



Parts Manual

Model _____ Layer Picker _____

Catalog Number _____ 30B42846 R0 _____

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corporation

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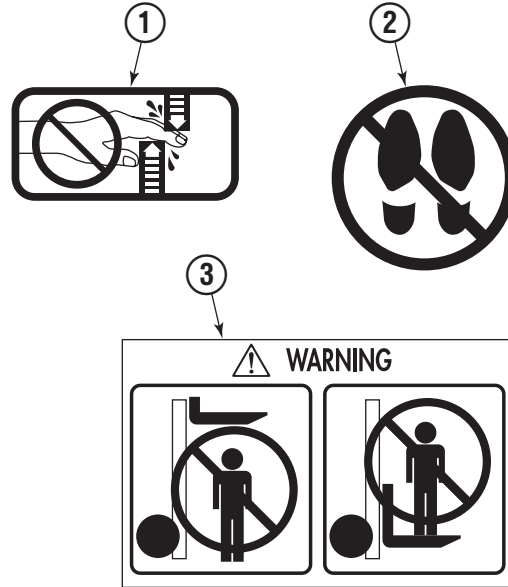
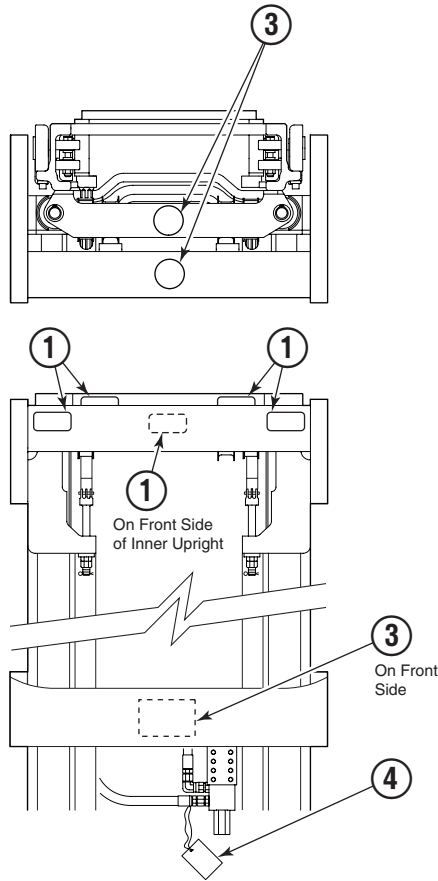
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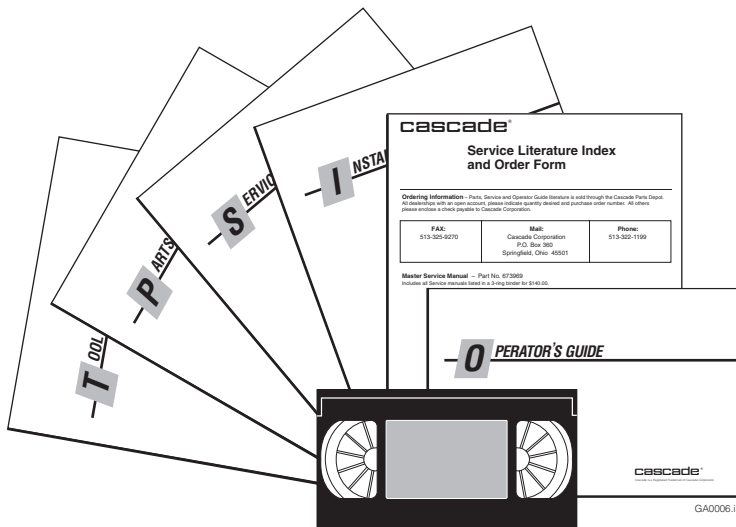
Safety Decals



LP0064.eps

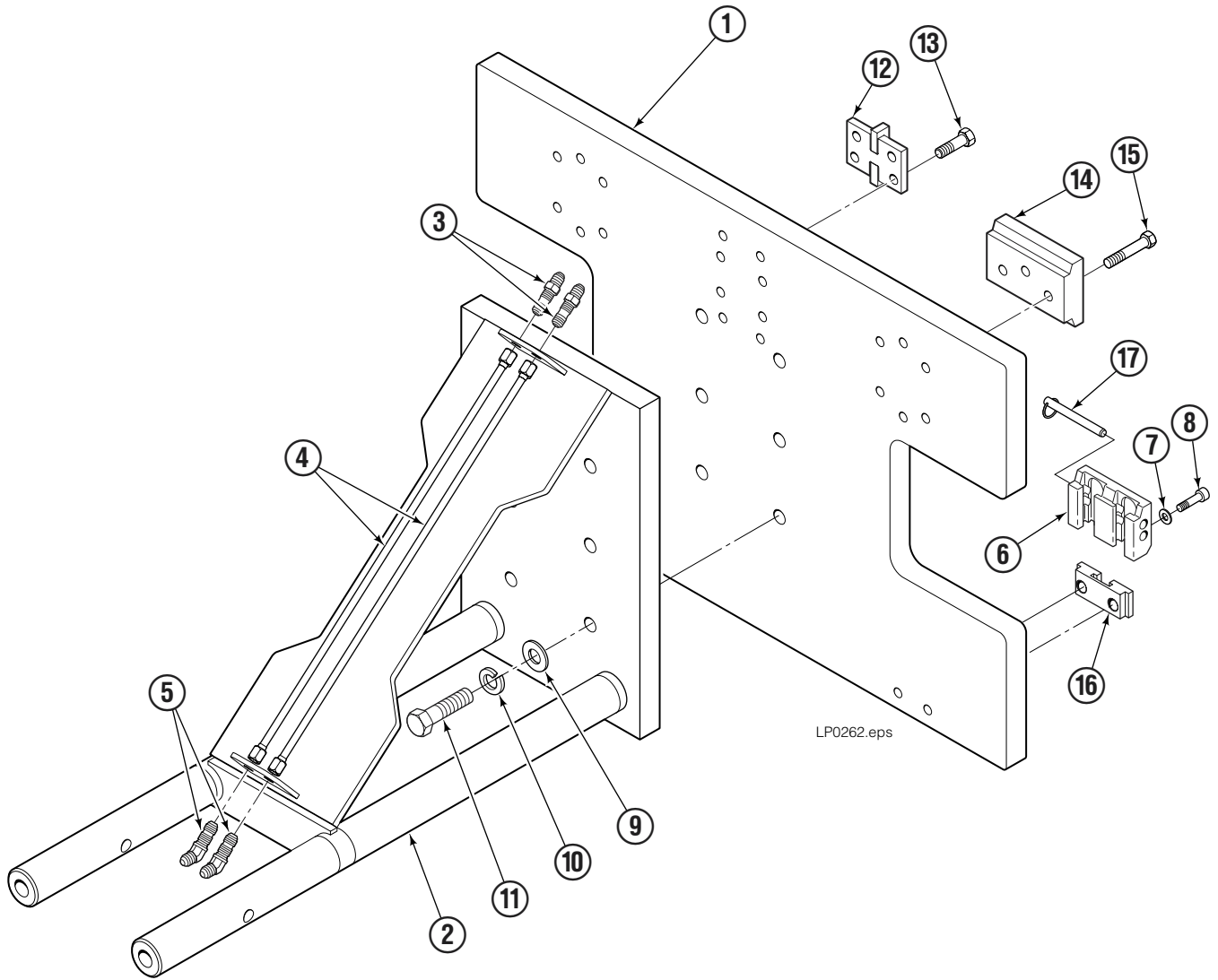
REF	QTY	PART NO.	DESCRIPTION
1	5	665595	No Hand Hold Decal
2	2	679150	No Step
3	1	684166	WARNING
4	1	200798	WARNING-Trapped Air

Publications



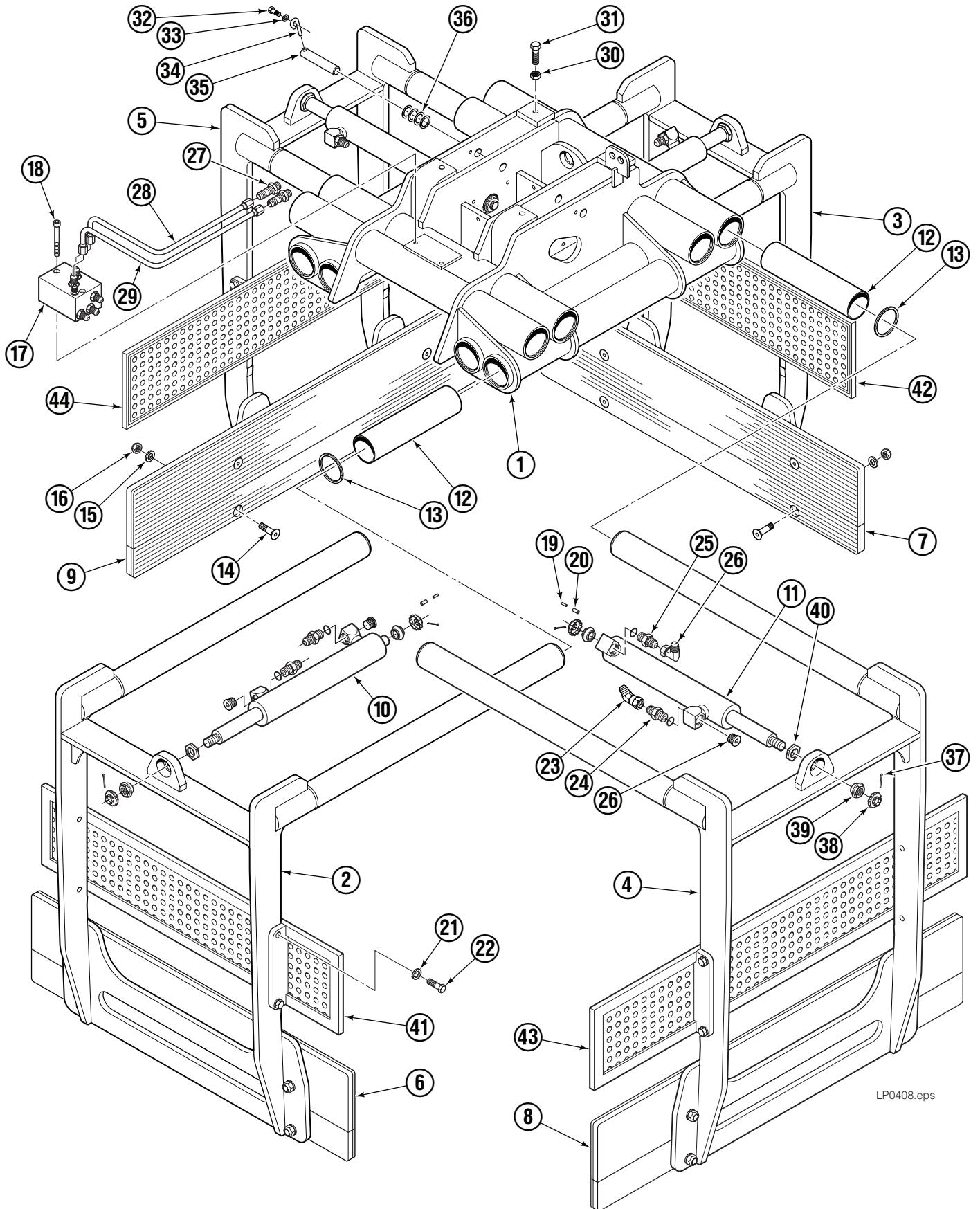
30A	
PART NO.	DESCRIPTION
230444	Service Manual
222225	Operators Guide
222964	Installation Instructions
679929	Tool Catalog
673964	Literature Index Order Form

Mounting/Frame Assembly



REF	QTY	PART NO.	DESCRIPTION
		6122048	Mounting/Frame Assembly
1	1	6115449	Mounting Plate
2	1	3018831	Frame
3	2	2375	Fitting, 6-6
4	2	3018912	Tube
5	2	2492	Fitting, 6-6
6	2	675514	Lower Hook
7	10	684586	Washer, M16
8	4	211180	Capscrew, M16 x 30
9	6	215419	Washer, M20
10	6	681467	Lockwasher, M20
11	6	768582	Capscrew, M20 x 80
12	1	3005793	Key Plate
13	4	684633	Capscrew, M16 x 50
14	2	3005795	Upper Hook
15	6	751511	Capscrew, M16 x 55
16	2	675515	Guide
17	2	678832	Pin

Clamp Assembly



LP0408.eps

Clamp Assembly

30B			
REF	QTY	PART NO.	DESCRIPTION
		6159479	Clamp Assembly
1	1	6154450	Frame
2	1	6154319	Wide Arm – Short
3	1	6154318	Narrow Arm – Short
4	1	6154317	Wide Arm – Long
5	1	6154316	Narrow Arm – Long
6	1	6159471	Contact Pad – Upper 38 x 6 in.
	1	6159467	Contact Pad – Lower, 38 x 3 in.
7	1	6151374	Contact Pad – Upper, 38 x 6 in.
	1	6151373	Contact Pad – Lower, 38 x 3 in.
8	1	6159473	Contact Pad – Upper, 42 x 6 in.
	1	6159457	Contact Pad – Lower, 42 x 3 in.
9	1	6151375	Contact Pad – Upper, 42 x 6 in.
	1	6151372	Contact Pad – Lower, 42 x 3 in.
10	2	6159454	Cylinder – SA ◆
11	2	6159455	Cylinder – LA ◆
12	8	6151809	Bushing
13	8	222901	Retaining Ring
14	16	755028	Capscrew, M12 x 50
15	16	200456	Washer, M12
16	16	205979	Nut, M12
17	1	219694	Valve ●
18	2	768802	Capscrew, M8 x 70
19	4	7861	Roll Pin – Inner
20	4	7962	Roll Pin – Outer
21	16	683822	Lockwasher, M12
22	16	763021	Capscrew, M12 x 30
23	2	605230	Fitting, 6-6
24	8	611288	Fitting, 6-6
25	6	2680	Fitting, 6-6
26	8	602580	Plug
27	2	2375	Fitting, 6-6
28	1	6143163	Tube
29	1	6143162	Tube
30	4	688387	Jam Nut, M12
31	4	768555	Capscrew, M12 x 40
32	2	787372	Capscrew, M8 x 20
33	2	787398	Washer, M8
34	2	689954	Eye Pin
35	2	218169	Pin
36	4	399469	Shim
37	8	6510	Cotter Pin
38	8	667624	Retainer
39	8	667625	Nut
40	8	667626	Washer
41	1	6157115	Load Support Panel, 35 x 8 in.
42	1	6127184	Load Support Panel, 35 x 8 in.
43	1	6159059	Load Support Panel, 46 x 8 in.
44	1	6127144	Load Support Panel, 46 x 8 in.
	1	6151672	Hose Group ■

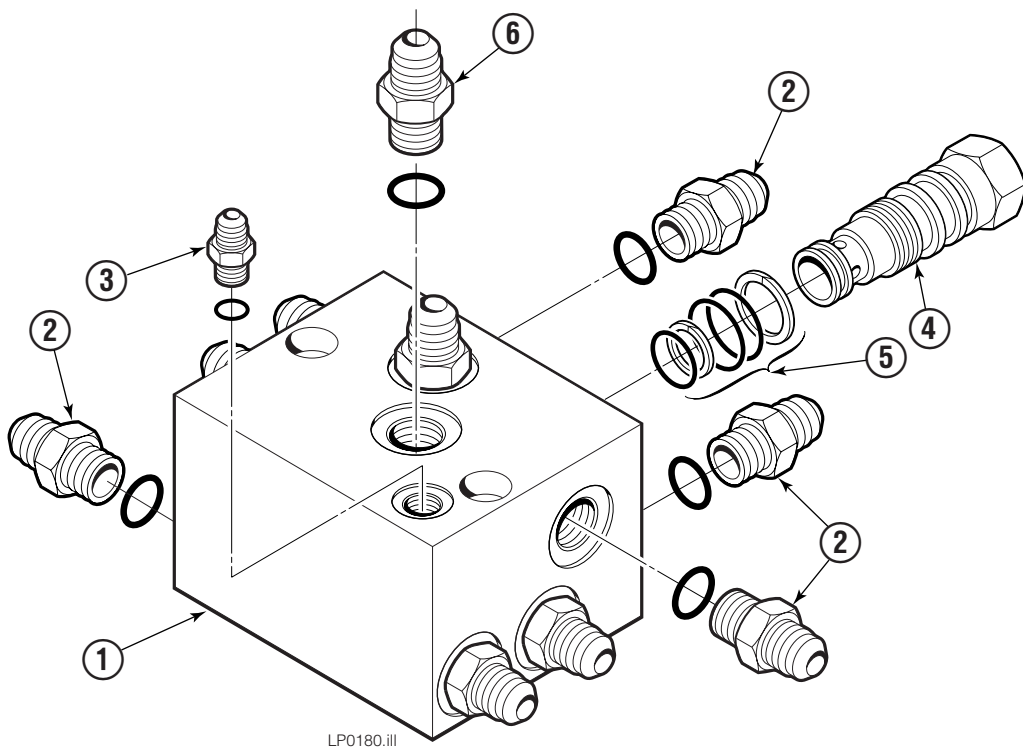
◆ See Cylinder page for parts breakdown.

● See Valve page for parts breakdown.

■ See Hose Group page for parts breakdown.

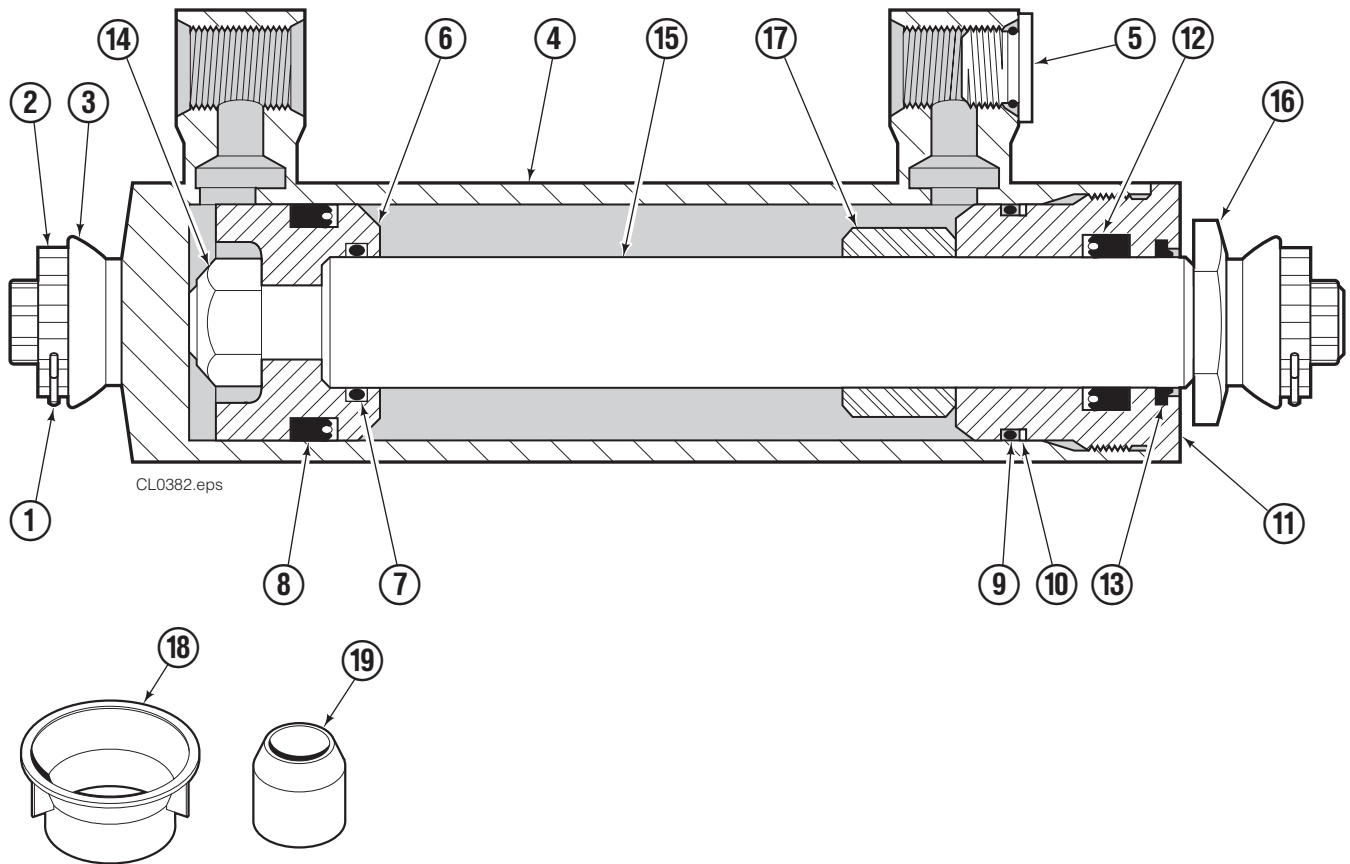
Reference: Common Parts Group 6159480, S-28956, SK-13056.

Valve Assembly



REF	QTY	PART NO.	DESCRIPTION
		219694	Valve Assembly
1	1	219693	Valve Body
2	8	611288	Fitting, 6-8
3	1	617915	Fitting, 4-4
4	1	6038929	Check Valve - PO
5	1	667516	Seal Kit
6	2	601377	Fitting, 8-8

Cylinder Assembly



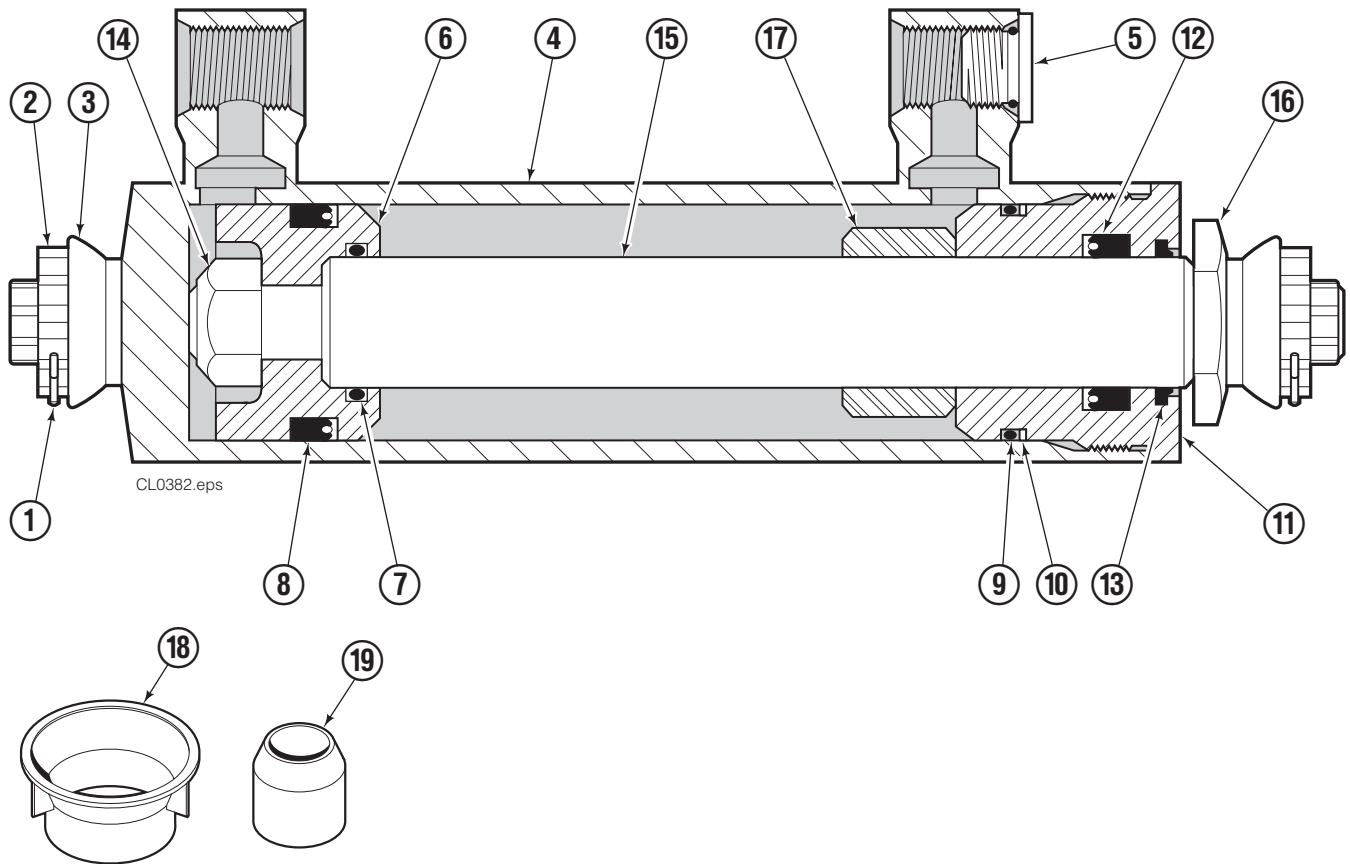
REF	QTY	PART NO.	DESCRIPTION
		6159454	Cylinder Assembly
1	2	6510	■ Cotter Pin
2	2	667624	■ Nut Retainer
3	2	667625	■ Nut
4	1	6127715	Shell
5	1	602580	Fitting
6	1	559702	Piston
7	1	2716	▲ O-Ring
8	1	662450	▲ Seal
9	1	2722	▲ O-Ring
10	1	615126	▲ Back-Up Ring
11	1	413799	Retainer
12	1	662448	▲ Seal
13	1	636853	▲ Wiper
14	1	667623	Nut
15	1	6158159	Rod
16	1	667626	Washer
17	1	6155294	Spacer
18	1	671047	▲ Seal Loader, Piston
19	1	671051	▲ Seal Loader, Retainer
		560729	Service Kit

■ Included in Nut Service Kit 668926.

▲ Included in Service Kit 560729.

Reference: ST-0284, ST-0283.

Cylinder Assembly



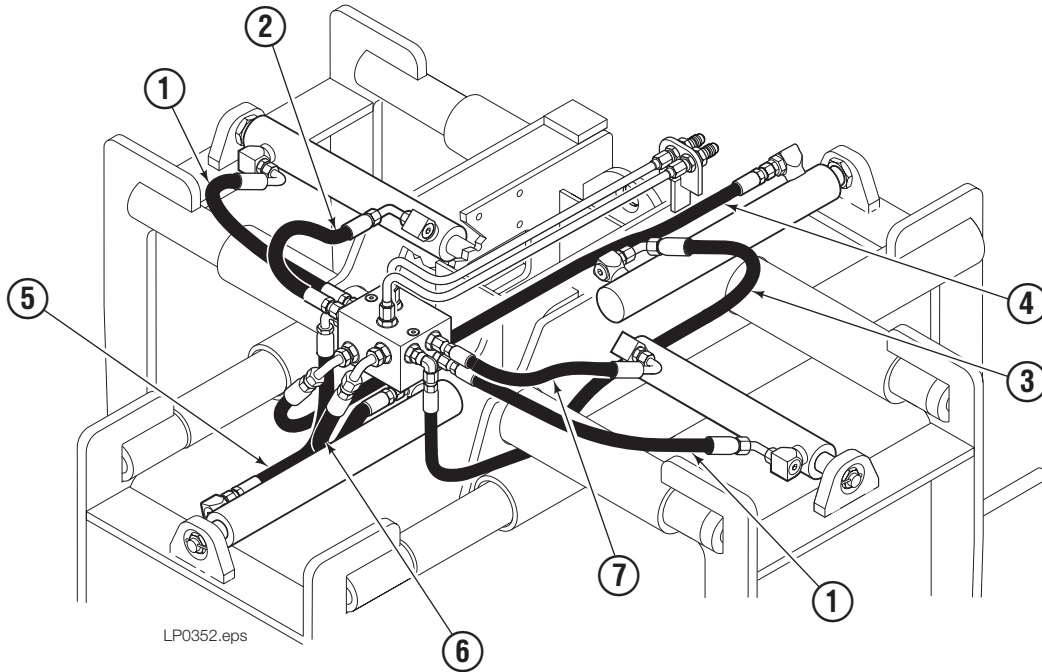
REF	QTY	PART NO.	DESCRIPTION
		6159455	Cylinder Assembly
1	2	6510	■ Cotter Pin
2	2	667624	■ Nut Retainer
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6	1	559702	Piston
7	1	2716	▲ O-Ring
8	1	662450	▲ Seal
9	1	2722	▲ O-Ring
10	1	615126	▲ Back-Up Ring
11	1	413799	Retainer
12	1	662448	▲ Seal
13	1	636853	▲ Wiper
14	1	667623	Nut
15	1	6120539	Rod
16	1	667626	Washer
17	1	6153442	Spacer
18	1	671047	▲ Seal Loader, Piston
19	1	671051	▲ Seal Loader, Retainer
		560729	Service Kit

■ Included in Nut Service Kit 668926.

▲ Included in Service Kit 560729.

Reference: ST-0284, ST-0283.

Hose Group



30B			
REF	QTY	PART NO.	DESCRIPTION
		6151672	Hose Group
1	2	205225	Hose, 33.00 in.
2	1	6132885	Hose, 16.00 in.
3	1	6125917	Hose, 35.00 in.
4	1	383294	Hose, 22.00 in.
5	1	6113344	Hose, 6.75 in.
6	1	6100716	Hose, 12.00 in.
7	1	383026	Hose, 14.50 in.

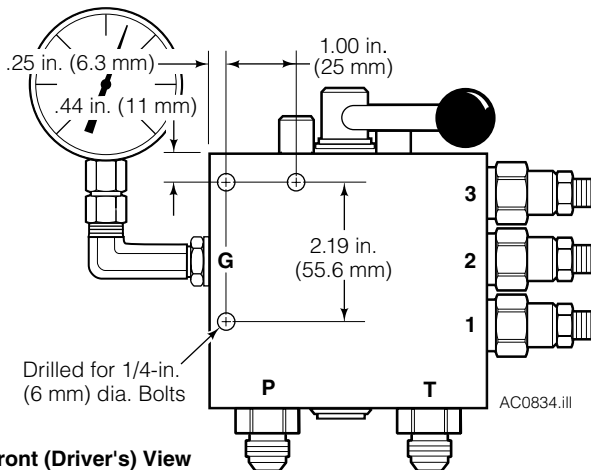


Installation Instructions

Four-Position Pressure Relief Valve 660412

This sheet provides installation instructions for the Four-Position Pressure Relief Valve 660412. The valve enables up to four (4) pressure selections, allowing the clamping force to be varied from load to load. Three pressure relief cartridges can be adjusted to relieve pressure between 100 and 3000 psi, a fourth position blocks flow to all relief cartridges enabling straight-through truck relief pressure. Maximum flow rate through the valve is 20 GPM.

- 1 Determine a convenient location on the truck cowl or safety cage upright, within safe reach and view of the driver (see illustration opposite). Use the mounting hole dimensions shown to mount the valve securely.



Front (Driver's) View

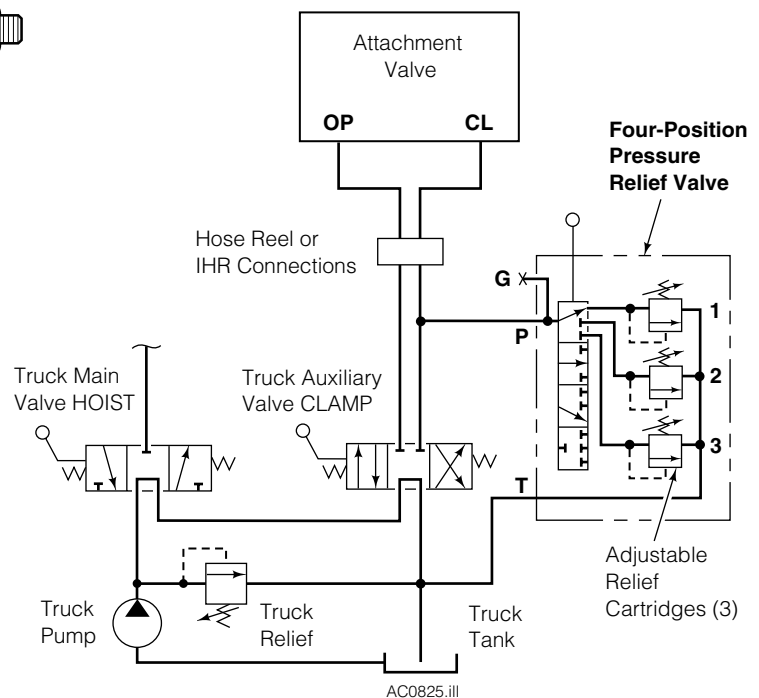
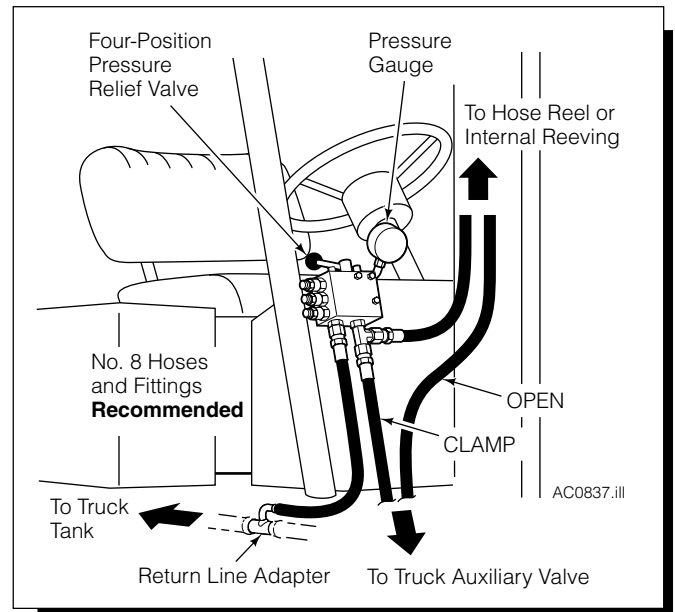


WARNING: Before removing hydraulic hoses, relieve pressure in the Attachment hydraulic system. Turn the truck off and move the auxiliary control lever several times in both directions.

- 2 Attach hoses and fittings between the Pressure Relief Valve, truck auxiliary valve, truck tank, and attachment valve using the diagram and hydraulic schematic. **No. 8 hoses and fittings with 13/32 in. (10 mm) minimum ID. recommended.**

CAUTION: A dedicated return-to-tank line is required from the relief valve 'TANK' port to the truck tank. Return Line Adapter Kits available:

Part No. 214062 (.75 in. dia. line)
Part No. 211745 (1.0 in. dia. line)
Part No. 214066 (1.25 in. dia. line)



Part No. 664827-R4

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- 3** Four basic stop configurations are shown in the illustration opposite (relief valve mounted as shown in this sheet). Many different configurations are possible by rearranging the stops, or by sliding the lever within the valve spool. Position the stops for desired movement of the lever depending on your specific requirements.

IMPORTANT: Numbers stamped around base of lever correspond to relief valve cartridge selected. Positions 1 and 2 are duplicated and can be selected 180 degrees opposite from each other. Position 'X' blocks the flow to all relief valve cartridges so the valve has no effect. Truck relief pressure is then delivered to the attachment.

- 4** To preset the Valve relief cartridges, install a 5000 psi (345 bar) pressure gauge (Cascade Part No. 664158) in the Valve gauge port.

Sample Settings*

3-Position	4-Position
Pos. X – Not Available	Pos. X – 2300 (Truck Pressure)
Pos. 1 – 1400 psi	Pos. 1 – 1800 psi
Pos. 2 – 1600 psi	Pos. 2 – 1600 psi
Pos. 3 – 1800 psi	Pos. 3 – 1400 psi

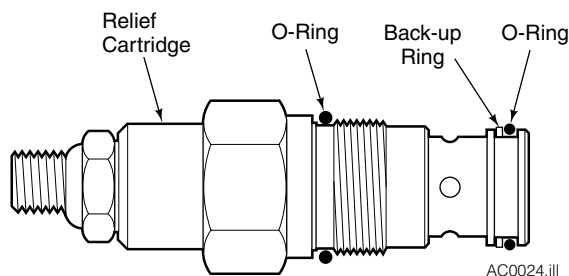
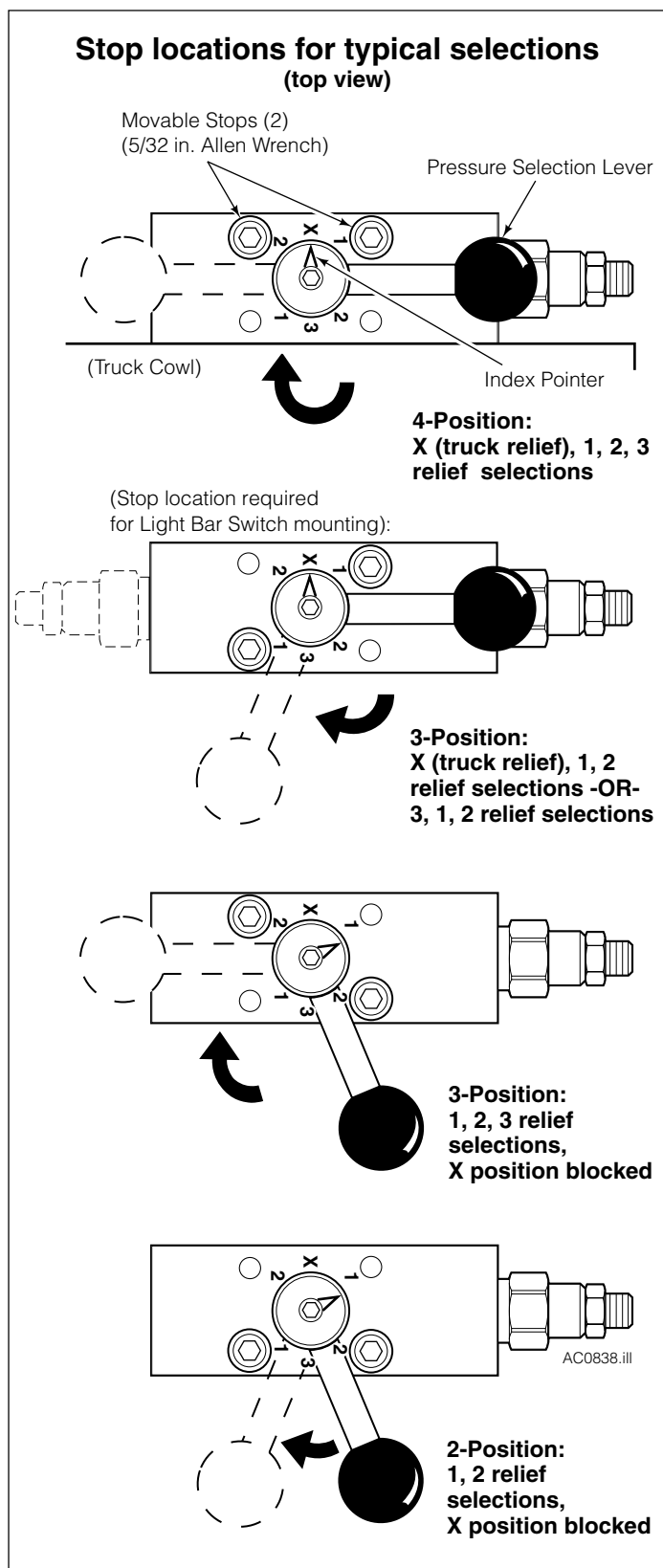
* **IMPORTANT: Cartridges are not factory pre-set.** Pressures must be adjusted for your application. Four (4) positions not available when Light Bar Switch is mounted on valve.

- 5** Shift the valve lever index pointer to position '1' stamped on the valve body.
- 6** Loosen the jam nut on the No. 1 relief cartridge. Adjust the relief cartridge (3/16-in. Allen hex wrench) inward (CW) to raise pressure or outward (CCW) to lower the pressure.
- 7** Clamp up on the load and check the pressure. Readjust as required. Tighten the jam nut.
- 8** Shift the valve lever pointer to position '2' stamped on the valve body. Repeat step 6 and 7 for No. 2 relief cartridge.
- 9** Shift the valve lever pointer to position '3' stamped on the valve body. Repeat step 6 and 7 for No. 3 relief cartridge.
- 10** With the valve lever pointer at position 'X', all ports to the relief valve cartridges are blocked, and the valve has no effect. Pressure to the attachment is determined by truck system relief pressure. The 'X' position selection may be blocked by positioning the stops as shown.

CAUTION: Do not remove the rotating spool from the valve body. Permanent damage will occur due to the spring-loaded detents and will void the warranty. Replace valve as a complete assembly.

Replacement Parts

Qty	Description	Part No.
3	Relief Cartridge with Seals	661676
3	Seal Service Kit	669597



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