

Ergonomic Handling Systems



Global Solution Centers

Providing turnkey, customized solutions that improve our customers' productivity and efficiency:

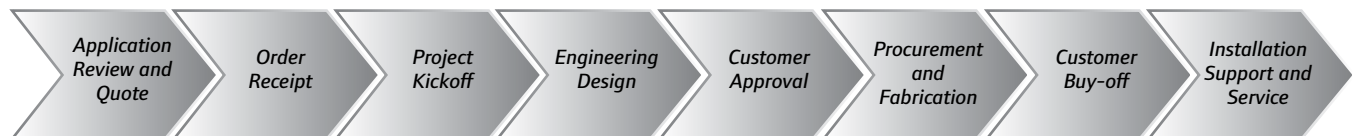
Custom Ergonomic Handling Systems



Custom Multi-Spindle Fastening Systems



Custom Solution Process



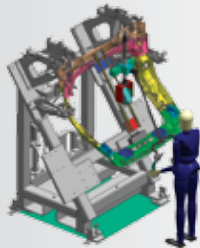
From RFQ

→ To Installation

Offering full-service capabilities tailored to our customers' needs:

Engineering

- ▶ Feasibility study
- ▶ Concept design
- ▶ Simulation
- ▶ System design
- ▶ 2D and 3D CAD



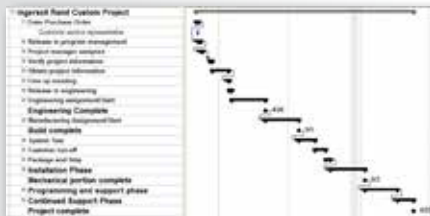
Service

- ▶ Installation and start-up support
- ▶ Training
- ▶ Preventive maintenance
- ▶ Calibration and repair service
- ▶ Technical support



Project management

- ▶ Dedicated project manager
- ▶ Project planning
- ▶ Coordination
- ▶ Execution



Served industries include:

- ▶ Aerospace
- ▶ Appliance
- ▶ Automotive
- ▶ Defense / military
- ▶ Electronics
- ▶ Food and beverage
- ▶ Furniture
- ▶ Heavy equipment
- ▶ Marine
- ▶ Medical

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er-go·nom·ics (ûr'guh-nŏm'îks) n.

1. The applied science of equipment design, as for the workplace, intended to maximize productivity by reducing operator fatigue and discomfort.
2. Design factors, as for the workplace, intended to maximize productivity by minimizing operator fatigue and discomfort.

See also: *Ingersoll Rand*

Since 1959, Ingersoll Rand has been at the forefront of developing ergonomic solutions for lifting, manipulating, and transferring loads by offering a complete line of products designed to maximize productivity while simultaneously minimizing operator fatigue and discomfort. No matter what your requirement, Ingersoll Rand offers the products for you to do your job effectively, efficiently, and above all, safely. By choosing Ingersoll Rand, you are receiving 50 years of innovation and product expertise that is unrivalled anywhere else.

Rail Systems

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Arm Systems

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Jib Cranes

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Hoists

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Balancers

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Handling Devices

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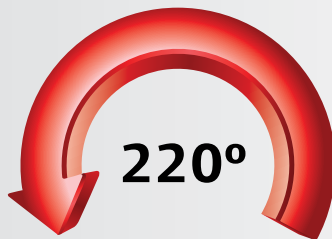
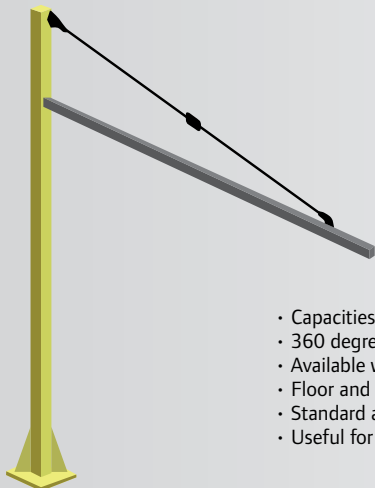


Three Building Blocks to a Complete Ergonomic Handling Solution

| OVERHEAD SUPPORT | | |
|--|---|--|
| Rail System (pg 6) | | |
| Freestanding Workstation Crane (pg 7) | Ceiling-Supported Workstation Crane (pg 7) | Monorail (pg 7) |
|  <ul style="list-style-type: none"> Capacities up to 2,000 lb Floor supported to eliminate the need for overhead support structure For use when there is adequate floor space and /or the ceiling structure cannot support the load Provides rectangular coverage for a single workstation, or an entire assembly line with multiple bridge cranes |  <ul style="list-style-type: none"> Capacities up to 3,000 lb For use when there is limited floor space and adequate ceiling structure to support the load Capable of mounting parallel or perpendicular to overhead support steel Provides rectangular coverage for a single workstation, or an entire assembly line with multiple bridge cranes |  <ul style="list-style-type: none"> Provides simple single-axis transfer Curved sections available for navigating obstructions |
| LIFTING / BALANCING DEVICE | | |
| Pneumatic Balancer (pg 20) | IntelLIFT® Balancer (pg 24) | Spring Balancer (pg 28) |
|  <ul style="list-style-type: none"> Capacities up to 2,000 lb Allows user to move load via up / down controls then float mode allows for precision manual movement and placement of the load without having the “jogging” associated with air and electric hoists Energy savings — less air consumption than an air hoist Used in applications where precision spotting is necessary Offers up to 120" travel |  <ul style="list-style-type: none"> Capacities up to 1,000 lb IntelLIFT removes the need for up / down switches and allows for completely manual operation by sensing user force input and translating it to precise lifting / lowering Features float mode throughout entire range of motion Used in applications where: <ul style="list-style-type: none"> Precision spotting is necessary Hands-on control of load is required / beneficial One hand operation is beneficial |  <ul style="list-style-type: none"> Capacities up to 363 lb Lifts ranging from 5 to 9 ft Used in applications where: <ul style="list-style-type: none"> Loads travel a relatively short distance One tool is used repeatedly in a limited area of motion, such as assembly stations Single load balancing is required (weld guns, assembly fixtures, etc.) |
| HANDLING DEVICE | | |
| Hook (pg 48) | Probe (pg 47) | Trap (pg 48) |
|  <ul style="list-style-type: none"> Used in applications where: <ul style="list-style-type: none"> Simple pick and place Straight transfer with no part manipulation Hook access is readily available Odd-shaped parts |  <ul style="list-style-type: none"> Used in applications where: <ul style="list-style-type: none"> Part is cylindrical with an accessible hole in the core Straight transfer or manipulation of parts Typical parts include rolls and machined parts |  <ul style="list-style-type: none"> Used in applications where: <ul style="list-style-type: none"> Simple pick and place Straight transfer with no part manipulation Accessible grab locations on both sides of part |

OVERHEAD SUPPORT

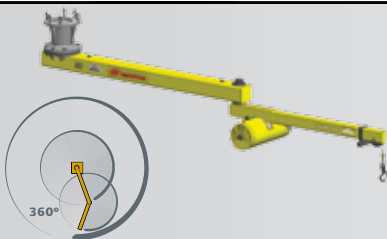
Jib Crane (pg 12)



- Capacities up to 2,000 lb
- 360 degrees of circular coverage area
- Available with up to 14 ft (12 ft standard) boom underclearance
- Floor and wall mounting options
- Standard and low profile configurations
- Useful for short transfer applications less than 20 ft

LIFTING / BALANCING DEVICE

Arm (pg 31)



- Capacities up to 1,000 lb
- Great for reaching in, under, and around obstacles to precisely and effortlessly position loads
- Column or overhead mounting options
- Available in three styles: articulating, parallel link, and vertical mast
- Up to 10 ft of horizontal reach

Torque Tube (pg 49)



- Capacities up to 150 lb
- Vertical travel range of up to 36 inches
- Rigidity of the system minimizes inertia when moving loads into place along a rail system
- Useful with lifting offset loads where the weight of the load is disproportionate to the center of gravity
- Provides torque reaction for fastening systems

Air / Electric Hoist (pg 42 & 40)

**Air**

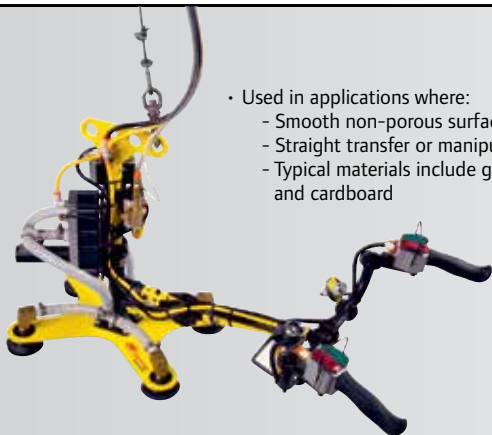
- Capacities up to 2,200 lb
- Very durable
- Continuous duty cycle
- Allows for "jogging" of load — movement up / down at various speeds
- Easy to maintain

**Electric**

- Capacities up to 2,200 lb
- Single or dual speed available
- Offers quiet, clean operation as there's no need for oil or air

HANDLING DEVICE

Vacuum (pg 45)



- Used in applications where:
 - Smooth non-porous surface is available
 - Straight transfer or manipulation of parts
 - Typical materials include glass, sheet metal and cardboard

Clamp (pg 46)



- Used in applications where:
 - Part is rigid with accessible clamping surfaces
 - Straight transfer or manipulation of parts
 - Typical parts include machined parts, bundles, fabricated metal parts

Rail Systems

The backbone of any ergonomic material handling system



Ingersoll Rand offers:

- ▶ Ceiling-supported workstation bridge cranes
- ▶ Freestanding workstation bridge cranes
- ▶ Monorails

MMA-CERTIFIEDSM

MONORAIL[®] Manufacturers[®]
Association
Workstation Cranes & Patented Track Systems

Meets or Exceeds ANSI MH27.1 or MH27.2

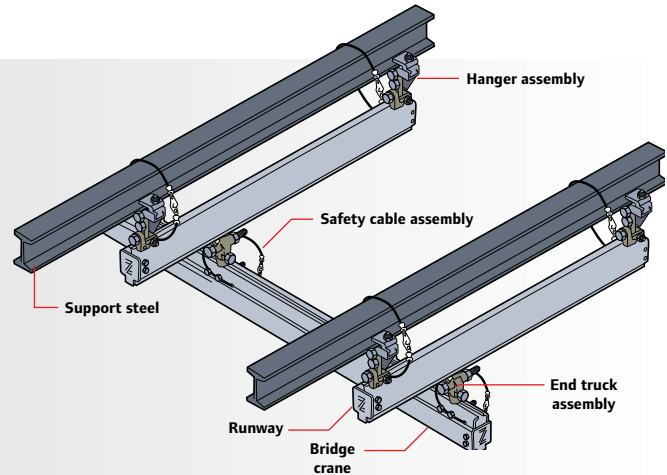
To review compliance requirements and confirm certification, visit www.mmacertified.org

Ingersoll Rand Rail Systems are now MMA-Certified.

Zimmerman Series Rail Systems

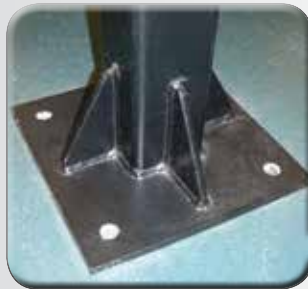
Ceiling-supported workstation bridge cranes:

- ▶ Ideal for high-volume production environments with limited floor space
- ▶ Capable of mounting parallel or perpendicular to overhead support steel
- ▶ Provide rectangular coverage for a single workstation, or an entire assembly line with multiple bridge cranes
- ▶ Capacities up to 3,000 lb



Freestanding workstation bridge cranes:

- ▶ Floor supported to eliminate the need for overhead support structure
- ▶ Available in 1/4, 1/2, and 1 ton capacities and 4, 6, 8, 10, and 12 column designs to cover lengths up to 105 ft or more
- ▶ Lindapter® adjustable toe clamps make it simple to align runways for smooth operation
- ▶ Rugged design with gusseted column base plates
- ▶ Custom-designed structures available to meet special applications



Monorails:

- ▶ Provide simple single-axis transfer
- ▶ Curved sections available for navigating obstructions



| ZRA1 | | ZRS2 | |
|------|-----|------|-----|
| R | | R | |
| 36" | 15° | 60" | 10° |
| 36" | 30° | 60" | 15° |
| 36" | 45° | 60" | 30° |
| 36" | 60° | 60" | 45° |
| 36" | 90° | 60" | 60° |
| | | 60" | 90° |

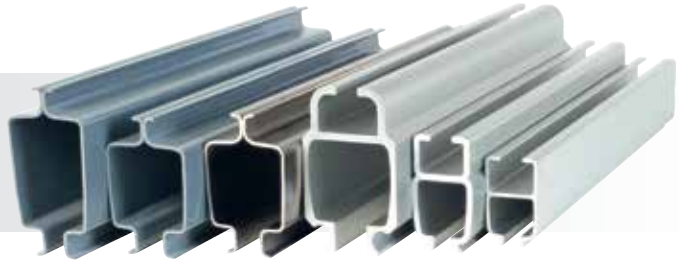


Zimmerman Series Rail Systems

Profiles:



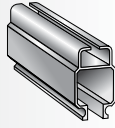
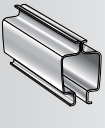
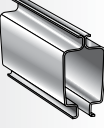
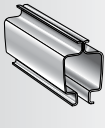
Quality steel, aluminum, and stainless steel rail systems

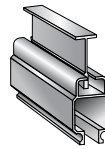
Ingersoll Rand rails are available in three different materials and five different sizes to meet your specific material handling needs. The enclosed rail systems design reduces the accumulation of dirt and grime on the internal rolling surfaces, thus reducing rolling effort.



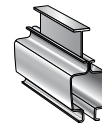
The Ingersoll Rand Rail Systems **ADVANTAGE**

- ▶ **Lightweight and ergonomic** — Less than 1 percent rolling resistance
- ▶ **Precision running surface** — Aluminum, steel, and stainless steel available
- ▶ **Modular and flexible** — Bolted together; no welding required
- ▶ **Clean, maintenance-free operation** — No lubrication required
- ▶ **Safety** — Designed to meet or exceed all national and international standards
- ▶ **Now MMA Certified** — Certified by the Monorail Manufacturers Association to meet or exceed ANSI MH27.2 monorails and underhung cranes

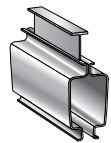
| | | Lightweight aluminum profiles | | | Rugged steel profiles | | Clean stainless steel |
|-----------------|----|--|---|---|--|---|--|
| | | <ul style="list-style-type: none"> ▶ Lightweight and available for long spans ▶ Extruded from aluminum alloy 6063-T6 ▶ Clear anodized for a smooth, clean, corrosive-free surface | | | <ul style="list-style-type: none"> ▶ Roll formed from 9 gauge, A569 hot-rolled steel ▶ Spot welded with automated welder for maximum strength ▶ Powder-coat painted for durability and smoothness | | <ul style="list-style-type: none"> ▶ Engineered for clean room applications ▶ Ideal for the food and pharmaceutical industries ▶ Roll formed from 10 gauge, 316 L stainless steel |
| | |  |  |  |  |  |  |
| | | ZRA1 | ZRA2 | ZRA3 | ZRS2 | ZRS3 | ZRSS |
| Part No. | | 31000 | 30200 | 30000 | 30500 | 30550 | 30500S |
| | | | | | | | |
| Weight per Foot | lb | 2.15 | 4.10 | 7.60 | 8.00 | 8.90 | 8.86 |
| | kg | 0.97 | 1.86 | 3.45 | 3.60 | 4.00 | 4.01 |
| Vertical Height | in | 3.83 | 4.90 | 7.00 | 5.91 | 7.13 | 5.91 |
| | mm | 97 | 124 | 177 | 150 | 181 | 150 |
| Maximum Length | ft | 24 | 30 | 30 | 24 | 24 | 16 |
| | m | 7 | 9 | 9 | 7 | 7 | 5 |



ZRA2T



ZRS2T



ZRS3T

Strongback profiles

- ▶ Reinforced profiles for added strength
- ▶ Uses the same hardware as standard profiles
- ▶ Increases span capacity

| Part No. | | 30000T | 30500T | 30550T |
|-----------------|----|--------|--------|--------|
| Weight per Foot | lb | 14.96 | 11.62 | 12.52 |
| | kg | 6.78 | 5.27 | 5.68 |
| Vertical Height | in | 13.0 | 7.83 | 9.20 |
| | mm | 330.0 | 198.8 | 233.6 |
| Maximum Length | ft | 30 | 24 | 24 |
| | m | 9 | 7 | 7 |

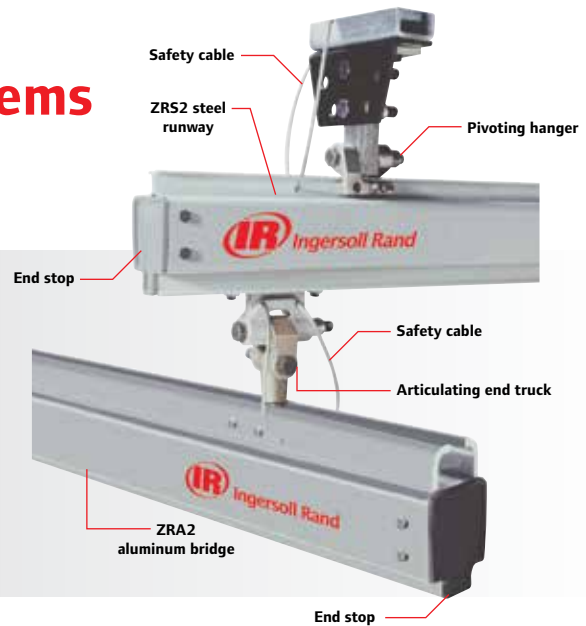
Zimmerman Series Rail Systems

Components:

Safety first

The primary and vital concern of Ingersoll Rand is *safety*.

- ▶ **Deflection** — Ingersoll Rand rail is designed to not exceed 1/450 of span, in accordance with ANSI B30.11 monorail and underhung cranes
- ▶ **Safety cables** — We require the use of safety cables at all moving (hanger and end-truck) suspension points
- ▶ **Redundant end stops** — Available for extra safety
- ▶ **Load ratings** — Clearly marked on both sides of bridge cranes
- ▶ **Safety factor** — All hardware components are rated at a 5 to 1 safety factor based on meticulous tests performed at independent testing laboratories

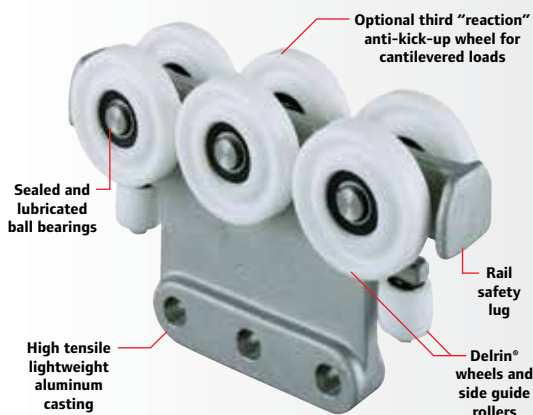


Hangers

- ▶ Attach to I-beam, angle iron, C-channel, and other overhead steel shapes
- ▶ Close and rigid style hangers available for low headroom
- ▶ Adjustable-height hangers provide easy leveling
- ▶ Sway bracing for hanger drops >24" for added safety and stability

Articulating end trucks

- ▶ Maximize the ability of the operator to precisely position the load
- ▶ Reduce fatigue by allowing the operator to move only the portion of the bridge crane near the load
- ▶ Dramatic improvements over typical rigid end-truck systems, which require the user to move the entire mass of the bridge crane for each operation



Advanced trolley design

Ingersoll Rand trolleys are designed to work in conjunction with the enclosed track rail to reduce the rolling effort required to move a load. In fact, only a force equal to 1 percent of the total rolling weight is needed when moving loads.

- ▶ **Lightweight** — Trolleys are made from high-strength, lightweight aluminum castings
- ▶ **Injection molded wheels** — Provide for clean, wear-free operation that resists flattening
- ▶ **Sealed precision bearings** — In wheels and side guide rollers, they provide long life and reduced maintenance
- ▶ **Rail safety lug** — Prevents the body of the trolley from being pulled through the enclosed track rail
- ▶ **Versatile** — Ingersoll Rand-built trolleys are available for use in virtually every manufacturer's enclosed track rail system

Zimmerman Series Rail Systems

Accessories:

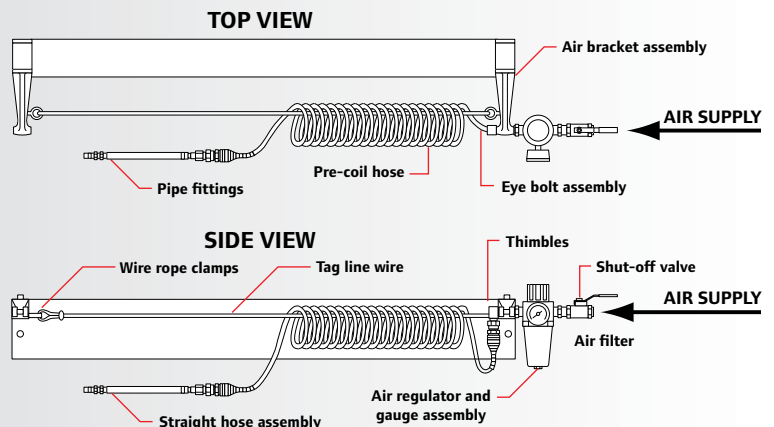
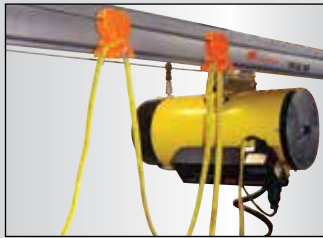
Power supply

Air supply kits:

- ▶ Available in both 3/8" and 1/2" to fit application needs
- ▶ Includes filter regulator to ensure clean regulated air supply
- ▶ Provides complete utilization of the bridge and runway system

Electrical supply kits:

- ▶ Available with or without flat conductor cable
- ▶ Secured to rail system eliminating interference with operator



Additional accessories:

Assorted load trolleys



Hoist trolley



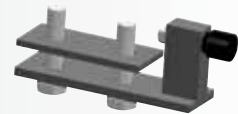
Balancer suspension

Bumper trolley



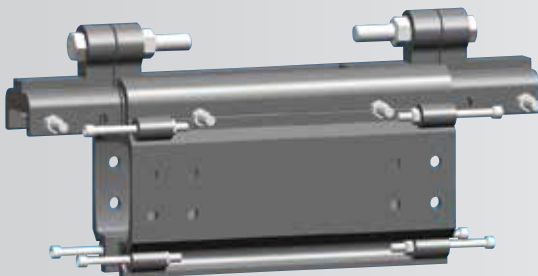
- ▶ Safely separate multiple bridge cranes

Adjustable stop



- ▶ Easily adjust travel limit of bridge crane or load trolley

Inspection gates



- ▶ Provide simple inspection of trolleys and end trucks

Insul-8™ electrification



- ▶ Clean electrification for long runs

Festooning trolleys



- ▶ Strap style
- ▶ Stamped
- ▶ Flat cable slider

Also available:

- ▶ Dual bridge kits for carriage applications
- ▶ Bridge extensions for reaching inside machines

Ingersoll Rand offers a full line of accessories to configure rail systems to your specific application

Zimmerman Series Rail Systems

Additional resources:

The Assembly Configuration Engine (ACE)

ACE is extremely flexible, enabling you to quote projects in a variety of ways. You can use ACE as a simple, guided selling tool to automatically configure systems based on relatively few inputs, or you can put it to use as a fully customized system with multiple options that you pick and choose.

Quoting with the tool is simply a matter of selecting the type of rail system(s) needed, entering customer requirements, choosing accessories and parts, then inputting customer information for the proposal.

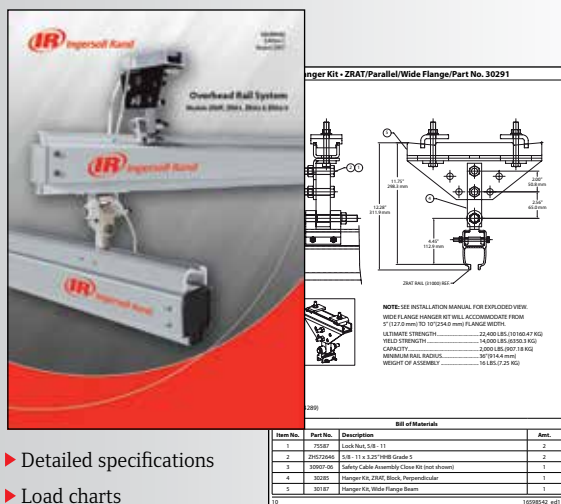
It's as easy as:

- 1 Select
- 2 Configure
- 3 Quote



Available to authorized Ingersoll Rand distributors at: irtools.com/ACE

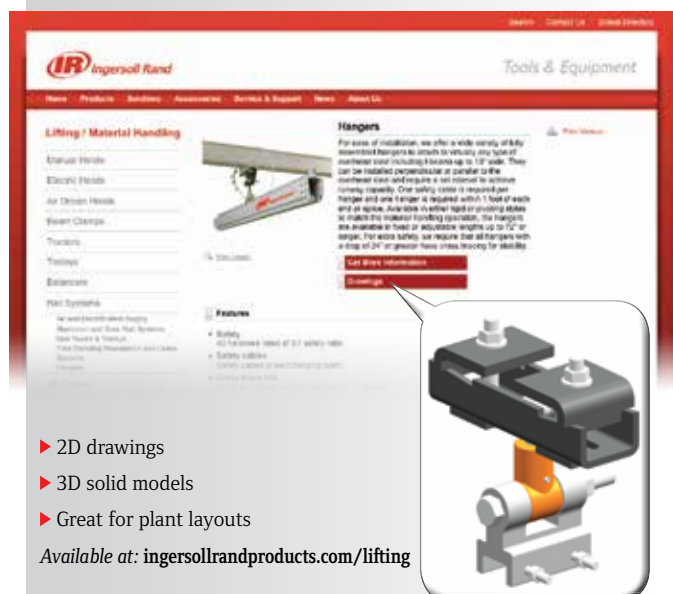
Rail Systems technical reference



- Detailed specifications
- Load charts
- Dimensional info

Available at: irtechpubs.com
(Doc. #16598542)

Drawings and CAD files available on the Web

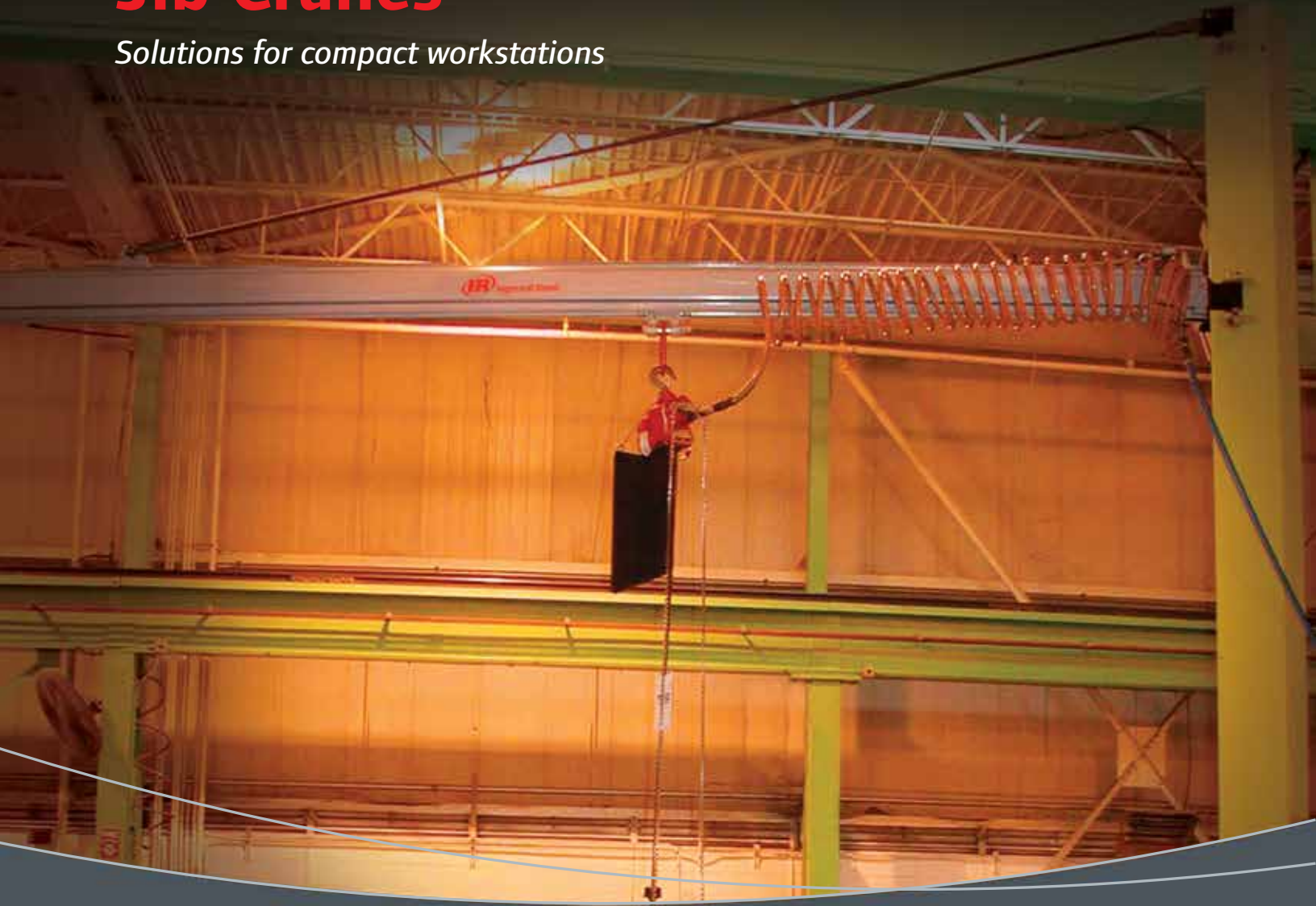


- 2D drawings
- 3D solid models
- Great for plant layouts

Available at: ingersollrandproducts.com/lifting

Jib Cranes

Solutions for compact workstations



Ingersoll Rand offers:

- ▶ 220° or 360° rotation
- ▶ Floor or wall mount
- ▶ Standard or low profile
- ▶ Capacities to 2,000 lb

Floor-mounted Jib Crane

The Ingersoll Rand Jib Crane with a rail option use precision Ingersoll Rand Enclosed Track rail for the boom, resulting in an ergonomic, lightweight boom with best-in-class rolling resistance. These jibs are designed to meet or exceed the AISC Steel Construction Manual, ANSI B30.11, and ANSI MH27.2.

These new Jibs carry capacity ratings that are conveniently aligned with standard metric ton hoist capacity points; 1/8t, 1/4t, and 1/2t. The capacity rating on each jib INCLUDES THE WEIGHT OF THE HOIST OR LIFTING DEVICE, so a 550# capacity jib can be directly pared with a 1/4t capacity hoist.

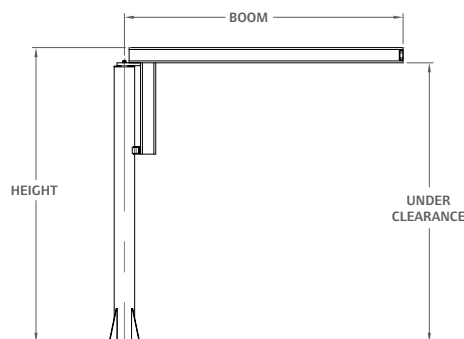
- **Ergonomic** — High impact, durable polymer roller wheel design provides smooth and easy rotation



- **Cost Effective** — Jib cranes are an inexpensive solution for short transfer applications

- **Design** — No tie-rod, it is ideally suited to applications with low ceilings and/or overhead obstructions.

- **Support** — Both air balancer and hoist applications



I-Beam Support

| Model | Capacity | Under Clearance | Boom Length | Column Diameter | Weight (lbs) | Height (inches) |
|-------------|----------|-----------------|-------------|-----------------|--------------|-----------------|
| ZF275-1010 | 275# | 122.8 | 122 | 8 5/8" | 575 | 131 |
| ZF550-1212 | 550# | 146.8 | 146 | 10 3/4" | 1,100 | 157 |
| ZF1100-1212 | 1,100# | 146.8 | 146 | 12 3/4" | 1,600 | 159 |

Aluminum (A2) Rail Support

| Model | Capacity | Under Clearance | Boom Length | Column Diameter | Weight | Height |
|--------------|----------|-----------------|-------------|-----------------|--------|--------|
| ZF350-1012A2 | 350# | 114.3 | 144 | 8 5/8" | 675 | 131 |

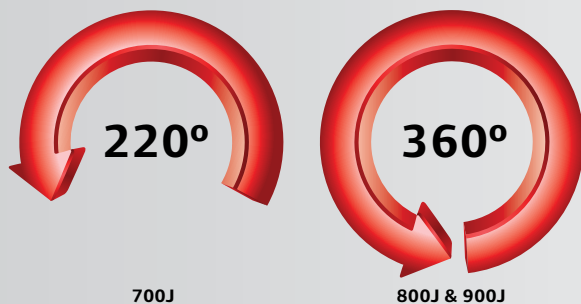
Zimmerman Series Jib Cranes

The Ingersoll Rand Jib Crane **ADVANTAGE**

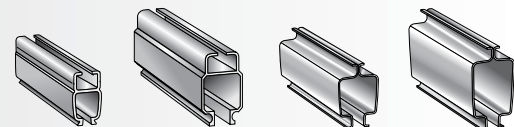
- ▶ **Ergonomic** — Unique single contact point, tapered roller bearing design provides easiest rotation in the industry on 360 degree jib cranes
- ▶ **Precision** — Made from precision Ingersoll Rand aluminum or steel rail, resulting in a lightweight, easy-to-move boom with low rolling resistance for smooth travel
- ▶ **Cost Effective** — Jib cranes are an inexpensive solution for short transfer applications
- ▶ **Rugged Reliability** — Light, Medium, and Heavy Duty configurations to meet every application

How to select

Rotation



Capacity



| Jib Style | lb (kg) | lb (kg) | lb (kg) | lb (kg) |
|-----------|-------------|---------------|---------------|---------------|
| 700J | 900 (408.2) | 2,000 (907.2) | 2,000 (907.2) | 2,000 (907.2) |
| 800J* | 820 (371.9) | 820 (371.9) | 820 (371.9) | |
| 900J* | | 820 (371.9) | | |

Note: Jib styles marked with a * are available in floor-mount configuration only

Boom length

- ▶ Radius of coverage area
- ▶ Most ergonomic operation is closer to end of boom

Boom underclearance

- ▶ Distance from floor to bottom of boom
- ▶ Available up to 14 ft (4.27 m) (12 ft [3.65 m] standard)

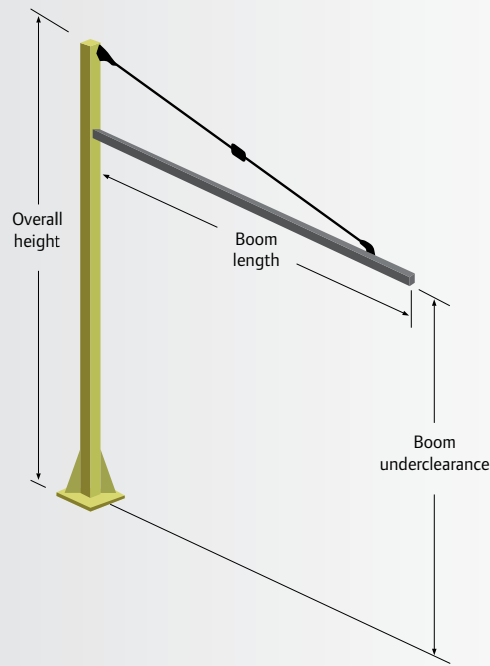
Overall height

- ▶ Distance from floor to top of jib crane
- ▶ 900J Series offers lowest overall height

Boom profile

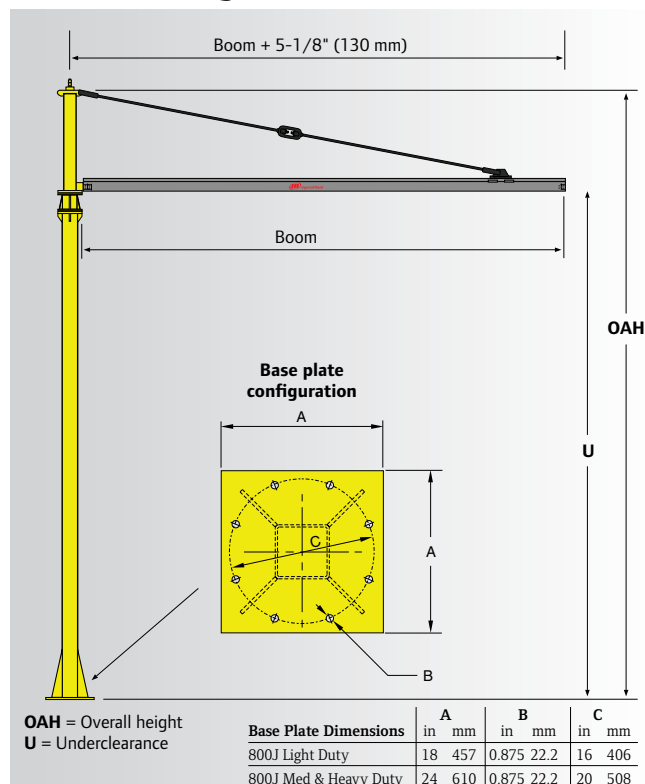
- ▶ Clean, lightweight anodized aluminum (ZRA1 and ZRA2)
- ▶ Rugged powder-coated steel (ZRS2 and ZRS3)

NOTE: For proper installation of a floor-supported jib crane system a minimum of a 6" (15.2 cm) thick reinforced concrete floor is required. Consult a registered structural engineer before installing the jib crane. This is required to ensure local building codes, possible seismic loading considerations and variance in concrete slab and soil conditions are addressed.



Zimmerman Series Jib Cranes

800J (360 degree):



ZRA1 boom type 360° rotation

| Part No. | Boom ft (m) | Capacity lb (kg) | OAH = U + in (mm) | Weight lb (kg) |
|---------------|----------------|---------------------|----------------------|-------------------|
| 8082JA1F04144 | 4' (1.22) | 820 (371.9) | 42.09" (1069) | 415 (188.6) |
| 8055JA1F06144 | 6' (1.83) | 550 (249.5) | 42.09" (1069) | 423 (192.3) |
| 8041JA1F08144 | 8' (2.44) | 410 (186) | 42.09" (1069) | 431 (195.9) |
| 8033JA1F10144 | 10' (3.05) | 330 (149.7) | 42.09" (1069) | 439 (199.5) |
| 8027JA1F12144 | 12' (3.66) | 270 (122.5) | 42.09" (1069) | 447 (203.2) |
| 8023JA1F14144 | 14' (4.27) | 230 (104.3) | 42.09" (1069) | 455 (206.8) |
| 8020JA1F16144 | 16' (4.88) | 200 (90.7) | 42.09" (1069) | 463 (210.5) |
| 8018JA1F18144 | 18' (5.49) | 180 (81.6) | 42.09" (1069) | 471 (214.1) |
| 8016JA1F20144 | 20' (6.1) | 160 (72.6) | 42.09" (1069) | 479 (217.7) |

ZRA2 boom type 360° rotation

| Part No. | Boom ft (m) | Capacity lb (kg) | OAH = U + in (mm) | Weight lb (kg) |
|---------------|----------------|---------------------|----------------------|-------------------|
| 8082JA2F04144 | 4' (1.22) | 820 (371.9) | 43.25" (1099) | 419 (190.5) |
| 8055JA2F06144 | 6' (1.83) | 550 (249.5) | 43.25" (1099) | 435 (197.7) |
| 8041JA2F08144 | 8' (2.44) | 410 (186) | 43.25" (1099) | 451 (205) |
| 8033JA2F10144 | 10' (3.05) | 330 (149.7) | 43.25" (1099) | 467 (212.3) |
| 8027JA2F12144 | 12' (3.66) | 270 (122.5) | 43.25" (1099) | 483 (219.5) |
| 8023JA2F14144 | 14' (4.27) | 230 (104.3) | 43.25" (1099) | 499 (226.8) |
| 8020JA2F16144 | 16' (4.88) | 200 (90.7) | 43.25" (1099) | 515 (234.1) |
| 8018JA2F18144 | 18' (5.49) | 180 (81.6) | 43.25" (1099) | 531 (241.4) |
| 8016JA2F20144 | 20' (6.1) | 160 (72.6) | 43.25" (1099) | 547 (248.6) |

For applications not covered on this sheet or pallet-based applications, consult the factory.

Dimensional notes:

ZRA1, ZRA2 and ZRS2 (medium)

U" Standard columns 6" x 6" x 1/4" designed for 168 in (14 ft/4.27m) underclearance or less.

P Base plate 3/4" x 18" x 18", 8-holes 7/8" diameter on a 16" (406.4 mm) bolt circle. 3/4" stud anchors or bolts are to be supplied by the customer.

ZRS2 boom type 360° rotation

| Part No. | Boom ft (m) | Capacity lb (kg) | OAH = U + in (mm) | Weight lb (kg) |
|---------------|----------------|---------------------|----------------------|-------------------|
| 8082JS2F04144 | 4' (1.22) | 820 (371.9) | 43.18" (1097) | 419 (190.5) |
| 8055JS2F06144 | 6' (1.83) | 550 (249.5) | 43.18" (1097) | 435 (197.7) |
| 8041JS2F08144 | 8' (2.44) | 410 (186) | 43.18" (1097) | 451 (205) |
| 8033JS2F10144 | 10' (3.05) | 330 (149.7) | 43.18" (1097) | 467 (212.3) |
| 8027JS2F12144 | 12' (3.66) | 270 (122.5) | 43.18" (1097) | 483 (219.5) |
| 8023JS2F14144 | 14' (4.27) | 230 (104.3) | 43.18" (1097) | 499 (226.8) |
| 8020JS2F16144 | 16' (4.88) | 200 (90.7) | 43.18" (1097) | 515 (234.1) |
| 8018JS2F18144 | 18' (5.49) | 180 (81.6) | 43.18" (1097) | 531 (241.4) |
| 8016JS2F20144 | 20' (6.1) | 160 (72.6) | 43.18" (1097) | 547 (248.6) |

Zimmerman Series Jib Cranes

700J (220 degree):

ZRA1 boom type 220° rotation (light)

| Part No. | Boom ft (m) | Capacity lb (kg) | OAH = U + in (mm) | Weight lb (kg) |
|---------------|----------------|---------------------|----------------------|-------------------|
| 7090JA1F04144 | 4' (1.22) | 900 (408.2) | 38" (965) | 375 (170.5) |
| 7061JA1F06144 | 6' (1.83) | 610 (276.7) | 38" (965) | 383 (174.1) |
| 7046JA1F08144 | 8' (2.44) | 460 (208.7) | 38" (965) | 391 (177.7) |
| 7037JA1F10144 | 10' (3.05) | 370 (167.8) | 38" (965) | 399 (181.4) |
| 7030JA1F12144 | 12' (3.66) | 300 (136.1) | 38" (965) | 407 (185) |
| 7026JA1F14144 | 14' (4.27) | 260 (117.9) | 38" (965) | 414 (188.2) |
| 7023JA1F16144 | 16' (4.88) | 230 (104.3) | 38" (965) | 423 (192.3) |
| 7020JA1F18144 | 18' (5.49) | 200 (90.7) | 38" (965) | 431 (195.9) |
| 7016JA1F20144 | 20' (6.1) | 160 (72.6) | 38" (965) | 439 (199.5) |

ZRA2 boom type 220° rotation (medium)

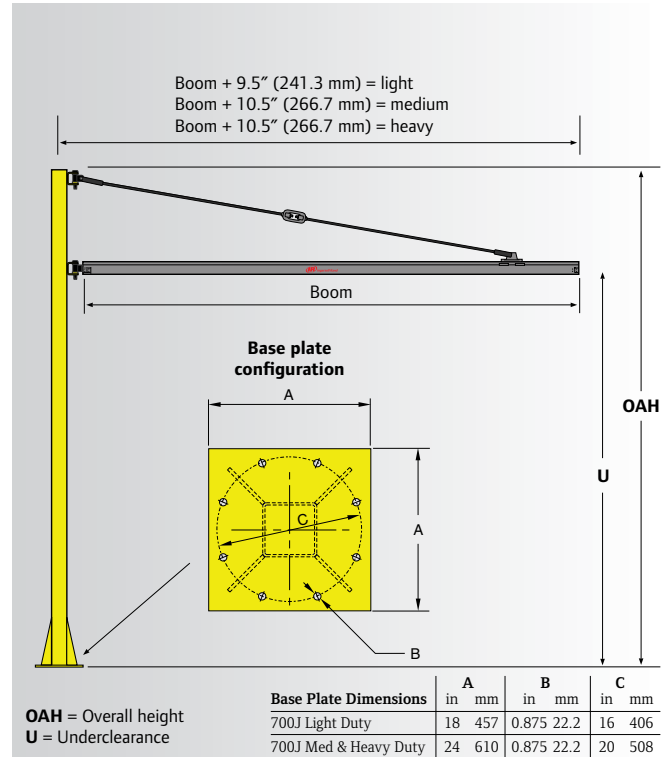
| Part No. | Boom ft (m) | Capacity lb (kg) | OAH = U + in (mm) | Weight lb (kg) |
|---------------|----------------|---------------------|----------------------|-------------------|
| 7200JA2F04144 | 4' (1.22) | 2,000 (907.2) | 39" (991) | 660 (300) |
| 7140JA2F06144 | 6' (1.83) | 1,400 (635) | 39" (991) | 675 (306.8) |
| 7105JA2F08144 | 8' (2.44) | 1,050 (476.3) | 39" (991) | 690 (313.6) |
| 7080JA2F10144 | 10' (3.05) | 800 (362.9) | 39" (991) | 705 (320.5) |
| 7070JA2F12144 | 12' (3.66) | 700 (317.5) | 39" (991) | 720 (327.3) |
| 7060JA2F14144 | 14' (4.27) | 600 (272.2) | 39" (991) | 735 (334.1) |
| 7050JA2F16144 | 16' (4.88) | 500 (226.8) | 39" (991) | 782 (355.5) |
| 7045JA2F18144 | 18' (5.49) | 450 (204.1) | 39" (991) | 797 (362.3) |
| 7040JA2F20144 | 20' (6.1) | 400 (181.4) | 39" (991) | 812 (369.1) |

ZRA2 boom type 220° rotation (heavy)

| Part No. | Boom ft (m) | Capacity lb (kg) | OAH = U + in (mm) | Weight lb (kg) |
|---------------|----------------|---------------------|----------------------|-------------------|
| 7200JA2F06144 | 6' (1.83) | 2,000 (907.2) | 39" (991) | 925 (420.5) |
| 7200JA2F08144 | 8' (2.44) | 2,000 (907.2) | 39" (991) | 940 (427.3) |
| 7160JA2F10144 | 10' (3.05) | 1,600 (725.7) | 39" (991) | 955 (434.1) |
| 7135JA2F12144 | 12' (3.66) | 1,350 (612.3) | 39" (991) | 970 (441) |
| 7115JA2F14144 | 14' (4.27) | 1,150 (521.6) | 39" (991) | 985 (447.7) |
| 7100JA2F16144 | 16' (4.88) | 1,000 (453.6) | 51" (1,295) | 1,000 (454.5) |
| 7080JA2F18144 | 18' (5.49) | 800 (362.9) | 51" (1,295) | 1,065 (484.1) |
| 7065JA2F20144 | 20' (6.1) | 650 (294.8) | 51" (1,295) | 1,080 (491) |

ZRS2 boom type 220° rotation (medium)

| Part No. | Boom ft (m) | Capacity lb (kg) | OAH = U + in (mm) | Weight lb (kg) |
|---------------|----------------|---------------------|----------------------|-------------------|
| 7200JS2F04144 | 4' (1.22) | 2,000 (907.2) | 39" (991) | 660 (300) |
| 7140JS2F06144 | 6' (1.83) | 1,400 (635) | 39" (991) | 675 (306.8) |
| 7105JS2F08144 | 8' (2.44) | 1,050 (476.3) | 39" (991) | 690 (313.6) |
| 7085JS2F10144 | 10' (3.05) | 850 (385.6) | 39" (991) | 705 (320.5) |
| 7070JS2F12144 | 12' (3.66) | 700 (317.5) | 39" (991) | 720 (327.3) |
| 7060JS2F14144 | 14' (4.27) | 600 (272.2) | 39" (991) | 735 (334.1) |
| 7053JS2F16144 | 16' (4.88) | 530 (240.4) | 39" (991) | 782 (355.5) |
| 7048JS2F18144 | 18' (5.49) | 480 (217.7) | 39" (991) | 797 (362.3) |
| 7042JS2F20144 | 20' (6.1) | 420 (190.5) | 39" (991) | 812 (369.1) |



ZRS3 boom type 220° rotation (heavy)

| Part No. | Boom ft (m) | Capacity lb (kg) | OAH = U + in (mm) | Weight lb (kg) |
|---------------|----------------|---------------------|----------------------|-------------------|
| 7200JA2F06144 | 6' (1.83) | 2,000 (907.2) | 39" (991) | 925 (420.5) |
| 7200JA2F08144 | 8' (2.44) | 2,000 (907.2) | 39" (991) | 940 (427.3) |
| 7160JA2F10144 | 10' (3.05) | 1,600 (725.7) | 39" (991) | 955 (434.1) |
| 7135JA2F12144 | 12' (3.66) | 1,350 (612.3) | 39" (991) | 970 (441) |
| 7115JA2F14144 | 14' (4.27) | 1,150 (521.6) | 39" (991) | 985 (447.7) |
| 7100JA2F16144 | 16' (4.88) | 1,000 (453.6) | 51" (1,295) | 1,000 (454.5) |
| 7080JA2F18144 | 18' (5.49) | 800 (362.9) | 51" (1,295) | 1,065 (484.1) |
| 7065JA2F20144 | 20' (6.1) | 650 (294.8) | 51" (1,295) | 1,080 (491) |

For applications not covered on this sheet or pallet-based applications, consult the factory.

Dimensional notes:

ZRA1 (light)

- U" Standard columns 6" x 6" x 1/4" designed for 168 in (14 ft/4.27 m) underclearance or less.
- P Base plate 3/4" x 18" x 18", 8-holes 7/8" diameter on a 16" (406.4 mm) bolt circle.
- 3/4" stud anchors or bolts are to be supplied by the customer.

ZRA2 (medium)

- U" Standard columns 8" x 8" x 1/4" designed for 168 in (14 ft/4.27 m) underclearance or less.
- P Base plate 3/4" x 24" x 24", 8-holes 7/8" diameter on a 20" (508 mm) bolt circle.
- 3/4" stud anchors or bolts are to be supplied by the customer.

ZRA2 (heavy)

- U" Standard columns 8" x 8" x 1/2" designed for 168 in (14 ft/4.27 m) underclearance or less.
- P Base plate 3/4" x 24" x 24", 8-holes 7/8" diameter on a 20" (508 mm) bolt circle.
- 3/4" stud anchors or bolts are to be supplied by the customer.

ZRS2 (medium)

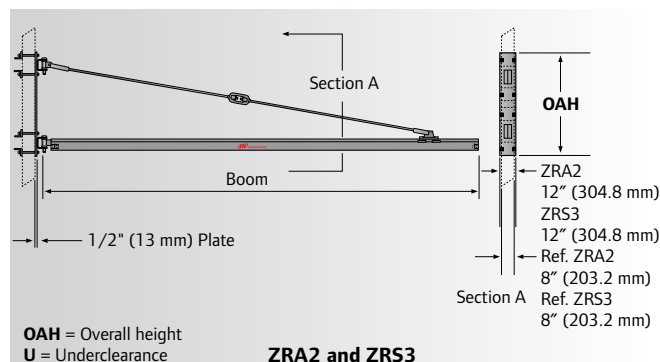
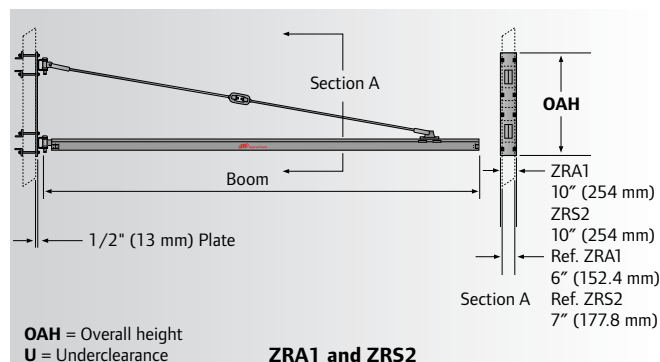
- U" Standard columns 8" x 8" x 1/4" designed for 168 in (14 ft/4.27 m) underclearance or less.
- P Base plate 3/4" x 24" x 24", 8-holes 7/8" diameter on a 20" (508 mm) bolt circle.
- 3/4" stud anchors or bolts are to be supplied by the customer.

ZRS3 (heavy)

- U" Standard columns 8" x 8" x 1/2" designed for 168 in (14 ft/4.27 m) underclearance or less.
- P Base plate 3/4" x 24" x 24", 8-holes 7/8" diameter on a 20" (508 mm) bolt circle.
- 3/4" stud anchors or bolts are to be supplied by the customer.

Zimmerman Series Jib Cranes

700JW (wall mount):



ZRA1 boom type wall mount (light)

| Part No. | Boom ft (m) | Capacity lb (kg) | OAH in (mm) | Weight lb (kg) |
|------------|----------------|---------------------|----------------|-------------------|
| 7100JA1W04 | 4' (1.22) | 1,000 (453.6) | 44" (1118) | 120 (54.5) |
| 7100JA1W06 | 6' (1.83) | 1,000 (453.6) | 44" (1118) | 131 (59.5) |
| 7100JA1W08 | 8' (2.44) | 1,000 (453.6) | 44" (1118) | 142 (64.5) |
| 7080JA1W10 | 10' (3.05) | 800 (362.9) | 44" (1118) | 153 (69.5) |
| 7050JA1W12 | 12' (3.66) | 500 (226.8) | 44" (1118) | 164 (74.5) |
| 7036JA1W14 | 14' (4.27) | 360 (163.3) | 44" (1118) | 175 (79.5) |
| 7026JA1W16 | 16' (4.88) | 260 (117.9) | 44" (1118) | 186 (84.5) |
| 7020JA1W18 | 18' (5.49) | 200 (90.7) | 44" (1118) | 197 (89.5) |
| 7016JA1W20 | 20' (6.1) | 160 (72.6) | 44" (1118) | 208 (94.5) |

ZRA2 boom type wall mount (heavy)

| Part No. | Boom ft (m) | Capacity lb (kg) | OAH in (mm) | Weight lb (kg) |
|------------|----------------|---------------------|----------------|-------------------|
| 7200JA2W04 | 4' (1.22) | 2,000 (907.2) | 44" (1118) | 145 (65.9) |
| 7200JA2W06 | 6' (1.83) | 2,000 (907.2) | 44" (1118) | 154 (70) |
| 7200JA2W08 | 8' (2.44) | 2,000 (907.2) | 44" (1118) | 181 (82.3) |
| 7190JA2W10 | 10' (3.05) | 1,900 (861.8) | 44" (1118) | 199 (90.5) |
| 7160JA2W12 | 12' (3.66) | 1,600 (725.7) | 44" (1118) | 217 (98.6) |
| 7135JA2W14 | 14' (4.27) | 1,350 (612.3) | 44" (1118) | 235 (106.8) |
| 7100JA2W16 | 16' (4.88) | 1,000 (453.6) | 56" (1423) | 266 (120.9) |
| 7080JA2W18 | 18' (5.49) | 800 (362.9) | 56" (1423) | 310 (140.9) |
| 7060JA2W20 | 20' (6.1) | 600 (272.2) | 56" (1423) | 354 (160.9) |

ZRS2 boom type wall mount (medium)

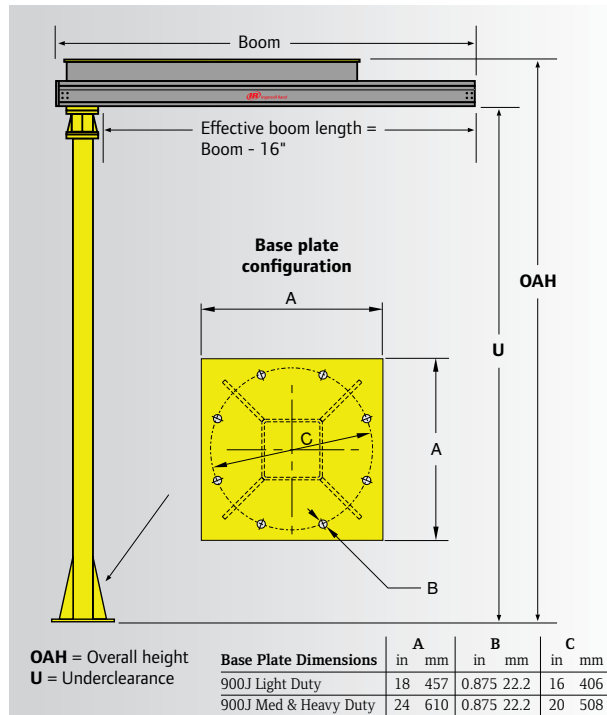
| Part No. | Boom ft (m) | Capacity lb (kg) | OAH in (mm) | Weight lb (kg) |
|------------|----------------|---------------------|----------------|-------------------|
| 7200JS2W04 | 4' (1.22) | 2,000 (907.2) | 44" (1118) | 145 (65.9) |
| 7200JS2W06 | 6' (1.83) | 2,000 (907.2) | 44" (1118) | 163 (74.1) |
| 7200JS2W08 | 8' (2.44) | 2,000 (907.2) | 44" (1118) | 181 (82.3) |
| 7190JS2W10 | 10' (3.05) | 1,900 (861.8) | 44" (1118) | 199 (90.5) |
| 7160JS2W12 | 12' (3.66) | 1,600 (725.7) | 44" (1118) | 217 (98.6) |
| 7100JS2W14 | 14' (4.27) | 1,000 (453.6) | 44" (1118) | 235 (106.8) |
| 7080JS2W16 | 16' (4.88) | 800 (362.9) | 56" (1423) | 266 (120.9) |
| 7060JS2W18 | 18' (5.49) | 600 (272.2) | 56" (1423) | 310 (140.9) |
| 7045JS2W20 | 20' (6.1) | 450 (204.1) | 56" (1423) | 354 (160.9) |

ZRS3 boom type wall mount (heavy)

| Part No. | Boom ft (m) | Capacity lb (kg) | OAH in (mm) | Weight lb (kg) |
|------------|----------------|---------------------|----------------|-------------------|
| 7200JS3W04 | 4' (1.22) | 2,000 (907.2) | 44" (1118) | 146 (66.4) |
| 7200JS3W06 | 6' (1.83) | 2,000 (907.2) | 44" (1118) | 166 (75.5) |
| 7200JS3W08 | 8' (2.44) | 2,000 (907.2) | 44" (1118) | 186 (84.5) |
| 7190JS3W10 | 10' (3.05) | 1,900 (861.8) | 44" (1118) | 206 (93.6) |
| 7160JS3W12 | 12' (3.66) | 1,600 (725.7) | 44" (1118) | 226 (102.7) |
| 7135JS3W14 | 14' (4.27) | 1,350 (612.3) | 44" (1118) | 246 (111.8) |
| 7100JS3W16 | 16' (4.88) | 1,000 (453.6) | 56" (1423) | 278 (126.4) |
| 7080JS3W18 | 18' (5.49) | 800 (362.9) | 56" (1423) | 322 (146.6) |
| 7060JS3W20 | 20' (6.1) | 600 (272.2) | 56" (1423) | 366 (166.4) |

Zimmerman Series Jib Cranes

900J low profile (360 degree):



ZRA2 boom type 360° rotation (heavy)

| Part No. | Boom ft (m) | Capacity lb (kg) | OAH = U + in (mm) | Weight lb (kg) |
|----------------|----------------|---------------------|----------------------|-------------------|
| 9082JA2TF04144 | 4' (1.22) | 820 (371.9) | 13.03" (340) | 410 (186) |
| 9055JA2TF06144 | 6' (1.83) | 550 (249.5) | 13.03" (340) | 440 (199.6) |
| 9041JA2TF08144 | 8' (2.44) | 410 (186) | 13.03" (340) | 470 (213.2) |
| 9033JA2TF10144 | 10' (3.05) | 330 (149.7) | 13.03" (340) | 500 (226.8) |
| 9027JA2TF12144 | 12' (3.66) | 270 (122.5) | 13.03" (340) | 530 (240.4) |
| 9023JA2TF14144 | 14' (4.27) | 230 (104.3) | 13.03" (340) | 560 (254) |
| 9020JA2TF16144 | 16' (4.88) | 200 (90.7) | 13.03" (340) | 590 (267.6) |
| 9018JA2TF18144 | 18' (5.49) | 180 (81.6) | 13.03" (340) | 620 (281.2) |
| 9016JA2TF20144 | 20' (6.1) | 160 (72.6) | 13.03" (340) | 650 (294.8) |

Note:

Effective boom length = Boom length - 16"

Dimensional notes:

Column: 6" x 6" x 1/4" designed for 168 in (14 ft/4.27 m) underclearance or less

Base plate:

3/4" x 18" x 18", 8 holes 7/8" diameter on a 16" (406.4 mm) bolt circle
 3/4" stud anchors or bolts are to be supplied by the customer.

Example: 7105JS2F08144

Jib Crane model driver

| Style 7 | Capacity 105 lb kg | Jib J | Rail Type S2 | Mount Type F | Boom Length 08 ft m | Underclearance 144 in mm |
|---|--------------------------|----------|---|-----------------------|---|---|
| 700J (220°) = 7 800J (360°) = 8 900J (360°) = 9 | 105 = 1050 476 | J = Jib | A1 = ZRA1 A2 = ZRA2 S2 = ZRS2 S3 = ZRS3 A2T = ZRA2T | F = Floor W = Wall | 04 = 4 1.22 06 = 6 1.83 08 = 8 2.44 10 = 10 3.05 12 = 12 3.66 14 = 14 4.27 16 = 16 4.88 18 = 18 5.49 20 = 20 6.10 | 144 = 144 3657.6 Note: Standard underclearance available up to 168 in. |

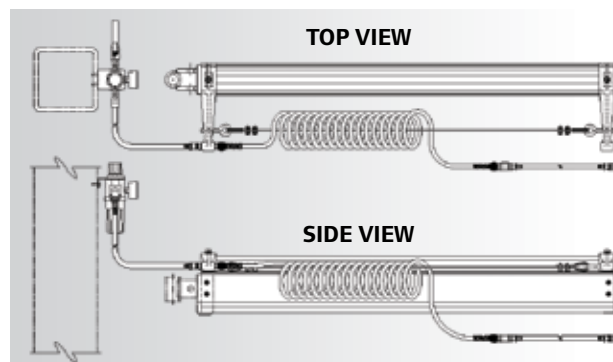
Zimmerman Series Jib Cranes

Accessories:

Air supply kits

| Size | Part No. |
|------|----------|
| 3/8" | 90027 |
| 1/2" | 90028 |

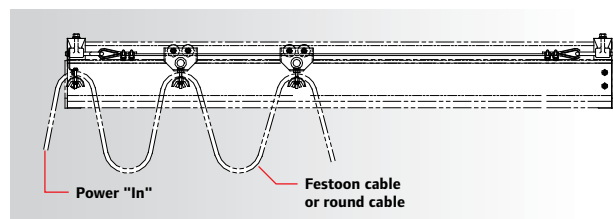
Note:
Includes filter regulator assembly with brackets, tagline assembly, and coiled hose.



Electrification kits

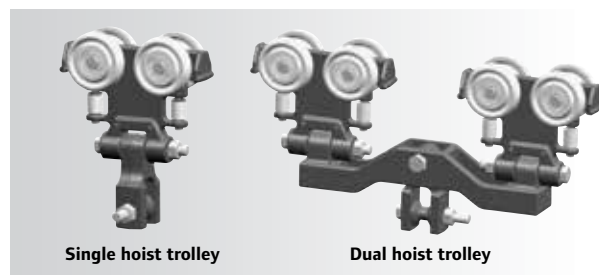
| Boom | Part No. |
|------------------|------------|
| Up to 12' | ZHS90090-1 |
| Greater than 12' | ZHS90090-2 |

Note:
Includes 2 suspension brackets, 1 anchor bracket, variable length tag line wire with clamps and eyebolt assembly, and cable trolleys.



Hoist trolleys

| Boom | Capacity lb (kg) | Part No. |
|--------|------------------|----------|
| ZRA1 | 500 (225) | ZHS30313 |
| ZRA1 | 1,000 (450) | 30303 |
| ZRA2 | 1,000 (450) | ZHS30314 |
| ZRA2 | 2,000 (900) | 30906 |
| ZRS2/3 | 1,000 (450) | ZHS30315 |
| ZRS2/3 | 2,000 (900) | 30830 |

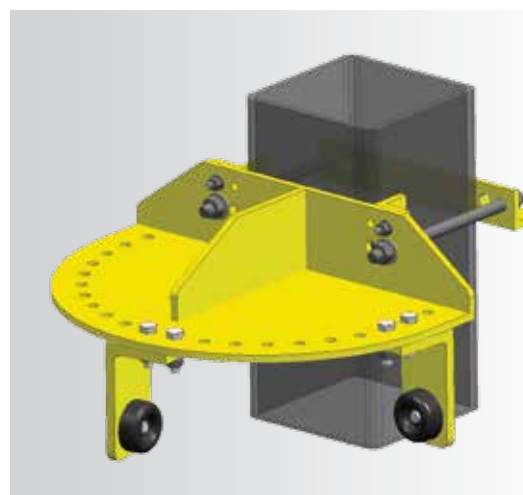


Adjustable boom rotation stops

| Jib Series | Part No. |
|--------------------------------------|----------|
| 700J Series - 220° Rotation | ZHS42982 |
| 800J and 900J Series - 360° Rotation | 42203000 |

Also available upon request:

- ▶ Portable pallet base — Provides jib mobility using a fork truck compatible base
- ▶ Custom designs for special applications



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

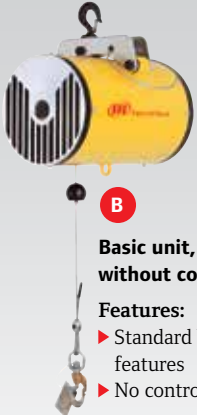
Versatile configuration

- ▶ 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

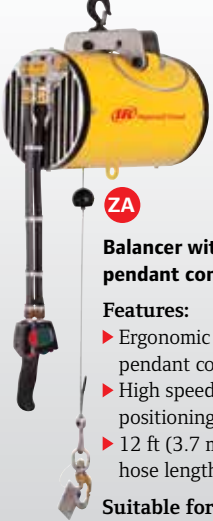
Basic unit, without control

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

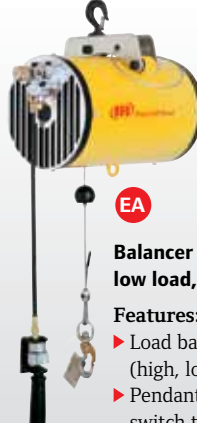
Balancer with servo control

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

¹ Not available with Z-Stop safety device.

² 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 = Basic, no controls ZA = Pendant control BA = Servo control EA = High, low, no load control | W = Wire rope | 020 = 200 lb (91 kg) For available capacities, refer to model number tables | 120 = 120 inches (3048 mm) For available travel, refer to model number tables | S = Z-stop | S2 = ZRS2 steel rail 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

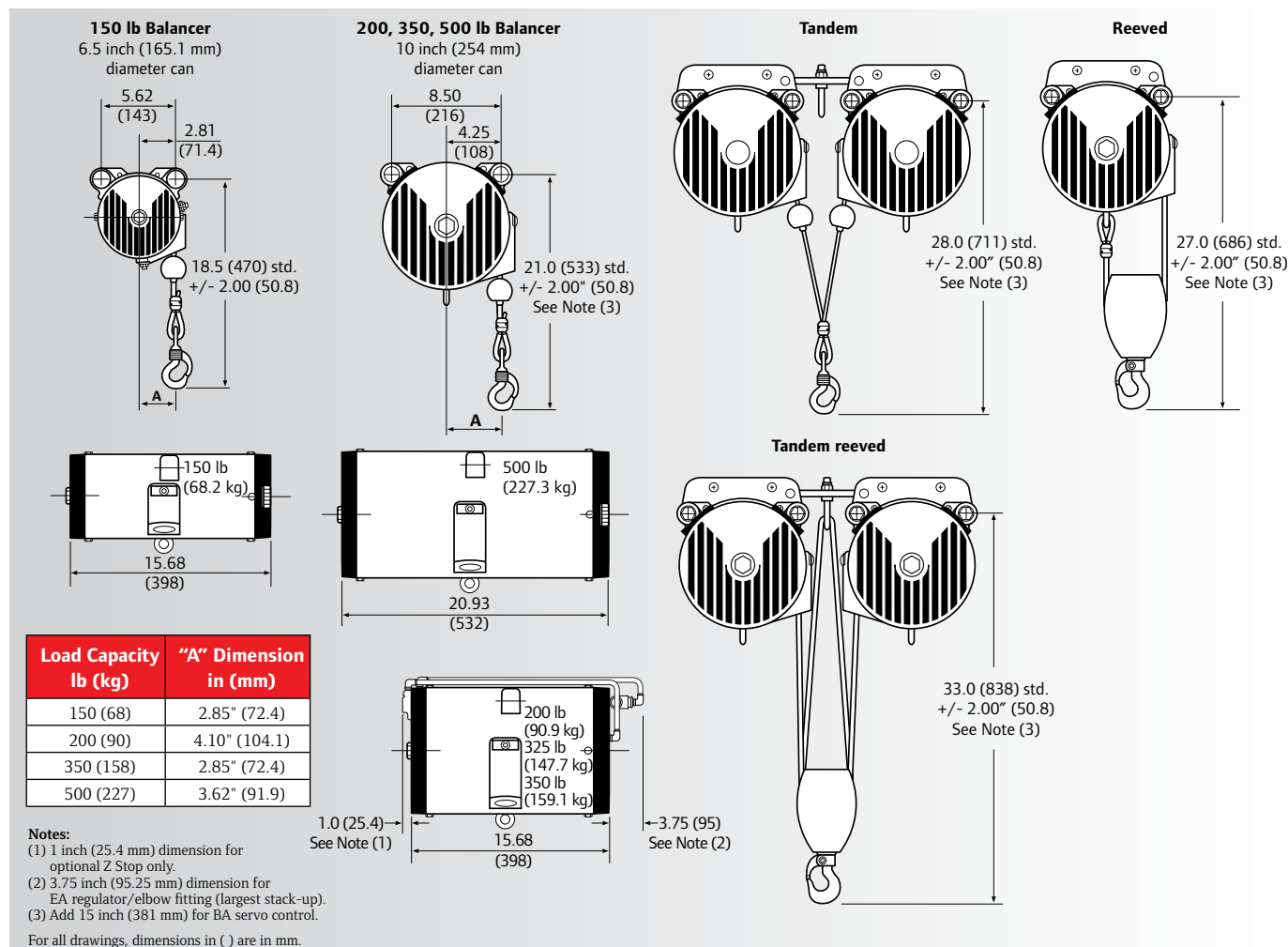
Quality handle manufactured by Ingersoll Rand, the world leader in ergonomically sound material handling equipment.



ZA Pendant Control (15300-12)

Zimmerman Series Pneumatic Balancers

Dimensions:



Also available:

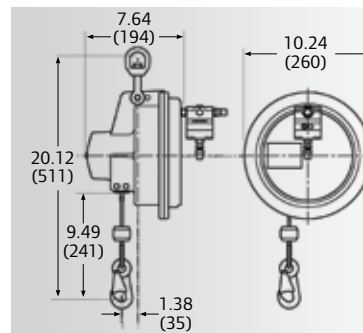
BAW series tool balancer

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 InteLIFT® Series Balancers

Intelligent Lifting Systems

What is InteLIFT?

InteLIFT 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 InteLIFT Balancer **ADVANTAGE**

- ▶ **Self-balancing** — Intuitive speed control for different weights
- ▶ **Hands-on maneuvering** — InteLIFT 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 InteLIFT 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>IB</p> <p>IntelLIFT basic unit, without control</p> <p>Features:</p> <ul style="list-style-type: none"> ▶ No controls ▶ Standard IntelLIFT features <p>Suitable for:</p> <ul style="list-style-type: none"> ▶ Integration with end effector |  <p>IA</p> <p>IntelLIFT with pendant control and pre-coil cable</p> <p>Features:</p> <ul style="list-style-type: none"> ▶ IntelLIFT ergonomic pendant control handle with up / down rocker switch ▶ Precise, high-speed positioning ▶ 12 ft (3.7 m) twin bonded pre-coil cable including pre-coil air hose for handling device integration <p>Suitable for:</p> <ul style="list-style-type: none"> ▶ Pick and place ▶ Precision assembly |  <p>IC</p> <p>IntelLIFT with force-sensing control (without up / down buttons)</p> <p>Features:</p> <ul style="list-style-type: none"> ▶ IntelLIFT ergonomic force-sensing control handle ▶ Intuitive up / down control ▶ 12 ft (3.7 m) twin bonded pre-coil cable including pre-coil air hose for handling device integration <p>Suitable for:</p> <ul style="list-style-type: none"> ▶ High-cycle pick and place ▶ Precision assembly |  <p>IS</p> <p>IntelLIFT with pendant control and straight cable</p> <p>Features:</p> <ul style="list-style-type: none"> ▶ IntelLIFT ergonomic pendant control handle with up / down rocker switch ▶ Precise, high-speed positioning ▶ 12 ft (3.7 m) straight electric cable <p>Suitable for:</p> <ul style="list-style-type: none"> ▶ Pick and place ▶ Precision assembly |
|---|--|--|---|

| IB | IA | IC | IS | Capacity lb (kg) | Travel in (mm) | Net Weight lb (kg) |
|-------------------------|------------|------------|------------|---------------------|-------------------|-----------------------|
| SINGLE WIRE ROPE | | | | | | |
| 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) |
| REEVED WIRE ROPE | | | | | | |
| 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

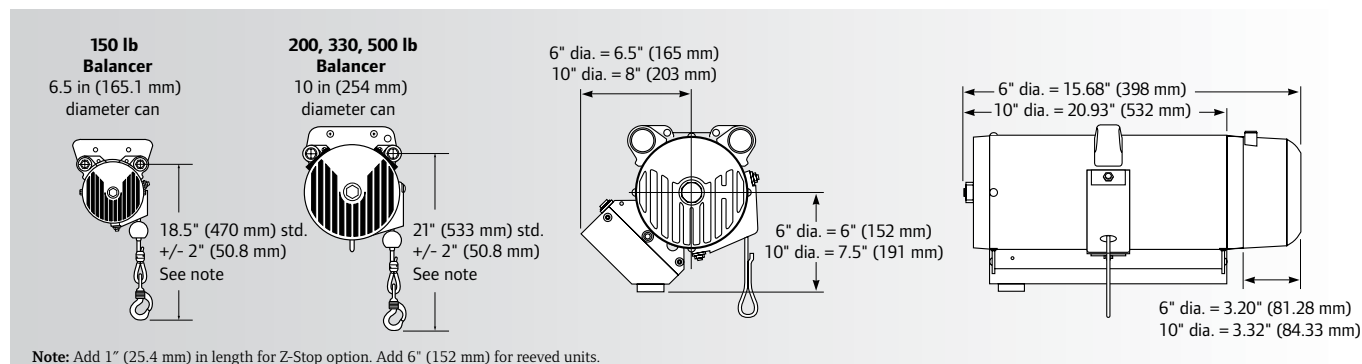


Example: IAW020120A21SP

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 IA = InteLIFT pendant control handle with 12' twin bond pre-coil cable 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



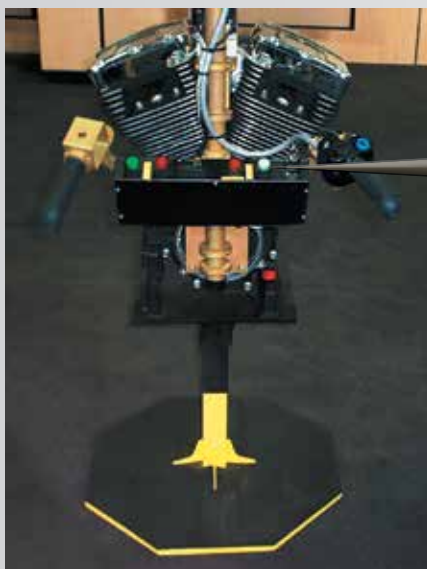
Biotechnology



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.

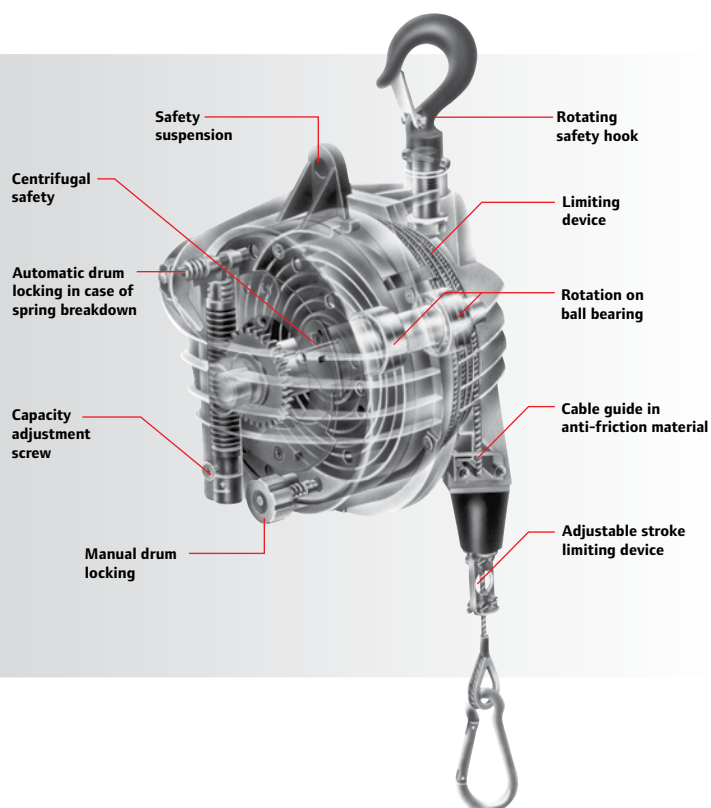
The warehouse-handling device shown is known for its versatility. The device mimics the human motion of picking up a part and placing it down. The same device can be used to pick up parts such as totes, trays, boxes, and milk crates. The self-balance feature allows the same device to pick up parts of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



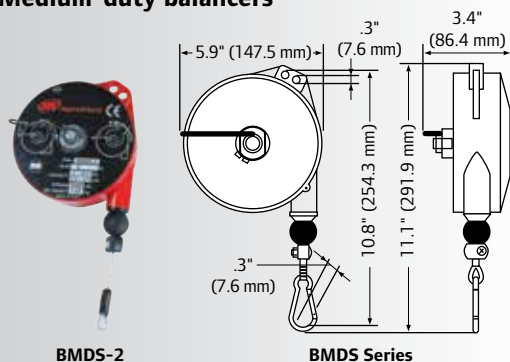
Spring Balancers

The Ingersoll Rand Spring Balancer **ADVANTAGE**

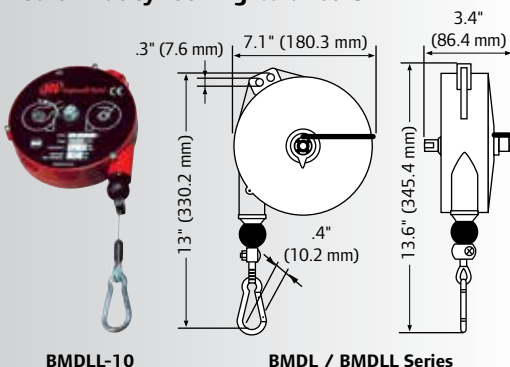
- ▶ 50 models from which to choose
- ▶ Five different series to meet all balancing requirements
- ▶ Lifts ranging from 5 to 9 feet
- ▶ Covers weight-balancing needs from 1 to 363 pounds
- ▶ “Gravity-free” effect on intermediate, heavy, and super-duty models allows user to move tool with minimal effort
- ▶ Made of rugged die-cast aluminum
- ▶ Safety locking device on medium, heavy, and super-duty models prevents dropping of the tool should the spring fail
- ▶ Easy-to-use controls allow for accurate spring adjustment



Medium-duty balancers



Medium-duty locking balancers

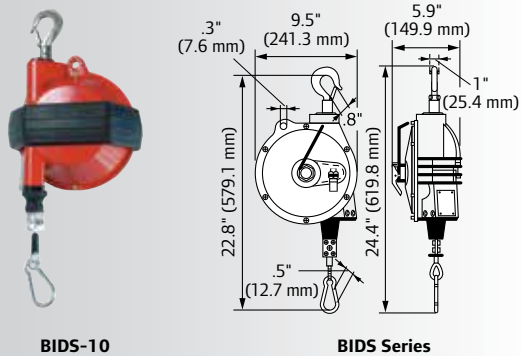


| Part Number | Capacity lb (kg) | Weight of Balancer lb (kg) | Lift ft (mm) |
|---|---------------------|-------------------------------|-----------------|
| MEDIUM-DUTY BALANCERS — 2.2 – 30 LB CAPACITY | | | |
| SHORT CABLE | | | |
| BMDS-2 | 2.2 – 5.5 (1 – 2.5) | 4.4 (2) | 6.5 (2000) |
| BMDS-4 | 4.4 – 8.8 (2 – 4) | 4.4 (2) | 6.5 (2000) |
| BMDS-6 | 8.8 – 13.2 (4 – 6) | 5.1 (2.3) | 6.5 (2000) |
| BMDS-8 | 13.2 – 17.6 (6 – 8) | 5.5 (2.5) | 6.5 (2000) |
| LONG CABLE | | | |
| BMDL-4 | 4.4 – 8.8 (2 – 4) | 6.4 (2.9) | 8.2 (2500) |
| BMDL-6 | 8.8 – 13.2 (4 – 6) | 7.1 (3.2) | 8.2 (2500) |
| BMDL-8 | 13.2 – 17.6 (6 – 8) | 7.7 (3.5) | 8.2 (2500) |
| BMDL-10 | 17.6 – 22 (8 – 10) | 8.2 (3.7) | 8.2 (2500) |
| BMDL-12 | 22 – 26.5 (10 – 12) | 8.8 (4) | 8.2 (2500) |
| BMDL-14 | 22 – 30 (10 – 14) | 5.6 (2.5) | 8.2 (2500) |
| BMDL-14-Y (Yellow) | 22 – 30 (10 – 14) | 5.6 (2.5) | 8.2 (2500) |
| MEDIUM-DUTY LOCKING BALANCERS — 4.4 – 22 LB CAPACITY | | | |
| LONG CABLE | | | |
| BMDLL-4 | 4.4 – 8.8 (2 – 4) | 6.6 (3) | 8.2 (2500) |
| BMDLL-6 | 8.8 – 13.2 (4 – 6) | 7.3 (3.3) | 8.2 (2500) |
| BMDLL-8 | 13.2 – 17.6 (6 – 8) | 7.9 (3.6) | 8.2 (2500) |
| BMDLL-10 | 17.6 – 22 (8 – 10) | 8.4 (3.8) | 8.2 (2500) |

- ▶ Safety device prevents dropping of load due to spring breakage (except BMDS-2)
- ▶ Anti-friction cable guide
- ▶ Adjustable stroke limiting device

Spring Balancers

Intermediate-duty balancers



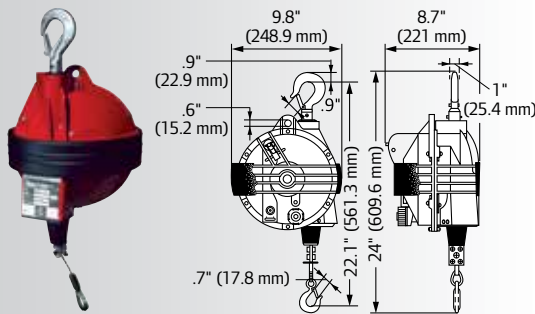
BIDS-10

BIDS Series

| Part Number | Capacity lb (kg) | Weight of Balancer lb (kg) | Lift ft (mm) |
|---|-----------------------|-------------------------------|-----------------|
| INTERMEDIATE-DUTY BALANCERS — 8.8 – 55 LB CAPACITY | | | |
| BIDS-7 | 8.8 – 15.4 (4 – 7) | 5 (2.26) | 6.5 (2000) |
| BIDS-10 | 15.4 – 22 (7 – 10) | 5.5 (2.49) | 6.5 (2000) |
| BIDS-14 | 22 – 30.8 (10 – 14) | 5.5 (2.49) | 6.5 (2000) |
| BIDS-18 | 30.8 – 39.6 (14 – 18) | 6.5 (2.95) | 6.5 (2000) |
| BIDS-22 | 39.6 – 48.4 (18 – 22) | 6.5 (2.95) | 6.5 (2000) |
| BIDS-26 | 48.4 – 55 (22 – 25) | 6.5 (2.95) | 6.5 (2000) |

- ▶ Safety device prevents load dropping due to spring breakage
- ▶ Anti-friction cable guide
- ▶ Adjustable stroke limiting device
- ▶ Upper rotary suspension
- ▶ Safety hook
- ▶ Auxiliary safety suspension

Heavy-duty balancers



BHD-35

BHD Series

| Part Number | Capacity lb (kg) | Weight of Balancer lb (kg) | Lift ft (mm) |
|--|---------------------|-------------------------------|-----------------|
| HEAVY-DUTY BALANCERS — 22 – 143 LB CAPACITY | | | |
| BHD-15 | 22 – 33 (10 – 15) | 22.7 (10.3) | 6.5 (2000) |
| BHD-20 | 33 – 44 (15 – 20) | 23.4 (10.6) | 6.5 (2000) |
| BHD-25 | 44 – 55 (20 – 25) | 24.7 (11.2) | 6.5 (2000) |
| BHD-30 | 55 – 66 (25 – 30) | 25.4 (11.5) | 6.5 (2000) |
| BHD-35 | 66 – 77 (30 – 35) | 26 (11.8) | 6.5 (2000) |
| BHD-45 | 77 – 99 (35 – 45) | 27.3 (12.4) | 6.5 (2000) |
| BHD-55 | 99 – 121 (45 – 55) | 27.6 (12.5) | 6.5 (2000) |
| BHD-65 | 121 – 143 (55 – 65) | 30 (13.6) | 6.5 (2000) |

- ▶ Safety device prevents load dropping due to spring breakage
- ▶ Upper suspension with rotary safety hook
- ▶ Precision guided cable winding prevents jamming
- ▶ Anti-friction cable guide
- ▶ Worm screw capacity adjustment
- ▶ Spring drum assembly
- ▶ Floor controlled locking device for instant manual clamping or release (BIL-7343)



Additional information

Additional information about Ingersoll Rand Spring Balancers can be found in our Balancers Brochure (IRPS-0407-007)

An online "Balancer Finder" tool to assist with balancer selection can be found at:

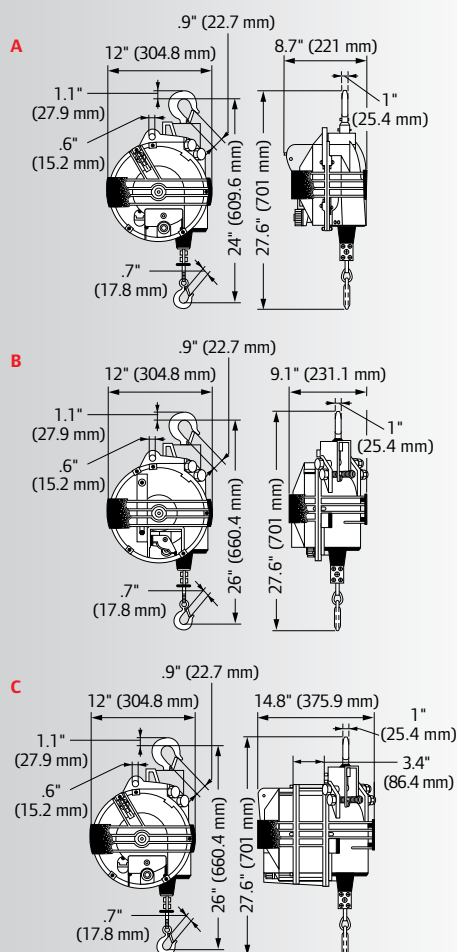
http://www.irtools.com/accessories/pgs/user_balancers.aspx

Spring Balancers

Super-duty balancers



BSD-20



Compatible trolleys



| Part Number | Capacity lb (kg) | Weight of Balancer lb (kg) | Lift ft (mm) | Diagram |
|--|-----------------------|-------------------------------|-----------------|---------|
| SUPER-DUTY BALANCERS — 33 – 363 LB CAPACITY | | | | |
| BSD-20 | 33 – 44 (15 – 20) | 41.9 (19) | 8.2 (2500) | A |
| BSD-30 | 44 – 66 (20 – 30) | 43.7 (19.8) | 8.2 (2500) | A |
| BSD-40 | 66 – 88 (30 – 40) | 45.9 (20.8) | 8.2 (2500) | A |
| BSD-50 | 88 – 110 (40 – 50) | 52.7 (23.9) | 8.2 (2500) | A |
| BSD-60 | 110 – 132 (50 – 60) | 56 (25.4) | 8.2 (2500) | A |
| BSD-70 | 132 – 154 (60 – 70) | 59.1 (26.8) | 8.2 (2500) | B |
| BSD-80 | 154 – 176 (70 – 80) | 61.3 (27.8) | 8.2 (2500) | B |
| BSD-90 | 176 – 198 (80 – 90) | 63.5 (28.8) | 8.2 (2500) | B |
| BSD-100 | 198 – 220 (90 – 100) | 78.5 (35.6) | 8.2 (2500) | C |
| BSD-120 | 220 – 265 (100 – 120) | 85.3 (38.7) | 8.2 (2500) | C |
| BSD-140 | 265 – 309 (120 – 140) | 92.2 (41.8) | 8.2 (2500) | C |
| BSD-150 | 287 – 330 (130 – 150) | 98.1 (44.5) | 8.2 (2500) | C |
| BSD-165 | 330 – 363 (150 – 165) | 106.3 (48.2) | 8.2 (2500) | C |
| MEDIUM-DUTY LOCKING BALANCERS — 33 – 330 LB CAPACITY LONG CABLE | | | | |
| BSDL-20 | 33 – 44 (15 – 20) | 42.1 (19.1) | 9.85 (3000) | A |
| BSDL-25 | 44 – 55 (20 – 25) | 43.9 (19.9) | 9.85 (3000) | A |
| BSDL-35 | 55 – 77 (25 – 35) | 46.1 (20.9) | 9.85 (3000) | A |
| BSDL-45 | 77 – 99 (35 – 45) | 52.5 (23.8) | 9.85 (3000) | B |
| BSDL-50 | 88 – 110 (40 – 50) | 52.7 (23.9) | 9.85 (3000) | B |
| BSDL-60 | 110 – 132 (50 – 60) | 55.8 (25.3) | 9.85 (3000) | B |
| BSDL-70 | 132 – 154 (60 – 70) | 58.9 (26.7) | 9.85 (3000) | B |
| BSDL-80 | 154 – 176 (70 – 80) | 61.7 (28) | 9.85 (3000) | B |
| BSDL-90 | 176 – 198 (80 – 90) | 64 (29) | 9.85 (3000) | B |
| BSDL-100 | 198 – 220 (90 – 100) | 81.1 (36.8) | 9.85 (3000) | C |
| BSDL-115 | 220 – 254 (100 – 115) | 85.3 (38.7) | 9.85 (3000) | C |
| BSDL-130 | 254 – 286 (115 – 130) | 88 (39.9) | 9.85 (3000) | C |
| BSDL-140 | 286 – 309 (130 – 140) | 94.4 (42.8) | 9.85 (3000) | C |
| BSDL-150 | 309 – 330 (140 – 150) | 100.6 (45.6) | 9.85 (3000) | C |

Higher capacities available upon request.

- ▶ Safety device prevents load dropping
- ▶ Upper suspension with rotary safety hook
- ▶ Precision guided cable winding prevents jamming
- ▶ Anti-friction cable guide
- ▶ Worm screw capacity adjustment
- ▶ Alignable rotating upper hook
- ▶ Cable replacement without balancer disassembly
- ▶ Cable visible for inspection
- ▶ Floor controlled locking device for instant manual clamping or release (BIL-3224)

| Rail Profile | Trolley Part Number | | |
|--------------|------------------------|------------|------------|
| | SPRING BALANCER SERIES | | |
| | INTERMEDIATE DUTY | HEAVY DUTY | SUPER DUTY |
| ZRAT | 31057 | ZHS31058 | ZHS31058 |
| ZRA1 | ZHS30304 | ZHS30313 | ZHS30313 |
| ZRA2 | 30923 | ZHS30314 | ZHS30314 |
| ZRS2/3 | 30842 | ZHS30315 | ZHS30315 |

Arm Systems

Great for reaching in, under, and around obstacles to precisely and effortlessly position loads



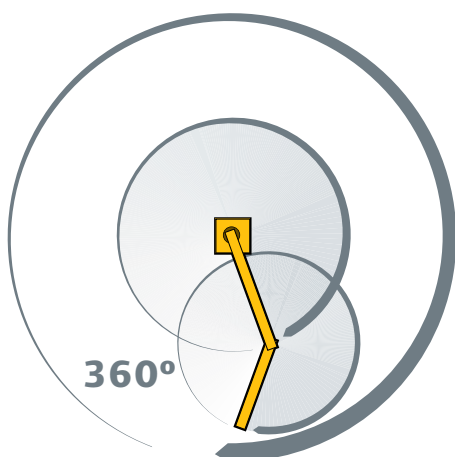
Ingersoll Rand offers:

- ▶ Column or overhead mounting options
- ▶ Three styles: articulating, parallel link, and vertical mast
- ▶ Up to 10 ft of horizontal reach
- ▶ Capacities up to 1,000 lb

Zimmerman Series Arm Systems

The Ingersoll Rand Arm System **ADVANTAGE**

- ▶ **Ergonomic reach** — Prevents the need for operator to bend and reach into tight areas causing injury
- ▶ **Precise, strain-free positioning** — Float leaves both hands free to raise, lower, or shift the load with virtually no resistance
- ▶ **Versatility** — Three styles available to fit a diverse set of applications in nearly any industry
- ▶ **Rugged reliability** — Continuous duty with minimal maintenance
- ▶ **Integrated air supply** — Prevents tangling of air lines running to below-the-hook handling devices



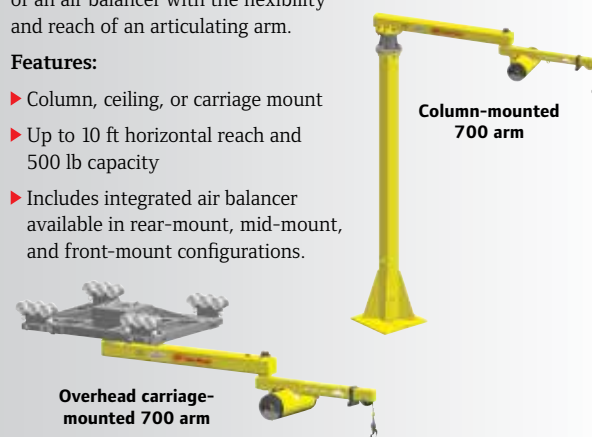
700 Series articulating arms:



700 Series arms combine the benefits of an air balancer with the flexibility and reach of an articulating arm.

Features:

- ▶ Column, ceiling, or carriage mount
- ▶ Up to 10 ft horizontal reach and 500 lb capacity
- ▶ Includes integrated air balancer available in rear-mount, mid-mount, and front-mount configurations.



Parallel link arms:

Parallel link arms utilize an air cylinder with a parallel link structure for lifting / lowering, making them ideal for reach-in applications.

Features:

- ▶ Capable of handling offset loads
- ▶ Column or carriage mount
- ▶ Up to 5 ft vertical travel and 800 lb capacity
- ▶ Optional brakes and limit switches available

Note: Parallel link-style arms are designed to specific customer requirements. Contact factory for more information.



600 Series arms:

600 Series arms utilize a rigid mast to guide the lifting / lowering, which is done by an integrated air balancer.

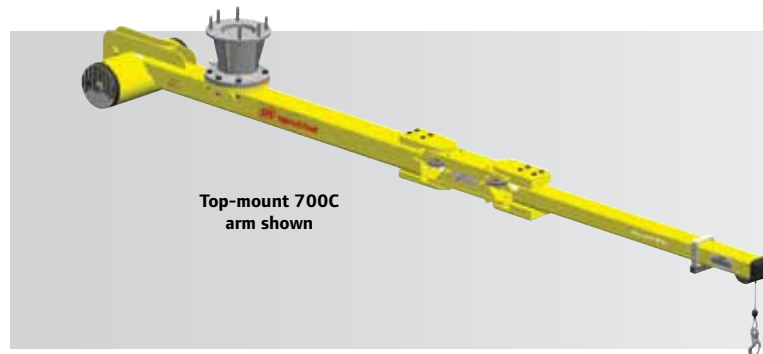
Features:

- ▶ Capable of handling offset loads
- ▶ Carriage mount compatible with most rail systems
- ▶ Up to 8 ft vertical travel and 1,000 lb capacity
- ▶ Includes integrated air balancer



Zimmerman Series Arm Systems

700C Series arm



Features:

- ▶ Rear-mount balancer offers lowest rotational inertia of all models
- ▶ Short stack-up for low headroom applications
- ▶ Two-point pivot providing 270° articulation
- ▶ Carriage or column mount
- ▶ Arm lengths of 6, 7, 8, 9, and 10 ft available
- ▶ Integrated 150, 200, 350, or 500 lb balancer

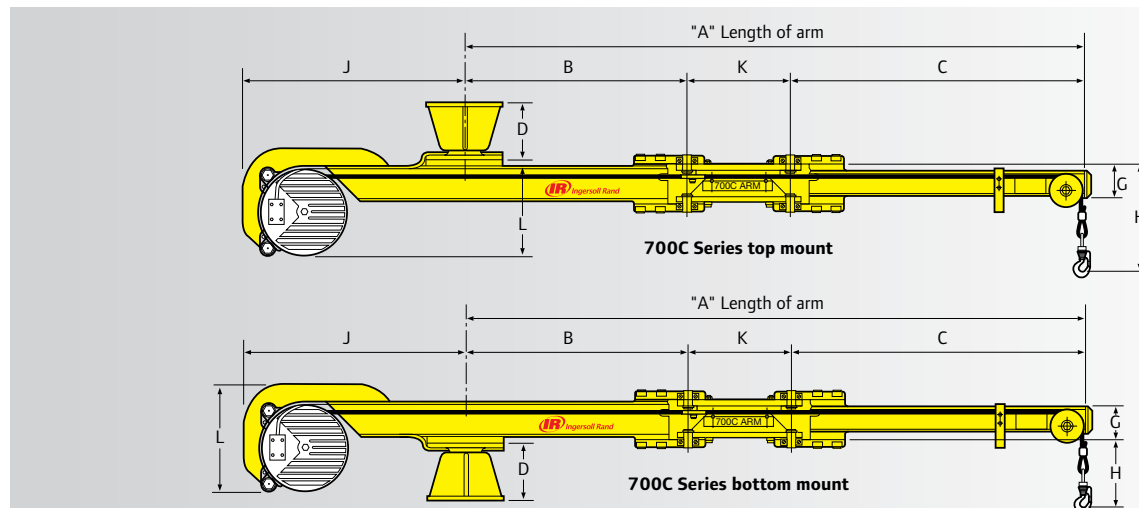
700C Series arm

| Base Model | Arm Length ft (m) | Capacity lb (kg) | Weight lb (kg) |
|-------------------|----------------------|---------------------|-------------------|
| 70015XXXXXXXXX06X | 6' (1.83) | 150 (65) | 218 (99) |
| 70015XXXXXXXXX07X | 7' (2.13) | 150 (65) | 237 (108) |
| 70015XXXXXXXXX08X | 8' (2.44) | 150 (65) | 248 (113) |
| 70015XXXXXXXXX09X | 9' (2.74) | 150 (65) | 263 (120) |
| 70015XXXXXXXXX10X | 10' (3.05) | 150 (65) | 275 (125) |
| 70020XXXXXXXXX06X | 6' (1.83) | 200 (90) | 248 (113) |
| 70020XXXXXXXXX07X | 7' (2.13) | 200 (90) | 267 (121) |
| 70020XXXXXXXXX08X | 8' (2.44) | 200 (90) | 278 (126) |
| 70020XXXXXXXXX09X | 9' (2.74) | 200 (90) | 278 (126) |
| 70020XXXXXXXXX10X | 10' (3.05) | 200 (90) | 304 (138) |
| 70035XXXXXXXXX06X | 6' (1.83) | 350 (155) | 257 (117) |
| 70035XXXXXXXXX07X | 7' (2.13) | 350 (155) | 279 (127) |
| 70035XXXXXXXXX08X | 8' (2.44) | 350 (155) | 290 (132) |
| 70035XXXXXXXXX09X | 9' (2.74) | 350 (155) | 290 (132) |
| 70035XXXXXXXXX10X | 10' (3.05) | 350 (155) | 316 (144) |
| 70050XXXXXXXXX06X | 6' (1.83) | 500 (225) | 271 (123) |
| 70050XXXXXXXXX07X | 7' (2.13) | 500 (225) | 290 (132) |
| 70050XXXXXXXXX08X | 8' (2.44) | 500 (225) | 328 (149) |
| 70050XXXXXXXXX09X | 9' (2.74) | 500 (225) | 350 (159) |
| 70050XXXXXXXXX10X | 10' (3.05) | 500 (225) | 367 (167) |

700C Series arm – dimensions (inches)

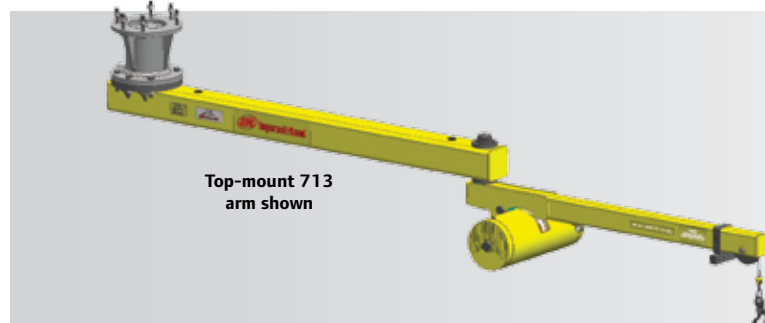
| Capacity lb | A | B | C | D | G | J | K | Top Mount H | Top Mount L | Bottom Mount H | Bottom Mount L |
|----------------|-----|----|----|------|------|-------|----|----------------|----------------|-------------------|-------------------|
| 150 | 72 | 26 | 34 | 6.78 | 4.25 | 23.75 | 12 | 13.25 | 8 | 7.75 | 13.53 |
| 150 | 84 | 38 | 34 | 6.78 | 4.25 | 23.75 | 12 | 13.25 | 8 | 7.75 | 13.53 |
| 150 | 96 | 38 | 46 | 6.78 | 4.25 | 23.75 | 12 | 13.25 | 8 | 7.75 | 13.53 |
| 150 | 108 | 38 | 46 | 6.78 | 4.25 | 23.75 | 24 | 13.25 | 8 | 7.75 | 13.53 |
| 150 | 120 | 38 | 46 | 6.78 | 4.25 | 23.75 | 36 | 13.25 | 8 | 7.75 | 13.53 |
| 200 | 72 | 26 | 34 | 6.78 | 4.25 | 26 | 12 | 13.25 | 11.13 | 7.75 | 13.66 |
| 200 | 84 | 38 | 34 | 6.78 | 4.25 | 26 | 12 | 13.25 | 11.13 | 7.75 | 13.66 |
| 200 | 96 | 38 | 46 | 6.78 | 4.25 | 26 | 12 | 13.25 | 11.13 | 7.75 | 13.66 |
| 200 | 108 | 38 | 46 | 6.78 | 4.25 | 26 | 24 | 13.25 | 11.13 | 7.75 | 13.66 |
| 200 | 120 | 38 | 46 | 6.78 | 4.25 | 26 | 36 | 13.25 | 11.13 | 7.75 | 13.66 |
| 350 | 72 | 26 | 34 | 6.78 | 4.25 | 27 | 12 | 13.25 | 9.96 | 7.75 | 14.47 |
| 350 | 84 | 38 | 34 | 6.78 | 4.25 | 27 | 12 | 13.25 | 9.96 | 7.75 | 14.47 |
| 350 | 96 | 38 | 46 | 6.78 | 4.25 | 27 | 12 | 13.25 | 9.96 | 7.75 | 14.47 |
| 350 | 108 | 38 | 46 | 6.78 | 4.25 | 27 | 24 | 13.25 | 9.96 | 7.75 | 14.47 |
| 350 | 120 | 38 | 46 | 6.78 | 4.25 | 27 | 36 | 13.25 | 9.96 | 7.75 | 14.47 |
| 500 | 72 | 26 | 34 | 6.78 | 4.25 | 27 | 12 | 13.25 | 10.63 | 7.75 | 14.16 |
| 500 | 84 | 38 | 34 | 6.78 | 4.25 | 27 | 12 | 13.25 | 10.63 | 7.75 | 14.16 |
| 500 | 96 | 38 | 46 | 8.5 | 5.5 | 27 | 12 | 13.25 | 11.38 | 7.75 | 16.63 |
| 500 | 108 | 38 | 46 | 8.5 | 5.5 | 27 | 24 | 13.25 | 11.38 | 7.75 | 16.63 |
| 500 | 120 | 38 | 46 | 8.5 | 5.5 | 27 | 36 | 13.25 | 11.38 | 7.75 | 16.63 |

Note: See Page 36 – Arm model driver for configuration options, "X" in base model above requires option selection.



Zimmerman Series Arm Systems

713 Series arm



Features:

- ▶ Mid-mount balancer
- ▶ Over-under boom design with single pivot point for 360° articulation
- ▶ Carriage or column mount
- ▶ Arm lengths of 6, 7, 8, 9, and 10 ft available
- ▶ Integrated 150, 200, 350, or 500 lb balancer

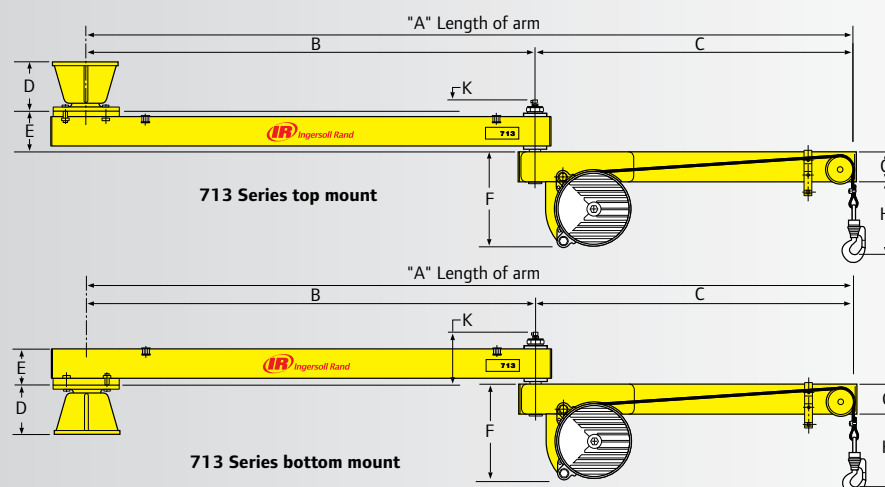
713 Series arm

| Base Model | Arm Length ft (m) | Capacity lb (kg) | Weight lb (kg) |
|-------------------|----------------------|---------------------|-------------------|
| 71315XXXXXXXXX06X | 6' (1.83) | 150 (65) | 151 (69) |
| 71315XXXXXXXXX07X | 7' (2.13) | 150 (65) | 166 (75) |
| 71315XXXXXXXXX08X | 8' (2.44) | 150 (65) | 175 (80) |
| 71315XXXXXXXXX09X | 9' (2.74) | 150 (65) | 184 (84) |
| 71315XXXXXXXXX10X | 10' (3.05) | 150 (65) | 228 (104) |
| 71320XXXXXXXXX06X | 6' (1.83) | 200 (90) | 197 (90) |
| 71320XXXXXXXXX07X | 7' (2.13) | 200 (90) | 213 (97) |
| 71320XXXXXXXXX08X | 8' (2.44) | 200 (90) | 224 (102) |
| 71320XXXXXXXXX09X | 9' (2.74) | 200 (90) | 235 (107) |
| 71320XXXXXXXXX10X | 10' (3.05) | 200 (90) | 281 (128) |
| 71335XXXXXXXXX06X | 6' (1.83) | 350 (155) | 233 (106) |
| 71335XXXXXXXXX07X | 7' (2.13) | 350 (155) | 246 (112) |
| 71335XXXXXXXXX08X | 8' (2.44) | 350 (155) | 261 (119) |
| 71335XXXXXXXXX09X | 9' (2.74) | 350 (155) | 258 (117) |
| 71335XXXXXXXXX10X | 10' (3.05) | 350 (155) | 271 (123) |
| 71350XXXXXXXXX06X | 6' (1.83) | 500 (225) | 261 (119) |
| 71350XXXXXXXXX07X | 7' (2.13) | 500 (225) | 275 (125) |
| 71350XXXXXXXXX08X | 8' (2.44) | 500 (225) | 276 (125) |
| 71350XXXXXXXXX09X | 9' (2.74) | 500 (225) | 335 (152) |
| 71350XXXXXXXXX10X | 10' (3.05) | 500 (225) | 351 (160) |

713 Series arm – dimensions (inches)

| Capacity lb | A | B | C | D | F | G | H | E | K | Top Mount E | Bottom Mount E | K |
|----------------|-----|----|----|------|-------|---|----|------|---|----------------|-------------------|---|
| 150 | 72 | 41 | 31 | 6.78 | 9.19 | 3 | 10 | 5.46 | 3 | 4.75 | 8.5 | |
| 150 | 84 | 47 | 37 | 6.78 | 9.19 | 3 | 10 | 5.46 | 3 | 4.75 | 8.5 | |
| 150 | 96 | 53 | 43 | 6.78 | 9.19 | 3 | 10 | 5.46 | 3 | 4.75 | 8.5 | |
| 150 | 108 | 59 | 49 | 6.78 | 9.19 | 3 | 10 | 5.46 | 3 | 4.75 | 8.5 | |
| 150 | 120 | 65 | 55 | 6.78 | 9.19 | 3 | 10 | 5.46 | 3 | 4.75 | 8.5 | |
| 200 | 72 | 41 | 31 | 6.78 | 12.81 | 4 | 9 | 5.46 | 3 | 4.75 | 8.5 | |
| 200 | 84 | 47 | 37 | 6.78 | 12.81 | 4 | 9 | 5.46 | 3 | 4.75 | 8.5 | |
| 200 | 96 | 53 | 43 | 6.78 | 12.81 | 4 | 9 | 5.46 | 3 | 4.75 | 8.5 | |
| 200 | 108 | 59 | 49 | 6.78 | 12.81 | 4 | 9 | 5.46 | 3 | 4.75 | 8.5 | |
| 200 | 120 | 65 | 55 | 6.78 | 12.81 | 4 | 9 | 5.46 | 3 | 4.75 | 8.5 | |
| 350 | 72 | 41 | 31 | 6.78 | 12.81 | 4 | 9 | 5.54 | 3 | 4.75 | 8.5 | |
| 350 | 84 | 47 | 37 | 6.78 | 12.81 | 4 | 9 | 5.54 | 3 | 4.75 | 8.5 | |
| 350 | 96 | 53 | 43 | 6.78 | 12.81 | 4 | 9 | 5.54 | 3 | 4.75 | 8.5 | |
| 350 | 108 | 59 | 49 | 6.78 | 12.81 | 4 | 9 | 6.78 | 3 | 6 | 8.5 | |
| 350 | 120 | 65 | 55 | 6.78 | 12.81 | 4 | 9 | 6.78 | 3 | 6 | 8.5 | |
| 500 | 72 | 41 | 31 | 6.78 | 12.81 | 4 | 9 | 5.54 | 3 | 4.75 | 8.5 | |
| 500 | 84 | 47 | 37 | 6.78 | 12.81 | 4 | 9 | 5.54 | 3 | 4.75 | 8.5 | |
| 500 | 96 | 53 | 43 | 8.5 | 12.81 | 4 | 9 | 6.79 | 3 | 6 | 8.5 | |
| 500 | 108 | 59 | 49 | 8.5 | 12.81 | 4 | 9 | 6.79 | 3 | 6 | 8.5 | |
| 500 | 120 | 65 | 55 | 8.5 | 12.81 | 4 | 9 | 6.79 | 3 | 6 | 8.5 | |

Note: See Page 36 – Arm model driver for configuration options, "X" in base model above requires option selection.



Zimmerman Series Arm Systems

720 Series arm



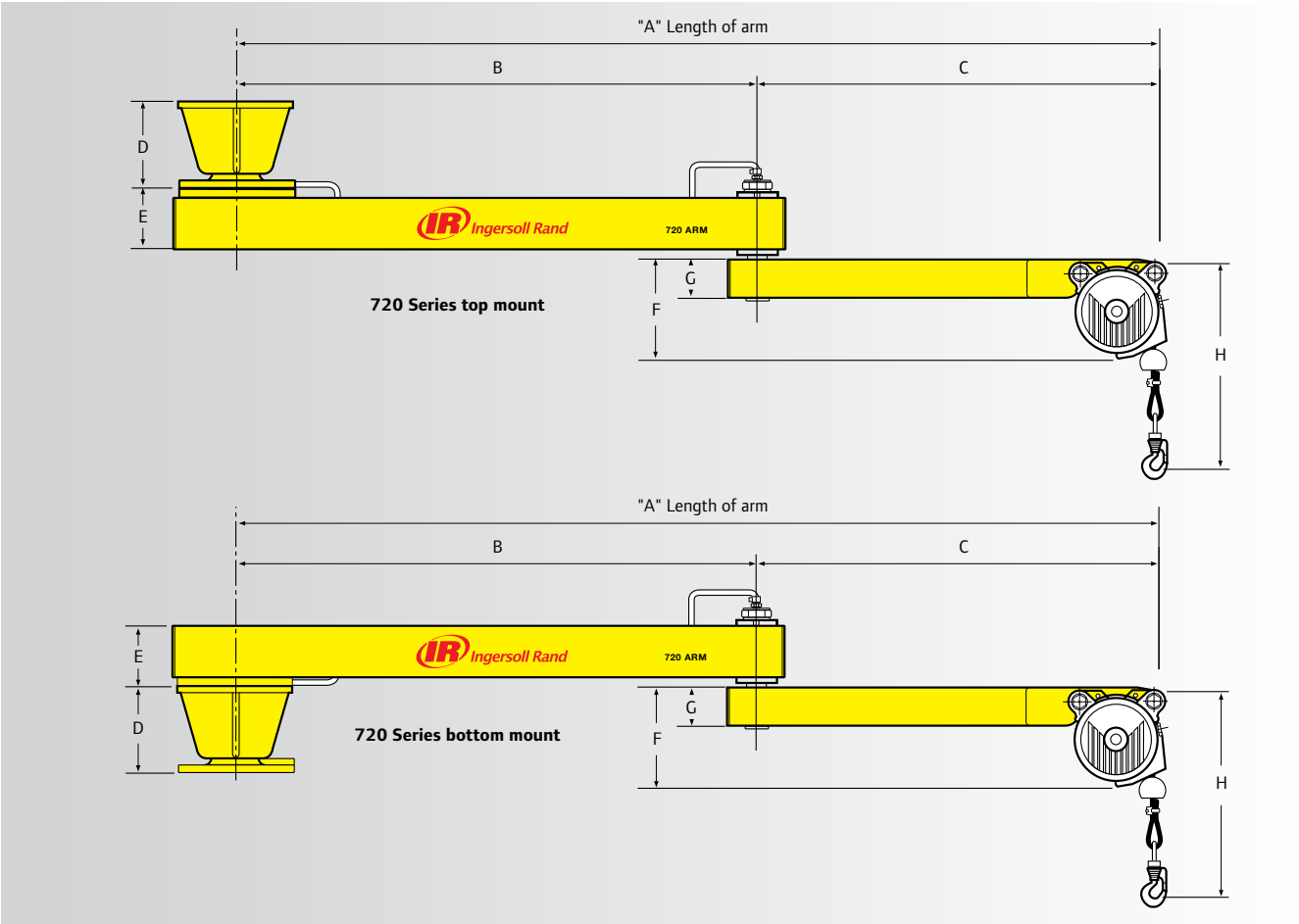
720 Series arm

| Base Model | Arm Length ft (m) | Capacity lb (kg) | Weight lb (kg) |
|------------------|----------------------|---------------------|-------------------|
| 72015XXXXXXXX06X | 6' (1.83) | 150 (65) | 218 (99) |
| 72015XXXXXXXX07X | 7' (2.13) | 150 (65) | 237 (108) |
| 72015XXXXXXXX08X | 8' (2.44) | 150 (65) | 248 (113) |
| 72015XXXXXXXX09X | 9' (2.74) | 150 (65) | 263 (120) |
| 72015XXXXXXXX10X | 10' (3.05) | 150 (65) | 275 (125) |

720 Series arm – dimensions (inches)

| Capacity lb | A | B | C | D | F | G | H | Top Mount E | Bottom Mount E |
|----------------|-----|----|----|------|-----|---|------|----------------|-------------------|
| 150 | 72 | 41 | 31 | 6.78 | 7.8 | 3 | 16.5 | 5.46 | 4.75 |
| 150 | 84 | 47 | 37 | 6.78 | 7.8 | 3 | 16.5 | 5.46 | 4.75 |
| 150 | 96 | 53 | 43 | 6.78 | 7.8 | 3 | 16.5 | 5.46 | 4.75 |
| 150 | 108 | 59 | 49 | 6.78 | 7.8 | 3 | 16.5 | 5.46 | 4.75 |
| 150 | 120 | 65 | 55 | 6.78 | 7.8 | 3 | 16.5 | 5.46 | 4.75 |

Note: See Page 36 – Arm model driver for configuration options, "X" in base model above requires option selection.

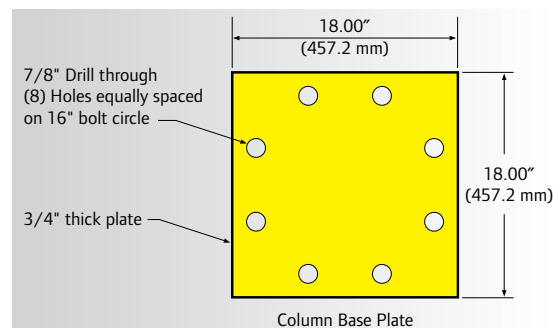


Zimmerman Series Arm Systems

700 Series arm options and accessories

Mounting accessories

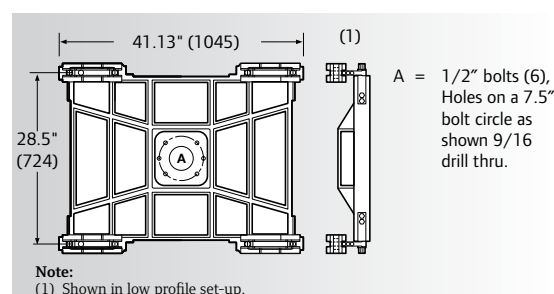
| Symbol | Description |
|--------|---|
| A | Overhead mount column 13.12 inches tall (for use with ceiling-mounted arms) |
| B | Column, 8 feet tall |
| C | Column, 8 feet 6 inches tall |
| D | Column, 9 feet tall |
| E | Column, 10 feet tall |
| F | Column, 11 feet tall |
| G | Column, 12 feet tall |



Carriages

| Symbol | Description | Part No. |
|--------|--|----------|
| NT | Carriage – basic, no trolleys | 40710 |
| TR | Carriage assembly – T-rail / I-beam | 40709 |
| A2 | Carriage assembly – ZRA2 (reaction trolley) | 30028-1 |
| S2 | Carriage assembly – ZRS2 / ZRS3 | 30028-2 |
| A1 | Carriage assembly – ZRA1 | 30028-3 |
| E8 | Carriage assembly – ETA-8 (reaction trolley) | 30028-4 |
| K2 | Carriage assembly – KBK2 | 30028-5 |

Note:
Lightweight ALMAG casting. Basic carriage weighs 60.0 lb (27.3 kg)



Controls

| Symbol | Description |
|--------|---|
| ZP | ZA (Zim-Air) up / down pendant control |
| ZQ | ZA (Zim-Air) up / down pendant control with Quad-Coil |
| ZT | ZA (Zim-Air) up / down pendant control with Tri-Coil |
| BA | BA (Balance-Air), single balance control (only for use on 150 lb capacity units) |
| BZ | BA (Balance-Air) Z-servo, single balance control |
| EP | EA (Equi-Air) 2PS pressure, load / no-load balance control for use with clamp devices |
| EV | EA (Equi-Air) 2PS vacuum, load / no-load balance control for use with vacuum devices |

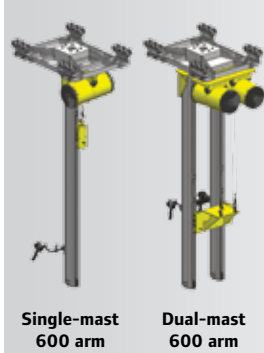
Example: 70015SATT0ZP06A

700 Series Articulating Arm model driver

| Style 700 | Capacity 15 | Balancer Type SA | Mounting Option TT | Carriage Options 0 | Controls ZP | Arm Length 06 | Mounting Access. A |
|--|--|--|---|--|---|---|---|
| 700 713 720 (150-lb capacity only) | 15 = 150 lb (68.2 kg) 20 = 200 lb (91 kg) 35 = 350 lb (159.1 kg) 50 = 500 lb (227.3 kg) | SA = Standard balancer IA = InteLIFT balancer (consult factory) | TT = Top mount - Ceiling BB = Bottom mount - Column NT = Carriage - no trolley TR = Carriage - T-rail / I-beam A2 = Carriage - ZRA2 (reaction trolley) S2 = Carriage - ZRS2 / ZRS3 A1 = Carriage - ZRA1 E8 = Carriage - ETA8 (reaction trolley) K2 = Carriage - KBK2 Note: A1 carriage mount option is only available for arms with less than 200 lb (90 kg) capacity and less than 8 ft (2.44 m) arm length. | 0 = No carriage H = High-profile L = Low-profile | ZP = ZA pendant control ZQ = ZA quad-coil control ZT = ZA tri-coil control BA = Single balance control BZ = Z-servo balance control EP = EA control 2ps pressure EV = EA control 2ps vacuum | 06 = 6 feet (1.83 m) 07 = 7 feet (2.13 m) 08 = 8 feet (2.44 m) 09 = 9 feet (2.74 m) 10 = 10 feet (3.05 m) | 0 = No mounting column A = 13 in (0.33 m) ceiling mount B = 8 ft (2.44 m) column C = 8.5 ft (2.59 m) column D = 9 ft (2.74 m) column E = 10 ft (3.05 m) column F = 11 ft (3.35 m) column G = 12 ft (3.66 m) column |

Zimmerman Series Arm Systems

600 Series arm



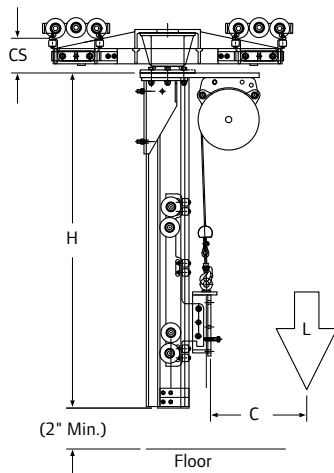
Features:

- ▶ Rigid mast guides load with up to 100 inch travel
- ▶ Accommodates offset loads up to 72 inches from mast
- ▶ 360° Arm rotation
- ▶ Carriage mount for overhead rail system suspension
- ▶ Integrated single, reeved, or tandem balancer to handle up to 1,000 lb

600 Series arm

| Base Model | Capacity lb (kg) | Max. Travel in (mm) | Notes |
|----------------------------------|------------------|---------------------|------------------|
| SINGLE MAST CONFIGURATION | | | |
| 60015XA1XXXXX | 150 (68.2) | 80 (2032) | 1x Balancer |
| 60020XA1XXXXX | 200 (90.9) | 120 (3048) | 1x Balancer |
| 60035XA1XXXXX | 350 (159.1) | 80 (2032) | 1x Balancer |
| 60050XA1XXXXX | 500 (227.3) | 80 (2032) | 1x Balancer |
| 6007RXA1XXXXX | 700 (318.2) | 40 (1016) | 1x Bal. (reeved) |
| 6007TXA1XXXXX | 700 (318.2) | 80 (2032) | 2x Balancer |
| 6001RXA1XXXXX | 1,000 (454.5) | 40 (1016) | 1x Bal. (reeved) |
| 6001TXA1XXXXX | 1,000 (454.5) | 80 (2032) | 2x Balancer |
| DUAL MAST CONFIGURATION | | | |
| 60015XA2XXXXX | 150 (68.2) | 80 (2032) | 1x Balancer |
| 60020XA2XXXXX | 200 (90.9) | 120 (3048) | 1x Balancer |
| 60035XA2XXXXX | 350 (159.1) | 80 (2032) | 1x Balancer |
| 60050XA2XXXXX | 500 (227.3) | 80 (2032) | 1x Balancer |
| 6007RXA2XXXXX | 700 (318.2) | 40 (1016) | 1x Bal. (reeved) |
| 6007TXA2XXXXX | 700 (318.2) | 80 (2032) | 2x Balancer |
| 6001RXA2XXXXX | 1,000 (454.5) | 40 (1016) | 1x Bal. (reeved) |
| 6001TXA2XXXXX | 1,000 (454.5) | 80 (2032) | 2x Balancer |

Note: See Page 38 – Arm model driver for configuration options. **Note:** "X" in base model above requires option selection.



600 Series arm - allowable mast configurations

| Load (L) max lb (kg) | Load CG (C) max in (mm) | Mast Ht. (H) max in (mm) | Max Hook Travel in (mm) |
|----------------------------------|-------------------------|--------------------------|-------------------------|
| SINGLE MAST CONFIGURATION | | | |
| 150 (68.2) | 12 (305) | 144 (3658) | 80 (2032) |
| | 24 (610) | 144 (3658) | 80 (2032) |
| | 36 (914) | 144 (3658) | 80 (2032) |
| | 48 (1219) | 144 (3658) | 80 (2032) |
| | 60 (1524) | 138 (3505) | 80 (2032) |
| 200 (90.9) | 72 (1829) | 114 (2896) | 74 (1880) |
| | 12 (305) | 144 (3658) | 104 (2642) |
| | 24 (610) | 144 (3658) | 104 (2642) |
| | 36 (914) | 144 (3658) | 104 (2642) |
| | 48 (1219) | 126 (3200) | 86 (2184) |
| 350 (159.1) | 60 (1524) | 102 (2591) | 62 (1575) |
| | 72 (1829) | 84 (2134) | 44 (1118) |
| | 12 (305) | 144 (3658) | 80 (2032) |
| | 24 (610) | 144 (3658) | 80 (2032) |
| | 36 (914) | 96 (2438) | 56 (1422) |
| 500 (227.3) | 48 (1219) | 72 (1829) | 32 (813) |
| | 60 (1524) | 60 (1524) | 20 (508) |
| | 72 (1829) | 48 (1219) | 8 (203) |
| | 12 (305) | 144 (3658) | 80 (2032) |
| | 24 (610) | 102 (2591) | 62 (1575) |
| 700 (318.2) | 36 (914) | 66 (1676) | 26 (660) |
| | 48 (1219) | 54 (1372) | 14 (356) |
| | 12 (305) | 138 (3505) | 40/80 (1016/2032) |
| | 24 (610) | 72 (1829) | 26/32 (660/813) |
| | 36 (914) | 48 (1219) | 2/8 (51/203) |
| 1000 (454.5) | 12 (305) | 96 (2438) | 40/56 (1016/1422) |
| | 24 (610) | 54 (1372) | 8/14 (203/356) |
| DUAL MAST CONFIGURATION | | | |
| 150 (68.2) | 60 (1524) | 144 (3658) | 80 (2032) |
| | 72 (1829) | 144 (3658) | 80 (2032) |
| 200 (90.9) | 48 (1219) | 144 (3658) | 104 (2642) |
| | 60 (1524) | 144 (3658) | 104 (2642) |
| 350 (159.1) | 72 (1829) | 144 (3658) | 104 (2642) |
| | 36 (914) | 144 (3658) | 80 (2032) |
| 48 (1219) | 144 (3658) | 80 (2032) | 80 (2032) |
| | 60 (1524) | 120 (3048) | 80 (2032) |
| 500 (227.3) | 72 (1829) | 102 (2591) | 62 (1575) |
| | 24 (610) | 144 (3658) | 80 (2032) |
| 36 (914) | 144 (3658) | 80 (2032) | 80 (2032) |
| | 48 (1219) | 144 (3658) | 80 (2032) |
| 700 (318.2) | 12 (305) | 144 (3658) | 40/80 (1016/2032) |
| | 24 (610) | 144 (3658) | 40/80 (1016/2032) |
| 36 (914) | 102 (2591) | 40/62 (1016/1575) | |
| | 12 (305) | 144 (3658) | 40/80 (1016/2032) |
| 1000 (454.5) | 24 (610) | 108 (2743) | 40/68 (1016/1727) |

Zimmerman Series Arm Systems

600 Series arm options and accessories

Masts

| Symbol | Description | Part No. |
|--------|---------------------------------|-------------|
| A | ZRA2 mast, 4' (1.22 m) Long | 30000-040-2 |
| B | ZRA2 mast, 4' 6" (1.37 m) Long | 30000-045-2 |
| C | ZRA2 mast, 5' (1.52 m) Long | 30000-050-2 |
| D | ZRA2 mast, 5' 6" (1.68 m) Long | 30000-055-2 |
| E | ZRA2 mast, 6' (1.83 m) Long | 30000-060-2 |
| F | ZRA2 mast, 6' 6" (1.98 m) Long | 30000-065-2 |
| G | ZRA2 mast, 7' (2.13 m) Long | 30000-070-2 |
| H | ZRA2 mast, 7' 6" (2.29 m) Long | 30000-075-2 |
| J | ZRA2 mast, 8' (2.44 m) Long | 30000-080-2 |
| K | ZRA2 mast, 8' 6" (2.59 m) Long | 30000-085-2 |
| M | ZRA2 mast, 9' (2.74 m) Long | 30000-090-2 |
| N | ZRA2 mast, 9' 6" (2.90 m) Long | 30000-095-2 |
| P | ZRA2 mast, 10' (3.05 m) Long | 30000-100-2 |
| Q | ZRA2 mast, 10' 6" (3.20 m) Long | 30000-105-2 |
| R | ZRA2 mast, 11' (3.35 m) Long | 30000-110-2 |
| S | ZRA2 mast, 11' 6" (3.51 m) Long | 30000-115-2 |
| T | ZRA2 mast, 12' (3.66 m) Long | 30000-120-2 |

Carriages

| Symbol | Description | Stack-up ⁽¹⁾ (CS) | Part No. |
|--------|-------------------------------------|------------------------------|----------|
| NT | Carriage - basic, no trolleys | - | 40710 |
| TR | Carriage - T-rail / I-beam | 5.46 | 40709 |
| A2 | Carriage - ZRA2 (reaction trolley) | 5.97 | 30028-1 |
| S2 | Carriage - ZRS2 / ZRS3 | 5.97 | 30028-2 |
| A1 | Carriage - ZRA1 | 8.44 | 30028-3 |
| E8 | Carriage - ETA-8 (reaction trolley) | 7.16 | 30028-4 |
| K2 | Carriage - KBK2 | 5.97 | 30028-5 |

Note: Lightweight ALMAG casting. Carriage weighs 60.0 lb (27.3 kg)

(1) Dimension is from the rail running surface to the base of the pivot. Changes with brake option.

Controls

| Symbol | Description | Controls Subassembly No. | |
|--------|--|--------------------------|----------|
| | | 1x Mast | 2x Mast |
| Z | ZA (Zim-Air) up / down pendant control | 54039847 | 54039854 |

Brake options

| Symbol | Description | Part No. |
|--------|--|----------|
| 0 | No brake | - |
| P | Pin-lock brake (hard stops every 45 degrees) | 54039722 |
| B | Bumper friction brake | 54039730 |
| C | Caliper brake | 54040977 |

Example: 60015SA1A2ZPG

600 Series Arm model driver

| Style 600 | Capacity - Vertical Travel 15 | Balancer Type SA | Single or Dual Mast 1 | Carriage Option A2 | Controls Z | Brake Options P | Mast Length G |
|-----------|---|--|----------------------------------|---|--|--|--|
| 600 | 15 = 150 lb (68.2 kg) - 80 in (2032 mm) 20 = 200 lb (90.9 kg) - 120 in (3048 mm) 35 = 350 lb (159.1 kg) - 80 in (2032 mm) 50 = 500 lb (227.3 kg) - 80 in (2032 mm) 7R = 700 lb (318.2 kg) - 40 in (1016 mm) 7T = 700 lb (318.2 kg) - 80 in (2032 mm) 1R = 1000 lb (454.5 kg) - 40 in (1016 mm) 1T = 1000 lb (454.5 kg) - 80 in (2032 mm) | SA = Standard balancer IA = InteLIFT balancer (consult factory) | 1 = single mast 2 = dual mast | A1 = Carriage - ZRA1 A2 = Carriage - ZRA2 (reaction trolley) S2 = Carriage - ZRS2 S3 = Carriage - ZRS3 TR = T-Rail / I-Beam E8 = Carriage - ETA8 (reaction trolley) K2 = Carriage - KBK22 | Z = ZA pendant control (includes dummy handle) | 0 = No brake P = Pin-lock brake (hard stops every 45 degrees) B = Bumper friction brake (soft stop at any point on 360 degree rotation) C = Caliper brake | A = 4 ft (1.22 m) B = 4 ft 6 in (1.37 m) C = 5 ft (1.52 m) D = 5 ft 6 in (1.68 m) E = 6 ft (1.83 m) F = 6 ft 6 in (1.98 m) G = 7 ft (2.13 m) H = 7 ft 6 in (2.29 m) J = 8 ft (2.44 m) K = 8 ft 6 in (2.59 m) M = 9 ft (2.59 m) N = 9 ft 6 in (2.90 m) P = 10 ft (3.05 m) Q = 10 ft 6 in (3.20 m) R = 11 ft (3.35 m) S = 11 ft 6 in (3.51 m) T = 12 ft (3.66 m) |
| | Note: R = Reeved balancer T = Tandem balancer | | | Note: All Ingersoll Rand 600 arms use a low profile carriage. | | | |

Hoists

Industrial lifting equipment



Ingersoll Rand offers:

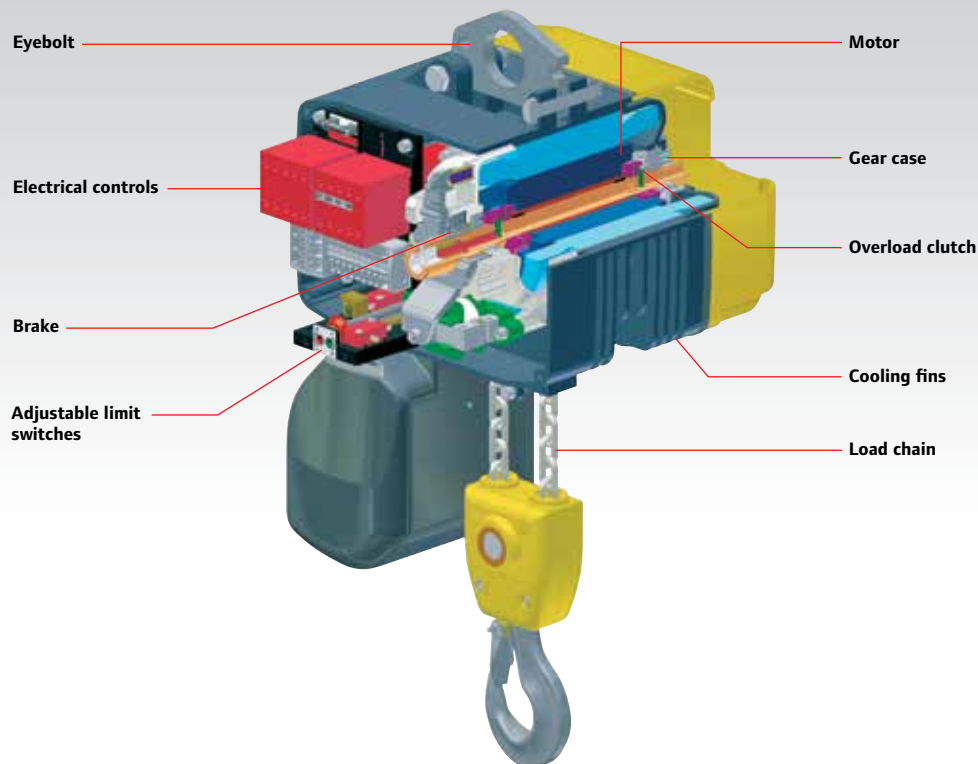
- ▶ Quantum electric chain hoists
- ▶ Air chain hoists

Quantum Series Electric Hoists

1/8 to 1 metric ton lifting capacities

The Ingersoll Rand Quantum Electric Hoist **ADVANTAGE**

- ▶ **Smooth, quiet operation** — Helical / spur gear combination provides grab-free movement and quiet, reliable operation. A floating chain guide precisely feeds chain onto a machined-matched, five-pocket chain wheel. This system ensures smooth, jam-resistant operation.
- ▶ **Durability** — Quantum load chains are precision-formed from alloy steel, case hardened and zinc-plated. The plating is an Ingersoll Rand proprietary process that resists corrosion better than any standard plating offered for load chain.
- ▶ **Reliability** — With high starting torque, Quantum motors utilize a totally enclosed non-ventilated (TENV) squirrel cage design. The H4-duty classification allows for 300 starts and 30 minutes “on-time” per hour. Class F insulation provides a total thermal rating of 145°C at a 1.0 service factor, instead of the more common Class B insulation of 120°C.
- ▶ **Safety** — State-of-the-art AC motor brakes with all-steel discs. Multiple stacking significantly increases braking surface area, reducing wear and extending life. Quantum brake discs are guaranteed for the life of the hoist. The overload clutch is factory-set to limit Quantum from lifting loads in excess of 150% of rated hoisting capacity.
- ▶ **Ergonomics** — Safety-first pendant control handles are comfortable and fit securely in the operator's hand. Each low-voltage (42-volt) control handle integrates a large, red emergency stop button. Operating buttons are clearly marked with high contrast arrows, feature soft-push action, and are horizontally aligned for easier operation.



Quantum Series Electric Hoists

1/8 to 1 metric ton lifting capacities

Quantum Series pendant control:

Handy Handle control

This ergonomically designed control enables precise operation at the hook and acts as a robotic power extension of the operator's arm. The load can be positioned and controlled with one hand, freeing the other to position the load. The Handy Handle can be ordered separately as part of a kit, to convert any 1/8-, 1/4-, and 1/2-ton single-line Quantum hoist, or as an "H" control option on a new hoist. Each Handy Handle comes standard with single- or dual-speed thumb control lever switches and red emergency stop button. A socket connection at the bottom allows the standard hook to be easily replaced by custom-end effectors or grabs.



Standard ergonomic "Charlie" pendant

Pendant features horizontal two-speed switch button for up and down hoist operations.

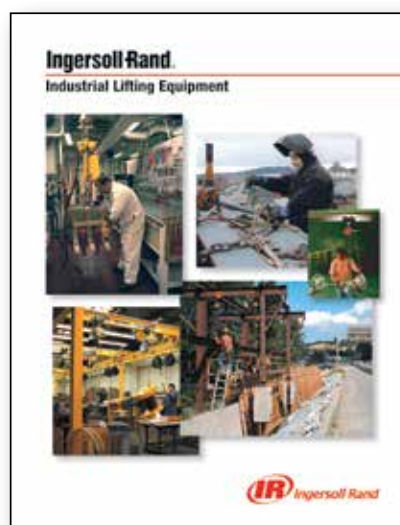


Quantum models

| Model | Capacity Metric Tons | Chain Falls | Lift Speed fpm | Motor HP | Amperage | | | Weight* lb |
|----------------------------|----------------------------|----------------|----------------------|-------------|----------|------|------|---------------|
| | | | | | 230V | 460V | 575V | |
| THREE-PHASE (SINGLE-SPEED) | | | | | | | | |
| QCH50-1NS12 | 1/8 | 1 | 32 | 1 | 3.5 | 1.8 | 1.4 | 45 |
| QCH50-1NS25 | 1/4 | 1 | 32 | 1 | 3.5 | 1.8 | 1.4 | 45 |
| QCH50-1NS50 | 1/2 | 1 | 32 | 1 | 3.5 | 1.8 | 1.4 | 45 |
| QCH50-2NS100 | 1 | 2 | 16 | 1 | 3.5 | 1.8 | 1.4 | 50 |
| QCH100-1NS100 | 1 | 1 | 32 | 2.1 | 7.4 | 3.7 | 3.0 | 100 |
| THREE-PHASE (DUAL-SPEED) | | | | | | | | |
| QCH50-1ND12 | 1/8 | 1 | 32 / 8 | 1 | 3.5 | 1.8 | 1.4 | 50 |
| QCH50-1ND25 | 1/4 | 1 | 32 / 8 | 1 | 3.5 | 1.8 | 1.4 | 50 |
| QCH50-1HD25 | 1/4 | 1 | 50 / 12 | 1 | 3.5 | 1.8 | 1.4 | 50 |
| QCH50-1ND50 | 1/2 | 1 | 32 / 8 | 1 | 3.5 | 1.8 | 1.4 | 50 |
| QCH50-2ND100 | 1 | 2 | 16 / 4 | 1 | 3.5 | 1.8 | 1.4 | 55 |
| QCH100-1ND100 | 1 | 1 | 32 / 8 | 2.1 | 8.0 | 4.0 | 3.2 | 101 |

Multiply speeds shown by 0.83 for 380-volt / 50 Hz units.

*All weights listed are with standard 10 ft of lift and 6 ft of pendant drop



Industrial Lifting Catalog: Form No. MHD55003
available online at ingersollrandproducts.com/lifting

Example: QCH100-1NS100H-21-17-4C

Quantum Hoists model driver

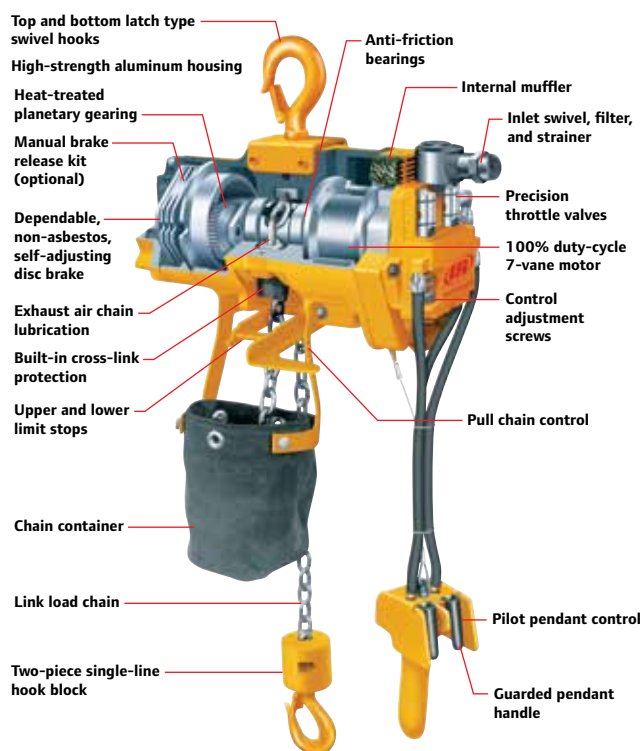
| Base Model | Suspension | Lift (ft) | Pendant Drop (ft) | Voltage | Options |
|--|--------------------------|--|---|--|--|
| QCH100-1NS100 | H | 21 | 17 | 4 | C |
| See model tables above for available models | E = Eye bolt H = Hook | 10 = Standard 15 = Standard 20 = Standard xx = Specify length | 6 = Standard 11 = Standard 16 = Standard xx = Specify length | 3 = 230/3/360 4 = 460/4/60 5 = 575/3/60 6 = 380/3/50* *These units have extended lead times and are not UL or C-UL (Canadian UL) listed. | C = Chain container E = External strain relief F = XX, specify power cord length (standard is 15 ft) H = Handy Handle K = 110 volt control P = Pendant with vertical aligned buttons P2 = Pendant with 2 extra vertical aligned buttons P4 = Pendant with 4 extra vertical aligned buttons Y = Bullard top hook Z = Bullard bottom hook |
| Note: Additional options and capacities available. Refer to Industrial Lifting Catalog: Form No. MHD55003 available online at ingersollrandproducts.com/lifting | | | | | |

MLK Series Air Hoists

1/4 to 1 metric ton lifting capacities

The Ingersoll Rand MLK Air Hoist **ADVANTAGE**

- **Continuous operation** — Suitable for A5 / H5 severe-duty use in the 1/4 to 1 metric ton range. Designed to be used as a high-speed production hoist
- **Precision spotting** — Precision throttle valves for smooth operation and metering of air combined with control adjustment screws to provide sensitivity and maximum speed control for pendant models. For even more precise control, MLKS slow-speed models are available
- **Interchangeable** — Motor, brake, and throttle parts are interchangeable with all current Ingersoll Rand air chain hoists making repair and maintenance easier
- **Durability** — Heat-treated planetary gearing system provides high-torque capability by splitting the torque path, thereby dividing and balancing the load over more teeth, assuring longer life and reduced maintenance



MLK models

| Model | Capacity | | Number of chain falls | Weight per foot of lift lb | Weight lb |
|---------|-------------|-------|-----------------------|----------------------------|-----------|
| | Metric tons | lb | | | |
| ML250K | 1/4 | 550 | 1 | 0.56 | 48 |
| ML500K | 1/2 | 1,100 | 1 | 0.56 | 48 |
| ML1000K | 1 | 2,200 | 2 | 1.12 | 61 |

*All weights listed are with standard 10 ft of lift and 6 ft of pendant drop

Hoist operating data @ 90 psi

| Series | Rated Load | | Half Load | | No Load | |
|-------------------|------------|----------|-----------|----------|---------|----------|
| | Up fpm | Down fpm | Up fpm | Down fpm | Up fpm | Down fpm |
| MLK Series | | | | | | |
| ML250K | 101 | 117 | 145 | 111 | 171 | 99 |
| ML500K | 55 | 97 | 80 | 72 | 106 | 59 |
| ML1000K | 28 | 49 | 40 | 36 | 53 | 30 |

Example: ML500K-2C10-C6U

MLK Hoists model driver

| Series M | Chain L | Capacity 500K | Control 2 | Suspension C | Lift (ft) 10 | Lower Hook C | Pendant Length 6 | Options U |
|--|----------------|---|--|--|--|---|--|---|
| M = Series | L = Link chain | 250K = 250 kg/ 550 lb 500K = 500 kg/ 1100 lb 1000K = 1000 kg/ 2200 lb | 0 = No controls 1 = Pull chain 2 = Pendant | A = Fixed lug B = Bullard hook C = Swivel hook CP = Copper-plated hook | 10 = 10 ft standard XX = Specify length | C = Steel snap hook CP = Copper-plated hook B = Bullard, self-closing hook | 6 = 6 ft standard XX = Specify length | M = Manual brake release kit P = Piped-away exhaust S = Steel chain container U = Fabric chain container |
| Note: Additional options and capacities available. Refer to Industrial Lifting Catalog: Form No. MHD55003 available online at ingersollrandproducts.com/lifting | | | | | | | | |

CLK Series

Pneumatic hoists: 125-, 250-, and 500-kg models

The CLK Series is the smart choice for:

- ▶ Durability that delivers more uptime — With a FEM/ISO mechanism classification of 1Am/M4 (ASME HST-5 rating of A5), CLK Series hoists are duty-rated to go an incredible 800 full-load hours between overhauls.
- ▶ Flexibility that lets you get more jobs done — Patent-pending top hook operates with full 360-degree swivel motion or converts quickly to lock in 90-degree increments with no additional parts to buy.
- ▶ Lifting speed and precision control for enhanced ease of use — Lifting speed of 43 fpm (13.1m/min) for the 125 kg models and 32 fpm (9.8m/min) for the 250 kg models is the **best in its class**. Enhanced load “positioning” capabilities and an outstanding combination of motor control and brake release make this hoist ideal for precision applications.
- ▶ “Best-in-the-industry” quiet operation enhances safety and decreases operator fatigue — Sound levels of just 75 dBA make CLK Series hoists easy on operators, while also minimizing the overall ambient noise of the work site.
- ▶ Highly efficient air motor saves money — For hoists in its class, CLK Series gets the most performance from your compressed air output. The CLK Series consumes only 32 cfm (0.9 m³/min) of air lifting rated load and less than 16 cfm (0.5 m³/min) while lowering load.



CLK Series Specifications

| Model | Capacity | | | Hook Mount Headroom | | Trolley Mount Headroom | | Lifting Speed | | | | Lowering Speed | | | | Chain Size | Chain Weight (per foot of lift) | | Net Weight w/10 ft of Lift | |
|--------|----------|-----|---------|---------------------|-------|------------------------|-------|---------------|-------|--------|-------|----------------|-------|--------|-------|------------|---------------------------------|------|----------------------------|------|
| | lb | kg | # Falls | in | mm | in | mm | ft/min | m/min | ft/min | m/min | ft/min | m/min | ft/min | m/min | | lb | kg | lb | kg |
| CL125K | 275 | 125 | 1 | 11.5 | 292.1 | 14.1 | 358.1 | 43 | 13.1 | 56 | 17.1 | 37 | 11.3 | 27 | 8.2 | 4 x 12 | 0.24 | 0.11 | 34 | 15.4 |
| CL250K | 550 | 250 | 1 | 11.5 | 292.1 | 14.1 | 358.1 | 32 | 9.8 | 56 | 17.1 | 45 | 13.7 | 27 | 8.2 | 4 x 12 | 0.24 | 0.11 | 34 | 15.4 |
| CL500K | 1100 | 500 | 2 | 12.75 | 323.9 | 15.35 | 389.9 | 15 | 4.6 | 26 | 7.9 | 22 | 6.7 | 13 | 4.0 | 4 x 12 | 0.48 | 0.22 | 38 | 17.2 |

Working pressure from 5 to 7 bar (70 to 100 psi). Air consumption @ rated load — all models 0.9 m (32 cfm). Air inlet 3/8" NPT. Sound level 75 dBA.

▶ HOW TO ORDER

Specify hoist by complete model number code as illustrated below. Specify accessories separately by part number. Note that 0 is a number, not a letter, in model part numbers.

Example: CL250K-2C10-C6-U-E

| C | L | 250K | - | 2 | C | 10 | - | C | 6 | U | - | E |
|-----------------------------|------------------------|--|---|---|--|--|---|--|---|---|---|---|
| Series C = Series | Link chain type | Capacity 125K = 125 kg = 275 lb 250K = 250 kg = 550 lb 500K = 500 kg = 1,100 lb | | Control 0 = No Pendant 2 = Pendant | | Lift (ft) 10 = 10 ft 200 ft max. - CL125K & CL250K 100 ft. max. - CL500K | | Pendent Control Hose (ft) 6 = 6 ft 40 ft max. pendent hose length | | | | |
| | | | | | | | | Lower hook C = Steel snap hook | | Options U = Fabric chain container | | |
| | | | | | Suspension A = Fixed lug (adapts to RT010A trolley) C = Swivel top hook DA = Plain rigid trolley | | | | | CE Package E = Compliance with the European Machinery Directive – will include E-stop pendent control | | |

Handling Devices

Made for the interaction of man and machine



Ingersoll Rand offers:

- ▶ Standard and custom solutions
- ▶ Manual and powered tilt and rotation packages
- ▶ Innovative designs from the simplest to the most complex device

Zimmerman Series Handling Devices

The Ingersoll Rand Handling Device **ADVANTAGE**

- **Safety** — Most Ingersoll Rand handling devices come equipped with a safety interlock system that will not allow the operator to accidentally disengage the part during transfer
- **Ergonomics** — Handling devices can be designed with manual or powered tilt and rotation packages, which allow the operator to orient the part to the proper position with minimal effort
- **Flexibility** — Through a variety of pneumatic packages, each system is matched to a control package that is tailored to the lifting and positioning task



Standard 4-cup vacuum handling device:



- Safety Interlock prevents accidental release of load
- Improve productivity through effective box or flat part pickup, orientation, transfer, and positioning
- Adjustable handle and controls reduce operator fatigue
- Protects surface quality with positive secure vacuum gripping and setdown
- Gives operator complete control throughout the handling operation

| Part Number | Cup Centerline Dimensions | Lift Capacity | | Cup Diameter |
|-------------|--------------------------------|-----------------|------------------|--------------|
| | | Vacuum - in Hg | @ 100 psi | |
| 87306338 | 5" x 7" (127 mm x 178 mm) | 6 (porous) | 45 lb (20.4 kg) | 3" (76 mm) |
| | | 18 | 99 lb (44.9 kg) | 3" (76 mm) |
| | | 25 (non-porous) | 120 lb (54.4 kg) | 3" (76 mm) |
| 87306486 | 10" x 14" (254 mm X 356 mm) | 6 (porous) | 45 lb (20.4 kg) | 3" (76 mm) |
| | | 18 | 99 lb (44.9 kg) | 3" (76 mm) |
| | | 25 (non-porous) | 120 lb (54.4 kg) | 3" (76 mm) |

To be used with "BW" series pneumatic balancers. Alternate layout and vacuum cup sizes available on request.
Note: Vacuum cups require a flat, non-porous surface. Consult factory for applications with porous surfaces.

Standard jib cranes handling device:

Standard Handling Devices

| Model | Description |
|-------|---------------------------------|
| ZV1S | 1-Cup handling device |
| ZV1ST | 1-Cup handling device with tilt |
| ZV4S | 4-Cup handling device |
| ZC2S | Standard clamp device |



Zimmerman Series Handling Devices

Signature bundle handlers

- ▶ Designed to meet the needs of the printing industry in handling logs from 22" – 48" and up to 250 lb
- ▶ Single (10" stroke) and dual (30" stroke) air cylinders with 900 lb clamping force at 90 psi
- ▶ Safety interlock prevents accidental release of load
- ▶ Standard paddles for end boards up to 12" x 12" (extended paddle configurations available — contact factory)
- ▶ Power rotation and self-leveling packages available — contact factory for further information
- ▶ Lightweight aluminum construction



Single cylinder with top swivel handle control



Dual cylinder with top swivel handle control

| Part No. | Body Style | Control | Bundle Size in (mm) | Stroke in (mm) |
|----------|-----------------|---------------------------|---------------------|----------------|
| SBH1-1-1 | Single cylinder | Single side control | 24-32 (610-813) | 10 (254) |
| SBH1-2-1 | Single cylinder | Dual side control | 24-32 (610-813) | 10 (254) |
| SBH1-3-1 | Single cylinder | End control | 24-32 (610-813) | 10 (254) |
| SBH1-4-1 | Single cylinder | Side and end control | 24-32 (610-813) | 10 (254) |
| SBH1-5-1 | Single cylinder | Top swivel handle control | 24-32 (610-813) | 10 (254) |
| SBH1-1-2 | Single cylinder | Single side control | 32-40 (813-1016) | 10 (254) |
| SBH1-2-2 | Single cylinder | Dual side control | 32-40 (813-1016) | 10 (254) |
| SBH1-3-2 | Single cylinder | End control | 32-40 (813-1016) | 10 (254) |
| SBH1-4-2 | Single cylinder | Side and end control | 32-40 (813-1016) | 10 (254) |
| SBH1-5-2 | Single cylinder | Top swivel handle control | 32-40 (813-1016) | 10 (254) |
| SBH1-1-3 | Single cylinder | Single side control | 40-48 (1016-1219) | 10 (254) |
| SBH1-2-3 | Single cylinder | Dual side control | 40-48 (1016-1219) | 10 (254) |
| SBH1-3-3 | Single cylinder | End control | 40-48 (1016-1219) | 10 (254) |
| SBH1-4-3 | Single cylinder | Side and end control | 40-48 (1016-1219) | 10 (254) |
| SBH1-5-3 | Single cylinder | Top swivel handle control | 40-48 (1016-1219) | 10 (254) |

Consult factory for applications that require greater than 10" stroke, dual cylinder available.



Dual cylinder with side control

Zimmerman Series Handling Devices

Rotary action handlers

- ▶ Provides effortless 90-degree manual rotation of rolls up to 300 lb
- ▶ Non-destructive rubber band style as well as pin style noses engage the ID of the core
- ▶ Safety interlock prevents accidental release of load
- ▶ Offered in both lightweight aluminum and rugged steel construction
- ▶ Integrated up/down controls work seamlessly with Ingersoll Rand Pneumatic Balancer



Effortless horizontal to vertical rotation

Body selection chart

| Body Material | Capacity lb (kg) | Max Core Length in (mm) | Max Core O.D. in (mm) |
|---------------|------------------|-------------------------|-----------------------|
| Aluminum | 100 (45.4) | 12 (305) | 30 (762) |
| Steel | 300 (136.1) | 24 (310) | 42 (1067) |

Nose selection chart

| Nose Style | Capacity lb (kg) |
|-------------|------------------|
| 3 Pin | 100 (45.4) |
| 6 Pin | 300 (163.1) |
| Single band | 200 (90.7) |
| Double band | 300 (136.1) |



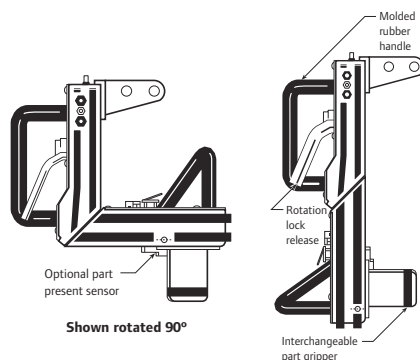
Band nose



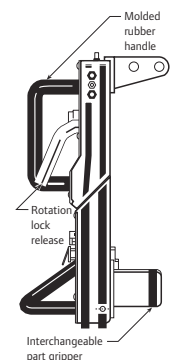
Pin nose



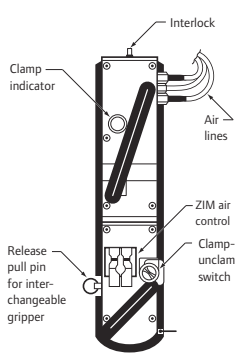
Custom power tilt



Shown rotated 90°



Wide variety of interchangeable part grippers available



Rotates and locks 90° right and left

Other options available upon request:

- ▶ Stepped nose for multiple cores
- ▶ "V" groove for pin cart applications
- ▶ Special paint / plating
- ▶ Spindle end locator
- ▶ Adjustable bail
- ▶ Heavy duty pivot for steel rotary action handler offers capacity up to 450 lb



Stepped nose

Example: RAHA020030TP

Rotary Action Handler model driver

| Device Type RAH | Body Material A | Core ID 020 | Core Length 030 | Nose Style T | Options P |
|--|---------------------------|---|---|--|---|
| RAH = Rotary Action Handler | A = Aluminum S = Steel | 020 = 2" 075 = 75 mm 030 = 3" 094 = 94 mm 040 = 4" 110 = 110 mm 050 = 5" 140 = 140 mm 060 = 6" 143 = 143 mm 080 = 8" | 030 = 3" 070 = 7" 035 = 3.5" 075 = 7.5" 040 = 4" 080 = 8" 045 = 4.5" XXX = Length 050 = 5" 12" Max for aluminum 055 = 5.5" 24" Max for steel 060 = 6" 065 = 6.5" | T = 3 Pin S = 6 Pin B = Single band D = Double band | P = Part present C = Side clamp (available only w/ steel body) I = Interchangeable nose w/ quick-release pins |
| To be used with "BW" series Pneumatic Balancers. Consult factory for applications with rolls prone to telescoping. | | | | | |

Zimmerman Series Handling Devices

Custom devices

Ingersoll Rand is a world leader in the manufacture of ergonomic, in-process, manual and powered custom material handling systems. We offer a complete range of handling devices, from the simplest to the most complex custom device. We specialize in providing turnkey solutions utilizing our complete line of standard and custom products to create a combination that empowers individuals to work more comfortably and effectively.



Motor vehicle



Agricultural equipment



Furniture / household

CLAMP



Cheese — food processing

HOOK / TRAP



Gaming table

VACUUM



Box — general industry

PROBE



Steel roll



Box — general industry



Beverage handling



Toilet tank



Ceramic steel funnel



Floor scrubber



Vehicle transmission



Glass



HVAC — copper coil

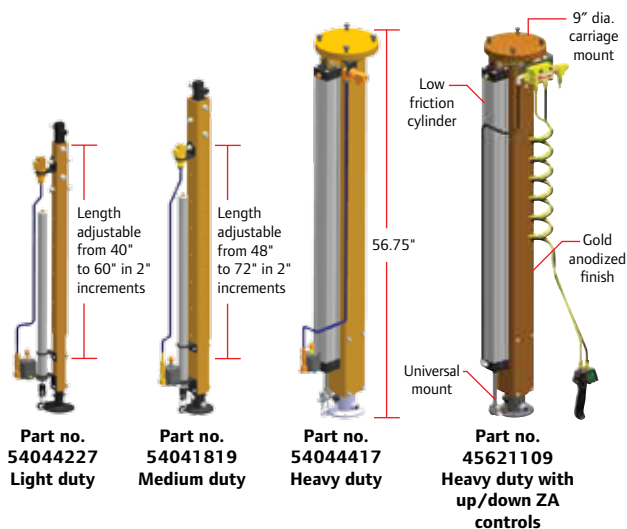
Contact factory for thousands more application photos and videos. E-mail requests to asbu_proposal@irco.com.

Zimmerman Series Torque Tubes

The Ingersoll Rand Torque Tube

ADVANTAGE

- **Guided lifting** — Cylinder guides up/down motion, preventing load from swinging
- **Effortless vertical travel** — Super linear bearings provide smooth, effortless motion
- **Versatility** — Four models available for both torque reaction and lifting applications
- **Torque reaction** — 4 Delrin® wheels for torque reaction and side loading in all four directions
- **Adaptable** — Universal mounting plate for bolt-on integration of tool holders and handling devices



Torque tube with integrated vacuum handling device

Torque tube models

| Part No. | Description | Torque Capacity ft-lbs (Nm) | Lift Capacity | | Weight lb (kg) | Travel in (mm) | Control |
|-------------------------|-------------|--------------------------------|---------------|---------------------------|-------------------|-------------------|--------------|
| | | | lbs @ 100 psi | kg @ 7 kg/cm ² | | | |
| 54044227 | IRZ-TT-100 | 74 (100) | 60 | 27 | 40 (18) | 20 (508) | BA regulator |
| 54041819 | IRZ-TT-250 | 184 (250) | 60 | 27 | 50 (23) | 24 (610) | BA regulator |
| 54044417 ¹ | IRZ-TT-500 | 368 (500) | 100 | 45 | 75 (34) | 36 (914) | BA regulator |
| 45621109 ^{1,2} | IRZ-ZA-500 | 368 (500) | 150 | 68 | 80 (36) | 36 (914) | ZA Up/Down |

¹ Carriage mount option only.

² Accommodates offset loads to 24" (609 mm). Consult factory for special applications.

Optional cylinder air supply

| Part No. | Description |
|----------|-----------------------------|
| 90050 | Cylinder air supply package |

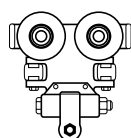
Includes regulator assembly and all required hose fittings to supply cylinder.

Suspension options:

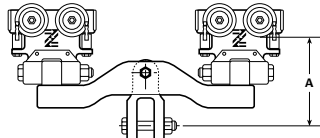
Suspension kits – single and dual trolleys

| Rail Profile | Part No. | "A" Dimension in (mm) | Weight lb (kg) |
|---|----------|--------------------------|-------------------|
| SINGLE TROLLEY – USE FOR 80 NM OR LESS APPLICATIONS | | | |
| ZRA2 | 16610 | 4.75 (120) | 4.50 (2) |
| ZRAS2/3 | 16600 | 4.75 (120) | 4.50 (2) |
| KBK-II/III | 16615 | 4.75 (120) | 4.50 (2) |
| ETA-8 | 16635 | 4.75 (120) | 4.50 (2) |
| T-Rail | 16620 | 3 (76.2) | 15 (6.8) |
| DUAL TROLLEY – UP TO 150 NM APPLICATIONS | | | |
| ZRAT | 16755 | 6.48 (165.0) | 10.50 (4.76) |
| ZRA1 | 16705 | 6.13 (156.0) | 10.50 (4.76) |
| ZRA2 | 16710 | 6.76 (172.0) | 10.50 (4.76) |
| ZRAS2/3 | 16700 | 6.76 (172.0) | 10.50 (4.76) |
| KBK-I | 16725 | 6.13 (156.0) | 10.50 (4.76) |
| KBK-II/III | 16715 | 6.76 (172.0) | 10.50 (4.76) |
| ETA-4 | 16744 | 6.13 (156.0) | 10.50 (4.76) |
| ETA-8 | 16735 | 6.76 (172.0) | 10.50 (4.76) |

Note: For use on torque tube part no. 54044227 and 54041819.



Suspension kit, Single trolley
Use for 80 Nm or less

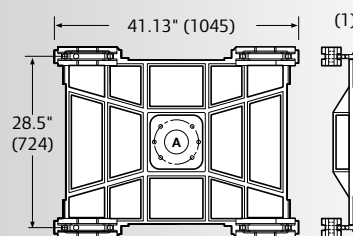


Suspension kit, Dual trolley
Use for 150 Nm or less

Carriages

| Description | Part No. |
|--|----------|
| Carriage — basic, no trolleys | 40710 |
| Carriage assembly — T-rail / I-beam | 40709 |
| Carriage assembly — ZRA2 (reaction trolley) | 30028-1 |
| Carriage assembly — ZRS2 / ZRS3 | 30028-2 |
| Carriage assembly — ZRA1 | 30028-3 |
| Carriage assembly — ETA-8 (reaction trolley) | 30028-4 |
| Carriage assembly — KBK2 | 30028-5 |

Note: For use on part no. 54044417 and 45621109
Lightweight ALMAG casting. Basic carriage weighs 60.0 lb (27.3 kg)
Each carriage assembly drawing has info for both high and low profile assemblies.



A = 1/2" bolts (6), Holes on a 7.5" bolt circle as shown
9/16 drill thru on a 7.5" bolt circle.

Standard tool holders available.
Refer to assembly catalog: IRPS-1007-052

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Ghaziabad-201010, India
Telephone: +91-120-4389400 / 4289400

Mexico

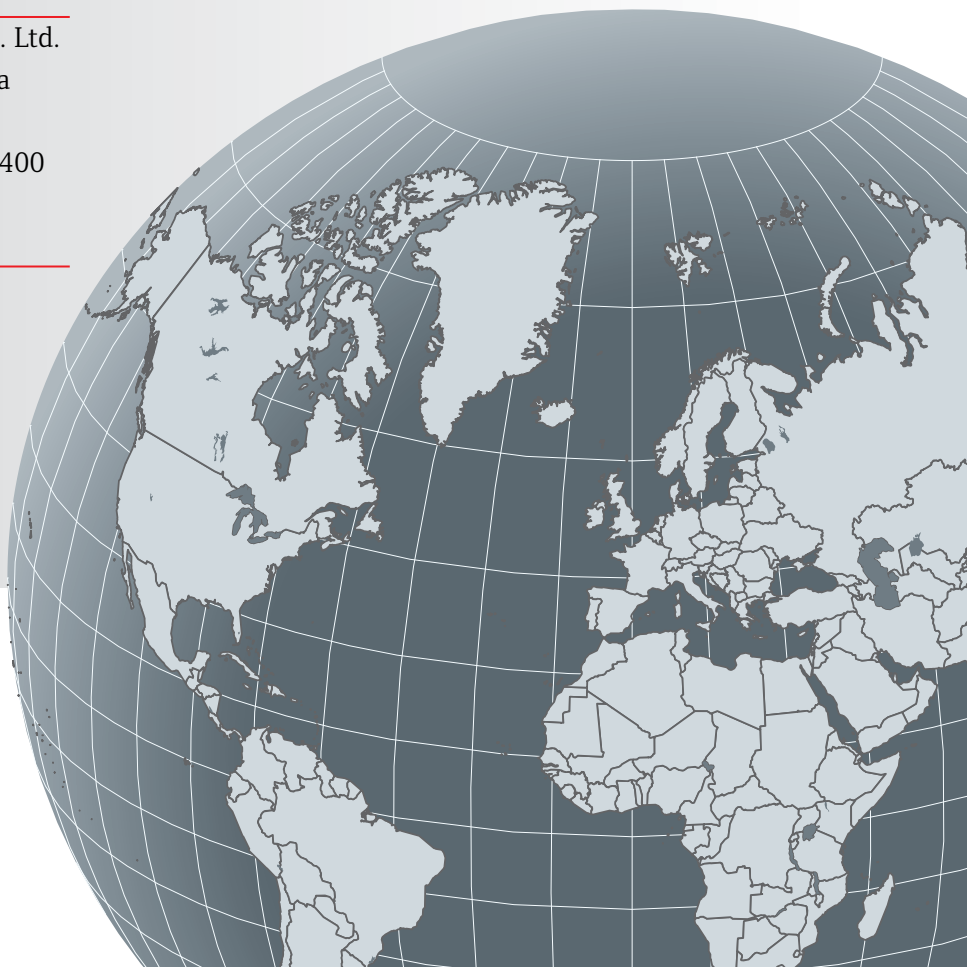
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