



Parts Manual

Model _____ Layer Picker _____

Catalog Number _____ 30B42131 _____

cascade®
corporation

For Technical Assistance call: 800-227-2233, Fax: 888-329-8207

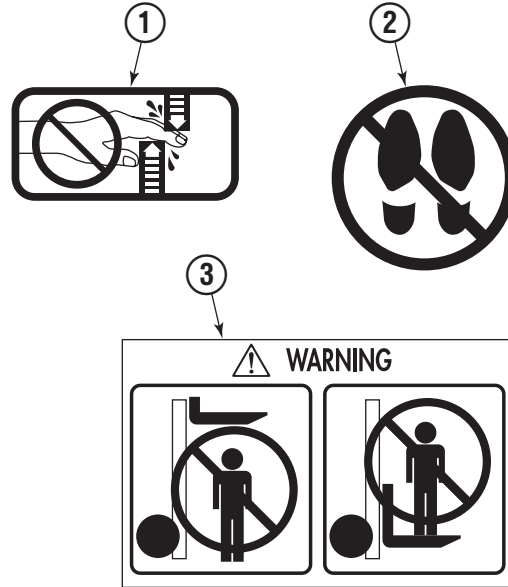
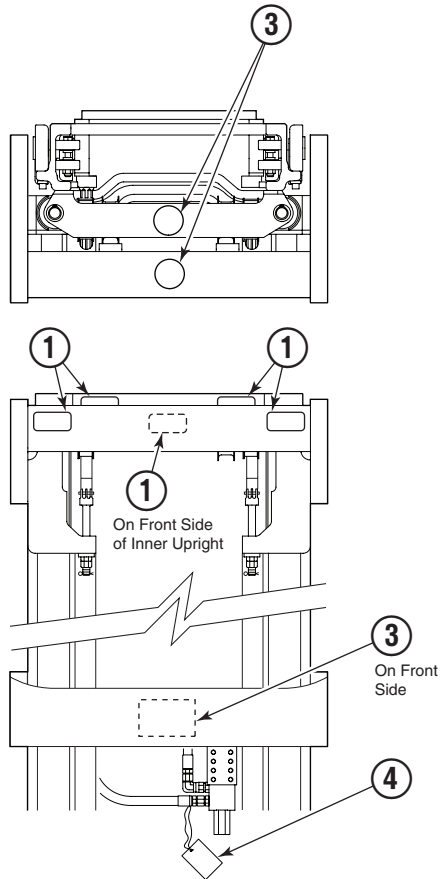
To Order Parts call: 888-227-2233, Fax: 888-329-0234

OR

Write: Cascade Corporation, P.O. Box 20187, Portland, OR 97220

Internet: www.cascorp.com

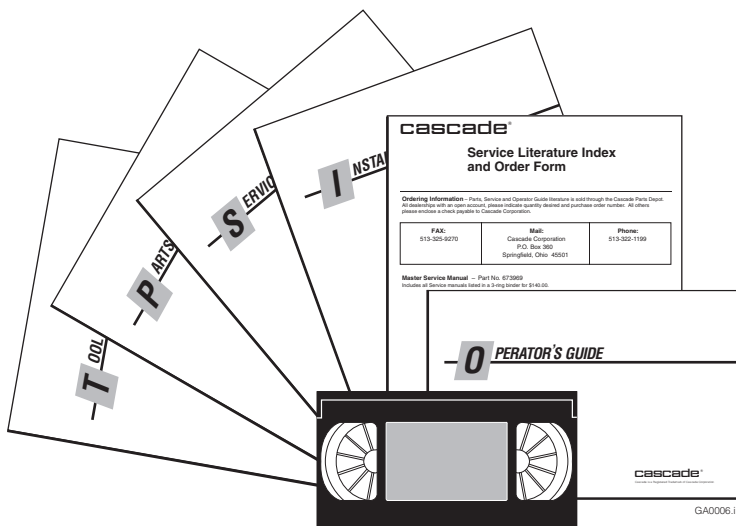
Safety Decals



LP0064.eps

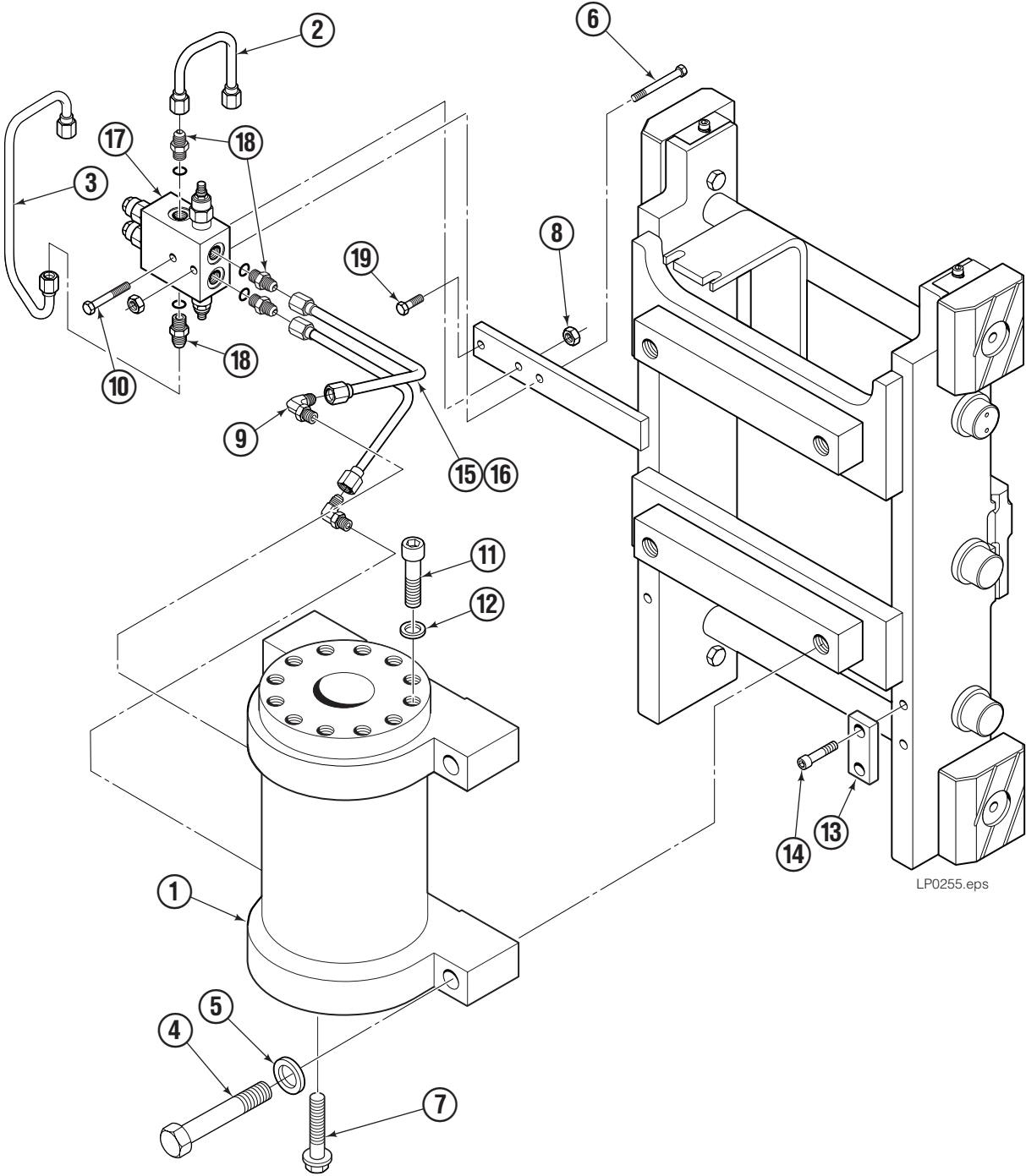
| REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|---------------------|
| 1 | 5 | 665595 | No Hand Hold Decal |
| 2 | 2 | 679150 | No Step |
| 3 | 1 | 684166 | WARNING |
| 4 | 1 | 200798 | WARNING-Trapped Air |

Publications



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

Hydraulic Group



LP0255.eps

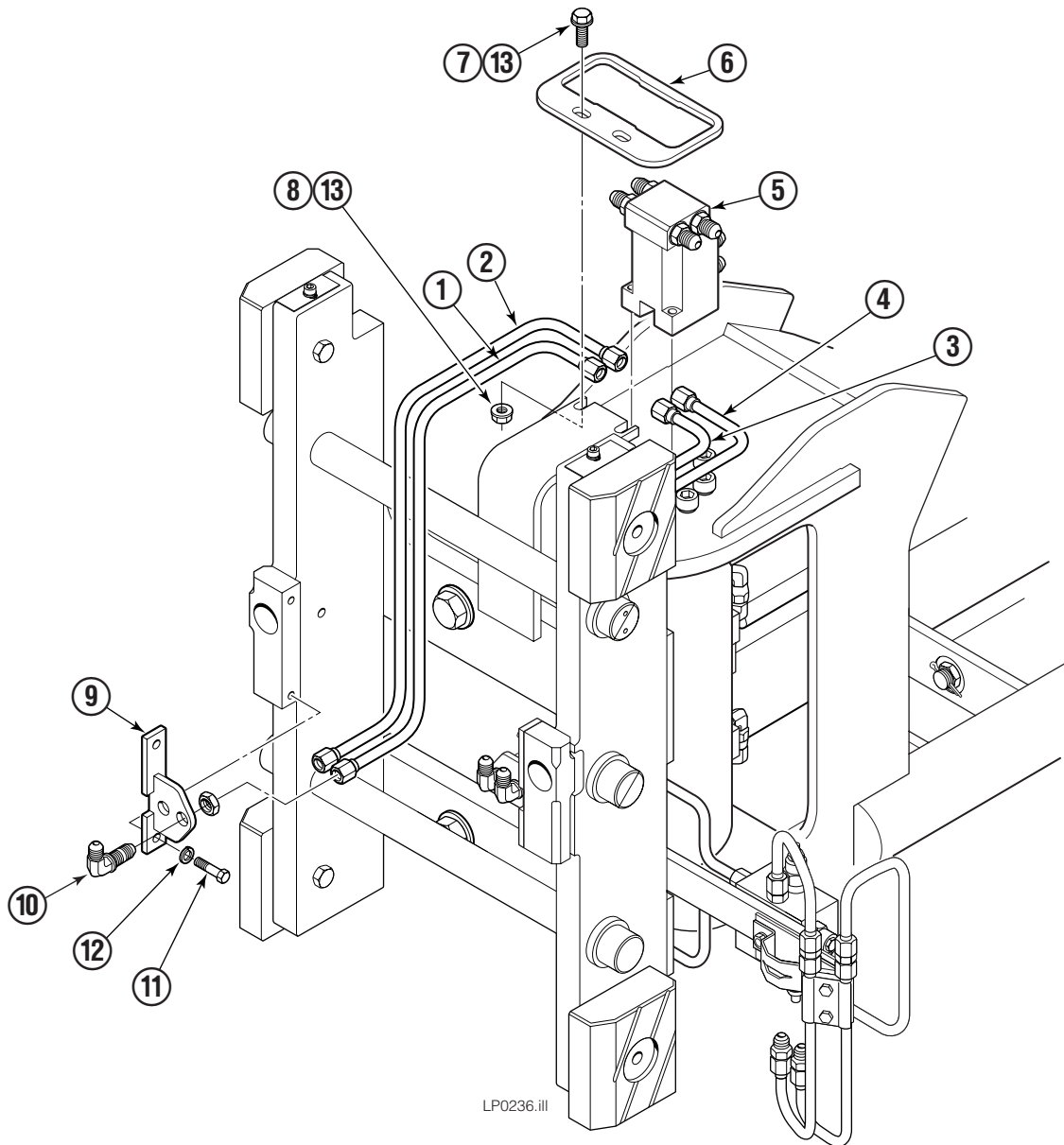
Hydraulic Group

| 30B | | | |
|-----|-----|----------|-----------------------|
| REF | QTY | PART NO. | DESCRIPTION |
| | | 6127207 | Hydraulic Group |
| 1 | 1 | 6125968 | Actuator |
| 2 | 1 | 223019 | Tube |
| 3 | 1 | 223020 | Tube |
| 4 | 4 | 6126374 | Capscrew, 7/8 x 5.00 |
| 5 | 4 | 221204 | Washer |
| 6 | 1 | 3611 | Capscrew, 3/8 x 3.00 |
| 7 | 7 | 607085 | Capscrew, .625 x 1.50 |
| 8 | 2 | 6099 | Nut |
| 9 | 2 | 601676 | Fitting, 6-6 |
| 10 | 1 | 674910 | Capscrew |
| 11 | 12 | 607105 | Capscrew, 3/4 x 2.00 |
| 12 | 12 | 670692 | Washer |
| 13 | 2 | 6127201 | Bumper |
| 14 | 4 | 753159 | Capscrew, M6 x 10 |
| 15 | 1 | 6126392 | Tube |
| 16 | 1 | 6126392 | Tube |
| 17 | 1 | 221642 | Valve ● |
| 18 | 4 | 604511 | Fitting, 6-6 |
| 19 | 1 | 629516 | Capscrew, 3/8 x 1.00 |

● See Valve page for parts breakdown.

Reference: SK-12167.

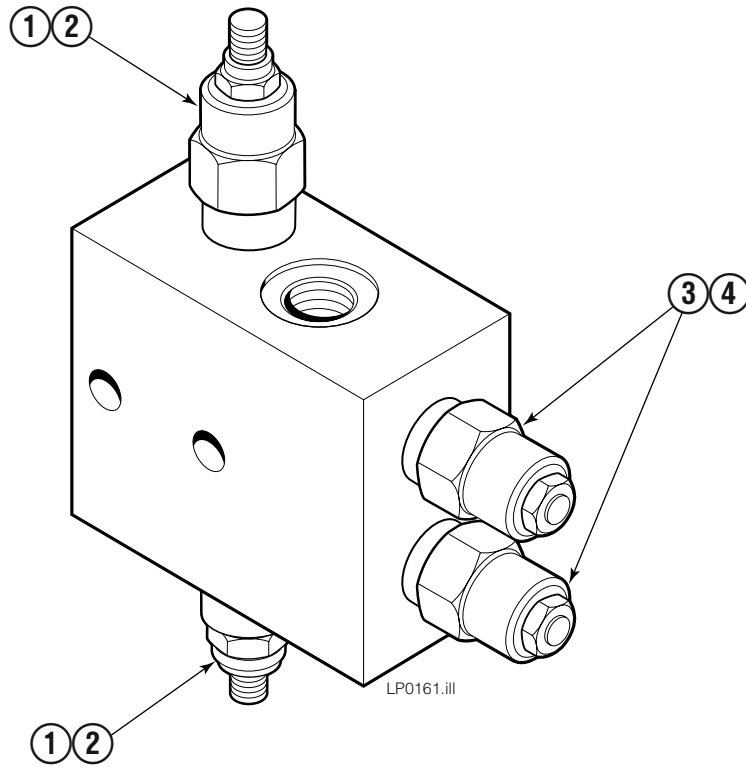
Hydraulic Group



| REF | QTY | PART NO. | DESCRIPTION | REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|------------------------|-----|-----|----------|--------------------|
| | | 6127207 | Hydraulic Group (cont) | 7 | 2 | 768538 | Capscrew, M10 x 30 |
| 1 | 1 | 6126385 | Tube | 8 | 2 | 786882 | Nut, M10 |
| 2 | 1 | 6126386 | Tube | 9 | 2 | 206898 | Bracket |
| 3 | 1 | 6126387 | Tube | 10 | 4 | 2453 | Fitting, 6-6 |
| 4 | 1 | 6126388 | Tube | 11 | 4 | 787372 | Capscrew, M8 x 20 |
| 5 | 1 | 220780 | Revolving Connection ♦ | 12 | 4 | 206315 | Lockwasher, M8 |
| 6 | 1 | 221649 | Bracket | 13 | 2 | 201570 | Washer, M10 |

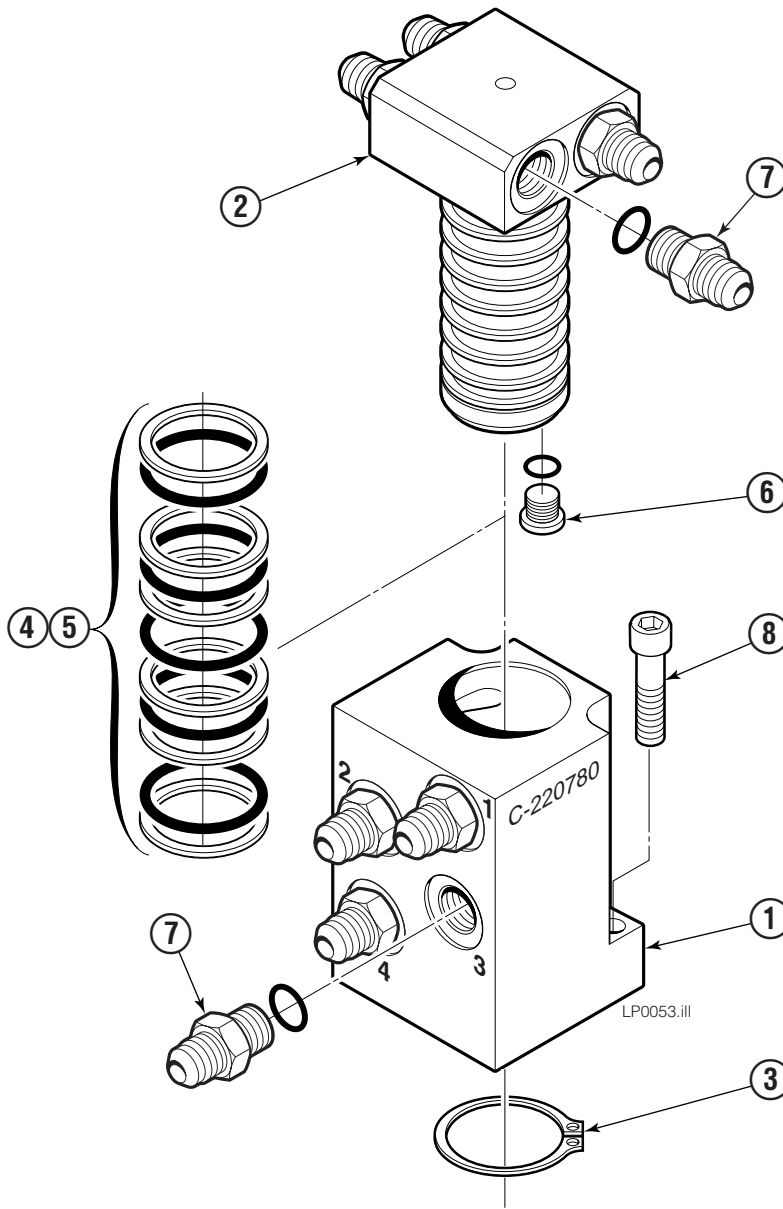
♦ See Revolving Connection page for parts breakdown.
Reference: SK-12167.

Valve



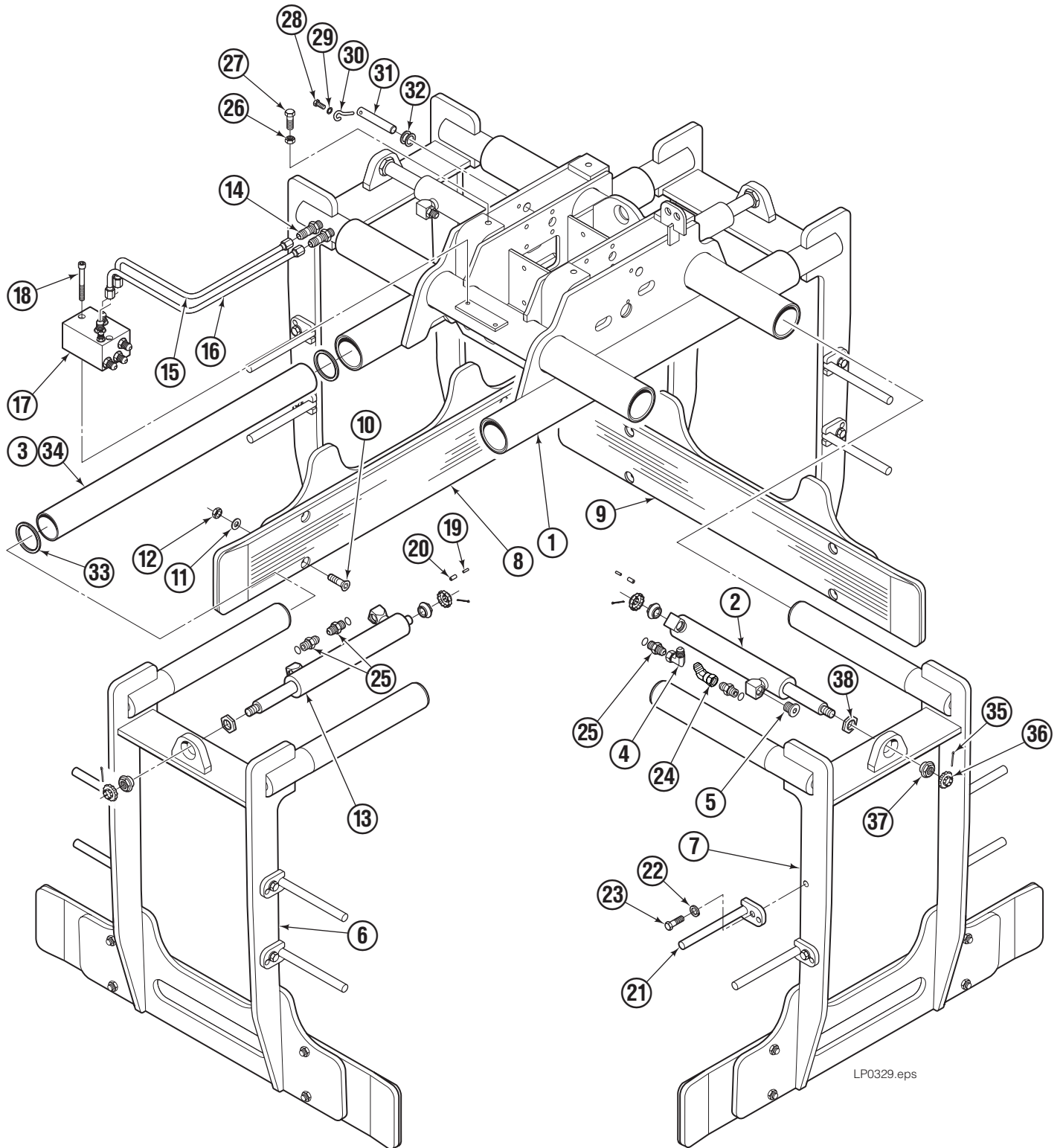
| REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|-----------------------|
| | | 221642 | Valve Group |
| 1 | 2 | 211762 | Relief Cartridge |
| 2 | 2 | 661312 | Service Kit |
| 3 | 2 | 674732 | Counter Balance Valve |
| 4 | 2 | 667516 | Service Kit |

Revolving Connection



| REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|----------------------|
| | | 220780 | Revolving Connection |
| 1 | 1 | 220781 | Body |
| 2 | 1 | 322714 | Shaft |
| 3 | 1 | 3139 | Retaining Ring |
| 4 | 8 | 615122 | Back-Up Ring |
| 5 | 5 | 655949 | O-Ring |
| 6 | 4 | 663694 | Fitting, 3 |
| 7 | 8 | 604511 | Fitting, 8-8 |
| 8 | 2 | 768796 | Capscrew, M8x35 |

Clamp Assembly



Clamp Assembly

| 30B | | | |
|-----|-----|------------|----------------------------------|
| REF | QTY | PART NO. | DESCRIPTION |
| | | 6147538 | Clamp Assembly |
| 1 | 1 | 6147537 | Frame (28836) |
| 2 | 2 | 6147547 | Cylinder – LA ♦ |
| 3 | 2 | 21066-0993 | Bushing – LA |
| 4 | 6 | 2680 | Fitting, 6-6 |
| 5 | 8 | 602580 | Plug |
| 6 | 2 | 6147543 | Arm – Short (21071) |
| 7 | 2 | 6147542 | Arm – Long (21071) |
| 8 | 2 | 6123896 | Contact Pad, 37 x 10 in. (21031) |
| 9 | 2 | 6124020 | Contact Pad, 43 x 10 in. (21031) |
| 10 | 16 | 755028 | Capscrew, M12 x 50 |
| 11 | 16 | 200456 | Washer, M12 |
| 12 | 16 | 205979 | Nut, M12 |
| 13 | 2 | 6147544 | Cylinder – SA ♦ |
| 14 | 2 | 2375 | Fitting, 6-6 |
| 15 | 1 | 6143163 | Tube |
| 16 | 1 | 6143162 | Tube |
| 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 | 221199 | Bracket |
| 22 | 16 | 683822 | Lockwasher, M12 |
| 23 | 16 | 763021 | Capscrew, M12 x 30 |
| 24 | 2 | 605230 | Fitting, 6-6 |
| 25 | 8 | 611288 | Fitting, 6-6 |
| 26 | 4 | 688387 | Jam Nut, M12 |
| 27 | 4 | 768555 | Capscrew, M12 x 40 |
| 28 | 2 | 787372 | Capscrew, M8 x 20 |
| 29 | 2 | 787398 | Washer, M8 |
| 30 | 2 | 6020429 | Eye Pin |
| 31 | 2 | 218169 | Pin |
| 32 | 4 | 399469 | Shim |
| 33 | 8 | 222901 | Retaining Ring |
| 34 | 2 | 21066-0816 | Bushing – SA |
| 35 | 8 | 6510 | Cotter Pin |
| 36 | 8 | 667624 | Retainer |
| 37 | 8 | 667625 | Nut |
| 38 | 8 | 667626 | Washer |
| | 1 | 6147539 | Hose Group ■ |

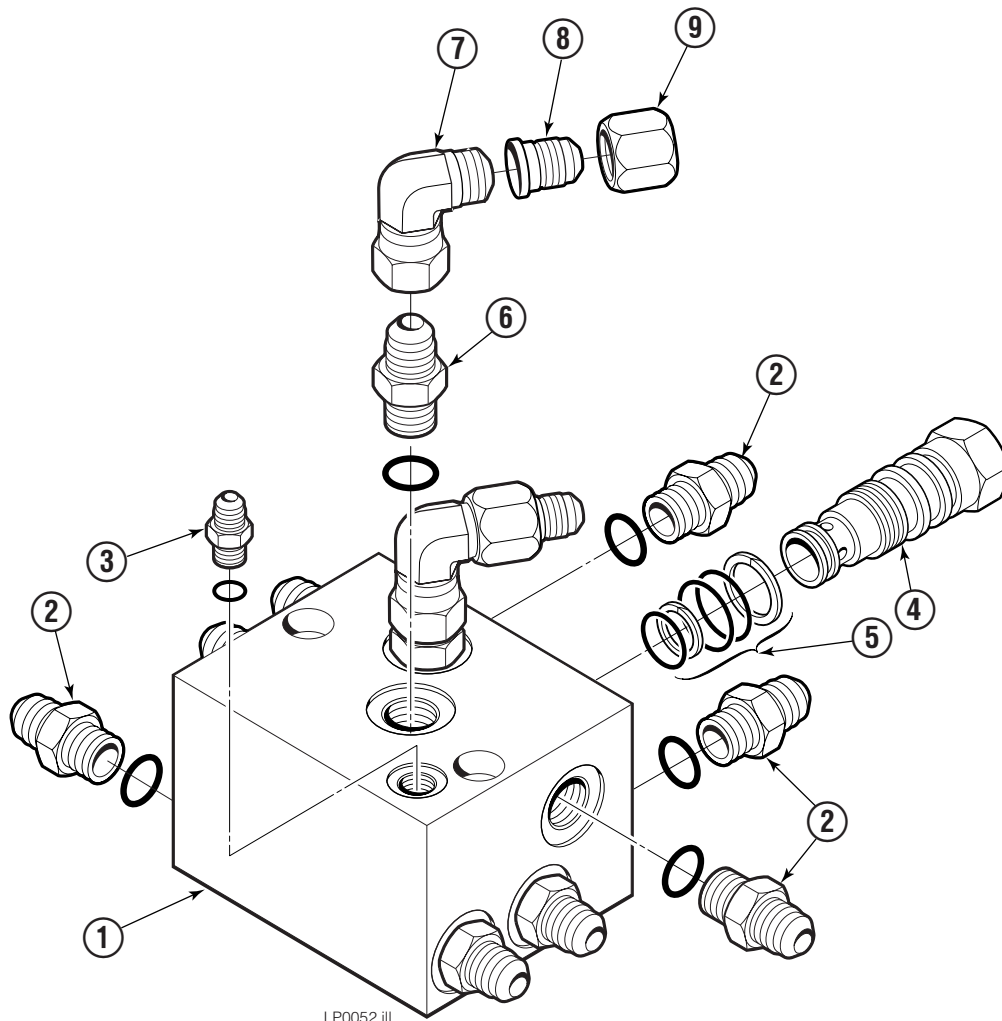
♦ See Cylinder page(s) for parts breakdown.

● See Valve page for parts breakdown.

■ See Hose Group page for parts breakdown.

Reference: Common Parts Group 6143338, S-28847, S-21075.

Clamp Valve



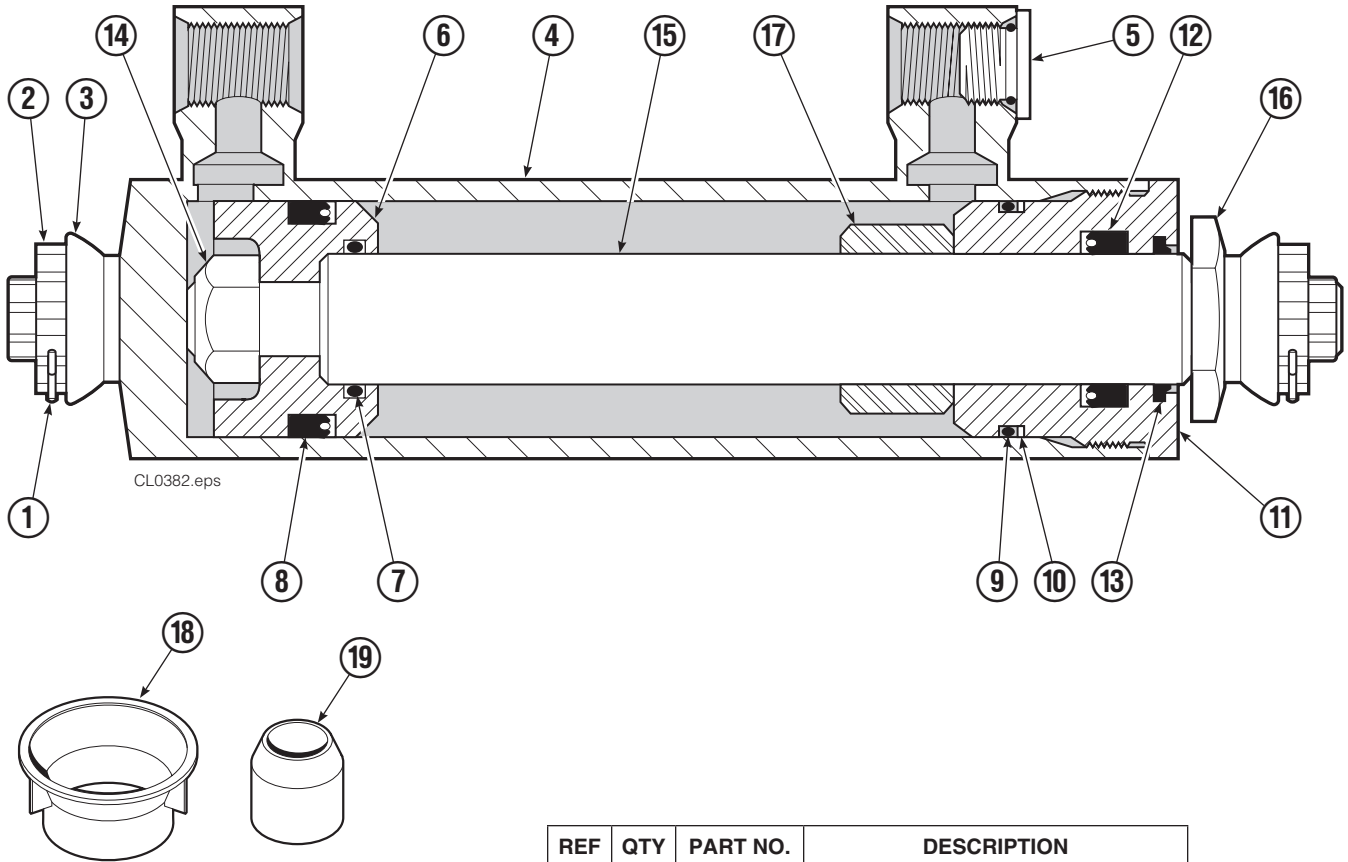
LP0052.ill

| REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|------------------|
| | | 219694 | Valve Assembly |
| 1 | 1 | 219693 | Body |
| 2 | 8 | 611288 | Fitting, 6-8 |
| 3 | 1 | 617915 | Fitting, 4-4 |
| 4 | 1 | 659058 | Check Valve - PO |
| 5 | 1 | 667516 | Service Kit |
| 6 | 2 | 601377 | Fitting, 8-8 |
| 7 | 2 | 605761 | Fitting, 8-8 ▲ |
| 8 | 2 | 2671 | Fitting, 8 ▲ |
| 9 | 2 | 2618 | Nut, 8 ▲ |

▲ Not included in Valve Assembly.

Reference: Hydraulic Group 222080.

Cylinder Assembly



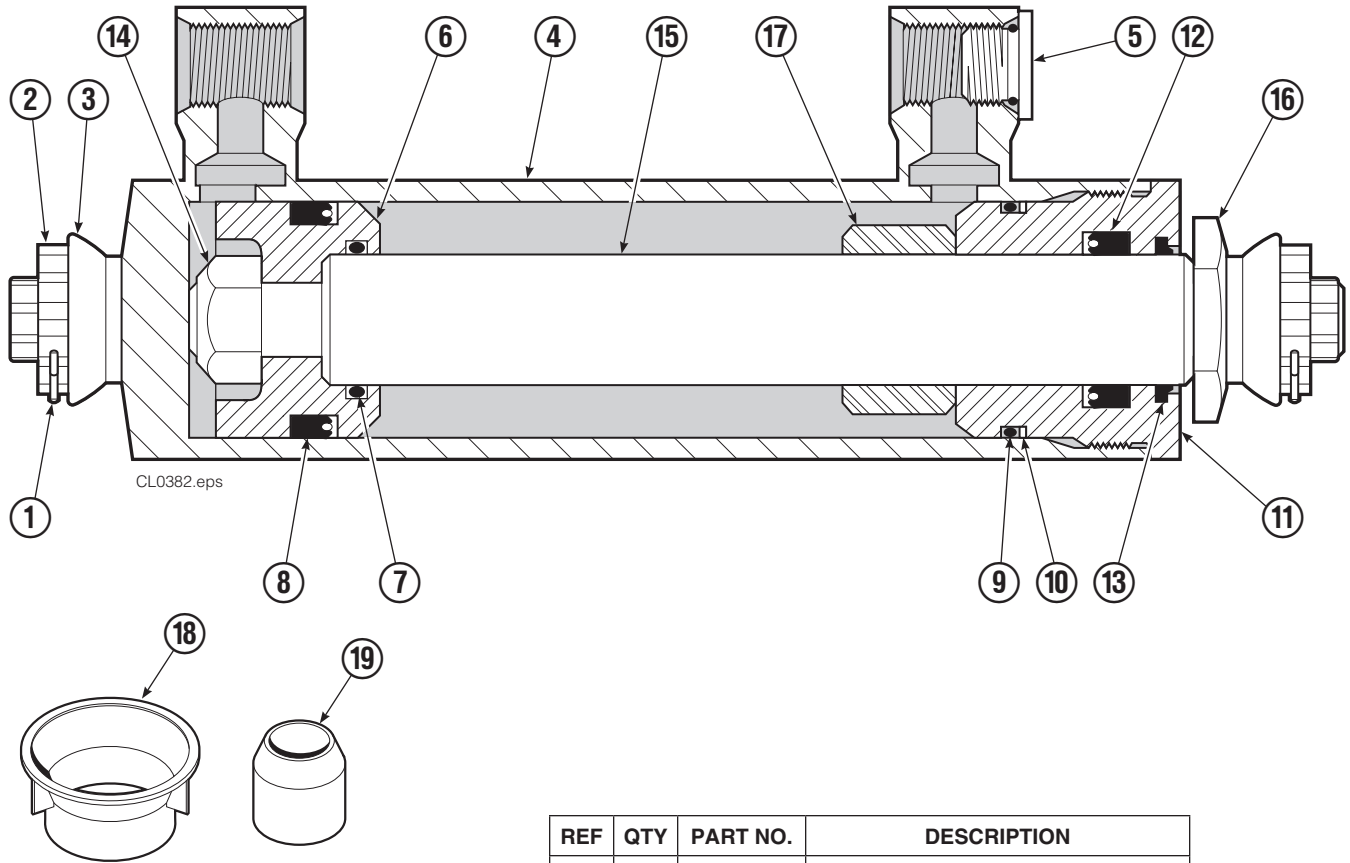
| REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|--------------------------|
| | | 6147544 | Cylinder Assembly |
| 1 | 2 | 6510 | ■ Cotter Pin |
| 2 | 2 | 667624 | ■ Nut Retainer |
| 3 | 2 | 667625 | ■ Nut |
| 4 | 1 | 6147545 | Shell |
| 5 | 1 | 602580 | Fitting |
| 6 | 1 | 559702 | Piston |
| 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 | 6147546 | Rod |
| 16 | 1 | — | Washer |
| 17 | 1 | 3005466 | 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-0283, ST-0284.

Cylinder Assembly



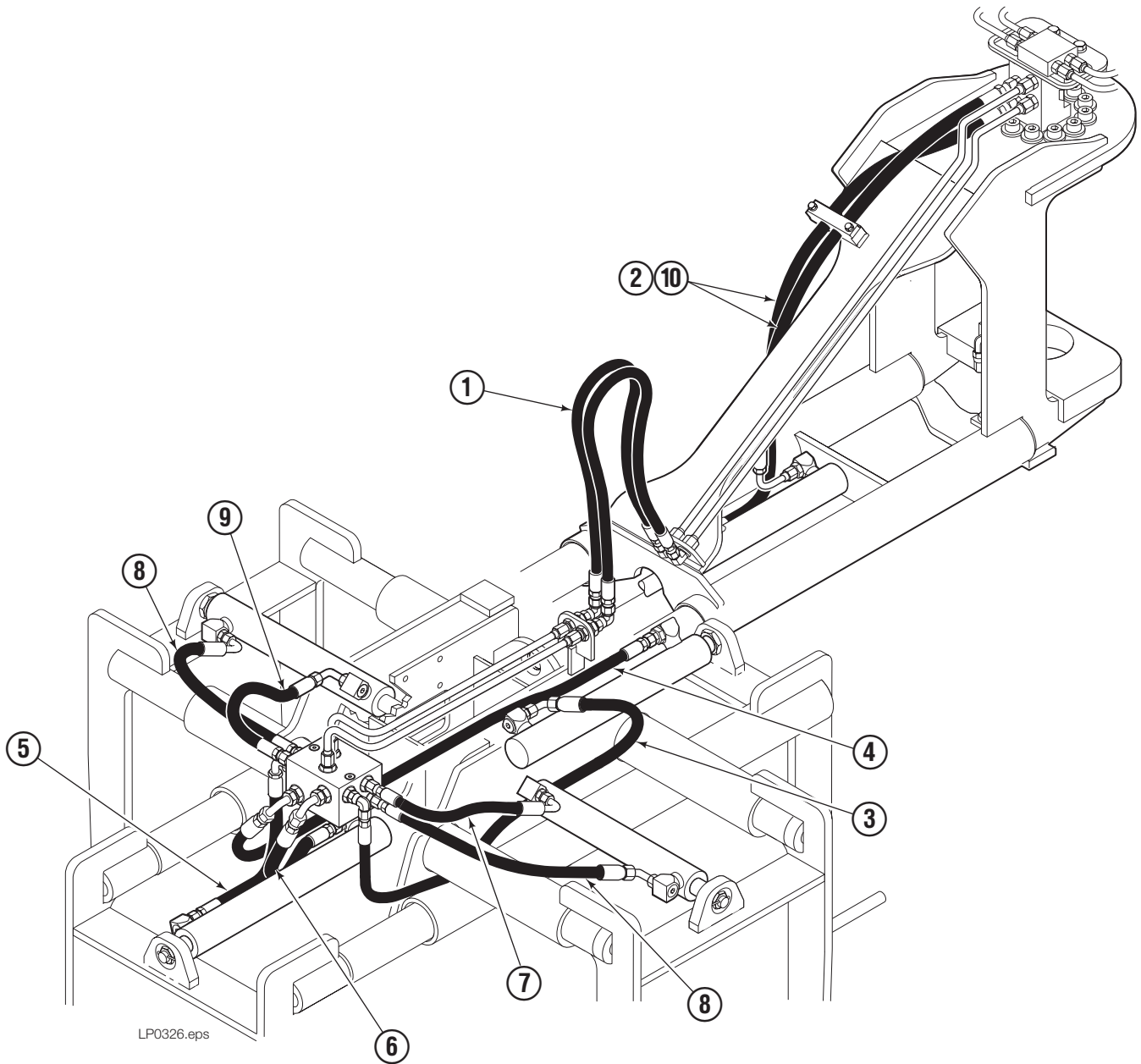
| REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|--------------------------|
| | | 6147547 | Cylinder Assembly |
| 1 | 2 | 6510 | ■ Cotter Pin |
| 2 | 2 | 667624 | ■ Nut Retainer |
| 3 | 2 | 667625 | ■ Nut |
| 4 | 1 | 6147548 | Shell |
| 5 | 1 | 602580 | Fitting |
| 6 | 1 | 559702 | Piston |
| 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 | 6147549 | Rod |
| 16 | 1 | — | Washer |
| 17 | 1 | 6003533 | 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-0283, ST-0284.

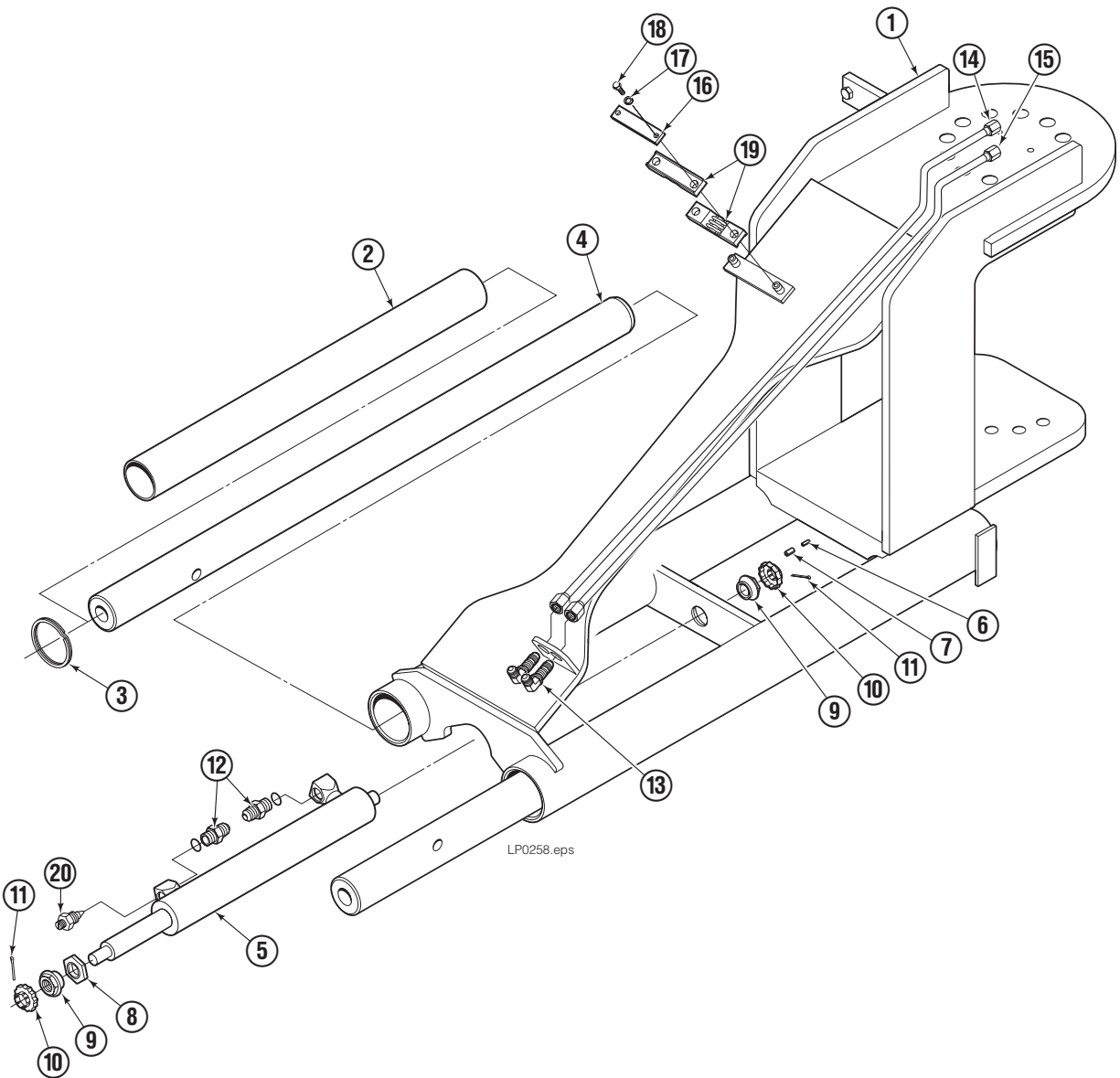
Hose Group



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| 30B | | | |
|-----|-----|----------|---------------------------|
| REF | QTY | PART NO. | DESCRIPTION |
| | | 6147539 | Hose Group |
| 1 | 1 | 6011624 | Hose, Twinline, 32.00 in. |
| 2 | 1 | 385000 | Hose, 41.00 in. |
| 3 | 1 | 386717 | Hose, 23.00 in. |
| 4 | 1 | 6131725 | Hose, 39.00 in. |
| 5 | 1 | 389258 | Hose, 9.25 in. |
| 6 | 1 | 6100716 | Hose, 12.00 in. |
| 7 | 1 | 383026 | Hose, 14.50 in. |
| 8 | 2 | 370272 | Hose, 18.00 in. |
| 9 | 1 | 383026 | Hose, 14.50 in. |
| 10 | 1 | 6131724 | Hose, 35.00 in. |

Boom Arm Assembly



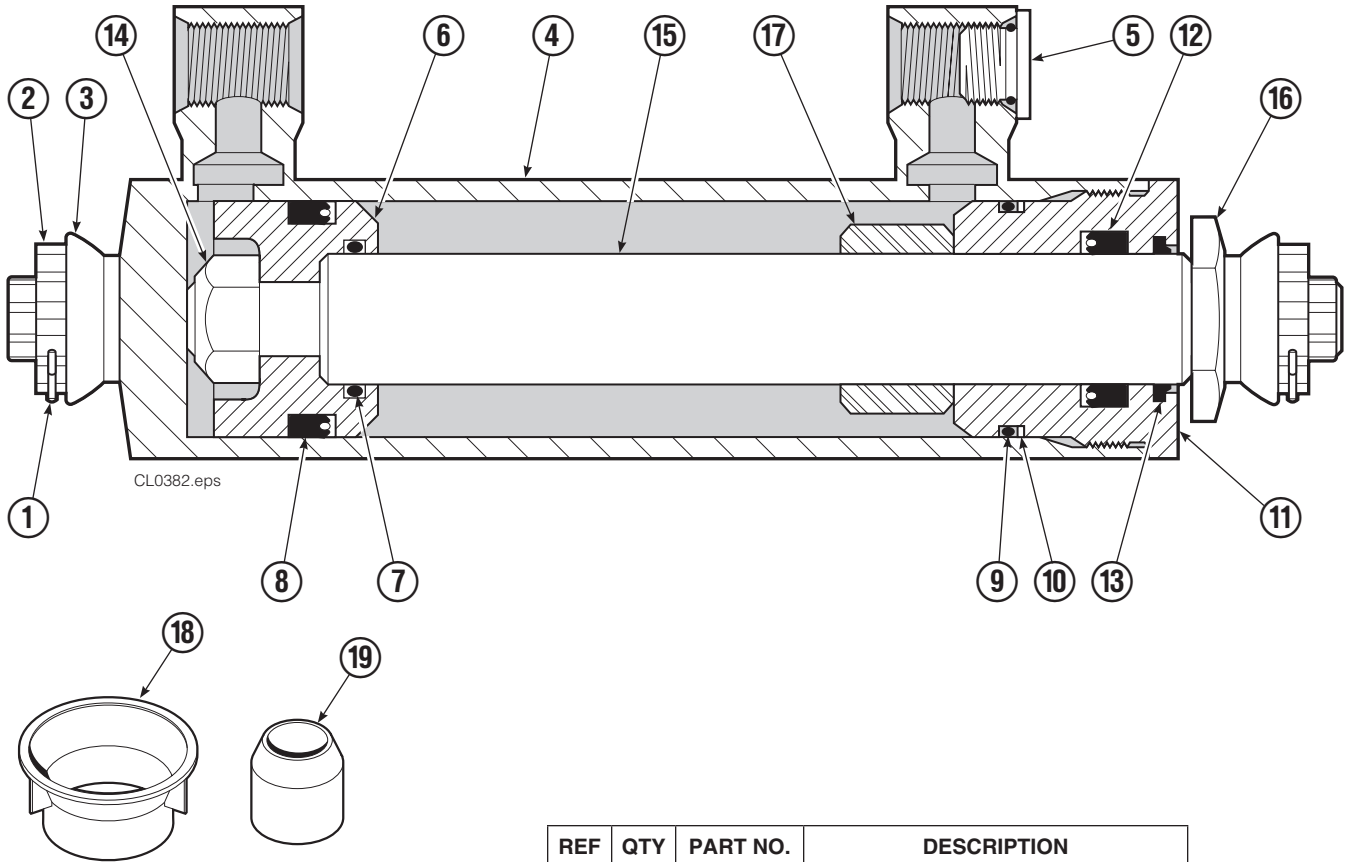
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| 30B | | | | | | | |
|-----|-----|------------|-------------------|-----|-----|----------|----------------------|
| REF | QTY | PART NO. | DESCRIPTION | REF | QTY | PART NO. | DESCRIPTION |
| | | 6125975 | Boom Arm Assembly | 11 | 2 | 6510 | Cotter Pin |
| 1 | 1 | 6116985 | Frame | 12 | 2 | 611288 | Fitting, 6-6 |
| 2 | 2 | 21066-0780 | Bushing | 13 | 2 | 2453 | Fitting, 6-6 |
| 3 | 2 | 222901 | Retaining Ring | 14 | 1 | 6011557 | Tube |
| 4 | 2 | 6008746 | Arm Bar | 15 | 1 | 6011537 | Tube |
| 5 | 1 | 3006095 | Cylinder ◆ | 16 | 1 | 203407 | Bar |
| 6 | 1 | — | Roll Pin - Inner | 17 | 2 | 206323 | Lockwasher, M6 |
| 7 | 1 | — | Roll Pin - Outer | 18 | 2 | 763169 | Capscrew, M6 x 20 |
| 8 | 1 | 667626 | Washer | 19 | 2 | 208731 | Molded Insert |
| 9 | 2 | 667625 | Nut | 20 | 1 | 667609 | Restrictor Fitting ● |
| 10 | 2 | 667624 | Retainer | | | | |

◆ See Cylinder page for parts breakdown.

● See Restrictor Fitting page for parts breakdown.

Cylinder Assembly



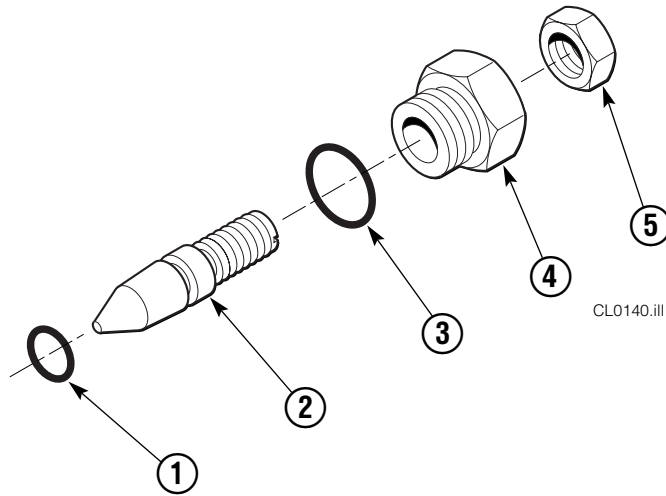
| REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|--------------------------|
| | | 3006095 | Cylinder Assembly |
| 1 | 2 | 6510 | ■ Cotter Pin |
| 2 | 2 | 667624 | ■ Nut Retainer |
| 3 | 2 | 667625 | ■ Nut |
| 4 | 1 | 3006096 | Shell |
| 5 | 1 | 602580 | Fitting |
| 6 | 1 | 559702 | Piston |
| 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 | 3006097 | Rod |
| 16 | 1 | — | Washer |
| 17 | 1 | 3004460 | 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.

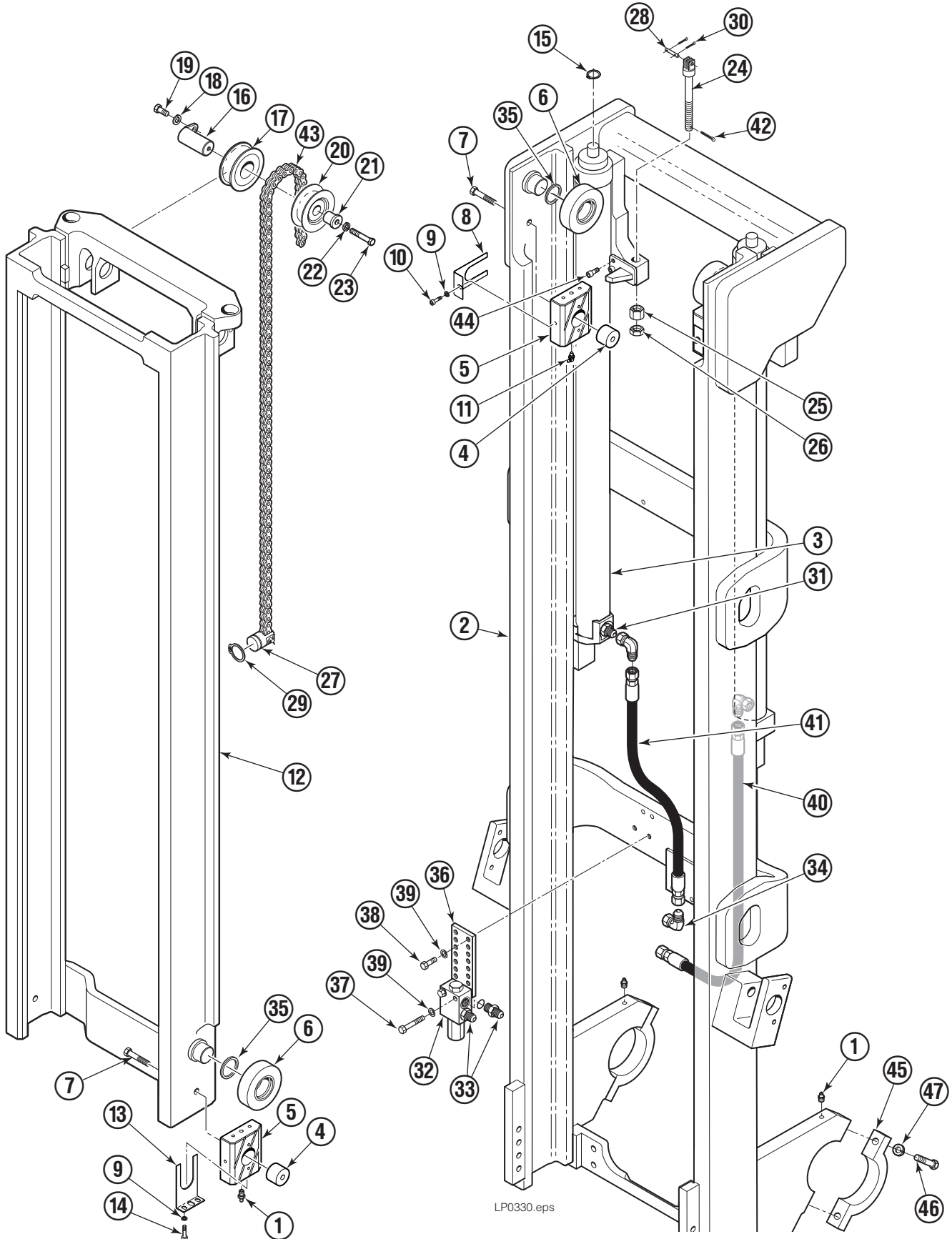
Reference: ST-0283, ST-0284.

Restrictor Cartridge



| REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|----------------------|
| | | 667609 | Restrictor Cartridge |
| 1 | 1 | 2701 | O-Ring |
| 2 | 1 | 667611 | Plunger |
| 3 | 1 | 2841 | O-Ring |
| 4 | 1 | 667610 | Plug - Special |
| 5 | 1 | 5716 | Jam Nut |

Mast Assembly



Mast Assembly

| 30B | | | | | | | |
|-----|-----|----------|-----------------------|-----|-----|----------|-------------------------------|
| REF | QTY | PART NO. | DESCRIPTION | REF | QTY | PART NO. | DESCRIPTION |
| | | 6143889 | Mast Assembly | 25 | 2 | 200006 | Nut, 5/8 |
| | 1 | 6143635 | Basic Mast Assembly ▼ | 26 | 2 | 200007 | Jam Nut, 5/8 |
| 1 | 6 | 7418 | Grease Fitting | 27 | 2 | 680243 | Chain Anchor |
| 2 | 1 | 6143636 | Mast Weldment | 28 | 4 | 684305 | Pin |
| 3 | 2 | 580705 | Cylinder ◆ | 29 | 2 | 3135 | Snap Ring |
| 4 | 4 | 6113008 | Stub Shaft | 30 | 8 | 6508 | Cotter Pin |
| 5 | 4 | 6142048 | Thrust Bearing | 31 | 2 | 611289 | Fitting, 8-10 |
| 6 | 4 | 662145 | Roller | 32 | 1 | 684810 | Lowering Control Valve ● |
| 7 | 4 | 768555 | Capscrew, M12 x 40 | 33 | 2 | 601377 | Fitting, 8-8 |
| 8 | 6 | 6142108 | Shim | 34 | 3 | 605761 | Fitting, 8-8 |
| 9 | 6 | 206315 | Lockwasher, M8 | 35 | ■ | 631881 | Shim (.030) |
| 10 | 2 | 787375 | Capscrew, M8 x 20 | 36 | 1 | 683831 | Bar |
| 11 | 2 | 201541 | Grease Fitting | 37 | 2 | 683823 | Capscrew, M10 x 50 |
| 12 | 1 | 6143085 | Inner Rail Weldment | 38 | 2 | 684649 | Capscrew, M10 x 25 |
| 13 | 6 | 6142091 | Shim | 39 | 4 | 681238 | Lockwasher, M10 |
| 14 | 4 | 768796 | Capscrew, M8 x 35 | 40 | 1 | 216822 | Hose, 32.00 in. |
| 15 | 2 | 688935 | Snap Ring | 41 | 1 | 200380 | Hose, 23.50 in. |
| 16 | 2 | 683802 | Pin | 42 | 2 | 6518 | Cotter Pin |
| 17 | 2 | 660051 | Sheave | 43 | 1 | 678770 | Chain |
| 18 | 2 | 787383 | Washer, M10 | 44 | 4 | 219596 | Capscrew, M8 x 16 |
| 19 | 2 | 683820 | Capscrew, M10 x 16 | 45 | 2 | 200381 | ◆ Pivot Cap |
| 20 | 2 | 209623 | Sheave | 46 | 1 | 203174 | ◆ Capscrew, M14 x 50 |
| 21 | 2 | 684657 | Shaft | 47 | 4 | 688705 | ◆ Lockwasher, M14 |
| 22 | 2 | 683822 | Lockwasher, M12 | | 2 | 688623 | Internal Hose Reeving Group ▲ |
| 23 | 2 | 768557 | Capscrew, M12 x 50 | | 1 | 6116740 | Upper Carriage Assembly □ |
| 24 | 2 | 201435 | Chain Anchor | | | | |

▼ Includes items 1 – 41 & 45 – 47.

◆ See Cylinder page for parts breakdown.

● See Valve page for parts breakdown.

■ Quantity as required.

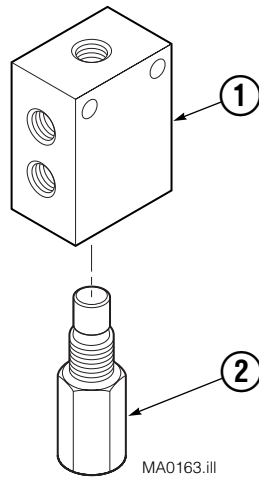
◆ Included in Mast Weldment 6143636. Also included in Mounting Group 6143746.

▲ See Internal Hose Reeving page for parts breakdown.

□ See Upper Carriage Assembly page for parts breakdown.

Lowering Control Valve

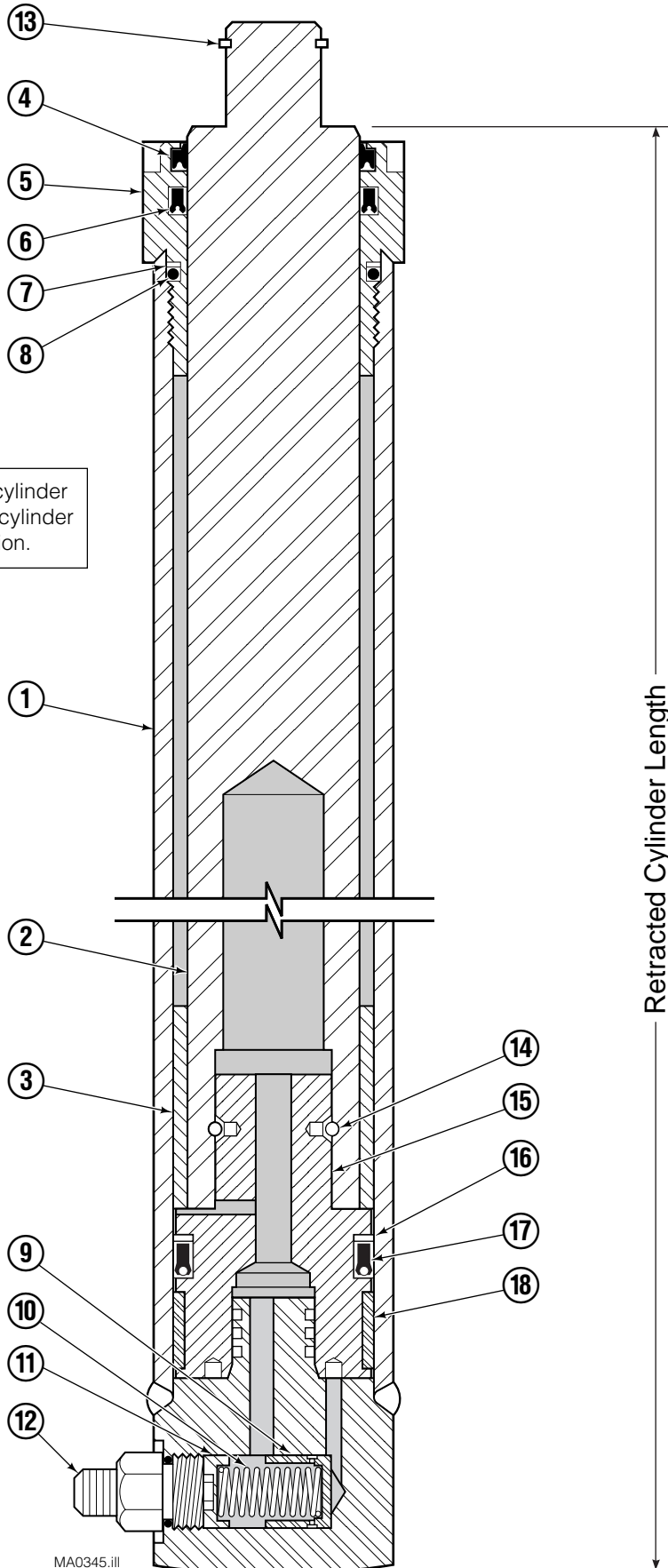
2600 PSI System Pressure




| REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|------------------------|
| | | 684810 | Lowering Control Valve |
| 1 | 1 | 684152 | Valve Body |
| 2 | 1 | 684210 | Valve Cartridge ▲ |

▲ This part must not be substituted. Check part number on side of cartridge when replacing.

Main Lift Cylinder-2600 PSI



 **WARNING:** Replacing the cylinder with a different part number cylinder may cause mast to malfunction.

MA0345.iii

Main Lift Cylinder-2600 PSI

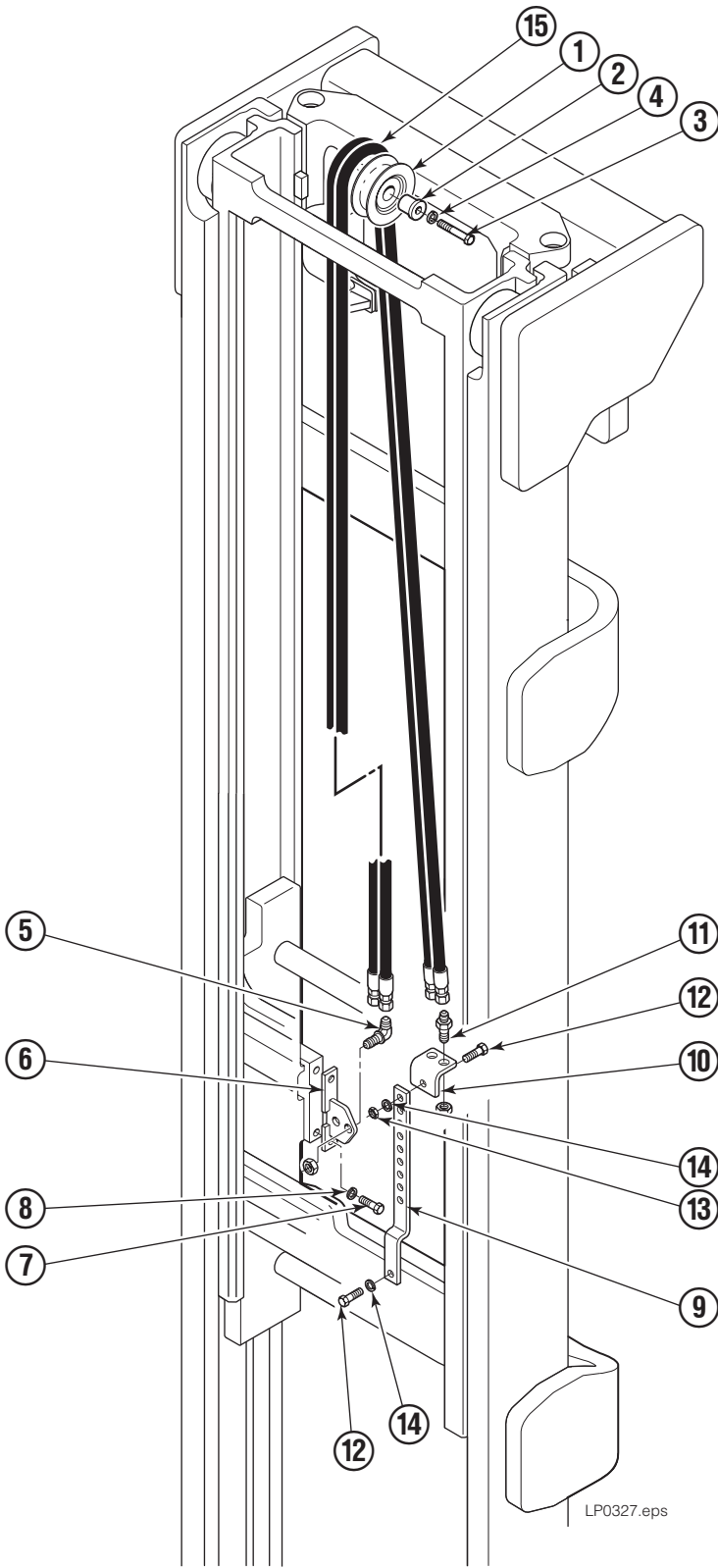
| REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|-----------|----------------------|
| | 1 | 580705 | Cylinder Assembly |
| 1 | 1 | 5432-1237 | Shell |
| 2 | 1 | 5444-1205 | Plunger |
| 3 | — | — | Spacer |
| 4 | 1 | 562663 | Plunger Wiper ▲ |
| 5 | 1 | 562630 | Retainer |
| 6 | 1 | 562569 | Plunger Seal ▲ |
| 7 | 1 | 559859 | Back-Up Ring ▲ |
| 8 | 1 | 559858 | O-Ring ▲ |
| 9 | 1 | 563782 | Piston-Lowering Fuse |
| 10 | 1 | 562847 | Spring |
| 11 | 1 | 562848 | Spring Guide |
| 12 | 1 | 611289 | Fitting, 8-10 ■ |
| 13 | 1 | 3129 | Snap Ring ▲ |
| 14 | 1 | 559906 | Pull-In Wire ▲ |
| 15 | 1 | 560462 | Piston |
| 16 | 1 | 560066 | Back-Up Ring ▲ |
| 17 | 1 | 563631 | Piston Seal ▲ |
| 18 | 1 | 559864 | Wear Ring ▲ |

▲ Included in Service Kit 562591.

■ Not included in Cylinder Assembly.

Reference: S-6079, S-6080.

Internal Hose Reeving

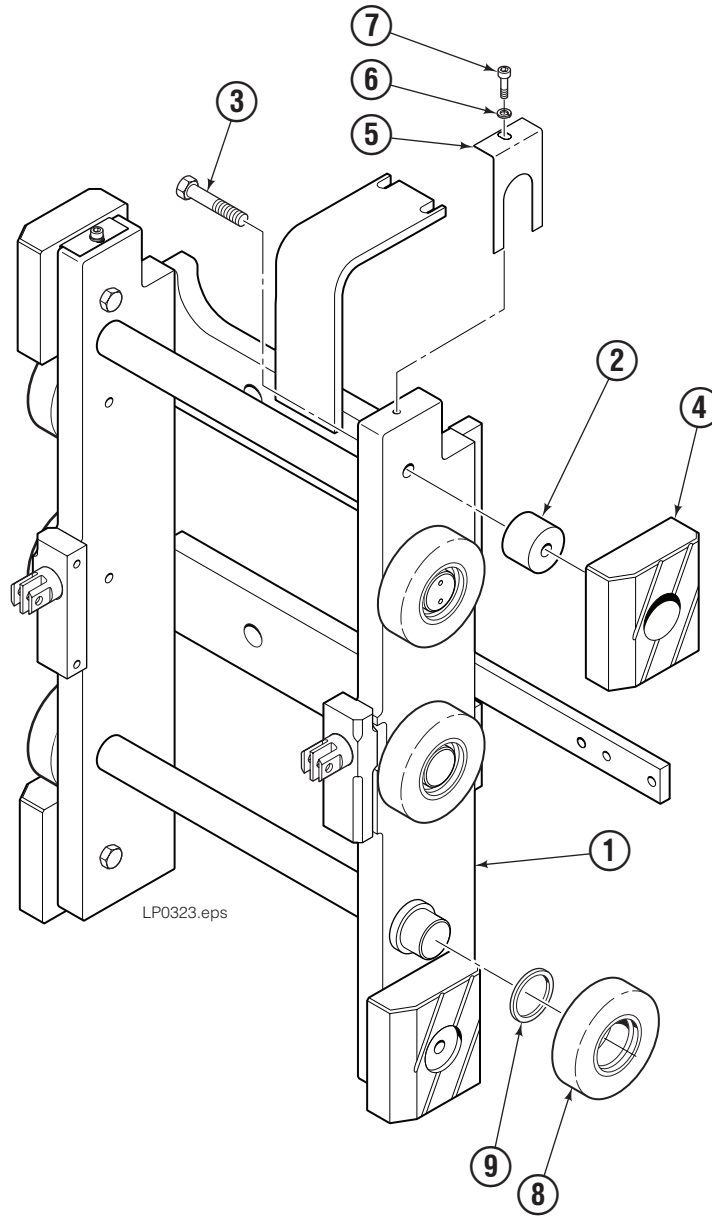


Internal Hose Reeving

| 30B | | | |
|-----|-----|-----------|-----------------------|
| REF | QTY | PART NO. | DESCRIPTION |
| | | 688623 | Internal Hose Reeving |
| 1 | 1 | 209623 | Sheave |
| 2 | 1 | 684657 | Shaft |
| 3 | 1 | 684650 | Capscrew, M12 x 55 |
| 4 | 1 | 683822 | Lockwasher, M12 |
| 5 | 2 | 2453 | Fitting, 8-8 |
| 6 | 1 | 206898 | Bracket |
| 7 | 2 | 787372 | Capscrew, M8 x 20 |
| 8 | 2 | 206315 | Lockwasher, M8 |
| 9 | 1 | 684658 | Bracket |
| 10 | 1 | 683919 | Bracket |
| 11 | 2 | 2375 | Fitting, 8-8 |
| 12 | 2 | 684649 | Capscrew, M10 x 25 |
| 13 | 1 | 763023 | Nut, M10 |
| 14 | 2 | 683826 | Lockwasher, M10 |
| 15 | 2 | 3550-3005 | Hose |

Reference: Common Parts Group 684819, S-3548.

Upper Carriage Assembly

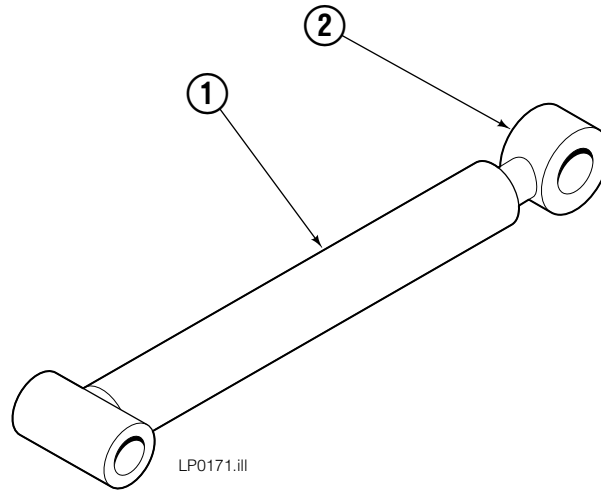


| REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|---------------------|
| | | 6116740 | Carriage Assembly ♦ |
| 1 | 1 | 6116741 | Carriage |
| 2 | 4 | 6113008 | Stub Shaft |
| 3 | 4 | 202407 | Capscrew, M12 x 60 |
| 4 | 4 | 6113010 | Bearing |
| 5 | ■ | 6113016 | Shim |
| 6 | 4 | 206315 | Lockwasher, M8 |
| 7 | 4 | 768795 | Capscrew, M8 x 30 |
| 8 | 6 | 662145 | Roller Assembly |
| 9 | 18 | 631881 | Shim, Roller |

♦ Includes items 1 – 7 only.

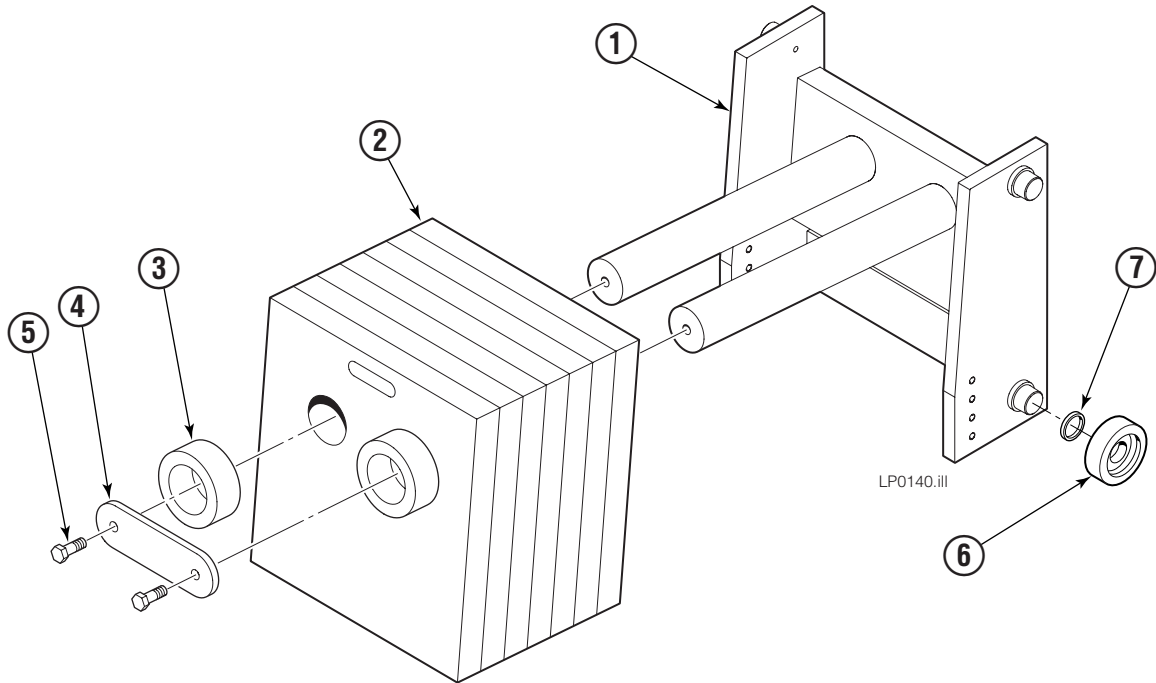
■ Quantity as required.

Tilt Lock Assembly



| REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|---------------------|
| | | 6108599 | Tilt Lock Assembly |
| 1 | 1 | 6108582 | Tilt Lock Weldment |
| 2 | 1 | 6108598 | Mast Mount Weldment |

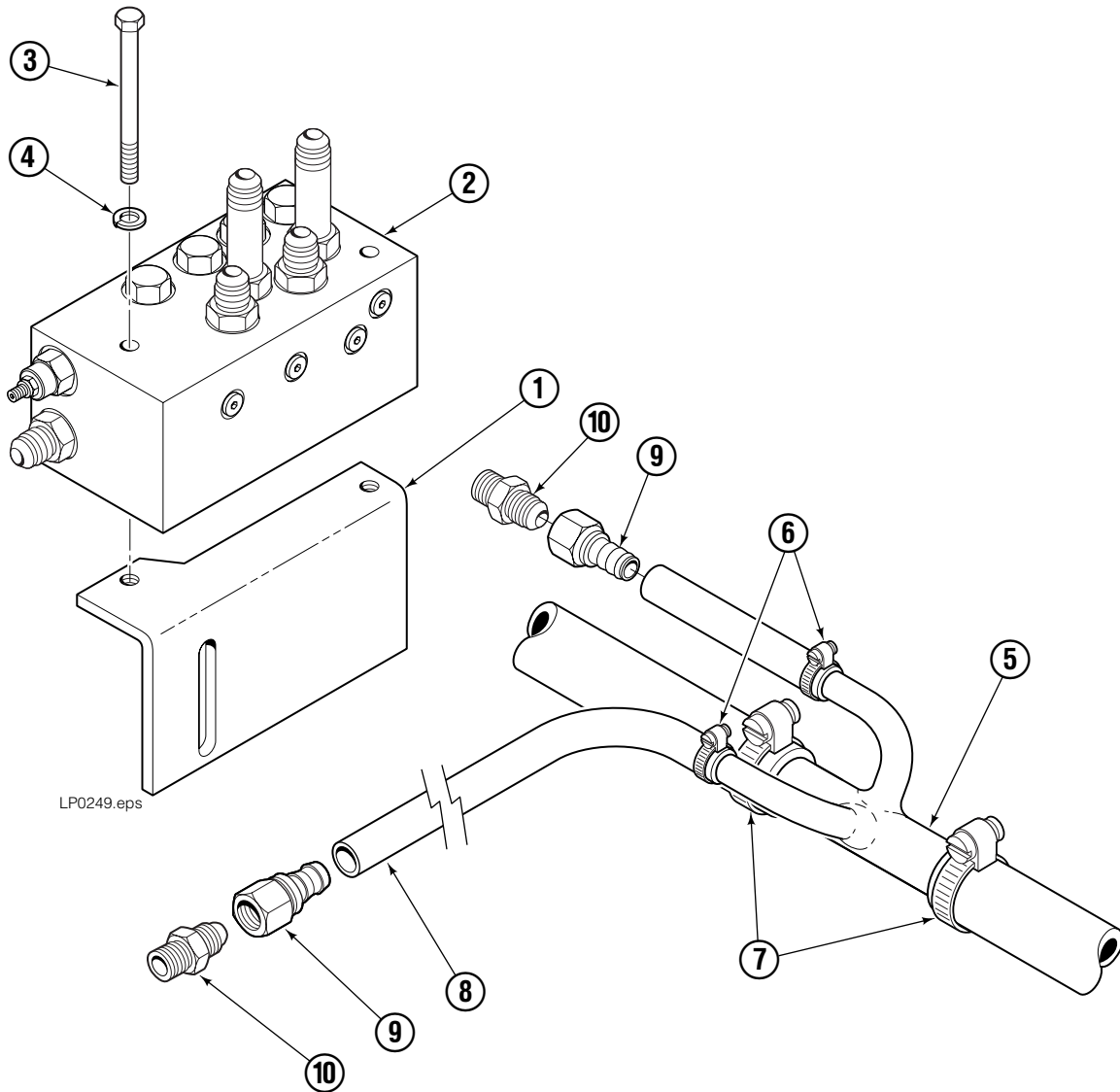
Carriage Ballast



| REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|---------------------------|
| | | 3013958 | Carriage Ballast Assembly |
| 1 | 1 | 3013959 | Carriage |
| 2 | 7 | 3013297 | Ballast Plate |
| 3 | 2 | 3013962 | Rubber Washer |
| 4 | 1 | 3013963 | Retainer |
| 5 | 2 | 752903 | Capscrew |
| 6 | 4 | 662145 | Roller |
| 7 | ■ | 631881 | Shim |

■ Quantity as needed.

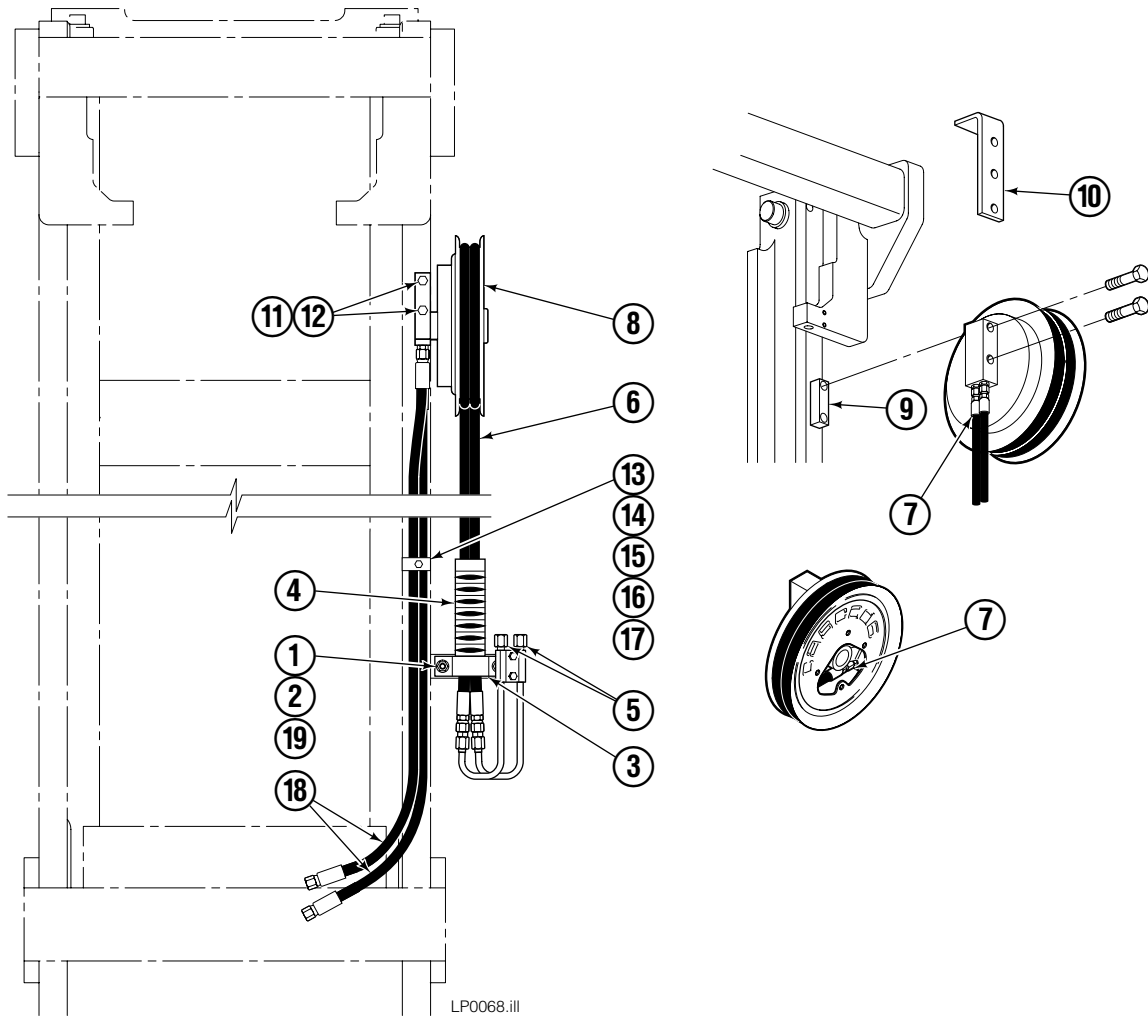
Flow Control Valve Group



| REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|--------------------------|
| | | 6113151 | Flow Control Valve Group |
| 1 | 1 | 233036 | Mounting Plate |
| 2 | 1 | 6036088 | Flow Control Valve |
| 3 | 2 | 768535 | Capscrew, M8 x 90 |
| 4 | 2 | 787398 | Washer, M8 |
| 5 | 1 | 6049384 | ◆ Adapter Tee - 1.00 in. |
| 6 | 2 | 211742 | ◆ Hose Clamp |
| 7 | 2 | 211743 | ◆ Hose Clamp - 1.00 in. |
| 8 | 1 | 211740 | ◆ Hose, 72.00 in. |
| 9 | 2 | 211741 | ◆ Fitting, 8 |
| 10 | 2 | 601377 | ◆ Fltting, 8-8 |

◆ Included in Connector Kit 6049381.

Hydraulic Supply Group



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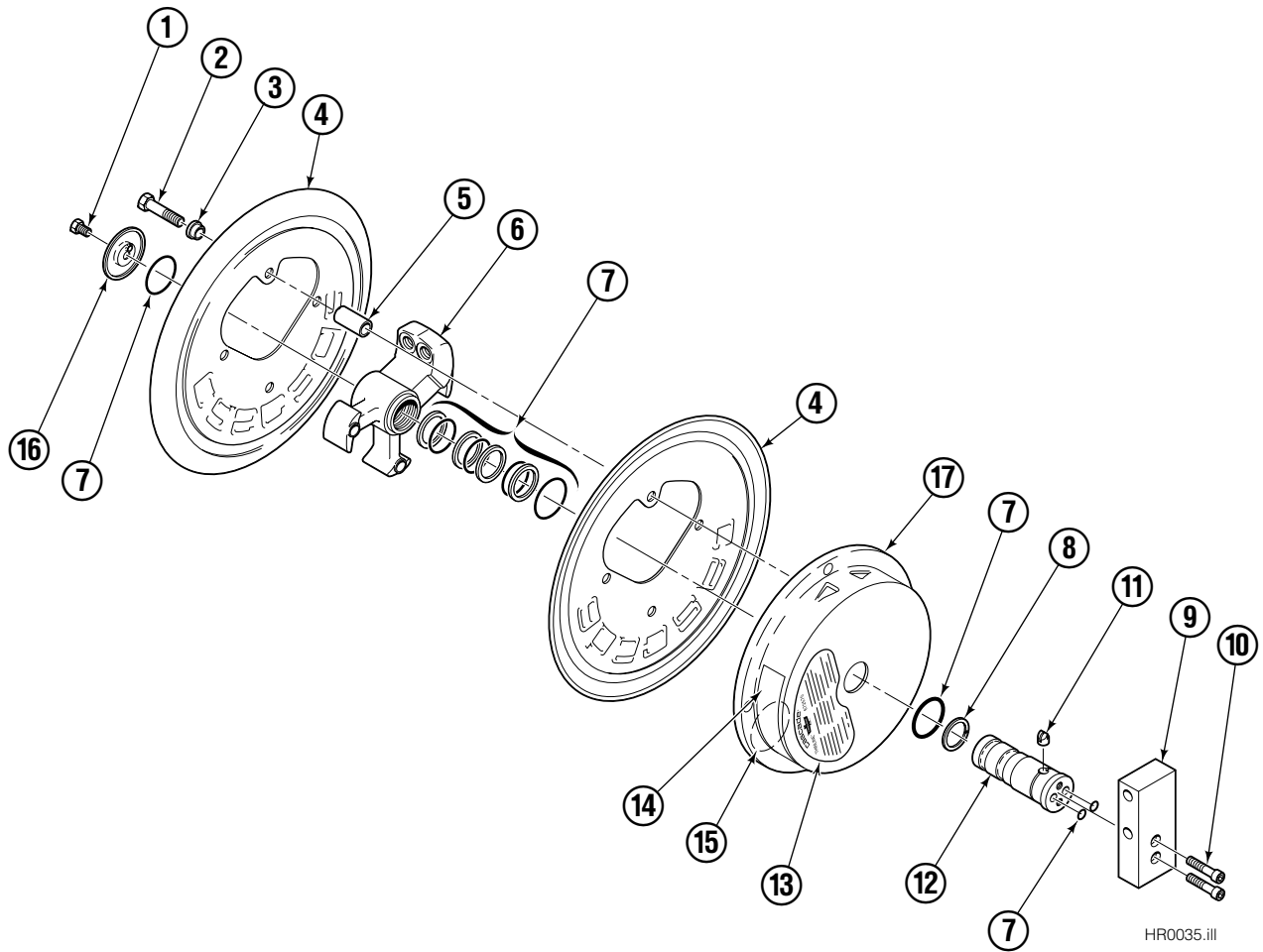
| REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|----------------------------------|
| | | 673594 | Hydraulic Supply Group |
| 1 | 2 | 3599 | Capscrew, 3/8 NC x .50 in. |
| 2 | 1 | 673520 | Carriage Block |
| 3 | 1 | 673428 | Clamp |
| 4 | 1 | 673510 | Hose Restraint Assembly |
| 5 | 1 | 674288 | Hose Up Connection Assembly ▲ |
| 6 | 1 | 673394 | Twinline Hose Assembly |
| 7 | 4 | 604511 | Fitting, 6-6 |
| 8 | 1 | 672572 | THINLINE Hose Reel, RH ● |
| 9 | 1 | 673526 | Mounting Block |
| 10 | 1 | 685487 | Mounting Bracket |
| 11 | 2 | 622337 | Capscrew, 1/2 NC x 3.00 in. GR5 |
| 12 | 2 | 6290 | Lockwasher, 1/2 |
| 13 | 1 | 631162 | Capscrew, 5/16 NC x 1.25 in. GR5 |
| 14 | 1 | 6287 | Lockwasher, 5/16 |
| 15 | 1 | 744535 | Clamp |
| 16 | 1 | 744536 | Spacer |
| 17 | 1 | 744662 | Bar |
| 18 | 2 | 2178 | Header Hose |
| 19 | 2 | 674376 | Washer |

▲ See Hose Up Connection Assembly page for parts breakdown.

● See Hose Reel page for parts breakdown.

Reference: 673562 Hose Reel Group, 673590 Mounting,
673496 Hose Terminal, 696567 Hose Reel Kit.

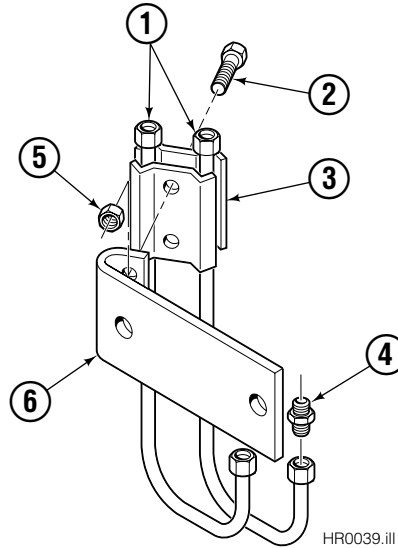
Hose Reel Assembly



| REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|-----------------------------|
| | | 672572 | Hose Reel, No. 6-13, RH |
| 1 | 1 | 672542 | Capscrew, M8x10 |
| 2 | 4 | 768525 | Capscrew, M8x40 |
| 3 | 4 | 672540 | Sleeve |
| 4 | 2 | 672567 | Flange, 13 in. (330mm) dia. |
| 5 | 1 | 672552 | Hose Guide |
| 6 | 1 | 672547 | Hub |
| 7 | 1 | 672563 | Seal Service Kit |
| 8 | 1 | 675610 | Snap Ring |
| 9 | 1 | 672551 | Mounting Block |
| 10 | 2 | 672550 | Capscrew, M10 |
| 11 | 1 | 645982 | Spring Retainer |
| 12 | 1 | 672543 | Shaft |
| 13 | 1 | 673423 | Nameplate, RH |
| 14 | 1 | 655271 | Patent Plate |
| 15 | 1 | 673392 | Warning Decal |
| 16 | 1 | 672544 | Cap |
| 17 | 1 | 672578 | Spring Assembly, RH |

Hydraulic Accessories

Hose Terminal Up



| REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|----------------------|
| | | 674288 | Up Connection Kit |
| 1 | 2 | 674371 | Tube |
| 2 | 2 | 3555 | Capscrew, 1/4NCx1.00 |
| 3 | 2 | 674374 | Clamp |
| 4 | 2 | 2347 | Fitting, 4-4 |
| 5 | 2 | 645986 | Nut, 1/4 |
| 6 | 1 | 674373 | Bracket |

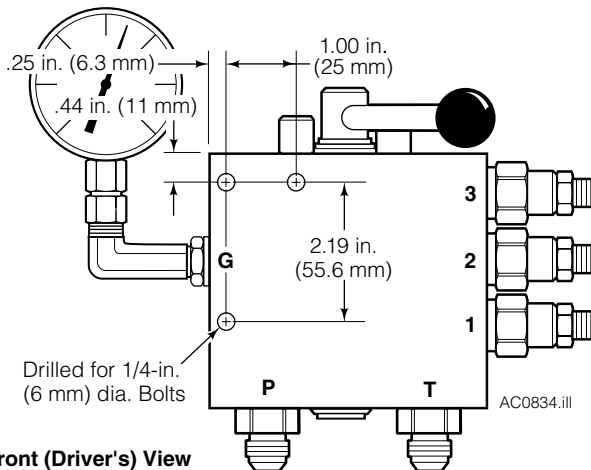


Installation Instructions

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)

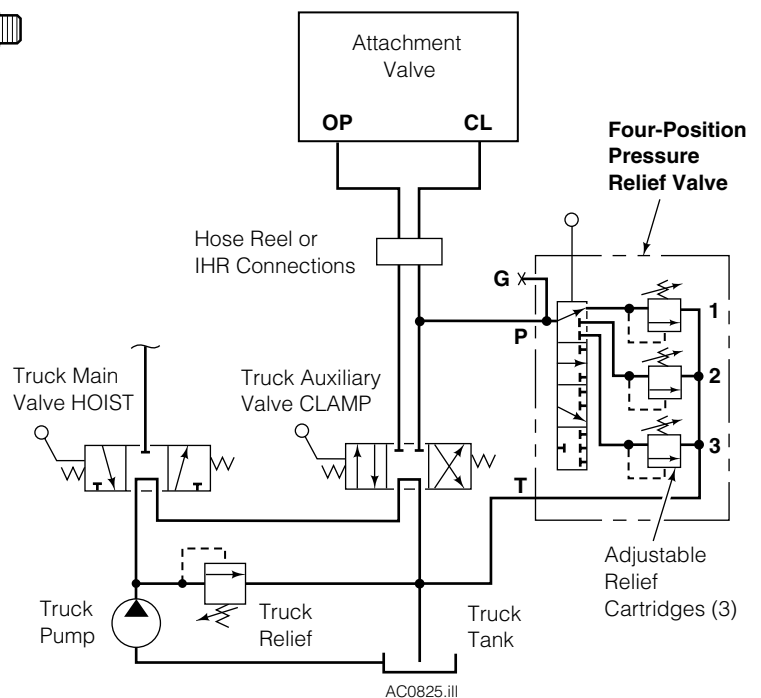
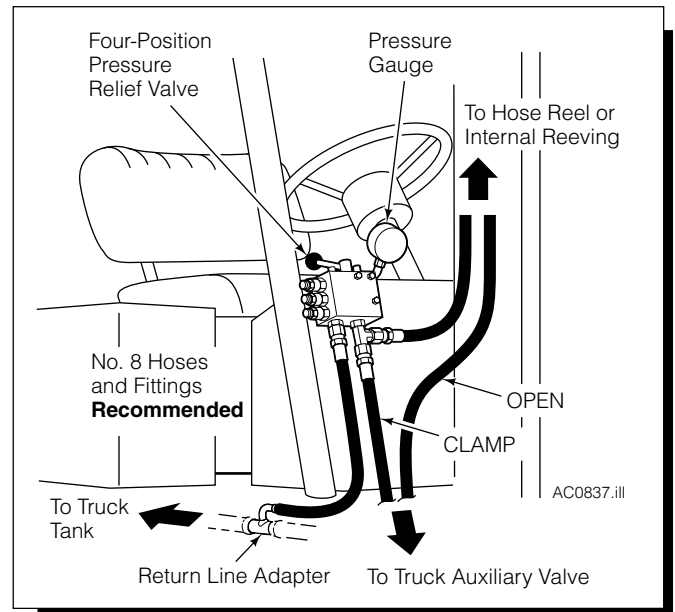


WARNING: Before removing hydraulic hoses, relieve pressure in the Attachment hydraulic system. Turn the truck off and move the auxiliary control lever several times in both directions.

- 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 |

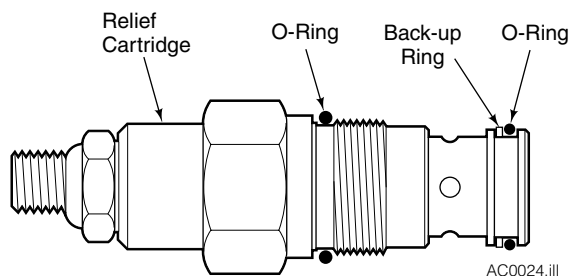
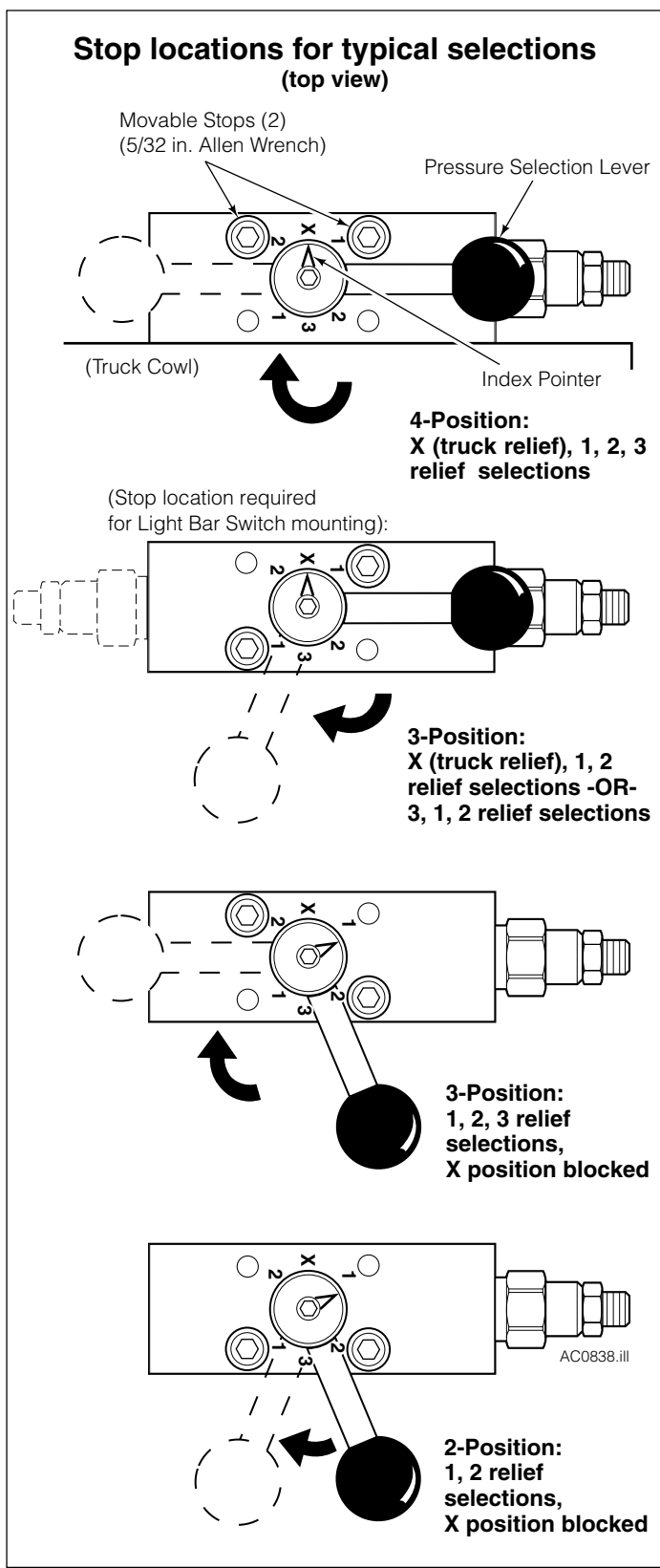
* **IMPORTANT: Cartridges are not factory pre-set.** Pressures must be adjusted for your application. Four (4) positions not available when Light Bar Switch is mounted on valve.

- 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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