Steel	1.13
020276-0550	550		1.38
020276-0650*	650		1.63
020276-0840	840		2.10
020276-0950	950		2.38
020276-1000	1000		2.50
020276-1150*	1150		2.88

* Standard range

Permissible Load for Support Arms



Note:

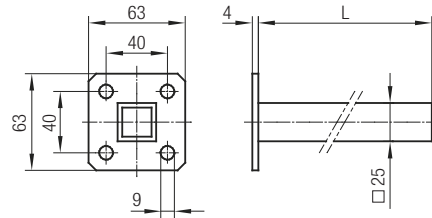
- Calculated with $\sigma = 140 \text{ N/mm}^2$ tension
- f = associated max. deflection

		L [mm]								
		0.25	0.40	0.50	0.65	0.80	1.00	1.25	1.52	2.00
Support Arm 30 x 32 x 2 mm	F [kg]	76.0	47.5	38.0	29.0	24.0	19.0	15.0	12.5	9.50
	f [cm]	0.08	0.20	0.32	0.60	0.90	1.40	2.20	3.30	5.70
Support Arm 40 x 40 x 2.5 mm	F [kg]	164.5	103.0	82.0	63.0	51.5	41.0	33.0	27.0	20.5
	f [cm]	0.07	0.20	0.30	0.45	0.70	1.10	1.70	2.50	4.30

Accessories for Cable Trolleys

Program 0270/0280

Towing Arms



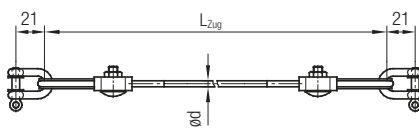
Part No.	L [mm]	Material	Weight [kg]
020195-400	400	Galvanized Steel	0.60
020195-630*	630	Steel	1.00

* Standard range

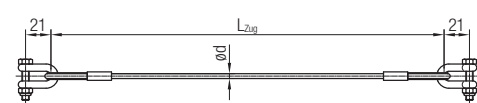
Tow Ropes



Type A



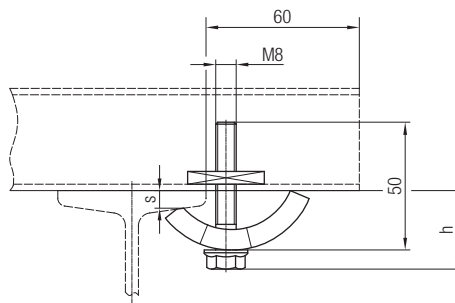
Type B



Part No.	ød [mm]	Type	Material	Weight [kg]	for Program
020316-04*	4	A	Plastic	0.12	0270 Plastic Cable Trolleys
020329-04*	4	B	Galv. Steel; PVC jacket	0.16	0270 Steel Cable Trolleys; 0280
020328-04*	4	B	Galvanized Steel	0.20	0270 Steel Cable Trolleys; 0280

* Standard range

Girder Clips, clamping thickness range 4 - 20 mm



Part No.	Material	Weight [kg]
020180-08*	Galvanized Steel	0.15
020480-08	Stainless Steel V4A	0.15

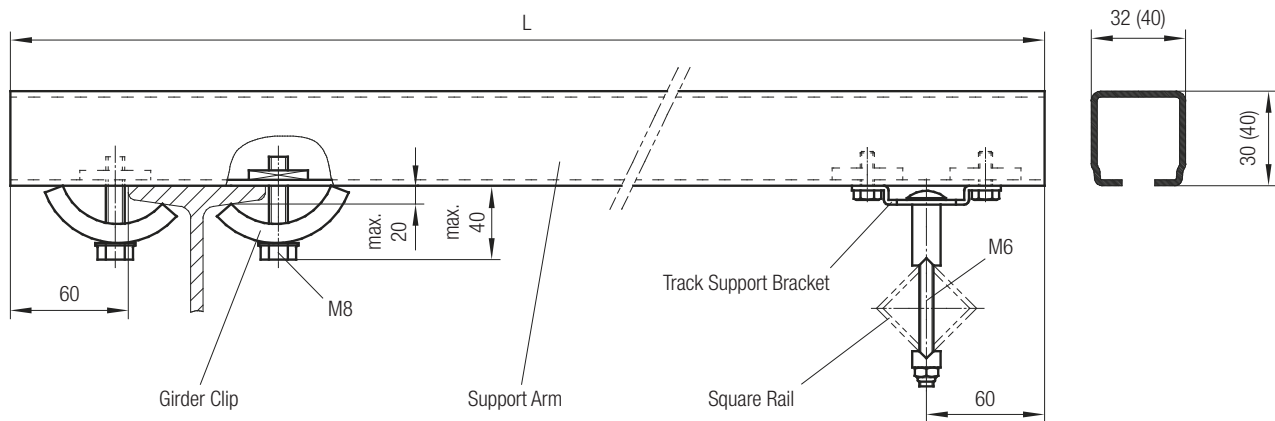
* Standard range

Clamping thickness	s	4	6	8	10	12	16	20
Installation height	h	31	32	33	34	35	37	40

Accessories for Cable Trolleys

Program 0270/0280

Application Example



Project Planning

Determining the Support Distance for Square Rail Program 0270

Technical Data / Calculation Assumptions

The required support distance of the square rail can be determined using the diagram below. The following calculation assumptions have been taken into consideration:

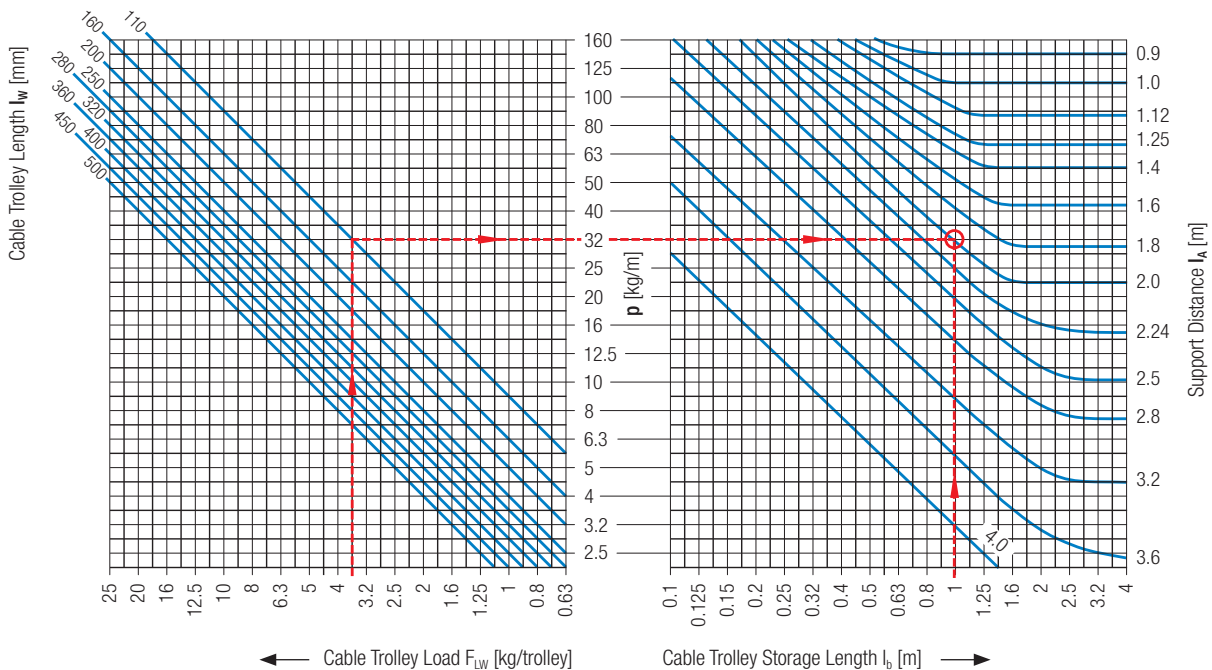
1. Simply-supported beam, uniform load symmetrical to middle of the beam
2. The load of one trolley F_{LW} [kg/trolley] is distributed over trolley length l_w as a uniform load p [kg/m]
3. Total length of the uniform load results from the cable trolley storage length l_b [m] of all trolleys side by side
4. $\sigma_{zul} = 100 \text{ N/mm}^2$
5. $f = l_b/250$ permissible deflection from the load and net weight of the rail
6. As track support bracket load the load of a field symmetrical to the mounting (bracket) is assumed

Example:

Given:

F_{LW} = Cable Trolley Load: 3.6 kg (X axis value on the left-hand graph below)
 l_w = Cable Trolley Length: 110 mm (blue line on the left graph)
 Z = Overall number of Cable Trolleys: 9
 l_b = Cable Trolley Storage Length: 0.99 m (X axis on the right-hand graph below)
 $(m) = Z \times l_w / 1000$

Load Diagram for Square Rail 30 x 30 x 2 (020275)



Result for Square Rail 30 x 30 x 2

From Diagram:

Required Support Distance $l_A = 2.0$ m

Note: Support distance in curves should not exceed two thirds of the required support distance for a straight track.

Project Planning

Determining the Support Distance for Square Rail Program 0280

Technical Data / Calculation Assumptions

The required support distance of the square rail can be determined using the diagram below. The following calculation assumptions have been taken into consideration:

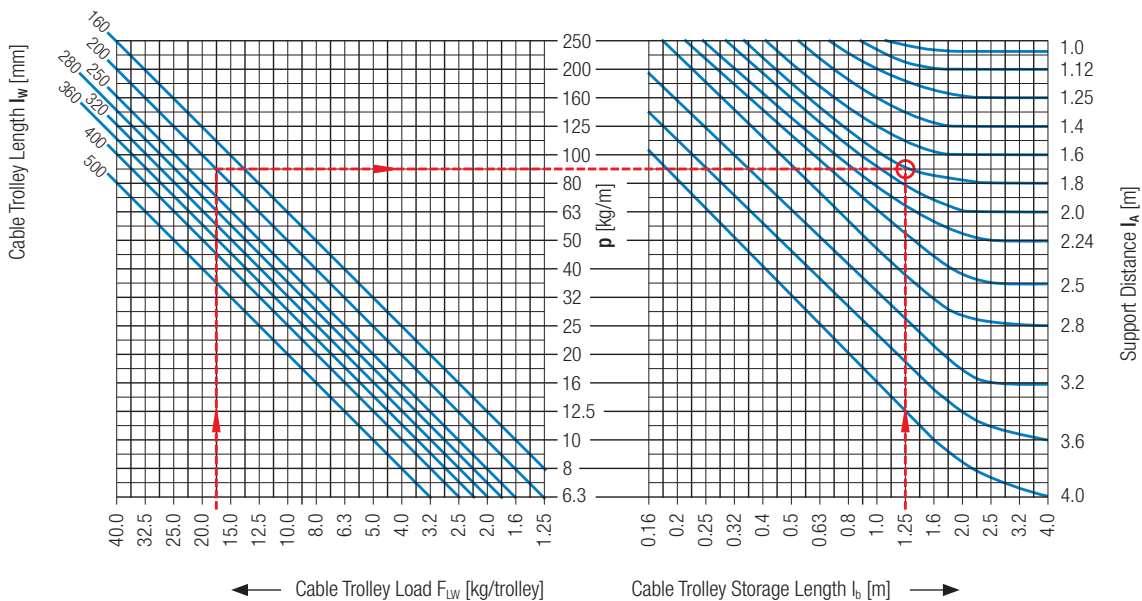
1. Simply-supported beam, uniform load symmetrical to middle of the beam
2. The load of one trolley F_{LW} [kg/trolley] is distributed over trolley length l_w as a uniform load p [kg/m]
3. Total length of the uniform load results from the cable trolley storage length l_b [m] of all trolleys side by side
4. $\sigma_{zul} = 100 \text{ N/mm}^2$
5. $f = l_A/250$ permissible deflection from the load and net weight of the rail
6. As track support bracket load the load of a field symmetrical to the mounting (bracket) is assumed

Example:

Given:

F_{LW} = Cable Trolley Load: 18 kg (X axis value on the left-hand graph below)
 l_w = Cable Trolley Length: 200 mm (blue line on the left graph below)
 Z = Overall number of Cable Trolleys: 6
 l_b = Cable Trolley Storage Length: 1.20 m (X axis value on the right-hand graph below)
 (m) = $Z \times l_w / 1000$

Load Diagram for Square Rail 40 x 40 x 3 (020276)



Result for Square Rail 40 x 40 x 3

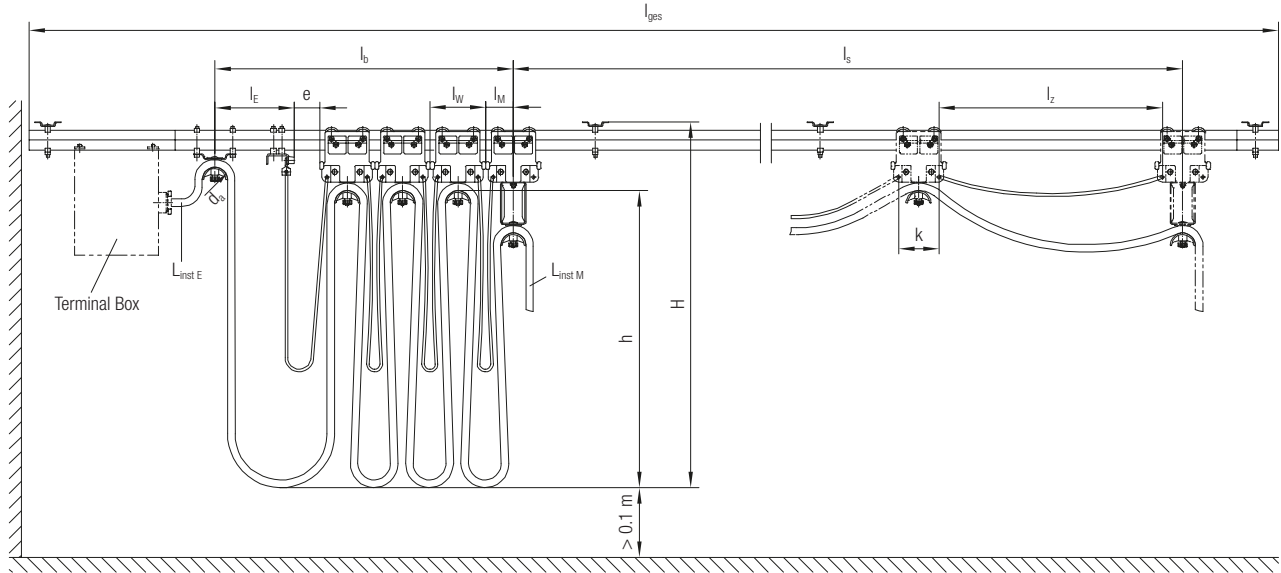
From Diagram:

Required Support Distance $l_A = 1.8 \text{ m}$

Note: Support distance in curves should not exceed two thirds of the required support distance for a straight track.

Project Planning

Technical Data



Calculating the number of Cable Loops, required Cable Length, and Loop Length

Number of loops:

$$n = \frac{f(l_s + e)}{2 \cdot h + 1.25 \cdot d_a + f \cdot l_w}$$

Cable Trolley storage length:

$$l_b \approx n \cdot l_w + e \quad [\text{m}]$$

Cable system length:

$$L_{\text{Syst}} = f(l_s + l_b) \quad [\text{m}]$$

Total cable length:

$$L_{\text{Best}} = L_{\text{Syst}} + L_{\text{instE}} + L_{\text{instM}} \quad [\text{m}]$$

Required length of tension relief:

$$l_z = \frac{1.05(l_s + l_b)}{n} - k \quad [\text{m}]$$

For plastic Cable Trolleys: $k = 0.08 \quad [\text{m}]$
For steel Cable Trolleys: $k = l_w - 0.06 \quad [\text{m}]$

Loop length:

$$L_{\text{Schl}} = \frac{L_{\text{Syst}}}{n} \quad [\text{m}]$$

Loop depth:

$$h = \frac{L_{\text{Schl}}}{2} - 0.63 \cdot d_a \leq 0.7 \cdot R_{\text{min}} \quad [\text{m}]$$

- d_a [m] = Trolley Saddle diameter
- e [m] = Tolerance in the Cable Trolley storage length (recommended $\geq 0.1 \text{ m}$)
- f = Length factor for cables (1.2 for square rails)
- h [m] = Loop depth (measured from top edge of Cable Support)
- H [m] = Overall installation space
- l_b [m] = Cable Trolley storage length incl. tolerance "e"
- l_s [m] = Travel distance
- l_w [m] = Cable Trolley length
- l_z [m] = Length of tension relief
- L_{Best} [m] = Total cable length
- L_{instE} [m] = Length for fixed installation, End Clamp side
- L_{instM} [m] = Length for fixed installation, Towing Trolley side
- L_{Schl} [m] = Loop length
- L_{Syst} [m] = Required cable length measured from middle of the End Clamp to middle of the Towing Trolley / Cable Clamp
- n = Number of loops
- R_{min} [m] = Smallest radius for curved track

The maximum permissible cable loop depends on the smallest radius to be passed. Loops which do not pass this radius can be larger accordingly.

Festoon Systems for I-Beams

Program 0314 | 0320 | 0325 | 0330



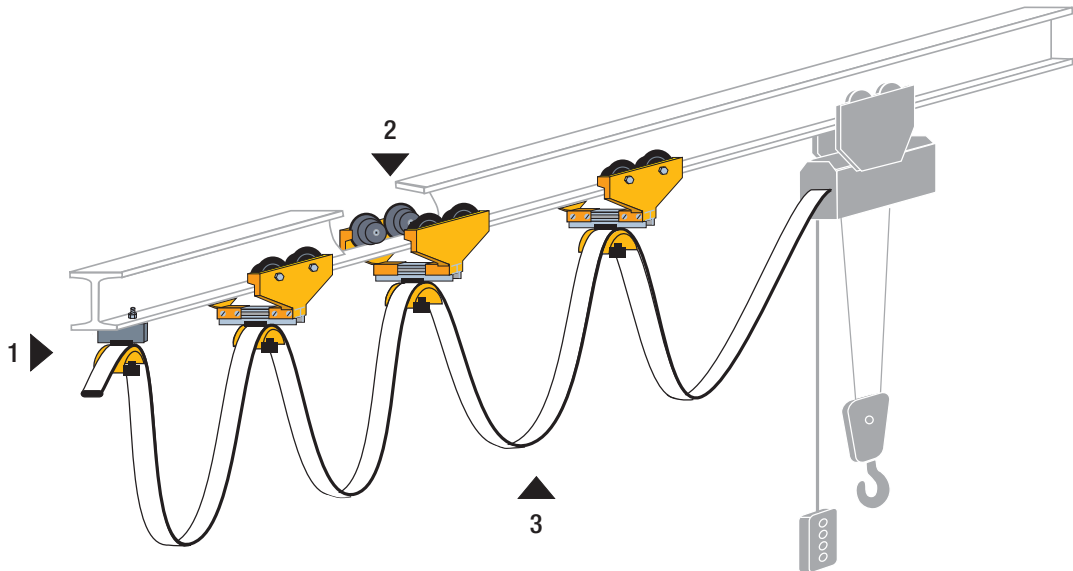
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Cable Trolleys for Flat Cables

Program 0314

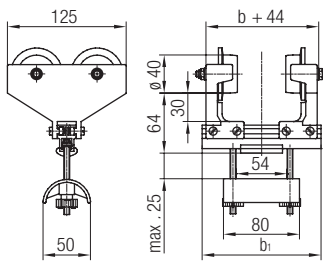
Festoon System for Flat Cables



- 1. End Clamp
- 2. Cable Trolleys
- 3. Flat Cable

Material Cable Trolleys for Flat Cables	
Side Shield:	Plastic
Roller:	Nylon, Friction Bearing
Shaft:	Stainless Steel
Support Rail:	Aluminum
Cable Support:	Plastic
Clamping Piece:	Rubber
Fasteners:	Galvanized Steel
Split Nut:	Plastic

4 Wheel Plastic Trolley



Application

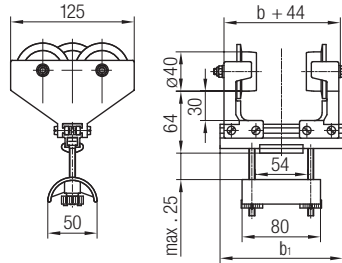
The trolleys 022134 are designed for use with flat cables. They have a maximum cable package window opening of 54 mm width by 25 mm height.

Part No.	Acid Resistant Part No.	b_1 [mm]	Max. Flange Width b [mm]	Max. Travel Speed	Max. Load Capacity
022134-125	---	125	81	50 m/min (165 FPM)	20 kg (45 lbs)
022134-160	022434-160	160	116		
022134-200	022434-200	200	156		
022134-250	---	250	206		
022134-280	---	280	236		
022134-320	---	320	276		
022134-350	---	350	306		

Cable Trolleys for Flat Cables

Program 0314

3 Wheel Plastic Trolley

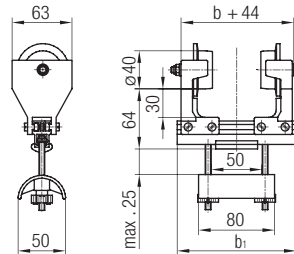


Application

The trolleys 022133 are designed for use with flat cables. They have a maximum cable package window opening of 54 mm width by 25 mm height.

Part No.	Acid Resistant Part No.	b ₁ [mm]	Max. Flange Width b [mm]	Max. Travel Speed	Max. Load Capacity
022133-125	---	125	81	50 m/min (165 FPM)	10 kg (22 lbs)
022133-160	022433-160	160	116		
022133-200	022433-200	200	156		
022133-250	---	250	206		
022133-280	---	280	236		
022133-320	---	320	276		

2 Wheel Plastic Trolley

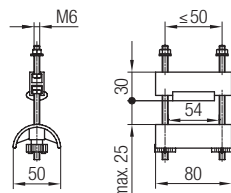


Application

The trolleys 022132 are designed for use with flat cables. They have a maximum cable package window opening of 54 mm width by 25 mm height.

Part No.	Acid Resistant Part No.	b ₁ [mm]	Max. Flange Width b [mm]	Max. Travel Speed	Max. Load Capacity
022132-125	---	125	81	50 m/min (165 FPM)	10 kg (22 lbs)
022132-160	022432-160	160	116		
022132-200	022432-200	200	156		
022132-250	---	250	206		
022132-280	---	280	236		
022132-320	---	320	276		

End Clamp

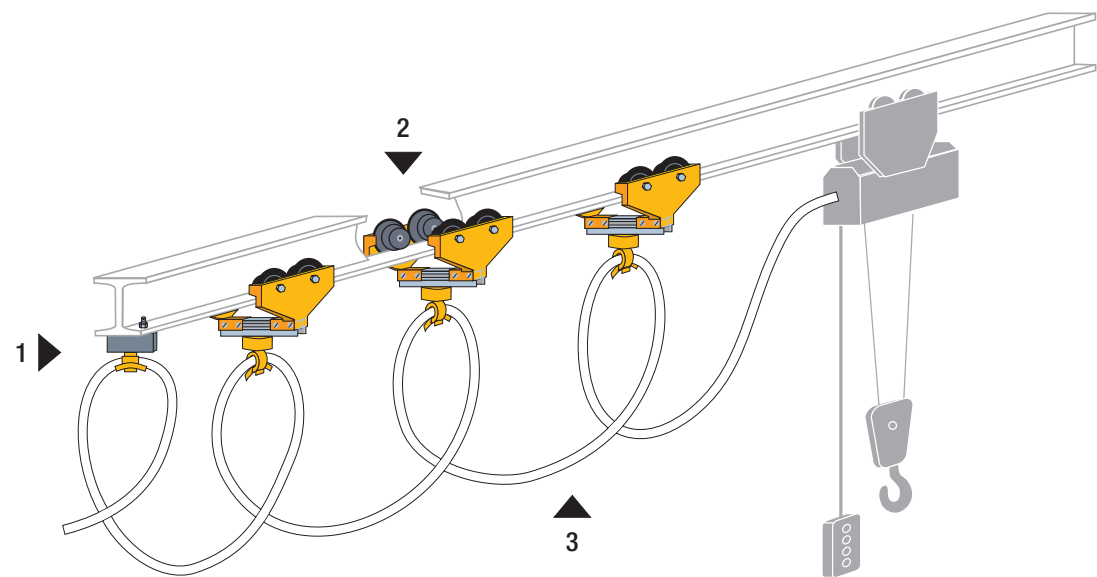


Part No.	Acid Resistant Part No.
020221-080	020421

Cable Trolleys for Round Cables

Program 0314

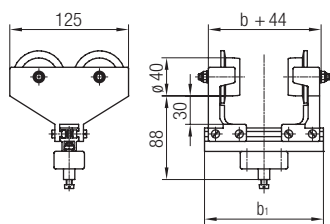
Festoon System for Round Cables



- 1. End Clamp
- 2. Cable Trolleys
- 3. Round Cable

Material Cable Trolleys for Round Cables	
Side Shield:	Plastic
Roller:	Nylon, Friction Bearing
Shaft:	Stainless Steel
Support Rail:	Aluminum
Ball Joint Housing:	Plastic
Clamping Piece:	Rubber
Fasteners:	Galvanized Steel

4 Wheel Plastic Trolley with Ball Joint Attachment

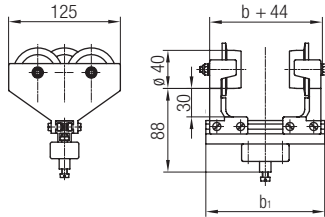


Application
Trolleys with ball joint are designed for use with round cables or hoses. Cable clip type 020131 for supporting cables or hoses must be ordered separately.

Part No.	Acid Resistant Part No.	b ₁ [mm]	Max. Flange Width b [mm]	Max. Travel Speed	Max. Load Capacity
022124-125	---	125	81	50 m/min (165 FPM)	20 kg (45 lbs)
022124-160	022424-160	160	116		
022124-200	022424-200	200	156		
022124-250	---	250	206		

Cable Trolleys for Round Cables Program 0314

3 Wheel Plastic Trolley with Ball Joint Attachment

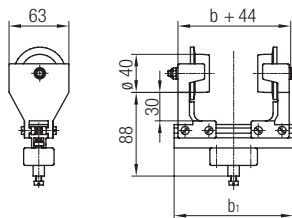


Application

Trolleys with ball joint are designed for use with round cables or hoses. Cable clip type 020131 for supporting cables or hoses must be ordered separately.

Part No.	Acid Resistant Part No.	b ₁ [mm]	Max. Flange Width b [mm]	Max. Travel Speed	Max. Load Capacity
022123-125	---	125	81	50 m/min (165 FPM)	10 kg (22 lbs)
022123-160	022423-160	160	116		
022123-200	022423-200	200	156		
022123-250	---	250	206		

2 Wheel Plastic Trolley with Ball Joint Attachment



Application

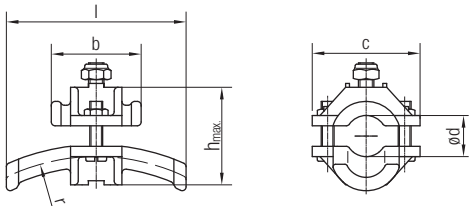
Trolleys with ball joint are designed for use with round cables or hoses. Cable clip type 020131 for supporting cables or hoses must be ordered separately.

Part No.	Acid Resistant Part No.	b ₁ [mm]	Max. Flange Width b [mm]	Max. Travel Speed	Max. Load Capacity
022122-125	---	125	81	50 m/min (165 FPM)	10 kg (22 lbs)
022122-160	022422-160	160	116		
022122-200	022422-200	200	156		
022122-250	---	250	206		

Cable Trolleys for Round Cables

Program 0314

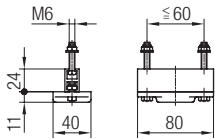
Cable Clip



It is possible to fit multiple cable clips onto a trolley. When fitting different sized cable clips, the largest cable clip must be fitted on top.

Part No.	Acid Resistant Part No.	ød [mm]	r [mm]	l [mm]	h [mm]	b [mm]	c [mm]	Material Cable Clip
020131-16	020431-16	10 - 16	80	70	38	35	42	Plastic
020131-25	020431-25	17 - 25	125	100	47	50	50	
020131-36	020431-36	26 - 36	180	140	58	70	64	

End Clamp

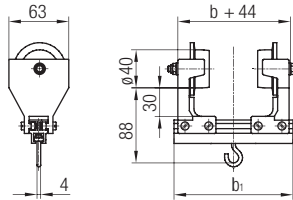


Part No.	Acid Resistant Part No.
020214-080	020414-080

Cable Trolleys for Round Cables

Program 0314

2 Wheel Plastic Trolley with Hook Attachment

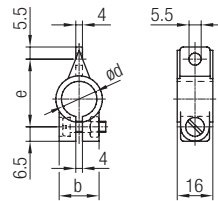


Application

Trolleys with hook are designed for use with cable collars for round cables or hoses. Cable collar type 020111 for cables or hoses must be ordered separately.

Part No.	b ₁ [mm]	Max. Flange Width b [mm]	Max. Travel Speed	Max. Load Capacity
022112-125	125	81	50 m/min (165 FPM)	10 kg (22 lbs)
022112-160	160	116		
022112-200	200	156		

Cable Collar

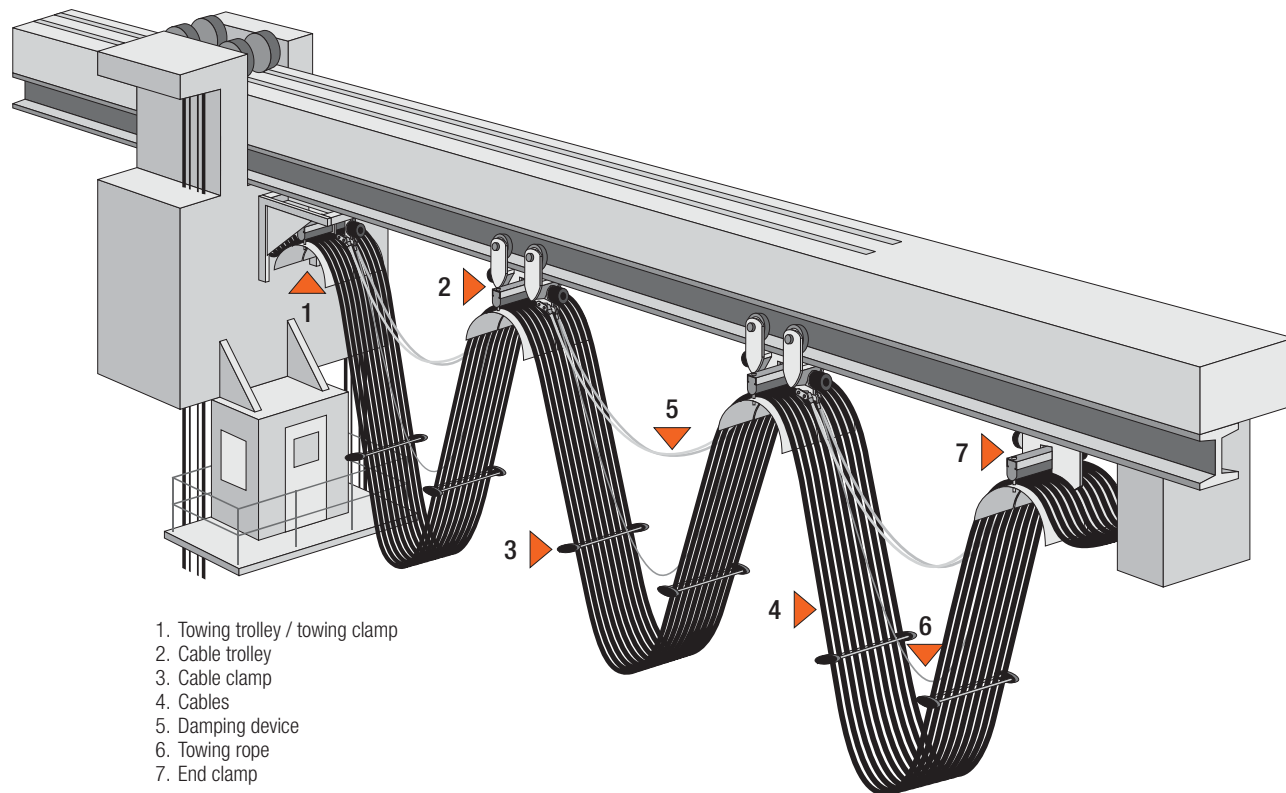


Cable collars for cables or hoses will attach to the hook on the trolley (Part No. 022112). It is possible to fit multiple cable collars onto a trolley. When stacking multiple cable collars, the largest cable collar must be fitted on top.

Part No.	Ød [mm]	b [mm]	e [mm]	Material	
				Cable Collar	Fasteners
020111-08	8	18	23.0	Plastic	Galvanized Steel
020111-10	10		24.5		
020111-11	11		25.5		
020111-12,5	12.5		27.5		
020111-14	14		28.5		
020111-16	16		30.5		
020111-18	18		32.5		
020111-20	20	23	34.5		
020111-22	22		36.5		
020111-25	25		39.5		
020111-28	28		42.5		
020111-32	32		46.5		
020111-36	36		50.5		

System Arrangement

Festoon System for Flat and Round Cables



Design Features

- Base trolley and cable supports: galvanized steel
- Fasteners: galvanized steel
- Running gear spacers are made of aluminum
- Clamping Piece: rubber
- Flange guided rollers made of hardened steel
- Cylindrical main rollers: steel with ball bearings hardened or with polyurethane rollers
- Anti-lift rollers made of hardened steel with ball bearings

Ordering Example Program 0320

Example:

Trolley selection for a flat cable package size of 110 mm width x 45 mm height set for a S6x12.5 I-Beam with flanged rollers.

Selection:

Cable support diameter $d_a = 125$ mm,
according to minimum bend diameter of cable.
 $b_2 = 130$ mm
 $s = 60$ mm (as per table on page 11)

Part No.:

Cable Trolley without Anti-Lift Rollers

032252-250x160/30-DE

Base Trolley _____
Running Gear Designation _____
Beam Suffix _____

Corresponding Tow Trolley with Anti-Lift Rollers

032262-250x160/31-DE

Corresponding End Clamp

032242-250x160

Cable Trolleys

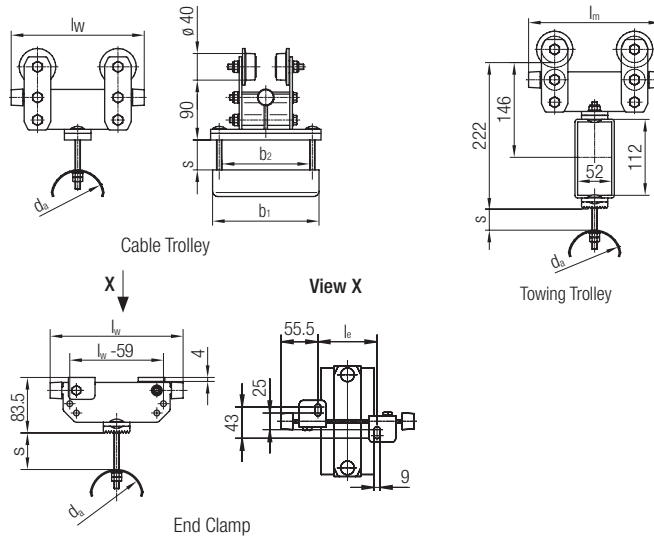
Program 0320

Steel Trolleys for Flat Cables



- Max. Load Capacity 80 kg¹⁾
- Max. Travel Speed 100 m/min¹⁾
- Other Trolley Sizes available upon request

1) depending on roller size and roller material



Cable Trolley Part No.	End Clamp Part No.	Towing Trolley Part No.	d _a [mm]	l _w [mm]	b ₁ [mm]	b ₂ [mm]	s [mm]	l _e [mm]	l _m [mm]
032250-160x100/...	032240-160x100	032260-200x100/...	80	160	100	70	35	49	200
032250-160x160/...	032240-160x160	032260-200x160/...			160	130			
032250-200x100/...	032240-200x100	032260-200x100/...		200	100	70	55	89	
032250-200x160/...	032240-200x160	032260-200x160/...			160	130			
032252-200x100/...	032242-200x100	032262-200x100/...	125	200	100	70	35	89	200
032252-200x160/...	032242-200x160	032262-200x160/...			160	130			
032252-250x100/...	032242-250x100	032262-250x100/...		250	100	70	60	139	250
032252-250x160/...	032242-250x160	032262-250x160/...			160	130			
032252-250x200/...	032242-250x200	032262-250x200/...			200	170			
032253-250x160/...	032243-250x160	032263-250x160/...			160	175			
032253-250x200/...	032243-250x200	032263-250x200/...	215	170					
032253-280x160/...	032243-280x160	032263-280x160/...	280	175		130	55	169	280
032253-280x200/...	032243-280x200	032263-280x200/...		215		170			

Running Gear with ø 40/55 mm Flanged Rollers (for parallel and tapered flange I-Beams)	
Without Anti-Lift Rollers	
Running Gear Designation with Hardened Steel Rollers .../30-...	
With Anti-Lift Rollers	
Running Gear Designation with Hardened Steel Rollers .../31-...	

Running Gear with ø 40 mm Cylindrical Main Rollers (for tapered flange I-Beams only)	
Without Anti-Lift Rollers	
Running Gear Designation with Hardened Steel Rollers .../10-... with Polyurethane Rollers .../12-...	
With Anti-Lift Rollers	
Running Gear Designation with Hardened Steel Rollers .../11-... with Polyurethane Rollers .../13-...	

Beam Suffix	Beam Size	Nominal Flange Width	
		[Inch]	[mm]
AA	S3x5.7	2.33	059
BB	S4x7.7	2.66	068
CC	S5x10.0	3.00	076
DE	S6x12.5	3.33	085
NF	S8x18.4	4.00	102
ED	W4x13.0	3.94	100
FD	W6x8.5	3.94	100
GD	W6x12.0	4.00	102
HD	W8x10.0	3.94	100
ID	W8x13.0	4.00	102
JD	W8x15.0	4.02	102
KD	W10x11.5	3.95	100
LD	W10x15.0	4.00	102
MD	W10x17.0	4.01	102

Cable Trolleys

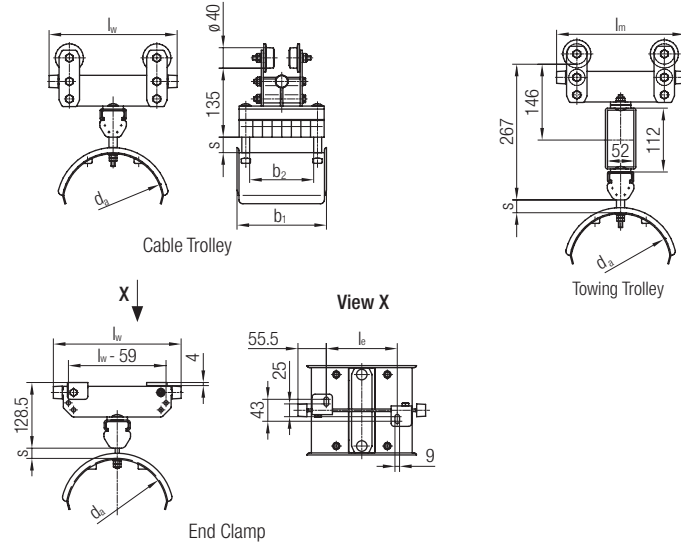
Program 0320

Steel Trolleys for Round Cables



- Max. Load Capacity 80 kg¹⁾
- Max. Travel Speed 100 m/min¹⁾
- Other Trolley Sizes available upon request

1) depending on roller size and roller material



Cable Trolley Part No.	End Clamp Part No.	Towing Trolley Part No.	d _a [mm]	l _w [mm]	b ₁ [mm]	b ₂ [mm]	s [mm]	l _e [mm]	l _m [mm]
032464-250x160/...	032494-250x160	032474-250x160/...	200	250	175	125	20	139	250
032464-250x200/...	032494-250x200	032474-250x200/...			215	165			
032465-320x160/...	032495-320x160	032475-320x160/...	250	320	175	125	25	209	320
032465-320x200/...	032495-320x200	032475-320x200/...			215	165			
032465-320x250/...	032495-320x250	032475-320x250/...			265	215			
032467-400x160/...	032497-400x160	032477-400x160/...	320	400	175	125	32	289	400
032467-400x200/...	032497-400x200	032477-400x200/...			215	165			
032467-400x250/...	032497-400x250	032477-400x250/...			265	215			

For tow trolleys, running gears with anti-lift rollers are recommended. Running gears for other beam styles are available on request. Please contact us.

Running Gear with ø40/55mm Flanged Rollers (for parallel and tapered flange I-Beams)	
Without Anti-Lift Rollers	
Running Gear Designation with Hardened Steel Rollers .../30-...	
With Anti-Lift Rollers	
Running Gear Designation with Hardened Steel Rollers .../31-...	

Running Gear with ø40mm Cylindrical Main Rollers (for tapered flange I-Beams only)	
Without Anti-Lift Rollers	
Running Gear Designation with Hardened Steel Rollers .../10-... with Polyurethane Rollers .../12-...	
With Anti-Lift Rollers	
Running Gear Designation with Hardened Steel Rollers .../11-... with Polyurethane Rollers .../13-...	

Beam Suffix	Beam Size	Nominal Flange Width	
		[Inch]	[mm]
AA	S3x5.7	2.33	59
BB	S4x7.7	2.66	68
CC	S5x10.0	3.00	76
DE	S6x12.5	3.33	85
NF	S8x18.4	4.00	102
ED	W4x13.0	3.94	100
FD	W6x8.5	3.94	100
GD	W6x12.0	4.00	102
HD	W8x10.0	3.94	100
ID	W8x13.0	4.00	102
JD	W8x15.0	4.02	102
KD	W10x11.5	3.95	100
LD	W10x15.0	4.00	102
MD	W10x17.0	4.01	102

Cable Trolleys

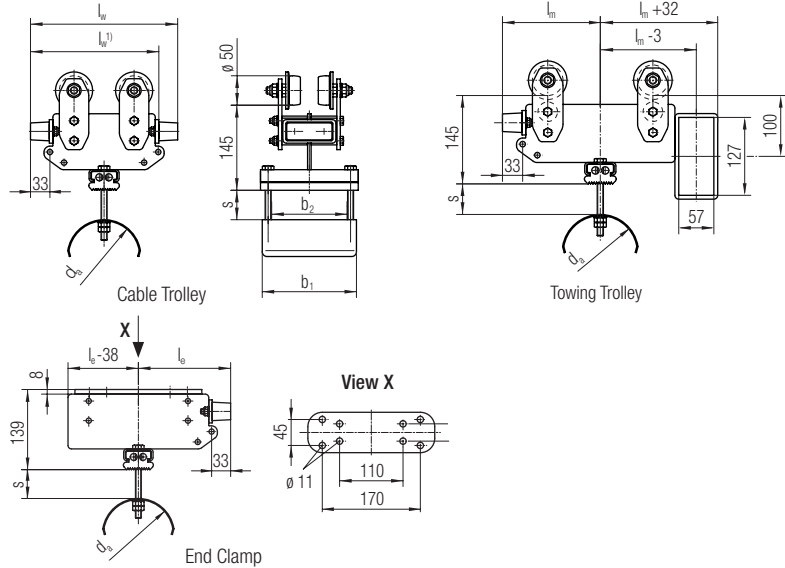
Program 0325

Steel Trolleys for Flat Cables



- Max. Load Capacity 125 kg¹⁾
- Max. Travel Speed 120 m/min¹⁾
- Other Trolley Sizes available upon request

1) depending on roller size and roller material



Cable Trolley Part No.	End Clamp Part No.	Towing Trolley Part No.	d _a [mm]	l _w [mm]	b ₁ [mm]	b ₂ [mm]	s [mm]	l _e [mm]	l _m [mm]
032652-220x160/...	032642-320x160	032662-320x160/...	125	220 ¹⁾	160	128	35	160	160
032652-220x200/...	032642-320x200	032662-320x200/...			200	168			
032652-250x160/...	032642-320x160	032662-320x160/...		250	160	128	50		
032652-250x200/...	032642-320x200	032662-320x200/...			200	168			
032653-290x160/...	032643-320x160	032663-320x160/...	160	290 ¹⁾	175	128	50		
032653-290x200/...	032643-320x200	032663-320x200/...			215	168			
032653-290x250/...	032643-320x250	032663-320x250/...			265	218			
032653-320x160/...	032643-320x160	032663-320x160/...		320	175	128	70		
032653-320x200/...	032643-320x200	032663-320x200/...			215	168			
032653-320x250/...	032643-320x250	032663-320x250/...			265	218			
032654-320x160/...	032644-320x160	032664-320x160/...	200	320	175	128	50		
032654-320x200/...	032644-320x200	032664-320x200/...			215	168			
032654-320x250/...	032644-320x250	032664-320x250/...			265	218			

1) Trolley with one buffer only

Running Gear with $\emptyset 50/63$ mm Flanged Rollers (for parallel and tapered flange I-Beams)	
Without Anti-Lift Rollers	
Running Gear Designation with Hardened Steel Rollers .../70-...	
With Anti-Lift Rollers	
Running Gear Designation with Hardened Steel Rollers .../71-...	

Running Gear with $\emptyset 50$ mm Cylindrical Main Rollers (for tapered flange I-Beams only)	
Without Anti-Lift Rollers	
Running Gear Designation with Hardened Steel Rollers .../50-... with Polyurethane Rollers .../60-...	
With Anti-Lift Rollers	
Running Gear Designation with Hardened Steel Rollers .../51-... with Polyurethane Rollers .../61-...	

Beam Suffix	Beam Size	Nominal Flange Width	
		[Inch]	[mm]
AA	S3x5.7	2.33	59
BB	S4x7.7	2.66	68
CC	S5x10.0	3.00	76
DE	S6x12.5	3.33	85
NF	S8x18.4	4.00	102
ED	W4x13.0	3.94	100
FD	W6x8.5	3.94	100
GD	W6x12.0	4.00	102
HD	W8x10.0	3.94	100
ID	W8x13.0	4.00	102
JD	W8x15.0	4.02	102
KD	W10x11.5	3.95	100
LD	W10x15.0	4.00	102
MD	W10x17.0	4.01	102

Cable Trolleys

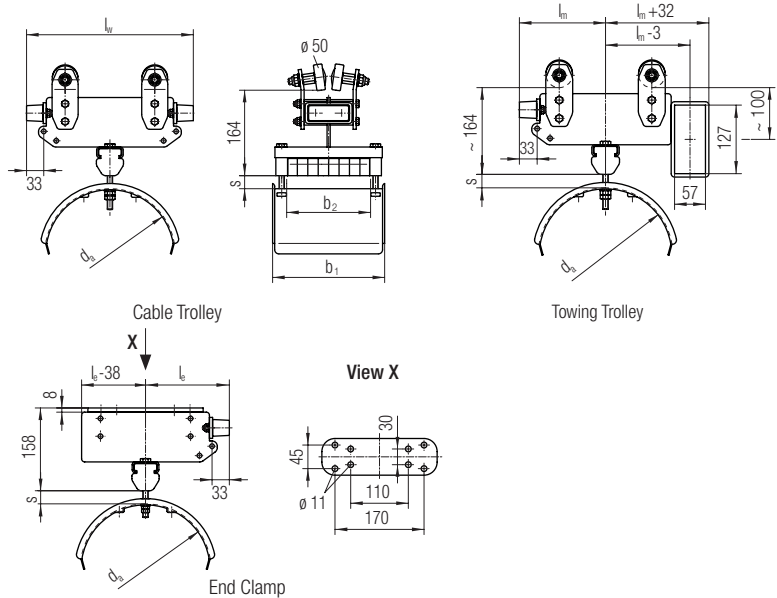
Program 0325

Steel Trolleys for Round Cables



- Max. Load Capacity 125 kg¹⁾
- Max. Travel Speed 120 m/min¹⁾
- Other Trolley Sizes available upon request

¹⁾ depending on roller size and roller material



Cable Trolley Part No.	End Clamp Part No.	Towing Trolley Part No.	d _a [mm]	l _w [mm]	b ₁ [mm]	b ₂ [mm]	s [mm]	l _e [mm]	l _m [mm]
032865-320x160/...	032895-320x160	032875-320x160/...	250	320	175	121	25	160	160
032865-320x200/...	032895-320x200	032875-320x200/...			215	161			
032865-320x250/...	032895-320x250	032875-320x250/...			265	211			
032867-400x160/...	032897-400x160	032877-400x160/...	320	400	175	121	32	200	200
032867-400x200/...	032897-400x200	032877-400x200/...			215	161			
032867-400x250/...	032897-400x250	032877-400x250/...			265	211			

For tow trolleys, running gears with anti-lift rollers are recommended. Running gears for other beam styles are available on request. Please contact us.

Running Gear with ø50/63 mm Flanged Rollers (for parallel and tapered flange I-Beams)	
Without Anti-Lift Rollers	
Running Gear Designation with Hardened Steel Rollers .../70-...	
With Anti-Lift Rollers	
Running Gear Designation with Hardened Steel Rollers .../71-...	

Running Gear with ø50 mm Cylindrical Main Rollers (for tapered flange I-Beams only)	
Without Anti-Lift Rollers	
Running Gear Designation with Hardened Steel Rollers .../50-... with Polyurethane Rollers .../60-...	
With Anti-Lift Rollers	
Running Gear Designation with Hardened Steel Rollers .../51-... with Polyurethane Rollers .../61-...	

Beam Suffix	Beam Size	Nominal Flange Width	
		[Inch]	[mm]
AA	S3x5.7	2.33	59
BB	S4x7.7	2.66	68
CC	S5x10.0	3.00	76
DE	S6x12.5	3.33	85
NF	S8x18.4	4.00	102
ED	W4x13.0	3.94	100
FD	W6x8.5	3.94	100
GD	W6x12.0	4.00	102
HD	W8x10.0	3.94	100
ID	W8x13.0	4.00	102
JD	W8x15.0	4.02	102
KD	W10x11.5	3.95	100
LD	W10x15.0	4.00	102
MD	W10x17.0	4.01	102

Cable Trolleys

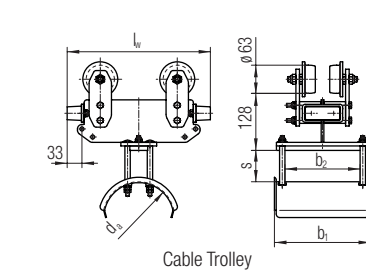
Program 0330

Steel Trolleys for Flat Cables

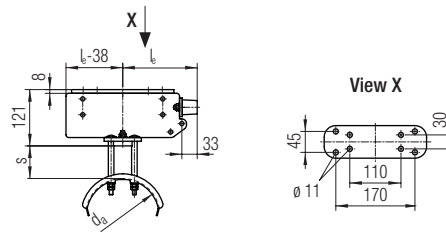


- Max. Load Capacity 200 kg¹⁾
- Max. Travel Speed 150 m/min¹⁾
- Other Trolley Sizes available upon request

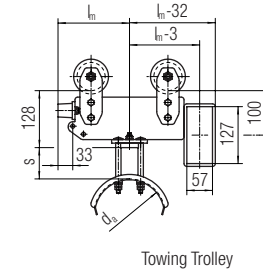
1) depending on roller size and roller material



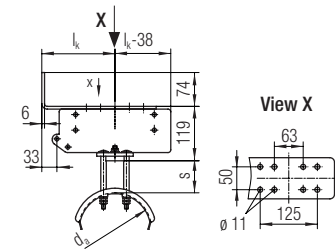
Cable Trolley



End Clamp



Towing Trolley



Towing Clamp

Cable Trolley Part No.	End Clamp Part No.	Towing Trolley Part No.	Towing Clamp Part No.	d _a [mm]	l _w [mm]	b ₁ [mm]	b ₂ [mm]	s [mm]	l _e [mm]	l _m [mm]	l _k [mm]
033252-250x160/...	033242-320x160	033262-320x160/...	033272-320x160	125	250	175	128	50	160	160	160
033252-250x200/...	033242-320x200	033262-320x200/...	033272-320x200			215	168				
033252-250x250/...	033242-320x250	033262-320x250/...	033272-320x250			265	218				
033252-320x160/...	033242-320x160	033262-320x160/...	033272-320x160			175	128				
033252-320x200/...	033242-320x200	033262-320x200/...	033272-320x200			215	168				
033252-320x250/...	033242-320x250	033262-320x250/...	033272-320x250			265	218				
033253-320x160/...	033243-320x160	033263-320x160/...	033273-320x160	160	320	175	128	70	160	160	160
033253-320x200/...	033243-320x200	033263-320x200/...	033273-320x200			215	168				
033253-320x250/...	033243-320x250	033263-320x250/...	033273-320x250			265	218				
033254-400x160/...	033244-400x160	033264-400x160/...	033274-400x160	200	400	175	128	85	200	200	200
033254-400x200/...	033244-400x200	033264-400x200/...	033274-400x200			215	168				
033254-400x250/...	033244-400x250	033264-400x250/...	033274-400x250			265	218				

Running Gear with ø63/80 mm Flanged Rollers (for parallel and tapered flange I-Beams)	
Without Anti-Lift Rollers	
Running Gear Designation with Hardened Steel Rollers .../90-...	
With Anti-Lift Rollers	
Running Gear Designation with Hardened Steel Rollers .../91-...	

Running Gear with ø63 mm Cylindrical Main Rollers (for tapered flange I-Beams only)	
Without Anti-Lift Rollers	
Running Gear Designation with Hardened Steel Rollers .../80-... with Polyurethane Rollers .../82-...	
With Anti-Lift Rollers	
Running Gear Designation with Hardened Steel Rollers .../81-... with Polyurethane Rollers .../83-...	

Beam Suffix	Beam Size	Nominal Flange Width	
		[Inch]	[mm]
AA	S3x5.7	2.33	59
BB	S4x7.7	2.66	68
CC	S5x10.0	3.00	76
DE	S6x12.5	3.33	85
NF	S8x18.4	4.00	102
ED	W4x13.0	3.94	100
FD	W6x8.5	3.94	100
GD	W6x12.0	4.00	102
HD	W8x10.0	3.94	100
ID	W8x13.0	4.00	102
JD	W8x15.0	4.02	102
KD	W10x11.5	3.95	100
LD	W10x15.0	4.00	102
MD	W10x17.0	4.01	102

Cable Trolleys

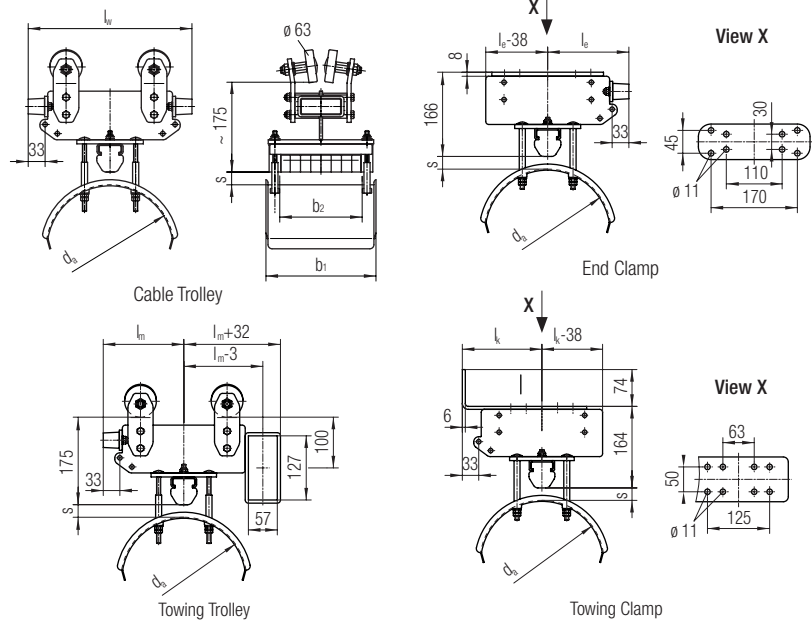
Program 0330

Steel Trolleys for Round Cables



- Max. Load Capacity 200 kg¹⁾
- Max. Travel Speed 150 m/min¹⁾
- Other Trolley Sizes available upon request

¹⁾ depending on roller size and roller material



Cable Trolley Part No.	End Clamp Part No.	Towing Trolley Part No.	Towing Clamp Part No.	d _a [mm]	l _w [mm]	b ₁ [mm]	b ₂ [mm]	s [mm]	l _e [mm]	l _m [mm]	l _k [mm]
033465-320x160/...	033495-320x160	033475-320x160/...	033485-320x160	250	320	175	121	25	160	160	160
033465-320x200/...	033495-320x200	033475-320x200/...	033485-320x200			215	161				
033465-320x250/...	033495-320x250	033475-320x250/...	033485-320x250			265	211				
033467-400x160/...	033497-400x160	033477-400x160/...	033487-400x160	320	400	175	121	32	200	200	200
033467-400x200/...	033497-400x200	033477-400x200/...	033487-400x200			215	161				
033467-400x250/...	033497-400x250	033477-400x250/...	033487-400x250			265	211				

For tow trolleys, running gears with anti-lift rollers are recommended. Running gears for other beam styles are available on request. Please contact us.

Running Gear with ø63/80mm Flanged Rollers (for parallel and tapered flange I-Beams)	
Without Anti-Lift Rollers	
Running Gear Designation with Hardened Steel Rollers .../90-...	
With Anti-Lift Rollers	
Running Gear Designation with Hardened Steel Rollers .../91-...	

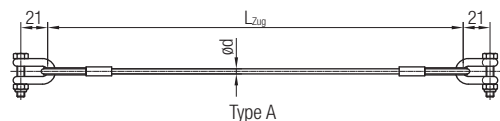
Running Gear with ø63mm Cylindrical Main Rollers (for tapered flange I-Beams only)	
Without Anti-Lift Rollers	
Running Gear Designation with Hardened Steel Rollers .../80-... with Polyurethane Rollers .../82-...	
With Anti-Lift Rollers	
Running Gear Designation with Hardened Steel Rollers .../81-... with Polyurethane Rollers .../83-...	

Beam Suffix	Beam Size	Nominal Flange Width	
		[Inch]	[mm]
AA	S3x5.7	2.33	59
BB	S4x7.7	2.66	68
CC	S5x10.0	3.00	76
DE	S6x12.5	3.33	85
NF	S8x18.4	4.00	102
ED	W4x13.0	3.94	100
FD	W6x8.5	3.94	100
GD	W6x12.0	4.00	102
HD	W8x10.0	3.94	100
ID	W8x13.0	4.00	102
JD	W8x15.0	4.02	102
KD	W10x11.5	3.95	100
LD	W10x15.0	4.00	102
MD	W10x17.0	4.01	102

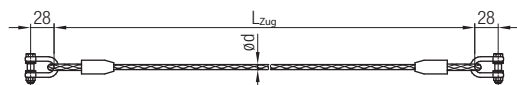
Accessories for Festoon Systems

Program 0320, 0325 and 0330

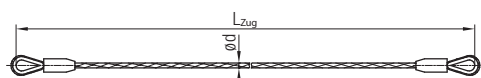
Tow Ropes



Type A



Type B

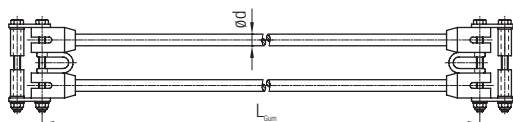


Type C

Type C suggested for use with Damping Rope assembly.
Different types and lengths available upon request.

Part No.	ød [mm]	Material Rope	Type	Program
020328-04	4	Galvanized Steel	A	0320
020329-04	4	Galvanized Steel (w/PVC Jacket)		
020328-06	6	Galvanized Steel	B	0325, 0330
020329-08	8	Galvanized Steel (w/PVC Jacket)		
020325-08	8	Galvanized Steel (w/PVC Jacket)	C	

Damping Devices



Note:

In case of order please state the lengths L_{Gum} of the respective Damping Ropes.

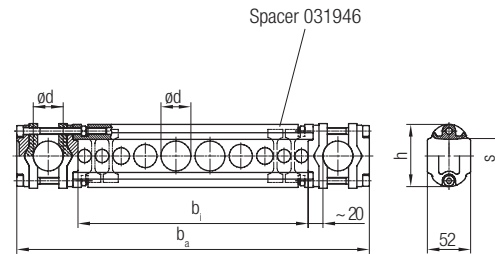
Different types and lengths available upon request.

Part No.	ød [mm]	Material Rope	Program
020337-10	10	Rubber core with a Nylon jacket	0325, 0330
020337-14	14		

Accessories for Festoon Systems

Program 0320, 0325 and 0330

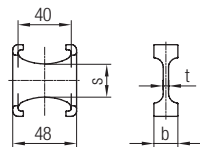
Round Cable Clamps



Part No.	ød _{max} [mm]	b _i [mm]	b _a [mm]	h [mm]	s [mm]	Σd ¹⁾ [mm]	Support Rail	Material Cable Clip	Fasteners	Weight [kg]
031941-026x100/400	26	100	236	64	30	34	Aluminum	Rubber	Stainless Steel	0.95
031941-026x150/400		150	286							1.07
031941-026x200/400		200	336							1.09
031941-026x250/400		250	386							1.31
031941-036x100/400	36	100	256	74	40	46				1.04
031941-036x150/400		150	306							1.16
031941-036x200/400		200	356							1.28
031941-036x250/400		250	406							1.40

1) A cable spacer is required between cables if the sum of the diameters of two adjacent cables is smaller than the value Σd .

Spacers

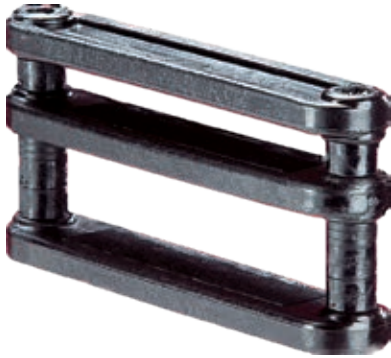


Part No.	s [mm]	t [mm]	b [mm]	Material	Used with Round Cable Clamp
031946-26	25	4	18	Plastic	031941-026x...
031946-36	35	5	19		031941-036x...

Accessories for Festoon Systems

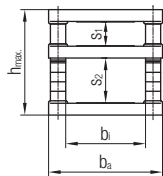
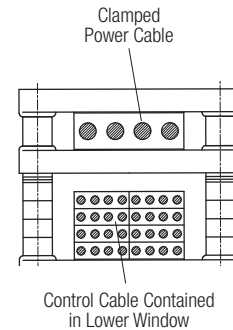
Program 0320, 0325 and 0330

Flat Cable Clamps

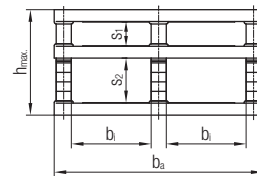


Power cables are clamped in upper window s_1 , control cables are contained in lower window s_2 with sufficient space ($> 2 \text{ mm}$) to allow the cables to move freely.

Flat cable clamps are supplied pre-assembled with upper window s_1 of minimum size and lower window s_2 of maximum size. The cable clamps can be adjusted to fit cable packages by transferring spacers from window s_2 to window s_1 .



020126...
031953...



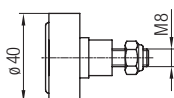
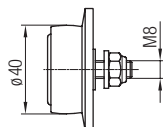
031955...

Part No.	b _i [mm]	b _a [mm]	s ₁ + s ₂ [mm]		s _{1min.} [mm]	h _{max.} [mm]	Material		Weight [kg]
							Cable Clamps	Fasteners	
020126-054x018	54	90	18	+2.5	3	50		Galvanized Steel	0.07
020126-054x028			28			60			0.08
020126-054x038			38			70			0.09
031953-084x025/400	84	120	25	+2.5	5	60			0.16
031953-084x035/400			35			70			0.17
031953-084x045/400			45			80			0.18
031953-084x055/400			55			90			0.19
031953-084x065/400			65			100			0.21
031953-136x025/400	136	172	25	+2.5	5	60			0.22
031953-136x035/400			35			70			0.23
031953-136x045/400			45			80			0.24
031953-136x055/400			55			90			0.25
031953-136x065/400			65			100			0.26
031953-136x075/400			75			110			0.27
031953-136x085/400			85			120			0.28
031955-084x035/400	84	220	35	+2.5	5	70			0.41
031955-084x045/400			45			80			0.43
031955-084x055/400			55			90			0.44
031955-084x065/400			65			100			0.46
031955-084x075/400			75			110			0.48
031955-103x025/400	103	258	25	+2.5	5	60			0.42
031955-103x035/400			35			70			0.43
031955-103x045/400			45			80			0.46
031955-103x055/400			55			90			0.47
031955-103x065/400			65			100			0.49
031955-103x075/400			75			110			0.51

Wear Parts for Cable Trolleys

Program 0320, 0325 and 0330

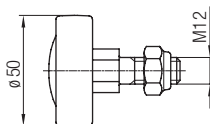
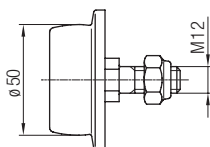
Replacement Rollers for Program 0320



ø 40/55 mm Flanged Roller	Part No.	Type with
	030101-040	Hardened Steel Roller

ø 40 mm Cylindrical Main Roller	Part No.	Type with	For Flange Widths
	030102-040.1	Hardened Steel Roller	42 - 58
	030102-040.2		61 - 84
	030103-040.1	Polyurethane Roller	42 - 58
	030103-040.2		61 - 84

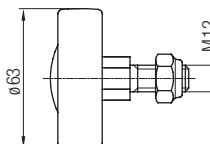
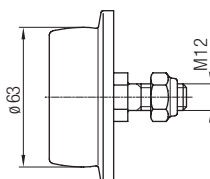
Replacement Rollers for Program 0325



ø 50/63 mm Flanged Roller	Part No.	Type with
	030101-050	Hardened Steel Roller

ø 50 mm Cylindrical Main Roller	Part No.	Type with	For Flange Widths
	030102-050.1	Hardened Steel Roller	50 - 58
	030102-050.2		61 - 84
	030113-050.1	Polyurethane Roller	50 - 58
	030113-050.3		61 - 84

Replacement Rollers for Program 0330



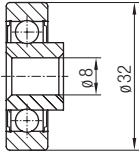
ø 63/80 mm Flanged Roller	Part No.	Type with
	030101-063	Hardened Steel Roller

ø 63 mm Cylindrical Main Roller	Part No.	Type with	For Flange Widths
	030102-063.1	Hardened Steel Roller	50 - 66
	030102-063.2		67 - 92
	030113-063.1	Polyurethane Roller	50 - 66
	030113-063.2		67 - 92

Wear Parts for Cable Trolleys

Program 0320, 0325 and 0330

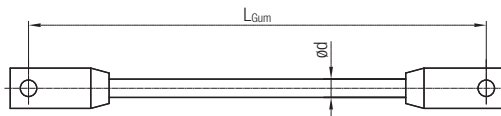
Replacement Anti-Lift Roller for Program 0320, 0325 and 0330



Part No.

02-K012-0062

Damping Ropes for Program 0325 and 0330



Technical details

- Damping Rope: rubber with plastic plait
- Fasteners: stainless steel/hot-dipped galvanized steel

Part No.	ød [mm]	Weight [kg/m]
020336-10	10	0.09
020336-14	14	0.17

Note:

In case of order please state the lengths L_{Gum} of the respective Damping Ropes.

Service – tailor-made

Complete service competence

The scope and depth of the Conductix-Wampfler range of services is based on the requests and requirements of the customers. From planning to long-term agreements, anything is possible – according to your needs. Plus, the more complex the system layout and the expectations of operational life and operational safety, the more sense it makes to utilize our competent service team. Ask us!

Project planning

- Determining the application parameters
- Selecting the optimal cable trolley technology and suitable cables – optimized to customer requirements, application parameters and environmental factors

Pre-assembly

- Mounting the cable trolleys on the transport beam
- Laying out and aligning the cables
- Installing the equipment
- Loading and transporting the festoon system to its site of operation



Final assembly & inspection

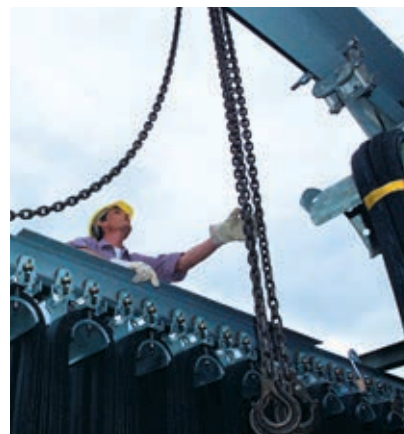
- Ensuring the correct assembly on site
- Completing the installation, inspection, and commissioning using trained and experienced personnel

Maintenance & service

- Regular maintenance and inspections increase the operational life of the facility, ensuring its long-term availability
- Conductix-Wampfler service agreements: the “complete worry-free package”

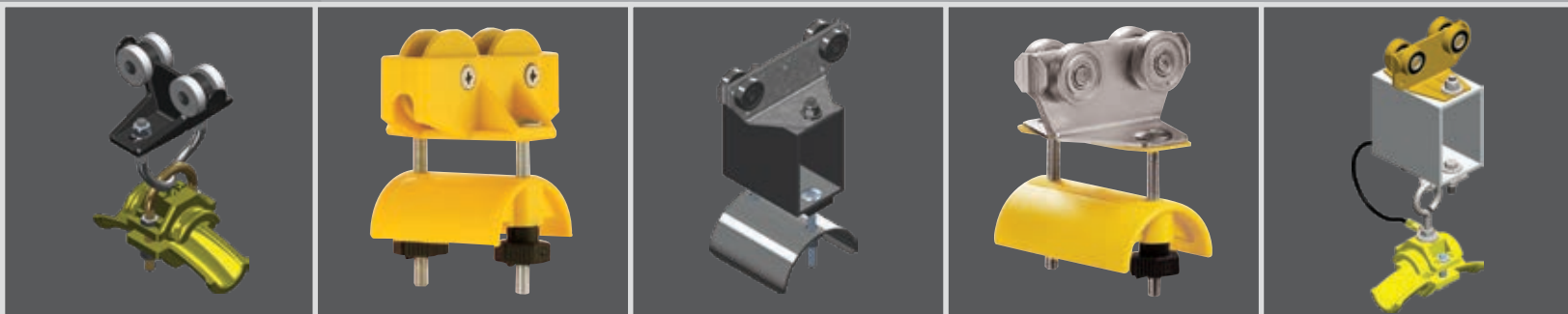


The experts of Conductix-Wampfler assist our customers from planning through pre-assembly right up to the on-site installation – anywhere in the world!



Cable Festoon Systems

C-Track | Stretch Wire Rope



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C-Track and Stretch Wire Rope Festoon Systems

Conductix-Wampfler is the leading global manufacturer of high-performance cable festoon systems for supporting, protecting, and managing cables. We make them for hoses as well. Our festoon brands Conductix-Wampfler, Wampfler, and Insul 8 are used in demanding industrial applications all over the world. You can count on us to provide the right system for the job from among our several cable festoon lines.

C-Track Cable Festoon systems are suitable for standard overhead cranes, small gantry cranes, water treatment plants, car wash systems, plating lines, and many other types of moving equipment. Choose from a complete array of trolleys, track, cable, junction boxes, and connectors. Push button pendants or radio remote controls are available to operate your crane systems.

Our **Stretch Wire Rope Festoon** systems work well for lighter duty applications and installations where a C-Track cannot be installed.

Conductix-Wampfler **I-Beam Festoon** systems and **Square Bar Festoon** systems are ideal for very demanding environments, such as steel mills, bulk handling facilities, and for port container cranes. These are featured in the separate catalogs listed below.

If you don't see exactly what you need, contact us. We specialize in custom-engineered systems to match your application.

Conductix-Wampfler manufacturing facilities are ISO 9001:2008 certified and we are proud members of:



I-Beam Festoon Systems

Please refer to Conductix-Wampfler I-Beam Festoon System catalogs:

KAT0300-0101 I-Beam Engineering Guide

KAT0300-0001 I-Beam Festoon Overview

KAT0320-0001 I-Beam 314/320/325/330 Series

KAT0350-0001 I-Beam 350/360/364 Series

KAT0365-0001 I-Beam 365/370/375 Series

PBL7059 I-Beam 225 Series

C-Track Cable Festoon

C-Track Festoon is an economical and dependable system when the cable required can be supported by a "C" channel.

Heavy Duty C-Track features a heavier gauge track channel for higher capacity.



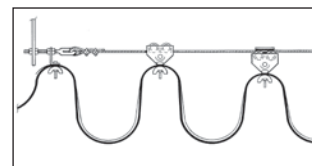
Preassembled C-Track Systems

Save time and money at the job site. Let our experienced personnel preassemble your C-track Cable Festoon system under ideal factory conditions. The complete system comes with cables already clamped to the trolleys at the specified loop depth and trolleys mounted to a C-track section. Installation is quick and easy - just hang the full length of track and transfer the system from the shipping track to the system track. Make your end connections, and you're done!



Stretch Wire Rope Festoon Kits

Stretch Wire systems are well suited for light duty applications. It is economical and dependable for small cranes, moving hoists, and other equipment.



Square Bar Festoon Systems

Please refer to Conductix-Wampfler's 270 Series Festoon Catalog KAT0270-0001 for more information.

Festoon Specification Data Sheet

To choose the correct Festoon System, we recommend that you collect the following application data.

Request Date	_____	Sales Person	_____
Company	_____	Contact	_____
	_____	Title	_____
	_____	Telephone	_____
	_____	Fax	_____
	_____	E-Mail	_____

System Parameters (circle units of measure used)

Crane type _____

CMAA crane class (see pg. 30) _____

Travel speed _____ ft/min m/min

Acceleration _____ ft/s² m/s²

Duty cycle (hr/day) _____

Type of Festoon System(s) Required:

☐ Power ☐ Control ☐ Power & Control

Operating Conditions (circle units of measure used)

Environment ☐ Indoor ☐ Outdoor

Temperature range (F° C°) _____ Min _____ Max

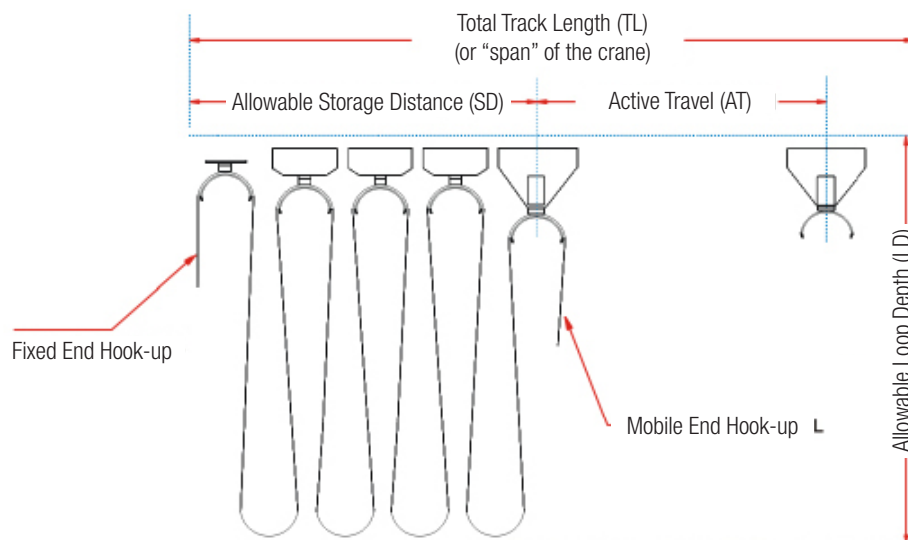
Humidity (%) _____

Corrosives? (please list) _____

Hazardous location? _____

Class, Division, Group _____

System Dimensions



System Dimensions - Refer to dwg above (circle units of measure used):

TL	_____	ft	m	System Window	_____	in.	mm
AT	_____	ft	m	Fixed End Hook-up	_____	ft	m
LD	_____	ft	m	Mobile End Hook-up	_____	ft	m
SD	_____	ft	m				

Type of "Lead" Trolley Req'd: ☐ Tow trolley ☐ Tow clamp ☐ Control Trolley

Festoon Specification Data Sheet

Festoon Cable Requirement

Cable Specification: ☐ Flat ☐ Round Cable Jacket: ☐ Neoprene ☐ PVC

Item	Qty	Cable Type/Description	AWG	# Cond	Dimensions (in)	Wt (lb/ft)
1						
2						
3						
4						
5						
6						
7						
8						

Accessories / Options Required

Want Factory Pre-assembly? ☐ Yes ☐ No

Need Cable Cord Grips? ☐ Yes ☐ No

Need Electrical J-Boxes? ☐ Yes ☐ No

J-Box NEMA Rating (if req'd) _____

Want Factory Pre-Wiring, Fixed End? ☐ Yes ☐ No

Want Factory Pre-Wiring, Mobile End? ☐ Yes ☐ No

Need Control Trolley? ☐ Yes, with J-box ☐ Yes, w/o J-box ☐ Yes, W/Quick disconnect ☐ No

Do You Require Individual Tagging of ☐ Cables? ☐ Conductors?

Style of Tagging (check one, if applicable) ☐ Standard ☐ Laminated ☐ Stainless Steel

Please add any other information below that might help specify the correct festoon system. See Pg. 11 for details on how cable festoons are typically mounted to overhead cranes.

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 www.ErgonomicPartners.com
 Tel: (314) 884-8884



“Quick Quote Web” Online System Quoting Program

Do you specify or purchase Conductor Bar Systems, Festoon Systems, or Push Button Pendants on a regular basis? If so, we recommend that you use our innovative **Quick Quote Web** online configuration tool. To access the program, all you need is a **Partners Site** login - see below.



Quick Quote Web:

- Configures systems based on your needs and generates a bill of material
- Allows you to create and save customized quotes for your customers
- Enables you to transmit your quote to Conductix-Wampfler as an order, at the click of a button.

Advanced features for C-track and Square Bar Festoon Systems:

- Handles most common festoon mounting configurations
- Lets you set-up cable package arrangements and trolley selection
- Handles factory prewiring and preassembly options for festoon systems

Quick Quote Web allows you to add the appropriate Push Button Pendant:

- Determines the type of pendant required based on your cable festoon system parameters
- Allows you to choose pre-configured pendants and related accessories, including pendant cable

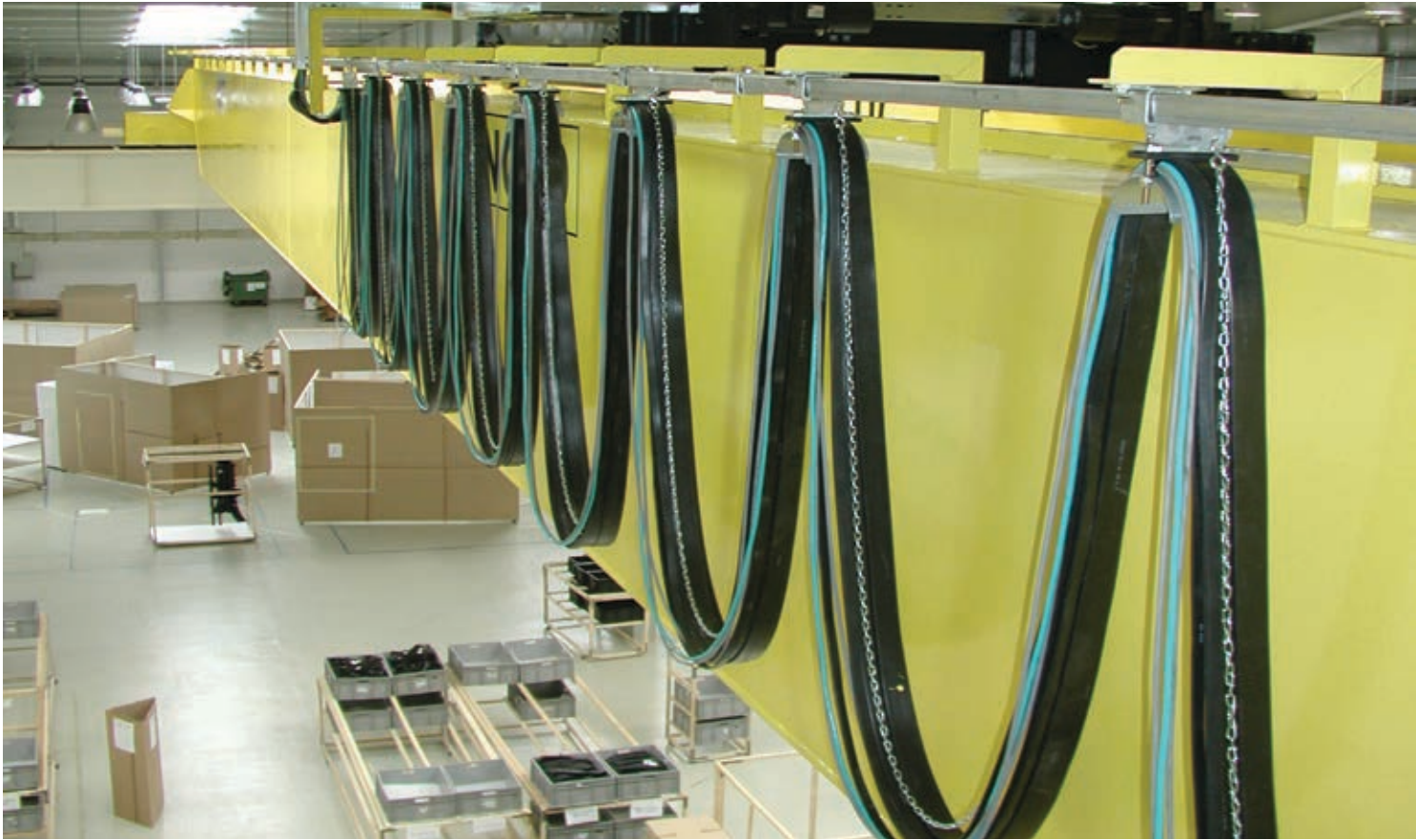
Quick Quote Web also specifies our most popular Conductor Bar Systems:

- Calculates crane amp draw with one or more vehicles
- Automatically calculates and graphs voltage drop with single or multiple power feed locations
- Handles advanced bar and collector mounting configurations
- Provides conductor bar system schematic



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C-Track Festoon Installations



Flat cable is available in either yellow or black.

PVC Flat Cable

Standard flat cable has a yellow PVC jacket. Black cable jacket is also available by request - contact Conductix-Wampfler. Rip cords are provided with cables from 16 AWG to 10 AWG to assist with removing the outside jacket.

Flat cable is sold by the foot. To calculate required festoon cable length, add 10% to the track length, then add the desired hookup lengths for both fixed end and mobile end connections.

For Neoprene flat cables, see page 10. For Round Cables, see Pg. 32.

Cable Size		Part No.		Continuous Duty Rating (amps) *	Short Duration Rating (amps) **		Strands per Conductor	Unshielded Cable Nominal Dimensions +		Wt lb/ft (kg/m)
# of Cond	AWG	PVC Jacket	Shielded +		60 min	30 min		Height in. (mm)	Width in. (mm)	
4	2	23958Y		120	148	173	665	0.56 (14)	1.96 (50)	1.33 (1.98)
4	4	26550Y		90	111	130	420	0.49 (12)	1.70 (43)	0.92 (1.37)
4	6	21814Y		70	83	94	266	0.44 (11)	1.45 (37)	0.65 (0.97)
4	8	26698Y		50	63	69	168	0.37 (9)	1.19 (30)	0.41 (0.61)
4	10	22542Y		40	49	52	105	0.27 (7)	0.88 (22)	0.25 (0.37)
4	12	22994Y		30	36	40	65	0.23 (6)	0.75 (18)	0.17 (0.25)
4	14	21815Y		25	31	32	41	0.21 (5)	0.63 (16)	0.13 (0.19)
4	16	-	31734	n/a	n/a	n/a	65	0.24 (6)	0.76 (19)	0.16 (0.24)
8	12	26005Y		21	n/a	n/a	65	0.23 (6)	1.34 (34)	0.32 (0.48)
8	14	26110Y		17	n/a	n/a	41	0.21 (5)	1.18 (30)	0.27 (0.40)
8	16	22607Y	31772	15	n/a	n/a	65	0.20 (5)	1.11 (28)	0.23 (0.34)
12	14	21813Y	34819	17	n/a	n/a	41	0.21 (5)	1.90 (48)	0.41 (0.61)
12	16	23324Y	31580	15	n/a	n/a	65	0.20 (5)	1.61 (41)	0.32 (0.48)

NOTES:

* At 30° C (86° F) ambient temperature. Refer to correction factors in NEC Table 16.14 (A) for temperatures above 30°C.

PVC Cable is not suitable for festoon applications below -10° C

** For crane and hoist motors, in accordance with 2008 National Electric Code, Article 610 for 90° C cables

+ Dimensions may vary - contact Conductix-Wampfler

We sell flat cable in full spools as well as by the foot - contact the factory for details.

Cable Connectors - For Flat PVC Cable

Cable Connectors for Flat PVC Cable are used to terminate the cable at the power source or junction box. Connector has an aluminum body and rubber bushing. Some of the connectors listed have a dual slot to accommodate a second cable - see Cable # 2 columns below.



PN: 35835 (1" NPT, single slot)



PN: 35837 (1" NPT, dual slot)



PN: 35838 (2.0" NPT single slot)

Cable # 1			Cable # 2 (if required)			Connector	
No. of Cond.	AWG	Cable Part No. *	No. of Cond.	AWG	Cable Part No. *	NPT in. (mm)	Part No.
4	4	26550Y	-	-	-	2.0 (51)	35838
4	6	21814Y	-	-	-	2.0 (51)	35838B
4	8	26698Y	-	-	-	1.5 (38)	35837
4	10	22542Y	-	-	-	1.0 (25)	35835C
4	12	22994Y	-	-	-	1.0 (25)	35835B
4	14	21815Y	-	-	-	1.0 (25)	35835
8	12	26005Y	-	-	-	1.5 (38)	35837B
8	12	26005Y	8	12	26005Y	2.0 (51)	35838G
8	14	26110Y	-	-	-	1.5 (38)	35837C
8	14	26110Y	4	10	22542Y	1.5 (38)	35837K
8	14	26110Y	4	12	22994Y	1.5 (38)	35837M
8	14	26110Y	4	14	21815Y	1.5 (38)	35837H
8	14	26110Y	8	14	26110Y	1.5 (38)	35837E
8	16	22607Y	-	-	-	1.5 (38)	35837D
8	16	22607Y	4	10	22542Y	1.5 (38)	35837J
8	16	22607Y	4	12	22994Y	1.5 (38)	35837L
8	16	22607Y	4	14	21815Y	1.5 (38)	35837G
8	16	22607Y	8	16	22607Y	1.5 (38)	35837F
12	14	21813Y	-	-	-	2.0 (51)	35838C
12	14	21813Y	4	10	22542Y	2.0 (51)	35838H
12	14	21813Y	12	14	21813Y	2.0 (51)	35838E
12	16	23324Y	-	-	-	2.0 (51)	35838D
12	16	23324Y	12	16	23324Y	2.0 (51)	35838F

* For details on PVC flat cables, see Pg. 8.

Heat Shrinkable Connectors For Flat or Round Cable



These connectors are for single cable and multiple cable groups and are corrosion resistant and flame retardant. They exceed US Navy requirements for tightness and integrity when used with one flat cable or multiple flat cables of the same size.

Cable Opening in. (mm)	Knockout Dia. in. (mm)	Part No.	Dimension "A"	Wt lb (kg)
1.60 (41)	2.00 (51)	03147	6.17 (157)	0.16 (0.07)
1.10 (28)	1.37 (35)	03146	4.50 (114)	0.16 (0.07)
0.75 (19)	1.00 (25)	03145	4.09 (104)	0.07 (0.03)

Neoprene Flat Cable

Neoprene Flat Cables are used for festoon systems when one or more of these conditions exist:

- The lateral and transverse motions of the host machine vary substantially.
- The cables will be exposed to oil.
- The minimum temperatures will be exceptionally low.

The Neoprene jacket is rated at -40° C to 90° C * and includes a UV inhibitor for outdoor use. The conductor insulation is ethylene propylene rubber (EPR) and rated at 90° C.

UL and CSA listed.

Conductix -Wampfler Part No.	Number of Cond.	Conductor Size AWG)	Stranding	Nominal Cable O.D. in (mm)	Minimum Bend Diameter in (mm)	Ampacity @ 40°C 1	Approximate Cable Weight Lbs/Mft (kg/Km)	Flat Cable Cord Grip
All-Temp (K) Flat Cable (600V)								
XA-579762	8	16	26/30	0.240 x 1.130 (6.1 x 28.7)	1.93 (49)	14	235 (350)	XA-35837C
XA-579765	12	16	26/30	0.240 x 1.662 (6.1 x 42.2)	1.93 (49)	14	340 (506)	XA-35838C
XA-579766	4	14	41/30	0.288 x 0.792 (7.3 x 20.1)	2.32 (59)	18	185 (275)	XA-35835C
XA-579767	8	14	41/30	0.288 x 1.509 (7.3 x 38.3)	2.32 (59)	16	361 (537)	XA-35838B
XA-579768	12	14	41/30	0.288 x 2.226 (7.3 x 56.5)	2.32 (59)	16	526 (783)	XA-562447
XA-579769	4	12	65/30	0.310 x 0.880 (7.9 x 22.4)	2.52 (64)	23	240 (357)	XA-35837
XA-579770	8	12	65/30	0.320 x 1.695 (8.1 x 43.1)	2.56 (65)	20	463 (689)	XA-580527
XA-579771	12	12	65/30	0.320 x 2.500 (8.1 x 63.5)	2.56 (65)	20	707 (1052)	XA-580529
XA-579772	4	10	105/30	0.335 x 0.980 (8.5 x 24.9)	2.72 (69)	29	314 (467)	XA-35837
XA-579776	4	8	168/30	0.451 x 1.354 (11.5 x 4.3)	4.53 (115)	41	565 (841)	XA-35838B
XA-579777	4	6	266/30	0.485 x 1.490 (12.3 x 37.8)	4.85 (123)	55	728 (1083)	XA-35838
XA-579778	4	4	420/30	0.545 x 1.730 (13.8 x 43.9)	5.43 (138)	71	974 (1449)	XA-562685
XA-579779	4	2	665/30	0.608 x 1.982 (15.4 x 50.3)	6.06 (154)	95	1.442 (2146)	020612-20
XA-579780	4	1/0	1045/30	0.778 x 2.542 (19.8 x 64.6)	7.80 (198)	132	2.259 (3362)	020612-20
XA-579781	4	2/0	2107/30	0.824 x 2.726 (20.9 x 69.2)	8.23 (209)	149	2.702 (4021)	020612-202

Neoprene Flat Cable is available in cut lengths and in full spools. Contact the Factory.

Cable Connectors

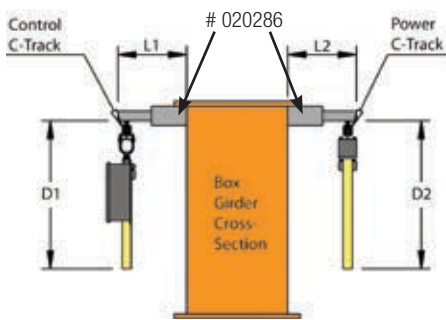
Cable Connectors for Flat Neoprene Cable are used to terminate the cable at the power source or junction box. Connector has an aluminum body and rubber bushing.



# of cond	AWG	Cable Part No.	NPT Size (in)	Connector Part No.
4	2	131120-F4G35UL	2.50	XA-562685
4	4	131120-F4G25UL	2.50	XA-562685
4	6	131120-F4G16UL	2.00	XA-35838
4	8	131120-F4G10UL	1.50	XA-35838B
4	10	131120-F4G6UL	1.50	XA-562683
4	12	131120-F4G4UL	1.50	XA-35837
4	14	131220-F4G2,5UL	1.00	XA-35835C
8	14	131220-F8G2,5UL	2.00	XA-35838B
8	16	131220-F8G1,5UL	1.25	XA-35837
12	14	131220-F12G2,5UL	2.50	XA-562447
12	16	131220-F12G1,5UL	2.00	XA-35838

C-Track Festoon Mounting Styles

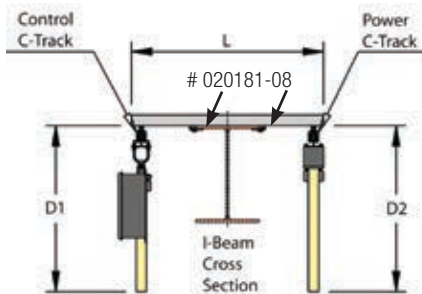
STYLE A Box Girder Crane - Control and Power Festoon on Opposite Sides



To quote this layout, we will need the information on Pg. 4-5, plus:

- Lengths L1 and L2, if Conductix-Wampfler is to supply the Cross Arm Support Channels (Pg. 13 and 21). These are attached with welded-on Suspension Support Brackets, 020286, Pg. 14.
- Maximum loop depths D1 and D2 from top of C-Track to the bottom of the loop

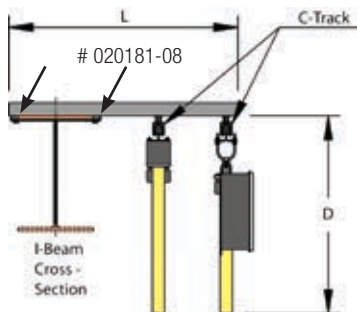
STYLE B I-Beam Crane - Control and Power Festoon on Opposite Sides



To quote this layout, we will need the information on Pg. 4-5, plus:

- Length L, if Conductix-Wampfler is to supply the Cross Arm Support Channels (Pg. 13 and 21). These are attached with Cross Arm Support Beam Clamps, 020181-08, see Pg. 14.
- Maximum loop depths D1 and D2 from top of C-Track to the bottom of the loop
- If a beam cap is present, the 020181-08 beam clamps will not work- contact Conductix-Wampfler for options.

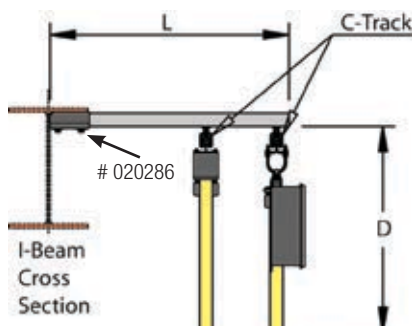
STYLE C I-Beam Crane - Control and Power Festoon on Same Side, Clamped Cross Supports



To quote this layout, we will need the information on Pg. 4-5, plus:

- Length L, if Conductix-Wampfler is to supply the Cross Arm Support Channels (Pgs. 13 and 21). These are attached with Cross Arm Support Beam Clamps, 020181-08, see Pg. 14.
- The maximum loop depth D from top of C-Track.
- If the I-beam has a cap, the 020181-08 beam clamps will not work- contact Conductix-Wampfler for options.

STYLE D I-Beam Crane - Control and Power Festoon on Same Side, Welded Cross Supports

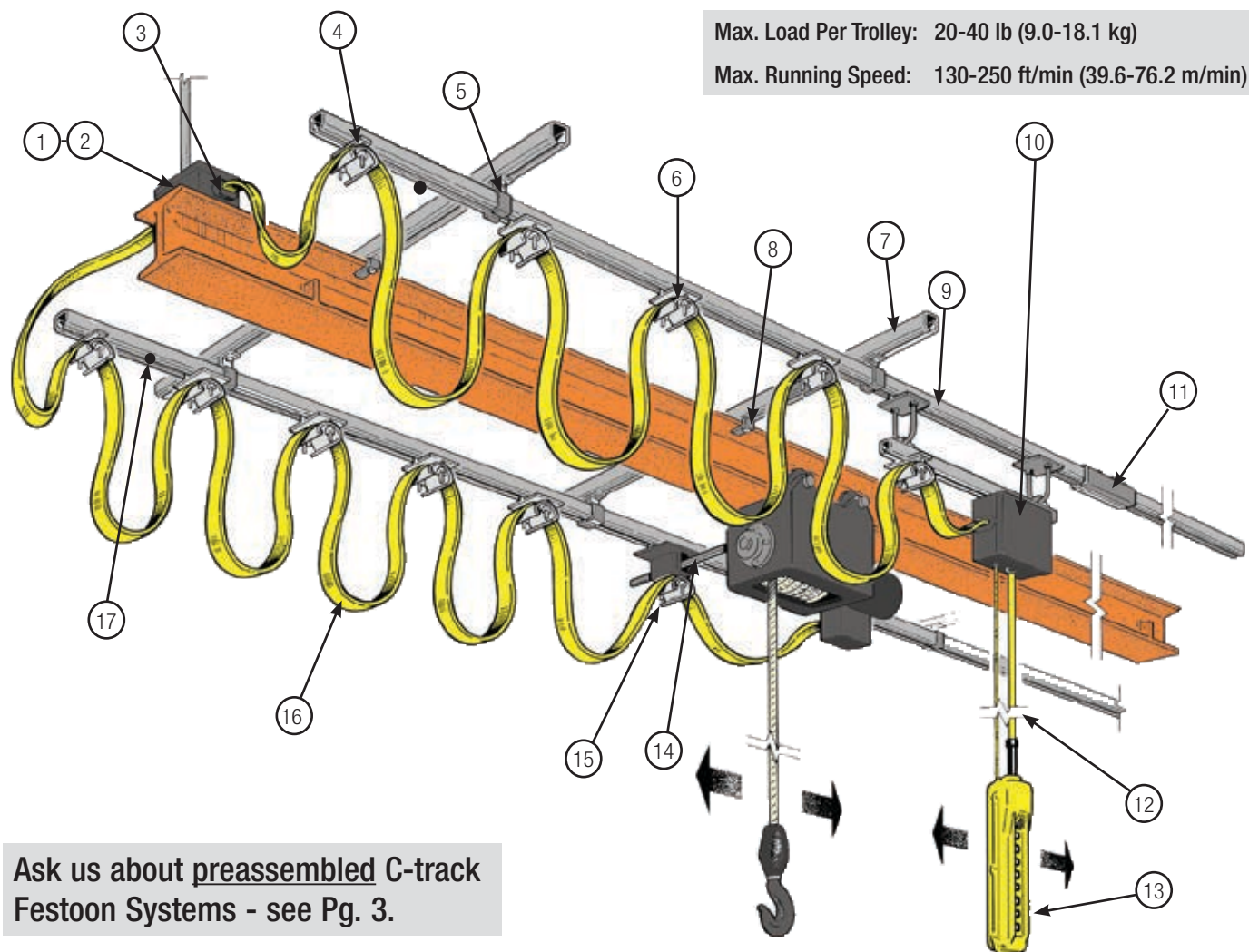


To quote this layout, we will need the information on Pg. 4-5, plus:

- Length L, if Conductix-Wampfler is to supply the Cross Arm Support Channels. These are attached with welded-on Suspension Support Bracket, 020286, Pg. 14.
- The maximum loop depth D from top of C-Track.

Standard Duty C-Track

The C-Track Festoon components needed for an overhead crane system depend upon how the system is to be mounted. Four typical mounting styles are shown on Pg. 11. The one shown below is "STYLE B". For all mounting styles, choose the types and lengths of cable (Pg. 8 and 10) using the formula (track length x 1.10) + hook-up lengths for both ends. For control systems, choose the type of control trolley you want - Junction Box or Quick-Disconnect - and whether you want to use a push button pendant (catalog CAT1001) or radio remote control (catalog CAT1002) to operate the crane. Please use the Specification Data Sheets on Pg. 4-5 to record your system parameters.



Max. Load Per Trolley: 20-40 lb (9.0-18.1 kg)

Max. Running Speed: 130-250 ft/min (39.6-76.2 m/min)

Ask us about preassembled C-track Festoon Systems - see Pg. 3.

- | | |
|---|--|
| ① Fixed End Junction Box | ⑩ Control Unit Trolley with Junction Box; or Quick Disconnect Control Unit Trolley (not shown) |
| ② Terminal Strips (inside junction box) | ⑪ Track Joint Assembly |
| ③ Cable Connectors | ⑫ Pendant Cable |
| ④ End Clamp | ⑬ Push-Button Pendant Station |
| ⑤ Track Hanger | ⑭ Tow Arm |
| ⑥ Cable Trolley | ⑮ Tow Trolley |
| ⑦ Cross Arm Support Channels | ⑯ Flat PVC Cable |
| ⑧ Beam Clamp (for cross arm support channels) | ⑰ End Stop |
| ⑨ C-Track Channel | |

Standard Duty C-Track - Track, Cross Arm Channels

C-Track



C-Track trolleys are designed to run in steel formed C-track sections. For curved track sections, please contact Conductix-Wampfler.

Available in either galvanized or stainless steel and in 10 and 20 foot lengths.

Minimum curve radius: 48" (Galvanized) 72" (Stainless)

Channel Length ft (m)	Part No.		Wt lb (kg)
	Galvanized	Stainless	
10 (3.0)	530754	535633	8 (3.6)
20 (6.1)	534176	535634	15 (6.8)

End Caps



Black plastic end cap trim off the ends of the C-track sections above. Two required per run.

Part No.	Wt lb [kg]
020662-31	0.008 (0.004)

Clips With Cable Tie



Black plastic clip provides a way to tie cables to the C-track. Includes plastic cable tie. Order as many as needed.

Part No.	Wt lb [kg]
023790-1	0.02 (0.009)

Track Joint



The bolted Track Joint securely connects track sections together end-to-end. One required at each track joint. Includes four bolts, lock washers, and nuts.

Part No.		Wt lb (kg)
Galvanized	Stainless	
023210	023410	0.65 (0.29)

Cross Arm Support Channels



Cross Arm Support Channels are mounted perpendicular to the I-beam or girder every 5 ft to support the main C-track channel. See Pg. 11 for mounting options. Made from heavy channel for added rigidity.

Cross Arm Support Channels can be replaced by customer-supplied angle iron or other structural member sufficient to carry the total load of the festoon system. Make sure to order the correct hanger for the type of cross member used - see Pg. 14-15.

Length in. (mm)	Part No		Wt lb (kg)
	Galvanized	Stainless	
16.54 (420)	KC-020276-0420		2.20 (1.00)
25.59 (650)	020276-0650	534148B	3.25 (1.47)
39.37 (1000)	020276-1000	020475-1000	5.19 (2.35)
52.76 (1340)	020276-1340	534148	7.25 (3.29)
59.84 (1520)	020276-1520		8.00 (3.63)
70.87 (1800)	020276-1800		9.00 (4.08)
78.74 (2000)	020276-2000		6.56 (2.98)

Standard Duty C-Track - Track Hanger Brackets

Cross Arm Support Channel Beam Clamps



This clamp attaches Cross Arm Support Channels (Pg. 13) to the I-beam flange - for Mounting Styles B or C - see Pg. 11. Two required per Cross Arm Support Channel.

Clamp bolt is an M8 x 50 mm long and will clamp to beam flange thicknesses between 0.24" and 0.98" (6 mm and 25 mm).

Part No.		Wt lb (kg)
Zinc Plated	Stainless Steel	
020181-08	534469	0.39 (0.18)

Suspension Support Bracket



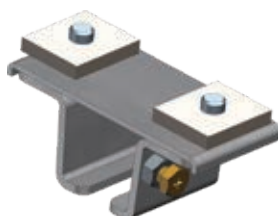
This bracket is welded to your runway beam, cross-bridge beam, or girder in the field to support the Cross Arm Support Channels when mounting styles A or D are preferred - see Pg. 11.

Galvanized finish only.

Part No.	Wt lb (kg)
020286	1.77 (0.80)

Track Hanger Brackets

To mount C-Track to Cross Arm Support Channels



This bracket mounts to Cross Arm Support Channels (Pg. 13) at two points to hang the C-Track. The separate "Z" clamps allow mounting of the C-Track Channel without needing to feed it through the hangers from the end. The clamping action of the support bracket eliminates the need for a separate anchor.

Available in either galvanized or stainless steel finishes.

Part No.		Wt lb (kg)
Galvanized	Stainless	
023222-1	023422-1	0.53 (0.24)

Track Hanger Brackets

To mount C-Track to Angle Iron Cross Supports



This bracket mounts to a customer-supplied angle iron at two points to hang the C-Track. The separate "Z" clamps allow mounting of the C-Track Channel without needing to feed it through the hangers from the end. The clamping action of the support bracket eliminates the need for a separate anchor.

Available in either galvanized or stainless steel finishes. Top bolts are M8 size and have an available length range between top of bracket and bottom of flat washer of 0.98" (20 mm).

Part No.		Wt lb (kg)
Galvanized	Stainless	
023223	023423-1	0.47 (0.21)

Standard Duty C-Track - Hangers/Anchors, End Stop

Track Hanger and Anchor

To mount C-Track to Cross Arm Support Channels



PN: 35707



PN: 35706

A single-point hanger designed to hang C-Track (Pg. 13) from the Cross Arm Support Channels (also Pg. 13). One Hanger is required at each Cross Arm Support Channel for each track run. One of the Hangers (per run) should be replaced with an Anchor that has a set screw to keep the channel from sliding.

With this Hanger/Anchor style, the C-Track channel is fed through each Hanger from the end.

Type	Part No.		Wt lb (kg)
	Galvanized	Stainless	
Hanger	35707	50308	0.48 (0.22)
Anchor	35706	50307	0.47 (0.21)

Track Hanger and Anchor

To mount C-Track to Angle Iron Cross Arms



PN: 28510



PN: 28511

A single-bolt hanger design to support C-Track from customer-supplied angle iron cross supports. One "hanger" required at each support channel for each track run. Replace one of the Hangers per run with an Anchor that has a set screw to keep the channel from sliding.

With this Hanger/Anchor style, the C-Track channel is fed through each Hanger from the end.

Top bolts are 3/8-16 x 1 1/4" long.

Type	Part No.		Wt lb (kg)
	Galvanized	Stainless	
Hanger	28510	28741	0.43 (0.20)
Anchor	28511	28742	0.42 (0.19)

End Stop



PN: 023215

One required for power system, two required for control systems with control trolley.

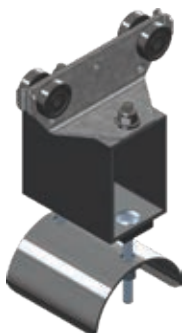
Part No.		Wt lb (kg)
Galvanized	Stainless	
023215	27727	0.13 (0.06)

Standard Duty C-Track - Flat Cable Trolleys, Tow Bar

These trolleys accommodate **Flat Cable** - see Pg. 8 and 10. For round cable/hose trolleys, see Pg. 17-18.

Max. Load Per Trolley: 20-40 lb (9.0-18.1 kg)
Max. Running Speed: 130-250 ft/min (39.6-76.2 m/min)

Tow Trolley



PN: 22168

One Tow Trolley is required for each track run. The unit has an opening in the body to accommodate the Tow Bar - see below. Stainless steel trolleys have stainless steel body/saddle and stainless steel sealed rollers and hardware. Spark-resistant trolley designs are available for hazardous locations.

Style (cap. lb)	Saddle in. (mm)		Part No.	Wt lb (kg)
	Dia	Width		
Plastic body/saddle (20)	2.00 (51)	3.0 (76)	28614	0.78 (0.35)
Plated Steel (40)	2.75 (70)	3.0 (76)	22168	1.49 (0.68)
Stainless Steel (40)	2.75 (70)	3.0 (76)	39274	1.12 (0.51)
Spark Resistant/Brass (40)	2.75 (70)	3.0 (76)	37042	1.49 (0.68)

Tow Bar



Tow Bar mounts on the moving equipment to move the festoon system. One required for each Tow Trolley. Square bar is 16" long.

Part No.	Metal Type	Post Size in. (mm)	Wt lb (kg)
39618	Plated Steel	0.50 (12.7)	1.56 (0.71)
50142	Stainless Steel	1.0 (25.4)	2.63 (1.19)

Cable Trolleys



PN: 023571



PN: 39227

A Cable Trolley is required for each flat cable loop between the End Clamp and Tow Trolley. Stainless steel trolleys have stainless steel body/saddle and stainless steel sealed rollers and hardware. Spark-resistant trolleys are available for hazardous locations.

Style (cap. lb)	Saddle in. (mm)		Part No.	Wt lb (kg)
	Dia	Width		
Plastic Body/Saddle (20)	2.00 (51)	3.0 (76)	023941	0.40 (0.18)
Steel Body/Plastic Saddle (20)	2.00 (51)	3.0 (76)	023261	0.52 (0.24)
Plated Steel (40)	2.75 (70)	3.0 (76)	21991	0.80 (0.36)
Stainless Steel (40)	3.00 (76)	3.0 (76)	39227	0.70 (0.32)
Spark Resistant/Brass (40)	2.75 (70)	3.0 (76)	37047	1.06 (0.48)
Plated Steel - 5" Body (40)	2.75 (70)	3.0 (76)	023571	1.06 (0.48)
Stainless Steel - 5" Body (40)	2.75 (70)	3.0 (76)	39275	0.97 (0.44)

End Clamps



PN: KC-023579/551

One End Clamp is required at the fixed end of the system. Includes clamp and hardware to secure the cable.

Style (cap. lb)	Saddle in. (mm)		Part No.	Wt lb (kg)
	Dia	Width		
Steel Body/Plastic Saddle (20)	2.00 (51)	3.0 (76)	KC-023269/551	0.50 (0.23)
Plated Steel (40)	2.75 (70)	3.0 (76)	21957	0.64 (0.29)
Plated Steel (40)	3.00 (76)	3.0 (76)	KC-023579/551	0.64 (0.29)
Stainless Steel (40)	2.75 (70)	3.0 (76)	39226	0.56 (0.25)

Standard Duty C-Track - Round Cable Trolleys

Round Cable Trolleys are used to carry round cables or hoses. A Tow Trolley is used at the mobile end, an End Clamp at the fixed end, and Cable Trolleys at each cable loop between. The trolleys have four rollers with shielded ball bearings. Stainless steel version has stainless steel body, saddle, sealed rollers, and hardware. Spark-resistant trolleys designs are available for hazardous locations - Contact Conductix-Wampfler.

For Round Cables - see Pg. 32

Max. Load Per Trolley: 20-40 lb (9.0-18.1 kg)
Max. Running Speed: 130-250 ft/min (39.6-76.2 m/min)

Tow Trolley



PN: 50591

One Tow Trolley is required for each track run. The unit has an opening in the body to accommodate the Tow Bar - see below. Stainless steel trolleys have stainless steel body, stainless steel sealed rollers, and stainless steel hardware. Spark-resistant trolleys designs are available for hazardous locations.

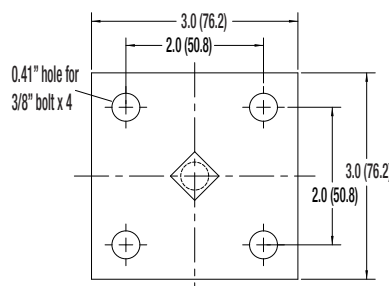
Max. Cable Dia. in. (mm)	Style (cap. lb)	Part No.	Wt lb (kg)
0.63 (16)	Plastic (20)	35741	0.70 (0.32)
0.63 (16)	Plated Steel (40)	35744	1.12 (0.51)
0.63 (16)	Stainless Steel (40)	51214B	1.12 (0.51)
0.63 (16)	Spark Resistant/Brass (40)	50591B	1.12 (0.51)
0.98 (25)	Plastic (20)	35488	0.74 (0.34)
0.98 (25)	Plated Steel (40)	35494	1.16 (0.53)
0.98 (25)	Stainless Steel (40)	51214	1.16 (0.53)
0.98 (25)	Spark Resistant/Brass (40)	50591	1.16 (0.53)
1.42 (36)	Plastic (20)	35491	0.87 (0.38)
1.42 (36)	Plated Steel (40)	35495	1.29 (0.57)
1.42 (36)	Stainless Steel (40)	51214C	1.29 (0.57)
1.42 (36)	Spark Resistant/Brass (40)	50591C	1.29 (0.57)

Tow Bar



Tow Bar mounts on moving equipment to move the festoon system. One required for each Tow Trolley. Square bar is 16" long.

Part No.	Metal Type	Post Size in (mm)	Wt lb (kg)
39618	Plated Steel	0.50 (12.7)	1.56 (0.71)
50142	Stainless Steel	1.0 (25.4)	2.63 (1.19)



Standard Duty C-Track - Round Cable Trolleys

Cable Trolleys

A Cable Trolley is required for each cable loop between the End Clamp and Tow Trolley. Stainless steel trolleys have stainless steel body, stainless steel sealed rollers, and stainless steel hardware.

Spark-resistant trolleys designs are available for hazardous locations.

For Round Cables - see Pg. 32



PN: 35487

PN: 50589

Max. Cable Dia. in. (mm)	Style (cap. lb)	Part No.	Wt lb (kg)
0.63 (16)	Plastic (20)	35740	0.41 (0.19)
0.63 (16)	Plated Steel (40)	35743	0.70 (0.32)
0.63 (16)	Stainless Steel (40)	51216B	0.70 (0.32)
0.63 (16)	Spark Resistant/Brass (40)	50589B	0.70 (0.32)
0.98 (25)	Plastic (20)	35487	1.56 (0.71)
0.98 (25)	Plated Steel (40)	35496	0.74 (0.34)
0.98 (25)	Stainless Steel (40)	51216	0.74 (0.34)
0.98 (25)	Spark Resistant/Brass (40)	50589	0.74 (0.34)
1.42 (36)	Plastic (20)	35490	0.57 (0.26)
1.42 (36)	Plated Steel (40)	35497	0.87 (0.40)
1.42 (36)	Stainless Steel (40)	51216C	0.87 (0.40)
1.42 (36)	Spark Resistant/Brass (40)	50589C	0.87 (0.40)

End Clamps

One End Clamp is required at the fixed end of the system.



PN: 35489

PN: 50590

Max. Cable Dia. in. (mm)	Style (cap. lb)	Part No.	Wt lb (kg)
0.63 (16)	Plated Steel (40)	35742	0.56 (0.25)
0.63 (16)	Stainless Steel (40)	51215B	0.56 (0.25)
0.63 (16)	Spark Resistant (40)	50590B	0.56 (0.25)
0.98 (25)	Plated Steel (40)	35489	0.60 (0.27)
0.98 (25)	Stainless Steel (40)	51215	0.60 (0.27)
0.98 (25)	Spark Resistant (40)	50590	0.60 (0.27)
1.42 (36)	Plated Steel (40)	35492	0.73 (0.33)
1.42 (36)	Stainless Steel (40)	51215C	0.73 (0.33)
1.42 (36)	Spark Resistant (40)	50590C	0.73 (0.33)

Standard Duty C-Track - Control Unit Trolleys

J-Box Control Unit Trolley



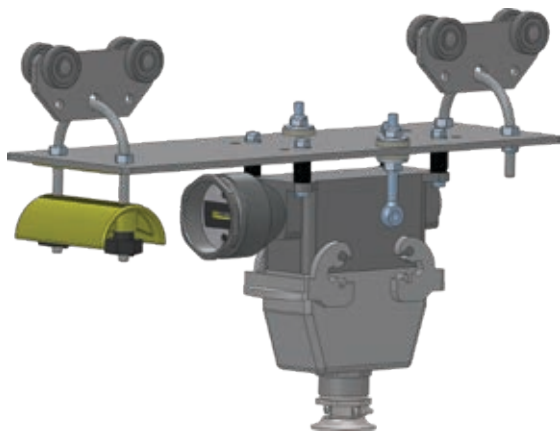
The Control Unit Trolley accommodates a control junction box, ordered separately, see Pg. 28. One flat cable saddle and two trolleys are suspended from a steel “T” section. Unit includes hardware to attach the junction box to the bracket.

Stainless steel version has stainless steel body and saddle, with stainless steel sealed rollers and hardware.

For hazardous locations, trolleys with spark-resistant bronze rollers are available - Contact Conductix-Wampfler.

Style	Saddle Dia in. (mm)	Part No.	Wt lb (kg)
Plated Steel	2.75 (70)	22203B	3.70 (1.68)
Stainless Steel	2.75 (70)	32166	3.00 (1.36)

Quick Disconnect Control Unit Trolley



Push Button Pendants working in tough industrial environments could easily be damaged. Rewiring a replacement pendant adds downtime and risk to personnel. The solution is the “Quick Disconnect” Pin Connector set, which is included with this style of Control Unit Trolley.

The connector set includes a positive latch mechanism to keep the pendant plugged in until you’re ready to disconnect it. The upper half of the connector accepts the incoming flat cable; the lower half accepts the pendant cable. Pendants are ordered separately - see CAT1001. Trolley and hardware are zinc plated.

Connector Electrical Rating: 16A maximum, 600 VAC

No. of Connector Pins	Saddle Dia in. (mm)	Part No.	Wt lb (kg)
16	2.75 (70)	KC-023178-16/554	5.28 (2.39)
24	2.75 (70)	KC-023178-24/554	5.59 (2.54)



Close-up of Pin Connector Set



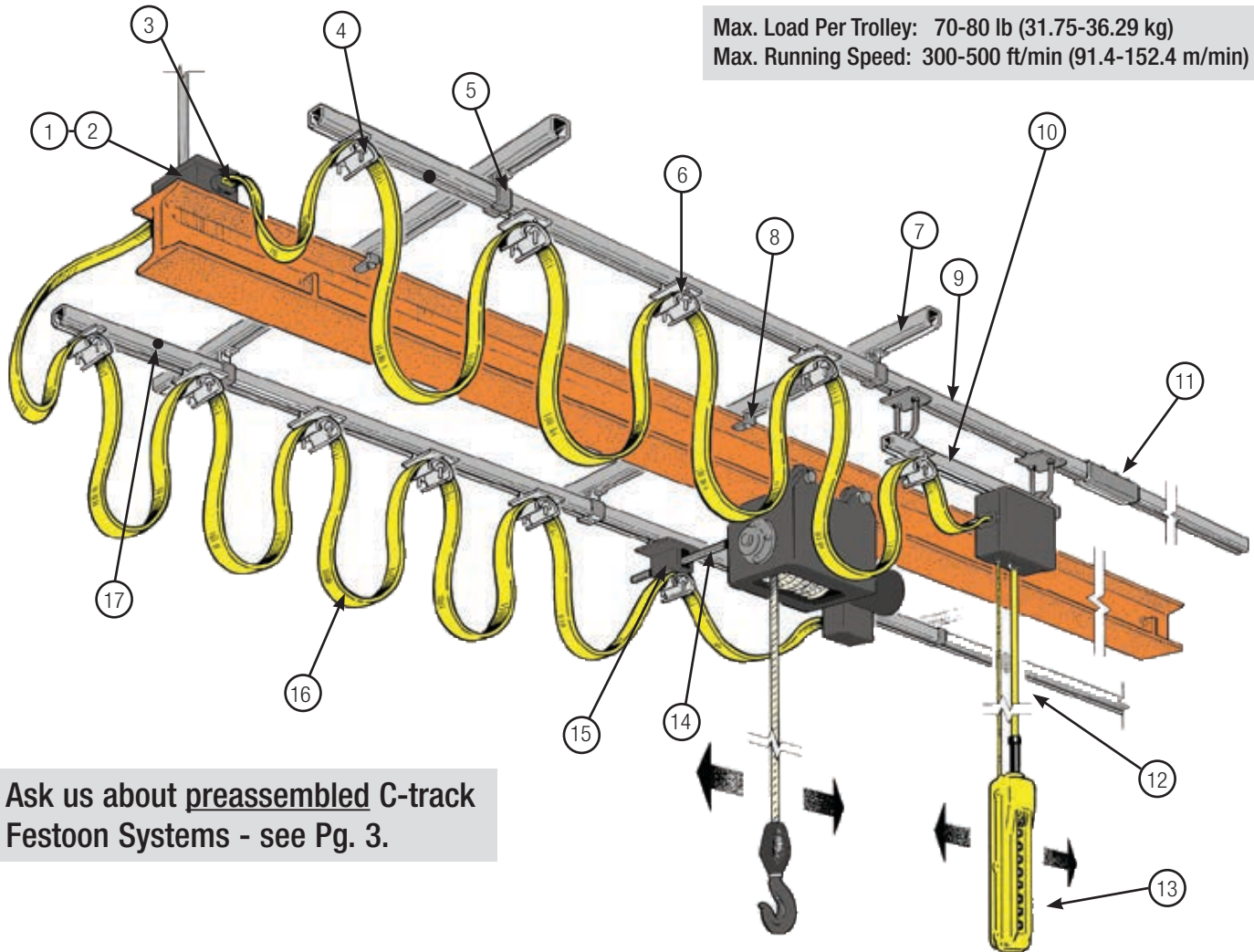
Quick Disconnects are commonly used with pendants, as shown at the far left, but they can also be used with radio controls. This allows a quick switch from radio control to a standard pendant.

Contact Conductix-Wampfler for more information about the possible uses for the Quick Disconnect.

Heavy Duty C-Track

To handle heavier cable loads and faster speeds, Heavy Duty C-Track features a thicker walled track versus Standard Duty C-Track. Order the appropriate HD C-Track components to assure they will fit the heavier track. The components needed for a system depend upon how the system is to be mounted - see Pg. 11 for examples. The system below is a "STYLE B" setup. For all mounting styles, choose the types and lengths of cable (Pgs. 8 & 10) using the formula (track length x 1.10) + hook-up lengths for both ends. Please use the Specification Data Sheets on Pg. 4-5 to record your system parameters.

Max. Load Per Trolley: 70-80 lb (31.75-36.29 kg)
Max. Running Speed: 300-500 ft/min (91.4-152.4 m/min)

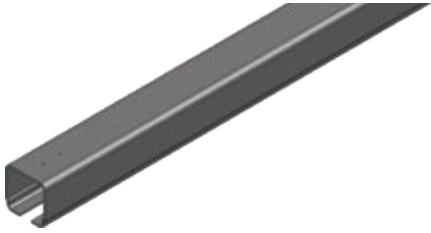


Ask us about preassembled C-track Festoon Systems - see Pg. 3.

- | | |
|---|---|
| ① Fixed End Junction Box | ⑩ Control Unit Trolley with Junction Box - or Quick Disconnect Control Unit Trolley (not shown) |
| ② Terminal Strips (inside junction box) | ⑪ Track Joint |
| ③ Flat Cable Connector | ⑫ Pendant Cable |
| ④ End Clamp | ⑬ Push Button Pendant |
| ⑤ Track Hanger | ⑭ Tow Arm |
| ⑥ Cable Trolley | ⑮ Tow Trolley |
| ⑦ Cross Arm Support Channels | ⑯ Flat PVC Cable |
| ⑧ Beam Clamp (for Cross Arm Channels) | ⑰ End Stop |
| ⑨ C-Track Channel | |

Heavy Duty C-Track - Galvanized Track and Fittings

C-Track



Heavy Duty galvanized track channel sections accommodate all the trolleys listed on Pgs. 24-25 except the stainless steel trolleys. For stainless steel C-track, see Pg. 23.

Channel Length ft (m)	Part No. Galvanized	Wt lb (kg)
10 (3.0)	22210	18.26 (8.28)
20 (6.1)	21805	38.0 (17.24)

Track Joint

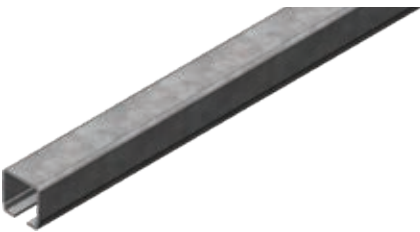


The galvanized Track Joint securely bolt track sections end-to-end. One required between each track joint. Includes four bolts, lock washers, and nuts.

Works only with track part numbers 22210 and 21805.

Part No.	Wt lb (kg)
21806	1.1 (0.50)

Cross Arm Support Channels



These channels are mounted perpendicular to the I-beam or girder every 10 ft to support the main C-track channel - see Pg. 11 for examples of mounting options.

Cross Arm Support Channels can be replaced by customer-supplied angle iron or other structural member sufficient to carry the total load of the festoon system. Make sure to order the correct hanger for the type of cross member used - see Pg. 22-23.

Length in. (mm)	Part No. Galvanized	Wt lb (kg)
16.54 (420)	KC-020276-0420	2.20 (1.00)
25.59 (650)	020276-0650	3.00 (1.36)
52.76 (1340)	020276-1340	7.25 (3.29)
59.84 (1520)	020276-1520	8.00 (3.63)
70.87 (1800)	020276-1800	9.00 (4.08)
78.74 (2000)	020276-2000	6.56 (2.98)

Heavy Duty C-Track - Galvanized Hangers, End Stop

Track Hanger and Anchor

To mount C-Track to Cross Arm Support Channels



PN: 37465



PN: 37466

A single-point hanger designed to hang Heavy Duty C-Track (Pg. 21) from the Cross Arm Support Channels (Pg. 21). One Hanger is required at each Cross Arm Support Channel for each track run. One of the Hangers (per run) should be replaced with an anchor. The anchor has a set screw to keep the channel from sliding.

With this style Hanger/Anchor, the C-Track is feed through each Hanger from the end.

Type	Part No. Galvanized	Wt lb (kg)
Hanger	37465	0.51 (0.23)
Anchor	37466	0.45 (0.021)

Track Hanger and Anchor

To mount C-Track to Angle Iron Cross Arms



PN: 28512



PN: 28513

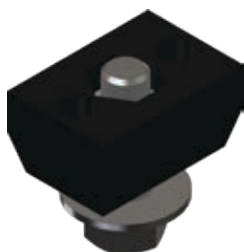
A single-bolt hanger designed to support Heavy Duty C-Track from customer-supplied angle iron cross supports. One "hanger" required at each support angle for each track run. One of the Hangers (per run) should be replaced with an Anchor that has a set screw to keep the channel from sliding.

With this style Hanger/Anchor, the C-Track channel is feed through each Hanger from the end.

Top carriage bolts are 3/8"-16 x 1 1/4" long.

Type	Part No. Galvanized	Wt lb (kg)
Hanger	28512	0.58 (0.26)
Anchor	28513	0.45 (0.21)

End Stop



One required for per system at storage end of track.

Part No. Galvanized	Wt lb (kg)
28508	0.20 (0.09)

Heavy Duty C-Track - Stainless Steel Track and Fittings

Stainless Steel Heavy Duty C-Track



Heavy Duty stainless steel C-Track sections are available in either 13.12 ft (4 meter) or 19.68 ft (6 meter) lengths.

This track only works with the 024186 stainless steel Track Joint shown below, and the stainless steel trolleys shown on Pg. 24.

Channel Length ft (m)	Part No.	Wt lb (kg)
13.12 (4.0)	024109-4	20.0 (9.07)
19.68 (6.0)	024109-6	40.0 (10.14)

Stainless Steel Track Joint



Stainless steel Track Joint securely joins and properly aligns stainless steel track sections. One required between each track joint. Includes four bolts, lock washers, and nuts. Works only with stainless steel HD C-track 024109-4 and 024109-6.

Type	Part No.	Wt lb (kg)
Stainless	024186	1.54 (0.70)

Stainless Steel Cross-arm Support Channel

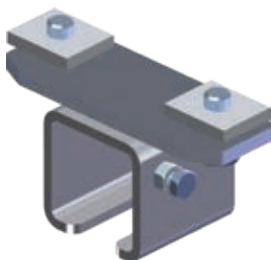


Mounted perpendicular to the I-beam or girder every 5 ft to support the stainless steel C-track (see above). See Pg. 11 for system mounting examples.

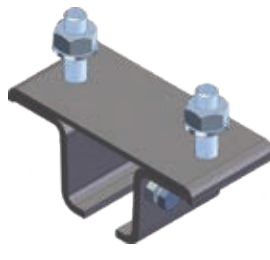
Cross Arm Support Channels can be replaced by customer-supplied angle iron or other structural member sufficient to carry the total load of the festoon system. Make sure to order the correct hanger for the type of cross member used.

Length in. (mm)	Part No. Stainless Steel	Wt lb (kg)
25.59 (650)	534148B	3.25 (1.47)
39.37 (1000)	020475-1000	3.28 (1.49)
52.76 (1340)	534148	4.40 (2.00)

Stainless Steel Track Hanger



PN: 024192



PN: 024177

A stainless steel two-point hanger designed to support stainless steel C-Track Channels from either the cross support above or from customer supplied cross members. One "hanger" required at each support channel for each track run.

The C-Track is feed through the 024192 Hanger from the end. The "Z" clamps on the 024177 hanger allows the C-track to be insert from the side of the bracket.

024177 mounting bolts are M8 and handle material thicknesses of up to 20 mm.

Part No.		Wt lb (kg)
For Cross Arm Channel	For Angle Iron	
024192	024177	0.51 (0.23)

**** Only for 024109 track shown above**

Heavy Duty C-Track - Flat Cable Trolleys

Stainless Steel Heavy Duty C-Track Trolleys only run in the Stainless Steel Heavy Duty C-Track (PN: 024109-4 and 024109-6, see Pg. 23.)

Max. Load Per Trolley: 70-80 lb (31.75-36.29 kg)
Max. Running Speed: 300-500 ft/min (91.4-152.4 m/min)

Tow Trolley



PN: 22169

One Tow Trolley is required for each flat cable run. The unit has an opening in the body to accommodate the Tow Bar - see Pg. 25. Aluminum style has aluminum body and saddle. Stainless steel trolleys have stainless steel body/saddle, stainless steel sealed rollers, and stainless steel hardware.

Style (cap lb)	Saddle in. (mm)		Part No.	Wt lb (kg)
	Dia	Width		
Aluminum (80)	2.75 (70)	3.0 (76)	38646	1.90 (0.86)
Aluminum (80)	4.0 (102)	5.0 (127)	22169	4.75 (2.15)
Stainless Steel (70)	5.0 (127)	7.0 (180)	024822-200x160	6.0 (2.72)

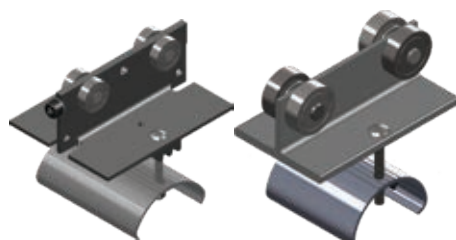
Control Unit Trolley for J-Box



Two trolleys and one 4" (102 mm) diameter aluminum saddle for flat cable, mounted on a 22" (559 mm) long galvanized or stainless steel bracket. Includes fittings to attach control box. Junction box sold separately - see Pg. 28.

Style	Part No.	Wt lb (kg)
Galvanized Steel	22350	12.5 (5.67)
Stainless Steel	024107-NB-SS	12.5 (5.67)

Cable Trolley



PN: 21802

PN: 38641

A Cable Trolley is required for each flat cable loop between the End Clamp and Tow Trolley. Aluminum style has aluminum body and saddle. Stainless steel trolleys have stainless steel body/saddle and stainless steel sealed rollers and hardware.

Style (cap. lb)	Saddle in. (mm)		Part No.	Wt lb (kg)
	Dia	Width		
Aluminum (80)	2.75 (70)	3.0 (76)	38641	1.49 (0.68)
Aluminum (80)	4.0 (102)	5.0 (127)	21802	2.45 (1.11)
Stainless Steel (70)	5.0 (127)	6.3 (160)	024812-160x160	4.00 (1.81)

End Clamp



PN: 24767

One End Clamp is required at the fixed end of the system. Includes zinc plated clamp and hardware to secure the cable. Stainless steel end clamp has stainless steel saddle and hardware.

Style (cap. lb)	Saddle in. (mm)		Part No.	Wt lb (kg)
	Dia	Width		
Aluminum (80)	2.75 (70)	3.0 (76)	24767	0.49 (0.22)
Aluminum (80)	4.0 (102)	5.0 (127)	21932	1.34 (0.61)
Stainless Steel (70)	5.0 (127)	6.3 (160)	024832-160x062	2.0 (0.90)

Heavy Duty C-Track - Round Cable/Hose Trolleys

Tow Trolley



One Tow Trolley is required for each track run and has a cutout in the body to accommodate the Tow Bar - see below. Trolley has aluminum body. Cable/Hose clip not included - order separately from the table below.

Cap. per Trolley (lb)	Part No.	Wt lb (kg)
80	38823	4.75 (2.15)

Cable Trolley



A Cable Trolley is required for each round cable (or hose) loop between the End Clamp and Tow Trolley. Trolley has aluminum body. Cable/Hose clip not included - order separately from the table below.

Cap. per Trolley (lb)	Part No.	Wt lb (kg)
80	38824	3.00 (1.36)

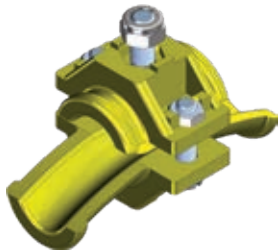
End Clamp



One End Clamp is required at the fixed end of the system. Includes aluminum body, clamp and hardware to secure the cable. Cable/Hose clip not included - order separately from the table below.

Cap. per End Clamp (lb)	Part No.	Wt lb (kg)
80	38825	1.63 (0.74)

Round Cable / Hose Clips



Order the appropriate cable clip for the diameter of the cable or hose. Cable clips can be combined in multiple variations.

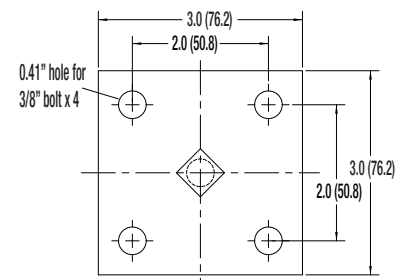
For Cable/Hose Diameter in. (mm)	Part No.	Wt lb (kg)
0.39 - 0.63 (10 - 16)	020131-16	0.08 (0.04)
0.67 - 0.98 (17 - 25)	020131-25	0.14 (0.06)
1.02 - 1.42 (26 - 36)	020131-36	0.24 (0.11)

Tow Bar



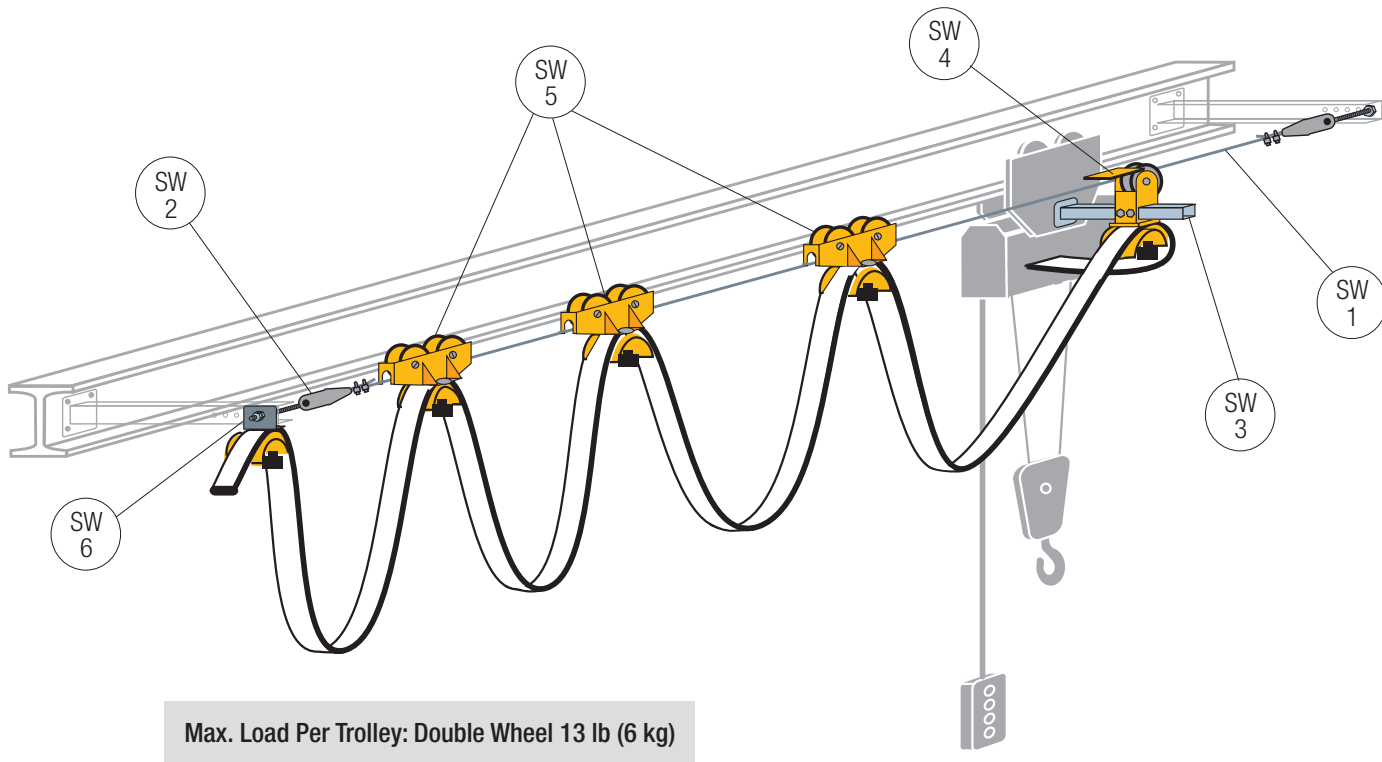
24 in. (610 mm) long. For mounting on moving equipment. One required for each tow trolley. Galvanized finish.

Part No.	Wt lb (kg)
39617C	2.63 (1.19)



Stretch Wire Rope Festoon Kits - For Flat Cable

Stretch Wire Rope Festoon Kits for flat cable are suited for light duty applications where an intermediate support structure is not available. Economical and dependable, stretch wire rope systems provide electrification to small cranes, moving hoists, and jib cranes. The kits below include standard zinc plated hardware.



Stretch Wire Rope Festoon Kits Include Parts Listed Below:

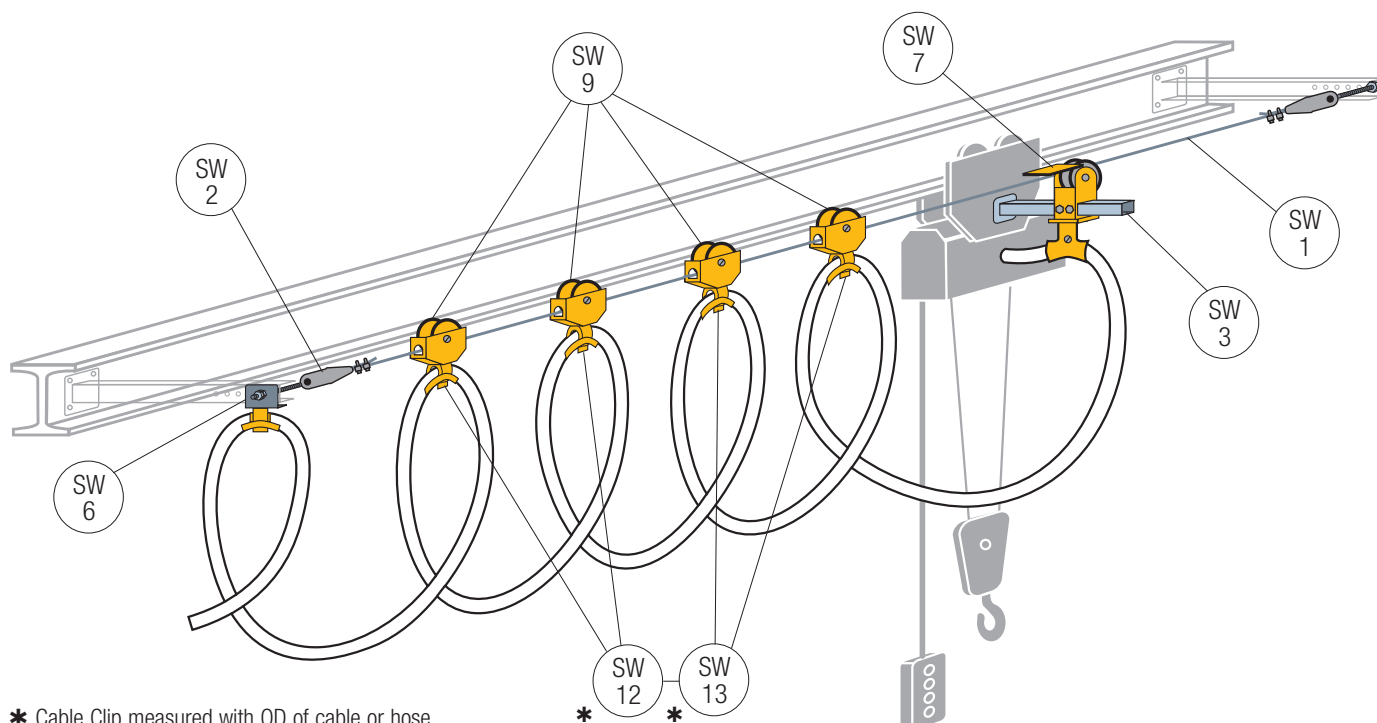
Dwg ID	Component	Part No.
SW1	Nylon-coated Wire Rope, 1/4" (6mm) Dia.	22950
SW2	Hardware Kit	23288
SW3	Tow Bar	39617C
SW4	Tow Trolley	021123
SW5	Trolley	021113
SW6	Anchor Bracket	021163

Kits with Double-Wheel Trolleys

Max. Span ft (m)	Kit Part No.	Max Flat Cable Width	Max. Load Per Trolley lb (kg)	No. of Trolleys in Kit
20 (6.1)	24867	1.75 (44.45)	13 (5.90)	3
40 (12.2)	24868			6
60 (18.3)	24869			9
80 (24.4)	24870			13
100 (30.5)	24871			17

Stretch Wire Rope Festoon Kits - For Round Cable or Hose

Stretched Wire Rope Festoon Kits for round cable or hose are suited for light duty applications where an intermediate support structure is not available. Economical and dependable, stretched wire rope systems provide electrification to small cranes, moving hoists, and jib cranes. The kits below include standard zinc plated hardware.



Max. Load Per Trolley: Double wheel 13 lb (6 kg)

Stretch Wire Festoon Kits Include Parts Listed Below:

Dwg ID	Component	Part No.	Dwg ID	Component	Part No.
SW1	Nylon-coated Wire Rope, 1/4" (6 mm) Dia.	22950	SW9	Trolley	021117
SW2	Hardware Kit	23288	SW12	Cable Clip 3/8" to 9/16" (10 to 15 mm)	020131-16
SW3	Tow Bar	39617C	SW13	Cable Clip 9/16" to 3/4" (15 to 20 mm)	020131-25
SW6	Anchor Bracket	021164			
SW7	Tow Trolley	021124			

Kits with Double-Wheel Trolleys

Max. Span ft (m)	Kit Part No.		No. of Trolleys in Kit
	Dia. Range 3/8" to 9/16" (10-15 mm)	Dia. Range 9/16" to 3/4" (15-20 mm)	
20 (6.1)	24892	24897	3
40 (12.2)	24893	24898	6
60 (18.3)	24894	24899	9
80 (24.4)	24895	24900	13
100 (30.5)	24896	24901	17

Control Trolley Junction Boxes and Terminal Strips



Listed below is an array of standard junction boxes with the listed terminal strip combinations included. These are for use with Control Unit Trolleys - see Pg. 19 and 24. See Pg. 19 for “Quick Disconnect connectors”, which can be used instead of hard-wired junction box.

If you don't see the junction box or terminal arrangement you need, please contact Conductix-Wampfler.

Terminal Strips Included	NEMA*	Size in. (mm)	Material	Part No.	Wt lb (kg)
4 Pole Power (45A)	12	10 x 8 x 4 (254 x 203 x 101)	Painted Steel	52394	10.2 (4.63)
4 Pole Power (45A)	4	10 x 8 x 4 (254 x 203 x 101)	Painted Steel	52394B	10.2 (4.63)
4 Pole Power (45A)	4X	10 x 8 x 4 (254 x 203 x 101)	Stainless Steel	52394C	9.5 (4.31)
4 Pole Power (85A)	12	10 x 8 x 4 (254 x 203 x 101)	Painted Steel	51018	10.3 (4.67)
4 Pole Power (85A)	4	10 x 8 x 4 (254 x 203 x 101)	Painted Steel	51018B	10.3 (4.67)
4 Pole Power (85A)	4X	10 x 8 x 4 (254 x 203 x 101)	Stainless Steel	51018C	9.6 (4.35)
8 Pole Power (85A)	12	10 x 8 x 4 (254 x 203 x 101)	Painted Steel	39415	10.4 (4.72)
8 Pole Power (85A)	4	10 x 8 x 4 (254 x 203 x 101)	Painted Steel	39415B	10.4 (4.72)
8 Pole Power (85A)	4X	10 x 8 x 4 (254 x 203 x 101)	Stainless Steel	39415C	9.7 (4.0)
12 Pole Control (20A)	12	10 x 8 x 4 (254 x 203 x 101)	Painted Steel	28314	10.5 (4.76)
12 Pole Control (20A)	4	10 x 8 x 4 (254 x 203 x 101)	Painted Steel	28314B	10.5 (4.76)
12 Pole Control (20A)	4X	10 x 8 x 4 (254 x 203 x 101)	Stainless Steel	28314N	9.8 (4.45)
24 Pole Control (20A)	12	10 x 8 x 4 (254 x 203 x 101)	Painted Steel	28314C	10.7 (4.85)
24 Pole Control (20A)	4	10 x 8 x 6 (254 x 203 x 152)	Painted Steel	28314D	10.7 (4.85)
24 Pole Control (20A)	4X	10 x 8 x 6 (254 x 203 x 152)	Stainless Steel	28314M	9.8 (4.45)
36 Pole Control (20A)	12	12 x 12 x 6 (305 x 305 x 152)	Painted Steel	36412	14.5 (6.58)
36 Pole Control (20A)	12	14 x 12 x 6 (356 x 305 x 152)	Painted Steel	39109	16.4 (7.44)
36 Pole Control (20A)	4	12 x 12 x 6 (305 x 305 x 152)	Painted Steel	36412B	14.9 (6.76)
36 Pole Control (20A)	4X	12 x 12 x 6 (305 x 305 x 152)	Stainless Steel	36412C	13.5 (6.12)
48 Pole Control (20A)	12	14 x 12 x 6 (356 x 305 x 152)	Painted Steel	35527	16.4 (7.44)
48 Pole Control (20A)	4	14 x 12 x 6 (356 x 305 x 152)	Painted Steel	35527B	16.9 (7.67)
48 Pole Control (20A)	4X	14 x 12 x 6 (356 x 305 x 152)	Stainless Steel	35527C	15.0 (6.80)
12 Pole Control (20A) + 4 Pole Power (85A)	12	10 x 8 x 4 (254 x 203 x 101)	Painted Steel	39362	10.5 (4.76)
12 Pole Control (20A) + 4 Pole Power (85A)	4	10 x 8 x 4 (254 x 203 x 101)	Painted Steel	39362B	10.5 (4.54)
12 Pole Control (20A) + 4 Pole Power (85A)	4X	10 x 8 x 4 (254 x 203 x 101)	Stainless Steel	39362C	10.0 (4.31)
24 Pole Control (20A) + 8 Pole Power (85A)	12	12 x 12 x 6 (305 x 305 x 152)	Painted Steel	39388	14.5 (6.58)
24 Pole Control (20A) + 8 Pole Power (85A)	4	12 x 12 x 6 (305 x 305 x 152)	Painted Steel	39388B	14.9 (6.76)
24 Pole Control (20A) + 8 Pole Power (85A)	4X	12 x 12 x 6 (305 x 305 x 152)	Stainless Steel	39388C	13.5 (6.12)

* For a description of NEMA enclosure ratings, see Pg. 34. As noted above, NEMA 4X boxes are stainless steel. All others are painted steel.

Appendix I CMAA Crane Classifications & NEMA Ratings

CMAA Crane Classifications

Provided for general information only. Refer to CMAA Section 78-6 for full definitions.

Class A (Standby or Infrequent Service): Performs precise lifts at slow speed, with long idle period between lifts. Performs lifts at full or near rated capacity. Power houses, public utilities, turbine rooms.

Class B (Light Service): Light service requirements at slow speed. Performs 2 to 5 lifts/hour, light to occasional full loads, at 10 feet average height. Repair shops, light assembly, service buildings, light warehousing.

Class C (Moderate Service): Moderate service requirement with loads averaging 50% of capacity. 5 to 10 lifts per hour at 15 feet average lift height. Not more than 50% of lifts at rated capacity. Machine shops, paper mill machine rooms, etc.

Class D (Heavy Service): Bucket/magnet duty, where heavy duty production is required. Loads of 50% capacity handled constantly. 10 to 20 lifts per hour averaging 15 feet lift height. Not over 65% of the lifts at rated capacity. Heavy machine shops, foundries, fabricating plants, steel warehouses, container yards, lumber mills, etc.

Class E (Severe Service): Loads approaching capacity throughout the life of the crane. 20 or more lifts per hour at or near rated capacity. Magnet/bucket cranes for scrap yards, cement mills, lumber mills, fertilizer plants, container handling.

Class F (Continuous Severe Service): Handles loads approaching capacity continuously under severe service conditions throughout the life of the crane. Includes custom designed specialty cranes performing work critical to the total production facility. Needs to have the highest reliability and ease of maintenance.

NEMA Enclosure Ratings

Provided for general information only. Refer to NEMA Standard 250 and IP AS 1939-1986 for full definitions.

Note: All enclosure types provide a degree of protection to personnel against incidental contact with the enclosed equipment.

NEMA 1 (IP10): Enclosures constructed for indoor use to provide a degree of protection against falling dirt

NEMA 2 (IP11): Enclosures constructed for indoor use to provide a degree of protection against falling dirt, and to provide a degree of protection against dripping and light splashing of liquids

NEMA 3 (IP54): Enclosures constructed for either indoor or outdoor use to provide a degree of protection against falling dirt, rain, sleet, snow, and windblown dust; and that will be undamaged by external formation of ice on the enclosure

NEMA 3R (IP14): Enclosures constructed for either indoor or outdoor use to provide a degree of protection against falling dirt, rain, sleet, and snow; and that will be undamaged by external formation of ice on the enclosure. (Enclosure can be vented.)

NEMA 4 (IP56): Enclosures constructed for either indoor or outdoor use to provide a degree of protection against falling dirt, rain, sleet, snow, windblown dust, splashing water, and hose-directed water, and that will be undamaged by the external formation of ice on the enclosure

NEMA 4X (IP56): Enclosures constructed for either indoor or outdoor use to provide a degree of protection against falling dirt, rain, sleet, snow, windblown dust, splashing water, hose-directed water, and corrosion and that will be undamaged by the external formation of ice on the enclosure

NEMA 6 (IP67): Enclosures constructed for either indoor or outdoor use to provide a degree of protection against damage by the external formation of ice on the enclosure.

NEMA 12 (IP52): Enclosures constructed (without knockouts) for indoor use to provide a degree of protection against falling dirt; against circulating dust, lint, fibers, and flying debris and against dripping and light splashing of liquids.

NEMA 13 (IP54): Enclosures constructed for indoor use to provide a degree of protection against falling dirt, circulating dust, lint, fibers, and flying debris and against the spraying, splashing, and seepage of water, oil, and non-corrosive coolants.

For information on hazardous location specifications, please contact Conductix-Wampfler.

Appendix II Motor Amperage and Electrical Formulas

The chart below lists the most common combinations of motor HP (horsepower) in relation to voltage used and the resulting amperage draw. To use the chart, determine amperage draw based on horsepower and voltage. Then use the Cable Data Chart in Appendix III to determine cable gauge and number of conductors required for your application. Direct Current requires two conductors. Single phase requires three conductors. Three-phase requires four conductors.

MOTOR AMPERAGE DRAW (AT FULL LOAD OF 60 Hz)															
3 PHASE AC Induction Type - Squirrel Cage & Wound Rotor								Single Phase			Direct Current				
HP	115V	200V	230V	460V	575V	2300V	4160V	HP	115V	230V	HP	120V	240V	HP	240V
1/2	4.0	2.3	2.0	1.0	.8			1/6	4.4	2.2					
3/4	5.6	3.2	2.8	1.4	1.1			1/4	5.8	2.9	1/4	2.9	1.5	15	55
1	7.2	4.15	3.6	1.8	1.4			1/3	7.2	3.6	1/3	3.6	1.8	20	72
1 1/2	10.4	6.0	5.2	2.6	2.1			1/2	9.8	4.9	1/2	5.2	2.6	25	89
2	13.6	7.8	6.8	3.4	2.7			3/4	13.8	6.9	3/4	7.4	3.7	30	106
3		11.0	9.6	4.8	3.9			1	16.0	8.0	1	9.4	4.7	40	140
5		17.5	15.2	7.6	6.1			1 1/2	20.0	10.0	1 1/2	13.2	6.6	50	173
7 1/2	25.0	22.0	11.0	9.0				2	24.0	12.0	2	17.0	8.5	60	206
10		32.0	28.0	14.0	11.0			3	34.0	17.0	3	25.0	12.5	75	225
15		48.0	42.0	21.0	17.0			5	56.0	28.0	5	40.0	20.0	100	341
20		62.0	54.0	27.0	22.0			7 1/2	80.0	40.0	7 1/2	58.0	29.0	125	425
25		78.0	68.0	34.0	27.0			10	100.0	50.0	10	76.0	38.0	150	506
30		92.0	80.0	40.0	32.0										
40		120.0	104.0	52.0	41.0										
50		150.0	130.0	65.0	52.0										
60		177.0	154.0	77.0	62.0	16.0	8.9								
75		221.0	192.0	96.0	77.0	20.0	11.0								
100		285.0	248.0	124.0	99.0	26.0	14.4								
125		358.0	312.0	156.0	125.0	31.0	17.0								
150		415.0	360.0	180.0	144.0	37.0	20.5								
200		550.0	480.0	240.0	192.0	49.0	27.0								

Ohms Law

$$\text{Ohms} = \frac{\text{Volts}}{\text{Amperes}} \quad \text{Amperes} = \frac{\text{Volts}}{\text{Ohms}}$$

$$\text{Volts} = \text{Amperes} \times \text{Ohms}$$

Speed Formulas

$$\text{Synchronous RPM} = \frac{F \times 120}{\# \text{ of poles}}$$

$$\text{Percent Slip} = \frac{\text{Synchronous RPM} - \text{Full Load RPM}}{\text{Synchronous RPM}} \times 100$$

Power Formulas

$$\text{Watts} = \text{Amperes} \times \text{Volts}$$

$$\text{Amperes} = \frac{\text{Watts}}{\text{Volts}}$$

$$\text{HP} = \frac{\text{Volts} \times \text{Amperes} \times \text{Efficiency}}{746}$$

$$\text{Power Factor} = \frac{\text{Watts}}{\text{Amperes} \times \text{Volts}}$$

$$\text{Single-Phase Kilowatts} = \frac{\text{Volts} \times \text{Amperes} \times \text{Power Factor}}{1000}$$

$$\text{Single-phase Amperes} = \frac{746 \times \text{HP (Horsepower)}}{\text{Volts} \times \text{Efficiency} \times \text{Power Factor}}$$

$$\text{Three Phase Kilowatts} = \frac{\text{Volts} \times \text{Amperes} \times \text{Power Factor} \times 1.732}{1000}$$

$$\text{Three Phase Amperes} = \frac{746 \times \text{HP (Horsepower)}}{1.732 \times \text{Volts} \times \text{Efficiency} \times \text{Power Factor}}$$

$$\text{Volts-Amperes} = \text{Volts} \times \text{Amperes}$$

Appendix III Round Cable Data (AWG)

The data on this page is for **general information only** applicable to cable sold by Conductix-Wampfler for use with round cable festoon systems. Nominal diameters and weights shown will vary with different manufacturers.

If you don't see the cable types and sizes you need - please Contact Conductix-Wampfler.

Type SOW-A or SOOW-A (90° C Insulation)					
AWG	# of Con.	Amps	Dia. in. (mm)	Wt lb/ft (kg/m)	Part No.
16	2	10	0.41 (10.24)	0.08 (0.04)	33017
16	3	10	0.43 (10.92)	0.09 (0.04)	33018
16	4	8	0.49 (12.32)	0.12 (0.05)	33019
16	6	8	0.57 (14.35)	0.18 (0.08)	33020
16	7	7	0.61 (15.37)	0.20 (0.09)	35158
16	8	7	0.65 (16.38)	0.22 (0.10)	33021
16	10	5	0.72 (18.29)	0.28 (0.13)	33022
16	12	5	0.74 (18.80)	0.31 (0.14)	33023
16	14	5	0.78 (19.69)	0.35 (0.16)	33024
16	16	5	0.83 (20.96)	0.39 (0.18)	33025
16	20	5	0.90 (22.86)	0.47 (0.21)	33026
16	24	5	1.02 (25.78)	0.57 (0.26)	33027
14	2	15	0.53 (13.46)	0.14 (0.06)	33029
14	3	15	0.56 (14.22)	0.17 (0.08)	33030
14	4	12	0.61 (15.37)	0.21 (0.10)	33031
14	6	12	0.74 (18.80)	0.31 (0.14)	33032
14	8	10.5	0.85 (21.46)	0.36 (0.16)	33033
14	10	7.5	0.91 (22.99)	0.43 (0.20)	33034
14	12	7.5	0.93 (23.62)	0.35 (0.16)	33035
14	14	7.5	0.98 (24.89)	0.56 (0.25)	33036
14	16	7.5	1.08 (27.31)	0.66 (0.30)	33037
14	20	7.5	1.18 (29.97)	0.79 (0.36)	33038
14	24	7.5	1.29 (32.77)	0.92 (0.42)	33039
12	2	20	0.61 (15.34)	0.17 (0.08)	33041
12	3	20	0.64 (16.26)	0.23 (0.10)	33042
12	4	16	0.67 (17.02)	0.28 (0.13)	33043
12	6	16	0.80 (20.32)	0.37 (0.17)	33044
12	8	14	0.92 (23.24)	0.45 (0.20)	33045
12	10	10	1.02 (25.78)	0.56 (0.25)	33046
12	12	10	1.05 (26.54)	0.64 (0.29)	33047
12	16	10	1.16 (29.34)	0.84 (0.38)	33048
12	20	10	1.29 (32.64)	1.00 (0.45)	33049
10	2	25	0.64 (16.26)	0.22 (0.10)	33052
10	3	25	0.69 (17.53)	0.28 (0.13)	33053
10	4	20	0.75 (19.05)	0.38 (0.17)	33054
10	6	20	0.88 (22.35)	0.48 (0.22)	33645
10	7	17.5	0.98 (24.89)	0.59 (0.27)	35667
10	8	17.5	1.05 (26.67)	0.65 (0.29)	33055
10	10	12.5	1.13 (28.58)	0.76 (0.34)	33056
10	12	12.5	1.16 (29.34)	0.85 (0.39)	33057

Type W (90° C Insulation)					
AWG	# of Con.	Amps	Dia. in. (mm)	Wt lb/ft (kg/m)	Part No.
8	2	50	0.81 (20.57)	0.42 (0.19)	33058
8	3	50	0.91 (23.11)	0.60 (0.27)	33059
8	4	45	0.99 (25.15)	0.68 (0.31)	33060
6	2	65	0.93 (23.62)	0.57 (0.26)	33061
6	3	65	1.01 (25.65)	0.75 (0.34)	33062
6	4	55	1.10 (27.94)	0.88 (0.40)	33063
4	2	75	1.08 (27.43)	0.79 (0.36)	33064
4	3	75	1.17 (29.72)	0.98 (0.44)	33065
4	4	65	1.27 (32.26)	1.22 (0.55)	33066
2	2	110	1.27 (32.26)	1.14 (0.52)	33067
2	3	110	1.34 (34.04)	1.41 (0.64)	33068

* Amp ratings are based on an ambient temperature of 30°C, derated for cables with more than 3 current carrying conductors per NEC. Ampacity requirements are solely dependent on applicable local codes. Conductix-Wampfler cannot specifically recommend required ampacity.

Appendix IV Metric Conversion Tables

AWG / Metric Conductor Size Conversion			
AWG or MCM	Circular Mils	Cross-Sectional Area (mm ²)	Metric Conductor Size
	987	.50	.50
20 AWG	1020	.52	
	1480	.75	.75
18	1620	.82	
	1970	1.0	1.0
16	2580	1.31	
	2960	1.50	1.5
14	4110	2.08	
	4930	2.50	2.5
12	6530	3.31	
	7890	4.00	4.0
10	10380	5.26	
	11800	6.00	6.0
8	16510	8.37	
	19700	10.00	10.0
6	26240	13.30	
	31600	16.00	16.0
4	41740	21.15	
	49300	25.00	25.0
2	66360	33.63	
	69100	35.00	35.0
1	83690	42.41	
	98700	50.00	50.0
1/0	105600	53.48	
2/0	133100	67.43	
	138000	70.00	70.0
3/0	167800	85.03	
	187000	95.00	95.0
4/0	211600	107.20	
	237000	120.00	120.0
250 MCM	250000	126.64	
	296000	150.00	150.0
300	300000	152.00	
350	350000	177.35	
	365000	185.00	185.0
400	400000	202.71	
	474000	240.00	240.0
500	500000	253.35	
	592000	300.00	300.0
600	600000	303.96	
750	750000	379.95	
	789000	400.00	400.0
	987000	500.00	500.0
1000	1000000	506.60	

Celsius / Fahrenheit Temperature Conversion								
1. Locate known temperature in °C/°F column.								
2. Read converted temperature in either the °C or °F column.								
°C	°C / F	°F	°C	°C / F	°F	°C	°C / F	°F
-45.4	-50	-58	15.5	60	140	76.5	170	338
-42.7	-45	-49	18.3	65	149	79.3	175	347
-40.0	-40	-40	21.1	70	158	82.1	180	356
-37.2	-35	-31	23.9	75	167	85.0	185	365
-34.4	-30	-22	26.6	80	176	87.6	190	374
-32.2	-25	-13	29.4	85	185	90.4	195	383
-29.4	-20	-4	32.2	90	194	93.2	200	392
-26.6	-15	5	35.0	95	203	96.0	205	401
-23.8	-10	14	37.8	100	212	98.8	210	410
-20.5	-5	23	40.5	105	221	101.6	215	419
-17.8	0	32	43.4	110	230	104.4	220	428
-15.0	5	41	46.1	115	239	107.2	225	437
-12.2	10	50	48.9	120	248	110.0	230	446
-9.4	15	59	51.6	125	257	112.8	235	455
-6.7	20	68	54.4	130	266	115.6	240	464
-3.9	25	77	57.1	135	275	118.2	245	473
-1.1	30	86	60.0	140	284	120.9	250	482
1.7	36	95	62.7	145	293	123.7	255	491
4.4	40	104	65.5	150	302	126.5	260	500
7.2	45	113	68.3	155	311	129.3	265	509
10.0	50	122	71.0	160	320	132.2	270	518
12.8	55	131	73.8	165	329	135.0	275	527

Temperature Conversion Formula

$$^{\circ}\text{F} = (9/5 \times ^{\circ}\text{C}) + 32 \quad ^{\circ}\text{C} = 5/9 (^{\circ}\text{F} - 32)$$

To Obtain	Multiply
Millimeters	Inches x 25.4
Inches	Millimeters x 0.0394
Meters	Feet x .3048
Feet	Meters x 3.281
Square Centimeters	Square Inches x 6.45
Square Inches	Square Centimeters x 0.155
Kilograms	Pounds x 0.4536
Pounds	Kilograms x 2.205
Pounds per Foot	Newtons per Meter x 1.356
Newtons per Meter	Lbs per ft x 0.738
Kilowatts	Horse Power x 1.341
Horse Power	Kilowatts x 0.746

Appendix V Terms, Conditions, and Warranty

The technical data and images which appear in this catalog are for informational purposes only. NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE CREATED BY THE DESCRIPTIONS AND DEPICTIONS OF THE PRODUCTS SHOWN IN THIS CATALOG. Conductix-Wampfler ("seller") makes no warranty and assumes no liability as to the function of equipment or the operation of systems built according to customer design or of the ability of any of its products to interface, operate or function with any portions of customer systems not provided by Conductix-Wampfler.

Seller agrees to repair or exchange the goods sold hereunder necessitated by reason of defective workmanship, and material discovered and reported to Seller within one year after shipment of such goods to Buyer. Except where the nature of the defect is such that it is appropriate in Seller's judgement to effect repairs on site, the seller's obligation hereunder to remedy defects shall be limited to repairing or replacing (at Seller's option), FOB point of original shipment by Seller, any part returned to Seller at the risk and cost of Buyer. Defective parts replaced by Seller shall become the property of Seller.

Seller shall only be obligated to make such repair or replacement of the goods which have been used by Buyer in service recommended by Seller and altered only as authorized by Seller. Seller is not responsible for defects which arise from improper installation, neglect, or improper use or from normal wear and tear.

Additionally, Seller's obligation shall be limited by the manufacturer's warranty (and shall not be further warranted by Seller) for all parts procured from others according to published data, specifications, or performance information not designed by or for Seller.

Seller further agrees to replace, or at Seller's option to provide a refund of the sales price of any goods that did not conform to applicable specifications or which differ from that agreed to be supplied which non-conformity is discovered and forthwith reported to Seller within thirty (30) days after shipment to Buyer. Seller's obligation to replace or refund the purchase price for non-conforming goods shall arise once Buyer returns such good FOB point of original shipment by Seller at the risk and cost of Buyer. Goods replaced by Seller shall be come property of Seller.

There is no guarantee or warranty as to anything made or sold by Seller, or any service performed, except as to title and freedom from encumbrances, and except as herein expressly stated and particularly without limiting the foregoing. There is no guarantee or warranty, express or implied, of merchantability or of fitness for any particular purpose or against claim of infringement or the like.

Seller makes no warranty (and assumes no liability) as to function of equipment or operation of systems built to Buyer's design or of the ability of any goods to interface, operate or function with any portions of Buyer's system not provided by Seller.

Seller's liability on any claim; whether in contract (including negligence) or otherwise, for any loss or damage arising out of, connected with, or resulting from the manufacture, sale, delivery, resale, repair, replacement or use of any products or, services shall in no case exceed the price paid for the product or services or any part thereof which give rise to the claim. In no event shall Seller be liable for consequential, special, incidental or other damages, nor shall Seller be liable in respect to personal injury or damage to property on the subject matter hereof unless attributable to gross misconduct of Seller, which shall mean an act of omission by Seller demonstrating reckless disregard of the foreseeable consequences thereof.

Seller is not responsible for incorrect choice of models or where products are used in excess of their rated and recommended capacities and design functions or under abnormal conditions. Seller assumes no liability for loss of time, damage or injuries to property or persons resulting from the use of Seller's products. Buyer shall hold Seller harmless from all liability, claims, suits and expenses in connection with loss or damage resulting from operation of products or utilization of services, respectively, of Seller and shall defend any suit or action which might arise there from Buyer's name, provided that Seller shall have the right to elect to defend any such suit or action for the account of Buyer. The foregoing shall be the exclusive remedies of the buyer and all persons and entitles claiming through the Buyer.



Other Products from Conductix-Wampfler

The products described in this catalog represent a few of the products from the broad spectrum of Conductix-Wampfler components and systems for the transfer of energy, data, gases, and fluids. The solutions we deliver for your applications are based on your specific requirements. In many cases, a combination of several different Conductix-Wampfler products are needed to fill the application. You can count on all of Conductix-Wampfler's business units for hands-on engineering support - coupled with the perfect solution to meet your energy management and control needs.



Motor driven cable reels

Motor driven reels by Conductix-Wampfler are the perfect solution for managing long lengths of heavy cable and hoses in very demanding industrial applications. Monospiral, level wind, and random wind spools.



Slip ring assemblies

Whenever powered machinery needs to rotate 360°, field proven slip ring assemblies by Conductix-Wampfler can flawlessly transfer energy and data. Here, everything revolves around flexibility and reliability.



Conductor bar

Whether they are enclosed conductor rails, expandable single-pole bar systems, or high amperage bar for demanding steel mill use up to 6000 amps. Conductix-Wampfler's conductor bar is the proven solution to reliably move people and material.



Spring driven cable reels

We have 60 years experience and trusted brands such as Insul-8, Wampfler, and IER. We offer small cord reels all the way to large multi-motor units, a wide range of accessories, and hazardous location reels.



Cable Festoon systems

It's hard to imagine Conductix-Wampfler cable trolleys not being used in virtually every industrial application. They are reliable and robust and available in an enormous variety of sizes and models.



Push Button Pendants

Our ergonomic pendants are ideally suited for industrial control applications. They are available in a wide range of configurations for overhead cranes and other machinery.



Radio remote controls

Safe, secure, and reliable radios use the latest in microprocessor technology. Available in several models for overhead crane control and other types of machinery.



Inductive Power Transfer IPT®

The contact-less system for transferring energy and data. For all tasks that depend on high speeds and absolute resistance to wear.



Energy guiding chains

The "Jack of all Trades" when it comes to managing energy and data cables and air and fluid hoses. A wide range of energy guiding chains are available for many industrial applications.



Air hoists and balancers

ENDO Air hoists accurately place delicate loads and continuously vary the speed for precise positioning. They run cool in continuous operations.



Bumpers

Conductix-Wampfler offers a complete range of bumpers for the auto industry, cranes, and heavy machinery. These include rubber, rubber/metal, and cellular types.



Spring balancers and retractors

ENDO spring balancers by Conductix-Wampfler are rugged, reliable high-precision positioning devices that reduce operator fatigue and assist with accurate tool placement.

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