# GRL 1110
## 1900-0560

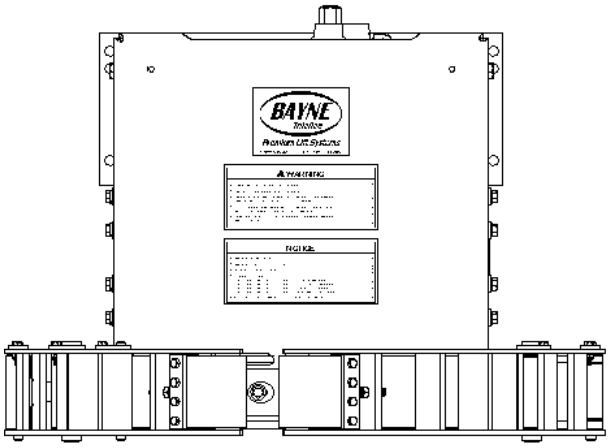
**OPERATION AND PARTS MANUAL**

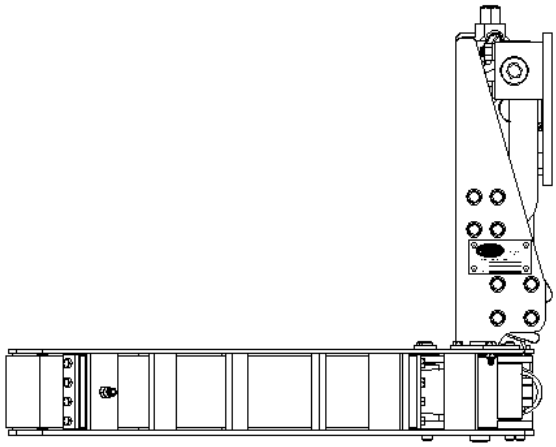
**ISSUED FEBRUARY 2020**

**CUSTOMER NAME:** _____

**SERIAL NUMBER:** _____

**1900-0560 Revision No. 003**







Environmental Solutions Group
201 W. Main Street, Ste 300
Chattanooga, TN 37408
Bayne Customer Care: 800.535.2671

# Cart Lifter General Operation Guidelines

Always adhere to your company's safety guidelines when using this lifter. This includes wearing appropriate clothing and personal protective equipment, including reflective gear. Keep in mind that you are operating the lifter on public roads or alleys with moving traffic. Stay vigilant and watch out for vehicles and pedestrians.

The lifter should only be used for lifting ANSI-approved carts that are in good condition. It is not designed to be used as a step, to assist in lifting commercial containers, or to crush or break down items. Use with non-approved carts or misuse can result in serious injury or damage and will void the warranty.

Make sure the area around the lifter is free of personnel before operation. Always maintain a safe distance from the lifter to avoid pinch points that can cause serious injury.

Cart lifters can hang very low to the ground at certain points in the lift cycle. It is the operator's responsibility to move the lifter to a safe position, such as raising the lifter fully or placing the lifter in the storage position before driving. Lifters left hanging low risk bottoming out on the street, road, or alley. This can cause serious damage.  Damages from bottoming out are not covered by the warranty.

It is the operator's responsibility to position the cart lifter safely before approaching any obstacles. Damages from collisions are not covered by the warranty.

# ⚠ WARNING

**IF INCORRECTLY USED, THIS EQUIPMENT CAN CAUSE SEVERE INJURY. THOSE WHO USE AND MAINTAIN THE EQUIPMENT SHOULD BE TRAINED IN ITS PROPER USE, WARNED OF ITS DANGERS, AND SHOULD READ AND FULLY UNDERSTAND THIS ENTIRE MANUAL BEFORE ATTEMPTING TO SET UP, OPERATE, ADJUST OR SERVICE THE EQUIPMENT. KEEP THIS MANUAL FOR FUTURE REFERENCE**

## IMPORTANT SAFETY NOTICE

**Proper service and repair are important to the safe, reliable operation of the Bayne THINLINE® products. Service procedures recommended by Bayne THINLINE® are described in this Operation and Parts Manual and are effective for performing service operations. Some of these service operations may require the use of tools or blocking devices specially designed for the purpose. Special tools should be used when and as recommended. It is important to note that some warnings against the use of specific methods that can damage the product or render it unsafe are stated in the service manual. It is also important to understand these warnings are not exhaustive. Bayne THINLINE® could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each method. Consequently, Bayne THINLINE® has not undertaken any such broad evaluations. Accordingly, anyone who uses service procedures or tools which are not recommended by Bayne THINLINE® must first satisfy himself thoroughly that neither his safety nor the product safety will be jeopardized by the method he selects.**

# GRL 1110
# TABLE OF CONTENTS




Printed in U.S.A.



Issued August 2016
Revision No: 003

# INTENTIONALLY LEFT BLANK

# GRL 1110

**PART NUMBER: 1900-0560 REVISION NO. 003**

**OPERATION AND PARTS MANUAL**

Printed in U.S.A.

Issued August 2016
Revision No: 003

## SPECIFICATIONS

WI-0091-A

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® lift unit can measure as little as 7 1/8” 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 10” to 12” from the back of the mainframe into the hopper or container opening. This places the cart or barrel 13” to 15” 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 GRL arms to clamp and unclamp.

**NOTICE**

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 flowrates 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.

**NOTICE**

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 800.535.2671 or by fax at 864.458.7519.

Printed in U.S.A.

Issued August 2016
Revision No: 003

## INSTALLATION INSTRUCTIONS

WI-0236-A

The following information is intended to be a **GENERAL GUIDE** to installing the **Bayne THINLINE®** 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.

**NOTICE**

If a **Bayne THINLINE®** 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.

A. Mounting lifter(s) on the truck :

1. The truck should be emptied and cleaned before any installation. The truck should be parked on a level solid surface, a concrete floor if possible.
2. All lights, tags, steps, etc. that will interfere with the installation should be removed and/or relocated.
3. Position the lifter(s) on the sill of the truck per Figure A-1 and mounting height drawing and tack weld in place. See **Appendix A** 21 for drawings. If using an “S” unit for bolt on applications, tack weld the mounting plate in place and attach the lifter to the mounting plate using the 1/2” studs.

**NOTICE**

Tack weld only at this time so that adjustments can be made if necessary.

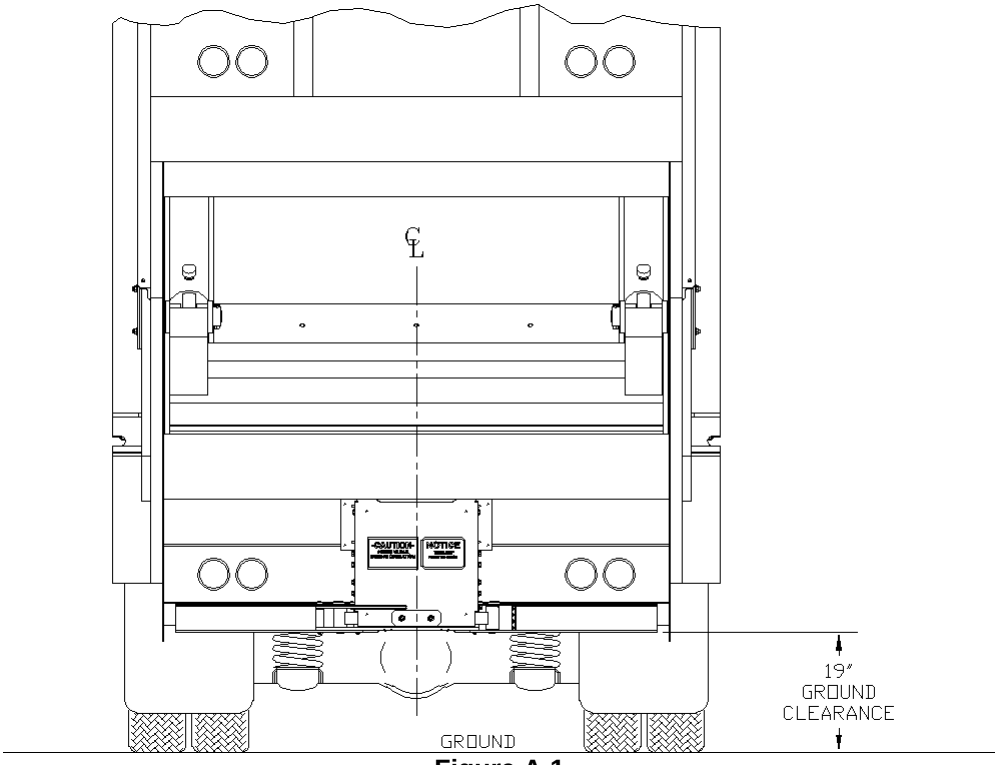



**Figure A-1**

B. Making Hydraulic Connections :

Before attempting any hydraulic connections, turn the truck's engine off and release all hydraulic pressure from the system. Refer to the hydraulic layout ( Figure 2) and hydraulic schematic while performing the following steps. See **Appendix A** 21 for drawings.

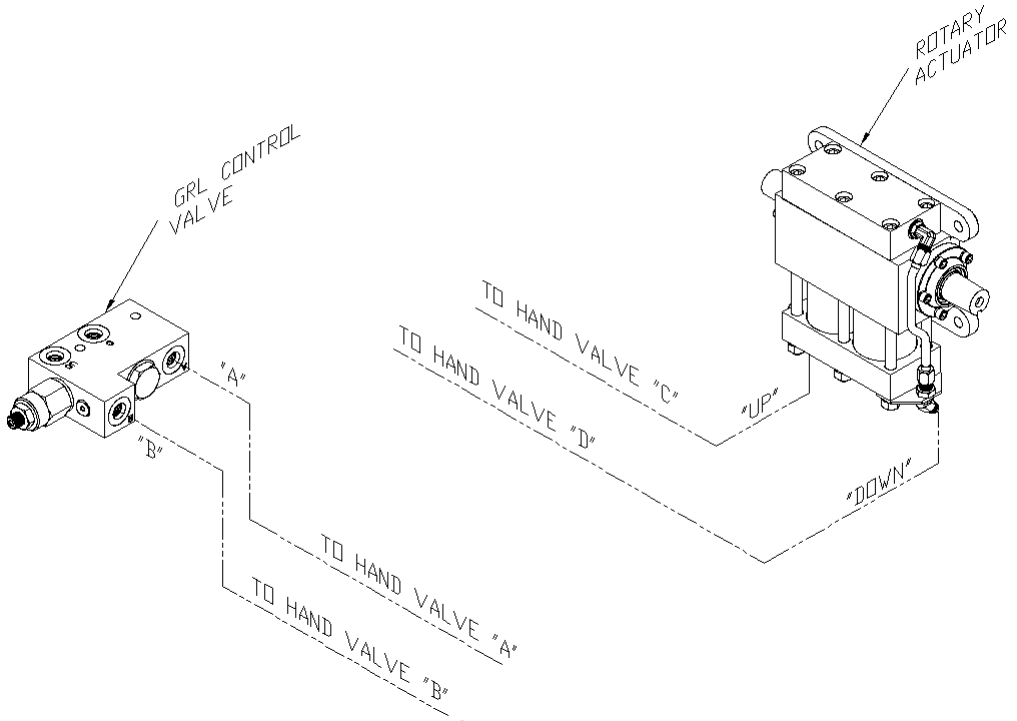



**Figure A-2**

1. Connect the hose from the "UP" port of the rotary actuator to the "C" port of the dual hand valve.
2. Connect the hose from the "DOWN" port of the rotary actuator to the "D" port of the hand valve.
3. Connect the hose from the "C" port of the GRL control valve to the "A" port of the hand valve.
4. Connect the hose from the "UC" port of the GRL control valve to the "B" port of the hand valve.

C. Adjusting the GRL control valve :

The clamping pressure and speed of the THINLINE ® GRL lifter's arms are controlled by the GRL control valve mounted to the lifter.

**NOTICE**

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 GRL control valve pressures.

**The proper flow rate and relief settings are 2 gpm at 1800 psi.**

The amount of pressure the GRL arms use to clamp the container is controlled with a pressure relief valve in the GRL 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 A-3 while performing the following steps to properly adjust the clamping pressure.

1. Loosen the lock nut on the pressure relief valve in the GRL control valve.
2. If the lifter is crushing the waste container, turn the adjustment screw counterclockwise 1/4 turn. If the lifter is loosing grip on the waste container, turn the adjustment screw clockwise 1/4 turn.
3. Repeat clamping and dumping the container, making necessary adjustments to the pressure relief valve in 1/4 turn increments until the lifter securely holds the container without crushing it.
4. Tighten the lock nut on the pressure relief valve to secure the correct pressure setting.

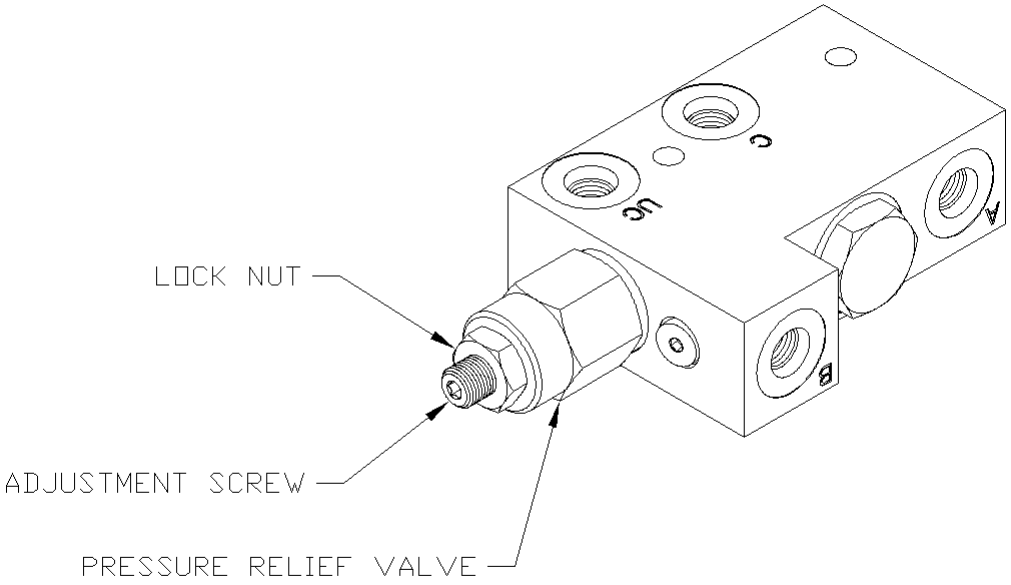



**Figure A-3**

D. Final operation and mounting:

1. Start the truck's engine and engage the hydraulic system.
2. Operate the lifter and bleed all air from the hydraulic system.
3. Place a cart on the lifter and operate to make sure there are no clearance problems and that the lifter engages the cart properly. Make any adjustments to the mounting position of the lifter to ensure correct operation.
4. After locating an acceptable mounting position, complete the welding of the lifter to the truck.

## OPERATION INSTRUCTIONS

WI-0405-A

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 B-1 ) in the cycle of the cart lifter are as follows:

1. **START** - The cart to be dumped is rolled up to the lifter.
2. **CLAMPING** - The clamp arms are 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.

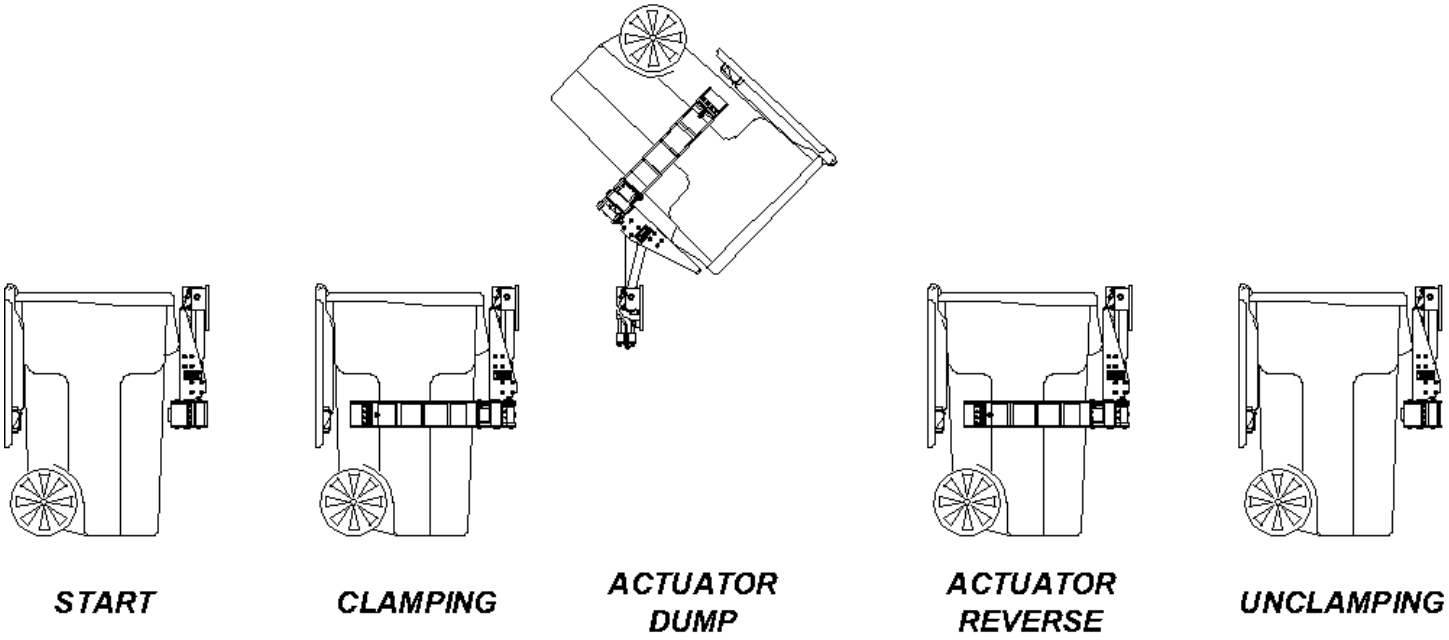



**Figure B-1**

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. 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.

## MAINTENANCE INSTRUCTIONS

WI-0141-A

**NOTICE**

The most common cause of hydraulic component failure is contamination of the hydraulic fluid ( water, chips, dirt, etc. ) The **Bayne THINLINE®** 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 dumper on a weekly basis for loose bolts, fittings, oil leaks, etc. Tighten loose hardware as necessary and replace necessary seals to repair oil leaks.

Issued August 2016
Revision No: 003

## ACTUATOR ASSEMBLY INSTRUCTIONS

1100 Series Roller Bearing Actuator, Part Number 1122-1015 ( WI-1116-D)

Licensed under on or more of the following U.S. Patents: 4,773,812 1,327,765 5,308,211 5,333,984

**NOTICE**

READ INSTRUCTIONS COMPLETELY BEFORE STARTING ASSEMBLY.

Before starting the assembly of the Rotary Actuator, refer to the exploded parts drawing and parts list (Figure C-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.

**NOTICE**

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) ( Figure C-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.

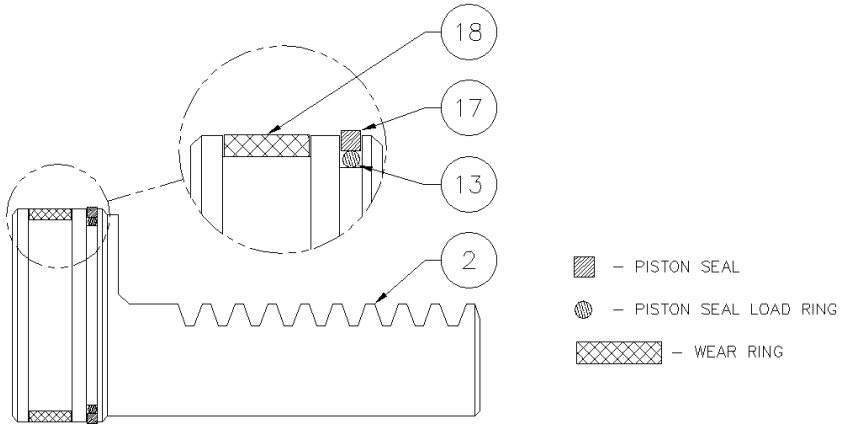



**Figure C-1**

2. Install the tube seal (12) ( Figure C-2 ) and “square” tube seal backup (16) on each end of the actuator tubes (3) ( Figure C-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.

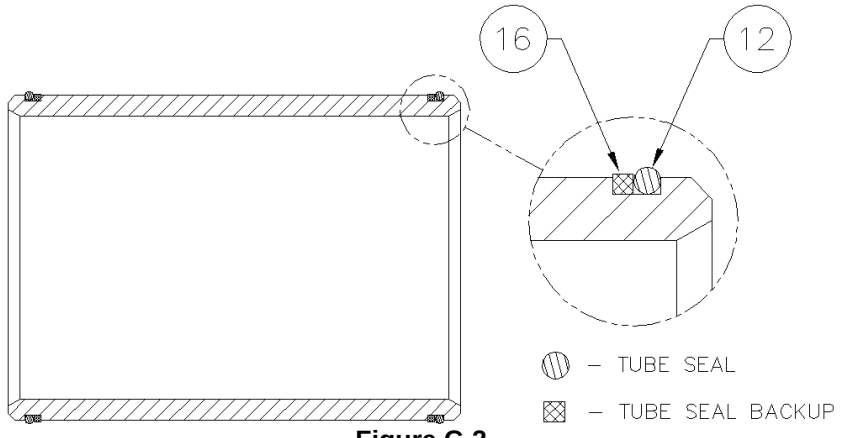



**Figure C-2**

3. Thoroughly clean the pinion shaft (1) ( Figure C-3 ) and inner races (10) with a mild solvent and dry completely. Spray the inner race contact area (shown in Figure C-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 C-3) until the races seat against the gear teeth. After the races seat against the gear teeth, twist the races on the pinion 360º to spread the retaining compound evenly. Wipe off any excess retaining compound.

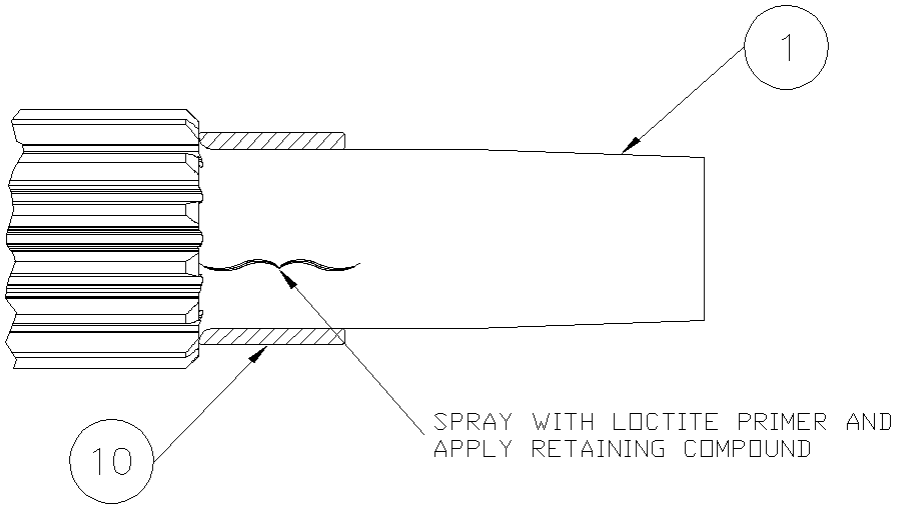



**Figure C-3**

4. Place the actuator body (7) ( Figure C-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 C-4. Center the pinion in the actuator body.

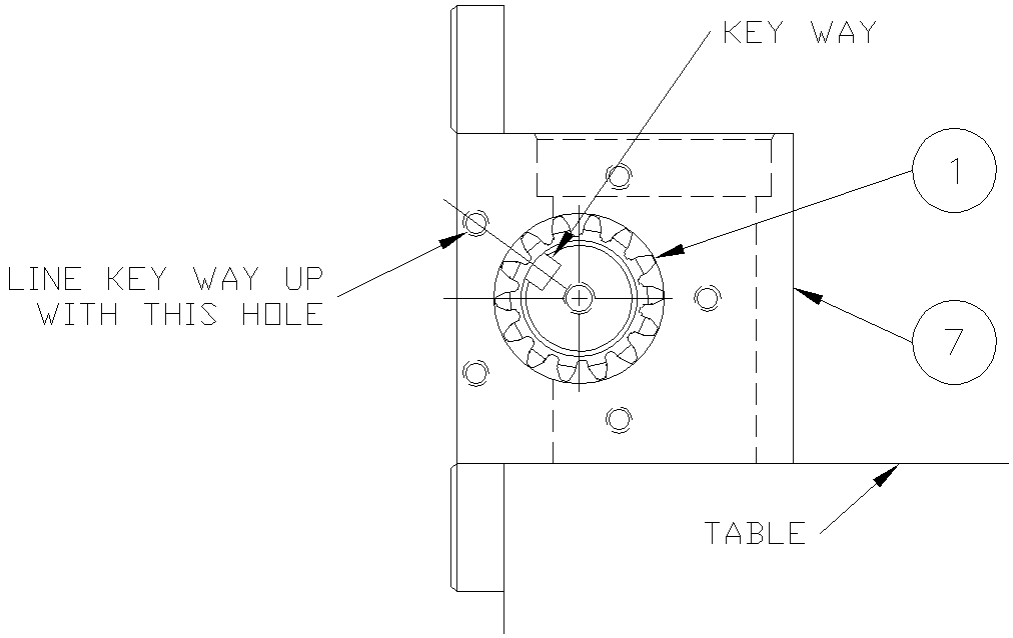



**Figure C-4**

5. Coat the head portion of the racks (2) ( Figure C-13 ) with STP Oil Treatment. 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.

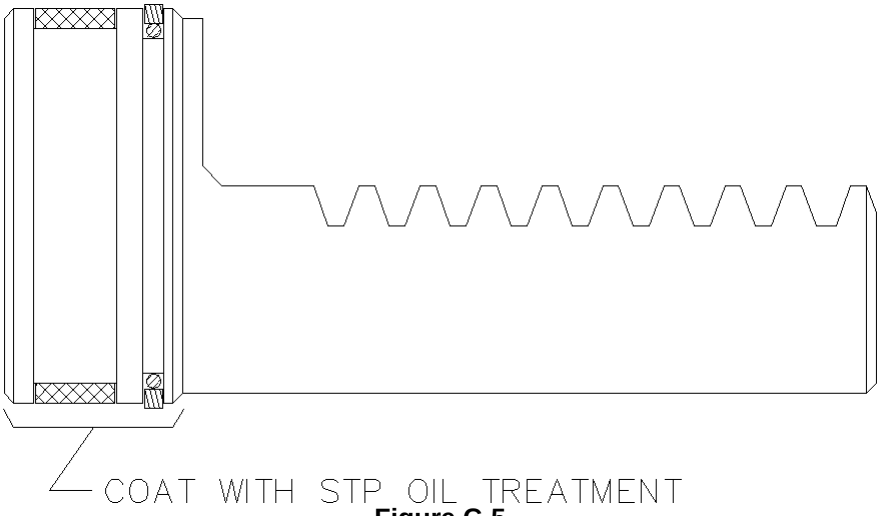



**Figure C-5**

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 C-6.

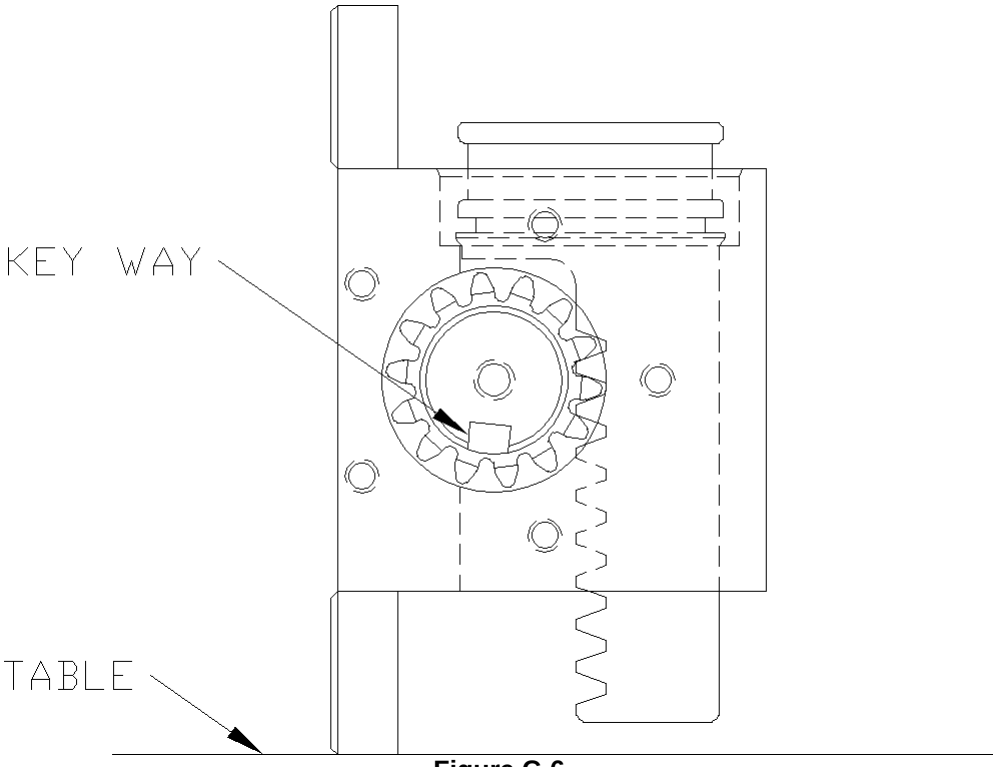
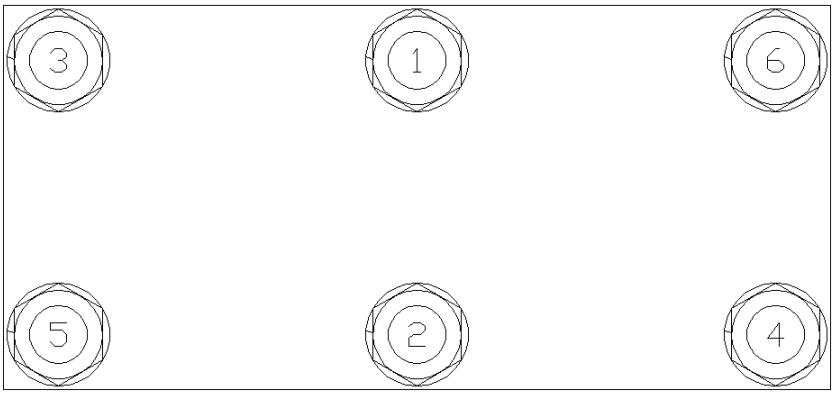



**Figure C-6**

7. Coat one end of the actuator tubes (3) ( Figure C-13 ) around the seal area with STP Oil Treatment as shown in Figure C-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 C-7**

8. Install the six tie rod studs (6) ( Figure C-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) ( Figure C-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 C-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. Place the tube mounting bracket (30) ( Figure C-13 ) over the two end rod studs opposite the oil port in the tube cap as shown in Figure C-13.
11. Install the hex nuts (23) ( Figure C-13 ) and lock washers (24) on the tie rod studs. Torque the nuts to 50 ft-lb. in the sequence shown in Figure C-8.




TUBE CAP TORQUE SEQUENCE

**Figure C-8**

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

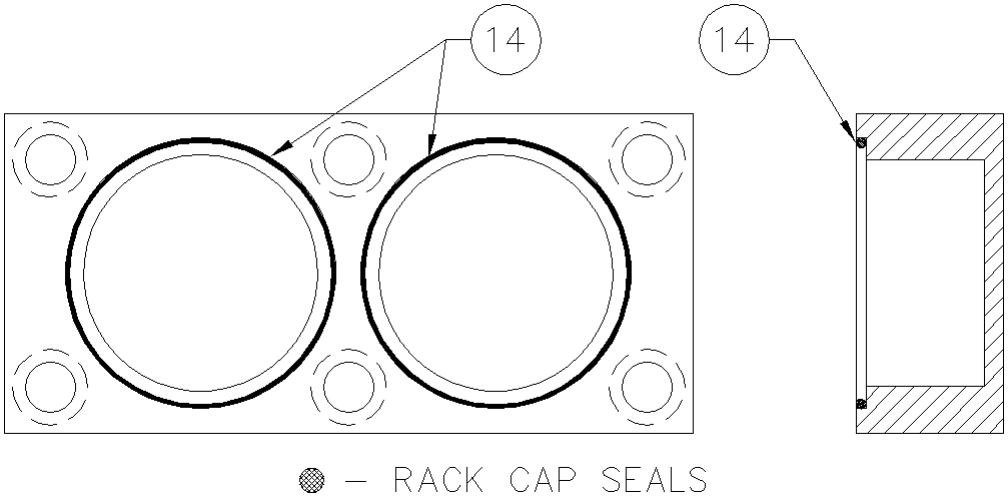



**Figure C-9**

13. 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 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 C-13. Attach the rack cap to the actuator body using the socket head bolts (22) ( Figure C-13 ) and lock washers (26). Torque the bolts to 90 ft-lb. in the sequence shown in Figure C-10.

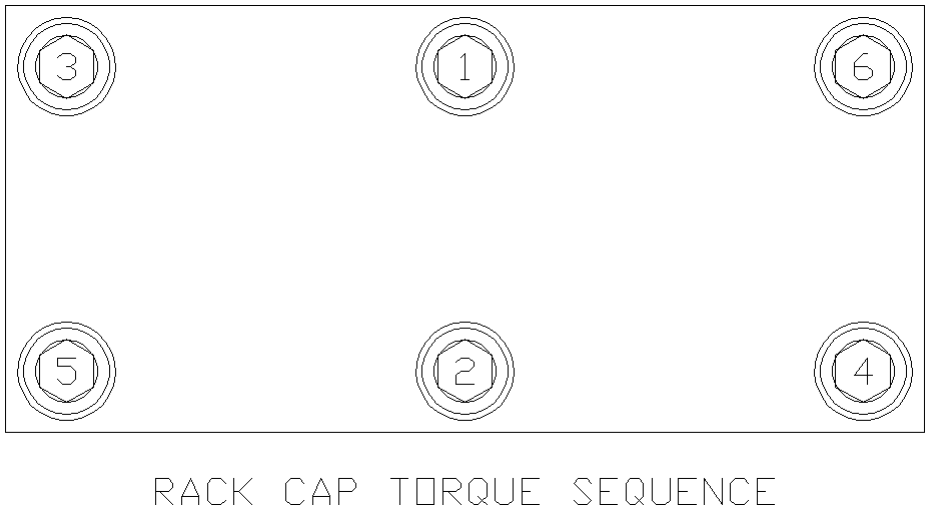



**Figure C-10**

14. 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.
15. 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 (9) ( Figure C-13 ), over the pinion shaft and inner race, and into the actuator body. Repeat this procedure for the other bearing.

16. Thoroughly clean the bearing caps (8) ( Figure C-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 (20) and carefully work it into the groove. Use fingers to carefully press the seal completely into the groove as shown in Figure C-11. **Be careful not to score or scratch the sealing surface during the installation.** Install the bearing cap seal (15) and thrust washer (32) into their respective grooves on the bearing cap mounting surface as shown in Figure C-11.
17. Coat the bearing cap seal area and pinion seal area shown in Figure C-11 lightly with STP Oil Treatment.

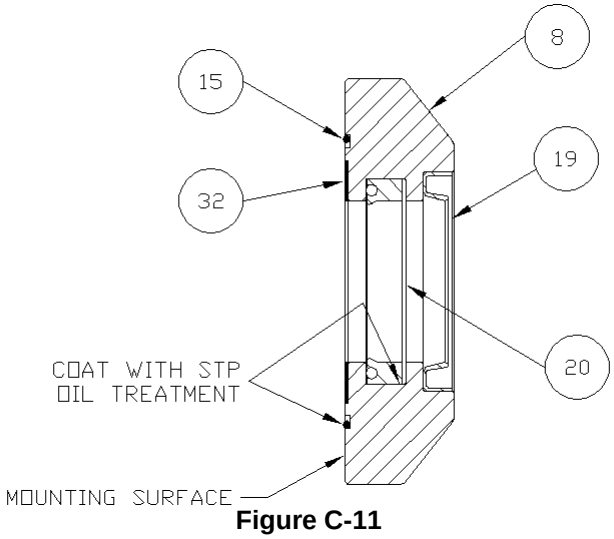



**Figure C-11**

18. 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 C-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) ( Figure C-13 ) and lock washers (25). Hand tighten only at this time. Repeat this procedure for other bearing cap.
19. After both bearing caps have been installed, torque all bearing cap bolts to 30 ft-lb. in the sequence shown in Figure C-12.

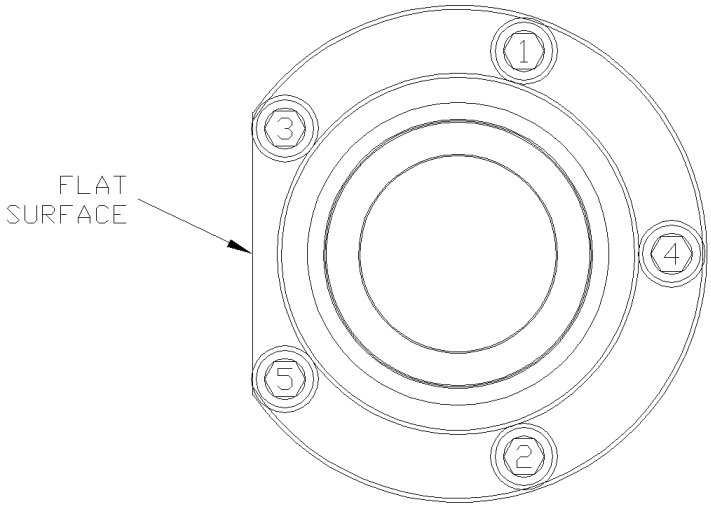



**Figure C-12**

20. Install the 90° fitting (27) ( Figure C-13 ) into the oil port on the side of the rack cap (5). Hand tighten only at this time.

21. Install the 45° bulk-head fitting (31) ( Figure C-13 ) up through the hole in the tube mounting bracket (30) bolted to the tube cap as shown in Figure C-13. The 45° end must be pointing down away from the rack cap (5) and back toward the mounting flanges on the actuator body. Hand tighten only at this time.
22. Install the rack cap extension tube assembly (29) ( Figure C-13 ) between the 90° fitting in the rack cap and the 45° fitting in the tube mounting bracket as shown in Figure C-13. Tighten all connections.
23. Install the orifice plug (11) ( Figure C-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 C-13. Turn the fitting so that it points down away from the rack cap (5) and back toward the mounting flanges on the actuator body and tighten.
24. Install the cap nuts (28) ( Figure C-13 ) onto the open fittings to prevent contamination of the unit until the hoses are installed.

## ACTUATOR ASSEMBLY

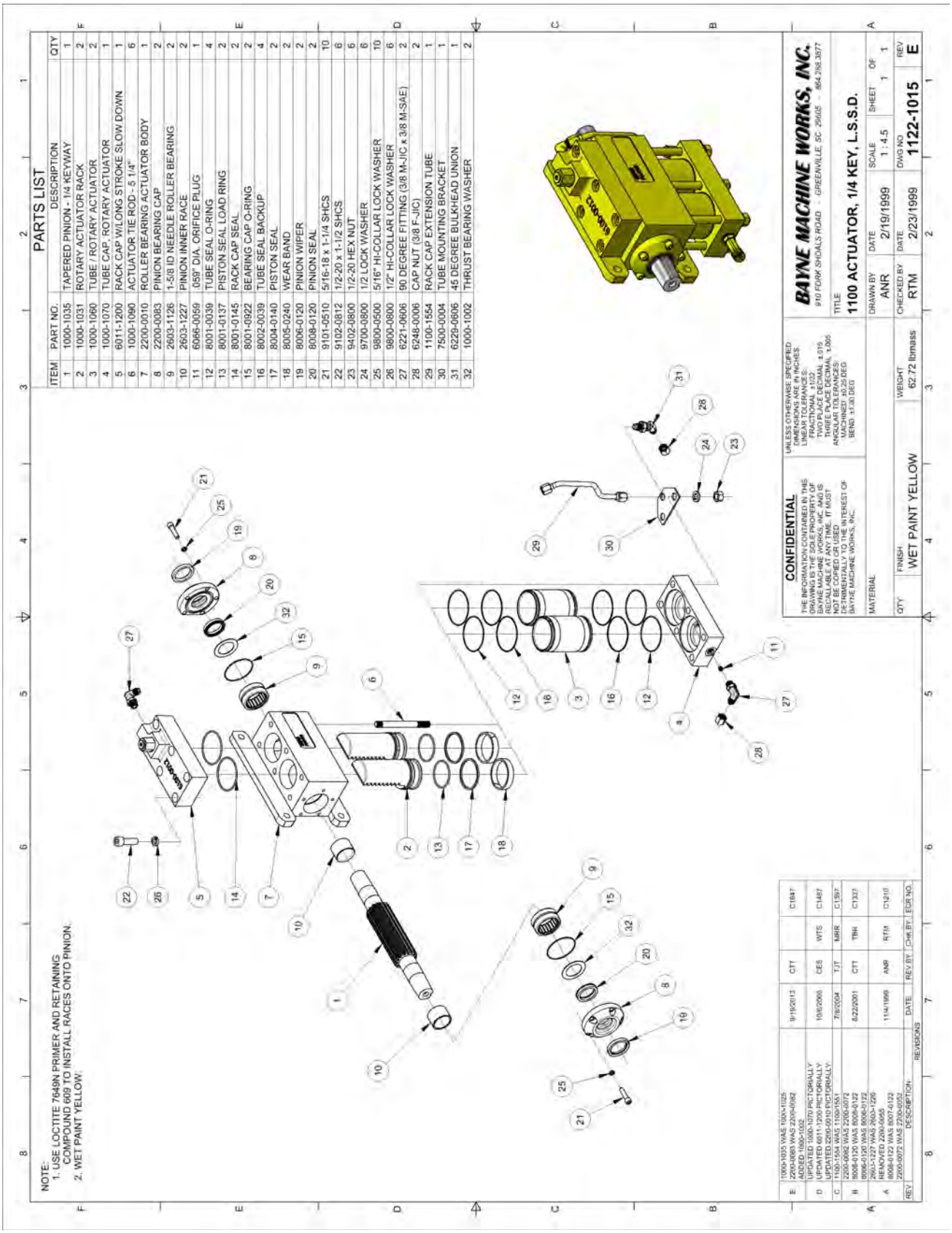



**Figure C-13**

## LONG STROKE SLOWDOWN ASSEMBLY INSTRUCTIONS

Long Stroke Slowdown, Part Number 6011-1200 ( WI-2301-A)

Licensed under on or more of the following U.S. Patents: 4,773,812  1,327,765  5,308,211  5,333,984

**NOTICE**

READ INSTRUCTIONS COMPLETELY BEFORE STARTING ASSEMBLY.

The Slowdown is a patented device used to cushion the unit as it completes its rotation into the dump position. This cushioning prevents the tearing of carts and helps protect the dumper from abuse. The Slowdown is part of the Actuator assembly and is assembled into the rack cap.

Before starting the assembly of the Slowdown, refer to the exploded parts drawing ( Figure D-4 ) and parts list to familiarize yourself with the individual components. Prepare a clean surface in an area free from blowing dust and contaminants in which to assemble the Slowdown. Be sure that all parts are clean and dry before starting assembly.

**NOTICE**

All torque values given apply to clean dry threads only. Follow these directions when assembling the Slowdown:

1. Install the housing seal ( 5 ) ( Figure D-1 ) in the groove next to the hexagon head of the plunger housing ( 1 ). Place the square backup ring ( 7 ) in the groove at the end of the plunger housing ( 1 ). Place the o-ring ( 6 ) in the same groove as the square backup ring ( 7 ) closest to the hexagon head of the plunger housing ( 1 ).

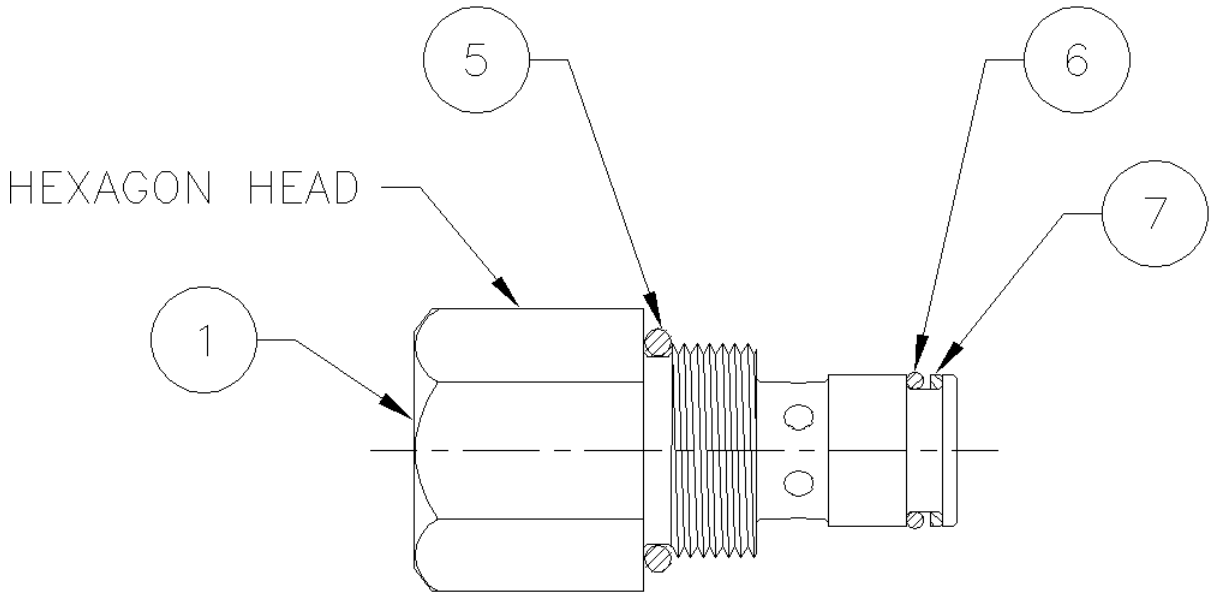



**Figure D-1**

2. Place the plunger ( 2 ) ( Figure D-2 ) into the plunger housing ( 1 ). Place the spring ( 4 ) on top of the plunger ( 2 ). Coat the o-ring on the o-ring plug ( 9 ) with STP Oil Treatment. Screw the o-ring plug ( 9 ) into the plunger housing ( 1 ) on top of the spring ( 4 ) and tighten to 30 in-lb. torque.

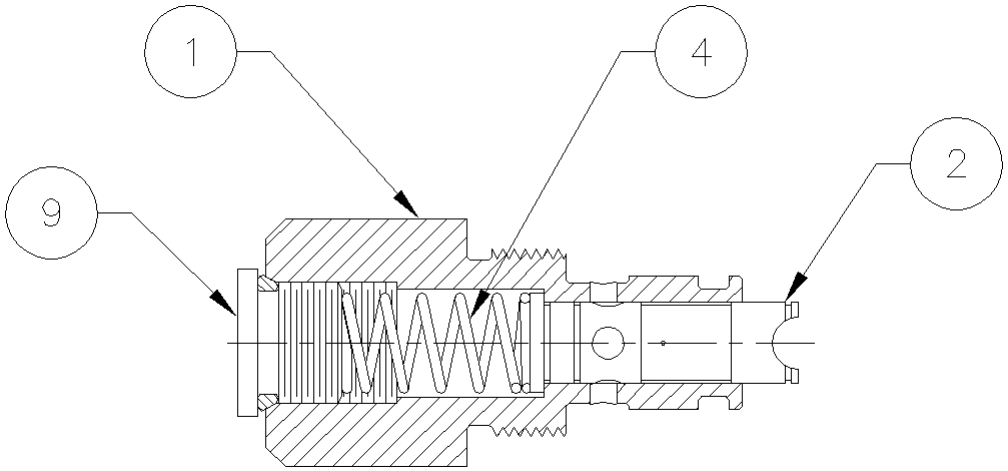



**Figure D-2**

3. Coat the o-rings on the plunger housing ( 1 ) ( Figure D-3 ) and the o-ring on the o-ring plug ( 8 ) with STP Oil Treatment. Screw the plunger housing ( 1 ) into the top of the rack cap ( 3 ) ( Figure D-4 ) and tighten. Screw the o-ring plug ( 8 ) into the side of the rack cap ( 3 ) in the bottom port and tighten.

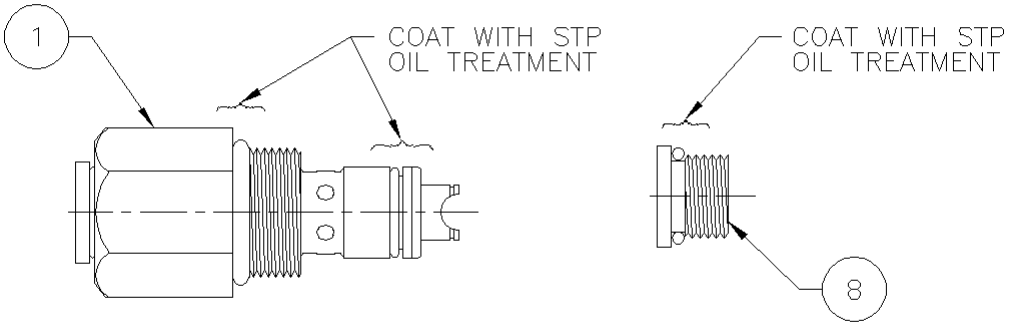



**Figure D-3**

## SLOWDOWN ASSEMBLY
LONG STROKE
PART NO. 6011-1200

| ITEM NO | PART NO. | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 6100-0011 | PLUNGER HOUSING | 1 |
| 2 | 6100-0006 | VALVE-PLUNGER-LONG STROKE | 1 |
| 3 | 6100-0012 | RACK CAP- SOFT START/SLOW DOWN | 1 |
| 4 | 3400-0020 | SPRING-SLOWDOWN/SOFT START VALVE | 1 |
| 5 | 8001-0910 | O-RING | 1 |
| 6 | 8001-0014 | O-RING | 1 |
| 7 | 8002-4014 | BACK-UP WASHER | 1 |
| 8 | 6246-0004 | PLUG (ST. THREAD HOLLOW HEX) | 1 |
| 9 | 6246-0006 | PLUG (ST. THREAD HOLLOW HEX) | 1 |
| 10 | 6011-1214 | LONG STROKE SLOW DOWN ASSEMBLY | 1 |

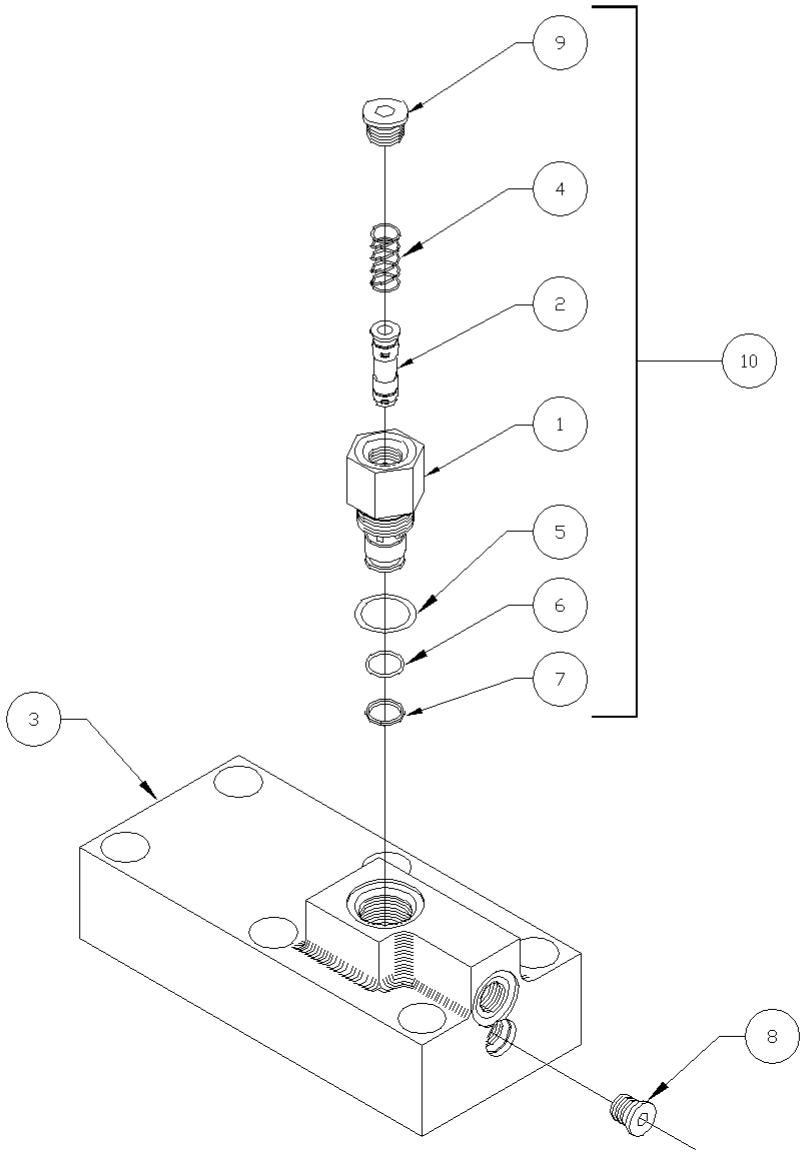



**Figure D-4**

# GRL 1110
## Troubleshooting Chart

| TROUBLESHOOTING CHART | | |
|---|---|---|
| **SYMPTOM** | **POSSIBLE CAUSES** | **CORRECTIVE ACTION** |
| **Lifter operation very erratic.** | 1. Air trapped in system. | 1. Bleed all air from lifter hydraulic system. |
| | 2. Low oil level. | 2. Add oil to system. |
| **Cart lifter will not pick up carts.** | 1. Cart overweight. | 1. Reduce loaded weight of cart. |
| | 2. Lifter system hydraulic pressure too low. | 2. Check and adjust pressure relief on hand valve. |
| | 3. Truck system hydraulic pressure too low. | 3. Check and adjust pressure on truck system relief. |
| | 4. Faulty hand valve. | 4. Replace hand valve. |
| **Lifter operates extremely slow.** | 1. Engine idle too low. | 1. Adjust engine idle. |
| | 2. Faulty hand valve. | 2. Replace hand valve. |
| | 3. Low hydraulic flow to lifter circuit. | 3. Check truck's hydraulic system flow. |
| | 4. Faulty truck hydraulic pump. | 4. Consult truck maintenance manual. |
| **Lifter operates under recommended cycle time.** | 1. Engine idle too high. | 1. Adjust engine idle. |
| | 2. High hydraulic flow to lifter circuit. | 2. Check truck's hydraulic system flow. |
| **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. |
| **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. |
| **Lifter looses carts when dumping.** | 1. Clamping pressure setting too low. | 1. Adjust clamping pressure setting per Installation Instructions of this manual. |
| | 2. Cart sides are too weak. | 2. Replace cart. |
| **Lifter crushes carts when dumping.** | 1. Clamping pressure setting too high. | 1. Adjust pressure setting per Installation Instructions of this manual. |
| | 2. Cart sides are too weak. | 2. Replace cart. |

Issued August 2016
Revision No: 003

# APPENDIX A

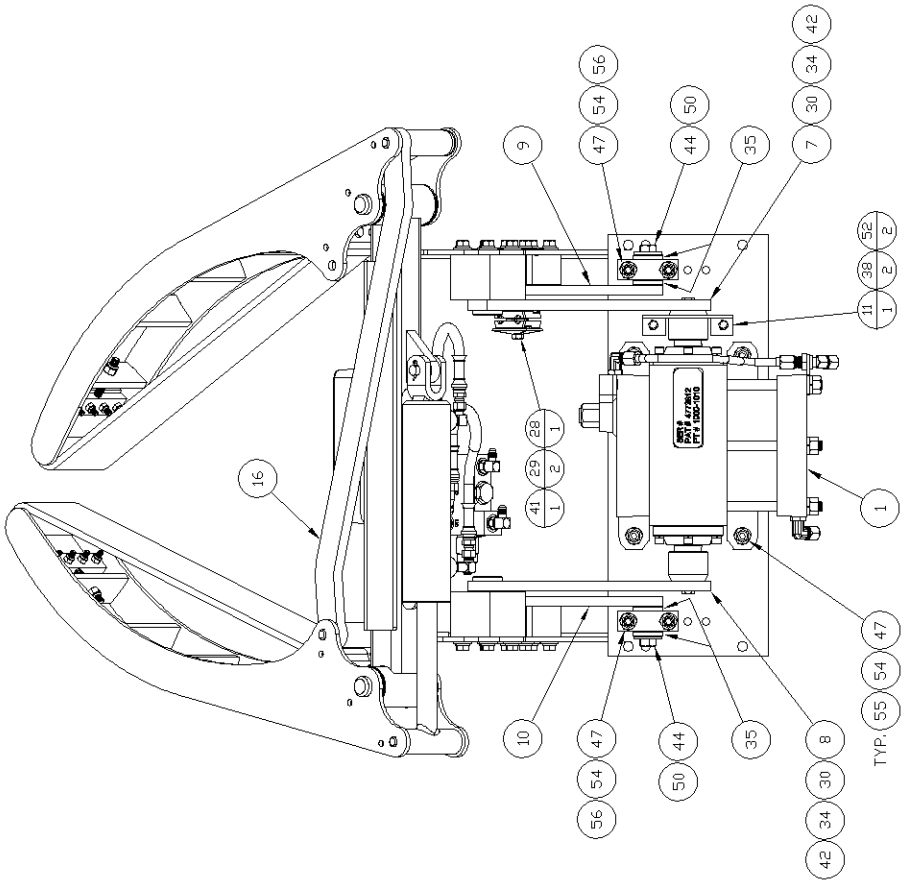
## ASSEMBLY DRAWINGS AND PART NUMBERS

# GRL 1110

## Appendix A - Assembly Drawings and Part Numbers

| ITEM | PART NO. | DESCRIPTION | QTY |
|---|---|---|---|
| 54 | 9700-0800 | 1/2" LOCK WASHER | 8 |
| 55 | 9902-0814 | 1/2-20 x 1 3/4 STUD | 4 |
| 56 | 9902-0830 | 1/2-20 x 3 3/4" STUD | 4 |

| ITEM | PART NO. | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | 1122-1015 | 1100 ACTUATOR (.059" ORIFICE) | 1 |
| 2 | 2000-1131 | 21" GTL MAINFRAME | 1 |
| 3 | 2000-1230 | TORQUE BEARING ASSEMBLY | 2 |
| 4 | 2000-1335 | UPPER IDLER BEARING | 2 |
| 5 | 2000-1338 | LOWER IDLER BEARING ASSEMBLY | 2 |
| 6 | 3112-1044 | GRL CLAMP CYLINDER ASS'Y | 1 |
| 7 | 4010-1207 | 10" GTL TORQUE ARM | 1 |
| 8 | 4010-1220 | 10" TORQUE ARM | 1 |
| 9 | 4010-1328 | 10" RH IDLER ARM WELDMENT | 1 |
| 10 | 4010-1329 | 10" LH IDLER ARM WELDMENT | 1 |
| 11 | 4800-0009 | GTL HOSE PROTECTOR BRACKET | 1 |
| 12 | 4800-0058 | GRL CYLINDER PIN WELDMENT | 3 |
| 13 | 4800-0060 | GRL CLAMP ARM ASSEMBLY | 2 |
| 14 | 4800-0066 | BRONZE THRUST WASHER | 4 |
| 15 | 4800-0272 | GRL FACE PLATE WELDMENT | 1 |
| 16 | 4800-0277 | GRL CLAMP ARM LINK WELDMENT | 1 |
| 17 | 4900-0025 | LOWER CYL. PIN WELDMENT | 2 |
| 18 | 5000-0010 | WARNING LABEL | 1 |
| 19 | 5000-0015 | BAYNE LOGO LABEL | 1 |
| 20 | 5000-0077 | NOTICE LABEL | 1 |
| 21 | 6065-2710 | GRL CONTROL VALVE | 1 |
| 22 | 6221-0404 | 90° ADAPTER (4SAE x 4JIC) | 5 |
| 23 | 6222-0404 | 90° L. ADAPTER (4SAE x 4JIC) | 1 |
| 24 | 6420-0674 | HOSE ASS'Y (Ø3/8" x 87") | 2 |
| 25 | 6427-0411 | HOSE ASS'Y (Ø1/4" x 11") | 1 |
| 26 | 6427-0412 | HOSE ASS'Y (Ø1/4" x 12") | 1 |
| 27 | 6427-4126 | HOSE ASS'Y (Ø1/4" x 126") | 2 |
| 28 | 6530-0010 | HOSE CLAMP COVER PLATE | 1 |
| 29 | 6530-0014 | 1/2" PLASTIC CLAMP | 2 |
| 30 | 7300-0410 | KEY (1/4" x 1 3/16" LG.) | 2 |
| 31 | 7500-0070 | MODEL/SERIAL NAME PLATE | 1 |
| 32 | 7500-0071 | DRIVE SCREW | 4 |
| 33 | 7500-0080 | RUBBER BUMPER | 1 |
| 34 | 7500-0117 | TORQUE ARM WASHER | 2 |
| 35 | 7500-0171 | ARM WASHER | 4 |
| 36 | 8901-0400 | 1/4-20 SELF-LOCKING NUT | 7 |
| 37 | 8901-0600 | 3/8-16 SELF-LOCKING NUT | 2 |
| 38 | 9001-0404 | 1/4-20 x 1/2" H.H.C.S. | 2 |
| 39 | 9001-0408 | 1/4-20 x 1" H.H.C.S. | 5 |
| 40 | 9001-0416 | 1/4-20 x 2" H.H.C.S. | 2 |
| 41 | 9001-0514 | 5/16-18 x 1 3/4" H.H.C.S. | 1 |
| 42 | 9001-0608 | 3/8-16 x 1" H.H.C.S. | 18 |
| 43 | 9001-0618 | 3/8-16 x 2 1/4" H.H.C.S. | 2 |
| 44 | 9001-0808 | 1/2-13 x 1" H.H.C.S. | 2 |
| 45 | 9201-0808 | 1/2-13 x 1" B.H.C.S. | 2 |
| 46 | 9201-1010 | 5/8-11 x 1 1/4" B.H.C.S. | 2 |
| 47 | 9402-0800 | 1/2-20 HEX NUT | 8 |
| 48 | 9600-0500 | 5/16" FLAT WASHER | 18 |
| 49 | 9600-0700 | 7/16" FLAT WASHER | 4 |
| 50 | 9600-0800 | 1/2" FLAT WASHER | 4 |
| 51 | 9600-1000 | 5/8" FLAT WASHER | 2 |
| 52 | 9700-0400 | 1/4" LOCK WASHER | 2 |
| 53 | 9700-0600 | 3/8" LOCK WASHER | 16 |






BAYNE MACHINE WORKS
910 FOSTER SKILLS ROAD - GREENVILLE, SC 29605 - 864.268.1377

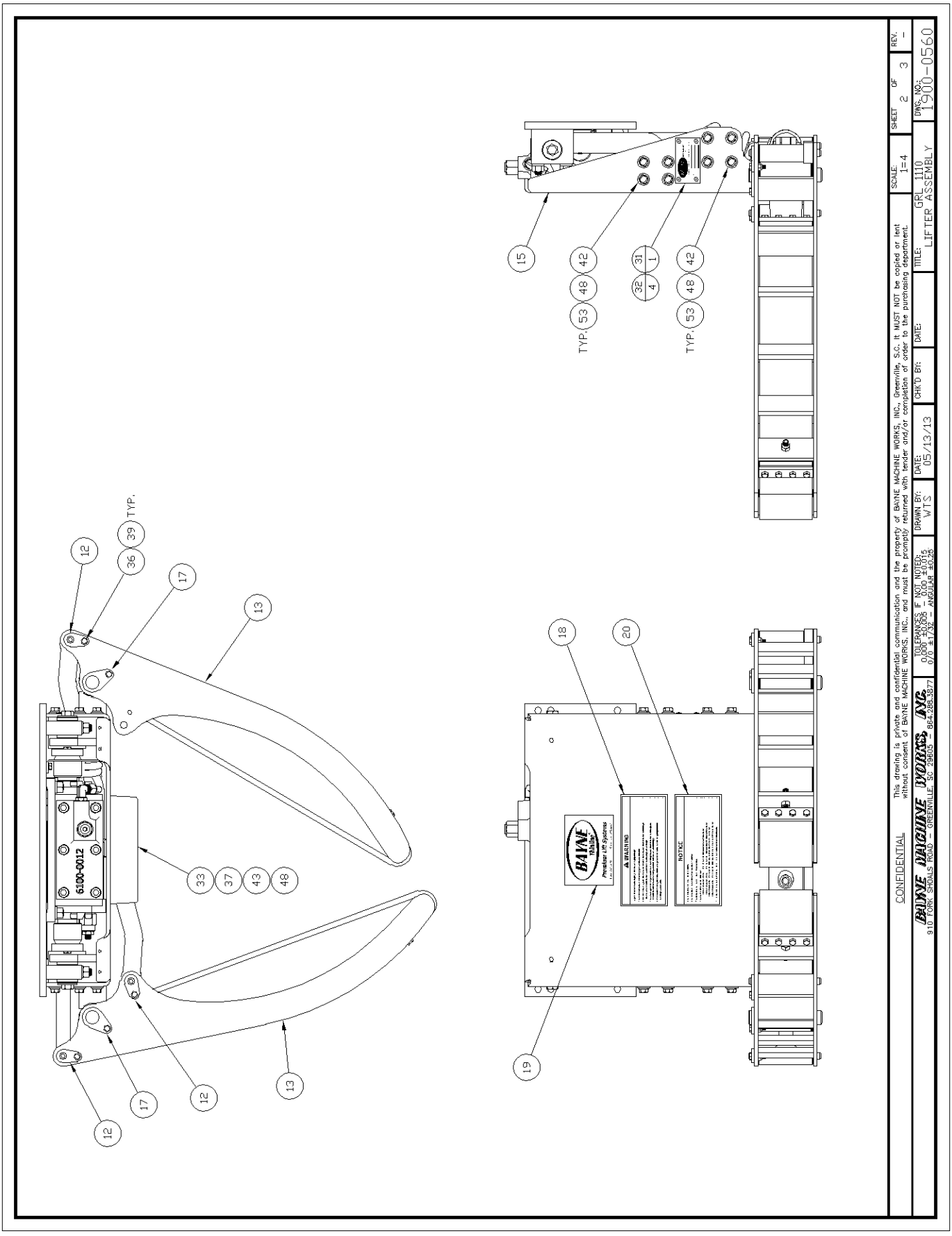
TOLERANCES IF NOT NOTED:
0.000 ±0.005 - 0.00 ±0.015
0/0 ±1/32 - ANGULAR ±0.25

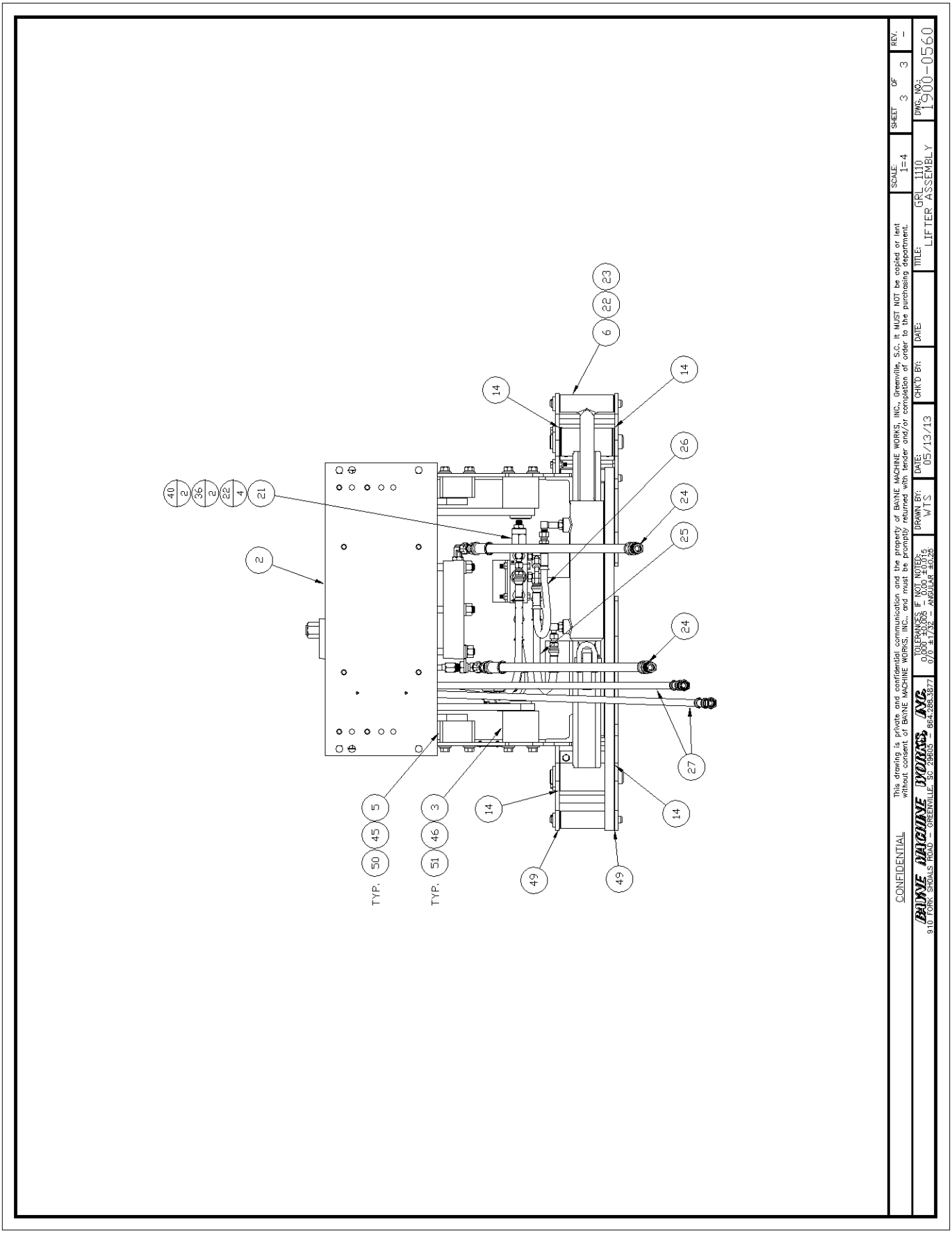
DRAWN BY: WTS
DATE: 05/13/13
CHK'D BY:
DATE:

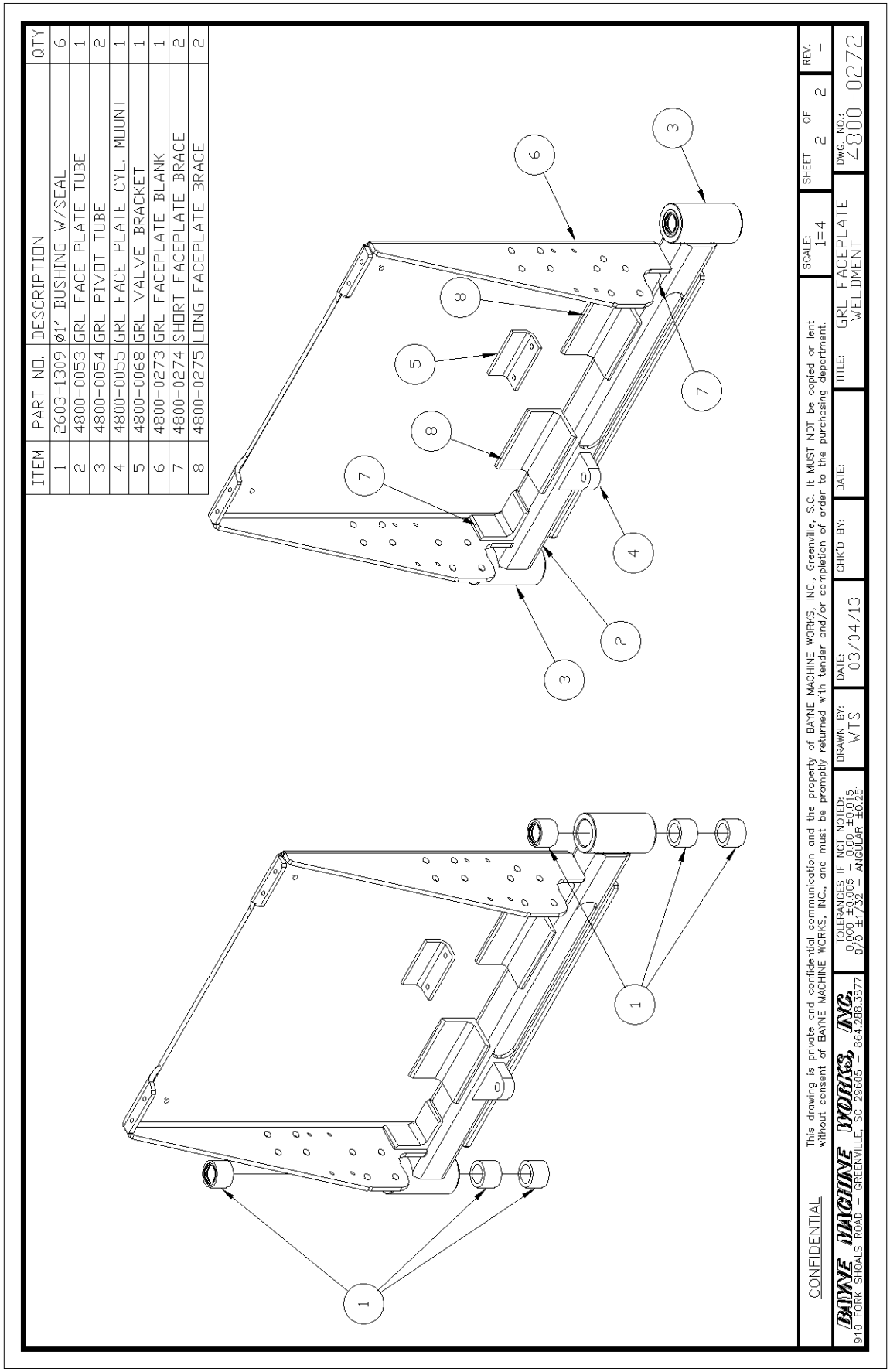
SCALE: 1=4
SHEET 1 OF 3
REV. -
TITLE: GRL 1110 LIFTER ASSEMBLY
DWG. NO.: 1900-0560

# GRL 1110

## Appendix A - Assembly Drawings and Part Numbers

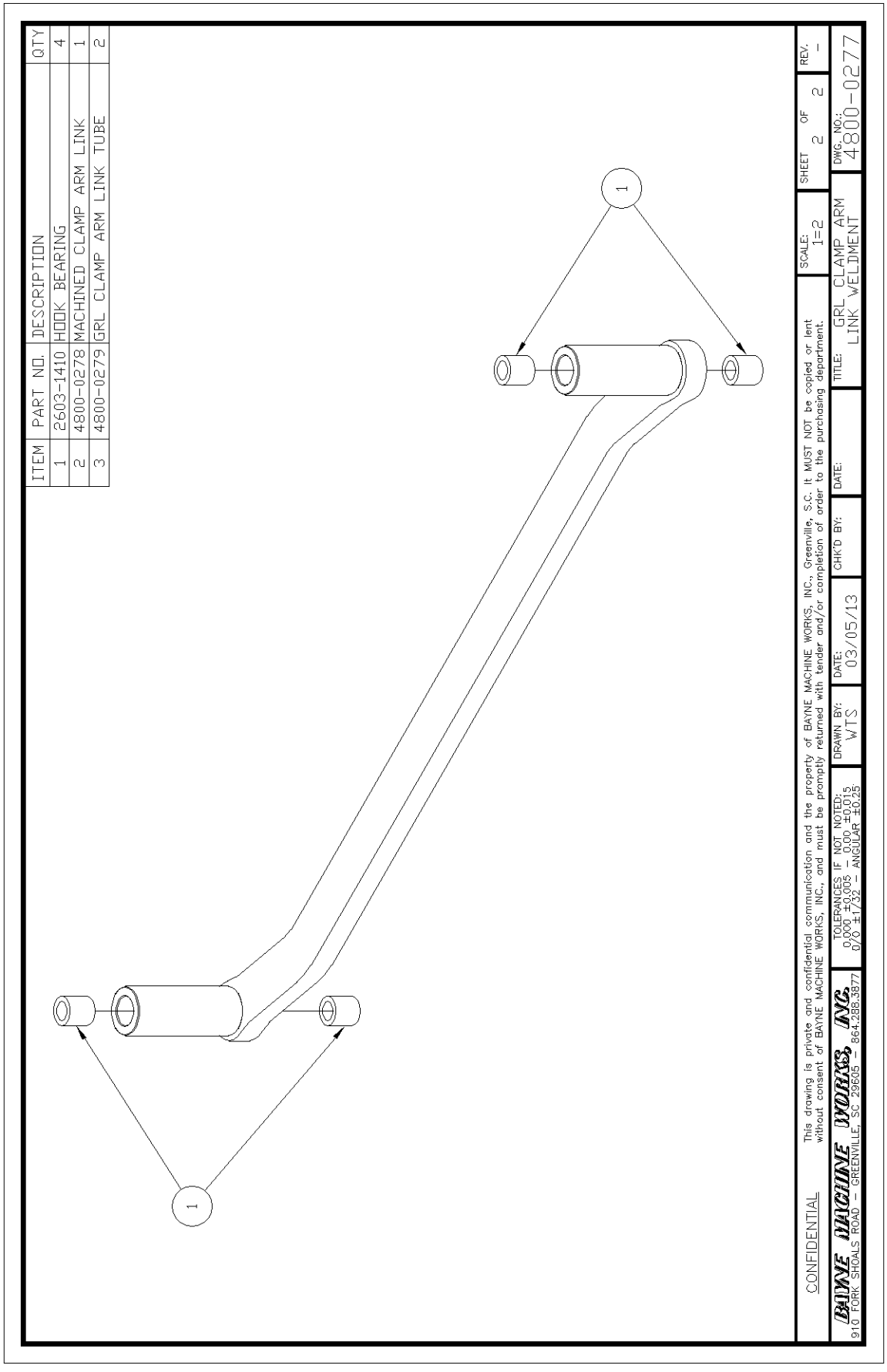


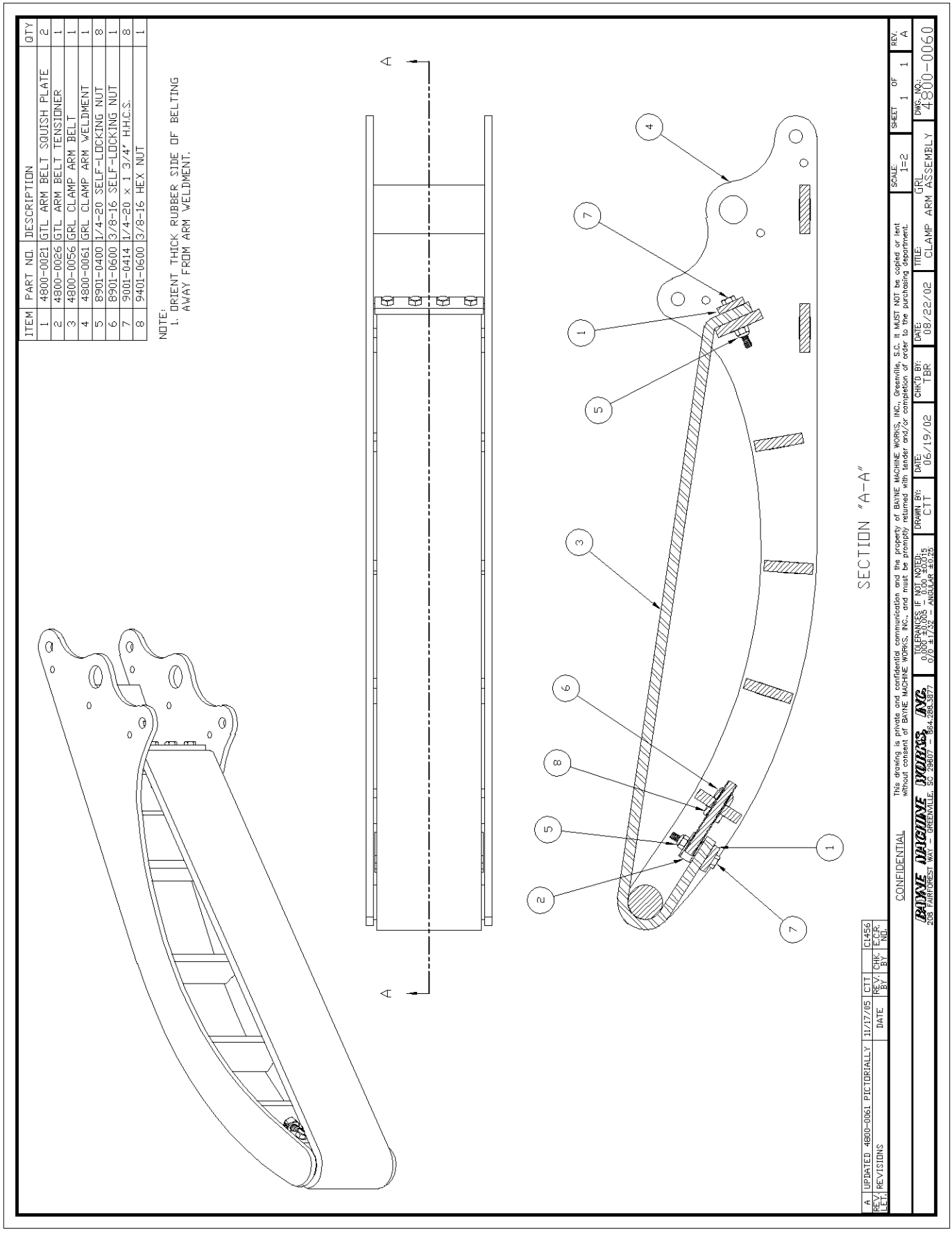


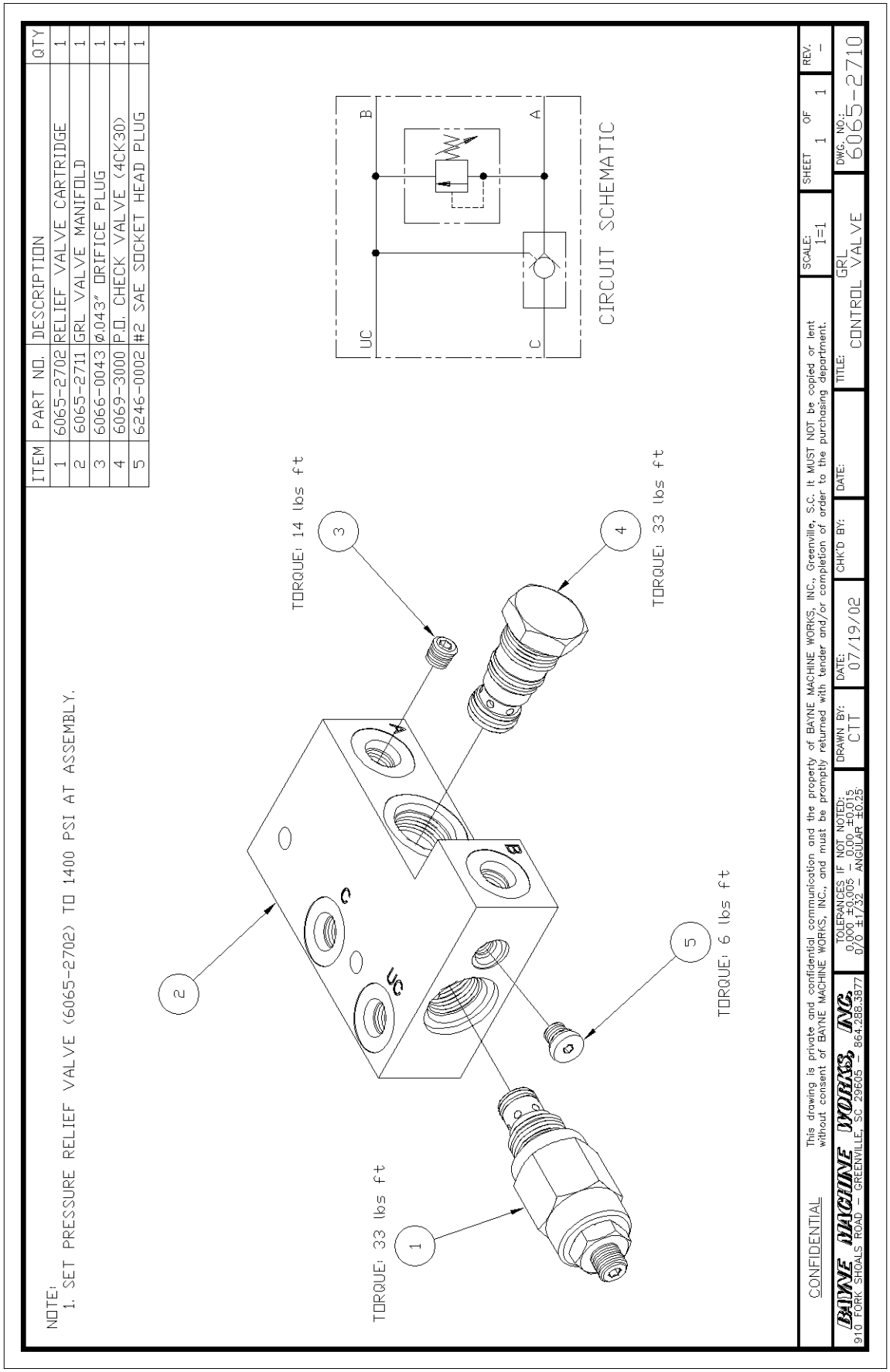


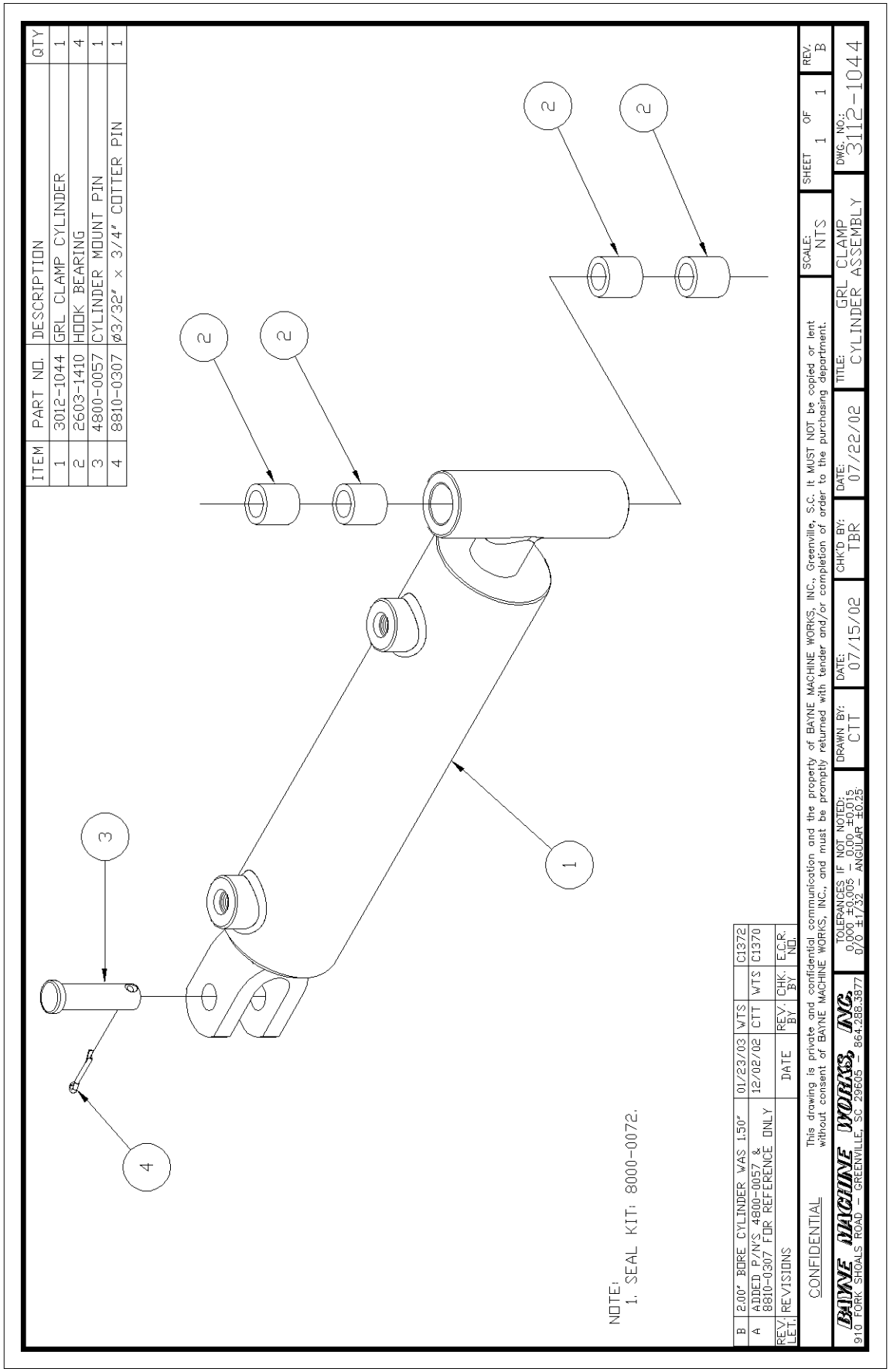
# GRL 1110

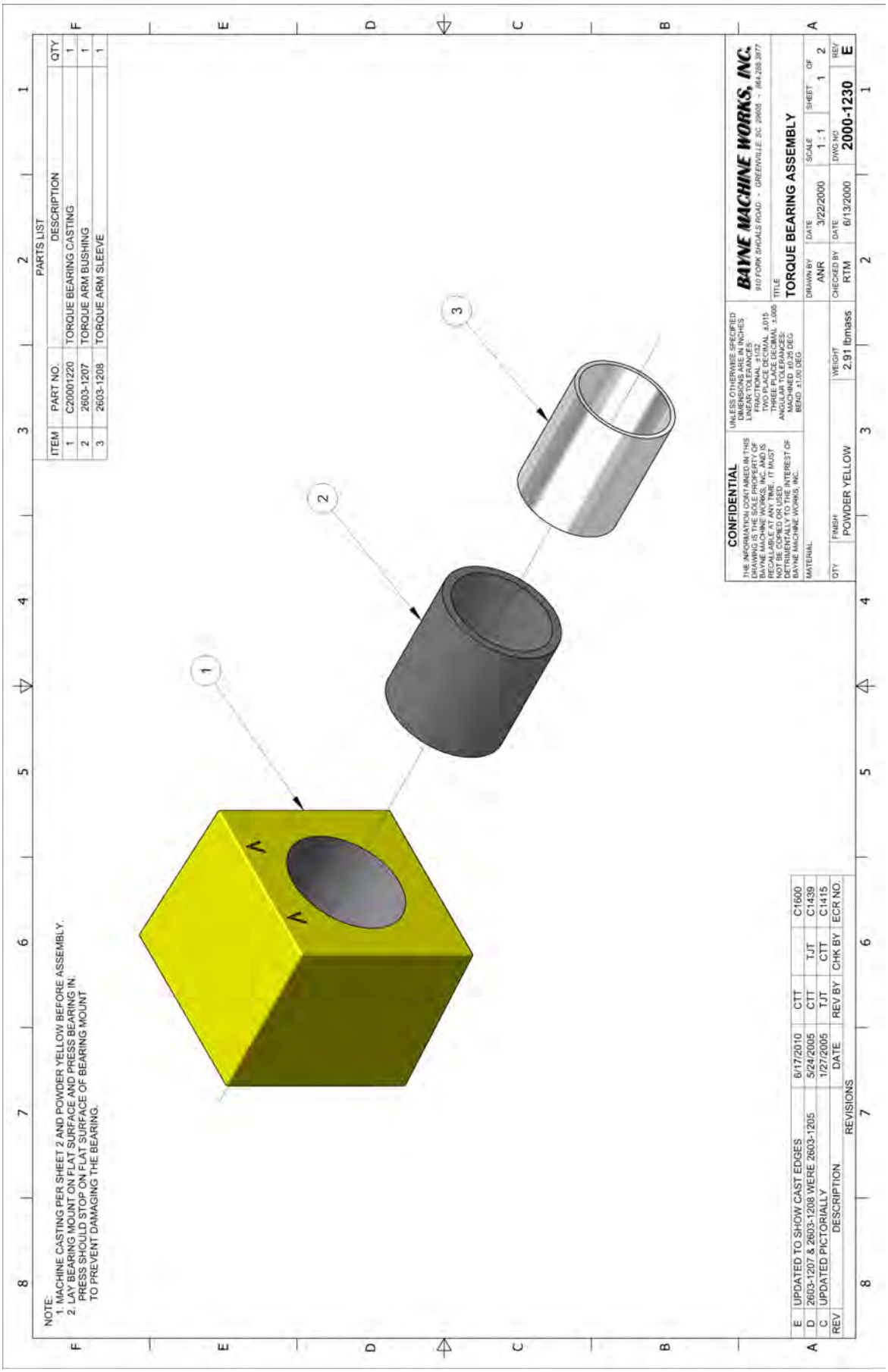
## Appendix A - Assembly Drawings and Part Numbers

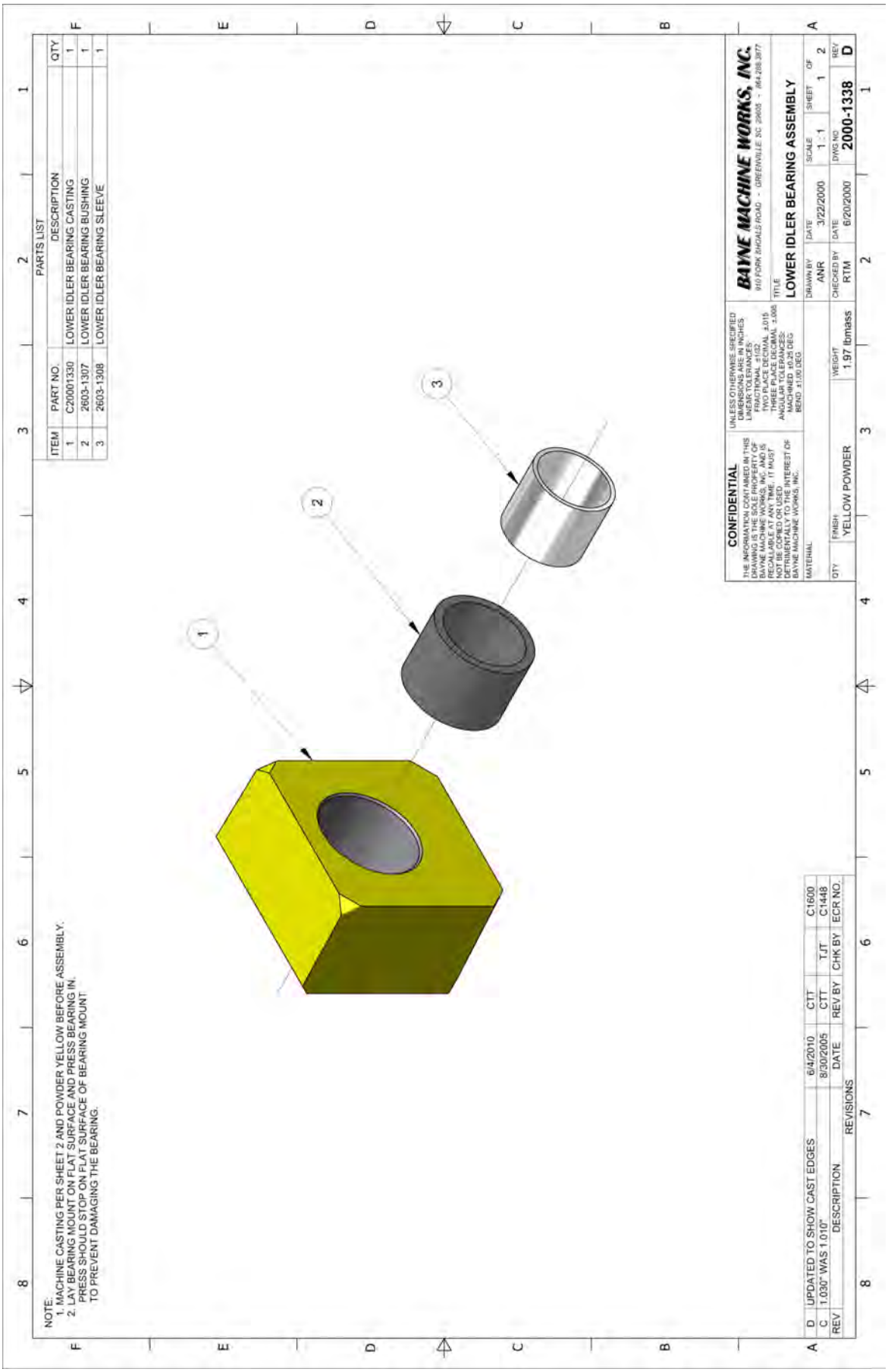


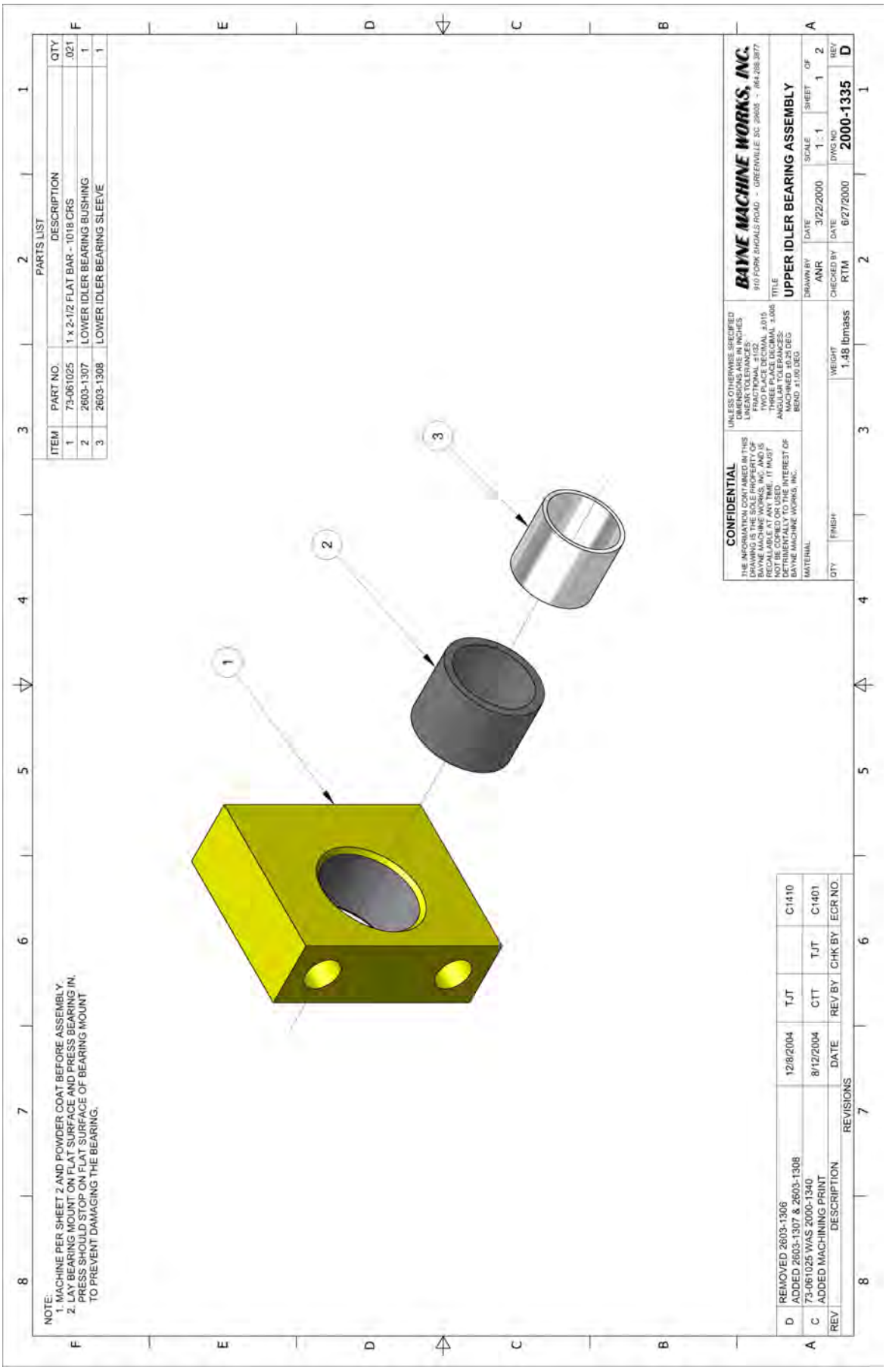


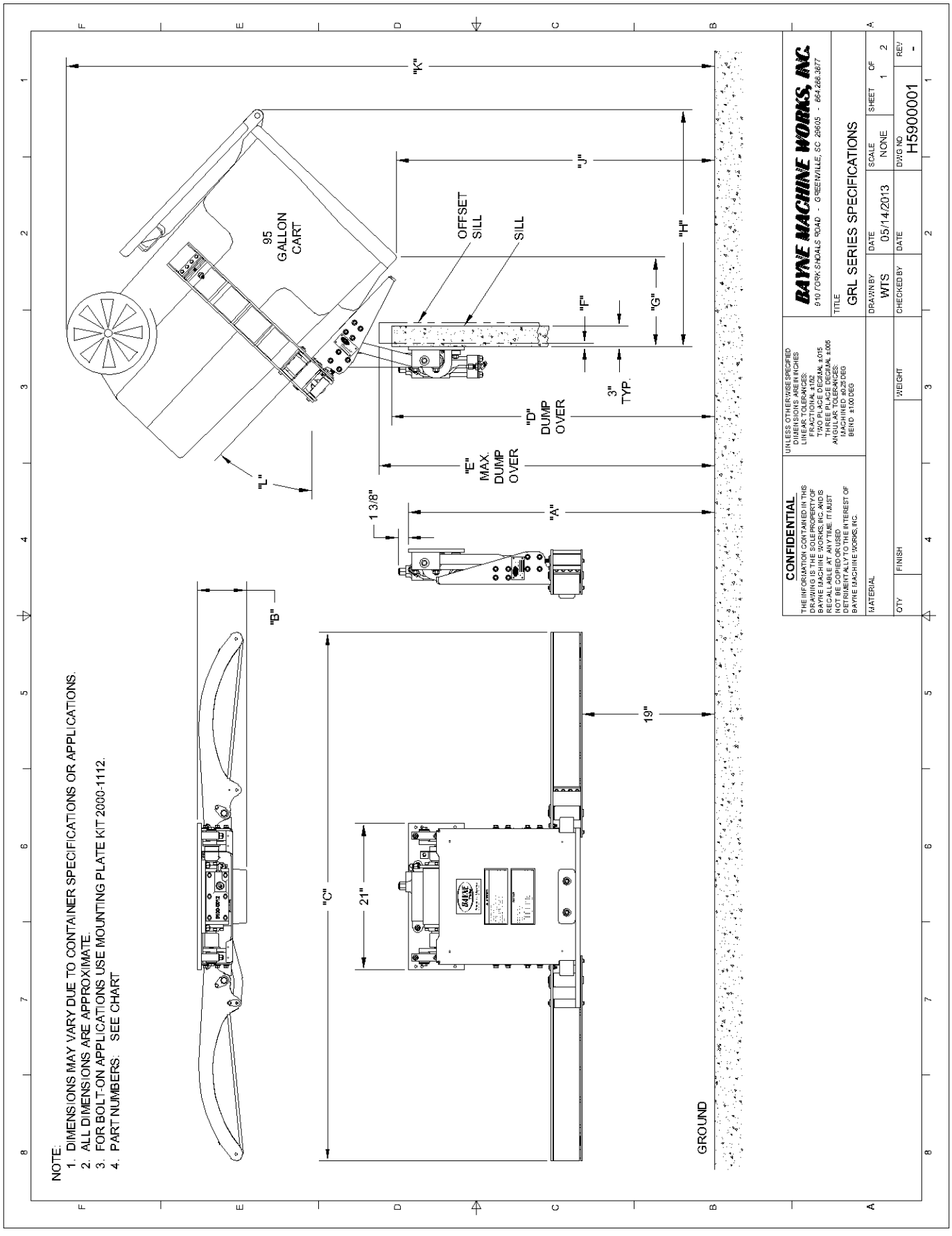








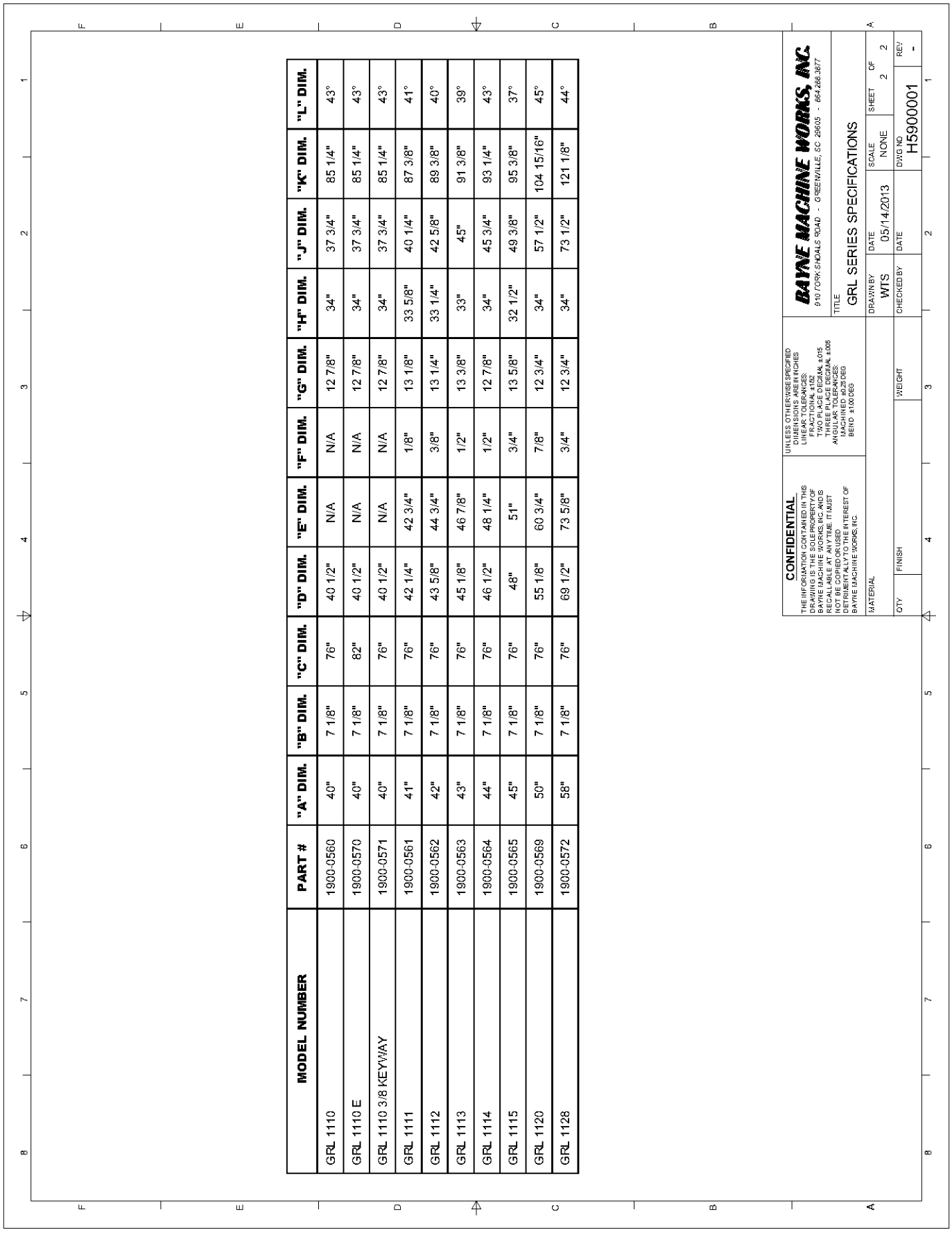


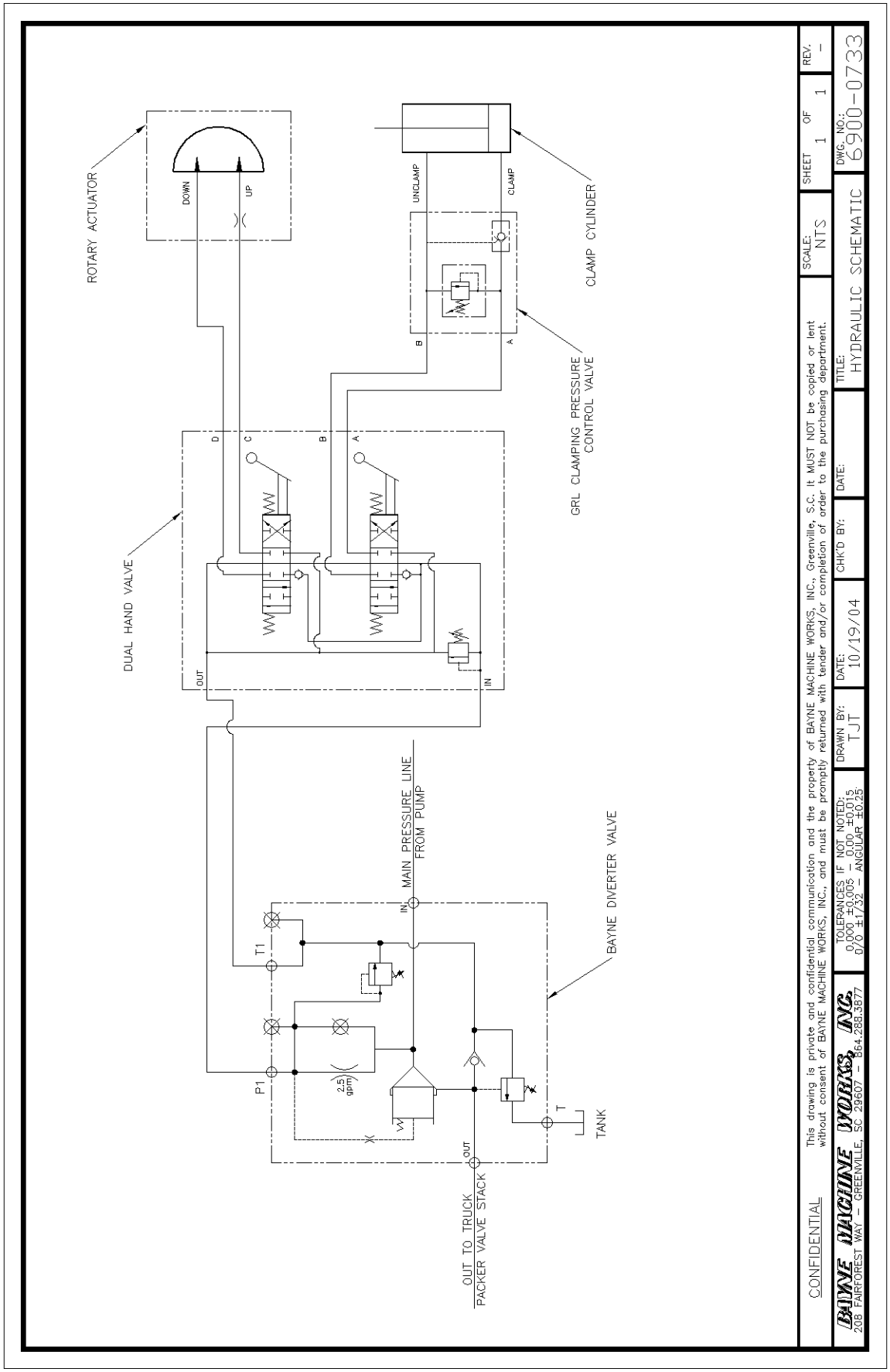


# GRL 1110

## Appendix A - Assembly Drawings and Part Numbers

| MODEL NUMBER | PART # | "A" DIM. | "B" DIM. | "C" DIM. | "D" DIM. | "E" DIM. | "F" DIM. | "G" DIM. | "H" DIM. | "J" DIM. | "K" DIM. | "L" DIM. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GRL 1110 | 1900-0560 | 40" | 7 1/8" | 76" | 40 1/2" | N/A | N/A | 12 7/8" | 34" | 37 3/4" | 85 1/4" | 43° |
| GRL 1110 E | 1900-0570 | 40" | 7 1/8" | 82" | 40 1/2" | N/A | N/A | 12 7/8" | 34" | 37 3/4" | 85 1/4" | 43° |
| GRL 1110 3/8 KEYWAY | 1900-0571 | 40" | 7 1/8" | 76" | 40 1/2" | N/A | N/A | 12 7/8" | 34" | 37 3/4" | 85 1/4" | 43° |
| GRL 1111 | 1900-0561 | 41" | 7 1/8" | 76" | 42 1/4" | 42 3/4" | 1/8" | 13 1/8" | 33 5/8" | 40 1/4" | 87 3/8" | 41° |
| GRL 1112 | 1900-0562 | 42" | 7 1/8" | 76" | 43 5/8" | 44 3/4" | 3/8" | 13 1/4" | 33 1/4" | 42 5/8" | 89 3/8" | 40° |
| GRL 1113 | 1900-0563 | 43" | 7 1/8" | 76" | 45 1/8" | 46 7/8" | 1/2" | 13 3/8" | 33" | 45" | 91 3/8" | 39° |
| GRL 1114 | 1900-0564 | 44" | 7 1/8" | 76" | 46 1/2" | 48 1/4" | 1/2" | 12 7/8" | 34" | 45 3/4" | 93 1/4" | 43° |
| GRL 1115 | 1900-0565 | 45" | 7 1/8" | 76" | 48" | 51" | 3/4" | 13 5/8" | 32 1/2" | 49 3/8" | 95 3/8" | 37° |
| GRL 1120 | 1900-0569 | 50" | 7 1/8" | 76" | 55 1/8" | 60 3/4" | 7/8" | 12 3/4" | 34" | 57 1/2" | 104 15/16" | 45° |
| GRL 1128 | 1900-0572 | 58" | 7 1/8" | 76" | 69 1/2" | 73 5/8" | 3/4" | 12 3/4" | 34" | 73 1/2" | 121 1/8" | 44° |




ROTARY ACTUATOR
DOWN
UP
UNCLAMP
CLAMP
CLAMP CYLINDER
GRL CLAMPING PRESSURE CONTROL VALVE
DUAL HAND VALVE
OUT
IN
MAIN PRESSURE LINE FROM PUMP
BAYNE DIVERTER VALVE
T1
P1
2.5 gpm
T
TANK
OUT TO TRUCK PACKER VALVE STACK
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.
BAYNE MACHINE WORKS, INC.
208 FAIRFOREST WAY – GREENVILLE, SC 29607 – 864.288.3877
TOLERANCES IF NOT NOTED:
0.000 ±0.005 – 0.00 ±0.015
0/0 ±1/32 – ANGULAR ±0.25
DRAWN BY: TJT
DATE: 10/19/04
CHK'D BY:
DATE:
SCALE: NTS
SHEET 1 OF 1
REV. –
TITLE: HYDRAULIC SCHEMATIC
DWG. NO.: 6900-0733

# INTENTIONALLY LEFT BLANK

# GRL 1110
# INDEX



Printed in U.S.A.

Issued August 2016
Revision No: 003


www.baynethinline.com

Customer Care:
800.535.2671

Bayne Premium Lift Systems
4301 Gault Avenue North
Fort Payne, AL 35967