

INSTALLATION, OPERATION AND SERVICE MANUAL

PLTC SCISSORS DOCK LIFT



Autoquip[®]

P.O. Box 1058 • 1058 West Industrial Avenue • Guthrie, OK 73044-1058 • 888-811-9876
405-282-5200 • FAX: 405-282-3302 • www.autoquip.com

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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.

1.3 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	Travel (inches)	Capacity (lbs)	Platform Width (inches)	Platform Length (inches)	Lowered Height (inches)	Shipping Weight Approx. (lbs)	Axle Load Capacity		
							Clevis End (Bridge) (lbs)	Roller End (lbs)	Sides (lbs)
PLTC-6050	60	5000	72	100	8	2800	3000	3000	2500
6050A	60	5000	96	100	8	3300	3000	3000	2000
6050S	60	5000	72	120	8	3400	2000	2000	2500
6050B	60	5000	84	120	8	3400	2000	2000	2250
6050K	60	5000	96	120	8	3600	2000	2000	2000
PLTC-6060	60	6000	72	100	8	3000	3000	3000	2500
6060A	60	6000	96	100	8	3400	3000	3000	2000
6060S	60	6000	72	120	8	3400	2000	2000	2500
6060B	60	6000	84	120	8	3500	2000	2000	2250
6060K	60	6000	96	120	8	3600	2000	2000	2000
PLTC-6070	60	7000	72	96	12	4600	6400	6400	6400
6070A	60	7000	96	96	12	4780	6400	6400	5400
6070S	60	7000	72	120	12	4800	6400	6400	6400
6070B	60	7000	84	120	12	4900	6400	6400	6000
6070K	60	7000	96	120	12	5100	6400	6400	5400
PLTC-6080	60	8000	72	96	12	4700	6400	6400	6400
6080A	60	8000	96	96	12	4890	6400	6400	5400
6080S	60	8000	72	120	12	4800	6400	6400	6400
6080B	60	8000	84	120	12	5100	6400	6400	6000
6080K	60	8000	96	120	12	5300	6400	6400	5400
PLTC-60100	60	10000	72	100	12	4800	8000	8000	6400
60100A	60	10000	96	100	12	4990	8000	8000	5400
60100S	60	10000	72	120	12	4900	6400	6400	6400
60100B	60	10000	84	120	12	5200	6400	6400	6000
60100K	60	10000	96	120	12	5400	6400	6400	5400
PLTC-58120	58	12000	72	100	12.5	4900	10000	10000	8000
58120A	58	12000	96	100	12.5	5100	10000	10000	6400
58120S	58	12000	72	120	12.5	5300	8000	8000	8000
58120B	58	12000	84	120	12.5	4950	8000	8000	7200
58120K	58	12000	96	120	12.5	5500	8000	8000	6400
PLTC-58150	58	15000	72	100	12.5	4900	10000	10000	8000
58150A	58	15000	96	100	12.5	5100	10000	10000	6400
58150S	58	15000	72	120	12.5	5300	8000	8000	7200
58150B	58	15000	84	120	12.5	4950	8000	8000	8000
58150K	58	15000	96	120	12.5	5500	8000	8000	6400

NOTES:

- All PLTC Models have a rollover capacity equal to twice the lifting capacity when in the fully lowered position.
- All PLTC Models have (2) lifting cylinders.

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


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

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 PLTC 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.

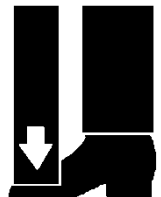
NOTICE

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 2800 – 5500 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 66" 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

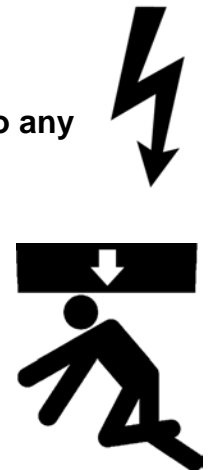
Prevent serious injury or death.

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.



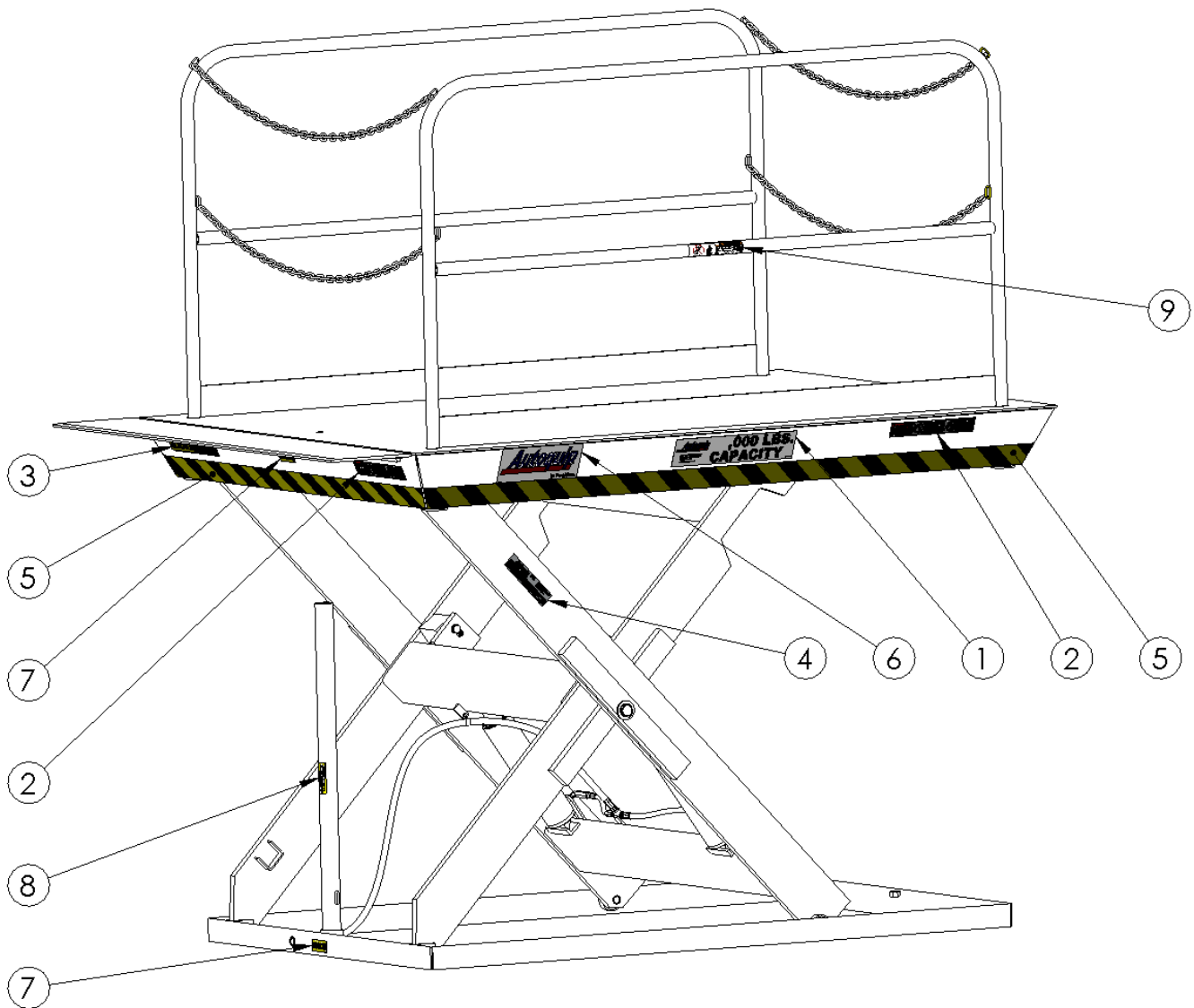
3.6 Modifications

⚠ 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.



1058 W. INDUSTRIAL AVE.
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www.autoquip.com

,000 LBS. CAPACITY

36401594

1 – 36401594

<p>DANGER</p>		<p>Do not put hands or feet under top.</p>		<p>Do not work under lift without maintenance device.</p>
<p>To avoid bodily injury, read all instructions before operating or servicing lift.</p>				<p><small>Cut-Extruded</small></p>

2 – 36430050M

<p>CAUTION</p>	<p>FAMILIARIZE YOURSELF WITH OPERATORS MANUAL BEFORE OPERATING THIS EQUIPMENT</p>
-----------------------	---

3 – 36401487

	<p>A SUBSIDIARY OF MINER ENTERPRISES INC. CORPORATION</p>	<p>P.O. Box 1058 1058 W. INDUSTRIAL GUTHRIE, OK 73044-1058 888-811-9876 WWW.AUTOQUIP.COM.</p>
<p>MAXIMUM LOAD <input type="text"/></p> <p>MODEL NUMBER <input type="text"/></p> <p>SERIAL NO. <input type="text"/></p>	<p>MAXIMUM AXLE LOAD OVER EDGES <input type="text"/></p>	<p>36401560</p>

4 – 36401560



5 – 06100010

AutoquipSM

In Position.

36403225

6 – 36403225

LEG SOCKET

36400265

7 – 36400265

MAINTENANCE DEVICE

For use only in maintenance of LIFT. Not to be used to support the lift platform when loaded.
See instruction manual for proper usage.

36400257

8 – 36400257



9 – 36403715

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 Contractor Remote Power Unit

1. The Contractor Power Unit utilizes a 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.
- 3.

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.
- 3.

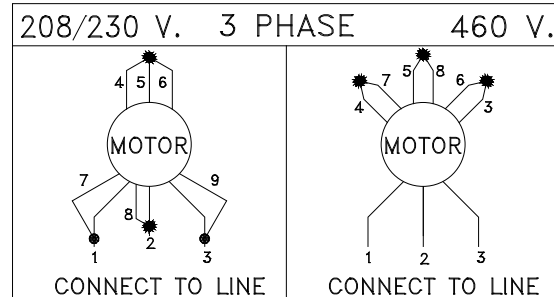
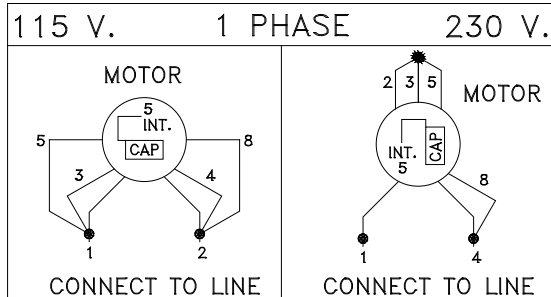
NOTE: For larger horsepower motors, consult factory.

Motor Details					Full Load Amps			
HP	HZ	PH	RPM	Time Rating	115V	208V	230V	460V
3	60	1	1725	2 Min.	33.6	16.8	16.8	-
5	60	1	1800	2 Min.	-	25.2	23.0	-
5 (Contractor)	60	3	3450	2 Min.	-	15.8	14.8	7.4
5 (Vertical HD)	60	3	3475	2 Min.	-	16.0	15.2	7.6
5 (Continuous)	60	3	1760	Continuous	-	13.6	12.6	6.6

⚠ WARNING

Prevent serious injury or death.

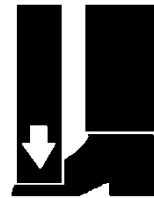
Electrical service installation must be performed by a licensed electrician and conform to all local and national electrical codes.



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 (Reference drawing 82600431 below). Pit should 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.

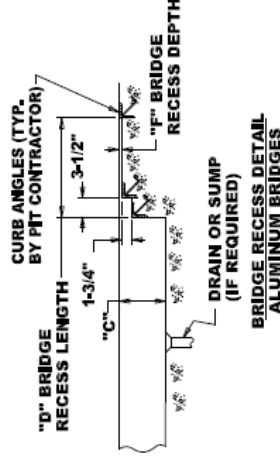
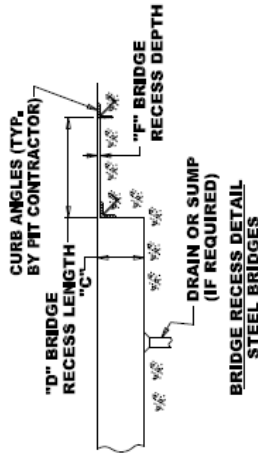
Depending on model, standard weight of lift ranges from 500 – 4700 lbs.

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

82600431

MODEL	PLATFORM	"A" PIT WIDTH	"B" PIT LENGTH w/BRIDGE	"B" PIT LENGTH w/o BRIDGE	"C" PIT DEPTH
PLT-C					
PLT-6050	71-1/2" x 96"	73-1/2"	99"	98"	8-1/2"
PLT-6060					
PLT-6050A	96" x 96"	98"	99"	98"	8-1/2"
PLT-6060A					
PLT-6050S	72" x 120"	74"	123"	122"	8-1/2"
PLT-6060S					
PLT-6050B	84" x 120"	86"	123"	122"	8-1/2"
PLT-6060B					
PLT-6050K	96" x 120"	98"	123"	122"	8-1/2"
PLT-6060K					
PLT-6070					
PLT-6080	72" x 100"	74"	103"	102"	12-1/2"
PLT-60100					
PLT-60120					
PLT-60150					
PLT-6070A	96" x 100"	98"	103"	102"	12-1/2"
PLT-6080A					
PLT-60100A					
PLT-60120A					
PLT-60150A					
PLT-6070S	72" x 120"	74"	123"	122"	12-1/2"
PLT-6080S					
PLT-60100S					
PLT-60120S					
PLT-60150S					
PLT-6070B	84" x 120"	86"	123"	122"	12-1/2"
PLT-6080B					
PLT-60100B					
PLT-60120B					
PLT-60150B					
PLT-6070K	96" x 120"	98"	123"	122"	12-1/2"
PLT-6080K					
PLT-60100K					
PLT-60120K					
PLT-60150K					

D = BRIDGE RECESS LENGTH = BRIDGE LENGTH
 E = BRIDGE RECESS WIDTH = BRIDGE WIDTH + 2"
 F = BRIDGE RECESS DEPTH = BRIDGE THICKNESS + 1/8"



NOTES:

1. ALL CURB ANGLES, PIT WORK, ELECTRICAL WIRING, ETC. TO BE BY OTHERS.
2. LOCATION OF BASE FRAME MOUNTING HOLES DETERMINED WITH SELECTION OF LIFT. ANCHORS TO BE IN SOUND CONCRETE AND RESIST UPWARD PULL OF 2,000 LBS. IN EACH CORNER.
3. ALL PIT WALLS TO BE PLUMB. REVERSE SLOPE OF 1/4" IS PERMISSIBLE.

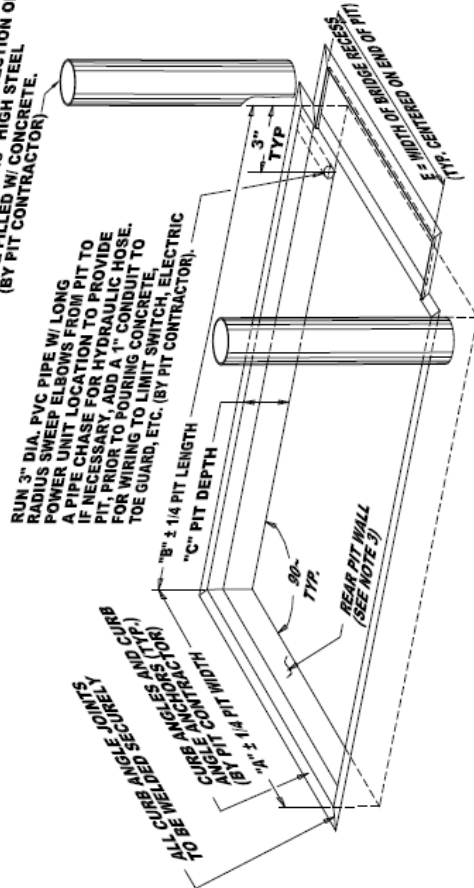
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 2010

BUMPER POSTS (IMBEDDED IN GROUND), RECOMMENDED FOR PROTECTION OF LIFT. 8" DIA. X 48" HIGH STEEL PIPE FILLED W/ CONCRETE. (BY PIT CONTRACTOR).



PLT - 4-SIDED PIT DETAIL

(NOT TO SCALE)
 PROPOSAL DRAWING
 QUOTE NO. _____

REV. 4, 08/29/14

82600431

PLT Pit Detail
 See Pit Installation Notes

4. Make temporary hose connections with high-pressure hose (see chart below) to allow the lift to be operated when it is set in the pit.
5. Temporarily connect electrical service and hydraulic hoses. The hose connection on the end of the base frame is 1/2" female NPT.

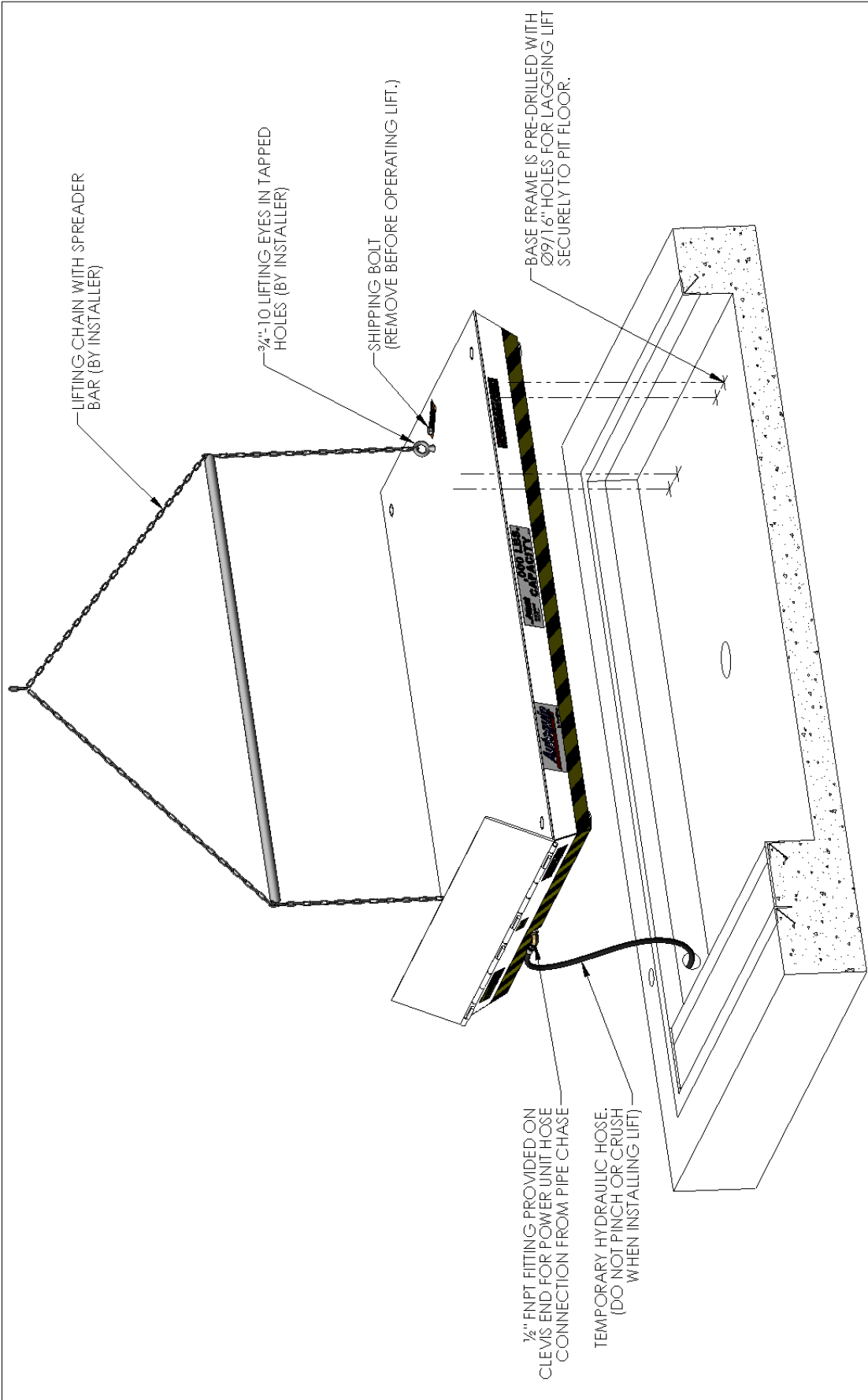
Hydraulic Piping/Hose Size

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

6. Fittings have been provided to extend the hose connection outside the bevel toe guard. Point the elbow toward the pipe chase in the pit.



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. Using 3/4-10 UNC eyebolts and a chain spreader, place the lift into the pit as illustrated below.



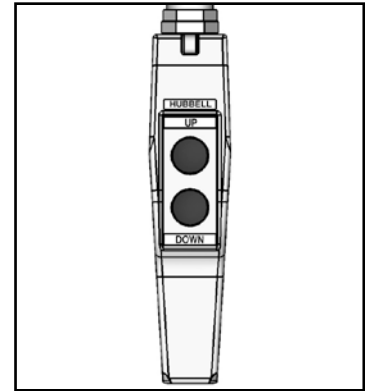
Lifting and Installation

9. 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.
10. Remove the shipping bolt and eye bolts from the lift and hydraulically raise the platform.

⚠ CAUTION

Failing to remove the shipping bolts before operation will cause permanent damage to the lift.

11. Fill hydraulic reservoir with proper type and volume of fluid.
12. Press “UP button and raise lift one foot.
13. 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.
14. Raise and lower lift as needed to make positioning adjustments.
15. 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.



16. 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”.
- 17.
18. Make permanent electrical and hydraulic connections and operate lift through a few cycles.
19. Clean up debris and spilled oil from area. Dispose of oil in an environmentally safe manner.
20. Touch-up paint is available from *Autoquip* for repair of damaged paint surfaces.
21. Train personnel on lift operation, all safety features and procedures.

4.4 Surface Installation

Surface installation procedures are the same as for pit installation instructions with the following consideration:

NOTICE

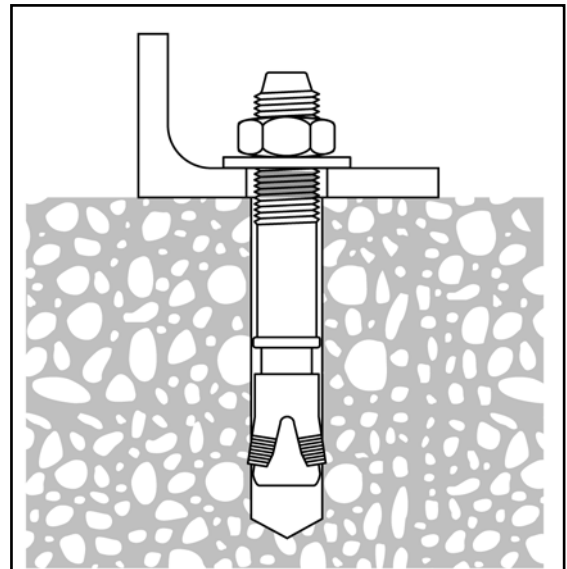
The surface area where the lift will be set must be flat and level and be of sound concrete of sufficient thickness to support the lift while loaded at full capacity. Asphalt is not sufficient support for the lift.

22.

4.5 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. Raise the platform and install the maintenance leg (see “Maintenance Device Instructions” section).
3. Drill holes in concrete as specified by anchor bolt manufacturer.
4. Install and tighten anchors as specified by anchor bolt manufacturer.
5. Each lag bolts should be able to withstand 2000lbs. minimum upward pull.
6. After lift has been aligned, leveled and shimmed, and anchors have been installed, pour grout under entire base frame.
7. When grout has set and cured, tighten nuts on anchor bolts.
8. Route hydraulic hose or electrical cord through conduit in pit wall.



4.6 Bridge Lifting Chain Installation – Steel Bridge

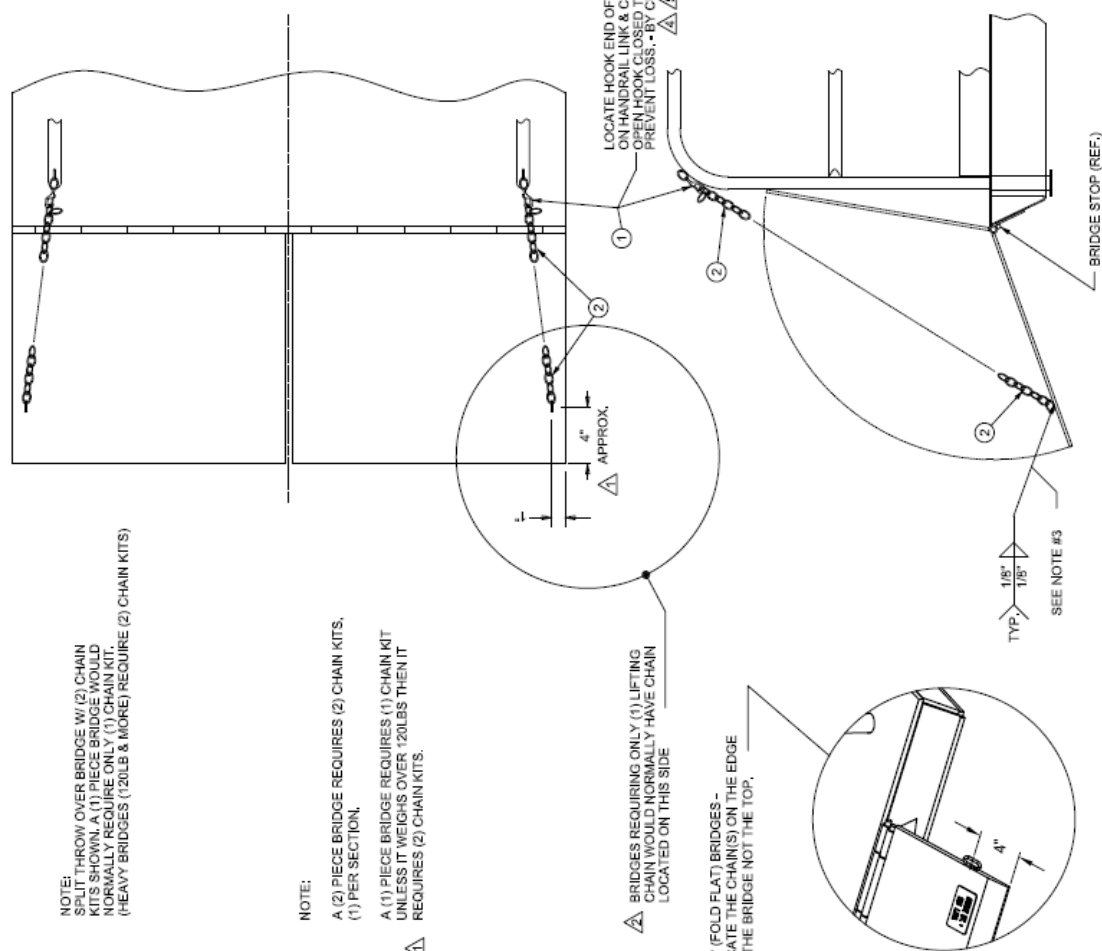
TOLERANCES UNLESS OTHERWISE SPECIFIED:
 FRACTIONS: $\pm 1/32$
 DECIMALS: X .1; .1
 ONE PLACE X .1; .1
 TWO PLACE X .01; .01
 THREE PLACE X .001; .001
 ANGLES: $\pm 1/16$
 BREAK ALL SHARP EDGES
 .010 MAX. \times 45° CHAMFER

INSTALLATION INSTRUCTIONS:

THE PURPOSE OF THE CHAIN IS TO PROVIDE A MEANS OF LIFTING BRIDGE AND SECURING BRIDGE IN THE RAISED POSITION, NOT TO SUPPORT BRIDGE IN THE LOWERED POSITION.

1. INSTALL SNAPHOOK ON LINK PROVIDED ON HANDRAIL BY CLAMPING OPEN EYELET CLOSED. TACK WELD IF DESIRED.
2. PLACE THE SECOND LINK FROM ONE END OF CHAIN PROVIDED IN THE SNAP END OF THE SNAPHOOK.
3. WITH LIFT RAISED ABOVE FLOOR LEVEL AND THE BRIDGE LOWERED TO REST ON ITS STOPS, PULL THE FREE END OF THE CHAIN TIGHT TO A POINT ON TOP OF THE BRIDGE, ONE INCH FROM ITS EDGE AS SHOWN. THE CHAIN MUST BE TIGHT ENOUGH TO CONNECT THE CHAIN FROM THE SNAP HOOK AND P-S-HOOK IT IN THE END LINK. THE CHAIN CAN BE SHORTENED IF DESIRED.
4. TO SECURE POSITION IN RAISED POSITION, PULL BRIDGE TO UPRIGHT POSITION AND LEAN IT AGAINST THE HANDRAIL. SECURE BRIDGE IN PLACE BY PULLING CHAIN TIGHT AND SECURING LINK IN SNAPHOOK.

(NOTE #3 APPLIES TO FIELD INSTALLED CHAINS: CHAINS THAT ARE INSTALLED AT AUTOQUIP SHOULD BE LOCATED TO DIMENSION SHOWN)



NOTE:
 SPLIT THROW OVER BRIDGE W/ (2) CHAIN KITS SHOWN. A (1) PIECE BRIDGE WOULD NORMALLY REQUIRE ONLY (1) CHAIN KIT. (HEAVY BRIDGES (120LB & MORE) REQUIRE (2) CHAIN KITS)

NOTE:
 A (2) PIECE BRIDGE REQUIRES (2) CHAIN KITS, (1) PER SECTION.

A (1) PIECE BRIDGE REQUIRES (1) CHAIN KIT UNLESS IT WEIGHS OVER 120LBS THEN IT REQUIRES (2) CHAIN KITS.

BRIDGES REQUIRING ONLY (1) LIFTING CHAIN WOULD NORMALLY HAVE CHAIN LOCATED ON THIS SIDE

180° (FOLD FLAT) BRIDGES - LOCATE THE CHAIN(S) ON THE EDGE OF THE BRIDGE NOT THE TOP.

(1) REQUIRED PER BRIDGE LEAF

7	CLARIFIED HEAVY BRIDGE	JCJ	5/1/09
6	ADDED 180° BRIDGE VIEW	AAA	10/04/06
5	ADDED HEAVY BRIDGE VALUE.		
4	DELETE SNAP HOOK FROM BOM	MS	5/26/04
3	ADDED SNAP HOOK TO BOM		
2	ADDED NOTE REVISION.	TB	5/14/04
1	ADDED CONTROL ISSUE SYMBOL	C.W.G.	2/27/97
	ADDED NOTE PER ECN #000486.	DWL	4/9/96
	ADDED DIMENSION & NOTE	WJBI	7/18/95

NO.	REVISIONS	BY	DATE
1	1 of 1		

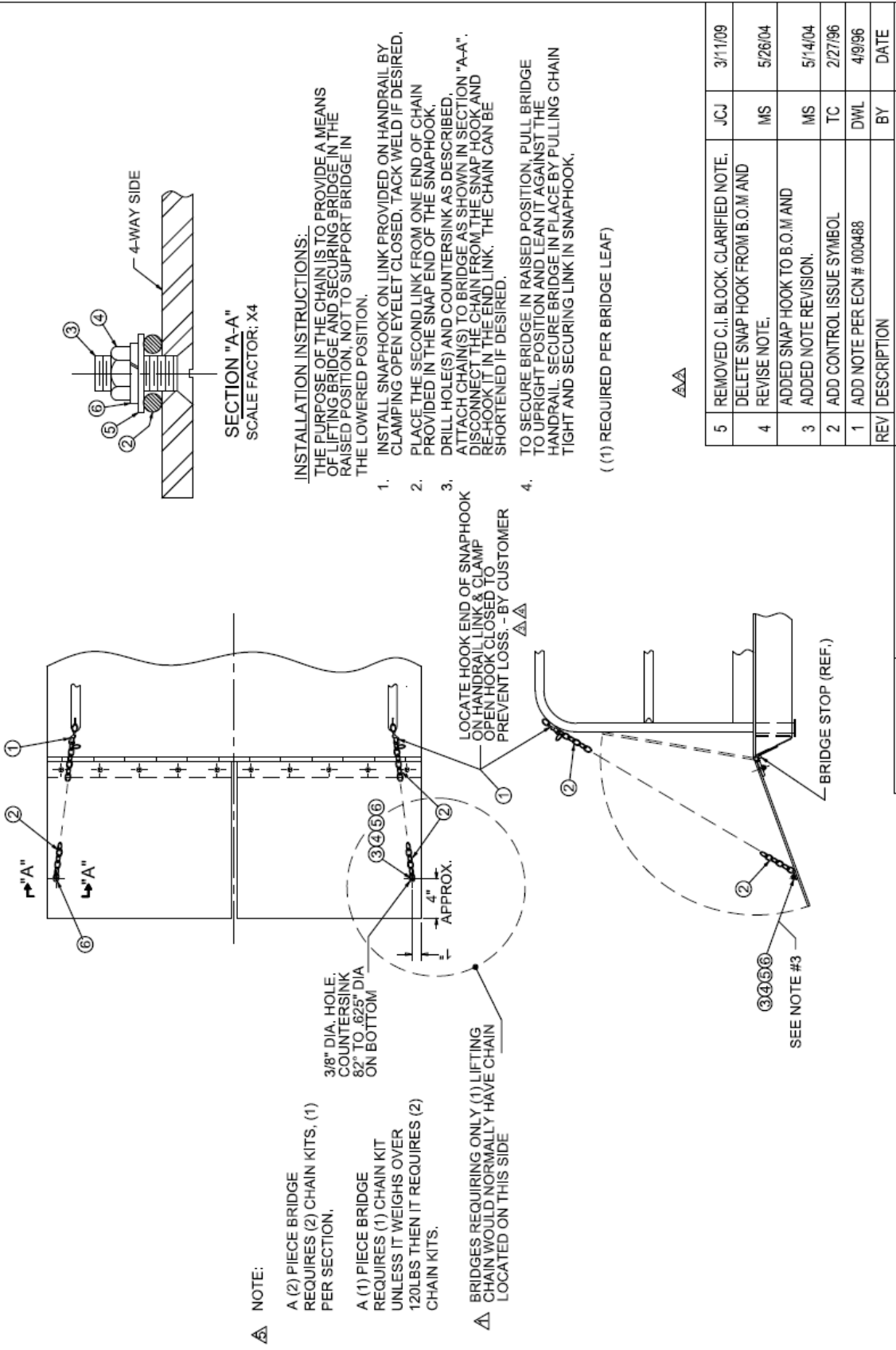
AUTOQUIP BOX 998 REVISED

BRIDGE LIFTING / HOLDING CHAIN

DATE: 5/31-0085-0

4.7 Bridge Lifting Chain Installation – Aluminum Bridge

531-0087-0



SECTION "A-A"
SCALE FACTOR: X4

- INSTALLATION INSTRUCTIONS:**
THE PURPOSE OF THE CHAIN IS TO PROVIDE A MEANS OF LIFTING BRIDGE AND SECURING BRIDGE IN THE RAISED POSITION, NOT TO SUPPORT BRIDGE IN THE LOWERED POSITION.
1. INSTALL SNAPHOOK ON LINK PROVIDED ON HANDRAIL BY CLAMPING OPEN EYELET CLOSED, TACK WELD IF DESIRED.
 2. PLACE THE SECOND LINK FROM ONE END OF CHAIN PROVIDED IN THE SNAP END OF THE SNAPHOOK, DRILL HOLE(S) AND COUNTERSINK AS DESCRIBED.
 3. ATTACH CHAIN(S) TO BRIDGE AS SHOWN IN SECTION "A-A". DISCONNECT THE CHAIN FROM THE SNAP HOOK AND RE-HOOK IT IN THE END LINK. THE CHAIN CAN BE SHORTENED IF DESIRED.
 4. TO SECURE BRIDGE IN RAISED POSITION, PULL BRIDGE TO UPRIGHT POSITION AND LEAN IT AGAINST THE HANDRAIL. SECURE BRIDGE IN PLACE BY PULLING CHAIN TIGHT AND SECURING LINK IN SNAPHOOK.

((1) REQUIRED PER BRIDGE LEAF)

AA

5	REMOVED C.I. BLOCK, CLARIFIED NOTE.	JCJ	3/1/09
4	DELETE SNAP HOOK FROM B.O.M AND REVISE NOTE.	MS	5/26/04
3	ADDED SNAP HOOK TO B.O.M AND ADDED NOTE REVISION.	MS	5/14/04
2	ADD CONTROL ISSUE SYMBOL	TC	2/27/96
1	ADD NOTE PER ECN # 000488	DWL	4/9/96
REV DESCRIPTION		BY	DATE
JOB NAME:		ORDER NO.	

Autoquip
CORPORATION

REFERENCE DRAWING: ALUM TOB LIFTING/HOLDING CHAIN KIT

APPROXIMATE WEIGHT: <2T

DATE: 11/6/95

QTY REQ'D: 1 OF 1

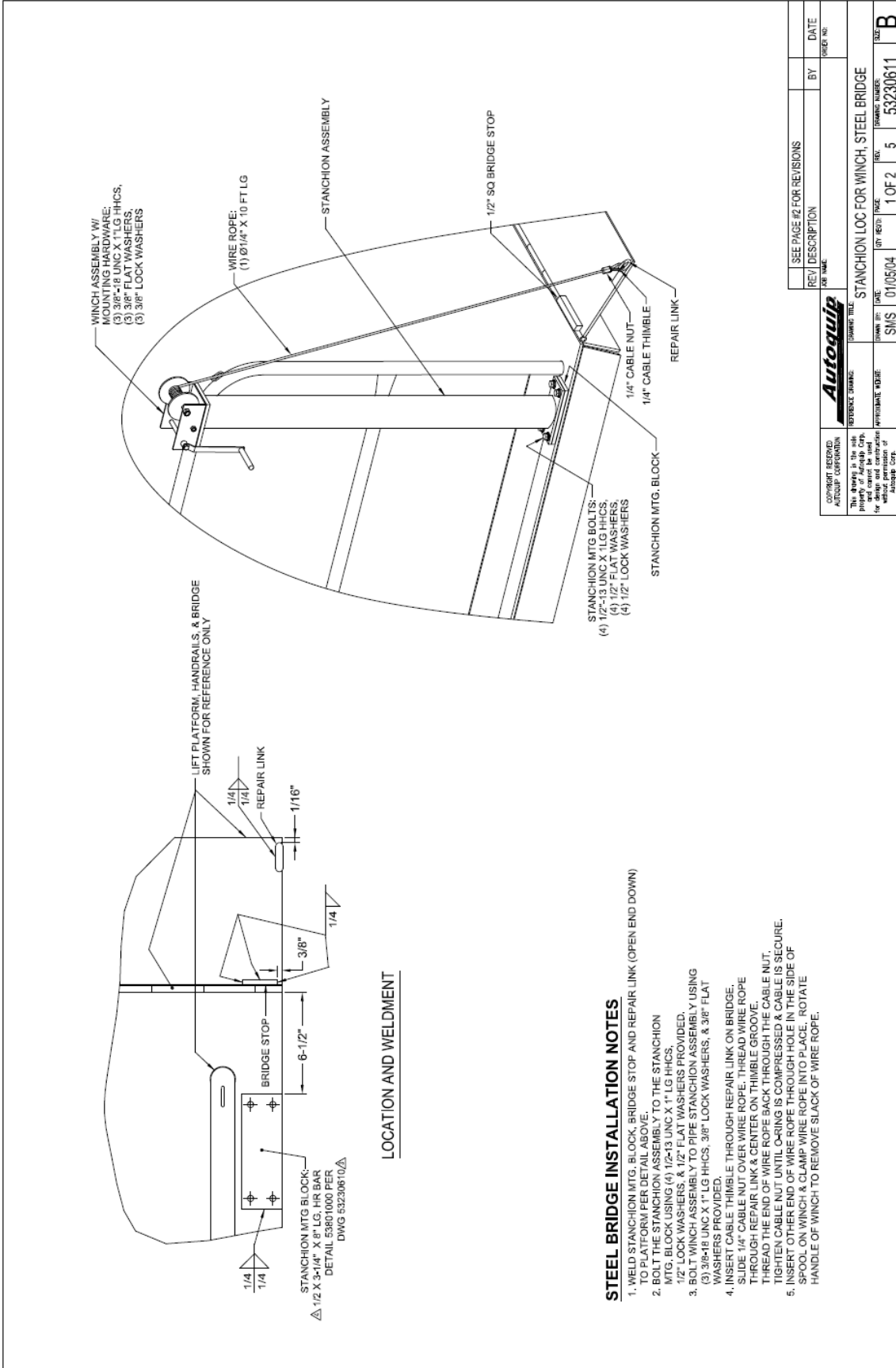
REV: 5

DRAWING NUMBER: 531-0087-0

SIZE: A

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4.8 Bridge Winch Installation – Steel Bridge



WINCH ASSEMBLY W/
MOUNTING HARDWARE:
(3) 3/8" - 18 UNC X 1" LG HHCS,
(3) 3/8" FLAT WASHERS,
(3) 3/8" LOCK WASHERS

WIRE ROPE:
(1) 1/4" X 10 FT LG

STANCHION ASSEMBLY

1/2" SQ BRIDGE STOP

1/4" CABLE NUT
1/4" CABLE THIMBLE

REPAIR LINK

STANCHION MTG BOLTS:
(4) 1/2" X 1" LG HHCS,
(4) 1/2" FLAT WASHERS,
(4) 1/2" LOCK WASHERS

STANCHION MTG. BLOCK

LIFT PLATFORM, HANDRAILS, & BRIDGE
SHOWN FOR REFERENCE ONLY

REPAIR LINK

1/4"

1/4"

1/16"

1/4"

1/4"

3/8"

1/4"

6-1/2"

BRIDGE STOP

STANCHION MTG BLOCK:
1/2" X 3-1/4" X 8" LG, HR BAR
DETAIL 53801000 PER
DWG 53230610

LOCATION AND WELDMENT

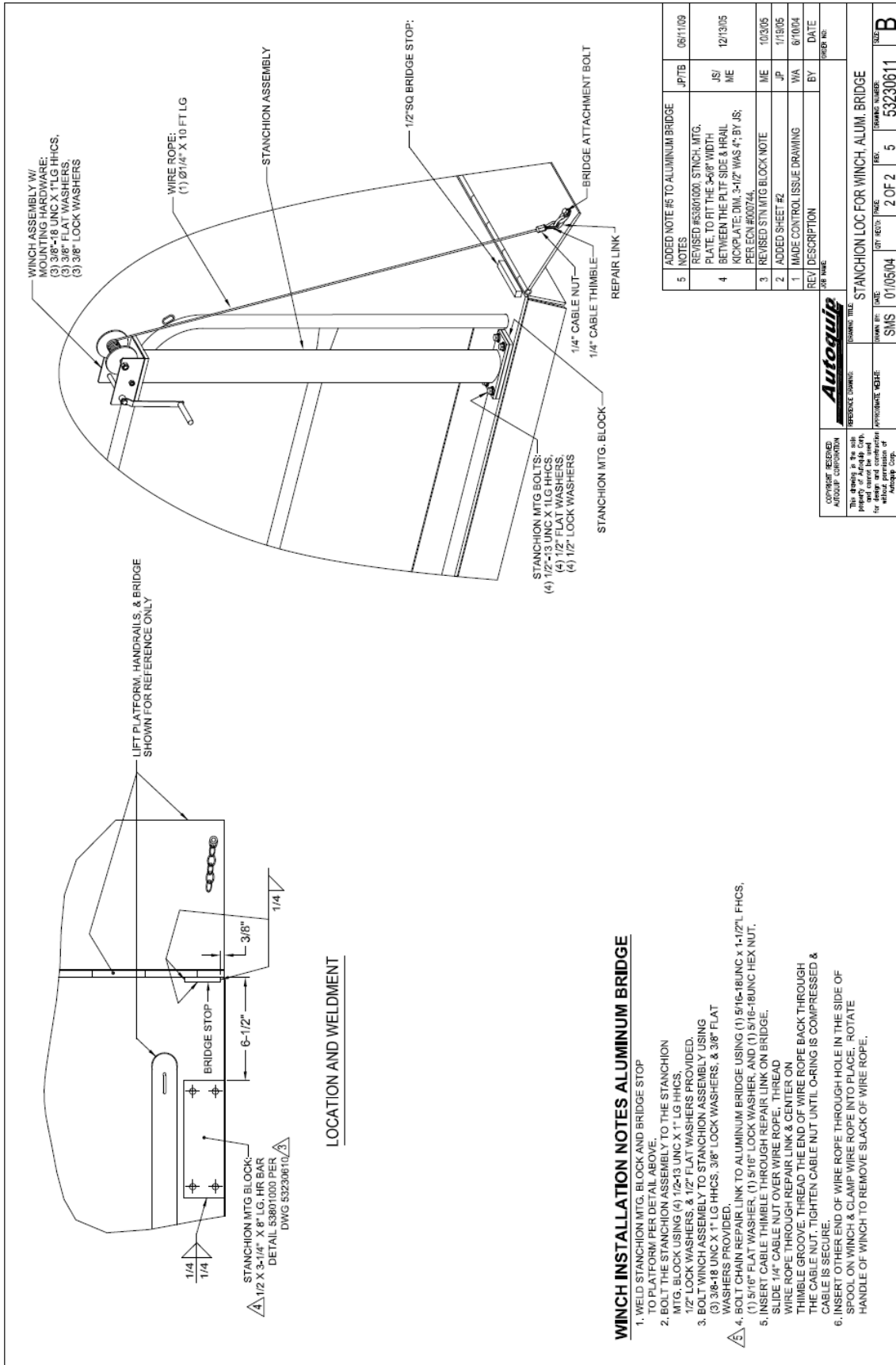
STEEL BRIDGE INSTALLATION NOTES

1. WELD STANCHION MTG. BLOCK, BRIDGE STOP AND REPAIR LINK (OPEN END DOWN) TO PLATFORM PER DETAIL ABOVE.
2. BOLT THE STANCHION ASSEMBLY TO THE STANCHION MTG. BLOCK USING (4) 1/2"-13 UNC X 1" LG HHCS, 1/2" LOCK WASHERS, & 1/2" FLAT WASHERS PROVIDED.
3. BOLT WINCH ASSEMBLY TO PIPE STANCHION ASSEMBLY USING (3) 3/8" UNC X 1" LG HHCS, 3/8" LOCK WASHERS, & 3/8" FLAT WASHERS PROVIDED.
4. INSERT CABLE THIMBLE THROUGH REPAIR LINK ON BRIDGE THROUGH REPAIR LINK & CENTER ON THIMBLE GROOVE. SLIDE 1/4" CABLE NUT OVER WIRE ROPE. THREAD WIRE ROPE THROUGH REPAIR LINK & CENTER ON THIMBLE GROOVE. THREAD THE END OF WIRE ROPE BACK THROUGH THE CABLE NUT. TIGHTEN CABLE NUT UNTIL O-RING IS COMPRESSED & CABLE IS SECURE.
5. INSERT OTHER END OF WIRE ROPE THROUGH HOLE IN THE SIDE OF SPOOL ON WINCH & CLAMP WIRE ROPE INTO PLACE. ROTATE HANDLE OF WINCH TO REMOVE SLACK OF WIRE ROPE.

SEE PAGE #2 FOR REVISIONS	BY	DATE
REV. DESCRIPTION		ORDER NO.
Autoquip		
PROPERTY RESERVED Autoquip Corporation	REFERENCE DRAWING	DRAWING TITLE
This drawing is the sole property of Autoquip Corp. and is not to be reproduced without permission of Autoquip Corp.	STANCHION LOC FOR WINCH, STEEL BRIDGE	
DATE	SHOWN BY	REV.
01/05/04	SMS	5
DATE	REV.	ORDER NO.
01/05/04	1 OF 2	53230611
		B

53230611

4.9 Bridge Winch Installation – Aluminum Bridge



LOCATION AND WELDMENT

WINCH INSTALLATION NOTES ALUMINUM BRIDGE

1. WELD STANCHION MTG. BLOCK AND BRIDGE STOP TO PLATFORM PER DETAIL ABOVE.
2. BOLT THE STANCHION ASSEMBLY TO THE STANCHION MTG. BLOCK USING (4) 1/2-13 UNC X 1\"/>

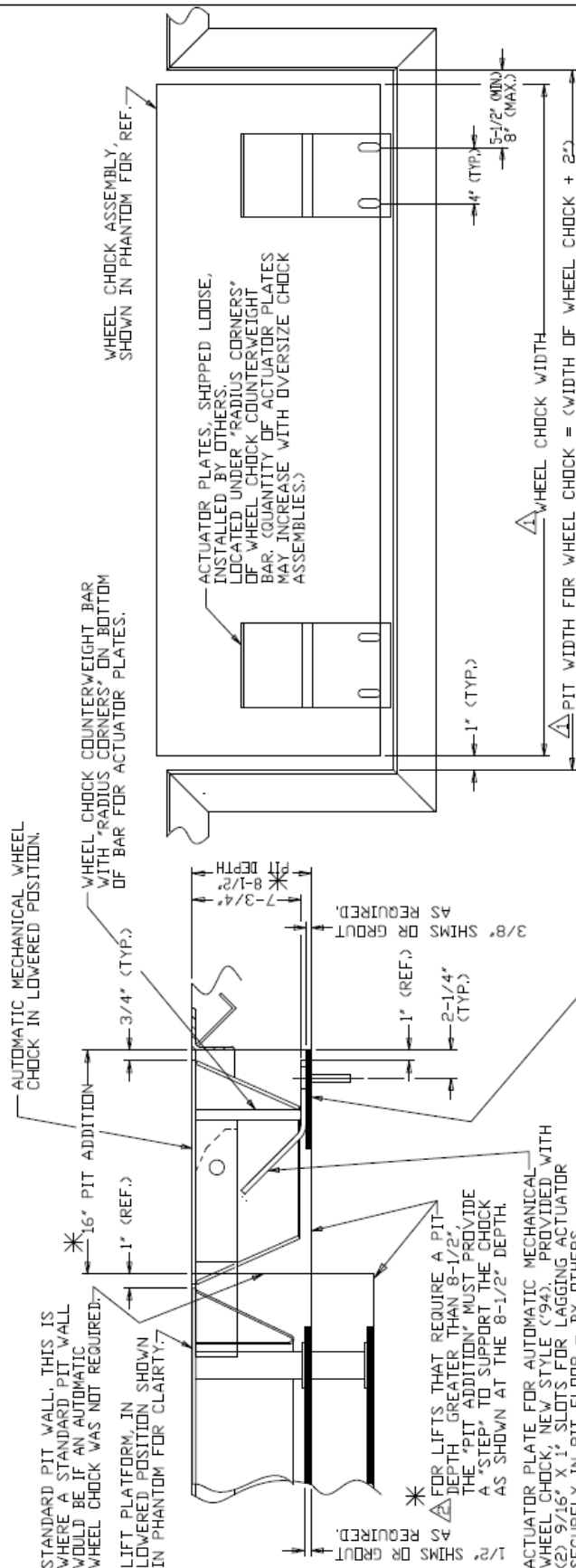
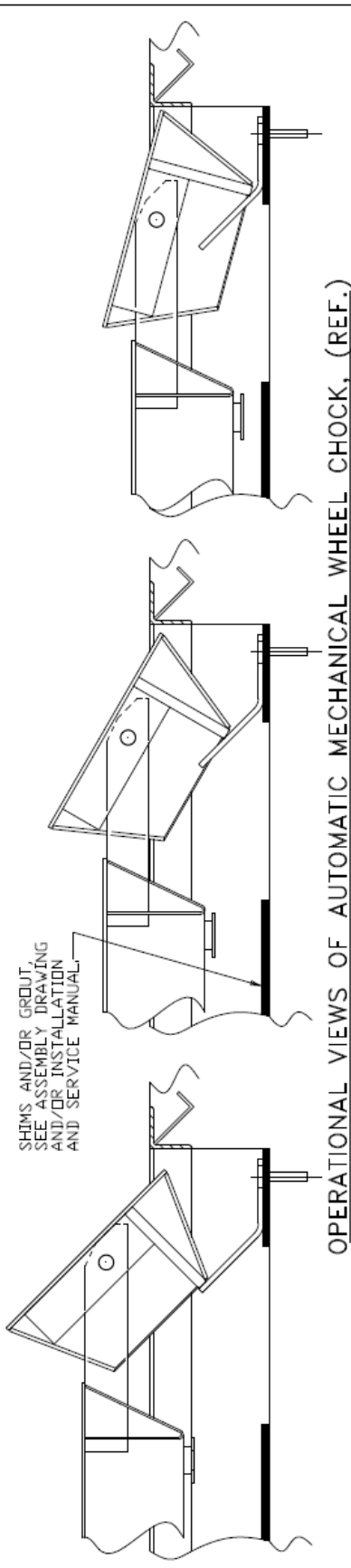
5	ADDED NOTE #6 TO ALUMINUM BRIDGE	JPTB	08/11/09
4	REVISED #63801000 STANCH. MTG. PLATE TO FIT THE 5-8\"/>		
3	REVISED STN MTG BLOCK NOTE PER ECR#00744.	ME	10/3/05
2	ADDED SHEET #2	JP	1/15/05
1	MADE CONTROL ISSUE DRAWING	WA	6/10/04
REV. DESCRIPTION		BY	DATE

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PROJECT TITLE	STANCHION LOC FOR WINCH, ALUM. BRIDGE
PROJECT NO.	01/05/04
DATE	01/05/04
SCALE	2 OF 2
DWG. NO.	53230611
SHEET NO.	B

53230611

4.10 Pit Modification & Installation for Mechanical Wheel Check



STANDARD PIT WALL, THIS IS WHERE A STANDARD PIT WALL WOULD BE IF AN AUTOMATIC WHEEL CHECK WAS NOT REQUIRED.

LIFT PLATFORM, IN LOWERED POSITION SHOWN IN PHANTOM FOR CLARITY.

FOR LIFTS THAT REQUIRE A PIT DEPTH GREATER THAN 8-1/2', THE "PIT ADDITION" MUST PROVIDE A "STEP" TO SUPPORT THE CHECK AS SHOWN AT THE 8-1/2' DEPTH.

1/2" SHIMS OR GROUT REQUIRED.

1" (REF.)

2-1/4" (TYP.)

3/8" SHIMS OR GROUT REQUIRED.

7-3/4" DEPTH

8-1/2" DEPTH

16" PIT ADDITION

3/4" (TYP.)

1" (REF.)

1" (TYP.)

5-1/2" (MIN.) 8" (MAX.)

1. THIS DRAWING JUST COVERS A PIT ADDITION FOR A AUTOMATIC WHEEL CHECK ADDED TO STANDARD PLT PIT. FOR CORRECT LIFT ASSEMBLY PIT DRAWINGS, SEE LIFT ASSEMBLY DRAWING AND/OR INSTALLATION AND SERVICE MANUAL.

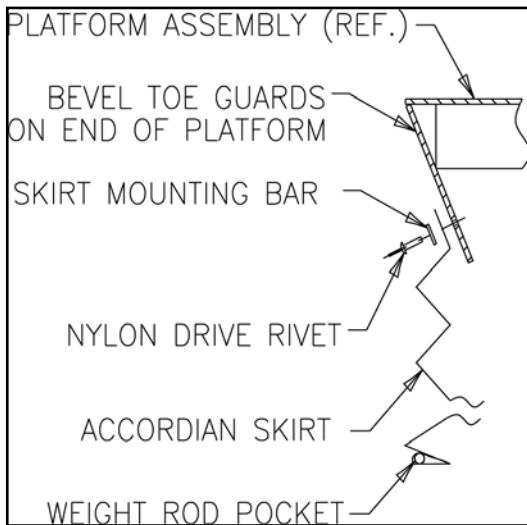
REVISIONS:

NO.	DATE	DESCRIPTION
1	08/17/94	ISSUE FOR LIFT ASSEMBLY DRAWING AND/OR INSTALLATION AND SERVICE MANUAL.

8. DATE: 08/17/94
 9. DRAWING NO.: 810-0786-0
 10. PROJECT NO.:
 11. SHEET NO.: 1 of 1
 12. SCALE: <2T
 13. DESIGNED BY: SS
 14. CHECKED BY: SS
 15. APPROVED BY: SS
 16. TITLE: AUTOMATIC MECHANICAL WHEEL CHECK AND PIT ADDITION

4.1 | Accordion Skirt Installation

1. Position platform in raised position. Engage maintenance device (see "Maintenance Device" section). Remove the handrails. 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.

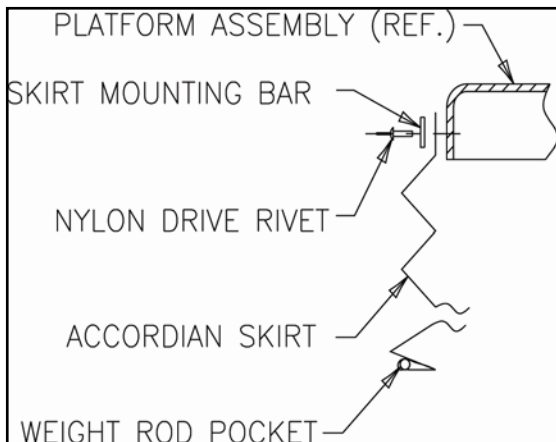


Raise one side of skirt along with a skirt-mounting bar (1/8" x 1") to side of bevel toe guard. When possible, center skirt-mounting collar and skirt-mounting bar (1/8" x 1") on platform.

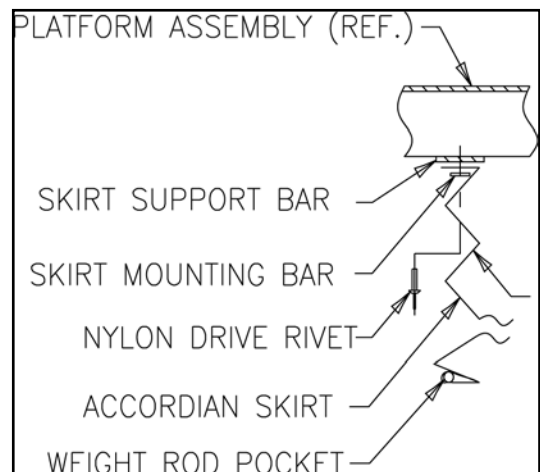
Align pre-drilled holes in platform with skirt-mounting bar holes and punch holes in skirt-mounting collar.

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.

Bevel Toe Guard (Typical)



Platform Side



Under Platform

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

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.

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

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.

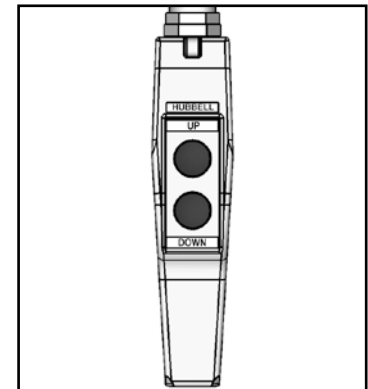
For lifts supplied with throw-over bridges, make sure bridges are in the stored (raised) position prior to raising or lowering the lift, and when backing up trucks for loading/unloading - to ensure that the bridges will clear all possible obstructions and contact with a moving truck.

1. Verify all personnel are clear of 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.



5.2 Raise And Lower Bridge (hydraulic)

If your lift has a hydraulically operated throw over bridge (TOB), it is equipped with UP/DOWN buttons and a FLOAT switch. The FLOAT switch must be set to "LOCK" for the UP/DOWN buttons to work. The UP/DOWN operate just as the lift UP/DOWN. The FLOAT switch is to be used when the bridge is resting on the truck bed. The "FLOAT" mode allows the bridge to float up or down with the truck. This prevents damage to the equipment when loads are being moved across the bridge.

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 device and procedures that have been provided.

1. All loads must be removed from the lift prior to engaging the maintenance device. 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 device 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 device may not be able to be placed properly in its designed blocking position.
3. The lift will be provided with one (1) maintenance device stored at the clevis end of the lift (either under the platform or between the legs). The device must be securely placed inside the leg socket on the base frame. **(See Figure 6.1).**
4. Lower the lift platform until it comes down and makes contact with the maintenance leg. The maintenance leg should be centered in maintenance leg collar located underneath the platform on the clevis end. Re-check to ensure that the maintenance leg device is inside the maintenance collar and in contact with the platform deck surface. If the maintenance leg is not fully engaged the lift could fall unexpectedly, resulting in permanent damage to the device or the lift.

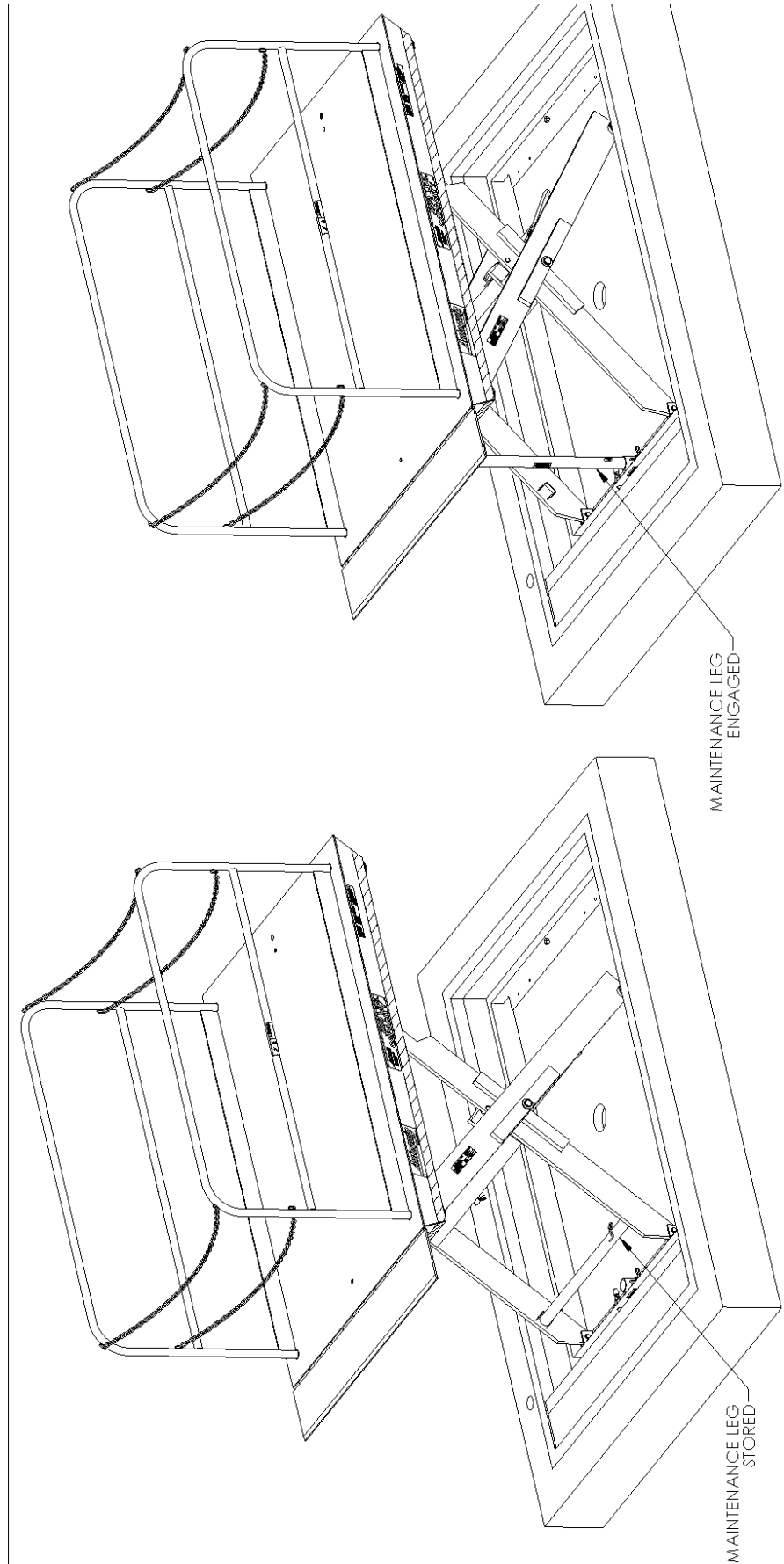


Figure 6.1

⚠ 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 device is 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 Device 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.

6.2.5 Oil Capacity

*Contractor Polyethylene Tank: Oil capacity is approximately: (5.5) gallons or (22) quarts.

*Vertical Steel Tank: Oil capacity is approximately: (10) gallons or (40) quarts.

*Large Vertical Steel Tank: Oil capacity is approximately: (12) gallons or (48) quarts.

Steel Tube Tank for Internal Power Units: Oil capacity is approximately (2) gallons or (8) quarts.

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

NOTICE

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

Do Not Use:

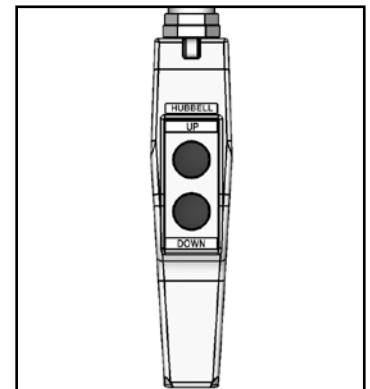
- Automatic Transmission Fluid (ATF)
- Hydraulic Jack Oil
- Brake Fluids

6.3 General Maintenance

6.3.1 Hydraulic Cylinder Repair

6.3.1.1. Cylinder Removal

1. Raise lift to its full height and engage maintenance device. See "Maintenance Device" section.
2. Disconnect electrical power to lift. Follow lock out-tag out procedure.
3. Disconnect cylinder hose at the tee connection on the Base assembly. Place the open end of the hose in a container to receive oil spillage.
4. Remove the setscrew or hex bolt in the cylinder upper leg clevis (otherwise known as the Trunnion clevis).
5. Secure the cylinder from dropping on the floor. 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.

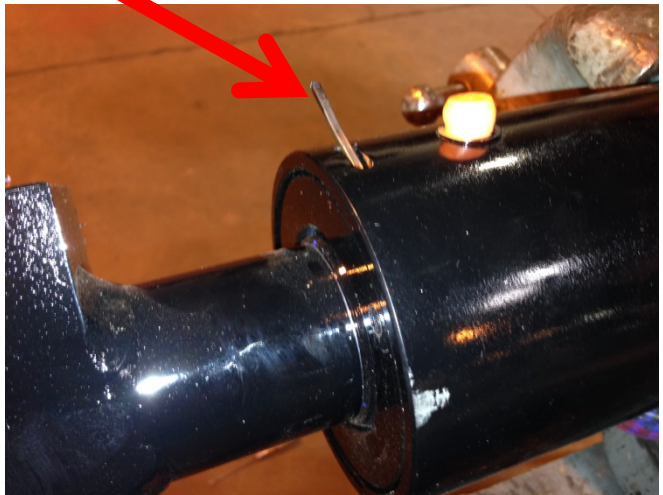


6.3.1.2. Replace Cylinder Seals

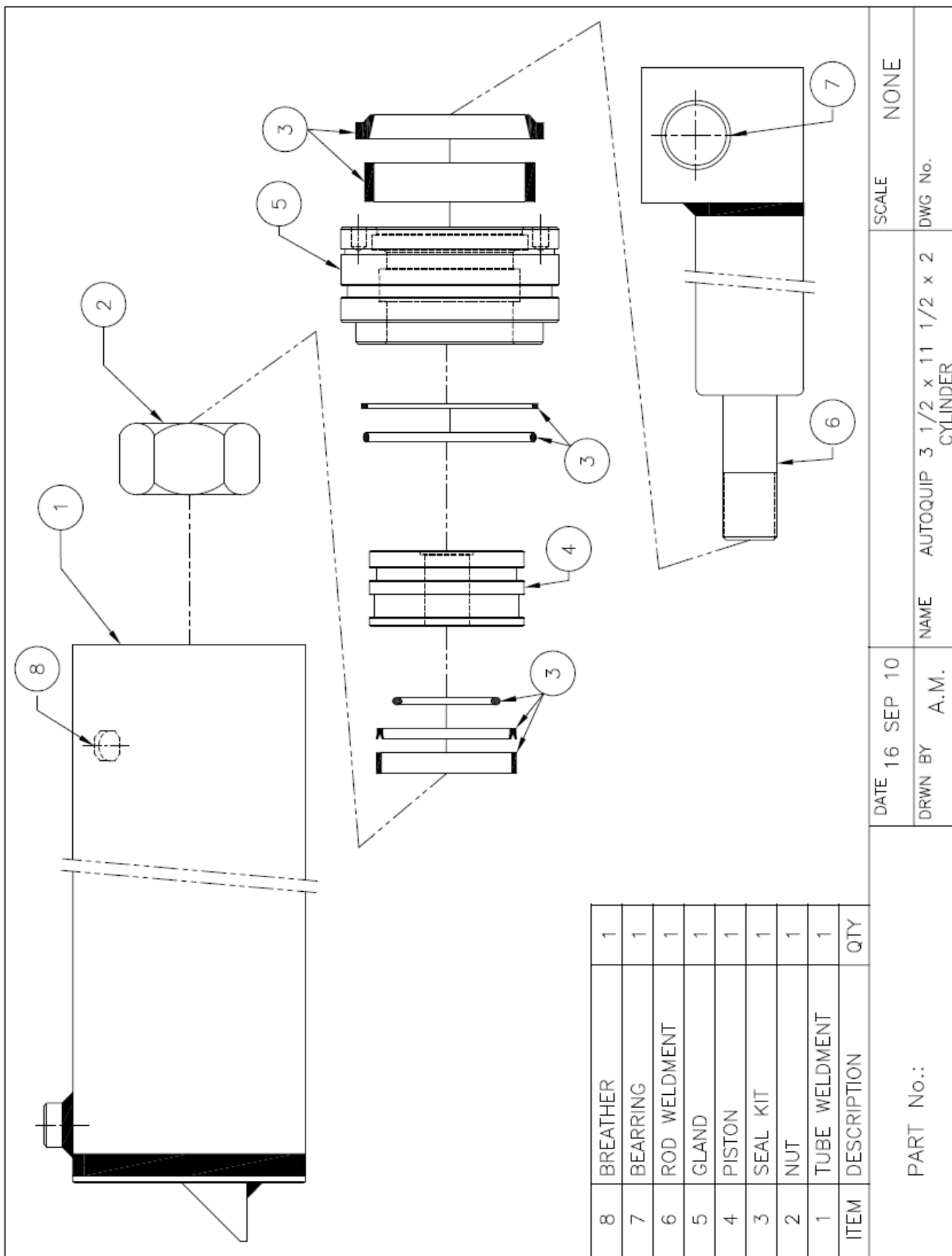
1. Insert spanner wrench and turn upper bearing assembly clockwise until tip of retainer appears in slot.



2. Place a small screwdriver under retainer and turn retainer to remove.



3. Be sure hose port is open to allow air into cylinder. Pull piston rod out to remove upper bearing.
4. 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.
5. Remove piston head nut from rod. Upper clevis and pin may be used to prevent rotation of rod while loosening. Remove old piston.
6. Inspect groove for nicks or scratches that could affect seal or barrel walls; remove as necessary.



8	BREATHER	1
7	BEARRING	1
6	ROD WELDMENT	1
5	GLAND	1
4	PISTON	1
3	SEAL KIT	1
2	NUT	1
1	TUBE WELDMENT	1
ITEM	DESCRIPTION	QTY

PART No.:		DATE	16 SEP 10	SCALE	NONE
DRWN BY		A.M.	NAME	AUTOQUIP 3 1/2 x 11 1/2 x 2 CYLINDER	DWG No.

Figure 6.3 – Cylinder Seals

7. Install new piston, seals, and rod wiper.
8. Install and tighten piston head nut to 325 ft•lb of torque. Upper clevis and pin may be used to prevent rotation of rod while tightening.
9. Liberally lubricate piston and seal with clean grease or oil.
10. Insert piston into barrel, taking care not to damage seal.
11. Slip bearing assembly into place and align retainer hole with slot in barrel.
12. 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

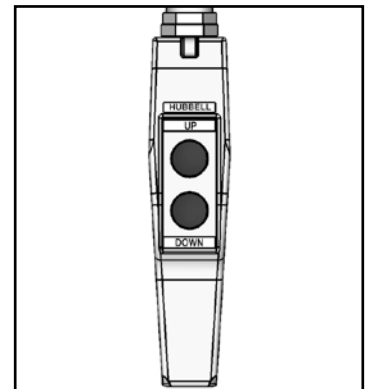
Do not use Teflon tape on hydraulic threaded connections. Tape fragments may damage hydraulic system.

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. See “Bleeding Air From System” section

6.3.2 Bleeding Air From System

1. Bleed air from system by raising lift 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 and Flow Control (VF/FC) Replacement

⚠ WARNING

Prevent serious injury or death.

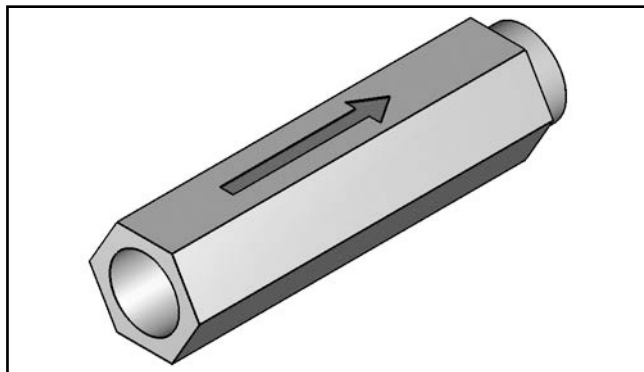
Never go under lift platform until load is removed and scissors mechanism is securely blocked in raised position with maintenance devices and hydraulic pressure is relieved.

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

1. Arrow on VF/FC indicates direction of oil flow restriction. VF/FC 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.



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

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.
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” section.

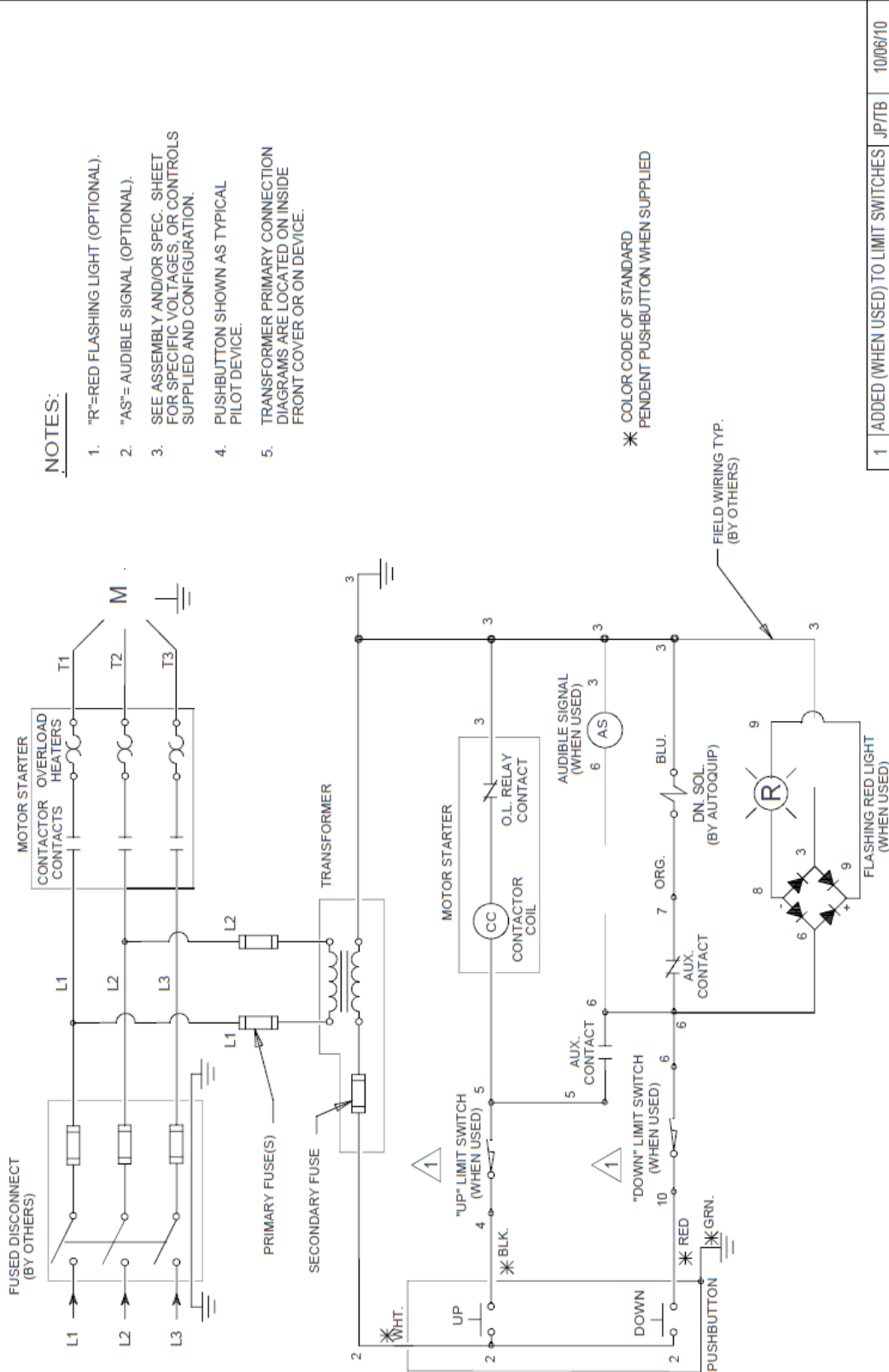
6.3.4 Hose Orientation

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 Device”.
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

65700810



NOTES:

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

* COLOR CODE OF STANDARD PENDENT PUSHBUTTON WHEN SUPPLIED

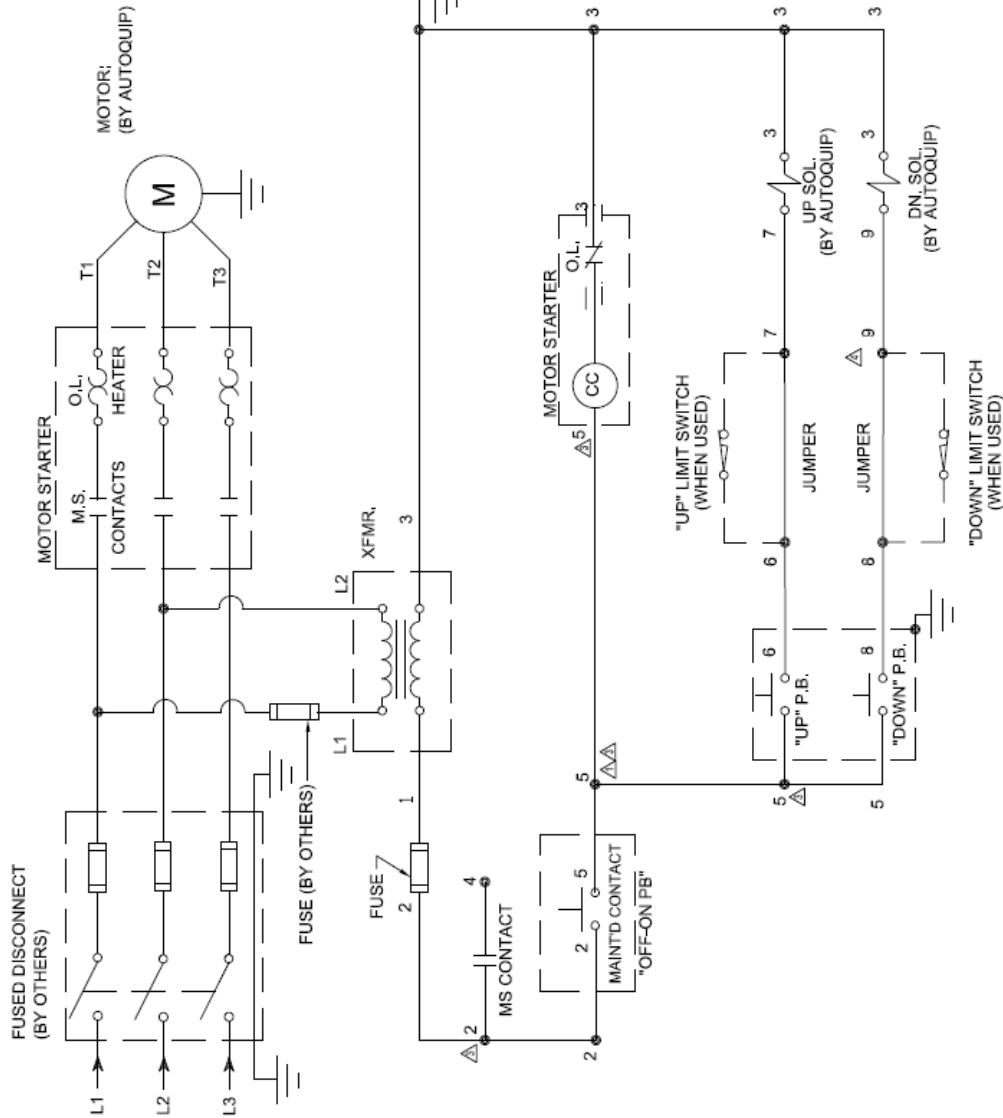
FIELD WIRING TYP. (BY OTHERS)

1	ADDED (WHEN USED) TO LIMIT SWITCHES	JP/TB	10/06/10
REV	DESCRIPTION	BY	DATE
JOB NAME: ORDER NO:			

Autoquip	
2014 COPYRIGHT RESERVED AUTOQUIP CORPORATION	REFERENCE DRAWING:
This drawing is the sole property of Autoquip Corp. and cannot be used for design and construction without permission of Autoquip Corp.	
DRAWN BY: ML	DATE: 03/06/02
QTY: 1	REV: 1
DRAWING NUMBER: 65700810	SIZE: A

Electric Schematic; 5HP/ 3Ph Contractor or Vertical Power Unit

65700500



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.

REV	DESCRIPTION	BY	DATE
4	ADDED DOWN LIMIT SWITCH OPTION	JCJ	11/22/06
3	ADDED MS CONTACT; WIRE #5 WAS #4	TB	03/30/04
2	REDRAWN IN AUTOCAD	JZ	10/09/01
1	LEAD CHANGED FROM 2 TO 4 RE-DRAWN IN AUTOCAD	RM	07/31/01

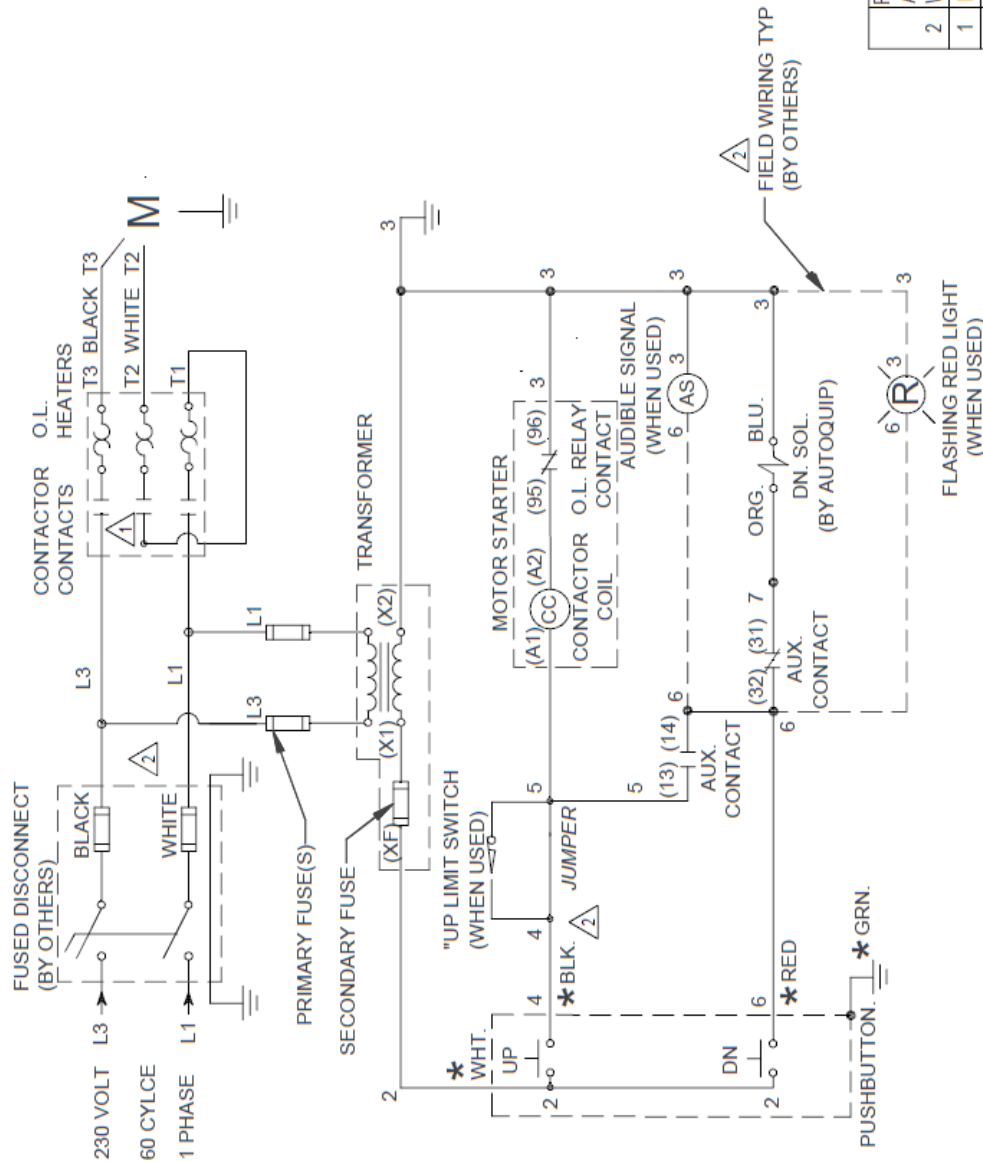
JOB NAME:		ORDER NO.:	
DRAWING TITLE:		DRAWING NUMBER:	
DATE:	QTY REQ'D:	PAGE:	REV.
TB	09/16/99	1 OF 1	4
DRAWN BY:			SIZE:
DRAWING WEIGHT:			A

Autoquip

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Electric Schematic; 5HP/ 3Ph Continuous Running Vertical Power Unit

65700070



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.
 () INDICATED ACTUAL TERMINAL CONNECTION No. ON DEVICE.

REVISED WIRING OF OPTIONAL ITEMS; ADDED JUMPER; DELETED NEUTRAL	DWL	07/30/87
WIRE TO AGREE WITH ABB SCHEMATIC	CGWB	09/10/85
REVISED PER ABB	BY	DATE
REV DESCRIPTION		ORDER NO.
JOB NAME:		

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REFERENCE DRAWING:
 ELEC SCH FOR STD AND UTIL. PU PRE-WIRED SINGLE PHASE

APPROXIMATE WEIGHT:
 CGWB 08/09/95

DRAWN BY: DATE:
 CGWB 08/09/95

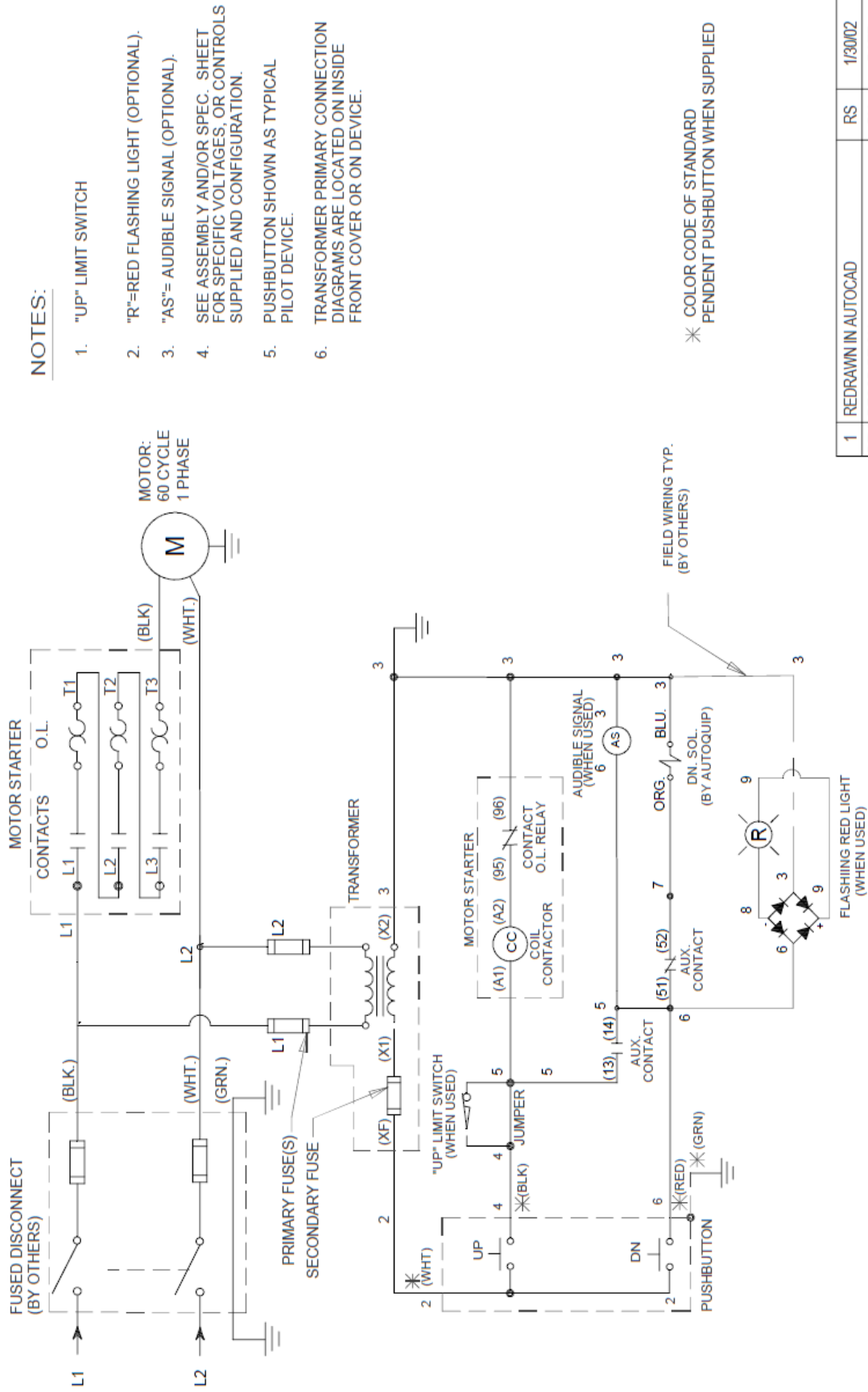
QTY REQ'D: PAGE:
 1 OF 1 2

DRAWING NUMBER:
 65700070

SIZE:
 A

Electric Schematic; 5HP/ 1Ph/230V Vertical Power Unit

65700640



NOTES:

1. "UP" LIMIT SWITCH
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

1	REDRAWN IN AUTOCAD	RS	1/30/02
	REV DESCRIPTION	BY	DATE
JOB NAME:			
1	QTY REQD: 10F1	REV. 1	DRAWING NUMBER: 65700640
2/2/01	DATE: TC	1	ORDER NO:

Autoquip

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REFERENCE DRAWING: DRAWING TITLE: ELEC SCH FOR STD & UTIL PU, SINGLE PHASE

APPROXIMATE WEIGHT: N/A

DRAWN BY: TC

DATE: 2/2/01

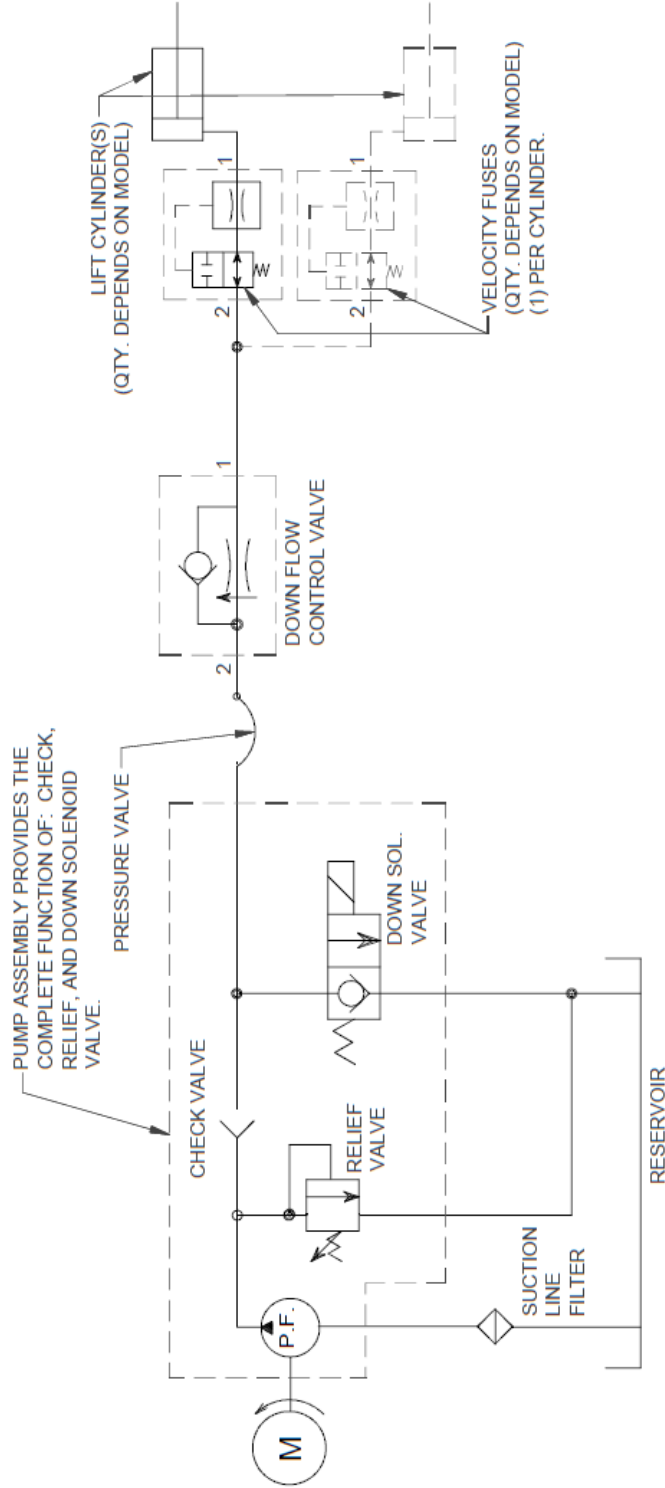
REV. 1

DRAWING NUMBER: 65700640

SIZE: A

Electric Schematic; 3HP/ 1Ph/115V Vertical Power Unit

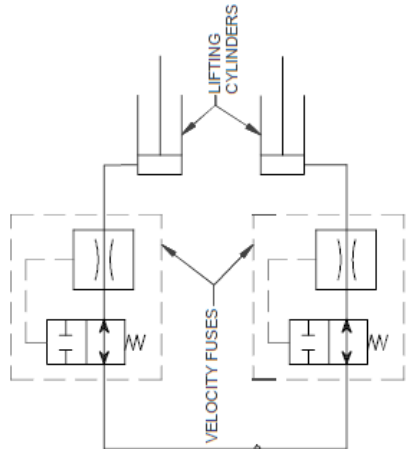
65750040



HYDRAULIC SCHEMATIC

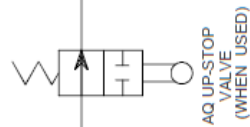
1995	COPYRIGHT RESERVED AUTOQUIP CORPORATION	1665	Autoquip	JOB NAME:		ORDER NO:	
2	REDRAWN IN AUTOCAD	JZ	10/11/01				
1	ADDED PLT-C TO TITLE	WJB	10/16/96				
REV	DESCRIPTION	BY	DATE				
DRAWING TITLE: HYD SCH FOR S35 & PLT-C		REV	DRAWING NUMBER:	REV	DRAWING NUMBER:	SIZE:	
REFERENCE DRAWING: 65807323	DRAWN BY: DWL	DATE: 09/11/95	QTY REQD: 1	PAGE: 1	REV	DRAWING NUMBER:	SIZE:
APPROXIMATE WEIGHT: N/A					2	65750040	A

65750001



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

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



DOWN VALVE
WITH PRESSURE
COMPENSATED
FLOW CONTROL

PRESSURE LINE



DOWN SPEED
RESTRICTOR



RESERVOIR

CHECK VALVE



RELIEF
VALVE



SUCTION
LINE
FILTER



P.F.



M



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



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REFERENCE DRAWING:
65750230

APPROXIMATE WEIGHT:
WJB

DRAWN BY: DATE:
WJB 10/13/99

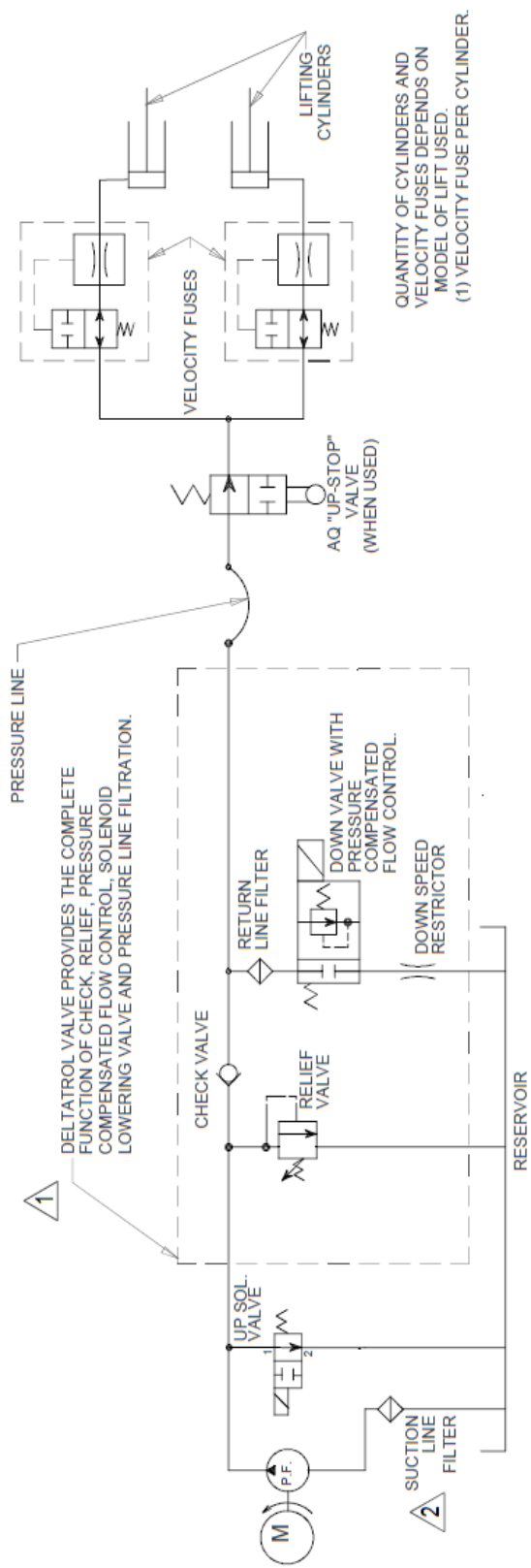
DRAWING TITLE:
HYD SCH FOR SCISSOR LIFT W/ DELTA TROL

QTY RECD: PAGE: REV. DRAWING NUMBER: SIZE:
1 OF 1 1 65750001 A

1	REDRAWN IN AUTOCAD	JZ	10/11/01
REV	DESCRIPTION	BY	DATE
JOB NAME: _____ ORDER NO: _____			

Hydraulic Schematic – Vertical Power Unit

65750070



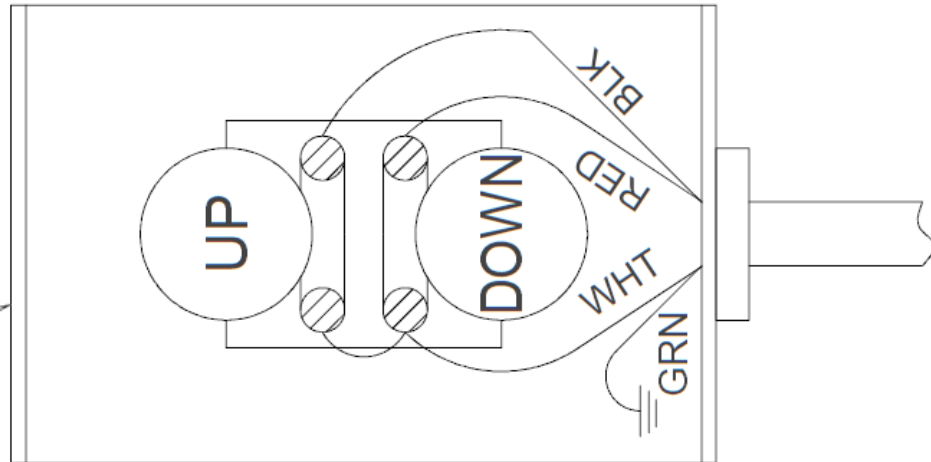
2	CHG. SUCTION FILTER TO EXTERNAL FILTER	ME	11/09/06
1	REDRAWN IN AUTOCAD, WAS AUTOTROL VALVE.	JZ	10/09/01
REV. DESCRIPTION		BY	DATE
JOB NAME		ORDER NO:	

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This drawing is the sole property of Autoquip Corp. and cannot be used for design and construction without permission of Autoquip Corp.	DRAWING TITLE: HYD SCH FOR SCISSORS LIFT WIDELTATROL, CONT RUNNING
DRAWN BY: CG/MA	DATE: 06/04/96
APPROXIMATE WEIGHT: -	QTY REQ'D: 1 OF 1
	REV. 2
	DRAWING NUMBER: 65750070
	SIZE: A

Hydraulic Schematic – Continuous Running Vertical Power Unit

658-0734-9

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.)

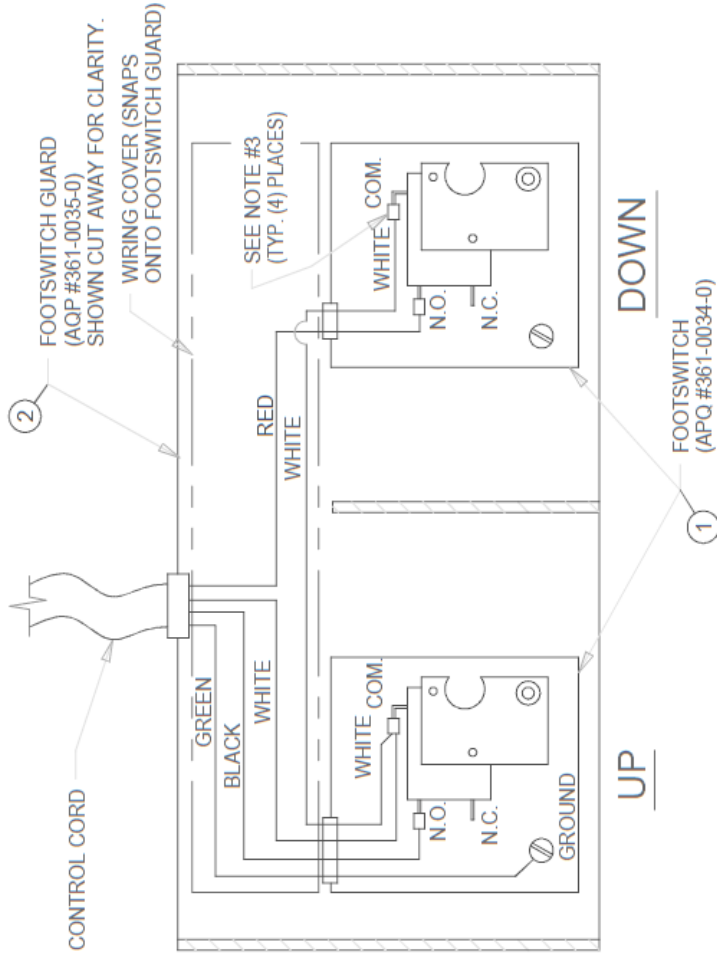


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REFERENCE DRAWING:
DRAWING TITLE: STD WALL MOUNT PUSHBUTTON WIRING DIAGRAM
APPROXIMATE WEIGHT: <2T
DRAWN BY: SC
DATE: 3/23/88
QTY REQD: PAGE: 1 OF 1
REV. DRAWING NUMBER: 2 658-0734-9
ORDER NO. SIZE: A

2	REDRAWN IN AUTOCAD	JZ	9/18/01
1	REDRAWN IN CAD	CWG	8/21/00
REV	DESCRIPTION	BY	DATE
JOB NAME: ORDER NO.:			

Push Button Wiring Diagram



NOTES:

1. **WARNING: ELECTRICAL HAZARD.**
DISCONNECT POWER BEFORE WIRING 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

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

2	ADDED NEW TITLE BLOCK 2ND PAGE	JP	01/12/05
1	ADDED NEW TITLE BLOCK, CTRL ISSUE	PW	1/4/96
REV / DESCRIPTION		BY	DATE
JOB NAME:		ORDER NO:	



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REFERENCE DRAWING:

DRAWING TITLE:

DRAWN BY: DATE:

APPROXIMATE WEIGHT:

QTY REQD: PAGE:

REV. DRAWING NUMBER:

SIZE:

FOOTSWITCH - GUARDED

1 OF 2

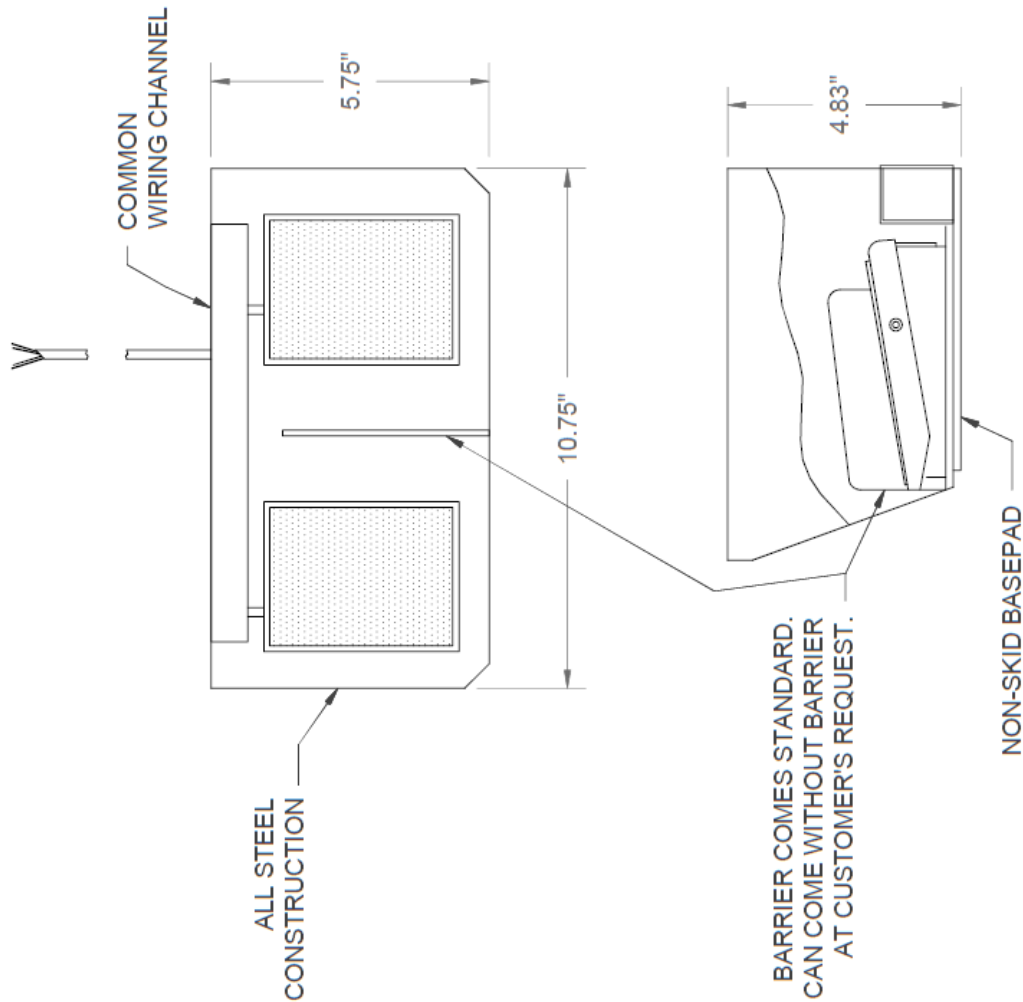
2

351-0338-0

A

Guarded Foot Switch Wiring Diagram

351-0338-0



SEE PAGE ONE FOR REVISIONS	BY	DATE
REV DESCRIPTION		ORDER NO:
JOB NAME:		



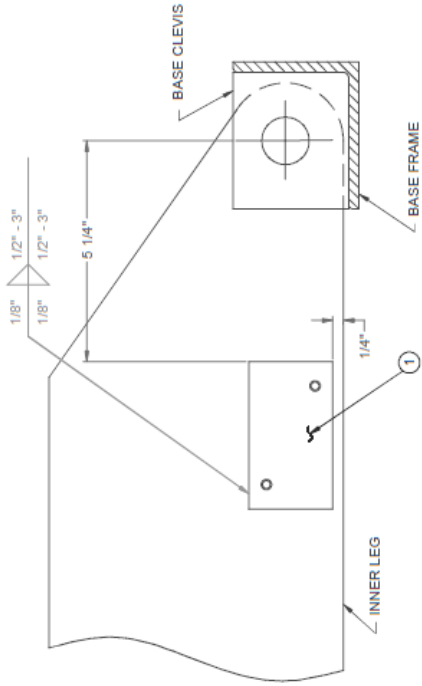
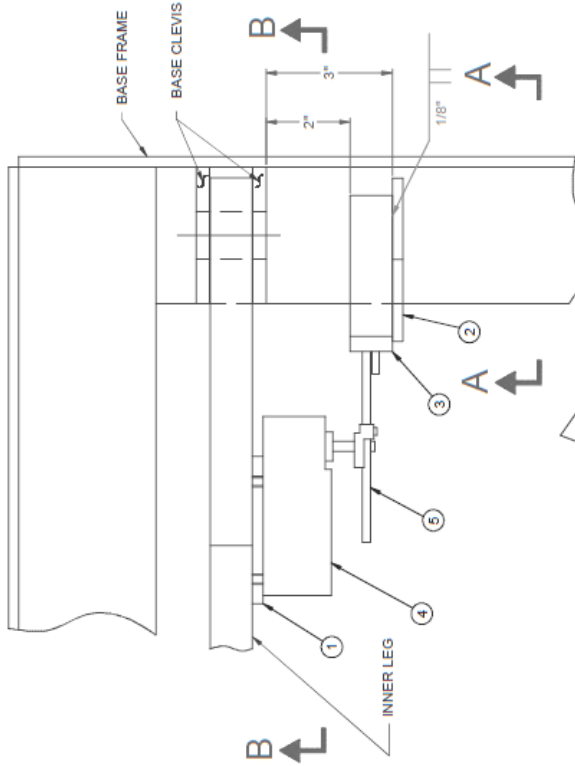
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REFERENCE DRAWING:
DRAWING TITLE: KIT - FOOTSWITCH - GUARDED (STD.-93)
DRAWN BY: DWL
DATE: 06/30/93

APPROXIMATE WEIGHT:
QTY REQ'D: PAGE: 2 OF 2
REV. 2
DRAWING NUMBER: 351-0338-0
SIZE: A

Guarded Foot Switch Assembly

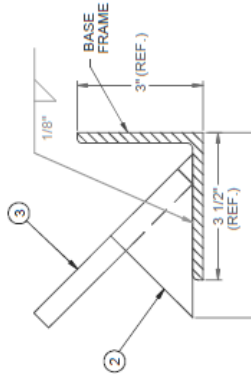
351-0186-4



SECTION "B-B"

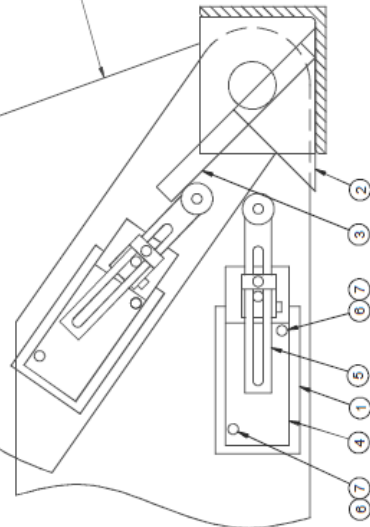
REFERENCE MATERIALS:

- ① MOUNTING PLATE
- ② 2-3/4" X 2-3/4" GUSSET
- ③ 1/2" X 1" X 4-3/4" LG. BAR
- ④ LIMIT SWITCH
- ⑤ ADJUSTABLE ARM FOR LIMIT SWITCH
- ⑥ (2) #10-24 UNC X 1-1/4" LG. SCREW
- ⑦ (2) #10 LOCKWASHER



SECTION "A-A"

LEG IN RAISED POSITION
(SHOWN IN THINLINE FOR CLARITY). ADJUST ARM OF LIMIT SWITCH TO DESIRED RAISED HEIGHT AT FINAL ASSEMBLY OR AT INSTALLATION. TEST AND RE-ADJUST IF NECESSARY.



3	REDRAWN IN AUTOCAD; MADE CONTROL ISSUE DWG	TJ	6/13/01
2	PUT ON NEW TITLE BLOCK; ITEM #4 WAS 340-0001-8; ITEM #5 WAS 340-0025-7 PER ECN #000519	WJB	4/24/97
1	COR. PART NO. FOR ITEM #5 WAS 340-0027-7	DWL	3/22/90
	REV DESCRIPTION	BY	DATE
	JOB NAME:		ORDER NO:

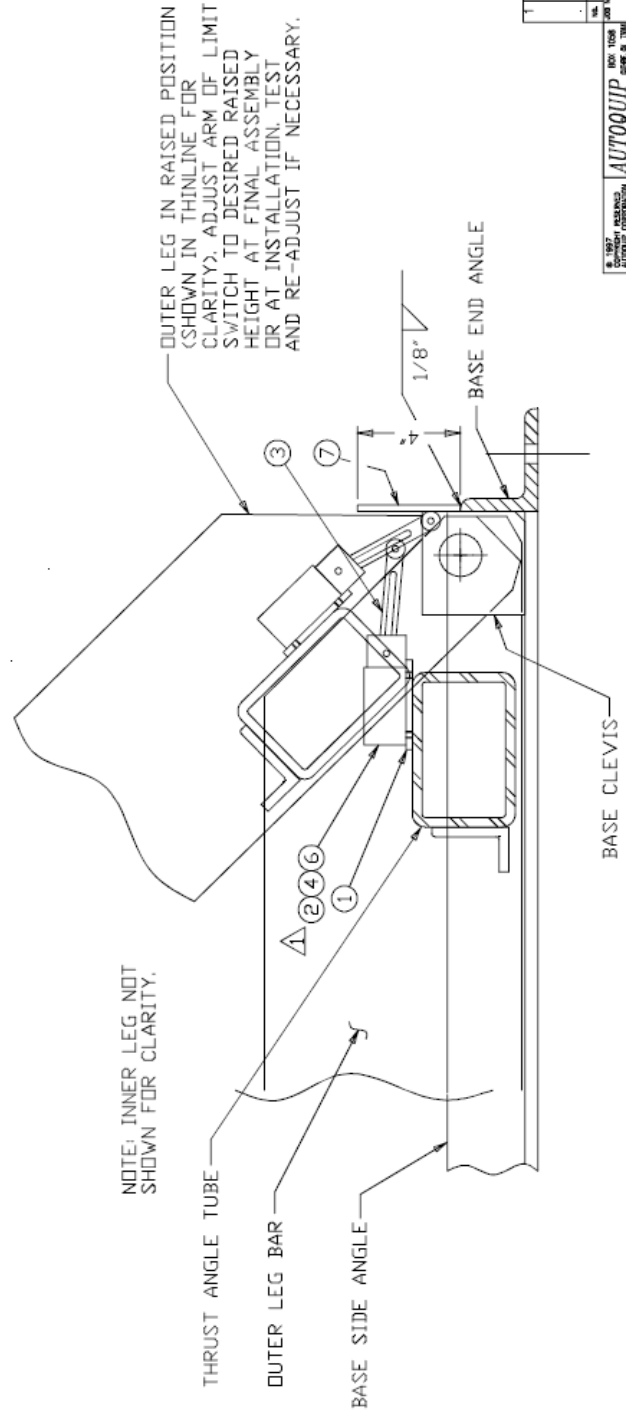
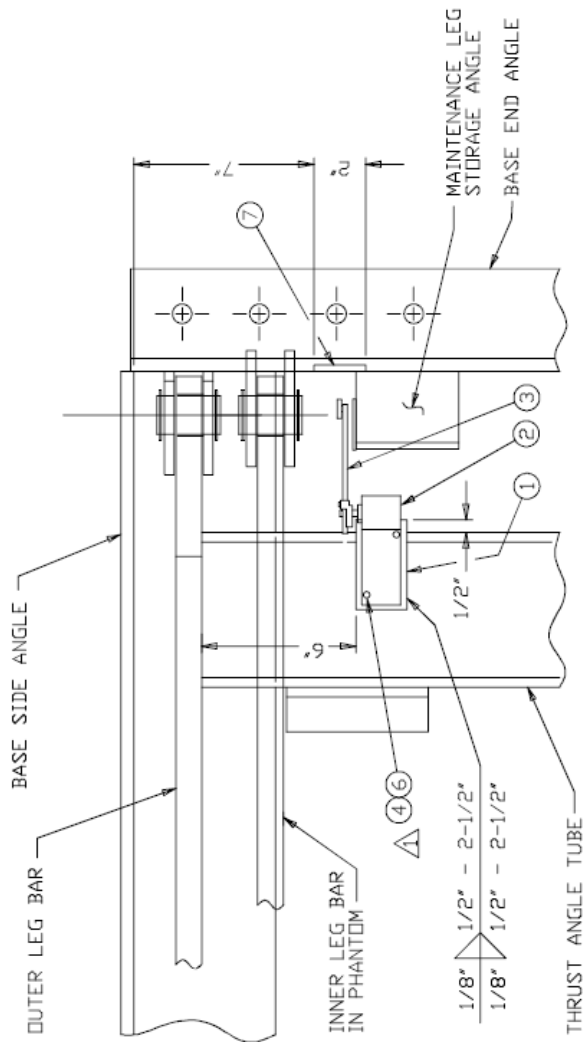


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REFERENCE DRAWING:	DRAWING TITLE:
APPROXIMATE WEIGHT:	PLT LIMIT SWITCH & LOCATION
DRAWN BY: DWL	QTY REQ'D: 1 OF 1
DATE: 3/9/90	REV. 3
	DRAWING NUMBER: 351-0186-4
	SIZE: A

Optional Limit Switch Mounting Diagram – PLTC-6050 to 6060

DIMENSIONS SHOWN IN
 PARENTHESES ARE
 FOR REFERENCE ONLY
 UNLESS OTHERWISE
 SPECIFIED
 ALL DIMENSIONS ARE
 IN INCHES UNLESS
 OTHERWISE SPECIFIED
 ALL DIMENSIONS ARE
 TO CENTER UNLESS
 OTHERWISE SPECIFIED



OUTER LEG IN RAISED POSITION
 (SHOWN IN THINLINE FOR
 CLARITY). ADJUST ARM OF LIMIT
 SWITCH TO DESIRED RAISED
 HEIGHT AT FINAL ASSEMBLY
 OR AT INSTALLATION. TEST
 AND RE-ADJUST IF NECESSARY.

THIS DRAWING WAS
 PREPARED BY
 W. J. WILSON
 PLT-6070-0186-0
 1 of 1

AUTOQUIP
 AUTOQUIP CORPORATION
 10000 W. 10TH AVE.
 DENVER, CO 80231
 PHONE (303) 751-1000
 FAX (303) 751-1001

PART NUMBER: PLT-6070-0186-0
 REV: 01
 DATE: 01/27/86
 QUANTITY: 1

PROJECT NUMBER: 351-0186-0
 DRAWING NUMBER: C

Optional Limit Switch Mounting Diagram – PLTC-6070 to 58150

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 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. 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>
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>

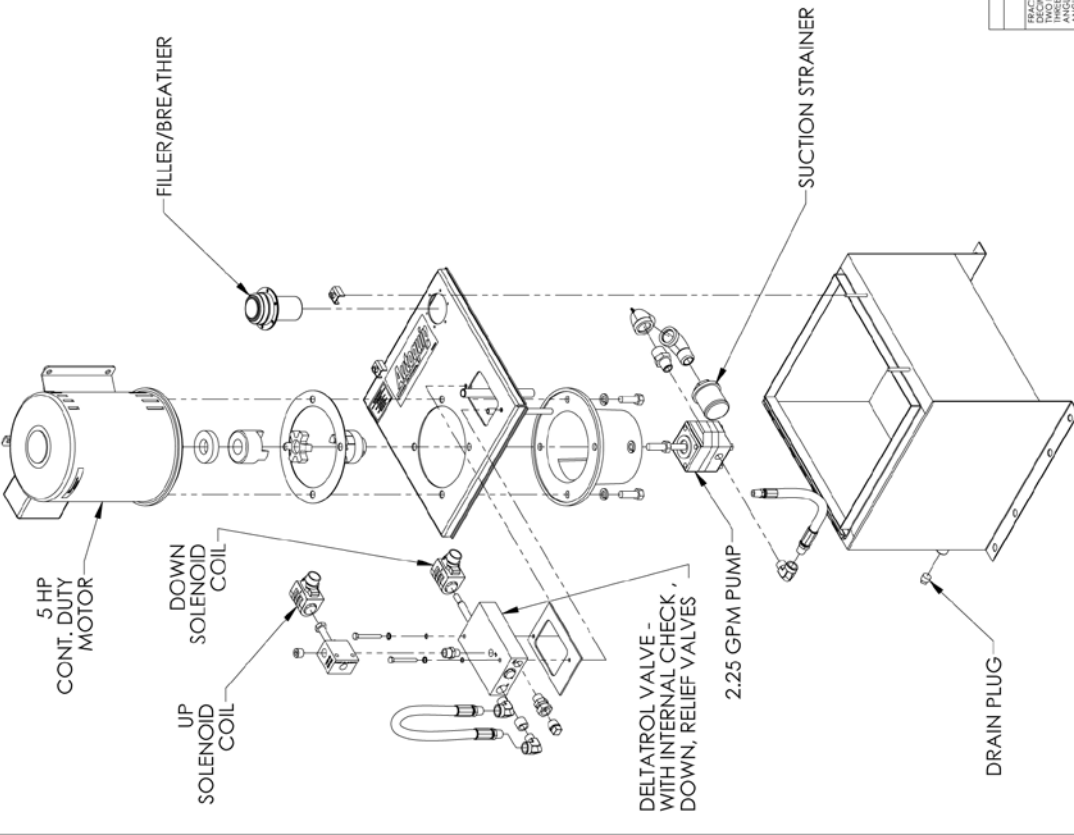
PROBLEM	POSSIBLE CAUSE AND SOLUTION
Lift Does Not Raise, Continued.	

PROBLEM	POSSIBLE CAUSE AND SOLUTION
Lift Won't Lower.	<p data-bbox="561 831 1438 926">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 data-bbox="548 968 1451 1031">Velocity fuse may be locked. Do not attempt to remove the velocity fuse. The following steps should be followed:</p> <ol data-bbox="548 1066 1451 1602" style="list-style-type: none"> <li data-bbox="548 1066 1451 1129">1. Remove load from lift. Inspect all fittings, hoses, and other hydraulic components for leaks or damage. <li data-bbox="548 1167 1451 1297">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. <li data-bbox="548 1335 1451 1430">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. <li data-bbox="548 1467 1451 1602">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 data-bbox="581 1640 1419 1696">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="613 163 1484 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="894 331 1198 359">Check for oil starvation.</p>
Motor Labors Or Heats Excessively.	<p data-bbox="578 367 1520 464">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="578 499 1520 632">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="591 667 1507 732">Running against relief pressure unnecessarily due to over loaded lift or hitting physical stops.</p> <p data-bbox="618 768 1479 833">Failure to observe wiring diagram on nameplate for proper voltage connections.</p> <p data-bbox="570 869 1523 966">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 7 OF 8



NOTE:
DIMENSIONS ARE APPROXIMATE

Continuous Running Vertical Power Unit

UNLESS OTHERWISE SPECIFIED:		TOLERANCES		Autogrip		JOB NAME	
FRACTIONS:		DECIMALS		REFERENCE DRAWING		PUNING	
1/16		.0625		GENERIC S35 COMPONENTS		-	
1/8		.125		AUGUST 13, 2013		-	
1/4		.25		DATE		-	
3/8		.375		DESIGNED BY		-	
1/2		.5		DRAWING NUMBER		B	
3/4		.75		DATE		7 OF 8	
1		1.0		APPROXIMATE WEIGHT		-	
1 1/4		1.25		DESIGNED BY		JCJ	
1 1/2		1.5		DATE		02/25/13	
1 3/4		1.75		APPROXIMATE WEIGHT		-	
2		2.0		DESIGNED BY		-	
2 1/4		2.25		DATE		-	
2 1/2		2.5		APPROXIMATE WEIGHT		-	
2 3/4		2.75		DESIGNED BY		-	
3		3.0		DATE		-	
3 1/4		3.25		APPROXIMATE WEIGHT		-	
3 1/2		3.5		DESIGNED BY		-	
3 3/4		3.75		DATE		-	
4		4.0		APPROXIMATE WEIGHT		-	
4 1/4		4.25		DESIGNED BY		-	
4 1/2		4.5		DATE		-	
4 3/4		4.75		APPROXIMATE WEIGHT		-	
5		5.0		DESIGNED BY		-	
5 1/4		5.25		DATE		-	
5 1/2		5.5		APPROXIMATE WEIGHT		-	
5 3/4		5.75		DESIGNED BY		-	
6		6.0		DATE		-	
6 1/4		6.25		APPROXIMATE WEIGHT		-	
6 1/2		6.5		DESIGNED BY		-	
6 3/4		6.75		DATE		-	
7		7.0		APPROXIMATE WEIGHT		-	
7 1/4		7.25		DESIGNED BY		-	
7 1/2		7.5		DATE		-	
7 3/4		7.75		APPROXIMATE WEIGHT		-	
8		8.0		DESIGNED BY		-	
8 1/4		8.25		DATE		-	
8 1/2		8.5		APPROXIMATE WEIGHT		-	
8 3/4		8.75		DESIGNED BY		-	
9		9.0		DATE		-	
9 1/4		9.25		APPROXIMATE WEIGHT		-	
9 1/2		9.5		DESIGNED BY		-	
9 3/4		9.75		DATE		-	
10		10.0		APPROXIMATE WEIGHT		-	
10 1/4		10.25		DESIGNED BY		-	
10 1/2		10.5		DATE		-	
10 3/4		10.75		APPROXIMATE WEIGHT		-	
11		11.0		DESIGNED BY		-	
11 1/4		11.25		DATE		-	
11 1/2		11.5		APPROXIMATE WEIGHT		-	
11 3/4		11.75		DESIGNED BY		-	
12		12.0		DATE		-	
12 1/4		12.25		APPROXIMATE WEIGHT		-	
12 1/2		12.5		DESIGNED BY		-	
12 3/4		12.75		DATE		-	
13		13.0		APPROXIMATE WEIGHT		-	
13 1/4		13.25		DESIGNED BY		-	
13 1/2		13.5		DATE		-	
13 3/4		13.75		APPROXIMATE WEIGHT		-	
14		14.0		DESIGNED BY		-	
14 1/4		14.25		DATE		-	
14 1/2		14.5		APPROXIMATE WEIGHT		-	
14 3/4		14.75		DESIGNED BY		-	
15		15.0		DATE		-	