

Pentalift Equipment Corporation – Lift table and positioning equipment glossary of terms

Access Plate – removable or hinged plate which permits access to components that are covered by some portion of the lift. An example is a self-contained power unit when the lift is in the fully lowered position.

Accordion Bellows – a steel rod reinforced pleated vinyl material which surrounds the sides of the lift. The bellows expand and retract with the raising and lowering of the lift. Accordion bellows enclose the internal components of the equipment to minimize debris entry. Accordion bellows are not considered a safety device.

Air/Hydraulic – a system that utilizes an air motor to run a hydraulic pump.

Approach Ramp – for rolling loads, rigid structure used to bridge the vertical gap from floor level to the top of the platform when the lift is in the fully lowered position. Approach ramps can be attached to the platform (hinged) or floor mounted (shipped loose).

Authorized Person – trained and/or qualified personnel approved or assigned to perform specific duty or duties.

Automatic Landing Gate – a landing gate that is automatically permitted to open or close, respectively, as a lift platform arrives at or departs from subject landing.

Backstop – a flat surface on the hinged end of a tilt table, perpendicular to the platform, which prevents the load from sliding off the platform during the tilting operation. The backstop also provides a physical stop point during the positioning of the load on the tilter.

Bevel Toe Guards – platform sides are slanted inwardly at an angle of approximately 30° in order to provide a physical alert and a means of pushing way body parts from the potential shear edges.

Bushing – a sleeve or liner that reduces friction and takes the wear between moving parts. Bushings are intended to be replaced after being worn to a maximum level.

Capacity, Lifting – the rated capacity of a scissors lift applied as a uniformly distributed load while the platform is raising or lowering.

Capacity, Rated – the maximum load which can be applied to the platform according to the manufacturer's specification.

Capacity, Rollover – the maximum amount of single axle load which can be rolled over the platform surface when the lift is in its fully closed position.

Casters – small wheels, swivel or fixed, that are used to make equipment or loads portable.

Center of Gravity – for convenience in calculations, an imaginary point in the load where the total weight can be located, or the 'average location' of the weight of the load.

Checker Plate – steel plate with safety non-slip tread pattern hot rolled on the surface during the manufacture of the steel plate. Also known as floor plate.

Clevis – a 'u' shaped coupling device with two holes and a pin, used to make attachments.

Continuous Running Power Unit – for high cycle applications, a power unit that continues to run even when the equipment is not being cycled.

Controls – electrical devices that combine to manage the movement of the equipment, usually consisting of push button stations, control box, limit switches, interlocks, etc.

Controls, Foot Pedal – type of operator controls where the equipment's motion is managed through the use of foot pedals.

Controls, Keyed Switch – type of operator controls where the tables movement is managed by a key. The key sits in neutral or off position and is then turned one direction to raise the platform and the opposite direction to lower the platform. It includes spring return so that the key automatically returns to off position when released.

Controls, Key Lock Out – type of operator controls that requires the presence of the key in order for the pushbuttons to perform their functions. Without the key, the pushbuttons will not operate the equipment.

Controls, Operator – buttons or pedals used by the operator to control the motion of the equipment.

Controls, Pushbutton – type of operator controls where the equipment's motion is managed through the use of handheld, wall mounted, or post mounted set of buttons.

Controls, Press & Hold (Standard) – operator controls that are of the type that when pressed the equipment will operate, and when released the equipment will cease operation.

Controls, Press & Release (Custom) – operator controls that are of the type that when pressed the equipment will operate, and when released the equipment will continue to operate until it meets a limit switch or completes its full operation. Not to be used on equipment that allows operators and/or riders on platform.

Control Voltage – see voltage, control.

Counterbalance Valve – usually used in upending operations, valves that are designed to create back pressure in the return line to prevent hydraulic system from losing control over the load.

Critical Components – those components whose absence or failure would cause the equipment, of which they are a part, to become inadequate or unsafe for its specific purpose.

Cycle – one full lift and one full lower, through the entire vertical travel of the lift table.

Cylinder, Double Acting – a cylinder where the force is applied in either direction, used when down time is important or for upending applications.

Cylinder, Single Acting – most common cylinder, where the force is applied in only one direction. Note: most lifts rely on the weight of the lift mechanisms and the weight of the load to "gravity" lower.

Cylinder Return Line – the hose that carries the hydraulic fluid from the cylinders back to the reservoir.

Dock Lift – see 'Lift, Dock'.

Drawing, Approval – an outline drawing which reflects the proposed equipment accurately as it will be built and requires customer sign-off confirmation prior to construction of equipment.

Drawing, Concept – a preliminary outline drawing which reflects a rough visualization of the proposed equipment and is not to be used for fabrication.

Drawing, Confirmation – an outline drawing that is completed after the equipment has already been completed or released to production, to illustrate any changes since issue of previous drawings or to confirm ‘as built’ conditions.

Drift – the action of a lift platform slowly lowering on its own, usually due to slight internal hydraulic leaks (through valves) or inability of a brake to hold a motor.

Ductile Material – materials having a minimum elongation of 5% in 2 inches (50.8mm).

Elevating Dock – another term for dock lift. See ‘lift, dock’.

Emergency Stop – a device that provides a rapid means to disconnect the energy source of the lift table in emergency situations.

Electric/Hydraulic - a system that utilizes an electric motor to run a hydraulic pump.

Ergonomics – the scientific discipline concerned with the understanding of interactions among humans and other elements of a system, intended to maximize productivity by increasing operator safety and reducing operator fatigue.

Floor Plate – see ‘checker plate’.

Flow Control Valve – see valve, flow control.

Flow Rate – volume of oil circulating in the hydraulic system per unit of time, usually stated in gallons per minute.

Fork Pockets – steel tubes added to the bottom or the side of the equipment to permit the equipment to be moved by a fork lift when not in use.

Frame – the portion of the lift table that encompasses the leg sets and creates the footprint.

Full Load Amps – the current draw of the power unit when operating under full load.

Galvanized – the process of applying a protective zinc coating to steel or iron, to improve the ability of the equipment to withstand corrosive substances or harsh environments.

Gate, Interlocked – a device that opens and closes to permit operator and/or riders access to the platform for loading and unloading, and includes an electrical device that will not permit the equipment to operate unless the gate is closed and secured.

GPM – gallons per minute.

Guarded Foot Pedal – alternative operator controls that allow the equipment to be operated by depressing a foot pedal instead of pushbutton. The foot pedal is provided with a top guard to reduce the possibility of accidental or unintentional activation.

Guide Channels – combination of secured steel uprights and rollers that act as a guide track to increase the lateral stability of the lift table. This feature is commonly applied on lifts with high vertical travel.

High Cycle Package – changes to the equipment’s componentry to permit higher than standard cycle frequency, including: upgraded bearings, cam followers in place of standard rollers, upgraded cylinders, etc. Note: Central lubrication is commonly used in conjunction with this option.

Hinged Bridge – a hinged transition plate which is attached to the edge of the platform and used to bridge the gap between the platform and landing and/or truck bed.

Horsepower (HP) – a unit of measure that describes the power output, or rate at which work is done, of the motor.

Hydraulics – generation, control, and transmission of power by the use of pressurized liquids.

Hydraulic Piping System – the entire system of fluid conductors such as hose, pipe, tubing, etc., utilized to transfer hydraulic fluid between various operating components of a hydraulic system such as pumps, valves, actuators, etc.

Hydraulic Velocity Fuse – a valve that monitors the flow rate of the hydraulic fluid and prevents free-fall if the hydraulic hose is severed. May not lock with lighter loads on platform.

Interlock – use of mechanical or electrical detection to allow or prevent a function of the lift table to work if doors or gates are not properly secured, or if the table is not present at a specified level.

Jog – to raise or lower equipment in short increments.

Landing – a permanent working surface at a fixed elevation used for loading/unloading a scissors lift platform positioned at that elevation.

Landing Gate – a mechanical barrier to control personnel traffic at a landing.

Landing Interlock – a device to prevent lift movement when a landing gate is not fully closed and to prevent the landing gate from being opened unless the lift platform is present at that landing.

Lift, Dock (Dock Lift) – a stationary or portable scissors lift used in the area of a dock to transfer loads (typically wheeled loads) from a fixed elevation to a vehicle; the lift is operated from the platform which may include rider(s) in addition to the operator.

Lift, Work Access – a stationary, portable or mobile scissors lift operated from the platform which may include rider(s) in addition to the operator; the lift may be used to transfer material from one elevation to another.

Lift Table – a stationary, portable or transport scissors lift used to raise, lower, stack, convey and/or transfer material from one elevation to another. No riders are allowed on the platform.

Limit Switch, Down Travel – an electrical device that prevents the lift table from travelling below a preset level.

Limit Switch, Mid Travel Down – an electrical device that temporarily prevents the lift table from travelling below a preset level during its descent, but once the down button is held again it will continue its downward travel. The table will not stop during its upward travel.

Limit Switch, Mid Travel Up – an electrical device that temporarily prevents the lift table from travelling above a preset level during its ascent, but once the up button is held again it will continue its upward travel. The table will not stop during its downward travel.

Limit Switch, Mid Travel Up & Down – an electrical device that temporarily halts the travel of the table, regardless of direction of travel. The table will continue its travel in either direction once the button is released and pressed again.

Limit Switch, Up Travel – an electrical device that prevents the lift table from travelling above a preset level.

Low Height – the minimum height from the installed surface to the top of the platform while the equipment is in the fully retracted position.

Maintenance Stand – a device used to mechanically support an unloaded lift or tilt table while in the up position for maintenance.

Manual Lowering Valve – see valve, manual lowering.

Manufacturer – a person or entity that makes, builds, or produces an industrial scissors lift.

Mechanical Stop – a mechanical means of stopping travel at a predetermined spot.

Motor – a device that converts fluid or electricity into rotational mechanical force.

NEMA – the type of electrical enclosure as defined by NEMA 250-2014, *Enclosures for Electrical Equipment (1000 Volts Maximum)*. NEMA Type 4 would be the most common for lift tables.

Non-Ductile Material – materials having an elongation of less than 5% in 2 inches (50.8mm).

ODP – open drip proof, type of motor.

Operator – an authorized and trained person controlling the movement of the industrial scissors lift.

Owner – a person or entity that has possession of an industrial scissors lift by virtue of title to the equipment.

Pantograph Leg Section – the articulated support mechanism characterized by a single central pivot axis and commonly referred to as the scissors leg assembly.

Platform – the surface of the equipment upon which the load is placed.

Platform Ends – the edges of the platform that are perpendicular to the scissors legs. The end dimension is considered the platform width.

Platform Sides – the edges of the platform that are parallel to the scissors legs. The side dimension is considered the platform length.

Pneumatics – generation, control, and transmission of power by the use of pressurized air or other gas.

Pneumatic Piping System – the entire system of pneumatic conductors such as hose, pipe, tubing, etc., utilized to transfer gas between various operating components of the pneumatic system such as pumps, valves, actuators, etc.

Power Unit – an assembly that consists of the motor, the pump, the reservoir, and the control valve as well as other components.

Pressure Line – a hose carrying pressurized fluid to the cylinders.

Primary Voltage – see voltage, primary.

Pump – a device that forces liquid to flow, converting mechanical force into hydraulic pressure.

Pushbutton Controls – handheld pendant, wall mounted, or post mounted set of buttons that allows the operator to control the motion of the equipment. Up and down control buttons are typically supplied as standard with lifts.

Qualified Person – a person, who by possession of a recognized degree, certificate, professional standing, or who by knowledge, training and experience, has demonstrated the ability to deal with problems relating to the subject matter, the work, or the project.

Quick Disconnect – a means of rapidly connecting or disconnecting electrical, pneumatic, or hydraulic lines.

Raised Height – the overall height from the installed surface to the top of the platform while the equipment is in the fully raised position, a combination of the low height and vertical travel.

Rating, End/Side Axle Load – the maximum amount of single axle load (in the case of rolling loads) which can be applied to the loading edge of the platform (end or side) when the lift is in any raised position. This rating considers: 1) that some amount of deflection will occur during load transfer; 2) the moving and impact forces imposed by the load; 3) that this is a temporary condition during load transfer only; and 4) that the scissors lift platform is static and non-moving.

Rating, End/Side Edge Load – the maximum amount of static load that can be applied to the edge of the platform (end or side) when the lift is in any raised position. This rating considers: 1) that some amount of deflection will occur during load transfer; 2) that this is a temporary condition during load transfer only; and 3) that the scissors lift platform is static and non-moving.

Relief Valve – a valve that operates at a preset levels to allow the escape of fluids and to limit hydraulic pressure.

Remote Power Unit – hydraulic power unit that is located outside the structure of the lift. Pit installations require conduits to allow hydraulic hoses access from the cylinders to the power unit.

Reservoir – the container that holds the non-pressurized fluid in a hydraulic system.

Return Line – see cylinder return line.

Scissors Lift – a raising/lowering platform that is supported or stabilized by one or more pantograph leg sections.

Scissors Lift, Mobile – a work access lift designed for lateral movement where: 1) there may be material on the lift platform; 2) there may be operators or other riders on the lift platform during lateral movement; 3) the lift platform may be in a raised position during lateral movement; and 4) the lateral movement is restricted to a predetermined path via tracks, grooves, or other physical guides.

Scissors Lift, Portable – a scissors lift designed for lateral movement from one stationary work station to another where: 1) there is no load on lift platform during lateral movement; 2) there are no operators or other riders on the lift platform during lateral movement; 3) the lift platform is in fully lowered position during lateral movement; and 4) the lateral movement is unrestricted.

Scissors Lift, Transport – a lift table designed for lateral movement where: 1) there may be a load on the lift platform during lateral movement; 2) there no operators or other riders on the lift platform; 3) the lift platform may be in raised position during lateral movement; and 4) the lateral movement may be unrestricted.

Self-Contained Power Unit – hydraulic power unit that is located under the platform of the lift., generally on the frame of the equipment.

Shall – the word ‘shall’ is to be understood as mandatory.

Should – the word ‘should’ is to be understood as advisory.

Stability/Stable – a condition in which the sum of the moments that tend to overturn the industrial scissors lift is less than the sum of the moments tending to resist overturning.

Stroke – the length of travel of a piston.

Structural Strength Factor – the ratio of minimum specified ultimate strength of a material to its design stress at maximum rated capacity.

Tank – see reservoir.

TEFC – totally enclosed, fan cooled. Generally in reference to an electric motor.

TENV – totally enclosed, non-ventilated. Generally in reference to an electric motor.

Trained Personnel – personnel who have been trained by a qualified person and have demonstrated the ability to perform a particular function on or around a scissors lift.

User – a person or entity that has care, control and custody of an industrial scissors lift.

Valve – a device that is added to the hydraulic circuit that controls or stops fluid flow direction, pressure, or flow rate.

Valve, Flow Control – a valve that is added to control the fluids rate of flow. On lifts it is generally used to limit the downward travel speed of the equipment.

Valve, Manual Lowering – a valve that can be added to remote power units that will facilitate the lowering of the table regardless of the status of other electrical or hydraulic controls. The valve is generally located on the hydraulic power unit and manually activated. The handle that is required to turn this valve is shipped loose to help avoid accidental or unauthorized lowering of the equipment.

Valve, Soft Shift – valve that meters the flow when shifting a valve, that dampens the hydraulic response. When applied to a lift and lower circuit, it makes the initiation of platform movement less abrupt.

Valve, Sure Stop – valve that can be added to minimize the upward coast of the platform after the ‘up’ button has been let go.

Valve, WOG – water, oil, and gas (WOG) valve that can be added for positive shutoff of fluids, used to help reduce the magnitude of downward creep when a platform must maintain position for extended periods.

Velocity Fuse – see hydraulic velocity fuse.

Vertical Creep – unintended vertical movement of an industrial scissors lift.

Vertical Travel – the difference between the fully raised height of the platform deck and the fully closed height of the platform deck.

Voltage, Control – secondary voltage, from the transformer to the operator controls.

Voltage, Primary – the main power supply to the motor and control box.