



Since 1947, Autoquip has been dedicated to providing ergonomics and productive material handling solutions to the manufacturing, distribution and transportation industries. Autoquip offers a variety of standard and custom equipment for lifting, tilting, and turning to improve the safety and efficiency of your production system.

Autoquip

DOCK PRODUCTS

Material Handling Solutions to Improve Productivity on the Dock

With decades of experience in engineering and manufacturing solutions to material handling problems, Autoquip can custom design products to increase your productivity and streamline work-flow. Whether you need a product raised, lowered, turned, or tilted Autoquip has the engineering experience and manufacturing capability to handle virtually any custom material handling project.

So, call Autoquip today for a custom material handling solution to increase your facility's productivity, and the safety of your employees.

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GENERAL & TECHNICAL INFORMATION

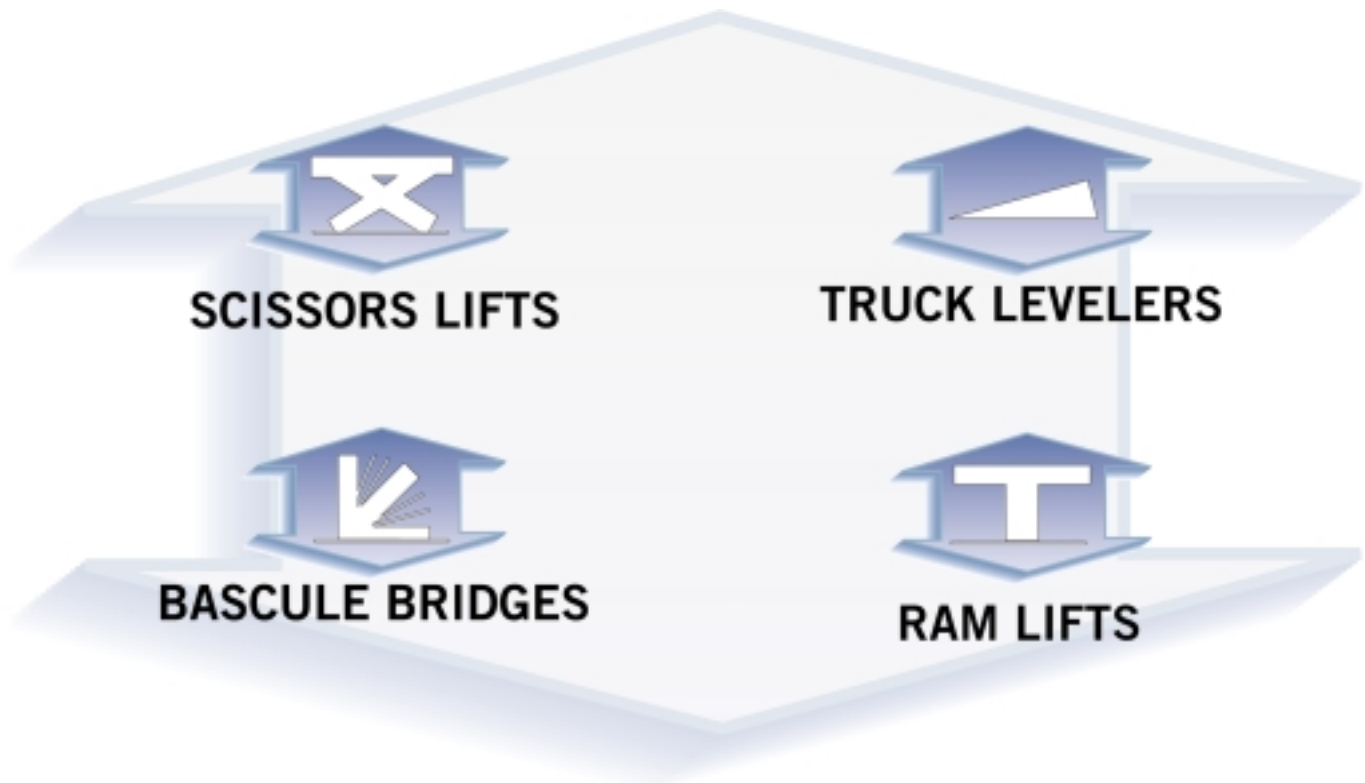


Evaluating the Application

Today's loading dock must deal with extreme variations of truck bed elevations – pick-ups and vans at 18" to 25", trailers and reefers to 60" as well as "low boy" trailers with threshold heights as low as 26". In order to gain maximum efficiency and utilization from a powered loading dock equipment solution, a close evaluation of the specific dock application must be made. First, there are situations where no

dock exists at a building's loading and unloading area. In other instances, a dock may exist but it may be too low or too high for conventional hinged dock boards. The dock area may be restricted in size by features such as alleys, railroad tracks, or other traffic lanes. Finally, the loads being handled may require the use of extremely heavy fork trucks or special conveyors. All these factors must be considered

THERE ARE FOUR BASIC TYPES OF POWERED LOADING DOCKS...





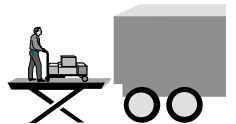
Various Dock Applications

In every one of these instances, an Autoquip powered loading dock can be used to increase productivity by providing a means to load and unload with ease, efficiency, and safety.



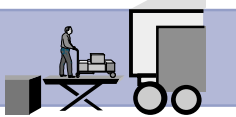
STANDARD DOCK

42" to 48" high—a powered loading moving equipment or material to ground level.



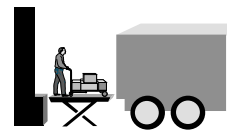
NO DOCK EXISTS

Ground Level Building—a powered loading dock serves as a dock for loading and unloading operations.



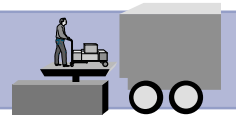
VARIOUS TRUCKBED HEIGHTS

28" to 60" high with a powered loading dock, you bring the dock to the truck, regardless of height.



NARROW DOCK APRONS

A powered loading dock serves as an extension of the dock when preexisting circumstances prevent installation at the dock apron.



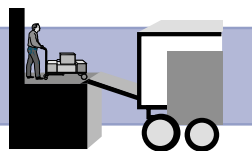
LOW DOCK

30" - 36" high – the incline is too steep for a conventional dock board. A powered loading dock makes loading and unloading possible and practical.



HIGH DOCK

Powered loading dock with over 36" travel eliminates dangerous ramp inclines. Loading operations are possible under inclement conditions.



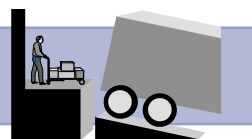
RESTRICTED SPACE

A powered Mini-Basculer Bridge provides a means to load and unload trucks with varying heights in an alley or driveway, then stores in upright position.



RAIL DOCK CROSSOVERS

A powered Basculer Bridge provides a means to cross from one dock to another across rail spurs—inside or outside the building.



TRUCK LEVELERS

36" Height Adjustment—this type of powered loading dock actually levels the truck or trailer, bringing it to the exact height of the dock.

GENERAL & TECHNICAL INFORMATION



Choose the Right Equipment

Each type of powered loading dock equipment has specific advantages.

After reading the definitions and applications common for each type, you will be better prepared to decide which is best for your situation.



SCISSORS LIFTS

The scissors lift is the most popular type of powered loading dock equipment. Installation is quite simple and relatively inexpensive with some units being ready to go to work by merely plugging into an electrical power source. Basically, the Autoquip scissors lift is a single pantograph mechanism with the platform serving as the vertical moving link. This type of unit is usually installed outdoors and is constantly exposed to the elements. Autoquip's chrome plated hydraulic cylinder rods and pivot pins are equipped to prevent rust and corrosion.

Permanent or pit mounted models of scissors lifts are normally installed on or in front of a dock and are positioned in relation to the turning area required by the truck. A front of dock installation which is flush with the grade allows vehicular cross traffic in alleyways or in tight turning areas.

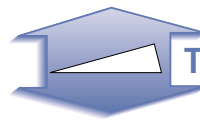
These scissors lifts require a shallow pit (8.5" to 21.5") and capacities generally range from 2,000lbs. to 20,000 lbs.

Surface mounted, medium to heavy capacity (2,000 lb. to 6,000 lb. range) Autoquip scissors lifts are available and are especially suited to conditions where permanent installation cannot be made, such as leased or rented facilities when alley right-of-way restrictions exist. Surface mounted lifts are designed to be easily and inexpensively relocated.

Some scissors lifts are portable and can be moved from one work area to another with relative ease. These units are ideal for the light to medium duty loading applications: crates, pallets, wire baskets or wheeled hamper carts. Portable models have capacities up to 6,000 lbs. Because this type of



unit is portable and not a permanent part of the building, it is ideal in cases where a building is rented... adjacent businesses can share loading dock equipment. The Autoquip portable unit can also be moved indoors for protection from vandalism, theft, and undue exposure to harsh elements.



TRUCK LEVELERS

Autoquip truck Levelers put your trucks where the work is, leveling the truck bed to exact dock height. This maximizes loading and unloading efficiency, even with large, long loads normally difficult or impossible to handle using hinged dock-levelers or throwover-plates. You save the cost of limited dock-leveler installation and the dock space it requires.

Truck levelers use no valuable dock space. They eliminate door security concerns associated with conventional hinged leveling devices. Because the truck leveler is installed in front of the dock, not on or in the dock edge, air loss is minimized in refrigerated or heated applications. Truck levelers are especially well-suited for loading and unloading in wet, icy, or other inclement weather conditions because the angle is minimized between the dock and truck.

The surface mounted truck leveler has up to a 60,000 lb. capacity, raises a full 30", and lowers to a very low 5". The surface-mounted models come standard with an approach ramp, or can be ordered to fit in a shallow pit.

The unit is easy to install and can be relocated to another dock inexpensively. The pit-mounted truck levelers also have capacities up to 60,000 lbs. and have the added capability to travel above and below grade to accommodate a wider variety of truck heights or if the dock height is lower than average.

If you are planning a new warehouse, distribution center or other facility with one or multiple doors, make sure Autoquip truck levelers have been considered as an effective loading and unloading solution.





BASCULE BRIDGES

A bascule bridge offers the ideal solution to many inplant traffic problems. As a transfer bridge, it permits safe crossings of depressed rail spurs, service ramps, and driveways between building... anything that interrupts the smooth flow of inplant traffic. It can also be used as a folding loading dock in limited access areas or alleyways.

Autoquip bascule bridges are hydraulically operated and can be raised to full vertical position when not in use, eliminating the possibility of interference with rail or other traffic.

A complete line of standard bridges is available to meet a wide range of requirements. Standard capacities range from 10,000 lbs. to 60,000 lbs. for single leaf units. Standard single platforms range from 6 x 16 feet to 8 x 20 feet. Double wide bridges to 16' and double long bridges to cross spans to 40'. Heavy-duty, hydraulic cylinders assure



safe, reliable bridge operation. Self-contained power units and easy-to-use pushbutton controls are standard equipment. On double leaf bridges, individual power units and controls are provided for each leaf.

RAM LIFTS

Whenever conditions allow the use of ram lifts, they are preferred over scissors lifts because of their inherent simplicity.

In general, the Autoquip ram lift is for situations calling for larger than normal platform sizes. This type of unit should also be used for heavy, concentrated rolling loads. Most ram lifts require pits and are "permanent" installations.

Relocation and/or removal is impractical and expensive. Ram lifts typically have one or two hydraulic rams which support a rigid platform. When deciding between a scissors type unit or a ram unit, one should make a unit cost comparison. Remember, the Autoquip ram type lift can handle much heavier axle loads and larger platform sizes, and can travel significantly higher than scissors lifts. Holes in the pits must be augered and casings may be required in situations where there is a high water table where the installation is to be made in loose, sandy soil. As a general rule, for capacities of over 20,000 lbs., ram lifts should be specified over the scissors type because the cost of the latter increases disproportionately due to the more complex design and structural requirements.



GENERAL & TECHNICAL INFORMATION



Choose the Right Model

Autoquip products have been designed to perform specific tasks. Customer satisfaction is paramount and it is important that consideration be given to all of the following conditions to ensure the proper lift model is matched to a specific job application.

Lowered Height -

Model selection considerations should include lowered height for portable or above-ground applications. For ground level and roll-over operations, consider pit mounting of the unit.

Vertical Travel-

Decide how high a load needs to be raised and note the distance. Specifications for all Autoquip lifts show "standard vertical travel." Distances are expressed in inches. Select one of these standard travels (or the next higher travel) from the specification tables shown for the product being considered.

Raised Height -

Model selection considerations should include maximum raised height for the application. For higher level operations, consider a ram lift or a custom engineered scissors lift.

Lifting Capacity -

Lifting capacity is the gross weight a lift is required to raise. Determine the maximum weight that must be handled. Select a "standard lifting capacity" from the Autoquip specification table for the product being considered.

Axle Load Capacity -

Axle load capacity ratings are typically listed for rolling loads over the bridge end of the lift, the end opposite the bridge end, and the side of the lift. Estimate your heaviest single axle load and select a model which has a rated capacity equal to or greater than the axle load required in the direction required.

Rollover Capacity -

Rollover capacity is the gross weight which can be "rolled over" a lift when the lift is in the fully collapsed position - usually due to the fork truck or commercial truck traffic in an aisle or alley. As a general rule, dock scissors lifts have a rollover capacity equal to twice their rated lifting capacity. Consult Sales for rollover capacities or other types of dock lifts.

Platform Size -

Determine how much area the largest load will occupy and select a "Standard Platform Size" from an Autoquip product specification table. Custom-Engineered platform sizes are also available for most dock lift models. Dock lifts come standard with a non-skid platform for all-weather use.

Pit Mounting -

For pit mounted installations, ANSI MH29.1 and OSHA both require platforms be equipped with toe protection (i.e. Beveled toe guards, electric toe guards or hanging toe indicator bars). The minimum lowered height is noted in the product matrix for each model; however, additional protection such as accordion skirting may increase the lowered height of the unit.

Operating Speed -

Product specification tables will provide the standard operating speed for a unit usually in feet per minute (FPM). If different requirements are needed, request information from Sales.

Choose the right features/options -

Autoquip offers a wide variety of features and options for each family of dock lifts - to optimize lift efficiency, employee satisfaction, and personal safety.

Standard Duty -

The number of cycles for industrial applications should not exceed 100,000 per year. Standard duty also implies that equipment downtime does not adversely affect production and is not a consideration. Also the lift does not exceed the "Frequency of lift operations" shown below.

High Cycle -

When total number of cycles per year exceeds 100,000. When possible equipment downtime could seriously affect

production. Speed and cycle frequency determines size of power unit, motor horsepower, pump output, and tank capacity to dissipate heat buildup. Power units are usually built for continuously running operation. Special leg set bearings can be used for high cycle applications. Units are designed to accommodate fatigue stress and extra wear.

High Speed -

When required speed exceeds standard catalogued speed, larger pump and motors are used.



Frequency of Lift Operations -

Intermittent duty rated motors are used in all standard applications and are rated for a frequency of operation not exceeding one full lift every 2 minutes. Failure to observe these frequencies could cause the motor to overheat.

If “jogging” is required, as a part of a feeding operation, be sure jogs are limited to one 2 second jog every 10 seconds for a limited time, but not to exceed 200 motor starts an hour. If application should require greater frequency, check with Sales department for a high cycle rated special lift, which is equipped with a continuous-running power unit.

Portability -

Portable dock lifts can be moved between docks or from a parking lot to the dock when the lift is empty. Flip-down portability wheels are engaged when needed as the lift collapses fully, and can be pulled using a detachable dolly handle.

Throw Over Bridges -

Most loading applications require a means to safely transition a wheeled load from a docked truck bed onto the dock lift. This transition can be over a distance of several inches or several feet, depending on site restrictions. A hinged throwover bridge (TOB) is used to span this transition distance and, according to ANSI MH29.1, must be long enough to always maintain at least 4” of contact with the truck or landing on which it rests.

TOB's are available in a variety of widths and lengths to fit each application. Long bridges are available in aluminum or supplied split in half to minimize the weight of the bridge. For large bridges which weigh in excess of 100 pounds, bridge lift assist devices are available in either a manual winch design, or a hydraulically-powered design.

Hinged TOB's can be attached to the ends or sides of a dock lift.

Handrails and Snap Chains -

Handrails are required per ANSI MN29.1 and OSHA for any lift carrying personnel, particularly to elevations over 48” above the floor. Autoquip handrails are 48” high with a 4” kick plate and a mid-rail. Handrails can be either removable or permanently installed depending on the application.

Snap chains are provided across all openings in handrails at a height which does not allow the snap chain to sag below an elevation of 42”. Swing gates can also be ordered in place of snap chains.

As an added safety feature, handrails and gates can also be provided with electronic interlocks to prevent operation of the lift if the handrail or gate is not securely in place.

Approach Ramps -

When it is not feasible to pit mount the dock lift, an approach ramp may be necessary to move a wheeled load from the ground level up onto the lift platform. Approach ramps are permanently attached and hinged to most standard surface mounted or portable dock lifts. Ramps may also be ordered to mount to the ground in front of a lift, and can be specified in variety of lengths and widths.

Wheel Chocks -

When elevating a wheeled load such as a fork truck, it may be necessary to have wheel chocks which pop up into place as the lift leaves the ground to prevent accidental rolling of the truck off the lift. Wheel chocks are usually non-powered and mechanically swing into place automatically upon take off. The addition of wheel chocks may increase the lowered height of the lift.

Power Units -

All portable lifts are supplied with internal or on-board power units. The power cord is “pigtailed” on one end for the end-user to supply and install the appropriate type of plug for their particular dock requirement.

Most permanent dock lifts are supplied with a remote power unit which can be mounted on the floor or wall (with brackets) and a pre-wired control panel which is located, mounted, and wired to the motor and control signal by the installer. All remote power units are supplied without oil inside.

Power Supply -

Standard for three phase power units are 208/230/460V/3PH/60Hz. Standard for single phase horsepower units is 230V/1PH/60Hz. 115V/1PH/60Hz is also available but not recommended. (NOTE: proper operation on 115 Volt power involves the provision of a separate 30 amp or larger circuit and adequate wiring to assure an actual 115 Volts at the control box during operation under full load.)

24VAC is standard control voltage, 115VAC is available upon request. Standard controls include an UP/DOWN constant pressure push-button station. Also available upon request are level limit switches, key lock out switches, and momentary contact push-button stations with emergency stop “panic” buttons. Audible alarms and warning lights can be provided upon request for added safety.