

Easily and safely move loads between levels with vertical reciprocating conveyors

Excellent for mezzanines, multilevel buildings and more

A Vertical Reciprocating Conveyor (VRC) moves materials in factories, warehouses, industrial plants, institution—anywhere that products or supplies need to move from one level to another.

VRCs have their own national code and are specifically exempt from the national elevator code. VRCs provide fast, efficient, convenient and safe access to or from mezzanines, balconies, basements, and between levels in multiple story buildings. They can be installed for through-floor, interior or exterior applications. The principle components of a VRC include guide columns, carriage and a mechanical or hydraulic actuating mechanism.

We offer the most complete line of VRCs from mechanical to hydraulic to fully automatic, customized systems for automated manufacturing and warehousing operations. VRCs are available in capacities from 10 lbs. to 100,000 lbs. with carriages from 30 x 30 in. to 30 x 30 ft., vertical heights from 4 ft. to over 200 ft. and travel speeds to 400 fpm. They meet or exceed ANSI and OSHA regulations.

Integrating VRC's and automated systems

The platform of a VRC may be equipped with a powered roller conveyor assembly, a gravity conveyor with a drop lock assembly, a chain transfer conveyor assembly, a turntable device and/or a pusher assembly and can interface with conveyor lines, single or multi-level rack system, or a transport. The controls can be so designed such that the carriage or carrier can receive the load automatically, deliver products to a pre-selected destination and then return to its original position automatically.

VRC Types

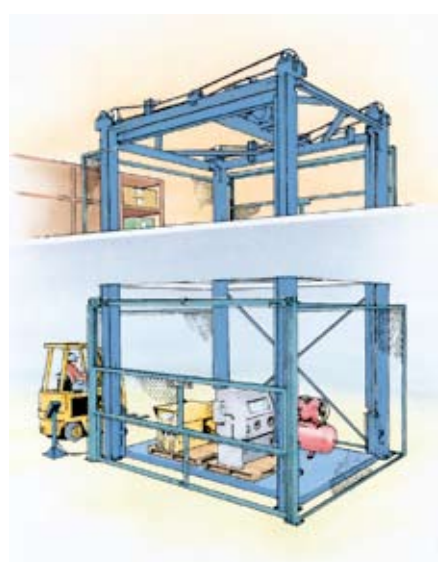
Hydraulic lifts

Hydraulic vertical conveyors provide reliable, economical vertical lifting for mezzanines, balconies and other two-level applications. Hydraulic VRC's offer heavy-duty construction with advanced safety technology and proven reliability. These lifts are available with straddle or cantilever carriages.

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Mechanical lifts

Mechanical vertical reciprocating conveyors offer versatility and dependability for high-speed and multi-level applications and for moving large, heavy loads. Mechanical VRCs offer durable, heavy-duty construction and maximum flexibility in carriage size, capacity and traffic patterns.



Fully automated VRC systems

Fully Automated Systems provide an efficient, reliable way to transport materials in an automated manufacturing or warehousing operation. They are custom-fit to your application, ranging from simple two-level applications to sophisticated multi-level, multi-directional systems.

Fully automated systems, including VRC, horizontal conveyors, control and system startup, are completely designed, manufactured and installed by on-staff engineers and technicians. Pflow's experience in the industry, plus a commitment to quality and safety, ensures a convenient, reliable system, with service to match.

Custom designs

We have the engineering capabilities, experience and technical know-how to solve a myriad of vertical lifting problems. We have designed vertical lifts to move materials that weigh 10 lbs. to over 100,000 lbs...with carriages from 30"x 30" to 30'x 30'...vertical rise heights from 4' to over 200'. We've built large load working platforms, over and under equipment for assembly lines, hopper transfer systems, just to name a few. If you are faced with a difficult or unusual vertical lifting application, contact us. Whatever the size, speed and vertical height your application demands, we'll help you develop the best solution.

Pflow



Use Air Balancers to handle tools, equipment, and work-in-process effortlessly & effectively

Ideal for tool balancing, fixture suspension, assembly workstations

Balancers are ergonomic lift assistance that interacts with the operator and multiplies his effort with “float” lifting and built-in safety. IR offers 5 models of pneumatic balancers that have a load capacity between 50 to 2,000 lbs. Cable travel in terms of up/down movement varies from 40” to 120” depending on the model. Balancer suspension kits can accommodate enclosed track, I-Beam, patented track, and hook mount.



Pneumatic balancer controls - 50 to 2,000 lbs. capacity

ZA control: For Lifting, hoisting, and positioning variable loads: The “ZA” pendant control is the most popular and is designed for high speed precision handling of variable weight loads. Up/down movement is accomplished through the use of an ergonomically designed pendant.

BA control: For Suspending and or positioning constant weight items such as portable tools, gun welders, tooling, and heavy fixtures: No pendant control and are used for either single load suspending applications at a given height or single load application where both hands are used to manually raise, lower and position, or “float” a load with virtually no part weight or resistance to the operator.

EA control: for lifting and positioning constant loads: The EA controls are used constant weight repetitive parts handling within a 40 lb. range that need operator handling of the parts similar to loading



a machine tool. The selector switch has three modes that the operator uses in sequence.

IntelIFT combines the productivity & ergonomics of pneumatic units with an electric control package: A blend of the industry’s finest, thoroughly proven, mechanical balancing technology with the intelligence of precise, reliable electronic controls. Intelligent lifting systems, provides operators with a safe, ergonomically beneficial, and highly flexible solution.

Arm systems precisely, effortlessly position loads regardless of physical strength

Series 700C: 270-degree articulation Up to 500 lbs.

The 700C Arm is a “banjo” arm consisting of three connecting linkages which allows the boom/balancer combination to cover a large area. The arm can fold into itself and articulate 270 degrees to reach around columns, posts or other interference points. The 700C has a short stack-up, which is useful for low headroom applications because it minimizes interference with the operator.

Series 713: 360-degree articulation, up to 500 lbs.

The 713 arm is very useful in areas with limited space. It incorporates an over-under boom design with two linkages and two pivots. One pivot is between the mounting point and main boom and the other is between the two booms. Each pivot can rotate 360 degrees, which allows the operator full coverage of the work area, including directly under the carriage.

Series 720: 360-degree articulation, up to 150 lbs.

Ideal for lightweight parts that require the operator to work directly under the arm, the 720 arm incorporates an over-under boom design with two linkages and two pivots. One pivot is between the mounting point and main boom and the other is between the two booms. Each pivot can rotate 360 degrees, which allows the operator full coverage of the work area. The balancer is mounted at the end of the arm.



Series 600: Rigid vertical mast Up to 1000 lbs.

For loads that can not wobble, and adaptable to most overhead rail systems, the 600 series arm consists of a rigid vertical beam with a moving horizontal beam that is able to reach into an opening. The unit features 360 degree rotation and utilizes an air balancer for lifting and balancing power. The unit can be used with a variety of end effector combinations.

Series 400: Parallel link design Up to 800 lbs.

Utilizing an air cylinder and parallel link design, the 400 series arm is an alternative for reaching in, under and around obstacles. The 400 series parallel link arm is designed to maintain either end effector or tool orientation and allows the operator to effortlessly position a part or tool. The 400 series arms are typically carriage mounted and adaptable to most overhead rail systems.

Rail systems let your balancer glide easily and efficiently to position it for the task

The enclosed Rail Systems design reduces the accumulation of dirt and grime on the internal rolling surfaces, which reduces rolling effort. Combine rail systems with air balancers and end effectors to create an efficient handling system.

• **ALUMINUM:** Lightweight, for long spans. Extruded: From aluminum alloy 6063-T6. Clear Anodized: For a smooth, clean, corrosive-free surface. ZRAT: lengths up to 24'. ZRA1: lengths up to 30'. ZRA2: lengths up to 30'. Strongbacking: Available for increased capacities.

• **STEEL:** Economical choice for heavy weight applications. Roll formed, 9 ga., A569 hot-rolled steel. Spot welded, automated welder for maximum strength. Powder coated for durability and smoothness. ZRS2 & ZRS3: lengths up to 24' (7 meters). Strongbacking available for increased capacities.

• **STAINLESS STEEL** is engineered for cleanroom applications, ideal for the food and pharmaceutical industries It's roll-formed from 10-gauge, 316L stainless steel and spot welded with automated welding systems for strength. ZRSS: Available in lengths up to 24'.

- Lightweight & ergonomic with less than 1% rolling resistance
- Modular and flexible: bolted together; no welding required
- Clean, maintenance-free operation; no lubrication required
- Designed to meet or exceed all national and international safety standards
- Safety cables are required



Jib cranes are ideal for short transfer applications

Light-duty cranes use precision aluminum or steel rail for the boom, resulting in a lightweight, easy to move boom. Can be mounted from ceiling, vertical column or are tie rod based on floor mounted support. Jib cranes can be ordered with either air or electric power supply packages. They are also available with portable pallet base mounts.

Jib crane types available

- 700J: 220° rotation, tie-rod based jib crane w/ column for floor or ceiling mounting
- 700JW: 220° rotation, tie-rod based crane; plate for mounting to walls, building columns, or any suitable surface
- 800J: 360° rotation, tie-rod based jib crane with column for floor mounting



End Effectors increase ergonomic handling, versatility

Standard balancer systems are provided with a hook, but for more specialized loads you may want to explore the world of ergonomic effectors that allow you to more easily handle almost any load. These devices use vacuum, clamp, probe, trap or hook connections to handle loads up to 1,000 lbs. Most Ingersoll Rand end effectors come equipped with a safety interlock system that will not allow the operator to accidentally disengage the part during transfer.

Effectors: Basic Types

- Vacuum Devices: 1 & 4-cup styles
- Signature Bundle Handlers
- Warehouse Handling Devices
- J-Hook Systems
- Rotary Action Handlers
- Clamp Devices



Bridge Crane Mounted



Floor mounted Jib Crane

GORBEL

Gorbel G-Force® Intelligent Lifting Devices

Lift up to 1,320 pounds with pinpoint precision & blazing speeds

G-Force® technology fills the void between traditional lifting devices and completely automated robotic solutions. These devices use the human's intelligence and adaptability for guidance — but the work is done by the device. Features 360° swivel assembly, LCD display, Operator-present function for safety, and ergonomic handle design for ease of use.

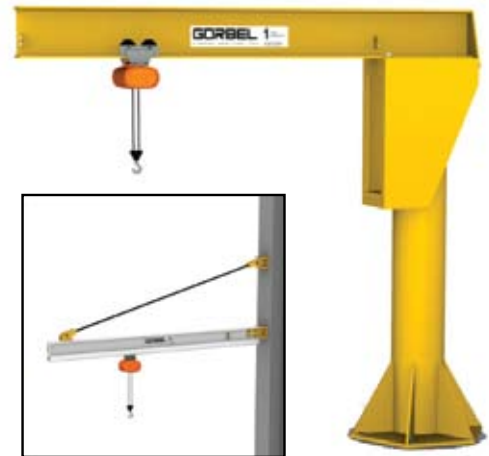
Intelligent Lifting Devices - bridge crane or lifting arm mounted

- **Choose bridge crane systems** for higher capacities (165, 330, & 660 lbs. configurations); faster speeds - up to 200 fpm; capacities; more responsive performance; faster acceleration and deceleration; the ability to cover multiple work areas with one unit, and the ability to cover larger single-unit work areas
- **Choose freestanding jib-arm mounted systems** for easy installation - it ships assembled & ready to be installed; no foundation required. Smaller work areas requiring 14' or shorter spans; capacities of 165 and 330 lbs.; easy relocation - it simply bolts to the floor
- **Choose Under-Hung systems** to save valuable floor space; for hook heights exceeding 11 feet; to cover multiple workcells
- Contact us for assistance with your lifting project today

Gorbel Jib Cranes: ergonomic lifting power

Jib cranes allow workers to lift and manipulate heavy loads at nearly any location in an operation. The following types of cranes are available:

- **Freestanding:** capacities to 10,000 pounds, circular coverage in spans up to 20', 360° rotation, and three mounting styles (1) Base plate, (2) sleeve, and (3) insert sleeve. Independent head assembly installs separately for ease of installation
- **Mast-Type:** Capacities to 10,000 lbs., circular coverage in spans up to 30', 200° rotation. Ideal for swinging around obstacles or under obstructions. The most economical means of hoist coverage for individual use in bays, along walls, or plant columns
- **Wall Cantilever:** 10,000-lbs. capacity with circular coverage in spans to 20' and 200° rotation. Requires structurally adequate wall or column. Welded or bracketed connection depending on bracket centers. These jibs require little headroom - can be installed close to the underside of ceilings for maximum hoist lift
- **Wall Bracket:** 10,000-lbs. capacity with circular coverage in spans to 30' and 200° rotation. Ideal for swinging around obstacles or under obstructions. An economical means of providing hoist coverage for individual use in bays, along walls or columns of plants



GORBEL

Tarca® Crane Systems: pre-engineered for up to 2 tons, and 55' long



Gorbel's pre-engineered crane systems are built using patented Tarca® Track, a three-piece welded-construction, compound section of a mild steel top flange and web and a specially rolled high-carbon steel lower rail. Offers unmatched versatility, durability and ease of installation.

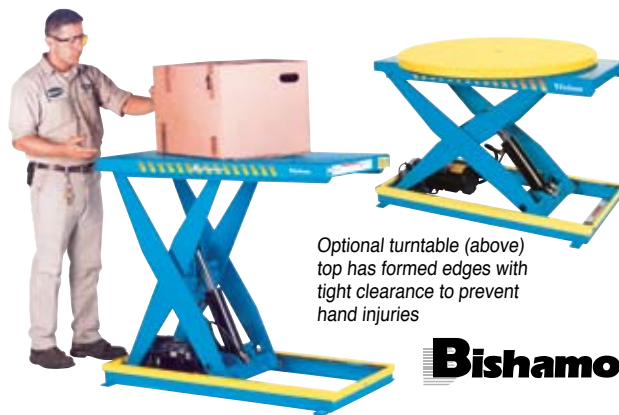
Components:

- Rail features specially-rolled high-carbon alloy with raised treads to provide maximum spanning capability for heavy loads while minimizing the weight of required materials
- Carriers/Trolleys connect lifting device and the bridge. Wheel base is proportioned for smooth, vibration-free carrier operation. Swiveling yoke provides excellent performance through curves & switches
- Motorized drives available in gear and belt-driven varieties. Equipped with anti-friction bearings for easy movement
- Hanger assemblies: ceiling or freestanding mount options to connect track and the structural support

Minimize unproductive bending and stretching with Vision Series Lifts

When using a lift table to accurately position a load, you can minimize unproductive lifting and stretching that can lead to worker fatigue, injuries, and product damage. Ships assembled and requires electrical installation. These electrohydraulic scissor lift tables are controlled by a standard hand control or optional foot pedal. Vision series lift tables are versatile and heavy-duty. Vision lifts offer unsurpassed safety features and are provided in a wide range of platform sizes.

Model Number	Vertical Travel	Cap. (Lbs.)	Platform Size (In.)	Heights (Inches)		Up Speed (sec.)	Wt. (Lbs.)
				Lowered	Raised		
VIS-25-36	36"	2,500	24" x 48"	7.06"	43.06"	10	590
VIS-35-36		3,500		7.44"	43.44"	11	625
VIS-50-36		5,000		7.50"	43.50"	20	735
VIS-65-36		6,500		7.50"	43.50"	22	750
VIS-25-24	24"	2,500	24" x 41"	7.06"	31.06"	7	445
VIS-35-24		3,500		7.13"	31.13"	8	455
VIS-50-24		5,000		7.13"	31.13"	13	640
VIS-65-24		6,500		7.13"	31.13"	15	655
VIS-15-48	48"	1,500	30" x 62.5"	7.38"	55.38"	11	885
VIS-25-48		2,500		7.38"	55.38"	12	895
VIS-35-48		3,500		7.50"	55.50"	21	1030
VIS-50-48		5,000		7.50"	55.50"	23	1050
VIS-65-48		6,500		7.75"	55.75"	27	1060



Optional turntable (above) top has formed edges with tight clearance to prevent hand injuries

Bishamon



Bishamon

Build & break down pallets with a minimum of bending, reaching, stretching or walking

Automatically raises, lowers pallets to comfortable working height - rotating top ring presents the correct side of the pallet to workers

EZ Loaders reduce worker fatigue, improve safety and minimize situations which can lead to back injuries or damage to sensitive products. Typical applications are in manufacturing, processing and distribution.

Model Number	Base Size	Dia. (In.)	Raised Ht. (Inches)	Lowered Ht. (Inches)	Travel (Inches)	Cap. (Lbs.)	Wt. (Lbs.)
EZ-30	50.5" x 30"	43"	30"	9.25"	20.75"	3,000	480
EZ-45				8.25"	21.75"	4,500	480

LoProfile™ lift tables provide lifting power from as low as 2.9" collapsed height

Hydraulic hose is 8' long, and the remote power unit with hand control is on an 8' cord,

Model Number	Table W x L (Inches)	Cap. (Lbs.)	Height (Inches)		Wt. (Lbs.)
			Min.	Max.	
LX-25S	23.5 x 32.5	550	2.9"	20.9	213
LX-25L	23.5 x 40			30.0	257
LX-50S	23.5 x 32.5	1100		20.9	228
LX-50L	23.5 x 40			30.0	277
LX-100W	34.5 x 51	2200	3.3"	38.6	606
LX-100N	24 x 51			38.6	490
LX-200WM	45.5 x 61.5	4400	4.3"	39.4	1110
LX-200N	33.5 x 55.5			39.4	860
LX-200WL	45.5 x 81			39.4	1238



NOTES:

- 1) Heavy-duty construction with captured scissor rollers for stability.
- 2) Available options: foot operated control with guard; approach ramp; pallet truck approach ramp.
- 3) High performance external electrohydraulic power unit with durable steel braided hydraulic hose.



Some applications require lifting power from a very low elevation. This extremely low collapsed height provides easy access for pallet jacks, 4-wheeled carts and other devices requiring low profile. Also an excellent choice for conveyor transfer. Electric full-perimeter toe-guard around the platform provides optimum operator safety.



Increase Productivity, Reduce Injuries with The Mule Stacker

Ideal in areas where a traditional skid lift, forklift, or stacker can't be utilized - warehouses, offices - anyplace you need it for ergonomic lifting, positioning, & movement

The Mule lift is an all-in-one stacker, transporter and positioner and portable work bench. This ergonomic workforce multiplier can turn through tight corners that defy a conventional stacker or lift truck, giving you the ability to use it in many environments -- it can pass through a 28" door-frame. Easy to use with a minimum of training.

It lifts up to 350 pounds with an all-metal frame platform and a screw-driven lift that delivers smooth precision that hydraulics or chains can't match. Excellent for moving boxes or rolls, supplies, heavy components, and finished goods. Helps workers with repetitive lifting and heavy payloads, while moving heavy items through narrow aisles.

The Mule also raises and lowers material to and from assembly tables to serve as an ergonomic workbench. Includes the Mule Bag which easily attaches to the handle and is perfect for storing various tools and accessories. Pendant remote with a 72" tether that allows workers to operate the lift and lower functions of the platform without leaving their work station is standard.

Work in tight spaces with compact lifts

X-Series CompacLif tables are used in machine tool or other production line manufacturing activities requiring heavy-duty lifting and positioning within a confined area.



Emphasis is placed on ergonomics and the reduction of repetitive lifting activities.

Model Number	Lift Mechanism	Table Size	Scissor Type	Cap. (Lbs)	Height		Travel (In.)
					Lowered	Raised	
X-20C	Manual foot pedal	19.5 x 25.5	Single	440	5.00	21.00	16.0
X-25C		19.5 x 32	Single	550	6.00	28.00	22.0
X-50C		20 x 40	Single	1100	6.00	31.50	25.5
X-75C		20 x 40	Single	1650	6.00	31.50	25.5
X-30SC		20 x 40	Double	660	9.25	54.25	45.0
X-25E	Electric/Hydraulic	19.5 x 32	Single	550	6.00	28.00	22.0
X-50E		20 x 40	Single	1100	6.00	31.50	25.5
X-75E		20 x 40	Single	1650	6.00	31.50	25.5
X-30SE		20 x 40	Double	660	9.25	54.25	45.0
X-50SE		18 x 25.5	Double	1100	8.25	33.75	25.5
X-25P	Air/Hydraulic	19.5 x 32	Single	550	6.00	28.00	22.0
X-50P		20 x 40	Single	1100	6.00	31.50	25.5
X-75P		20 x 40	Single	1650	6.00	31.50	25.5
X-30SP		20 x 40	Double	660	9.25	54.25	45.0
X-50SP		18 x 25.5	Double	1100	8.25	33.75	25.5

Position skids, minimize back strain and increase productivity with hydraulic skid lifts

Skid lifts are one of the easiest ways to move, load or unload skids, increasing safety, reducing injuries and reducing worker fatigue. Continuous-weld heavy steel frame and forks easily handle heavy duty loads, letting you focus on the task at hand. With a 29.5" vertical travel, they are a flexible, mobile way to ergonomically load & unload skids. If you have a forklift, they free it for other tasks. If you don't they're an excellent vehicle for transporting loaded skids.



Tilt wire baskets, totes, boxes & improve access with ergonomic mobile tilters

MTL Series Mobile Tilters are rugged, electrohydraulic AC or DC powered positioning devices. Tilt angle is infinitely adjustable from 0-88°. Use for positioning applications under the toughest working conditions.



Tilters are widely used in stamping operations, assemblies areas and other production facilities that utilize containers of loose components for work in progress.

Model Number	Cap. (Lbs.)	Fork Width	Fork Length (In.)	Fork Lowered Height	Fork Raised Height	Strokes to max Height	Wt. (Lbs.)
LV-10	1,000	20.5"	42.5"	3.3"	32.8"	50	300
LV-10W		27"				50	325
LV-100	2,200	20.5"				48	350
LV-100W		27"				48	375

Model Number	L x W x H (Inches)	Cap. (Lbs.)	Fork Width	Between Forks	Fork Spacing	Wt. (Lbs.)
MTL-20	31.56" x 61.30" x 39.50"	2,000	6"	13"	25"	550
MTL-40		4,000	7"	16"	30"	635