



PALADIN LIGHT CONSTRUCTION

INSTALLATION INSTRUCTIONS

FOR



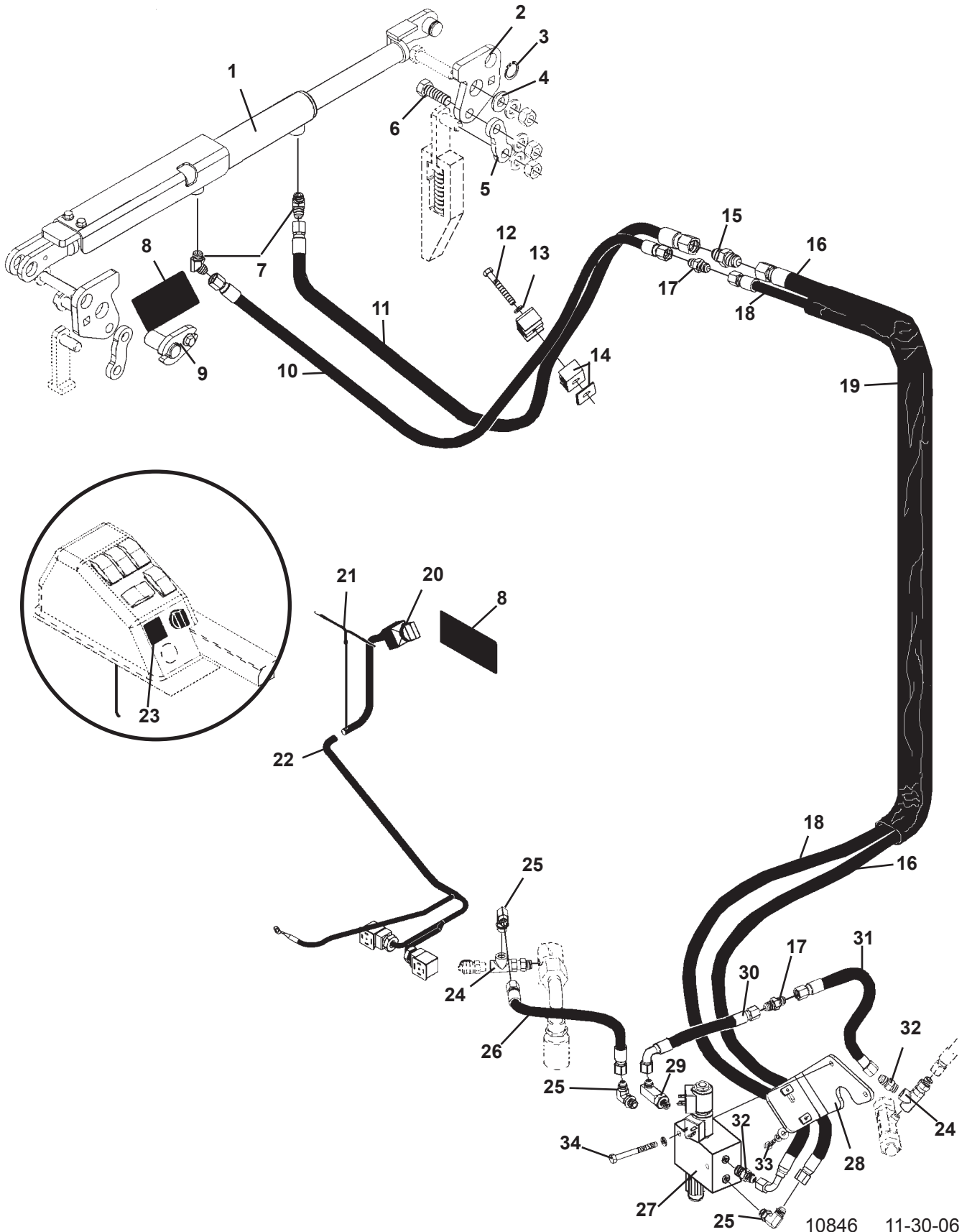
BRADCO

**JCB 160/170/190/1110
SKID STEER AND TRACK LOADER
HYDRAULIC LATCH ASSEMBLY
#102350 & #108920**

INSTRUCTIONS NUMBER: 76240

HYDRAULIC LATCH ASSEMBLY

JCB 160/170 LATCH ASSEMBLY #108920



HYDRAULIC LATCH ASSEMBLY

JCB 160/170 LATCH ASSEMBLY #108920

<u>NO</u>	<u>REQ'D</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	108921	Cylinder and Guard Assembly
2	2	102352	Pivot Link
3	1	6612	Snap Ring
4	2	102354	Spacer Tube
5	2	102353	Link
6	2	2649	16M X 45MM Hex Capscrew
7	2	30313	45° Elbow 6MBo-6MJ
8	2	40740	Warning Decal
9	1	19714	Pivot Pin
	1	1953	.38" UNC X .75" Flangehead Hex Capscrew
10	1	38171	Hose .25" X 68" 6JFX-6FJX
11	1	38185	Hose .38" X 68" 6FJX-8FJX
12	1	1025	.31" UNC X 1.75" Hex Capscrew
13	1	1502	.31" Lock Washer
14	1	17025	Double Hose Clamp
15	1	3354	Straight Connector 8MJ-8MJ
16	1	38173	Hose .38" X 160" 6JFX-8FJX
17	2	3352	Straight Connector 6MJ-6MJ
18	1	38172	Hose .25" X 164" 6FJX 90° -6FJX
19	1	100723	Hose Sock 1.5" X 140"
20	1	100280	Switch Assembly
21	1	102364	Wiring Adapter
22	1	100741	Wiring Harness
23	1	40756	Lock/Unlock Decal
24	2	30357	Tee 6MBo-6FBo-6FBo
25	3	3434	90° Elbow 6MBo-6MJ
26	1	38153	Hose .25" X 16" 6FJX-6FJX
27	1	107939	Valve Assembly - Dual Solenoid
28	1	108925	Mounting Bracket
29	1	30140	90° Elbow XL 6MBo-6MJ
30	1	37571	Hose .25" X 15" 6FJX-6FJX 90°
31	1	35696	Hose .25" X 28" 6FJX-6FJX
32	2	3457	Straight Connector 6MBo-6MJ
33	2	1002	.25" UNC X .75" Hex Capscrew
	2	1501	.25" Lock Washer
	2	1512	.25" Flat Washer
34	2	1010	.25" UNC X 2.75" Hex Capscrew
	2	1501	.25" Lock Washer

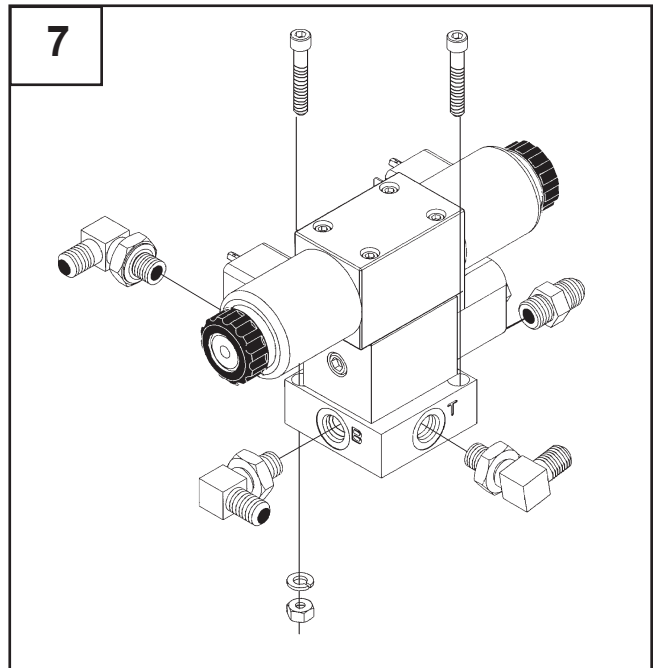
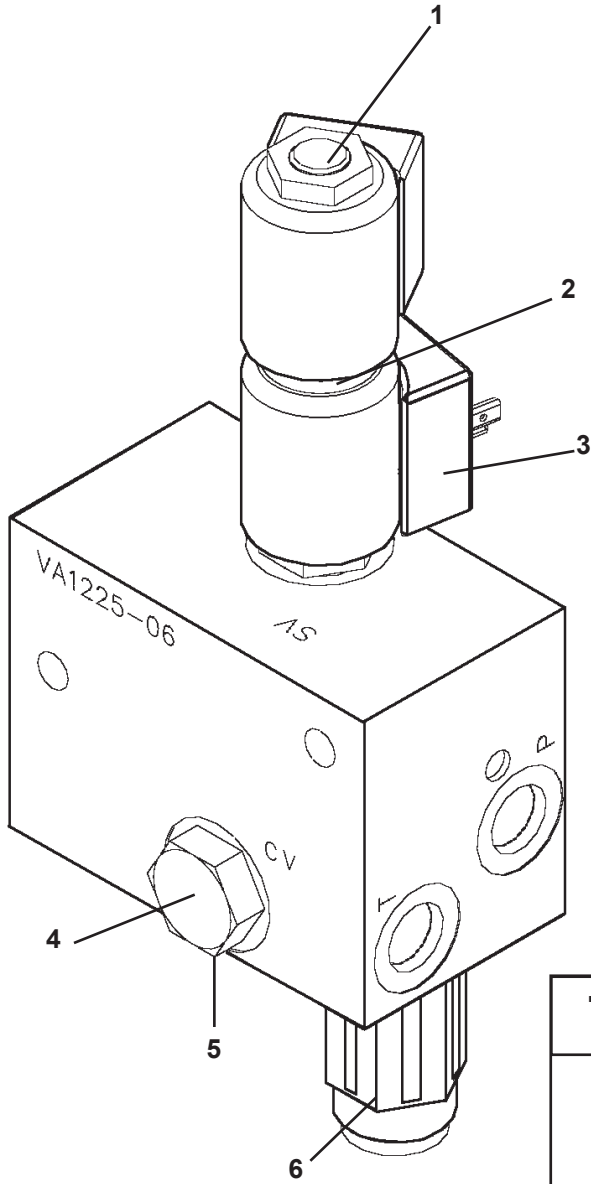
HYDRAULIC LATCH ASSEMBLY

JCB 190/1110 LATCH ASSEMBLY #102350

<u>NO</u>	<u>REQ'D</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	102360	Cylinder and Guard Assembly
2	2	102352	Pivot Link
3	2	102354	Spacer Tube
4	2	19714	Pivot Pin
5	2	1953	.38" UNC X .75" Flangehead Hex Capscrew
6	2	102353	Link
7	2	2649	16M X 45MM Hex Capscrew
8	2	30313	45° Elbow 6MBo-6MJ
9	2	40740	Warning Decal
10	1	38171	Hose .25" X 68" 6JFX-6FJX
11	1	38185	Hose .38" X 68" 6FJX-8FJX
12	1	2645	8M X 60M Hex Capscrew
13	1	2531	8mm Lock Washer
14	1	17025	Double Hose Clamp
15	1	3354	Straight Connector 8MJ-8MJ
16	1	38173	Hose .38" X 160" 6JFX-8FJX
17	1	3352	Straight Connector 6MJ-6MJ
18	1	38172	Hose .25" X 164" 6FJX 90° -6FJX
19	1	100723	Hose Sock 1.5" X 140"
20	1	100280	Switch Assembly
21	1	102364	Wiring Adapter
22	1	100741	Wiring Harness
23	1	40756	Lock/Unlock Decal
24	1	30357	Tee 6MBo-6FBo-6FBo
25	4	3434	90° Elbow 6MBo-6MJ
26	1	38153	Hose .25" X 16" 6FJX-6FJX
27	1	107939	Valve Assembly - Dual Solenoid
28	1	108262	Mounting Bracket
29	1	30140	90° Elbow XL 6MBo-6MJ
30	1	37571	Hose .25" X 15" 6FJX-6FJX 90°
31	2	1030	.31" UNC X 3.00" Hex Capscrew
	2	1502	.31" Lock Washer
32	1	30335	Straight Connector 4FBSPP-6MJ
33	1	30334	Tee 4FBSPPX-4MBSPP-4MBSPP
34	2	1022	.31" UNC X 1.00" Hex Capscrew
	2	1502	.31" Lock Washer
	2	1513	.31" Flat Washer

VALVE ASSEMBLY

ASSEMBLY #107939



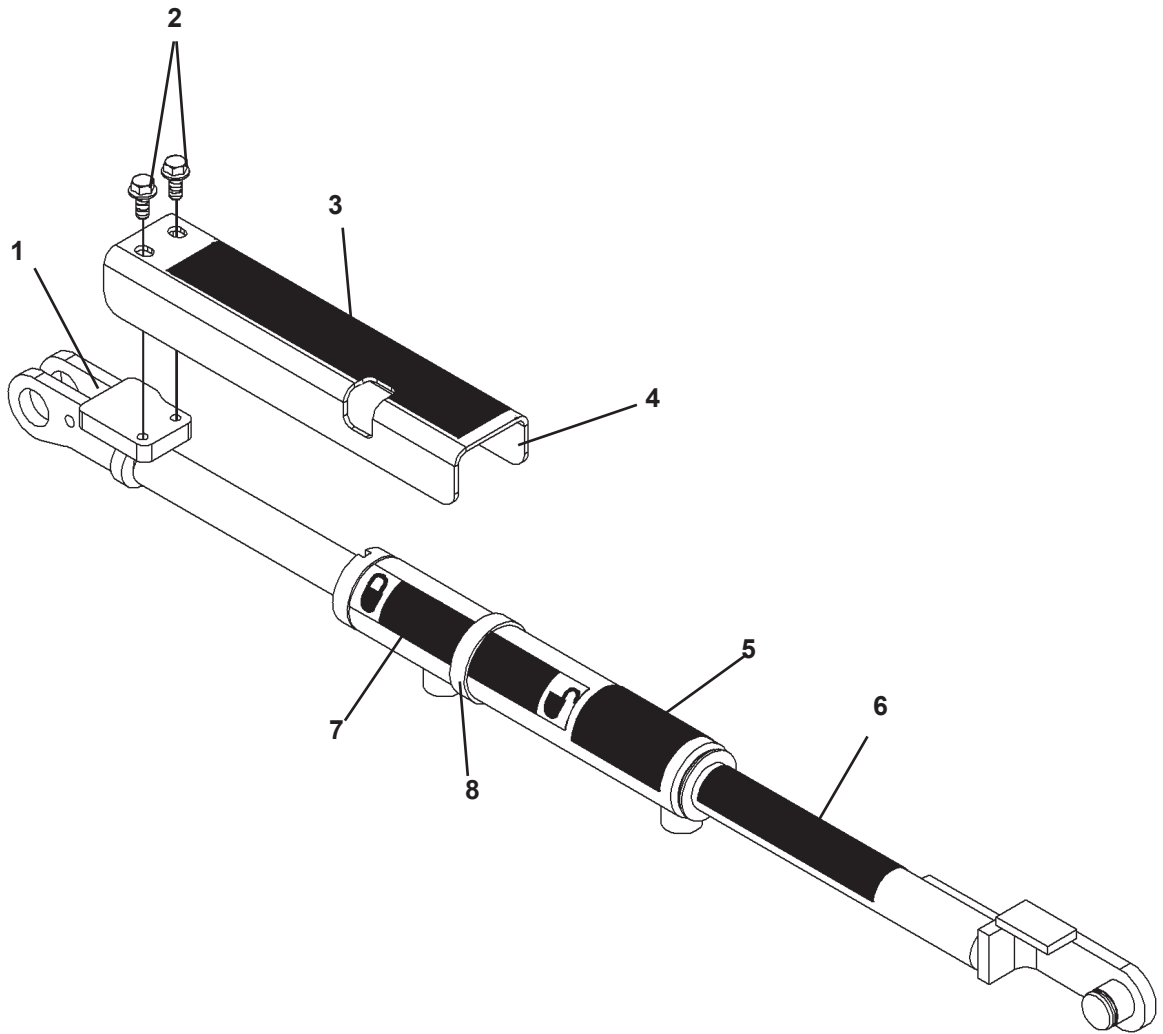
VALVE ASSEMBLY

ASSEMBLY #107939

<u>ITEM</u>	<u>REQ'D</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	45976	Solenoid Valve
	1	45978	Coil Nut
	1	45889	Solenoid Valve Seal Kit
2	1	45894	Coil Spacer
3	2	45893	Solenoid Coil
4	1	45977	Check Valve
	1	45862	Check Valve Seal Kit
5	1	45850	P.O. Check Valve
	1	45851	P.O. Check Valve Seal Kit
6	1	45966	Pressure Reducing Valve
	1	45979	Pressure Reducer Seal Kit
7	-	----	Valve Assembly (Not Available) Replace with Valve Update Kit #109069

CYLINDER AND GUARD ASSEMBLY

JCB 160/170 CYLINDER AND GUARD ASSEMBLY #108921

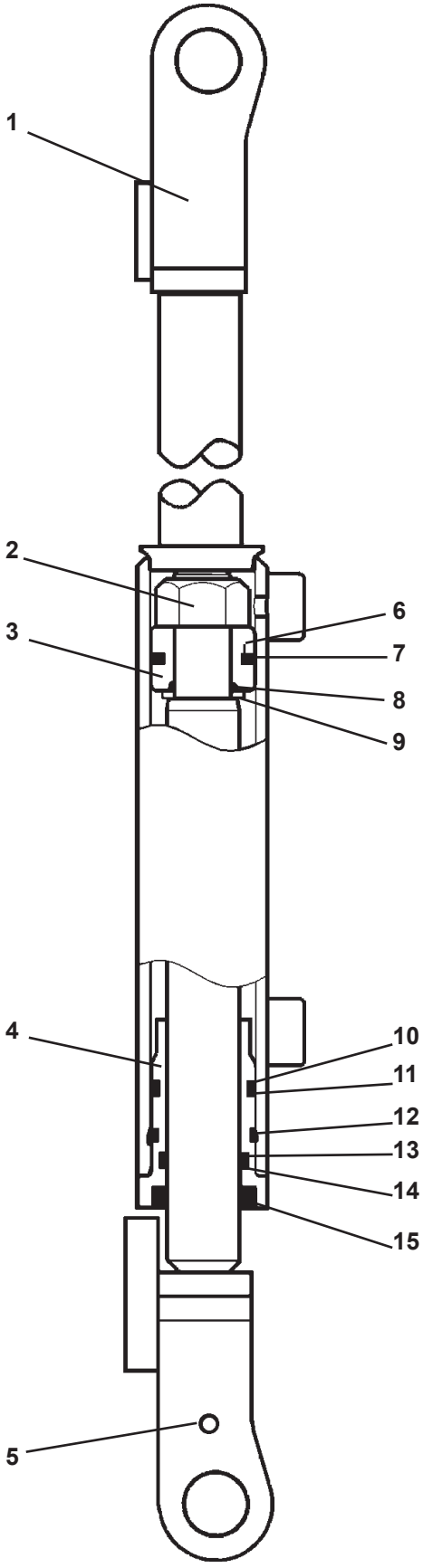


CYLINDER AND GUARD ASSEMBLY
JCB 160/170 CYLINDER AND GUARD ASSEMBLY #108921

<u>ITEM</u>	<u>REQ'D</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	108922	Cylinder Assembly
2	2	1930	.31" UNC X .75" FlangeHead Hex Capscrew
3	1	40742	Non-Slip Surface Decal 3" X 10"
4	1	100705	Cylinder Guard
5	1	40755	Non-Slip Surface Decal 3" X 3"
6	1	40198	Non-Slip Surface Decal 2" X 6"
7	1	40698	Lock/Unlock Decal
8	1	100706	Slider Ring

CYLINDER ASSEMBLY

JCB 160/170 CYLINDER ASSEMBLY #108922



CYLINDER ASSEMBLY

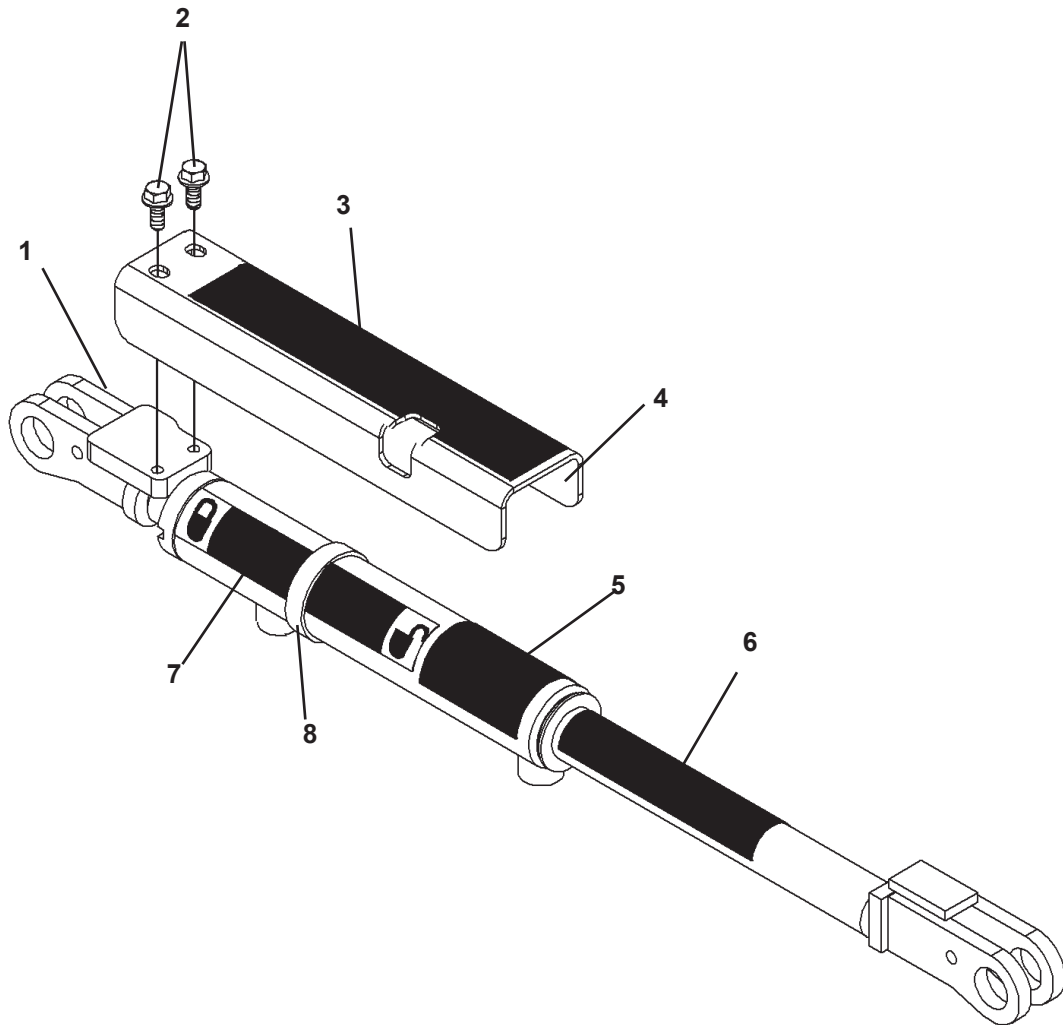
JCB 160/170 CYLINDER ASSEMBLY #108922

<u>ITEM</u>	<u>REQ'D</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	108923	Cylinder Tube
2	1	1482	Hex Lock Nut (Torque to 150-200 ft. lbs.)
3	1	50546	Piston
4	1	50547	Gland
5	1	102342	Cylinder Rod
6	1	4985*	O'Ring
7	1	4984*	Piston Ring
8	1	4635*	O'Ring
9	1	52644	Washer
10	1	4987*	O'Ring
11	1	4988*	Back-Up Washer
12	1	8177*	Gland Retainer
13	1	4580*	O'Ring
14	1	4579*	Back-Up Washer
15	1	4981*	Rod Wiper

NOTE: Seal Kit #4990 includes all parts marked with an asterisk (*). Parts are not sold separately.

CYLINDER AND GUARD ASSEMBLY

JCB 190/1110 CYLINDER AND GUARD ASSEMBLY #102360



CYLINDER AND GUARD ASSEMBLY
JCB 190/1110 CYLINDER AND GUARD ASSEMBLY #102360

<u>ITEM</u>	<u>REQ'D</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	102351	Cylinder Assembly
2	2	1930	.31" UNC X .75" FlangeHead Hex Capscrew
3	1	40742	Non-Slip Surface Decal 3" X 10"
4	1	100705	Cylinder Guard
5	1	40755	Non-Slip Surface Decal 3" X 3"
6	1	40198	Non-Slip Surface Decal 2" X 6"
7	1	40698	Lock/Unlock Decal
8	1	100706	Slider Ring

CYLINDER ASSEMBLY

JCB 190/1110 CYLINDER ASSEMBLY #102351

<u>ITEM</u>	<u>REQ'D</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	1	102343	Cylinder Tube
2	1	1482	Hex Lock Nut (Torque to 150-200 ft. lbs.)
3	1	50546	Piston
4	1	50547	Gland
5	1	102342	Cylinder Rod
6	1	4985*	O'Ring
7	1	4984*	Piston Ring
8	1	4635*	O'Ring
9	1	52644	Washer
10	1	4987*	O'Ring
11	1	4988*	Back-Up Washer
12	1	8177*	Gland Retainer
13	1	4580*	O'Ring
14	1	4579*	Back-Up Washer
15	1	4981*	Rod Wiper

NOTE: Seal Kit #4990 includes all parts marked with an asterisk (*). Parts are not sold separately.

MOUNTING KIT INSTALLATION

The following instructions will assist in the installation of the hydraulic latch for the JCB skid steers and track loaders.

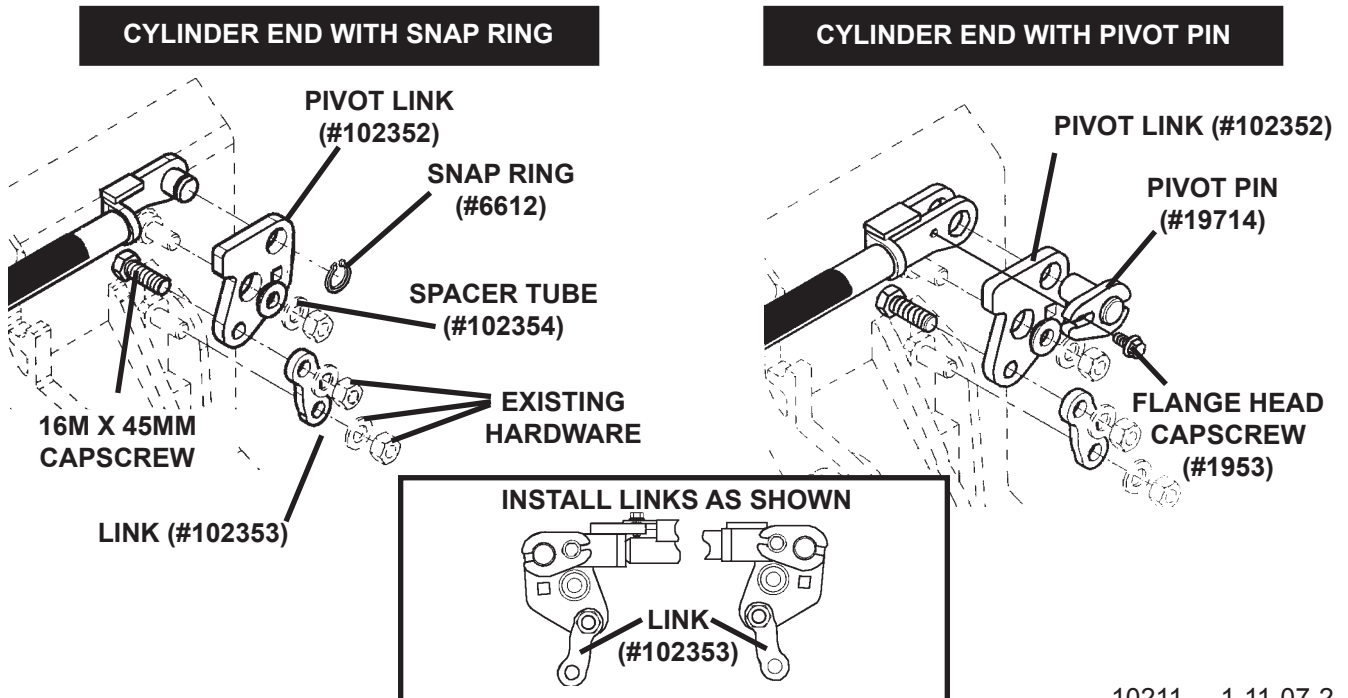
MOUNTING INSTRUCTIONS

Cylinder Installation

To facilitate cylinder installation, position the loader arms completely down and tilt the toolbar out to gain access to the back side of the toolbar. The cylinder and guard assembly should have been assembled at the factory. If the guard and decals were not installed onto the cylinder at the factory install them now according to the parts diagram.

1. Remove the cover plates from the loader arm and bucket cylinder.
2. Remove the lock handles and links by first removing the capscrews and washers securing the handles and links to the toolbar.
3. Position the cylinder and guard assembly (#102360 or #108921) across the toolbar with the hydraulic ports pointing down. See Figure #1
4. Install the 16M x 45mm capscrews into the bottom of the pivot links (#102352) and then position the pivot links onto the toolbar and cylinder pins. Secure to the cylinder pins using the snap ring (#6612) and/or pivot pins (#19714) and to the toolbar using the existing 16M hardware and the spacer tube (#102354) provided. See Figures #1
5. Position links (#102353) as shown, onto the 16M capscrews installed in step #4 and the lock pin with existing 16mm lock nuts and flat washers. **NOTE: DO NOT OVERTIGHTEN LOCK NUTS.** Check the links for freedom of movement but not excessive play. See Figures #1

FIGURE #1



MOUNTING KIT INSTALLATION

6. Install 45° elbows (#30313) into the hydraulic ports of the cylinder. See Figure #2
7. Connect .38" X 68" hose (#38185) to the elbow on the barrel end of the cylinder and the .25" X 68" hose (#38171) to the elbow on the rod end of the cylinder. See Figure #2

CAUTION! The .38" X 68" hose (#38185) **MUST** be connected to the barrel end for correct operation of the latch assembly.

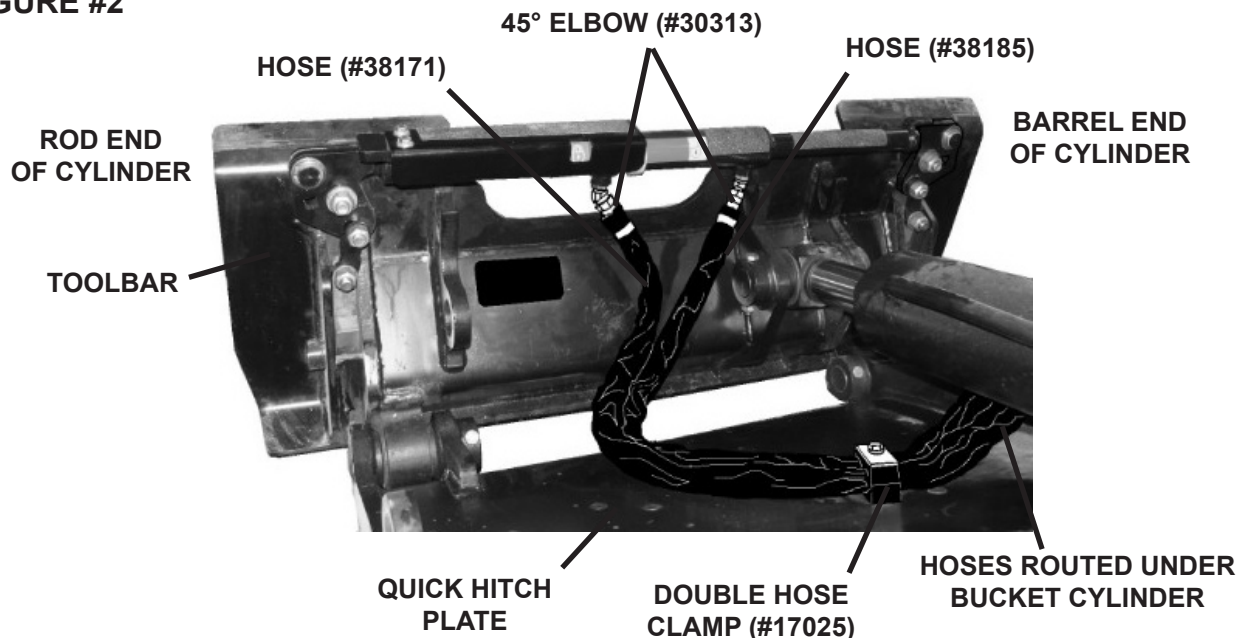


8. Remove the plastic plug on the quick hitch plate and install double hose clamp (#17025) using the 8M x 60MM capscrew (#2645) and lock washer provided. See Figure #2

NOTE: If there is not a tapped hole on the toolbar, tack weld the clamp nut plate in the approximate position shown and install the double hose clamp (#17025) using the .31" hardware supplied.

9. Route the cylinder hoses through the double hose clamp and tighten the clamp leaving a small loop in the hoses to accommodate attachment rollout. See Figure #2
10. JCB 160/170: Route the hoses over the bucket cylinder, up and around to loader arm and then under guard mount plate on the loader arm. Pull bucket cylinder hoses back into loader arm to provide clearance for cylinder movement.
JCB 190/1110: Route the hoses under the bucket cylinder, up and around to loader arm and then under guard mount plate on the loader arm. See Figure #2

FIGURE #2



12. Connect straight connector (#3352) to the end of the .25" hose (#38171) coming from the cylinder and straight connector (#3354) to the .38" hose (#38185) coming from the cylinder. See Figure #3

MOUNTING KIT INSTALLATION

13. Position the 90° end of the .25" X 164" hose (#38172) with the 6FJX end of the .38" X 160" hose (#38173) and thread through hose sock (#100723).
14. Connect the hoses to the straight connectors and route then along side the right loader arm (beside the auxiliary hydraulic lines) and into the engine compartment. See Figure #3 and Figure #4

FIGURE #3

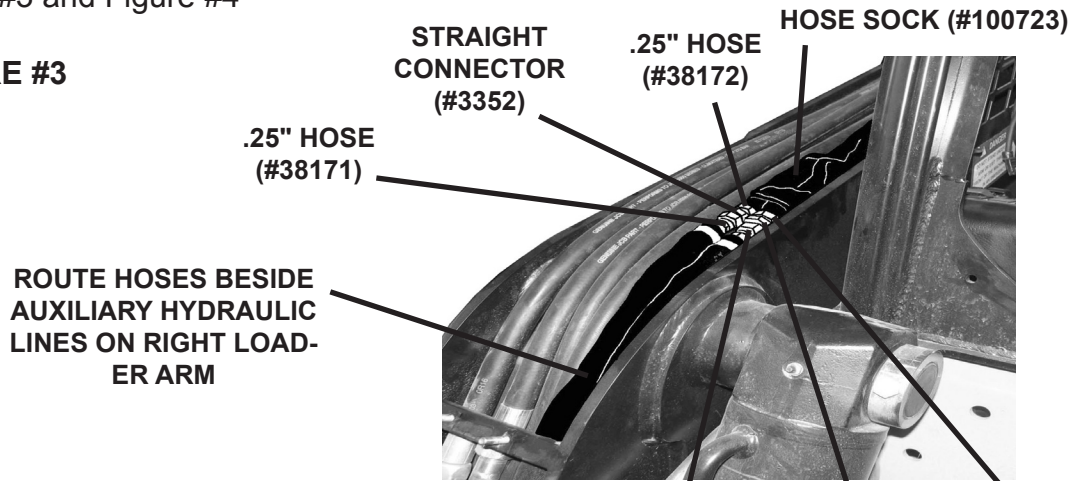
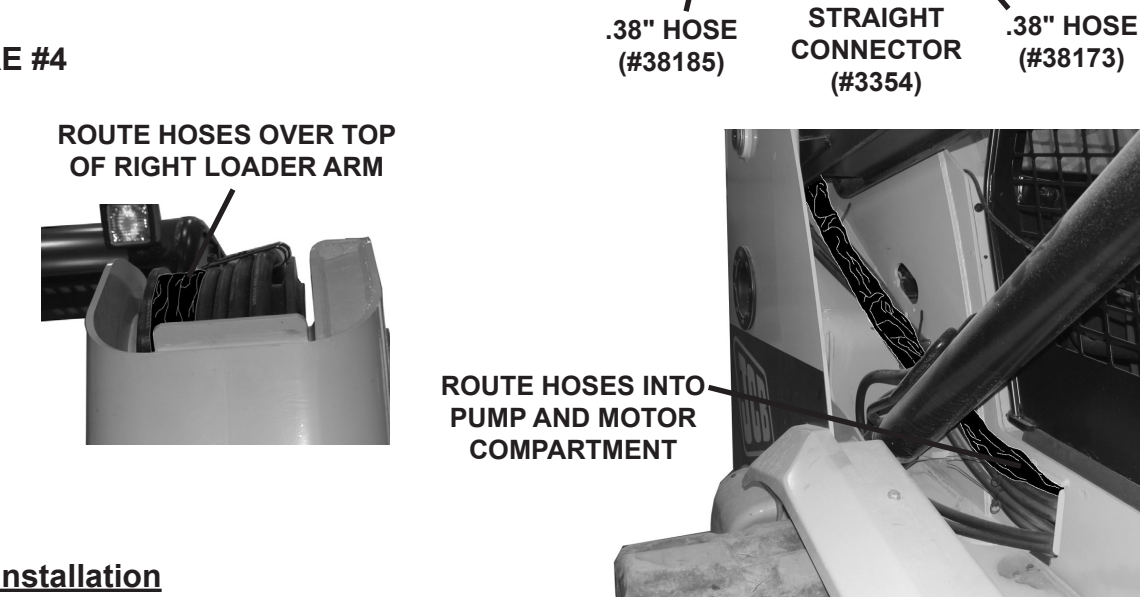


FIGURE #4

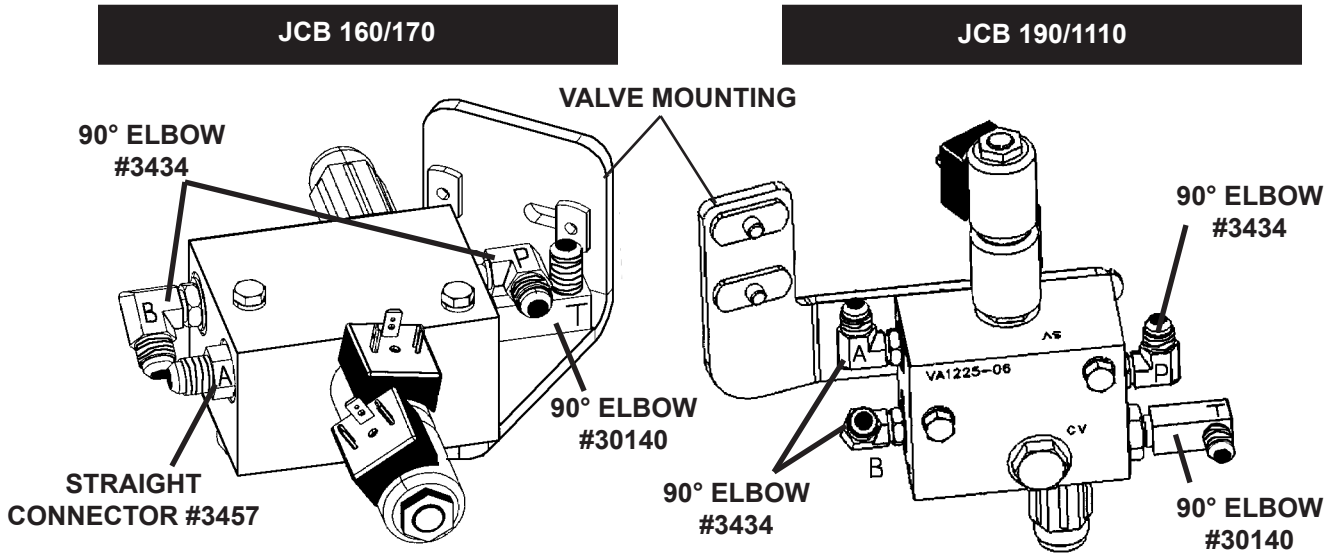


Valve Installation

15. Remove the seat from the opening to the pump and motor compartment of your loader.
16. JCB 160/170: Install two 90° elbows (#3434) into ports "B" and "P", one long 90° elbow (#30140) into port "T" and one of the straight connectors (#3457) into port "A" of the valve assembly and ensure that they are in the correct orientation. See Figure #5
JCB 190/1110: Install three 90° elbows (#3434) into ports "A", "B" and "P" and one long 90° elbow (#30140) into port "T" of the valve assembly and ensure that they are in the correct orientation. See Figure #5

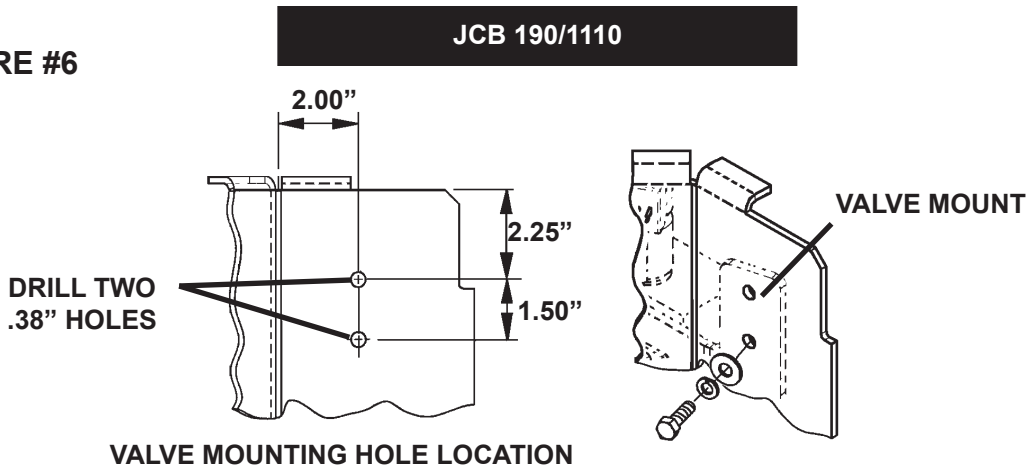
MOUNTING KIT INSTALLATION

FIGURE #5



17. JCB 160/170: Install valve onto the valve mounting bracket using the .25" hardware supplied and then bolt the mounting bracket to the left side of the pump and motor compartment. See Figure #5
 JCB 190/1110: Drill two .38" holes into the left side of the pump and motor compartment as shown. (See Figure #6) Install valve onto the valve mounting bracket using the .31" hardware supplied and then bolt the bracket to the engine compartment. See Figure #5 and #6

FIGURE #6

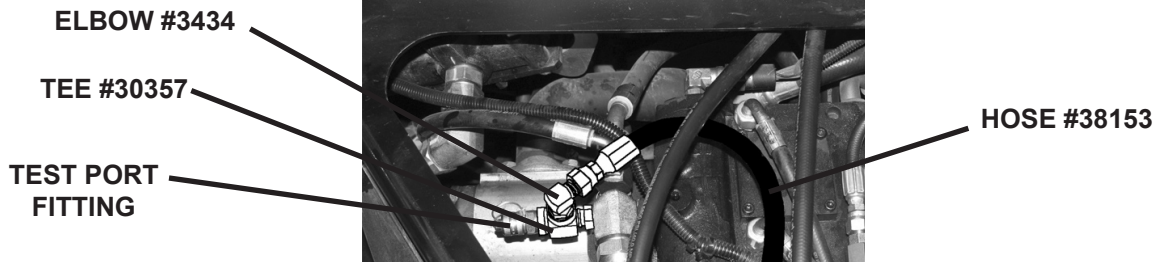


18. Ensure that all fittings are tight and in the correct orientation on the valve assembly. Connect one end of the 16" hose (#38153) to the elbow in the "P" port of valve assembly. Connect the straight end of the 15" hose (#37571) to the elbow in the "T" port of the valve on the JCB 190/1110 loaders and the 90° end of the hose to the elbow on the JCB 160/170 loaders.

MOUNTING KIT INSTALLATION

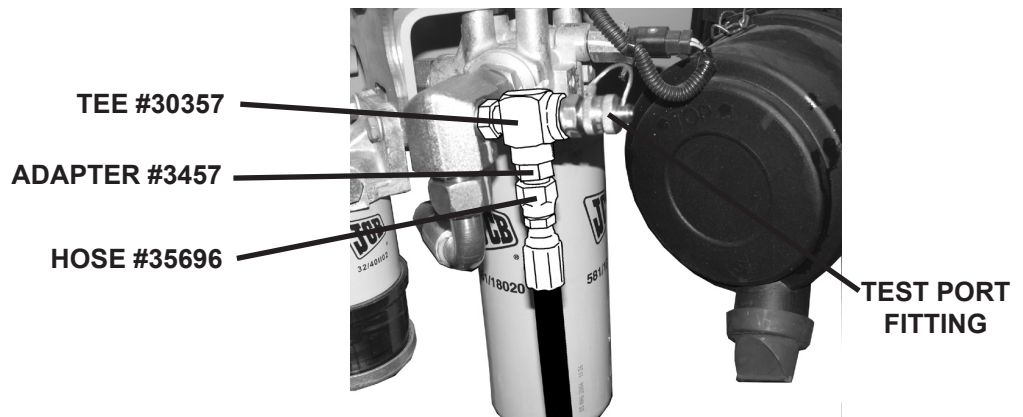
19. Connect the 90° end of the 164" long hose coming from the cylinder to the "A" port of the valve and the straight end of the 160" hose to the fitting in the "B" port of the valve.
20. Install 90° elbow (#3434) to the middle port #6 tee (#30357).
21. Remove test port fitting from elbow on the left outlet of gear pump and install #6 SAE tee (#30357). Reinstall test port on running end of tee and connect the 16" long hose (#38153) from port "P" on the valve assembly to the 90° elbow (#3434). See Figure #7

FIGURE #7



22. JCB 160/170: Install adapter (#3457) to the middle port of the remaining #6 tee (#30357). Disconnect the test port fitting from the elbow on the top left side of the gear pump and install the male end of the #6 tee (#30357) onto the elbow. Reconnect the test port fitting to the running end of the tee. Connect straight adapter (#3352) to the end of the 15" long hose coming from the "T" port of the valve assembly followed by the 28" long hose (#35696). Connect the 28" long hose to the adapter #3457. See Figure #8

FIGURE #8



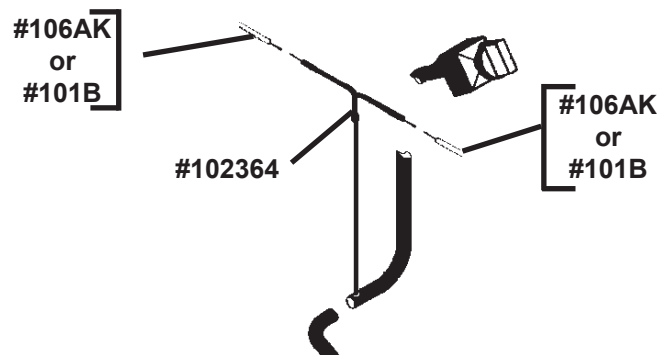
23. JCB 190/1110: Install adapter (#30335) to the middle port of #4 tee (#30334). Disconnect the tank hose from the tee on the top left side of the transmission pump and install the female end of the #4 tee (#30334) onto the fitting. Reconnect the tank hose to the running end of the tee and connect the hose (#37571) from the "T" port on the valve assembly to the adapter on the middle port of the tee.
24. Route hoses along the loader arm with sufficient clearance from hot or moving parts and secure in place.

MOUNTING KIT INSTALLATION

Wiring

25. Remove the fuse box cover and switch panel.
26. Secure the DIN connector receptacles to a DIN plugs on the valve assembly.
27. Secure the black wire of the wiring harness (#100741) to any ground location. Ensure there is sufficient metal exposed for a good ground; remove paint around hole if necessary.
28. Route the wiring harness up and under the frame, towards fuse box.
29. Locate the accessory plug wiring. Wires #106AK and 600EC on the JCB 160/170 loaders and wires #101B and 600EC on the JCB 190/1110 loaders. Cut wire #106AK or #101B and strip 1/4" off each end. See Figure #9
30. Crimp the butt connectors on wiring adapter (#102364) to each stripped end of wire #106AK or #101B and cover with heat shrink tubing or electrical tape. See Figure #9

FIGURE #9



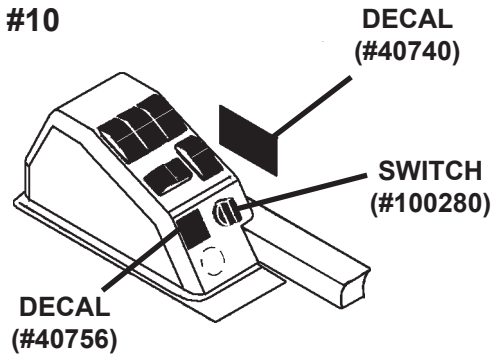
31. Connect the male bullet connector on wiring harness (#100741) to female bullet connector on wiring adapter (#102364). Cover with shrink tubing or electrical tape.
32. Connect the red wire of the wiring harness (#100741) to the "A" terminal of the switch (#100280). Connect the purple wire to the "B" terminal of the switch and the pink wire to the "C" terminal. **IMPORTANT: Cover all exposed connections with electrical tape to prevent grounding.**
33. Drill a 1/2" hole in the switch mount cover and secure switch to cover.
34. Reinstall switch panel and fuse box cover.
35. Place one of the warning decals (#40740) on the toolbar facing the operator and the other on the inside right of the canopy near the control box. See Figure #10

MOUNTING KIT INSTALLATION

36. Place the lock/unlock decal (#40756) on the flat surface of the control box next to the switch. See Figure #10

Lubricate all pivot points on the hydraulic latch assembly with a general purpose grease. Following all safety practices, start the loader and check the hydraulic system for leaks. Check hose routing for pinching or chafing of the hydraulic hoses.

FIGURE #10



Operate the switch back and forth to purge any air from the hydraulic system. Note the movement of the lock cylinder relative to the switch position. If the locking operation is reversed from the decal, shut off the engine and switch the two DIN connector receptacles on the valve assembly. **NOTE:** In order to operate the hydraulic latch, there must be a load applied to either the bucket cylinder, loader arms or auxiliary hydraulics.

Hydraulic latch installation is now complete.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	REMEDY
Latch will not cycle	Air in hydraulic lines	*Cycle lever to release air *Bleed lines
	Latch linkage binding	*Ensure links are properly installed *Adjust linkage hardware
Latch cycles reverse of decal	Valve wiring connected backwards	*Reverse DIN connectors at valve
Latch does not stay completely locked	Air in hydraulic lines	*Purge air from hydraulic system
	Incorrect hose connection	*Reverse hoses at cylinder