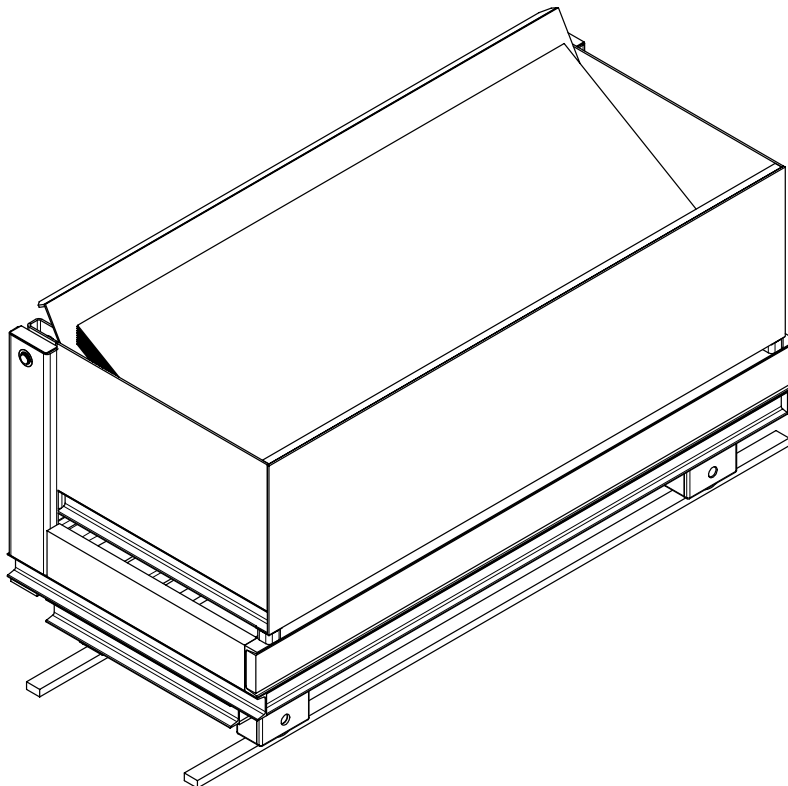


# INSTALLATION, OPERATION AND SERVICE MANUAL

## HIGH HINGE DUMPER



**w/ POWER TRAVERSE**



P.O. Box 1058 • 1058 West Industrial Avenue • Guthrie, OK 73044-1058 • 405-282-5200 •  
FAX: 405-282-8105 • [www.autoquip.com](http://www.autoquip.com)

Version 1.0  
9/23/03

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## IMPORTANT

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

---

## 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.

---

# IDENTIFICATION & INSPECTION

## **IDENTIFICATION**

When ordering parts or requesting information or service on this tilter, 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.

## **INSPECTION**

Immediately upon receipt of the tilter, a visual inspection should be made to determine that it has not been damaged in transit. Any damage found must be noted on the delivery receipt. In addition to this preliminary inspection, the tilter should be carefully inspected for concealed damage. Any concealed damage found that was not noted on the delivery receipt should be reported in writing to the delivering carrier within 48 hours.

The following is a checklist that will aid you in the inspection of this equipment:

1. Examine entire unit for any signs of mishandling. Pay special attention to the power unit and pushbuttons.
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 the tilter and inspect the base frame, platform, and cylinder plumbing connections.

# RESPONSIBILITY OF OWNERS/USERS

## **DEFLECTION**

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

## **INSPECTION & MAINTENANCE**

The lift shall be inspected & maintained in proper working order in accordance with Autoquip's operating/maintenance (O&M) manual and with other applicable safe operating practices.

## **REMOVAL FROM SERVICE**

Any lift not in safe operating condition such as, but not limited to, excessive leakage, missing rollers, pins, 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.

## **REPAIRS**

All repairs shall be made by qualified personnel in conformance with Autoquip's instructions.

## **OPERATORS**

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

## **BEFORE OPERATION**

Before using the lift, the operator shall have:

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

## **DURING OPERATION**

The lift shall only be used in accordance with Autoquip's O&M manual.

- Do not overload the lift.
- Ensure that all safety devices are operational and in place.

## **MODIFICATIONS OR ALTERATIONS**

Modifications or alterations to industrial lifting equipment shall be made only with written permission of Autoquip. Autoquip does not foresee and does not anticipate unauthorized modifications, and these changes or alterations are grounds for voiding all warranties.

# DANGERS, WARNINGS & CAUTIONS

Read and understand this manual and all labels prior to operating or servicing this tilter. All labels are provided in accordance with ANSI Z535.4.

---



**DANGER!**

Do not work under tilter! To avoid personal injury, NEVER go under the tilter platform until the load is removed and the platform.

---



**DANGER!**

To avoid personal injury, stand clear of tilter mechanism while it is in motion.

---



**DANGER!**

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

---



**DANGER!**

**HIGH VOLTAGE!!** Disconnect and/or lock out the electrical supply to the power unit prior to any maintenance being performed.

# DANGERS, WARNINGS & CAUTIONS



## DANGER!

Tilters are designed individually for a specific load and application. To avoid personal injury, do not change the load or application from the original design.

---



## WARNING!

NEVER stand, sit or ride on the tilter.

---



## WARNING!

All warning and information decals should be in place as outlined in the “Label Identification” section. If decals are missing or damaged, they should be replaced with new ones. Contact *Autoquip* for replacements.

---



## WARNING!

Do not attempt to remove the velocity fuse until the tilter is fully collapsed and all hydraulic pressure has been removed from the tilting cylinders and hydraulic hoses. Failure to do so could result in personal injury or death!

---



## WARNING!

Tilter platforms traveling below floor levels may create openings, and the shape of the load and how the load is arranged on the tilter may create a toe hazard as the load passes the top edge of the pit. Both situations may require guarding in accordance with Federal Regulations. Any such guarding must be installed prior to operating the tilter.

---

# DANGERS, WARNINGS & CAUTIONS



## CAUTION!

Do not continue to depress the “UP” button on the controller if the tilter is not raising or if it has reached the fully raised position. To do so may result in permanent damage to the motor or pump.

---



## CAUTION!

Never run the pump for more than a couple of seconds without pumping oil. This applies to low oil conditions, improper motor rotation, running the pump against the relief pressure after the tilter is fully raised against the physical stops, running overloaded beyond capacity, or running at reduced speed because of pinched or obstructed hydraulic lines.

---



## CAUTION!

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

---



## CAUTION!

Precautions should be taken to prevent the introduction of contaminants such as dirt or other foreign material into the system through open fittings, pipes or disassembled components. Contamination will ruin the hydraulic system.

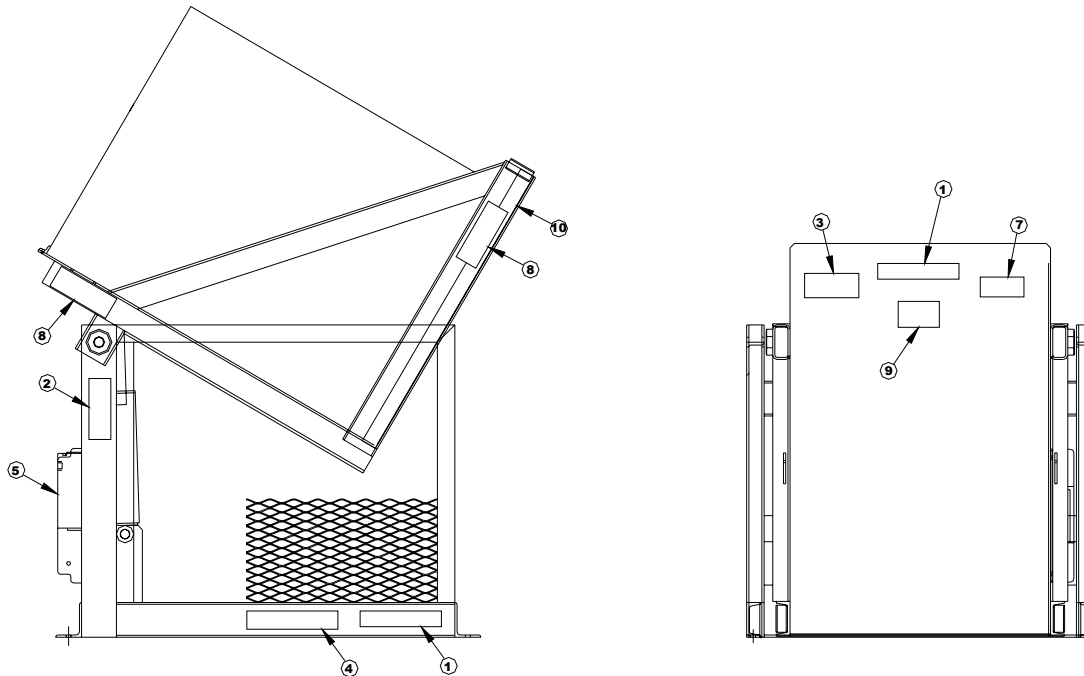
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## CAUTION!

Use only approved oils in the tilter. See “Specifications” section.

# LABEL IDENTIFICATION



**Figure 1 Label Placement Diagram**

<b>Series 35 Tilter Label Information</b>			
<b>Item No.</b>	<b>Qty</b>	<b>Description</b>	<b>Part No.</b>
1	2	Caution – Familiarize Yourself With Operators Manual	36401487
2	2	Caution – Do Not Go Under Lift Platform . . .	36400679
3	2	Warning – No Riders	36403707
4	1	<i>Autoquip</i> Serial Number Nameplate	36401511
5	1	Fill with Recommended Oils Only	36400661
7	2	Capacity	36401586
8	1	Warning – Stay Clear When Tilted	36403822
9	1	Warning – Stand Clear When Tilting	36403830
10	1	Safety Striping	06100010



# LABEL IDENTIFICATION

Note: Labels shown here are not actual size.



Figure 2 Label 36401487



Figure 3 Label 36400679

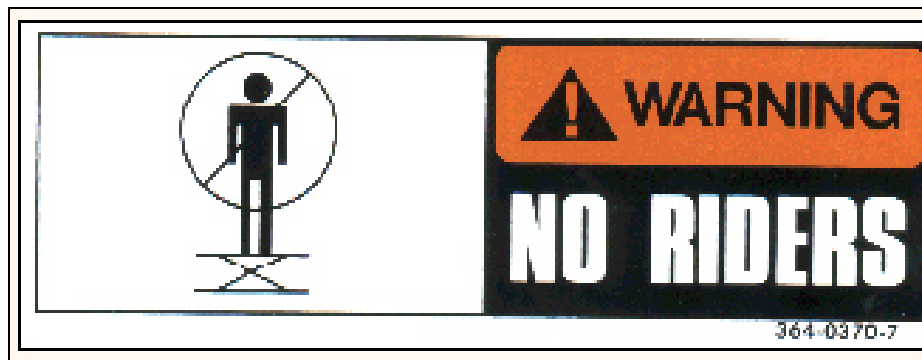


Figure 4 Label 36403707

# LABEL IDENTIFICATION



Figure 5 Label 36401511



Figure 6 Label 36400661



Figure 7 Label 36401586

# LABEL IDENTIFICATION



Figure 8 Label 36403822



Figure 9 Label 36403830



Figure 10 Label 06100010

# SPECIFICATIONS

Model #	Capacity (pounds)	Travel	Lowered Height (Inches)	Platform (Inches)	Raising/Lowering Time (seconds)	Electric Motor (hp)	Shipping Weight (Pounds)
HHT 120-05	500	120	3/8	38 X 56	30	5	2700

## **LOAD CAPACITY**

The load capacity rating is stamped on a metal plate attached to one side of the tilter. This figure is a net capacity rating for a tilter furnished with the standard platform. The relief valve of the pumping unit has been set to raise the weight, plus a small amount for overload. **Tilters should not be overloaded beyond the established capacity as damage and/or personal injury may result.**

## **UNBALANCED LOADING**

The stabilization provided is basically for balanced loads. If special attachments extend beyond the length and/or width dimensions of the platform, the end and/or side load capacity is reduced. If the load is rolling onto the platform (in any but the fully-lowered position) the end and/or side load capacity is also reduced.

## **PUMP PRESSURE**

This tilter incorporates a positive displacement pump machined to a high degree of accuracy and specially adapted to requirements of higher-pressure ranges over that of a standard pump. Therefore, standard factory models of the same manufacture cannot replace it.

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

## **DEMAG DRIVE SYSTEM**

This coil car incorporates an electric traverse drive system with a motor and gearbox speed reducer directly driving a splined shaft and two drive wheels in high capacity wheel "pockets" attached to each side of the lift. Most components in this Demag drive system are specially machined, high-precision, and metric - and should not be replaced with non-Demag components.

# BLOCKING INSTRUCTIONS

1. Remove all load from the platform. Never block the lift when loaded.
2. Raise the tilter by pressing the “UP” button.
3. The maintenance leg is stored in a socket in the base. Place the end of the maintenance leg in the socket of the base of the tilter.
4. Begin lowering the tilter by pressing the “DOWN” button while guiding the leg so that the socket on the back of the platform comes down over the top of the maintenance leg.
5. Continue to hold the “DOWN” button for five to ten seconds after the maintenance leg contacts the platform to relieve the hydraulic pressure in the cylinder.
6. Check to be certain that the maintenance leg is securely in the socket on the platform and the socket on the base.



**DANGER!**

**To avoid personal injury, NEVER go under the platform until the load is removed and the lift is securely blocked.**

7. To remove the maintenance leg, raise the tilter by pressing the “UP” button to provide sufficient clearance for the removal of the maintenance leg. Remove and return the maintenance leg to its storage location in the dumper base.

# INSTALLATION INSTRUCTIONS

1. Make sure installation area is clean before starting.
2. If the permanent electrical work is not complete, some means of temporary lines with an on-off device for the power supply should be set up for testing purposes.
3. Place the dumper in the installation area onto the tracks.



## CAUTION!

**When moving the tilter, do not attempt to pick it up by the platform; it is hinged and could be damaged. Pick up the tilter from under the base frame ONLY using a strap sling.**

4. Make temporary electrical connections and raise the tilter approximately one foot using the “UP” button. Then lower it back to fully collapse, holding the “DOWN” button for approximately 60 seconds. Repeat this process five to seven times to bleed any air out of the hydraulic system.
5. Run the lift in forward and reverse and check for proper motor rotation & speed.



## DANGER!

**Do not work under the tilter! To avoid personal injury, NEVER go under the platform.**

6. Make permanent electrical connections and operate the tilter through a few cycles.
7. Check the oil in the reservoir and add oil, if necessary. See “Routine Maintenance” section.

# INSTALLATION INSTRUCTIONS

## CLEAN UP

1. Clean up any debris from the area. A clean installation makes a good impression and creates a much safer environment!
2. Touch-up paint is available from *Autoquip* for repair of damaged paint surfaces.



## **WARNING!**

**All DANGER, WARNING, and CAUTION labels and informational decals and plates must be intact and in place on the tilter. Contact an Autoquip representative if labels are missing or damaged. See “DANGERS, WARNINGS, and CAUTIONS” section of this manual.**

# OPERATING INSTRUCTIONS

1. Dumpers have maximum lifting capacity ratings (See the "Specifications" section). The safety relief valve has been factory set to open at a point slightly above the rated load and allows the oil to bypass into the reservoir. **The safety relief valve should not be adjusted for any reason as it could cause the motor to prematurely burn out.** Applying loads exceeding the rated capacity of the tilter may result in excessive wear and damage.
2. This type of tilter is designed primarily for in-plant applications and is furnished with a constant pressure pushbutton control. Actuating the "UP" button will cause oil to enter the cylinders and the tilter platform will tilt.
3. When the desired height or upward travel of the platform is attained, removing the operators' foot or hand from the switch deactivates the "UP" circuit button. The oil stops flowing and the upward movement will stop.
4. To lower the tilter, activate the "DOWN" button. Opening the down control valve allows the oil in the cylinders to flow through the down valve at a controlled rate and return oil to the reservoir.
5. When the desired height or downward travel of the platform is attained, removing the operator's foot or hand from the switch deactivates the "DOWN" circuit. The oil stops flowing from the cylinders and the downward movement will stop.



## CAUTION!

**Do not continue to activate the "UP" button if the tilter is not raising or if it has reached the fully raised position. To do so may result in permanent damage to the tilter.**

6. To traverse the lift, the operator simply depresses either the "FORWARD" or "REVERSE" button on the pushbutton control energizing the reversing motor starter in the control panel. The motor starter activates the motor in either direction which then turns the gearbox reducer. The splined output shaft runs through the gearbox and drives the drive wheels mounted on each side of the lift.
7. When the desired travel is achieved, release pressure from either the "FORWARD" or "REVERSE" button (**NOTE:** even though the motor does have a brake, there will be slight forward motion after release of the button while the lift "coasts" to a complete stop).



# ROUTINE MAINTENANCE

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



## **WARNING!**

**To avoid personal injury, NEVER go under the tilter platform or perform any maintenance on the tilter until the load is removed and the platform is fully collapsed.**

### **MONTHLY INSPECTION**

1. Check oil level (see oil recommendations in this section) and add appropriate oil when necessary.
2. Check for any visible leaks. Correct as necessary.
3. Check any unusual noise when it occurs. Determine the source and correct as necessary.
4. Check all wiring for looseness or wear. Repair at once.
5. Do not grease axles; they have lifetime-lubricated bearings.
6. Check all wiring for looseness or wear. Repair at once.
7. Check gearbox “non-rotator” bracket and its connection to the structure of the base frame to ensure it has not vibrated loose or shows signs of excessive wear.

### **OIL REQUIREMENTS**

Change oil yearly, or more frequently if it darkens materially or feels gummy or gritty. Do not use hydraulic-jack oil, hydraulic fluids, brake fluids, or automatic transmission fluid.

# ROUTINE MAINTENANCE

## **DUMPER**

### **Oil Viscosity Recommendations**

<b>Environment (Ambient Temperatures)</b>	<b>Recommended Oil</b>
Indoor location, variable temperatures (30 - 100° F)	10W30 or 10W40 Multiviscosity motor oil
Indoor location, consistent Temperatures (70° F)	SAE-20W motor oil
Outdoor location, (-10 - 100° F)	SAE 5W30 Multiviscosity motor oil
Cold-storage warehouse (10 - 40° F)	5W30 Multiviscosity motor oil
Freezer (-40° F to 0° F)	Consult Factory

### **OIL CAPACITY**

Standard polyethylene tank capacity is approximately five quarts.

## **TRAVERSING BASE**

Under normal operating conditions the oil should be changed after 10,000 hours of service. The oil should, however, be changed at least every four years.

### **Oil Change**

1. Drain the old oil at operating temperature.
2. Remove the vent plug located at the top of the gearbox.
3. Remove the plug at the bottom, which will allow the oil to run out.
4. The oil used to flush the gearbox should have a viscosity of ISO 46 – 68 at 40°C. To flush the gearbox, use twice the amount of oil specified for lubrication. After a few minutes of idle running, the oil may be drained.
5. Repeat the flushing operation several times, preferably in both directions of rotation, and again without a load, to ensure that all remains of the old lubricant are drained with the flushing oil.
6. Fill the gearbox with the quantity of new oil specified on the gearbox data plate.

# ROUTINE MAINTENANCE

## **Oil Grades**

For ambient temperatures of approximately -10°C to +50°C (14° to 122°F) a gear oil of ISO 220 at 40°C with mild high-pressure additives should be used, DIN 51502 CLP 220, e.g. BP ENERGOL GR-XP 220, Esso Spartan EP 220, SHELL Omala Oel 220, Mobilgear 630, or Aral Degol BG 220.

At high or lower ambient temperatures, the type of oil used should be adapted to the specific conditions. Contact the Autoquip Customer Assurance department.

## **Grease Lubrication**

If the gearbox casing is filled with low-viscosity grease, it is recommended that this be changed after every 10,000 hours of service.

1. Open the gearbox casing and flush it thoroughly with a commercial cleaning agent.
2. Fill the casing with new grease. The required quantity of grease is indicated on the gearbox data plate.

## **Grease Quality**

For ambient temperatures ranging from approximately -10°C to +50°C (14° to 122°F) a low-viscosity gear grease with a dripping point of approximately 150°C (300°F) and a worked penetration of 380 to 430 1/10 mm should be used, e.g., DIN 51502 GP 00F, z.B. BP Energrease HT EP00, SHELL Special low-viscosity gear grease H, Esso Fibrax EP 370, or Aralub FD 00.

# GENERAL MAINTENANCE

## CYLINDER REMOVAL AND REPACKING

1. Install the maintenance leg. See “Blocking Instructions” section.



**DANGER!**

**To avoid personal injury, NEVER go under the tilter platform until the load is removed and the platform is securely blocked in position.**

2. Disconnect the power source.



**DANGER!**

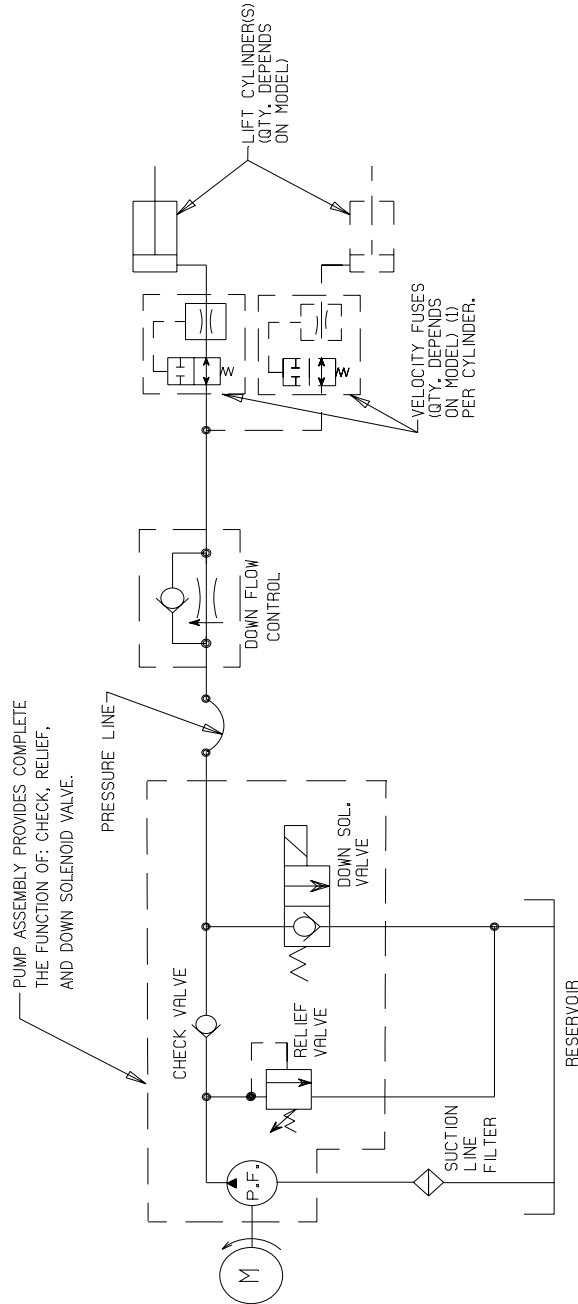
**HIGH VOLTAGE!! Disconnect and/or lock out the electrical supply to the power unit prior to any maintenance being performed.**

3. Disconnect the cylinder hose from the cylinder and insert into a container to receive oil spillage.
4. Remove the pin retaining rings and carefully tap out the clevis pin to avoid damaging the clevis pin bushings. Remove the cylinder.
5. Push the rod fully into the jacket assembly to eject any remaining oil.
6. Using a spanner wrench, turn the gland nut counter-clockwise to unscrew it from the jacket assembly.
7. Pull the rod out of the jacket slowly to remove the rod, piston and gland nut. **NOTE: Use caution to prevent surface damage to the rod that could result in seal failure and/or leakage.**
8. Inspect the bore of the jacket. Hone if necessary to remove any surface imperfections in the bore. Flush thoroughly after honing to remove chips and grit.
9. Remove the piston locknut and slide the piston and gland nut off of the rod. Take care to protect the rod surface from damage.

# GENERAL MAINTENANCE

10. Install new packing and seals on the piston, rod, and gland nut. Inspect all grooves and seal surfaces for any imperfections and repair or replace as necessary.
11. Grease all seals and packing liberally with grease or equivalent, and install the gland nut and the piston on the rod. Torque the locknut to 500 ft-lbs.
12. Install the rod into the jacket assembly taking care not to damage any seals or packing.
13. Using a spanner wrench, turn the gland nut clockwise until it is completely inserted in the jacket assembly.
14. Check the clevis pin bushings in the cylinder rod for wear and replace as necessary.
15. Install the assembled cylinder into the tilter by carefully inserting the clevis pin through the clevis and cylinder rod. Be sure the clevis pin is free of nicks and burrs. Extreme care must be taken to prevent damage to the clevis pin bushings. Install the retaining rings and washers on the pin (cylinder rod may be extended by hand).
16. Connect the cylinder hydraulic hose using the recommended sealant.
17. Check all pins and other mechanical components as well as the hydraulic components to assure that the assembly is complete and in good condition.
18. Connect the power source back up and bump the “UP” lever. Bleed the system of air.
19. Raise the tilter and remove the maintenance leg; return it to its storage location on the tilter base.
20. Raise and lower the tilter to help remove air from the system.
21. Check the oil level in the reservoir with the tilter in the fully lowered position. Add oil as necessary (see “Specifications” section).
22. Clean the oil filler breather cap if it appears dirty.

# GENERAL MAINTENANCE



## HYDRAULIC SCHEMATIC

1	ADDED PLT-C TO TITLE	WJB	10/16/96
NO.	REVISIONS	BY	DATE
JOB NAME:			
AUTOQUIP BOX 1058		AQU. NO.	
COPYRIGHT RESERVED AUTOQUIP CORPORATION GUTHRIE, OK 73044			
DRAWING TITLE: HYD SCH FOR SM & PLT-C			
REFERENCE DWG.:	658-0732-3A	DRAWN BY:	DWL
APPROXIMATE WEIGHT:	N/A	DATE:	9/11/95
QTY. REQUIRED:	1 of 1	PAGE:	1
DRAWING NUMBER:	657-5004-0	REV.	1
SIZE:	A		

Figure 12 Hydraulic Schematic

# GENERAL MAINTENANCE

## WIRING AUTOQUIP "SUPER TORQUE" MOTORS

Because *Autoquip* "Super-Torque" motors actually deliver substantially more horsepower than their nameplate rating, they 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.

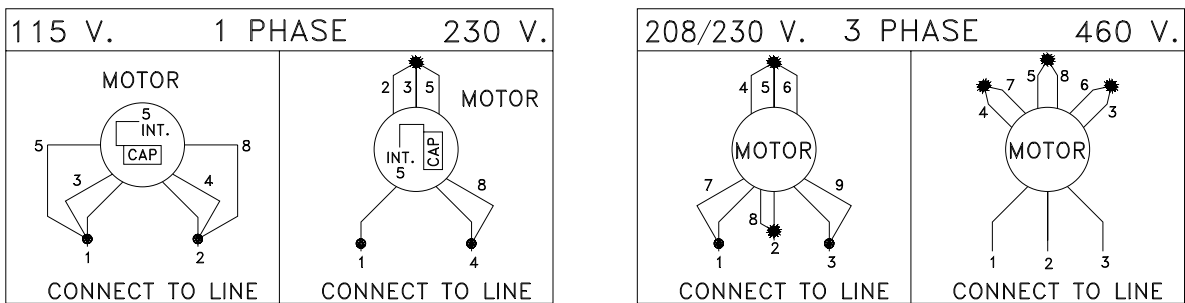
The following chart should be observed in connecting these motors to power sources, remembering that, where 115-Volt operation is contemplated, the current-draw is too heavy for plugging into ordinary lighting circuits. Heavy wire must be used all the way to the power-source.

5 HP	208 Volts	230 Volts	460 volts
Full Load Amperages	15.8 AMPS	14.8 AMPS	7.4 AMPS

HP and Source	Fuse Size	Circuit Breaker
1 ½ HP 208-230 V/60 CY/3 PH	15 A	10 A
1 ½ HP 460 V/60 CY/ 3 PH	7.5 A	5 A

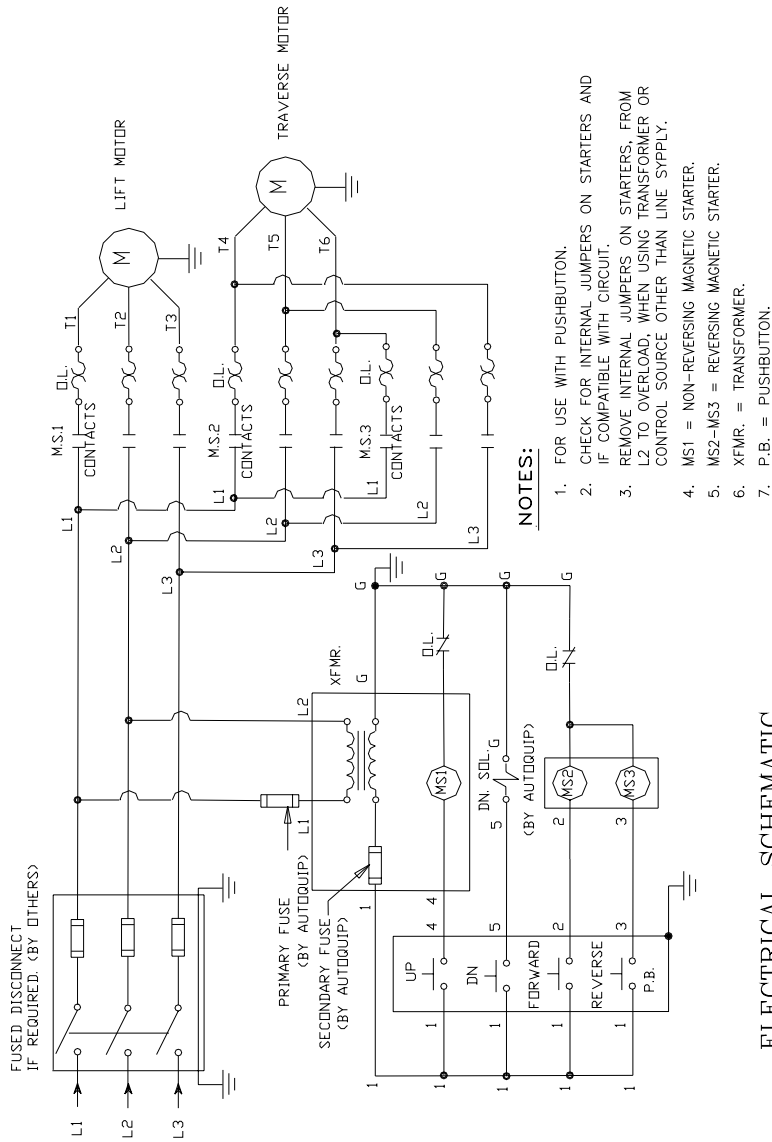
**NOTE:** For larger horsepower motors, consult factory.

## MOTOR CONNECTION DIAGRAMS



# GENERAL MAINTENANCE

65828910



**NOTES:**

1. FOR USE WITH PUSHBUTTON.
2. CHECK FOR INTERNAL JUMPERS ON STARTERS AND IF COMPATIBLE WITH CIRCUIT.
3. REMOVE INTERNAL JUMPERS ON STARTERS, FROM L2 TO OVERLOAD, WHEN USING TRANSFORMER OR CONTROL SOURCE OTHER THAN LINE SUPPLY.
4. MS1 = NON-REVERSING MAGNETIC STARTER.
5. MS2-MS3 = REVERSING MAGNETIC STARTER.
6. XFMR. = TRANSFORMER.
7. P.B. = PUSHBUTTON.

**ELECTRICAL SCHEMATIC**

TYPICAL PILOT CONTROLS ONLY

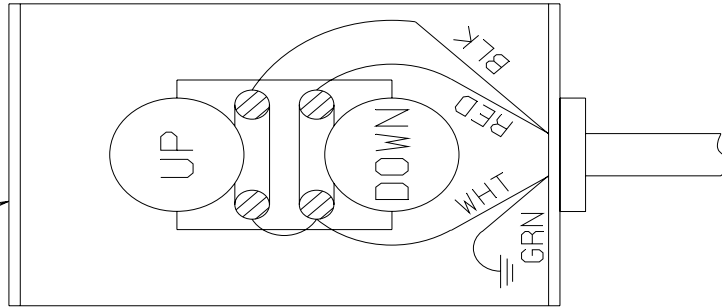
		ORDER NO:	
©2003 COPYRIGHT RESERVED AUTOQUIP CORPORATION This drawing is the sole property of Autoquip Corp. and cannot be used for design and construction without permission of Autoquip Corp.		JOB NAME:	
REFERENCE DRAWING: <b>65701010</b>	DRAWING TITLE: <b>ELEC SCH,PWRD TRAV BASE,CC</b>		
APPROXIMATE WEIGHT:	DRAWN BY: <b>TJ</b>	DATE: <b>9/23/03</b>	REV. DRAWING NUMBER: <b>1 OF 1 65828910</b>
QTY REQ'D:			SIZE: <b>A</b>

Figure 13 Electric Schematic



# GENERAL MAINTENANCE

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



NOTES:

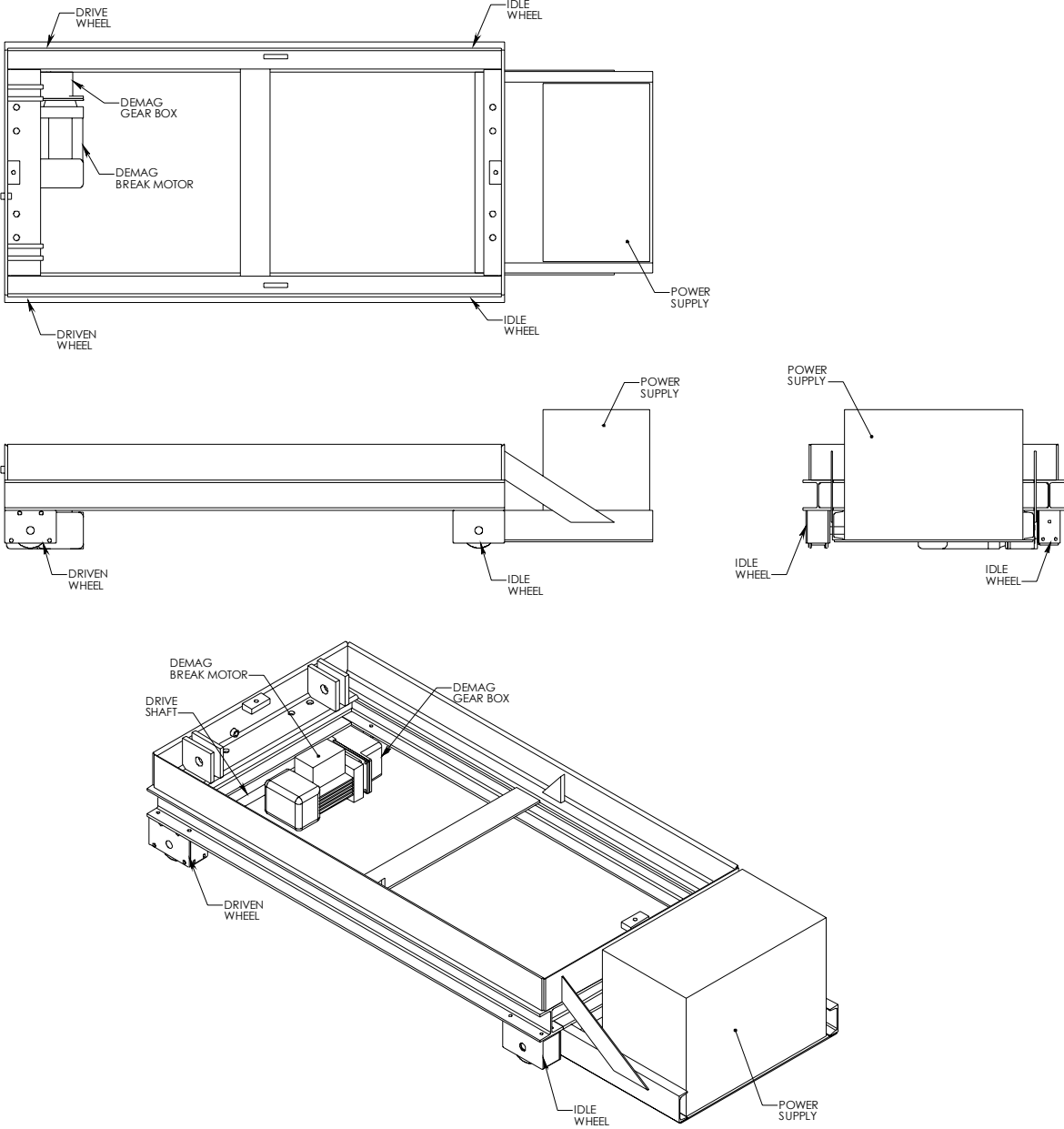
1. WARNING: ELECTRICAL HAZARD  
DISCONNECT POWER BEFORE  
WIRING THIS ACCESSORY.
2. COLOR CODING SHOWN CORRESPONDS TO  
EXISTING 16/4 SO CONTROL CORD ON  
LIFT.
3. USE APPROPRIATE WIRE, CONDUIT, ETC.  
TO SATISFY LOCAL CODES. (BY OTHERS.)

© 2000 COPYRIGHT RESERVED AUTOQUIP CORPORATION  This drawing is the sole property of Autoquip Corp. and cannot be used for design & construction without permission of Autoquip Corp.	REV. 1/88 CUTURE OK 7/044 888-811-8976	JOB NAME:  AQL NO.
	REFERENCE DWG:  APPROXIMATE WEIGHT: (2T)	DRAWING TITLE STD WALL MOUNT PUSHBUTTON WIRING DIAGRAM
DATE: 3/23/88	DRAWN BY: SC	REVISIONS BY DATE
QTY. REQUIRED 1	PAGE: 1 of 1	REV. 1
DRAWING NUMBER: 658-0734-9	SIZE A	

Figure 14 Pushbutton Assembly

# REPLACEMENT PARTS LIST

Specific part numbers vary from job to job, depending on the model and options chosen for the application. Call the *Autoquip* Service Department with the serial number of the specific equipment to order the appropriate parts.



**Figure 15 Typical Demag Drive Assembly**

# REPLACEMENT PARTS LIST

AQ PART	DESCRIPTION
28501330	Wheel Pocket, Also Drive, Double Flange
28501340	Wheel Pocket, Idler, Double Flange
28501390	Wheel Pocket, Idler, Flat
28501400	Wheel Pocket, Drive, Flat
28500690	Drive Unit
28500630	Wheel Pocket Top Connector
28500670	Wheel Pocket Spacer
28500660	Wheel Pocket Retainer Ring
28500680	Torque Connector
28500650	Drive Shaft Coupling
42600780	Cylinder, 3" Dia x 10" Stroke
41501776	Flow Control Valve, 1.5 GPM
35108590	Controller, 1/4 HP, 460V
64304785	Lift Power Unit, 1.5HP, 460V
46000105	Hose, 1/4" x 48"LG
46000097	Hose, 1/4" x 36"LG
36202610	Pushbutton, "UP/DN/FWD/REV"

# TROUBLESHOOTING ANALYSIS



**DANGER!**

To avoid personal injury, **NEVER** go under the tilter platform until the load is removed and the platform is securely blocked in the open position. See "Blocking Instructions" section.

PROBLEM	POSSIBLE CAUSE AND SOLUTION
Tilter raises, then lowers back slowly.	<ul style="list-style-type: none"> <li>• The "Down" solenoid may not be seating. Remove the solenoid coil and check again. If the tilter does not hold with the solenoid coil removed, the down valve cartridge should be removed and cleaned or replaced as necessary.</li> <li>• The oil line, hose, or fitting may be leaking. Check and repair if necessary.</li> <li>• The "check valve" in the pump assembly may not be seating. This is indicated by the pump shaft and motor turning backward on their own with no power applied. Generally, this condition can be heard. Replace the pump assembly.</li> </ul>
Tilter lowers very slowly.	<ul style="list-style-type: none"> <li>• The down-solenoid is not operating properly due to dirt or damage.</li> <li>• Check for pinched tubing or hose. Where pipe is used, check for obstruction in the line.</li> <li>• The oil is extremely viscous due to low ambient temperatures. Add or replace with lower weight oil that stays thinner in cold conditions (5W-15, etc.)</li> </ul>

# TROUBLESHOOTING ANALYSIS

PROBLEM	POSSIBLE CAUSE AND SOLUTION
<p>Tilter does not raise.</p>	<ul style="list-style-type: none"> <li>• The motor rotation for a 3-phase motor may be reversed. Reverse only two motor electrical leads.</li> <li>• Check for a line or hose leak.</li> <li>• Check for oil shortage in the reservoir. Add oil as necessary (See Oil Requirements in the "Routine Maintenance" section.)</li> <li>• The load may exceed the rating. (See the "Specifications" section.) Remove the excess load.</li> <li>• The suction screen may be clogged, starving the pump. Remove and clean the screen. Drain and replace the oil.</li> <li>• The suction line may be leaking air due to a loose fitting. Tighten as needed.</li> <li>• The breather holes in the reservoir fill plug may be clogged. Remove and clean.</li> <li>• The voltage at the motor terminals may be too low to run the pump with the existing load. Check by measuring the voltage at the motor terminals, or as near as possible, <u>while the pump is running under load</u>. Reading the source voltage or pump-idling voltage is meaningless. Inadequate or incorrect wiring can starve the motor when the source voltage is ample. Correct as necessary.</li> <li>• The "Down" valve may be energized by faulty wiring or stuck open. Remove the solenoid and check.</li> <li>• The motor may be single phasing. Check wiring, fuses, etc.</li> <li>• The pump may be seized if motor is humming or blowing fuses on overload protection devices. Remove the pump. The pump should be able to be rotated by hand. Check for cracks in the housing.</li> <li>• The down solenoid valve stem may be bent, causing the valve to be stuck open. Replace the down solenoid valve.</li> </ul>

# TROUBLESHOOTING ANALYSIS

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

# TROUBLESHOOTING ANALYSIS

PROBLEM	POSSIBLE CAUSE AND SOLUTION
<p>Tilter seems bouncy during operation.</p>	<ul style="list-style-type: none"> <li>• Lower the tilter to collapsed position and continue to hold “DOWN” button an additional 10-30 seconds to bleed air from the cylinder. Do not confuse spongy or jerky operation with small surges that may occur when operating on rough or uneven floors</li>   <li>• Check for oil starvation.</li> </ul>
<p>Motor labors or heats excessively.</p>	<ul style="list-style-type: none"> <li>• The voltage may be low. Check at the motor terminals while the pump is <u>running loaded</u>, not at the line source or while the pump is idling. Inadequate wiring can starve the motor even when the source voltage is ample.</li>   <li>• Most of <i>Autoquip’s</i> standard motors are rated for intermittent duty (two minute run times with two minute rests). 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.</li>   <li>• Running against relief pressure unnecessarily due to over loaded tilter or hitting physical stops.</li>   <li>• Failure to observe wiring diagram on nameplate for proper voltage connections.</li>   <li>• The pump may be binding from oil starvation, which develops high internal heat. Check for low oil level or closed breather holes in the reservoir fill plug. The pump can be irreparably damaged by oil starvation and may have to be replaced.</li> </ul>

# TROUBLESHOOTING ANALYSIS

<b>PROBLEM</b>	<b>POSSIBLE CAUSE AND SOLUTION</b>
Lift won't traverse	<ul style="list-style-type: none"> <li>• Traverse path may be blocked with debris or the drive axle may be "high-centered" on some obstacle &amp; preventing wheels from gaining enough traction. Look under traversing base and remove any obstacle that may impede travel.</li> <li>• Non-rotation device/bracket may have broken or vibrated loose. Re-attach or replace this bracket.</li> <li>• Load may exceed nameplate capacity and exceed horsepower ratings for the drive transmission. Ensure that the load is within the rated limits.</li> <li>• Motor has overheated and tripped the overload protection device. Check the control panel and reset motor overload or replace any electrical fuses.</li> <li>• Motor wiring may be incorrectly terminated, severed, or loose. Check motor wiring for proper connection and conduction.</li> </ul>
Lift traverses in the opposite direction of the button that is pushed	<ul style="list-style-type: none"> <li>• The motor rotation for a 3-phase motor may be reversed. Reverse only two motor electrical leads.</li> </ul>