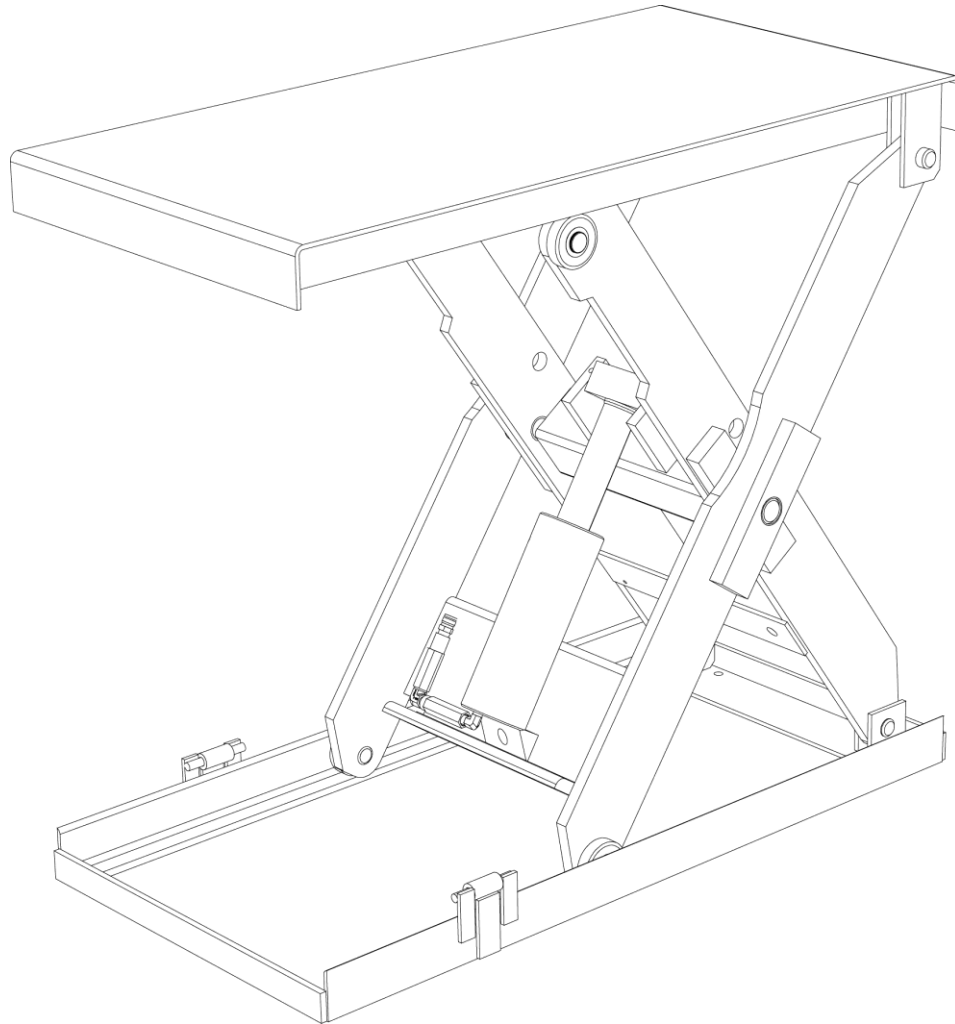


INSTALLATION, OPERATION AND SERVICE MANUAL

SERIES 35 SCISSORS LIFT



Autoquip
Innovative Lift Solutions

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Item #830S35

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I. INTRODUCTION AND WARRANTY

I.1 Introduction

Please read and understand this manual prior to installation or operation of this lift. Failure to do so could lead to property damage and/or serious personal injury. If you have any questions, call a local dealer or *Autoquip Corporation* at 1-888-811-9876 or 405-282-5200.

Please record the following information and refer to it when calling your dealer or Autoquip.

Model Number: _____ Serial Number: _____

Installation Date ____/____/____

I.1.1 Identification

When ordering parts or requesting information or service on this lift, PLEASE REFER TO THE MODEL AND SERIAL NUMBER. This information is on a nameplate attached to the leg assembly. Replacement parts are available from a local *Autoquip* distributor.

I.1.2 Inspection

Upon receipt of lift, perform a visual inspection to determine whether the lift has been damaged in transit. Any damage found must be noted on delivery receipt. In addition to this preliminary inspection, carefully inspect lift for concealed damage. Any concealed damage found that was not noted on delivery receipt must be reported in writing to the delivering carrier within 48 hours.

Use the following checklist for inspection of lift:

1. Examine entire unit for any signs of mishandling. Carefully check power unit and controls.
2. Thoroughly examine all connections, making sure they have not vibrated loose during transit, and inspect wiring for any signs of damage.
3. After installation, raise lift and inspect base frame, platform, scissors assembly, and cylinder plumbing connections.

I.1.3 Planned Maintenance Program

A local *Autoquip* representative provides a Planned Maintenance Program (PMP) for this equipment using factory-trained personnel. Call a local representative or *Autoquip Corporation* at 1-888-811-9876 or 405-282-5200 for more information.

I.2 Responsibility Of Owners/Users

I.2.1 Deflection

It is the responsibility of user/purchaser to advise manufacturer where deflection may be critical to the application.

I.2.2 Inspection & Maintenance

Lift must be inspected and maintained in accordance with Autoquip's operating/maintenance (O&M) manual and with other applicable safe operating practices.

I.2.3 Removal From Service

Any lift not in safe operating condition such as, but not limited to, excessive leakage, missing parts or fasteners, any bent or cracked structural members, cut or frayed electric, hydraulic, or pneumatic lines, damaged or malfunctioning controls or safety devices, etc. shall be removed from service until it is repaired to the original manufacturer's standards.

I.2.4 Repairs

All repairs must be made by a qualified technician in conformance with Autoquip's instructions.

I.2.5 Operators

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

I.2.6 Before Operation

Before using lift, operator must:

- Read and/or had explained, and understood, manufacturer's operating instructions and safety rules.
- Inspect lift for proper operation and condition. Any suspect item must be carefully examined and a determination made by a qualified person as to whether it constitutes a hazard. All items not in conformance with Autoquip's specification must be corrected before operating lift.

I.2.7 During Operation

Use lift in accordance with Autoquip's O&M manual.

- Do not overload lift.
- Verify all safety devices are operational and in place.
- Autoquip warrants this lift for 60,000 cycles each warranty year. This number of cycles represents normal, single shift duty. Exceeding this number of cycles shortens life of lift and length of your warranty.

I.2.8 Modifications Or Alterations

Modifications or alterations to this equipment may be made only with written permission of Autoquip. Unauthorized modification or alteration will void warranty.

I.3 Warranty

The user is solely responsible for using this equipment in a safe manner and observing all of the safety guidelines provided in the Owner's Manual and on the warning labels provided with the lift. If you are unable to locate either the manual or the warning labels, please contact Autoquip or access www.autoquip.com for replacement downloads or information.

Autoquip Corporation expressly warrants that this product will be free from defects in material and workmanship under normal, intended use for a period of Two (2) Years for Labor and all electrical, mechanical, and hydraulic components, parts or devices, and warrants the structure of the lift against breakage or failure for a period of Five (5) years. The warranty period begins from the date of shipment. When making a claim, immediately send your dealer or Autoquip notice of your claim. All claims must be received by Autoquip within the warranty time period. The maximum liability of Autoquip, under this Limited Warranty, is limited to the replacement of the equipment.

This warranty shall not apply to any Autoquip lift or parts of Autoquip lift that have been damaged or broken in transit/shipping, or due directly or indirectly to misuse, abuse, vehicle impact, negligence, faulty installation, fire, floods, acts of God, accidents, or that have been used in a manner contrary to the manufacturer's limitations or recommendations as stated in the manual, or that have been repaired, altered or modified in any manner outside of Autoquip Corp's manufacturing facility or which have not been expressly authorized by Autoquip.

Autoquip Corporation makes no warranty or representation with respect to the compliance of any equipment with state or local safety or product standard codes, and any failure to comply with such codes shall not be considered a defect of material or workmanship under this warranty. Autoquip Corporation shall not be liable for any direct or consequential damages resulting from such noncompliance.

Autoquip Corporation's obligation under this warranty is limited to the replacement or repair of defective components at its factory or another location at Autoquip Corp's discretion at no cost to the owner. This is owner's sole remedy. Replacement parts (with exception of electrical components) will be warranted for a period of ninety (90) days. Except as stated herein, Autoquip Corporation will not be liable for any loss, injury, or damage to persons or property, nor for direct, indirect, or consequential damage of any kind, resulting from failure or defective operation of said equipment. All parts used to replace defective material must be genuine Autoquip parts in order to be covered by this Limited Warranty.



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2. SPECIFICATIONS

2.1 Model Specifications

Model Number	Travel (inches)	Lifting Capacity (lbs)	Max. End Load Capacity (lbs)	Max. Side Load Capacity (lbs)	Base and Min. Platform Size (in)	Lowered Height (in)	Raise Time (sec)	Lower Time - Fully Loaded (sec.)	App. Ship Wt. (lbs.)
24S25	24	2500	2500	2500	24 x 36	6.5	8	4	500
24S40	24	4000	4000	4000	24 x 36	6.5	11	5.5	510
24S60	24	6000	4500	4500	24 x 36	6.5	16	8	530
24S80	24	8000	4500	4500	24 x 36	7	22	11	650
36S15	36	1500	1000	750	24 x 48	6.5	28	28	580
36S25	36	2500	2500	2500	24 x 48	6.5	12	6	610
36S40	36	4000	3500	3500	24 x 48	6.5	17	8.5	620
36S60	36	6000	3500	3500	24 x 48	6.5	25	12.5	650
36S80	36	8000	3500	3500	24 x 48	7	34	17	750
48S25	48	2500	2500	2500	24 x 64	7	16	8	820
48S40	48	4000	3500	3500	24 x 64	7	22	11	830
48S60	48	6000	3500	3500	24 x 64	7	33	16.5	860
48S80	48	8000	3500	3500	24 x 64	7.5	44	22	960
60S25	60	2500	2500	2500	32 x 87	8	22	11	1750
60S40	60	4000	3500	3500	32 x 87	8	44	22	1800
60S60	60	6000	3500	3500	32 x 87	8	44	22	1850
60S80	60	8000	8000	8000	32 x 90	12	36	36	4400
60S100	60	10000	10000	9000	32 x 90	12	36	36	4500
60S120	58	12000	12000	10000	32 x 90	12.5	60	60	4600
60S150	58	15000	14000	12000	32 x 90	12.5	60	60	4700

2.2 Lift Specifications

There are many custom designs whose specifications may vary from those published for standard models. Please consult the specific General Arrangement (GA) Drawing to obtain the specifications for application-specific designs.

2.3 Load Capacity

Load capacity rating is stamped on a metal nameplate attached to lift. This figure is a net capacity rating for a lift furnished with a standard platform. If optional items are installed on lift after leaving manufacturer, deduct weight of these from load rating to obtain net capacity.

Do not exceed rated capacity of lift. Loading lift beyond its rated capacity is unsafe, will shorten operational life of lift, and will void warranty.

2.4 Unbalanced Loading

The stabilization provided is basically for balanced loads. If special attachments extend beyond the length and/or width dimensions of platform, end and/or side load capacity is reduced 2% for each one-inch extension from edge of platform. If load is rolling onto platform (in any but fully-lowered position) end and/or side load capacity is reduced by dividing the rated end/side load by 1.50 to establish an available "axle" load.

2.5 Pump Pressure

This lift incorporates a unique, positive displacement pump. Therefore, standard factory models of same manufacture cannot replace it.

Pump can operate efficiently at intermittent pressures up to 3200 PSI and continuous duty to 2500 PSI. The factory installed safety relief valve is factory-set to stay within parameters of pump and lift requirements.


2.6 Lift Duty

It is the responsibility of the user to notify Autoquip whenever a specific application is likely to demand "above normal" duty from lift. Above normal duty typically requires supplemental design features to enhance serviceable life of lift and to avoid loss of warranty.

3. SAFETY

3.1 Safety Signal Words

This Owner's Manual covers Series 35 Lift models produced by Autoquip. Before installing, operating or servicing lift, you must read, understand and follow the instructions and safety warnings in this manual. Your lift may not be equipped with some optional equipment shown in this manual.

The safety information in this manual is denoted by the safety alert symbol: 

The level of risk is indicated by the following signal words.

DANGER

DANGER – Indicates a hazardous situation, which, if not avoided, will result in death or serious injury.

WARNING

WARNING – Indicates a hazardous situation, which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION – Indicates a hazardous situation, which, if not avoided, could result in minor or moderate injury.

NOTICE

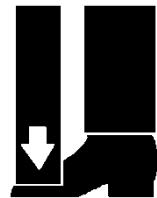
NOTICE – Indicates a situation that could result in damage to the lift or other property.

3.2 Installation

WARNING

Do not install lift in a pit unless pit has a bevel toe guard or other approved toe protection. A shear point can exist which can cause severe foot injury.

Lift platforms traveling below floor levels may create a toe hazard as load passes top edge of pit. This may require guarding in accordance with Federal Regulations. Guarding must be installed prior to operating lift.



WARNING

Prevent serious injury or death.

Depending on model, standard weight of lift ranges from 500 – 4700 lbs.

Use a properly rated lifting device to move and install lift.

3.3 Operation

⚠ WARNING

Prevent serious injury or death.

Scissor lifts are designed for a specific load and application. Do not change load or application from original design.

Overloading, or uneven loading, could result in load instability and cause serious personal injury.

Stay clear of lift while lift is in motion.

Never stand, sit or ride on lift unless equipped with OSHA-compliant personnel guarding on the platform.

⚠ WARNING

Prevent serious injury or death.

Lifts which travel to an elevation above floor level where distance between floor and the underside of lift platform exceeds 60" must have the scissors mechanism guarded per ANSI MH29.1.

3.4 Hydraulics

Fluids can be hazardous. Before servicing lift, check Material Safety Data Sheet (MSDS) to understand the product, safe handling procedures, and first aid measures relating to product. Follow this information when servicing or repairing lift.

Do not drain or pour any fluids or lubricants into ground. Check with local environmental agencies, recycling centers, or your Autoquip dealer for correct disposal information.

⚠ CAUTION

Any time velocity fuses have been tripped, investigate cause of trip and verify necessary corrective actions have been taken prior to operation of lift.

⚠ WARNING

Prevent serious injury or death.

Do not attempt to remove Hydraulic Velocity Fuse (HVF) until maintenance device securely supports lift and all hydraulic pressure has been relieved.

HVF is attached to elbow fitting in pressure port of cylinder. Do not use a swivel fitting between HVF and cylinder. If HVF is installed improperly, it will not lock up in event of a hydraulic line failure.

⚠ WARNING

Pressurized fluids can penetrate the skin.

Hydraulic hoses can fail from age, damage and exposure.

Do not search for hydraulic leaks without body and face protection. A tiny, almost invisible leak can penetrate the skin, thereby requiring immediate medical attention.

Use wood or cardboard to detect hydraulic leaks, never your hands.



⚠ WARNING

Spilled fluids and lubricants may be slippery and may also present a fire hazard.

Clean up spilled fluids and lubricants.



3.5 Maintenance

⚠ WARNING

Prevent serious injury or death.

Disconnect and/or lock out electrical supply to power unit prior to any maintenance being performed.

⚠ WARNING

Prevent serious injury or death.

Never go under lift platform until load is removed and scissors mechanism is securely blocked in raised position with maintenance devices.



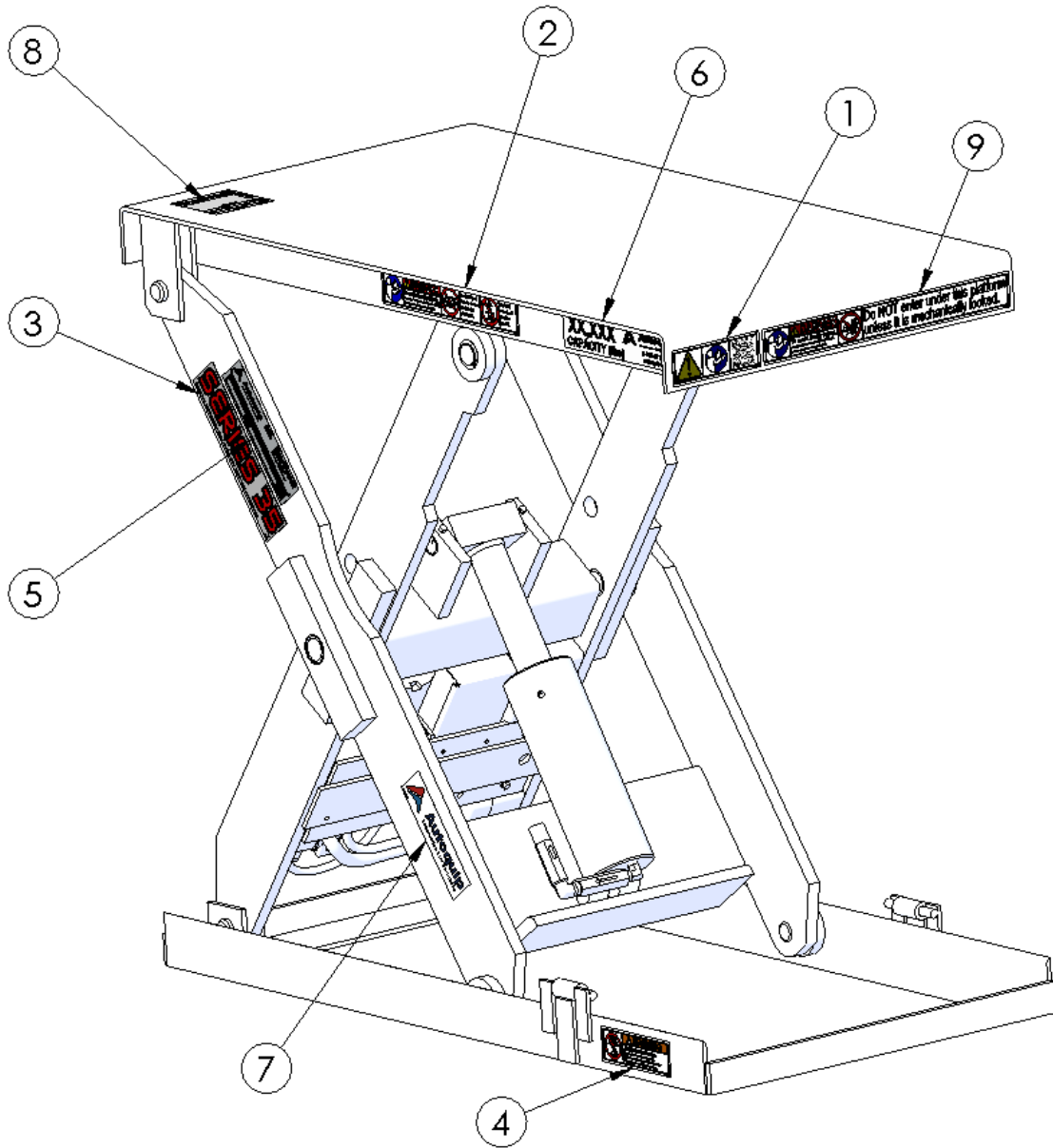
3.6 Modifications

⚠ WARNING

Prevent serious injury or death.

Do not modify lift. Autoquip cannot foresee and is not responsible for injury or damage which results from unauthorized modifications or misuse of lift.

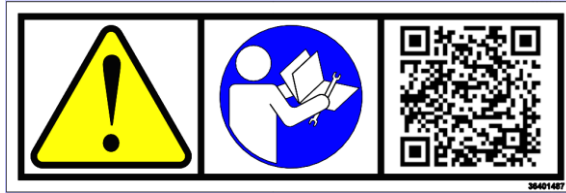
3.7 Labels



⚠ WARNING

To protect against death or serious injury, all labels must be on lift and must be legible.

If any of these labels are missing or cannot be read, call Autoquip for replacement labels.



1 – 36401487



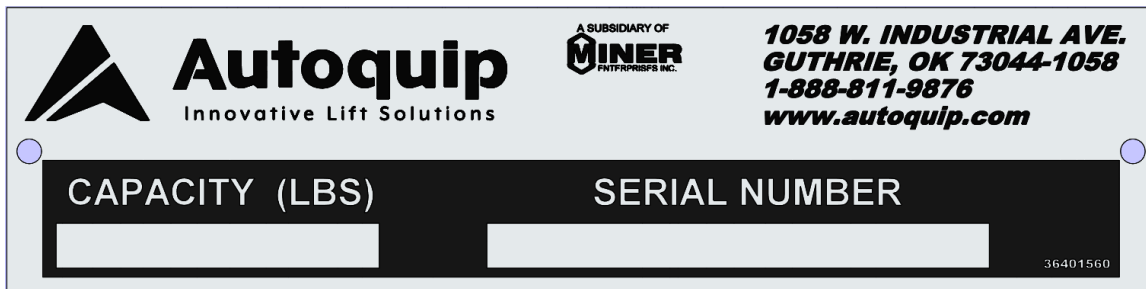
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3 – 36402980



4 – 36400257



5 – 36401560

XX,XXX
CAPACITY (lbs)



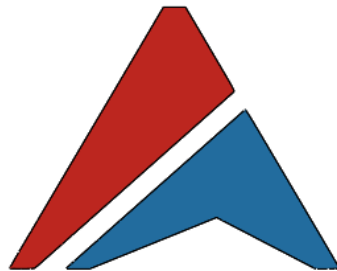
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autoquip.com

6 – DECAL_CAPACITY



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36403220

7 – 36403220

JOB NO.		MODEL NO.	
MOTOR	VOLTS	CYCLE	PHASE
CONTROL	VOLTS		
WIRE CODE			
BLACK –			
WHITE –			
RED –			
ORANGE –			
BLUE –			
GREEN –			
<p>TO OBTAIN PROPER ROTATION ON 3 PHASE UNITS-RUN PUMP MOTOR 5 TO 10 SECONDS ONLY- IF LIFT DOES NOT RISE CHANGE ROTATION.</p> <p style="text-align: right;">PN 364-0334-3</p>			

8 – 36403343

	⚠ DANGER To avoid bodily injury, read and understand all instructions before operating or servicing lift.		Do NOT enter under this platform unless it is mechanically locked.
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9 – 36433670

4. INSTALLATION

4.1 Remote Power Unit Installation

1. The remote power unit is to be located in an area protected from the elements and should be installed prior to the lift to facilitate lift operation during installation into the pit.
2. The remote contractor power unit is equipped with power unit mounting brackets and can be wall or floor mounted using these brackets. If equipped with a vertical power unit, optional power unit mounting brackets must be used for wall mounting.
3. The electrical work is to be done in accordance with local codes by a qualified electrician. See the "Maintenance" section for the standard wiring diagram.
4. If permanent electrical work is not complete, some means of temporary power with an on/off device for the motor will be required.
5. Fill the reservoir with oil per instructions in the "Maintenance" section.

4.2 Power Unit Wiring

4.2.1 Intermittent Remote Power Unit

1. The Intermittent Power Units utilize a 1-½ or 5 HP / 208-230-460 Volt / 60 hertz / 3 phase "Super-Torque" intermittent duty motor with (one full lift cycle per 2 minute period) driving a high pressure positive displacement pump assembly with an internal relief valve, check valve and down solenoid valve.
2. Because an Autoquip "Super-Torque" motor actually delivers substantially more horsepower than the nameplate rating, it must always be wired for heavier current-draw than standard motors of the same nameplate rating. However, because of the "Super-Torque" motor's starting efficiency and superior running characteristics, circuit components do not have to be as large as for standard motors of equal delivered horsepower.

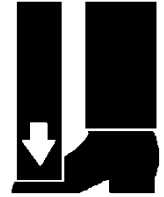
4.2.2 Heavy Duty Remote Power Unit

1. The Vertical 'HD' Power unit utilizes a 5 HP/ 208-230-460 Volt / 60 hertz / 3 phase Heavy Duty motor, (with a 30 minute continuous duty rating). The power unit is coupled with a high-pressure positive displacement gear pump, and Autoquip Corporation's patented Deltatrol valve assembly.
2. The motor connection diagram should be referenced in connecting the motors to a power source. Remember that heavy wire must be used all the way to the power source.

4.3 Pit Installation

⚠ WARNING

Do not install lift in a pit unless lift has a bevel toe guard or other approved toe protection. A shear point may exist which can cause severe foot injury.



Lift platforms traveling below floor levels may create a toe hazard as load passes top edge of pit. This may require guarding in accordance with ANSI MH29.1. Guarding must be installed prior to operating lift.

1. Check pit dimensions. Pit must be 2" longer and 2" wider than lift platform to allow a 1" gap between platform and pit. Pit depth should allow 1/2" for shims or grout.
2. Conduit diameter must be a minimum of 3" with long radius sweeps for necessary hydraulic hosing and field wiring.
3. Verify installation area is clean before starting. Check mounting surface of pit floor with a level or straight edge. If floor is not level, add shims or grout under entire perimeter of base to achieve a level and flat base installation. A level base is essential for proper wheel tracking and smooth lift operation.

⚠ WARNING

Prevent serious injury or death.

Depending on model, standard weight of lift ranges from 500 – 4700 lbs.

Use a properly rated lifting device to move and install lift.

4. Lower lift into pit and check for proper height. Lift must be solid and flush with pit curb angle framing (D). If needed, shim to desired height. DO NOT “spot” shim. Shim along full length of frame. This will prevent frame from sagging under load.
5. Remove the shipping bolt and eye bolts from the lift and hydraulically raise the platform. Failing to remove the shipping bolts before operation will cause permanent damage to the lift.

⚠ WARNING

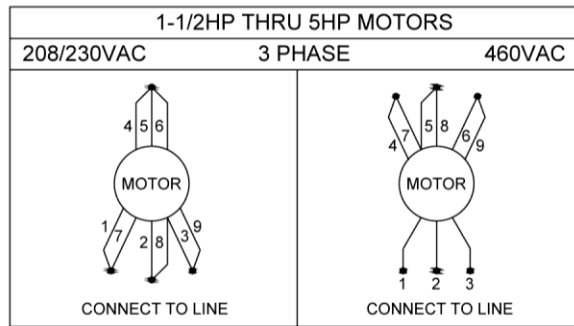
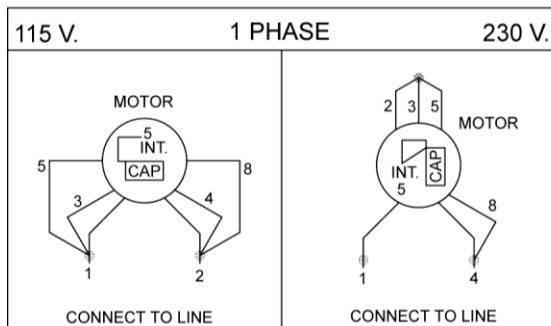
Prevent serious injury or death.

Electrical service installation must be performed by a licensed electrician and conform to all local and national electrical codes.



NOTE: For larger horsepower motors, consult factory.

Motor Details					Full Load Amps			
HP	HZ	PH	RPM	Time Rating	115V	208V	230V	460V
1/2	60	1	1725	2 Min.	15.0	7.7	7.7	-
3/4	60	1	1725	2 Min.	16.6	8.3	8.3	-
1-1/2	60	3	3450	2 Min.	-	5.3	5.3	2.65
5	60	3	3600	2 Min.	-	15.8	14.8	7.4
5	60	3	1760	Continuous	-	13.6	12.6	6.3



6. Temporarily connect electrical service and hydraulic hoses. The hose connection on the end of the base frame is 1/2" female NPT.

Hydraulic Piping/Hose Size

Up to 25 feet	1/2" ID
26 feet to 50 feet	3/4" ID
Over 50 feet	1" ID

7. Check the routing of the temporary hydraulic lines to assure that the hose is clear of legs, base frame, and platform when lift is in the lowered position.

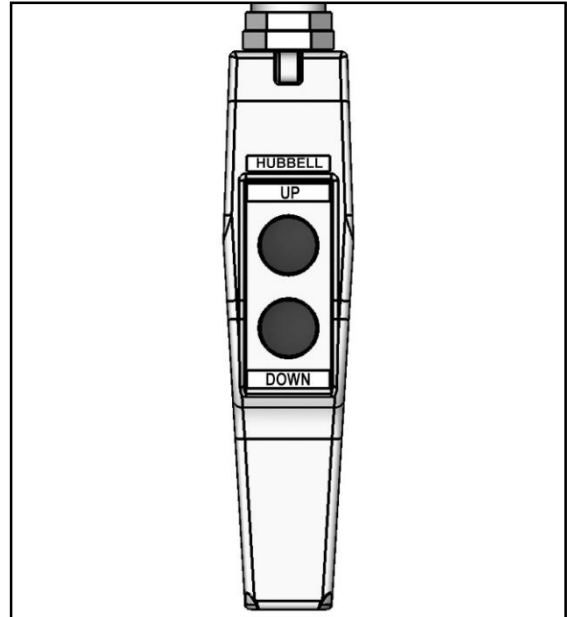
8. Fill hydraulic reservoir with proper type and volume of fluid.

9. Press "UP" button and raise lift one foot.

10. Press "DOWN" button to fully lower lift. Continue to hold down button for 60 seconds. Repeat procedure five to seven times to bleed air out of hydraulic system.

11. Raise and lower lift as needed to make positioning adjustments.

12. Adjust platform to a clearance of 1" minimum around perimeter between platform and pit angle.



⚠ WARNING

NEVER go under a raised lift platform until load is removed and lift is securely blocked in raised position with maintenance devices.

See "Maintenance Device" section of this manual.

Lock-out/tag-out power source.



13. Base frame of lift has pre-drilled holes for anchoring to the floor. Anchor lift to floor. Lifts with oversize platforms have minimum pull out requirements of 2,000 lbs. for each anchor. See "Shimming And Anchoring Lift To Concrete".

14. Make permanent electrical and hydraulic connections and operate lift through a few cycles.

15. Clean up debris and spilled oil from area. Dispose of oil in an environmentally safe manner.

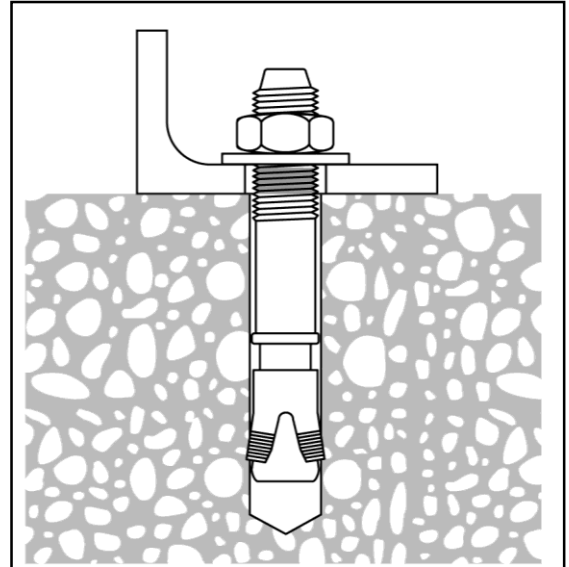
16. Touch-up paint is available from *Autoquip* for repair of damaged paint surfaces.

17. Train personnel on lift operation, all safety features and procedures.

4.4 Shimming And Anchoring Lift To Concrete

Recommended concrete anchor bolts are: HILTI “Kwik-Bolt”, Molly Parabolts or similar.

1. Verify lift is positioned correctly.
2. Drill holes in concrete as specified by anchor bolt manufacturer.
3. Install and tighten anchors as specified by anchor bolt manufacturer.
4. After lift has been aligned, leveled and shimmed, and anchors have been installed, pour grout under entire base frame.
5. When grout has set and cured, tighten nuts on anchor bolts.
6. Route hydraulic hose or electrical cord through conduit in pit wall.



4.5 Accordion Skirt Installation

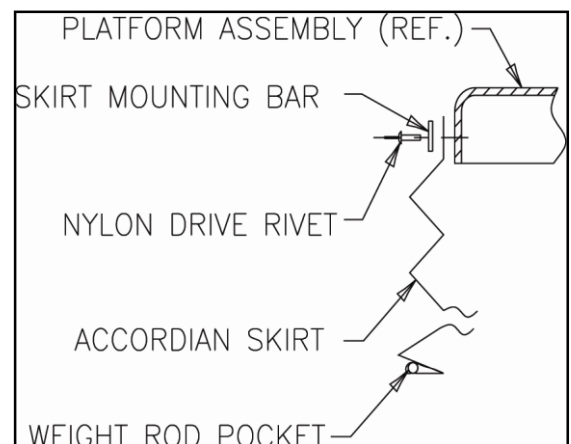
1. Position platform in raised position. Engage maintenance locks (see “Lift Blocking Instructions” section). Position accordion with weight rod pocket at bottom and mounting collar at top. The breathable material when provided must be positioned at top of skirt with mounting collar.
2. Slip skirt over end of platform. Turn skirt as required to slide over other end of platform and leg assembly. The skirt should be in position under platform while enveloping base assembly.
3. Select from the following mounting configurations.

Mounting Accordion Skirt On Platform Side

Raise one side of skirt along with a skirt-mounting bar (1/8" x 1") to (1) side of platform. When possible, center skirt-mounting collar and skirt-mounting bar (1/8" x 1") on platform side.

Align pre-drilled holes in side of platform with skirt-mounting bar holes and punch holes in skirt-mounting collar.

Push a nylon drive rivet through each hole in skirt-mounting bar. Hammer aluminum pin into rivet until flush with rivet head. Repeat mounting process for remaining sides of accordion skirt.



Mounting Accordion Skirt Under Platform

Raise one side of skirt along with a skirt-mounting bar (1/8" x 1") to underside of platform skirt support bar. When possible, center skirt-mounting collar and skirt-mounting bar (1/8" x 1") on platform support bar.

Align pre-drilled holes in skirt support bar with skirt-mounting bar holes and punch holes in skirt-mounting collar.

Push a nylon drive rivet through each hole in skirt-mounting bar. Hammer aluminum pin into rivet until flush with rivet head. Repeat mounting process for remaining sides of accordion skirt.

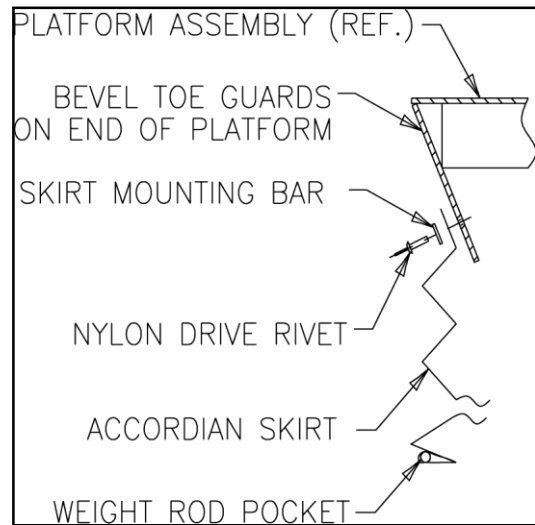
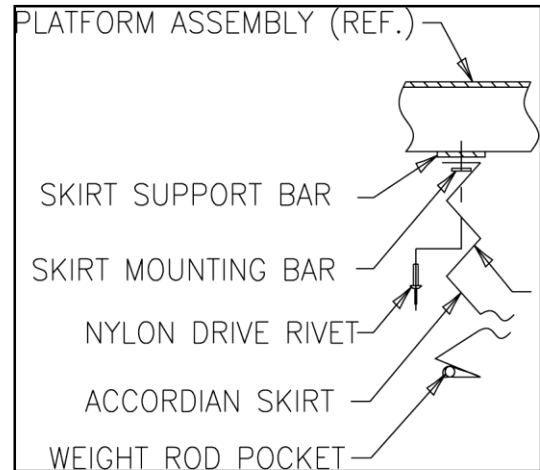
Mounting Accordion Skirt On Bevel Toe Guard

Raise one side of skirt along with a skirt-mounting bar (1/8" x 1") to side of bevel toe guard. When possible, center skirt-mounting collar and skirt-mounting bar (1/8" x 1") on platform bevel toe guard.

Align pre-drilled holes in bevel toe guard with skirt-mounting bar holes and punch holes in skirt-mounting collar.

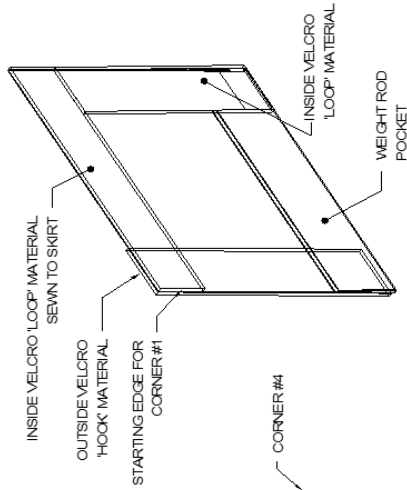
Push a nylon drive rivet through each hole in skirt-mounting bar. Hammer aluminum pin into rivet until flush with rivet head. Repeat mounting process for remaining sides of accordion skirt.

4. Install weight rods into weight rod pockets at bottom of accordion skirt. Install spring tempered wire rods into pocket of black convolutions.



4.6 Toe Indicator Skirt

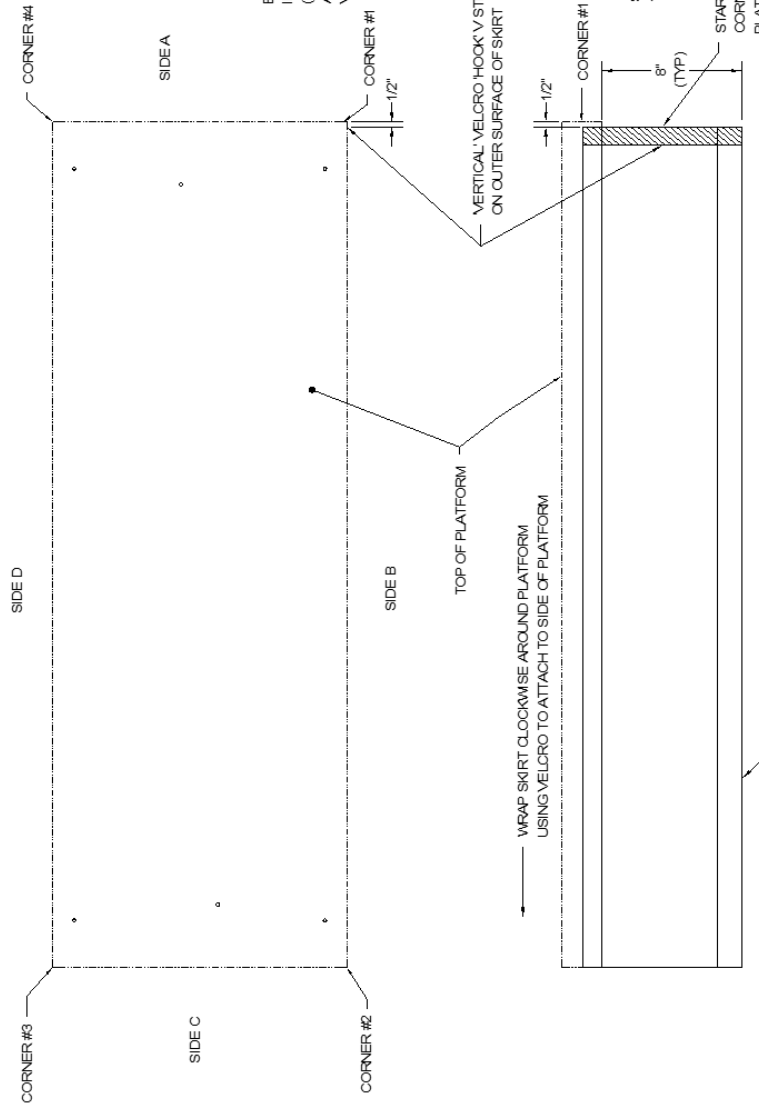
1. Position the platform in the raised position. Install the maintenance locks (see “Lift Blocking Instructions”). Position the Toe Indicator skirt with the weight rod pocket at the bottom and the Internal Horizontal Velcro strip at the top. See Toe Indicator Drawing.
2. The skirt should be mounted to the platform sides to allow the skirt to extend approximately 8” below the bottom of the platform, see Toe Indicator Drawing. At the Skirt starting point, the skirt should have a Vertical Exterior Velcro strip and an Internal Horizontal Velcro strip. Use the Horizontal Velcro strip with adhesive back to attach the skirt to the platform sides, typical for all (4) platform sides. Start the skirt 1/2” from Corner #1 and wrap the Toe Indicator Skirt ‘Clockwise’ around the side of the platform. Keep the skirt smooth and tight during the clockwise installation.
3. Before overlapping the skirt at Corner #1, insert the Weight Rods into the weight rod pockets. (1) Weight Rod into Side ‘A’ pocket and (1) Weight Rod into Side ‘B’ pocket. Check the opposite ends of each weight rod to insure the weight rod is fully inserted into each weight rod pocket. Wrap the skirt around Corner #1 and attach the Vertical Interior Velcro strip on Side ‘A’ to the Vertical Exterior strip on Side ‘B’.
4. After installing the Weight Rods in Side A & Side B, we need to install Weight Rods into Side ‘C’ and ‘D’. At Corner #3, on the OUTSIDE surface cut a 1” (max.) Vertical slot in the TOP of the weight rod pocket. Insert weight rods in this slot, (1) for Side ‘C’ and (1) for Side ‘D’. The un-cut portion of the weight rod pocket will retain the weight rods.



TOE INDICATOR SKIRT

BEFORE OVERLAPPING SKIRT AT CORNER #1
 INSERT WEIGHT RODS IN WEIGHT ROD POCKET.
 (1) FOR SIDE 'A' AND (1) FOR SIDE 'B'. WRAP SKIRT
 AROUND CORNER AND ATTACH TO VERTICAL
 VELCRO STRIP.

AT CORNER #3, ON OUTSIDE SURFACE,
 LOCATE OR CUT 1" SLOT IN TOP OF
 WEIGHT ROD POCKET. INSERT RODS
 INTO SLOT, (1) FOR SIDE 'C' AND (1) FOR
 SIDE 'D'



WRAP SKIRT CLOCKWISE AROUND PLATFORM
 USING VELCRO TO ATTACH TO SIDE OF PLATFORM

HANGING TOE INDICATOR SKIRT
 W/ WEIGHT ROD POCKET ON
 BOTTOM

START PLACING SKIRT APPROX.
 1/2" FROM CORNER #1

START SKIRT INSTALLATION AT
 CORNER #1 ON SIDE OF
 PLATFORM (AS SHOWN)

Autoquip		REV. DESCRIPTION	BY	DATE
REFERENCE DRAWING	FORMING TITLE	FIELD INSTALL HANGING TOE INDICATOR SKIRT		
APPROVING NUMBER	DRAWN BY: DATE	CHK. DATE	ISS. NUMBER	REV.
	JP 1/8/06	10F1	2	534-2900-5
				B

Toe Indicator Skirt Installation

5. OPERATION

5.1 Raise And Lower Lift

⚠ WARNING

Prevent serious injury or death.

Before operating lift, all personnel interacting with lift must read, understand and follow instructions and safety warnings in this manual.

NOTICE

Adjusting safety relief valve may result in premature motor failure.

Do not adjust safety relief valve.

Raising loads exceeding rated capacity of lift may result in excessive wear and damage to lift.

⚠ WARNING

Prevent serious injury or death.

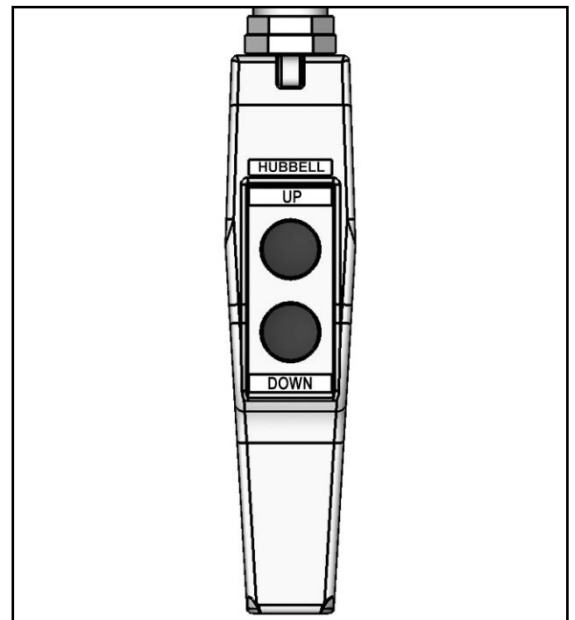
Personnel must maintain a safe operating distance of at least 36” any time lift is operated.

1. Verify all personnel are away from lift.
2. Press “UP” button to raise lift. Release button when lift reaches desired position.

NOTICE

Do not operate lift on relief for more than a few seconds. When on relief, valve will make a squealing sound.

3. Press "DOWN" button to lower lift. Release button when lift reaches desired position.
4. For lifts supplied with throw-over bridges, make sure bridges are in the stored (raised) position prior to raising or lowering the lift, and when backing up trucks for loading/unloading - to ensure that the bridges will clear all possible obstructions and contact with a moving truck.



Note: Bridges that hang below 45 degrees are in violation of ANSI Standard MH29.1-2012 paragraph 4.12.2 which states “When a hinged bridge is in its fully lowered position and not resting on a truck bed or landing, it should hang down at an angle not to exceed approximately 45 degrees from horizontal....” Autoquip’s standard is to allow 20° of drop below horizontal.

6. MAINTENANCE

6.1 Maintenance Device

⚠ WARNING

NEVER go under a raised lift platform until load is removed and lift is securely blocked in raised position with maintenance device.

Lock-out/tag-out power source.



This procedure describes the only factory-approved method of working under a lift. Follow these instructions EVERY time you plan to reach or crawl beneath the lift to perform service or maintenance – no matter how momentary that might be.

If the factory-provided maintenance device is damaged or missing, stop immediately and consult the factory for assistance. The manufacturer is not liable for your failure to use the approved maintenance leg and procedures that have been provided.

1. All loads must be removed from the lift prior to engaging the maintenance devices. These devices are designed to support an unloaded lift only. Failure to remove the load from the lift prior to blocking could cause the failure of the maintenance devices and allow the lift to fall unexpectedly. This can result in personal injury or death.
2. Raise the lift to its fully raised position. If you do not, the maintenance devices may not be able to be placed properly in their designed blocking position.
3. The lift will be provided with two (2) maintenance devices stored on the outside of the base frame. The devices must be securely placed inside the base frame (B) and thus in the roller path of the lift (**See Figure 6.1 or 6.2**).

A - Maintenance Devices Disengaged

B - Maintenance Devices Engaged

4. Lower the lift platform until the leg rollers or platform make contact with both maintenance device(s). Re-check to ensure that both device(s) are fully and properly engaged. If the maintenance device(s) is/are not fully engaged the lift could fall unexpectedly.

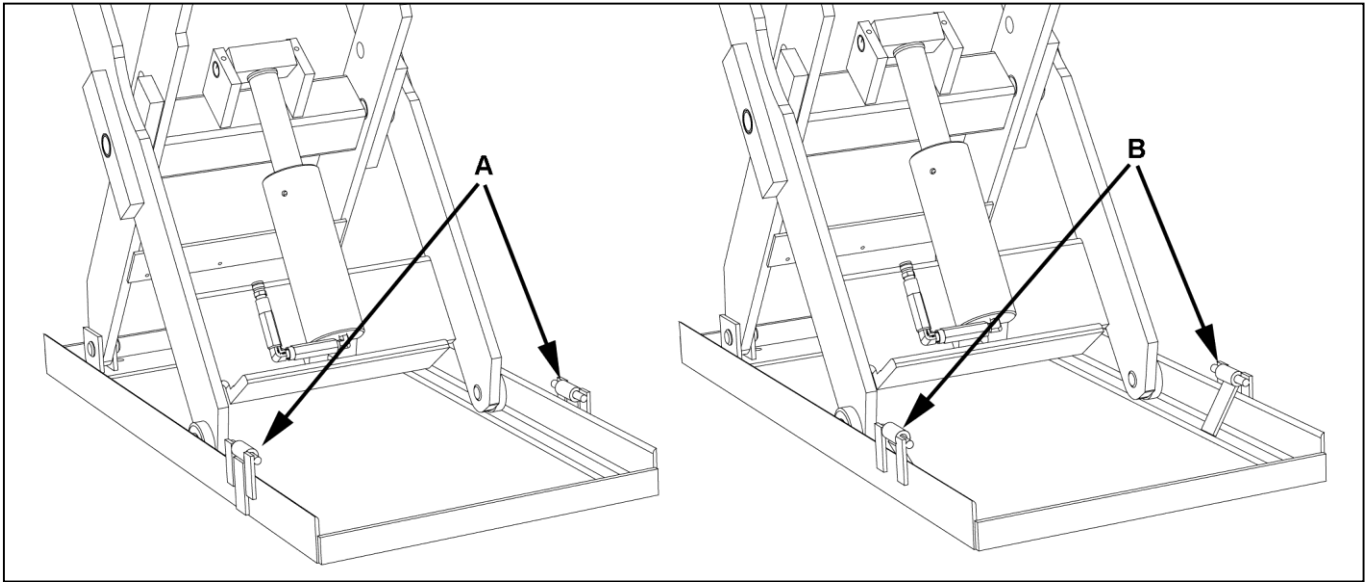


Figure 6.1

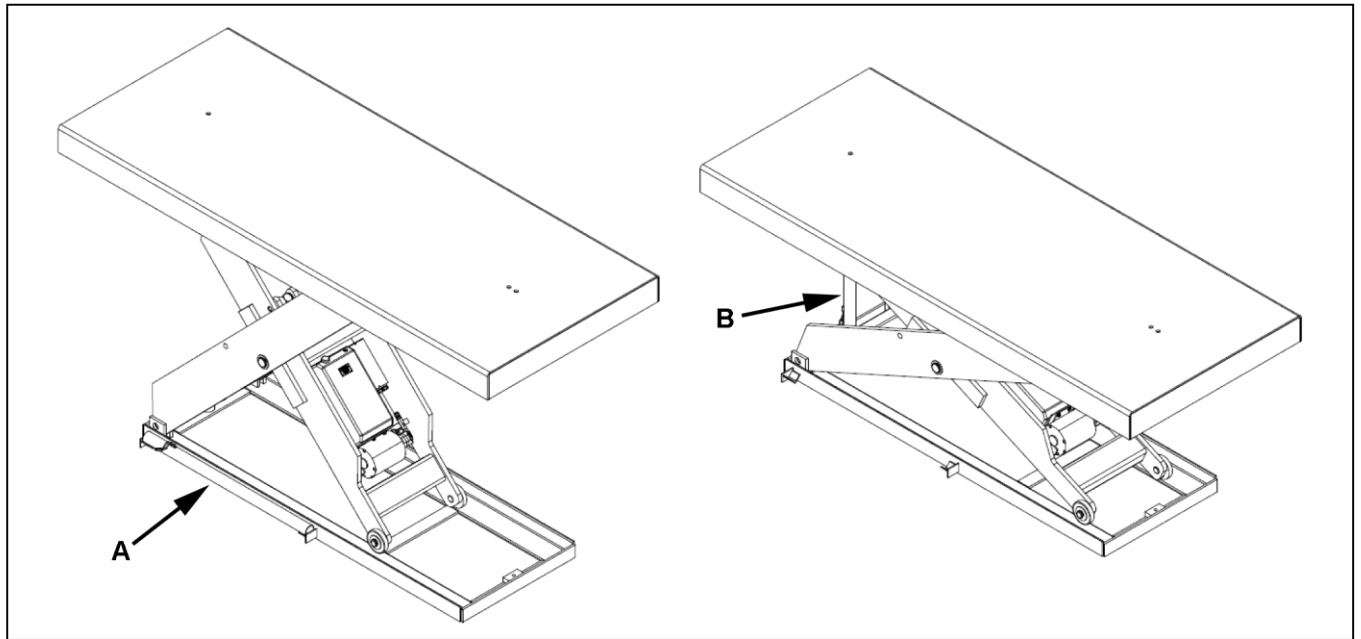


Figure 6.2

⚠ DANGER

If for any reason you are unable to lower the lift completely onto the maintenance devices, stop immediately and consult the factory. Failure to properly use the factory approved maintenance devices could result in severe injury or death.

5. Once the maintenance devices are properly and securely engaged, continue to press the down button, valve or switch for an additional 5-10 seconds to relieve all pressure in the hydraulic system (it could take longer in a pneumatic system).

⚠ WARNING

Failure to relieve operating system pressure could result in the sudden and unexpected release of high-pressure fluids (or air) during maintenance and/or repair of the lift, resulting in severe injury or death.

6. Follow OSHA electrical lock-out/tag-out procedures. Disconnect and tag all electrical and/or other power sources to prevent an unplanned or unexpected actuation of the lift.
7. Once inspection or work is complete, reverse the performance of the steps above to raise the lift off the maintenance locks and place the locks back into the designated storage position.

⚠ DANGER

HIGH VOLTAGE!! – Disconnect and/or lock out the electrical supply to the power unit per OSHA regulations prior to any installation or maintenance being performed.

6.2 Routine Maintenance

⚠ WARNING

Prevent serious injury or death.

Lock-out/tag-out power source prior to any maintenance being performed.

⚠ WARNING

Prevent serious injury or death.

Never go under lift platform until load is removed and scissors mechanism is securely blocked in raised position with maintenance devices.

See Maintenance Devices section.

⚠ WARNING

Pressurized fluids can penetrate the skin.

Hydraulic hoses can fail from age, damage and exposure. Do not search for hydraulic leaks without body and face protection. A tiny, almost invisible leak can penetrate the skin, requiring immediate medical attention.

Use wood or cardboard to detect hydraulic leaks, never your hands.



⚠ WARNING

Spilled hydraulic fluid is slippery and may also present a fire hazard.

Clean up spilled hydraulic fluid.



Normally, scissor lifts will require very little maintenance. However, a routine maintenance program could prevent costly replacement of parts and/or downtime.

6.2.1 Every Day Or 10 Hours Of Operation

- Check reservoir fluid level.
- Check for fluid leaks.
- Check all hoses and electrical cords for cracks, abrasions, twisting, etc. Small leaks at connections can be remedied by tightening connections or replacing faulty component.
- Check that oil pressure does not exceed 3,000 psi.
- Check all pivot joints & roller bearings for noise and wear.
- Check overall condition of unit (i.e. bends, breaks, loose or missing screws, etc.).

6.2.2 Every Month Or 100 Hours Of Operation

- Check quality of oil. Replace if discolored (oxidized), cloudy, or otherwise contaminated. Do not overfill reservoir. Always use clean fluid.
- Inspect lift cylinder rods for scoring and leaking, wipe away any foreign material.
- Inspect all structural and mechanical components for cracked, or broken welds and any distortion caused by collision, overloading, or other misuse.
- Inspect snap rings/bolts at rollers & pivot points for proper retention & tightness.
- Inspect cylinder trunion pin for proper retention.

When all checks have been completed, start unit and operate through all functions. Inspect all components for signs of noise, vibration, erratic movement, and any other abnormal behavior.

6.2.3 Every Year Or 1000 Hours Of Operation

- Change oil and clean reservoir. Always use clean fluid. Never return fluid from drip pans, pit, etc. back to reservoir. Dispose of and handle used fluid as a hazardous material.
- If noise or vibration has been noticed, remove lift cylinder pins, pivot pins, and roller bearings. Inspect for wear and replace as necessary.
- Inspect all hydraulic hoses, replace any that show signs of wear or leaking.
- Replace all filters.
- Check for permanent mechanical deformation.

6.2.4 Oil Requirements

Follow recommendations below that apply to your application.

Environment (Ambient Temperature)	Recommended Oil
Indoor locations with variable temperatures: 30 - 100 degrees F.	5W 30 or 5W 40 Multiviscosity Motor Oil
Indoor locations with constant temperatures: 60 - 80 degrees F.	SAE 20 Motor Oil
Outdoor locations: 30 - 120 degrees F.	5W 30 or 5W 40 Multiviscosity Motor Oil
Outdoor locations: 10 degrees F below 0 to 100 degrees F.	5W 20 or 5W 30 Multiviscosity Motor Oil
Cold Storage Warehouse: 10 - 40 degrees F.	Contact local <i>Autoquip</i> Service Rep.

Note: All oils are detergent type.

Note: Oil level should be 1" to 1-1/2" below the top of the reservoir.

6.2.5 Oil Capacity

Standard Series 35 Polyethylene Tank: Approximately 1.25 gal.

Series 35: 48S80 & 60Sxx Tube Tank: Approximately 2 gal.

Contractor polyethylene Tank: Approximately: 5.5 gal.

Vertical Steel Tank: Approximately: 10 gal.

NOTICE

Use approved fluids only. Use of unauthorized fluids may cause damage to seals and hosing.

Do Not Use:

- Automatic Transmission Fluid (ATF)
- Hydraulic Jack Oil
- Brake Fluids

6.3 General Maintenance

6.3.1 Hydraulic Cylinder Repair

6.3.1.1. Cylinder Plunger Removal

1. Raise lift to its full height and engage maintenance devices. See “Maintenance Devices”.
2. Disconnect electrical power to lift. Follow lock out-tag out procedure.
3. Disconnect cylinder hose at power unit end and insert into reservoir oil-fill hole.
4. Loosen the setscrew or hex bolt in the cylinder upper leg clevis (otherwise known as the Trunnion clevis).
5. Remove the cylinder pin from the upper leg clevis.
6. Lift the cylinder out of the leg assembly.
7. Push the piston rod into the cylinder to eject as much oil as possible into a container.

6.3.1.2. Replace Cylinder Seals

1. Insert spanner wrench and turn upper bearing assembly clockwise until tip of retainer appears in slot. Place a small screwdriver under retainer and turn retainer to remove.
2. Be sure hose port is open to allow air into cylinder. Pull piston rod out to remove upper bearing.
3. After all internal components have been removed, inspect inner walls of barrel. Use a cylinder hone to remove any apparent nicks or scratches. Clean and flush barrel after honing.
4. Remove piston head nut from rod. Upper clevis and pin may be used to prevent rotation of rod while loosening. Remove old piston.
5. Inspect groove for nicks or scratches that could affect seal or barrel walls; remove as necessary.
6. Install new piston, seals, and rod wiper.
7. Install and tighten piston head nut to 600-650 ft•lb of torque on 3½ inch bore cylinders or 850-950 ft•lb on 4 inch bore cylinders. Upper clevis and pin may be used to prevent rotation of rod while tightening.
8. Liberally lubricate piston and seal with clean grease or oil.
9. Insert piston into barrel, taking care not to damage seal.
10. Slip bearing assembly into place and align retainer hole with slot in barrel.
11. Turn bearing with spanner wrench until retainer is reinserted completely.

6.3.1.3. Placing Cylinder Back Into Service

Loctite PST #567 pipe thread sealant or equivalent is recommended.

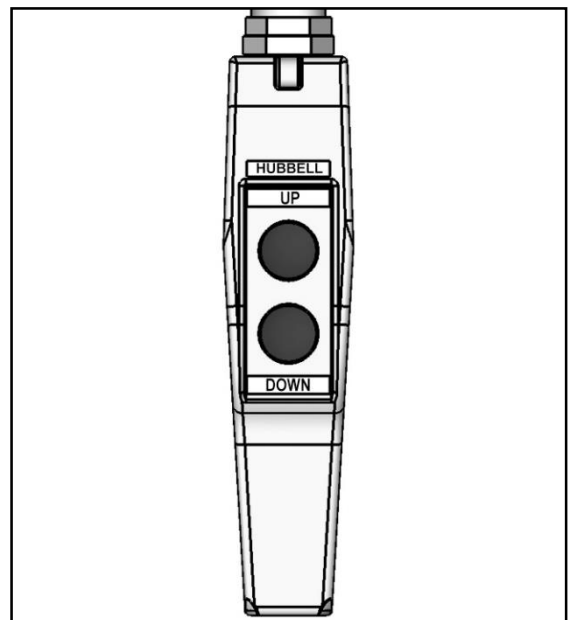
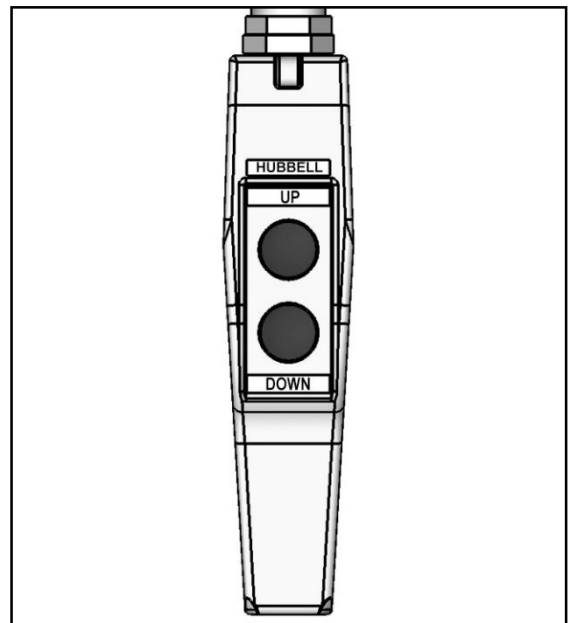
NOTICE Do not use Teflon tape on hydraulic threaded connections. Tape fragments may damage hydraulic system.

Autoquip recommends replacing any NPT fittings that have been disassembled due to their inherent design for sealing.

1. Check that lift anchors are tight (when used). Check all pins and other mechanical and hydraulic connections.
2. Restore oil level. See oil recommendations in “Oil Requirements” section.
3. Turn on electrical power and press “UP” button. Loosen bleeder plug at the top end of ram casing and operate pump to remove trapped air from ram. When clear oil appears, tighten plug and raise lift slightly to disengage maintenance locks.
4. Lower lift completely and hold “DOWN” button for 60 seconds to allow air in cylinders to bleed back into reservoir.
5. Raise lift to 25 – 50% of full travel, then lower and hold “DOWN” button for an additional 60 seconds. Repeat procedure 8 – 10 times.
6. Clean oil fill breather cap.

6.3.2 Bleeding Air From System

1. Bleed air from system by raising lift to 25-50% of full travel, then lower completely.
2. Hold “DOWN” button for 60 seconds.
3. Repeat procedure 8-10 times. If this does not bleed all air from system, contact Autoquip.
4. Clean up any spilled oil. Dispose of spilled oil in an environmentally safe manner.



6.3.3 Hydraulic Velocity Fuse (HVF) Replacement

**** Velocity Fuses were used on units built prior to November, 2017 ****

⚠ WARNING

Prevent serious injury or death.

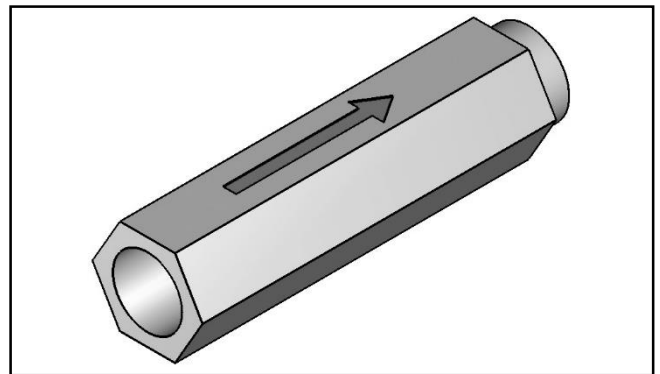
Never go under lift platform until load is removed and scissors mechanism is securely blocked in raised position with maintenance devices and hydraulic pressure is relieved.

The HVF is attached to elbow fitting in rod port of cylinder. Do not use a swivel fitting between HVF and cylinder. If HVF is installed improperly, it will not lock up in the event of a hydraulic line failure.

Velocity fuse is not repairable. Replace velocity fuse if defective.

1. Arrow on hydraulic velocity fuse indicates direction of oil flow restriction. Hydraulic velocity fuse must be installed with arrow pointing away from cylinder.

NOTICE Do not use Teflon tape on hydraulic threaded connections. Tape fragments may damage hydraulic system.



2. Apply Loctite PST #567 pipe thread sealant or equivalent to threads and install fuse to cylinder with arrow pointing away from cylinder. Tighten fuse.

Autoquip recommends replacing any NPT fittings that have been disassembled due to their inherent design for sealing.

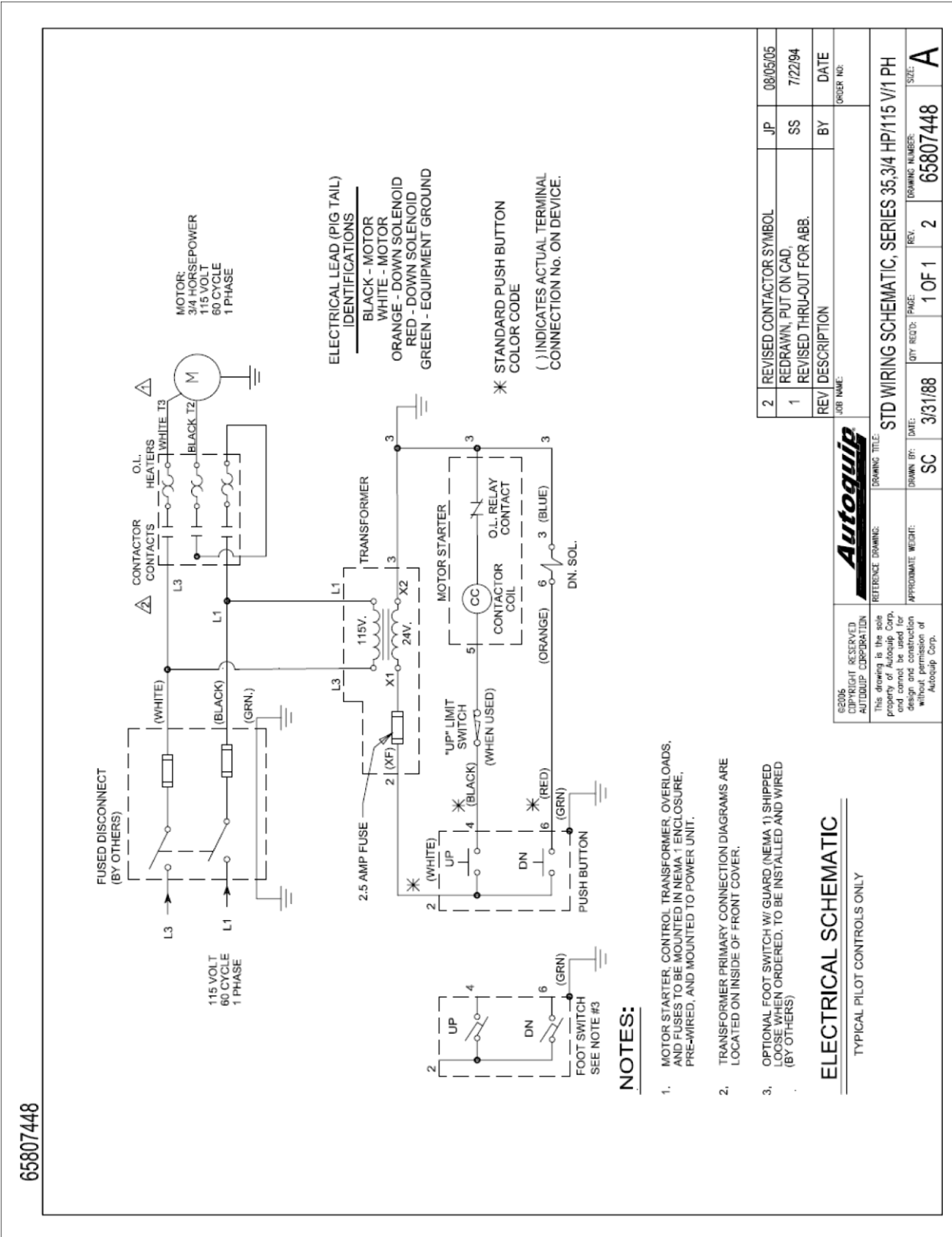
3. Fill reservoir to full mark if necessary with proper oil.
4. Check all fitting connections for hydraulic leaks and tighten as necessary.
5. Bleed air from system. See “Bleeding Air From System” in this section.

6.3.4 Hose Orientation

To prevent damage to cylinder hoses, it is necessary to establish a correct hose shape and pattern of movement as follows:

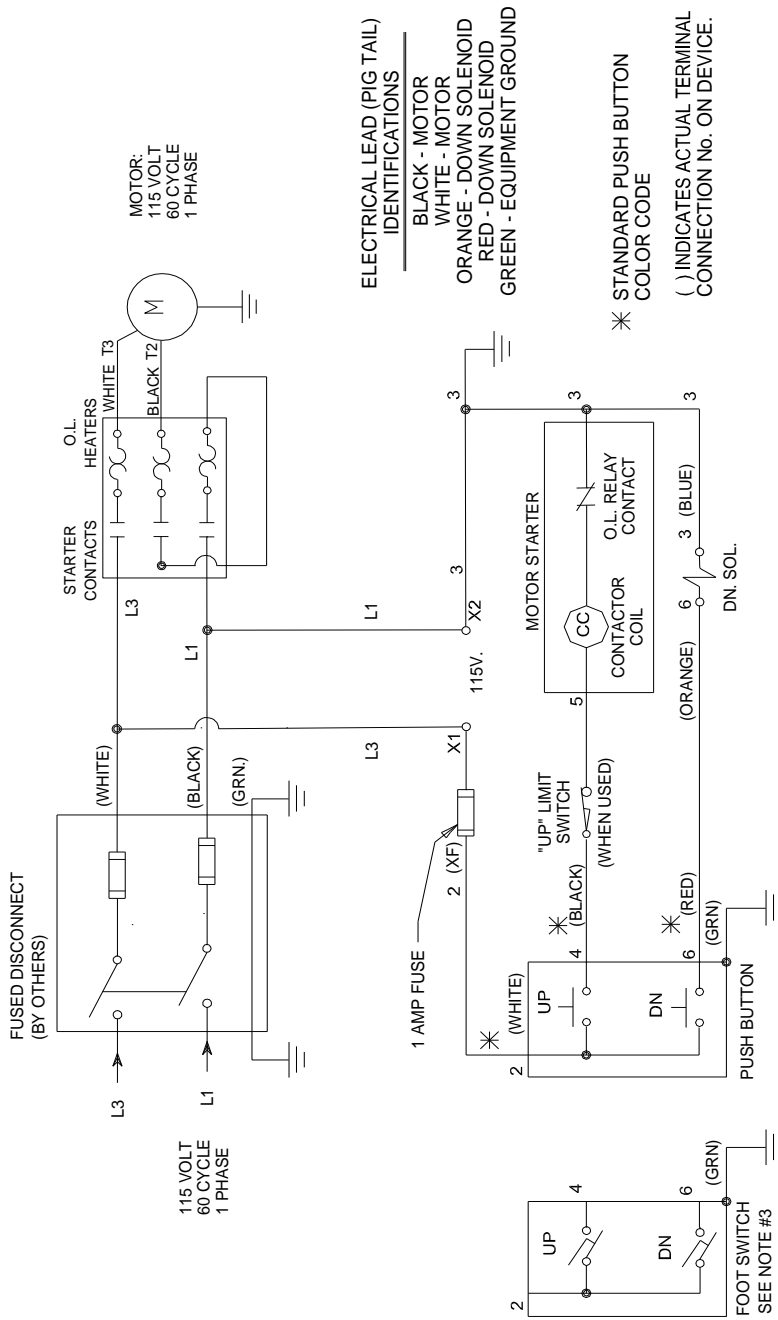
1. Raise lift to its full height and block securely. See “Maintenance Devices”.
2. Install one end of new hose to cylinder fitting.
3. Since hose is fixed at both ends, it is possible to put a twist in hose that will allow it to follow the same pattern each time lift is operated. This twist will allow hose to travel about half way between cylinder on right side and inner leg on right side.
4. Lower lift carefully and verify hose is free and clear of cylinder and inner leg assembly. If not, twist hose in direction necessary to clear any obstruction and tighten swivel fitting.

6.3.5 Schematics and Field Wiring Details



Electric Schematic; 115V / 1 Phase /24V Control

65/50500



NOTES:

1. MOTOR STARTER OVERLOADS AND FUSES TO BE MOUNTED IN NEMA 1 ENCLOSURE, AND INTERNALLY PRE-WIRED.
2. WIRING DIAGRAM IS LOCATED ON INSIDE OF FRONT COVER.
3. OPTIONAL FOOT SWITCH W/ GUARD (NEMA 1) SHIPPED LOOSE WHEN ORDERED. TO BE INSTALLED AND WIRED (BY OTHERS)

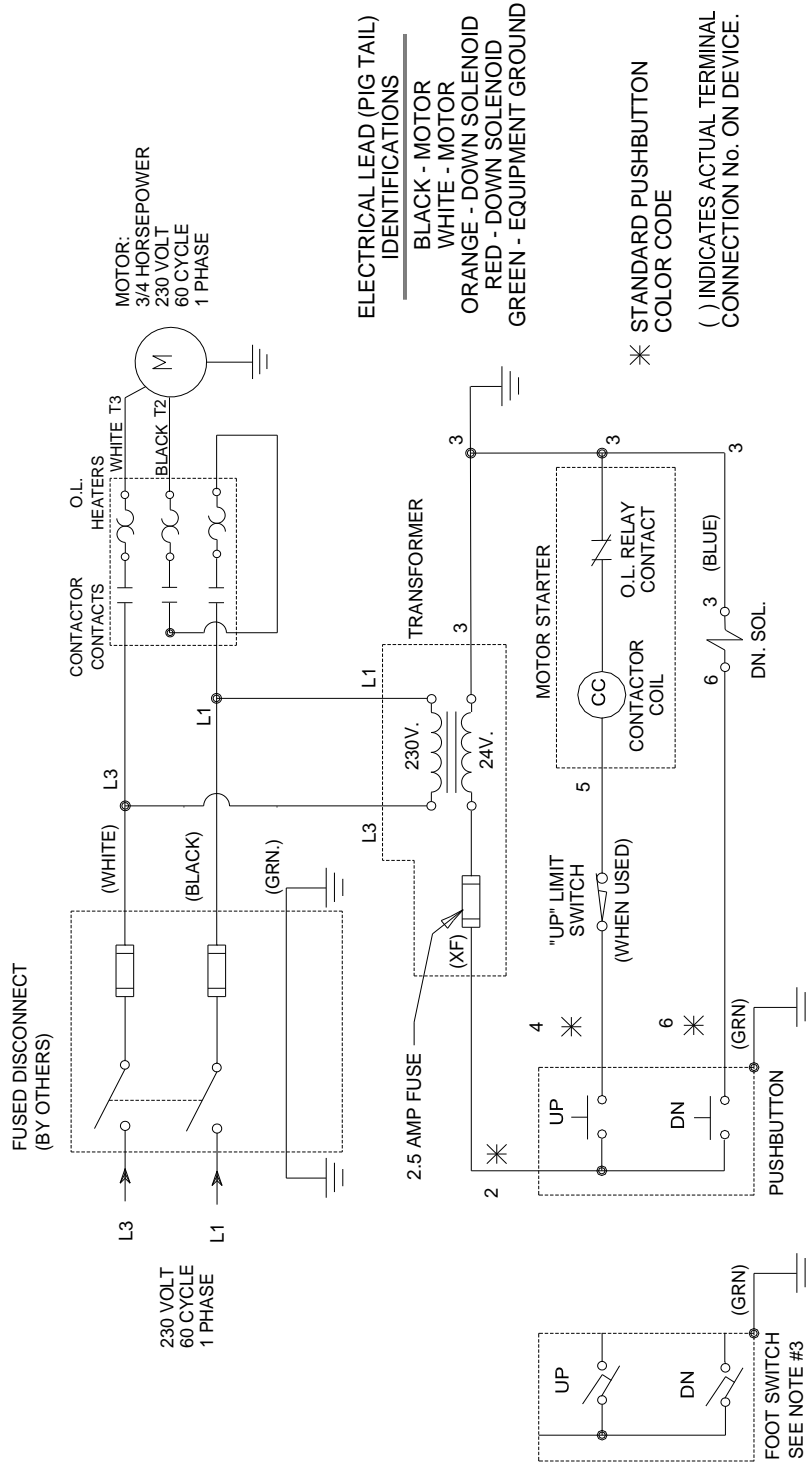
ELECTRICAL SCHEMATIC

TYPICAL PILOT CONTROLS ONLY

©2006 COPYRIGHT RESERVED AUTOQUIP CORPORATION This drawing is the sole property of Autoquip Corp. and cannot be used for design and construction without permission of Autoquip Corp.		REFERENCE DRAWING: 65807448		DRAWING TITLE: ELECT SCH, SERIES 35; 115V/ 1PH/ 115CV	
APPROXIMATE WEIGHT: ME		DRAWN BY: ME		DATE: 1/4/05	
QTY REQ'D: PAGE: 1 OF 1		DRAWING NUMBER: 65750500		SIZE: A	
REV	DESCRIPTION	BY	DATE	ORDER NO:	

Electric Schematic; 115V / 1 Phase / 115V Control

65807430



ELECTRICAL LEAD (PIG TAIL) IDENTIFICATIONS
 BLACK - MOTOR
 WHITE - MOTOR
 ORANGE - DOWN SOLENOID
 RED - DOWN SOLENOID
 GREEN - EQUIPMENT GROUND

* STANDARD PUSHBUTTON COLOR CODE
 () INDICATES ACTUAL TERMINAL CONNECTION No. ON DEVICE.

NOTES:

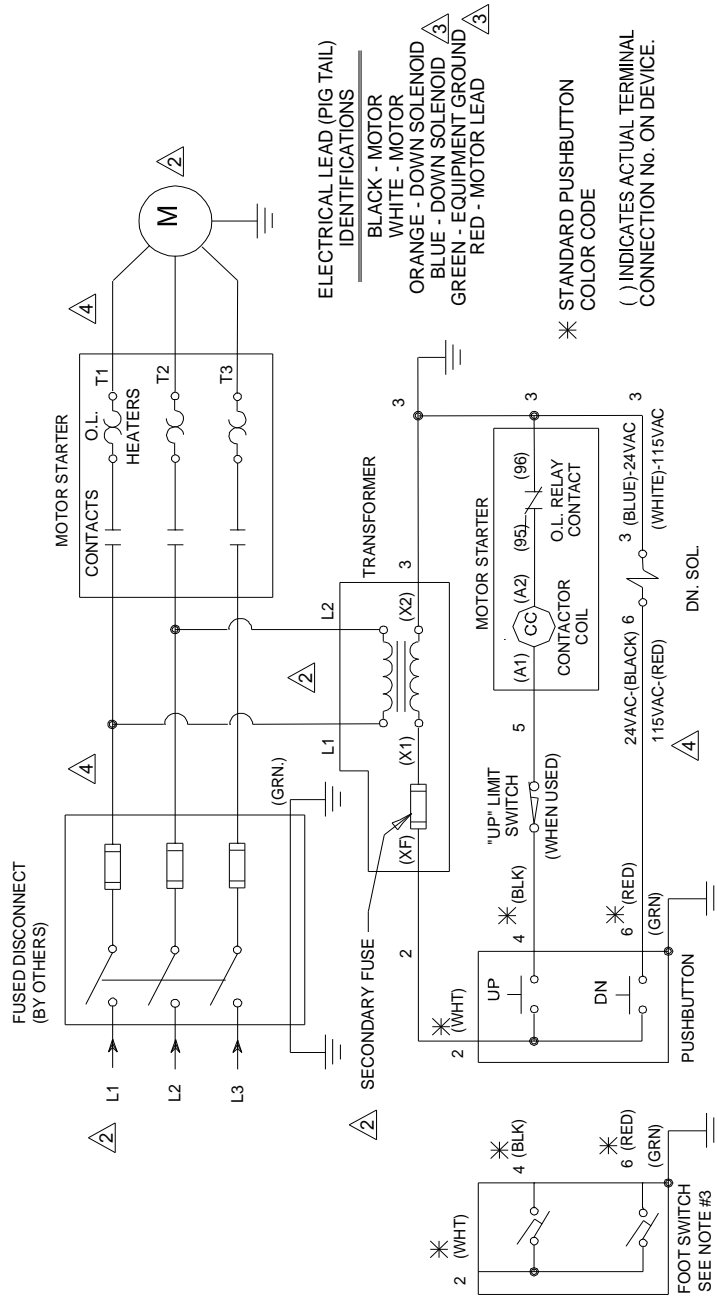
1. MOTOR STARTER, CONTROL TRANSFORMER, OVERLOADS, AND FUSES TO BE MOUNTED IN NEMA 1 ENCLOSURE, PRE-WIRED, AND MOUNTED TO POWER UNIT.
2. TRANSFORMER PRIMARY CONNECTION DIAGRAMS ARE LOCATED ON INSIDE OF FRONT COVER.
3. OPTIONAL FOOTSWITCH W/ GUARD (NEMA 1) SHIPPED LOOSE WHEN ORDERED. TO BE INSTALLED AND WIRED (BY OTHERS)

ELECTRICAL SCHEMATIC

TYPICAL PILOT CONTROLS ONLY

©2005 COPYRIGHT RESERVED AUTOQUIP CORPORATION This drawing is the sole property of Autoquip Corp. and cannot be used for design and construction without permission of Autoquip Corp.	Autoquip REFERENCE DRAWING:	DRAWING TITLE: STD WIRING SCHEMATIC, SERIES 35,3/4 HP/230 V/1 PH	REV: 2 BY:	DATE:
	APPROXIMATE WEIGHT:	DRAWN BY: SC DATE: 3/31/88	QTY REQ'D: 1 PAGE: 1 OF 1	ORDER NO.:
DRAWING NUMBER: 65807430			SIZE: A	

65807422



ELECTRICAL LEAD (PIG TAIL) IDENTIFICATIONS
 BLACK - MOTOR
 WHITE - MOTOR
 ORANGE - DOWN SOLENOID
 BLUE - DOWN SOLENOID
 GREEN - EQUIPMENT GROUND
 RED - MOTOR LEAD

* STANDARD PUSHBUTTON COLOR CODE
 () INDICATES ACTUAL TERMINAL CONNECTION NO. ON DEVICE.

NOTES:

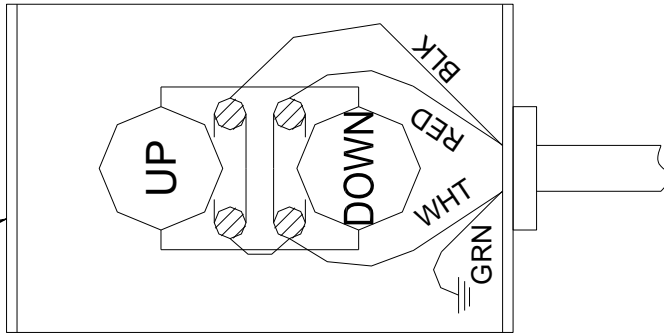
1. MOTOR STARTER, CONTROL TRANSFORMER, HEATERS, AND FUSES TO BE MOUNTED IN NEMA 1 ENCLOSURE, AND PRE-WIRED TO POWER UNIT.
2. TRANSFORMER PRIMARY CONNECTION DIAGRAMS ARE LOCATED ON INSIDE OF FRONT COVER.
3. FOOTSWITCH IS SHIPPED LOOSE FOR INSTALLATION BY OTHERS (WHEN ORDERED).

ELECTRICAL SCHEMATIC

TYPICAL PILOT CONTROLS ONLY


REV/ DESCRIPTION		BY	DATE
JOB NAME:			ORDER NO:
Autoquip			
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APPROXIMATE WEIGHT:	DRAWN BY:	DATE:	QTY REQD:
	SC	3/30/88	1 OF 1
		REV:	DRAWING NUMBER:
		4	65807422
			SIZE:
			A

STANDARD WALL MOUNT PUSHBUTTON SWITCH
(FRONT VIEW, COVER REMOVED)



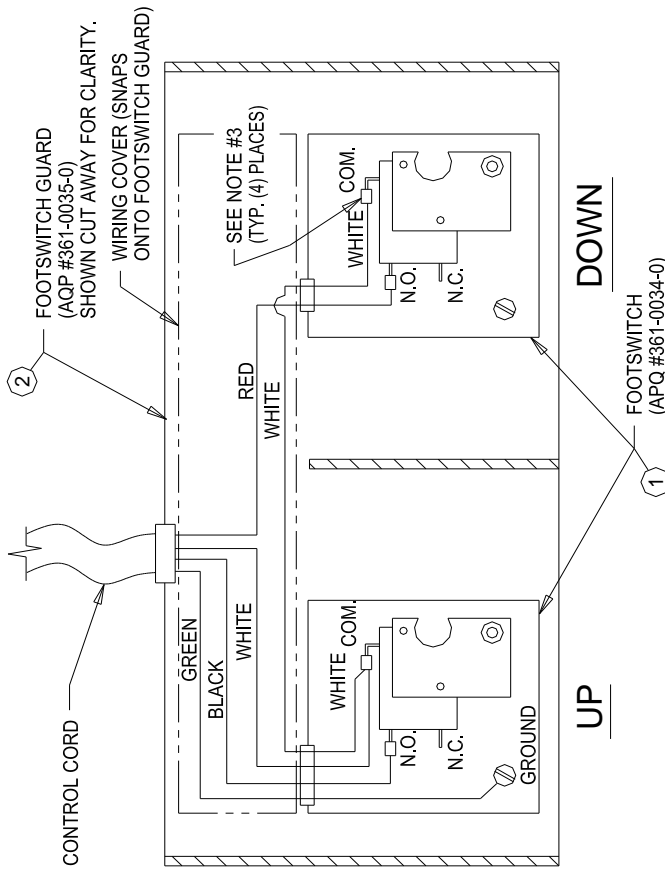
NOTES:

1. WARNING: ELECTRICAL HAZARD
DISCONNECT POWER BEFORE
WIRING THIS ACCESSORY.
2. COLOR CODING SHOWN CORRESPONDS TO
EXISTING 16/4 SO CONTROL CORD ON
LIFT.
3. USE APPROPRIATE WIRE, CONDUIT, ETC.
TO SATISFY LOCAL CODES. (BY OTHERS.)

©2005 COPYRIGHT RESERVED AUTODIUP CORPORATION This drawing is the sole property of Autoquip Corp. and cannot be used for design and construction of without permission of Autoquip Corp.			REV/ DESCRIPTION	BY	DATE
	REFERENCE DRAWING:		JOB NAME:		
DRAWING TITLE:		ORDER NO.			
APPROXIMATE WEIGHT:		STD WALL MOUNT PUSHBUTTON WIRING DIAGRAM			
<2T		DRAWN BY: SC	QTY REC'D: 1 OF 1	REV: 2	DRAWING NUMBER: 658-0734-9
DATE: 3/23/88		SIZE: A			

Optional Wall Mount Push Button Wiring Diagram

351-0338-0



Optional Guarded Foot Switch Wiring Diagram

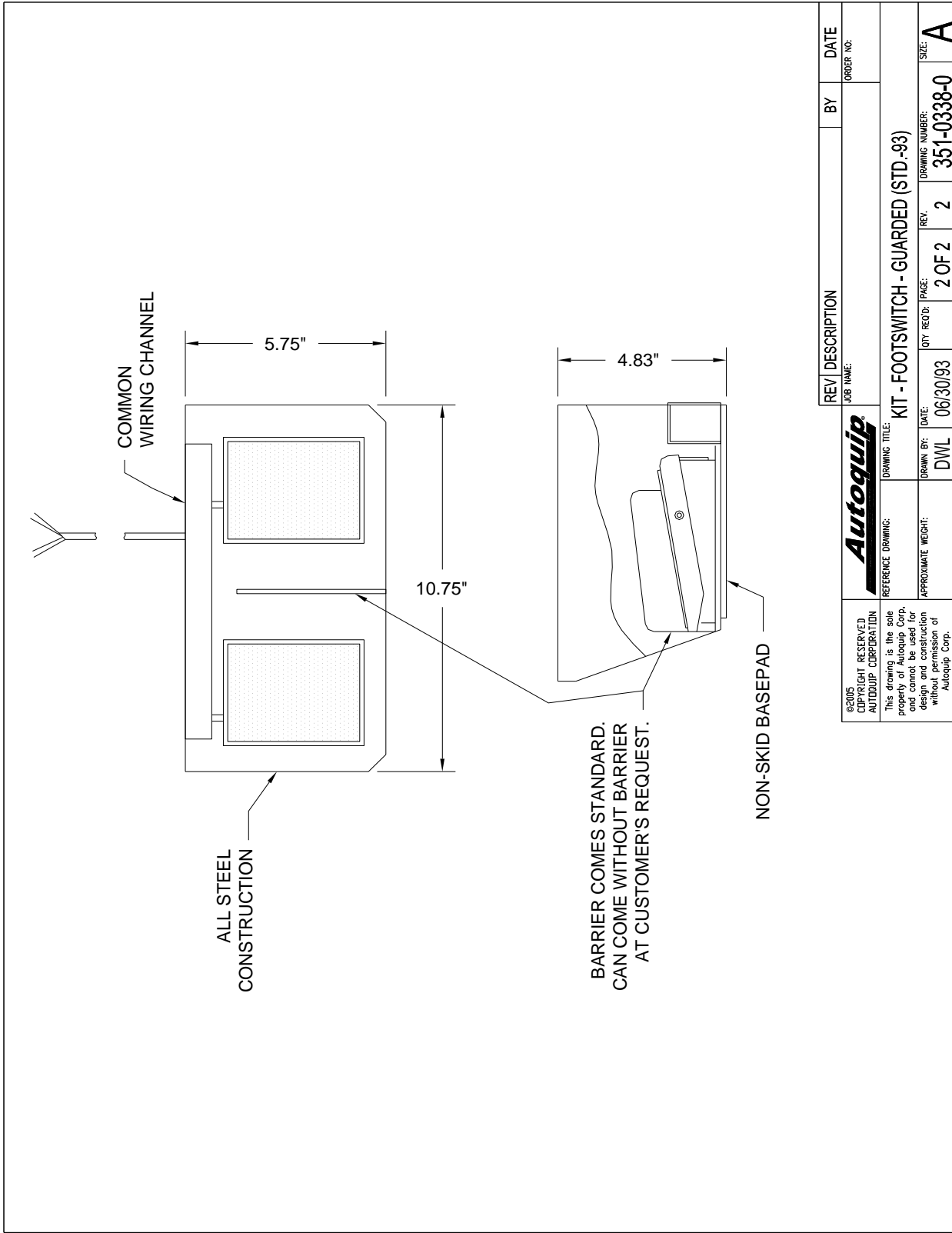
STANDARD FOOTSWITCH ASSEMBLY
 (TOP VIEW WITH TOP COVERS OF FOOTSWITCHES REMOVED)

NOTES:

1. **WARNING: ELECTRICAL HAZARD.**
DISCONNECT POWER BEFORE WIRING THIS ACCESSORY.
2. COLOR CODING SHOWN CORRESPONDS TO EXISTING 16/4 SO CONTROL CORD ON LIFT.
3. USE 3/16" WIRE TABS FOR WIRING FOOTSWITCH.
4. EXCHANGE BLACK AND RED WIRES IF DESIRED TO SWITCH "UP" AND "DOWN" FUNCTIONS.
5. USE APPROPRIATE WIRE, CONDUIT, ETC. TO SATISFY LOCAL CODES (BY OTHERS).
6. INSTALL FOOTSWITCH GUARD PER MANUFACTURER'S INSTRUCTIONS.
7. INSTALLER TO APPLY "UP" AND "DOWN" LABELS TO TOP OF COVER AS REQUIRED.
8. ELECTRICAL RATING WITHOUT CORD 15 AMP, 115/230VAC
9. FOOT GUARD PAINTED YELLOW

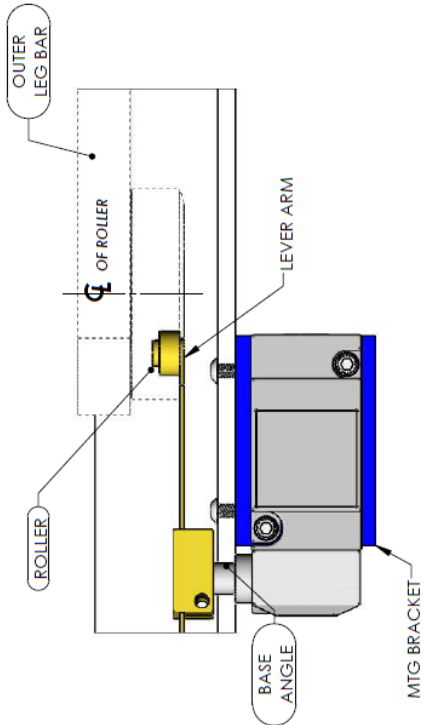
©2015 COPYRIGHT RESERVED AUTOQUIP CORPORATION	REFERENCE DRAWING: Autoquip	REV DESCRIPTION	BY	DATE
This drawing is the sole property of Autoquip Corp. and cannot be used for design and construction without permission of Autoquip Corp.	DRAWING TITLE: FOOTSWITCH - GUARDED	JOB NAME:		ORDER NO.:
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		QTY REQD: 1 OF 2	FACE: 2	SIZE: A

351-0338-0

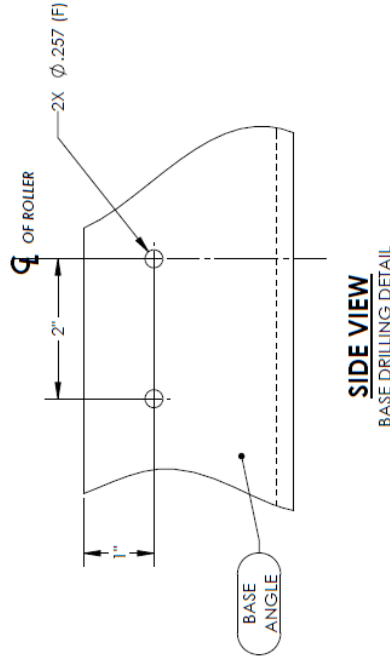


Guarded Foot Switch Assembly

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APPROXIMATE WEIGHT:	DRAWN BY:	DATE:	QTY REQ'D:	PAGE:	REV.
DWL	06/30/93	2 OF 2	2	351-0338-0	A



TOP VIEW
STANDARD SIDE MOUNT

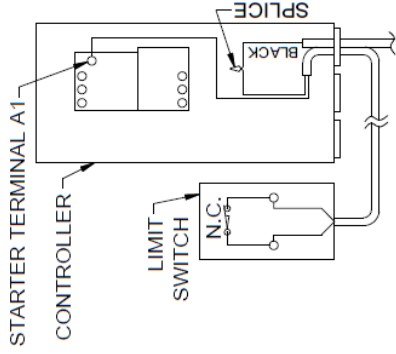


SIDE VIEW
BASE DRILLING DETAIL

STANDARD SIDE MOUNT

TO BE USED IN MOST CASES UNLESS INTERFERENCE BETWEEN LEG STIFFENER BAR AND LIMIT SWITCH ROLLER WHICH OCCURS IN THE LOWERED POSITION. IF INTERFERENCE OCCURS, SEE OPTIONAL END MOUNT ON PAGE 2. FOR FULLY LOWERED TRIGGER LOCATION, SEE PAGE 3.

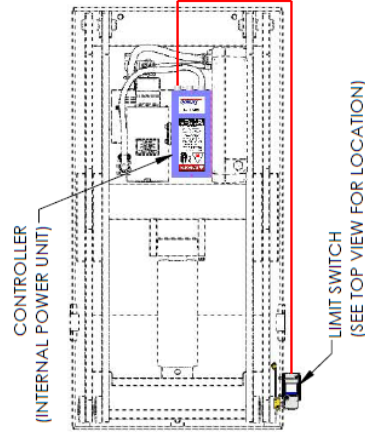
1. RAISE LIFT TO DESIRED LIMITED HEIGHT.
2. MARK BASE ANGLE AT CENTER LINE (CL) OF ROLLER.
3. FULLY LOWER THE LIFT.
4. TEMPORARILY HOLD LIMIT SWITCH ON THE OUTSIDE OF THE BASE FRAME AS SHOWN IN TOP VIEW AND CHECK FOR CLEARANCE ON THE LIMIT SWITCH (IF INTERFERENCE OCCURS, SEE OPTIONAL END MOUNT ON PAGE 2.)
5. FOLLOW INSTRUCTION MANUAL AND BLOCK LIFT OPEN AT A POSITION THAT ALLOWS ACCESS TO THE MARKED AREA
6. SET ARM TO TRIGGER AT DESIRED HEIGHT.



WIRING DETAIL

WIRING INSTRUCTIONS

1. WARNING - ELECTRICAL HAZARD - FOLLOW INSTRUCTION MANUAL AND DISCONNECT POWER BEFORE WIRING THIS ACCESSORY.
2. USE APPROPRIATE WIRE, CONDUIT, ETC. TO COMPLY WITH LOCAL CODES (BY OTHERS).
3. DISCONNECT EXISTING BLACK CONTROL WIRE FROM TERMINAL "A1" OF THE MOTOR STARTER IN THE CONTROLLER.
4. SPLICE TO THIS WIRE AND CONNECT TO EITHER WIRE OF THE LIMIT SWITCH.
5. WIRE THE REMAINING WIRE OF THE LIMIT SWITCH BACK TO TERMINAL "A1" OF THE STARTER.

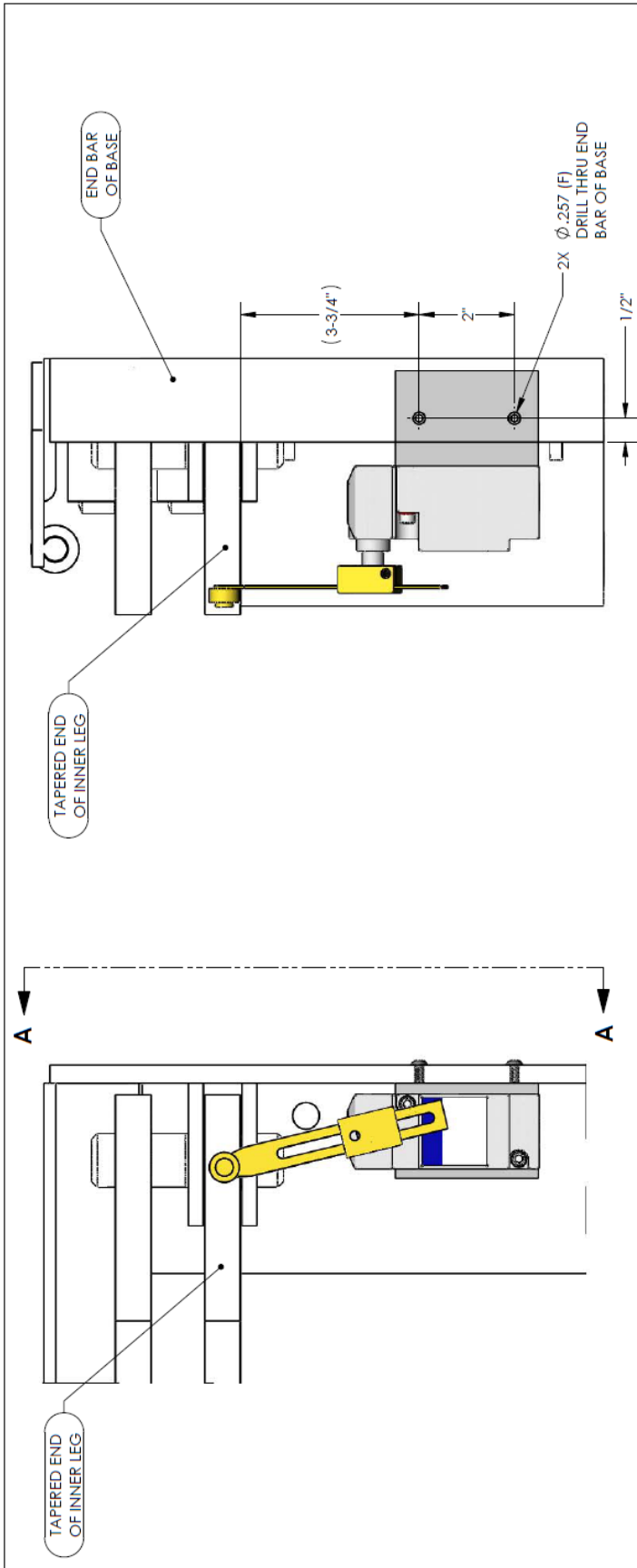


WIRING PATH
STANDARD SIDE MOUNT

UNLESS OTHERWISE SPECIFIED:		TOLERANCES ALL DIMENSIONS ARE IN INCHES		FRACTIONS: +/ - 1/4				DRAWING TITLE: LIMIT SWITCH INSTALLATION & WIRING CHECKED: [] DATE: 3/23/88 DESIGNED: [] DATE: 1 OF 3 PART NO.: 60401106	
NO.	DESCRIPTION	BY	CHK'D	TB	DATE	REV.	ISSUE	DESCRIPTION	REV.
4	REDRAWN IN SOLIDWORKS. REVISED THOROUGHOUT. SEE REVISION 3 FOR PREVIOUS CHANGES.	JCJ			8/24/2015				

Optional Limit Switch Wiring Diagram

60401106 2 OF 3



SECTION A-A

OPTIONAL END MOUNT

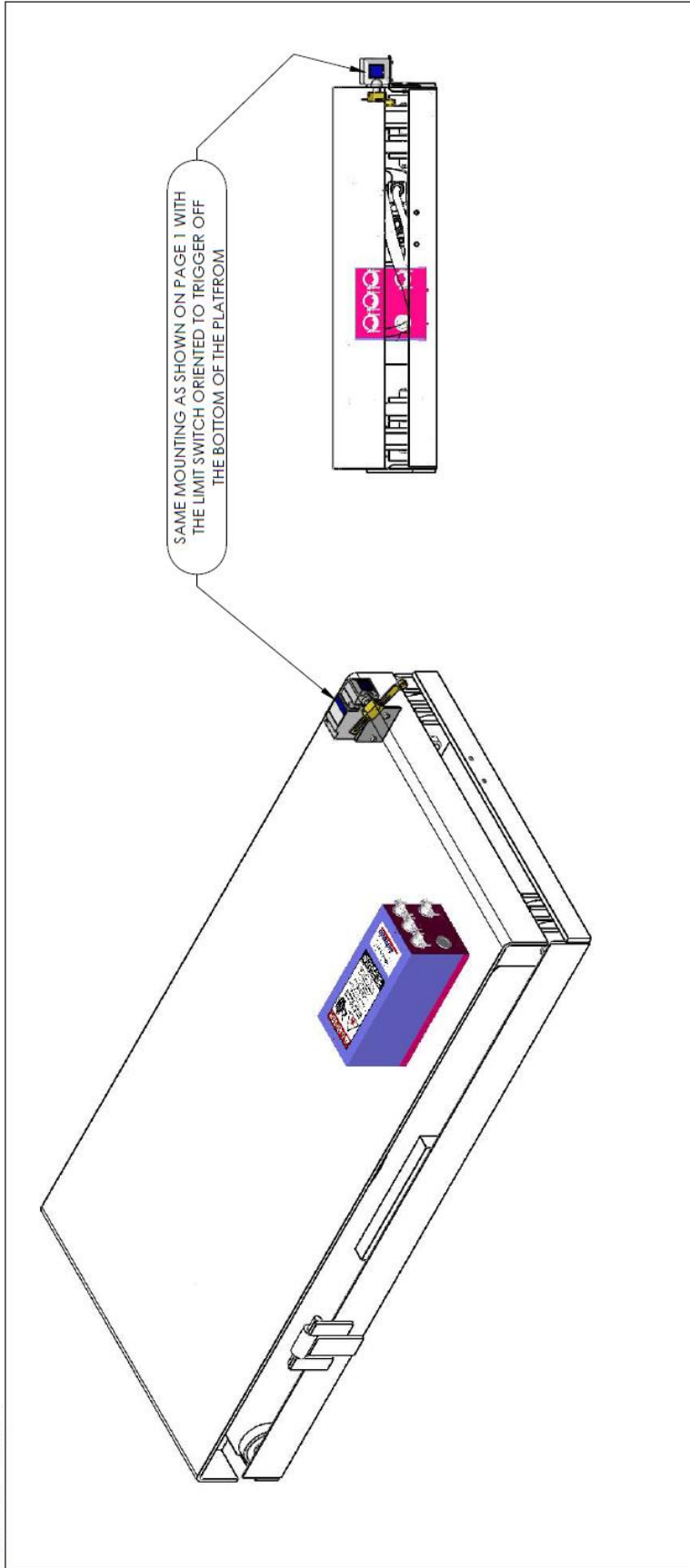
TO BE USED ONLY WHEN INTERFERENCE OCCURS ON STANDARD SIDE MOUNT STYLE EXPLAINED ON PAGE 1. TYPICAL FOR FULL UP POSITIONS.

1. FOLLOW INSTRUCTION MANUAL AND BLOCK LIFT OPEN AT A POSITION THAT ALLOWS ACCESS TO THE AREA SHOWN ABOVE.
2. SET LIMIT SWITCH LOCATION WHERE THE ARM WILL STRIKE THE TAPERED END OF THE LEG AS IT RAISES TO DESIRED LIMITED HEIGHT.
3. FULLY LOWER THE LIFT AND CHECK FOR CLEARANCE ON THE LIMIT SWITCH (IT SHOULD STAY COMPLETELY INSIDE THE BASE FRAME.)
4. SET ARM TO TRIGGER AT DESIRED HEIGHT.

UNLESS OTHERWISE SPECIFIED:		FRAC. NAME		REV.	
TOLERANCES		Autoquip		LIMIT SWITCH INSTALLATION & WIRING	
ALL DIMENSIONS ARE IN INCHES		© COPYRIGHT AUTOQUIP		DATE	
FRACTIONS: +/- 1/4		ALL RIGHTS RESERVED.		3/23/88	
		NO. OF COPIES IN THIS SET		PAGE	
		1 OF 3		2 OF 3	
		PART NO.		REV.	
		SC		60401106	
		APPROVED FOR THE PROJECT		4	

Optional Limit Switch Wiring Diagram, Continued

60401106 3 OF 3



FULLY LOWERED TRIGGER END MOUNT

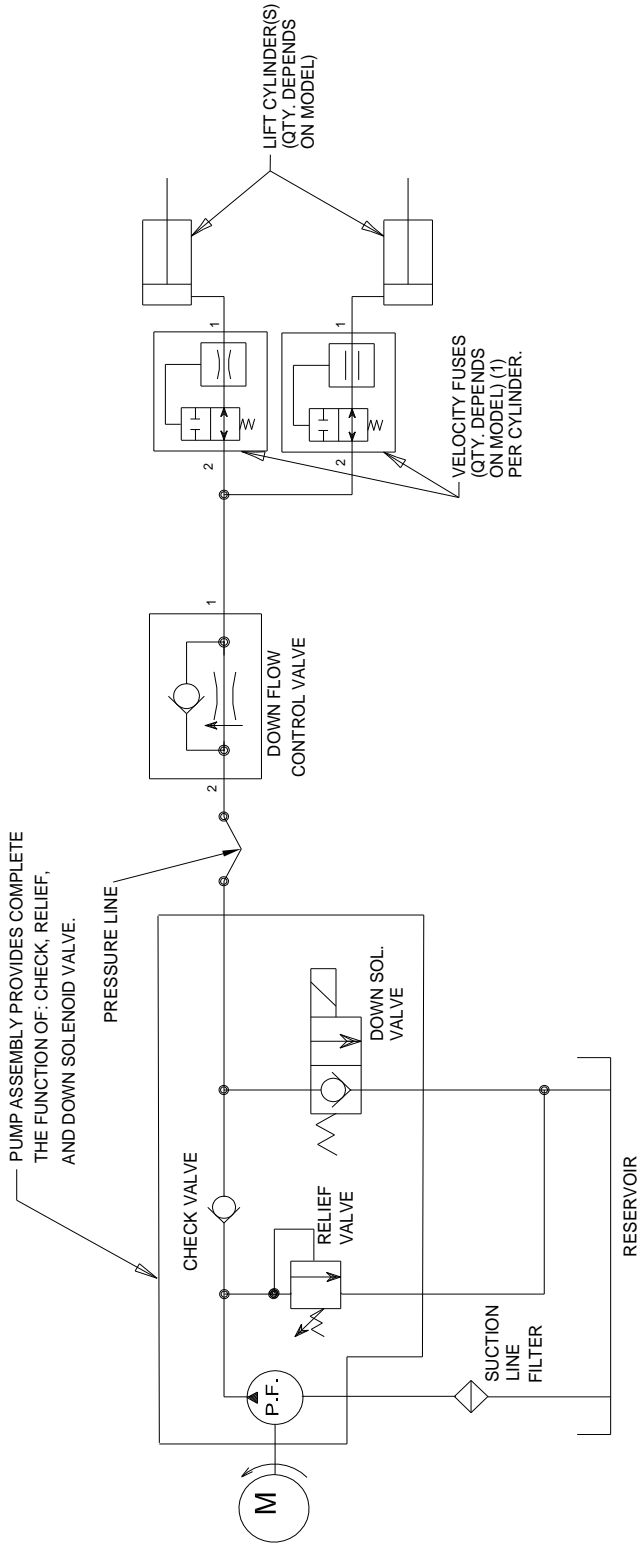
TO BE USED FOR FULLY CLOSED SIGNALING ON STANDARD SIDE MOUNT STYLE EXPLAINED ON PAGE 1.

1. FOLLOW INSTRUCTION MANUAL AND BLOCK LIFT OPEN AT A POSITION THAT ALLOWS ACCESS TO THE AREA SHOWN ABOVE.
2. SET LIMIT SWITCH LOCATION WHERE THE ARM WILL STRIKE THE BOTTOM OF THE PLATFORM END OR BACK UP BAR THAT IS DIRECTLY ABOVE THE END OF THE BASE.
3. FULLY LOWER THE LIFT AND CHECK FOR CLEARANCE ON THE LIMIT SWITCH (IT SHOULD STAY COMPLETELY INSIDE THE BASE FRAME.)
4. SET ARM TO TRIGGER AT DESIRED HEIGHT.

UNLESS OTHERWISE SPECIFIED:				JOB NAME: DRAWING TITLE: LIMIT SWITCH INSTALLATION & WIRING	
TOLERANCES		© COPYRIGHT AUTOQUIP ALL RIGHTS RESERVED. INDICATED ON THE DOCUMENT.		DATE: 3/23/88 PAGE: 3 OF 3 SHEET: B DRAWING NUMBER: 60401106	
FRACTIONS: +/- 1/4		APPROXIMATE WEIGHT: - CHECKED: SC		REV: 4	

Optional Limit Switch Wiring Diagram, Continued

657-5004-0



HYDRAULIC SCHEMATIC

©2005 COPYRIGHT RESERVED AUTOQUIP CORPORATION This drawing is the sole property of Autoquip Corp. and cannot be used for design and construction without permission of Autoquip Corp.	Autoquip REFERENCE DRAWING: 658-0732-3	DRAWING TITLE: HYD SCH FOR SM & PLT-C	REV DESCRIPTION JOB NAME:	BY	DATE
	APPROXIMATE WEIGHT: N/A	DRAWN BY: DWL	DATE: 9/11/95	QTY. REQ'D: 1 OF 1	REV: 2
					SIZE: A

6.3.6 Troubleshooting

⚠ WARNING

Prevent serious injury or death.

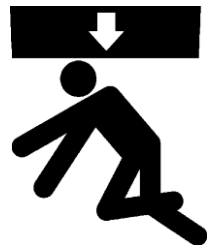
Disconnect and/or lock out electrical supply to power unit prior to any maintenance being performed.



⚠ WARNING

Prevent serious injury or death.

Never go under lift platform until load is removed and scissors mechanism is securely blocked in open position. Follow OSHA lock-out/tag-out procedure.



See "Maintenance Devices" section.

⚠ WARNING

Pressurized fluids can penetrate the skin.

Hydraulic hoses can fail from age, damage and exposure.

Do not search for hydraulic leaks without body and face protection. A tiny, almost invisible leak can penetrate the skin, thereby requiring immediate medical attention.



Use wood or cardboard to detect hydraulic leaks, never your hands.

⚠ WARNING

Spilled hydraulic fluid is slippery and may also present a fire hazard.

Clean up spilled hydraulic fluid.



PROBLEM	POSSIBLE CAUSE AND SOLUTION
Lift Raises, Then Lowers Slowly.	<p>Down solenoid may not be seating. Remove solenoid coil and check. If lift does not hold with solenoid coil removed, remove and clean down valve cartridge or replaced as necessary.</p> <p>Oil line, hose, or fitting may be leaking. Check and repair if necessary.</p> <p>Check valve in pump assembly may not be seating. This is indicated by pump shaft and motor turning backward on their own with no power applied. Generally, this condition can be heard. Replace pump assembly.</p>
Lift Lowers Slowly.	<p>Down solenoid is not operating properly due to debris or damage.</p> <p>Check for pinched tubing or hose. Where pipe is used, check for obstruction in line.</p> <p>Thick oil due to low ambient temperatures. Add or replace with lower weight oil that stays thin in cold conditions (5W-15, etc.)</p> <p>If foam is visible in tank oil, check for loose connection in suction line between pump and tank. Tighten connections.</p>
Lift Does Not Raise.	<p>Motor rotation for a 3-phase motor may be reversed. Reverse two motor electrical leads.</p> <p>Check for line or hose leak.</p> <p>Check for low oil in reservoir. Add specified oil as necessary.</p> <p>Load may exceed rating. See the Specifications section. Remove excess load.</p> <p>Suction screen may be clogged, starving pump. Remove and clean screen. Drain and replace oil.</p> <p>Suction line may be leaking air due to a loose fitting. Tighten as needed.</p>

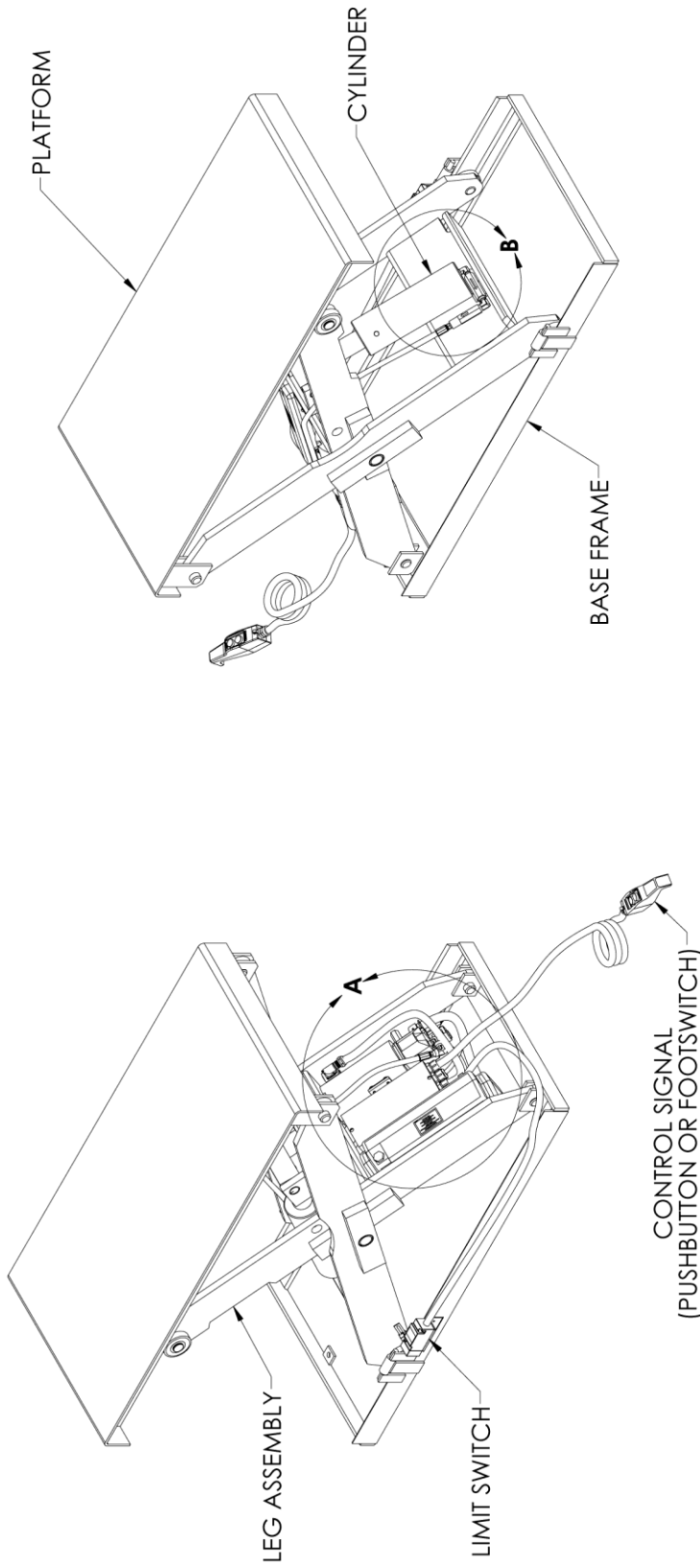
PROBLEM	POSSIBLE CAUSE AND SOLUTION
Lift Does Not Raise, Continued.	<p>Breather holes in reservoir fill plug may be clogged. Remove and clean.</p> <p>Voltage may be too low to run pump with existing load. Check by measuring voltage at motor terminals, or as near as possible, <u>while pump is running under load</u>. Inadequate or incorrect wiring can starve motor when source voltage is ample. Correct as necessary.</p> <p>Down valve may be energized by faulty wiring or stuck open. Remove solenoid and check.</p> <p>Motor may be single phasing. Check wiring, fuses, etc.</p> <p>Pump may be seized if motor is humming or blowing fuses on overload protection devices. Remove pump. Pump can be rotated by hand unless seized. Check for cracks in housing.</p> <p>Down solenoid valve stem may be bent, causing valve to stick open. Replace down solenoid valve.</p>

PROBLEM	POSSIBLE CAUSE AND SOLUTION
Lift Won't Lower.	<p>Solenoid coil may be incorrectly wired, burned out, not rated for the voltage, or line voltage may be excessively low. Check voltage near coil.</p> <p>Velocity fuse may be locked. Do not attempt to remove the velocity fuse. The following steps should be followed:</p> <ol style="list-style-type: none"> 1. Remove load from lift. Inspect all fittings, hoses, and other hydraulic components for leaks or damage. 2. If no leak or damage is noticed, attempt to pressurize lifting cylinder by pressing "UP" button on controller for a few seconds. Immediately release "UP" button and press "DOWN" button. If lift starts to lower, continue pressing "DOWN" button until lift is fully lowered. 3. If lift does not lower after trying Step 2, wait approximately 10 – 15 minutes for pressure in hydraulic system to equalize. Then, press "DOWN" button until lift is fully lowered. 4. Once lift is fully lowered, hold "DOWN" button for approximately 60 seconds to bleed air from system. This step may need to be repeated several times to fully remove air in system by raising the lift to 50% of its travel and lowering. <p>If above steps do not correct problem, contact <i>Autoquip</i> to obtain instruction for further action.</p>

PROBLEM	POSSIBLE CAUSE AND SOLUTION
Lift Seems Bouncy During Operation.	<p data-bbox="516 163 1398 296">Lower lift to closed position and continue to hold "DOWN" button an additional 10-30 seconds to bleed air from cylinder. Do not confuse spongy or jerky operation with small surges that may occur when operating on rough or uneven floors.</p> <p data-bbox="516 331 829 363">Check for oil starvation.</p>
Motor Labors Or Heats Excessively.	<p data-bbox="516 367 1466 468">Voltage may be low. Check voltage at motor terminals while pump is <u>running under load</u>, not at line source or while pump is idling. Inadequate wiring can starve motor even when source voltage is ample.</p> <p data-bbox="516 499 1466 636">Most of <i>Autoquip's</i> standard motors are rated for intermittent duty. If a single-phase motor is being run more than 15 – 20 motor starts per hour, or a 3-phase motor more than 200 starts per hour, the problem may be motor over-heating.</p> <p data-bbox="516 667 1438 737">Running against relief pressure unnecessarily due to over loaded lift or hitting physical stops.</p> <p data-bbox="516 768 1378 837">Failure to observe wiring diagram on nameplate for proper voltage connections.</p> <p data-bbox="516 869 1430 968">Pump may be binding from oil starvation, which develops high internal heat. Check for low oil level or clogged breather holes in reservoir fill plug. Pump can be damaged by oil starvation.</p>

7. PARTS LISTS

ASSEMBLY 1 OF 8

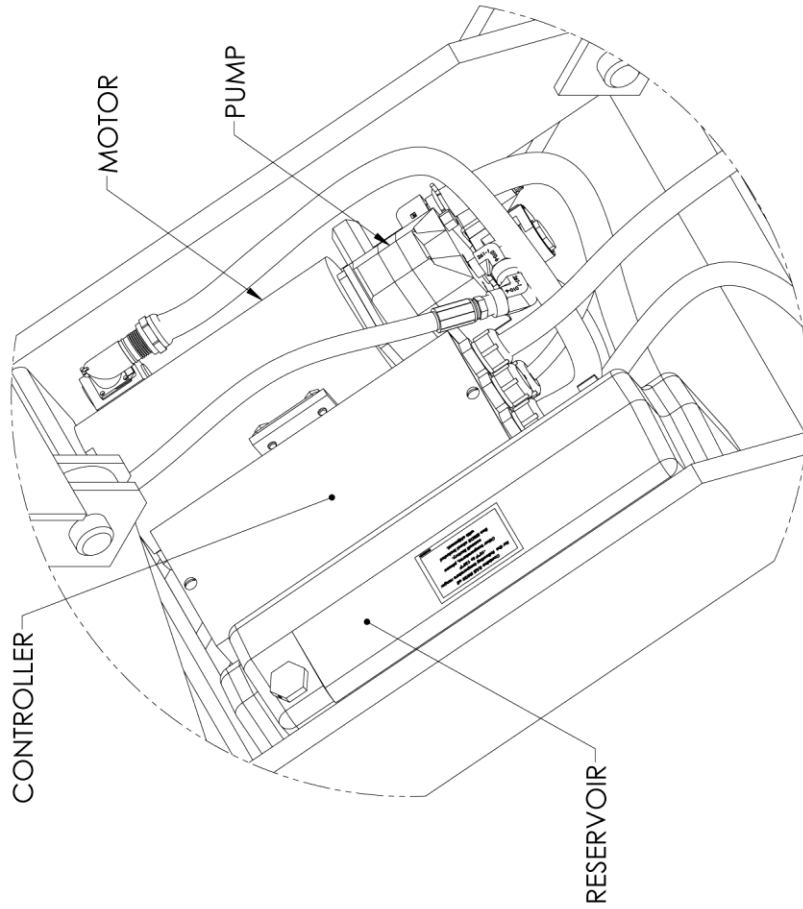


Standard Lift

NO.	DESCRIPTION	BY	CHK'D	DATE
	FOR NAME			ADD'NO.
	REFERENCE DRAWING			
	DRAWING TITLE			
	GENERIC S35 COMPONENTS			
	DRAWN BY: J.C.J.			
	CHECKED: TB			
	DATE: 02/25/13			
	SIZE: 1 OF 8			
	FACE: B			
	ASSEMBLY			

UNLESS OTHERWISE SPECIFIED:	
TOLERANCES	±.125
FRACTIONS	1/16
DECIMALS	.03
THREE PLACES	.010
ANGLES FOR MACHINING	XX
ANGLES FOR STRUCTURAL FIT-UP	1/2°
BREAK ALL SHARP EDGES	.010 MAX
	#5 CHAMFER

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CONTROLLER

MOTOR

PUMP

RESERVOIR

CYLINDER

FLOW CONTROL

VELOCITY FUSE

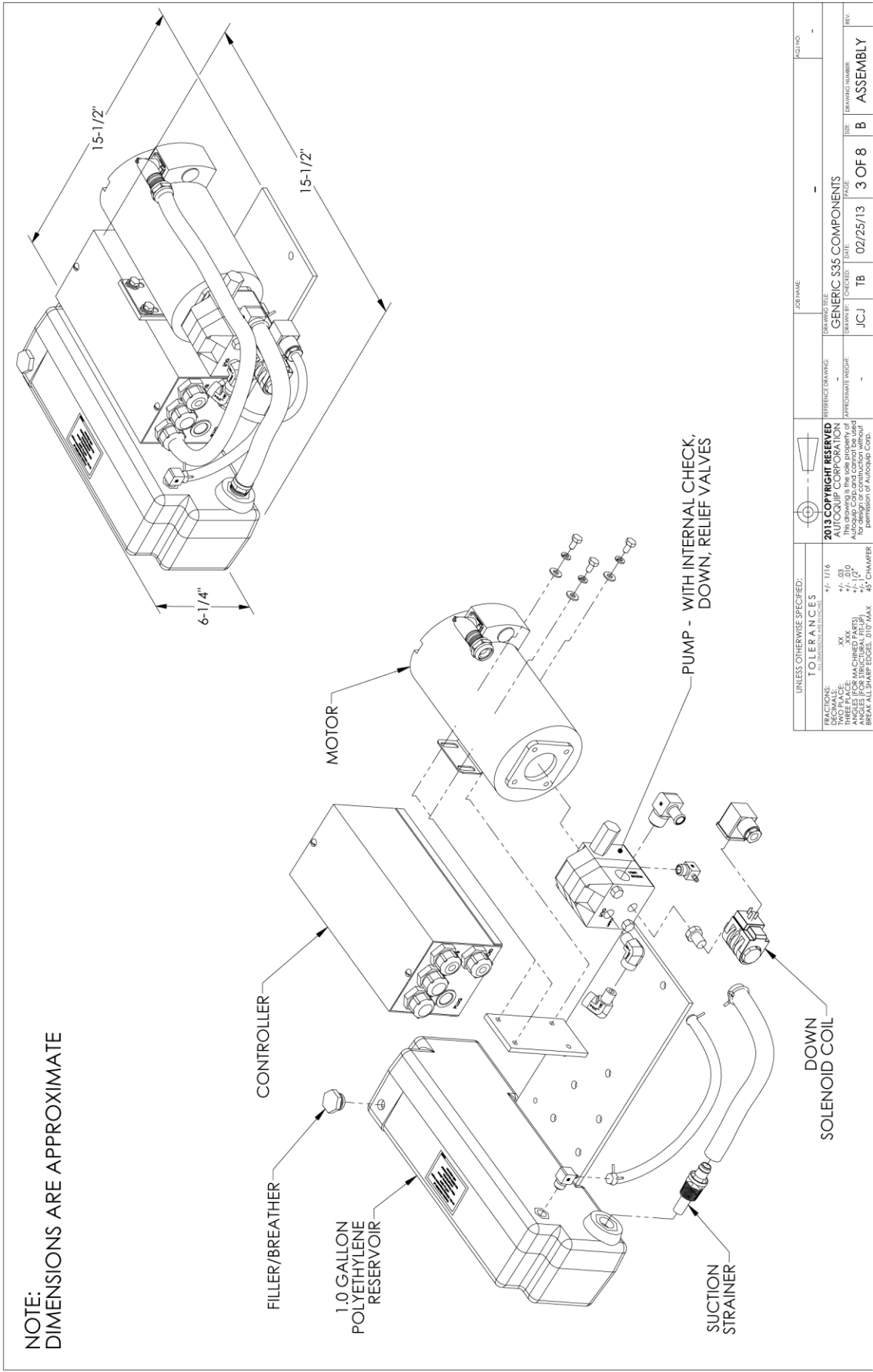
DETAIL B

DETAIL A

UNLESS OTHERWISE SPECIFIED:		TOLERANCES		DIMENSIONS		JOB NAME		JOB NO.	
FRACTIONS: ALL DIMENSIONS IN INCHES		+/-. 1/16		+		-		-	
DIMALS: ALL DIMENSIONS IN MILLIMETERS		+/-. 0.03		+		-		-	
THREE PLACE DECIMALS		+/-. 0.10		+		-		-	
TWO PLACE DECIMALS		+/-. 0.25		+		-		-	
ONE PLACE DECIMALS		+/-. 0.50		+		-		-	
ANGLES (FOR STRUCTURAL FLUPT)		+/-. 1°		+		-		-	
BREAK ALL SHARP EDGES (R) OR MAX.		.05 CHAMFER		+		-		-	
2013 COPYRIGHT RESERVED		DRAWING TITLE		JOB NAME		JOB NO.		-	
AUTOQUIP CORPORATION		GENERIC S35 COMPONENTS		-		-		-	
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APPROXIMATE WEIGHT		DRAWN BY		J.C.J.		T.B.		02/25/13	
-		-		-		-		2 OF 8	
-		-		-		-		B	
-		-		-		-		ASSEMBLY	
-		-		-		-		REV.	

ASSEMBLY 3 OF 8

NOTE:
DIMENSIONS ARE APPROXIMATE

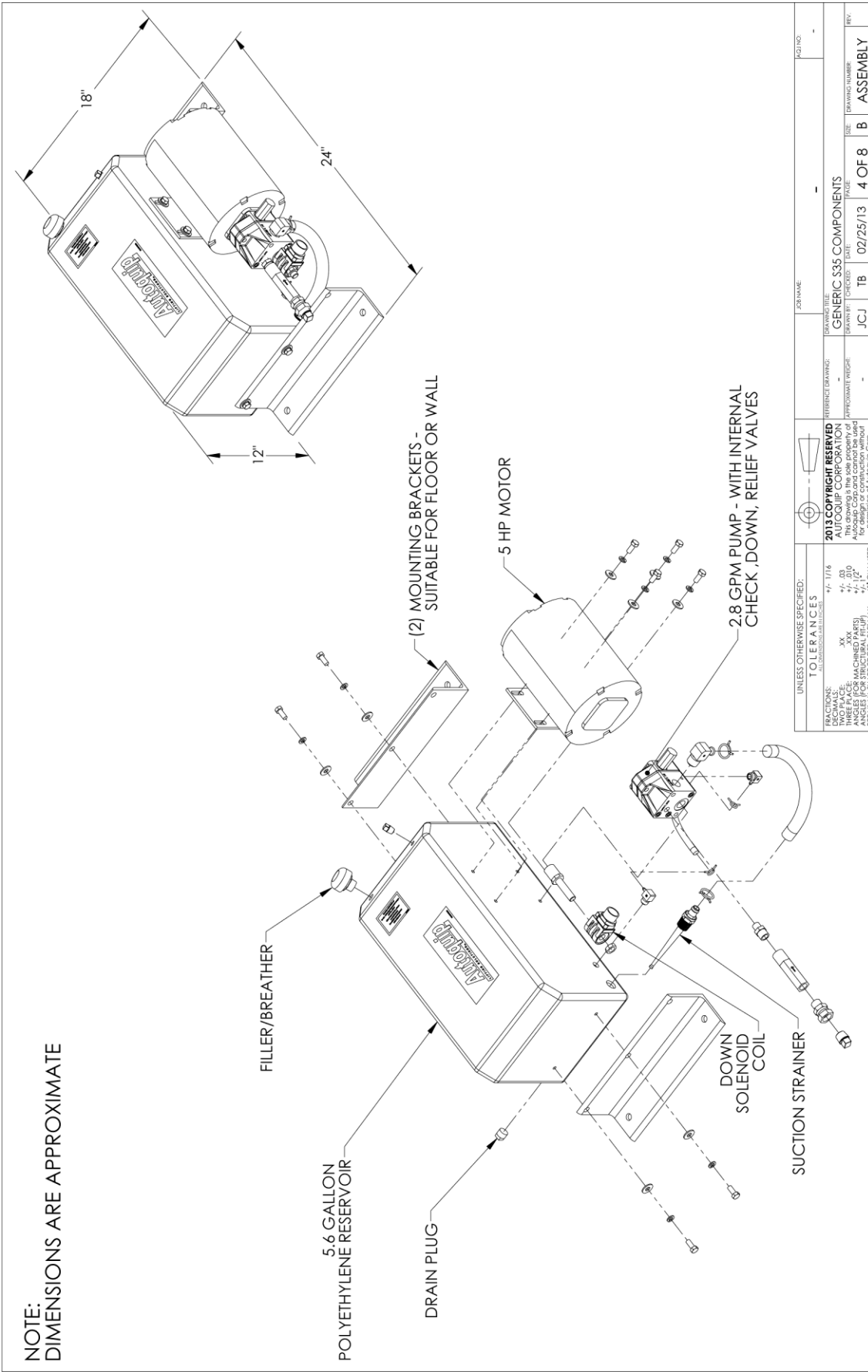


Series 35 Power Unit

UNLESS OTHERWISE SPECIFIED:		JOB NAME		JOB NO.	
TOLERANCES		REFERENCE DRAWING		DRAWING TITLE	
FRACIONS:	1/16	2013 COPYRIGHT RESERVED		GENERIC S35 COMPONENTS	
TWO PLACE	.03	AUTOCOIL CORPORATION		PARTS: 1100	
THREE PLACE	.010	Autocorp Corp. and control use. Used		DATE: 02/25/13	
ANGLES (FOR MACHINED PARTS)	1/2°	Autocorp Corp. and control use. Used		ISS: B	
ANGLES (FOR CASTING PARTS)	1/2°	Autocorp Corp. and control use. Used		REV: ASSEMBLY	
ANGLES (FOR WELDING PARTS)	45° CHAMFER	Autocorp Corp. and control use. Used		PARTS: 3 OF 8	
PARTS (FOR PARTS)		Autocorp Corp. and control use. Used		JOB: B	
PARTS (FOR PARTS)		Autocorp Corp. and control use. Used		JOB: B	

ASSEMBLY 4 OF 8

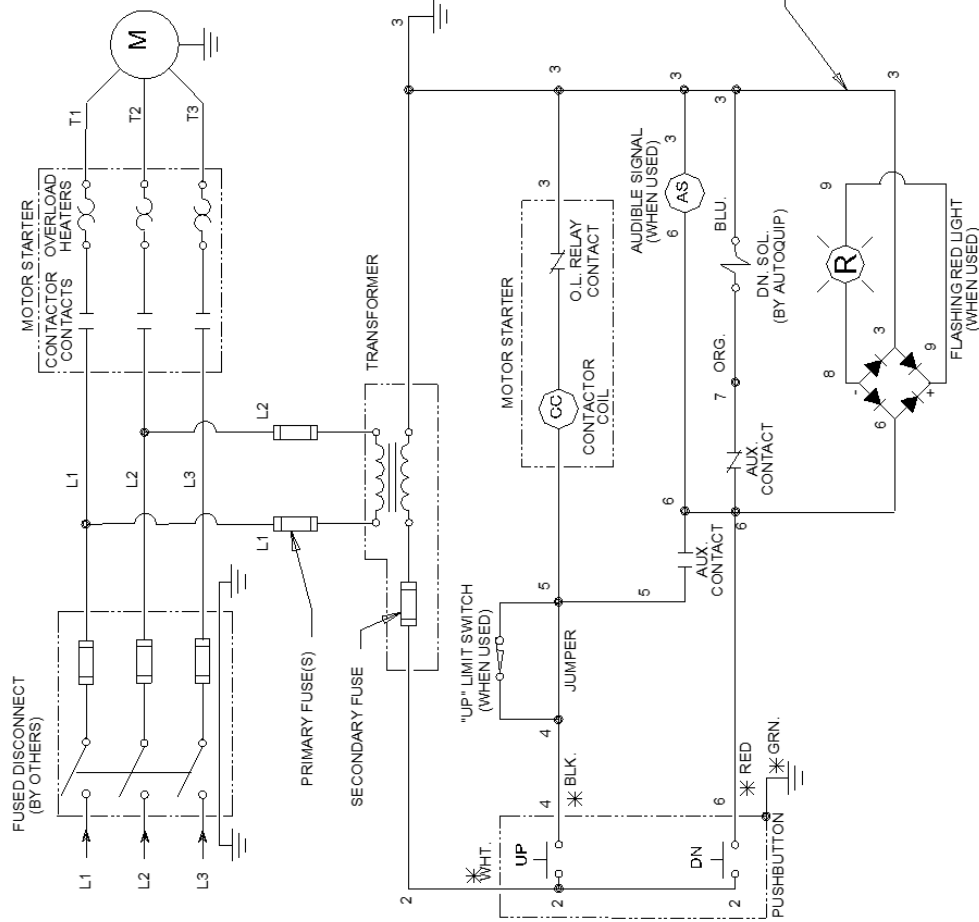
NOTE:
DIMENSIONS ARE APPROXIMATE



Contractor Power Unit

UNLESS OTHERWISE SPECIFIED:		TOLERANCES		JOB NAME		JOB NO.	
FRACTIONS:	1/16	ALL DIMENSIONS IN INCHES		DRAWING TITLE		DRAWING NUMBER	
DIMENSIONS:	XX			GENERIC S35 COMPONENTS		4 OF 8	
THREE PLACE DECIMALS:	.03			DRAWN BY		DATE	
ANGLES:	1/2°			JCJ		TB	
ANGLES FOR STRUCTURAL PLUFF:	1/4°			CHECKED		DATE	
BREAK ALL SHARP EDGES .010 R MAX.	.45° CHAMFER			APPROXIMATE WEIGHT		SCALE	
				2013 COPYRIGHT RESERVED			
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				reproduced or used for design or construction without			
				the written permission of Autoquip Corp.			

bb/UUU3U



NOTES:

1. "UP" LIMIT SWITCH (OPTIONAL). WHEN USED, REMOVE JUMPER BETWEEN #4 AND #5.
2. "R"=RED FLASHING LIGHT (OPTIONAL).
3. "AS"= AUDIBLE SIGNAL (OPTIONAL).
4. SEE ASSEMBLY AND/OR SPEC. SHEET FOR SPECIFIC VOLTAGES, OR CONTROLS SUPPLIED AND CONFIGURATION.
5. PUSHBUTTON SHOWN AS TYPICAL PILOT DEVICE.
6. TRANSFORMER PRIMARY CONNECTION DIAGRAMS ARE LOCATED ON INSIDE FRONT COVER OR ON DEVICE.

* COLOR CODE OF STANDARD PENDENT PUSHBUTTON WHEN SUPPLIED

FIELD WIRING TYP. (BY OTHERS)

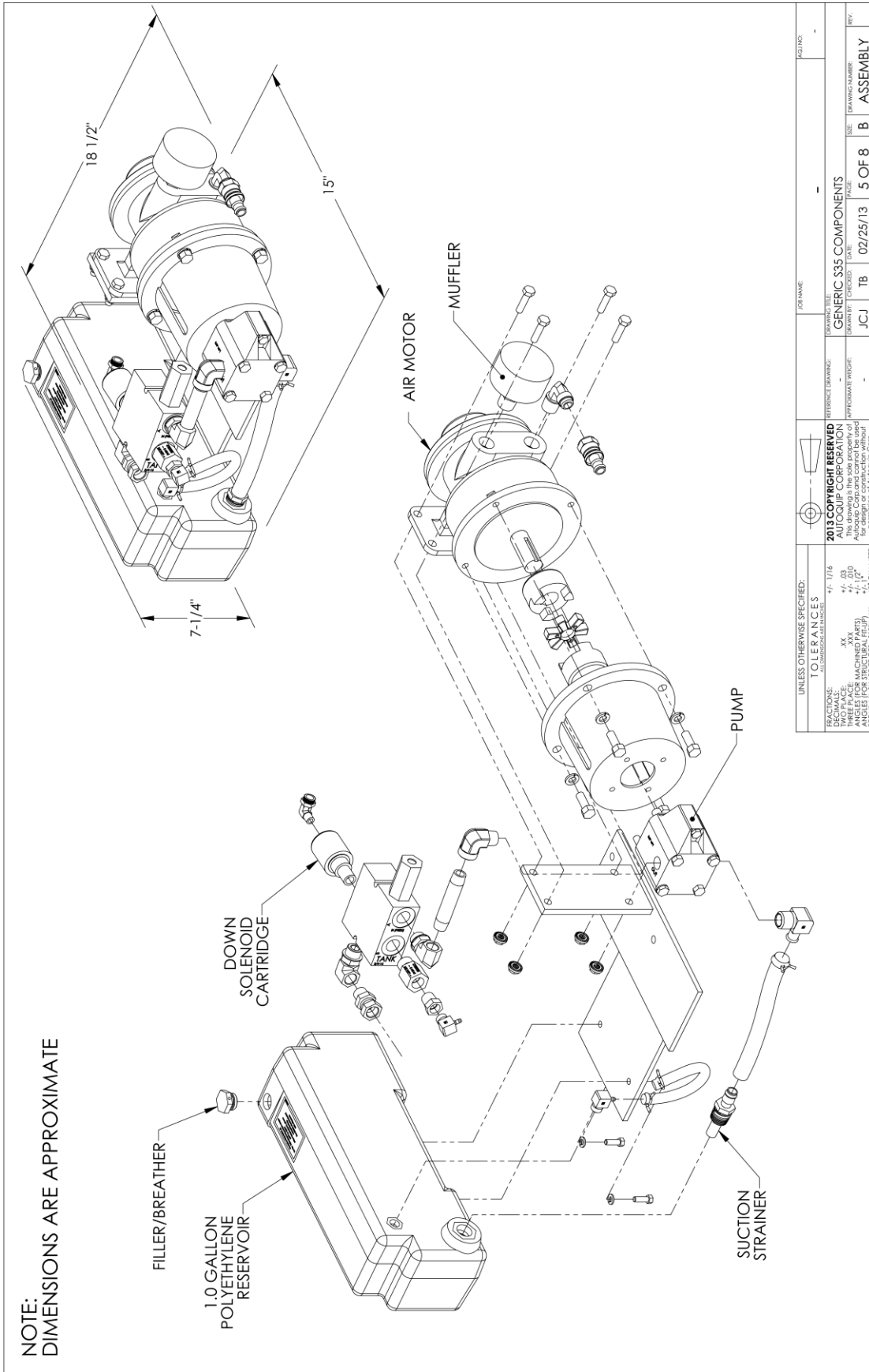
REV	DESCRIPTION	BY	DATE
	JOB NAME		ORDER NO.
Autoquip			
REFERENCE DRAWING:	DRAWING TITLE:	ELEC SCH FOR VERT & CONTR PU	
APPROXIMATE WEIGHT:	DRAWN BY: DATE:	QTY: REQ'D: PAGE:	REV. DRAWING NUMBER: SIZE:
	CG/WB 7/21/95	1 OF 1 3	65700030 A

5HP / 208-230-460V / 3 Phase Contractor PU

Air Requirement: 90 PSI & 110 CFM

ASSEMBLY 5 OF 8

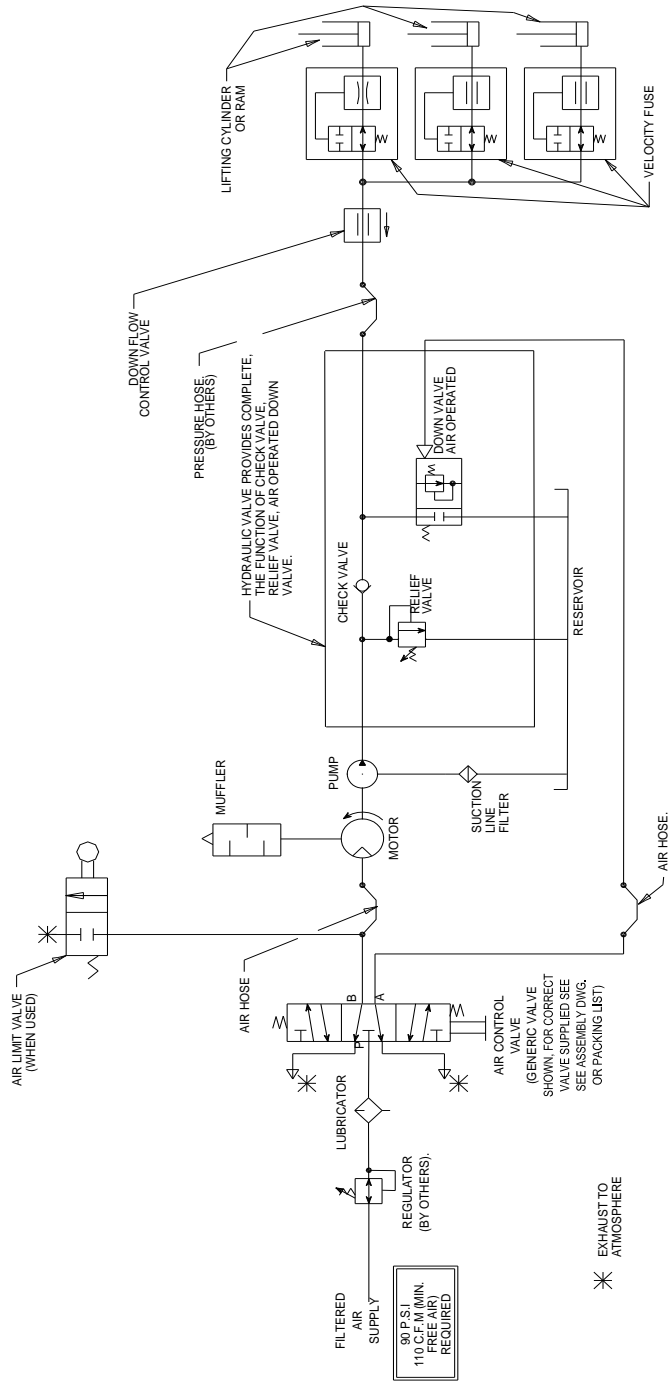
NOTE:
DIMENSIONS ARE APPROXIMATE



UNLESS OTHERWISE SPECIFIED:		JOB NAME		JOB NO.	
TOLERANCES		DRAWING TITLE		DATE	
ALL DIMENSIONS ARE IN INCHES		GENERIC S35 COMPONENTS		02/25/13	
FRACTIONS:	1/16	DRAWN BY	JCJ	5 OF 8	B
DECIMALS:	.01	CHECKED BY	TB	ASSEMBLY	REV.
THREE PLACE:	.000	DATE			
ANGLES:	1/2°	APPROXIMATE WEIGHT			
ANGLES (FOR STRUCTURAL STEEL):	1/4°				
BREAK ALL SHARP EDGES .010" MAX.					

Series 35 Air Power Unit (P/N 64306710)

65825000



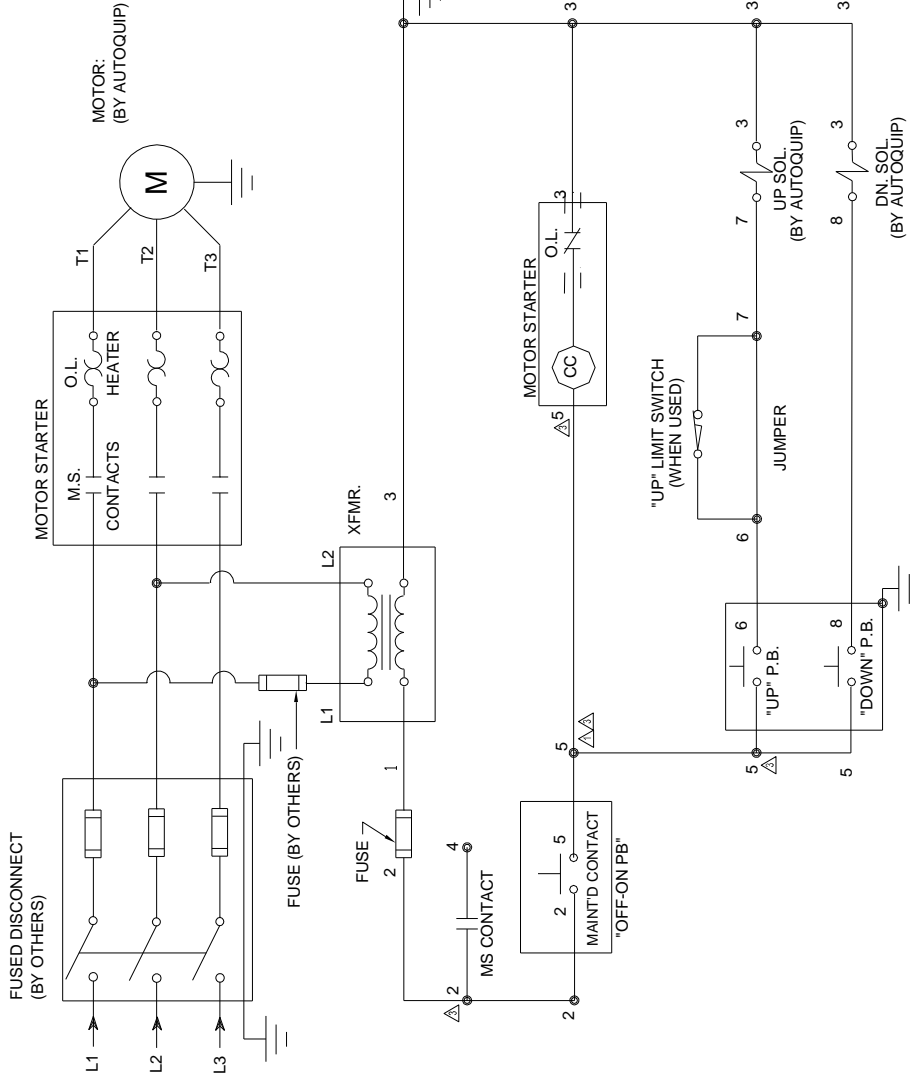
QUANTITY OF CYLINDER / RAMS AND VELOCITY FUSES DEPENDS ON THE MODEL OF LIFT USED.
(1) VELOCITY FUSE PER CYLINDER / RAM.

AIR / HYDRAULIC SCHEMATIC

©2005 COPYRIGHT RESERVED AUTOQUIP CORPORATION		JOB NAME:		ORDER NO:	
This drawing is the sole property of Autoquip Corp. and cannot be used for design and construction without permission of Autoquip Corp.		DRAWING TITLE: AIR/HYD. SCHEM FOR AIR MOTOR P.U. - DELTA		DRAWING NUMBER: 65825000	
REFERENCE DRAWING: 65808750	DRAWN BY: TB	DATE: 8/22/00	QTY REQD: 1	REV: 1 OF 1	SIZE: A
APPROXIMATE WEIGHT:		PAGE: 1 OF 1		DRAWING NUMBER: 65825000	

Standard & Contractor Air Power Units

657-0050-0



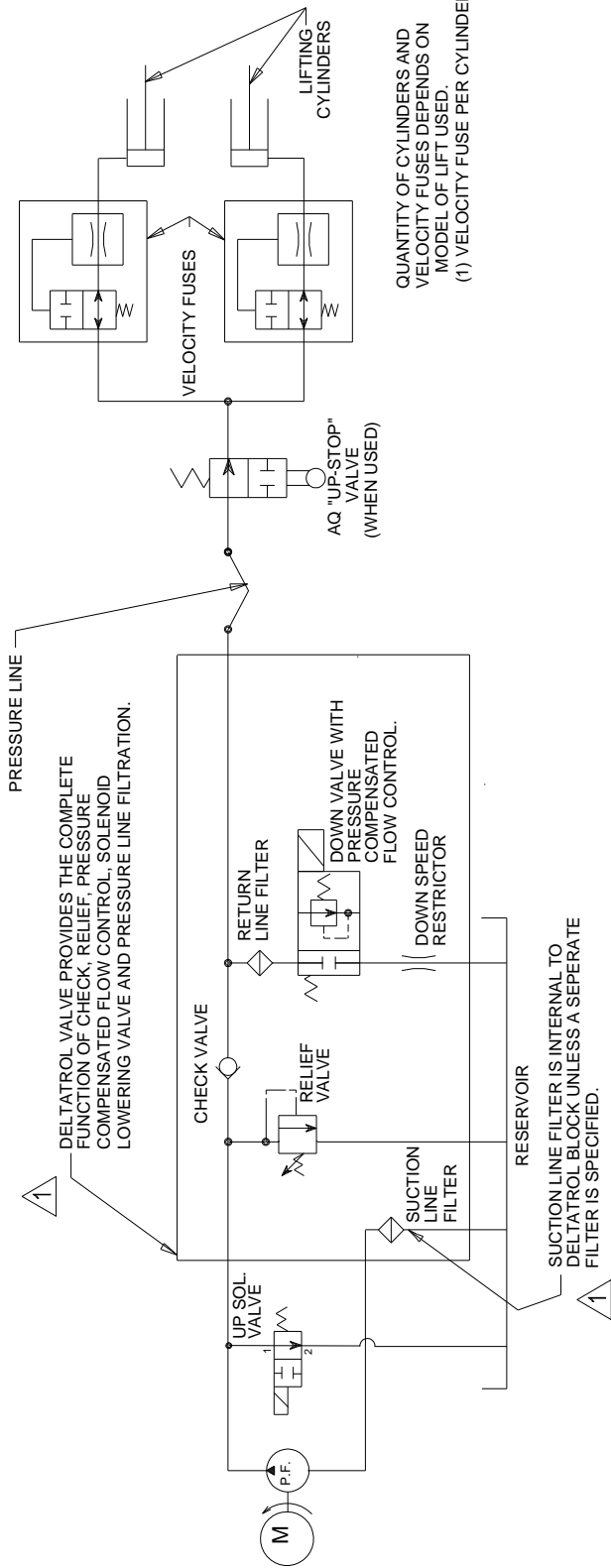
NOTES:

1. FOR USE WITH PUSHBUTTON CONTROLS.
2. SEE ASSEMBLY AND/OR SPEC. SHEET FOR SPECIFIC VOLTAGES, OR CONTROLS SUPPLIED AND CONFIGURATION.
3. MS = MOTOR STARTER
4. XFMR = TRANSFORMER
5. P.B. = PUSHBUTTON
6. SOL. = SOLENOID COIL
7. ALL INTERCONNECTING WIRING (BY OTHERS).
8. "UP" LIMIT SWITCH (OPTIONAL). WHEN USED, REMOVE JUMPER BETWEEN #6 AND #7.

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<p>REFERENCE DRAWING:</p>		<p>DRAWING TITLE:</p>		<p>657-0050-0</p>
<p>APPROXIMATE WEIGHT:</p>		<p>DATE:</p>	<p>REV:</p>	<p>SIZE:</p>
<p>DRAWN BY:</p>		<p>QTY REQD:</p>	<p>PAGE:</p>	<p>DRAWING NUMBER:</p>
<p>TB</p>		<p>9/16/99</p>	<p>1 OF 1</p>	<p>3 657-0050-0</p>
				<p>A</p>

Continuous Running Vertical Power Unit

657-5007-0



DELTA TROL VALVE PROVIDES THE COMPLETE FUNCTION OF CHECK, RELIEF, PRESSURE COMPENSATED FLOW CONTROL, SOLENOID LOWERING VALVE AND PRESSURE LINE FILTRATION.

PRESSURE LINE

AQ "UP-STOP" VALVE (WHEN USED)

VELOCITY FUSES

LIFTING CYLINDERS

QUANTITY OF CYLINDERS AND VELOCITY FUSES DEPENDS ON MODEL OF LIFT USED.
(1) VELOCITY FUSE PER CYLINDER.

SUCTION LINE FILTER IS INTERNAL TO DELTA TROL BLOCK UNLESS A SEPERATE FILTER IS SPECIFIED.

Continuous Running Vertical Unit

Autoquip		JOB NAME:		ORDER NO:		
REFERENCE DRAWING:	DRAWING TITLE:	HYD SCH FOR SCISSORS LIFT WIDELATROL, CONT RUNNING				
APPROXIMATE WEIGHT:	DRAWN BY:	DATE:	QTY REC'D:	PAGE:	REV:	
<2T	CG/MA	6/4/96	1 OF 1	1	1	
					DRAWING NUMBER:	SIZE:
					657-5007-0	A

