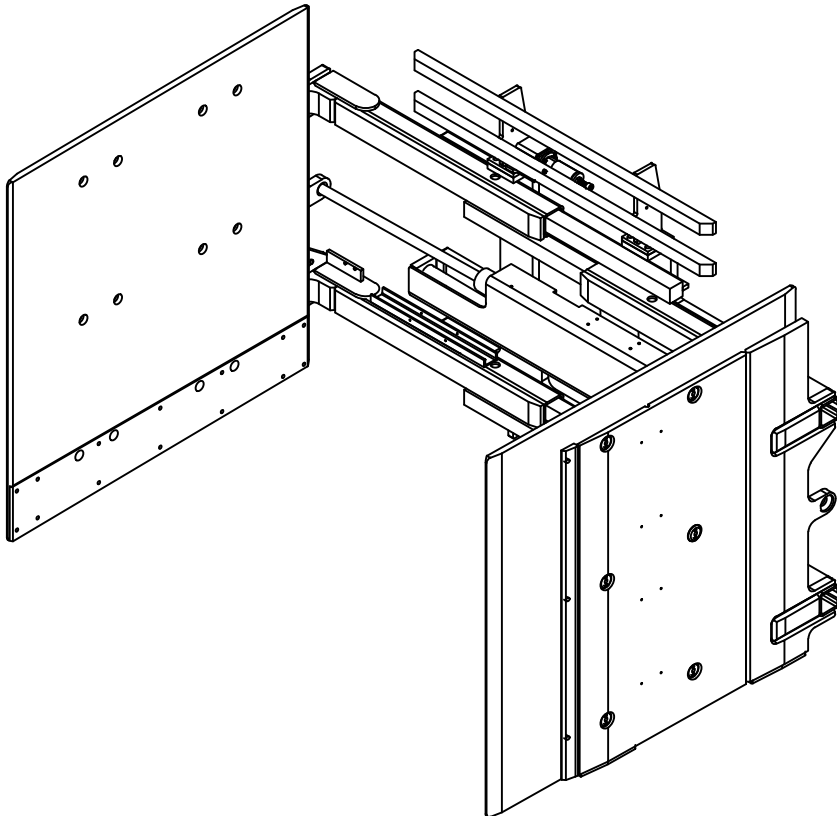




SERVICE MANUAL / PARTS LIST

APPLIANCE CLAMP SOFT TOUCH

MODEL #114047
PATENT NO. 9,630,821
PATENT NO. 10,597,272



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Specifications:

Mounting: Class II
Side Shifting: Internal Side Shifting
Capacity: 2000 lbs at 24"
Pad Size: 48" High x 48" Long
Range: 22.3" - 81.8"
Frame: 46" Wide

R0 - 07/2023

425 Hazel St.
Kelso WA 98626
(800) 248-6079
Fax (360) 578-9934

LIFT TRUCK REQUIREMENTS

CAPACITY

Capacity shown on the clamp's name plate is for the clamp only. The combined truck and clamp capacity is provided by the lift truck manufacturer.

CLAMP HYDRAULICS

Recommended Truck Pressure: 2300 to 2400 PSI (159 to 165 bar).

Hydraulic fluid: petroleum based hydraulic fluid only.

Hydraulic supply group: includes hoses and take-up - one for each function.

Auxiliary valves: 2 function (Side Shift & Clamp) = double auxiliary valve.

Oil Volume Settings:

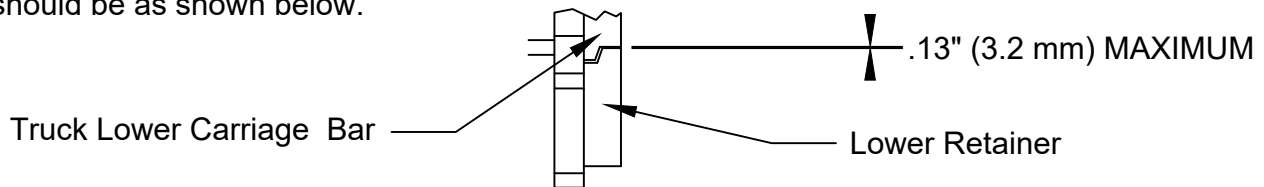
Side Shift = 3 GPM

Clamp Open/Close = 7 GPM

NOTE: Three Position Force Selector must be disabled.

GENERAL INSTALLATION PROCEDURES

1. Make sure that the attachment centering lug is correctly seated in truck carriage center notch.
2. Clearance between the lower retainers that hold the attachment to the truck lower carriage bar should be as shown below.



3. Connect hydraulic jumper hoses from the truck's supply group to the attachment's main manifold.
4. Standing clear of the clamp attachment, cycle the attachment in and out several times. Partially filled hydraulic lines may cause erratic movement.

GENERAL INSPECTION AND MAINTENANCE

1. Check all hydraulic fittings, hoses, cylinders and valves for leakages - repair or replace as required.
2. Check bladder system pressure. If out of operating range adjust as required using the LORON hand pump (PN: 112909) and pure propylene glycol antifreeze mixed 1:1 with water. Check clamp force and adjust.

Time Schedule: Check bladder pressure every day and clamp forces every 3 weeks

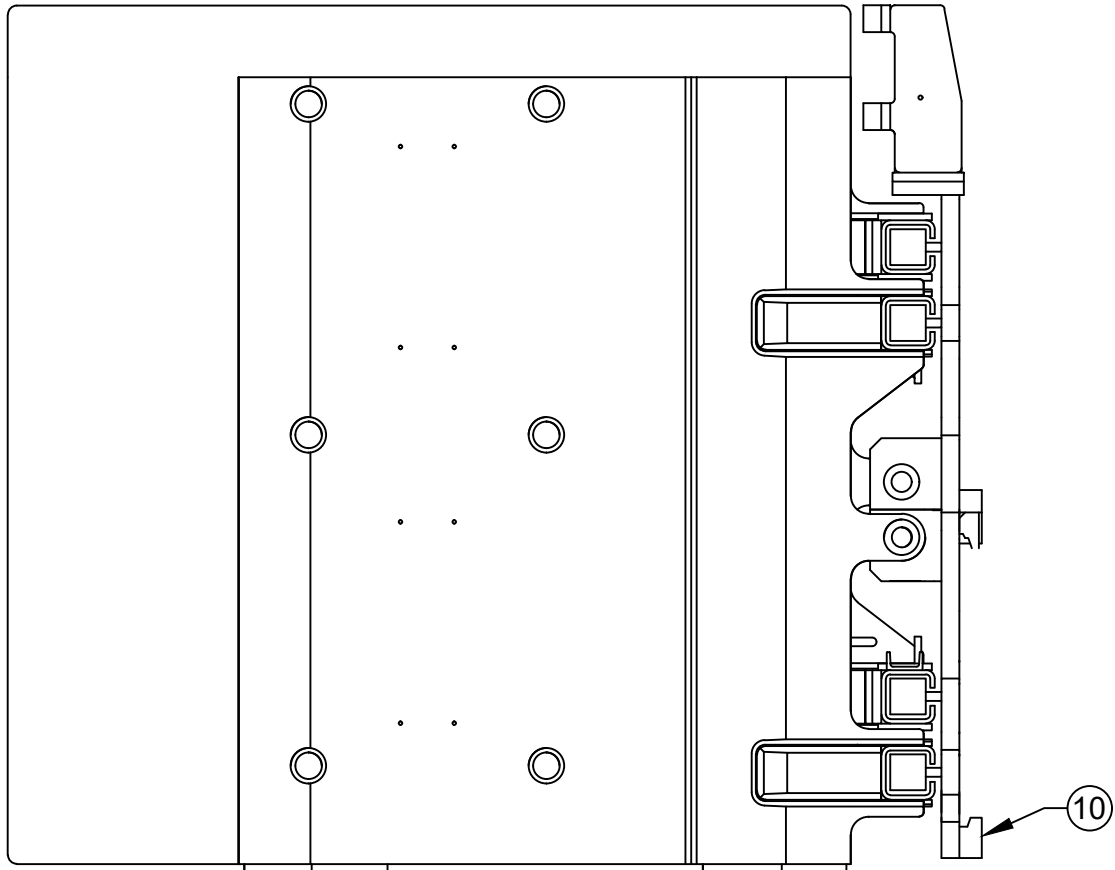
Bladder System Pressure: 4 - 6 PSI

3. All bolts should be checked and tightened as required.
4. Check lower retainer clearance - see item 2 in the General Installation Procedures above.

CLAMP ASSEMBLY - 1

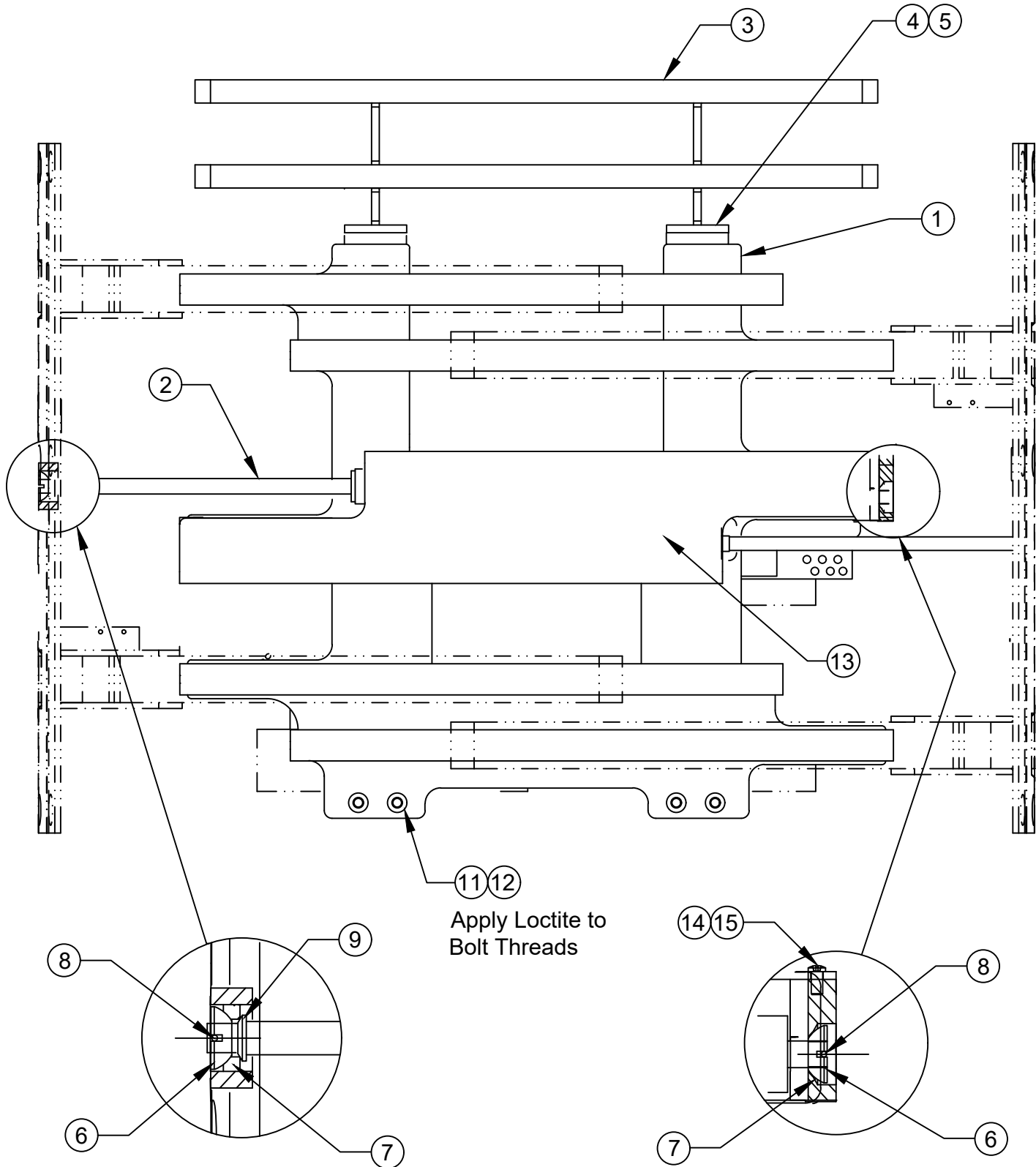
Drawing Reference: 113742.1

| # | QTY | PART # | DESCRIPTION |
|----|-----|------------|---------------------|
| 1 | 1 | 113743 | Frame |
| 2 | 2 | 111714.7 | Cylinder Assembly |
| 3 | 1 | 111439.4 | Load Backrest |
| 4 | 8 | 1C.0820 | Bolt |
| 5 | 8 | 4E.08 | Lock Washer |
| 6 | 4 | 111631 | Spherical Bearing |
| 7 | 4 | 100029.301 | O-Ring |
| 8 | 4 | 100574.83 | Cotter pin |
| 9 | 2 | 111380 | Cylinder Rod Washer |
| 10 | 2 | 112990 | Lower Retainer |
| 11 | 4 | 11G.1028 | Bolt |
| 12 | 4 | 16E.10 | Lock Washer |
| 13 | 1 | 113734 | Cylinder Guard |
| 14 | 4 | 25GN.0612 | Nylok Bolt |
| 15 | 4 | 109528 | Nord-Lock Washer |



CLAMP ASSEMBLY - 2

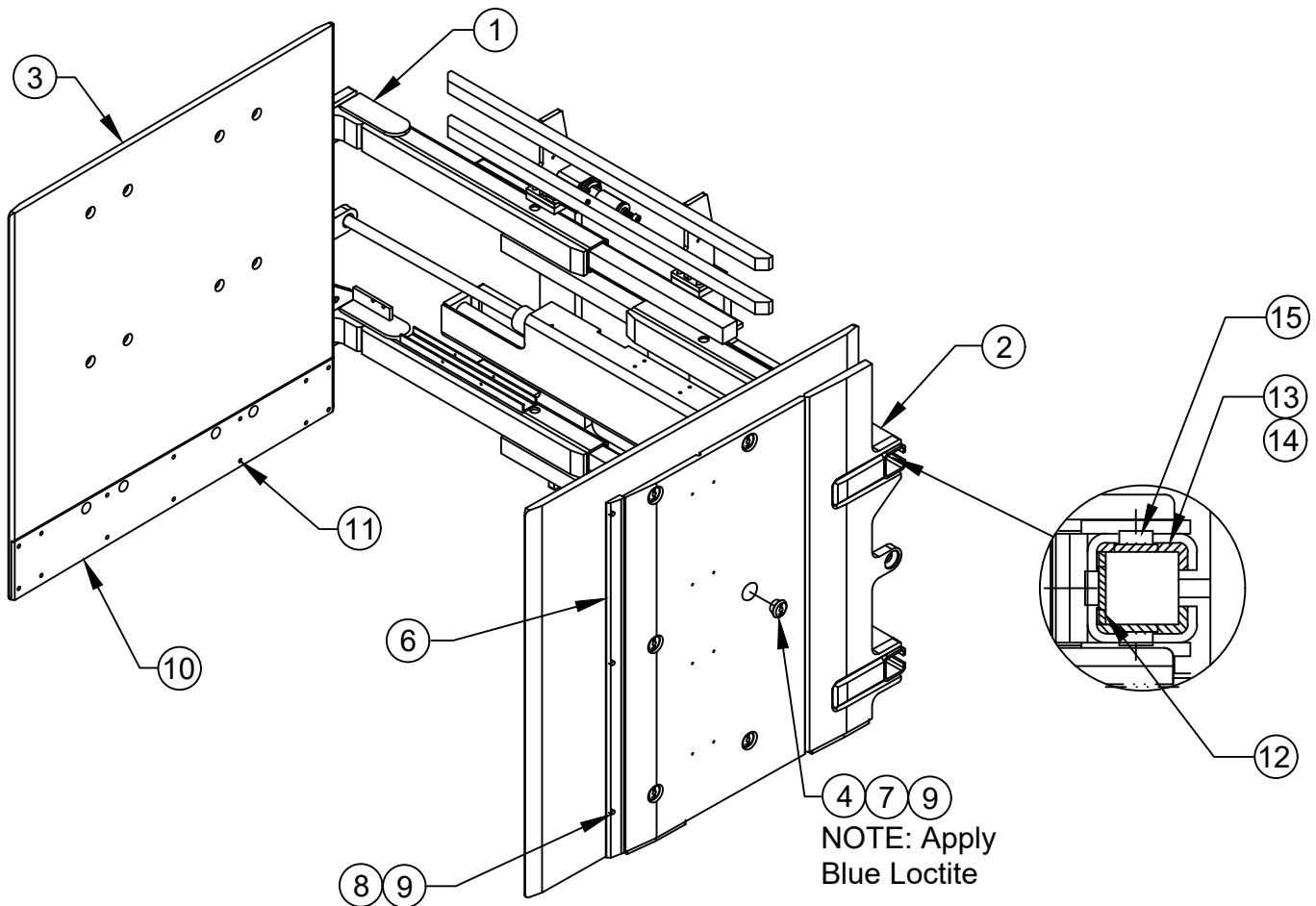
Drawing Reference: 113742.1



ARM GROUP ASSEMBLY

Drawing Reference: 114180.1

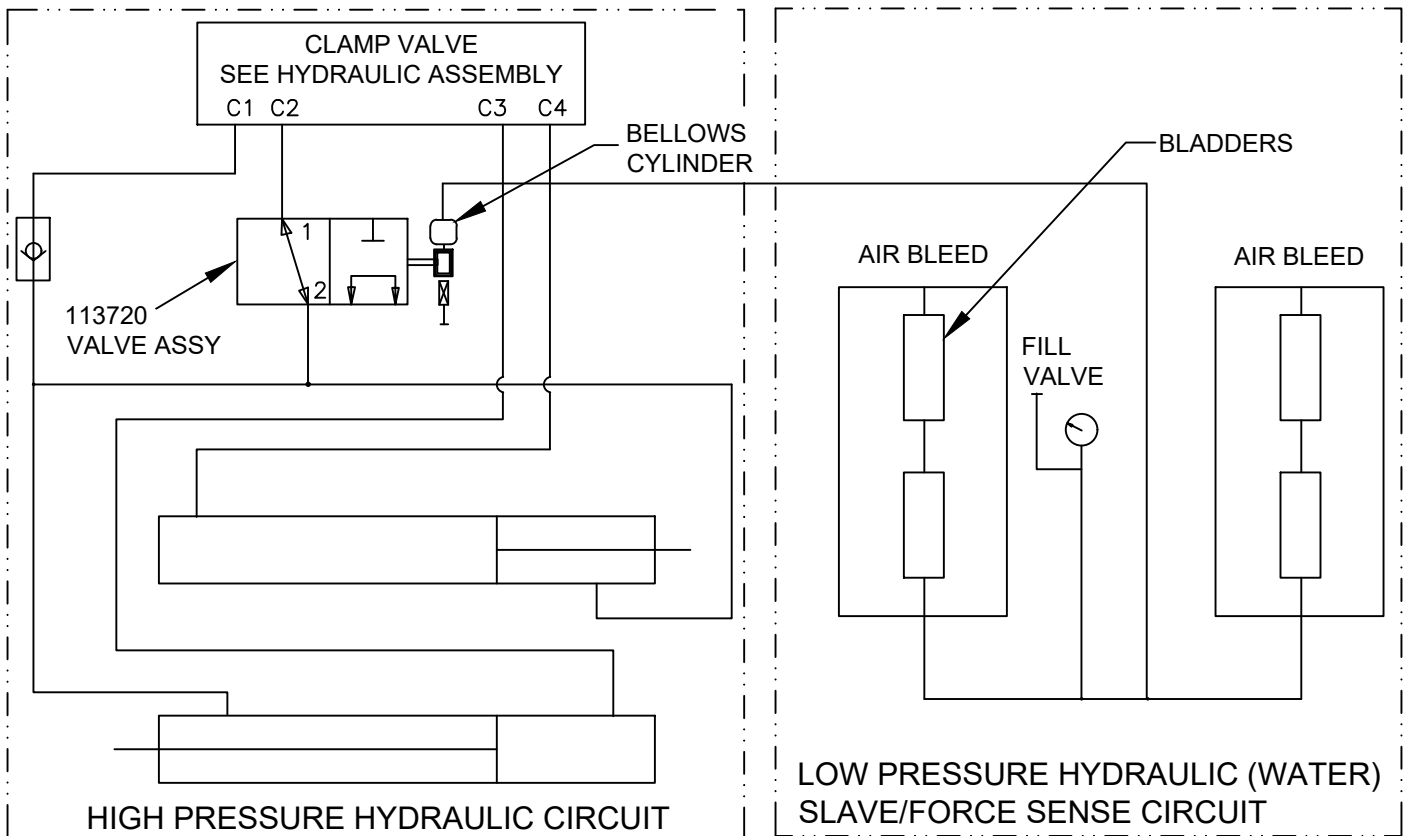
| # | QTY | PART # | DESCRIPTION |
|----|-----|----------|-------------------------|
| 1 | 1 | 113701 | Right Hand Arm Weldment |
| 2 | 1 | 113706 | Left Hand Arm Weldment |
| 3 | 2 | 114181 | Upper Contact Pad |
| 4 | 12 | 111031 | Retaining Nut |
| 5 | 1 | 113717 | Right Hand Tip Plate |
| 6 | 1 | 113718 | Left Hand Tip Plate |
| 7 | 12 | 1C.0820 | Bolt |
| 8 | 6 | 1C.0812 | Bolt |
| 9 | 18 | 108088 | Spring Washer |
| 10 | 2 | 114183 | Lower Contact Pad |
| 11 | 28 | 25G.0610 | Bolt |
| 12 | 4 | 114576.1 | Flat Slide |
| 13 | 8 | 111621.1 | Angle Slide |
| 14 | 8 | 109212.4 | Shim |
| 15 | 12 | 111619 | Slide Button |



FLOATING PAD ASSEMBLY - 1

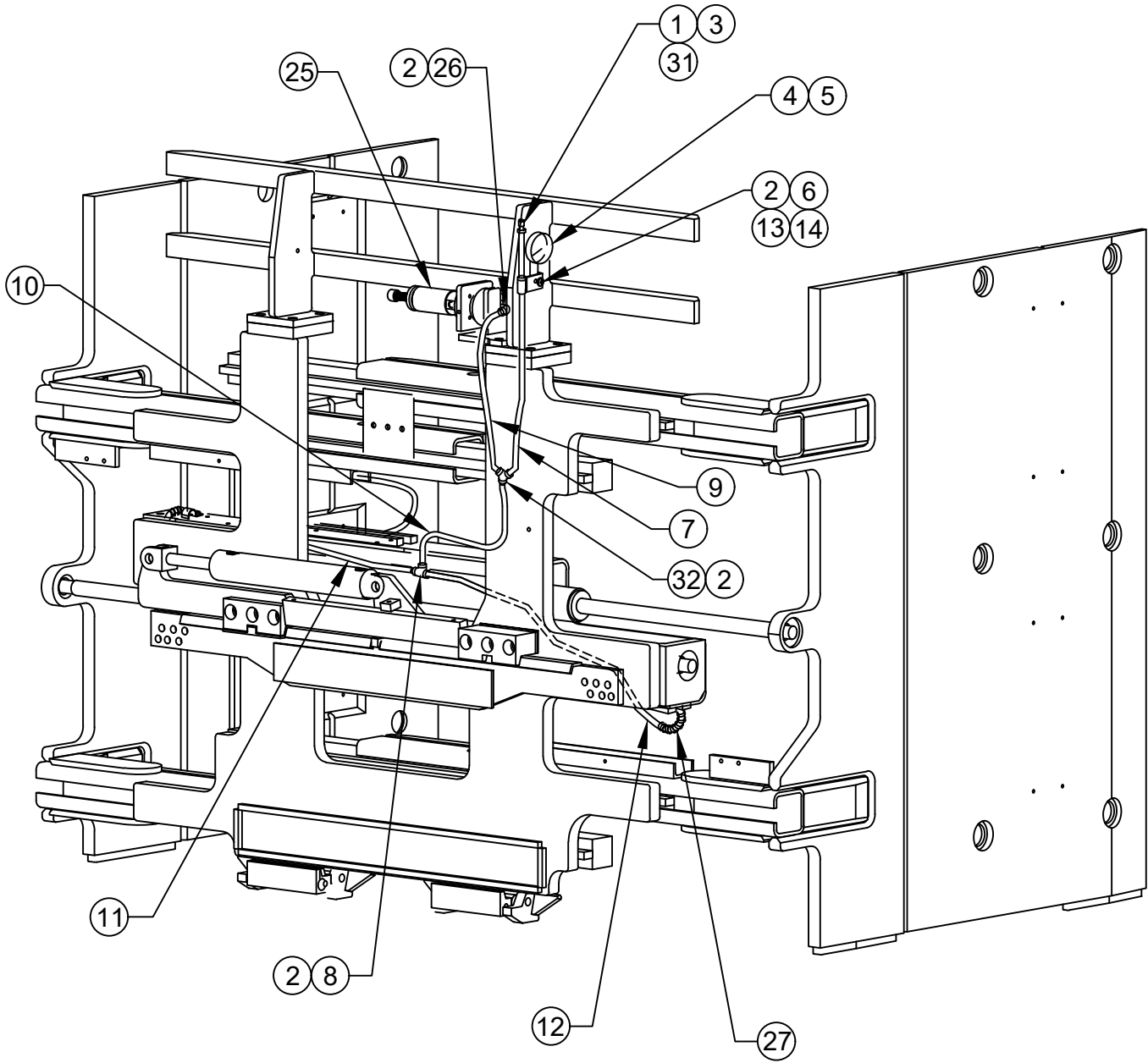
Drawing Reference: 113740.1

| # | QTY | PART # | DESCRIPTION | # | QTY | PART # | DESCRIPTION |
|----|-----|-------------|-------------------|----|-----|-------------|------------------------------|
| 1 | 3 | 111350 | Air Tank Valve | 17 | 2 | 113026.0360 | Cover Hose |
| 2 | 9 | 111295 | Hose Clamp | 18 | 2 | 111290.0087 | Hose |
| 3 | 1 | 111290.0025 | Hose | 19 | 16 | 9G.0414 | Bolt |
| 4 | 1 | 111296 | Pressure Gauge | 20 | 8 | 111471 | Clamp Bar |
| 5 | 1 | 111543.01 | 90° Elbow Fitting | 21 | 8 | 109256 | Hose Clamp |
| 6 | 1 | 111292 | Branch Tee | 22 | 8 | 25GN.0508 | Bolt |
| 7 | 1 | 111290.0075 | Hose | 23 | 4 | 111128 | Hose Guide |
| 8 | 1 | 111293 | Run Tee | 24 | 12 | 1C.0512 | Bolt |
| 9 | 1 | 111290.0057 | Hose | 25 | 1 | 113720 | Directional Valve Assy. Ref. |
| 10 | 1 | 111290.0165 | Hose | 26 | 1 | 111289 | Pipe Elbow |
| 11 | 1 | 111290.1170 | Hose | 27 | 2 | 111510 | Spring |
| 12 | 1 | 111290.0985 | Hose | 28 | 16 | 111878 | 19 Gauge Wire Tie |
| 13 | 1 | 111299 | Hose Clip | 29 | 2 | 113416 | Extrusion w/ Holes |
| 14 | 1 | 25G.0520 | Bolt | 30 | 8 | 3G.0808 | Bolt |
| 15 | 4 | 111030 | Bladder | 31 | 3 | 111653 | Valve Cap |
| 16 | 2 | 111290.0020 | Hose | 32 | 1 | 113970 | Wye |



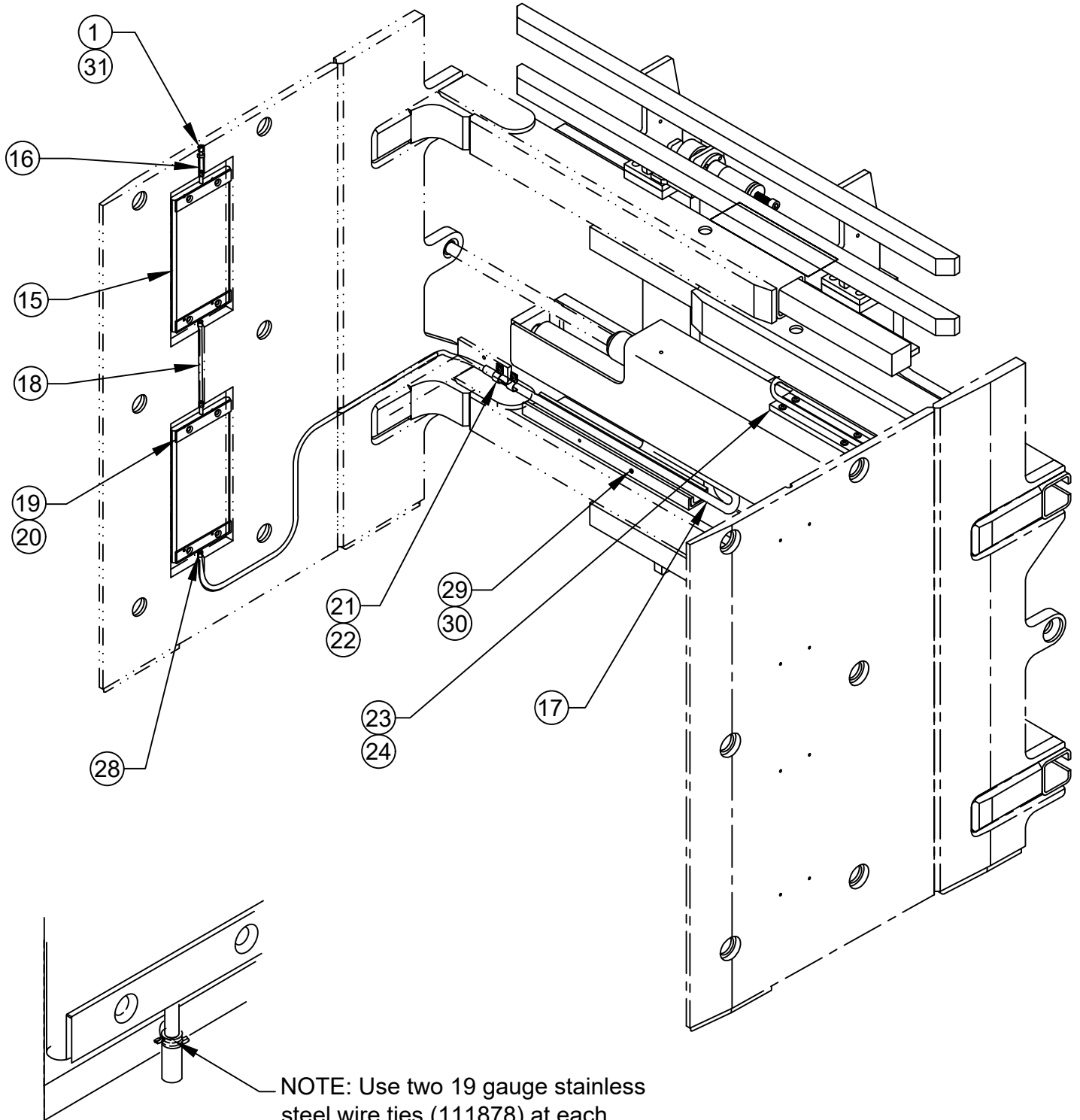
FLOATING PAD ASSEMBLY - 2

Drawing Reference: 113740.1



FLOATING PAD ASSEMBLY - 3

Drawing Reference: 113740.1

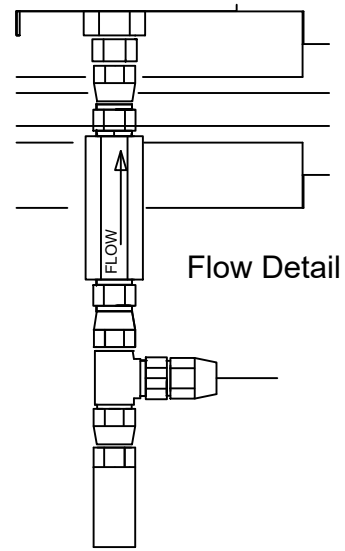
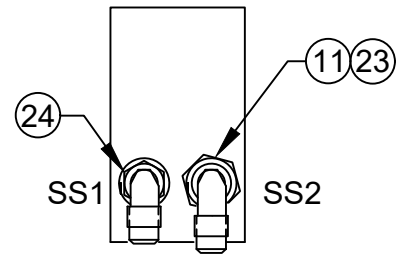
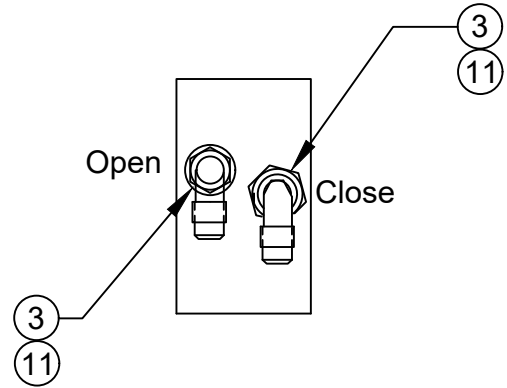


NOTE: Use two 19 gauge stainless steel wire ties (111878) at each bladder connection. Twist to tighten and clip to reduce ends.

HYDRAULIC ASSEMBLY - 1

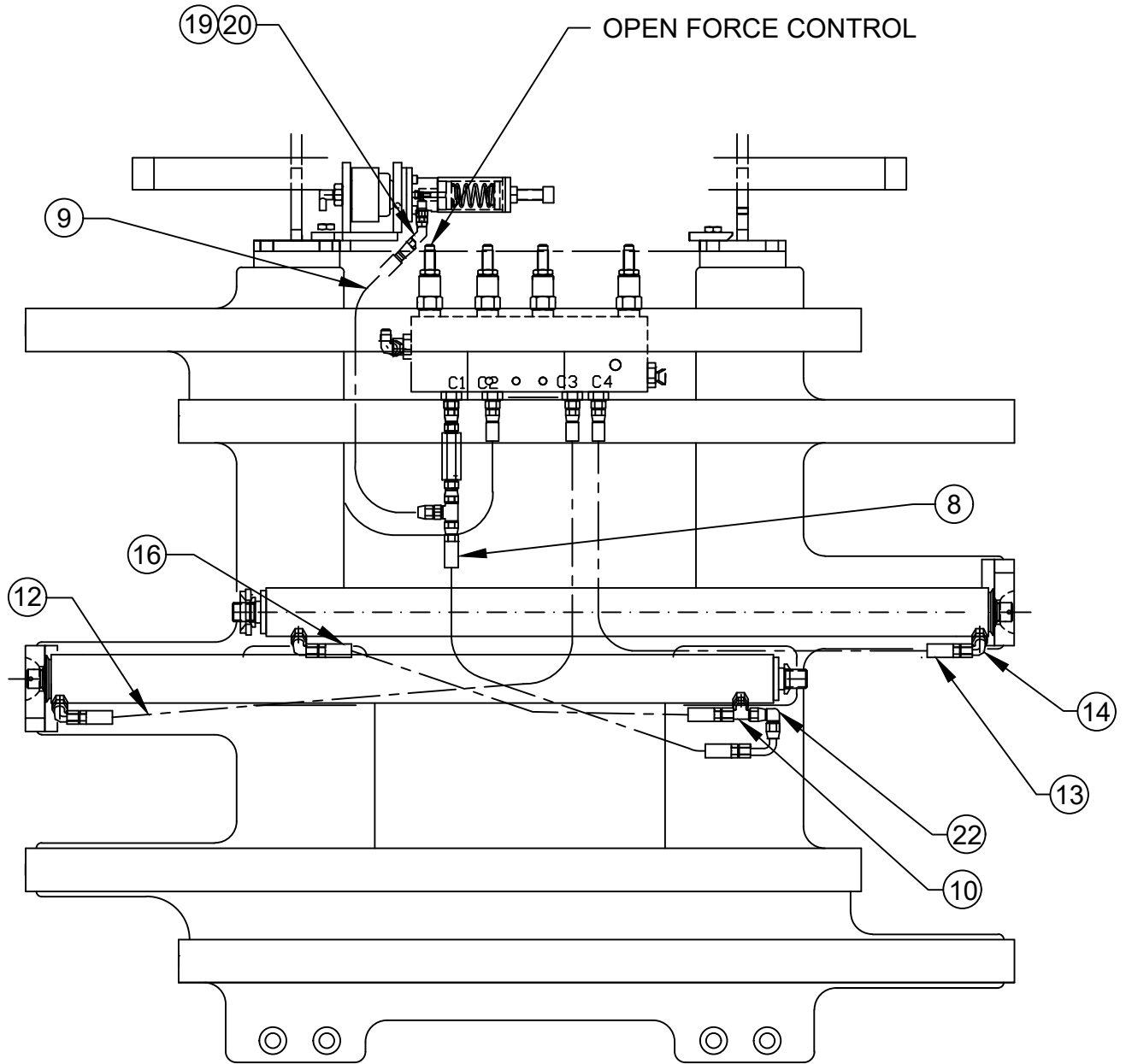
Drawing Reference: 113888

| # | QTY | PART # | DESCRIPTION |
|----|-----|-------------|-----------------------------|
| 1 | 1 | 111193 | Clamp Valve Assembly |
| 2 | 2 | 25G.0524 | Bolt |
| 3 | 6 | 100676.05 | Straight Thread Adapter |
| 4 | 2 | 111518.06 | 90° Elbow 04 Pipe - 06 JIC |
| 5 | 1 | 113720 | Directional Valve Assembly |
| 6 | 1 | 100227.05 | Union Tee Fitting |
| 7 | 1 | 111123 | In-line Check Vavle |
| 8 | 1 | 103411.0210 | Hose |
| 9 | 1 | 102702.0173 | Hose |
| 10 | 1 | 100678.05 | Tee Branch Fitting |
| 11 | 3 | 100238.05 | 45° Swivel Fitting |
| 12 | 1 | 100674.0340 | Hose |
| 13 | 1 | 100674.0245 | Hose |
| 14 | 3 | 100095.05 | 90° Elbow Fitting |
| 15 | 1 | 102702.0310 | Hose |
| 16 | 1 | 100674.0215 | Hose |
| 17 | 1 | 113725 | Valve Guard |
| 18 | 2 | 25G.0412 | Bolt |
| 19 | 1 | 100676.03 | Straight Fitting |
| 20 | 1 | 100238.03 | 45° Swivel Fitting |
| 21 | 1 | 100095.03 | 90° Fitting |
| 22 | 1 | 100440.05 | 90° Swivel Fitting |
| 23 | 1 | 109626.1 | Straight Restrictor Fitting |
| 24 | 1 | 100222 | 90° Restrictor Fitting |



HYDRAULIC ASSEMBLY - 2

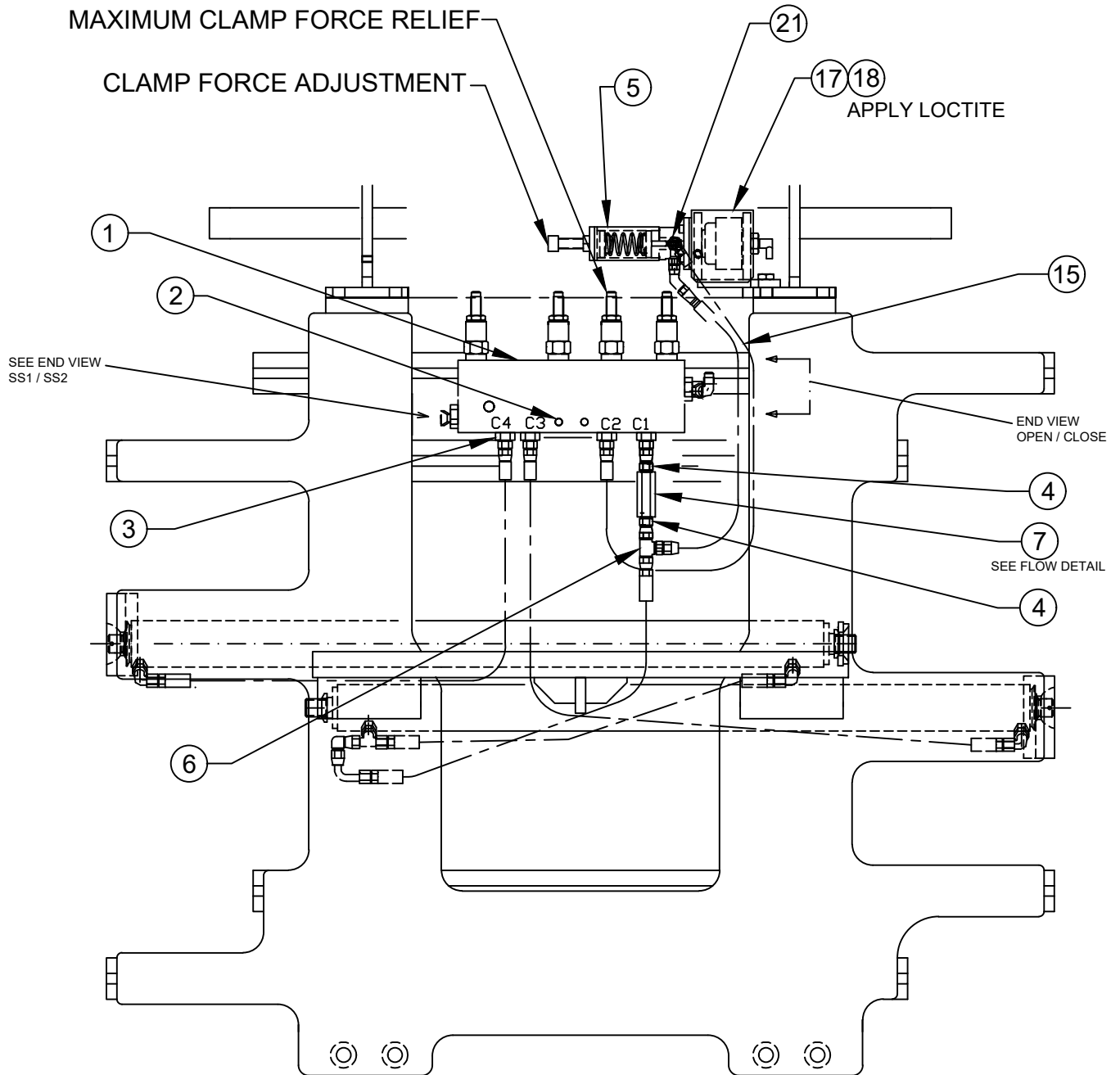
Drawing Reference: 113888



FRONT VIEW

HYDRAULIC ASSEMBLY - 3

Drawing Reference: 113888



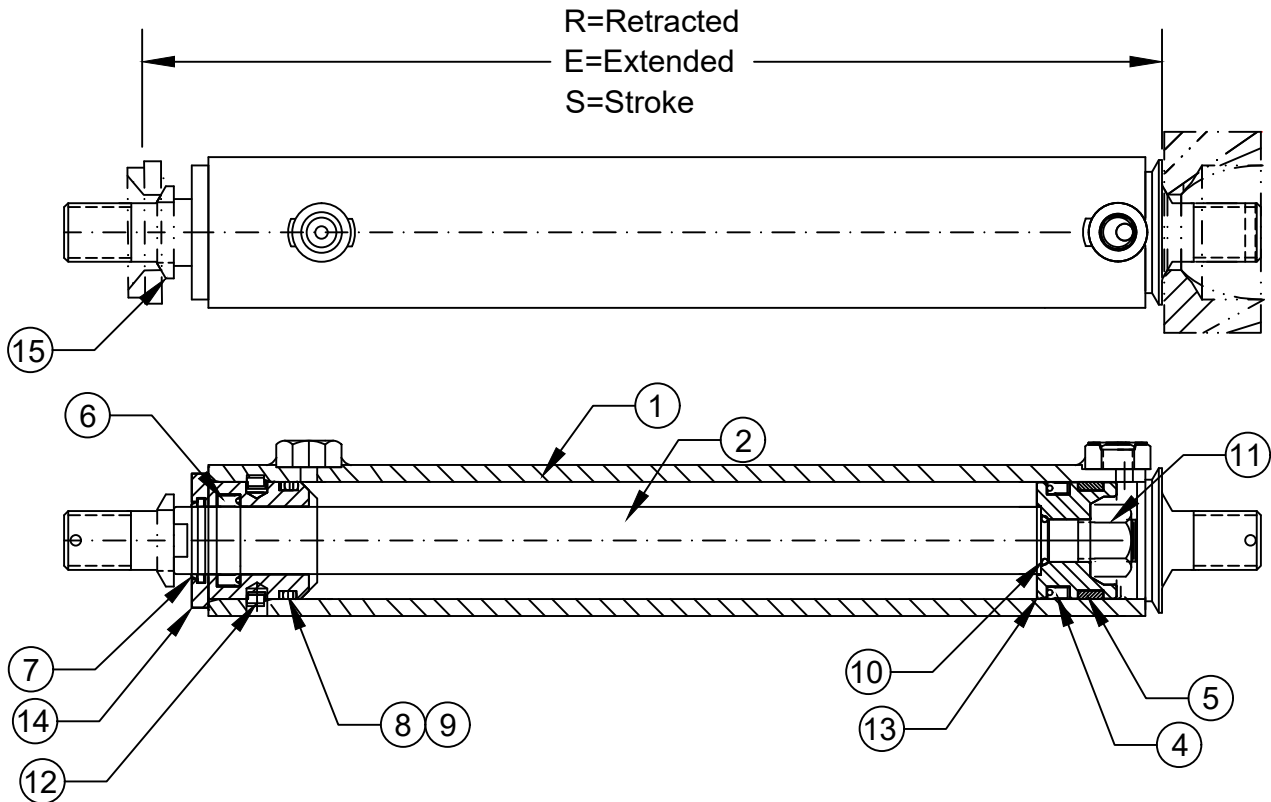
BACK VIEW

CYLINDER ASSEMBLY

Drawing Reference: 111714.7

| Part # | R | E | S | NET STROKE |
|----------|-------|-------|-------|------------|
| 111714.7 | 34.36 | 64.72 | 30.36 | 30.36 |

| # | QTY | PART # | DESCRIPTION | 8 | 1 | 100029.2 | O-Ring |
|---|-----|----------|-----------------------|----|---|------------|---------------------|
| 1 | 1 | 111715.6 | Tube Weldment | 9 | 1 | 100028.2 | Back-Up Ring |
| 2 | 1 | 111717.6 | Rod | 10 | 1 | 100029.201 | O-Ring |
| 3 | 1 | 111482 | Seal Kit (Items 4-10) | 11 | 1 | 27D.10 | Nut Self Locking |
| 4 | 1 | 114206 | Piston Seal | 12 | 1 | 100027.7 | Lock Wire |
| 5 | 1 | 102099.1 | Wear Ring | 13 | 1 | 111374 | Piston |
| 6 | 1 | 112905 | Rod Seal | 14 | 1 | 111373 | Gland |
| 7 | 1 | 102098.5 | Rod Wiper | 15 | 1 | 111380 | REF Washer Cylinder |



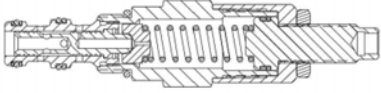
Cylinder Service

- Prior to assembly lubricate seals, cylinder bore and rod with STP.
- Inspect all parts for scratches, nicks and gouges - replace all damaged components.
- Inspect cylinder bore and rod for scoring - replaced if scored.
- Avoid damage to seal grooves - use a dull screwdriver for seal removal.
- Torque piston nut to 100 FT-LBS. (13.8kg-m).

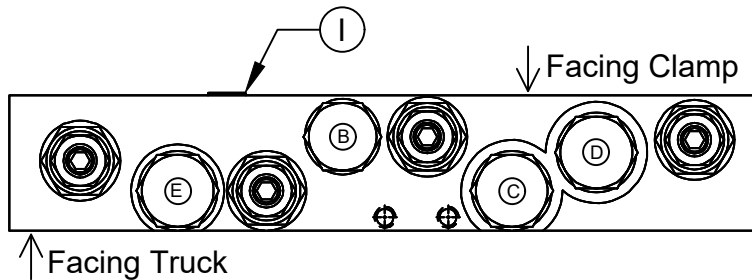
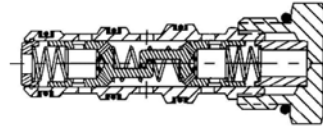
CONTROL VALVE

Drawing Reference: 111193

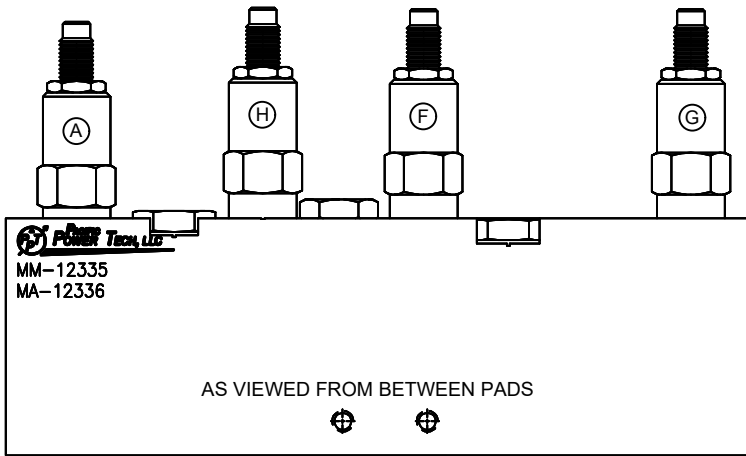
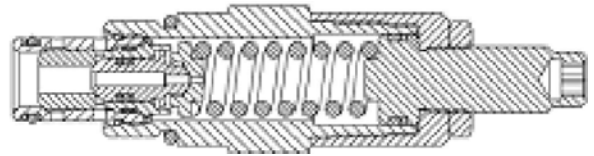
(A) **111627** Pressure Reduce/Relief Valve
Torque 15-20 FT/LBS
Seal Kit 112065



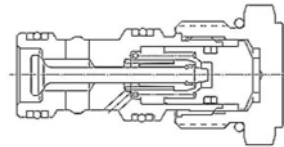
(B) **112887** Flow Divider
Torque 10-12 FT/LBS
Seal Kit 104711



(H)(G) **112406.1** & (F) **112406.2** Relief Valve
Torque 20-25 FT/LBS
Seal Kit 112064



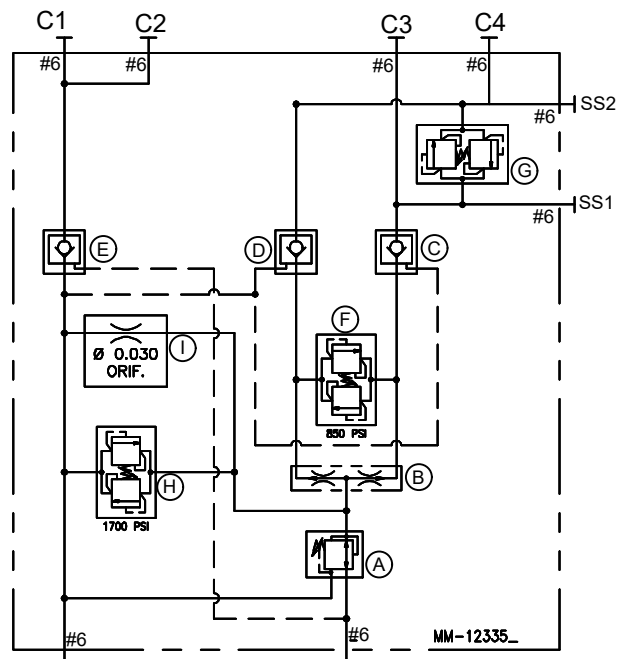
(C)(D)(E) **111244** Check Valve
Torque 30-35 FT/LBS
Seal Kit 112059



NOTE: Lubricate threads & seals prior to assembly.

| QTY | PART # | DESCRIPTION |
|-----|----------------|------------------------|
| 1 | 111627 | Pressure Reducer Valve |
| 1 | 103813 | Flow Divider |
| 2 | 112406.1 | Relief Cartridge |
| 1 | 112406.2 | Relief Cartridge |
| 1 | 00.030 ORIFICE | 1/16" NPT Orifice Plug |
| 3 | 111244 | Check Valve |

HYDRAULIC SCHEMATIC



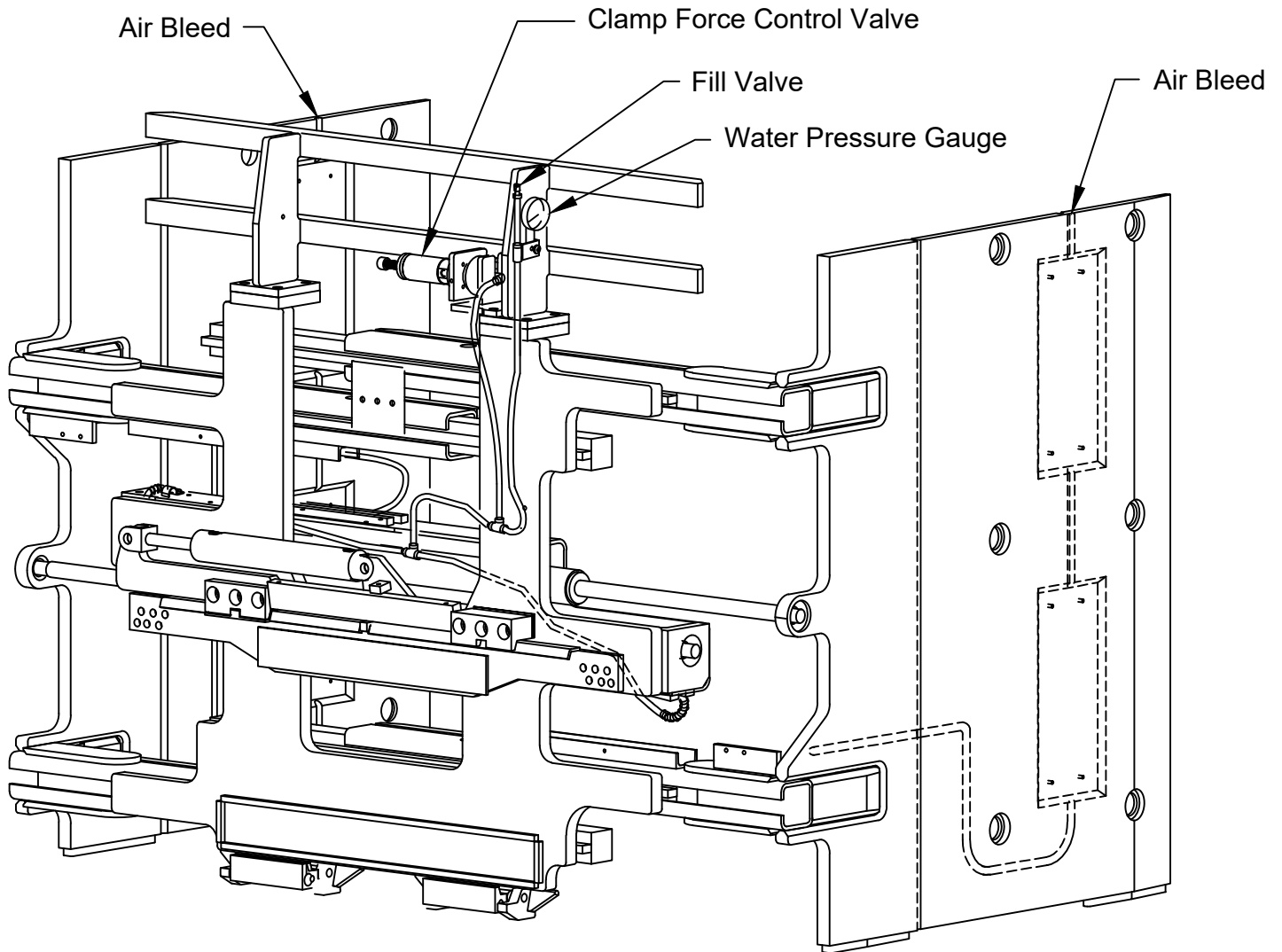
CLAMP ADJUSTMENTS

CLAMP FORCE CHECK/ADJUSTMENT

1. Check water pressure. If out of operating range fill with LORON hand pump # 112909. NOTE: Use pure Propylene Glycol Antifreeze mixed 1 to 1 with water.
2. Check the clamp force. If out of the acceptable force range, adjust with adjustment bolt of the clamp force control valve (see pg 10).

OPEN FORCE CHECK/ADJUSTMENT

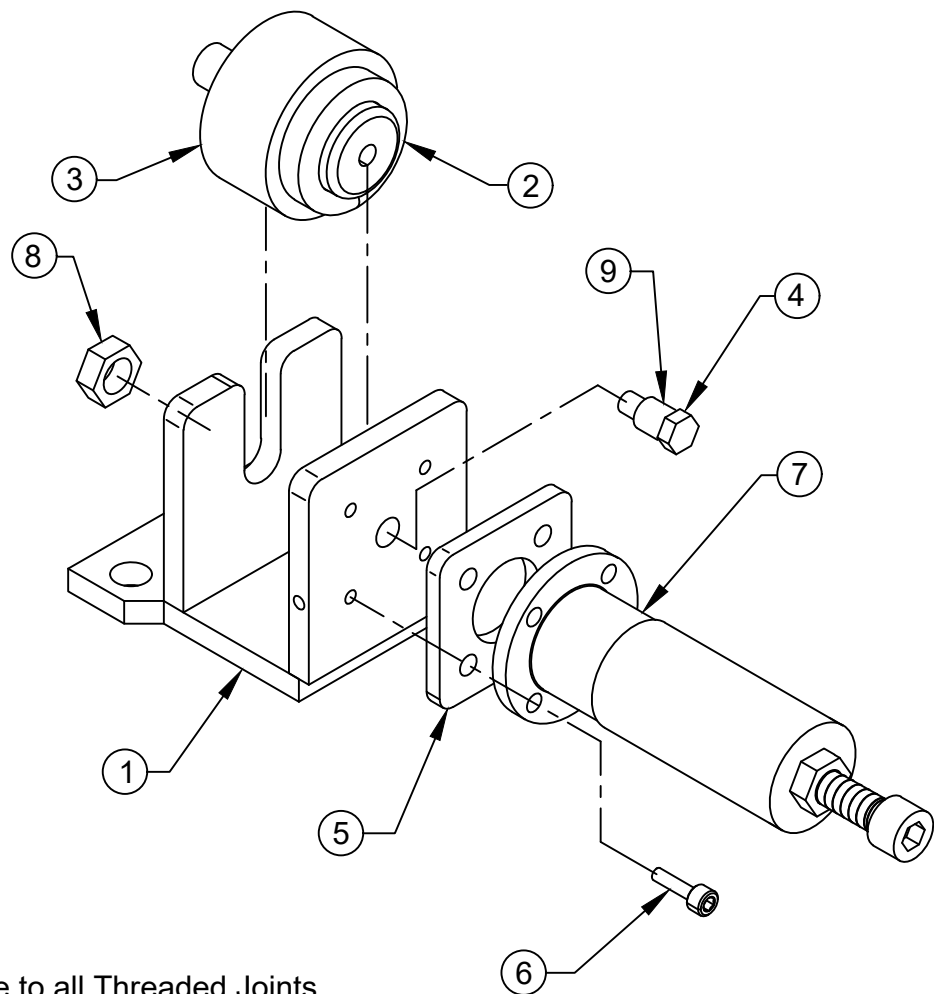
Open the arms against a force fixture and adjust for desired maximum force.



CLAMP FORCE CONTROL VALVE

Drawing Reference: 113720

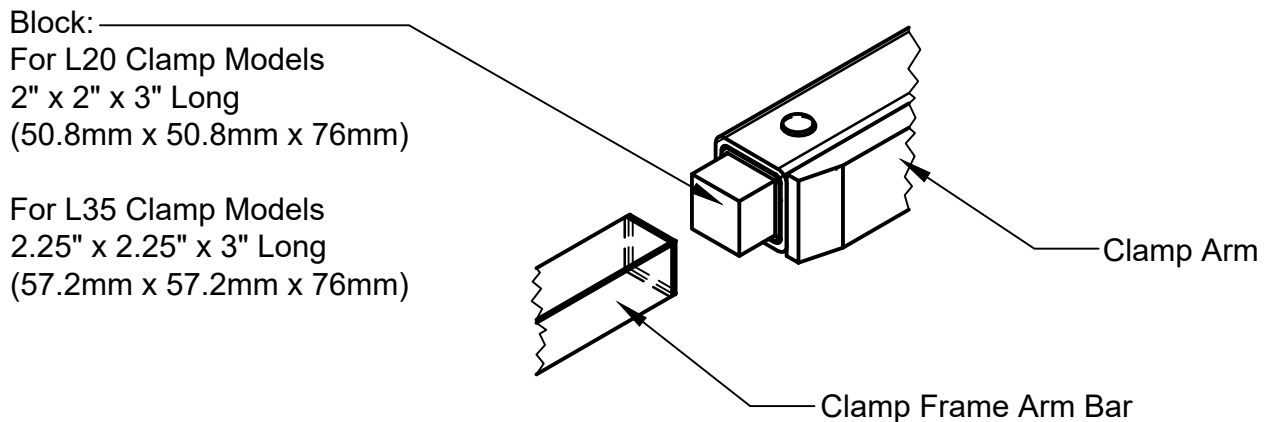
| # | QTY | PART # | DESCRIPTION |
|---|-----|----------|-------------------------|
| 1 | 1 | 113721 | Mounting Plate Weldment |
| 2 | 1 | 111091 | Air Spring |
| 3 | 1 | THA 7160 | Tube |
| 4 | 1 | 1C.0514 | Bolt |
| 5 | 1 | 113680 | Spacer |
| 6 | 4 | 11G.0414 | Bolt |
| 7 | 1 | 113779 | Control Valve Assembly |
| 8 | 1 | 7D.10 | Jam Nut |
| 9 | 1 | 103488.5 | Bearing |



Note: Apply Loctite to all Threaded Joints

ARM SLIDE & SHIM REPLACEMENT

1. To replace the slides, the arms need to be in the fully open position. Release system pressure prior to removing the arms by turning the truck off and working the side shift and clamp function controls several times.
2. Support the arm with an overhead crane or lift truck. Be sure to secure the chain or sling in a manner that prevents the arm from falling out of the chain or sling when hanging free of the clamp.
3. Remove the cotter pin, slotted nut and spherical bearing from the end of the clamp cylinder rod. Keeping hands and feet clear, and carefully slide the clamp arm off of the clamp frame.
4. Inspect slides and slide buttons for wear. Slides may be rotated end-to-end and reused if excessively worn on the outer end only. Extra shims may be used to tighten operating clearance on slightly worn slides. Replace any slides worn to less than 0.15" (3.8mm) thick or any slide that is deeply scored or broken.



5. To aid in replacing the slides a block may be fashioned of wood or another convenient material to the dimensions shown above. The block is inserted to the end of the arm to hold the slides, shims, and buttons in position while the arm is inserted over the arm bars on the clamp frame. The block is expelled out the opposite end of the arm as the arm is pushed onto the frame. Prior to installing the arm the block may be used to determine the number of shims to place under the slides. Adjust the clearance between the slides and the block to provide approximately .06" (1.5mm) running clearance between the slides and arm when installed.
6. Keeping hands and feet clear, carefully slide the clamp arm onto the clamp frame. Be sure the arm moves freely without excessive binding. If the arm is too loose or too tight add or remove shims as required.
7. Install the spherical bearing, slotted nut and cotter pin onto the end of the clamp cylinder rod. Be sure to leave .03"-.06" (.7mm to 1.5mm) clearance to allow the cylinder to "float" on its mountings.

TROUBLE SHOOTING GUIDE

LOADS SLIPPING OR DROPPING

POSSIBLE CAUSES

SOLUTION

- | | |
|--|--|
| 1. Clamp force set too low. | 1. Adjust clamp force. |
| 2. Internal leakage in cylinder. | 2. Replace cylinder seals. If tube, pistons or rod is scored replace with new parts. |
| 3. Load too heavy for the clamp capacity. | 3. Consult factory. |
| 4. Load may not be stacked correctly or may need to be unitized. | 4. Restack or unitize load (shrink wrap). |
| 5. Bent arms or contact pads. | 5. Consult factory. |
| 6. Damaged / leaking hydraulic hose | 6. Replace damaged hose. |

CRUSHING LOADS

POSSIBLE CAUSES

SOLUTION

- | | |
|--------------------------------|--------------------------------|
| 1. Clamp force set too high. | 1. Adjust clamp force. |
| 2. Bent arms or contact pads. | 2. Consult factory. |
| 3. Leak in the bladder system. | 3. Check for leaks and repair. |

ARM CHATTERING OR ERRATIC MOVEMENT

POSSIBLE CAUSES

SOLUTION

- | | |
|---|--|
| 1. Bent clamp arms. | 1. Consult factory. |
| 2. Nylon slides sticking. Note: Sticking slides can cause inconsistent force measurements. | 2. Clean slides if necessary, the slides are self lubricating. |
| 3. Nylon slides worn, broken or missing. | 3. Replace damaged slides, shims, and retaining buttons. |