

# Balancers

*The strength behind Ingersoll Rand ergonomic handling*



## **Ingersoll Rand offers:**

- ▶ Pneumatic balancers
- ▶ IntelLIFT® intelligent assist devices
- ▶ Mechanical spring balancers

# Zimmerman Series Pneumatic Balancers

## The Ingersoll Rand Pneumatic Balancer **ADVANTAGE**

- ▶ **Precise, strain-free positioning** — Float leaves both hands free to raise, lower, or shift the load with virtually no resistance; no more “hoist control” hit-and-miss spotting
- ▶ **Simple adjustment** — Clear access to air-flow calibration controls allows quick, easy adjustment of the float
- ▶ **Rugged reliability** — For continuous duty with minimal maintenance

### PLUS:

- ▶ **Low air consumption** — Approximately 1/8 cfm required per cycle (one fiftieth of that of an air hoist) means very low energy costs
- ▶ **Clean, oil-free operation** — Pre-lubricated design eliminates air line lubrication and oil mist exhaust; ideal for food processing and clean manufacturing environments

*Progress is **greener** with Ingersoll Rand*



**Z Stop:** The optional Z Stop is a patented device that will eliminate the down-drift of suspended loads or tools during shut down or at night when the air supply is shut off. The Z Stop will stop drift within 6 inches (152.4 mm) and put the Balance Air into a mechanically locked position preventing damage to tools or objects below the suspended load. Available for use on all 10 inch (254 mm) diameter units.



### Z Brake Safety Retraction System (Patent No. 5,522,581):

Standard on all units, prevents violent retraction in the event of a sudden release or loss of load. The brake will also eliminate excessive upward acceleration of a no load hook when the “up” button is pressed in fully.

**Suspension lugs:** Fits all Ingersoll Rand suspensions and most trolleys from other manufacturers.

**Rugged steel housing:** All steel housing for added durability

**Injection-molded reel:** Engineered plastic for excellent durability and wear resistance.

**Anti-friction ball screw:** Creates smooth rotation path for the cable reel.

**Heavy-duty thrust bearing:** Absorbs piston force and transfers smooth reel rotation over the ball screw.

**Low-friction cable guide** (not shown): Ensures smooth cable feed on and off the reel.

**Air chamber and piston:** Forms the heart of the unit. Air entering the chamber pushes the piston to rotate the spool, wind the cable, and lift the load. Exhausting air lowers the load. Regulating this flow balances the load, creating a zero gravity float.

## Safety is standard

- ▶ Built-in overload protection — The lifted load can never exceed the unit's maximum rated capacity
- ▶ Minimal cable recoil due to loss of load — If the load is accidentally lost, a centrifugal brake (Z brake) automatically stops rapid upward cable travel


## Versatile configuration

- ▶ Wide range of capacities up to 2,000 lbs (907 kg)
- ▶ Added protection — The optional Z Stop offers protection against the drifting of loads in the event the main air supply is lost
- ▶ Cable travel — 40 to 120 inches (1016 to 3048 mm) depending on the model
- ▶ Controls — ZA (pendant) controls let you handle varying loads; a BA (single) balance control is ideal for a constant load, and an EA for 2 loads
- ▶ Mounting — Suspension kits for Ingersoll Rand and other enclosed track manufacturers as well as I-beam, patented track, and hook mount
- ▶ CE certification — Meets the requirements for the European community

# Zimmerman Series Pneumatic Balancers

50 to 2,000 lb (22 to 909 kg) capacity

Control options:



**B**


**Basic unit, without control**

**Features:**

- ▶ Standard balancer features
- ▶ No control

**Suitable for:**

- ▶ Integration with end effector



**ZA**

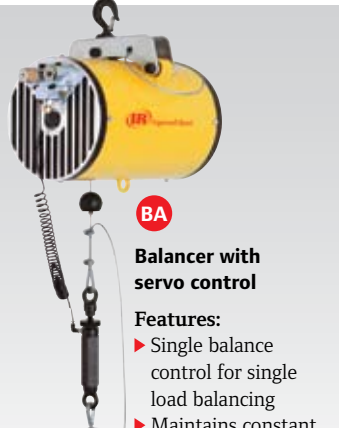
**Balancer with pendant control**

**Features:**

- ▶ Ergonomic up / down pendant control
- ▶ High speed precise positioning
- ▶ 12 ft (3.7 m) standard hose length

**Suitable for:**

- ▶ Pick and place
- ▶ Precision assembly



**BA**


**Balancer with servo control**

**Features:**

- ▶ Single balance control for single load balancing
- ▶ Maintains constant tension through full range of motion

**Suitable for:**

- ▶ Tool balancing
- ▶ Weld gun suspension
- ▶ Fixture suspension



**EA**

**Balancer with high load, low load, no load control**

**Features:**

- ▶ Load balancing for 3 loads (high, low, no load)
- ▶ Pendant with rotary thumb switch to select load
- ▶ 12 ft (3.7 m) standard hose length

**Suitable for:**

- ▶ Multiple load balancing
- ▶ End effector balancing (loaded/unloaded)

B	ZA	BA	EA	Capacity lb (kg)	Travel in (mm)	Net Weight lb (kg)
<b>SINGLE WIRE ROPE</b>						
BW015080 <sup>1</sup>	ZAW015080 <sup>1</sup>	BAW015080 <sup>1</sup>	EAW015080 <sup>1</sup>	150 (68)	80" (2032)	50 (23)
BW020120	ZAW020120	BAW020120	EAW020120	200 (90)	120" (3048)	62 (28)
BW020120S <sup>2</sup>	ZAW020120S <sup>2</sup>	BAW020120S <sup>2</sup>	EAW020120S <sup>2</sup>	200 (90)	120" (3048)	62 (28)
BW032080S <sup>2</sup>	ZAW032080S <sup>2</sup>	BAW032080S <sup>2</sup>	EAW032080S <sup>2</sup>	325 (147)	80" (2032)	62 (28)
BW035080 <sup>1</sup>	ZAW035080 <sup>1</sup>	BAW035080 <sup>1</sup>	EAW035080 <sup>1</sup>	350 (158)	80" (2032)	62 (28)
BW050080	ZAW050080	BAW050080	EAW050080	500 (227)	80" (2032)	110 (50)
BW050080S <sup>2</sup>	ZAW050080S <sup>2</sup>	BAW050080S <sup>2</sup>	EAW050080S <sup>2</sup>	500 (227)	80" (2032)	110 (50)
<b>REEVED WIRE ROPE</b>						
BW040060	ZAW040060	BAW040060	EAW040060	400 (181)	60" (1524)	67 (30)
BW040060S <sup>2</sup>	ZAW040060S <sup>2</sup>	BAW040060S <sup>2</sup>	EAW040060S <sup>2</sup>	400 (181)	60" (1524)	67 (30)
BW065040S <sup>2</sup>	ZAW065040S <sup>2</sup>	BAW065040S <sup>2</sup>	EAW065040S <sup>2</sup>	650 (294)	40" (1016)	67 (30)
BW070040 <sup>1</sup>	ZAW070040 <sup>1</sup>	BAW070040 <sup>1</sup>	EAW070040 <sup>1</sup>	700 (317)	40" (1016)	67 (30)
BW100040	ZAW100040	BAW100040	EAW100040	1,000 (453)	40" (1016)	115 (52)
BW100040S <sup>2</sup>	ZAW100040S <sup>2</sup>	BAW100040S <sup>2</sup>	EAW100040S <sup>2</sup>	1,000 (453)	40" (1016)	115 (52)
<b>TANDEM WIRE ROPE</b>						
BW040120	ZAW040120	BAW040120	EAW040120	400 (181)	120" (3048)	124 (56)
BW040120S <sup>2</sup>	ZAW040120S <sup>2</sup>	BAW040120S <sup>2</sup>	EAW040120S <sup>2</sup>	400 (181)	120" (3048)	124 (56)
BW065080S <sup>2</sup>	ZAW065080S <sup>2</sup>	BAW065080S <sup>2</sup>	EAW065080S <sup>2</sup>	650 (294)	80" (2032)	124 (56)
BW070080 <sup>1</sup>	ZAW070080 <sup>1</sup>	BAW070080 <sup>1</sup>	EAW070080 <sup>1</sup>	700 (317)	80" (2032)	124 (56)
BW100080	ZAW100080	BAW100080	EAW100080	1,000 (453)	80" (2032)	220 (100)
BW100080S <sup>2</sup>	ZAW100080S <sup>2</sup>	BAW100080S <sup>2</sup>	EAW100080S <sup>2</sup>	1,000 (453)	80" (2032)	220 (100)
<b>TANDEM REEVED WIRE ROPE</b>						
BW080060	ZAW080060	BAW080060	EAW080060	800 (360)	60" (1524)	129 (59)
BW080060S <sup>2</sup>	ZAW080060S <sup>2</sup>	BAW080060S <sup>2</sup>	EAW080060S <sup>2</sup>	800 (360)	60" (1524)	129 (59)
BW130040S <sup>2</sup>	ZAW130040S <sup>2</sup>	BAW130040S <sup>2</sup>	EAW130040S <sup>2</sup>	1,300 (589)	40" (1016)	129 (59)
BW140040 <sup>1</sup>	ZAW140040 <sup>1</sup>	BAW140040 <sup>1</sup>	EAW140040 <sup>1</sup>	1,400 (620)	40" (1016)	129 (59)
BW200040	ZAW200040	BAW200040	EAW200040	2,000 (900)	40" (1016)	225 (102)
BW200040S <sup>2</sup>	ZAW200040S <sup>2</sup>	BAW200040S <sup>2</sup>	EAW200040S <sup>2</sup>	2,000 (900)	40" (1016)	225 (102)

## Selection Tips:

- ▶ Actual operating capacity is determined by available plant air pressure. Operating capacity decreases 1% for every 1 psi below 100 psi inlet air pressure. For example: at 50 psi, a 350 lb capacity balancer has a 175 lb operating capacity (350 X 50%)
- ▶ For lifting applications, working load should not exceed 80% of operating capacity
- ▶ Working load includes part weight and handling device weight

<sup>1</sup> Not available with Z-Stop safety device.

<sup>2</sup> Model delivered with Z-Stop as standard.

# Zimmerman Series Pneumatic Balancers

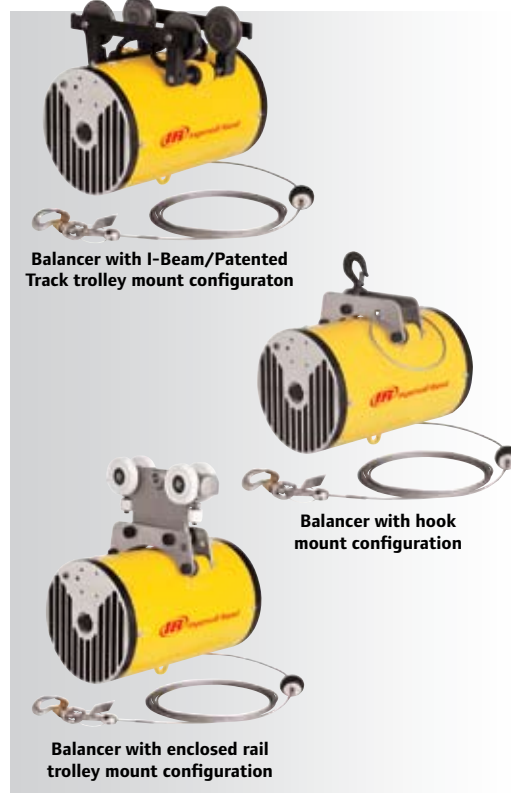
50 to 2,000 lb (22 to 909 kg) capacity

*Suspension options:*

Option Code	Description	6.5" Dia. 150 lb Unit	10" Dia. >150 lb Units	Competitor Product
00	No suspension	–	–	NA
S2	ZRS2 steel rail	16300	16400	NA
S3	ZRS3 steel rail	16300	16400	NA
HM	Hook mount	16360	16460*	NA
TR	T-Rail / I-Beam	16320	16420*	NA
AT	ZRAT aluminum rail	16355	16455*	NA
A1	ZRA1 aluminum rail	16305	16405*	NA
A2	ZRA2 aluminum rail	16310	16410	NA
E4	ETA-4 aluminum rail	16344	16444*	Unified
E8	ETA-8 aluminum rail	16345	16445	Unified
K1	KBK1 steel rail	16325	16425*	Demag
K2	KBK2 steel rail	16315	16415	Demag
G1	Gorbel 1000# alum. series track	16307	16407*	Gorbel
G2	Gorbel 1000# steel series track	16307	16407*	Gorbel
K3	4" Aluminum	16344	16444*	Knight
K4	8" Aluminum	16345	16445	Knight
K5	8" Aluminum anti-kickback	16345	16445	Knight
K6	4" Steel	16325	16425*	Knight
K7	6" Steel	16315	16415	Knight
K8	7" Steel	16315	16415	Knight

**Note:**

\* NOT compatible with tandem balancers



Example: BW020120SS2

## Pneumatic Balancers model driver

Control B	Type W	Capacity 020	Travel 120	Z-Stop Option S	Suspension Option S2
<b>B = Basic, no controls</b> ZA = Pendant control BA = Servo control EA = High, low, no load control	<b>W = Wire rope</b>	<b>020 = 200 lb (91 kg)</b> For available capacities, refer to model number tables	<b>120 = 120 inches (3048 mm)</b> For available travel, refer to model number tables	<b>S = Z-stop</b>	<b>S2 = ZRS2 steel rail</b> For available suspension options, refer to suspension option table

## Replacement part numbers

Z-Stop Option Code	Description	Part No.
S	Z-Stop, 200 lb capacity	13301
S	Z-Stop, 325 lb capacity	13311
S	Z-Stop, 500 lb capacity	13321
Control Options Code	Description	Part No.
B	Basic – no controls	N/A
ZA	Pendant control	15300–12
BA	Single balance control – 6.5" unit	15320
BA	Single balance control – 10" unit	15330
EA	High, low, no load control	15310–12

## EZ Grip Ergonomic Control Handle

Quality handle manufactured by Ingersoll Rand, the world leader in ergonomically sound material handling equipment.

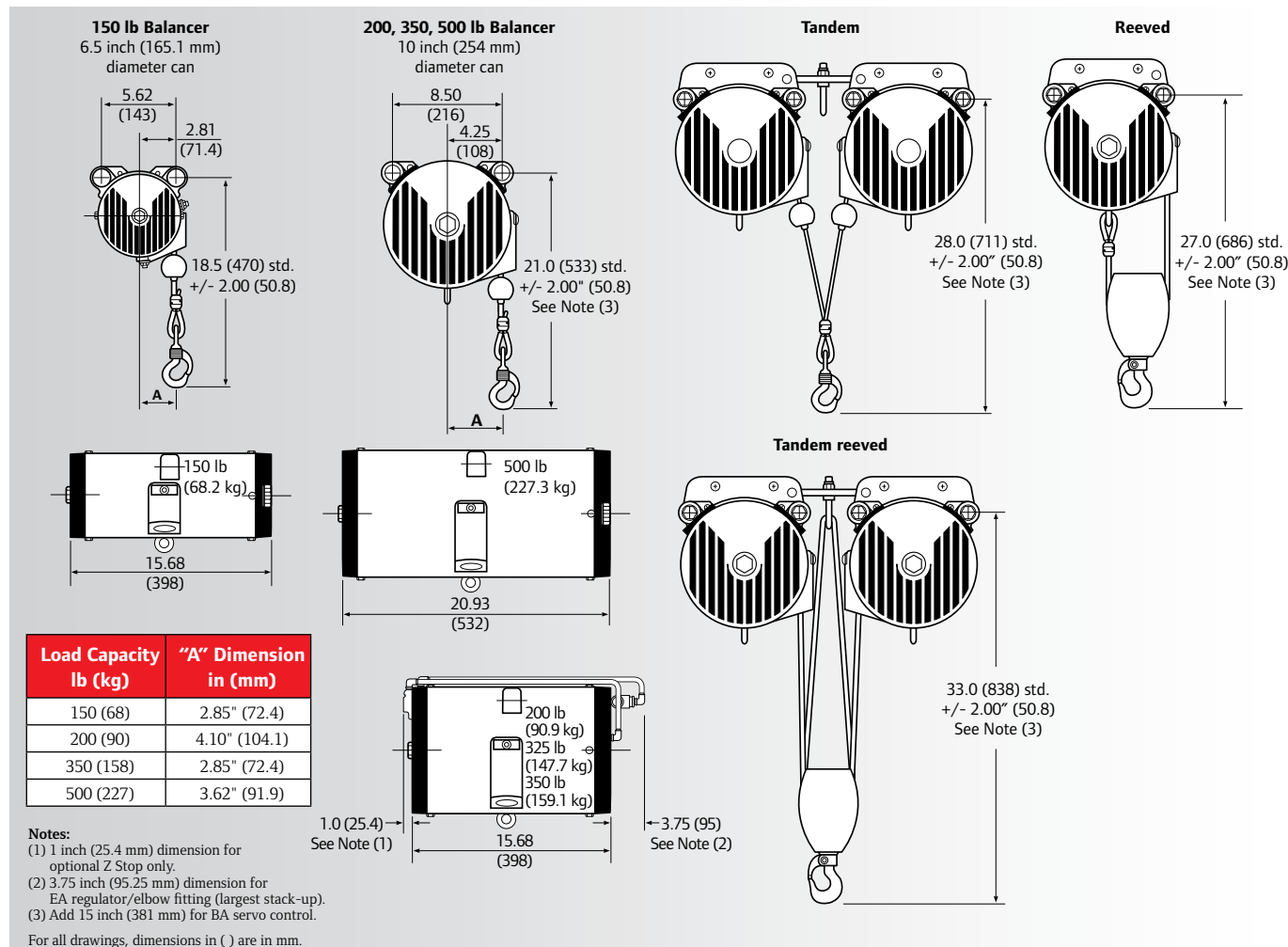


**ZA Pendant Control (15300-12)**



# Zimmerman Series Pneumatic Balancers

## Dimensions:



## Also available:

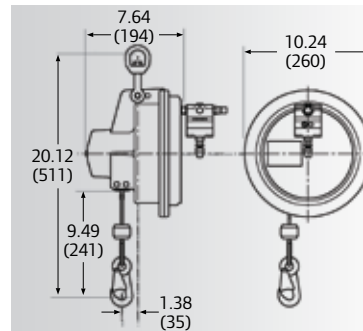
### BAW series tool balancer

This air unit offers an incredible 2 to 50 pound (0.9 to 22 kg) load capacity and our exclusive flotation feature.

#### Standard features:

- **Performance** — Float action provides ease of vertical travel, eliminating tension on load, making positioning capability far superior
- **Versatility** — No need to change model when making tool change; one model (BAW005060) covers entire 50 lb (22 kg) range
- **Headroom** — Requires only 20 inches (508 mm) from bottom of rail to bottom of hook
- **Adjustment** — Simple adjustment in seconds by means of external regulator
- **Sequencing** — Can be sequenced via air signal to perform timed or "stepped" operation
- **Maintenance** — Virtually maintenance-free. Normal maintenance can be done in place on the rail

BAW005060



Part No.	Capacity lb (kg)	Travel in (mm)	Net Weight lb (kg)
SINGLE WIRE ROPE			
BAW005060	2 - 50 (0.9 - 22)	59" (1500)	19.8 (9)

# Zimmerman IntelLIFT® Series Balancers

## Intelligent Lifting Systems

### What is IntelLIFT?

IntelLIFT is an intelligent assist device (IAD); it converts intuitive operator input into smooth, effortless up / down motion. The force-sensing control handle responds to operator input quickly and seamlessly for precise positioning of loads.

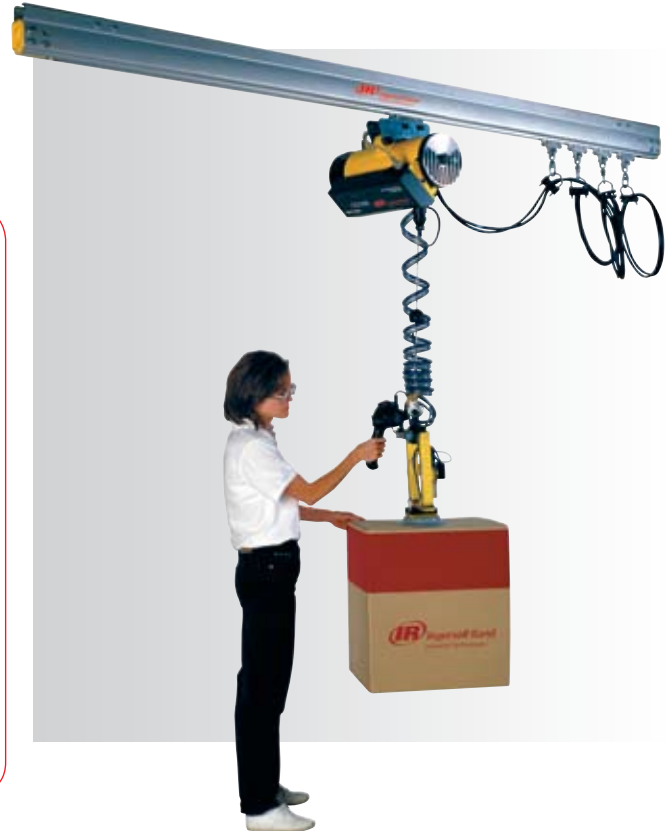
### The Ingersoll Rand IntelLIFT Balancer **ADVANTAGE**

- ▶ **Self-balancing** — Intuitive speed control for different weights
- ▶ **Hands-on maneuvering** — IntelLIFT senses force input of the user and translates that to assisted lifting / lowering of the load without the need for up / down buttons
- ▶ **Float mode** — Throughout entire range of motion
- ▶ **Robust design** — Electric over air design allows continuous duty with minimal maintenance
- ▶ **Part present** — Eliminates potential to accidentally drop part
- ▶ **3-Speed select** — Enables speed selection to match application and operator comfort level

### Same green features as the Pneumatic Balancer

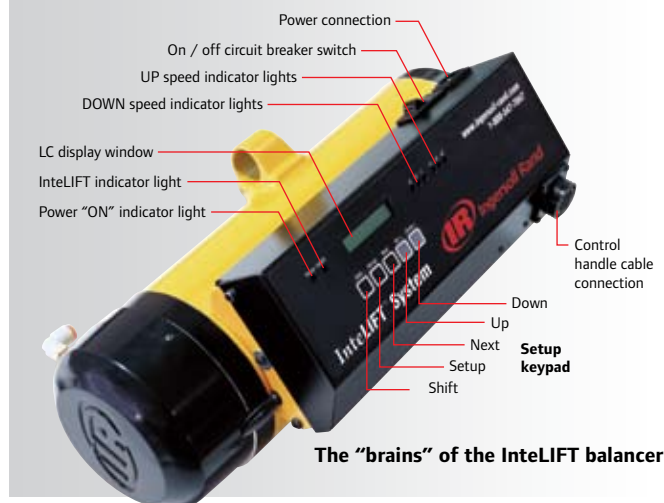
- ▶ Low air consumption
- ▶ Clean, oil-free operation

*Progress is greener with Ingersoll Rand*



### Integrated IntelLIFT control module:

- ▶ Integral element of the balancer itself
- ▶ Simple programming of functions with a keypad and indicator lights
- ▶ Easy-to-read display window



### Ergonomic control handle:



# Zimmerman IntelLIFT® Series Balancers

## Intelligent Lifting Systems

### Control options:

 <p><b>IB</b></p> <p><b>IntelLIFT basic unit, without control</b></p> <p><b>Features:</b></p> <ul style="list-style-type: none"> <li>▶ No controls</li> <li>▶ Standard IntelLIFT features</li> </ul> <p><b>Suitable for:</b></p> <ul style="list-style-type: none"> <li>▶ Integration with end effector</li> </ul>	 <p><b>IA</b></p> <p><b>IntelLIFT with pendant control and pre-coil cable</b></p> <p><b>Features:</b></p> <ul style="list-style-type: none"> <li>▶ IntelLIFT ergonomic pendant control handle with up / down rocker switch</li> <li>▶ Precise, high-speed positioning</li> <li>▶ 12 ft (3.7 m) twin bonded pre-coil cable including pre-coil air hose for handling device integration</li> </ul> <p><b>Suitable for:</b></p> <ul style="list-style-type: none"> <li>▶ Pick and place</li> <li>▶ Precision assembly</li> </ul>	 <p><b>IC</b></p> <p><b>IntelLIFT with force-sensing control (without up / down buttons)</b></p> <p><b>Features:</b></p> <ul style="list-style-type: none"> <li>▶ IntelLIFT ergonomic force-sensing control handle</li> <li>▶ Intuitive up / down control</li> <li>▶ 12 ft (3.7 m) twin bonded pre-coil cable including pre-coil air hose for handling device integration</li> </ul> <p><b>Suitable for:</b></p> <ul style="list-style-type: none"> <li>▶ High-cycle pick and place</li> <li>▶ Precision assembly</li> </ul>	 <p><b>IS</b></p> <p><b>IntelLIFT with pendant control and straight cable</b></p> <p><b>Features:</b></p> <ul style="list-style-type: none"> <li>▶ IntelLIFT ergonomic pendant control handle with up / down rocker switch</li> <li>▶ Precise, high-speed positioning</li> <li>▶ 12 ft (3.7 m) straight electric cable</li> </ul> <p><b>Suitable for:</b></p> <ul style="list-style-type: none"> <li>▶ Pick and place</li> <li>▶ Precision assembly</li> </ul>
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IB	IA	IC	IS	Capacity lb (kg)	Travel in (mm)	Net Weight lb (kg)
<b>SINGLE WIRE ROPE</b>						
IBW015080*	IAW015080*	ICW015080*	ISW015080*	150 (68)	80" (2032)	60 (27)
IBW020120	IAW020120	ICW020120	ISW020120	200 (91)	114" (2896)	72 (33)
IBW033080	IAW033080	ICW033080	ISW033080	330 (150)	70" (1778)	72 (33)
IBW050080	IAW050080	ICW050080	ISW050080	500 (227)	74" (1880)	120 (54)
<b>REEVED WIRE ROPE</b>						
IBW040060	IAW040060	ICW040060	ISW040060	400 (182)	57" (1448)	65 (30)
IBW066040	IAW066040	ICW066040	ISW066040	660 (300)	35" (883)	77 (35)
IBW100040	IAW100040	ICW100040	ISW100040	1,000 (454)	37" (940)	125 (57)

\*Not available with Z-Stop safety device

### Selection Tips:

- ▶ Actual operating capacity is determined by available plant air pressure. Operating capacity decreases 1% for every 1 psi below 100 psi plant air pressure. For example: at 50 psi, a 200 lb capacity balancer has a 100 lb operating capacity (200 X 50%)
- ▶ For lifting applications, working load should not exceed 80% of operating capacity
- ▶ Working load includes part weight and handling device weight
- ▶ IC control option includes force sensing load cell which must be mounted to end effector for proper operation
- ▶ See following page for additional IntelLIFT options and complete model driver required to order product.

# Zimmerman InteLIFT® Series Balancers

## Suspension options:

Option Code	Description	6.5" Dia. 150 lb Unit	10" Dia. >150 lb Units	Competitor Product
00	No suspension	–	–	NA
S2	ZRS2 steel rail	16300	16400	NA
S3	ZRS3 steel rail	16300	16400	NA
HM	Hook mount	16360	16460	NA
TR	T-Rail / I-Beam	16320	16420	NA
AT	ZRAT aluminum rail	16355	16455	NA
A1	ZRA1 aluminum rail	16305	16405	NA
A2	ZRA2 aluminum rail	16310	16410	NA
E4	ETA-4 aluminum rail	16344	16444	Unified
E8	ETA-8 aluminum rail	16345	16445	Unified
K1	KBK1 steel rail	16325	16425	Demag
K2	KBK2 steel rail	16315	16415	Demag
G1	Gorbel 1000# alum. series track	16307	16407	Gorbel
G2	Gorbel 1000# steel series track	16307	16407	Gorbel
K3	4" Aluminum	16344	16444	Knight
K4	8" Aluminum	16345	16445	Knight
K5	8" Aluminum anti-kickback	16345	16445	Knight
K6	4" Steel	16325	16425	Knight
K7	6" Steel	16315	16415	Knight
K8	7" Steel	16315	16415	Knight

### Voltage option:

- ▶ 115V 50/60 Hz single phase
- ▶ 230V 50/60 Hz single phase

### Power cord option:

- ▶ 6 ft (1.8 m) power cord

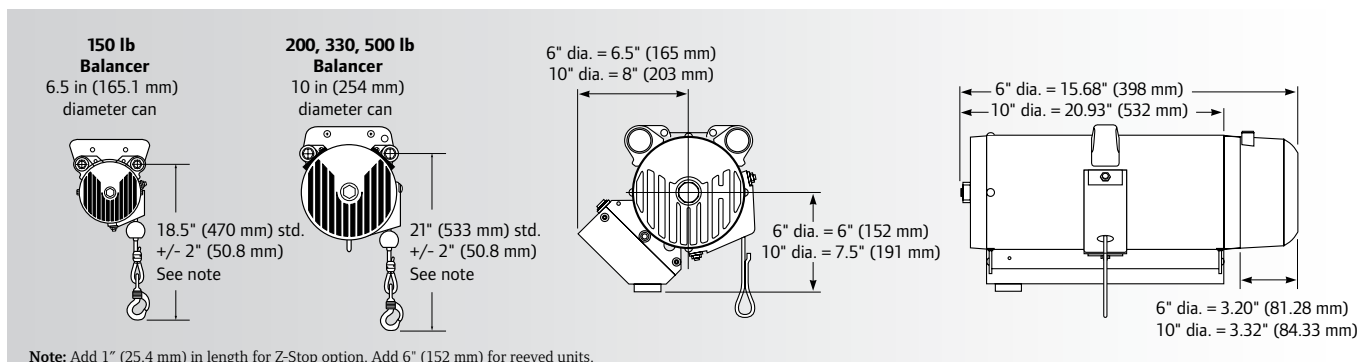


Example: IAW020120A21SP

### InteLIFT model driver

Control IA	Type W	Capacity 020	Travel 120	Suspension A2	Voltage 1	Z-Stop S	Power Cord P
IB = InteLIFT basic, no controls <b>IA = InteLIFT pendant control handle with 12' twin bond pre-coil cable</b> IC = InteLIFT force sensing control handle with 12' twin bond pre-coil cable IS = InteLIFT pendant control handle with 12' straight electric cable	W = Wire rope	lb kg 020 = 200 91 For available capacities, refer to model number tables	in mm 120 = 120" 3048 For available travel, refer to model number tables	A2 = ZRA2 aluminum rail For available suspension options, refer to suspension option table	1 = 115V 50/60 Hz 1 PH 2 = 230V 50/60 Hz 1 PH	S = Z-Stop	P = 6' Power cord 0 = None

## Dimensions:





# Zimmerman IntelIFT® Series Balancers

## Integrated solutions

A complete range of end effectors can be used with IntelIFT controls for greater efficiency, from the simplest to the most complex device. The IntelIFT unit incorporates a fully grounded, fault-protected electrical system, with fused circuits and memory that automatically reinstates function selections following a power interruption. In every respect, the Ingersoll Rand IntelIFT air balancer is an essential solution for a more productive workplace; empowering individuals to work comfortably and effectively, significantly contributing to product and process quality.

*The closed-loop feedback system delivers precise, responsive motion control suitable for a wide range of applications in:*



**Vehicle assembly**



**General industry**



**Beverage and warehouse**



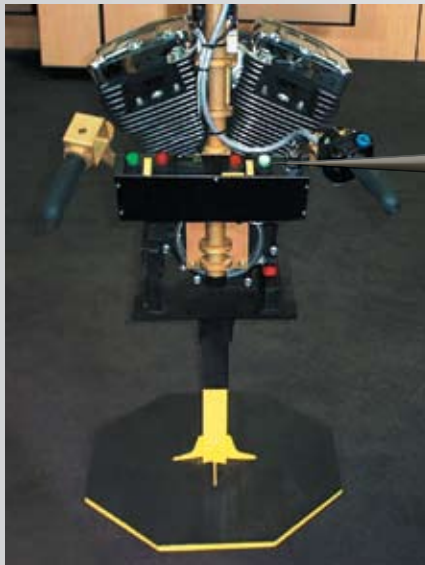
**Biotechnology**



**Electronics**



**Aerospace**



The engine-handling device shown uses the unique features of the IntelIFT balancer. Features include: auto clamp, interlock, up control disable, weight sensing with automatic alarm, and keyed lockout.



### Error-proof assembly:

The device digitally displays the weight of the part picked up. Device will not allow the operator to move the part if not clamped properly. The key allows the operator the ability to lock the device. Allows 100 percent visual inspection of the assembly.

The warehouse-handling device shown is known for its versatility. The device mimics the human motion of picking up a part and placing it down. The same device can be used to pick up parts such as totes, trays, boxes, and milk crates. The self-balance feature allows the same device to pick up parts of different weights and sizes. Order P/N 16010209 in conjunction with IBW015080 IntelIFT balancer.

