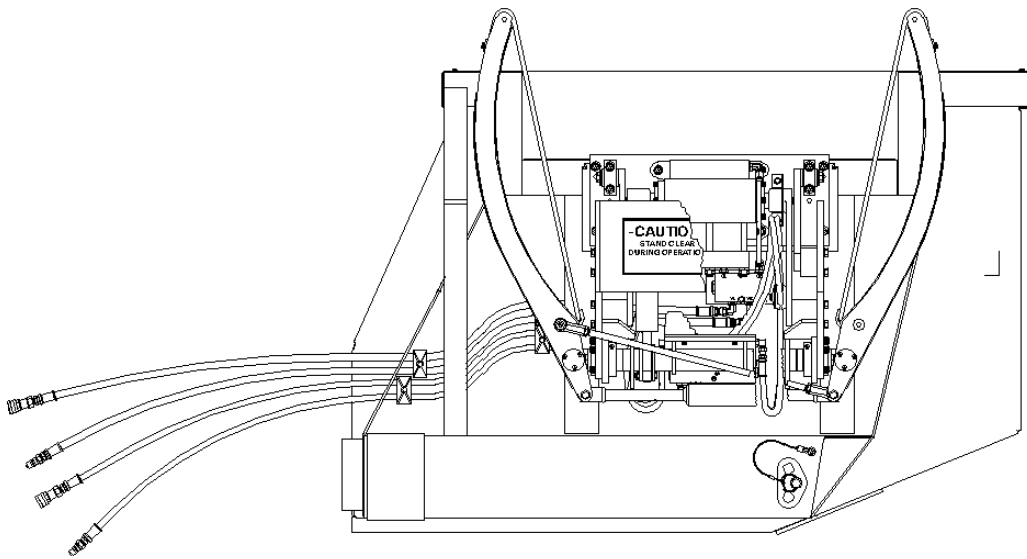




**Premium Lift Systems**

## **OPERATION AND PARTS MANUAL**



**GTL 1110**

**CURBSIDE CARRY CAN**

MODEL NUMBER : \_\_\_\_\_

PART NUMBER : \_\_\_\_\_ **1910-0003** \_\_\_\_\_

SERIAL NUMBER : \_\_\_\_\_

**BAYNE MACHINE WORKS, INC.**  
**910 FORK SHOALS ROAD**  
**GREENVILLE SC, 29605**  
**WEBSITE: [www.baynethinline.com](http://www.baynethinline.com)**

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LICENSED UNDER ONE OR MORE OF  
THE FOLLOWING U.S. AND CANADIAN PATENTS:

5,503,512	4,773,812	1,327,765	5,447,405
1,335,648	5,308,211	5,333,984	5,826,485

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SPECIFICATIONS ( WI-0082-A )  
Bayne **THINLINE**<sup>®</sup> Premium Lift Systems

- A. Rotary Actuator - rack and pinion style design.
- Rack, pinion, and shaft bearings are constantly lubricated by the hydraulic oil for extended life.
  - Body and caps are made of high quality ductile iron.
  - Pinion output shaft and racks are made of high tensile alloy steel.
  - The rotary actuator provides smooth motion throughout the lift cycle, which results in longer cart life with virtually no cart damage or abuse.
- B. Arm bearings are made of a composite material which provides superior compression strength along with self-lubrication, thus eliminating the need to grease the arm bearings.
- C. The **THINLINE**<sup>®</sup> lift unit can measure as little as 8 1/2” thick from the back of the mainframe to the front of the lifter, depending on the types of arms used.
- D. The faceplate is normally at 45 degrees in the dump position and extends 13” to 15” from the back of the mainframe into the hopper or container opening. This places the cart or barrel 16” to 18” into the truck or container opening thus reducing any potential spillage of materials.
- E. Cycle times for safe, fast, efficient service.
- **6 - 8 seconds** for Actuator to rotate up and down.
  - **3 - 4 seconds** for GTL arms to rotate down, clamp, unclamp, and rotate up.
- Note : Cycle time is controlled by flowrate, as flowrate increases, cycle times decrease.*
- Warning : Never exceed the cycle times listed above. In order to avoid injury and maintain manufacturer’s warranty never operate outside of these recommendations.***
- F. Recommended flow rates are as follows:
- **2 to 2 1/2 GPM** for 1100 series units
  - **2 to 4 GPM** for 2200 series units
- G. Hydraulic pressure requirements are as follows:
- **1800-2000 PSI** normal working pressure
  - **3000 PSI** maximum pressure

- H. All lifters can be a bolt on type installation for easy, quick maintenance and less downtime.
- I. All parts are manufactured and kept in stock at Bayne Machine Works, Inc. for fast response to customer request.
- J. Two ( 2 ) year limited warranty from date of delivery on all units and models when properly maintained and operated within the recommended cycle time.

*All lift units and parts are inspected by our Quality Control Department before shipment to insure that you always receive the highest quality available in the lift business.*

For more information, please contact us at 1/800/535-2671 or by fax at 1/864/458-7519.

## INSTALLATION INSTRUCTIONS ( WI-0215-B )

### Bayne *THINLINE*<sup>®</sup> Premium Lift Systems

The following information is intended to be a **GENERAL GUIDE** to installing the Bayne *THINLINE*<sup>®</sup> lifter on a typical refuse truck. Before starting the installation, read these instructions completely. **ALWAYS** use the proper tools, lift devices, and personal protective equipment to prevent injury while performing the installation.

**NOTE:** If a Bayne *THINLINE*<sup>®</sup> Tap-In Kit was also acquired for this installation, refer to the installation instructions included in the Tap-In Kit manual for more detailed information.

#### I. Mounting lifter on the truck:

1. Place the Bayne front load carry can and lifter assembly on the ground in front of the truck fork arms. Insert the fork arms into the fork pockets on each side of the carry can as shown in figure I-1. Insert the locking pins either under or thru each fork to lock the carry can to the truck fork arms. **DO NOT DUMP THE CARRY CAN INTO THE HOPPER UNTIL THE HYDRAULICS HAVE BEEN CONNECTED AND ALL AIR IS PURGED FROM THE SYSTEM.**
2. Adjust the ride height of the front load carry can to obtain a distance of approximately 16" from the top of the fork to the ground as shown in figure I-1.

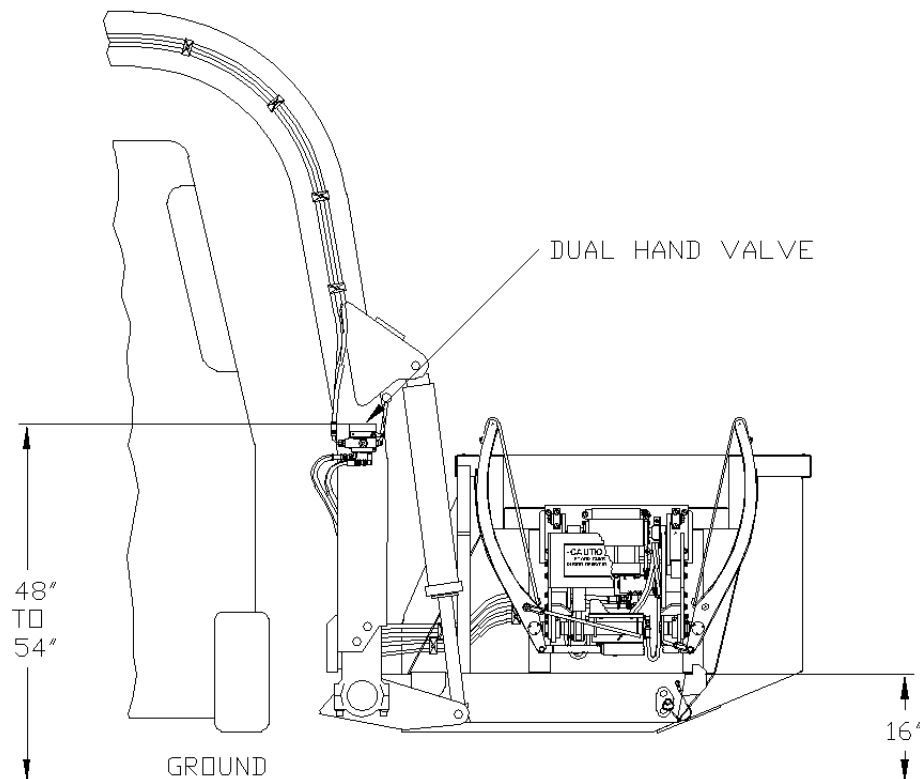


figure I-1

## II. Mounting hand valve on the truck:

1. Choose and mark an acceptable location on the truck approximately 48” to 54” from the ground to mount the hand valve assembly as shown in figure I-1.
2. Remove the mounting bracket from the hand valve assembly and weld it to the truck.
3. After the weld has cooled, paint the mounting bracket to match the truck color.
4. After the paint has dried, reassemble the hand valve assembly on the mounting bracket.

## III. Mounting diverter valve on the truck :

1. Choose and mark an acceptable location to mount the diverter valve assembly. This location should be near the truck’s main hydraulic pressure and tank lines.
2. Weld diverter valve mounting bracket to the truck.
3. After the weld has cooled, paint the mounting bracket to match the truck color.
4. After the paint has dried, bolt the diverter valve to the mounting bracket using the 1/4” bolts, washers and elastic lock nuts.

## IV. Making hydraulic connections:

*Before attempting any hydraulic connections, turn the truck’s engine off and release all pressure from the hydraulic system. Refer to the hydraulic layout (figure I-2 ) and hydraulic schematic ( Appendix A ) while performing the following steps. Always clean & lubricate fitting threads before installation.*

1. Cut or disconnect truck’s main hydraulic pressure line and install the diverter valve in series using the “IN” and “OUT” ports.
2. Connect the “T” port on the diverter valve to the truck’s hydraulic tank line with an appropriate size line to handle the lifter system flow. (Approximately 5 GPM max.)
3. Connect port “P1” on the diverter valve to the “IN” port on the hand valve.
4. Connect port “T1” on the diverter valve to the “OUT” port on the hand valve.
5. Connect port “A” on the hand valve to the “1A” port on the GTL control valve.
6. Connect port “B” on the hand valve to the “1B” port on the GTL control valve.

7. Connect port “C” on the hand valve to the “V1” port on the dual check valve.
8. Connect port “D” on the hand valve to the “V2” port on the dual check valve.

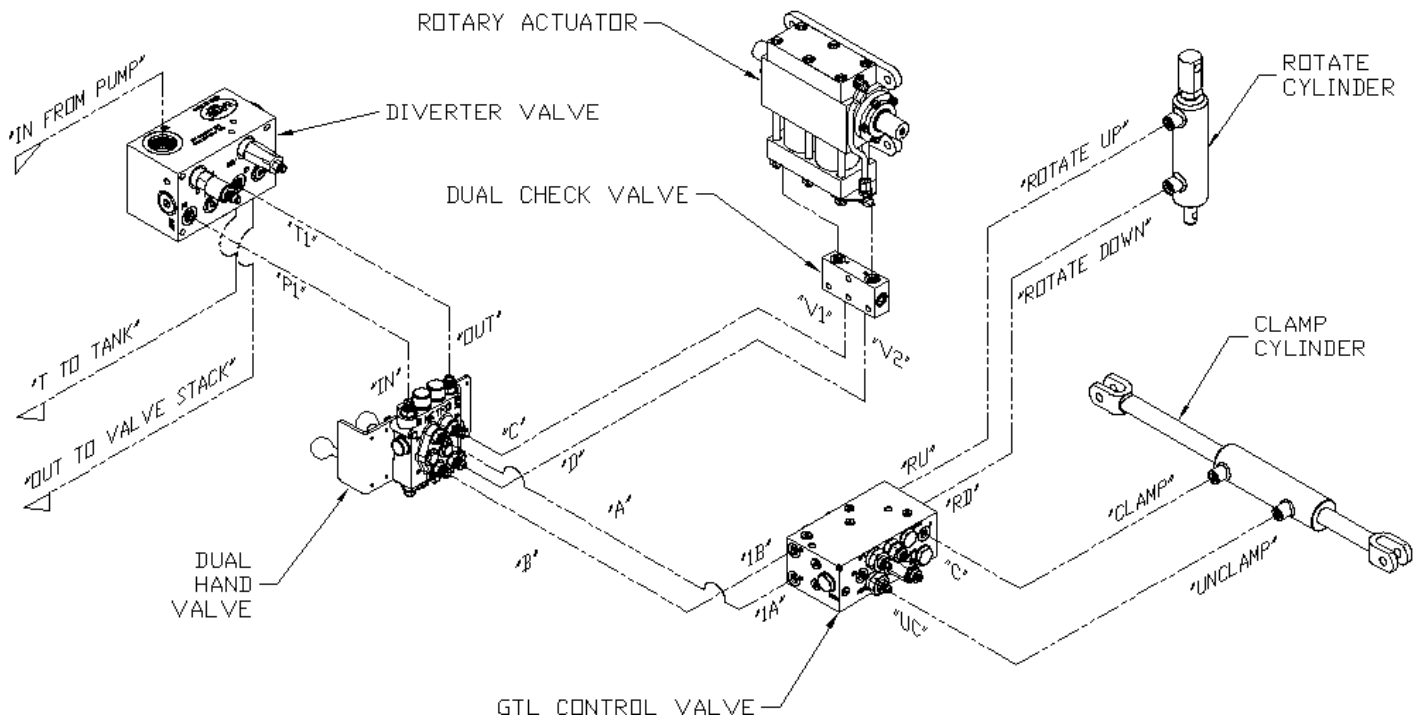


figure I-2

9. Disassemble each hose clamp assembly and position weld plates where needed and weld in place.
10. After the weld has cooled, paint the weld plates to match the truck color.
11. After the paint has dried, reassemble the hose clamp assemblies around the hoses.

## V. Adjusting relief valve settings:

The diverter valve ( 1 ) ( figure I-3 ) supplies the cart lifter hydraulic system with approximately 2 GPM of oil flow. This diverter valve is equipped with a lifter circuit relief valve ( 3 ) set at 2500 psi, to prevent the diverter valve from shutting down if a blockage occurs in the lifter circuit. There is also a relief valve ( 5 ) set at 1800 psi in the hand valve ( 2 ) to protect the lifter from excessive pressure. These relief valves are preset from the factory to operate properly on most trucks with a system pressure between 2300 and 2500 psi without any adjustment. However, if any adjustment is necessary, follow these instructions.

**WARNING :** Bayne equipment is rated for a maximum pressure of 3000 psi. Operation at pressures above 3000 psi may damage equipment and cause personal injury. In order to avoid injury and maintain manufacturer's warranty never operate above 3000 psi.

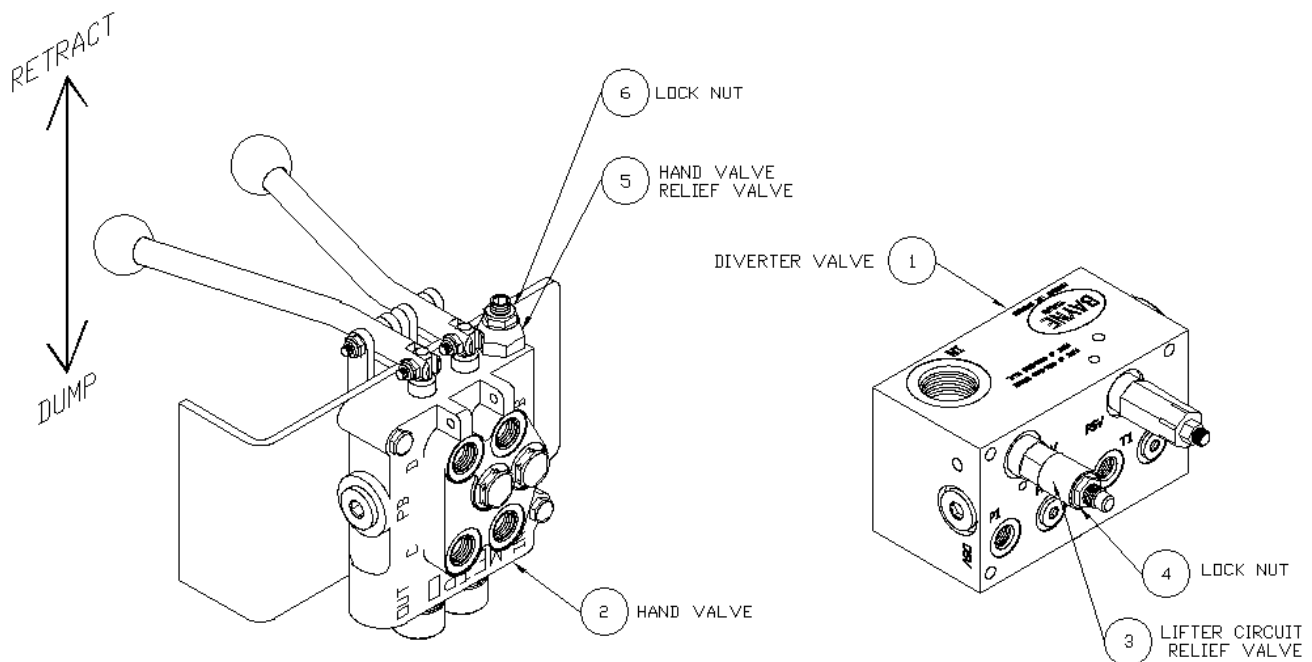
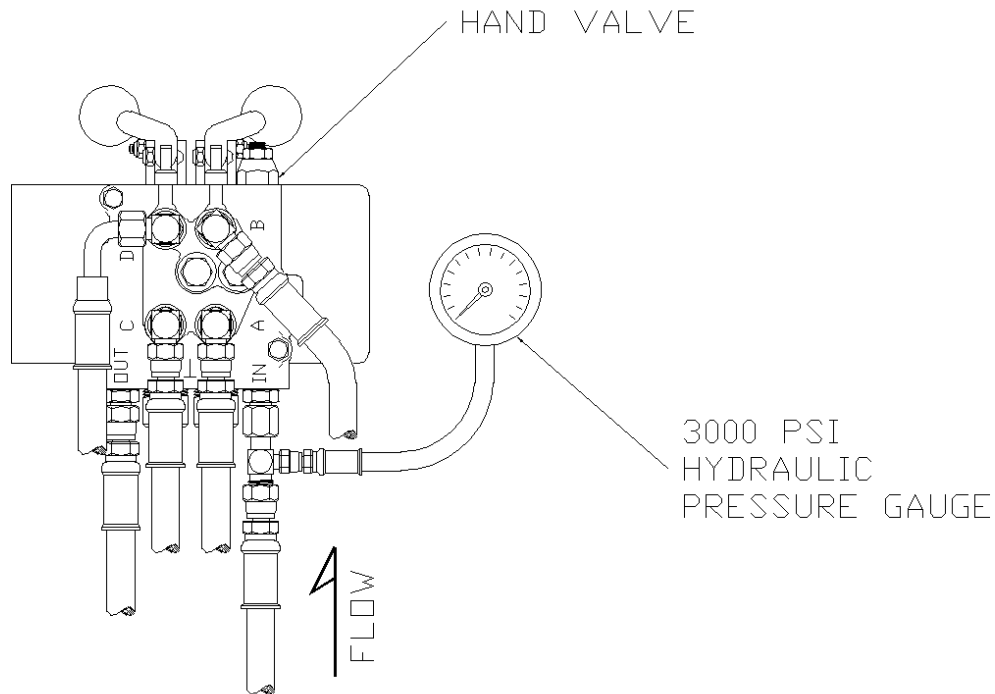


figure I-3

1. Determine the truck system pressure setting.
2. Loosen the lock nut ( 6 ) ( figure I-3 ) on the hand valve relief valve ( 5 ) and turn the adjustment screw clockwise until it bottoms out.
3. Loosen the lock nut ( 4 ) ( figure I-3 ) on the lifter circuit relief valve ( 3 ) and turn the adjustment screw clockwise until it bottoms out.



4. Start the truck's engine and engage the hydraulic system.
5. Operate the handle on the hand valve ( 2 ) (*figure I-3*) back and forth a few times to bleed all air from the lifter hydraulic system.
6. Turn the truck's engine off and release all hydraulic pressure from the system.
7. Install a 3000 psi hydraulic pressure gauge with the necessary adapter in the hydraulic line connected to the "IN" port of the hand valve as shown in figure I-4.



**figure I-4**

8. Start the truck's engine and engage the hydraulic system.
9. **Setting the diverter valve lifter circuit relief valve :**
  - a) Have an assistant hold the handle on the hand valve ( 2 ) (*figure I-3*) ( *with pressure gauge installed at the "IN" port* ) in the "retract" position to show pressure on the gauge.
  - b) Turn the pressure relief adjusting screw on the lifter circuit relief valve ( 3 ) counter-clockwise until the pressure reading on the gauge is either 100 psi less than the truck system pressure or 2300 psi, which ever is the lowest.
  - c) Release the handle on the hand valve.

## 10. Setting the hand valve relief valve :

- a) Hold the handle on the hand valve ( 2 ) ( *figure I-3* ) ( *with pressure gauge installed at the “IN” port* ) in the “retract” position to show pressure on the gauge.
  - b) Turn the pressure relief adjusting screw on the hand valve relief valve ( 5 ) counter-clockwise until the pressure reading on the gauge is either 200 psi less than truck system pressure or 1800 psi, which ever is the lowest.
  - c) Release the handle on the hand valve.
11. Turn the truck’s engine off and release all hydraulic pressure from the system.
  12. Remove the hydraulic pressure gauge from the hydraulic line connected to the “IN” port of the hand valve.
  13. Tighten the lock nut ( 6 ) ( *figure I-3* ) on the hand valve relief valve ( 5 ) to secure the correct pressure setting.
  14. Tighten the lock nut ( 4 ) ( *figure I-3* ) on the lifter circuit relief valve ( 3 ) to secure the correct pressure setting.
  15. The hydraulic circuit pressures are now set for optimum performance.

## VI. Adjusting the GTL control valve :

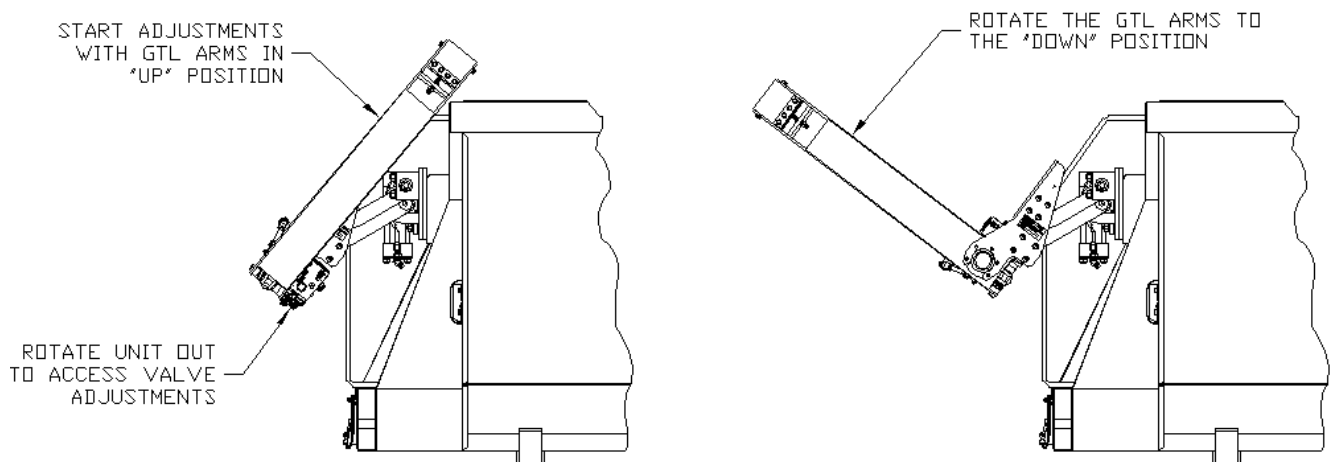
*The rotational and clamping motions of the THINLINE<sup>®</sup> GTL lifter’s arms are controlled through a series of valves in the GTL control valve mounted to the lifter.*

*Pressurizing the “1A” port of this manifold will rotate the arms down to the horizontal position. As the arms reach the horizontal position, the sequence valve in port “CT4” senses the pressure increase, then shifts to direct oil to the clamping cylinder, causing the arms to clamp. Pressurizing the “1B” port of the control valve will unclamp the arms. As the arms reach the fully unclamped position, the sequence valve in port “CT1” senses the pressure increase, and then shifts to direct oil to the rotate cylinder, returning the arms to the upright position.*

*The GTL control valve includes a pressure reducing valve in port “CT5” to control the clamping pressure.*

*It is very important to make sure the hydraulic oil is at operating temperature, and the flow rate and relief valve settings have been properly adjusted before setting the GTL control valve pressures.*  
*The proper flow rate and relief settings are 2 gpm at 1800 psi.*

*Start the adjustment process with the GTL arms in the “up” position as shown in figure I-5 and rotate the lifter as far as possible without hitting the arms on the can. This should allow better access to the GTL control valve adjustments.*



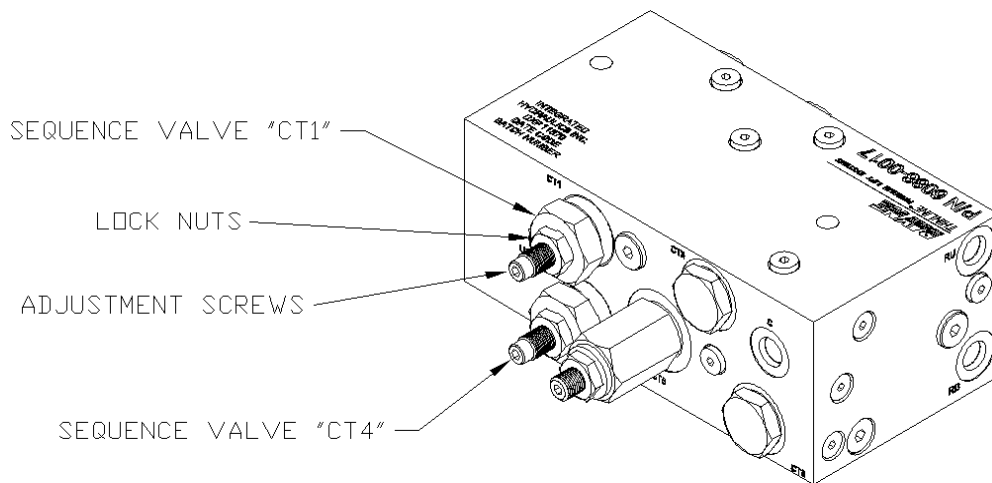
**figure I-5**

**1. Setting the GTL sequence valves :**

**As stated above the rotational and clamping motions of the GTL arms are controlled with the use of sequence valves. These valves are preset from the factory to operate properly on most trucks without any adjustment. However, if the arms will rotate down but will not clamp, or if the arms will unclamp but not rotate up, refer to figure I-6 while performing the following steps to properly adjust the sequence valves.**

- a) Start the truck's engine and engage the hydraulic system.
- b) Loosen the lock nuts on the sequence valves in ports “CT1” and “CT4” of the GTL control valve, and using an allen wrench turn the adjustment screws clockwise until they bottom out.

- c) Shift the handle of the dual hand valve to move the arms to the “down” position. ( *Figure I-5* ) After the arms completely rotate down, release the handle on the dual hand valve.
- d) Use the allen wrench to turn the adjustment screw ( *figure I-6* ) on the sequence valve in port “CT4” counter-clockwise 1/4 turn. Remove the allen wrench and move the handle on the dual hand valve to see if the valve will shift to clamp the arms. If the arms do not clamp, release the handle on the dual hand valve, and repeat this procedure, backing the adjustment screw out in 1/4 turn increments until the arms clamp. **Note: It may take as many as 10 to 15 adjustments.**
- e) Move the handle on the dual hand valve the opposite direction, causing the GTL arms to unclamp. After the arms completely unclamp, release the handle on the dual hand valve.



**figure I-6**

- f) Use the allen wrench to turn the adjustment screw on the sequence valve in port “CT1” counter-clockwise 1/4 turn. Remove the allen wrench and move the handle on the dual hand valve to see if the valve will shift to rotate the arms to the “up” position. If the arms do not rotate to the “up” position, release the handle on the dual hand valve, and repeat this procedure, backing the adjustment screw out in 1/4 turn increments until the arms rotate. **Note: It may take as many as 10 to 15 adjustments.**
- g) Tighten the lock nuts on the sequence valves to secure the correct pressure settings.

## 2. Setting the clamp pressure valve :

The amount of pressure the GTL arms use to clamp the container is controlled with a pressure reducing valve in the “CT5” port of the GTL control valve. This valve is preset at the factory to operate with most containers. However, if the lifter seems to be crushing or loosing grip on your specific containers, refer to figure I-7 while performing the following steps to properly adjust the clamping pressure.

- a) Place a container into the grabber arms, clamp, and rotate the lifter to the dump position.
- b) Loosen the lock nut on the pressure reducing valve in port “CT5” of the GTL control valve.
- c) If the lifter is crushing the waste container, turn the adjustment screw counter-clockwise 1/4 turn. If the lifter is loosing grip on the waste container, turn the adjustment screw clockwise 1/4 turn.

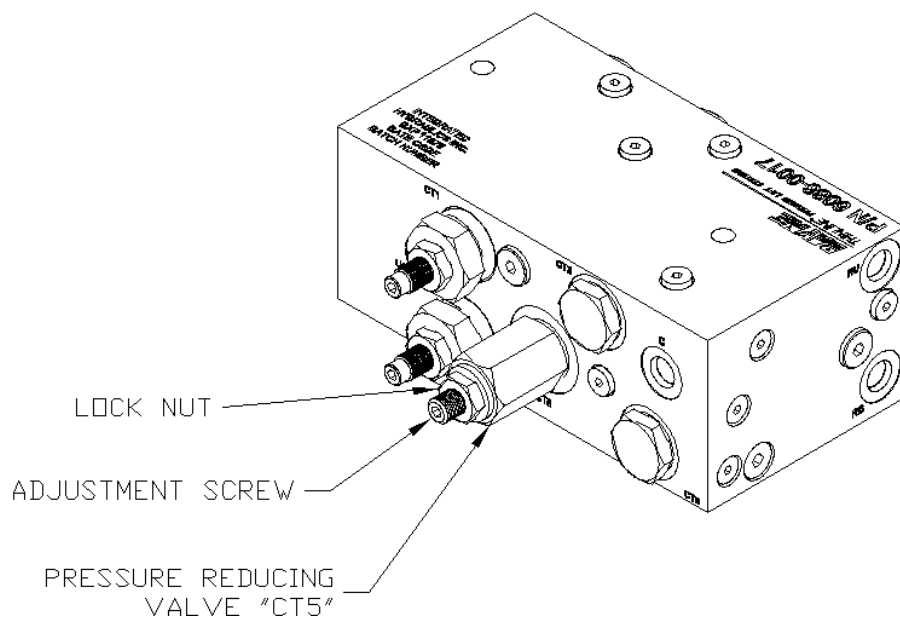


figure I-7

- d) Lower the container back down, unclamp, and rotate the grabber arms back to the “up” position.
- e) Repeat clamping and dumping the container, making necessary adjustments to the pressure reducing valve in 1/4 turn increments until the lifter securely holds the container without crushing it.
- f) Tighten the lock nut on the pressure reducing valve to secure the correct pressure setting.

## **VII.Final operation and dumping:**

1. Start the truck's engine, and engage the hydraulic pump.
2. Operate the lifter up and down to bleed all air from the hydraulic system.
3. Always bring the lifter back to the complete "down" position before dumping the carry can.
4. Carefully dump the box assembly into the truck hopper, making sure there are no clearance problems.

## OPERATION INSTRUCTIONS ( WI-0135-A )

### *Bayne THINLINE*® Premium Lift Systems

The *Bayne THINLINE*® Premium Lift System is a high quality durable cart lifter built to meet your industry's requirements. To insure the safety of all operators of this equipment, please read this manual carefully before operating the lifter. ***FAILURE TO COMPLY WITH INSTRUCTIONS COULD RESULT IN PERSONAL INJURY AND/OR PROPERTY DAMAGE.***

The operating stages ( *figure O-1* ) in the cycle of the cart lifter are as follows:

- 1) ***START*** - The cart to be dumped is rolled up to the lifter. *The cart must be placed in close proximity to the front of the lifter to ensure that the clamp arms will fully engage the cart. Also, the cart must be centered to ensure there is no interference when the clamp arms are lowered.*
- 2) ***CLAMPING*** - The clamp arms are lowered and engaged around the cart.
- 3) ***ACTUATOR DUMP*** - The rotary actuator is cycled to dump the contents of the cart.
- 4) ***ACTUATOR REVERSE*** - The rotary actuator is reversed, returning the cart to the ground.
- 5) ***UNCLAMPING*** - The clamp arms are unclamped and return to the upright position.

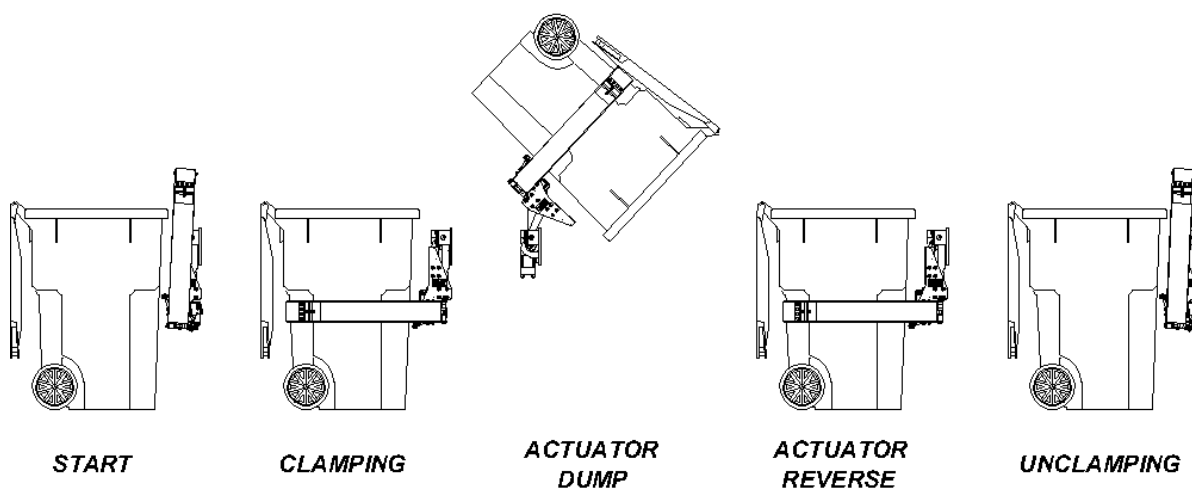


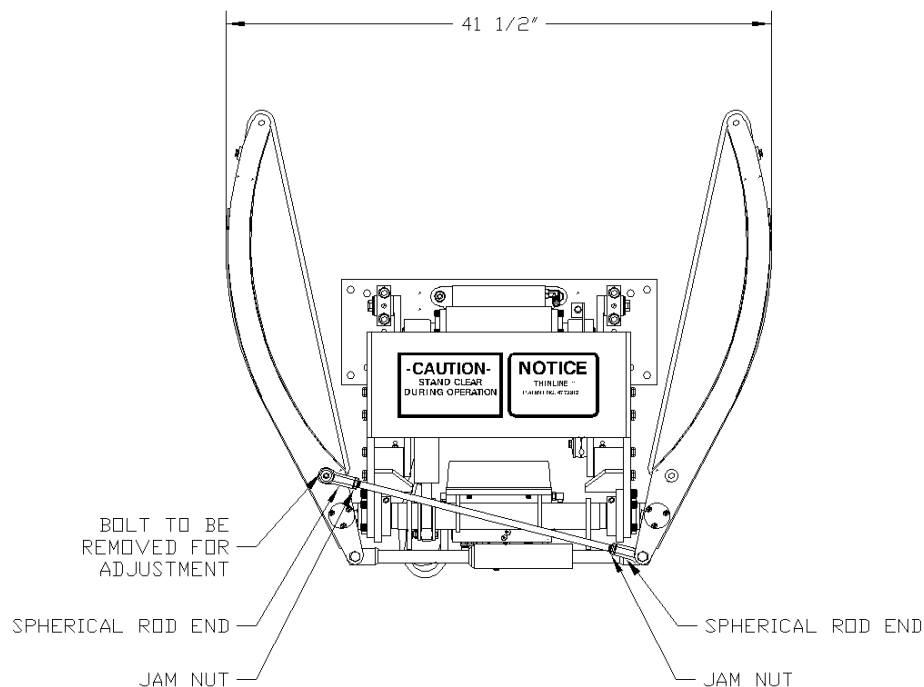
figure O-1

The rotational and clamping motions of the cart lifter are controlled with the use of a dual hand valve. Moving the grabber arm handle on the dual hand valve in the upward direction will cause the grabber arms to perform the *CLAMPING* stage (*figure O-1*). Moving the actuator handle in the upward direction will cause the lifter to perform the *ACTUATOR DUMP* stage. Moving the actuator handle in the downward direction will cause the lifter to perform the *ACTUATOR REVERSE* stage. Finally, moving the grabber arm handle in the downward direction will cause the lifter to perform the *UNCLAMPING* stage.

## UNCLAMPED WIDTH ADJUSTMENT

Check the distance between the outsides of the grabber arms when the lifter is in the fully *UNCLAMPED* position as shown in figure O-2. Maintain this dimension at **41 1/2"**.

To adjust the setting, loosen the jam nuts on the spherical rod ends. Remove the bolt that holds the rod end to the grabber arm. Screw the rod ends in or out as required to obtain the proper dimension of **41 1/2"**. Reinsert the bolt to attach the rod end to the grabber arm and tighten the jam nuts.



**figure O-2**



6091/6092-0700 DIVERTER VALVE  
OPERATION AND INSTALLATION INFORMATION  
( WI-0026 )

Bayne *THINLINE*<sup>®</sup> Premium Lift Systems

The Bayne diverter valve establishes priority flow to the lifter circuit “P1” and “P2” ports and bypasses oil to the “OUT” port, which typically supplies flow to the remainder of the truck’s hydraulic circuit. This bypass occurs only after the lifter circuit is satisfied. The priority flow is controlled by the flow regulator cartridge (FR1) (and FR2 in dual applications) in combination with the differential pressure sensing valve (DPS). This allows the valve to maintain constant flow regardless of changes in load pressure or volume flow rate. Since both the lifter circuit and bypass flow can be utilized in the operation of the truck regardless of which pressure is greater, a single pump can be used to supply two circuits or operations.

The lifter circuit flow is regulated and maintained by the flow regulator cartridge (FR1) (and FR2 in dual applications). The differential pressure sensing valve (DPS), rated for 75 gpm of flow and 3000 psi of pressure, is operated by an internal spring and dampening orifice (OR) which establishes a pressure drop across the block sufficient to ensure the correct operation of the flow regulator (FR1). For a dual diverter valve, a second flow regulator cartridge (FR2) is installed in the “FR2” cavity and a shuttle valve (DSV) is installed in place of the SAE plug in the “DSV” cavity. Once the pressure drop is established, a precision metered flow is provided to the tipper circuit(s) with additional flow being bypassed to the “OUT” port.

The operation of the diverter valve does not require the use of a tank line to be run to the “T” port. However, the efficiency of the block will be significantly increased if a tank line is installed. The logic circuit of the block will manage the flow of oil returning from the tipper circuit to ensure optimum performance. This is primarily controlled with the sequence valve (PSV) which is factory set and should not be adjusted. All oil returning from the tipper circuit will normally be regenerated into the outgoing flow to ensure that the downstream functions are not slowed in any way. When the downstream backpressure rises to a predetermined pressure, the block will redirect the flow to the “T” port to increase the overall efficiency of the block and reduce the pressure drop through the block. If the “T” port is connected to a tank line, the oil will be dumped through the block at a lower pressure. This allows downstream functions to operate at the highest possible pressure when pressure is being required. If the “T” port is blocked, the oil will be redirected back into the outgoing flow through the check valve (CV).

A relief circuit for the tipper function is controlled by a relief valve (RV), which is preset to 2300 psi. This can be adjusted to limit pressure to the tipper(s). This relief valve is more efficient than the relief in the hand valve and will operate with less noise. It is recommended that it be adjusted to relieve before the hand valve relief. It may also be used to limit the weight the lifter can dump. This may be beneficial in avoiding damage to cans resulting from overloading. This should be the only adjustment that the block may require. Any other adjustments should only be made after close consultation with Bayne’s Engineering Department to ensure proper operation.

## POSSIBLE PROBLEMS

1. The most common cause of valve failure is dirty oil. If debris becomes lodged in the cartridge valves they will malfunction. Recommended filtration level is between 15 and 25 microns. Many systems filter the oil on the return side. This does not guarantee clean oil going into the system. It is important to ensure that the tank vent filtration element is properly maintained as well. Very small contaminants may not cause the valve to stop functioning, but can cause “stiction” in the cartridges between the body and the moving spool. This can cause improper operation. A slow moving tipper is most likely the result of contamination in the flow regulator cartridge. A pulsating noise may be the result of contamination in the differential pressure sensing valve causing it to stick. If any valve malfunctions, remove and thoroughly clean the valve, being extremely careful not to score or abrade the “o” ring seals or moving parts of the valve. Be sure that the spool moves freely in the valve body.
2. The flow regulator cartridges (FR1 and FR2) are designed to operate at a designated pressure of 80 psi. This means that in order for the valve to function properly, a minimum of 80 psi is required from the supply line through the “IN” port of the valve. This can present a problem on trucks with a dry valve pump system. Normally in the dry (off) mode of the pump, a flow of approximately 2 gpm at 20 psi is required to circulate through the open center system of the truck. This is for pump lubrication in the off mode. When the diverter valve is placed in the main pressure line of the truck, a blockage occurs because of the differential pressure sensing valve needing 80 psi to initially open and allow the flow regulators function. The path of the lubrication oil is therefore stopped because the valve does not open. When the oil is blocked, the pump will rotate and cavitate in the lubricating oil, causing heat to build up over an extended period of time, possibly leading to premature pump failure. To prevent this problem from occurring, a “bleed line” circuit needs be installed on the truck to allow passage of the lubricating oil back to tank.
3. On front load residential truck applications, several considerations need to be noted. The Bayne hand valve is an open center valve that allows for the lifter circuit to maintain flow through the hand valve and back to the diverter valve when the lifter is not being operated. If flow is not maintained through the hand valve, the oil will constantly be relieving over the lifter circuit relief valve (RV) in the diverter valve, which can cause an increase in operating temperature. Certain front load box designs allow for the hand valve to be located on the arms of the truck which keeps the hand valve in the lifter circuit at all times to maintain flow. Most problems occur with applications where the hand valve is located on the box itself. In this situation, when the operator disconnects the hydraulic lines to the box, a blocked condition occurs in the lifter circuit. To prevent this problem, the pump must be turned off prior to disconnecting the box hydraulic lines. Once the lines have been disconnected from the box, it is necessary to connect the two lines for the hand valve to each other to functionally complete the lifter circuit. It is recommended that male and female quick disconnects be used opposite each other on the truck to provide an uninterrupted circuit. Once the lines have been connected and the circuit continued, the pump could then be turned on to continue operations.

MAINTENANCE INSTRUCTIONS ( WI-0140-A )

Bayne ***THINLINE***<sup>®</sup> Premium Lift Systems

**NOTE:**

THE MOST COMMON CAUSE OF HYDRAULIC COMPONENT FAILURE IS CONTAMINATION OF THE HYDRAULIC FLUID ( WATER, CHIPS, DIRT, ETC. ) THE Bayne ***THINLINE***<sup>®</sup> LIFT SYSTEM COMES CLEAN FROM THE FACTORY. IF REMOVED, BE SURE THE HOSES, CYLINDER AND FITTINGS ARE CLEAN BEFORE RE-INSTALLING THEM ON THE UNIT.

Inspect your cart lifter on a weekly basis for loose bolts, fittings, oil leaks, etc. Tighten loose hardware as necessary and replace necessary seals to repair oil leaks.

In order to maintain warranty and for preventive maintenance, grease all points weekly with a good multi-purpose grease at points shown in the lubrication drawing ( *APPENDIX A* ).

**BAYNE**  
**PREMIUM LIFT SYSTEMS**

**ASSEMBLY INSTRUCTIONS**  
**1100 SERIES ROLLER BEARING ACTUATOR**  
**PART NUMBER 1120-1035 ( WI-1122-C )**

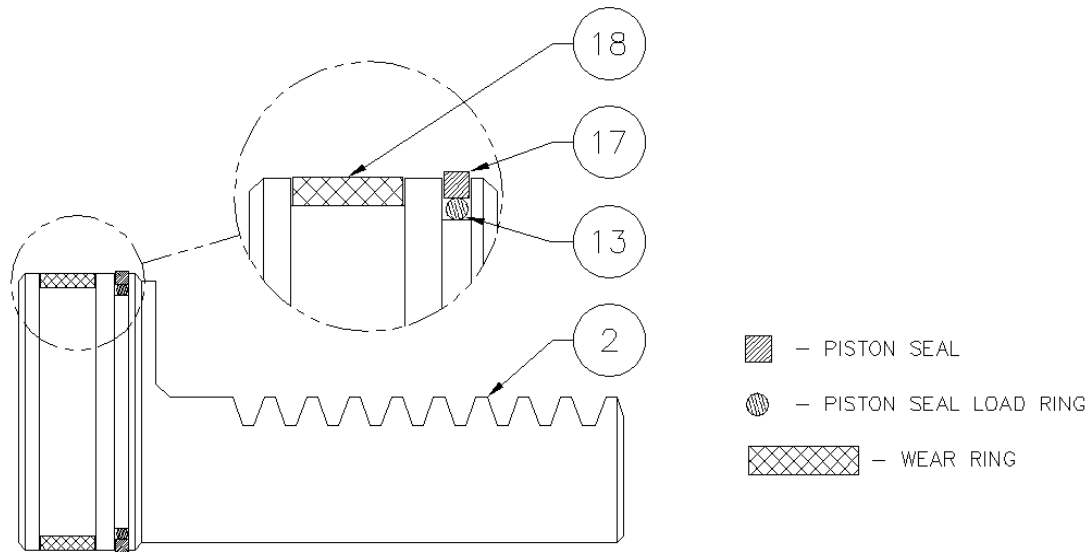
**LICENSED UNDER ONE OR MORE OF THE FOLLOWING U.S. PATENTS:**  
**4,773,812    1,327,765    5,308,211    5,333,984**

**READ INSTRUCTIONS COMPLETELY BEFORE STARTING ASSEMBLY.**

Before starting the assembly of the Rotary Actuator, refer to the exploded parts drawing and parts list (fig. A-13 found at the end of these instructions) to familiarize yourself with the individual components. Prepare a clean surface, in an area free of blowing dust and contaminants in which to assemble the Rotary Actuator. Be sure that all parts are thoroughly clean and dry before starting assembly.

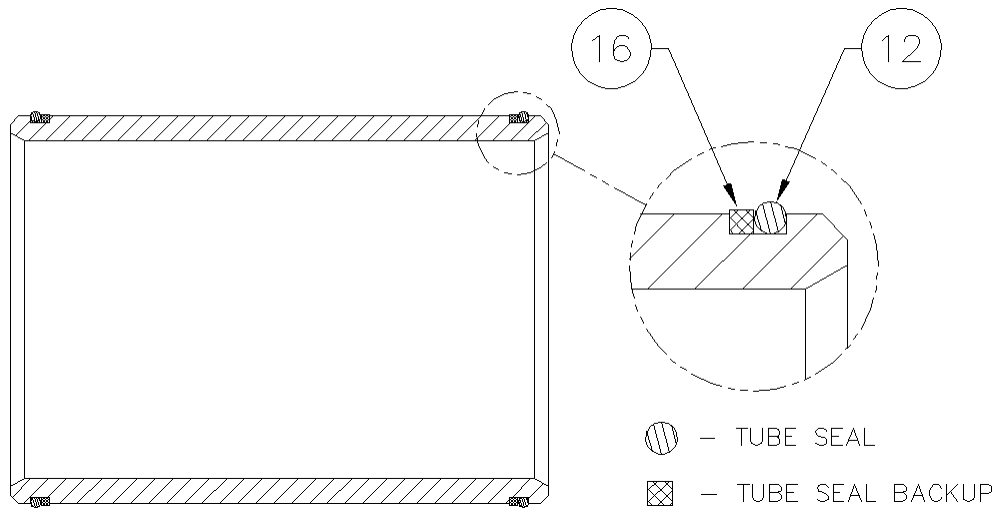
**NOTE:** All torque values given apply to clean dry threads only. Follow these directions closely when repairing the Rotary Actuator.

1. Install the piston seal load ring (13) (fig. A-1) in the small groove on the head of the actuator rack (2). Place the “square” piston seal (17) over the load ring (13) in the same small groove (a small “*blunt*” flathead screwdriver may be used, taking care not to scratch or damage the seal). Install the wear ring (18) in the large groove on the head of the rack. Using a ring compressor, firmly seat the rings on the rack before setting it aside, this will help to reverse the effects of any stretching of the rings that occurred during installation. Repeat this procedure for the other rack.



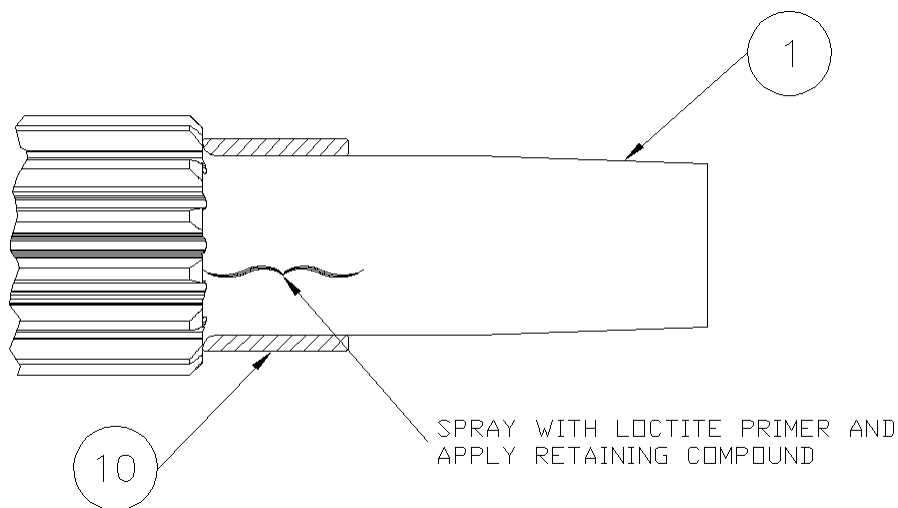
**figure A-1**

2. Install the tube seal (12) (fig. A-2) and “square” tube seal backup (16) on each end of the actuator tubes (3) (fig. A-13). Be sure that the “square” tube seal backup ring is toward the inside of the tubes at both ends as shown. Press all rings firmly into the grooves. Repeat this procedure for the other tube.



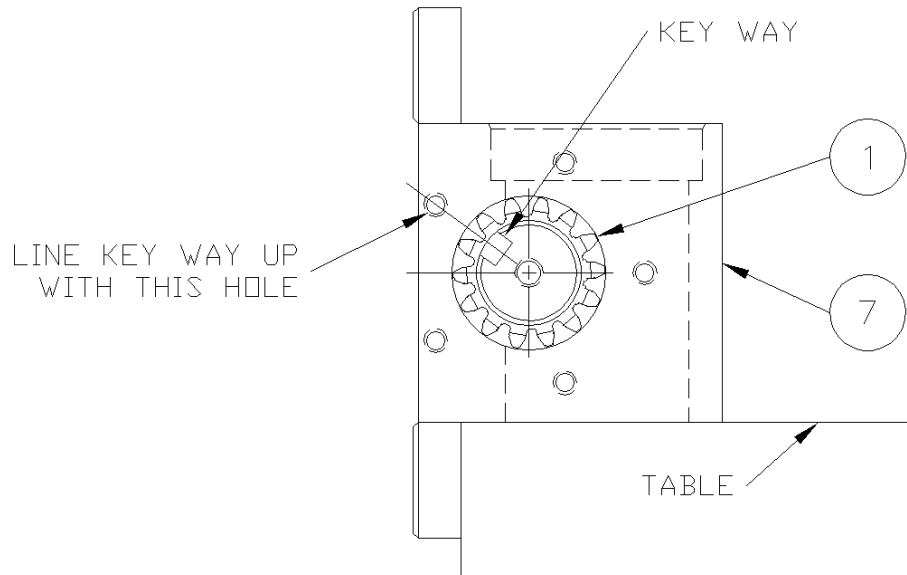
**figure A-2**

3. Thoroughly clean the pinion shaft (1) (fig. A-3) and inner races (10) with a mild solvent and dry completely. Spray the inner race contact area (shown in figure A-3) at each end of the pinion shaft and the inside diameter of the inner race thoroughly with *LOCTITE 7649 N PRIMER*. Apply *LOCTITE RETAINING COMPOUND 609* around the pinion shaft at contact area and the inside diameter of the inner races. Slide the inner races (10) on the pinion shaft (radius end first as shown in figure A-3) until the races seat against the gear teeth. After the races seat against the gear teeth, twist the races on the pinion 360° to spread the retaining compound evenly. Wipe off any excess retaining compound.



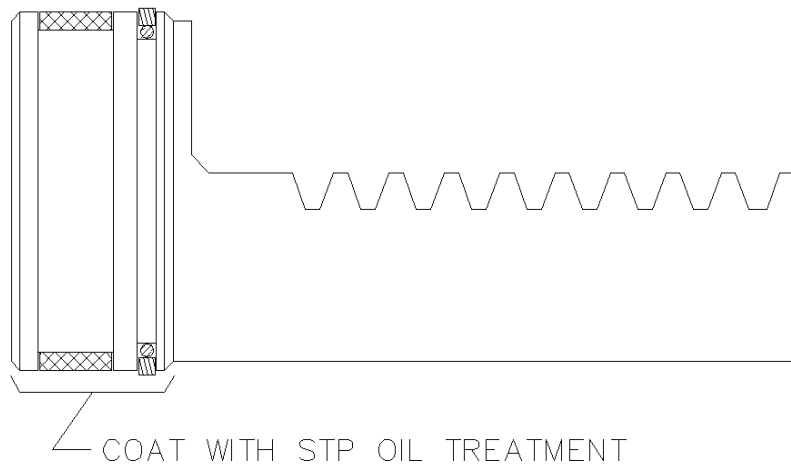
**figure A-3**

- Place the actuator body (7) (fig. A-4) on the edge of the table, mounting flanges closest to the assembler with the counter-bores facing up. Insert the pinion shaft (1) through the bore on either side of the actuator body with the key ways facing back toward the mounting flanges and up away from the table with the center line of the key ways pointing toward the center of the tapped hole shown in figure A-4. Center the pinion in the actuator body.



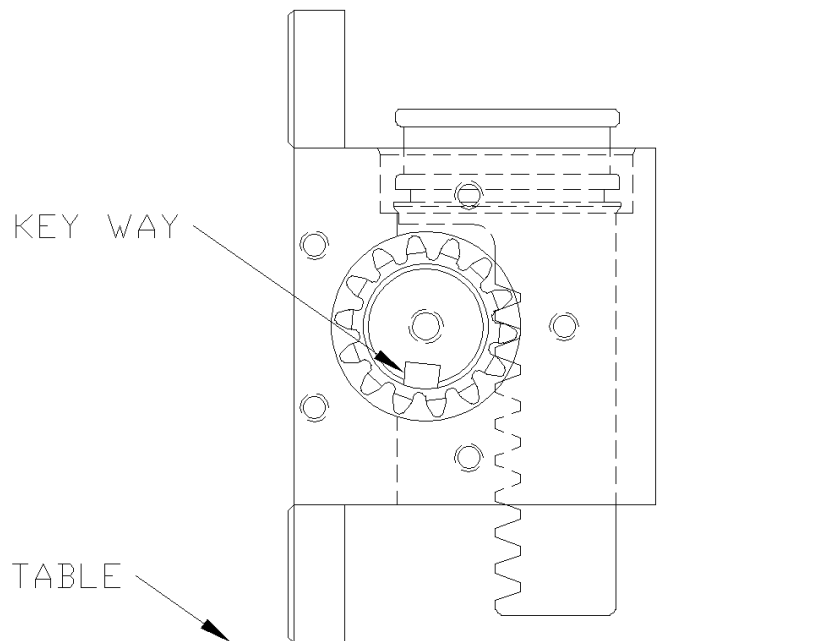
**figure A-4**

- Coat the head portion of the racks (2) (fig. A-13) with STP Oil Treatment as shown in figure A-5. Install the racks, head portion up with the teeth facing the flanges of the actuator body, into the dual set of bores in the body. Simultaneously slide the racks into the bores so that the racks mesh with the pinion in the same position. Rotate the pinion shaft to engage the racks into the pinion.



**figure A-5**

6. Check the position of the racks in the pinion by making sure both racks seat against the actuator body at the same time and also when the racks are seated against the body, the key ways on the pinion shaft should be facing down toward the table and very slightly back toward the mounting flanges on the actuator body as shown in figure A-6.



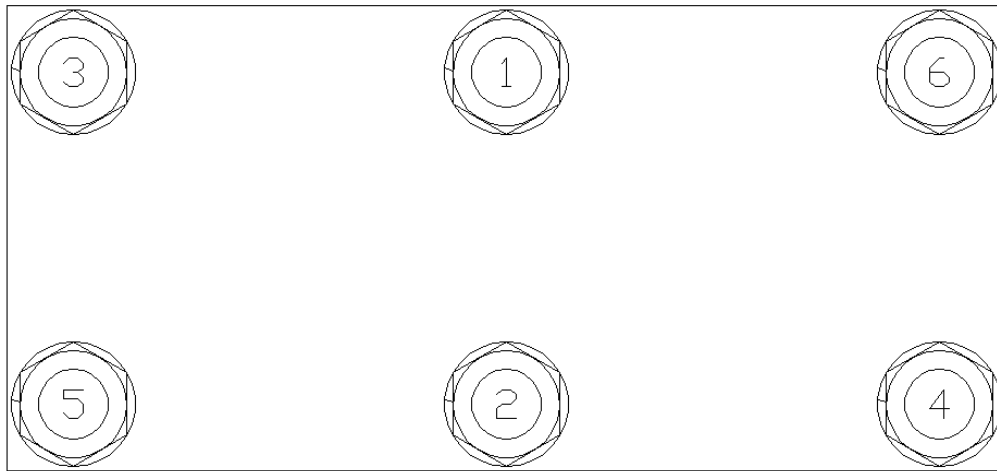
**figure A-6**

7. Coat one end of the actuator tubes (3) (fig. A-13) around the seal area with STP Oil Treatment as shown in figure A-7. Using a rubber mallet, drive the coated end of the tube onto the exposed rack until the tube end seats in the actuator body, making sure that the seals remain in place as the tube enters the counter-bore. Repeat this procedure for the other side.



**figure A-7**

8. Install the six tie rod studs (6) (fig. A-13) by screwing the short threaded end into the actuator body. Hand tighten only at this time (the torque needed will be applied later in the procedure).
9. Place the tube cap (4) (fig. A-13) on the table. Coat the sides of the two bores in the tube cap with STP Oil Treatment. Install the cap over the tubes and rod studs with the oil port positioned to the left as shown in figure A-13. Using a rubber mallet, tap the tube cap over the tubes until the tubes seat in the cap, making sure that the seals remain in place.
10. Install the hex nuts (23) (fig. A-13) and lock washers (24) on the tie rod studs. Torque the nuts to 50 ft-lb. in the sequence shown in figure A-8.

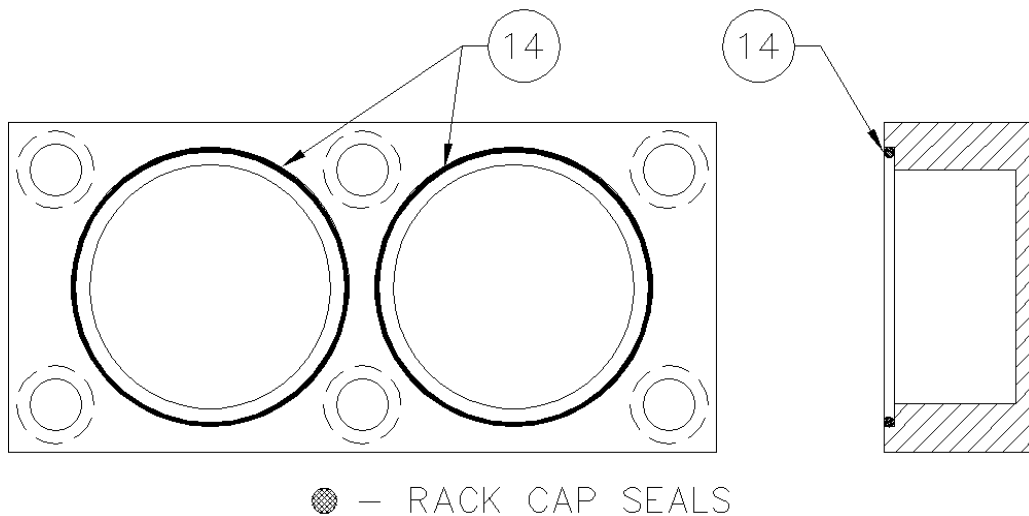


TUBE CAP TORQUE SEQUENCE

**figure A-8**

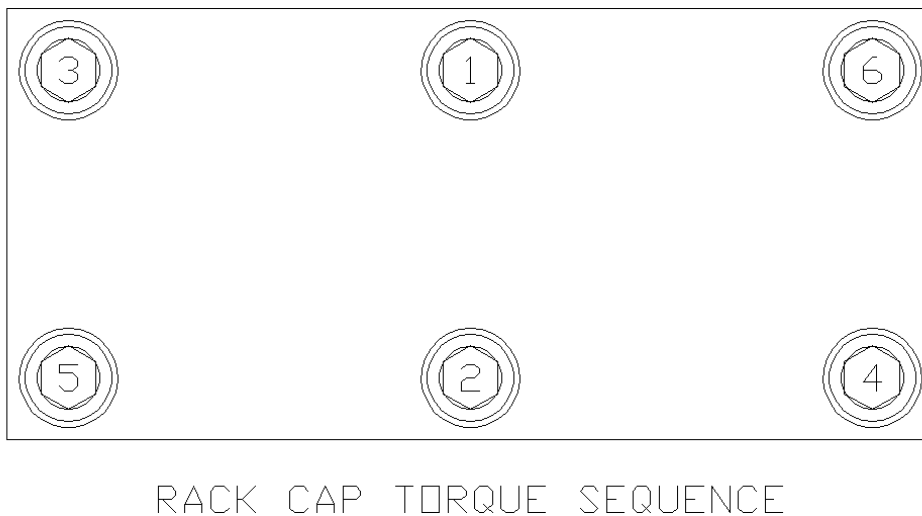
11. Place the rack cap (5) (fig. A-13) bore side up on the table and coat the edge of each bore with STP Oil Treatment. Install the rack cap seals (14) (fig. A-9) in the rack cap.





**figure A-9**

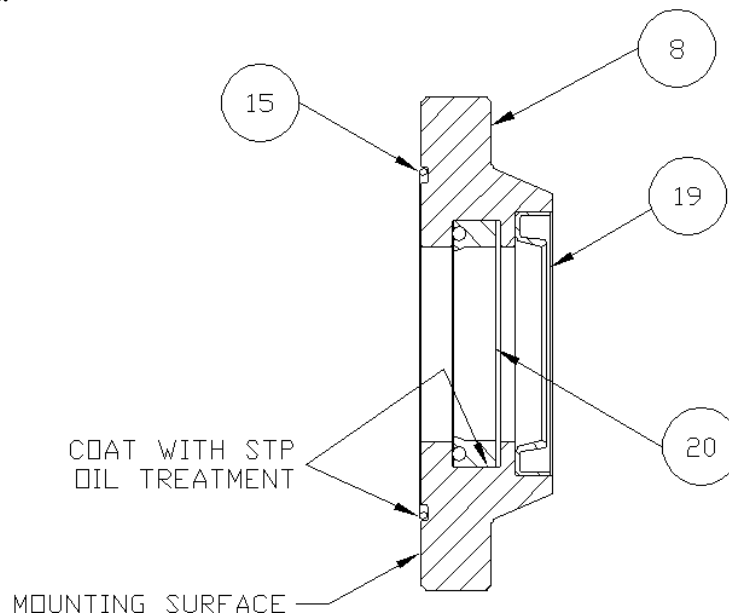
12. Reposition the actuator on the table mounting flanges down, and the lower tubes facing away from the assembler. Rotate the pinion shaft to allow 1" of the rack to protrude from the top of the actuator body. Install the rack cap on the actuator body with the oil port positioned to the left hand side of the actuator opposite the bottom oil port located in the tube cap as shown in figure A-13. Attach the rack cap to the actuator body using the socket head bolts (22) (fig. A-13) and lock washers (26). Torque the bolts to 90 ft-lb. in the sequence shown in figure A-10.



**figure A-10**

13. Reposition the actuator so that the pinion shaft can be rotated with no obstacles. Rotate the pinion shaft to ensure that the racks move freely. Also make sure that the key ways point perfectly straight "up" toward the rack cap and "down" toward the tube cap at each end of the 180° stroke. If the assembly does not perform all of these functions correctly, it must be disassembled, cleaned, and reassembled.

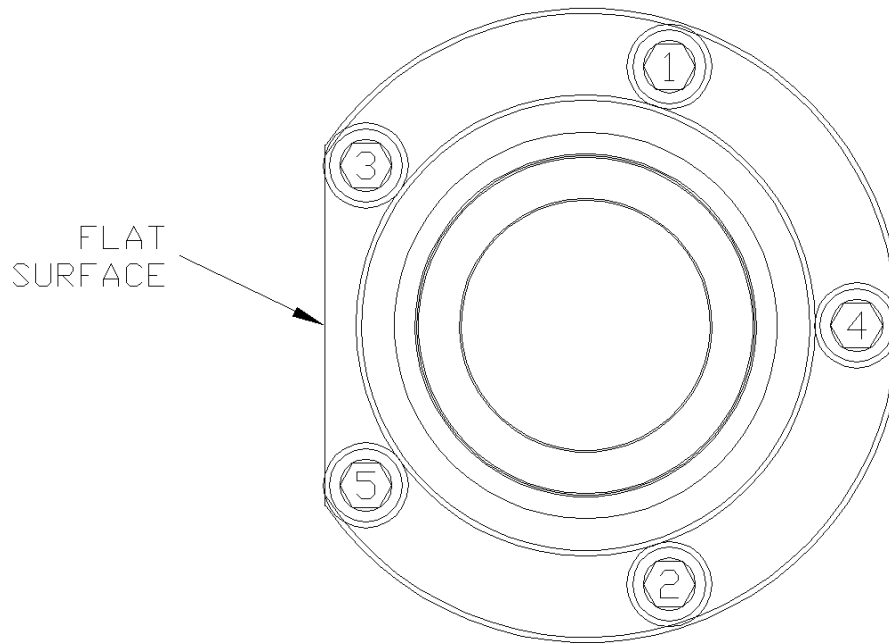
14. Re-center the actuator pinion in the actuator body by tapping on one end of the shaft with a rubber mallet. Install the roller bearing (10) (fig. A-13), over the pinion shaft and inner race, and into the actuator body. Repeat this procedure for the other bearing.
15. Thoroughly clean the bearing caps (8) (fig. A-11) with a mild solvent and lubricate all seal grooves with STP oil treatment. Place the bearing caps (8) on the table (mounting surface down) and install the wiper ring (19) in the outside groove using a rubber mallet or small press. ***(Avoid using tools that may damage seals or scratch bearing cap or bearing surfaces.)*** Turn the bearing cap (8) over. Collapse the pinion seal (24) and carefully work it into the groove. Use fingers to carefully press the seal completely into the groove as shown in figure A-11. ***Be careful not to score or scratch the sealing surface during the installation.*** Install the bearing cap seal (15) by pressing it firmly into the groove on the bearing cap mounting surface.
16. Coat the bearing cap seal area and pinion seal area shown in figure A-11 lightly with STP Oil Treatment.



**figure A-11**

17. Wrap masking tape or electrical tape around the pinion to cover the edges at the keyway. Slide the bearing cap assembly over the pinion shaft with the bearing cap seal facing toward the actuator body and the flat surface of the flange shown in figure A-16 facing toward the actuator mounting flanges. Press against the bearing cap until the shoulder seats against the actuator body, making sure that the seals remain in place. Install the bearing cap bolts (21) (fig. A-13) and lock washers (25). Hand tighten only at this time. Repeat this procedure for other bearing cap.

18. After both bearing caps have been installed, torque all bearing cap bolts to 30 ft-lb. in the sequence shown in figure A-12.



**figure A-12**

19. Install the 90° fitting (27) (fig. A-13) into the oil port on the side of the rack cap (5) and tighten.
20. Install the orifice plug (11) (fig. A-13) into the oil port on the side of the tube cap (4), and install the 90° fitting (27) into the oil port over the orifice plug as shown in figure A-13 and tighten.
21. Install the cap nuts (28) (fig. A-13) onto the open fittings to prevent contamination of the unit until the hoses are installed.

# ACTUATOR ASSEMBLY

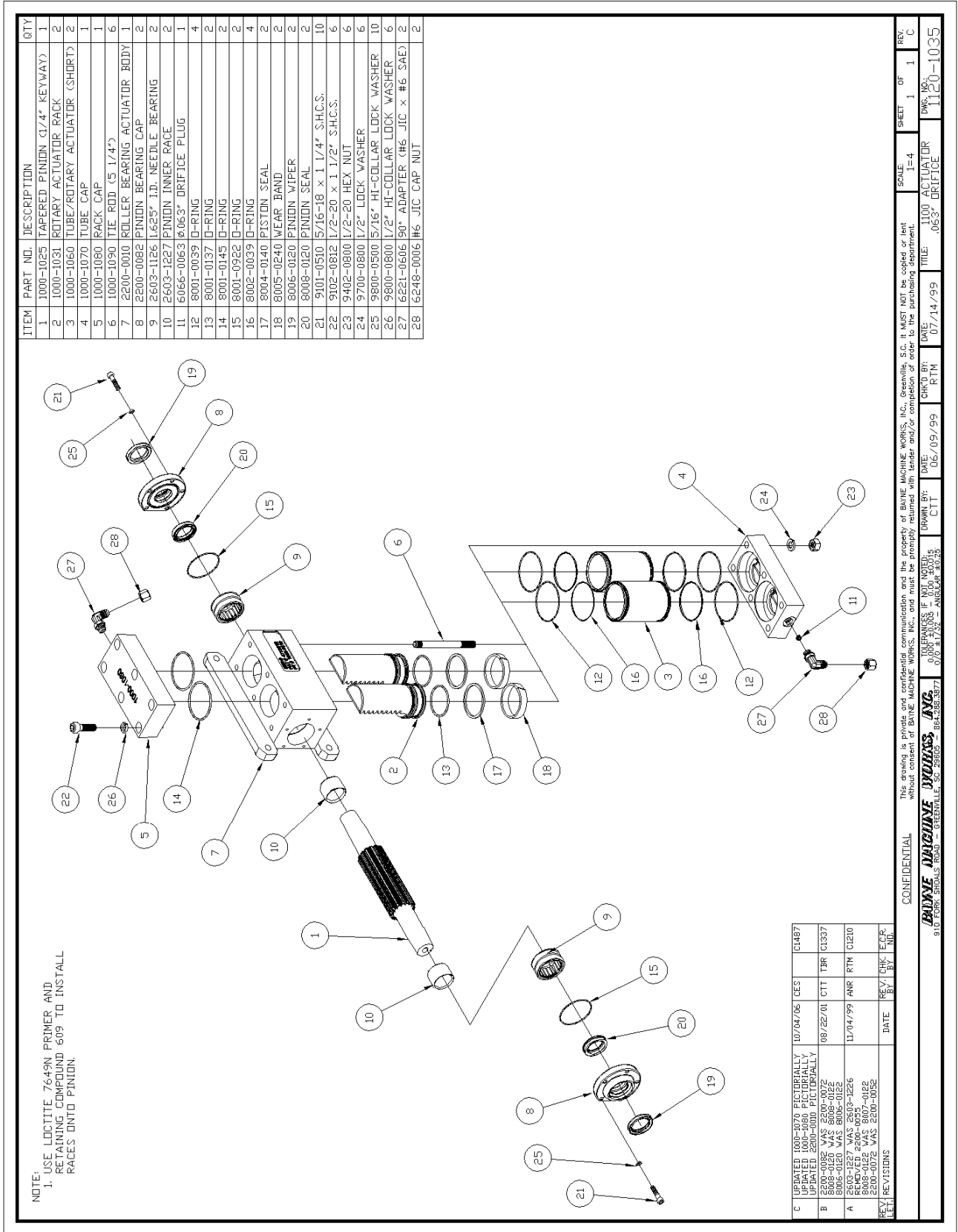


figure A-13

## TROUBLE-SHOOTING CHART ( WI-0308-A )

<i><b>SYMPTOM</b></i>	<i><b>POSSIBLE CAUSES</b></i>	<i><b>CORRECTIVE ACTION</b></i>
Lifter operation very erratic.	<ol style="list-style-type: none"> <li>1. Air trapped in system.</li> <li>2. Low oil level.</li> </ol>	<ol style="list-style-type: none"> <li>1. Bleed all air from lifter hydraulic system.</li> <li>2. Add oil to system.</li> </ol>
Cart lifter will not pick up carts.	<ol style="list-style-type: none"> <li>1. Cart overweight.</li> <li>2. Lifter system hydraulic pressure too low.</li> <li>3. Truck system hydraulic pressure too low.</li> <li>4. Faulty hand valve.</li> </ol>	<ol style="list-style-type: none"> <li>1. Reduce loaded weight of cart.</li> <li>2. Check and adjust pressure relief on hand valve.</li> <li>3. Check and adjust pressure on truck system relief.</li> <li>4. Replace hand valve.</li> </ol>
Lifter operates extremely slow.	<ol style="list-style-type: none"> <li>1. Engine idle too low.</li> <li>2. Faulty hand valve.</li> <li>3. Low hydraulic flow to lifter circuit.</li> <li>4. Faulty truck hydraulic pump.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust engine idle.</li> <li>2. Replace hand valve.</li> <li>3. Check truck's hydraulic system flow.</li> <li>4. Consult truck maintenance manual.</li> </ol>
Lifter operates under recommended cycle time.	<ol style="list-style-type: none"> <li>1. Engine idle too high.</li> <li>2. High hydraulic flow to lifter circuit.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust engine idle.</li> <li>2. Check truck's hydraulic system flow.</li> </ol>

## TROUBLE-SHOOTING CHART ( WI-0308-A )

<i><b>SYMPTOM</b></i>	<i><b>POSSIBLE CAUSES</b></i>	<i><b>CORRECTIVE ACTION</b></i>
Actuator leaking oil around pinion shaft.	1. Worn pinion shaft seals.	1. Install pinion seal kit.
Actuator leaking oil around piston tubes or rack cap.	1. Worn seals in actuator.	1. Install actuator seal kit.
Cylinder leaking around rod.	1. Worn cylinder rod seal.	1. Install cylinder seal kit.
Grabber arms rotate down but will not clamp.	1. Sequence valve in port "CT4" pressure setting too high.	1. Adjust pressure setting per Installation Instructions of this manual.
Grabber arms try to clamp before fully rotating down.	1. Sequence valve in port "CT4" pressure setting too low.	1. Adjust pressure setting per Installation Instructions of this manual.
Grabber arms unclamp but will not rotate up.	1. Sequence valve in port "CT1" pressure setting too high.	1. Adjust pressure setting per Installation Instructions of this manual.
Grabber arms try to rotate up before fully unclamping.	1. Sequence valve in port "CT1" pressure setting too low.	1. Adjust pressure setting per Installation Instructions of this manual.
Valve settings quit working after a period of time.	1. Valves were adjusted with cool oil temperature.	1. Adjust valves with oil at operating temperature.

## TROUBLE-SHOOTING CHART ( WI-0308-A )

<i><b>SYMPTOM</b></i>	<i><b>POSSIBLE CAUSES</b></i>	<i><b>CORRECTIVE ACTION</b></i>
Lifter looses carts when dumping.	<ol style="list-style-type: none"> <li>1. Clamping pressure setting too low.</li> <li>2. Cart sides are too weak.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust clamping pressure setting per Installation Instructions of this manual.</li> <li>2. Replace cart.</li> </ol>
Lifter crushes carts when dumping.	<ol style="list-style-type: none"> <li>1. Clamping pressure setting too high.</li> <li>2. Cart sides are too weak.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust pressure setting per Installation Instructions of this manual.</li> <li>2. Replace cart.</li> </ol>
Connecting rod frequently breaking or bending.	<ol style="list-style-type: none"> <li>1. Width dimension out of adjustment.</li> <li>2. Clamping pressure setting too high.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust unclamped width dimension per Operation Instructions of this manual.</li> <li>2. Adjust pressure setting per Installation Instructions of this manual.</li> </ol>

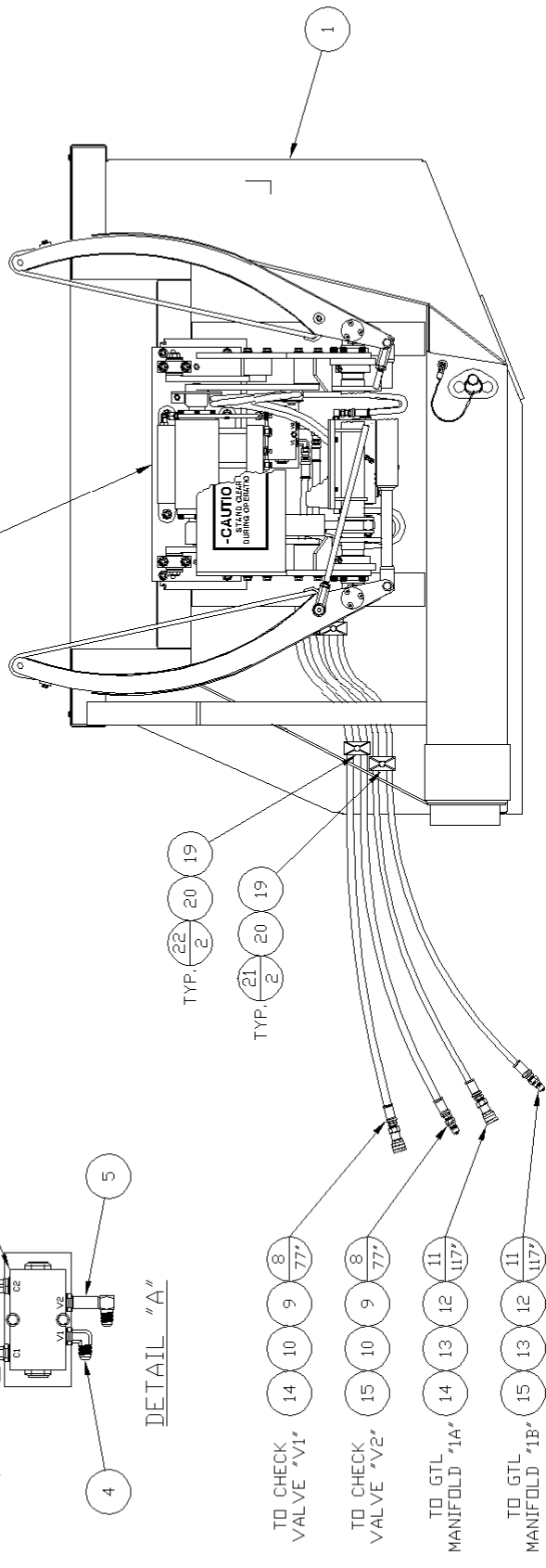
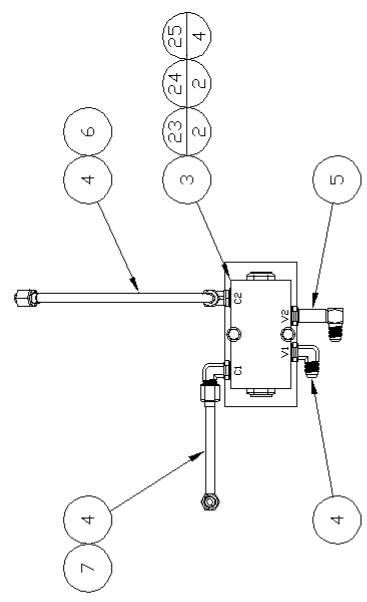
**APPENDIX A**  
Assembly drawings and part numbers



ITEM	PART NO.	DESCRIPTION	QTY
12	6514-0404	HOSE END - 1/4" x 1/4 NPT	2
13	6515-0404	HOSE END - 1/4" x STR. JIC	2
14	6525-0104	COUPLER - QUICK DISCONNECT	2
15	6525-0504	NIPPLE - QUICK DISCONNECT	2
16	9402-0800	1/2-20 HEX NUT	4
17	9700-0800	1/2" LOCK WASHER	4
18	9902-0814	1/2-20 x 1 3/4 STUD	4
19	6530-0010	HOSE CLAMP COVER PLATE	4
20	6530-0012	TWIN CLAMP HEX BOLT	4
21	6530-0014	1/2" PLASTIC CLAMP	4
22	6530-0015	5/8" PLASTIC CLAMP	4
23	9001-0416	1/4-20 x 2" H.H.C.S.	2
24	8901-0400	1/4-20 SELF-LOCKING NUT	2
25	9600-0400	1/4" FLAT WASHER	4

ITEM	PART NO.	DESCRIPTION	QTY
1	8300-5003	CARRY CAN - GTL CURBSIDE	1
2	1900-0500	GTL 1110 F.L.B. LIFTER	1
3	6069-0425	DUAL P.D. CHECK VALVE	1
4	6221-0606	90° FITTING (SHORT)	3
5	6222-0606	90° FITTING (LONG)	1
6	6410-0650	TUBING ASSEMBLY (RACK CAP)	1
7	6410-0651	TUBING ASSEMBLY (TUBE CAP)	1
8	6510-0606	3/8" WEATHERHEAD HYD. HOSE	154'
9	6514-0604	HOSE END - 3/8" x 1/4 NPT	2
10	6515-0606	HOSE END - 3/8" x STR. JIC	2
11	6510-0400	1/4" WEATHERHEAD HYD. HOSE	234'

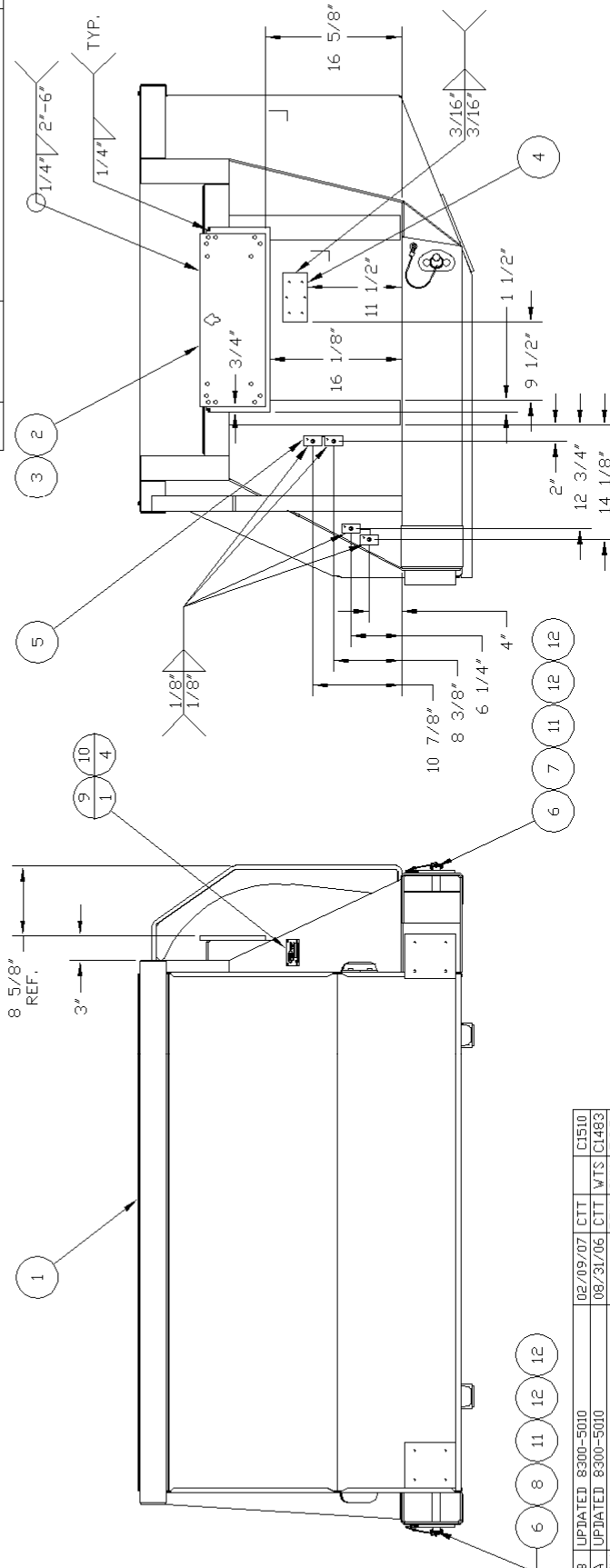
NOTE:  
 1. XX FIGURE ABOVE LINE INDICATES ITEM NO.  
 XX FIGURE BELOW LINE INDICATES QTY. RECD.  
 2. USE LOCTITE #271 (RED) P/N 7500-0057.



A		UPDATED	8300-5003	02/12/07	LC	TT	CS10
REV.	CHK.	DATE	REV.	CHK.	BY	BY	NO.
LET.	BY		BY	BY			
REV. REVISIONS			SCALE:	SHEET 1 OF 1			
			1=9				
TITLE:			GTL 1110		DWG. NO.:		
CARRY CAN ASSEMBLY			1910-0003				
DATE:			11/22/05		CHK'D BY:		
MRR			12/06/05		DRAWN BY:		
C.T.T.			11/22/05		TOLERANCES IF NOT NOTED:		
					0.000 ±0.005 - 0.00 ±0.015		
					Ø/Ø ±1/32 - ANGULAR ±0.25		
CONFIDENTIAL							
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<b>BAYNE MACHINE WORKS, INC.</b> 910 FORK SHOALS ROAD - GREENVILLE, SC 29635 - 864-288-3877							

NOTE:  
1. POWDER COAT COLOR SPECIFIED BY CUSTOMER.

ITEM	PART NO.	DESCRIPTION	QTY
1	8300-5010	CARRY CAN WELDMENT	1
2	2000-1104	MOUNTING PLATE	1
3	8300-5038	GTL SPACER	1
4	8300-5039	CHECK VALVE BRACKET	1
5	6530-0011	HOSE CLAMP WELD PLATE	4
		**END OF WELDED PARTS**	0
			0
6	7500-0051	LOCKING PIN CABLE	2
7	7500-0054	QUICK RELEASE PIN 5-3/4"	1
8	7500-0129	QUICK RELEASE PIN 6-1/2"	1
9	7500-0070	MODEL/SERIAL NAME PLATE	1
10	7500-0071	DRIVE SCREW	4
11	8901-0500	5/16-18 SELF-LOCKING NUT	2
12	9600-0500	5/16" FLAT WASHER	4



REV	DATE	BY	CHK	BY	DATE	REV	BY	CHK	BY	DATE
B	02/09/07	CTT	WTS	BY	ND					
A	08/31/06	CTT	WTS	BY	ND					

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SCALE: 1=1/2

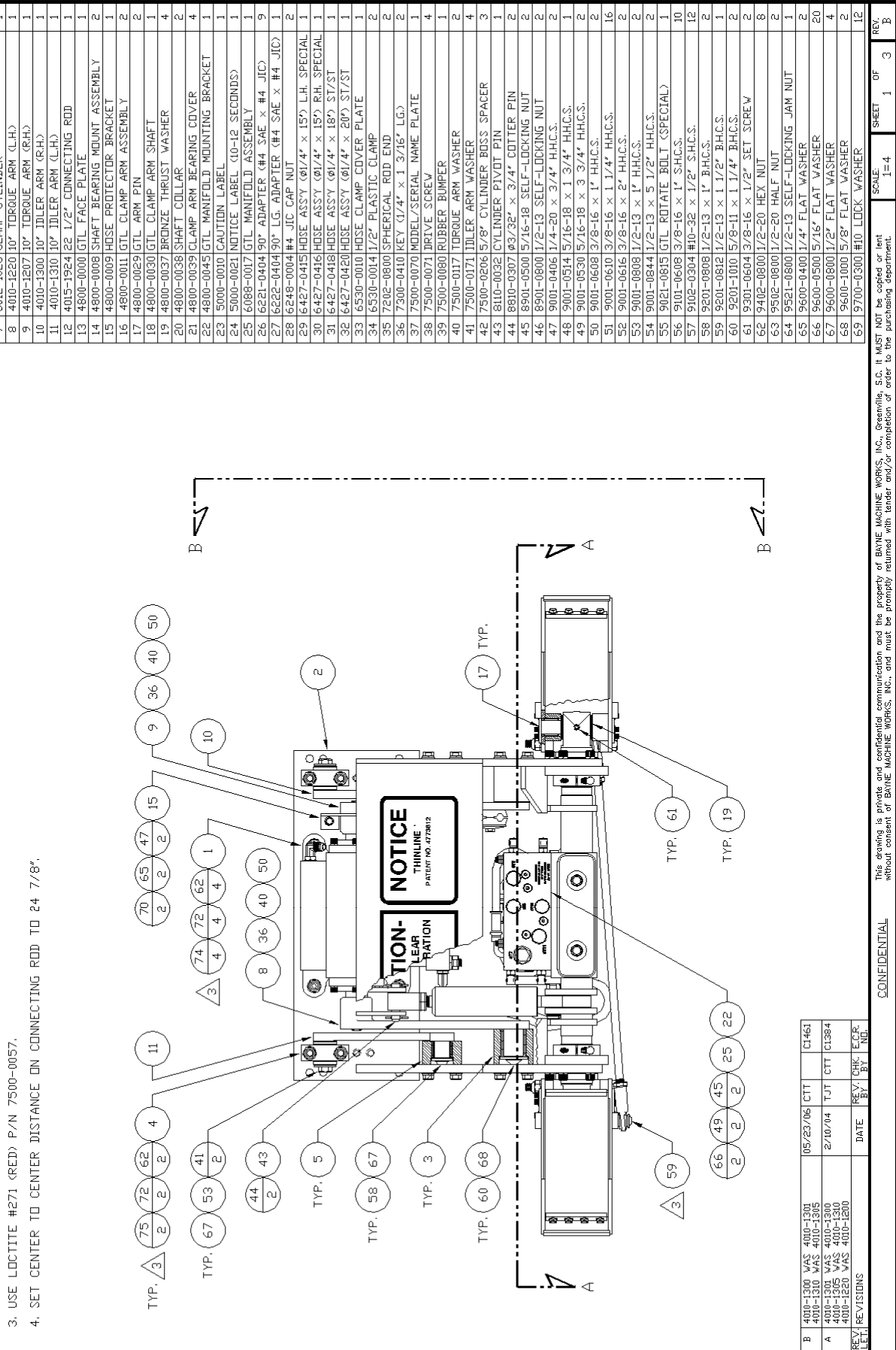
SHEET 1 OF 1 REV. B

TOLERANCES IF NOT NOTED:  
 0.000 ±0.005 - 0.00 ±0.015  
 0/0 ±1/32 - ANGULAR ±0.25

DATE: 11/21/05 MRR  
 DATE: 12/01/05  
 TITLE: CARRY CAN  
 DRAWN BY: CTT  
 CHECKED BY: MRR  
 DATE: 12/01/05  
 TITLE: GTL CURBSIDE  
 DWG. NO.: 8300-5003

**BAYNE MACHINE WORKS, INC.**  
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ITEM NO.	PART NO.	DESCRIPTION	QTY
1	1120-1035	1100 ACTUATOR (Ø0.63" DRIFTED)	1
2	2000-1131	Ø1" GTL MAINFRAME	1
3	2000-1230	TORQUE BEARING ASSEMBLY	2
4	2000-1338	UPPER IDLER BEARING ASSEMBLY	2
5	2000-1338	LOWER IDLER BEARING ASSEMBLY	2
6	3012-1026	ROTATE CYLINDER	1
7	3012-1028	CLAMP CYLINDER	1
8	4010-1220	10" TORQUE ARM (L.H.)	1
9	4010-1207	10" TORQUE ARM (R.H.)	1
10	4010-1300	10" IDLER ARM (R.H.)	1
11	4010-1310	10" IDLER ARM (L.H.)	1
12	4015-1924	Ø2 1/2" CONNECTING ROD	1
13	4800-0000	GTL FACE PLATE	2
14	4800-0008	SHAFT BEARING MOUNT ASSEMBLY	1
15	4800-0009	HOSE PROTECTOR BRACKET	2
16	4800-0011	GTL CLAMP ARM ASSEMBLY	2
17	4800-0029	GTL ARM PIN	2
18	4800-0030	GTL CLAMP ARM SHAFT	2
19	4800-0037	BRONZE THRUST WASHER	4
20	4800-0038	SHAFT COLLAR	2
21	4800-0039	CLAMP ARM BEARING COVER	2
22	4800-0045	GTL MANIFOLD MOUNTING BRACKET	1
23	5000-0010	CAUTION LABEL	1
24	5000-0021	NOTICE LABEL (Ø10-12 SECONDS)	1
25	6088-0017	GTL MANIFOLD ASSEMBLY	1
26	6221-0404	90° ADAPTER (#4 SAE x #4 JIC)	9
27	6222-0404	90° LG. ADAPTER (#4 SAE x #4 JIC)	1
28	6248-0004	#4 JIC CAP NUT	2
29	6427-0415	HOSE ASSY (Ø1/4" x 15') L.H. SPECIAL	1
30	6427-0416	HOSE ASSY (Ø1/4" x 15') R.H. SPECIAL	1
31	6427-0418	HOSE ASSY (Ø1/4" x 18') ST/ST	1
32	6427-0420	HOSE ASSY (Ø1/4" x 20') ST/ST	1
33	6530-0010	HOSE CLAMP COVER PLATE	1
34	6530-0014	1/2" PLASTIC CLAMP	2
35	7202-0800	SPHERICAL ROD END	2
36	7300-0410	KEY (Ø1/4" x 1 3/16" LG.)	2
37	7500-0070	MODEL/SERIAL NAME PLATE	1
38	7500-0071	DRIVE SCREW	4
39	7500-0080	RUBBER BUMPER	2
40	7500-0117	TORQUE ARM WASHER	2
41	7500-0171	IDLER ARM WASHER	4
42	7500-0206	5/8" CYLINDER BOSS SPACER	3
43	810-0032	CYLINDER PIVOT PIN	1
44	8810-0307	Ø3/32" x 3/4" COTTER PIN	2
45	8901-0500	5/16-18 SELF-LOCKING NUT	2
46	8901-0800	1/2-13 SELF-LOCKING NUT	2
47	9001-0406	1/4-20 x 3/4" H.H.C.S.	2
48	9001-0514	5/16-18 x 1 3/4" H.H.C.S.	1
49	9001-0530	5/16-18 x 3 3/4" H.H.C.S.	2
50	9001-0608	3/8-16 x 1" H.H.C.S.	2
51	9001-0610	3/8-16 x 1 1/4" H.H.C.S.	16
52	9001-0616	3/8-16 x 2" H.H.C.S.	2
53	9001-0808	1/2-13 x 1" H.H.C.S.	2
54	9001-0844	1/2-13 x 5 1/2" H.H.C.S.	2
55	9021-0815	GTL ROTATE BOLT (SPECIAL)	1
56	9101-0608	3/8-16 x 1" S.H.C.S.	10
57	9102-0304	#10-32 x 1/2" S.H.C.S.	12
58	9201-0808	1/2-13 x 1" B.H.C.S.	1
59	9201-0812	1/2-13 x 1 1/2" B.H.C.S.	2
60	9201-1010	5/8-11 x 1 1/4" B.H.C.S.	1
61	9301-0604	3/8-16 x 1/2" SET SCREW	2
62	9402-0800	1/2-20 HEX NUT	8
63	9502-0800	1/2-20 HALF NUT	2
64	9521-0800	1/2-13 SELF-LOCKING JAM NUT	1
65	9600-0400	1/4" FLAT WASHER	2
66	9600-0500	5/16" FLAT WASHER	20
67	9600-0800	1/2" FLAT WASHER	4
68	9600-1000	5/8" FLAT WASHER	2
69	9700-0300	#10 LOCK WASHER	12



ITEM NO.	PART NO.	DESCRIPTION	QTY
70	9700-0400	1/4" LOCK WASHER	2
71	9700-0600	3/8" LOCK WASHER	18
72	9700-0800	1/2" LOCK WASHER	8
73	9900-0600	3/8" HI-COLLAR LOCK WASHER	10
74	9902-0814	1/2-20 x 1 3/4" THREADED STUD	4
75	9902-0830	1/2-20 x 3 3/4" THREADED STUD	4

NOTE:  
 1. (XX) FIGURE ABOVE LINE INDICATES ITEM NO. RECD.  
 2. USE LOCTITE #242 (BLUE) P/N 7500-0055 ON ALL THREADED FASTENERS UNLESS OTHERWISE NOTED.  
 3. USE LOCTITE #271 (RED) P/N 7500-0057.  
 4. SET CENTER TO CENTER DISTANCE ON CONNECTING ROD TO 24 7/8".

REV.	REVISIONS	DATE	BY	CHKD BY	APP'D
B	4010-1300 WAS 4010-1301	05/23/06	CTT	CL461	
A	4010-1300 WAS 4010-1300	2/10/04	TJT	CL384	
	4010-1305 WAS 4010-1300				
	4010-1220 WAS 4010-1200				

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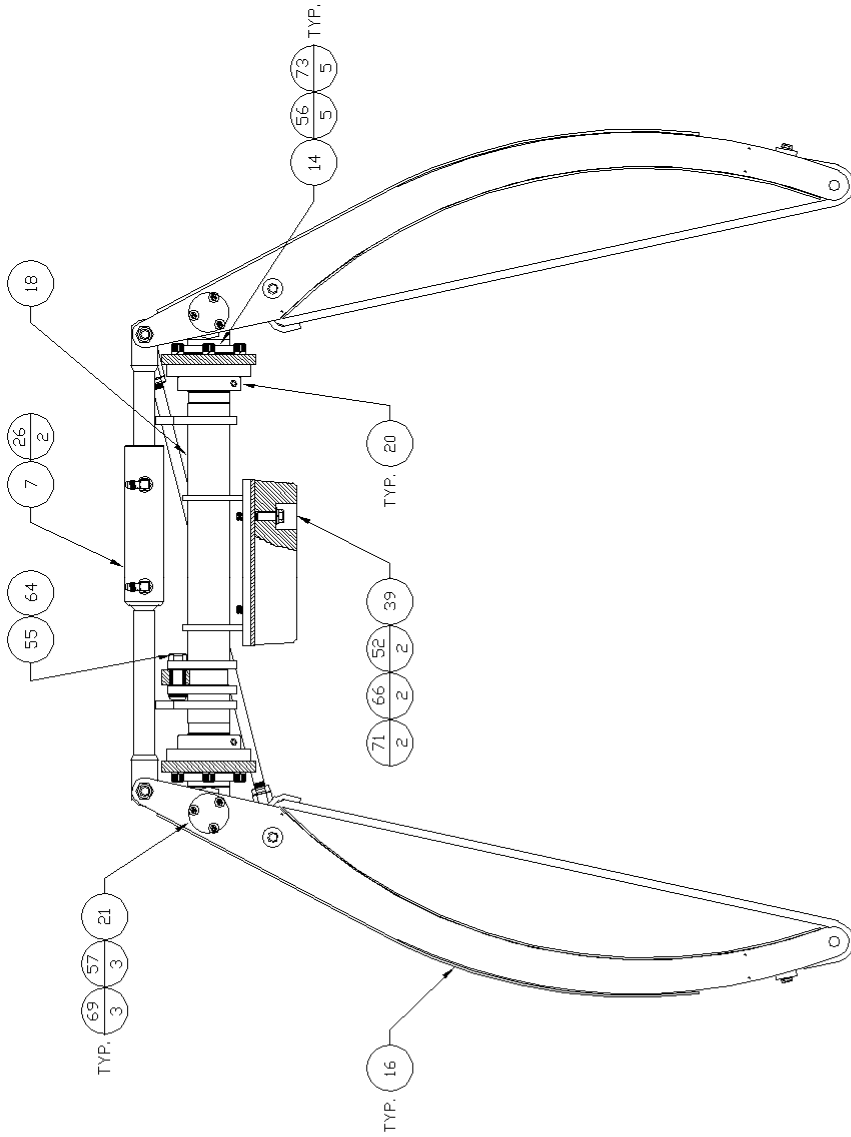
10 FRANCES IF NOT NOTED:  
 0.004 ±0.005 - 0.004 ±0.015  
 0.010 ±0.015 - 0.010 ±0.020

DATE: 07/17/03  
 DRAWN BY: CTT  
 CHECKED BY: T.J.T.

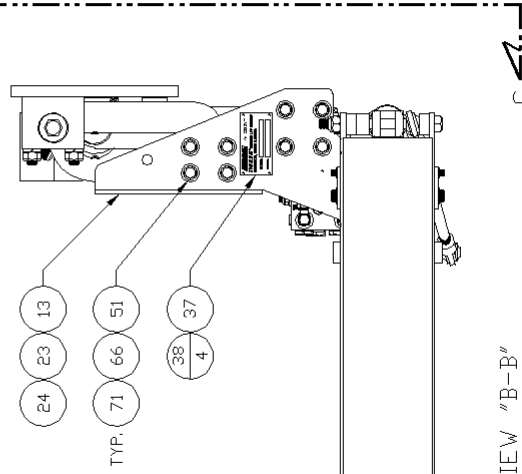
DATE: 08/26/03  
 TITLE: LIFTER ASSEMBLY

SCALE: 1=4  
 SHEET OF: 1 3 B

DWG. NO.: 1910-0500

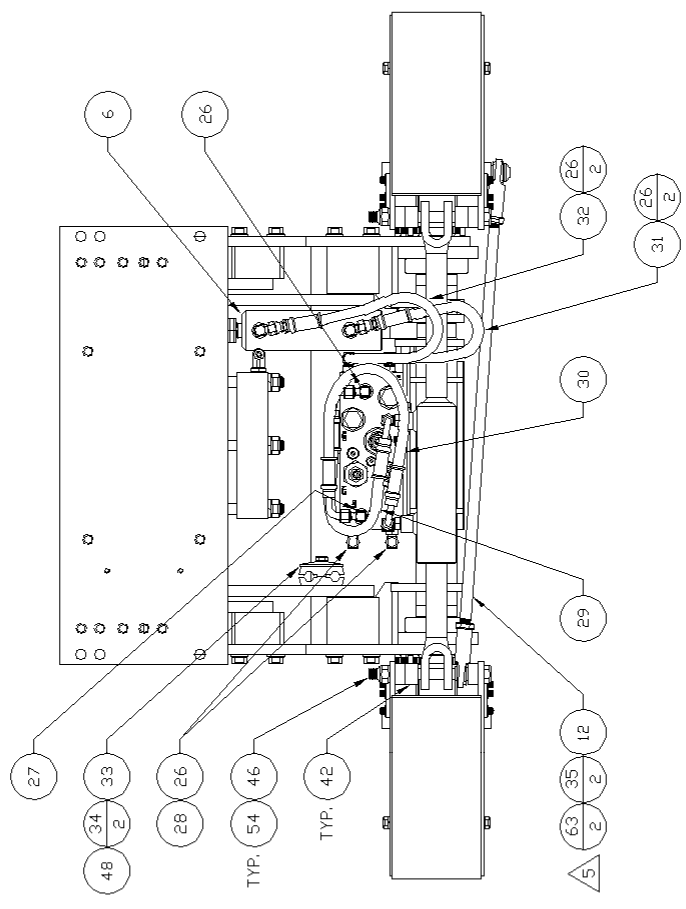


SECTION "A-A"



VIEW "B-B"

CONFIDENTIAL		This drawing is private and confidential communication and the property of BAYNE MACHINE WORKS, INC., Greenville, S.C. It MUST NOT be copied or lent without consent of BAYNE MACHINE WORKS, INC., and must be promptly returned with tender and/or completion of order to the purchasing department.		SCALE:	SHEET	OF	REV.
BAYNE MACHINE WORKS, INC.		TOLFRANCES IF NOT NOTED: 0.004 ±0.005 - 0.004 ±0.015 0.010 ±0.020 - 0.010 ±0.030		1=4	2	3	B
517 POPE BIRDALE ROAD - GREENVILLE, SC 29605 - 864-255-3577		DATE:	DRAWN BY:	CHKD BY:	TITLE:		DWG. NO.:
		07/17/03	CTT	T.JT	LIFTER ASSEMBLY		1910-0500

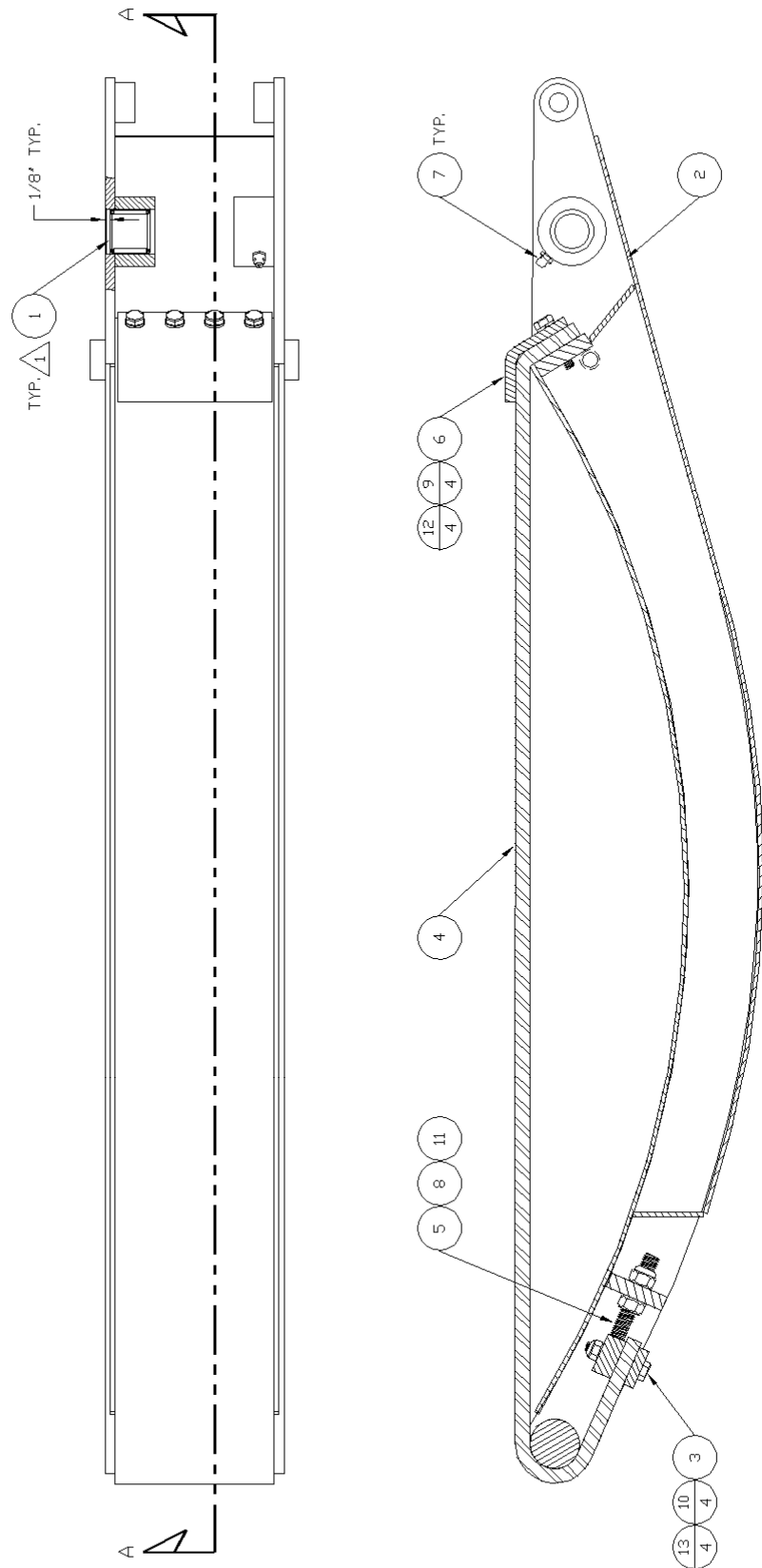


VIEW "C-C"

CONFIDENTIAL This drawing is private and confidential communication and the property of BAYNE MACHINE WORKS, INC., Greenville, S.C. It MUST NOT be copied or lent without consent of BAYNE MACHINE WORKS, INC., and must be promptly returned with tender and/or completion of order to the purchasing department.		SCALE: 1=4	SHEET 3 OF 3	REV. B
<b>BAYNE MACHINE WORKS, INC.</b> 914 POPE BROADS ROAD - GREENVILLE, SC 29605 - 864-255-3577 TOLL FREE: 1-800-433-0315 FAX: 864-255-3577		DATE: 07/17/03	DRAWN BY: CTT	CHECK BY: T.JT.
TITLE: LIFTER ASSEMBLY		DATE: 08/26/03	GTL 1110 F.L.B.	DWG. NO.: 1910-0500

ITEM NO.	PART NO.	DESCRIPTION	QTY
1	2603-1115	NEEDLE ROLLER BEARING	2
2	4800-0012	GTL ARM WELDMENT	1
3	4800-0021	GTL ARM BELT SQUISH PLATE	1
4	4800-0025	GTL ARM BELT	1
5	4800-0026	GTL ARM TENSIONER	1
6	4800-0046	GTL ARM BELT CLAMP	1
7	7002-0400	1/4-28 STRAIGHT GREASE FITTING	2
8	8901-0600	3/8-16 SELF-LOCKING NUT	1
9	9001-0410	1/4-20 x 1 1/4" H.H.C.S.	4
10	9001-0412	1/4-20 x 1 1/2" H.H.C.S.	4
11	9401-0600	3/8-16 HEX NUT	1
12	9700-0400	1/4" LOCK WASHER	4
13	8901-0400	1/4-20 SELF-LOCKING NUT	4

NOTE:  
 1. ALIGN OIL HOLE IN BEARING WITH GREASE FITTING HOLE AND PRESS FIT INTO ARM.  
 2. ORIENT THICK RUBBER SIDE OF BELTING AWAY FROM ARM WELDMENT.



REV.	REVISIONS	DATE	BY	CHKD BY	DATE	CHKD BY	RTM	DATE	DATE	SCALE	SHEET	OF	REV.
C	9001-0412 WAS 9001-0408	11/07/02	CTT	CL387						1=2	1	1	C
B	UPDATED 4800-0012 PICTORIALY	06/16/00	CTT	TBR	CL270								
A	ADDED 4800-0046												
	ADDED 4800-0021 WAS 2												
	ADDED NOTE 2	02/28/00	CTT	STM	CL245								
			REV	BY	BY	BY	BY	BY	BY				

SECTION "A-A"

CONFIDENTIAL

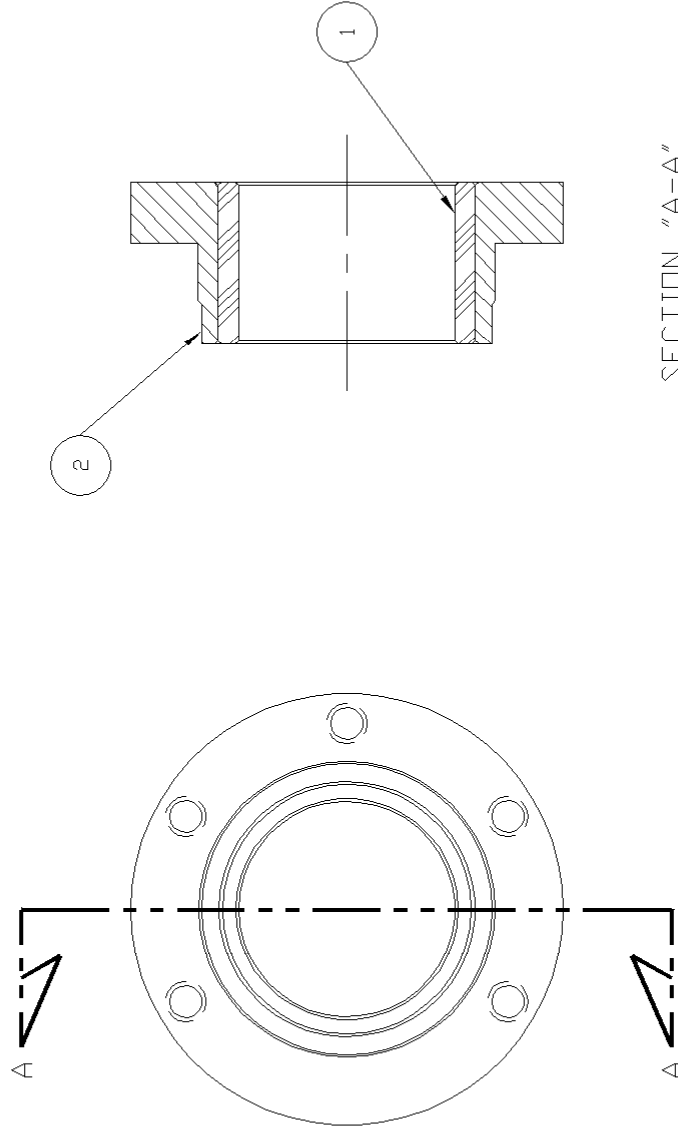
**BAYNE MACHINE WORKS, INC.**  
 516 POPE BIRDALE ROAD - GREENVILLE, SC 29605 - 864-255-5977

TOLFRANCES IF NOT NOTED:  
 0.004 ±0.005 - 0.004 ±0.015  
 0.00 ±1/32" - ANGULAR ±0.02

DRAWN BY: CTT  
 DATE: 05/24/99  
 SHKD BY: RTM  
 DATE: 07/14/99  
 TITLE: GTL ARM ASSEMBLY

DWS. NO.: 4800-0011  
 SHEET 1 OF 1  
 REV. C

ITEM NO	PART NO.	DESCRIPTION	QTY
1	2500-0011	BRONZE BEARING	1
2	4800-0007	GTL SHAFT BEARING MOUNT	1

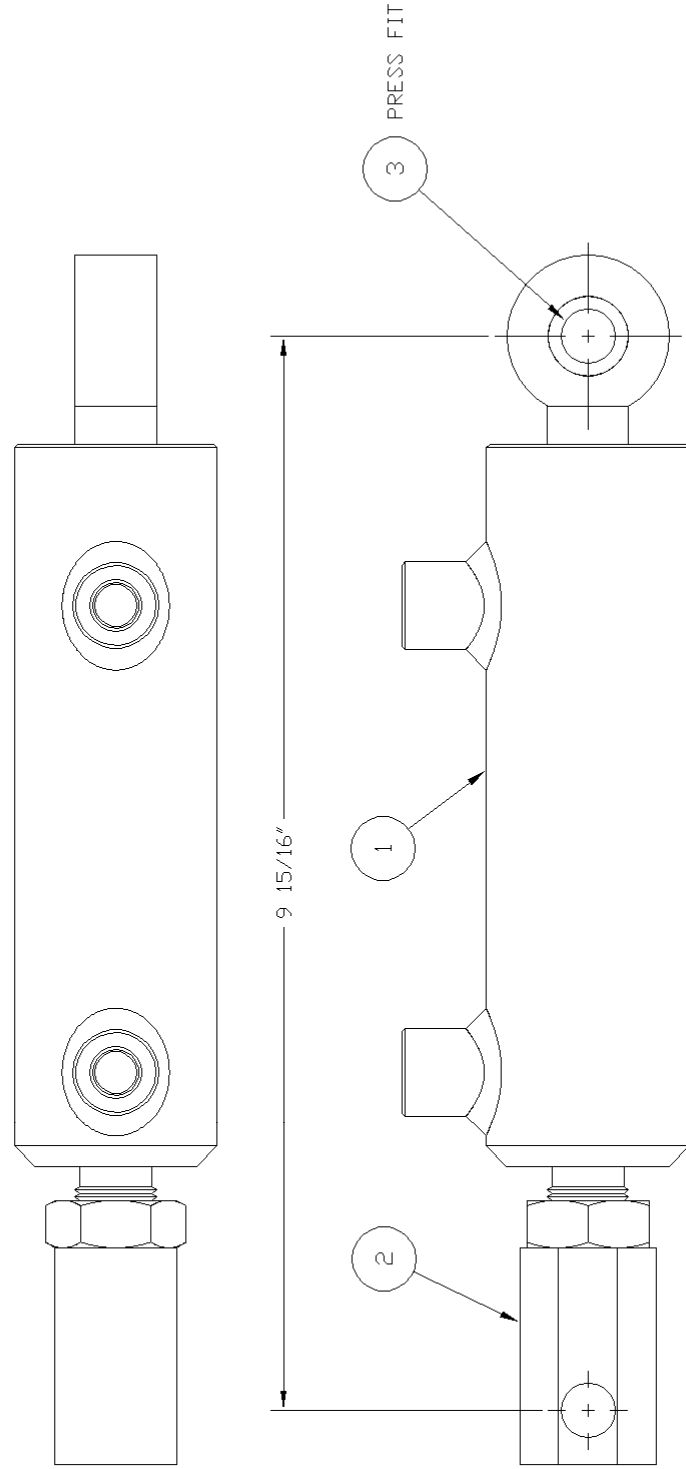


SECTION "A-A"

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<b>BAYNE MACHINE WORKS, INC.</b>		910 FORK SHOALS ROAD - GREENVILLE, SC 29635 - 864-288-3877		DRAWN BY:		C.T.T.		DATE:		11/30/98	
TOLERANCES IF NOT NOTED:		0.000 ±0.005 - 0.00 ±0.015		GTL SHAFT		BEARING MOUNT ASS'Y		DWG. NO.:		4800-0008	
7/0 ±1/32 - ANGULAR ±0.25		CHKD BY:		DATE:		11/30/98		TITLE:		BEARING MOUNT ASS'Y	

ITEM	PART NO.	DESCRIPTION	QTY
1	3012-1025	GTL ARM ROTATE CYLINDER	1
2	4800-0010	GTL ROTATE CYLINDER END	1
3	2603-1410	HOOK BEARING	1

NOTE:  
 1. THREAD CYLINDER END ONTO THREADS UNTIL THE CORRECT DIMENSION IS AQUIRED AND LOCK IN PLACE USING THE JAM NUT.



REV	DATE	BY	CHKD	DATE	BY	WTS	WTS	CI371
B	12/10/02	WAS	2612-2300					CI371
A	09/16/02	CTT	2612-2300					CI358

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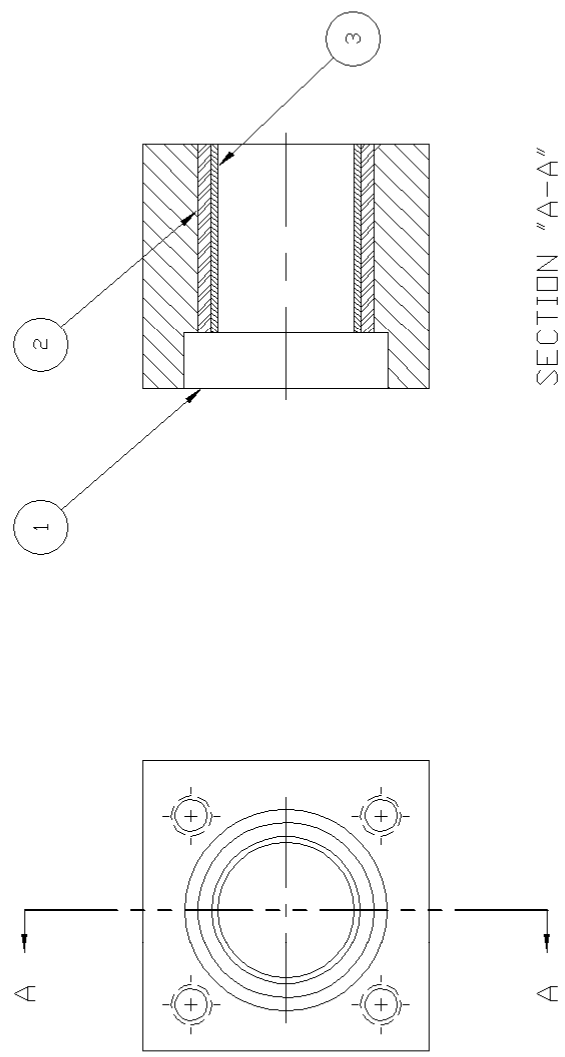
**BAYNE MACHINE WORKS, INC.**  
 910 FORK SHOALS ROAD - GREENVILLE, SC 29605 - 864-288-3877

SCALE: 1=1 SHEET 1 OF 1 REV. B  
 TITLE: GTL ARM ROTATE CYLINDER ASSEMBLY DWG. NO.: 3012-1026  
 DATE: 10/29/99 DATE: 03/22/99 CHKD BY: RTM DRAWN BY: CTT  
 TOLERANCES IF NOT NOTED:  
 0.000 ±0.005 - 0.00 ±0.015  
 Ø/Ø ±1/32 - ANGULAR ±0.25



NOTE:  
 1. MACHINE CASTING PER SHEET 2 AND PAINT BEFORE ASSEMBLY.  
 2. LAY BEARING MOUNT ON FLAT SURFACE AND PRESS BEARING IN.  
 PRESS SHOULD STOP ON FLAT SURFACE OF BEARING MOUNT  
 TO PREVENT DAMAGING THE BEARING.

ITEM	PART NO.	DESCRIPTION	QTY
1	C20001220	TORQUE BEARING MOUNT CASTING	1
2	2603-1207	TORQUE ARM BUSHING	1
3	2603-1208	TORQUE ARM SLEEVE	1



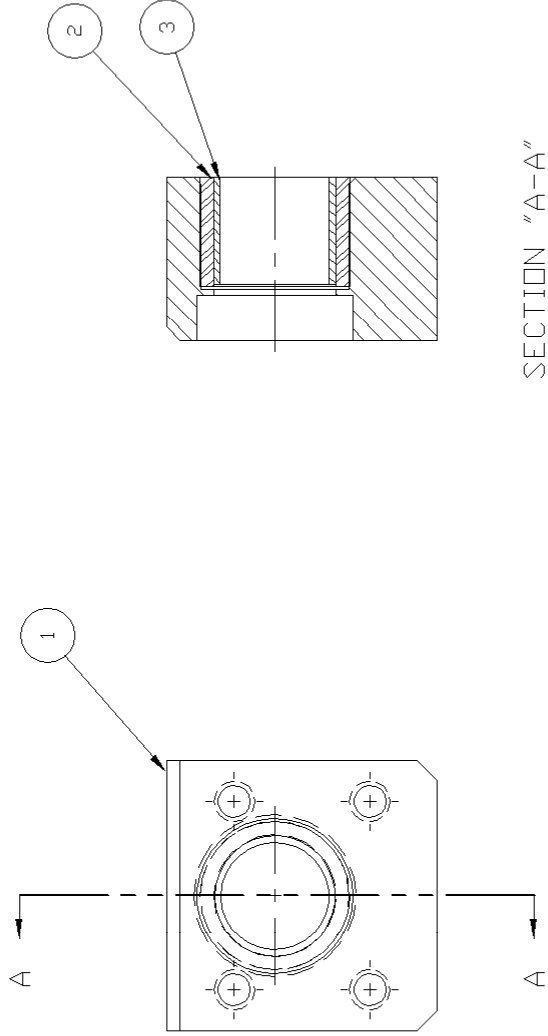
SECTION "A-A"

REV.	REVISIONS	DATE	CHKD BY	BY	ND
D	2603-1207 & 2603-1208 WERE 2603-1205	05/24/05	CTT		CI439
C	UPDATED PICTORIALY	01/27/05	TJT	CTT	CI415
B	C20001220 WAS 2000-1210 ADDED MACHINING PRINT	04/16/04	CTT	TJT	CI393
A	UPDATED 2000-1210 PICTORIALY	10/16/02	CTT	WTS	CI357
LET.					

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BAYNE MACHINE WORKS, INC.		910 FORK SHOALS ROAD - GREENVILLE, SC 29605 - 864-288-3877		TITLE:	TORQUE BEARING ASSEMBLY	DWG. NO.:	2000-1230				
		DATE:	03/22/00	CHKD BY:	RTM	DATE:	06/13/00				
		DRAWN BY:	ANR								

ITEM	PART NO.	DESCRIPTION	QTY
1	C20001330	LOWER IDLER BEARING CASTING	1
2	2603-1307	IDLER BEARING BUSHING	1
3	2603-1308	IDLER BEARING SLEEVE	1

NOTE:  
 1. MACHINE CASTING PER SHEET 2 AND PAINT BEFORE ASSEMBLY.  
 2. LAY BEARING MOUNT ON FLAT SURFACE AND PRESS BEARING IN. PRESS SHOULD STOP ON FLAT SURFACE OF BEARING MOUNT TO PREVENT DAMAGING THE BEARING.



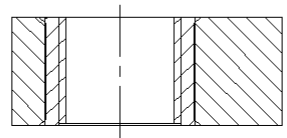
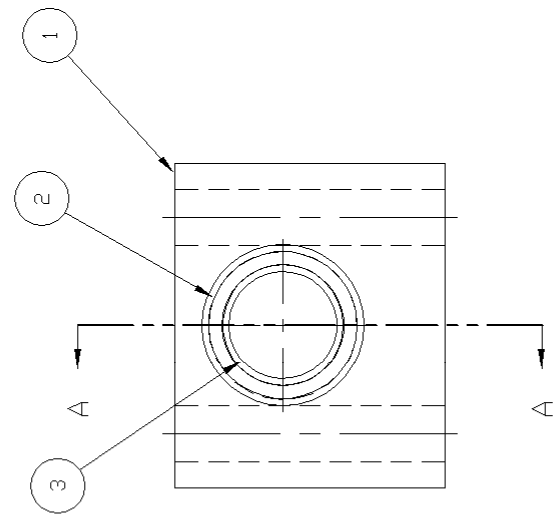
SECTION "A-A"

REV.	REVISIONS	DATE	REV. BY	CHK. BY	LET.
C	1.030" WAS 1.010"	08/30/05	CTT		CI448
B	REMOVED 2603-1306	12/08/04	TJT	CTT	CI410
A	ADDED 2603-1307 & 2603-1308	04/19/04	CTT	TJT	CI393
	ADDED MACHINING PRINT				

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		1=1	1	2	C
BAYNE MACHINE WORKS, INC. 910 FORK SHOALS ROAD - GREENVILLE, SC 29605 - 864-288-3877		TITLE:	LOWER IDLER BEARING ASSEMBLY DWG. NO.: 2000-1338		
TOLERANCES IF NOT NOTED: 0.000 ±0.005 - 0.00 +0.015 0/0 ±1/32 - ANGULAR ±0.25		DATE:	CHK'D BY:	DATE:	REV.
		03/22/00	RTM	06/20/00	2
		ANR			

ITEM	PART NO.	DESCRIPTION	QTY
1	73-061025	1" x 2 1/2" C.R.S FLAT BAR	.021
2	2603-1307	IDLER BEARING BUSHING	1
3	2603-1308	IDLER BEARING SLEEVE	1

NOTE:  
 1. MACHINE PER SHEET 2 AND PAINT BEFORE ASSEMBLY.  
 2. LAY BEARING MOUNT ON FLAT SURFACE AND PRESS BEARING IN. PRESS SHOULD STOP ON FLAT SURFACE OF BEARING MOUNT TO PREVENT DAMAGING THE BEARING.



SECTION "A-A"

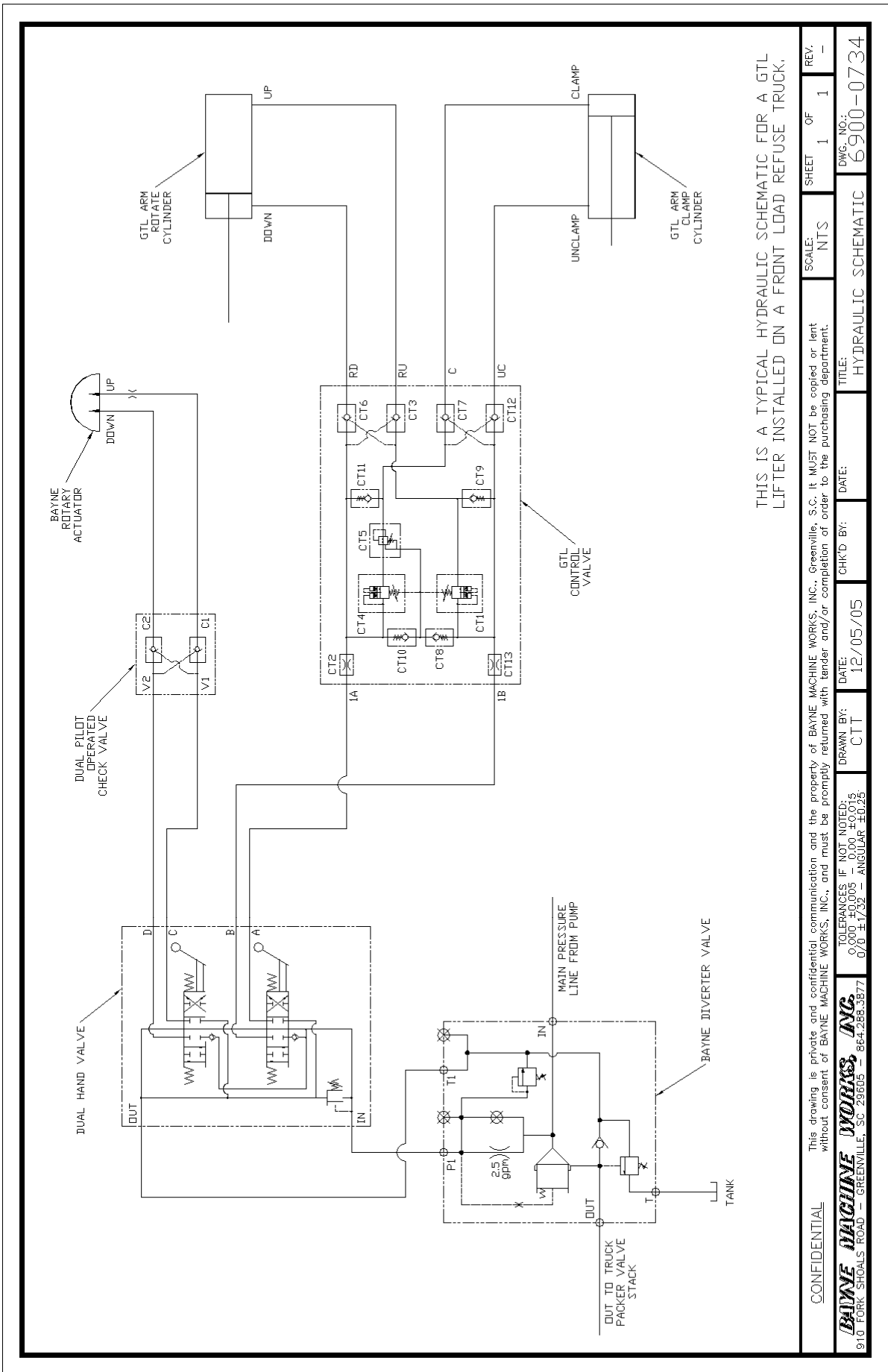
REV.	REVISIONS	DATE	REV. BY	CHK. BY	E.C.R. BY	IND.
D	REMOVED 2603-1306 ADDED 2603-1307 & 2603-1308	12/08/04	TJT			C1410
C	73-061025 WAS 2000-1340 ADDED MACHINING PRINT	08/12/04	CTT	TJT		C1401
B	2603-1306 WAS 2603-1305 REMOVED 8302-0404	05/16/01	ANR	TBR		C1302
A	2000-1340 WAS 2000-1306 ADDED 8302-0404	08/24/00	ANR	TBR		C1283

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TOLERANCES IF NOT NOTED:  
 0.000 ±0.005 — 0.00 ±0.015  
 0/0 ±1/32 — ANGULAR ±0.25

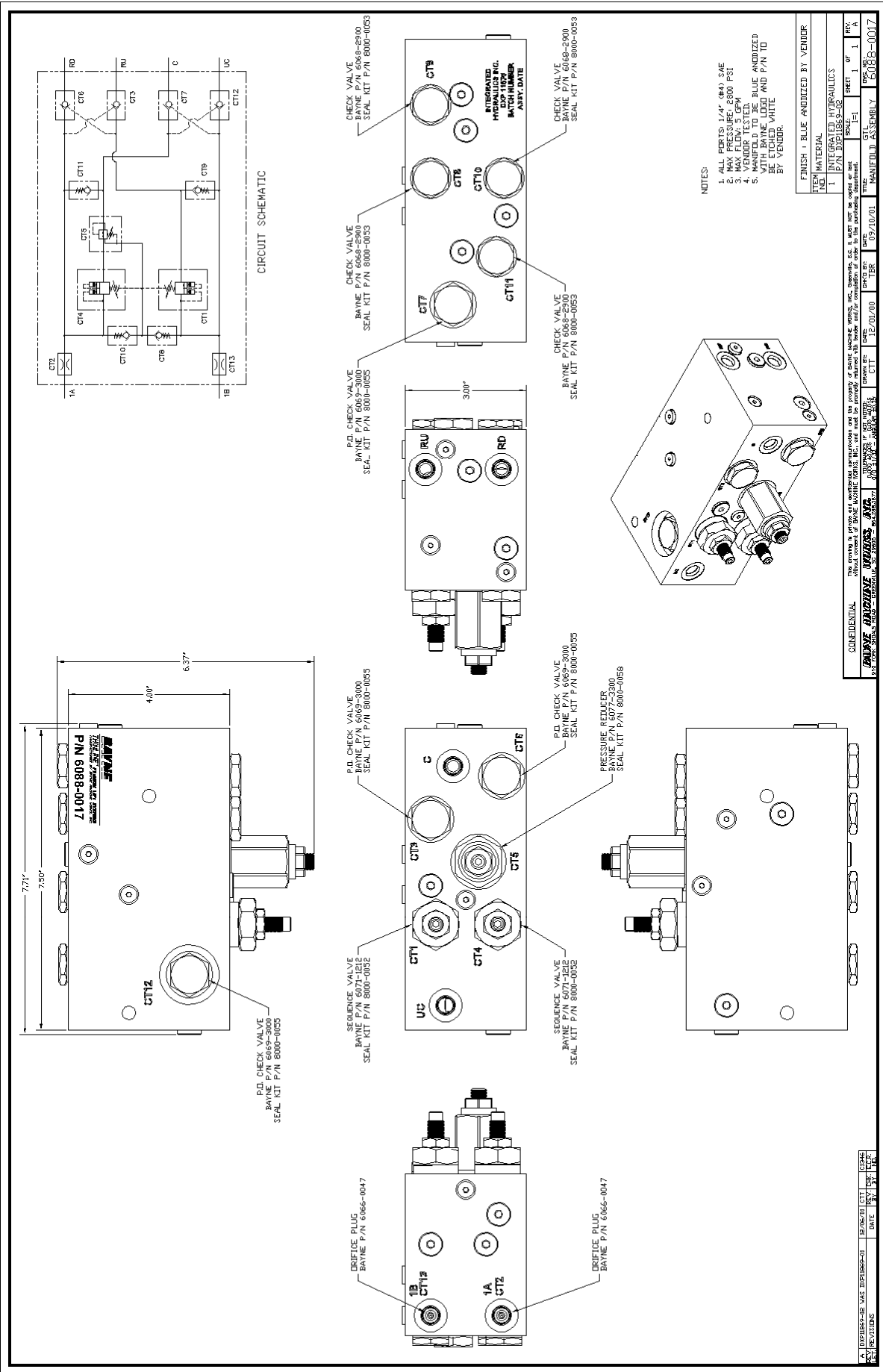
**BAYNE MACHINE WORKS, INC.**  
 910 FORK SHOALS ROAD — GREENVILLE, SC 29635 — 864-288-3877

SCALE: 1=1  
 SHEET 1 OF 2  
 REV. D  
 DATE: 03/22/00  
 CHK'D BY: RTM  
 DRAWN BY: ANR  
 TITLE: UPPER IDLER BEARING ASSEMBLY  
 DWG. NO.: 2000-1335



THIS IS A TYPICAL HYDRAULIC SCHEMATIC FOR A GTL LIFTER INSTALLED ON A FRONT LOAD REFUSE TRUCK.

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<b>BAYNE MACHINE WORKS, INC.</b>	TOLERANCES IF NOT NOTED: 0.000 ±0.0005 - 0.00 ±0.015 Ø/Ø ±1/32 - ANGULAR ±0.25	DATE: 12/05/05	CHKD BY: C.T.T.	DWG. NO.: 6900-0734
910 FORK SHOALS ROAD - GREENVILLE, SC 29605 - 864-288-3877				TITLE: HYDRAULIC SCHEMATIC

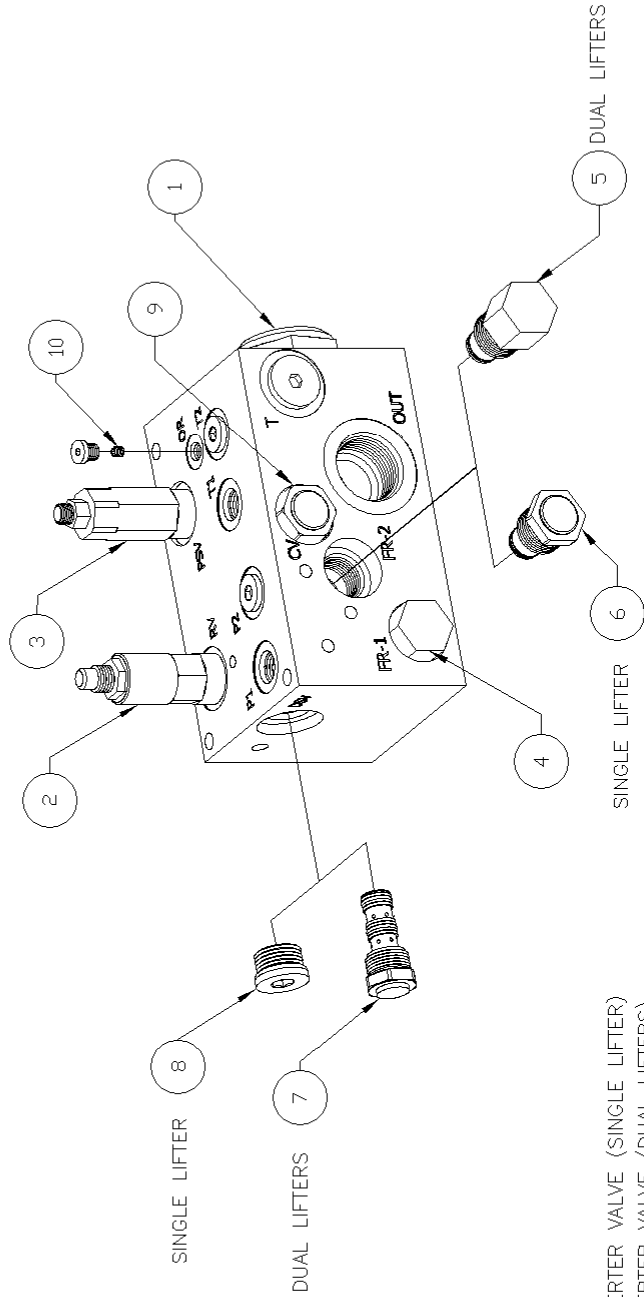


### SERVICE PARTS

ITEM	PORT	PART NO.	DESCRIPTION	SEAL KIT	APPLICATIONS
1	DPS	6091-0716	DIFF. PRESSURE SENSING VALVE	8000-0782	ALL
2	RV	6091-0712	RELIEF VALVE	8000-0784	ALL
3	PSV	6091-0713	PRESSURE SEQUENCE VALVE	8000-0781	ALL
4	FR-1	6091-0710	FLOW REGULATOR		ALL
5	FR-2	6091-0710	FLOW REGULATOR	8000-0784	FOR DUAL LIFTERS
6		6091-0715	CAVITY PLUG	8000-0783	FOR SINGLE LIFTER
7	DSV	6091-0720	SHUTTLE VALVE		FOR DUAL LIFTERS
8		6246-0008	INL. 8 SAE SOCKET HEAD PLUG		FOR SINGLE LIFTER
9	CV	6091-0714	CHECK VALVE	8000-0784	ALL
10	DR	6066-0028	Ø0.038" DRIFICE	-	ALL

**NOTE:**

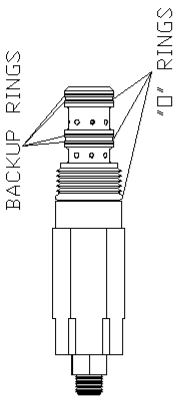
1. MAXIMUM WORKING PRESSURE 3000 PSI
2. MAXIMUM WORKING FLOW 50 GPM
3. TEMPERATURE RANGE = 160° MAXIMUM
4. PORT SIZES  
IN & OUT = #16 SAE  
T = #10 SAE  
T1, T2, P1 & P2 = #6 SAE
5. T2 & P2 ARE PLUGGED USING #6 SAE PLUGS IN SINGLE LIFTER APPLICATIONS



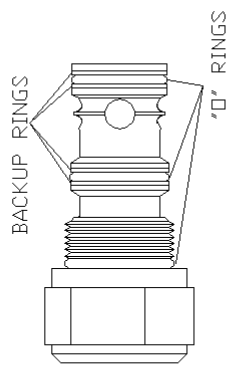
6091-0700 COMPLETE DIVERTER VALVE (SINGLE LIFTER)  
 6092-0700 COMPLETE DIVERTER VALVE (DUAL LIFTERS)

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<b>BAYNE MACHINE WORKS, INC.</b>		DATE:	09/24/04	CHKD BY:	CJT	TITLE: SINGLE/DUAL DIVERTER VALVE PARTS		1 1 A
910 FORK SHOALS ROAD - GREENVILLE, SC 29605 - 864-288-3877		DATE:	10/11/04	DATE:	10/11/04	DWG. NO.:		M3500005
		TOLERANCES IF NOT NOTED:						
		0.000 ±0.005 - 0.00 +0.015						
		Ø/Ø ±1/32 - ANGULAR ±0.25						

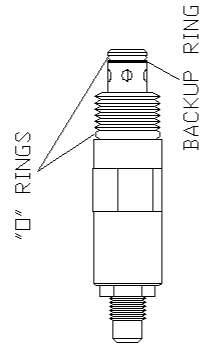
ITEM NO	PART NO.	DESCRIPTION	QTY
1	8000-0781	PRES. SEQUENCE VALVE SEAL KIT	1
2	8000-0782	PRESSURE SENSING VALVE SEAL KIT	1
3	8000-0783	SHUTTLE VALVE SEAL KIT	1
4		RELIEF VALVE SEAL KIT	1
5		FLOW REGULATOR SEAL KIT	1
6	8000-0784	FLOW REG. CAVITY PLUG SEAL KIT	1
7		CHECK VALVE SEAL KIT	1



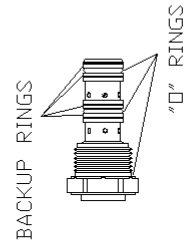
PRESSURE SEQUENCE VALVE SEAL KIT



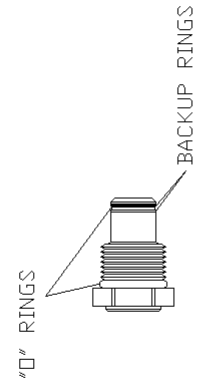
DIFFERENTIAL PRESSURE SENSING VALVE SEAL KIT



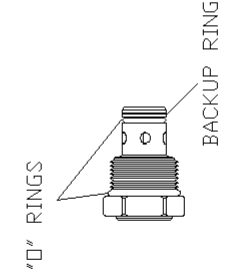
RELIEF VALVE SEAL KIT



SHUTTLE VALVE SEAL KIT



FLOW REGULATOR CAVITY PLUG SEAL KIT



CHECK VALVE SEAL KIT

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**BAYNE MACHINE WORKS, INC.**  
 910 FORK SHOALS ROAD - GREENVILLE, SC 29605 - 864-288-3877

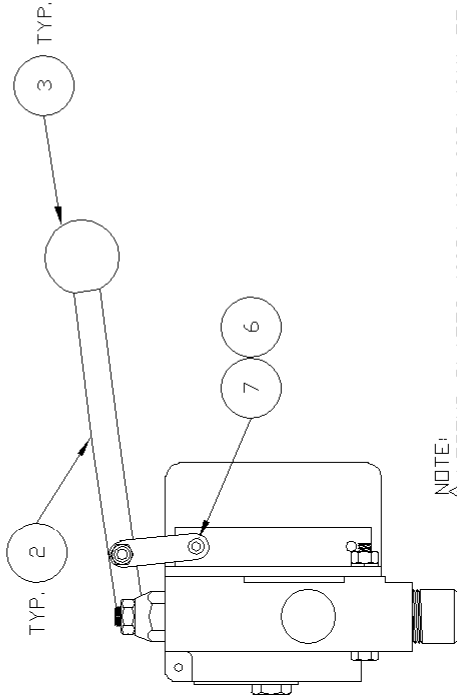
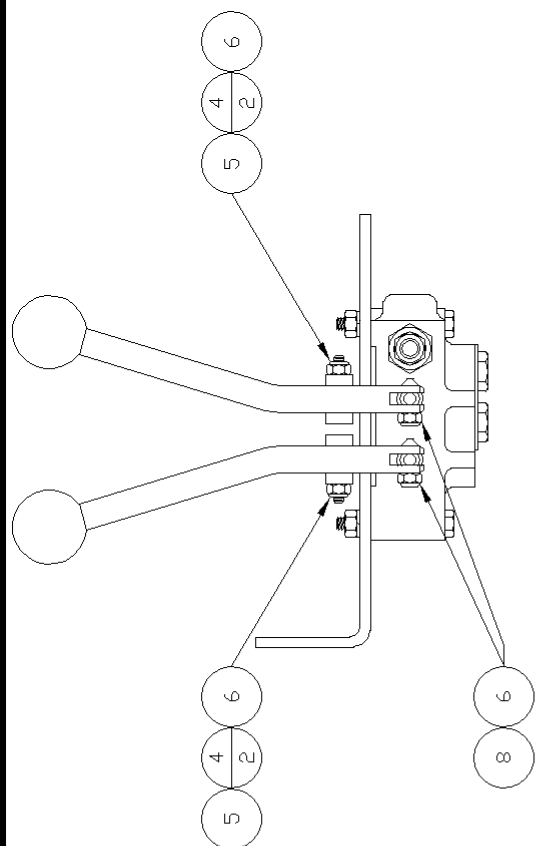
TOLERANCES IF NOT NOTED:  
 0.000  $\pm$ 0.005 - 0.00  $\pm$ 0.015  
 0.0  $\pm$ 0.005 - 0.00  $\pm$ 0.015  
 0.0  $\pm$ 0.005 - 0.00  $\pm$ 0.015  
 0.0  $\pm$ 0.005 - 0.00  $\pm$ 0.015

DRAWN BY: TJT DATE: 09/29/04  
 CHK'D BY: DATE:

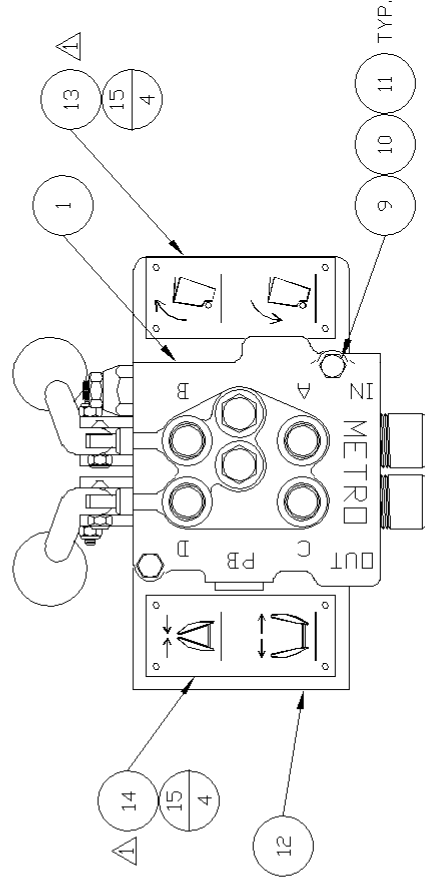
TITLE: DIVERTER VALVE SEAL KIT  
 DWG. NO.: 8000-0780

SCALE: 2=3 SHEET 1 OF 1 REV. -

ITEM NO	PART NO.	DESCRIPTION	QTY
1	6084-0406	DUAL HYD. HAND VALVE	1
2	7500-0065	HANDLE-DUAL HAND VALVE	2
3	7500-0012	HAND VALVE HANDLE BALL	2
4	7500-0010	HAND VALVE LINKAGE STRAP	4
5	8702-0310	10-32 x 1 1/4" LG. F.H.S.C.S.	2
6	8902-0300	10-32 SELF LOCKING NUT	5
7	9102-0320	10-32 x 2 1/2" LG. S.H.C.S.	1
8	9202-0306	10-32 x 3/4" LG. B.H.C.S.	2
9	9001-0416	1/4-20 x 2" LG. H.H.C.S.	2
10	9401-0400	1/4-20 HEX NUT	2
11	9700-0400	1/4" LOCK WASHER	2
12	7500-0043	HAND VALVE MOUNTING BRACKET	1
13	6084-1013	LEGEND PLATE, ACTUATOR	1
14	6084-1012	LEGEND PLATE, GRABBER	1
15	7500-0071	DRIVE SCREW	8



NOTE:  
 ▲ LEGEND PLATES (6084-1010, 6084-1011) TO BE MOUNTED AT INSTALLATION DEPENDING ON HAND VALVE ORIENTATION.



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**BAYNE MACHINE WORKS, INC.**  
 910 FORK SHOALS ROAD - GREENVILLE, SC 29605 - 864-288-3877

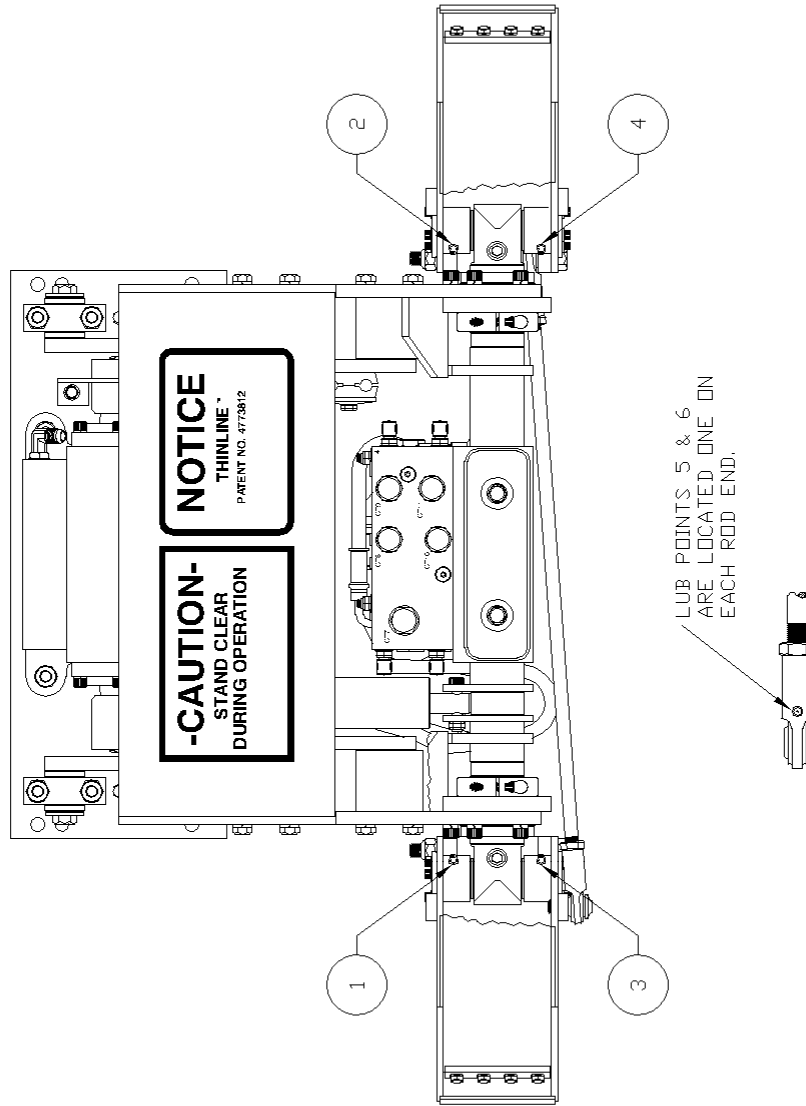
SCALE: 1=2  
 SHEET 1 OF 1  
 REV. -

DATE: 12/13/99  
 DRAWN BY: ANR  
 CHECKED BY: DATE: 12/13/99

TOLERANCES IF NOT NOTED:  
 0.000 ±0.005 - 0.00 ±0.015  
 0/0 ±1/32 - ANGULAR ±0.25

TITLE: VALVE ASSEMBLY  
 DWG. NO.: 6084-1006





**-CAUTION-**  
STAND CLEAR  
DURING OPERATION

**NOTICE**  
THINLINE™  
PATENT NO. 4772812

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BAYNE MACHINE WORKS, INC. 910 FORK SHOALS ROAD - GREENVILLE, SC 29605 - 864-288-3877		DRAWN BY: CTT		DATE: 12/15/99	CHK'D BY:	
TOLERANCES IF NOT NOTED: 0.000 ±0.005 - 0.00 +0.015 Ø/Ø ±1/32 - ANGULAR ±0.25		DATE: 12/15/99		CHK'D BY:		
		TITLE: LUBRICATION POINTS		DWG. NO.: LUB4100		