

PFLOW

Industries, Inc.

We Elevate Your Business

M SERIES LIFT | STRADDLE

M SERIES LIFT | CANTILEVER

F SERIES LIFT

21 SERIES LIFT | STRADDLE

21 SERIES LIFT | CANTILEVER

D SERIES LIFT

B SERIES | BOX LIFT

DB SERIES | PACKAGE HANDLING

FULLY AUTOMATED SYSTEM



Welcome to PFlow,

In 1977 Bob Pflieger reached the end of an influential 20 year career in the dock business at Kelley Company. Bob started PFlow Industries with an idea that pioneered the way and created a new product called the vertical conveyor. The impact was immediate in the material handling industry and remains so to this day as people found more and more creative ways they could be used. He became legendary for his weekly newsletters that expounded about life in general as much as they discussed business. Along the way he developed a company philosophy that the employees are what mattered most.

After joining PFlow in its infancy in 1981, I had the privilege of working side-by-side with Bob and my father, fellow Kelley alum, Herb Ruehl. I became President in early 2002 after Bob passed suddenly. It has been my privilege to guide PFlow Industries since that time. I can attest that PFlow continues its dedication to Bob's vision with a strong employee ownership culture.

Today PFlow remains the leader in the vertical lift industry we created. We have a staff of 135 knowledgeable employees at our 145,000 sq. ft. facility in Milwaukee. In 2004, PFlow purchased the Kelley Company facility where Bob Pflieger and Herb Ruehl had worked for many years. It allowed us to expand production and efficiently produce lifts under one roof. As we have continued to grow, it is worth noting that 60% of the employees on the payroll at that time in 2004 remain with our organization today. Our team is highly experienced and focused on keeping PFlow in its leadership role.

Since our inception PFlow has worked at building a talented network of dealers, resellers and installers. Without them, it would not be possible to provide the local support that has proven necessary in meeting the needs of end users all over the globe. PFlow's strength is the dedication of our employees and our dealers. It is why we have successfully installed 16,000+ lifts world-wide and remain the best choice in the Vertical Lift business.

At PFlow we welcome the opportunity to develop creative customized solutions to many types of material handling problems. PFlow lifts are designed with a variety of safety features and are subjected to more rigorous testing than any other manufacturer's equipment. We continuously emphasize that safety is our top priority.

I take great pride in our history. We created an Industry. We will continue to be at the forefront of that Industry. Our commitment to provide safe superior products for our customers will never change.

Sincerely,



Ted Ruehl
President

"Before we could build a business, we had to create an industry."

- Bob Pflieger, PFlow Founder



INDUSTRY LEADER

Since 1977, PFlow has been devoted to the design and manufacture of safe and reliable vertical material handling equipment. We were instrumental in creating the vertical conveyor market and have led the industry from the start. We've developed a leadership culture that provides a superior level of experience, engineering innovation and customer support. From a simple, two-level Vertical Reciprocating Conveyor (VRC) to multi-level, multi-directional automated lifting systems, PFlow will provide a solution to your material handling needs.

CUSTOMIZED LIFTING SOLUTIONS

PFlow VRCs transport materials of all shapes, sizes and weights between two or more levels. We've designed lifts to move hand loaded boxes, pallets, automobiles and more.

We also offer fully automated systems for automated manufacturing and warehousing operations. PFlow delivers single-source responsibility for VRC design, fabrication, installation and service support. Whatever the size, speed and vertical height your application demands, we'll help you develop the best solution.

With over 16,000+ installations, PFlow has solved mezzanine, through-floor, inside and outside application challenges. We listen to your material handling needs, design the safest, most effective solution and provide a lift that fits your application.

PFlow guarantees code approval in every state and offers the best warranty in the industry. Plus, PFlow continuously monitors current and proposed state laws and agency regulations to promote compliance with ASME B20.1 National Safety Standard for Conveyors and Related Equipment.



PFlow Staff including President Ted Ruehl

MOVING UPWARD

In 1981, PFlow helped change the national safety codes to specifically exempt “material-moving” vertical conveyors from “people-moving” elevator safety requirements. This was also a factor in defining the VRC business.

PFlow has successfully changed 25 individual state codes, making VRCs available to businesses throughout the country.

PROVEN EXPERIENCE

PFlow has designed VRCs to move materials that weigh 10 lbs to over 200,000 lbs, with carriages from 30” x 30” to 60’ x 60’, and vertical heights from 4’ to over 200’. We have built large load work platforms, over-and-under equipment for assembly lines, hopper transfer systems and much more. At PFlow, we know each VRC application is unique. That’s why we scrutinize and address every detail of every job. We carefully analyze your needs, cover all design and construction issues, provide complete code-approved engineered drawings and deliver unmatched, ongoing service support. Our trained staff is always ready to answer your application, installation or service questions.

Over 35% of our personnel are engineers or R&D specialists who continually work to enhance the safety and technology built into our equipment.

QUALITY MANUFACTURING

PFlow has on-site manufacturing and a complete R&D center. In addition to experienced, certified welders, we are staffed with production and quality control personnel. We have consistently provided the industry with quality VRC equipment built to exact specifications. Quality is maintained throughout the entire process, from weldments to finished assemblies to final inspection prior to shipment. PFlow offers total fabrication and coast-to-coast installation services.

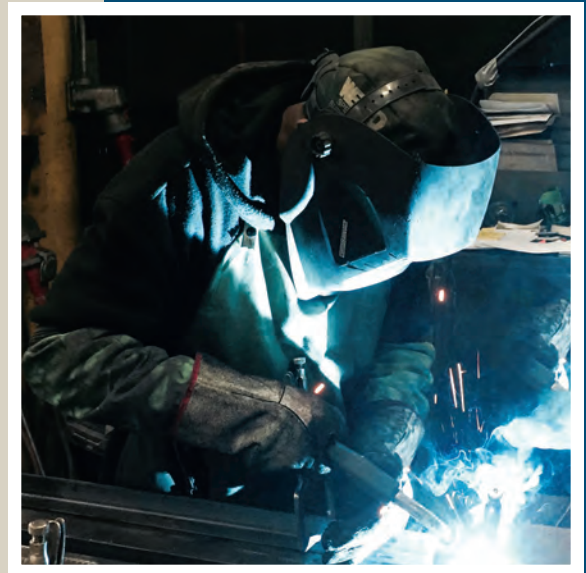
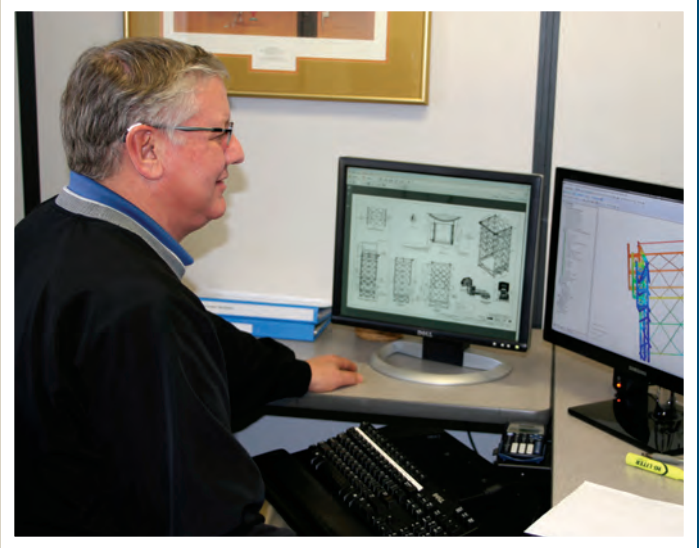
COMMITTED TO SAFETY

Our commitment to safety has resulted in a stronger VRC research and development (R&D) program and more rigorous testing than any other VRC manufacturer. Each VRC is designed with a variety of safety features that protect humans, materials and machines.

PFlow lifts include spring-loaded safety cams, over-travel and chain tension protection, safety interlocked gates and enclosure guards. These features meet or exceed all code requirements and provide the best defense against a potential, costly industrial accident.

Only PFlow offers the advanced DeckLock Safety System that provides added protection at critical upper levels. Our VRCs are designed for a longer life, improved performance and safer operation.

“Pflow” was inspired by of our founder’s last name, Pflieger. The “P” is silent.



LARGEST ENGINEERING STAFF IN THE INDUSTRY, BY FAR!



PFlow Engineering Department

PFlow's engineering staff totals 24, with a combined vertical conveyor experience of 240 years!

PFlow engineers cover a wide range of engineering disciplines; mechanical, manufacturing, civil, and electrical, allowing us to provide complete engineering of every aspect of your custom vertical material handling solution. We seek to hire bright and creative engineers who enjoy the challenge of solving material handling problems.

Leading-edge Technology

Although our basic philosophy is to keep designs as simple and robust as possible, PFlow engineers have the experience to apply the newest technology to their designs, providing truly innovation solutions to your toughest material handling needs. From variable speed drives and complex control systems, to servo controlled mechanical and hydraulic drives, to intricate mechanisms and giant geared drives, we have the expertise to properly evaluate and leverage the latest technologies and custom engineer a solution to your complex material handling problems.

State of the Art Tools

PFlow engineers are provided with the best engineering software tools available, including SolidWorks and AutoCad for computer aided design, SolidWorks Simulation and Autodesk Simulation software to perform finite element analysis, and kinematic and dynamic analysis, and seismic analysis. Superior engineering means better designs, which result in better performance, less downtime and maintenance, and lower overall cost of ownership.

Continuous Improvement and innovation

PFlow engineering maintains a continuous improvement program that seeks feedback from manufacturing, customers, installers, dealers, and field service personnel in an ongoing process to improve product quality, value, and ease of installation. Error reports and field service/installation reports are reviewed on a weekly basis to identify potential areas for improvement.

Knowledgeable & Experienced

PFlow's customer centric Sales Team and Project Managers strive to make the buying experience informative and easy

PFlow's expertise in vertical material handling is our number one strength. When shopping for a niche product like a VRC, you need to align yourself with a sales team that cannot only answer your questions, but can use their years of experience to make sure you get the right solution to all your vertical lifting needs. Let our 25 member team put their 250 years of combined experience to work for you. Unmatched in the industry in both size and experience, PFlow's sales team is dedicated solely to the VRC. Let us show you how an experienced sales team can take the guess work out of your vertical material handling needs.

When it comes to keeping up with State Code Requirements, PFlow's Sales Team has you covered

PFlow has a full time State Code Specialist with 20 years of experience. We consult with regulatory officials nationwide; helping them shape the codes that govern VRC's to keep operators safe and companies productive. PFlow is so confident that we meet or exceed the code requirements in all 50 that we put a Code Guarantee on every quote; no PFlow unit has ever been shut down for lack of code compliance. We guarantee that should your PFlow VRC be cited for lack of code compliance - PFlow will help you solve the conflict or repurchase the equipment at your full purchase price.

PFlow's commitment to the VRC has paid off over the last 38 years

PFlow remains the dominant player in the vertical conveyor market globally. It is our commitment to the VRC as our primary product that helps us continue to grow the large market share we have worked so hard to achieve. Working with dealers nationwide, it is PFlow's mission to continue to dominate the market by offering a quality product at a competitive price. With our knowledge and experience, PFlow is your low risk provider for vertical material handling!



PFlow Regional and International Sales Managers



PFlow Inside Sales, Project Managers and Marketing Team

PFLOW MECHANICAL VERTICAL LIFT

Overhead mount drive, chain driven, mechanical vertical lifts.

- ↓↑ Limit switches protect against under or over-travel and to sense a slack or broken chain condition.
- ↓↑ Overload protection is provided by a current-sensing relay.
- ↓↑ Fail-safe brake engages upon loss of power.
- ↓↑ Safety cams with hardened teeth are connected to each lifting chain and engage the guiderails to prevent carriage free fall in the event of chain failure.
- ↓↑ Available safety buzzer in push button station annunciates if a door at an upper operating level is opened and the carriage is not present.
- ↓↑ Available maintenance platform with expanded metal grating, handrails and snap chain access.
- ↓↑ Available DeckLocks provide additional safety and stop carriage decent when driving on the carriage to load/unload at critical upper levels. The DeckLock can stop carriage decent in the event the brake is not operating properly due to lack of maintenance or inadvertent overload.
- ↓↑ Available shaftway safety barrier at the upper most level. This visual barrier provides additional protection for personnel if the upper level door/gate is opened and the carriage is not present.



Pflow is the global leader in VRC development with solutions on 5 of the 7 continents.

PFLOW HYDRAULIC VERTICAL LIFT

Remote mount power unit, direct or chain driven, hydraulic vertical lifts.

- ↓↑ Overload protection is provided to prevent rise of carriage if loaded to more than 110% of rated capacity.
- ↓↑ Over-travel is prevented by positive mechanical stops.
- ↓↑ Velocity fuses prevent uncontrolled descent in the case of hose rupture.
- ↓↑ Check valves hold carriage position in the event of power loss.
- ↓↑ Available safety buzzer in push button station annunciates if a door at an upper operating level is opened and the carriage is not present.
- ↓↑ Available DeckLocks provide additional safety and stop carriage decent when driving on the carriage to load/unload with a motorized vehicle at critical upper levels. The DeckLock can stop carriage decent in the event the brake is not operating properly due to lack of maintenance or inadvertent overload.
- ↓↑ Available shaftway safety barrier at the upper most level. This visual barrier provides additional protection for personnel if the upper level door/gate is opened and the carriage is not present.



M SERIES | 2-POST MECHANICAL LIFT

The most versatile of lifts, have minimal limitations and customized for the widest variety of uses.

- ↑ Lifts loads up to 10,000 lbs. Carriage sizes up to 12' x 10' or more. Maximum vertical rise of 200'. Standard travel speed is 25-30 FPM (500 FPM or more available).
- ↑ Carriage is lifted and lowered by heavy-duty roller chain attached to a mechanical lifting mechanism mounted on top of the 6" guide columns.
- ↑ Straddle or cantilever carriages available.
- ↑ Ideal for high-cycle, automated systems or frequent-use applications.
- ↑ Designed to transport large, heavy loads between two or more levels.
- ↑ Proven 2-post mechanical design and quality construction provides superior strength, reliability and long-term performance.
- ↑ DeckLock Safety System available for added security at critical upper levels.
- ↑ Suitable for indoor or outdoor use. Optional hot-dipped galvanized or epoxy finish; available for outdoor, chemical, caustic wash-down, or explosion proof environments.
- ↑ Conforms to ASME B20.1 Safety Standards.



Work with Pflow and you'll discover what our thousands of satisfied customers have come to know and expect.

GENERAL

The M Series moves materials between two or more levels. Principal components are guide columns, carriage and a motor-gear reducer drive.

APPLICATION DATA

Lifts loads up to 10,000 lbs. Carriage sizes up to 12' x 10' or more. Maximum vertical rise of 200'. Standard travel speed is 25-30 FPM (500 FPM or more available).

STRUCTURE

Guide columns are 6" wide flange sections. Carriage is fabricated with heavy structural steel members and a steel deck plate. Other deck surfaces can be supplied. Straddle or cantilever carriage available depending on application.

OPERATION

Carriage is lifted and lowered by roller chain attached to an electric motor/reducer assembly mounted on the guide columns. Standard units employ 2 HP to 10 HP TEFC brake motors.

ELECTRICAL

Standard power requirements are 230/460VAC, 3-phase. Control voltage is 110VAC. Standard control panels and push button stations are NEMA 12 rated. Push button stations are provided at each level and include momentary contact, call/send operators and mushroom-head emergency stop.

SAFETY FEATURES

Travel of the carriage is controlled by a limit switch. When the switch is tripped or power is lost, the motor shuts off and the mechanically actuated brake is engaged. Overload protection is provided by a relay that measures the motor current. If the current exceeds the amount required to move the maximum load, it will shut the unit down and engage the brake. Safety cams, mounted on the carriage prevent uncontrolled descent if chains break. Chain sensors shut down the lift if chain tension is lost. Chain tensioners and guides prevent chains from jumping on sprockets. NO RIDER signs are posted at each point of operation. Available with optional DeckLock Safety System.

CARRIAGE SIDE GUARDS

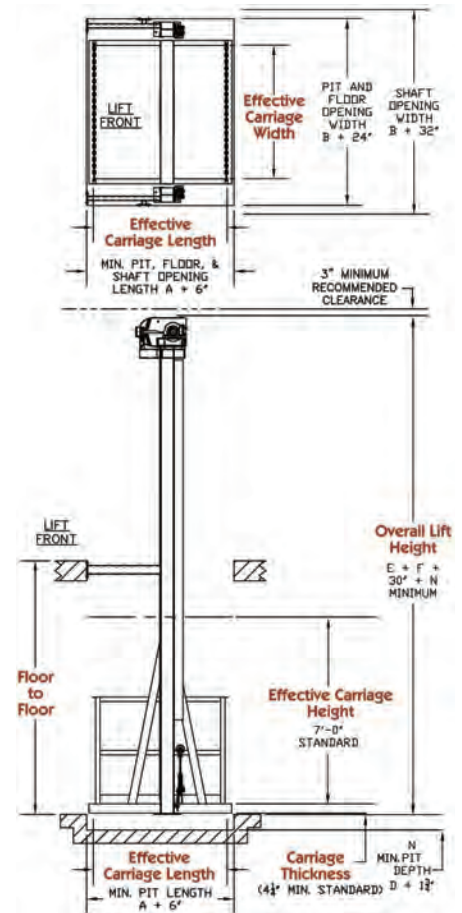
Carriage is equipped with safety rails on non-operating sides and safety chains or diagonal drop bars on operating gates ends. Optional expanded metal or sheet metal carriage side guards available.

SAFETY ENCLOSURES / GATES

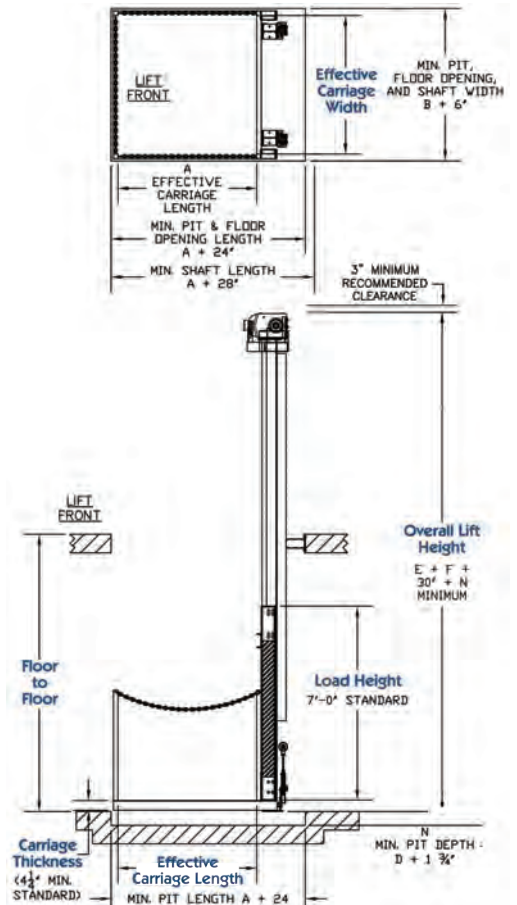
Safety codes (ASME B20.1) require interlocked gates and enclosures on all sides of the lift. Enclosures must be a minimum of 8' high and reject a ball 2" in diameter. See page 22-23 for additional information.



STRADDLE CARRIAGE



CANTILEVER CARRIAGE



F SERIES | 4-POST MECHANICAL LIFT

Maximum capacity and a rugged 4-post design for the heaviest lifting applications.

- ↑ Lifts heavy, bulky oversized loads up to 50,000 lbs or more. Unlimited carriage sizes and vertical rise. Standard travel speed of 20 FPM (400 FPM or more available).
- ↑ Carriage is lifted and lowered by heavy-duty roller chain attached to a motor gear reducer mounted on top of 6" guide columns.
- ↑ Transports multiple pallet loads, large carts, heavy machinery and any other type of load between two or more levels.
- ↑ Provides maximum flexibility in carriage size, capacity and traffic patterns.
- ↑ Loading and unloading from all four sides.
- ↑ Quality construction provides superior strength, reliability and long-term performance.
- ↑ Built-in, advanced safety features protect workers and materials.
- ↑ DeckLock Safety System available for added security at critical upper levels.
- ↑ Suitable for indoor or outdoor use. Optional hot-dipped galvanized or epoxy finish; available for outdoor, chemical, caustic wash-down, or explosion proof environments.
- ↑ Conforms to ASME B20.1 Safety Standards.



From simple, two-level VRCs to multi-level, multi-directional automated lifting systems, PFlow can design it.

GENERAL

The F Series moves materials between two or more levels. Features four-corner support for heavy-duty, vertical material handling jobs. Principal components are guide columns, carriage and a mechanical lifting mechanism.

APPLICATION DATA

Lifts heavy, bulky oversized loads up to 50,000 lbs or more. Unlimited carriage sizes and vertical rise. Standard travel speed of 20 FPM (400 FPM or more available).

STRUCTURE

Guide columns are 6" wide flange. Carriage is fabricated of heavy-duty steel structural members with deck plate. Other surfaces can be supplied. Can be loaded/unloaded from all four sides.

OPERATION

Carriage is lifted and lowered by roller chain attached to an electric motor/reducer assembly mounted on the guide columns. Standard speed units employ 7-1/2 HP to 25 HP TEFC brake motors.

ELECTRICAL

Standard power requirements are 230/460VAC, 3-phase. Control voltage is 110VAC. Standard control panels and push button stations are NEMA 12 rated. Push button stations are provided at each level and include momentary contact, call/send operators and mushroom-head emergency stop.

SAFETY FEATURES

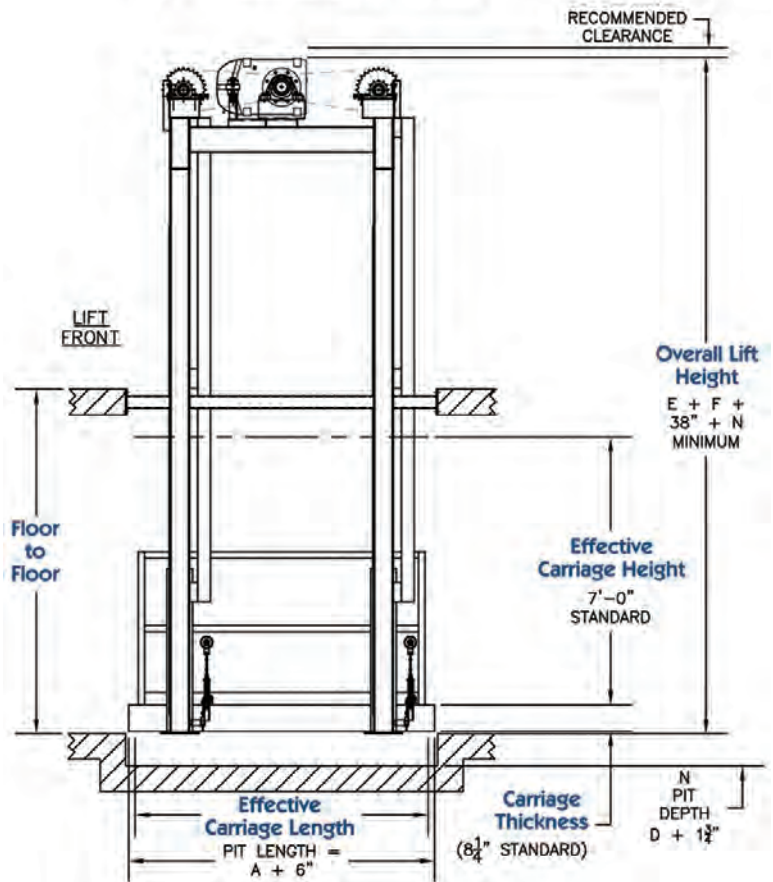
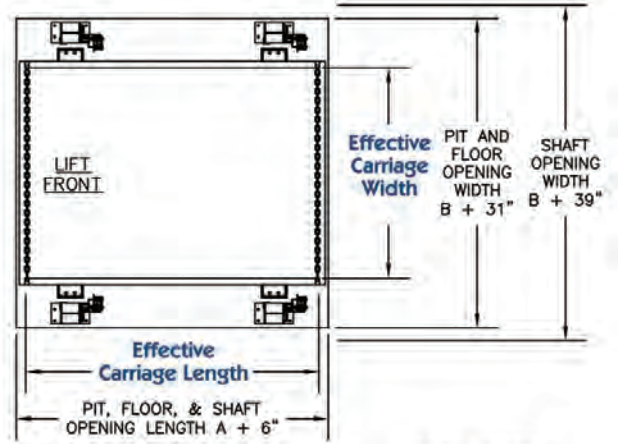
Upward/downward travel of the carriage is controlled by a limit switch. When switch is tripped or power is lost, the motor shuts off and the mechanically actuated brake is engaged. Overload protection is provided by a relay that measures the motor current. If the current exceeds the amount required to move the maximum load, it will shut the unit down and engage the brake. Safety cams, mounted on carriage prevent uncontrolled descent if chains break. Chain sensors shut down the lift if chain tension is lost. Chain tensioners and guides prevent chains from jumping on sprockets. NO RIDER signs are posted at each point of operation. Available with optional DeckLock Safety System.

CARRIAGE SIDE GUARDS

Carriage is equipped with safety rails on non-operating sides and safety chains, gates or diagonal drop bars on operating ends. Optional expanded metal or sheet metal carriage side guards available.

SAFETY ENCLOSURES / GATES

Safety codes (ASME B20.1) require interlocked gates and enclosures on all sides of the lift. Enclosures must be a minimum of 8' high and reject a ball 2" in diameter. See page 22-23 for additional information.



21 SERIES | 2-POST HYDRAULIC LIFT

Adaptable for mezzanines, through-floor, inside or outside applications.

- ↑ Lifts loads up to 6,000 lbs. Carriage sizes up to 12' x 10'. Vertical rise to 22'. Standard travel speed is 24 FPM (up to 35 FPM available).
- ↑ Carriage is lifted and lowered by two hydraulic cylinders mounted on 6" guide columns.
- ↑ Torsion bar links the two hydraulic cylinders to equalize the load and ensure the carriage remains level at all times regardless of load placement.
- ↑ Velocity fuses prevent uncontrolled descent in the event of hose rupture.
- ↑ Pressure switch prevents the carriage from drifting or sinking to ensure smoother, safer loading and unloading operations.
- ↑ Pressure-compensated control valve regulates flow of hydraulic oil to ensure smooth, constant lowering speed under any load.
- ↑ Quick-connect cabling for push-button stations and gate interlocks are optional. This significantly reduces field-wiring costs.
- ↑ DeckLock Safety System available for added security at critical upper levels.
- ↑ Suitable for indoor or outdoor use. Optional hot-dipped galvanized or epoxy finish; available for outdoor, chemical, caustic wash-down, or explosion proof environments.
- ↑ Conforms to ASME B20.1 Safety Standards.



Pflow delivers single-source responsibility for design, fabrication, installation and service support.

GENERAL

The 21 Series moves materials between two levels. Principal components are guide columns, carriage and hydraulic actuating mechanism.

APPLICATION DATA

Lifts loads up to 6,000 lbs. Carriage sizes up to 12' x 10'. Vertical rise to 22'. Standard travel speed is 24 FPM (up to 35 FPM available).

STRUCTURE

Guide columns are 6" wide flange. Carriage is fabricated of heavy-duty structural members with steel deck plate. Other deck surfaces can be supplied. Straddle or cantilever carriage available depending on application.

OPERATION

Carriage is lifted and lowered by two hydraulic cylinders mounted on guide columns. Cylinders are actuated by a remote mounted hydraulic pump. Transmission of the lifting force is through roller chain attached to the cylinders and carriage. A torsion bar links the two cylinders to equalize the load and ensure carriage remains level at all times.



ELECTRICAL

Standard power requirements are 208/230/460VAC, 3-phase (single-phase available). Control voltage is 24VAC. Push button stations and pump mounted pre-wired control panel are NEMA 12 rated. Push button stations are provided for each level and include call/send operators and mushroom-head emergency stop. Quick connect pre-wiring is optional.

SAFETY FEATURES

Upward travel of the carriage is limited by mechanical stops that ensure positive leveling with the upper deck. Overtravel is prevented by positive mechanical stops. Safety cams prevent uncontrolled descent if chains break. Pressure builds to "lock" carriage into position at upper level. Velocity fuses prevent uncontrolled descent in case of hydraulic hose rupture. NO RIDER signs are posted at each point of operation. Optional DeckLocks automatically lock carriage at the upper level to eliminate drift or bounce.

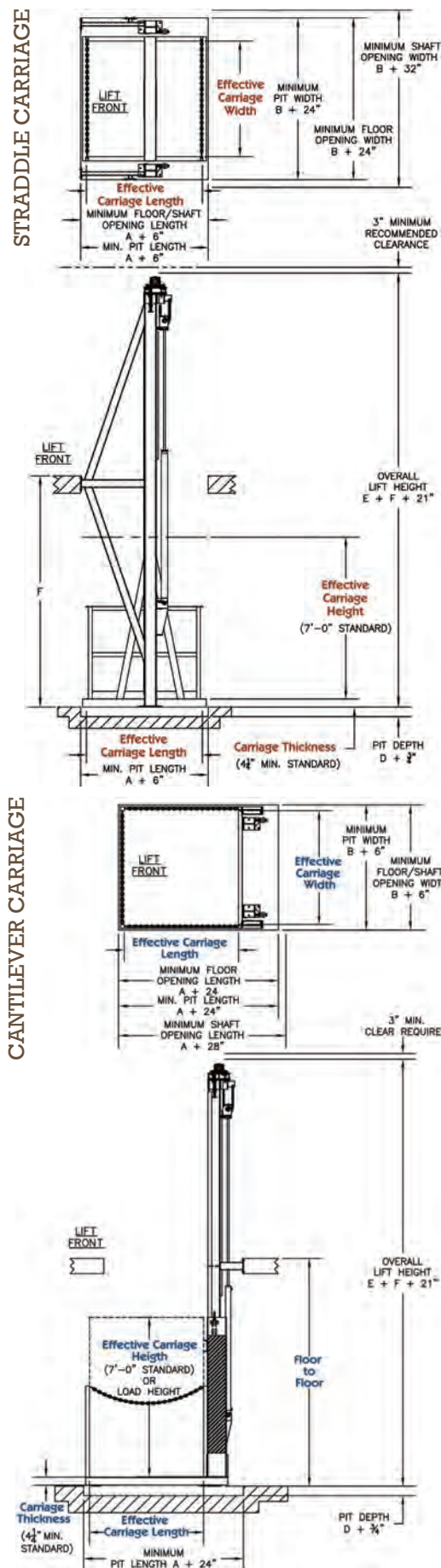


CARRIAGE SIDE GUARDS

Carriage is equipped with safety rails on non-operating sides and safety chains or diagonal drop bars on operating ends. Optional expanded metal or sheet metal carriage side guards are available.

SAFETY ENCLOSURES / GATES

Safety codes (ASME B20.1) require interlocked gates and enclosures on all sides of the lift. Enclosures must be a minimum of 8' high and reject a ball 2" in diameter. See page 22-23 for additional information.



D SERIES | HYDRAULIC LIFT

High quality design with low maintenance - ideal for mezzanine and balcony applications.

- ↑ Lifts loads up to 4,000 lbs. Carriage sizes up to 6' x 6'. Vertical rise to 15'. Standard travel speed is 17 FPM (up to 25 FPM available).
- ↑ Carriage is lifted and lowered by dual 2" direct-acting hydraulic cylinders mounted between 6" guide columns.
- ↑ Guided Dual-Pak design is direct action and has no cables, chains, bearings or other components that can break or require lubrication for a long-term performance.
- ↑ Pressure switch prevents the carriage from drifting or sinking to ensure smoother, safer loading and unloading operations. Velocity fuses prevent uncontrolled descent in the event of hose rupture. Pressure-compensated control valve regulates flow of hydraulic oil to ensure smooth, constant lowering speed under any load.
- ↑ Quick-connect cabling for push-button stations and gate interlocks are available, but not standard. This significantly reduces field-wiring costs.
- ↑ Remote mounted control panel and motor are pre-wired and ready for immediate installation.
- ↑ Ultra-highmolecular weight, polyethylene cylinder guide prevents cylinders from twisting during operation - improving cylinder life.
- ↑ Suitable for indoor or outdoor use. Optional hot-dipped galvanized or epoxy finish; available for outdoor, chemical, caustic wash-down, or explosion proof environments.
- ↑ Conforms to ASME B20.1 Safety Standards.



Optional Design: Can be shipped as a modular, self-contained unit equipped to service in-plant mezzanines. The lift is pre-assembled and shipped with enclosures and code-approved safety gates. The lift motor pump and controls are pre-wired for fast, easy installation.

Pflow is always up for a challenge - no VRL is too big, too heavy or too tall!

GENERAL

The D Series moves materials between two levels. Principal components are guide columns, carriage and hydraulic actuating mechanism.

APPLICATION DATA

Lifts loads up to 4,000 lbs. Carriage sizes up to 6' x 6'. Vertical rise to 15'. Standard travel speed is 17 FPM (up to 25 FPM available).

STRUCTURE

Guide columns are 6" wide flange sections. Carriage is fabricated of heavy-duty structural members with steel deck plate. Other deck surfaces can be supplied. Carriage is cantilever style and may be loaded from any one of three operating sides depending on application.



OPERATION

Carriage is lifted and lowered by direct-acting hydraulic cylinders. Cylinders are actuated by a remote mounted hydraulic pump. Transmission of the lifting force is direct from the base of the guide columns to the carriage using a Dual-Pak ram.

ELECTRICAL

Standard power requirements are 208/230/460VAC, 3-phase (single-phase available). Control voltage is 24VAC. Push button stations are NEMA 12 rated. Pump mounted, pre-wired control panel is NEMA 12 rated. Push button stations are provided for each level and include call/send operators and a mushroom-head emergency stop. Quick connect pre-wiring is available (optional).

SAFETY FEATURES

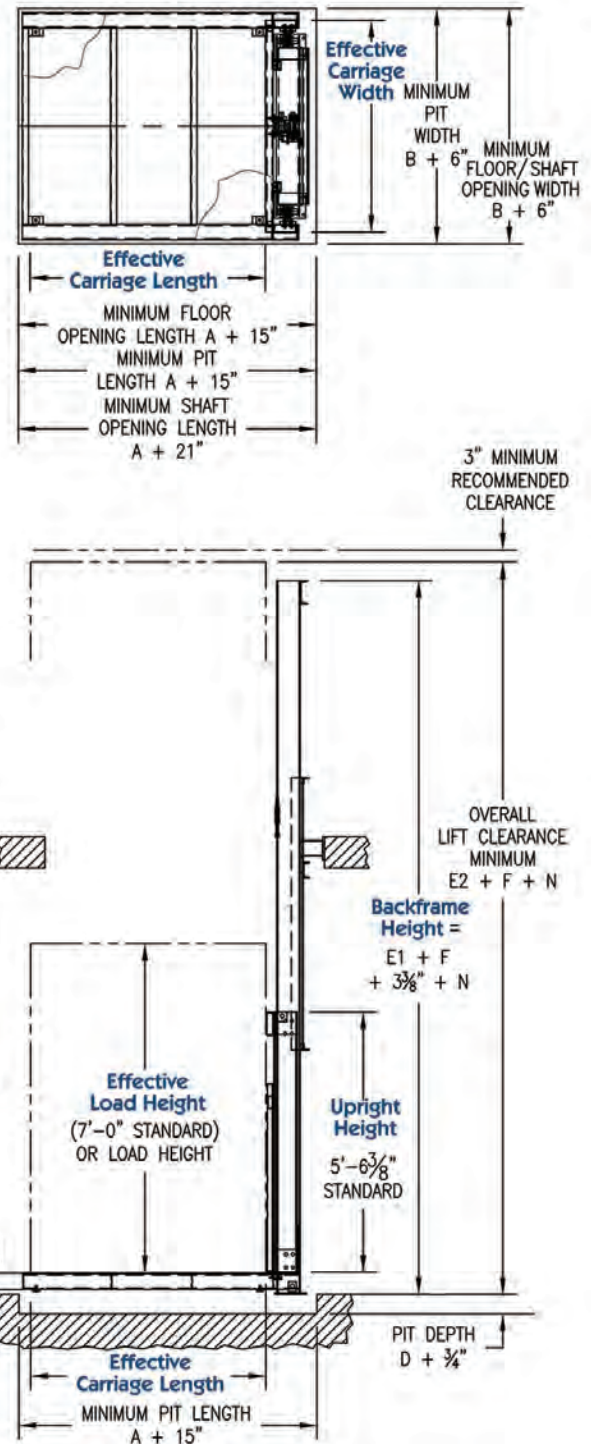
Upward travel of the carriage is limited by positive mechanical stops that ensure positive leveling with the upper deck. Redundant overload protection is provided to positively prevent raising of the carriage if loaded to more than 120% of rated capacity. Velocity fuses prevent uncontrolled descent in case of hydraulic hose rupture. NO RIDER signs are posted at each point of operation.

CARRIAGE SIDE GUARDS

Carriage is equipped with safety rails on non-operating sides and safety chains or diagonal drop bars on operating ends. Optional expanded metal or sheet metal carriage side guards are available.

SAFETY ENCLOSURES / GATES

Safety codes (ASME B20.1) require interlocked gates and enclosures on all sides of the lift. Enclosures must be a minimum of 8' high and reject a ball 2" in diameter. See page 22-23 for additional information.



B SERIES | BOX LIFT

Modular design for easy installation and minimal maintenance.

- ↑ Lifts loads up to 500 lbs. Standard carriage size is 3' x 3'. Standard travel speed of 30 FPM.
- ↑ Ideal for lifting boxes, totes, cartons, barrels, sacks, cases, individual parts or miscellaneous items.
- ↑ Moves loads to mezzanines/between floors.
- ↑ Completely self-contained, self-supporting and economical to own.
- ↑ Allows loading and unloading from one of three sides at each level.
- ↑ Durable, high quality construction ensures safe, reliable long-term performance.
- ↑ Mechanical motor/gear reducer located at the base of unit for ease of maintenance.
- ↑ Unit ships in modular sections pre-wired with "quick-connect" wiring.
- ↑ Integral access gates are provided at each level and interlocked with lift operation.
- ↑ Gates are modular and can be configured to hinge right and lock left or vice versa.
- ↑ Built-in, advanced safety features protect workers and materials.
- ↑ Conforms to ASME B20.1 Safety Standards.



When it comes to VRLs, PFlow was the first in the industry and we intend to remain the best in the business.

OVERALL

The B Series Box Lift provides simple and convenient transportation of materials between two levels. Principle components include modular steel enclosure frame, mechanical drive assembly and lift carriage.

APPLICATION DATA

Lifts loads up to 500 lbs. Standard carriage size is 3' x 3'. Standard travel speed of 30 FPM.

STRUCTURE

Stackable modular formed steel panels provide full height guarding and internal guide for carriage assembly. Gate arrangement can be easily changed for right hand or left hand swing open pattern.

OPERATION

Carriage is lifted and lowered by dual roller chains connected to electric motor-reducer assembly. Motor-reducer assembly is mounted within lift enclosure at floor level with easy access door for maintenance.

ELECTRICAL

Standard power requirements are 230V single-phase or 230V/460V 3-phase. Low voltage controls. NEMA 12 rated momentary contact push button stations are provided for each level and include mushroom head E-stop. Quick-connect wiring is provided and ships partially pre-wired to minimize installation.

SAFETY FEATURES

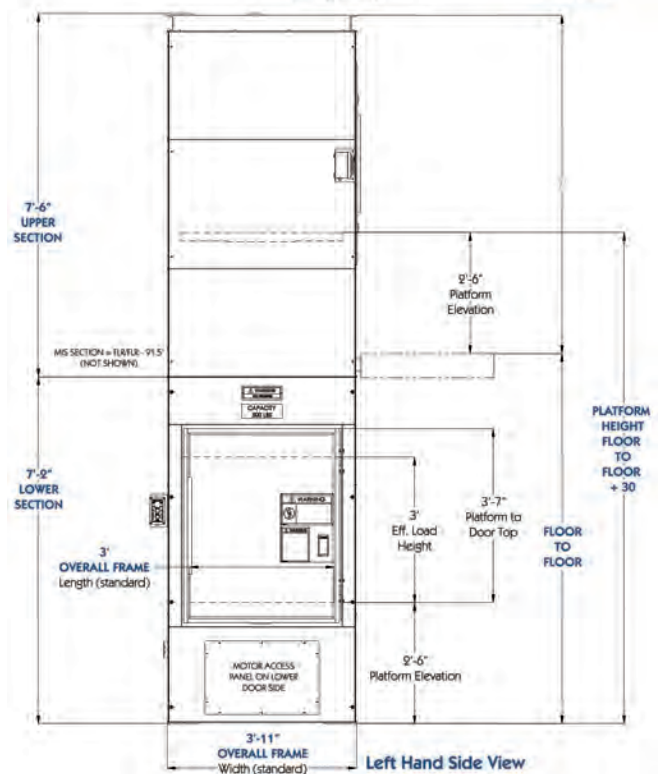
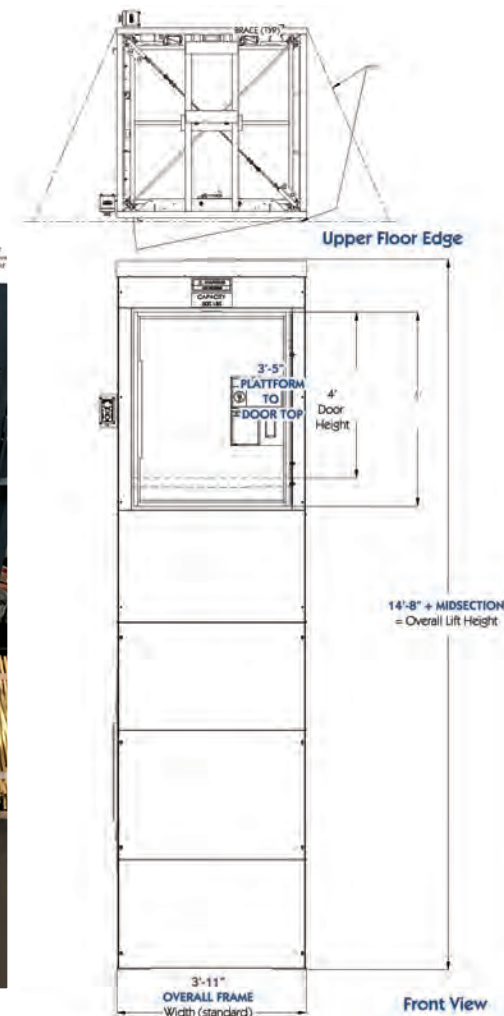
The B Series Box Lift is the safest modular small package lift on the market. Features include exclusive spring loaded dual safety pins that prevent uncontrolled descent in case of chain failure; electro-mechanical door interlocks, full height safety enclosures, and overload protection.

CARRIAGE

Positioned to load/unload at ergonomic heights at each level.

SAFETY ENCLOSURES / GATES

Standard units include interlocked swing gates and full-height enclosures on all sides made of 1/2" expanded metal.



Note: The dimensions shown are illustrative. Request a job-specific drawing before making any building modifications.

DB SERIES | PACKAGE HANDLING LIFT

Fast, safe and automated for small loads and packages.

- ↑ Lifts loads up to 100 lbs. Carriage size is 3' x 3'. Standard vertical rise to 25'. Travel speeds from 60 FPM up to 600 FPM. (Advanced speeds available up to 1,500 FPM.)
- ↑ Perfect for use in an automated conveyORIZED systems.
- ↑ Available with variable frequency or Servo drive packages.
- ↑ Drive packages ensure smooth acceleration and deceleration control in high-speed, automated systems.
- ↑ Provides high throughput of loads.
- ↑ Ideal for high-speed applications that require light-duty lifting of boxes, cartons, packages, totes, containers or cases.
- ↑ Moves loads to mezzanines, between floors or between conveyor levels.
- ↑ Loading and unloading from three sides.
- ↑ Completely self-contained, self-supporting and economical.
- ↑ The smooth and quiet counter-weighted lifting mechanism minimizes horse-power requirements and saves energy costs.
- ↑ Durable, high-quality construction ensures safe, reliable, long-term performance.
- ↑ Saves space and handles loads that are often transported on an inclined conveyor.



As an employee owned company, we take pride in our work and unparalleled service.

GENERAL

The DB Series moves materials between two or more levels. Principal components are guide columns, carriage and mechanical actuating mechanism. All components are pre-assembled for ease of installation.

APPLICATION DATA

Live load lifting capacities to 100 lbs; carriage size is 3' x 3'; standard vertical rise to 25'. Travel speeds from 60 FPM up to 600 FPM. (Advanced speeds available up to 1,500 FPM.)

STRUCTURE

Frame is designed to be self-supporting and constructed of structural tube and steel. Carriage is typically supplied with powered roller conveyor deck. Carriage is cantilever style and may be loaded from any one of three operating sides depending on application.

OPERATION

Carriage is lifted and lowered by dual chains or timing belts attached to an electric motor-reducer assembly mounted on the frame. Power unit employs a fractional HP brake motor mounted to the top of lift frame.

ELECTRICAL

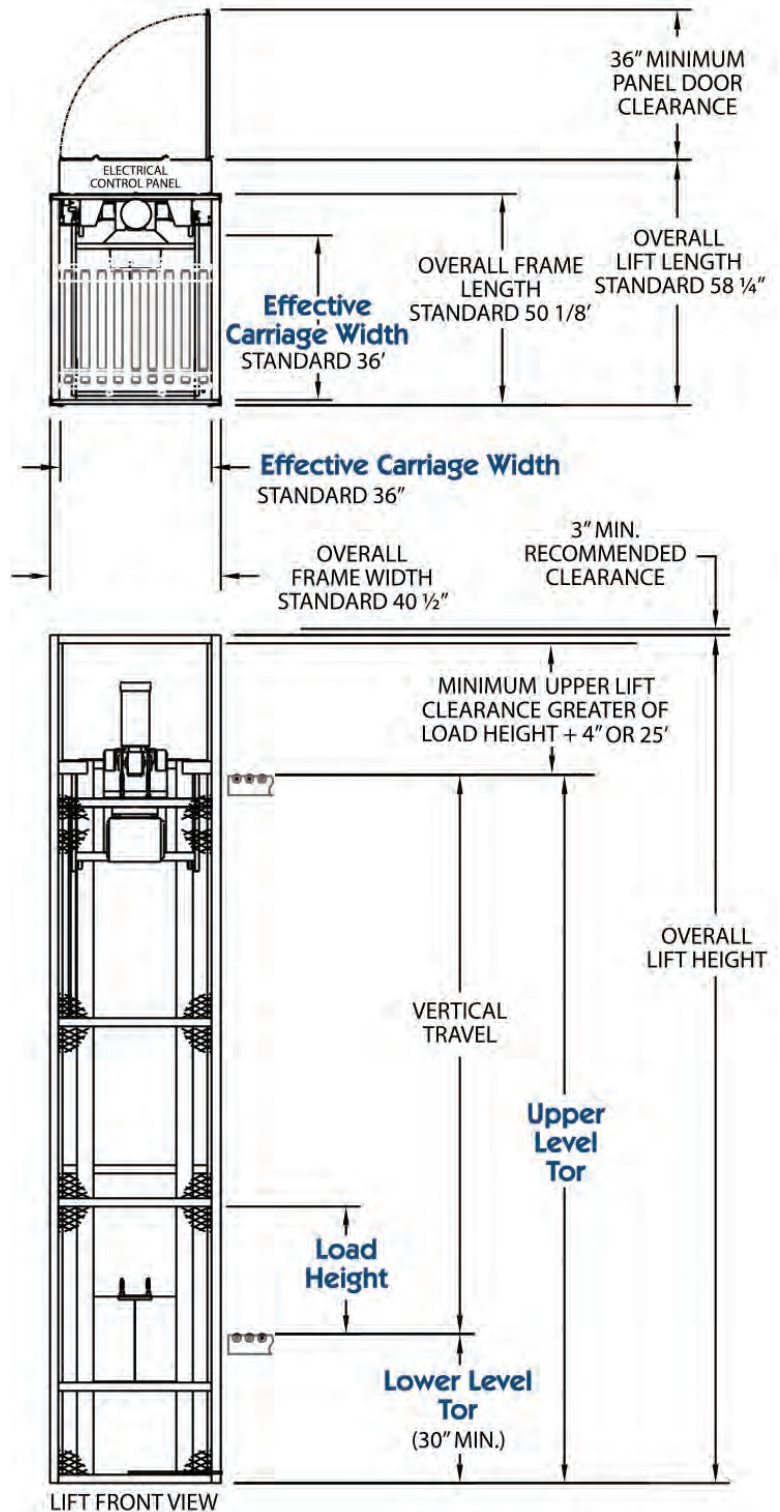
Standard power requirements are 230/460VAC, 3-phase. Control voltage is 110VAC. Standard push button stations and control panel are NEMA 12 rated. Control panel is designed to be mounted to the back of the frame and all control devices are pre-wired at the factory. A variety of control options are available from basic interface to PLC automated controls.

SAFETY FEATURES

Upward/downward travel of the carriage is controlled by a limit switch. When the switch is tripped or power is lost the motor shuts off and the brake is engaged. Overload and carriage over-travel protection is provided.

SAFETY ENCLOSURES

Standard units include integral, full-height enclosures on all sides made of 1/2" expanded metal. See page 22-23 for additional information.



FULLY AUTOMATED SYSTEMS

Efficient and reliable way to transport materials in an automated manufacturing or warehousing operation.

- ↑ Custom designed to fit your exact application needs. Systems typical include M Series, F Series or Series DB Lift models.
- ↑ Load capacities up to 15,000 lbs or more. Standard carriage size up to 15' x 15' or more. Vertical travel to 200'. Custom speeds to match through-put.
- ↑ Simple two-level applications or sophisticated multi-level systems.
- ↑ Multi-directional systems provide both vertical and horizontal conveying means with flexible loading/unloading patterns.
- ↑ Horizontal conveyors specified for load type, weight, size and throughput requirements.
- ↑ Tilt-deck, roll-handling and cart-handling systems are available.



Automated conveying systems that involve a VRC component differ dramatically from horizontal systems. The success of this type of system depends largely on the designer's experience. PFlow has over 38 years experience designing fully automated systems that integrate horizontal and vertical components, as well as fully automated PLC system controls.

PFlow knows each VRC application is unique, that's why we address every detail of every job.

CUSTOM VRCs

PFlow has the engineering capability, experience and technical know-how to solve a myriad of VRC problems.

PFlow offers complete single-source responsibility for system design, installation and total support for all components including conveyors, VRCs, and programmable controls. If faced with a difficult or unusual VRC application, call PFlow. Whatever the size, speed and vertical height - our team will develop the best VRC solution.



Moving Floor System

The giant moving-floor system was engineered and built by PFlow. Weighing in at just under one million pounds, it is designed to provide high-efficiency operation, while delivering improved safety and increased productivity. Its 390' x 25' moving-floor assembly line, used for manufacturing pneumatic seeding/tillage equipment, can reach widths of 125' and upwards of 75,000 lbs.



Offshore Oil Drilling Platform

The lift travels 32' to and from a helipad and the top floor. The lift transports supplies and luggage for arriving and departing staff members and guests. The M Series 2-post cantilever has a 4' x 4' platform and a 1,500 lb capacity. Each metal part is hot-dip galvanized, all hardware is stainless steel and most non-metal parts are polycarbonate, UV resistant plastic.



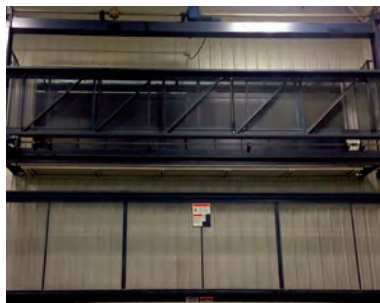
Aircraft Manufacturer

The 2-post lifts unconventional-sized carts that carry fragile aircraft parts up 10' to a mezzanine. Carriage measures 10' x 10' and is equipped with a fold-down ramp to offer ease of loading when lift is located at floor level. The lift is mobile and can be moved to different locations.



Adaptive Reuse

The renovation of a 10,000 plus sq ft restaurant to a government facility also required the movement of electronic toll transponder boxes, office products and customer paperwork. The D Series was the best fit. All structural elements are attached to one basement wall, forming an L-shaped configuration with the lift carriage.



Insulated Glass Window Operation

The unusually wide M Series is an integral part of transporting delicate, desiccant filled stainless steel spacer channels from the ground floor to the second floor. The 26' carriage has a lifting capacity of 9,600 lbs and travels 25' FPM.



High Rise Dealership

Installed at one of the tallest and most high-tech dealerships in the country, the F Series travels 72.5' from the ground floor to the sixth floor service department. Primarily intended to move inoperable cars to the storage and service levels, it features powered steel roll-up doors at each level and plenty of capacity to lift large luxury models.



Advanced Technology Solar Telescope

The 4-post is used to lift the telescope mirror to the observatory level. The lift moves at 5 FPM for stability to maintain the delicate load. It features a 76' vertical rise, 19' x 19' carriage and a 54,000 lb payload (44,000 lbs mirror / 10,000 lbs carriage).



Winery Lift

The 4-post lift features a 10 ton lifting capacity, 12' x 12' lift carriage and a travel distance of just over 26'. The VRC is in service throughout the year. During the peak harvest season, August through November, it is in constant use for 12 to 14 hours a day.

GATES

Quality, code-approved safety gates provide maximum safety protection for VRC installations.

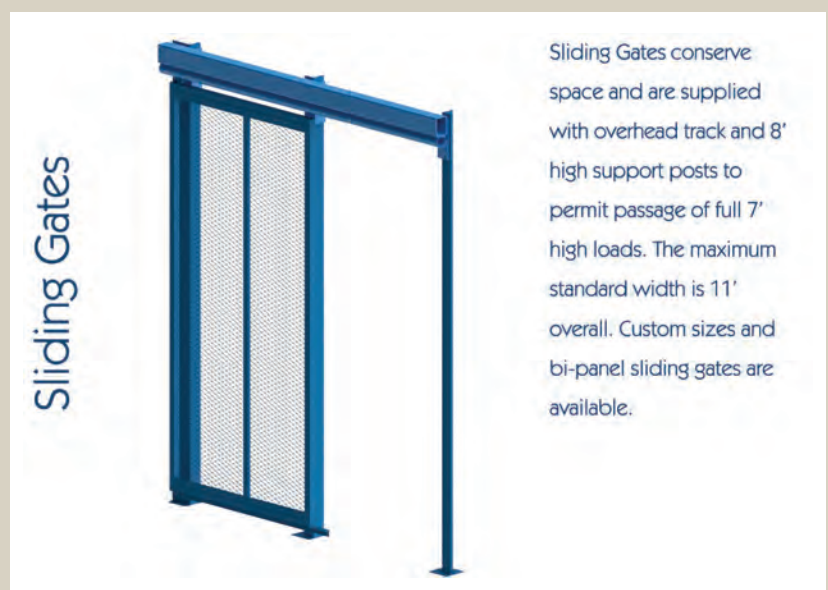
- ↑ All gates are equipped with mechanical locks and contact interlocks.
- ↑ In a manual loading application, each unit must be equipped with a safety gate that is electrically and mechanically interlocked with the carriage movement.
- ↑ Vertical acting gates, available in single and bi-panel models save space, don't intrude into aisles and are not easily damaged.
- ↑ Bi-panel models, with telescoping panels, offer the most space-efficient protection and require significantly less overhead clearance.
- ↑ Non-binding UHMW sliding guides on vertical acting gates tolerate misaligned posts better than roller guides and are more resistant to damage. Chain is used instead of cable for greater strength and durability.
- ↑ Vertical acting gates are counterbalanced with an exclusive cross-shaft design. This ensures the gate remains constantly level when raised from either the right side, left side or center.
- ↑ Single or bi-parting swing gates and sliding gates are offered in a variety of widths. Tubular panel construction on swing gates allows for gates up to 7' wide.
- ↑ Both pneumatic and motorized operators are available for vertical acting and sliding gates to allow push button operation.

GATE INTERLOCKS

Interlocks prevent the gate from being opened unless the carriage is at a designated level and prevent carriage movement if the gate is not fully closed.

ACCESSORIES

PFlow safety gates and enclosures can be equipped with a variety of accessories to fit your application. These include filler panels, inside and outside angles, wall fasteners, stiffeners and mounting hardware to open and close gates.



ENCLOSURES

Quality, code-approved enclosures provide maximum safety protection for VRC installations.

- ↑ All accessible sides of the unit not used for loading or unloading must be protected by enclosures a minimum of 8' high and capable of rejecting a ball 2" in diameter at each level. If lift service is to the edge of a mezzanine or balcony, only minimal enclosure is required because the equipment is guarded by location.
- ↑ Enclosure panels are made of 8' high, expanded metal. Standard panels are 6" to 5' wide and painted to match the lift. All mounting hardware is included. Non-standard sizes, custom finishes and galvanized panels available on request.
- ↑ Provides workers with the needed protection to remain safe from moving machinery.
- ↑ Any combination of shaftways, walls or permanent enclosures that provide equivalent protection is acceptable. Fire doors, acoustic doors, finish doors, etc., are acceptable if they are provided with appropriate interlocks.

FIRE CODE REQUIREMENTS

If a floor is penetrated, your insurance company or local fire authorities should be contacted to determine if a fire-rated enclosure is required.

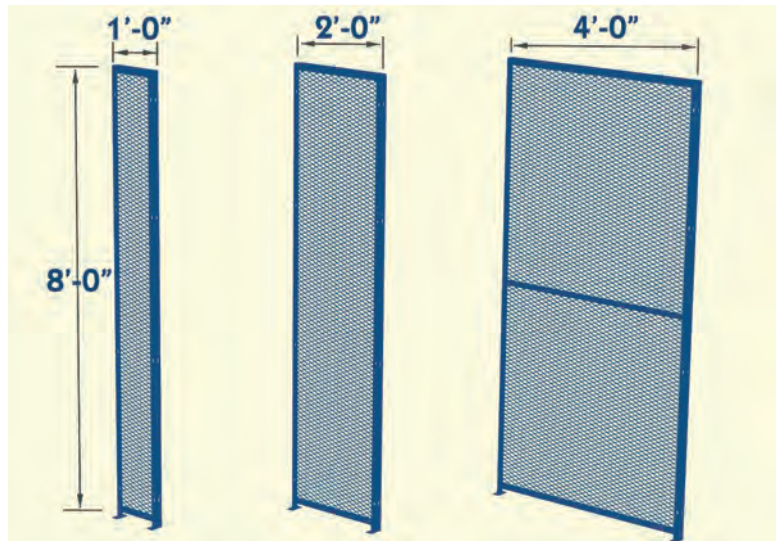
SAFETY BARRIER

Physical barrier at upper-most level to provide additional safety if access gate is opened and carriage is not present.

Each VRC should be reviewed for adherence to all state codes.

SHAFTWAY APPLICATIONS

When a VRC is penetrating floors that are rated due to fire-breaks or environmental conditions, walls and doors configured by others to meet the required conditions may be required. The term typically used is a "Shaftway" and you can find Pflow's VRC's behind interlocked doors in a variety of these in new installations or replacing freight and service elevators, ash lifts, dumbwaiters, etc.



Enclosures



Safety Barrier



PFlow provides enclosure panels designed to be configured to the application and comply with guarding requirements in your area.

SAFETY SYSTEMS

SAFETY CAMS

In the unlikely event of a lifting chain break, a PFlow “safety cam,” mounted on the carriage and positioned between the flanges of the guide column, will immediately and automatically rotate into position.

These spring-loaded safety cams are designed with a series of hardened teeth. As they rotate into position, the downward pressure of the carriage forces them into the flanges of the guide columns, preventing carriage descent. When chain tension is returned to normal, the cams automatically rotate back to their inoperative position, allowing the VRC to resume normal operation. (All units should be fully inspected before unit is put back into service).

On the M Series and F Series, slack or broken chain conditions are sensed by a switch on the chain tensioner assembly which cuts power to the drive.

DECKLOCK SYSTEM

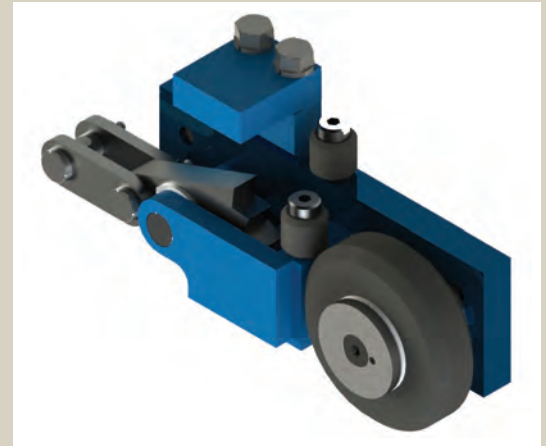
- ↓↑ Exclusive PFlow VRC safety system.
- ↓↑ High-capacity DeckLocks automatically extend to prevent uncontrolled descent at critical upper levels.
- ↓↑ Offers added assurance for safe loading and unloading with a forklift.
- ↓↑ Prevents uncontrolled descent in the case of overload or brake malfunction during loading/unloading operations.
- ↓↑ Protects workers, materials and machines by eliminating accidents caused by carriage drop.
- ↓↑ Simple and reliable gate-operated mechanical, pneumatic and electric versions available.

PFlow’s DeckLock System locks in safety.

PFlow VRCs are built with a substantial safety factor, but inadvertent overload can result in dangerous, unintentional carriage descent. Mechanical VRCs depend upon spring-set brakes to maintain the carriage position. These brakes are sized to provide a minimum of 150% of maximum load capacity; however, wear and lack of brake maintenance can reduce that capacity. Overload of the carriage can cause brake slippage. PFlow DeckLock System provides additional safety under these conditions.

MAINTENANCE PINS

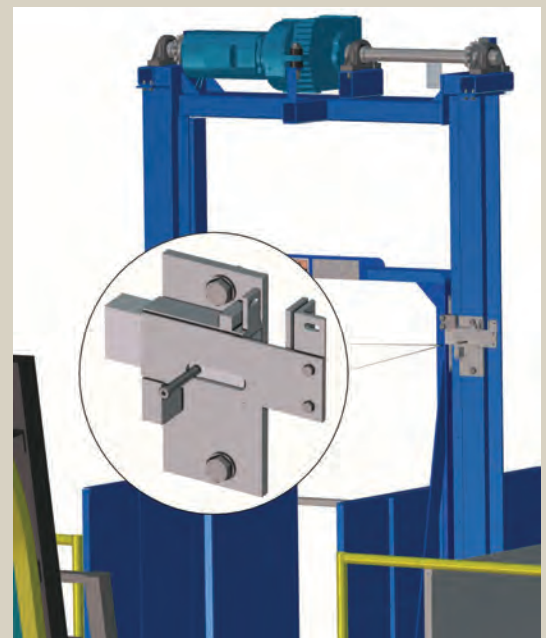
Maintenance pins are optional and add additional safety when performing service on the VRC. Maintenance pins are actuated manually. When actuated, the maintenance pins extend under the carriage structure to provide assurance that the VRC carriage is properly secured.



Safety Cam



DeckLock: Optional



Maintenance Pin: Optional

SERVICE & SUPPORT

We offer solutions up front, during design and engineering and throughout the life cycle of the lift.

After the sale, we have a dozen after-market sales and service specialists who are fully dedicated to superior customer support. We stand behind our product with the knowledge and parts to keep a lift functioning continuously at peak performance.

Call PFlow for troubleshooting, on-site assistance and a variety of duties in-between, such as:

- ↕ Code Compliance Inspections
- ↕ Drawing Approval
- ↕ Extended Warranties
- ↕ Installation Supervision & Assistance
- ↕ Maintenance Contracts
- ↕ Safety Inspections
- ↕ Site Measurements
- ↕ Start-up & Training

Our highly-trained technicians are available 24/7. If a problem does arise, call PFlow to schedule a technician whether your lift is located in North America or internationally.

PFlow has an ongoing improvement and training program in place for dealers, installers and technicians. We regularly conduct Service and Sales Schools at our headquarters to keep people up-to-date and machines up-to-speed. PFlow is also an approved AIA course provider. Our learning sessions provide architects with the opportunity to acquire knowledge about VRCs and earn AIA credits.

Assistance is available at www.pflow.com and in the field. Comprehensive Owner's Manuals are accessible in PDF format so that they can be easily downloaded. Each Manual also includes exploded drawings of sub-assemblies.

Our engineered-to-order products are designed and manufactured to provide years of trouble-free operation. If you need help, we have the resources and highly qualified team to get your VRC lifting.

It's no secret that many competitive dealers and VRC manufacturers call PFlow for service, support and code help.



PFlow Parts and Support Team



State-of-the-art PFlow Showroom



PFlow Sales School

As the VRC pioneer, PFlow has led the vertical conveyor industry from the start.

FIRST TO OFFER CUSTOM, SAFE, EFFICIENT VRCS.

FIRST MANUFACTURER TO SIT ON THE ASME B20.1 STANDARDS COMMITTEE.

FIRST TO GUARANTEE CODE APPROVAL IN EVERY STATE.

FIRST MANUFACTURER WITH CONTINUOUSLY ACTIVE R&D AND TESTING PROGRAMS.

FIRST TO OFFER MECHANICALLY DRIVEN UNIT EMPLOYING LIFT CHAINS.

FIRST WITH THE FOUR-POST DESIGN FOR ADDED CAPACITY AND SIZE.

FIRST WITH AUTOMATED VRC SYSTEMS.

FIRST TO OFFER PATENTED LEVELDECK CARRIAGE LEVELING SYSTEM.

FIRST TO INTRODUCE PATENTED DECKLOCK SAFETY SYSTEM.

PFlow and/or its employees are members of: APICS, ASQ, ASME, AWS, CSS, EESF, ICC, MHI, MHEDA, MHIA, NAEC, NFIB, NSPE, SME.

PFlow Industries Vertical Reciprocating Conveyors are covered by one or more of the following U.S. Patents: 5,228,537; 5,205,379; 5,601,157; 5,908,088. Other patents pending.

When you choose PFlow, you can be assured of a Vertical Reciprocating Conveyor that meets your exact needs. There are other companies that dabble in the Vertical Reciprocating Conveyor business, but none can match PFlow's commitment to research & development, product innovation, engineering expertise, manufacturing excellence and total customer support.

We Elevate Your Business



Dial

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