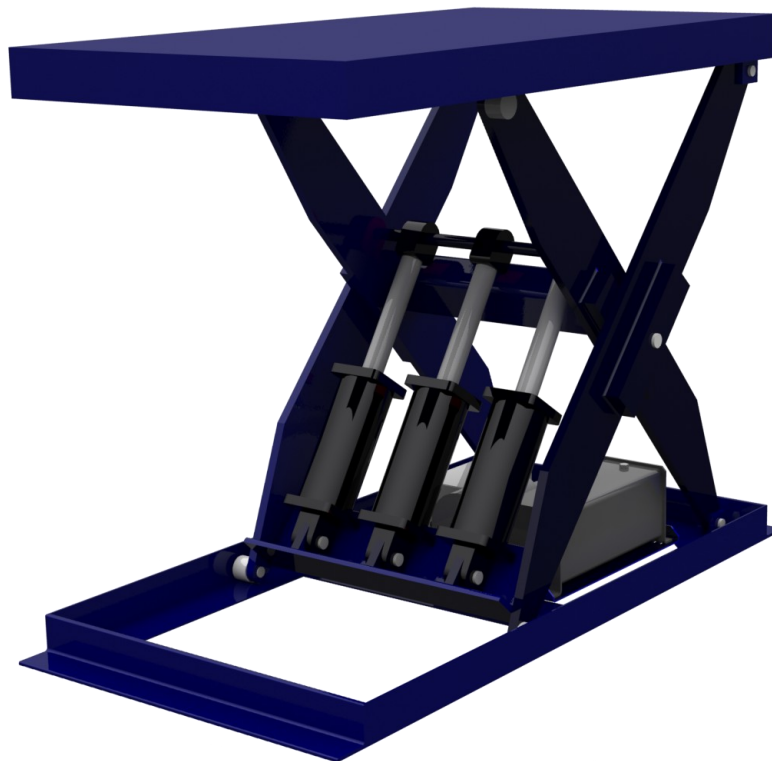


# SCISSOR LIFT

## TECHNICAL HANDBOOK

Maintenance, Start Up and  
Troubleshooting for Your  
Omni Metalcraft Corp.  
Equipment



DO NOT OPERATE  
BEFORE READING

**Omni Metalcraft**corp.

**DO NOT DISCARD**

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## GENERAL SAFETY STATEMENTS

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### **IMPORTANT REQUIRED READING!**



### **¡IMPORTANTE! ¡LECTURA OBLIGATORIA!**

To ensure this quality product is safely and correctly utilized, all instructions within this manual must be read and understood prior to equipment start-up. Be aware of all safety labels on machinery. **If you do not understand any of the safety instructions or feel there may be safety labels missing, contact your supervisor or product supplier immediately!**

Para garantizar que este producto de calidad se utilice correctamente y con seguridad, es necesario leer y comprender las instrucciones incluidas en este manual, antes de comenzar a utilizar el equipo. Esté atento a todas las etiquetas de seguridad que se encuentran en las máquinas. Si no entiende alguna de las instrucciones de seguridad o considera que faltan algunas etiquetas de seguridad, ¡comuníquese inmediatamente con su supervisor o proveedor del producto!

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#### **COMPLIANCE WITH SAFETY STANDARDS**

Compliance with safety standards, including federal, state and local codes or regulations is the responsibility of the equipment purchaser(s). Placement of guards, safety labels and other safety equipment is dependent upon the area and use to which the system is applied. A safety study should be made of the equipment application by the purchaser(s). It is the purchaser's responsibility to provide any additional guards, safety labels or other safety equipment deemed necessary based on this safety study.

The information contained in this safety manual is correct at the time of printing. Due to the continuing development of product lines, changes in specifications are inevitable. The company reserves the right to implement such changes without prior notice.

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If you suspect fire hazards, safety hazards, dangers towards health or any other job safety concerns, consult your federal, state or local codes.



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Inspect equipment for **safety labels**. Make sure personnel are aware of and follow safety instructions.



Maintain an **orderly environment** in the vicinity of the equipment at all times. Clean up spilled materials or lubricants immediately.



All personnel shall be instructed regarding the necessity for continuous care and attention to safety during the operation of the equipment. They **must be trained** to identify and immediately report all unsafe conditions or practices relating to the equipment and its operation.



Know your company's machine specific **Lockout / Tagout procedure**. **Do Not** perform maintenance until electrical disconnect has been turned off!

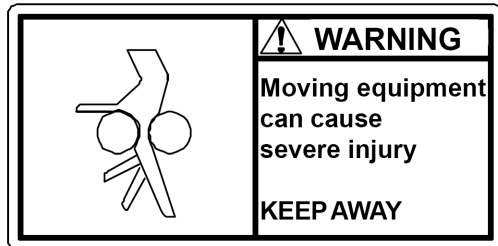


**Replace all safety devices, guards and guarding prior to equipment start-up.**

References used for safety instructions in this manual are from: Conveyor Equipment Manufacturers Association (CEMA) and The American Society of Mechanical Engineers (ASME)

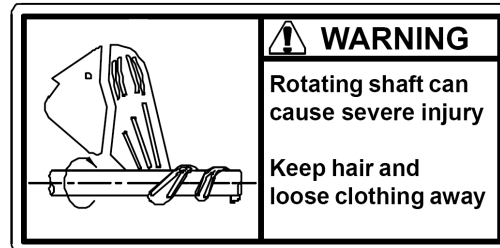
## SAFETY INFORMATION: GENERAL SAFETY LABELS

Safety labels have been placed at various points on the equipment to alert everyone of potential dangers. Inspect equipment for proper position of safety labels and make sure all personnel are aware of the labels and obey their warnings. As mentioned in the previous section, a safety study should be made of the equipment application by the purchaser(s). **It is the purchaser's responsibility to provide any additional guards, safety labels or other safety equipment deemed necessary based on this safety study.** The following pages contain typical safety labels that may have been attached to your equipment.



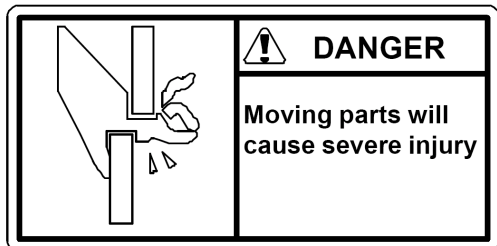
#110479 ( 5" x 2 1/2" )

Placed on terminating ends (both ends) where there are exposed moving parts which must be unguarded to facilitate function, i.e. rollers, pulleys, shafts, chains, etc.



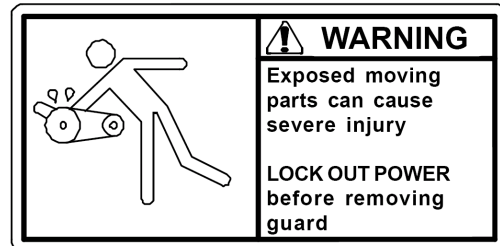
#113529 ( 5" x 2 1/2" )

Placed next to drive (both sides) to warn personnel that the lineshaft conveyor utilizes a rotating shaft which may be hazardous if hair or loose clothing become entangled around the rotating shaft. Also used on any other conveyors where the exposed shaft may create similar hazards.



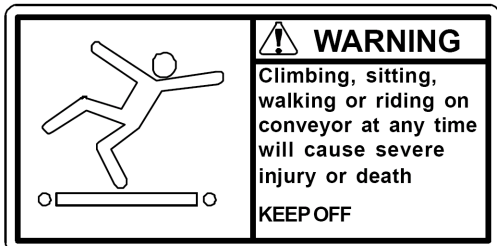
#111744 ( 5" x 2 1/2" )

General warning to personnel that the equipment's moving parts, which operate unguarded by necessity or function, i.e., air cylinders, etc., create hazards to be avoided.



#110478 ( 5" x 2 1/2" )

Placed on all chain guards to warn that operation of the machinery with guards removed would expose chains, belts, gears, shafts, pulleys, couplings, etc. which create hazards.



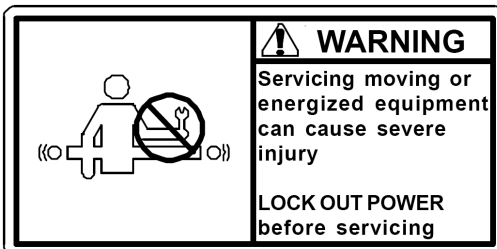
#111752 ( 5" x 2 1/2" )

Placed on max. of 20' centers (both sides) along conveyors which provide surfaces and profiles attractive, but hazardous, for climbing, sitting, walking or riding.



#113513 ( 5" x 2 1/2" )

Placed on chain guard base so label is visible when guard cover is removed.



#113528 ( 5" x 2 1/2" )

Placed next to drive (both sides) to warn maintenance personnel that conveyors must be shut off and locked out prior to servicing. Examples: drives, take-ups, and lubrication points, which require guard removal.

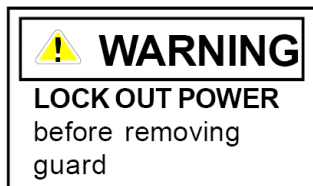


#111870 ( 5" x 3" )

General warning of pinch point hazards.

## SAFETY INFORMATION: GENERAL SAFETY LABELS (Continued)

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#111750 ( 1 3/4" x 1 1/4" )

Generally placed on smaller guards to alert personnel of potential danger if guard is removed and power is not locked out.



#111749 ( 3" x 1 1/4" )

Placed on shipping brace which stabilizes equipment during shipping. Brace must be removed before operating! May cause severe injury if not removed.



#110491 (10" x 7" )


Placed on equipment where conveyors may start without warning.

# SAFETY INFORMATION: SCISSOR LIFT SAFETY LABELS


1

**⚠ DANGER**


To avoid bodily injury, read all instructions before operating or servicing lift.



Do not put hands or feet under top.



Do not work under lift without maintenance device.




Do not stand, sit or ride on lift.

#113611 - A-4 (6 7/8 x 1 1/4) or B-4 (17 x 2)

Placed on the side edges of the lift table platform to warn personnel to read operating instruction before using lift table and to warn of possible bodily injury hazards.

2



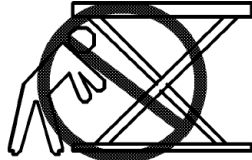
**⚠ WARNING**

Do not stand, sit or ride on lift

#113609 - A-1 (6 7/8 x 1 1/4) or B-1 (8 x 2)

Placed on the top surface of the lift table platform to warn personnel against riding on scissor lifts that are not designed for such use.

3




**⚠ DANGER**

Do no work under lift without maintenance device

#113608 - A-3 (6 7/8 x 1 1/4) or B-3 (8 x 2)

Placed on the base frame adjacent to each maintenance device to warn service personnel to engage maintenance device before working on, and particularly under, lift table.

4

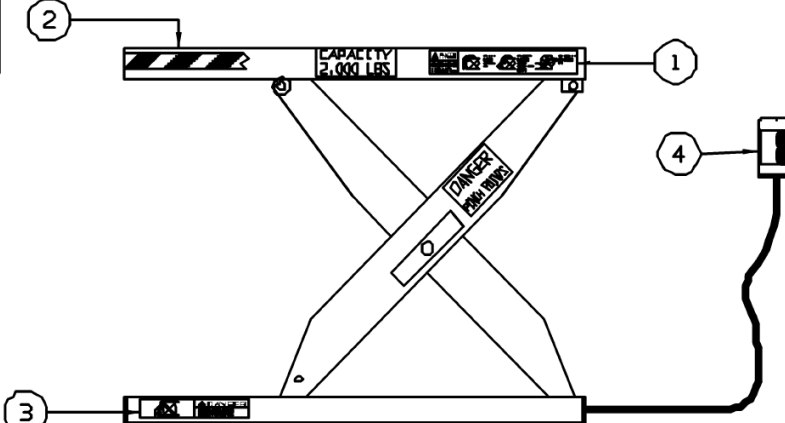


**⚠ DANGER**

To avoid bodily injury, stand clear while lift table is moving

#113610 - A-5 (6 7/8 x 1 1/4) or B-4 (8-2), A-6 (2 x 1 1/12)

Placed on or near the control station where up/down controls are located to warn personnel to stand clear while lift table is in operation. Location can vary depending on type of control station used.



6

## SAFETY INFORMATION: INSTALLATION SAFETY

---

### 1) LOADING / UNLOADING

Have trained personnel load or unload equipment. The equipment must be properly handled when transferring from the unloading area to final site location to prevent damage.

### 2) GUARDS / GUARDING

**Interfacing of Equipment.** When two or more pieces of equipment are interfaced, special attention shall be given to the interfaced area to ensure the presence of adequate guarding and safety devices.

**Guarding Exceptions.** Wherever conditions prevail that would require guarding under this standard but such guarding would render the equipment unusable, seek guidance from your safety professional.



### 3) ANCHORING

**DO NOT** operate equipment unless it is properly anchored. Serious injury or death may result.

### 4) SAFETY WARNING

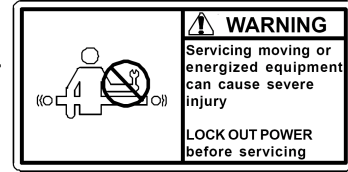
Install all safety devices, guards and guarding prior to equipment start-up.

## SAFETY INFORMATION: ELECTRICAL SAFETY

### 1) ELECTRICAL CODE

All electrical installations and wiring shall conform to federal, state and local codes.

When equipment operation is not required for a maintenance procedure, **electrical power must be turned off and locked / tagged out following your company's machine specific procedure.**



### 2) CONTROL STATION

Control stations should be so arranged and located that the operation of the affected equipment is visible from them. Control stations shall be clearly marked or labeled to indicate the function controlled.

Equipment that would cause injury when started shall not be started until personnel in the area are alerted by a signal or by a designated person that the equipment is about to start.

Where system function would be seriously hindered or adversely affected by the required time delay, or where the intent of the warning may be misinterpreted (i.e., a work area with many different equipment and allied devices), a clear, concise and legible warning sign needs to be provided. The warning sign shall indicate that equipment and allied equipment may be started at any time, that danger exists and that personnel must keep clear. These warning signs shall be provided along the equipment at areas not guarded by position or location.

Remotely and automatically controlled equipment, and equipment where operator stations are not manned or are beyond voice or visual contact from drive areas, loading areas, transfer points and other potentially hazardous locations on the equipment path not guarded by location, position or guards shall be furnished with emergency stop buttons, pull cords, limit switches or similar emergency stop devices.

All such emergency stop devices shall be easily identifiable in the immediate vicinity of such locations unless guarded by location, position or guards. Where the design, function and operation of such equipment clearly is not hazardous to personnel, an emergency stop device is not required.

The emergency stop device shall act directly on the control of the equipment concerned and shall not depend on the stopping of any other equipment. The emergency stop devices shall be installed so that they cannot be overridden from other locations.

Inactive and unused actuators, controllers and wiring should be removed from control stations and panel board, together with obsolete diagrams, indicators, control labels and other material that might confuse the operator.

### 3) SAFETY DEVICES

All safety devices, including wiring of electrical safety devices, shall be arranged to operate such that a power failure or failure of the device itself will not result in a hazardous condition.

### 4) EMERGENCY STOPS AND RESTARTS

Equipment controls shall be so arranged that, in case of emergency stop, manual reset or start at the location where the emergency stop was initiated shall be required for the equipment and associated equipment to resume operation.

Before restarting the equipment that has been stopped because of an emergency, an inspection of the equipment shall be made and the cause of the stoppage determined. The starting device and electrical power must be turned off and locked / tagged out according to your company's machine specific procedure before any attempt is made to remove the cause of the stoppage, unless operation is necessary to determine the cause or to safely remove the stoppage.

### 5) SAFETY WARNING

**Replace all safety devices, guards and guarding prior to equipment start-up.**



## SAFETY INFORMATION: OPERATIONAL SAFETY

Only trained, qualified personnel shall be permitted to operate the equipment. Training shall include instruction in operation under normal conditions and emergency situations.

Where safety is dependent upon stopping / starting devices, they shall be kept free of obstructions to permit access.

The area around loading and unloading points shall be kept clear of obstructions that could endanger personnel.

Do not ride the load-carrying element of a conveyor/equipment under any circumstances, unless the equipment is designed and equipped with safety and control devices intended to carry personnel. For no reason shall a person ride any element of a vertical conveyor. Warning labels reading **“DO NOT RIDE CONVEYOR”** shall be affixed by the owner of the equipment.



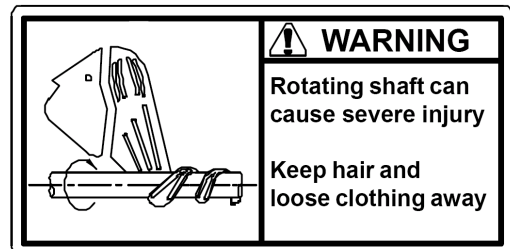
Personnel working on or near a conveyor/equipment shall be instructed as to the location and operation of pertinent stopping devices.

Equipment shall be used to transport only a load that it is designed to handle safely.

Under no circumstances shall the safety characteristics of the equipment be altered.

Routine inspections and preventative and corrective maintenance programs shall be conducted to ensure that all safety features and guards are retained and function properly. Inspect equipment for safety labels. Make sure personnel are aware of and follow safety label instructions.

Alert all personnel to the potential hazard of entanglement in conveyors/equipment caused by items such as long hair, loose clothing and jewelry.



### **SAFETY WARNING**

**Replace all safety devices, guards and guarding prior to equipment start-up.**

**SAFETY INFORMATION: MAINTENANCE / SERVICE SAFETY**

**ELECTRICAL POWER MUST BE TURNED OFF AND LOCKED / TAGGED OUT** following your company's machine specific procedures when servicing equipment to prevent accidental restarting by other persons or interconnecting equipment (when used).

**1) MAINTENANCE (REPAIR)**

Maintenance and service shall be performed by trained, qualified personnel only.

Where lack of maintenance and service would cause a hazardous condition, the user shall establish a maintenance program to ensure that conveyor components are maintained in a condition that does not constitute a hazard to personnel.

No maintenance or service shall be performed when a conveyor is in operation. See "Lubrication" and "Adjustment or Maintenance During Operation" for exceptions.

When a conveyor is stopped for maintenance or service, the starting devices, prime mover, powered accessories or electrical must be locked / tagged out in accordance with a formalized procedure designed to protect all persons or groups involved with the conveyor against an unexpected restart. Personnel should be alerted to the hazard of stored energy, which may exist after the power source is locked out. All safety devices and guards shall be replaced before starting equipment for normal operation.

**2) ADJUSTMENT OR MAINTENANCE DURING OPERATION**

When adjustments or maintenance must be done while equipment is in operation, only trained, qualified personnel who are aware of the hazards of the conveyor in motion shall be allowed to make adjustments, perform maintenance or service.

Conveyors shall NOT be maintained or serviced while in operation unless proper maintenance or service requires the conveyor to be in motion. If conveyor operation is required, personnel shall be made aware of the hazards and how the task may be safely accomplished.

**3) LUBRICATION**

Conveyors shall **NOT** be lubricated while in operation unless it is impractical to shut them down for lubrication. Only trained and qualified personnel who are aware of the hazards of the conveyor in motion shall be allowed to lubricate a conveyor that is operating.

Where the drip of lubricants or process liquids on the floor constitutes a hazard, drip pans or other means of eliminating the hazard must be provided by purchaser(s).

**4) MAINTENANCE OF GUARDS AND SAFETY DEVICES**

Guards and safety devices shall be maintained in a serviceable and operational condition. Warning signs are the responsibility of the owner of the conveyor and must be maintained in a legible / operational condition.



## **SAFETY INFORMATION: MAINTENANCE / SERVICE SAFETY** (Continued)

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### **5) INSPECTIONS**

Routine inspections with preventative and /or corrective maintenance programs shall be conducted to ensure that all safety features and devices are maintained and function properly.

All personnel shall inspect for hazardous conditions at all times. Remove sharp edges or protruding objects. Repair or replace worn or damaged parts immediately.

### **6) CLEANING**

Where light cleaning and/or casing cleaning are required, they shall be performed by trained personnel. The conveyor electrical power **must be turned off and locked / tagged out following your company's machine specific procedures**. Special attention may be required at feed and discharge points.

### **7) SAFETY WARNING**

**Replace all safety devices, guards and guarding prior to equipment start-up.**

## **SAFETY INFORMATION: RESPONSIBILITIES OF OWNERS AND USERS**

---

### **INSPECTION AND MAINTENANCE**

The lift shall be inspected and maintained in proper working order in accordance with this manual and safe operating practices.

### **REMOVAL FROM SERVICE**

Any lift not in safe operating condition shall be removed from service until it is repaired to the original manufacturer's standards.

### **REPAIRS, MODIFICATIONS OR ALTERATIONS**

All repairs shall be made by authorized personnel in conformance with the manufacturer's instructions.

### **OPERATORS**

Only trained and authorized personnel shall be permitted to operate the lift.

### **BEFORE OPERATION**

Before using the lift, the operator shall have:

- 1) Read and understood the manufacturer's operating instructions and safety rules and been trained by qualified personnel.
- 2) Inspected the lift for proper operation and condition. Any suspect item shall be carefully examined and a determination made by a qualified person as to whether it constitutes a safety hazard. All unsafe items shall be corrected before further use of the lift.

### **DURING OPERATION**

The lift shall be used only in accordance with its intended purpose and within the manufacturer's limitations and safety rules:

- 1) Do not overload the lift. Please note that the lift has a capacity tag attached to it. Do not remove the tag. Exceeding the capacities shown on the tag may cause damage to the lift or injury to personnel.
- 2) Ensure that all safety devices are operational and in place.
- 3) Personnel near operating lifts must maintain a safe distance to avoid being pinched or trapped by the equipment or struck by objects that may fall from the lift platform.

### **MODIFICATIONS OR ALTERATIONS**

Consult the manufacturer before modifying or altering the equipment in any way. (failure to do so may void the warranty)

## **SAFETY INFORMATION: WARNINGS**

---

### **WARNING!!!**

### **NO RIDERS!!!**

#### **WARNING!!!**

To avoid personal injury, never go under the lift platform until the load is removed and the scissor mechanism is securely blocked in the UP position.

#### **WARNING!!!**

To avoid personal injury, stand clear of scissor leg mechanism while lift is in motion.

#### **WARNING!!!**

Where it is desired to raise the base of the lift to achieve a greater collapsed height, the footprint of the base frame must be fully supported. Failure to do so will damage the lift. This lift is designed to be a floor mount.

#### **WARNING!!!**

DO NOT install lifts in pits unless equipped with bevel toe guards or other approved toe protection. A shear point can exist causing serious toe injury or severance.

### **SAFETY MAINTENANCE BAR PROCEDURE**

#### **WARNING!!!**

ALWAYS use the safety bars for service or maintenance. NEVER go under or reach under the lift unless both safety bars are securely in place and the power to the unit has been disconnected. NEVER use safety bars with a load on the platform.

#### **CAUTION**

Operating the lift with safety bars improperly stored may result in damage to the equipment.

- 1) Remove the safety bars from their storage position.
- 2) Raise the lift to full travel, and place the safety bar. Make sure the safety bar is in place.
- 3) Once BOTH safety bars are in place, slowly lower the lift until the safety bars rest against the end of the base frame. Visually inspect both safety bars to ensure they are secure.
- 4) To disengage the safety bars, raise the lift, move the safety bars and make sure lift operates correctly. Store the safety bars in their original position.

#### **SAFETY WARNING**

**REPLACE ALL SAFETY DEVICES, GUARDS AND GUARDING PRIOR TO EQUIPMENT START-UP.**

## RECEIVING AND INSPECTION: RETURNS, DAMAGES AND SHORTAGES

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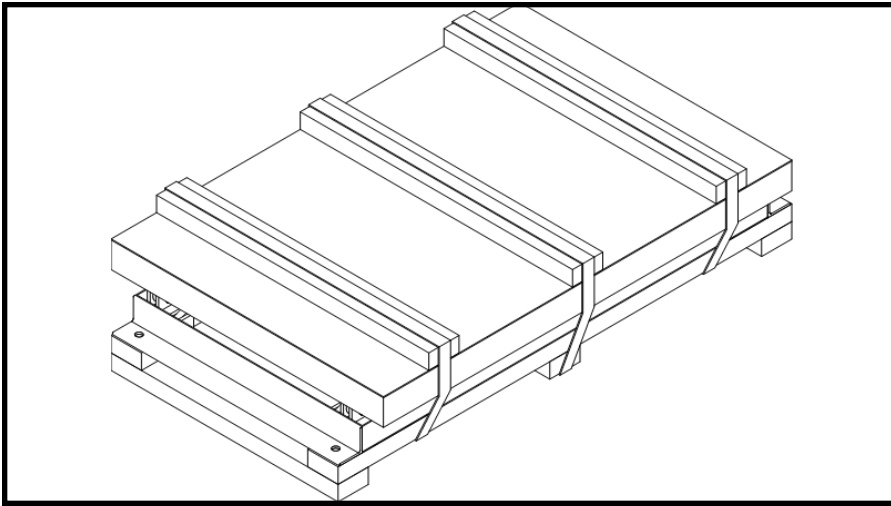
### UNCRATING CHECKLIST

- 1) Compare the bill of lading with what you have received (including accessories).
- 2) Examine the equipment for damage.
- 3) Immediately report shortages or damages to the vendor and carrier.
- 4) Obtain a signed damage report from the carrier and send a copy to the vendor.

**Do not attempt to modify or repair damaged equipment prior to filing this report.**

#### **Note:**

Do not return equipment to the factory without a written return authorization. Returns without written authorization will not be accepted.



**Note:** Custom products may be crated differently.

## RECEIVING AND INSPECTION: REMOVAL OF CRATING

---

### AFTER COMPLETING THE “UNCRATING CHECKLIST”

- 1) Remove crating and packaging.
- 2) Look for boxes, accessories, bags or components such as fasteners, manuals, guard rails etc. that may be banded or fastened to the crating material.

**Note:** Make sure all fasteners, guards and essential components are not discarded.

## GENERAL INSTALLATION: INSTALLATION INSTRUCTIONS

### ANCHORED AND PIT MOUNTED HYDRAULIC SCISSOR LIFT TABLES

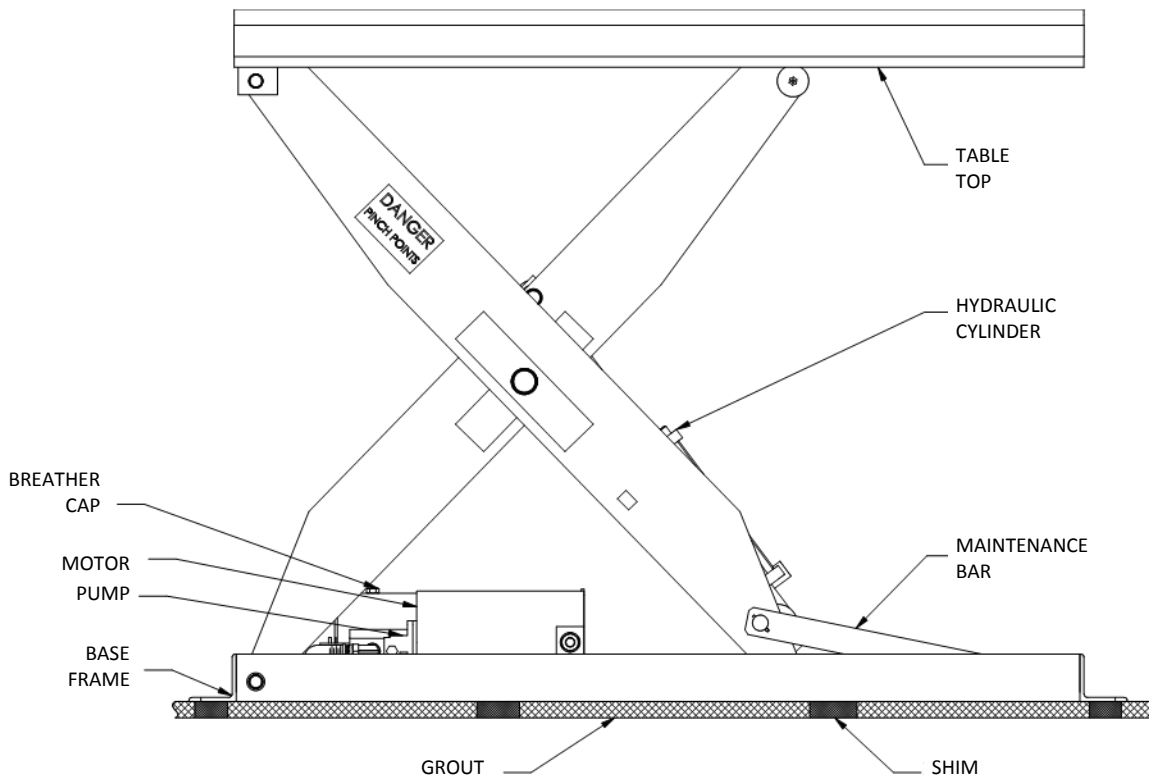
**Note:**

Permanent installation of hydraulic scissor lift tables may be subject to local codes, regulations, permits or inspections.

- 1) Scissor lifts are shipped on either skids or pallets. With slings placed around the base frame or lift bottom, remove the lift from the skid. Be careful not to damage any of the frame structure.
- 2) Position and align the lift so that 1/2" to 1" clearance is maintained around the platform. Level the scissor lift and place solid shims under the base frame as detailed in the drawing below. Grout as required. If shimming and grout will not be used, the floor must be level "to within 1/8 in. over 5 ft. of length and width."
- 3) Where anchor clips have been provided, the bolt fit is close to restrict shifting. Careful location of the anchor bolts is required with special consideration being given to the frame and platform.
- 4) Jog the motor with the control in very short jogs, to check if the lift will raise. On 3-phase systems, 2 of 3 power leads may need to be switched so the pump will turn the proper direction.

**Caution:** Continued operation of a reversed direction hydraulic pump for approximately 30 seconds can burn up a pump, so use short jogs.

- 5) Raise the lift halfway several times, fully lower, holding the down control an extra 10 seconds each time when the lift is fully lowered to bleed air from the cylinders. Then with the lift fully up, insert the safety maintenance bars, remove the breather cap and add hydraulic oil. Replace the breather cap.
- 6) Clean up any debris or spilled fluid, as this may later be misinterpreted as mechanical trouble or a cylinder leak. Remove the maintenance bars and lower the unit.
- 7) Instruct user(s) in the proper operation of the lift, safety precautions, and equipment capacity. Supply maintenance personnel with this service manual.

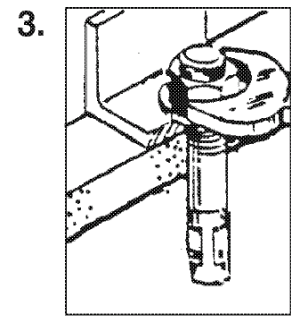
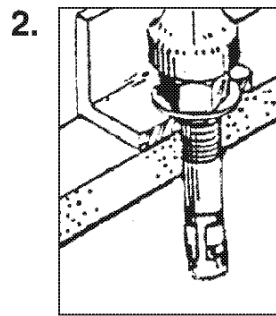
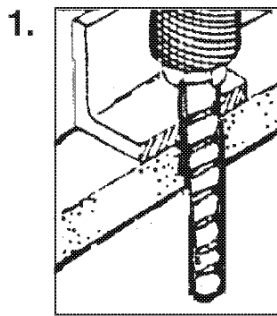


## GENERAL INSTALLATION: INSTALLATION INSTRUCTIONS

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### INSTALLATION OF ANCHOR BOLTS

- 1) Position lift according to instructions on page 15. Drill holes in concrete the same diameter as anchor bolts, using anchor clip holes as guides. Drill holes sufficiently deep.
- 2) With nut and washer on anchor bolts, drive anchor bolts into holes so that a minimum of six to seven threads are below the top of the anchor clips.
- 3) Tighten the nuts while making sure enough force is used to spread anchor bolt wedges. Use three or four turns past finger-tightening as a guide.
- 4) After the scissor lift has been aligned, leveled and shimmed, and all anchor bolts installed, pour 1" of grout under the entire base frame. Tighten nuts or anchor bolts after the grout has set and cured. Run hydraulic hose and/or electrical cord through the conduit in the pit wall. Replace the platform.







**NOTES:**

- 1) All pit work "by others", includes conduit, piping, curb angles, etc.
- 2) Run 3" diameter PVC with long radius sweep elbows to provide pipe case for hose or cables, run from pit to power unit or control location.

## GENERAL INSTALLATION: SEQUENCE OF OPERATION

---

- 1) Hydraulic Scissor Lifts are designed primarily for in-plant applications and are furnished with constant pressure push-button controls. Actuating the "UP" button causes the solenoid on the magnetic starter to pull in, closing its line contacts and allowing the line voltage to be applied to the motor.
- 2) Assuming the motor rotation is correct, the motor will drive a gear pump, which in turn draws oil from the reservoir through the pump and forces it at a constant volume under pressure required by the load. The oil flows through the valves and piping into the hydraulic cylinder. The hydraulic cylinder must displace the incoming volume of oil by increasing the size of the chamber. This is accomplished by forcing the piston inside the cylinder away from the fully collapsed position. The piston is attached to a rod which is attached to structural members of the lift's leg assembly. As the piston and rod move out, the legs open.
- 3) When the desired height or upward travel of the platform is attained, the "UP" button is deactivated by removing the operator's finger from the push-button. The motor stops the pump from pumping oil. The check valve in the pump assembly closes, preventing reverse flow of the oil. This maintains the desired raised position.
- 4) When the operator desires to lower the lift, the person depresses the "DOWN" button on the push-button control which closes the circuit and energizes the down valve solenoid. The solenoid pulls in and activates the Down valve which allows the valve to open. Opening the Down valve allows the oil in the cylinder to flow through the Down valve at a controlled rate and return to the reservoir.
- 5) The downward travel of the lift may be stopped at any desired point by removing the operator's finger from the "DOWN" button.

**CAUTION:** DO NOT continue to press the "UP" button if the lift is not raising or you have reached the fully raised position as this may result in permanent damage to the motor or pump.

## GENERAL INSTALLATION: OPERATING INSTRUCTIONS

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### CUSTOM HYDRAULIC SCISSOR LIFT

Hydraulic scissor lifts have an excellent safety record overall, but as with all moving equipment, they can be dangerous. Operators must use common sense and take responsibility for the safety of everyone near the lift. They must use the safety devices provided and be careful not to surprise anyone in the area with the movement of the lift.

### PREOPERATIONAL CHECKS

- 1) Check all electrical wiring and connections to be sure that they are completed properly and are operational.
- 2) Check for obstructions or debris that may interfere with the safe operation of the lift.
- 3) Be sure that all personnel in the area are a safe distance away from the lift and aware that you are about to operate it.
- 4) If there are any optional safety devices such as bellows or electric toe guards, check them for proper operation.

### TEST OPERATE THE EQUIPMENT

- 1) Station yourself so that you will always see the equipment when it is in operation.  
Never operate the equipment in the blind!
- 2) Raise the equipment and note that the control is a constant pressure, deadman type. When you release the up or down switch the unit should stop moving immediately and maintain its elevation. If it does not, contact qualified maintenance personnel.
- 3) Cycle the equipment several times to be sure that it is operating smoothly with no jerking or sudden movement. On initial start up there may be some air in the lines or the cylinders may be dry due to storage so it may take several cycles to smooth out the operation. If the operation is not smooth after several cycles, contact qualified maintenance personnel. Any evidence of binding or scraping in the operation should cause you to immediately stop using the lift.
- 4) Check all safety devices for proper operation.
- 5) If you elect to test load the equipment, be sure that you do not exceed the capacities shown on the tag. Overloading may cause structural stresses that may not show up for some time, but will diminish the life and capacity of the unit.

### DAILY OPERATION

- 1) All personnel should be required to read and understand the entire operating instructions section of this manual prior to operating the lift.
- 2) Operators must know the capacity of the unit and be aware of any loads that may exceed the capacity.
- 3) Operators must be alert to all personnel in the vicinity of the lift and avoid any surprises to these personnel in regard to movement or the position of the lift at any time. Never operate the unit if you cannot see it and the personnel around it.
- 4) On the first use of the lift each day, each operator should check to see that the lift is operating properly and smoothly. All safety devices must be in place and operating properly.
- 5) If the unit has a traveling electrical cord, the operator must ensure that it is kept away from the lift as it raises and lowers.
- 6) Loads should be centered before raising or lowering the lift as this will help ensure even wear on all moving parts.

## **MAINTENANCE: MAINTENANCE INSTRUCTIONS**

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- 1) Always remember that this is a piece of machinery with large moving parts that can seriously hurt you.
- 2) Read and understand this manual in its entirety before attempting service work.

### **WARNING**

- 3) **Always use the safety bars or safety chocks if you are going to work on the unit in the elevated position or must reach under the platform.**
- 4) When using the safety supports, adhere to the following rules:
  - A) Be sure there is no load on the platform.
  - B) Be sure the safety support is properly engaged.
  - C) Hold the down pedal an extra 10 seconds when lowering onto the safety support to be sure that all the weight of the lift is on the support.
  - D) Disconnect and lock / tag out the electricity to the unit to prevent accidental movement of the lift by other personnel.
  - E) Spend as little time as possible under the lift.
- 5) Use only replacement parts recommended by the manufacturer.
- 6) Do not let the equipment stay in disrepair: fix little problems while they are little problems or some of them may get very severe very quickly.
- 7) Inspect the equipment on a regular schedule, preferably monthly.
- 8) Never work on the hydraulics or electrical systems unless the unit is fully lowered or properly sitting on a safety support.
- 9) Never apply a load to the equipment unless the base is continuously supported.

### **WARNING**

- 10) Never expect to hold a leg assembly by simply lifting one end of a platform:
  - A) The roller end of most lifts is not gibbed or captured in any way, so lifting on the roller end simply tilts the platform.
  - B) Even if you raise the clevis end of the platform, if the base frame is not firmly lagged to the ground or held down by some other means, the legs will come up with the platform in a spongy and unpredictable manner and could cause personal injury.
  - C) The only safe way to hold a lift's legs open other than the factory designed safety support, is to block between the clevis end of the platform and the base frame.

The routine maintenance of this equipment is minor and consists of periodic checks.

### **SAFETY WARNING**

**REPLACE ALL SAFETY DEVICES, GUARDS AND GUARDING PRIOR TO EQUIPMENT START-UP.**

## **MAINTENANCE: MAINTENANCE SCHEDULES**

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### **WARNING**

To avoid personal injury, never go under the lift platform until the load is removed and the scissor mechanism is securely blocked in the "UP" position with maintenance bars to prevent accidental lowering of the lift.

Before maintenance or servicing, ELECTRICAL POWER MUST BE TURNED OFF AND LOCKED / TAGGED OUT following your company's machine specific procedure.

Be sure that all pressure is relieved from the hydraulic system before disassembling any components. See General Hydraulic Information.

### **WEEKLY MAINTENANCE**

- Inspect bushings for wear. Replace if necessary.  
(See Bushing Maintenance and Lubrication Instructions below.)
- Grease all regreaseable pivot pins. Use No. 2 lithium based grease or equivalent. (if supplied)

### **MONTHLY MAINTENANCE**

- Inspect oil level in reservoir. Fill if necessary.
- Inspect hydraulic hose(s) for pinch points and signs of wear. Correct pinch points and replace hose(s) when necessary.
- Inspect all wires for looseness or wear.
- Inspect all hydraulic fittings for leaks. Tighten as required.
- Clean all debris from the vicinity of floor mounted units in order to avoid interference with the lift mechanism or rollers.
- Operate the unit and check for any abnormal noise or vibrations.
- Check all safety devices on the unit such as the condition of the pleated bellows or smooth operation of the electric toe guards.

### **SEMI-ANNUAL MAINTENANCE**

- Inspect oil for darkening or gritty feel. Change if necessary.
- Inspect oil for presence of water (oil will turn milky in color).
- Change oil if necessary.

### **BUSHING MAINTENANCE AND LUBRICATION INSTRUCTIONS**

The service life of a bushing is generally not predictable, since their failure will develop only as gradual wear, not as catastrophic failure, such as with a bearing. The need for inspection is largely proportional to the actual duty cycle, environment, and application. It is recommended that the bushings be inspected for wear at least once a week during the first few months of operation. It is likely that such frequent attention will prove unnecessary, but will result in the establishment of a realistic maintenance schedule based on experience. Replace bushings as necessary. Failure to do so will damage the scissor arms. It is also recommended that the bushings be inspected following a lengthy period of shutdown.

### **SAFETY WARNING**

**REPLACE ALL SAFETY DEVICES, GUARDS AND GUARDING PRIOR TO EQUIPMENT START-UP.**

## MAINTENANCE: GENERAL HYDRAULIC INFORMATION

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- 1) All hydraulic cylinders will require the replacement of packing and seals after a period of time, depending on usage and environmental conditions. It is normal maintenance just like changing oil in an automotive engine. However, maintenance personnel should recognize the difference between leakage and weepage:
  - Weepage is the normal accumulation of fluid that passes the seals in the course of operations. As the hydraulic fluid properly performs its lubrication function on cylinder walls and piston rods. It may be occasionally observed squirting from cylinder breathers, but should stop squirting after several cycles of full stroke when the small accumulation is cleared.
  - Leakage is the fluid which leaks past worn or cut packing and seals. It too may be observed squirting, but does not stop after several cycles and the lift will probably not hold position under load.
  - Always be careful when working around cylinders, not to nick the extended rod or dent the cylinder casing, as this may cause damage to cylinder seals or packing.
  - If you elect to repaint or retouch part of the lift, cover exposed rods with plastic or soluble grease which can be removed after painting to ensure that no paint sticks to the rods and damages packing or seals.
  
- 2) General precautions:
  - Be sure that all pressure is relieved from the hydraulic system before disassembling any components. Continue to hold the down control for several seconds after fully lowering the unit on its safety support or the ground, before opening a line or component.
  - Always be careful to avoid contamination entering the system. Be careful with the ends of the hoses which may fall into dirt or other foreign materials. If you suspect contamination, flush the system and components.
  
- 3) Hydraulic fittings sealants and torques:
  - The lift may be equipped with NPT fittings (tapered), (JIC) 37 Degrees (flared) fittings, and SAE fittings (with "O" ring seals).
  - Be careful when tightening NPT fittings not to over tighten and crack them. Swivel fittings are especially vulnerable and should be snugged up enough to stop leaking.
  - If leakage persists after tightening the fittings fairly hard, inspect fittings for burrs on the mating edges.
  - Always use a sealant or Teflon tape with NPT fittings. If using Teflon tape, be sure the tape is started 1 1/2 threads back from the leading edge and only use 2 wraps to be sure that tape does not break off and contaminate the system. Never reuse old sealant or Teflon tape. Once a connection has been opened, remove old and apply fresh sealant or tape.

## MAINTENANCE: OIL VISCOSITY RECOMMENDATIONS

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### HYDRAULIC FLUID

All types of petroleum-based hydraulic fluids are more or less suitable for use. The exact choice of fluid is determined by its wear and temperature viscosity characteristics, taking into consideration oxidation and corrosion protection, material compatibility and air/water separation characteristics.

### CHEMICAL AND PHYSICAL PROPERTIES

|                          |               |
|--------------------------|---------------|
| A.P.I. Gravity (@ 60° F) | 28 to 31.5    |
| Viscosity (sus @ 100° F) | 194 to 236    |
| Viscosity Index          | 90 min.       |
| Flash (o.c.)             | 385 deg. min. |
| Fire (o.c.)              | 425 deg. min. |

### THESE PRODUCTS ARE PREFERRED DUE TO THE ANTI-WEAR ADDITIVES THEY CONTAIN

|                            |                      |
|----------------------------|----------------------|
| Cities Service Oil Company | Pacemaker XD 20      |
| Gulf Oil Corporation       | Harmony 48 AW        |
| Mobil Oil Corporation      | D.T.E. 25            |
| Shell Oil Company          | Tellus 929           |
| Sinclair Refining Company  | Duro AW 21           |
| Standard Oil Company Ohio  | Induston FF-48       |
| Sun Oil Company            | Sunvis 821 WR Oil    |
| Texaco Incorporated        | Rando Oil HD-Z32     |
| *Valvoline Quality         | Hydraulic Oil ISO-46 |
| Wolfshead                  | Hydraulic Oil-46     |

### FILL COMPONENTS WITH FLUID

Reservoir filled with specified oil level mark.

**MAINTENANCE: REPORT ON MISCELLANEOUS MAINTENANCE PERFORMANCE**

REPORT ON MISCELLANEOUS MAINTENANCE PERFORMANCE

Date\_\_\_\_\_

Maintenance Performed:

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\_\_\_\_\_  
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Date\_\_\_\_\_

Maintenance Performed:

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## **TROUBLESHOOTING AND REPLACEMENT PARTS: TROUBLESHOOTING**

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### **WARNING**

- Only qualified service personnel should undertake service work on hydraulic lifts. Service personnel should be able to read and understand wiring and hydraulic diagrams, know how to safely trouble shoot live electrical circuits and be familiar with this manual and all safety devices on this lift.
- No work should be performed beneath a raised lift platform unless safety bars are installed.

### **LIFT DOES NOT RAISE (POWER UNIT IS RUNNING OR HUMMING)**

- Rotation of 3-phase motor may be reversed. Reverse any two electrical leads.
- Motor may be single-phasing (humming). Check wiring.
- Voltage at motor terminals may be too low to run pump at existing load. Check by measuring voltage at motor terminals, or as near as possible while pump is running under load. Reading source voltage or pump-idling voltage is meaningless. Inadequate or incorrect wiring can starve the motor when the source voltage is ample. Correct as necessary.
- Check for line or hose leak. Correct as necessary.
- Check for oil shortage in reservoir. Add oil if necessary.
- Load may exceed rating. Remove excessive load.
- Suction screen may be clogged, starving pump. Screen is attached to suction line in tank. Remove and clean. Drain and replace oil.
- Breather cap on reservoir may be clogged. Remove and clean.
- "Down" valve may be energized by faulty wiring or stuck open. Remove solenoid and check.
- Pump may be seized if motor is humming or blowing fuses or overloads.

### **MOTOR LABORS OR HEATS EXCESSIVELY**

- Voltage may be low. Check at motor terminals while pump is running loaded, not at line source or while pump is idling, inadequate wiring can starve motor, even when source voltage is ample.
- Wiring may be incorrect. On 3-phase units using twist-lock plug, make sure that one leg of motor line is not connected to ground prong.
- Pump may be binding from oil starvation, which develops high internal heat. Pump can be irreparably damaged by oil starvation and may have to be replaced.

### **LIFT OPERATES "JERKY" OR "SPONGY"**

- Lower lift entirely and hold "Down" button an additional 10-30 seconds to bleed air from cylinder.
- Check for oil starvation in pump.

### **LIFT LOWERS TOO SLOWLY WITH LOAD**

- Down valve may require cleaning.
- Check for pinched tubing or hose.
- Oil extremely heavy for existing temperature.

### **LIFT WILL NOT LOWER (ELECTRICAL)**

- Solenoid coil may be incorrectly wired, not rated for the voltage, or the line voltage may be excessively low. Check voltage near coil. (120-volt) or (24V)

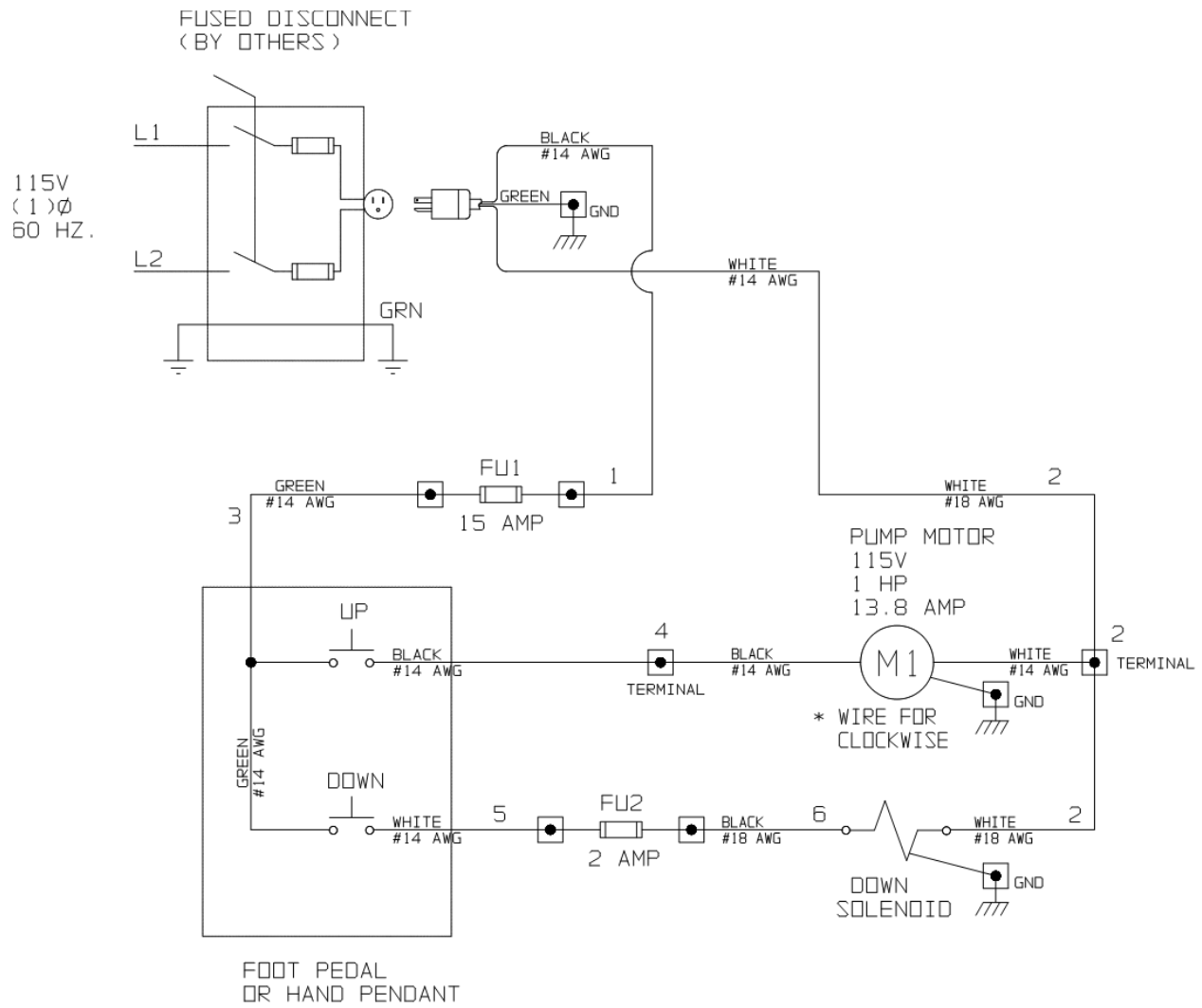
### **LIFT RAISES, THEN LOWERS BACK SLOWLY**

- Down solenoid valve may not be seating. Remove solenoid coil and check again. If lift does not hold with solenoid coil removed, down valve cartridge should be removed and cleaned or replaced as necessary.
- Oil, line, hose or fitting may be leaking. Check and repair if necessary.
- "Check valve" in pump assembly may not be seating. This is indicated by the pump and motor turning backward on their own. Most of the time this condition is audible. Replace pump assembly.

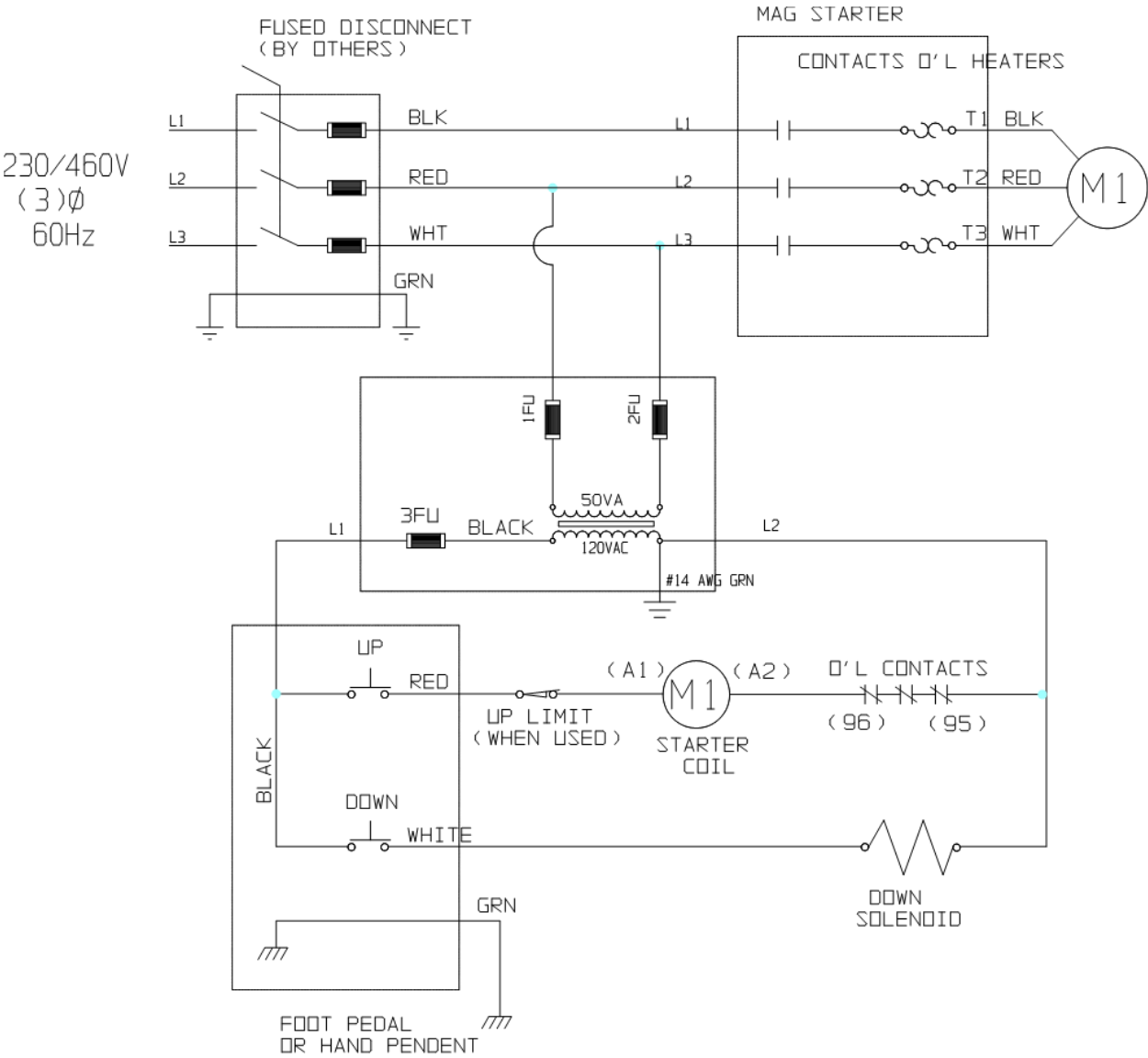
### **SAFETY WARNING**

**REPLACE ALL SAFETY DEVICES, GUARDS AND GUARDING PRIOR TO EQUIPMENT START-UP.**

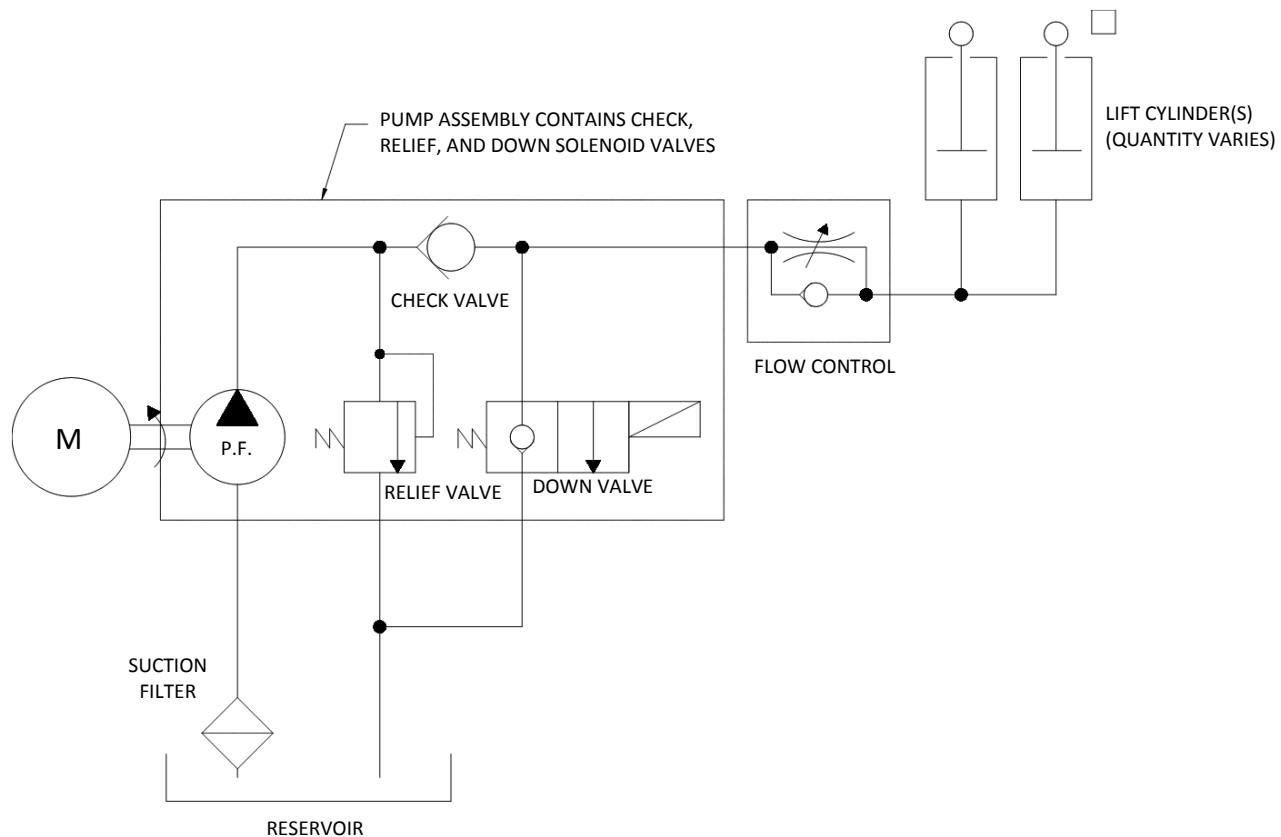
# ELECTRICAL SCHEMATIC: STANDARD SINGLE-PHASE WIRING SCHEMATIC



ELECTRICAL SCHEMATIC: STANDARD THREE-PHASE WIRING SCHEMATIC

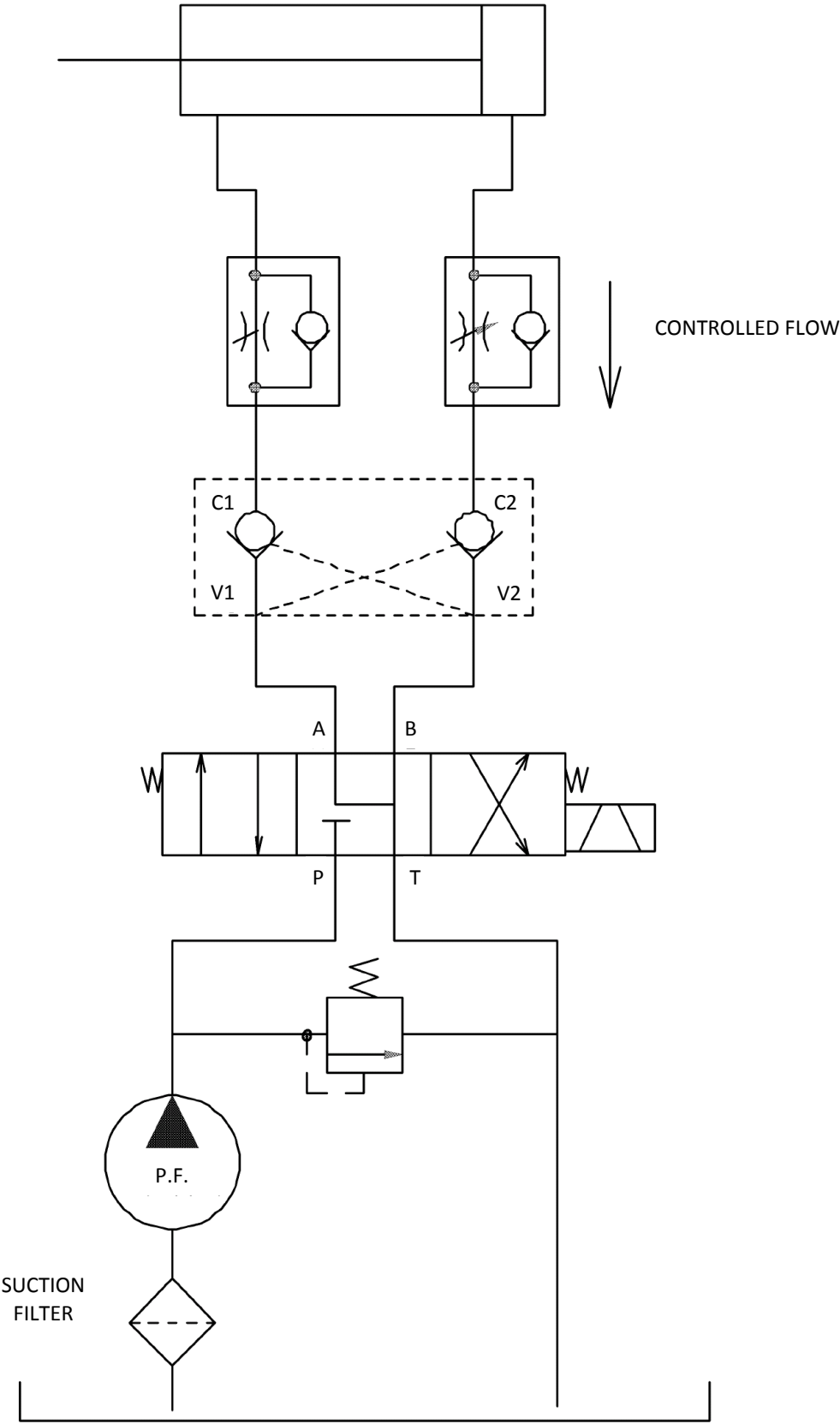


# HYDRAULIC SCHEMATIC: SHOP-AID SERIES SCISSOR LIFTS ONLY



HYDRAULIC SCHEMATIC: POWER-UP/POWER-DOWN SCHEMATIC

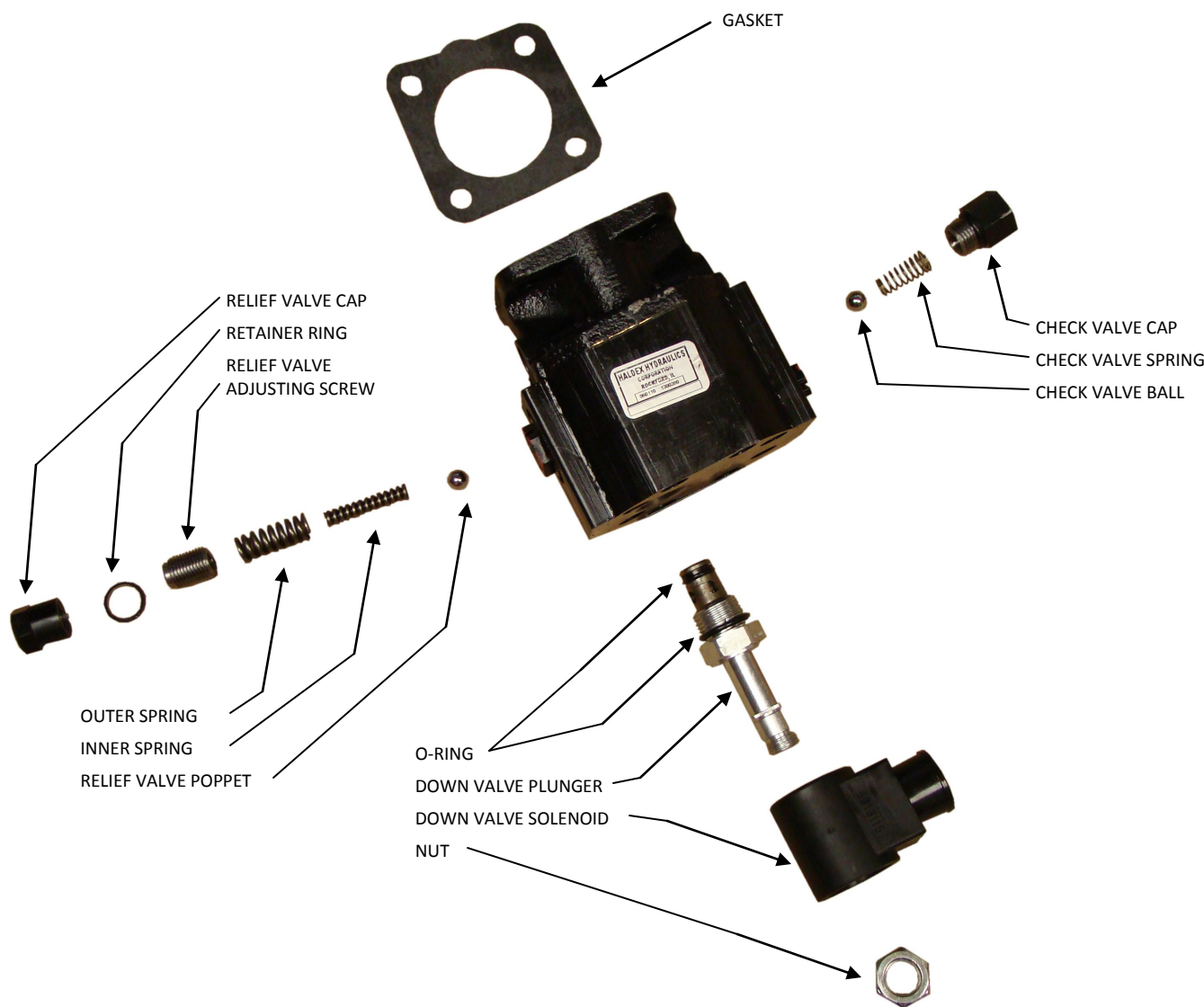
POWER UP / DOWN HYDRAULIC SCHEMATIC

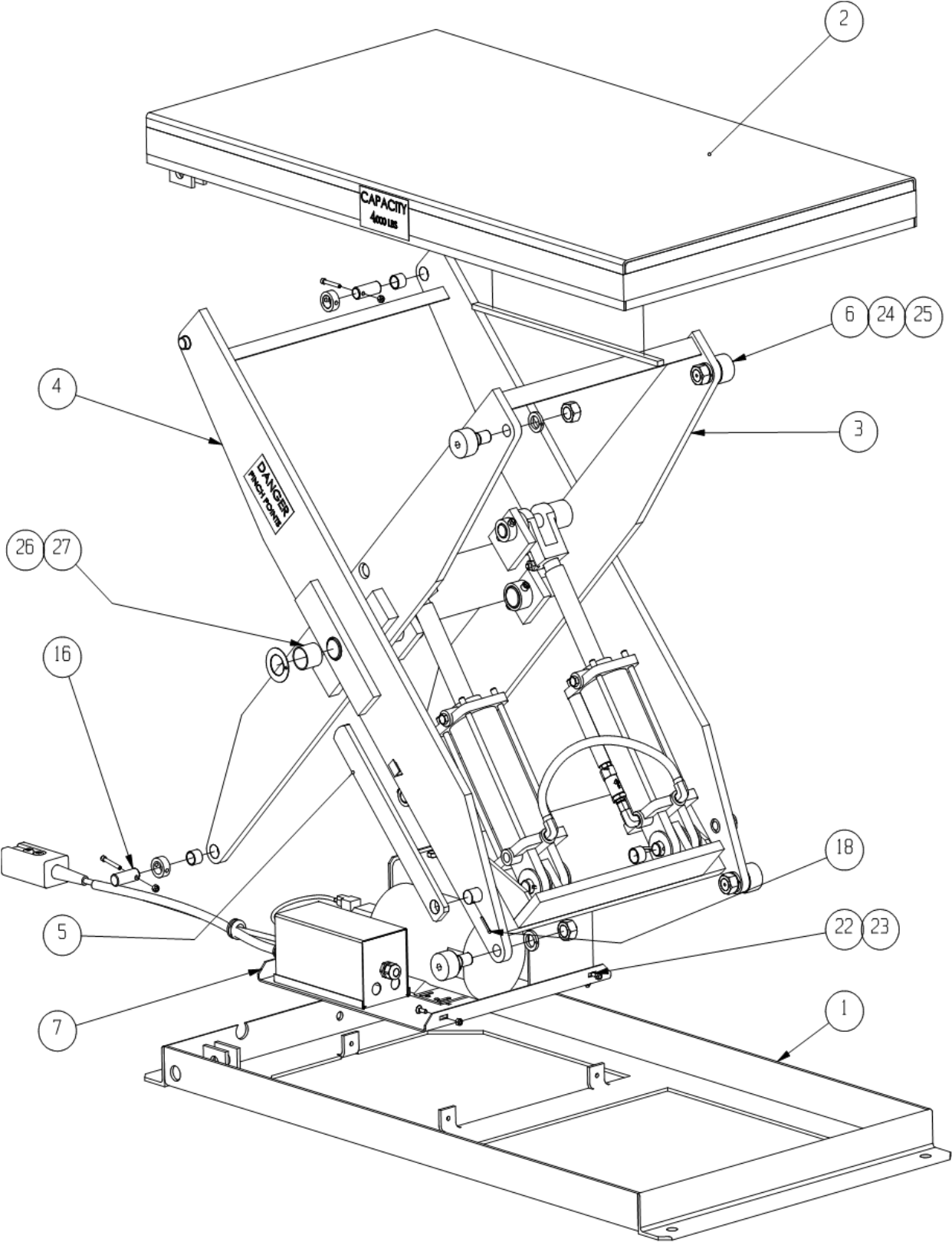


SCISSOR LIFT TECH HANDBOOK

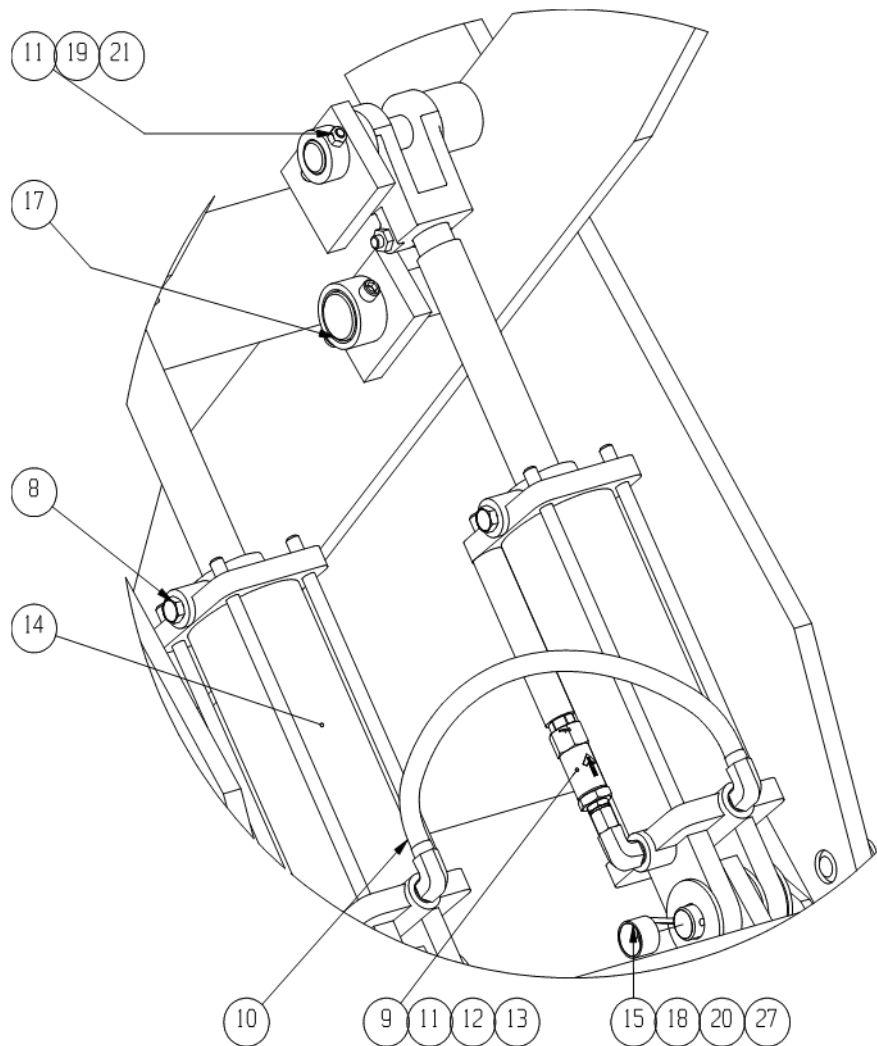
**HYDRAULIC SCHEMATIC: PUMP AND DOWN VALVE**

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PARTS LISTS: SCISSOR LIFT



| DETAIL | DESCRIPTION                  | DETAIL | DESCRIPTION           |
|--------|------------------------------|--------|-----------------------|
| 1      | BASE WELDMENT                | 15     | BUSHING               |
| 2      | PLATFORM                     | 16     | ARM PIVOT PIN         |
| 3      | INNER ARM WELDMENT           | 17     | CENTER PIVOT PIN      |
| 4      | OUTER ARM WELDMENT           | 18     | COTTER PIN            |
| 5      | MAINTENANCE BAR              | 19     | CLEVIS PIN: CAP END   |
| 6      | CAM FOLLOWER                 | 20     | CLEVIS PIN: ROD END   |
| 7      | INTERNAL POWER UNIT ASSEMBLY | 21     | SOCKET HEAD CAP SCREW |
| 8      | BREATHER VENT                | 22     | CARRIAGE BOLT         |
| 9      | FLOW CONTROL                 | 23     | NYLOCK NUT            |
| 10     | HYDRAULIC HOSE               | 24     | HEX NUT               |
| 11     | HYDRAULIC FITTING: NIPPLE    | 25     | LOCK WASHER           |
| 12     | HYDRAULIC FITTING: ADAPTER   | 26     | THRUST WASHER         |
| 13     | HYDRAULIC FITTING: ELBOW     | 27     | FLAT WASHER           |
| 14     | HYDRAULIC CYLINDER           |        |                       |



This image shows a full page of blank, lined paper. It features approximately 20 evenly spaced horizontal black lines across its entire width, providing a guide for handwriting or typing. The paper itself is a clean, off-white color.

## **ABBREVIATED WARRANTY**

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Omni Metalcraft Corp. warrants that the Equipment will be free of defects in workmanship and material (if properly installed, operated and maintained) for a period of one year or 2080 hours of use, whichever is sooner, from date of shipment to Customer, subject to the limitations hereunder set forth. If within the one year warranty period, Omni receives from the Customer written notice of any alleged defects in the Equipment and if the Equipment is not found to be in conformity with this warranty (the Customer having provided Omni a reasonable opportunity to perform any appropriate tests thereon) Omni will, at its option, either repair the Equipment or supply a replacement therefore.

\*The above stated information is in reference to a section of Omni Metalcraft's full Terms and Conditions of sale. This information does not constitute an agreement, but simply reference information. To obtain a full copy of Omni Metalcraft's Terms and Conditions of sale, please contact your sales representative.

# **Omni Metalcraft corp.**

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