



# Harsco Track Technologies

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## SERVICE BULLETIN MAINTENANCE OF WAY EQUIPMENT

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**DATE:** 5-13-2002 **BULLETIN NO:** 02-010

**TITLE:** 198747 REAR HYDRAULIC LOCK CONVERSION GROUP

**RATING:**

<input type="checkbox"/>	<b>DIRECTIVE</b> (Action Is Required)	<input type="checkbox"/>	<b>ALERT</b> (Potential Problem)
<input type="checkbox"/>	<b>INFORMATION</b> (Action Is Optional)	<input checked="" type="checkbox"/>	<b>PRODUCT IMPROVEMENT</b> (Enhance Product)

**PRODUCT SERIES / MODEL:** All Vehicles Equipped With HR4000A HY-RAIL® Rear Guide Wheel Equipment

**SERIAL NO:** All Rear HR4000 Models A1 / A2

**SUMMARY:** To replace the manually operated lock on the rear rail pilot unit with a hydraulically operated lock.

**OPERATIONAL IMPACT:** Eases operation of the rear lock mechanism on the rear rail pilot unit.

**ACTION:** The installation of this Conversion Group requires:

- Removing the existing manual lock components from the rear unit.
- Installing the new hydraulic lock components on the rear unit.
- Cutting off the existing lock handle on the rear unit.
- Welding a new mounting bolt and control valve mounting plate on the rear unit.
- Installing new hydraulic piping to the rear hydraulic lock.

**CONTACT:** To order the 198747 Rear Hydraulic Lock conversion, please contact the HY-RAIL® Parts Department at the Fairmont, MN. facility, (507) 235-7143.

**SAFETY INFORMATION**

- **FOLLOW APPLICABLE RAILROAD LOCKOUT - TAGOUT PROCEDURE TO REMOVE ALL ENERGY SOURCES FROM VEHICLE AND RAIL GUIDE WHEEL EQUIPMENT. FAILURE TO COMPLY COULD RESULT IN SEVERE BODILY INJURY.**

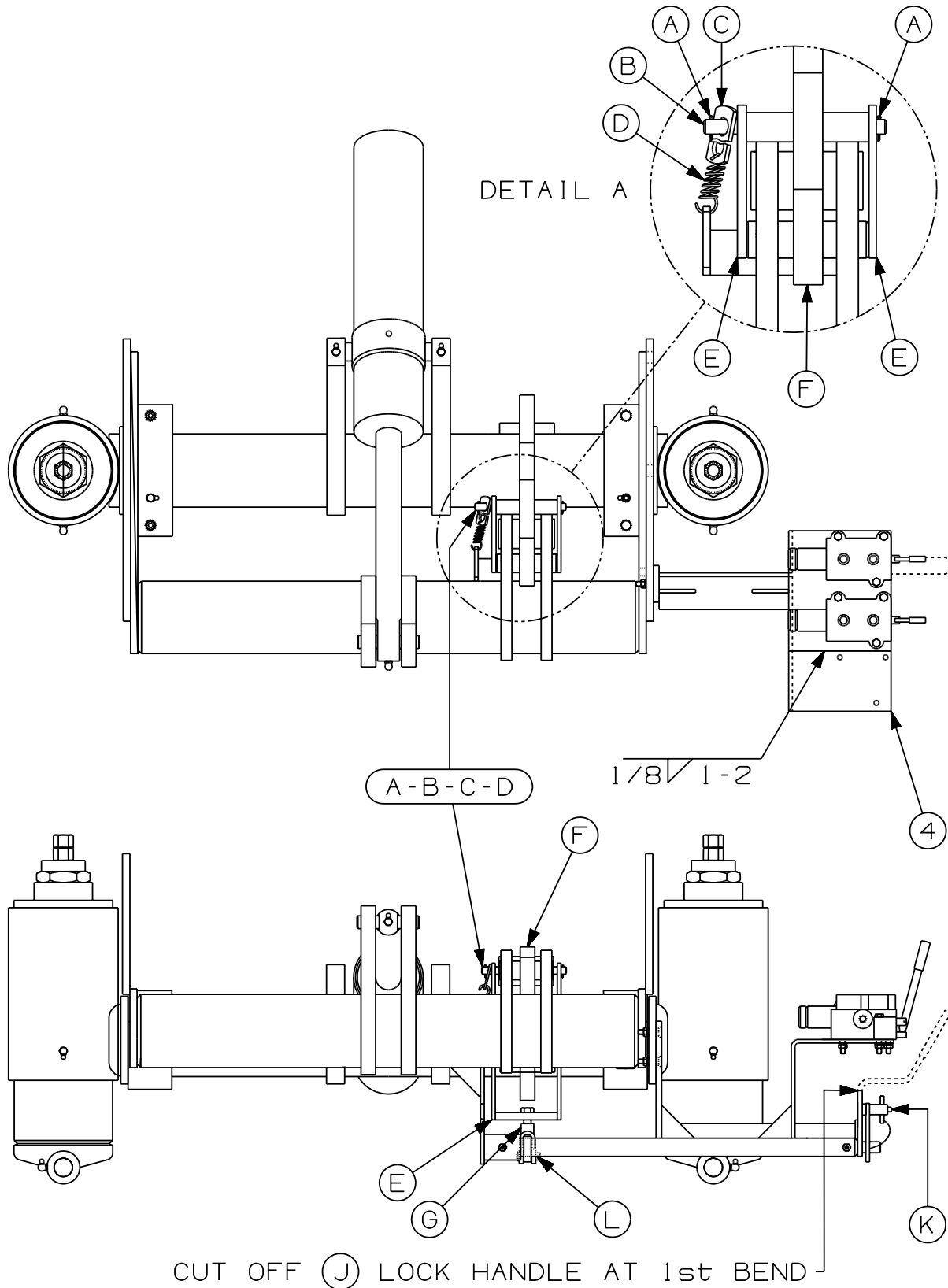
**CONVERSION GROUP INSTALLATION - See Figure 1, Figure 2, Figure 3 and Figure 4**

1. **Important:** Before doing any welding on the vehicle, refer to the vehicle manufacturer for any electrical wires or cables that may need to be disconnected to prevent damage to the vehicle's electrical system.
2. Unlock and lower the rear rail guide wheel unit so the guide wheels are resting on the ground.
3. See Figure 1. Remove the two cotter pins (A) from the pin (B). Remove the pin (B) to remove the link (C), spring (D) and yoke weldment (E) from the locking pawl (F). Discard items (A, B, C and D); they will not be re-used.
4. See Figure 1. Remove the cap screw from the small yoke assembly (G) to remove the yoke weldment (E). Remove the cotter pin and pin from the end of the small yoke assembly (G) to remove it from the lock handle shaft (L). Save item (G); it will be re-used. Discard item (E); it will not be re-used.
5. See Figure 1. Cut-off the manual lock handle (J) at the 1st bend as shown. Remove all sharp edges, burrs, etc.
6. See Figure 1. If the rear unit is equipped with the side-shift control valve mounted next to raise / lower control valve, locate the valve bracket (4) on the front of the frame as shown (or on the rear if clearance is a problem) and weld per the weld symbol shown.
7. See Figure 2 and Figure 3. Locate the head of the 1/2" x 2-1/2" hex head cap screw (6) on the locking arm (H) per the dimensions shown and weld per the weld symbol shown. The cap screw (6) will be located in the center of the radius of the locking arm (H) and will be used as a mounting stud for the lock cylinder (2).
8. See Figure 2 and Figure 3. Install the rod end of the lock cylinder (2) and yoke weldment (3) to the locking pawl (F) using one pin (1) and two 1/8" x 1" cotter pins (11). Install the head end of the lock cylinder (2) on the 1/2" x 2-1/2" cap screw (6) that was welded on the locking arm (H) and secure with one 1/2" hex lock nut (7).
9. See Figure 1 and Figure 3. Thread the small yoke assembly (G) on the cap screw on the yoke weldment (3). Re-connect the end of the small yoke assembly (G) to the lock handle shaft (L) re-using the pin and cotter pin.

CONVERSION GROUP INSTALLATION

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FIGURE 1  
EXISTING MANUAL LOCK REMOVAL AND REWORK



**CONVERSION GROUP INSTALLATION**

10. See Figure 4. Remove the plastic shipping plugs from the ports of the lock control valve (5). Install the lock control valve (5) next to the side shift control valve (if the unit is so equipped) or next to the raise / lower control valve using three 5/16" x 2-1/2" cap screws (12) and hex nuts (13).

*Note: The lock control valve pressure relief setting is preset at 300 PSI (20.69 bar) from the factory.*

11. See Figure 4. Install the hydraulic components (8, 9, 10 and 14) as shown. The valves must be piped in sequence as shown for proper operation.
12. Reconnect any electrical wires or cables that were disconnected in Step 1.
13. Start the vehicle engine and pressurize the rear rail guide wheel unit.
14. Check the lock control valve, cylinder, fittings and hoses for hydraulic leaks.



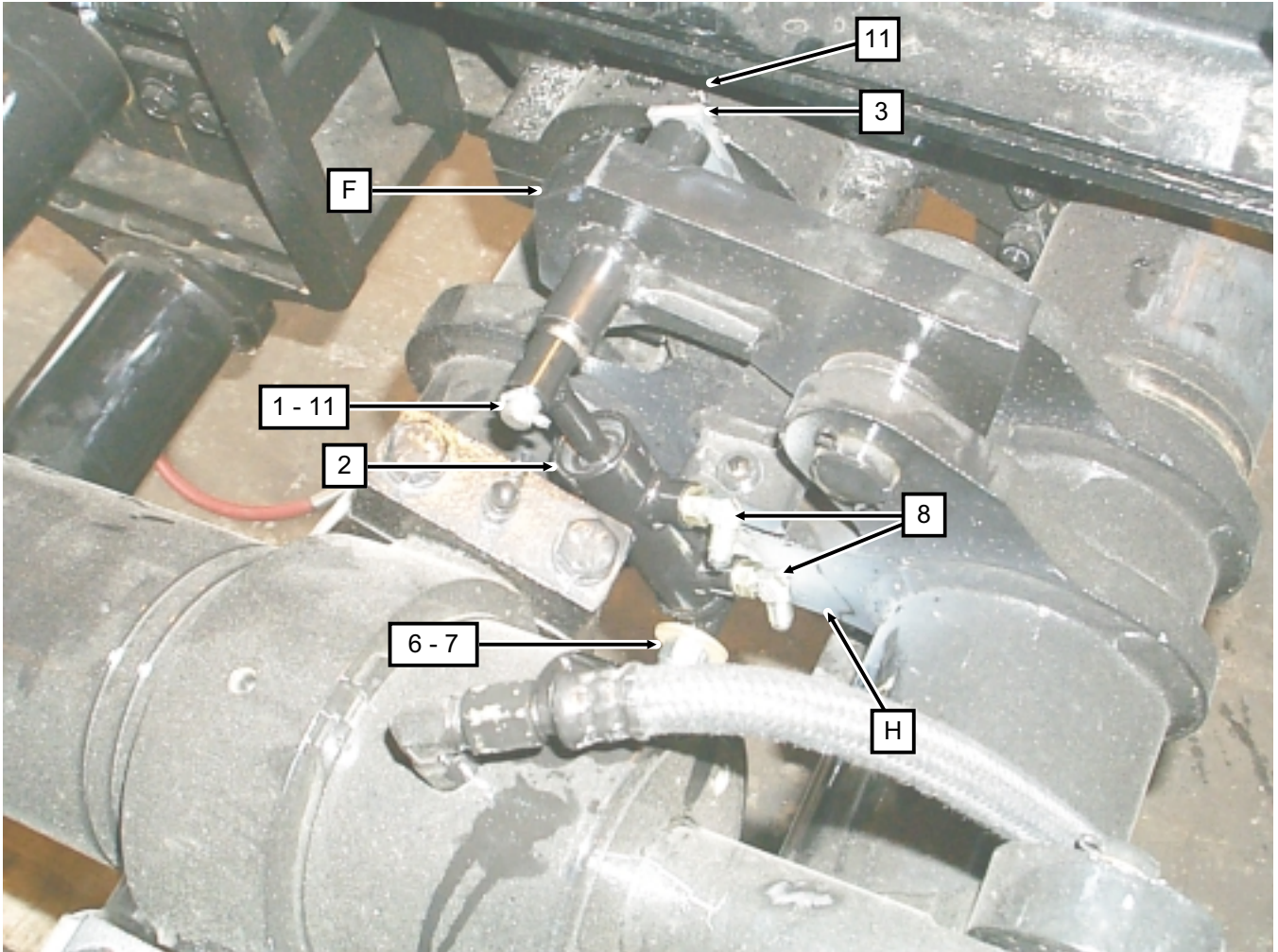
- **INSPECT LOCK MECHANISM DAILY FOR DAMAGE, WEAR, ALIGNMENT, ETC. KEEP LOCK MECHANISM CLEAN OF RUST AND DEBRIS (Dirt, Mud, etc.). FAILURE TO COMPLY COULD RESULT IN BODILY INJURY AND/OR PROPERTY DAMAGE.**

15. Operate the lock control valve to verify proper operation of the lock mechanism.
16. See Figure 1. The lock handle (J) that was cut-off at the 1st bend must be locked with the lock pin (K) when the rear rail guide wheel unit is locked in the ROAD or RAIL position.

CONVERSION GROUP INSTALLATION

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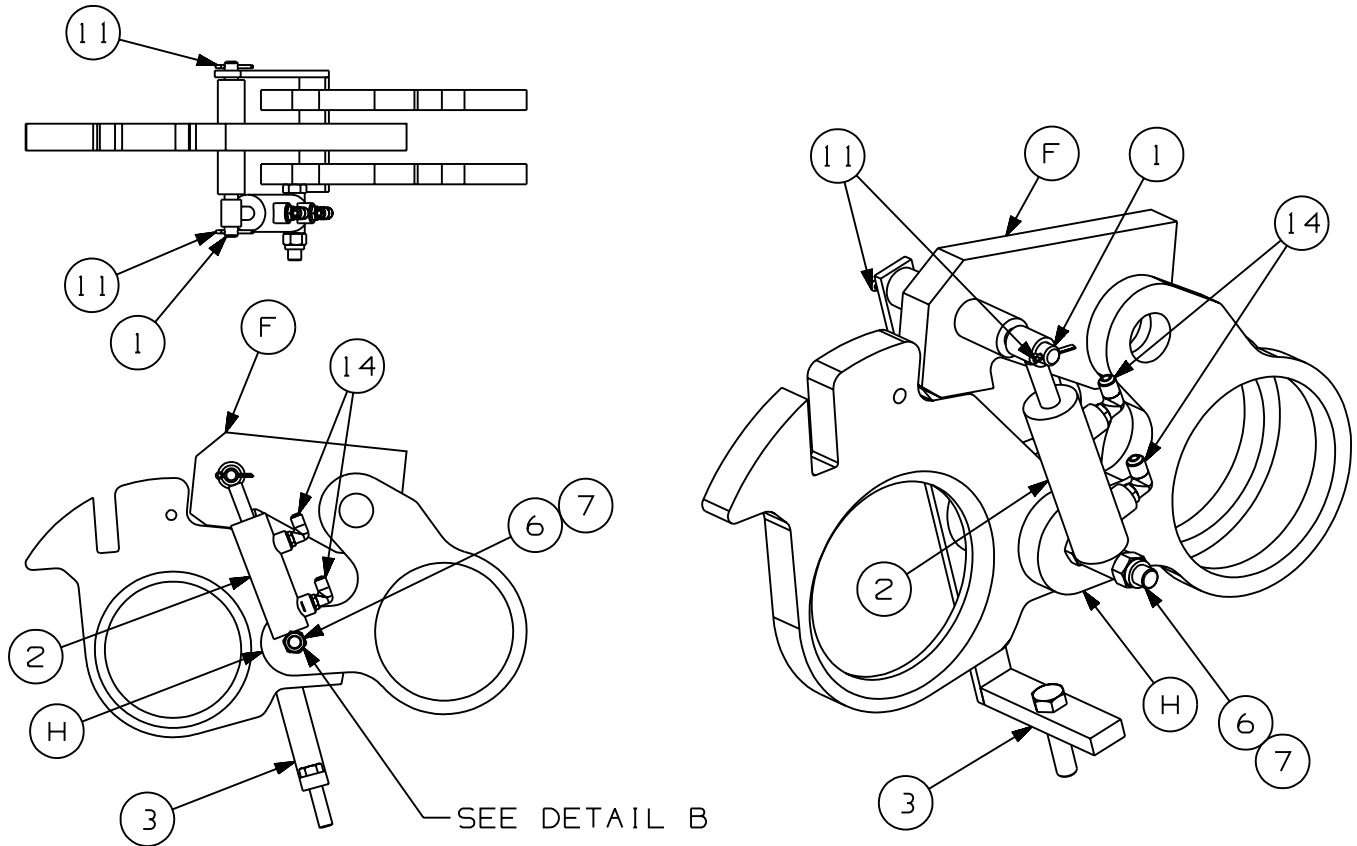
FIGURE 2  
NEW HYDRAULIC LOCK INSTALLATION



CONVERSION GROUP INSTALLATION

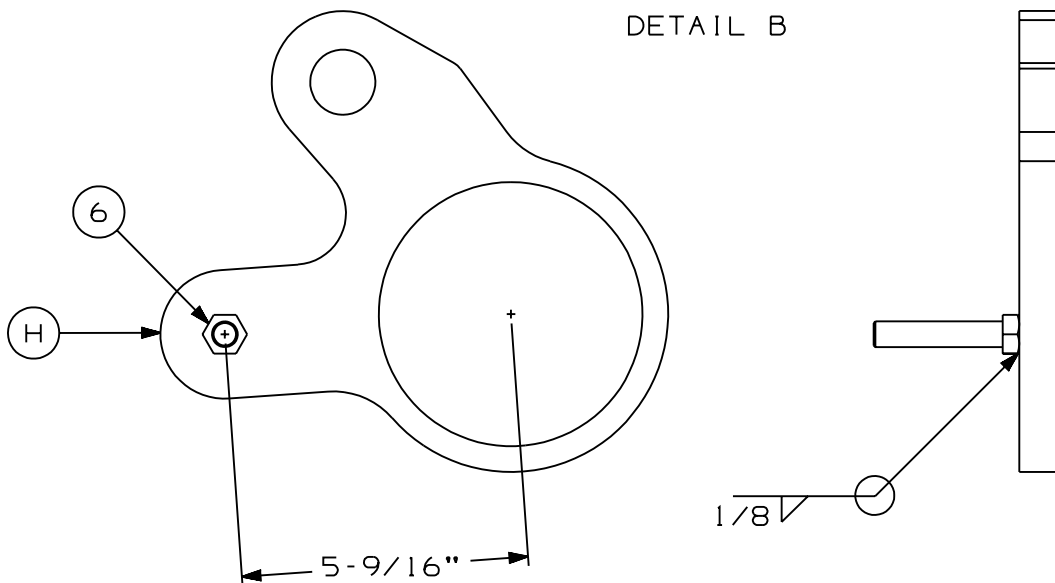
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FIGURE 3  
NEW HYDRAULIC LOCK INSTALLATION



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DETAIL B

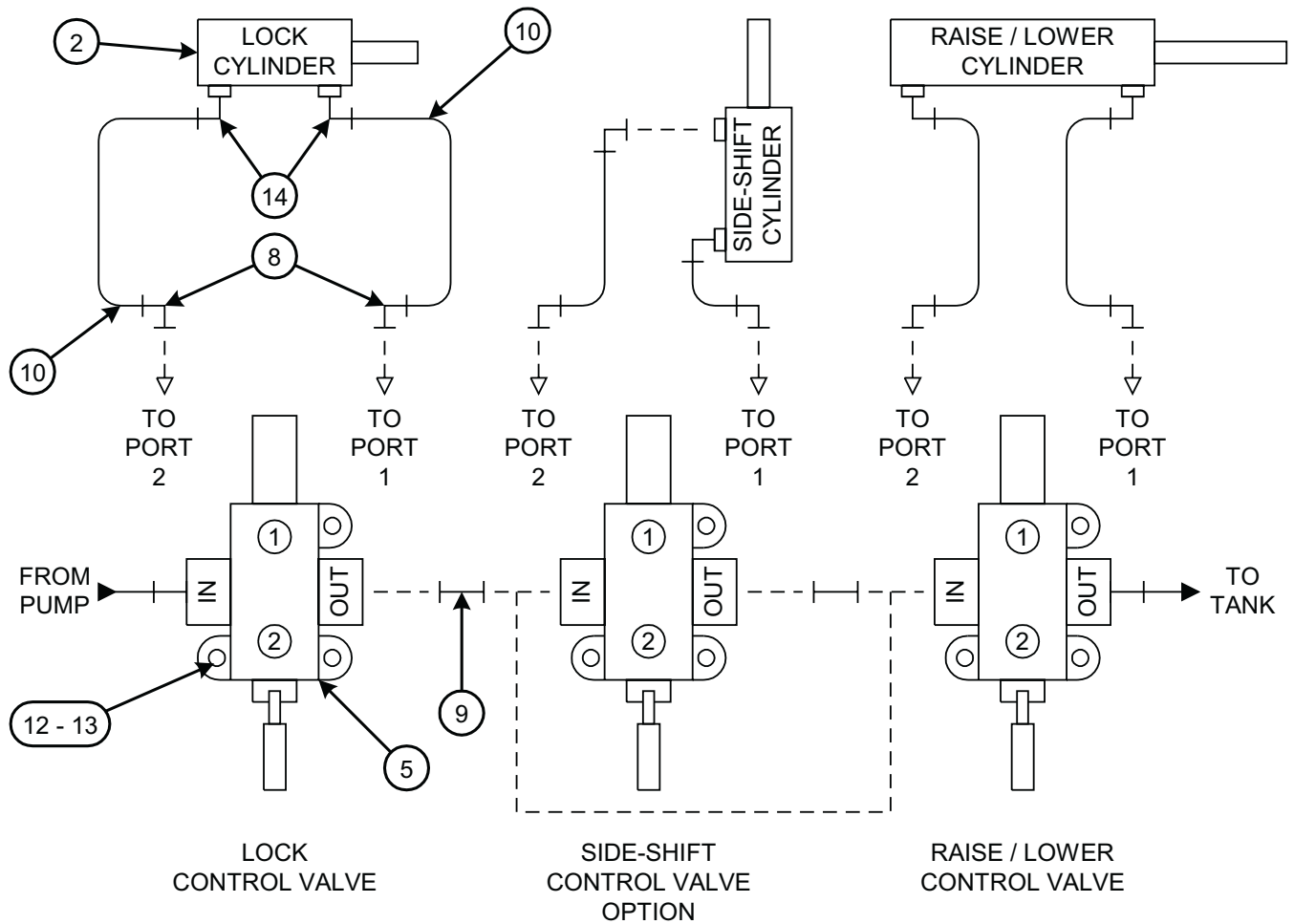


CONVERSION GROUP INSTALLATION

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FIGURE 4  
NEW HYDRAULIC LOCK PIPING

NOTE:  
COMPONENTS WITHOUT ITEM NUMBERS ARE EXISTING



**CONVERSION GROUP PARTS LIST - See Figure 1, Figure 2, Figure 3 and Figure 4**

ITEM	PART NO	DESCRIPTION	QTY
	198747	REAR HYDRAULIC LOCK CONVERSION GROUP . . . . .	1
1	198670	Pin . . . . .	1
2	198668	Hydraulic Cylinder . . . . .	1
3	198671	Yoke Weldment . . . . .	1
4	198672	Valve Bracket . . . . .	1
5	198669	Control Valve . . . . .	1
6	173116	Cap Screw, 1/2"-20 x 2-1/2" . . . . .	1
7	F010606	Hex Lock Nut, 1/2"-20 . . . . .	1
8	F015104	90° Elbow, 7/16"-20 JIC x 3/8 NPT . . . . .	2
9	F011604	Adapter, 3/8" NPT x 3/8" NPT . . . . .	1
10	410861	Hose Assembly . . . . .	2
11	F001104	Cotter Pin, 1/8" x 1" . . . . .	2
12	F013428	Cap Screw, 5/16"-18 x 2-1/2" Hex Head . . . . .	3
13	F040088	Hex Flange Nut, 5/16"-18 . . . . .	3
14	F014734	90° Elbow, 7/16"-20 x JIC x 7/16"-20 SAE . . . . .	2

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