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IR-Zimmerman Lifting Equipment – Product Overview

- Handling Devices
- Torque Reaction Products
- Irax Spring Balancers
- Quantum Electric Chain Hoists

End Effectors

The real workhorse of material handling equipment is the end effector. The most important part of a material handling application is the actual handling of the product and its components. End-effectors are the units mounted to balancers, arms, or manipulators that actually grab, move, and place items.



End-effectors may be used in a variety of applications such as moving heavy, sharp, or irreplaceable items or handling items that could cause damage to a person, machine tool or other items in the travel path. Customizable to a variety of weights, sizes, and surfaces, end-effectors may be as simple as a hook or as complex as an air-actuated gripper, expanding mandrel or vacuum grab.

IPS and Zimmerman offer custom solutions to material handling needs. Zimmerman has over 40 years of experience in the design and building of ergonomic, in-process product and material handling equipment. This experience, teamed with IPS Associates in-house CAD department, allows us to provide solutions for a vast array of material handling needs.

Zimmerman end-effectors come equipped with a Safety Interlock system that will not allow the operator to accidentally disengage the part during transfer. Each system is matched to a control package that is tailored to the lifting and positioning task. Manual and/or powered tilt and rotation packages are available for multi-axis motion to orient the part to the proper position. All end-effectors are flexible and may be customized to meet the needs of the application. Thorough testing ensures functionality prior to shipping.

Handling Equipment

Handling equipment are the link between the operator and the product being manipulated. Various types of handling equipment, or manipulators, are used to address specific applications in an ergonomic manner.



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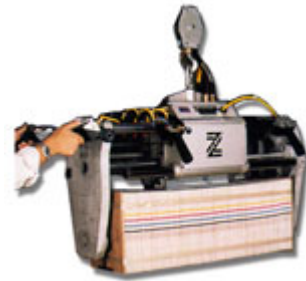
The Rotary Action Handler, for example, performs virtually flawless horizontal-to-vertical product orientation and can handle loads up to 300 pounds. Its versatility is enhanced by a variety of end effector part grippers, designed for Roll Handling, Wire Reel Handling, Tire Handling from O.D., Vacuum-CRT Handling, Carton Handling, and Bobbin Handling.

The Signature Bundle Handler is designed to improve productivity in applications demanding the pickup, orientation, transfer, and positioning of bundles, such as those in pressroom and bindery operations. This Handler is lightweight, has high flexibility up to 180°, and a wide capacity range. The safety designed Handler is engineered for positive, secure gripping and pickup, providing complete operator control throughout the handling sequence.

The 600 Series consists of a rigid vertical beam with a moving horizontal beam that is able to reach into an opening.

Signature Bundle Handler SBH-1

- Single Stroke air cylinder with 900 lbs clamping force at 90 psig.
- Safety interlock to prevent operator from releasing the load during transfer.
- Straight transfer.
- Handles up to 250 lb bundles.
- Standard paddles for end boards, (6 x 9" through 12 x 12").
- 10 inches of clamp range available, minimum log size, (24").
- Light weight aluminum construction.



Signature Bundle Handler SBH-2

- Dual stroke cylinder for greater opening.
- Safety interlock to prevent operator from releasing the load during transfer.
- Straight transfer.
- Handles up to 300 lb bundles.
- Up to 30 inches of stroke, minimum log size, (20"), maximum of (50").

Signature Bundle Handler SBH-2P

- Same standard features as SBH-2.
- Safety interlock to prevent operator from releasing the load during transfer.
- Self-retracting leveling pad for positioning.



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- Power rotate 90 or 180 degrees.
- Extended paddles available.

Rotary Action Handler

- 90 degree manual rotation of rolls.
- Cast aluminum construction for light weight.
- Rubber band (non-destructive) and pin style noses engage the I.D. of the core.
- Optional side clamp to prevent telescoping of rolls.
- Safety interlock to prevent operator from releasing the load during transfer.



IR-Zimmerman Air Balancers

Today's material handling applications require precision and control. Ergonomic lift assist devices must interact with the operator to achieve these elements. Zimmerman offers a wide range of lifting and balancing units to meet these needs. All Zimmerman Balance Air lifting units are available in capacities from 50 to 1200 lbs.



The Balance-Air series is made up of

- **BA Series**
- **EA Series**
- **ZA Series**
- **Intelift**

BA Series

The BA Series from Zimmerman is ideally suited for balancing or suspending portable tools, welders, tooling, and heavy fixtures. The BA Series uses air pressure to maintain a precise counterbalance of the suspended load. The air pressure is set and controlled by a self-relieving external regulator that automatically bleeds off or increases pressure as required to maintain constant load balance. The regulator can be adjusted quickly, allowing for quick and accurate balancing.

EA Series

EA series balancers are designed to excel in high-speed, constant weight, repetitive parts handling operations. They also work very well in applications requiring precision positioning. Each EA unit can be adjusted using a three-position control



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handle. Another system known as the 2PS (2-position sensor) replaces the need for a control handle, and can produce automatic load/balance and manual push-button unload conditions.

Safety Features

Safety features are standard components on all Zimmerman equipment. The built-in overload protection prevents loads exceeding the unit's maximum rated capacity for a given air pressure. If a load is accidentally lost, the Z brake automatically stops rapid upward cable travel. The optional Z Stop will eliminate the down-drift of suspended loads or tools during shut down or when the air supply is shut off.

Every balancer can be customized to an application with control and suspension options. For constant loads such as tool balancing and fixture suspension, the single balance control provides an excellent alternative to traditional spring balancers. For high speed handling precision handling of variable weight loads, the pendent control provides ergonomic design. After positioning the load with the pendent control, the unit defaults into a zero gravity float condition for final positioning. Balancers equipped with Hi, Lo, Un Load Controls are designed to excel in high speed, constant weight, repetitive parts handling operations.



Intelift

A challenge that has faced many manufacturing plants is lifting loads of different weights using the same balancer. Traditional balancers, once set, will only properly balance the specific set weight. This is an especially difficult challenge for applications using an end effector to pick up, move, and place an object. The typical solution is to have a pendent control on the end effector that changes the balancer's settings, using it like a hoist.

To overcome this obstacle, IR Zimmerman has developed the Intelift electronic controlled air balancer. With features like Self Balance, Float, and Dump modes; three-speed selection; an ergonomic control handle; Smart Drop placement; and many safety features, the Intelift air balancer will substantially benefit the vehicle assembly, the beverage and warehouse, the textile, and the electronics industries.

The Intelift balancer is available in capacities from 150 to 1000 lbs. It uses a low voltage 115 VAC power supply for its computer components.

The default mode of the Intelift balancer is Self Balance. The software residing within the control unit has 17 variables, which are optimized for smooth and accurate articulation of the cable. Computer control of the vertical motion of the load ensures



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uniform velocity and acceleration with minimum overshooting of the load to target point. The Intelift balancer has intuitive speed control for different weights without the need for constant adjustments.

The Dump mode of the balancer allows for greater position control. The micro-controller reads the number of counts on the encoder wheel that occur as the load drifts away from its original position while dumping the load. As the dumping occurs, the unit will return to the same position.

In Float mode, the micro-controller maintains constant pressure in the balancer through the use of a pressure sensor. This allows the operator to manually adjust the load vertically to a new position using buttons on the control handle.

In addition to the standard capabilities, the Intelifts unique features make it ideal for custom applications. When the pendant control is used in conjunction with a load cell and an end effector, the Intelift will precisely lift and place whatever weight is set. The load cell senses any change in weight and this signal is sent to the Intelift which then compensates according to pre-set limits. Virtually any style and configuration of end effector can be integrated with the Intelift and load cell combination.

With the introduction of the Intelift, Zimmerman has revolutionized the role of the balancer in industrial operations. The operator now has full control of virtually every aspect of the lifting and positioning process, eliminating the need for some custom solutions, the misapplication of hoists, and the need for constant configuration changes within a work process.