

Industrial Ergonomics

612-532-6774

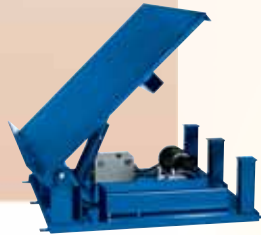
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**ADVANCE LIFTS**



**LIFT**



**TILT**



**TURN**

**CATALOG AND APPLICATION GUIDE**

## ABOUT ADVANCE



*Our state of the art 120,000 square foot building houses all operations including sales, design, manufacturing and shipping.*

Since 1974, our business platform has been built upon three pillars. These are the principles of “Be fair”, “Make it right” and “Provide superior service”. Our employees are given these guidelines on the day that they are hired and reminded of them often. We believe each and every employee, not just managers, should be able to make daily decisions based on these basic principles to optimize our relationship with our suppliers, our fellow employees and most importantly, you, our customers.

All Americans have a strong sense of what fair treatment is, so we find that this requires almost no explanation to our employees.

When a process or product goes astray, the principle of “make it right” tells everyone what needs to be done and reinforces the principle of “be fair”.

Providing superior service is defined as maximum responsiveness to questions and requests and being as easy to deal with as possible. We pride ourselves on providing the fastest quotations, fastest deliveries, and fastest response to service questions of anyone in business. We strive to provide the most helpful literature, service manuals and website available.

In today’s business environment, providing high quality equipment is only a starting point. What really differentiates businesses is the quality of the relationship and service during the entire buying and maintenance process. We believe our faithful dedication to our three basic principles will provide great value to our customers and put us head and shoulders above our competition.

### *Why it pays to buy from an Advance distributor!*

**SALES** – Advance distributor sales engineers are trained to help you apply the correct equipment to your specific application, thereby saving you time and money and precluding costly misapplications. Because they visit hundreds of facilities each year, they are aware of the latest equipment and techniques to solve your problems.

**INSTALLATION** – Advance distributors can install what they sell, which makes your job easier and assures you the job will be done right and the equipment will function to your satisfaction. Their trained technicians have the experience required to meet your installation requirements.

**SERVICE** – When your equipment needs service, your Advance distributor is right there to help. They have trained service personnel to get you up and running as fast as possible, thereby saving on downtime costs.

**VALUE** – It’s very simple. Advance distributors save you money by applying the right equipment to the job, making sure it’s installed correctly, and making sure you get service when you need it. Call the Advance distributor nearest you to insure your project’s success.

## ADVANCE LIFTS INC. WARRANTY

For a period of one (1) year from date of shipment from the Company's plant, the Company agrees to replace or repair, free of charge, any defective parts, material or workmanship on new equipment. This shall include electrical and hydraulic components.

For a period of ten (10) years or 125,000 cycles (whichever occurs first) from date of shipment from Company's plant, the Company agrees to replace or repair any defective structure.

Company authorization must be obtained prior to the commencement of any work. The Company reserves the right of choice between effecting repairs in the field or paying all freight charges and effecting the repairs at the Company's plant. The Company further reserves the right of final determination in all warranty considerations. Evidence of overloading, abuse or field modification of units without Company approval shall void this warranty. No contingent liabilities will be accepted.

## ADVANCE LIFTS INC. ULTRA HIGH CYCLE WARRANTY

### STRUCTURAL PORTION:

For a period of ten (10) years or 3,000,000 cycles (whichever occurs first) from date of shipment from the Company's plant, the Company agrees to replace or repair, any defective parts, material or workmanship in the lift structure. This includes axles, bearings and cylinders, but not cylinder packings.

### POWER UNIT PORTION:

For a period of one (1) year from date of shipment from the Company's plant, the Company agrees to replace or repair any defective parts. This shall include all electric and hydraulic components including cylinder packings.

Company authorization must be obtained prior to the commencement of any work. The Company reserves the right of choice between effecting repairs in the field or paying all freight charges and effecting the repairs at the Company's plant. The Company further reserves the right of final determination in all warranty considerations. Evidence of overloading, abuse or field modification of units without Company approval shall void this warranty. No contingent liabilities will be accepted.

## EXPECTED LIFE VERSUS WARRANTY LIFE

We at Advance Lifts base our warranties on units being used at maximum capacity and full range of motion on every cycle. In most real world applications, this is not the case. Most units are usually cycled only a portion of their full range and are only loaded to maximum capacity occasionally, if ever. This means that most lifts last much longer than the warranty period. In normal operating environments, we expect the average unit to last several times the warranted cycle limit. It is not unusual for our parts department to sell consumable parts (wheels or packing kits) for units that are more than 25 years old and still going strong. The keys to reaching expected lives well beyond warranty are avoiding abuse and attending to maintenance.

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## ***DISTRIBUTED BY:***

**Industrial Ergonomics**

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## HOW TO USE THIS CATALOG AND APPLICATION GUIDE

The purpose of this catalog and application guide is twofold. First we would like to present our products to you in an easy to use format so that you can find the information you need in a quick and efficient manner. Secondly, we would like to provide enough application information so that application engineers can select units with confidence or at least have the right information at hand before they call for assistance. We want to make it as easy as possible for you to work with us and our products.

The following two pages are the “Table of Contents” to this catalog and application guide. Please note that there are five (5) main sections dedicated to Lifts, Tilters, Turntables, Combination Lift and Tilt Units, and finally Combination Lift and Turn Units. There are more combinations that can be created, but the possibilities are too numerous to list, so we have included instructions on the basic rules and application considerations to help you easily create your own specific combinations to suit your needs.

We suggest that you read the Research and Development section on *page 6* to learn how many of our rules have been developed. You will learn that our R & D team is available for your special projects. You will also discover that our licensed Professional Engineers have the professional credentials, experience and tools, to put them at the very top of our industry.

The beginning of each main section contains a general discussion of the most important considerations for selecting the proper equipment from the entire section. Typically we explain loading and endurance issues along with other stress inducing factors on a general basis. Each individual product group will start with any special considerations for that particular product group. The lift section includes a separate discussion of double wide, double long and double high applications. The end of each main section includes information on typical standard options and how to properly apply them. It is very helpful to be familiar with the beginning and ending parts of each main section before you begin selecting units.

The color selection chart is at the rear of the booklet with an explanation of how our units are painted.

The very last page of the booklet lists our various warranties with a brief discussion on the difference between “Expected” life and “Warranty” life of our units.

Notice that in the Table of Contents, each product group is followed by the capacity and range of motion of the units in the group. This should help to get you into the right group quickly.

### *The basic information necessary to begin product selection is as follows:*

- ▶ **CAPACITY:** *Total weights of loads*
- ▶ **NATURE OF THE LOADS:** *A detailed description*
- ▶ **MEANS OF LOADING AND UNLOADING:** *Effects the edge loading requirements*
- ▶ **LOWERED HEIGHT AND TRAVEL OR MOTION REQUIRED:** *Lift – tilt – turn*
- ▶ **PLATFORM SIZE:** *Including configuration and attachments*
- ▶ **SPEED REQUIREMENTS:** *In both (all) directions*
- ▶ **POWER AND DUTY CYCLE OR NUMBER OF CYCLES PER GIVEN TIME PERIOD**
- ▶ **SPECIAL FEATURES:** *Hostile environment – portability – special finishes etc.*

Armed with this data and doing a careful reading of the appropriate application information in this booklet, you should be able to select the best equipment and options for any application.

If you are unsure of your judgement or you encounter any unusual requirements, do not hesitate to call your local distributor or our sales department. They have a great deal of experience and the full resources of the company behind them. It is our purpose and privilege to assist you.

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*\* Reading these sections will keep engineers and users out of trouble.*

## RESEARCH AND PRODUCT DEVELOPMENT

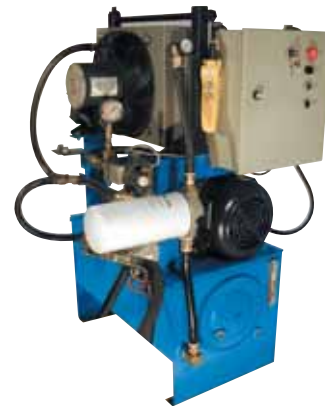
Advance Lifts has an active and constant research and development program. All of our products are regularly reviewed with an eye to improve performance and value. New materials and components are evaluated. Means and methods of production are reviewed. State of the art engineering tools of analysis are applied to our designs to see if further refinement of our structures will benefit our customers. Exhaustive tests are conducted to measure and prove the performance of design changes. Finally, new improved versions of established product lines are regularly released.

The team of licensed professional engineers dedicated to the research work, have a "skunk works" within our plant and personnel permanently assigned to them. Their 3D CAD programs allow them to use finite element analysis to optimize designs and then detailed strain gauge testing is used to verify results. Extensive cycle testing is also done to verify fatigue life calculations and endurance limits of components and structures. All of this research on top of their considerable base of work experience has allowed them to develop a very high level of expertise.

In addition to the research conducted on our products, our team has also been used for development of custom equipment for customer applications. Typically, our production engineers handle the usual modifications and combinations of our products. However, when very unusual design requirements present themselves, our R & D team can be used to solve the design problems with some unique designs.

### RENT OUR RESEARCH AND DEVELOPMENT DEPARTMENT

If you encounter very unusual application specifications that require extremely high speeds, high cycle loads or unusual lift configurations unlike anything you have seen before, bring the inquiry to us. Our engineers love a challenge. If the dollar volume of the project exceeds \$50,000, we may assign the project to our R&D team. Engineering challenges can be both profitable and a good way to build our engineers' body of knowledge, which can later be applied to other products or new product lines. You will benefit by having the best in the business design your custom solution.



We at Advance Lifts believe we live in a changing world and yesterday's outstanding design is today's run of the mill. We are dedicated to the principle of continuous product improvement through effective research and development.



SPECIAL DESIGN PRODUCTS



*This lift has 60,000 lbs. of capacity and has a 9 ft. by 35 ft. platform. Similar units have been built with platforms as long as 60 feet.*



These custom designed tilters handle 5000# rolls of tissue, 8 ft. in dia. by 8 ft. long. The unit on the left has a fixed "V" cradle and powered conveyor flat deck. The companion unit on the right has a hydraulically adjustable "V" cradle for handling rolls of the same size.



This custom designed siren lift and trailer raises a 10 ft. tall, 4 ft dia., 1000# siren, 27 ft. into the air and is capable of withstanding winds of 100 mph in the raised position.



Advance lifts has an Underwriters Laboratories approved assembly shop for controllers. We can produce computer controlled power units as illustrated with the controller on the left as well as sophisticated continuous running power units typical of the units on the right. See our section on Ultra High Cycle lifts and power units.

## WHY BUY ADVANCE PRODUCTS

We have considerable expertise in designing both solid bar leg sets and tubing style leg sets, which means that we can select the best material for each design group to optimize performance and value.



Life-time lubricated bearings on chrome shafts at all pivot points for long life



Oversized wheel with sealed life-time lubricated ball bearings for long life



Steel bearing housings with internal low friction bearings



Chrome plated cylinder rods



Aluminum pistons with ultra precision wear rings



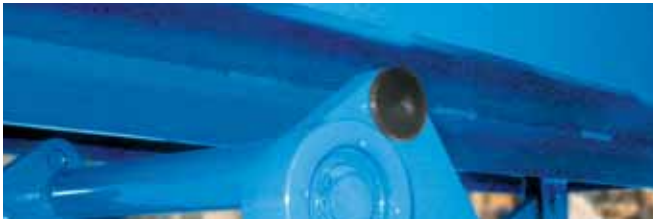
SAE "O" ring ports for JIC fittings to minimize leakage



All of our pressure hoses are 100R2A double wire braid for maximum safety



U. L. approved controller assemblies  
(Our power unit department is regularly checked by Underwriter Laboratory inspectors).



Patented platform centering devices which dramatically improve off center load performance and substantially increase lift life.



All units are fully primed and finished with a baked on industrial enamel. Eight standard colors options are available at no extra charge. Epoxy and polyurethane paints as well as color matching are available at a nominal extra charge.



We provide one of the most complete service manuals in the industry and have a web site available 24 hours a day, seven days a week.

- ▶ All of our units conform to OSHA, BOCA, ANSI, UL and NEC codes and regulations.
- ▶ We have a wide selection of products to suit a very wide array of applications.
- ▶ We offer a large assortment of options to customize units.
- ▶ Our engineers have the expertise to custom design solutions to the most demanding applications.
- ▶ All of our employees are dedicated to providing our customers maximum value through superior service.

## LIFT APPLICATIONS, SPECIFICATIONS & SELECTION

*The basic information necessary to select an appropriate lift for an application includes all of the topics listed below:*

- ▶ **CAPACITY** (p 10)
- ▶ **NATURE OF THE LOAD** (p 10)
- ▶ **MEANS OF LOADING AND UNLOADING** (p 11)
  - EDGE LOADING** (p 11)
  - DERATING OVERSIZE PLATFORMS** (p 11)
  - SIDE LOADING** (p 12)
  - INCREASING SIDE LOAD CAPACITY** (p 12)
  - ROLLING AXLE LOADS** (p 12)
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- ▶ **SPECIAL FEATURES AND ACCESSORIES** (p 15)
  - BONUS SECTION- HOW TO CONFIGURE YOUR OWN DW – DL – DH UNITS** (p 16)

*The following discussions will be used to clarify the meanings of these topics, point out special considerations to be aware of, and provide us with a common vocabulary.*

**CAPACITY:** The capacity of a unit is the total weight being placed on a unit and consists of the total live load + the total dead load as described below:

**Live load weight and description:** Live loads are the items that will be placed on the unit and removed from the unit. It is important to know the maximum weight. It should also be noted if the load will be unbalanced due to a lopsided or irregular configuration or a loading operation that can cause temporary uneven loads.

**Dead load weight and description:** The dead load is the weight that is applied to the unit on a permanent basis such as conveyor, weight scales, or fixtures. A good description including how the dead weight will be supported by the platform and attached to the platform is necessary so that our engineers can determine if the structure of our standard platform can satisfactorily support the incurred loads without deflection or twisting. Any unbalanced loads such as offset conveyor drive motors must be mentioned so that the center of gravity for fully loaded and minimally loaded configurations can be determined.

**NATURE OF THE LOAD:** This requires a good description of what the load consists of, the weights of the load components, the center of gravity of the load, if it is not centered on the load, and the physical dimensions of the load.

Our concern here is that off centered loads can reduce lift life dramatically if not properly handled. They can put more severe demands on a structure than the simple lifting effort. In all cases, we assume the worst loading to be encountered with the lift in motion will be no more than half of the load on half of the platform. The critical information in these cases is where the center of gravity of the load will be in relation to the center of the platform (center of the supporting leg structure as described by the minimum platform size) when the unit is put in motion. Ideally, we like to see the center of gravity of a load in the center of the platform.

Fork truck counterbalance weights and oil filled transformers are just two examples of loads that present severe off center loads when their foot prints are nicely centered on platforms. Off center loads due to loading or unloading operations while the lift is stationary is discussed as a separate topic below.

There are many ways to handle off centered loads satisfactorily, provided that the requirements are understood by our engineers early in the selection and design process.

**MEANS OF LOADING AND UNLOADING:** How loads are transitioned onto and off of the lifts can be the critical factor in choosing an appropriate lift design. These movements determine the “edge loading” and/or “impact” that the structure must sustain and they may contribute to off centered load conditions during the lifting cycle. The most common ways in which loads are transitioned on and off lifts are as follows:

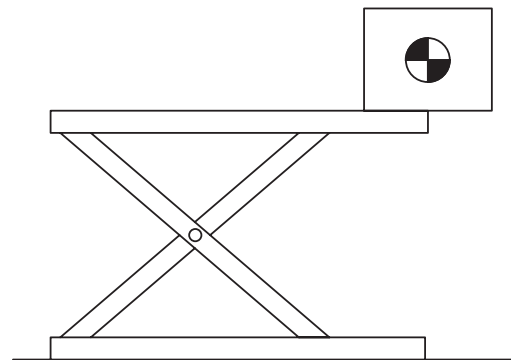
- ▶ **ROLLED ON/ ROLLED OFF** – *with a wheeled vehicle or cart*
- ▶ **SLID ON/ SLID OFF** – *as in sheet feeding operations or conveyor operations*
- ▶ **PLACED ON/ PICKED OFF** – *as in stacking operations or crane loading*

Before we talk about these specific applications we need to discuss unit capacity ratings.

**GENERAL DISCUSSION:** “Edge loading” capacities of lifts are generally stated in this catalog as a “static” capacity. This is equivalent to a uniform stiff load teetering on the edge of a minimum size platform edge with no allowance for any impact. This is illustrated below:

In real life this condition rarely exists and the “static” rating in the catalog must be modified with an appropriate multiplier for the various types of “dynamic” or moving loads that will actually be encountered.

**EDGE LOADING:** What matters most with edge loading is what loads will pass over the edge of the lift in anything other than the fully lowered position. In the fully lowered position the baseframe, cylinders and leg assembly are fully supported and only the overhang of larger than minimum tops are subject to any bending forces. Therefore, a maximum capacity load may pass over the edge of a minimum size platform of a fully lowered lift and we would have no concerns about the edge loading of the lift. If the platform were larger than minimum, then our engineers would have to ensure that proper supports were placed under the platform to prevent any potential deflecting or bending.



*Static edge load*

**DERATING FOR OVERSIZE PLATFORMS:** The “static” edge load capacity of over sized platforms must be derated because the oversize platform overhang acts as a lever, increasing the forces incurred by the supporting leg assemblies for any given weight. Edge loading capacities are derated by the rule of thumb of 2% per inch for every inch that a platform is wider than minimum width and for every inch that it is longer than minimum length. For example, a P-2536 has a minimum platform size of 24" X 48". If it were equipped with a 48" X 54" platform, the unit would have the side edge load capacity reduced by  $(48" - 24") \times 2\% = 48\%$ . The end of platform capacity rating would be reduced by  $(54" - 48") \times 2\% = 12\%$ . There are many variables that go into the actual edge load capacities, but the 2% rule of thumb is a good general rule to use.

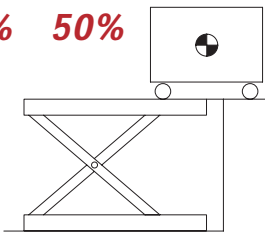
## LIFT APPLICATIONS, SPECIFICATIONS & SELECTION

**SIDE LOADING:** Most scissor lift designs have much greater strength over the ends of the lifts than they have over the sides of the lifts. For this reason, we prefer to see loads travel over the ends of lifts, parallel to the lift legs, rather than over the sides when the lifts are anything but fully closed.

**INCREASING SIDE LOAD CAPACITY:** We have developed EW (extra wide) models and VW (very wide) models for many series of lifts. The wider units are built with wider stance leg assemblies which means that for a given platform size the side edge loading does not have to be reduced as much as their narrower brother. In the P-2536 example given above, we could choose the PVW-2036 lift model which has a minimum platform size (and leg structure) of 48" X 48". If this model were equipped with a 48" X 54" platform, the side edge loading would not have to be reduced at all because the minimum width on that model is the same as the chosen platform, so the derating calculation would be  $(48" - 48") \times 2\% = 0\%$ . The end load rating would still have to be reduced by 12%, but not having to reduce the side edge load rating by using the wider leg set can be a real advantage in some applications. The EW (extra wide) and VW (very wide) options) are available on many lift series including P's, HD's, MSL's and AT's. Usually the EW's are 12" wider and VW's are 24" wider than standard minimum width platforms. The maximum platform widths on these units are also proportionately wider. Check the exact models to be sure of the sizes.

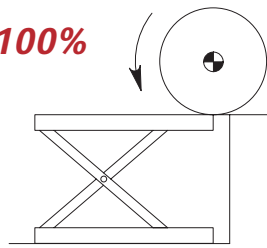
### ROLLING AXLE LOADS:

50% 50%



Manual pallet jacks & carts

100%



Single Axle

80% to 90%

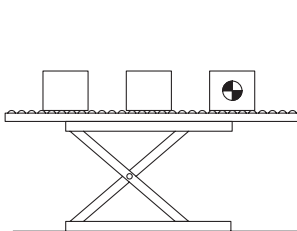


Typical Loaded Fork Truck

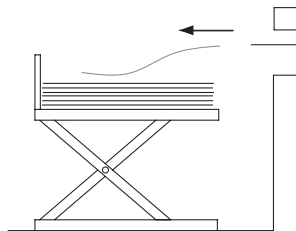
Axle loads may be expressed in static edge load terms by simply adding 50% for impact and dynamic forces. For example, a two axle cart loaded to a 2,000# total weight would have a 1,000# axle load. To calculate the static load equivalent, we would simply add 50%, so we would have a 1,500# static load. If we were rolling a 2,000# coil of steel or paper over an edge, we would have a 2,000# axle load that would be equivalent to a 3,000# static load. If the static load rating of the lift/platform configuration you have chosen does not meet the calculated requirement, you must choose a stronger or larger lift that does.

There are two (2) cautions in these simple axle load conversions. First, fully loaded fork trucks can have 80% to 90% of their total weight on their front axle, not the 50% that is used on other two axle vehicles, therefore appropriate allowances must be made. Secondly, very short carts rolling onto platforms with long overhangs can present situations where the entire cart is on the overhang. In these situations, please give the distance between axles to our sales people so that they can check with our engineers about what can be done to accommodate the load. Typically, units with longer leg sets must be chosen so that the center of gravity of the entire cart will be within the leg set outline before the second axle reaches the platform.

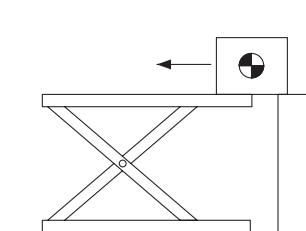
### SLIDING LOADS:



Typical Conveyor Load



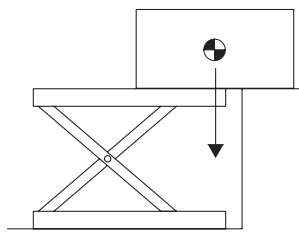
Supple Sheet or Small Increments



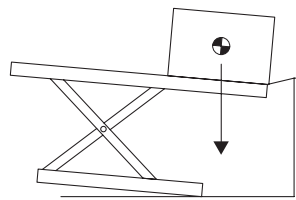
Stiff Bottomed Load

The loading that requires the most judgement is the sliding load. When a load is sliding onto a conveyor, there is less of an impact factor on the lift than a rolling axle would apply and the end conveyor roller (and platform edge) would never see the entire weight of the load because of deflection within the lift mechanism. In the case of supple incremental loads such as sliding sheets of paper onto a unit, the edge loading and impact are trivial and not a factor in selecting a lift. In the case of an ingot of lead being slid onto a platform, impact and edge loading requirements may be the deciding factor in lift selection. Therefore when considering the entire range of applications, judgements must be made about all of the following factors:

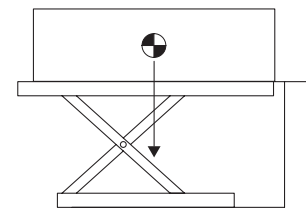
- 1. Friction and impact:** Conveyor virtually eliminates friction for items being loaded onto a lift. Steel items sliding on steel platforms usually have a coefficient of friction of approximately 30%. Rubber based items can have extremely high coefficients of friction. Since sliding forces are more horizontal than vertical, they usually can be ignored except for extreme situations. Impact becomes a factor when loads are traveling at high speeds. If either of these factors is of concern to you, please allow our engineers to make the value judgements.
- 2. Horizontal impact against stops:** Many conveyor applications require stops be added to our lifts either by us or by our customers. The horizontal force imparted by the stop must be parallel to the leg members and shock absorbers should be considered. Horizontal impact forces must not impact the unit perpendicular to the leg members or there will be structural damage. When you consult with the factory, be sure you have the weight of the moving object and the speed of movement.
- 3. Incremental layers:** Each load increment must be considered as a percentage of both the total lifting capacity and the edge load rating. Small percentages are no factor and large percentages may dictate choosing units with higher edge load ratings. If the incremental layer being moved onto a raised lift is large, then consideration of items 4 through 6 below become more important.
- 4. Footprint of the load increments relative to the overall platform size:** If the foot print of the increments match the platform size, then the load will probably come onto the unit in a gradual manner and edge loading will be fairly negligible. If the foot print is relatively small, estimates of the edge loading that will be produced become important, as do items 5 & 6 below.
- 5. Footprint of the load increments relative to the minimum platform size (supporting leg outline):** If the proposed lift will be equipped with a minimum platform size, then the load will always transition onto satisfactory leg support. If there is a large oversized top, it is necessary that the load have more than 50% of its footprint and weight over the supporting leg outline when it is no longer supported by the adjacent surface.



*Good*

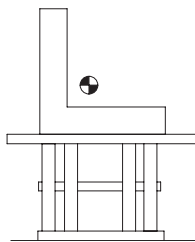


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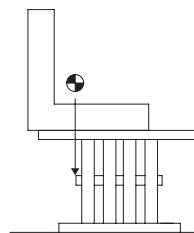


*Good*

- 6. Location of center of gravity of the load increments relative to the minimum platform size (supporting leg outline):** When items are not uniform in shape or weight, we must be careful that the center of gravity of the load is always within the supporting leg outline, (minimum size platform outline) when the load is no longer supported by the adjacent surface.



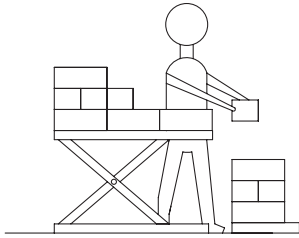
*Good*



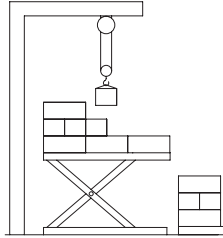
*Not Acceptable*

## LIFT APPLICATIONS, SPECIFICATIONS & SELECTION

### PLACED OR STACKED LOADS:



*Manual Stacking*



*Crane Loading*

Some loading produces no edge loading requirements. Manually stacking layers of boxes would be a good example. This type of operation imposes negligible impact and no edge loading.

Vertical loading with a crane or other overhead device is a good example of no edge loading, but the possibility of very high impact to the lift. With a maximum capacity load, a lowering speed of 17 ft. per minute (fpm) will produce acceptable impact loads on opened lifts. Speeds in excess of 17 fpm may create damage to cylinder packings, hoses or structural members. Most industrial cranes are limited to speeds of 17 fpm or less, but applications with vacuum assist lifts, vertical conveyors or free fall applications, may produce destructive impacts. Obviously, the slower the rate of vertical impact the better.

**TRAVEL AND LOWERED HEIGHT:** Travel refers to the vertical movement of the unit. It should not be confused with raised height, which is the sum of the lowered height and travel. The only time the travel is the same as the height above ground is when a unit is recessed into a pit. The vertical travel of a unit can never be increased, but it can be decreased or limited with limit switches or mechanical stops. Units with excess travel are chosen for some applications, so that longer platforms can be made available.

Published lowered heights can never be reduced, but they can be increased by either blocking units open or building up beneath the base frames.

**PLATFORM SIZE:** The platform sizes must fall within the maximum and minimum sizes shown in the catalog. Note that if something is affixed to our platform like a conveyor or other device, it must also fall within the maximum size constraints listed for our platform as the attached device in fact becomes the platform.

**SPEED REQUIREMENTS:** Usually the standard speed offered with each lift model is satisfactory for most applications, but occasionally faster speeds are required. The formula for horsepower is work (force X distance) divided by (550 X time). Therefore, the shorter the amount of time to do the work, the more horsepower that will be required. In the case of units with internal power units, any increment in horsepower size will require moving the power unit externally because the larger motors will no longer fit within the structure. As horsepower goes up in size and cost, so do the electrical controls, hydraulic pumps and valves. Costs often rise quickly.

To combat these steep price increases, some customers have suggested that their applications only require that the lift only go up fast "empty" and come down slowly with a load. It should be understood that from a safety aspect, we will not produce a unit that can not lift its maximum loaded capacity, in case someone gets a body part caught within the lift.

Speed cautions begin at speeds of 15 fpm (ft. per min.) to 24 fpm. At these speeds enough energy is built up so that damage can occur to the units over time unless something is done to decelerate the units at the limits of travel. The worst conditions are going up empty and down fully loaded. In this speed range, depending on the actual application, we can do simple things like adding shock absorbers at the bottom of travel, providing adjustable flow controls or simply adding limit switches at the limits of travel. Good descriptions of travel increments and load increments will provide the necessary information to determine what, if any, precautions should be taken.



Speeds greater than 24 fpm will definitely require a more sophisticated deceleration system. Speeds of 100 fpm can be provided, but position sensing and special hydraulics are mandatory to preserve lift life. Very high speeds can triple or quintuple the cost of a lift.

**POWER AND DUTY CYCLE REQUIREMENTS:** The actual power available at the intended location of the equipment should be confirmed at the beginning of the selection process. Some units will not operate at catalog speeds on single phase currents. On air applications, PSI and CFM availability at the equipment site must also be confirmed.

When considering the duty requirements of the lift, it is necessary to think in terms of two (2) systems, the lift mechanism and the power unit. It is necessary to know whether the lift application requires full stroke movement “up” or “down”, or will there be a series of incremental “jogs” in one of the directions. Specifically, we need the time intervals between operations and the direction and size of movement in each operational increment. Finally, the total number of cycles per hour, day and year should be calculated.

Applications with many short jogs in quick intervals may require the need of a special power unit. If the jogs are in a downward direction, the standard lowering solenoids are of a continuous duty type and nothing needs to be done. However, if the increments are in the “up” direction, the standard motor would not take the frequent motor starts without overheating. Therefore, the options to consider are going to an air operated unit, air over water unit, or a continuous running power unit. (See the power unit options for the specific table model that you are considering.)

Applications without frequent jogging are usually easier on the power units, but check the operational sequence against the rule of thumb of eleven (11) seconds off for every one (1) second on with full loads. Keep in mind that most applications seldom see full loads. If overheating is an issue, consider a continuous running power unit or check with the factory for other power unit options.

Once the total number of cycles per year are calculated, that number can be compared to the “warranty life” and “expected life” as explained in the warranty section of this booklet. Note that there is a large difference in the warranty life of a standard unit and an ultra high cycle unit, just as there is a large difference in price. If the application that you are considering falls somewhere in between, contact us to see if a modified standard unit can be designed to better fit the application and the budget.

**SPECIAL FEATURES & ACCESSORIES:** These items are generally divided into two categories, standard options which are included in the catalog and price lists and those unusual items that must be priced by the factory.

*Items that require factory consultation include:*

- ▶ Special environments such as freezers, proximity to high heat, or damp locations
- ▶ Hazardous environments such as explosion proof for dust or for vapor  
(Note: We can supply explosion proof components, but the installing electrician is the only one who can guaranty compliance to local electrical codes for explosion proof.)
- ▶ Special finishes such as stainless steel, polyurethane paints, epoxy paints
- ▶ High cycle requirements that fall between our standard units and our ultra high cycle units
- ▶ Any requirements that do not fit within any of our standard groups of equipment
- ▶ AC or DC self propelled units
- ▶ Bellows and roller shades

*Items shown in our catalog and price lists: (see accessory sections)*

- ▶ Power units that are deluxe, continuous duty or continuous running
- ▶ Push buttons, footswitches, and other control options
- ▶ Oversize platforms and platforms with bevel toe guards
- ▶ Portability options such as wheel and dolly sets and casters

## LIFT APPLICATIONS, SPECIFICATIONS & SELECTION

*How to configure your own DW-DL-DH units: Doubling units to provide more capacity, width, length or travel is a common practice. This catalog contains some double wide, double long, and double high units. It does not contain every possible combination of lifts as it would add too many pages. You, however, can configure your own double units to suit your needs if you follow the rules listed below.*

### **Double High (DH) Configuration Rules:**

- MSL units cannot be stacked into DH units.
- The lifts making up a DH unit must be of equal travel and both of their base frames must be the same width and length.
- The capacity of a DH unit can only equal the capacity of the upper lift, when the lower lift capacity equals or exceeds the sum of the weight and capacity of the upper lift. If there is a shortfall in the capacity of the lower lift, this must be subtracted from the capacity of the upper lift to determine total unit capacity.
- The DH travel is equal to the sum of the travel of the upper and lower units.
- The maximum platform size may be up to 12" wider than the minimum platform dimension and no longer than the maximum listed platform length for the upper unit.
- The end load and side load capacity is equal to one half of the upper lift end and side capacity.
- Side load capacity is reduced by 4% per inch increase over minimum platform width.
- End load capacity is reduced by 4% per inch increase over minimum platform length.
- DH units with total platform travel over 72", should use guide angles to reduce potential sway during loading and unloading operations.
- If personnel are going to ride the units, then handrails, gates and interlocks should be considered and local safety codes should be investigated.
- Units with internal power units will continue to have internal power units when they are stacked.
- The speed of the stacked units will equal the sum of the individual unit speeds.



*Note: Unlike MSL units, the legs on upper and lower units do not open equally during operation. Usually the top legs partially open first, then the lower legs open and the units continue to move alternately.*

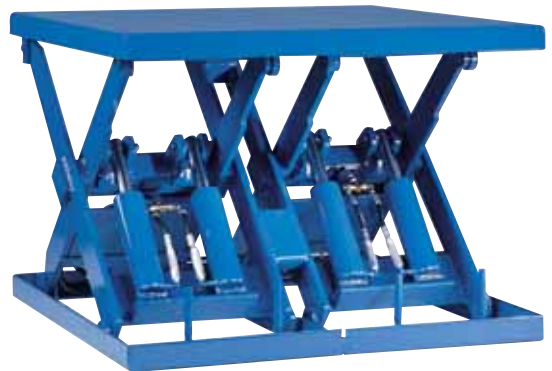
**Double Long (DL) Configuration Rules:**

- The lifts making up a DL must be of equal capacity and travel and must have the same width and length base frames.
- DL lifting capacity equals twice the catalog capacity of a single unit provided that the platform is no longer than twice the length of the maximum platform allowed for a single lift.
- The factory engineers will reduce capacity for units with extra long platforms. Consult the factory for exact capacities.
- DL travel equals the travel of the base lift.
- The maximum platform width may be up to 24" wider than the minimum platform width of the base lift.
- The minimum platform length is (2 x base frame length + 2").
- DL side load capacity equals twice the base unit side load capacity.
- Side load capacity is reduced by 2% per inch increase over the minimum platform width of the base unit.
- DL end load capacity is the same as the base unit end load capacity.
- End load capacity is reduced by 2% per inch increase over the minimum platform length of the DL unit.
- Lowered height may increase for applications where the platform is not evenly loaded (contact factory for specific applications).



**Double Wide (DW) Configuration Rules:**

- The units making up a DW must be of equal capacity and travel and must have the same width and length base frame.
- DW capacity equals the catalog capacity of a single unit, times 160%.
- DW travel equals the travel of the base unit less 2".
- DW lowered height equals base unit lowered height + 2".
- The maximum platform width may be up to 24" wider than sum of the minimum platform widths of the base units.
- The maximum platform length may be up to 24" longer than the minimum platform length of the base unit.
- DW side loads equal (base unit side load x 2) x 60%.
- Side load capacity is reduced by 2% per inch increase over the minimum platform width of the DW unit.
- DW end load capacity is twice the capacity for a single unit.
- End load capacity is reduced by 2% per inch increase over the minimum platform length of the base unit.



*If you configure your own double unit, be sure to check with our sales department before you order the lift.*

## ULTRA HIGH CYCLE LIFTS

*When heavy loads need to be moved quickly, precisely and with consistent repeatability and/or a lift is expected to operate in an application which will exceed millions of cycles, an ultra high cycle lift should be considered. Our Ultra High Cycle (UHC) lifts offer not only accuracy and durability, but lower maintenance costs, less down time, reduced or eliminated lift replacement costs and flexible installation requirements which all add up to greater value in demanding applications.*

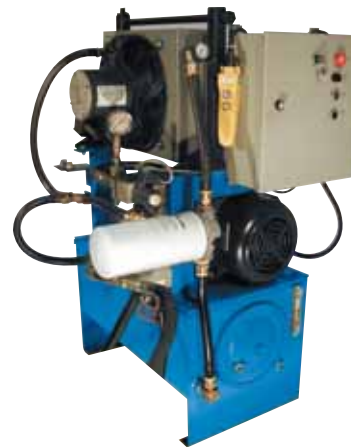
*When determining the need for an ultra high cycle lift in such an application, three systems should be considered: lifting structure, position control and hydraulic power unit.*

- Our lifting mechanism is no simple lift. The unit looks and acts like a machine tool. Precision tolerances are used to ensure the necessary tight fits that produce smooth operation and accurate positioning without the deflections associated with standard lifts. Sliders replace wheels for greater contact area reducing stresses and wear. Cylinders are double acting and connected directly to the platform corners, which provides better load support and less deflection. Special grade alloy steel and custom seals are used in the cylinders to help meet the **3,000,000** cycle life warranty of our UHC lift structure. As with any lift, the load weight, shape and CG location are important in determining the overall dimensions of the ultra high cycle lift. The factory must be contacted for non-standard travel requirements.
- With the rigid structure of our UHC lift, very accurate positioning can be obtained. Not all applications require extreme accuracy, therefore we offer three levels of position control. Standard is a system of proximity sensors that act like limit switches to control the minimum lowered position and the maximum raised position. This allows operation between these two points with an accuracy and repeatability of approximately  $\pm 1/4"$ . If intermediate positions and/or greater accuracy is required, then for a moderate price increment a position control system that measures platform position is available for use with our standard power unit. This package offers platform indexing up or down, preprogrammed application specific intermediate positioning, accuracy and repeatability to  $\pm .030"$ , or any combination of these features. Optional user and network interfaces offer even greater flexibility and system integration. Finally, if greater speeds and/or accuracy are required, then a custom position control system can be provided, but in this case price will need to be determined based on the application and it can become very high, very quickly.
- The standard hydraulic power unit is capable of providing speeds of up to 40 feet per minute for our UHC lifts and is designed to run continuously. At this speed, a lift will provide a full, up and down through 32" of travel, with a cycle time of 8 seconds. With a 10 HP motor, 20 gallon reservoir, better than 10 micron absolute filtration and an oil cooler, these power units are built to last with a minimum amount of maintenance. Besides the usual hydraulic valving you would find in a high cycle power unit, there is also a PLC controlled proportional valve which is used in part to eliminate shock at the start and stop of a cycle. The standard controls offer two modes of operation, manual and automatic. Manual mode allows the platform to be raised and lowered at a slower speed for maintenance while the automatic mode operates at the lift and lowering speeds which are preprogrammed into the PLC based on the customer's application requirements.

Each of the three systems will be quoted separately providing a modular approach to custom applications. The following is a specification table on our standard Ultra High Cycle lifts:

## SPECIFICATION TABLE FOR ULTRA HIGH CYCLE LIFTS

Model	Travel	Capacity	Std Min Platform	Opt. Max. Platform	Maximum Loading End	Maximum Loading Side	Baseframe Size	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
UHC-3032	32	3000	36 X 50	72 X 90	3000	3000	36 X 50	11-1/4	43-1/4	4	10	1900
UHC-6032	32	6000	42 X 50	78 X 90	6000	6000	42 X 50	12-1/2	44-1/2	6-1/4	10	3800



The technology we developed for our UHC lifts is very robust and transferable. In applications with requirements of up to **1,000,000** cycles a less expensive lift can be used. By tailoring the UHC technology to those moderately high cycle applications, a suitably robust lift is feasible which will accommodate a wide range of travels and loads at a significantly lower price. As mentioned elsewhere in this application guide, warranty life and actual useful life of a lift are quite different. Even though the UHC lifts are warranted for **3,000,000**, useful life of the lift could well exceed that number depending on load, environment, speed of operation and maintenance quality. The warranty life is a good term to refer to with respect to level of lift robustness. With warranty life as the basis, the moderately high cycle lift is 8 times as robust as a standard lift and the ultra high cycle lift is 24 times as robust. How's that for value?

*Please contact the factory with your requirements whether it is a standard lift, an Ultra High Cycle Lift or anything in between.*

## SINGLE SCISSORS

### LITE TABLES (LT) AND LITE TABLE DOUBLE-SCISSORS (LTD) SERIES LIFTS

*The LT & LTD-Series lifts were designed for the lighter capacity applications. These units are ideal for work station applications where operator performance is enhanced by the reduced bending and lifting.*



#### SPECIAL FEATURES

- ▶ All of the controllers are Underwriter Laboratory approved assemblies.
- ▶ These units are fully primed and finished with a baked enamel finish.
- ▶ The cylinders are machine grade with clear plastic return lines.
- ▶ All pressure hoses are double wire braid with JIC fittings.
- ▶ The reservoirs are mild steel.
- ▶ These units conform to all applicable ANSI codes.

#### FEATURE DETAILS

See pg. 48 for optional accessories



▶ Platform Centering Device



▶ Cylinder



▶ Double Wire Braid Hose



▶ LT Power Unit

**SPECIFICATION TABLE FOR SINGLE & DOUBLE LIFTS**

Model	Travel	Capacity	Std Min Platform	Opt. Max. Platform	Maximum Loading End	Maximum Loading Side	Baseframe Size	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
LT-1036	36	1000	24 X 48	36 X 60	650	500	24 X 48	6	42	30	1/2	440
LT-1536	36	1500	24 X 48	36 X 60	1000	750	24 X 48	6	42	32	1/2	475
LTD-0536	36	500	18 X 33	30 X 45	325	250	18 X 33	6	42	25	1/2	200
LTD-1036	36	1000	18 X 33	30 X 45	650	500	18 X 33	6	42	25	1/2	215
LTD-1536	36	1500	18 X 33	30 X 45	1000	750	18 X 33	6	42	35	1/2	245

**SPECIAL FEATURES**

- ▶ The portability option adds 7-1/2" to the LT lowered height and 5" to the LTD lowered height.
- ▶ The DC option adds 110 lbs to the LT model weights and 225 lbs to the LTD model weights.
- ▶ The DC option available only on portable models with minimum platform length.



*LTD-1036 with oversized deck option*



*Portable models can be equipped with the 12 volt DC battery option with built in charger.*



*LT-1036 with portability option*

## PRODUCTION (P) SERIES LIFTS

*The P-Series lifts are our most popular series as they fit a wide array of manufacturing applications.*



### SPECIAL FEATURES

- ▶ These units are equipped with the patented "Platform Centering Devices".
- ▶ All of the controllers are Underwriter Laboratory approved assemblies.
- ▶ These units are fully primed and finished with a baked enamel finish.
- ▶ The cylinders are machine grade with clear plastic return lines.
- ▶ All pressure hoses are double wire braid with JIC fittings.
- ▶ The reservoirs are mild steel.
- ▶ These units conform to all applicable ANSI codes.

### FEATURE DETAILS

See pg. 48 for optional accessories



▶ Platform Centering Device



▶ Cylinder



▶ Double Wire Braid Hose



▶ Power Unit



# PRODUCTION (P) SERIES LIFTS

## SPECIFICATION TABLE FOR SINGLE SCISSOR UNITS

Model	Travel	Capacity	Std Min Platform	Opt. Max. Platform	Maximum Loading End	Maximum Loading Side	Baseframe Size	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
P-2524	24	2500	24 X 36	48 X 60	2500	2500	24 X 36	6-1/2	30-1/2	10	1-1/2	500
P-4024	24	4000	24 X 36	48 X 60	4000	3000	24 X 36	6-1/2	30-1/2	15	1-1/2	550
P-6024	24	6000	24 X 36	48 X 60	4200	3800	24 X 36	6-1/2	30-1/2	22	1-1/2	560
PEW-2524	24	2500	36 X 36	60 X 60	2500	2500	36 X 36	6-1/2	30-1/2	10	1-1/2	650
PEW-4024	24	4000	36 X 36	60 X 60	4000	3100	36 X 36	6-1/2	30-1/2	15	1-1/2	700
PEW-6024	24	6000	36 X 36	60 X 60	4300	4000	36 X 36	6-1/2	30-1/2	22	1-1/2	710
PVW-2024	24	2000	48 X 36	72 X 60	2000	2000	48 X 36	6-1/2	30-1/2	10	1-1/2	750
PVW-4024	24	4000	48 X 36	72 X 60	4000	3200	48 X 36	6-1/2	30-1/2	15	1-1/2	800
PVW-6024	24	6000	48 X 36	72 X 60	4300	4000	48 X 36	6-1/2	30-1/2	22	1-1/2	815
P-2536	36	2500	24 X 48	48 X 72	2500	2500	24 X 48	6-1/2	42-1/2	11	2	600
P-4036	36	4000	24 X 48	48 X 72	3300	2900	24 X 48	6-1/2	42-1/2	17	2	650
P-6036	36	6000	24 X 48	48 X 72	4100	3500	24 X 48	6-1/2	42-1/2	23	2	680
PEW-2536	36	2500	36 X 48	60 X 72	2500	2500	36 X 48	6-1/2	42-1/2	11	2	765
PEW-4036	36	4000	36 X 48	60 X 72	3300	3100	36 X 48	6-1/2	42-1/2	17	2	815
PEW-6036	36	6000	36 X 48	60 X 72	4300	3100	36 X 48	6-1/2	42-1/2	23	2	845
PVW-2036	36	2000	48 X 48	72 X 72	2000	2000	48 X 48	6-1/2	42-1/2	11	2	870
PVW-4036	36	4000	48 X 48	72 X 72	3300	3100	48 X 48	6-1/2	42-1/2	17	2	920
PVW-6036	36	6000	48 X 48	72 X 72	4300	3800	48 X 48	6-1/2	42-1/2	23	2	945
P-2548	48	2500	24 X 64	48 X 96	2500	2200	24 X 64	7	55	19	2	730
P-4048	48	4000	24 X 64	48 X 96	3500	2800	24 X 64	7	55	28	2	830
P-6048	48	6000	24 X 64	48 X 96	3500	3000	24 X 64	7	55	38	2	850
PEW-2548	48	2500	36 X 64	60 X 96	2500	2300	36 X 64	7	55	19	2	920
PEW-4048	48	4000	36 X 64	60 X 96	3400	3000	36 X 64	7	55	28	2	1015
PEW-6048	48	6000	36 X 64	60 X 96	3400	3000	36 X 64	7	55	38	2	1040
PVW-2048	48	2000	48 X 64	72 X 96	2000	2000	48 X 64	7	55	19	2	1040
PVW-4048	48	4000	48 X 64	72 X 96	3400	3100	48 X 64	7	55	28	2	1135
PVW-6048	48	6000	48 X 64	72 X 96	3400	3000	48 X 64	7	55	38	2	1150
P-2560	60	2500	24 X 84	48 X 120	2500	2500	24 X 84	10	70	28	2	1000
P-4060	60	4000	24 X 84	48 X 120	4000	4000	24 X 84	10	70	42	2	1150
P-6060	60	6000	24 X 84	48 X 120	5700	4000	24 X 84	10	70	57	2	1175
PEW-2560	60	2500	36 X 84	60 X 120	2500	2500	36 X 84	10	70	29	2	1210
PEW-4060	60	4000	36 X 84	60 X 120	4000	4000	36 X 84	10	70	42	2	1335
PEW-6060	60	6000	36 X 84	60 X 120	5700	4400	36 X 84	10	70	57	2	1365
PVW-2560	60	2500	48 X 84	72 X 120	2500	2500	48 X 84	10	70	29	2	1365
PVW-4060	60	4000	48 X 84	72 X 120	4000	4000	48 X 84	10	70	42	2	1490
PVW-6060	60	6000	48 X 84	72 X 120	5600	4500	48 X 84	10	70	57	2	1510

The next page lists the double wide units which provide greater capacity and wider platform sizes. There are also double long units that provide greater capacity and longer platform sizes. For units with greater vertical travel, refer to the multiple scissors section of this booklet starting on *page 38* to see the multiple scissor lifts (MSL's) and the double high (DH) units.

If you do not find what you need, give us a call. The units shown in this catalog are only a small sampling of what can be done by combining units. Furthermore, if combining existing units will not meet your needs, we are always happy to quote on a custom design unit.

## DOUBLE WIDE (P) SERIES UNITS

### SPECIFICATION TABLE FOR DOUBLE WIDE UNITS

Model	Travel	Capacity	Std Min Platform	Opt. Max. Platform	Maximum Loading End	Maximum Loading Side	Baseframe Size	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
PDW-4022	22	4000	48 X 36	72 X 60	5000	3000	48 X 36	8-1/2	30-1/2	20	1-1/2	1000
PDW-6422	22	6400	48 X 36	72 X 60	8000	3600	48 X 36	8-1/2	30-1/2	30	1-1/2	1100
PDW-9622	22	9600	48 X 36	72 X 60	8400	4500	48 X 36	8-1/2	30-1/2	44	1-1/2	1120
PEDW-4022	22	4000	72 X 36	96 X 60	5000	3000	72 X 36	8-1/2	30-1/2	20	1-1/2	1300
PEDW-6422	22	6400	72 X 36	96 X 60	8000	3700	72 X 36	8-1/2	30-1/2	30	1-1/2	1400
PEDW-9622	22	9600	72 X 36	96 X 60	8600	4800	72 X 36	8-1/2	30-1/2	44	1-1/2	1420
PVDW-3222	22	3200	96 X 36	120 X 60	4000	2400	96 X 36	8-1/2	30-1/2	20	1-1/2	1500
PVDW-6422	22	6400	96 X 36	120 X 60	8000	3800	96 X 36	8-1/2	30-1/2	30	1-1/2	1600
PVDW-9622	22	9600	96 X 36	120 X 60	8600	4800	96 X 36	8-1/2	30-1/2	44	1-1/2	1630
PDW-4034	34	4000	48 X 48	72 X 72	5000	3000	48 X 48	8-1/2	42-1/2	22	2	1200
PDW-6434	34	6400	48 X 48	72 X 72	6600	3400	48 X 48	8-1/2	42-1/2	34	2	1300
PDW-9634	34	9600	48 X 48	72 X 72	8200	4200	48 X 48	8-1/2	42-1/2	46	2	1360
PEDW-4034	34	4000	72 X 48	96 X 72	5000	3000	72 X 48	8-1/2	42-1/2	22	2	1530
PEDW-6434	34	6400	72 X 48	96 X 72	6600	3700	72 X 48	8-1/2	42-1/2	34	2	1630
PEDW-9634	34	9600	72 X 48	96 X 72	8600	4400	72 X 48	8-1/2	42-1/2	46	2	1690
PVDW-3234	34	3200	96 X 48	120 X 72	3200	2400	96 X 48	8-1/2	42-1/2	22	2	1740
PVDW-6434	34	6400	96 X 48	120 X 72	6600	3700	96 X 48	8-1/2	42-1/2	34	2	1840
PVDW-9634	34	9600	96 X 48	120 X 72	8600	4500	96 X 48	8-1/2	42-1/2	46	2	1890
PDW-4046	46	4000	48 X 64	72 X 96	5000	2600	48 X 64	9	55	38	2	1460
PDW-6446	46	6400	48 X 64	72 X 96	7000	3300	48 X 64	9	55	56	2	1660
PDW-9646	46	9600	48 X 64	72 X 96	7000	3600	48 X 64	9	55	76	2	1700
PEDW-4046	46	4000	72 X 64	96 X 96	5000	2700	72 X 64	9	55	38	2	1840
PEDW-6446	46	6400	72 X 64	96 X 96	6800	3600	72 X 64	9	55	56	2	2030
PEDW-9646	46	9600	72 X 64	96 X 96	6800	3600	72 X 64	9	55	76	2	2080
PVDW-3246	46	3200	96 X 64	120 X 96	4000	2400	96 X 64	9	55	38	2	2080
PVDW-6446	46	6400	96 X 64	120 X 96	6800	3700	96 X 64	9	55	56	2	2270
PVDW-9646	46	9600	96 X 64	120 X 96	6800	3600	96 X 64	9	55	76	2	2300
PDW-4058	58	4000	48 X 84	72 X 120	5000	3000	48 X 84	12	70	56	2	2000
PDW-6458	58	6400	48 X 84	72 X 120	8000	4800	48 X 84	12	70	84	2	2300
PDW-9658	58	9600	48 X 84	72 X 120	11400	4800	48 X 84	12	70	114	2	2350
PEDW-4058	58	4000	72 X 84	96 X 120	5000	3000	72 X 84	12	70	56	2	2420
PEDW-6458	58	6400	72 X 84	96 X 120	8000	4800	72 X 84	12	70	84	2	2670
PEDW-9658	58	9600	72 X 84	96 X 120	11400	5200	72 X 84	12	70	114	2	2730
PVDW-4058	58	4000	96 X 84	120 X 120	5000	3000	96 X 84	12	70	56	2	2730
PVDW-6458	58	6400	96 X 84	120 X 120	8000	4800	96 X 84	12	70	84	2	2980
PVDW-9658	58	9600	96 X 84	120 X 120	11200	5400	96 X 84	12	70	114	2	3020

Wider units are available in the Heavy Duty and Super Duty lift section. Also, the factory can modify existing units or design custom units, so please call us if you do not find a size that you need.

# DOUBLE LONG (P) SERIES UNITS

## SPECIFICATION TABLE FOR DOUBLE LONG UNITS

### LENGTH 74"-98"

Model	Travel	Capacity	Std Min Platform	Opt. Max. Platform	Maximum Loading End	Maximum Loading Side	Baseframe Size	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
PDL-5024	24	5000	24 X 74	48 X 98	2500	5000	24 X 74	6-1/2	30-1/2	20	1-1/2	1000
PDL-8024	24	8000	24 X 74	48 X 98	4000	6000	24 X 74	6-1/2	30-1/2	30	1-1/2	1100
PDL-12024	24	12000	24 X 74	48 X 98	4200	7600	24 X 74	6-1/2	30-1/2	44	1-1/2	1120
PEWDL-5024	24	5000	36 X 74	60 X 98	2500	5000	36 X 74	6-1/2	30-1/2	22	1-1/2	1300
PEWDL-8024	24	8000	36 X 74	60 X 98	4000	6200	36 X 74	6-1/2	30-1/2	32	1-1/2	1400
PEWDL-12024	24	12000	36 X 74	60 X 98	4300	8000	36 X 74	6-1/2	30-1/2	46	1-1/2	1420
PVWDL-4024	24	4000	48 X 74	72 X 98	2000	4000	48 X 74	6-1/2	30-1/2	24	1-1/2	1500
PVWDL-8024	24	8000	48 X 74	72 X 98	4000	6400	48 X 74	6-1/2	30-1/2	32	1-1/2	1600
PVWDL-12024	24	12000	48 X 74	72 X 98	4300	8000	48 X 74	6-1/2	30-1/2	46	1-1/2	1630

### LENGTH 84"-108"

Model	Travel	Capacity	Std Min Platform	Opt. Max. Platform	Maximum Loading End	Maximum Loading Side	Baseframe Size	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
PEDL-5024	24	5000	24 X 84	48 X 108	2500	5000	24 X 84	6-1/2	30-1/2	20	1-1/2	1070
PEDL-8024	24	8000	24 X 84	48 X 108	4000	6000	24 X 84	6-1/2	30-1/2	30	1-1/2	1170
PEDL-12024	24	12000	24 X 84	48 X 108	4200	7400	24 X 84	6-1/2	30-1/2	44	1-1/2	1190
PEWEDL-5024	24	5000	36 X 84	60 X 108	2500	5000	36 X 84	6-1/2	30-1/2	22	1-1/2	1390
PEWEDL-8024	24	8000	36 X 84	60 X 108	4000	6200	36 X 84	6-1/2	30-1/2	32	1-1/2	1490
PEWEDL-12024	24	12000	36 X 84	60 X 108	4300	7800	36 X 84	6-1/2	30-1/2	46	1-1/2	1510
PVWEDL-4024	24	4000	48 X 84	72 X 108	2000	4000	48 X 84	6-1/2	30-1/2	24	1-1/2	1600
PVWEDL-8024	24	8000	48 X 84	72 X 108	4000	6200	48 X 84	6-1/2	30-1/2	32	1-1/2	1700
PVWEDL-12024	24	12000	48 X 84	72 X 108	4300	8000	48 X 84	6-1/2	30-1/2	46	1-1/2	1730

### LENGTH 108"-144"

Model	Travel	Capacity	Std Min Platform	Opt. Max. Platform	Maximum Loading End	Maximum Loading Side	Baseframe Size	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
PVDL-5024	24	5000	24 X 108	48 X 144	2500	5000	24 X 108	6-1/2	30-1/2	20	1-1/2	1150
PVDL-8024	24	8000	24 X 108	48 X 144	4000	6000	24 X 108	7	31	30	1-1/2	1310
PVDL-12024	24	12000	24 X 108	48 X 144	4200	7400	24 X 108	7-1/2	31-1/2	44	1-1/2	1330
PEWVDL-5024	24	5000	36 X 108	60 X 144	2500	5000	36 X 108	6-1/2	30-1/2	22	1-1/2	1700
PEWVDL-8024	24	8000	36 X 108	60 X 144	4000	6200	36 X 108	7	31	32	1-1/2	1830
PEWVDL-12024	24	12000	36 X 108	60 X 144	4300	7800	36 X 108	7-1/2	31-1/2	46	1-1/2	1920
PVWVDL-4024	24	4000	48 X 108	72 X 144	2000	4000	48 X 108	6-1/2	30-1/2	22	1-1/2	1940
PVWVDL-8024	24	8000	48 X 108	72 X 144	4000	6200	48 X 108	7	31	32	1-1/2	2070
PVWVDL-12024	24	12000	48 X 108	72 X 144	4300	7800	48 X 108	7-1/2	31-1/2	46	1-1/2	2160

### LENGTH 98"-122"

Model	Travel	Capacity	Std Min Platform	Opt. Max. Platform	Maximum Loading End	Maximum Loading Side	Baseframe Size	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
PDL-5036	36	5000	24 X 98	48 X 122	2500	5000	24 X 98	6-1/2	42-1/2	22	2	1200
PDL-8036	36	8000	24 X 98	48 X 122	3300	5800	24 X 98	6-1/2	42-1/2	34	2	1320
PDL-12036	36	12000	24 X 98	48 X 122	4100	7000	24 X 98	6-1/2	42-1/2	46	2	1380
PEWDL-5036	36	5000	36 X 98	60 X 122	2500	5000	36 X 98	6-1/2	42-1/2	24	2	1550
PEWDL-8036	36	8000	36 X 98	60 X 122	3300	6000	36 X 98	6-1/2	42-1/2	36	2	1650
PEWDL-12036	36	12000	36 X 98	60 X 122	4300	7400	36 X 98	6-1/2	42-1/2	48	2	1710
PVWDL-4036	36	4000	48 X 98	72 X 122	2000	4000	48 X 98	6-1/2	42-1/2	24	2	1760
PVWDL-8036	36	8000	48 X 98	72 X 122	3300	6200	48 X 98	6-1/2	42-1/2	36	2	1860
PVWDL-12036	36	12000	48 X 98	72 X 122	4300	7400	48 X 98	6-1/2	42-1/2	48	2	1910

\*Base frame length may vary on longer platforms.

# DOUBLE LONG (P) SERIES UNITS

## SPECIFICATION TABLE FOR DOUBLE LONG UNITS

### LENGTH 120"-144"

Model	Travel	Capacity	Std Min Platform	Opt. Max. Platform	Maximum Loading End	Maximum Loading Side	Baseframe Size	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
PEDL-5036	36	5000	24 X 120	48 X 144	2500	4800	24 X 120	6-1/2	42-1/2	22	2	1350
PEDL-8036	36	8000	24 X 120	48 X 144	3300	5800	24 X 120	6-1/2	42-1/2	34	2	1400
PEDL-12036	36	12000	24 X 120	48 X 144	4100	7000	24 X 120	7	43	46	2	1500
PEWEDL-5036	36	5000	36 X 120	60 X 144	2500	5000	36 X 120	6-1/2	42-1/2	24	2	1650
PEWEDL-8036	36	8000	36 X 120	60 X 144	3300	6000	36 X 120	6-1/2	42-1/2	36	2	1750
PEWEDL-12036	36	12000	36 X 120	60 X 144	4300	7400	36 X 120	7	43	48	2	1850
PVWEDL-4036	36	4000	48 X 120	72 X 144	2000	4000	48 X 120	6-1/2	42-1/2	24	2	1880
PVWEDL-8036	36	8000	48 X 120	72 X 144	3300	6200	48 X 120	6-1/2	42-1/2	36	2	1980
PVWEDL-12036	36	12000	48 X 120	72 X 144	4300	7400	48 X 120	7	43	48	2	2070

### LENGTH 144"-192"

Model	Travel	Capacity	Std Min Platform	Opt. Max. Platform	Maximum Loading End	Maximum Loading Side	Baseframe Size	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
PVDL-5036	36	5000	24 X 144	48 X 192	2500	4800	24 X 144	6-1/2	42-1/2	22	2	1450
PVDL-8036	36	8000	24 X 144	48 X 192	3300	5800	24 X 144	7-1/2	43-1/2	34	2	1580
PVDL-12036	36	12000	24 X 144	48 X 192	4000	7000	24 X 144	8	44	46	2	1680
PEWVDL-5036	36	5000	36 X 144	60 X 192	2500	5000	36 X 144	6-1/2	42-1/2	24	2	1770
PEWVDL-8036	36	8000	36 X 144	60 X 192	3200	6000	36 X 144	7-1/2	43-1/2	36	2	1950
PEWVDL-12036	36	12000	36 X 144	60 X 192	3900	7200	36 X 144	8	44	48	2	2050
PVWVDL-4036	36	4000	48 X 144	72 X 192	2000	4000	48 X 144	6-1/2	42-1/2	24	2	2020
PVWVDL-8036	36	8000	48 X 144	72 X 192	3200	6000	48 X 144	7-1/2	43-1/2	36	2	2210
PVWVDL-12036	36	12000	48 X 144	72 X 192	3900	7400	48 X 144	8	44	48	2	2300

### LENGTH 130"-160"

Model	Travel	Capacity	Std Min Platform	Opt. Max. Platform	Maximum Loading End	Maximum Loading Side	Baseframe Size	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
PDL-5048	48	5000	24 X 130	48 X 160	2500	4400	24 X 130	7	55	36	2	1540
PDL-8048	48	8000	24 X 130	48 X 160	3500	5600	24 X 130	7	55	54	2	1680
PDL-12048	48	12000	24 X 130	48 X 160	3500	5600	24 X 130	7	55	74	2	1720
PEWDL-5048	48	5000	36 X 130	60 X 160	2500	4600	36 X 130	7	55	38	2	1860
PEWDL-8048	48	8000	36 X 130	60 X 160	3400	6000	36 X 130	7	55	56	2	2050
PEWDL-11848	48	11800	36 X 130	60 X 160	3400	6000	36 X 130	7	55	76	2	2100
PVWDL-4048	48	4000	48 X 130	72 X 160	2000	4000	48 X 130	7	55	38	2	2100
PVWDL-8048	48	8000	48 X 130	72 X 160	3400	6000	48 X 130	7	55	56	2	2290
PVWDL-11648	48	11600	48 X 130	72 X 160	3400	6000	48 X 130	7	55	76	2	2320

### LENGTH 160"-192"

Model	Travel	Capacity	Std Min Platform	Opt. Max. Platform	Maximum Loading End	Maximum Loading Side	Baseframe Size	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
PEDL-5048	48	5000	24 X 160	48 X 192	2500	4400	24 X 160	7	55	36	2	1660
PEDL-8048	48	8000	24 X 160	48 X 192	3400	5400	24 X 160	7-1/2	55-1/2	54	2	1860
PEDL-11848	48	11800	24 X 160	48 X 192	3400	5600	24 X 160	8	56	74	2	1900
PEWEDL-5048	48	5000	36 X 160	60 X 192	2500	4600	36 X 160	7	55	38	2	2000
PEWEDL-8048	48	8000	36 X 160	60 X 192	3400	6000	36 X 160	7-1/2	55-1/2	56	2	2210
PEWEDL-11648	48	11600	36 X 160	60 X 192	3400	6000	36 X 160	8	56	76	2	2300
PVWEDL-4048	48	4000	48 X 160	72 X 192	2000	4000	48 X 160	7	55	38	2	2270
PVWEDL-8048	48	8000	48 X 160	72 X 192	3200	6000	48 X 160	7-1/2	55-1/2	56	2	2480
PVWEDL-11448	48	11400	48 X 160	72 X 192	3300	6000	48 X 160	8	56	76	2	2560

\*Base frame length may vary on longer platforms.



**SPECIFICATION TABLE FOR DOUBLE LONG UNITS**

**LENGTH 192"-256"**

Model	Travel	Capacity	Std Min Platform	Opt. Max. Platform	Maximum Loading End	Maximum Loading Side	Baseframe Size	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
PVDL-4848	48	4800	24 X 192	48 X 256	2400	4200	24 X 192	7	55	36	2	1800
PVDL-8048	48	8000	24 X 192	48 X 256	3400	5400	24 X 192	8	56	54	2	2040
PVDL-11448	48	11400	24 X 192	48 X 256	3300	5400	24 X 192	9	57	74	2	2180
PEWVDL-4848	48	4800	36 X 192	60 X 256	2400	4600	36 X 192	7	55	40	2	2170
PEWVDL-8048	48	8000	36 X 192	60 X 256	3300	5800	36 X 192	8	56	56	2	2470
PEWVDL-11248	48	11200	36 X 192	60 X 256	3300	5800	36 X 192	9	57	76	2	2620
PVWVDL-4048	48	4000	48 X 192	72 X 256	2000	4000	48 X 192	7	55	40	2	2470
PVWVDL-8048	48	8000	48 X 192	72 X 256	3300	6000	48 X 192	8	56	56	2	2770
PVWVDL-11048	48	11000	48 X 192	72 X 256	3200	5800	48 X 192	9	57	76	2	2900

**LENGTH 170"-212"**

Model	Travel	Capacity	Std Min Platform	Opt. Max. Platform	Maximum Loading End	Maximum Loading Side	Baseframe Size	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
PDL-5060	60	5000	24 X 170	48 X 212	3300	5600	24 X 170	10	70	58	2	2100
PDL-8060	60	8000	24 X 170	48 X 212	5600	8000	24 X 170	10	70	84	2	2300
PDL-12060	60	12000	24 X 170	48 X 212	5700	8000	24 X 170	10	70	114	2	2350
PEWDL-5060	60	5000	36 X 170	60 X 212	2900	5000	36 X 170	10	70	59	2	2560
PEWDL-8060	60	8000	36 X 170	60 X 212	5600	8000	36 X 170	10	70	85	2	2680
PEWDL-12060	60	12000	36 X 170	60 X 212	5700	8800	36 X 170	10	70	115	2	2740
PVWDL-5060	60	5000	48 X 170	72 X 212	2800	5000	48 X 170	10	70	60	2	2905
PVWDL-8060	60	8000	48 X 170	72 X 212	5600	9000	48 X 170	10	70	86	2	2995
PVWDL-12060	60	12000	48 X 170	72 X 212	5600	9000	48 X 170	10	70	116	2	3035

**LENGTH 212"-254"**

Model	Travel	Capacity	Std Min Platform	Opt. Max. Platform	Maximum Loading End	Maximum Loading Side	Baseframe Size	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
PEDL-5060	60	5000	24 X 212	48 X 254	3300	5600	24 X 212	10	70	58	2	2300
PEDL-8060	60	8000	24 X 212	48 X 254	5600	8000	24 X 212	10	70	84	2	2510
PEDL-12060	60	12000	24 X 212	48 X 254	5700	8000	24 X 212	10	70	114	2	2560
PEWEDL-4860	60	4800	36 X 212	60 X 254	2400	4800	36 X 212	10	70	59	2	2790
PEWEDL-8060	60	8000	36 X 212	60 X 254	5600	8600	36 X 212	10	70	85	2	2920
PEWEDL-12060	60	12000	36 X 212	60 X 254	5600	8600	36 X 212	10	70	115	2	2980
PVWEDL-4860	60	4800	48 X 212	72 X 254	2300	4600	48 X 212	10	70	60	2	3170
PVWEDL-8060	60	8000	48 X 212	72 X 254	5600	8800	48 X 212	10	70	86	2	3270
PVWEDL-12060	60	12000	48 X 212	72 X 254	5600	8800	48 X 212	10	70	116	2	3310

**LENGTH 252"-336"**

Model	Travel	Capacity	Std Min Platform	Opt. Max. Platform	Maximum Loading End	Maximum Loading Side	Baseframe Size	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
PVDL-5060	60	5000	24 X 252	48 X 336	3200	5600	24 X 252	10	70	59	2	2485
PVDL-8060	60	8000	24 X 252	48 X 336	5600	8000	24 X 252	10	70	85	2	2710
PVDL-12060	60	12000	24 X 252	48 X 336	5600	7800	24 X 252	11	71	115	2	2890
PEWVDL-4660	60	4600	36 X 252	60 X 336	2300	4600	36 X 252	10	70	60	2	3010
PEWVDL-8060	60	8000	36 X 252	60 X 336	5600	8600	36 X 252	10	70	86	2	3130
PEWVDL-12060	60	12000	36 X 252	60 X 336	5500	8600	36 X 252	11	71	116	2	3345
PVWVDL-4460	60	4400	48 X 252	72 X 336	2200	4400	48 X 252	10	70	61	2	3430
PVWVDL-8060	60	8000	48 X 252	72 X 336	5500	8800	48 X 252	10	70	86	2	3530
PVWVDL-12060	60	12000	48 X 252	72 X 336	5500	8600	48 X 252	11	71	117	2	3710

\*Base frame length may vary on longer platforms.

## HEAVY DUTY (HD) SERIES LIFTS

*The HD-Series lifts were designed for the higher capacity applications beyond the scope of the P-Series units.*



### SPECIAL FEATURES

- ▶ These units are equipped with the patented "Platform Centering Devices".
- ▶ All of the controllers are Underwriter Laboratory approved assemblies.
- ▶ These units are fully primed and finished with a baked enamel finish.
- ▶ The cylinders are machine grade with clear plastic return lines.
- ▶ All pressure hoses are double wire braid with JIC fittings.
- ▶ The reservoirs are mild steel.
- ▶ These units conform to all applicable ANSI codes.

### FEATURE DETAILS

See pg. 48 for optional accessories



▶ Platform Centering Device



▶ Controller



▶ Cylinder



▶ Double Wire Braid Hose



▶ Power Unit



## SPECIFICATION TABLE FOR SINGLE SCISSOR UNITS

Model	Travel	Capacity	Std Min Platform	Opt. Max. Platform	Maximum Loading End	Maximum Loading Side	Baseframe Size	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
HD-0824	24	8000	30 X 48	54 X 78	10000	7500	30 X 48	9-3/4	33-3/4	12	5	1300
HD-1024	24	10000	30 X 48	54 X 78	11000	9700	30 X 48	9-3/4	33-3/4	18	5	1400
HD-1224	24	12000	30 X 48	54 X 78	11000	9700	30 X 48	9-3/4	33-3/4	19	5	1450
HDEW-0824	24	8000	42 X 48	66 X 78	10000	7900	42 X 48	11-3/4	35-3/4	13	5	1550
HDEW-1024	24	10000	42 X 48	66 X 78	11000	10400	42 X 48	11-3/4	35-3/4	18	5	1650
HDEW-1224	24	12000	42 X 48	66 X 78	11000	10400	42 X 48	11-3/4	35-3/4	19	5	1700
HDVW-0824	24	8000	54 X 48	78 X 78	10000	8300	54 X 48	11-3/4	35-3/4	13	5	1700
HDVW-1024	24	10000	54 X 48	78 X 78	10900	10600	54 X 48	11-3/4	35-3/4	18	5	1800
HDVW-1224	24	12000	54 X 48	78 X 78	10900	10700	54 X 48	11-3/4	35-3/4	19	5	1850
HD-0836	36	8000	30 X 60	54 X 90	8200	6000	30 X 60	9-3/4	45-3/4	18	5	1450
HD-1036	36	10000	30 X 60	54 X 90	10000	8300	30 X 60	9-3/4	45-3/4	26	5	1550
HD-1236	36	12000	30 X 60	54 X 90	10000	8800	30 X 60	9-3/4	45-3/4	27	5	1600
HDEW-0836	36	8000	42 X 60	66 X 90	8100	6600	42 X 60	11-3/4	47-3/4	18	5	1700
HDEW-1036	36	10000	42 X 60	66 X 90	10000	9200	42 X 60	11-3/4	47-3/4	26	5	1800
HDEW-1236	36	12000	42 X 60	66 X 90	10000	9300	42 X 60	11-3/4	47-3/4	27	5	1880
HDVW-0836	36	8000	54 X 60	78 X 90	8100	6800	54 X 60	11-3/4	47-3/4	18	5	1900
HDVW-1036	36	10000	54 X 60	78 X 90	10000	9500	54 X 60	11-3/4	47-3/4	26	5	2010
HDVW-1236	36	12000	54 X 60	78 X 90	9600	9600	54 X 60	11-3/4	47-3/4	27	5	2090
HD-0848	48	8000	30 X 68	54 X 98	7400	5100	30 X 68	10	58	24	5	1680
HD-1048	48	10000	30 X 68	54 X 98	8500	7100	30 X 68	10	58	34	5	1800
HD-1248	48	12000	30 X 68	54 X 98	8500	7300	30 X 68	10	58	35	5	1880
HDEW-0848	48	8000	42 X 68	66 X 98	7300	5500	42 X 68	12	60	24	5	1990
HDEW-1048	48	10000	42 X 68	66 X 98	8400	7800	42 X 68	12	60	34	5	2110
HDEW-1248	48	12000	42 X 68	66 X 98	8400	7800	42 X 68	12	60	35	5	2200
HDVW-0848	48	8000	54 X 68	78 X 98	7200	5700	54 X 68	12	60	24	5	2190
HDVW-1048	48	10000	54 X 68	78 X 98	8400	8000	54 X 68	12	60	34	5	2340
HDVW-1248	48	12000	54 X 68	78 X 98	8400	8000	54 X 68	12	60	35	5	2410
HD-0860	60	8000	30 X 84	54 X 114	6200	3700	30 X 84	10	70	32	5	1950
HD-1060	60	10000	30 X 84	54 X 114	8300	5300	30 X 84	10	70	47	5	2100
HD-1260	60	12000	30 X 84	54 X 114	8800	7100	30 X 84	10	70	48	5	2190
HDEW-0860	60	8000	42 X 84	66 X 114	6100	4000	42 X 84	12	72	33	5	2290
HDEW-1060	60	10000	42 X 84	66 X 114	8200	5800	42 X 84	12	72	48	5	2450
HDEW-1260	60	12000	42 X 84	66 X 114	8700	8700	42 X 84	12	72	48	5	2550
HDVW-0860	60	8000	54 X 84	78 X 114	6000	4200	54 X 84	12	72	33	5	2510
HDVW-1060	60	10000	54 X 84	78 X 114	8200	5900	54 X 84	12	72	48	5	2690
HDVW-1260	60	12000	54 X 84	78 X 114	8600	8100	54 X 84	12	72	48	5	2780

The next page lists the double wide units which provide greater capacity and wider platform sizes. There are also double long units that provide greater capacity and longer platform sizes. For units with greater vertical travel, refer to the multiple scissors section of this booklet starting on *page 38* to see the multiple scissor lifts (MSL's) and the double high (DH) units.

If you do not find what you need, do not be discouraged, give us a call. The units shown in this catalog are only a small sampling of what can be done by combining units. Furthermore, if combining existing units will not meet your needs, we are always happy to quote on a custom design unit.

# HEAVY DUTY (HD) SERIES LIFTS

## SPECIFICATION TABLE FOR DOUBLE WIDE UNITS

Model	Travel	Capacity	Std Min Platform	Opt. Max Platform	Maximum Loading End	Maximum Loading Side	Baseframe Size	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
HDDW-12822	22	12800	60 X 48	84 X 78	19200	9000	60 X 48	11-3/4	33-3/4	24	5	2600
HDDW-16022	22	16000	60 X 48	84 X 78	22000	11600	60 X 48	11-3/4	33-3/4	36	5	2800
HDDW-19222	22	19200	60 X 48	84 X 78	22000	11600	60 X 48	11-3/4	33-3/4	38	5	2900
HDEDW-12822	22	12800	84 X 48	108 X 78	19200	9400	84 X 48	13-3/4	35-3/4	26	5	3100
HDEDW-16022	22	16000	84 X 48	108 X 78	22000	12400	84 X 48	13-3/4	35-3/4	36	5	3300
HDEDW-19222	22	19200	84 X 48	108 X 78	22000	12400	84 X 48	13-3/4	35-3/4	38	5	3400
HDVDW-12822	22	12800	108 X 48	132 X 78	19200	9900	108 X 48	13-3/4	35-3/4	26	5	3400
HDVDW-16022	22	16000	108 X 48	132 X 78	21800	12700	108 X 48	13-3/4	35-3/4	36	5	3600
HDVDW-19222	22	19200	108 X 48	132 X 78	21800	12800	108 X 48	13-3/4	35-3/4	38	5	3700
HDDW-12834	34	12800	60 X 60	84 X 90	16400	7200	60 X 60	11-3/4	45-3/4	36	5	2900
HDDW-16034	34	16000	60 X 60	84 X 90	20000	9900	60 X 60	11-3/4	45-3/4	52	5	3100
HDDW-19234	34	19200	60 X 60	84 X 90	20000	10500	60 X 60	11-3/4	45-3/4	54	5	3200
HDEDW-12834	34	12800	84 X 60	108 X 90	16200	7900	84 X 60	13-3/4	47-3/4	36	5	3400
HDEDW-16034	34	16000	84 X 60	108 X 90	20000	11000	84 X 60	13-3/4	47-3/4	52	5	3600
HDEDW-19234	34	19200	84 X 60	108 X 90	20000	11100	84 X 60	13-3/4	47-3/4	54	5	3760
HDVDW-12834	34	12800	108 X 60	132 X 90	16200	8100	108 X 60	13-3/4	47-3/4	36	5	3800
HDVDW-16034	34	16000	108 X 60	132 X 90	20000	11400	108 X 60	13-3/4	47-3/4	52	5	4020
HDVDW-19234	34	19200	108 X 60	132 X 90	19200	11500	108 X 60	13-3/4	47-3/4	54	5	4180
HDDW-12846	46	12800	60 X 68	84 X 98	14800	6100	60 X 68	12	58	48	5	3360
HDDW-16046	46	16000	60 X 68	84 X 98	17000	8500	60 X 68	12	58	68	5	3600
HDDW-19246	46	19200	60 X 68	84 X 98	17000	8700	60 X 68	12	58	70	5	3760
HDEDW-12846	46	12800	84 X 68	108 X 98	14600	6600	84 X 68	14	60	48	5	3980
HDEDW-16046	46	16000	84 X 68	108 X 98	16800	9300	84 X 68	14	60	68	5	4220
HDEDW-19246	46	19200	84 X 68	108 X 98	16800	9300	84 X 68	14	60	70	5	4400
HDVDW-12846	46	12800	108 X 68	132 X 98	14400	6800	108 X 68	14	60	48	5	4380
HDVDW-16046	46	16000	108 X 68	132 X 98	16800	9600	108 X 68	14	60	68	5	4680
HDVDW-19246	46	19200	108 X 68	132 X 98	16800	9600	108 X 68	14	60	70	5	4820
HDDW-12858	58	12800	60 X 84	84 X 114	12400	4400	60 X 84	12	70	64	5	3900
HDDW-16058	58	16000	60 X 84	84 X 114	16600	6300	60 X 84	12	70	94	5	4200
HDDW-19258	58	19200	60 X 84	84 X 114	17600	8500	60 X 84	12	70	96	5	4380
HDEDW-12858	58	12800	84 X 84	108 X 114	12200	4800	84 X 84	14	72	66	5	4580
HDEDW-16058	58	16000	84 X 84	108 X 114	16400	6900	84 X 84	14	72	96	5	4900
HDEDW-19258	58	19200	84 X 84	108 X 114	17400	9300	84 X 84	14	72	96	5	5100
HDVDW-12858	58	12800	108 X 84	132 X 114	12000	5000	108 X 84	14	72	66	5	5020
HDVDW-16058	58	16000	108 X 84	132 X 114	16400	7000	108 X 84	14	72	96	5	5380
HDVDW-19258	58	19200	108 X 84	132 X 114	17200	9700	108 X 84	14	72	96	5	5560

Wider units are available in the Super Duty lift section. Also, the factory can quote on modified Heavy Duty units to meet your needs.





**SPECIFICATION TABLE FOR DOUBLE LONG UNITS**

Model	Travel	Capacity	Std Min Platform	Opt. Max. Platform	Maximum Loading End	Maximum Loading Side	Baseframe Size	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
HDDL-16024	24	16000	30 X 98	54 X 122	10000	15000	30 X 98	9-3/4	33-3/4	24	5	2600
HDDL-20024	24	20000	30 X 98	54 X 122	11000	19400	30 X 98	9-3/4	33-3/4	36	5	2800
HDDL-24024	24	24000	30 X 98	54 X 122	11000	19400	30 X 98	9-3/4	33-3/4	38	5	2900
HDEWDL-16024	24	16000	42 X 98	66 X 122	10000	15800	42 X 98	11-3/4	35-3/4	26	5	3100
HDEWDL-20024	24	20000	42 X 98	66 X 122	11000	20800	42 X 98	11-3/4	35-3/4	36	5	3300
HDEWDL-24024	24	24000	42 X 98	66 X 122	11000	20800	42 X 98	11-3/4	35-3/4	38	5	3400
HDVWDL-16024	24	16000	54 X 98	78 X 122	10000	16600	54 X 98	11-3/4	35-3/4	26	5	3400
HDVWDL-20024	24	20000	54 X 98	78 X 122	10900	21200	54 X 98	11-3/4	35-3/4	36	5	3600
HDVWDL-24024	24	24000	54 X 98	78 X 122	10900	21400	54 X 98	11-3/4	35-3/4	38	5	3700
HDDL-16036	36	16000	30 X 122	54 X 146	8200	12000	30 X 122	9-3/4	45-3/4	36	5	2900
HDDL-20036	36	20000	30 X 122	54 X 146	10000	16600	30 X 122	9-3/4	45-3/4	52	5	3100
HDDL-24036	36	24000	30 X 122	54 X 146	10000	17600	30 X 122	9-3/4	45-3/4	54	5	3200
HDEWDL-16036	36	16000	42 X 122	66 X 146	8100	13200	42 X 122	11-3/4	47-3/4	36	5	3400
HDEWDL-20036	36	20000	42 X 122	66 X 146	10000	18400	42 X 122	11-3/4	47-3/4	52	5	3600
HDEWDL-24036	36	24000	42 X 122	66 X 146	10000	18600	42 X 122	11-3/4	47-3/4	54	5	3760
HDVWDL-16036	36	16000	54 X 122	78 X 146	8100	13600	54 X 122	11-3/4	47-3/4	36	5	3800
HDVWDL-20036	36	20000	54 X 122	78 X 146	10000	19000	54 X 122	11-3/4	47-3/4	52	5	4020
HDVWDL-24036	36	24000	54 X 122	78 X 146	9600	19200	54 X 122	11-3/4	47-3/4	54	5	4180
HDDL-16048	48	16000	30 X 138	54 X 162	7400	10200	30 X 138	10	58	48	5	3360
HDDL-20048	48	20000	30 X 138	54 X 162	8500	14200	30 X 138	10	58	68	5	3600
HDDL-24048	48	24000	30 X 138	54 X 162	8500	14600	30 X 138	10	58	70	5	3760
HDEWDL-16048	48	16000	42 X 138	66 X 162	7300	11000	42 X 138	12	60	48	5	3980
HDEWDL-20048	48	20000	42 X 138	66 X 162	8400	15600	42 X 138	12	60	68	5	4220
HDEWDL-24048	48	24000	42 X 138	66 X 162	8400	15600	42 X 138	12	60	70	5	4400
HDVWDL-16048	48	16000	54 X 138	78 X 162	7200	11400	54 X 138	12	60	48	5	4380
HDVWDL-20048	48	20000	54 X 138	78 X 162	8400	16000	54 X 138	12	60	68	5	4680
HDVWDL-24048	48	24000	54 X 138	78 X 162	8400	16000	54 X 138	12	60	70	5	4820
HDDL-16060	60	16000	30 X 170	54 X 194	6200	7400	30 X 170	10	70	64	5	3900
HDDL-20060	60	20000	30 X 170	54 X 194	8300	10600	30 X 170	10	70	94	5	4200
HDDL-24060	60	24000	30 X 170	54 X 194	8800	14200	30 X 170	10	70	96	5	4380
HDEWDL-16060	60	16000	42 X 170	66 X 194	6200	8000	42 X 170	12	72	66	5	4580
HDEWDL-20060	60	20000	42 X 170	66 X 194	8200	11600	42 X 170	12	72	96	5	4900
HDEWDL-24060	60	24000	42 X 170	66 X 194	8700	15600	42 X 170	12	72	96	5	5100
HDVWDL-16060	60	16000	54 X 170	78 X 194	6000	8400	54 X 170	12	72	66	5	5020
HDVWDL-20060	60	20000	54 X 170	78 X 194	8200	11800	54 X 170	12	72	96	5	5380
HDVWDL-24060	60	24000	54 X 170	78 X 194	8600	16200	54 X 170	12	72	96	5	5560

*Note: Longer units can be created as needed. Contact the factory for specifications and pricing.*

## SUPER DUTY (SD) AND JUMBO (JSL) SERIES LIFTS

*The SD-Series lifts were designed as a step up from the HD series. Many of these models are modified dock lifts so you will notice that the edge loading capabilities are often a higher percentage of the lifting capacity than is typical for smaller lifts. The JSL series units are a sampling of some of the very large special lifts that we have produced. If you have a very large lift requirement that does not match up with one of our Jumbo units, please call us and we will be pleased to quote on your exact requirements.*



### SPECIAL FEATURES

- ▶ All of the controllers are Underwriter Laboratory approved assemblies.
- ▶ These units are fully primed and finished with a baked enamel finish.
- ▶ The cylinders are machine grade.
- ▶ All pressure hoses are double wire braid with JIC fittings.
- ▶ The reservoirs are mild steel.
- ▶ These units conform to all applicable ANSI codes.

### FEATURE DETAILS

See pg. 48 for optional accessories



▶ Controller



▶ Cylinder



▶ Double Wire Braid Hose



▶ Power Unit

**SPECIFICATION TABLE FOR SINGLE SCISSOR UNITS**

Model	Travel	Capacity	Std Platform	Maximum Loading End	Maximum Loading Side	Baseframe Size	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
SD-05608	58	5000	6' X 8'	3500	3500	60-1/2 X 94-1/2	10	68	25	5	2250
SD-05609	58	5000	6' X 9'	3500	3500	60-1/2 X 94-1/2	10	68	25	5	2340
SD-05610	58	5000	6' X 10'	3500	3500	60-1/2 X 94-1/2	10	68	25	5	2430
SD-05708	58	5000	7' X 8'	3500	3500	60-1/2 X 94-1/2	10	68	25	5	2370
SD-05709	58	5000	7' X 9'	3500	3500	60-1/2 X 94-1/2	10	68	25	5	2475
SD-05710	58	5000	7' X 10'	3500	3500	60-1/2 X 94-1/2	10	68	25	5	2580
SD-05808	58	5000	8' X 8'	3500	3500	60-1/2 X 94-1/2	10	68	25	5	2490
SD-05809	58	5000	8' X 9'	3500	3500	60-1/2 X 94-1/2	10	68	25	5	2610
SD-05810	58	5000	8' X 10'	3500	3500	60-1/2 X 94-1/2	10	68	25	5	2730
SD-08608	58	8000	6' X 8'	8000	7500	69 X 89-7/8	15	73	30	5	3950
SD-08609	58	8000	6' X 9'	8000	7500	69 X 89-7/8	15	73	30	5	4040
SD-08610	58	8000	6' X 10'	8000	7500	69 X 89-7/8	15	73	30	5	4130
SD-08708	58	8000	7' X 8'	8000	7500	69 X 89-7/8	15	73	30	5	4070
SD-08709	58	8000	7' X 9'	8000	7500	69 X 89-7/8	15	73	30	5	4175
SD-08810	58	8000	7' X 10'	8000	7500	69 X 89-7/8	15	73	30	5	4280
SD-08808	58	8000	8' X 8'	8000	7500	69 X 89-7/8	15	73	30	5	4190
SD-08809	58	8000	8' X 9'	8000	7500	69 X 89-7/8	15	73	30	5	4310
SD-08810	58	8000	8' X 10'	8000	7500	69 X 89-7/8	15	73	30	5	4430
SD-10608	58	10000	6' X 8'	10000	7500	69 X 89-7/8	15	73	38	5	4225
SD-10609	58	10000	6' X 9'	10000	7500	69 X 89-7/8	15	73	38	5	4315
SD-10610	58	10000	6' X 10'	10000	7500	69 X 89-7/8	15	73	38	5	4405
SD-10708	58	10000	7' X 8'	10000	7500	69 X 89-7/8	15	73	38	5	4345
SD-10709	58	10000	7' X 9'	10000	7500	69 X 89-7/8	15	73	38	5	4450
SD-10710	58	10000	7' X 10'	10000	7500	69 X 89-7/8	15	73	38	5	4555
SD-10808	58	10000	8' X 8'	10000	7500	69 X 89-7/8	15	73	38	5	4465
SD-10809	58	10000	8' X 9'	10000	7500	69 X 89-7/8	15	73	38	5	4585
SD-10810	58	10000	8' X 10'	10000	7500	69 X 89-7/8	15	73	38	5	4705
SD-12610	58	12000	6' X 10'	12000	12000	68-1/2 X 118-1/2	16-1/2	74-1/2	41	5	5200
SD-12611	58	12000	6' X 11'	12000	12000	68-1/2 X 118-1/2	16-1/2	74-1/2	41	5	5320
SD-12612	58	12000	6' X 12'	12000	12000	68-1/2 X 118-1/2	16-1/2	74-1/2	41	5	5440
SD-12710	58	12000	7' X 10'	12000	12000	80-1/2 X 118-1/2	16-1/2	74-1/2	41	5	5400
SD-12711	58	12000	7' X 11'	12000	12000	80-1/2 X 118-1/2	16-1/2	74-1/2	41	5	5540
SD-12712	58	12000	7' X 12'	12000	12000	80-1/2 X 118-1/2	16-1/2	74-1/2	41	5	5680
SD-12810	58	12000	8' X 10'	12000	12000	92-1/2 X 118-1/2	16-1/2	74-1/2	41	5	5600
SD-12811	58	12000	8' X 11'	12000	12000	92-1/2 X 118-1/2	16-1/2	74-1/2	41	5	5760
SD-12812	58	12000	8' X 12'	12000	12000	92-1/2 X 118-1/2	16-1/2	74-1/2	41	5	5920
SD-15610	58	15000	6' X 10'	15000	15000	80 X 118-1/2	16-1/2	74-1/2	38	7-1/2	5500
SD-15611	58	15000	6' X 11'	15000	15000	80 X 122-1/2	16-1/2	74-1/2	38	7-1/2	5620
SD-15612	58	15000	6' X 12'	15000	15000	80 X 139-1/2	16-1/2	74-1/2	38	7-1/2	5740
SD-15710	58	15000	7' X 10'	15000	15000	92 X 118-1/2	16-1/2	74-1/2	38	7-1/2	5700
SD-15711	58	15000	7' X 11'	15000	15000	92 X 122-1/2	16-1/2	74-1/2	38	7-1/2	5840
SD-15712	58	15000	7' X 12'	15000	15000	92 X 139-1/2	16-1/2	74-1/2	38	7-1/2	5980
SD-15810	58	15000	8' X 10'	15000	15000	104 X 118-1/2	16-1/2	74-1/2	38	7-1/2	5900
SD-15811	58	15000	8' X 11'	15000	15000	104 X 122-1/2	16-1/2	74-1/2	38	7-1/2	6060
SD-15812	58	15000	8' X 12'	15000	15000	104 X 139-1/2	16-1/2	74-1/2	38	7-1/2	6220
SD-18610	58	18000	6' X 10'	18000	18000	80 X 120	18	76	38	7-1/2	5800
SD-18611	58	18000	6' X 11'	18000	18000	80 X 124	18	76	38	7-1/2	5920
SD-18612	58	18000	6' X 12'	18000	18000	80 X 141	18	76	38	7-1/2	6040
SD-18710	58	18000	7' X 10'	18000	18000	92 X 120	18	76	38	7-1/2	6000
SD-18711	58	18000	7' X 11'	18000	18000	92 X 124	18	76	38	7-1/2	6140
SD-18712	58	18000	7' X 12'	18000	18000	92 X 141	18	76	38	7-1/2	6280
SD-18810	58	18000	8' X 10'	18000	18000	104 X 120	18	76	38	7-1/2	6200
SD-18811	58	18000	8' X 11'	18000	18000	104 X 124	18	76	38	7-1/2	6360
SD-18812	58	18000	8' X 12'	18000	18000	104 X 141	18	76	38	7-1/2	6520

There are more models on the next page.

## SUPER DUTY (SD) AND JUMBO (JSL) SERIES LIFTS

### STANDARD MODELS & CONFIGURATIONS FOR SUPER DUTY LIFTS

Model	Travel	Capacity	Std Platform	Maximum Loading End	Maximum Loading Side	Baseframe Size	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
SD-20610	58	20000	6' X 10'	20000	20000	6' X 10'	20	78	38	7-1/2	6100
SD-20611	58	20000	6' X 11'	20000	20000	6' X 11'	20	78	38	7-1/2	6220
SD-20612	58	20000	6' X 12'	20000	20000	6' X 12'	20	78	38	7-1/2	6340
SD-20710	58	20000	7' X 10'	20000	20000	7' X 10'	20	78	38	7-1/2	6300
SD-20711	58	20000	7' X 11'	20000	20000	7' X 11'	20	78	38	7-1/2	6440
SD-20712	58	20000	7' X 12'	20000	20000	7' X 12'	20	78	38	7-1/2	6580
SD-20810	58	20000	8' X 10'	20000	20000	8' X 10'	20	78	38	7-1/2	6500
SD-20811	58	20000	8' X 11'	20000	20000	8' X 11'	20	78	38	7-1/2	6660
SD-20812	58	20000	8' X 12'	20000	20000	8' X 12'	20	78	38	7-1/2	6820

### SPECIFICATION TABLE FOR DOUBLE LONG SUPER DUTY LIFTS

Model	Travel	Capacity	Std Platform	Maximum Loading End	Maximum Loading Side	Baseframe Size	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
SD-05408DL	58	10000	4' X 16'	2500	5000	4' X 16'	10	68	48	5	4120
SD-05409DL	58	10000	4' X 18'	2500	5000	4' X 18'	10	68	48	5	4240
SD-05410DL	58	10000	4' X 20'	2500	5000	4' X 20'	10	68	48	5	4360
SD-05608DL	58	10000	6' X 16'	2500	5000	6' X 16'	10	68	48	5	4600
SD-05609DL	58	10000	6' X 18'	2500	5000	6' X 18'	10	68	48	5	5360
SD-05610DL	58	10000	6' X 20'	2500	5000	6' X 20'	10	68	48	5	5520
SD-05808DL	58	10000	8' X 16'	2500	5000	8' X 16'	10	68	48	5	5630
SD-05809DL	58	10000	8' X 18'	2500	5000	8' X 18'	10	68	48	5	5830
SD-05810DL	58	10000	8' X 20'	2500	5000	8' X 20'	10	68	48	5	6000
SD-10408DL	58	16000	4' X 16'	6500	10000	4' X 16'	15	73	70	5	8105
SD-10409DL	58	16000	4' X 18'	6500	10000	4' X 18'	15	73	70	5	8240
SD-10410DL	58	16000	4' X 20'	6500	10000	4' X 20'	15	73	70	5	8375
SD-10608DL	58	16000	6' X 16'	6500	10000	6' X 16'	15	73	70	5	8650
SD-10609DL	58	16000	6' X 18'	6500	10000	6' X 18'	15	73	70	5	9010
SD-10610DL	58	16000	6' X 20'	6500	10000	6' X 20'	15	73	70	5	9370
SD-10808DL	58	16000	8' X 16'	6500	10000	8' X 16'	15	73	70	5	9610
SD-10809DL	58	16000	8' X 18'	6500	10000	8' X 18'	15	73	70	5	10090
SD-10810DL	58	16000	8' X 20'	6500	10000	8' X 20'	15	73	70	5	10570
SD-15610DL	58	20000	6' X 20'	15000	30000	6' X 20'	16-1/2	74-1/2	76	7-1/2	11200
SD-15611DL	58	20000	6' X 22'	15000	30000	6' X 22'	16-1/2	74-1/2	76	7-1/2	11600
SD-15612DL	58	20000	6' X 24'	15000	30000	6' X 24'	16-1/2	74-1/2	76	7-1/2	12000
SD-15810DL	58	20000	8' X 20'	15000	30000	8' X 20'	16-1/2	74-1/2	76	7-1/2	12800
SD-15811DL	58	20000	8' X 22'	15000	30000	8' X 22'	16-1/2	74-1/2	76	7-1/2	13400
SD-15812DL	58	20000	8' X 24'	15000	30000	8' X 24'	16-1/2	74-1/2	76	7-1/2	14000
SD-20610DL	58	30000	6' X 20'	20000	40000	6' X 20'	20	78	76	7-1/2	13400
SD-20611DL	58	30000	6' X 22'	20000	40000	6' X 22'	20	78	76	7-1/2	14200
SD-20612DL	58	30000	6' X 24'	20000	40000	6' X 24'	20	78	76	7-1/2	15400
SD-20810DL	58	30000	8' X 20'	20000	40000	8' X 20'	20	78	76	7-1/2	13800
SD-20811DL	58	30000	8' X 22'	20000	40000	8' X 22'	20	78	76	7-1/2	14600
SD-20812DL	58	30000	8' X 24'	20000	40000	8' X 24'	20	78	76	7-1/2	15800



Typical Jumbo Unit

## SPECIFICATION TABLE FOR SINGLE SCISSORS JUMBO LIFTS

Model	Travel	Capacity	Std Platform	Maximum Loading End	Maximum Loading Side	Baseframe Size	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
JSL-10926	72	40000	9' X 12'	19000	5000	9' X 12'	30	102	120	10	14000
JSL-10619	58	20000	9' X 15'	16000	14000	9' X 15'	24	82	72	7-1/2	11475
JSL-12007	58	30000	9' X 15'	24000	21000	9' X 15'	30	88	36	25	14900
JSL-17959	58	12000	10' X 14'	9600	8400	10' X 14'	16-1/2	74-1/2	36	7-1/2	10100
JSL-18649	58	30000	10' X 15'	24000	21000	10' X 15'	30	88	36	25	16500
JSL-10354	60	15000	12' X 14'	12000	5000	12' X 14'	18	78	43	7-1/2	12600
JSL-16050	58	25000	12' X 20'	20000	17500	12' X 20'	30	88	72	10	18000

## SPECIFICATION TABLE FOR DOUBLE SCISSORS JUMBO LIFTS

Model	Travel	Capacity	Std Platform	Maximum Loading End	Maximum Loading Side	Baseframe Size	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
JDL-14010	72	6000	8'-6" X 38'	3000	3000	8'-6" X 38'	24	96	60	7-1/2	13650
JDL-14257	72	12000	8'-6" X 38'	6000	6000	8'-6" X 38'	24	96	72	7-1/2	16500
JDL-08179	87	20000	8'-6" X 50'	7500	7500	8'-6" X 50'	33	120	109	10	23500
JDL-12646	99	20000	8'-6" X 50'	8000	8000	8'-6" X 50'	33	132	124	10	25000
JDL-13727	60	60000	9' X 35'	48000	30000	9' X 35'	45	105	37	40	40000
JDL-19164	60	60000	9' X 35'	45000	25000	9' X 35'	45	105	37	40	46500
JDL-17616	84	6000	12' X 25'	2500	2500	12' X 25'	15	99	60	7-1/2	12500

## CAROUSEL & ORDER PICKING LIFTS

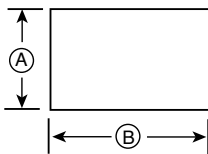
The carousel and order picking lifts evolved from standard units to specialized units designed for order picking operations. Their chief features include handrail and gate configurations on three (3) sides and in some instances they have modified platform outlines. The units below are the most common configurations ordered, but custom layouts are not unusual.



### SPECIAL FEATURES

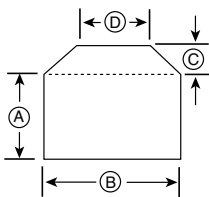
- ▶ These units are equipped with the patented "Platform Centering Devices".
- ▶ All of the controllers are Underwriter Laboratory approved assemblies.
- ▶ These units are equipped with remote power units mounted on mild steel reservoirs.
- ▶ These units are fully primed and finished with a baked enamel finish.
- ▶ All pressure hoses are double wire braid with JIC fittings.
- ▶ These units conform to all applicable ANSI codes.

### STANDARD MODELS & CONFIGURATIONS



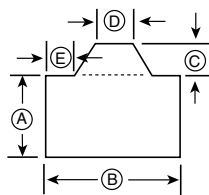
Model	Travel	Capacity	Min Platform	Max Platform	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
CNC-2060	60	2000	48 X 96	96 X 144	10	70	20	5	2100
CNC-2072	72	2000	48 X 102	96 X 168	8	80	24	5	2700

A = 48"-96", B = 96"-144" or 102"-168"



Model	Travel	Capacity	Min Platform	Max Platform	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
CFC-2060	60	2000	48 X 96	96 X 144	10	70	20	5	2100
CFC-2072	72	2000	48 X 102	96 X 168	8	80	24	5	2700

A = No less than 48", B = 96"-144" or 102"-168", A + C = No greater than 96", C = No greater than A/4



Model	Travel	Capacity	Min Platform	Max Platform	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
CPC-2060	60	2000	48 X 96	96 X 144	10	70	20	5	2100
CPC-2072	72	2000	48 X 102	96 X 168	8	80	24	5	2700

A = No less than 48", B = 96"-144" or 102"-168", A + C = No greater than 96", C = No greater than A/4

These units are designed with off center load limits of: 1/2 of total capacity on 1/2 of the platform. This is more than adequate for typical order picking applications.

## LOW PROFILE LIFT TABLES

The low profile lift tables have decks at ground level to accept roll on loads without the need for a ramp. These units are ideal for pallet breakdown or buildup operations. The platform deck is equipped with a steel hinged lip extension that provides toe protection.



Flatjack Unit



Safety Foot Protector

### SPECIAL FEATURES

- ▶ All of the controllers are Underwriter Laboratory approved assemblies.
- ▶ These units are equipped with remote power units mounted on mild steel reservoirs.
- ▶ These units are fully primed and finished with a baked enamel finish.
- ▶ All pressure hoses are double wire braid with JIC fittings.
- ▶ These units conform to all applicable ANSI codes.

### STANDARD MODELS & CONFIGURATIONS

Model	Travel	Capacity	Platform Size	O. A. Size	Motor H.P.	Speed Sec.	Voltage	Ship Wt.
F-240	33	2000	40 X 48	64 X 53	1	35	110/60/1	1020
F-246	33	2000	46 X 48	70 X 53	1	35	110/60/1	1060
F-252	33	2000	52 X 48	76 X 53	1	35	110/60/1	1100
F-440	33	4000	40 X 48	64 X 53	1	50	110/60/1	1250
F-446	33	4000	46 X 48	70 X 53	1	50	110/60/1	1300
F-452	33	4000	52 X 48	76 X 53	1	50	110/60/1	1350
F-640	33	6000	40 X 48	64 X 53	1	57	110/60/1	1480
F-646	33	6000	46 X 48	70 X 53	1	57	110/60/1	1540
F-652	33	6000	52 X 48	76 X 53	1	57	110/60/1	1600

## MULTI STAGE (MSL) SERIES LIFTS

The MSL Series lifts were designed for the higher travel applications that require shorter platform lengths than would be available with a single scissor design. The lighter capacity units are built with solid steel legs for more compact design and greater cost savings, while the higher capacity units are built with structural tubing legs for greater rigidity, lighter weight and optimum cost savings.



### SPECIAL FEATURES

- ▶ These units are equipped with the patented "Platform Centering Devices".
- ▶ All of the controllers are Underwriter Laboratory approved assemblies.
- ▶ These units are fully primed and finished with a baked enamel finish.
- ▶ The cylinders are machine grade with clear plastic return lines.
- ▶ All pressure hoses are double wire braid with JIC fittings.
- ▶ The reservoirs are mild steel.
- ▶ These units conform to all applicable ANSI codes.

### FEATURE DETAILS

See pg. 48 for optional accessories



▶ Platform Centering Device



▶ MSL Cylinder w/Clear Plastic Return Lines



▶ Power Unit w/Controller



▶ Double Wire Braid Hose



▶ MSL Swing Arm Safety Bar



**SPECIFICATION TABLE FOR MULTI STAGE LIFTS**

Model	Travel	Capacity	Std Min Platform	Opt. Max. Platform	Maximum Loading End	Maximum Loading Side	Baseframe Size	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
MSL2-248	48	2000	30 X 42	48 X 66	1500	1500	30 X 42	10-1/2	58-1/2	16	2	750
MSL2-448	48	4000	30 X 42	48 X 66	2800	2800	30 X 42	12-1/2	60-1/2	25	2	875
MSL2-648	48	6000	30 X 42	48 X 66	3800	3800	30 X 42	13-1/2	61-1/2	37	2	1150
MSL2-260	60	2000	30 X 48	48 X 72	1400	1400	30 X 48	10-1/2	70-1/2	20	2	850
MSL2-460	60	4000	30 X 48	48 X 72	2500	2500	30 X 48	12-1/2	72-1/2	32	2	975
MSL2-660	60	6000	30 X 48	48 X 72	3400	3400	30 X 48	13-1/2	73-1/2	44	2	1250
MSL2-272	72	2000	30 X 54	48 X 78	1100	1100	30 X 54	10-1/2	82-1/2	23	2	925
MSL2-472	72	4000	30 X 54	48 X 78	2400	2400	30 X 54	12-1/2	84-1/2	37	2	1075
MSL2-672	72	6000	30 X 54	48 X 78	3000	3000	30 X 54	13-1/2	85-1/2	52	2	1400
MSL2-284	84	2000	38 X 60	56 X 84	1400	1400	38 X 60	12-1/2	96-1/2	27	2	1000
MSL2-484	84	4000	38 X 60	56 X 84	2300	2300	38 X 60	14-1/2	98-1/2	44	2	1100
MSL2-684	84	6000	38 X 62	56 X 86	3200	3200	38 X 62	16-1/2	100-1/2	64	2	1450
MSL2-884	84	8000	48 X 65	66 X 89	4400	4400	48 X 65	18-3/4	102-3/4	41	5	2200
MSL2-1084	84	10000	48 X 65	66 X 89	5200	5200	48 X 65	18-3/4	102-3/4	48	5	2250
MSL2-1284	84	12000	48 X 67	66 X 91	6300	6300	48 X 67	22-3/4	106-3/4	52	5	2550
MSL2-296	96	2000	38 X 66	56 X 90	1300	1300	38 X 66	12-1/2	108-1/2	31	2	1050
MSL2-496	96	4000	38 X 66	56 X 90	2200	2200	38 X 66	14-1/2	110-1/2	49	2	1225
MSL2-696	96	6000	38 X 68	56 X 92	3300	3300	38 X 68	16-1/2	112-1/2	71	2	1525
MSL2-896	96	8000	48 X 71	66 X 95	4600	4600	48 X 71	18-3/4	114-3/4	45	5	2400
MSL2-1096	96	10000	48 X 71	66 X 95	5400	5400	48 X 71	18-3/4	114-3/4	56	5	2675
MSL2-1296	96	12000	48 X 74	66 X 98	6000	6000	48 X 74	22-3/4	118-3/4	58	5	2775
MSL3-2108	108	2000	32 X 54	50 X 78	1100	1100	32 X 54	14	122	33	2	1000
MSL3-4108	108	4000	32 X 54	50 X 78	2100	2100	32 X 54	20	128	55	2	1275
MSL3-6108	108	6000	32 X 54	50 X 78	3700	3700	32 X 54	23	131	38	5	1600
MSL3-2126	126	2000	32 X 62	50 X 86	1300	1300	32 X 62	17	143	39	2	1250
MSL3-4126	126	4000	32 X 62	50 X 86	2400	2400	32 X 62	20	146	63	2	1400
MSL3-6126	126	6000	32 X 62	50 X 86	3400	3400	32 X 62	23	149	43	5	1775
MSL3-8126	126	8000	42 X 65	60 X 89	4000	4000	42 X 65	25-1/4	151-1/4	51	5	2250
MSL3-10126	126	10000	42 X 65	60 X 89	5600	5600	42 X 65	25-1/4	151-1/4	59	5	2700
MSL3-12126	126	12000	42 X 67	60 X 92	6200	6200	42 X 67	31-1/4	157-1/4	74	5	3175
MSL3-2144	144	2000	32 X 70	50 X 92	1100	1100	32 X 68	17	161	44	2	1325
MSL3-4144	144	4000	32 X 70	50 X 92	2100	2100	32 X 68	20	164	70	2	1500
MSL3-6144	144	6000	32 X 70	50 X 92	3000	3000	32 X 68	23	167	48	5	1950
MSL3-8144	144	8000	42 X 71	60 X 95	4400	4400	42 X 71	25-1/4	169-1/4	65	5	2900
MSL3-10144	144	10000	42 X 71	60 X 95	5000	5000	42 X 71	25-1/4	169-1/4	76	5	2925
MSL3-12144	144	12000	42 X 75	60 X 100	6000	6000	42 X 75	31-1/4	175-1/4	84	5	3550

Consult the factory for higher speeds with larger power units, custom travels, custom platform sizes and capacities.

## DOUBLE HIGH (DH) SERIES LIFTS

The DH Series lifts were designed for the higher travel applications that require shorter platform lengths than would be available with a single scissor design.



### SPECIAL FEATURES

- ▶ These units are equipped with the patented "Platform Centering Devices".
- ▶ All of the controllers are Underwriter Laboratory approved assemblies.
- ▶ These units are fully primed and finished with a baked enamel finish.
- ▶ The cylinders are machine grade with clear plastic return lines.
- ▶ All pressure hoses are double wire braid with JIC fittings.
- ▶ The reservoirs are mild steel.
- ▶ These units conform to all applicable ANSI codes.

### FEATURE DETAILS

See pg. 48 for optional accessories



▶ Platform Centering Device



▶ Controller



▶ Cylinder



▶ Double Wire Braid Hose



▶ Power unit



**SPECIFICATION TABLE FOR P SERIES DOUBLE HIGH LIFTS**

Model	Travel	Capacity	Std Min Platform	Opt. Max. Platform	Maximum Loading End	Maximum Loading Side	Baseframe Size	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
PDH-2048	48	2000	24 X 36	36 X 60	1250	2360	24 X 36	13	61	20	1-1/2	1000
PDH-3448	48	3400	24 X 36	36 X 60	3000	1500	24 X 36	13	61	30	1-1/2	1100
PDH-5448	48	5400	24 X 36	36 X 60	2100	1900	24 X 36	13	61	44	1-1/2	1120
PEWDH-1848	48	1800	36 X 36	48 X 60	1250	1250	36 X 36	13	61	20	1-1/2	1300
PEWDH-3348	48	3300	36 X 36	48 X 60	2000	1550	36 X 36	13	61	30	1-1/2	1400
PEWDH-5248	48	5200	36 X 36	48 X 60	2150	2000	36 X 36	13	61	44	1-1/2	1420
PVWDH-1248	48	1200	48 X 36	60 X 60	1000	1000	48 X 36	13	61	20	1-1/2	1500
PVWDH-3248	48	3200	48 X 36	60 X 60	2000	1600	48 X 36	13	61	30	1-1/2	1600
PVWDH-5148	48	5100	48 X 36	60 X 60	2150	2000	48 X 36	13	61	44	1-1/2	1630
PDH-1972	72	1900	24 X 48	36 X 72	1250	1250	24 X 48	13	85	22	2	1200
PDH-3372	72	3300	24 X 48	36 X 72	1650	1450	24 X 48	13	85	34	2	1300
PDH-5372	72	5300	24 X 48	36 X 72	2050	1750	24 X 48	13	85	46	2	1360
PEWDH-1772	72	1700	36 X 48	48 X 72	1250	1250	36 X 48	13	85	22	2	1530
PEWDH-3172	72	3100	36 X 48	48 X 72	1650	1550	36 X 48	13	85	34	2	1630
PEWDH-5172	72	5100	36 X 48	48 X 72	2150	1550	36 X 48	13	85	46	2	1690
PVWDH-1172	72	1100	48 X 48	60 X 72	1000	1000	48 X 48	13	85	22	2	1740
PVWDH-3072	72	3000	48 X 48	60 X 72	1650	1550	48 X 48	13	85	34	2	1840
PVWDH-5072	72	5000	48 X 48	60 X 72	2150	1900	48 X 48	13	85	46	2	1890
PDH-1796	96	1700	24 X 64	36 X 96	1250	1100	24 X 64	14	110	38	2	1460
PDH-3196	96	3100	24 X 64	36 X 96	1750	1400	24 X 64	14	110	56	2	1660
PDH-5196	96	5100	24 X 64	36 X 96	1750	1500	24 X 64	14	110	76	2	1700
PEWDH-1596	96	1500	36 X 64	48 X 96	1250	1150	36 X 64	14	110	38	2	1840
PEWDH-2996	96	2900	36 X 64	48 X 96	1700	1500	36 X 64	14	110	56	2	2030
PEWDH-4996	96	4900	36 X 64	48 X 96	1700	1500	36 X 64	14	110	76	2	2080
PVWDH-0996	96	900	48 X 64	60 X 96	1000	1000	48 X 64	14	110	38	2	2080
PVWDH-2896	96	2800	48 X 64	60 X 96	1700	1550	48 X 64	14	110	56	2	2270
PVWDH-4896	96	4800	48 X 64	60 X 96	1700	1500	48 X 64	14	110	76	2	2300
PDH-15120	120	1500	24 X 84	36 X 120	1250	1250	24 X 84	20	140	56	2	2000
PDH-28120	120	2800	24 X 84	36 X 120	2000	2000	24 X 84	20	140	84	2	2300
PDH-48120	120	4800	24 X 84	36 X 120	2850	2000	24 X 84	20	140	114	2	2350
PEWDH-12120	120	1200	36 X 84	48 X 120	1250	1250	36 X 84	20	140	58	2	2420
PEWDH-26120	120	2600	36 X 84	48 X 120	2000	2000	36 X 84	20	140	84	2	2670
PEWDH-46120	120	4600	36 X 84	48 X 120	2850	2200	36 X 84	20	140	114	2	2730
PVWDH-11120	120	1100	48 X 84	60 X 120	1250	1250	48 X 84	20	140	58	2	2730
PVWDH-25120	120	2500	48 X 84	60 X 120	2000	2000	48 X 84	20	140	84	2	2980
PVWDH-44120	120	4400	48 X 84	60 X 120	2800	2250	48 X 84	20	140	114	2	3020

If you do not find what you need, give us a call. The units shown in this catalog are only a small sampling of what can be done by combining units. Furthermore, if combining existing units will not meet your needs, we are always happy to quote on a custom design unit.

## DOUBLE HIGH (DH) SERIES LIFTS

### SPECIFICATION TABLE FOR HD SERIES DOUBLE HIGH LIFTS

Model	Travel	Capacity	Std Min Platform	Opt. Max. Platform	Maximum Loading End	Maximum Loading Side	Baseframe Size	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
HDDH-6748	48	6700	30 X 48	42 X 78	5000	3750	30 X 48	19-1/2	67-1/2	24	5	2600
HDDH-8648	48	8600	30 X 48	42 X 78	5500	4850	30 X 48	19-1/2	67-1/2	36	5	2800
HDDH-10548	48	10500	30 X 48	42 X 78	5500	4850	30 X 48	19-1/2	67-1/2	38	5	2900
HDEWDH-6448	48	6400	42 X 48	54 X 78	5000	3950	42 X 48	23-1/2	71-1/2	26	5	3100
HDEWDH-8348	48	8300	42 X 48	54 X 78	5500	5200	42 X 48	23-1/2	71-1/2	36	5	3300
HDEWDH-10348	48	10300	42 X 48	54 X 78	5500	5200	42 X 48	23-1/2	71-1/2	38	5	3400
HDVWDH-6348	48	6300	54 X 48	66 X 78	5000	4150	54 X 48	23-1/2	71-1/2	26	5	3400
HDVWDH-8248	48	8200	54 X 48	66 X 78	5450	5300	54 X 48	23-1/2	71-1/2	36	5	3600
HDVWDH-10148	48	10100	54 X 48	66 X 78	5450	5350	54 X 48	23-1/2	71-1/2	38	5	3700
HDDH-6572	72	6500	30 X 60	42 X 90	4100	3000	30 X 60	19-1/2	91-1/2	36	5	2900
HDDH-8472	72	8400	30 X 60	42 X 90	5000	4150	30 X 60	19-1/2	91-1/2	52	5	3100
HDDH-10472	72	10400	30 X 60	42 X 90	5000	4400	30 X 60	19-1/2	91-1/2	54	5	3200
HDEWDH-6372	72	6300	42 X 60	54 X 90	4050	3300	42 X 60	23-1/2	95-1/2	36	5	3400
HDEWDH-8272	72	8200	42 X 60	54 X 90	5000	4600	42 X 60	23-1/2	95-1/2	52	5	3600
HDEWDH-10172	72	10100	42 X 60	54 X 90	5000	4650	42 X 60	23-1/2	95-1/2	54	5	3760
HDVWDH-6172	72	6100	54 X 60	66 X 90	4050	3400	54 X 60	23-1/2	95-1/2	36	5	3800
HDVWDH-7972	72	7900	54 X 60	66 X 90	5000	4750	54 X 60	23-1/2	95-1/2	52	5	4020
HDVWDH-9972	72	9900	54 X 60	66 X 90	4800	4800	54 X 60	23-1/2	95-1/2	54	5	4180
HDDH-6396	96	6300	30 X 68	42 X 98	3700	2550	30 X 68	20	116	48	5	3360
HDDH-8296	96	8200	30 X 68	42 X 98	4250	3550	30 X 68	20	116	68	5	3600
HDDH-10196	96	10100	30 X 68	42 X 98	4250	3650	30 X 68	20	116	70	5	3760
HDEWDH-6096	96	6000	42 X 68	54 X 98	3650	2750	42 X 68	24	120	48	5	3980
HDEWDH-7896	96	7800	42 X 68	54 X 98	4200	3900	42 X 68	24	120	68	5	4220
HDEWDH-9896	96	9800	42 X 68	54 X 98	4200	3900	42 X 68	24	120	70	5	4400
HDVWDH-5896	96	5800	54 X 68	66 X 98	3600	2850	54 X 68	24	120	48	5	4380
HDVWDH-7696	96	7600	54 X 68	66 X 98	4200	4000	54 X 68	24	120	68	5	4680
HDVWDH-9596	96	9500	54 X 68	66 X 98	4200	4000	54 X 68	24	120	70	5	4820
HDDH-60120	120	6000	30 X 84	42 X 114	3100	1850	30 X 84	20	140	64	5	3900
HDDH-79120	120	7900	30 X 84	42 X 114	4150	2650	30 X 84	20	140	94	5	4200
HDDH-98120	120	9800	30 X 84	42 X 114	4400	3550	30 X 84	20	140	96	5	4380
HDEWDH-57120	120	5700	42 X 84	54 X 114	3050	2000	42 X 84	24	144	66	5	4580
HDEWDH-75120	120	7500	42 X 84	54 X 114	4100	2900	42 X 84	24	144	96	5	4900
HDEWDH-94120	120	9400	42 X 84	54 X 114	4350	4350	42 X 84	24	144	96	5	5100
HDVWDH-54120	120	5400	54 X 84	66 X 114	3000	2100	54 X 84	24	144	66	5	5020
HDVWDH-73120	120	7300	54 X 84	66 X 114	4100	2950	54 X 84	24	144	96	5	5380
HDVWDH-92120	120	9200	54 X 84	66 X 114	4300	4050	54 X 84	24	144	96	5	5560

If you do not find what you need, do not be discouraged, give us a call. The units shown in this catalog are only a small sampling of what can be done by combining units. Furthermore, if combining existing units will not meet your needs, we are always happy to quote on a custom design unit.

## MEZZANINE LIFTS

The mezzanine lifts are simply double high (DH) dock lifts. The purpose of the design is to carry goods up to mezzanine level. Local elevator inspectors (city or county) need to be consulted before equipment is ordered. In many locations, handrails on the lifts is sufficient to avoid elevator codes, but each jurisdiction and application is unique. Therefore, it is important to determine if local elevator codes can be avoided and if not, the budget must be adjusted to include the additional safety equipment the elevator inspectors will require. A second caution is to consider how loads are rolled onto and off of the unit in the raised position. If loads are moved over the narrower side in the raised position (movement parallel to the legs), then sway will not be an issue. If loads are moved over the long side of the unit in the raised position (perpendicular to the leg set), then sway at the moment of transition can be a factor and angle iron guides should be used to limit sway.



"No Rider"

### SPECIAL FEATURES

- ▶ Each unit incorporates heavy structural tubing legs to maximize structural rigidity.
- ▶ All controllers are Underwriter Laboratory approved assemblies.
- ▶ These units are equipped with remote power units mounted on mild steel reservoirs.
- ▶ Each unit is fully primed and finished with a baked enamel finish.
- ▶ All pressure hoses are double wire braid with JIC fittings.
- ▶ These units conform to all applicable ANSI codes.

### FEATURE DETAILS

See pg. 48 for optional accessories



▶ UL Approved Controller



▶ Power Unit



▶ Double Wire Braid Hose



▶ Paint Booth

# MEZZANINE LIFTS

## SPECIFICATION TABLE FOR MEZZANINE LIFTS

Model	Travel	Std Platform	Capacity	Maximum End	Loading Side	Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
2510-DH	116	4' X 8'	2900	1450	1450	16	132	58	5	4100
2520-DH	116	4' X 9'	2700	1350	1350	16	132	58	5	4360
2530-DH	116	4' X 10'	2600	1300	1300	16	132	58	5	4620
2540-DH	116	5' X 8'	2700	1350	1350	16	132	58	5	4500
2560-DH	116	5' X 9'	2500	1250	1250	16	132	58	5	4780
2570-DH	116	5' X 10'	2400	1200	1200	16	132	58	5	5060
2500-DH	116	6' X 8'	2600	1300	1300	16	132	58	5	4700
2030-DH	116	6' X 9'	2700	1350	1350	16	132	58	5	5460
2040-DH	116	6' X 10'	2600	1300	1300	16	132	58	5	5620
2050-DH	116	7' X 8'	2700	1350	1350	16	132	58	5	5510
2060-DH	116	7' X 9'	2600	1300	1300	16	132	58	5	5700
2070-DH	116	7' X 10'	2000	1000	1000	16	132	58	5	5880
2080-DH	116	8' X 8'	2000	1000	1000	16	132	58	5	5730
2090-DH	116	8' X 9'	1900	950	950	16	132	58	5	5930
2020-DH	116	8' X 10'	1900	950	950	16	132	58	5	6100
3201-DH	116	4' X 8'	4200	2100	2100	30	146	64	5	7400
3202-DH	116	4' X 9'	4000	2000	2000	30	146	64	5	7660
3203-DH	116	4' X 10'	3900	1950	1950	30	146	64	5	7920
3204-DH	116	5' X 8'	4000	2000	2000	30	146	64	5	7800
3205-DH	116	5' X 9'	3800	1900	1900	30	146	64	5	8080
3206-DH	116	5' X 10'	3700	1850	1850	30	146	64	5	8360
3200-DH	116	6' X 8'	3800	1900	1900	30	146	64	5	8200
3210-DH	116	6' X 9'	3600	1800	1800	30	146	64	5	8500
3220-DH	116	6' X 10'	3500	1750	1750	30	146	64	5	8800
3230-DH	116	7' X 8'	3700	1850	1850	30	146	64	5	8400
3240-DH	116	7' X 9'	3500	1750	1750	30	146	64	5	8720
3250-DH	116	7' X 10'	3300	1650	1650	30	146	64	5	9040
3260-DH	116	8' X 8'	3500	1750	1750	30	146	64	5	8800
3270-DH	116	8' X 9'	3300	1650	1650	30	146	64	5	9140
3280-DH	116	8' X 10'	3100	1550	1550	30	146	64	5	9480
3201-33-DH	116	4' X 8'	6200	3100	2500	30	146	72	5	7500
3202-33-DH	116	4' X 9'	6000	3000	2500	30	146	72	5	7760
3203-33-DH	116	4' X 10'	5900	2950	2500	30	146	72	5	8020
3204-33-DH	116	5' X 8'	6000	3000	2500	30	146	72	5	7900
3205-33-DH	116	5' X 9'	5800	2900	2500	30	146	72	5	8180
3206-33-DH	116	5' X 10'	5700	2850	2500	30	146	72	5	8460
3200-33-DH	116	6' X 8'	5800	2900	2500	30	146	72	5	8300
3210-33-DH	116	6' X 9'	5600	2800	2500	30	146	72	5	8600
3220-33-DH	116	6' X 10'	5500	2750	2500	30	146	72	5	8900
3230-33-DH	116	7' X 8'	5700	2850	2500	30	146	72	5	8500
3240-33-DH	116	7' X 9'	5500	2750	2500	30	146	72	5	8820
3250-33-DH	116	7' X 10'	5300	2650	2500	30	146	72	5	9140
3260-33-DH	116	8' X 8'	5500	2750	2500	30	146	72	5	8900
3270-33-DH	116	8' X 9'	5300	2650	2500	30	146	72	5	9240
3280-33-DH	116	8' X 10'	5100	2550	2500	30	146	72	5	9580

## AIR SPRING ACTUATED LIFT TABLES (AT) SERIES

The air spring actuated lift tables offer several advantages and disadvantages when compared to hydraulic cylinder actuated lifts. The chief advantage of air spring tables is low cost. Other advantages include the fact that there are no hydraulic systems that can leak and no electrical requirements for operation. They are simply hooked up to the shop air system. The chief disadvantage to these units is the springiness of the units at any intermediate position between full up and full down. If the intermediate position springiness is a problem for an application, there are two (2) ways to solve this problem. First the water glycol option can be chosen so that the air spring is filled with a column of water glycol. This eliminates more than 90% of the springiness. The other option is to select an electric hydraulic lift and apply the air motor option. This allows the lift to be operated on an air supply, but the lift is actuated by hydraulic cylinders that eliminate springiness.



### SPECIAL FEATURES

- ▶ These units are equipped with the patented "Platform Centering Devices".
- ▶ These units are fully primed and finished with a baked enamel finish.
- ▶ These units conform to all applicable ANSI codes.
- ▶ Air springs are lifetime warranty.

### FEATURE DETAILS

See pg. 48 for optional accessories



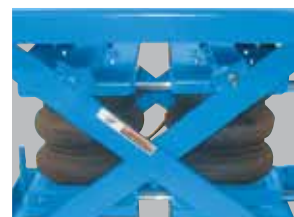
▶ Platform Centering Device



▶ Air Spring



▶ Opt. Water Glycol Power Unit



▶ AT Heavy Cap Configuration

Note: Speeds are dependent upon the air supply at the lift.

# AIR SPRING ACTUATED LIFT TABLES (AT) SERIES

## FEATURE DETAILS CONT.



*Opt. Foot Control*



*Hand Valve*

## SPECIFICATION TABLE FOR SINGLE UNITS

Model	Travel	Capacity	Platform		Maximum Loading End	Maximum Loading Side	Base Frame Size	Lowered Height	Raised Height	Ship Weight
			Minimum	Maximum						
AT-1024	24	1000	24 x 48	48 x 72	1000	1000	24 x 48	7-3/4	31-3/4	425
AT-2024	24	2000	24 x 48	48 x 72	1000	1000	24 x 48	7-3/4	31-3/4	430
ATEW-1024	24	1000	36 x 48	60 x 72	1000	1000	36 x 48	7-3/4	31-3/4	575
ATEW-2024	24	2000	36 x 48	60 x 72	1000	1000	36 x 48	7-3/4	31-3/4	580
ATEW-3024	24	3000	36 x 48	60 x 72	1000	1000	36 x 48	9	33	750
ATEW-4024	24	4000	36 x 48	60 x 72	1000	1000	36 x 48	9	33	760
ATVW-1024	24	1000	48 x 48	72 x 72	1000	1000	48 x 48	7-3/4	31-3/4	670
ATVW-2024	24	2000	48 x 48	72 x 72	1000	1000	48 x 48	7-3/4	31-3/4	675
ATVW-3024	24	3000	48 x 48	72 x 72	2000	2000	48 x 48	7-3/4	31-3/4	870
ATVW-4024	24	4000	48 x 48	72 x 72	2000	2000	48 x 48	7-3/4	31-3/4	880
ATVW-6024	24	6000	48 x 48	72 x 72	2000	2000	48 x 48	9	33	1025
ATVW-8024	24	8000	48 x 48	72 x 72	2000	2000	48 x 48	10	34	1100

## SPECIFICATION TABLE FOR DOUBLE LONG UNITS

Model	Travel	Capacity	Platform		Maximum Loading End	Maximum Loading Side	Base Frame Size	Lowered Height	Raised Height	Ship Weight
			Minimum	Maximum						
ATDL-2024	24	2000	24 x 96	48 x 144	1000	1000	24 x 96	7-3/4	31-3/4	850
ATDL-4024	24	4000	24 x 96	48 x 144	1000	1000	24 x 96	7-3/4	31-3/4	860
ATEWDL-2024	24	2000	36 x 96	60 x 144	1000	1000	36 x 96	7-3/4	31-3/4	1150
ATEWDL-4024	24	4000	36 x 96	60 x 144	1000	1000	36 x 96	7-3/4	31-3/4	1160
ATEWDL-6024	24	6000	36 x 96	60 x 144	1000	1000	36 x 96	9	33	1500
ATEWDL-8024	24	8000	36 x 96	60 x 144	1000	1000	36 x 96	9	33	1520
ATVWDL-2024	24	2000	48 x 96	72 x 144	1000	1000	48 x 96	7-3/4	31-3/4	1340
ATVWDL-4024	24	4000	48 x 96	72 x 144	1000	1000	48 x 96	7-3/4	31-3/4	1350
ATVWDL-6024	24	6000	48 x 96	72 x 144	2000	2000	48 x 96	7-3/4	31-3/4	1740
ATVWDL-8024	24	8000	48 x 96	72 x 144	2000	2000	48 x 96	7-3/4	31-3/4	1760
ATVWDL-12024	24	12000	48 x 96	72 x 144	2000	2000	48 x 96	9	33	2050
ATVWDL-16024	24	16000	48 x 96	72 x 144	2000	2000	48 x 96	10	34	2200





## SPECIFICATION TABLE FOR DOUBLE WIDE UNITS

Model	Travel	Capacity	Platform		Maximum Loading End	Loading Side	Base Frame Size	Lowered Height	Raised Height	Ship Weight
			Minimum	Maximum						
ATDW-2024	24	2000	48 X 48	96 X 72	1000	1000	48 X 48	7-3/4	31-3/4	850
ATDW-4024	24	4000	48 X 48	96 X 72	1000	1000	48 X 48	7-3/4	31-3/4	860
ATEWDW-2024	24	2000	72 X 48	120 X 72	1000	1000	72 X 48	7-3/4	31-3/4	1150
ATEWDW-4024	24	4000	72 X 48	120 X 72	1000	1000	72 X 48	7-3/4	31-3/4	1160
ATEWDW-6024	24	6000	72 X 48	120 X 72	1000	1000	72 X 48	9	33	1500
ATEWDW-8024	24	8000	72 X 48	120 X 72	1000	1000	72 X 48	9	33	1520
ATVWDW-2024	24	2000	96 X 48	144 X 72	1000	1000	96 X 48	7-3/4	31-3/4	1340
ATVWDW-4024	24	4000	96 X 48	144 X 72	1000	1000	96 X 48	7-3/4	31-3/4	1350
ATVWDW-6024	24	6000	96 X 48	144 X 72	2000	2000	96 X 48	7-3/4	31-3/4	1740
ATVWDW-8024	24	8000	96 X 48	144 X 72	2000	2000	96 X 48	7-3/4	31-3/4	1760
ATVWDW-12024	24	12000	96 X 48	144 X 72	2000	2000	96 X 48	9	33	2050
ATVWDW-16024	24	16000	96 X 48	144 X 72	2000	2000	96 X 48	10	34	2200

## SPECIFICATION TABLE FOR DOUBLE HIGH UNITS

Model	Travel	Capacity	Platform		Maximum Loading End	Loading Side	Base Frame Size	Lowered Height	Raised Height	Ship Weight
			Minimum	Maximum						
ATDH-1048	48	1000	24 X 48	48 X 72	1000	1000	24 X 48	15-1/2	63-1/2	1700
ATDH-2048	48	2000	24 X 48	48 X 72	1000	1000	24 X 48	15-1/2	63-1/2	1720
ATEWDH-1048	48	1000	36 X 48	60 X 72	1000	1000	36 X 48	15-1/2	63-1/2	2300
ATEWDH-2048	48	2000	36 X 48	60 X 72	1000	1000	36 X 48	15-1/2	63-1/2	2320
ATEWDH-3048	48	3000	36 X 48	60 X 72	1000	1000	36 X 48	18	66	3000
ATEWDH-4048	48	4000	36 X 48	60 X 72	1000	1000	36 X 48	18	66	3040
ATVWDH-1048	48	1000	48 X 48	72 X 72	1000	1000	48 X 48	15-1/2	63-1/2	2680
ATVWDH-2048	48	2000	48 X 48	72 X 72	1000	1000	48 X 48	15-1/2	63-1/2	2700
ATVWDH-3048	48	3000	48 X 48	72 X 72	2000	2000	48 X 48	15-1/2	63-1/2	3480
ATVWDH-4048	48	4000	48 X 48	72 X 72	2000	2000	48 X 48	15-1/2	63-1/2	3520
ATVWDH-6048	48	6000	48 X 48	72 X 72	2000	2000	48 X 48	18	66	4100
ATVWDH-8048	48	8000	48 X 48	72 X 72	2000	2000	48 X 48	20	68	4400

Standard deduction of 2% per inch for platforms longer and/or wider than minimum sizes.

## OPTIONAL LIFT ACCESSORIES

**WHEEL AND DOLLY SETS:** These are only used to move empty units. Standard pricing is for units with minimum size platforms and end mounted wheels as shown in (Fig 1.) Standard ground clearance is 1/2". Side mounted wheels (Fig. 2) may be special ordered. Special kits for other than minimum size platforms may also be available if you consult the factory.

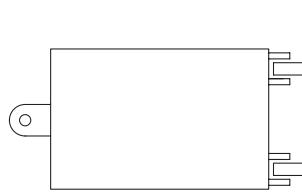


Figure 1

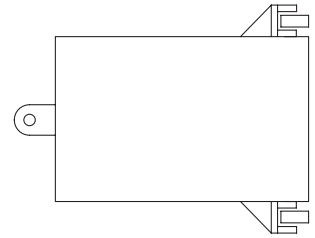


Figure 2

**CASTER SETS:** These are designed so that loaded lifts can be moved with no damage to the lifts or casters. It should be remembered however, that a 2000# load on a lift presents as much inertia to overcome as a car does and as the capacity of the lifts go up, it becomes increasingly difficult to move a fully loaded unit. Units are equipped with two fixed and two swivel casters to aid steering. Ground clearance varies by unit and caster configuration, but is always at least 1". The standard configuration is end mount (Fig. 3), but side mount (Fig. 4) and bottom mount (Fig. 5) are also available.

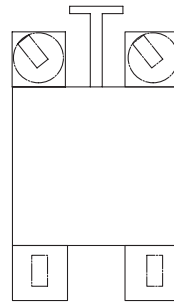


Figure 3

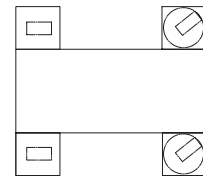


Figure 4

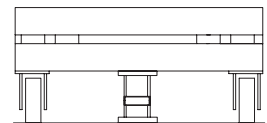
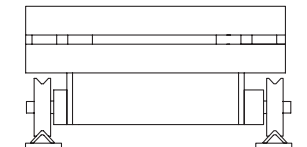
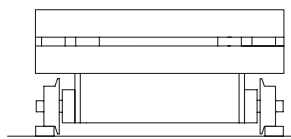
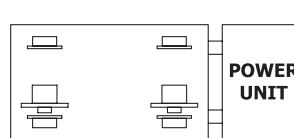


Figure 5

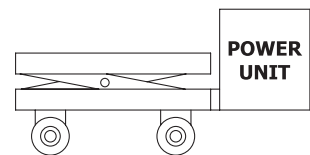
**FLANGED OR "V" GROOVE WHEEL SETS:** These guided wheel sets can be mounted in any of the three configurations shown for the caster sets. The flanged wheels typically ride 1/2" by 1-1/2" flat tracks and the 'V' groove wheels typically ride 1-1/2" by 1-1/2" inverted angle iron tracks. Higher capacities require larger tracks.



**POWERED DRIVE OPTIONS:** Powered drive options are available in either AC or DC models. The advantage to the AC units is that higher duty cycles are available and there is no need to recharge the units. The advantage to the DC units is freedom of movement with no power cords on the floor and no need for cable reels. These units can be designed for either "V" groove wheels (standard) or flanged wheels. The typical P series lift contains the powered drive power unit in a box 42-1/4" wide by 23-3/8" long on the end of the lift. The height of this box is typically 14-3/4" tall for AC units and DC units would have the batteries on top of the box providing a higher profile.



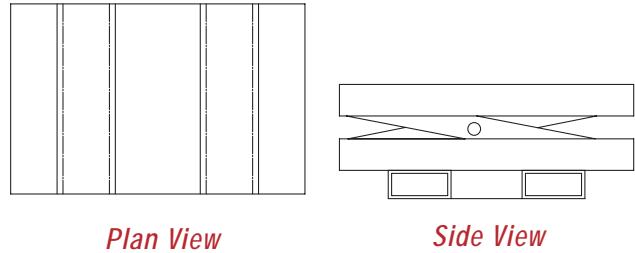
Plan View



Side View

## MORE LIFT ACCESSORIES

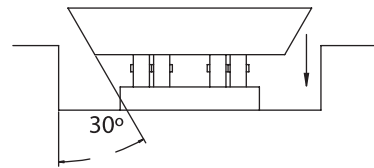
**FORK POCKETS:** The fork pocket option consists of a reinforced baseframe with cross tube fork pockets. The lift itself should be equipped with as close as possible to a minimum width platform. Fork truck capacity ratings are typically at 24" out from the mast and wide platforms can mean that the center of gravity of the loaded unit is positioned beyond the rated load center of the fork truck.



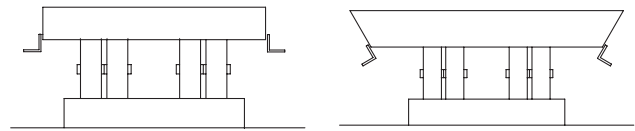
Plan View

Side View

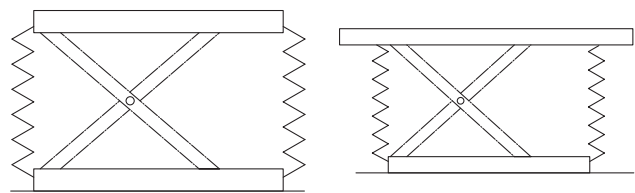
**BEVEL TOE GUARDS:** OSHA requires 8" bevel toe guards on all units that are recessed into the floor. This requires a minimum lowered height of 9" and the platforms must be at least 8" longer and 8" wider than standard minimum.



**ELECTRIC TOE GUARDS:** This option acts as foot or limb protection by breaking the "down" circuit of the lift control system whenever the guard is deflected. The unit "up" control remains intact. This option can be applied to either a straight sided or bevel toe guard unit. This option does not work well with accordion skirts.



**ACCORDION (BELLOW) SKIRTS:** This option consists of pleated black and yellow polyester skirting in a bellows configuration. It does prevent small debris from getting into the scissors mechanism, but it is not a substitute for bevel toe guards or electric toe guards. On lifts with oversize platforms the skirts are typically fitted around the leg mechanism, not the edge of the platform.



**SLIP REDUCING DECKS:** Plate manufacturers produce raised pattern plates for better traction which is standard on all dock lifts and an option on all other lifts. We can also embed silica sand in our enamel paint finish on smooth plates, which provides better traction than the embossed plates, but does not hold up to wear as well.



## MORE LIFT ACCESSORIES

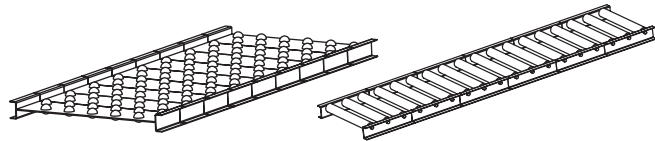
**HAND RAIL AND SAFETY CHAINS:** Whenever personnel will be on elevated lifts, handrails and safety chains should be added as safety restraints.



**“V” CRADLE DECKS:** Our standard slope is 1" per foot, which is approximately 5 degrees.



**CONVEYORS AND BALL TRANSFERS:** These items are usually supplied by our customers and we simply attach them. However, we can purchase these items as well.



### SPECIAL FINISHES:

1. Stainless steel, galvanized, and spray on zinc metalized finishes are available for special rust inhibiting applications. Consult factory for pricing.
2. Polyurethane paint is somewhat self-healing when scratched and is more durable than industrial enamel. Some food preparation applications require polyurethane paint. We are properly equipped and well practiced at applying polyurethane finishes. Depending on the customer specifications the paint itself can cost 4 to 10 times as much as industrial enamels. Consult factory for pricing.
3. Custom matched enamel paint colors are all commonly produced special finishes.  
*Note: Our standard finish is a baked industrial enamel over fully primed surfaces.*

### CONTROLS:



*NEMA 4X pushbutton  
(Standard)*



*NEMA 1 wall mount  
Pushbutton*



*Guarded footswitch*



*UP DOWN  
Key operated*



*Push Button  
With key lockout*

### WARNING DEVICES:



*Flashing light*

*Adjustable tone length and  
volume, audio alarm*



*Note: Standard voltage for all power units of 1HP or larger is 230/60/3. These units will operate on 208, 220, 230, 240 voltages and if the magnetic overloads are changed, they can be rewired to operate on 440, 460, and 480 voltages also.*

**FACTORY STANDARD RECEPTACLE CHARTS:**

Voltage	NEMA twist lock plug	Receptacle to purchase
208-230/60/3	L15-20P	L15-20R
460/60/3	L16-30P	L16-30R
230/60/1	L6-20P	L6-20R
115/60/1	I5-30P	I5-30R

**ELECTRIC POWER UNITS:**

**FIG. 1** Standard internally mounted power unit for a “P” series lift with all valves built into the hydraulic pump.

**FIG. 2** Deluxe power unit with a separate valve manifold which allows up to eight times more heat dissipation than pump mounted valves for greater endurance and longer component life.

**FIG. 3** External single phase power unit that will allow three phase speeds on “P” series lifts.

**FIG. 4** Continuous running external power unit for frequent jogging operations.



Fig. 1



Fig. 2



Fig. 3



Fig. 4

**WHEN TO USE CONTINUOUS RUNNING POWER UNITS:** If an application requires a two second jog every 10 seconds, or 200 motor starts per hour, or a full capacity full travel lift in less than 4 minute intervals, then a continuous running power unit is needed to prevent overheating the motor. If you provide the exact duty cycle requirements for a particular lift model that you are considering, we can tell you if a standard power unit will be sufficient.

**HIGH CYCLE POWER UNITS:** True high cycle power units are continuous running and require oil coolers, filters and other modifications which are unique to each application. See *page 19* for typical high cycle power unit configurations.

**HYDRAULIC FLUID OPTIONS:** For biodegradable and/or fire resistant applications we suggest Dasco 355-2 or equivalent. For food grade operations we suggest Nevastane AW32 or equivalent.

**AIR OPERATED POWER UNITS:** For applications that require positive hydraulic position holding, but avoid the use of electricity, we can provide air operated power units. These units utilize air motors in place of electric motors and air operated solenoids for lowering. Both hand operated and foot operated controls are available.



## TILT APPLICATIONS, SPECIFICATIONS & SELECTION

*This section deals with tilters, upenders, bin-tilters and dumpers. All of these devices are similar in that they all rotate angularly about a horizontal axis. The differences are the degree of rotation, the type of loads and the configuration of the platforms or bins. The basic information necessary to select an appropriate tilter for an application includes all of the topics listed below:*

- ▶ **CAPACITY** (p 52)
- ▶ **NATURE OF THE LOAD** (p 52)
- ▶ **MEANS OF LOADING AND UNLOADING** (p 53)
- ▶ **LOWERED HEIGHT AND TILT** (p 53)
- ▶ **PLATFORM AND BIN SIZE** (p 53)
- ▶ **SPEED REQUIREMENTS** (p 53)
- ▶ **POWER AND DUTY CYCLE REQUIREMENTS** (p 53)
- ▶ **SPECIAL FEATURES AND ACCESSORIES** (p 54)

*The following discussions will be used to clarify the meanings of these topics, point out special considerations to be aware of, and provide us with a common vocabulary.*

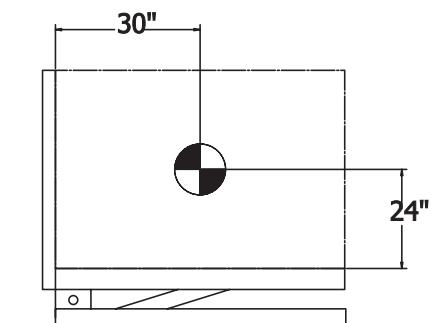
**CAPACITY:** The capacity of a unit is the total weight being placed on a unit and consists of the total live load + the total dead load as described below:

**Live load weight and description:** Live loads are the items that will be placed on the unit and removed from the unit. It is important to know the maximum weight. It should also be noted if the load will be unbalanced due to a lopsided or irregular configuration or a loading operation that can cause temporary uneven loads.

**Dead load weight and description:** Tilters and upenders may have a dead load weight that is applied to the unit on a permanent basis such as conveyor, weight scales, or fixtures. A good description including how the dead weight will be supported by the platform and attached to the platform is necessary so that our engineers can determine if the structure of our standard platform can satisfactorily support the incurred loads without deflection or twisting. Any unbalanced loads such as offset conveyor drive motors must be mentioned so that the center of balance for fully loaded and minimally loaded configurations can be determined. Any extensions to platforms must also be noted as they may effect the tilting capacity of the unit

**NATURE OF THE LOAD:** This requires a good description of what the load consists of, the weights of the load components, the location of the center of gravity of the load and the physical dimensions of the load. Our concern here is with very long loads (such as tall cabinets or refrigerators) or unusually configured loads (such as transformers or fork truck counter weights) that can place the center of gravity of the load outside of our design parameters. These items can be handled very easily if we know the location of the center of gravity, but they do not conform to our standard catalog ratings.

The capacity rating of a tilting unit in our catalog is based on the center of gravity of the load being no farther away from the tilting axis than the center of the tilting platform. As an example, *Figure 1* depicts an upender with a 48" x 48" platform and a 48" x 60" platform and a capacity rating of 6000 lbs. For design purposes, our engineer will assume that the center of gravity of the 6000 lb. load will be no more than 24" away from the 60" long platform and no more than 30" away from the 48" long platform.

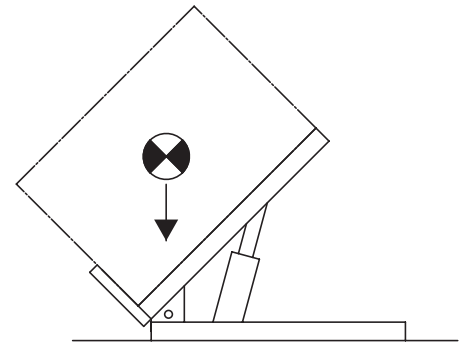


*Figure 1*

These loading assumptions are consistent with all tilting products. Basic tilters that have only one platform and a perpendicular retainer lip, are designed with a lip height appropriate for the load center of gravity being no more than 24" above the tilting platform. *Figure 2*, illustrates a 45-degree tilter with a 36" long platform.

The side to side loading on the platform should be approximately centered and a maximum capacity load should be positioned with the center of gravity within 6" of the center of the width. In the case of reduced loads, all tilters are designed to handle half the load on half of the platform.

If you encounter loads that do not fit within our design parameters, please contact us. We can either design a custom unit or determine which standard tilter will meet your needs with or without modification.



*Figure 2*

**MEANS OF LOADING AND UNLOADING:** Loading of a tilter is usually a simple process of placing loads onto the units in the fully lowered position, which will put no undo stress on the units. There is a complete discussion of loading issues in the lift application section of this catalog beginning on *page 11*. Most of those concerns do not apply to tilters. The one concern that applies to everything we manufacture is high impact loading from dropped loads or high speed loading impact. If you encounter a high impact loading application, give us the details of the operation and we will tell you what needs to be done to protect our equipment.

**LOWERED HEIGHT AND TILT:** The lowered height of a unit in the catalog can not be reduced. Building up the base frame can increase the lowered height of a unit. If an application absolutely requires a lower lowered height, then you should consult with the factory for a quote on a special design unit.

The degree of tilt for a unit can always be reduced electrically and/ or mechanically. Increasing the degree of tilt usually requires modification or a special design; therefore you must consult with the factory for pricing.

**PLATFORM AND BIN SIZE:** The platform sizes must fall within the maximum and minimum sizes shown in the catalog. Note that if something is affixed to our platform like a conveyor or other device, it must also fall within the maximum size constraints listed for our platform as the attached device in fact becomes the platform. Bin sizes may be altered, but the factory must be consulted for the cost increases.

**SPEED REQUIREMENTS:** Speed is usually not an issue in tilter applications. However, if our catalog tilting times are not satisfactory for an application please contact the factory with your requirement and we will quote on a modification to meet the need.

**POWER AND DUTY CYCLE REQUIREMENTS:** The actual power available at the intended location of the equipment should be confirmed at the beginning of the selection process. Note that some units will not operate at catalog speeds on single-phase currents. On air applications, PSI and CFM availability at the equipment site must also be confirmed.

When considering the duty requirements of the tilter, it is necessary to think in terms of two (2) systems, the tilting mechanism and the power unit. It is necessary to know whether the tilter application requires full stroke movement or will there be a series of incremental "jogs" in one of the directions. Specifically, we need the time intervals between operations and the direction and size of movement in each operational increment. Finally, the total number of cycles per hour, day and year should be calculated.

## TILT APPLICATIONS, SPECIFICATIONS & SELECTION

### ***POWER AND DUTY CYCLE REQUIREMENTS CONTINUED:***

Applications with many short jogs in quick intervals may require the need of a special power unit. If frequent incremental movement will occur in a short interval of time, the standard motor would not take the frequent motor starts without overheating. Therefore, the options to consider are going to an air operated unit, air over water unit, or a continuous running power unit. (See the power unit options for lift tables.)

Applications without frequent jogging are usually easier on the power units, but check the operational sequence against the rule of thumb of eleven (11) seconds off for every one (1) second on with full loads. If overheating is an issue, consider a continuous running power unit or check with the factory for other power unit options.

Once the total number of cycles per year are calculated, that number can be compared to the "warranty life" and "expected life" as explained in the warranty section of this booklet. Note that there is a large difference in the warranty life of a standard unit and an ultra high cycle unit, just as there is a large difference in price. If the application that you are considering falls somewhere in between, contact us to see if a modified standard unit can be designed to better fit the application and the budget.

**SPECIAL FEATURES & ACCESSORIES:** These items are generally divided into two categories, standard options which are included in the catalog and price lists and those unusual items that must be priced by the factory.

### ***Items that require factory consultation include:***

- ▶ Special environments such as freezers, proximity to high heat, or damp locations.
- ▶ Hazardous environments such as explosion proof for dust or for vapor.  
*(Note: We can supply explosion proof components, but the installing electrician is the only one who can guaranty compliance to local electrical codes for explosion proof.)*
- ▶ Special finishes such as stainless steel, polyurethane paints, epoxy paints.
- ▶ High cycle requirements that fall between our standard units and our ultra high cycle units.
- ▶ Any requirements that do not fit within any of our standard groups of equipment.
- ▶ AC or DC self propelled units.
- ▶ Bellows and roller shades.

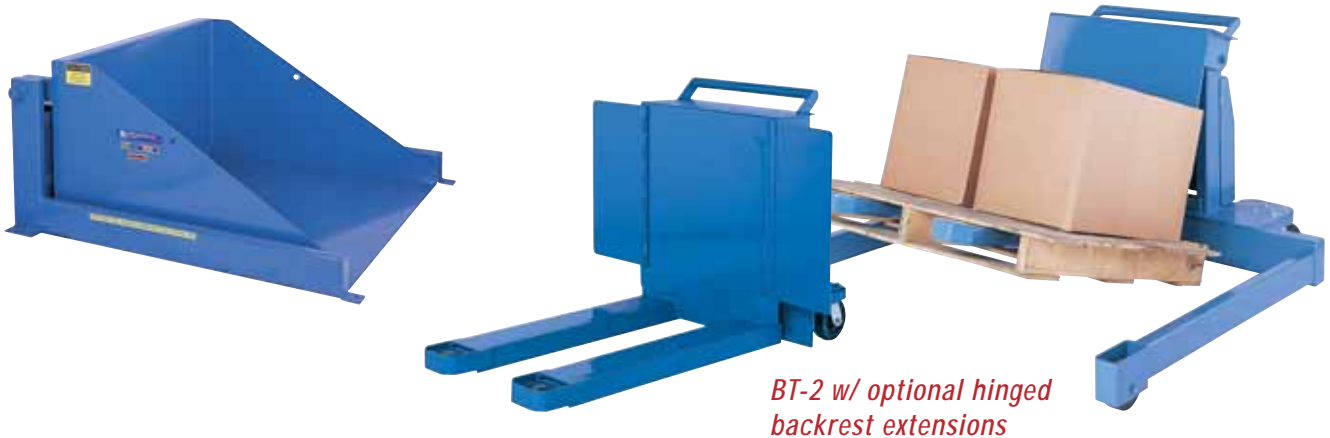
### ***Items shown in our catalog and price lists: (see accessory sections)***

- ▶ Single phase power units for dumpers.
- ▶ Bin tilters:
  - Special power units.
  - Backrest extensions
- ▶ Warning light and buzzer stanchion.
- ▶ All of the electrical control options for lift tables are applicable to tilters.
- ▶ Air operated power units are applicable to tilters, but you may wish to look at the air spring units in this catalog also.



## BIN TILTERS

*These units are designed to reduce reaching and bending into parts containers. There are models suitable for palletized loads, carts and stacker bins.*



## SPECIAL FEATURES

- ▶ All models have hydraulic return lines on the cylinders to preclude oil weepage.
- ▶ BT & BTS portable models are equipped with a 12 volt DC deep cycle battery power unit.
- ▶ All battery operated units are equipped with built in battery chargers.
- ▶ BTP non-portable pan tilters are equipped with 1HP AC 110 Volt motors.
- ▶ Portable units have "step down set", "step down release" floor locks for ease of operation.
- ▶ Portable units have ankle protection around the portability casters for added safety.
- ▶ BT models have a backrest extension option to support extra wide containers.
- ▶ All units have warning light and audio warning options available.

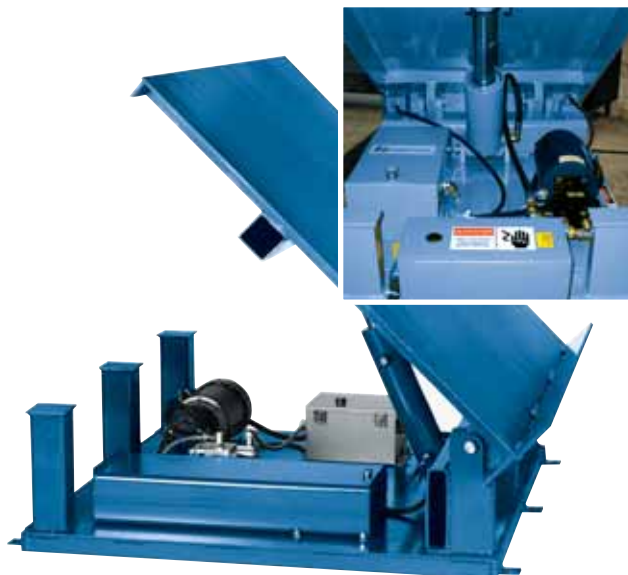
## SPECIFICATION TABLE FOR BIN TILTERS

Model	Capacity Lbs.	Tilt Degrees	Fork Length	Fork Height	O.A. Fork Spacing	Inside Straddle	Inside Pan	O.A. Width	O.A. Length	O.A. Height	Tilt Speed	Approx. Weight
BT-2	2000	87	40	3-1/2	24	N/A	N/A	34	53-1/2	35-1/4	17	600
BT-4	4000	87	40	3-1/2	26	N/A	N/A	34	55-1/2	35-1/4	25	700
BTS-2	2000	87	40	3-1/2	24	50-1/2	N/A	57 1/2	55-1/2	35-1/4	17	650
BTS-4	4000	87	40	3-1/2	26	50-1/2	N/A	57 1/2	55-1/2	35-1/4	25	750
BTP-2	2000	87	N/A	N/A	N/A	N/A	50 X 50	60 1/2	60-1/2	29-1/2	20	1100
BTP-4	4000	87	N/A	N/A	N/A	N/A	50 X 50	60 1/2	60-1/2	29-1/2	28	1300

If you do not find what you need, do not be discouraged, give us a call. The units shown in this catalog are only a small sampling of what can be done by combining units. Furthermore, if combining existing units will not meet your needs, we are always happy to quote on a custom design unit.

## ELECTRIC TILTERS

The electric hydraulic tilters are used in workstation applications to eliminate bending and stretching. The tilters tip containers to the workers, reducing fatigue and back injuries.



### SPECIAL FEATURES

- ▶ All of the controllers are Underwriter Laboratory approved assemblies.
- ▶ The cylinders on 45 and 60 degree tilters are double acting machine grade.
- ▶ All units are fully primed and finished with a baked enamel finish.
- ▶ All pressure hoses are double wire braid with JIC fittings.
- ▶ All reservoirs are mild steel.
- ▶ These units conform to all applicable ANSI codes.

### SPECIFICATION TABLE FOR ELECTRIC TILTERS

Model No.	Capacity	Lowered Height	Number of Cylinders	Degrees of Tilt	Min. Platform	Max. Platform	H.P.	Speed Sec.	Approx. Weight
TT-230-8	2000	8	1	30	24 X 36	60 X 60	2	5	400
TT-430-8	4000	8	2	30	24 X 36	60 X 60	2	9	440
TT-630-8	6000	8	2	30	24 X 36	60 X 60	2	9	465
TT-245-8	2000	8	1	45	24 X 36	60 X 60	2	7	405
TT-445-8	4000	8	2	45	24 X 36	60 X 60	2	15	445
TT-645-8	6000	8	2	45	24 X 36	60 X 60	2	15	470
TT-260-8	2000	8	2	60	24 X 36	60 X 60	2	10	410
TT-460-8	4000	8	2	60	24 X 36	60 X 60	2	20	450
TT-660-8	6000	8	2	60	24 X 36	60 X 60	2	20	475

## AIR OPERATED TILTERS

The air operated tilters offer the advantage of requiring no electrical connections. They operate on shop air with a minimum of 60 psi. The angle of tilt may increase as the load is decreased, which automatically rotates the bin toward the operator as it is unloaded.



### SPECIAL FEATURES

- ▶ All units are equipped with motion dampening shock absorbers.
- ▶ All air springs have lifetime warranties.
- ▶ These units are fully primed and then receive a baked enamel finish.
- ▶ These units comply with all applicable ANSI codes.
- ▶ All units are equipped with safety maintenance locks.
- ▶ Standard controls are hand valves mounted on pipe stanchions. (Foot operated controls are optional).

### SPECIFICATION TABLE FOR AIR OPERATED TILTERS

Model	Capacity	Air Springs	Lowered Height	Tilt	Minimum Platform	Maximum Platform	Baseframe	Shipping Weight
ATI-135	1000	1	7-1/4	35	24 X 36	72 X 48	24 X 31-1/4*	300
ATI-235	2000	1	7-1/4	35	24 X 36	72 X 48	24 X 31-1/4*	310
ATI-335	3000	1	7-1/4	35	24 X 36	48 X 48	24 X 31-1/4*	315
ATI-435	4000	1	7-1/4	35	24 X 36	72 X 36	24 X 31-1/4*	320
ATI-435-D	4000	2	7-1/4	35	36 X 37	72 X 48	36 X 31-1/4	470
ATI-535-D	5000	2	7-1/4	35	36 X 36	72 X 48	36 X 31-1/4	425
ATI-635-D	6000	2	7-1/4	35	36 X 36	72 X 48	36 X 31-1/4	430

\* Baseframe widths are increased from 24" to 36" for all platforms 60" wide or wider.

• All paired dimensions are width X length.

## UPENDERS

*These units are tilters that tilt a full ninety (90) degrees. It is common to equip one platform with a "V" cradle to hold coils or rolls. When this is done we leave a gap of 6", or whatever the customer specifies, to accommodate a pallet at the bottom face of the coil or roll. The upender is then called a roll "palletizer" or "depalletizer". Lifts have been mounted on one of the platforms and so have turntables. If a turntable is mounted, it usually has to be mounted on slides so that it can be pulled away from the adjacent perpendicular face in order to turn a square cornered load.*



### SPECIAL FEATURES

- ▶ All models have hydraulic return lines on the cylinders to preclude oil weepage.
- ▶ All of the controllers are Underwriter Laboratory approved assemblies.
- ▶ All shafts, axles and pins are hard chrome plated.
- ▶ All bearings are lifetime lubricated.
- ▶ These units are fully primed and finished with baked enamel.

### SPECIFICATION TABLE FOR UPENDERS

Model	Capacity Lbs.	Tilt Degrees	Lowered Height	Platform Widths	Platform Lengths	Tilt Speed	H.P.	Approx. Weight
UE-290	2000	90	12	48 - 60	54 - 72	58	5	2000
UE-490	4000	90	12	48 - 60	54 - 72	58	5	2200
UE-690	6000	90	12	48 - 60	54 - 72	86	5	2500
UE-890	8000	90	14	48 - 60	54 - 72	91	5	4000
UE-1090	10000	90	16	48 - 60	54 - 72	124	5	4300

*The table represents our most common sizes. The size and configuration possibilities are simply too numerous to list them all. If you do not see the size you need, please call the factory and we will gladly quote on your exact size and feature requirements.*

*These units lend themselves to many special applications and many modifications. The following photos illustrate some of the modifications we have applied to these units.*



*Upender with "V" cradle*



*Hydraulically adjustable "V" cradle*



*Upender with deep "V" cradle & powered conveyor flat deck*

*Whatever your needs are, we have the expertise to design a suitable unit.*

## DUMPERS

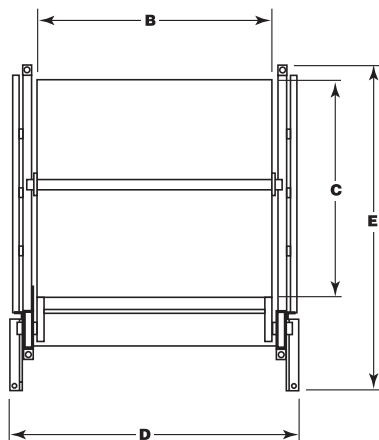
*These units are tilters that tilt approximately 135 degrees. The carriages are designed to hold bins and/or carts and dump the contents, which can be as varied as meat, grain, castings, plastic pellets and the U. S. mail. Because of the wide variety of applications, there are many options and modifications available such as custom size carriages, stainless steel or epoxy painted carriages for food applications, extended mesh side guards, electric eye safety barriers, semi portable wheel and caster sets, warning bell and light sets and more. See page 62 for accessories and typical modifications.*



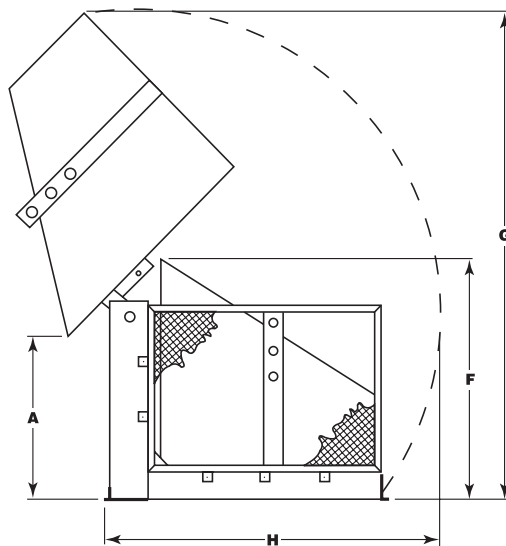
### SPECIAL FEATURES

- ▶ The cylinders are machine grade double acting style.
- ▶ All of the controllers are Underwriter Laboratory approved assemblies.
- ▶ All shafts, axles and pins are hard chrome plated.
- ▶ All bearings are lifetime lubricated.
- ▶ These units are fully primed and finished with baked enamel.

### DIMENSION KEY



Top View



Side View



## SPECIFICATION TABLE FOR DUMPERS

Model	Capacity Lbs.	(A) Dump Height	(BxC) Carraige WxL	(DxE) Overall WxL	Motor H.P.	Speed Sec.	(F) Carraige Height	(G) Arc Height	(H) Width	Approx. Weight
DP-236-4036	2000	36	40 X 36	53 X 56	2	19	53	99	70	1010
DP-236-4048	2000	36	40 X 48	53 X 68	2	19	53	108	79	1045
DP-236-5236	2000	36	52 X 36	65 X 56	2	19	53	99	70	1040
DP-236-5248	2000	36	52 X 48	65 X 68	2	19	53	108	79	1085
DP-248-4036	2000	48	40 X 36	53 X 58	2	25	65	120	79	1020
DP-248-4048	2000	48	40 X 48	53 X 70	2	25	65	128	87	1055
DP-248-5236	2000	48	52 X 36	65 X 58	2	25	65	120	79	1050
DP-248-5248	2000	48	52 X 48	65 X 70	2	25	65	128	87	1095
DP-260-4036	2000	60	40 X 36	53 X 58	2	33	77	140	79	1030
DP-260-4048	2000	60	40 X 48	53 X 70	2	33	77	149	87	1065
DP-260-5236	2000	60	52 X 36	65 X 58	2	33	77	140	79	1060
DP-260-5248	2000	60	52 X 48	65 X 70	2	33	77	149	87	1105
DP-436-4036	4000	36	40 X 36	53 X 58	2	33	53	99	70	1040
DP-436-4048	4000	36	40 X 48	53 X 70	2	33	53	108	79	1075
DP-436-5236	4000	36	52 X 36	65 X 58	2	33	53	99	70	1070
DP-436-5248	4000	36	52 X 48	65 X 70	2	33	53	108	79	1115
DP-448-4036	4000	48	40 X 36	53 X 58	2	37	65	120	79	1050
DP-448-4048	4000	48	40 X 48	53 X 70	2	37	65	128	87	1085
DP-448-5236	4000	48	52 X 36	65 X 58	2	37	65	120	79	1080
DP-448-5248	4000	48	52 X 48	65 X 70	2	37	65	128	87	1125
DP-460-4036	4000	60	40 X 36	53 X 58	2	53	77	140	89	1060
DP-460-4048	4000	60	40 X 48	53 X 70	2	53	77	149	96	1095
DP-460-5236	4000	60	52 X 36	65 X 58	2	53	77	140	89	1090
DP-460-5248	4000	60	52 X 48	65 X 70	2	53	77	149	96	1135
DP-636-4036	6000	36	40 X 36	53 X 58	2	37	53	99	70	1070
DP-636-4048	6000	36	40 X 48	53 X 70	2	37	53	108	79	1105
DP-636-5236	6000	36	52 X 36	65 X 58	2	37	53	99	70	1100
DP-636-5248	6000	36	52 X 48	65 X 70	2	37	53	108	79	1145
DP-648-4036	6000	48	40 X 36	53 X 58	2	53	65	120	79	1080
DP-648-4048	6000	48	40 X 48	53 X 70	2	53	65	128	87	1115
DP-648-5236	6000	48	52 X 36	65 X 58	2	53	65	120	79	1110
DP-648-5248	6000	48	52 X 48	65 X 70	2	53	65	128	87	1155
DP-660-4036	6000	60	40 X 36	53 X 58	2	66	77	140	89	1090
DP-660-4048	6000	60	40 X 48	53 X 70	2	66	77	149	96	1125
DP-660-5236	6000	60	52 X 36	65 X 58	2	66	77	140	89	1120
DP-660-5248	6000	60	52 X 48	65 X 70	2	66	77	149	96	1165

More photos on the next page.

## STANDARD DUMPER UNIT



### FEATURE DETAILS

See pg. 48 for optional accessories



▶ Standard power unit



▶ Cylinder



▶ Adjustable retaining bar



▶ Standard mesh guard

## MODIFIED DUMPER UNIT



### ACCESSORIES AND MODIFICATIONS



▶ Electric eye option



▶ Wheel and caster set



▶ optional power unit cover



## ACCESSORIES AND MODIFICATIONS



▶ *Hard lip extension*



▶ *Soft lip extensions*



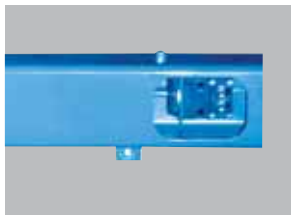
▶ *Warning light & alarm*

See pg. 48 for optional accessories

## LARGE CUSTOM DUMPER



## ACCESSORIES AND MODIFICATIONS



▶ *Dual beam electric eye*



▶ *Slotted retaining bar*



▶ *Large mesh side guards*



▶ *Wheel & caster set*

## OTHER OPTIONS NOT SHOWN

- ▶ Stainless steel carriage.
- ▶ Epoxy paint finishes.
- ▶ Custom controls such as footswitches or key lockout pushbuttons.
- ▶ Continuous running remote power units.
- ▶ Explosion proof remote power units.
- ▶ Air operated power units.
- ▶ Custom retaining bars.
- ▶ Shock absorbers for full down position.

## TURNTABLE APPLICATIONS, SPECIFICATIONS & SELECTION

*This section covers the full range of turntables manufactured by Advance Lifts. The basic information necessary to select an appropriate turntable for an application includes all of the topics listed below:*

- ▶ **TURNTABLE TYPES** (p 64)
- ▶ **CAPACITY** (p 64)
- ▶ **NATURE OF THE LOAD** (p 64)
- ▶ **MEANS OF LOADING AND UNLOADING** (p 65)
  - EDGE LOADING** (p 66)
  - DERATING OVERSIZE PLATFORMS** (p 66)
  - INCREASING EDGE LOAD CAPACITY** (p 66)
  - ROLLING AXLE LOADS** (p 66)
  - MOUNTING CONVEYORS** (p 67)
  - SLIDING LOADS** (p 68)
  - PLACED OR STACKED LOADS** (p 68)
- ▶ **PLATFORM SIZE AND SHAPE** (p69)
- ▶ **SPEED REQUIREMENTS** (p 69)
- ▶ **POWER AND DUTY CYCLE REQUIREMENTS** (p 69)
- ▶ **SPECIAL FEATURES AND ACCESSORIES** (p 69)

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*The following discussions will be used to clarify the meanings of these topics, point out special considerations to be aware of, and provide us with a common vocabulary.*

**TURNTABLE TYPES:** The two main categories of turntables are “standard duty” and “heavy duty ring bearing”. The standard duty tables have several sub-groups within them and both duty classes are divided into powered and non-powered (or manual). For high capacity, extra stable, more accurate positioning requirements, the heavy duty ring bearing turntables are the obvious choice. However, the more economical standard duty units offer most industrial customers satisfactory performance and a better value for less demanding applications.

**CAPACITY:** The capacity of a unit is the total weight being placed on a unit and consists of the total live load + the total dead load as described below:

**Live load weight and description:** Live loads are the items that will be placed on the unit and removed from the unit. It is important to know the maximum weight. It should also be noted if the load will be unbalanced due to a lopsided or irregular configuration or a loading operation that can cause temporary uneven loads.

**Dead load weight and description:** The dead load is the weight that is applied to the unit on a permanent basis such as conveyor, weight scales, or fixtures. A good description including how the dead weight will be supported by the platform and attached to the platform is necessary so that our engineers can determine if the structure of our standard platform can satisfactorily support the incurred loads without deflection or twisting. Any unbalanced loads such as offset conveyor drive motors must be mentioned so that the center of balance for fully loaded and minimally loaded configurations can be determined.

**NATURE OF THE LOAD:** This requires a good description of what the load consists of, the weights of the load components, the location of the center of gravity of the load, and the physical dimensions of the load.

Our concern here is that off centered loads can reduce turntable life dramatically if not properly handled. The critical information in these cases is where the center of gravity of the load will be in relation to the center of the platform. Ideally, we like to see the center of gravity of a load in the center of the platform. Fork truck counterbalance weights and oil filled transformers are just two examples of loads that present severe off center loads when their foot prints are nicely centered on the platforms. Powered conveyors with offset power drives can also create severe offset loads, especially with small size platforms. All of these situations can be handled, provided that they are considered during the selection process.

In order to utilize the maximum rated capacity of a turntable, the load must be evenly distributed over the surface of the platform. The center of gravity of the load should be placed directly over the center of the turntable platform. However, offset loading is allowed for loads that are less than the maximum rated capacity of a given turntable as explained below.

**STANDARD PLATFORMS:** Allowable offset or loading can be calculated for turntables with standard (non-reinforced) platforms using the following (2) formulas:

To calculate the allowable load offset for an actual load, the following formula is used:

$$\text{LOAD OFFSET} = (\text{PLATFORM LENGTH}/2) \times (1 - (\text{ACTUAL LOAD}/\text{RATED CAPACITY}))$$

Offset can not exceed the roller radius published in the turntable specification tables (*Refer to drawing on pg.67 for illustration of roller radius*). Maximum load for a given offset can be calculated using the following formula:

$$\text{ACTUAL LOAD} = (\text{RATED CAPACITY}) \times (1 - (2 \times (\text{LOAD OFFSET}/\text{PLATFORM LENGTH})))$$

**REINFORCED PLATFORMS:** Allowable offset loading for heavy duty turntables with reinforced platforms can be calculated in a similar way using the following (2) formulas:

- *When actual weight is known:*

$$\text{LOAD OFFSET} = (\text{PLATFORM LENGTH}/1.2) \times (1 - (\text{ACTUAL LOAD}/\text{RATED CAPACITY}))$$

- *When offset is known:*

$$\text{ACTUAL LOAD} = (\text{RATED CAPACITY}) \times (1 - (1.2 \times (\text{LOAD OFFSET}/\text{PLATFORM LENGTH})))$$

When using any of the (4) formulas above it is best to use inches for length and pounds for weight. Offset is measured from the center of the turntable platform to the center of gravity of the load. Rated capacity and available platform sizes can be found in the turntable specification tables. Consult the factory for offset loading cases that exceed the allowable offset or load calculated using the formulas.

**MEANS OF LOADING AND UNLOADING:** How loads are transitioned onto and off of the turntable can be the critical factor in choosing an appropriate lift design. These movements determine the “edge loading” and/or “impact” that the structure must sustain and they may contribute to off centered load conditions during the rotation. The most common ways in which loads are transitioned on and off turntables are as follows:

- ▶ **ROLLED ON/ ROLLED OFF** – *with a wheeled vehicle or cart*
- ▶ **SLID ON/ SLID OFF** – *as in sheet feeding operations or conveyor operations*
- ▶ **PLACED ON/ PICKED OFF** – *as in stacking operations or crane loading*

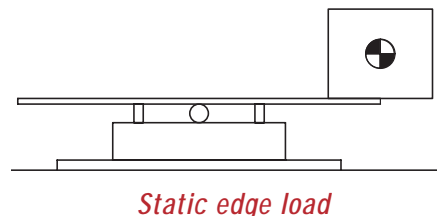
Before we talk about these specific applications we need to discuss unit capacity ratings.

## TURNTABLE APPLICATIONS, SPECIFICATIONS & SELECTION

**EDGE LOADING:** “Edge loading” capacities of turntables are generally stated in this catalog as a “static” capacity. This is equivalent to a uniform stiff load teetering on the edge of a minimum size platform edge with no allowance for any impact. This is illustrated in the drawing:

In real life this condition rarely exists and the “static” rating in the catalog must be modified with an appropriate multiplier for the various types of “dynamic” or moving loads that will actually be encountered.

What matters most with edge loading is what loads will pass over the edge of the turntable platform and potentially cause high platform stresses or tipping (standard duty models). Edge load ratings for standard duty turntables that are published in the turntable specification table are based primarily on platform tipping criteria. Standard duty turntables are designed with a “free floating” platform in order to reduce rotational friction. The platform is retained at the central pivot point, but some vertical movement is possible. If edge loading exceeds published values, the platform may tip up slightly until it is restrained by the central pivot. Movement and shock caused by tipping increases turntable component wear and may cause damage to the turntable or load. Edge load ratings for heavy duty ring bearing turntables are determined by ring bearing capacity, platform stress levels, and platform deflection. Exceeding edge load capacity in these models can result in platform damage or cause excessive deflection.



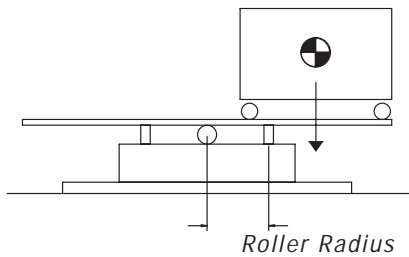
**DERATING FOR OVERSIZE PLATFORMS:** The “static” edge load capacity of oversized platforms must be derated because the oversize platform overhang acts as a lever, increasing the forces incurred by the platform structure and supporting rollers for any given weight. Edge loading capacities are derated by the rule of thumb of 4% per inch for every inch that a platform is wider than minimum width and for every inch that it is longer than minimum length. For example, a TPH-605 has a minimum platform size of 60" X 60". If it were equipped with a 65" X 65" platform, the unit would have the edge load capacity reduced by  $(65" - 60") \times 4\% = 20\%$ . There are many variables that go into the actual edge load capacities, but the 4% rule of thumb is a safe tool to use.

**INCREASING EDGE LOAD CAPACITY:** If the edge load capacity for a chosen model is not sufficient, a different turntable model must be selected. In many cases selecting a higher capacity model will result in a higher allowable edge loading. This is because the higher capacity models generally have more support rollers and larger support roller diameter, both of which increase edge load capacity. Consult the factory if higher edge load capacities than those published are required.

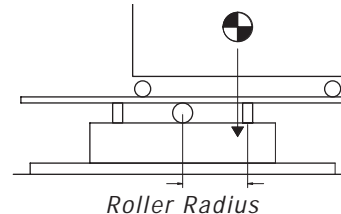
**ROLLING AXLE LOADS:** In some applications loads may be rolled onto platforms using carts or pallet jacks and thus make axle loads a concern. See illustration in the lift application section, *page 12*.

Axle loads may be expressed in static edge load terms by simply adding 50% for impact and dynamic forces. For example, a two axle cart loaded to a 2,000# total weight would have a 1,000# axle load. To calculate the static load equivalent, we would simply add 50%, so we would have a 1,500# static load. If the static load rating of the turntable configuration you have chosen does not meet the calculated requirement, you must choose one that does.

Caution is advised when rolling on a load and using these simple axle load conversions. Rolling a very short cart rolling onto a platform with a long overhang can present a situation where the entire cart is on the overhang and potentially exceed the edge load capacity. In this situation, please give the distance between axles to our sales people so that they can check with our engineers about what can be done to accommodate the load. Typically, a unit with larger support roller diameter must be chosen so that the center of gravity of the entire cart will be within the roller support circle before the second axle reaches the platform. See figures on top of next page.



**Improper Loading**



**Proper Loading**

**MOUNTING CONVEYORS:** Conveyors are sometimes used as a method of transitioning loads onto and off of turntable platforms. Care must be taken when using conveyors in order to assure a reliable application. Important details for the conveyor itself are quantity, size, mounting location, weight, and center of gravity. Important details regarding loading are load size, load weight, and load transfer dynamics. These terms are defined and discussed below.

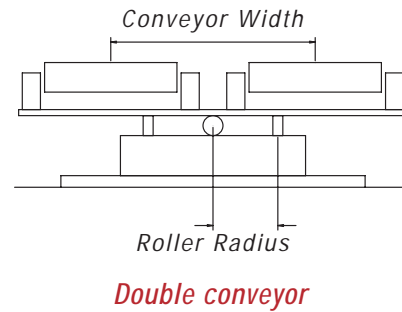
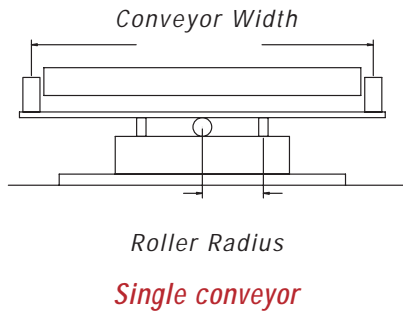
Conveyor quantity is the total number of conveyors to be mounted on the turntable platform. Usually one or two conveyors are used. Conveyor size consists of width (rail to rail) and length. The conveyor should never extend beyond the edge of the turntable platform. Mounting location is the placement of the conveyor on the platform. It is important to know the location of the conveyor rails relative to the outline of the turntable platform. Conveyors should usually be placed symmetrically on the platform. In some cases loads with uneven weight distribution may require uneven placement of the conveyor. Consult the factory for this special case. The weight of the conveyor is considered to be “dead weight” and is included in the total load of the turntable. If the conveyor has a large weight concentrated on one side (i.e., drive motor) this should be noted. Load size is important because it effects the amount of offset loading on the turntable platform as the load is transitioned onto the platform. A load with a large footprint (a large pallet for example) will typically place less offset loading on the platform than one with a small footprint as the load is rolled onto the platform. The weight of the load is also important as it has a direct effect on the magnitude of offset loading. Load transfer dynamics refers to the mechanics of how a load is rolled onto the platform. Important details to consider are rolling velocity and the method of stopping the load. Conveyor applications that have horizontal impact against stops are of particular concern because of potential increased wear or damage to the turntable components. If the application involves heavy loads and/or high load velocity and stops consult the factory. When you consult with the factory, be sure you have the weight of the moving object and the speed of movement.

Because conveyors typically transfer load to the turntable platform in a concentrated manner through the conveyor mounting rails, the capacity of the turntable must be derated in many cases. The following formula is to be used to calculate the allowable load for conveyor applications:

$$\text{ALLOWABLE LOAD} = \text{RATED CAPACITY} \times (\text{ROLLER RADIUS}/\text{CONVEYOR WIDTH})$$

When using the formula it is best to use inches for length and pounds for weight. In the case where one conveyor is used, conveyor width is defined to be the distance between the roller support rails. If two conveyors are used, conveyor width is defined to be the distance between the centers of the conveyors as they are to be mounted on the turntable platform. See figures on top of next page. Roller radius varies by turntable model and can be found in the turntable specification table.

## TURNTABLE APPLICATIONS, SPECIFICATIONS & SELECTION



Calculated allowable load includes the weight of the conveyors. When the load is being transferred onto the platform it is important that the offset loading of the platform is not so high as to cause excessive deflection or tipping of the platform. A good rule of thumb to follow is that at the point where the full load has transferred onto the turntable platform, the center of gravity of the load should be at or inside the turntable support roller radius. The following formula can be used:

### LOAD LENGTH > PLATFORM LENGTH – (2 x ROLLER RADIUS)

Consult the factory for cases where the above condition is not met.

**SLIDING LOADS:** In some cases loads may be slid onto a turntable platform. See illustrations in lift application section, *page 12*.

Typically, loads are slid on the platform in increments. When sliding loads onto the platform it is important to consider impact, friction, and load center. Impact loading in a sliding application can occur when loads are slid into a stop on the turntable, and can cause excess wear or damage to the turntable drive or structure. As with conveyor applications with stops, load speed and weight are important details to consider. Consult the factory if heavy loads are to be impacting stops at higher speeds. Frictional forces caused by sliding on incremental loads typically are not high enough to create any problems. However, if high frictional forces are expected because of materials with a high coefficient of friction (rubber for example) and the load is to be powered onto the turntable, consult the factory to prevent problems. It is important to follow the guidelines for offset loading (see previous section) when sliding on loads or whenever the load is rotated during the loading process.

**PLACED OR STACKED LOADS:** Loads may be placed or stacked on the turntable platform manually, with a fork lift, or vertically with a crane. See illustrations in lift application section, *page 14*.

Manually stacking the load on the platform usually does not create any problems provided the boxes are evenly distributed on the platform and the center of gravity of the total load remains within the roller support circle. This type of operation imposes negligible impact and minimal edge loading.

Fork lifts may be used to place loads on turntables provided certain precautions are taken. The most important concern is avoiding impact shock loading. It is possible to generate high horizontal and rotational shock loads on the platform and structure due to the mass and velocity of the fork lift and load. This is particularly true if load positioning guides or stops are attached to the platform. A careless fork truck operator can cause significant damage to the turntable drive and structure by “ramming” loads into position against guides or stops rather than carefully placing them. Consult the factory whenever loading is by fork truck and stops or guides are to be used to position the load on the platform.

Vertical loading with a crane or other overhead device creates the possibility of high impact to the turntable. With a maximum capacity load, a lowering speed of 17 ft. per minute (fpm) will produce acceptable impact loads on a turntable. Speeds in excess of 17 fpm may create damage to the platform, support rollers, or structural members. Most industrial cranes are limited to speeds of 17 fpm or less, but applications with vacuum assist lifts, vertical conveyors or free fall applications, may produce harmful impacts. Obviously, the slower the rate of vertical impact the better.

**PLATFORM SIZE:** The platform sizes must fall within the maximum and minimum sizes shown in the catalog. Note that if something is affixed to our platform like a conveyor or other device, it must also fall within the maximum size constraints listed for our platform, as the attached device in fact becomes the platform. Consult the factory for platform sizes outside the ranges listed in the catalog.

**SPEED REQUIREMENTS:** Usually the standard rotational speed and acceleration rates offered with each turntable model is satisfactory for most applications, but occasionally faster speeds are required. Standard acceleration and deceleration times are set at the factory at about 3 seconds for standard speed turntables and about 1 second for the high speed heavy duty turntables. In some cases it is possible to increase turntable speeds or decrease acceleration times, but compromises will have to be made. For example, increasing the maximum speed of the turntable increases the required torque of the drive motor and drive train of the turntable, and this would require a derating of the turntable capacity. In some limited cases it may be possible to increase the horsepower of the turntable drive to meet the increased torque demands of higher speed operation, but this may increase the costs significantly. Similarly, a reduction in the acceleration time would require a derating of the turntable capacity or an increase of the horsepower of the drive. Consult the factory with any speed or acceleration requirements that are outside standard parameters.

**DUTY CYCLE CONSIDERATIONS:** Primary considerations regarding the duty cycle of turntables are related to motor and motor drive heating. Standard turntable motors and drives are rated for continuous duty. This means that a turntable is capable of accelerating the rated load up to full speed and then maintaining this speed. However, many positioning applications require that a load be accelerated and decelerated many times within a short period of time. This can create motor and drive heating problems if it is done continuously with heavy loads, so the following guidelines should be followed. For standard speed turntables up to (5) start and stop cycles are permitted per minute. For high speed heavy duty turntables up to (15) start and stop cycles are permitted per minute. If the required cycle rate is near to or exceeds these guidelines, it is best to consult the factory to assure that problems do not occur. When calling, be prepared to provide the following information: description of process, degrees of rotation, times for rotation, load weight and size, and platform size.

**SPECIAL FEATURES & ACCESSORIES:** These items are generally divided into two categories, standard options which are included in the catalog and price lists and those unusual items that must be priced by the factory.

*Items that require factory consultation include:*

- ▶ Special environments such as freezers, proximity to high heat, or damp locations.
- ▶ Special finishes such as stainless steel, polyurethane paints, epoxy paints.
- ▶ Any requirements that do not fit within any of our standard groups of equipment.
- ▶ Powered turntables: proximity sensors, precision control.

*Items shown in our catalog and price lists: (see accessory sections)*

- ▶ Push buttons, footswitches, and other control options.
- ▶ Oversize platforms and platforms with bevel toe guards.
- ▶ Non-powered turntables: detents, locking pins, hard stops.
- ▶ Powered turntables: limit switch stops.

### STANDARD DUTY TURNTABLES TM, TML, TPL, AND TPH SERIES

*Turntables are used for positioning jobs where heavy duty loads must be rotated on a regular basis. There are two basic types of standard duty turntables, non-powered and powered. Turntables are available in low profile and high profile configurations.*



#### SPECIAL FEATURES

##### *Non-powered turntable features:*

- ▶ Lower cost than powered turntables.
- ▶ These units are manually rotated.
- ▶ These units can be rotated in either direction.
- ▶ All non-powered turntables are low profile.
- ▶ Standard platforms are rectangular and round platforms are optional on all models except TML.
- ▶ Rotational limits can be provided via optional detents, locking pins, and hard stops.
- ▶ TM platforms are supported by lifetime lubricated roller bearing cam followers.
- ▶ TML platforms are supported by lifetime lubricated ball bearing roller.
- ▶ Platforms rotate around a lifetime-lubricated kingpin bearing.

##### *Powered turntable features:*

- ▶ Used where more frequent turning is required.
- ▶ Used where rotational effort would be too high in a non-powered turntable.
- ▶ Standard turntables use DC motors and drives; AC motors and drives are optional.
- ▶ Standard rotation is clockwise only.
- ▶ Optional bi-directional rotation (clockwise & counterclockwise) requires an AC motor and drive.
- ▶ Platforms rotate on a lifetime-lubricated kingpin bearing.
- ▶ Platform travel can be limited by use of optional limit switch (+/- 3° accuracy).
- ▶ Powered turntables are available in low profile and high profile configurations.
  - ▶ Low profile powered turntables:
    - Use for powered applications where low platform height is important.
    - Circular platforms are required, rectangular platforms are not available.
    - Drive motor is located at the edge of the platform and projects above platform.
    - Platforms are supported by lifetime lubricated roller bearing cam followers.
  - ▶ High profile powered turntables:
    - Use for powered applications where low platform height is not important.
    - Standard platforms are rectangular and round platforms are optional.
    - Drive motor is located under the platform.
    - Platforms are supported by inverted casters with tapered roller bearings or cam followers.

*See pg. 72 for optional accessories*





## SPECIFICATION TABLE FOR STANDARD DUTY NON-POWERED TURNTABLES

Model	Capacity	Edge Load Maximum	Platform		Lowered Height	Roller Radius	Ship Weight
			Minimum	Maximum			
TML-100	1000	50	30 X 30	48 X 48	3-1/2	9	175
TML-200	2000	50	30 X 30	48 X 48	3-1/2	9	200
TM-200	2000	50	24 X 24	48 X 48	3-1/2	9	350
TM-400	4000	100	24 X 24	48 X 48	3-1/2	10	450
TM-600	6000	200	24 X 24	48 X 48	3-1/2	10-1/2	550
TM-605	6000	1150	49 X 49	60 X 60	3-1/2	21	625
TM-606	6000	1000	61 X 61	72 X 72	3-1/2	21	900
TM-607	6000	1600	73 X 73	84 X 84	3-1/2	26	1225
TM-608	6000	1500	85 X 85	96 X 96	3-1/2	26	1600
TM-804	8000	1900	48 X 48	48 X 48	3-1/2	20-1/2	600
TM-805	8000	1450	49 X 49	60 X 60	3-1/2	22-1/2	675
TM-806	8000	1150	61 X 61	72 X 72	3-1/2	22-1/2	975
TM-807	8000	1950	73 X 73	84 X 84	3-1/2	28	1375
TM-808	8000	1750	85 X 85	96 X 96	3-1/2	28	1730
TM-1005	10000	1600	49 X 49	60 X 60	3-1/2	23	750
TM-1006	10000	1250	61 X 61	72 X 72	3-1/2	23	1080
TM-1007	10000	2100	73 X 73	84 X 84	3-1/2	29	1470
TM-1008	10000	1900	85 X 85	96 X 96	3-1/2	29	1920

## SPECIFICATION TABLE FOR STANDARD DUTY POWERED HIGH PROFILE TURNTABLES

Model	Capacity	Edge load Maximum	Platform		Lowered Height	Roller Radius	Speed (RPM)	Motor HP	Ship Wt.
			Minimum	Maximum					
TPH-200	2000	100	24 X 24	48 X 48	9-1/2	8	0-8.5	1/2	375
TPH-400	4000	100	24 X 24	48 X 48	9-1/2	8	0-8.5	1/2	475
TPH-600	6000	150	24 X 24	48 X 48	9-1/2	10	0-8.5	1/2	575
TPH-605	6000	500	49 X 49	60 X 60	10	15	0-3.5	3/4	950
TPH-606	6000	500	61 X 61	72 X 72	10	15	0-3.5	3/4	1175
TPH-607	6000	1200	73 X 73	84 X 84	10	23-1/2	0-3.5	3/4	1525
TPH-608	6000	1200	85 X 85	96 X 96	10	23-1/2	0-3.5	3/4	1825
TPH-804	8000	350	48 X 48	48 X 48	10	13	0-3.5	3/4	750
TPH-805	8000	500	49 X 49	60 X 60	10	15	0-3.5	3/4	975
TPH-806	8000	500	61 X 61	72 X 72	10	15	0-3.5	1	1200
TPH-807	8000	1200	73 X 73	84 X 84	10	23-1/2	0-3.5	1	1550
TPH-808	8000	1200	85 X 85	96 X 96	10	23-1/2	0-3.5	1	1850
TPH-1005	10000	500	49 X 49	60 X 60	10	15	0-3.5	1	1075
TPH-1006	10000	500	61 X 61	72 X 72	10	15	0-3.5	1	1350
TPH-1007	10000	1200	73 X 73	84 X 84	10	23-1/2	0-3.5	1	1795
TPH-1008	10000	1200	85 X 85	96 X 96	10	23-1/2	0-3.5	1	2035

Turn to the next page for more models.

## STANDARD DUTY TURNTABLES TM, TML, TPL, AND TPH SERIES

### SPECIFICATION TABLE FOR STANDARD DUTY POWERED LOW PROFILE TURNTABLES

Model	Capacity	Edge Load Maximum	Minimum Platform	Maximum Platform	Lowered Height	Roller Radius	Speed (RPM)	Motor HP	Ship Wt.
TPL-200	2000	50	24 DIA.	48 DIA.	3-1/2	10	0 - 8.5	1/2	500
TPL-400	4000	50	24 DIA.	48 DIA.	3-1/2	10	0 - 8.5	1/2	550
TPL-600	6000	100	24 DIA.	48 DIA.	3-1/2	12	0 - 8.5	1/2	600
TPL-605	6000	400	49 DIA.	60 DIA.	3-1/2	15-1/2	0 - 3.5	3/4	950
TPL-606	6000	550	61 DIA.	72 DIA.	3-1/2	18-1/2	0 - 3.5	3/4	1200
TPL-607	6000	950	73 DIA.	84 DIA.	3-1/2	23-1/2	0 - 3.5	3/4	1600
TPL-608	6000	1300	85 DIA.	96 DIA.	3-1/2	27	0 - 3.5	3/4	1900
TPL-804	8000	450	48 DIA.	48 DIA.	3-1/2	16-1/2	0 - 3.5	3/4	900
TPL-805	8000	450	49 DIA.	60 DIA.	3-1/2	16-1/2	0 - 3.5	3/4	1000
TPL-806	8000	650	61 DIA.	72 DIA.	3-1/2	20	0 - 3.5	1	1250
TPL-807	8000	950	73 DIA.	84 DIA.	3-1/2	23-1/2	0 - 3.5	1	1650
TPL-808	8000	1300	85 DIA.	96 DIA.	3-1/2	27	0 - 3.5	1	1950
TPL-1005	10000	500	49 DIA.	60 DIA.	3-1/2	17	0 - 3.5	1	1050
TPL-1006	10000	700	61 DIA.	72 DIA.	3-1/2	20-1/2	0 - 3.5	1	1300
TPL-1007	10000	1000	73 DIA.	84 DIA.	3-1/2	24	0 - 3.5	1	1700
TPL-1008	10000	1400	85 DIA.	96 DIA.	3-1/2	28	0 - 3.5	1	2000

Consult the factory for special speeds, platform sizes and capacities.

### OPTIONAL ROTATIONAL LIMITS FOR MANUAL TURNTABLES: DETENTS, LOCKING PINS AND HARD STOPS



▶ Detent



▶ Locking pin



▶ Hard stop

### OPTIONAL ROTATIONAL LIMITS FOR POWERED TURNTABLES: LIMIT SWITCHES, PROXIMITY SENSORS, PRECISION CONTROL PLC



▶ Limit switch



▶ Proximity sensor

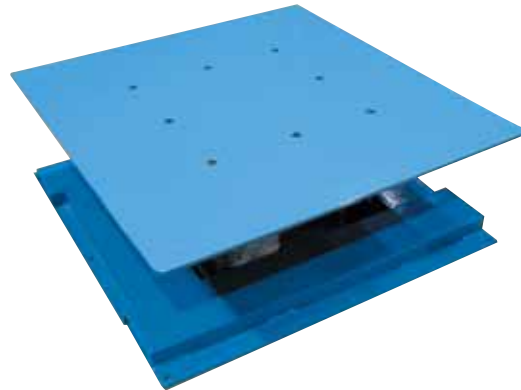


▶ Programmable logic controller

For electrical control options, see page 50

## HEAVY DUTY RING BEARING TURNTABLES

Use ring-bearing turntables for positioning jobs where very heavy loads must be rotated quickly, positioned accurately, and where high edge loading is expected. There are two basic types of heavy duty ring bearing turntables: non-powered and powered. Two types of platforms are offered for each of the types: standard and high capacity reinforced. Use standard platforms for applications where load distribution is even and high edge loading is not expected. Use reinforced platforms when load is not evenly distributed, high edge loading is expected, and platform deflection must be minimized.



### SPECIAL FEATURES

#### Non-powered ring bearing turntable features:

- ▶ Platform is supported by a high capacity ring bearing.
- ▶ Lower cost than powered ring bearing turntables.
- ▶ Rotation requires physical force be applied by operator.
- ▶ Can be rotated in either direction.
- ▶ Standard platforms are rectangular, round platforms are optional.
- ▶ Platforms are available in standard or high capacity reinforced configurations.
- ▶ Rotational limits can be provided via optional detents, locking pins, and hard stops.

#### Powered ring bearing turntable features:

- ▶ The platform is supported by a high capacity ring bearing.
- ▶ AC motors and drives are standard (DC is not available).
- ▶ Bi-directional rotation (clockwise & counterclockwise) is standard.
- ▶ High (0-10 RPM) and low (0-5 RPM) rotational speeds are available.
- ▶ Standard platforms are rectangular, round platforms are optional.
- ▶ Platforms are available in standard or high capacity reinforced configurations.
- ▶ Drive motor is located under the platform.
- ▶ Platform travel can be limited by use of optional proximity sensors (+/- 2° accuracy).
- ▶ Precise position control is available as an option (consult factory).



# HEAVY DUTY RING BEARING TURNTABLES

## SPECIFICATION TABLE FOR STANDARD PLATFORM

NON-POWERED

Model	Capacity	Edge Load Maximum	Standard Platform	Baseframe Size	Lowered Height	Ship Weight
HDTM-704	7000	2000	48 X 48	48 X 48	5-5/8	1175
HDTM-705	7000	1333	60 X 60	48 X 48	5-5/8	1350
HDTM-706	7000	1000	72 X 72	48 X 48	5-5/8	1600
HDTM-707	7000	800	84 X 84	48 X 48	5-5/8	1850
HDTM-708	7000	650	96 X 96	48 X 48	5-5/8	2150

## SPECIFICATION TABLE FOR REINFORCED PLATFORM

NON-POWERED

Model	Capacity	Edge Load Maximum	Standard Platform	Baseframe Size	Lowered Height	Ship Weight
HDTM-1004R	10000	10000	48 X 48	48 X 48	8	1400
HDTM-1005R	10000	10000	60 X 60	48 X 48	8	1625
HDTM-1006R	10000	10000	72 X 72	48 X 48	8	1925
HDTM-1007R	10000	10000	84 X 84	48 X 48	8	2625
HDTM-1008R	10000	10000	96 X 96	48 X 48	8	3025
HDTM-1009R	10000	10000	108 X 108	48 X 48	8	3500
HDTM-1010R	10000	10000	120 X 120	48 X 48	8	4000

## SPECIFICATION TABLE FOR STANDARD SPEED, STANDARD PLATFORM

POWERED

Model	Capacity	Edge Load Maximum	Standard Platform	Baseframe Size	Speed (RPM)	Motor HP	Lowered Height	Ship Weight
HDTP-704	7000	2000	48 X 48	48 X 48	0-5	3	17	1825
HDTP-705	7000	1333	60 X 60	48 X 48	0-5	3	17	2000
HDTP-706	7000	1000	72 X 72	48 X 48	0-5	3	17	2250
HDTP-707	7000	800	84 X 84	48 X 48	0-5	3	17	2500
HDTP-708	7000	650	96 X 96	48 X 48	0-5	3	17	2800

## SPECIFICATION TABLE FOR STANDARD SPEED, REINFORCED PLATFORM

POWERED

Model	Capacity	Edge Load Maximum	Standard Platform	Baseframe Size	Speed (RPM)	Motor HP	Lowered Height	Ship Weight
HDTP-1004R	10000	10000	48 X 48	48 X 48	0-5	3	18-7/8	1950
HDTP-1005R	10000	10000	60 X 60	48 X 48	0-5	3	18-7/8	2275
HDTP-1006R	10000	10000	72 X 72	48 X 48	0-5	3	18-7/8	2575
HDTP-1007R	10000	10000	84 X 84	48 X 48	0-5	3	18-7/8	3275
HDTP-1008R	10000	10000	96 X 96	48 X 48	0-5	3	18-7/8	3675
HDTP-1009R	10000	10000	108X108	48X48	0-5	3	18-7/8	4150
HDTP-1010R	10000	10000	120X120	48X48	0-5	3	18-7/8	4650



## SPECIFICATION TABLE FOR HIGH SPEED, STANDARD PLATFORM

**POWERED**

Model	Capacity	Edge Load Maximum	Standard Platform	Baseframe Size	Speed (RPM)	Motor HP	Lowered Height	Ship Weight
HDTP-504H	5000	2000	48 X 48	48 X 48	0-10	5	17	1825
HDTP-505H	5000	1333	60 X 60	48 X 48	0-10	5	17	2000
HDTP-506H	5000	1000	72 X 72	48 X 48	0-10	5	17	2250
HDTP-507H	5000	800	84 X 84	48 X 48	0-10	5	17	2500
HDTP-508H	5000	650	96 X 96	48 X 48	0-10	5	17	2800

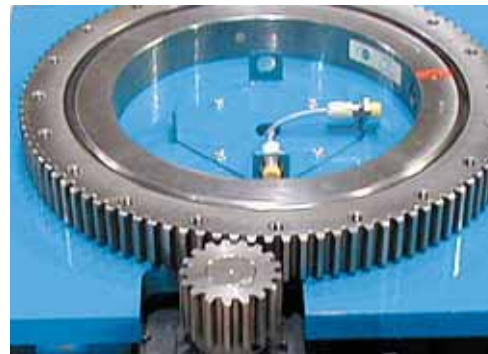
## SPECIFICATION TABLE FOR HIGH SPEED, REINFORCED PLATFORM

**POWERED**

Model	Capacity	Edge Load Maximum	Standard Platform	Baseframe Size	Speed (RPM)	Motor HP	Lowered Height	Ship Weight
HDTP-504HR	5000	5000	48 X 48	48 X 48	0-10	5	18-7/8	1950
HDTP-505HR	5000	5000	60 X 60	48 X 48	0-10	5	18-7/8	2275
HDTP-506HR	5000	5000	72 X 72	48 X 48	0-10	5	18-7/8	2575
HDTP-507HR	5000	5000	84 X 84	48 X 48	0-10	5	18-7/8	2875
HDTP-508HR	5000	5000	96 X 96	48 X 48	0-10	5	18-7/8	3250



▶ *Lifetime lubricated roller bearing wheel style of unit*



▶ *Ring bearing style of unit*



▶ *Lifetime lubricated cam follower style of unit*

## COMBINATION LIFT AND TILT UNITS

Many applications call for combining lifting and tilting functions. The bin-tilters on *page 55* of this catalog are an example of doing this to feed operators bin contents at a convenient fixed height. In other applications, the heights must vary or vary independently from the degree of tilt. In these instances, specific lifts can be equipped with tilters or upenders mounted on top of them.

The opposing page contains information on combination tilters that have been designed for the most common applications. The lifts and tilters in these models have been modified so that their power units can remain internally mounted to the mechanisms. The connecting surfaces between the tilters and the lifts have been optimized to reduce weight and cost. These units will cover 90% of the applications that you will encounter.

We can and have done many other combinations for more unusual or unique applications. In these instances the engineering cost of optimizing the designs exceeds the savings that would result from the process so we simply choose a tilter or upender that is suitable for the application and then pick a lift that will properly support it. The power units in these cases are usually a single remote unit, but the controls will allow independent control of the tilt and lift functions. In some instances the power units can be internal, but this usually requires two power units and two power sources or plugs.

### RULES FOR STACKING TILTERS/UPENDERS ON LIFTS:

1. The lift must have enough capacity to lift both the weight of the item on the tilter and the weight of the tilter/upender itself.
2. The minimum lift platform must be large enough to support the entire tilter baseframe.  
(If a tilter baseframe size is not shown, use the minimum platform size of the tilter.)
3. Electric lifts should be paired with electric tilters and air lifts should be paired with air tilters. Do not mix power sources.
4. In upender applications, add the length of each platform plus 5-1/2" and choose a lift that can be equipped with a platform of that combined length, as well as the width of the upender platforms.
5. When upenders are being stacked on lifts, it is important to be sure that the center of gravity of the live load in the full range of tilt positions, is always within the center 75% of the supporting leg set (minimum platform length).
6. Lowered heights are simply the sum of the lowered heights of the two units.



*Uperder on a lift*



*Tilter on a lift*

Please do not hesitate to contact your local distributor or our sales department with your special requirements. They have the full resources of our company behind them and it is our purpose and privilege to service your material handling needs.

## LIFT AND TILT (PT) COMBINATION SERIES

These lift and tilt units are optimized combination designs that are used where the lifting and tilting functions must be done independently.



### SPECIAL FEATURES

- ▶ These units are equipped with the patented “Platform Centering Devices”.
- ▶ These units are equipped with single internally mounted power units.
- ▶ The controllers are Underwriter Laboratory approved assemblies.
- ▶ All hydraulic cylinders are machine grade with clear plastic return lines.
- ▶ All pressure hoses are double wire braid with JIC fittings.
- ▶ These units are fully primed and finished with baked enamel.

### SPECIFICATION TABLE FOR LIFT AND TILT UNITS

Model	Lift Travel	Tilt Angle	Capacity	Platform Minimum	Platform Maximum	Lowered Height	Raised Height	Lift Up Speed	Tilt Up Speed	Ship Weight
PT-20243-I	24	30°	2000	30 x 36	48 x 60	14-1/4	38-1/4	10	6	800
PT-35243-I	24	30°	3500	30 x 36	48 x 60	14-1/4	38-1/4	15	12	890
PT-55243-I	24	30°	5500	30 x 36	48 x 60	14-1/4	38-1/4	22	12	925
PT-20363-I	36	30°	2000	30 x 48	48 x 60	14-1/4	50-1/4	11	5	910
PT-35363-I	36	30°	3500	30 x 48	48 x 60	14-1/4	50-1/4	17	9	1000
PT-55363-I	36	30°	5500	30 x 48	48 x 60	14-1/4	50-1/4	23	9	1045
PT-20483-I	48	30°	2000	30 x 60	48 x 60	14-3/4	62-3/4	18	5	1090
PT-35483-I	48	30°	3500	30 x 60	48 x 60	14-3/4	62-3/4	27	9	1195
PT-55483-I	48	30°	5500	30 x 60	48 x 60	14-3/4	62-3/4	37	9	1250
PT-20244-I	24	45°	2000	30 x 36	48 x 60	14-1/4	38-1/4	10	10	810
PT-35244-I	24	45°	3500	30 x 36	48 x 60	14-1/4	38-1/4	15	20	900
PT-55244-I	24	45°	5500	30 x 36	48 x 60	14-1/4	38-1/4	22	20	935
PT-20364-I	36	45°	2000	30 x 48	48 x 60	14-1/4	50-1/4	11	7	920
PT-35364-I	36	45°	3500	30 x 48	48 x 60	14-1/4	50-1/4	17	15	1010
PT-55364-I	36	45°	5500	30 x 48	48 x 60	14-1/4	50-1/4	23	15	1055
PT-20484-I	48	45°	2000	30 x 60	48 x 60	14-3/4	62-3/4	18	7	1100
PT-35484-I	48	45°	3500	30 x 60	48 x 60	14-3/4	62-3/4	27	15	1205
PT-55484-I	48	45°	5500	30 x 60	48 x 60	14-3/4	62-3/4	37	15	1260
PT-20246-I	24	60°	2000	30 x 36	48 x 60	14-1/4	38-1/4	10	13	815
PT-35246-I	24	60°	3500	30 x 36	48 x 60	14-1/4	38-1/4	15	27	905
PT-55246-I	24	60°	5500	30 x 36	48 x 60	14-1/4	38-1/4	22	27	940
PT-20366-I	36	60°	2000	30 x 48	48 x 60	14-1/4	50-1/4	11	10	925
PT-35366-I	36	60°	3500	30 x 48	48 x 60	14-1/4	50-1/4	17	20	1015
PT-50366-I	36	60°	5000	30 x 48	48 x 60	14-1/4	50-1/4	23	20	1060
PT-20486-I	48	60°	2000	30 x 60	48 x 60	14-3/4	62-3/4	18	10	1105
PT-35486-I	48	60°	3500	30 x 60	48 x 60	14-3/4	62-3/4	27	20	1210
PT-50486-I	48	60°	5000	30 x 60	48 x 60	14-3/4	62-3/4	37	20	1265

For air operated units, turn to the next page.

## AIR OPERATED LIFT AND TILT (ATT) SERIES

*These units are designed to operate on shop air with no need for electricity. Each model has been optimized for minimum weight and maximum value.*



### SPECIAL FEATURES

- ▶ These units are equipped with the patented “Platform Centering Devices”.
- ▶ These units are fully primed and finished with a baked enamel finish.
- ▶ All units are equipped with sealed ball bearing wheels.
- ▶ All shafts and axles are chrome plated 100,000 psi stressproof steel.
- ▶ All pivot bearings are lifetime lubricated.
- ▶ All tilters are equipped with (2) shock absorbers to smooth operations.
- ▶ These units are equipped with a pressure safety relief and a safety orifice speed control to regulate down speed in case of supply line hose rupture.

### SPECIFICATION TABLE FOR AIR OPERATED LIFT AND TILT UNITS

Model	Capacity	Platform		Lowered Height	Travel	Tilt	Ship Weight
		Minimum	Maximum				
ATT-1524	1500	24 x 48	48 x 48	15	24	35°	850
ATT-2524	2500	48 x 48	60 x 60	15	24	35°	1360
ATT-3524	3500	48 x 48	60 x 60	15	24	35°	1380
ATT-5024	5000	48 x 48	60 x 60	16-1/4	24	35°	1625
ATT-6024	6000	48 x 48	60 x 60	17-1/4	24	35°	1715



## COMBINATION LIFT AND TURN UNITS

Many applications call for combining lifting and turning functions. Both the manual and the powered turn tables in all of our turn table series can be mounted on lifts. On the following pages we have configured some standard model combinations that will fulfill the most common applications. However, we often create special combinations not shown in this catalog to meet the exact requirements of customer applications. Please call us for your special requirements.

We have also combined multiple lift tables on top of a large turntable in a carousel style to accommodate work centers with multiple operating stations. These are always custom designs and they usually require powered turntables with position sensing for both the turntable and the lifts. Programmable logic controllers are used to coordinate lift positioning with the customer's work stations. Because these applications are so specialized, we have not created any standard models for them, as they would be meaningless. When you encounter this kind of application, please call us so that we may quote on your requirements.

You may wish to configure your own special combination unit yourself for budget purposes or when brainstorming applications. Simply follow the stacking rules below and remember to confirm pricing with your distributor or the factory before finalizing your budget.

### RULES FOR STACKING TURNTABLES ON LIFTS:

1. The lift must have enough capacity to lift both the weight of the items on the turntable and the weight of the turntable itself.
2. The minimum lift platform must be large enough to support the entire turntable baseframe.
3. Be sure the lift under the turntable is allowed to have a platform as wide as the longest side or overall diameter of the turntable. Calculate the side loading capacity of the lift with the long dimension of the turntable.
4. If you are using a low profile powered turntable that normally has the drive motor mounted outside of the turntable, be sure that the lift has enough lowered height to allow the drive motor to hang down and if the motor is mounted on the side of the lift, it must be counterbalanced to provide an evenly distributed load on the lift when the unit is empty.
5. Lowered heights are simply the sum of the lowered heights of the two units.



*Lift with powered turntable*

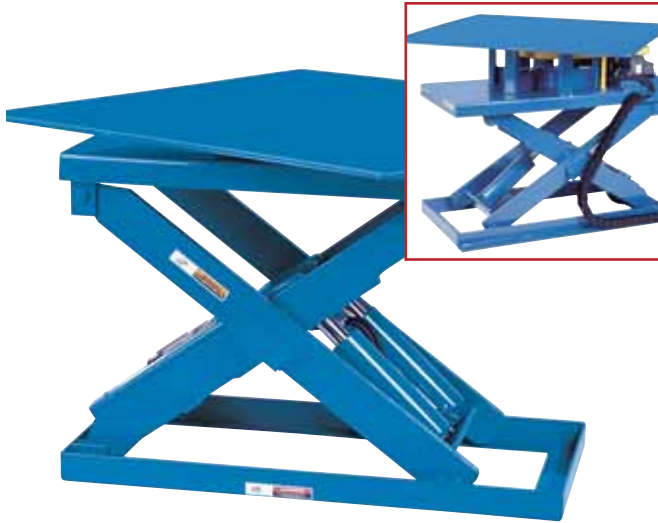


*Lift with manual turntable*

Please do not hesitate to contact your local distributor or our sales department with your special requirements. They have the full resources of our company behind them and it is our purpose and privilege to service your material handling needs.

## LIFT AND TURN (PM) & (PP) SERIES

These units are optimized lift and turn units used where the lifting and turning functions must be done independently.



### SPECIAL FEATURES

- ▶ These units are equipped with the patented "Platform Centering Devices".
- ▶ These units are equipped with single internally mounted power units.
- ▶ The controllers are Underwriter Laboratory approved assemblies.
- ▶ All hydraulic cylinders are machine grade with clear plastic return lines.
- ▶ All pressure hoses are double wire braid with JIC fittings.
- ▶ These units are fully primed and finished with baked enamel.

### SPECIFICATION TABLE FOR LIFT AND MANUAL TURN UNITS

Model	Travel	Capacity	Platform		Base-frame	Low Ht.	Raised Ht.	Speed Sec.	H.P.	Ship Weight
			Min.	Max						
PM-2024	24	2000	24 x 36	48 x 60	24 x 36	9-1/2	33-1/2	10	1.5	780
PM-3524	24	3500	24 x 36	48 x 60	24 x 36	9-1/2	33-1/2	15	1.5	820
PM-5524	24	5500	24 x 36	48 x 60	24 x 36	9-1/2	33-1/2	22	1.5	855
PM-2036	36	2000	24 x 48	48 x 64	24 x 48	9-1/2	45-1/2	11	2	935
PM-3536	36	3500	24 x 48	48 x 64	24 x 48	9-1/2	45-1/2	17	2	975
PM-5536	36	5500	24 x 48	48 x 64	24 x 48	9-1/2	45-1/2	23	2	1020
PM-2048	48	2000	24 x 64	48 x 64	24 x 64	10	58	18	2	1175
PM-3548	48	3500	24 x 64	48 x 64	24 x 64	10	58	27	2	1230
PM-5548	48	5500	24 x 64	48 x 64	24 x 64	10	58	37	2	1285

### SPECIFICATION TABLE FOR LIFT AND POWERED TURN UNITS

Model	Travel	Capacity	Platform		Base-frame	Low Ht.	Raised Ht.	Speed Sec.	H.P.	Ship Weight
			Min.	Max						
PP-1836	36	1800	24 x 48	48 x 64	24 x 48	16	52	11	2	1080
PP-3336	36	3300	24 x 48	48 x 64	24 x 48	16	52	17	2	1120
PP-5336	36	5300	24 x 48	48 x 64	24 x 48	16	52	23	2	1165
PP-1848	48	1800	24 x 64	48 x 64	24 x 64	16-1/2	64-1/2	18	2	1355
PP-3348	48	3300	24 x 64	48 x 64	24 x 64	16-1/2	64-1/2	27	2	1410
PP-5348	48	5300	24 x 64	48 x 64	24 x 64	16-1/2	64-1/2	37	2	1465
HDEWP-0636	36	6000	42 X 60	60 X 60	42 X 60	21-3/4	57-3/4	18	5	2940
HDEWP-0836	36	8000	42 X 60	60 X 60	42 X 60	21-3/4	57-3/4	26	5	3085
HDEWP-1036	36	10000	42 X 60	60 X 60	42 X 60	21-3/4	57-3/4	27	5	3255

## AIR OPERATED LIFT AND TURN (ATR) SERIES

*These units are designed to operate on shop air with no need for electricity. Each model has been optimized for minimum weight and maximum value.*



### SPECIAL FEATURES

- ▶ These units are equipped with the patented “Platform Centering Devices”.
- ▶ These units are fully primed and finished with a baked enamel finish.
- ▶ All units are equipped with sealed ball bearing wheels.
- ▶ All shafts and axles are chrome plated 100,000 psi stressproof steel.
- ▶ All pivot bearings are lifetime lubricated.
- ▶ These units are equipped with a pressure safety relief and a safety orifice speed control to regulate down speed in case of supply line hose rupture.

### SPECIFICATION TABLE FOR AIR OPERATED LIFT AND TURN UNITS

Model	Travel	Capacity	Platform		Base-frame	Lowered Height	Raised Height	Turn	Ship Weight
			Minimum	Maximum					
ATR-1524	24	1500	36 x 48	48 x 48	36 x 48	10-3/4	34-3/4	360°	690
ATR-2524	24	2500	48 x 48	60 x 60	48 x 48	10-3/4	34-3/4	360°	1210
ATR-3524	24	3500	48 x 48	60 x 60	48 x 48	10-3/4	34-3/4	360°	1220
ATR-5024	24	5000	48 x 48	60 x 60	48 x 48	12	36	360°	1375
ATR-6024	24	6000	48 x 48	60 x 60	48 x 48	13	37	360°	1450

## TRAILER AND TRUCK MOUNTED ARTICULATED BOOM LIFT

*For mobile material handling lift requirements, the trailer and truck mounted articulated booms manufactured by Advance Lifts, Inc. can be your solution.*

Truck mounted units offer the most flexibility in mobile lift applications; up to 500 lb. capacity and up to 22 ft. at the base of the lifting platform from the truck bed. You can select which 1-1/2 ton pickup you want to use. No outriggers are required and the units can be deployed in winds up to 35 mph. This lift is intended for demonstration units or mobile applications of sirens, light systems or emergency public address units.

Trailer mounted units can provide higher capacities (1000 lbs. or more), higher travels (27 ft. to the base of the platform) and with much higher wind loads when deployed, up to 100 mph in fact. The standard trailer configuration complies with United States Army vehicle transportation specifications. Optional over the road trailer configurations can be accommodated.

If you have any special requirements, just call the factory. We can develop a mobile articulated boom lift to meet your needs.

### SPECIAL FEATURES

- ▶ All of the controllers are Underwriter Laboratory approved assemblies.
- ▶ These units are fully primed and finished with a baked enamel finish.
- ▶ The cylinders are machine grade with return lines.
- ▶ All pressure hoses are double wire braid with JIC fittings.
- ▶ The reservoirs are mild steel.

### SPECIFICATION TABLE FOR ARTICULATED BOOM LIFTS

Model	Travel	Capacity	Std Platform	Baseframe		Lowered Height	Raised Height	Speed Sec.	Motor H.P.	Ship Wt.
				w/o O/R's*	w/ O/R's*					
SL-0522-TRK 201	201	500	12 X 12	47 X 111	n/a	70	271	30	1	3000
SL-1027-TRL 248	248	1000	12 X 12	79 X 156	239 X 236	76	324	60	1	6000

*Note: All units of measure are in inches and pounds.*

*\* O/R = outrigger*

## TRUCK MOUNTED ARTICULATED BOOM LIFT



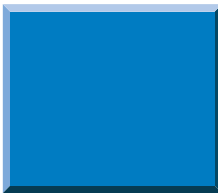
## TRAILER MOUNTED ARTICULATED BOOM LIFT



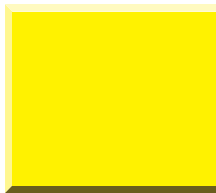
## COLOR OPTIONS

**YOU CHOOSE THE COLOR.** *Every Advance product is protected by a four-part paint process. All products are washed and acid etched, then hot air dried and inspected, then prime painted, finish painted, and then baked to provide the best paint finish in the industry.*

### 8 STANDARD COLORS AVAILABLE



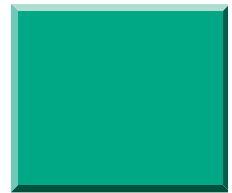
*Blue*



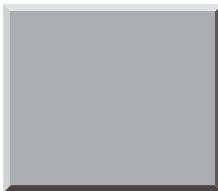
*Yellow*



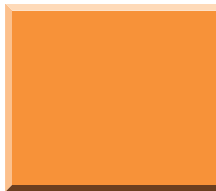
*Tan*



*Green*



*Gray*



*Orange*

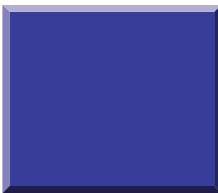


*Brown*

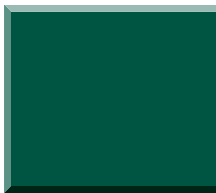


*Red*

### ANY CUSTOM COLOR AVAILABLE – ONE TIME SET-UP CHARGE



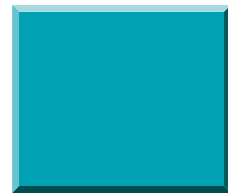
*Mediterranean  
Royal*



*Hunter Green*



*Platinum*



*Santa Fe  
Turquoise*

**YOU TELL US THE COLOR AND WE'LL MATCH IT**  
**(COLOR TONES MAY VARY FROM CATALOG AND PAINT BATCHES.)**