



Parts Manual

Model 45E Push Pull

Serial Number 45E-PH-220

cascade[®]
corporation

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

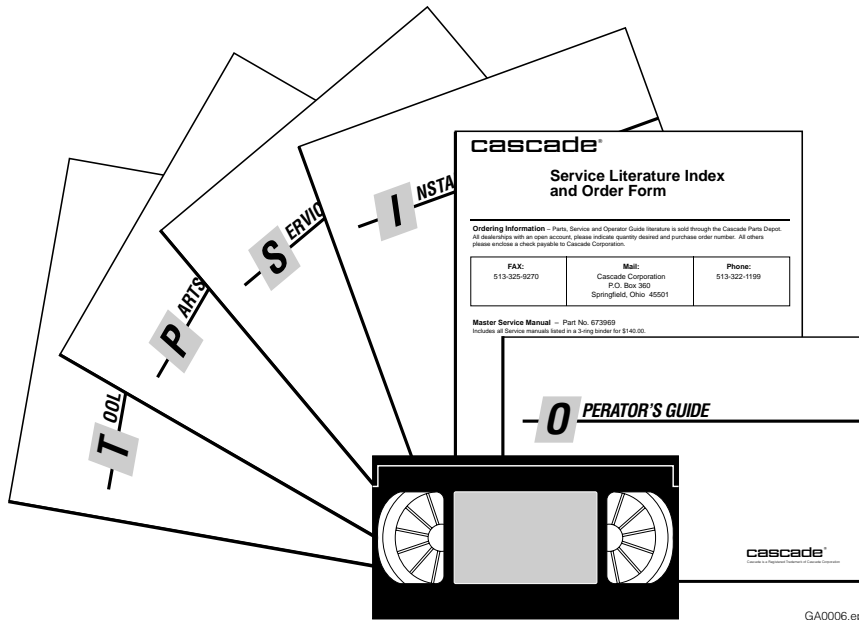
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OR

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

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Publications



GA0006.eps

| PART NO. | DESCRIPTION |
|----------|---------------------------------|
| | Parts Manual |
| 686455 | Service Manual |
| 684945 | Operators Guide |
| 685531 | Operators Pocket Guide |
| 684944 | Installation Instructions |
| 680664 | Servicing Cascade Cylinders-VHS |
| 679929 | Tool Catalog |
| 673964 | Literature Index Order Form |

Decals



Optional Faceplate Extension



Part No. 679150
(1 Place & 1 optional)



Part No. 665595
(2 Place & 2 optional)



Part No. 656038
(6 Places)

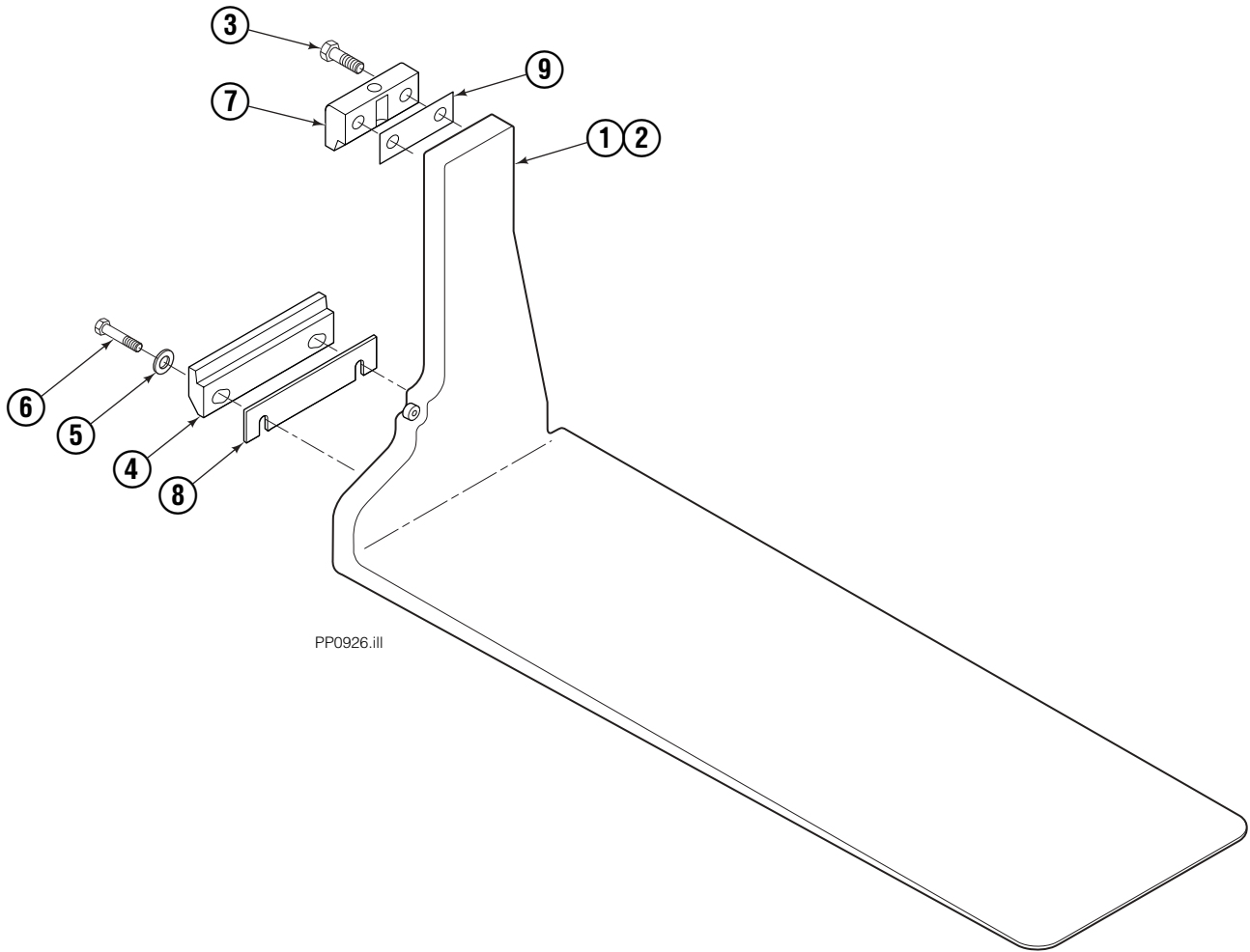


Part No. 679059
(1 Place if equipped with Quick Change Hooks)



PP0060.iii

Hydraulically Adjustable Platens



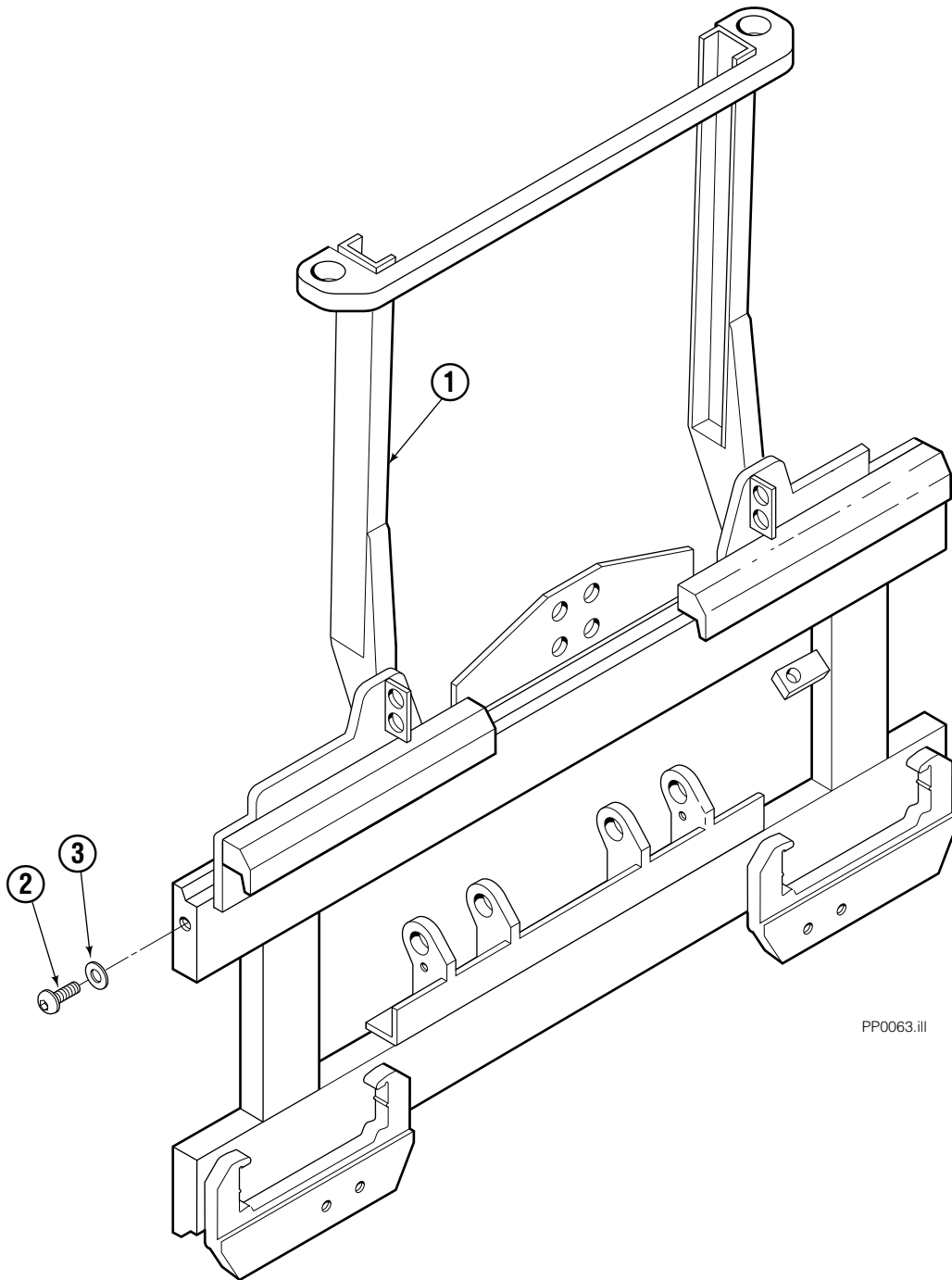
NOTE: Usable platen lengths are determined by measuring from the faceplate (fully retracted position) to the platen tip or total platen length minus 4.5 in.

| REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|--------------------|
| | | 368005 | Platen Group |
| 1 | 1 | 368011 | Platen L. H. |
| 2 | 1 | 368010 | Platen R. H. |
| 3 | 4 | 685534 | Capscrew, M16 x 50 |
| 4 | 2 | 682851 | Lower Hook |
| 5 | 4 | 667225 | Washer |
| 6 | 4 | 779010 | Capscrew, M16 x 35 |
| 7 | 2 | 685533 | Upper Hook |
| 8 | ★ | 682858 | Shim (.030) |
| 9 | ● | 688379 | Shim (.060) |

★ As required.

● As required (2 maximum)

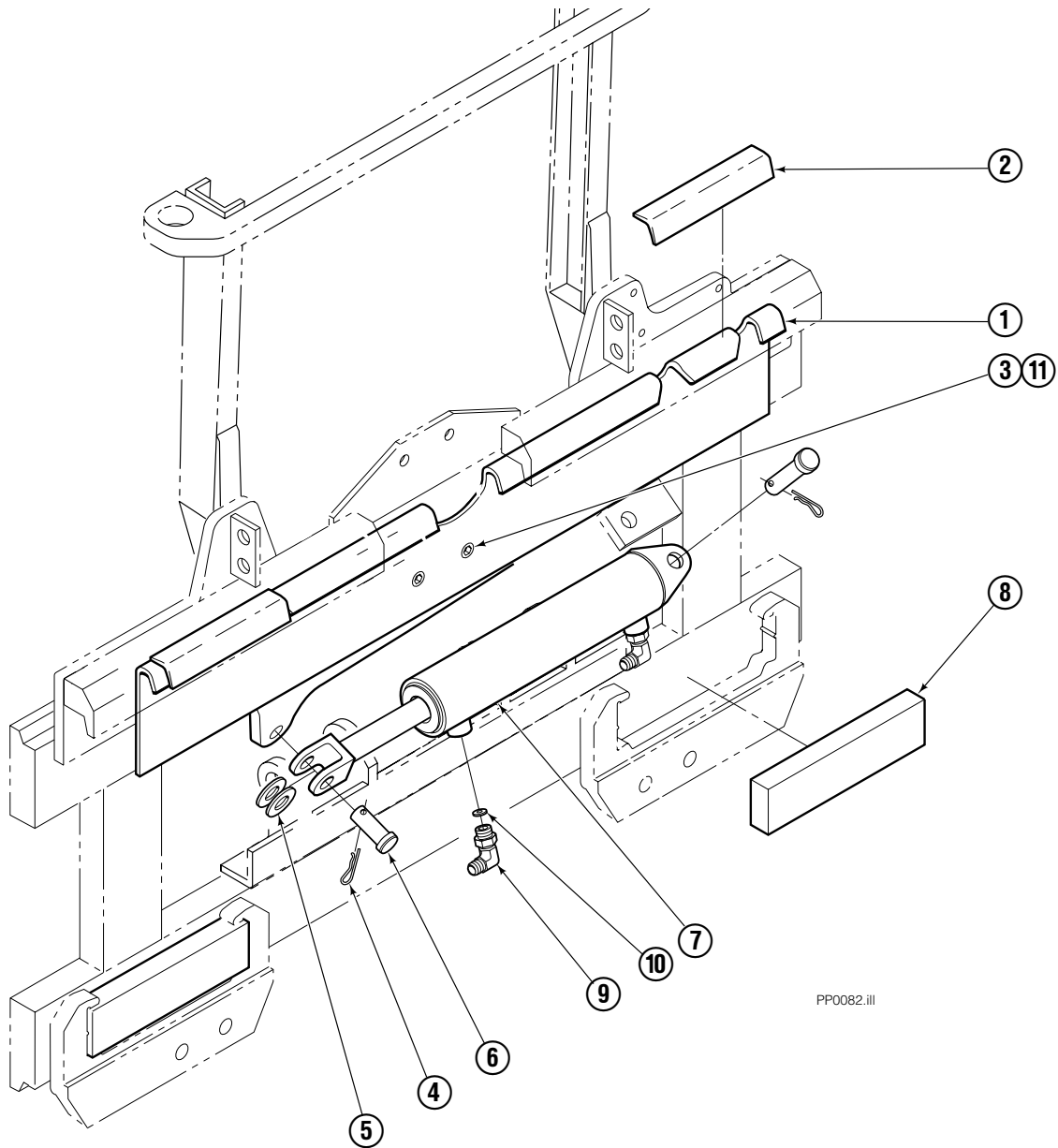
Frame Group ITA II



PP0063.iii

| 35E/45E | | | |
|---------|-----|----------|--------------------|
| REF | QTY | PART NO. | DESCRIPTION |
| | | 368004 | Frame Group ITA II |
| 1 | 1 | 368018 | Frame |
| 2 | 2 | 683142 | Capscrew |
| 3 | 2 | 683001 | Washer |

S/S Mounting Group ITA II

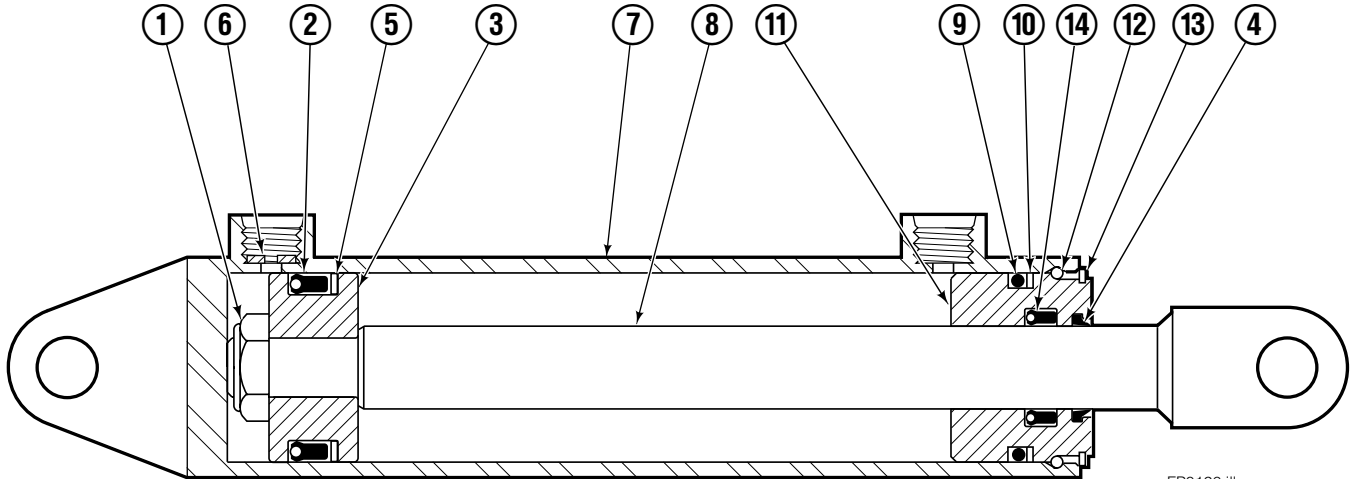


PP0082.iii

| 35E/45E | | | |
|---------|-----|----------|-------------------|
| REF | QTY | PART NO. | DESCRIPTION |
| | | 200605 | Mounting Group |
| 1 | 1 | 682554 | Anchor Bracket |
| 2 | 2 | 671165 | ■ Bearing Segment |
| 3 | 2 | 768759 | Setscrew |
| 4 | 2 | 6517 | Cotter Pin |
| 5 | 2 | 6234 | Washer |
| 6 | 2 | 678525 | Clevis Pin |
| 7 | 1 | 675548 | ● Cylinder |
| 8 | 2 | 682814 | Bearing |
| 9 | 2 | 666984 | Fitting, 4-6 |
| 10 | 2 | 675550 | Washer |
| 11 | 2 | 688387 | Jam Nut |

- Included in Bearing Service Kit 671423.
- See Cylinder page for parts breakdown.

Sideshift Cylinder ITA Class III

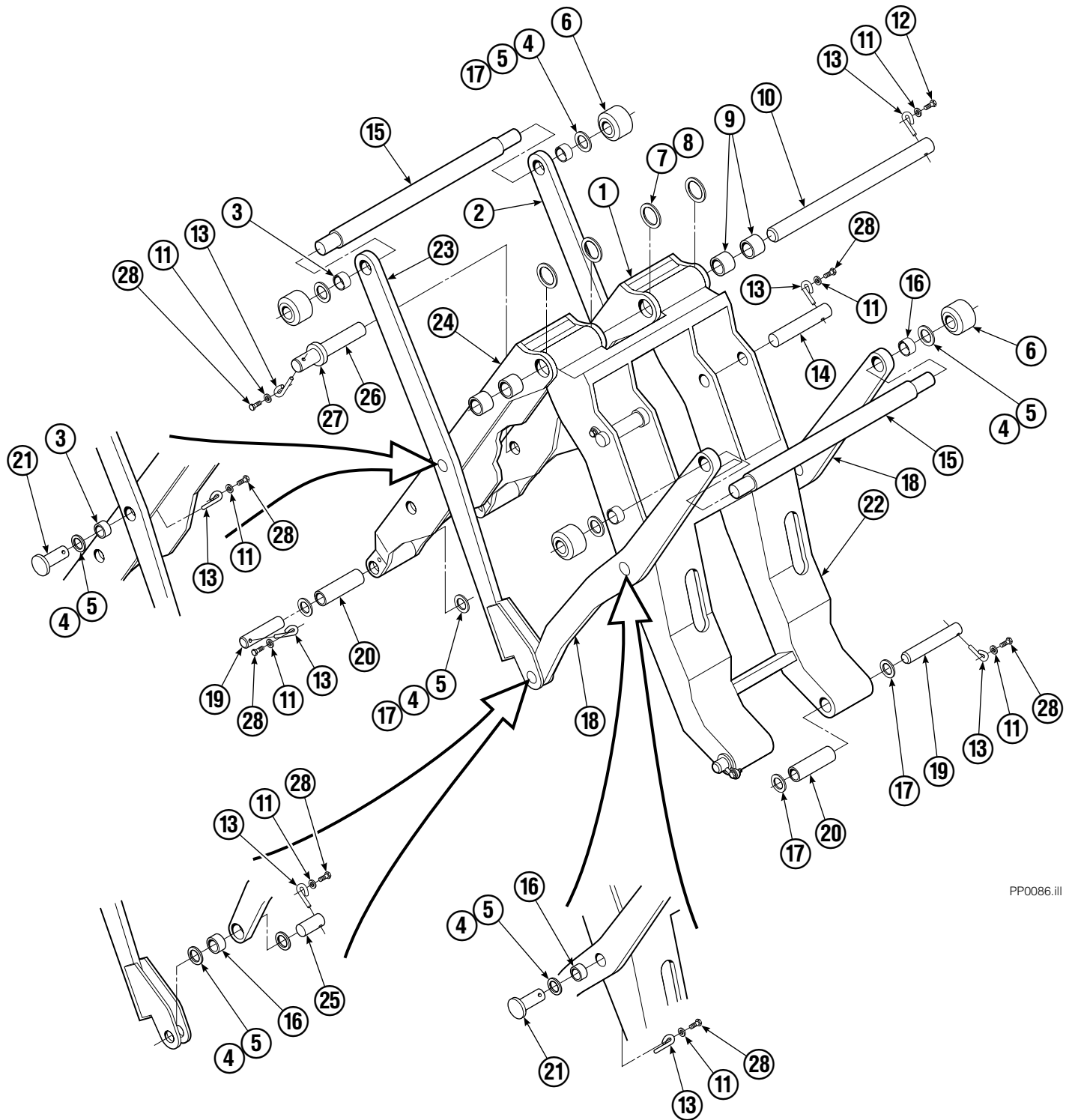


FP0126.ill

| 55E | | | |
|-----|-----|----------|---------------------------|
| REF | QTY | PART NO. | DESCRIPTION |
| | | 675548 | Cylinder Assembly |
| 1 | 1 | 553857 | Nut |
| 2 | 1 | 662452 | ■ Seal |
| 3 | 1 | 553501 | Piston |
| 4 | 1 | 636851 | ■ Wiper |
| 5 | 1 | 638247 | ■ Back-up Ring |
| 6 | 1 | 675550 | Washer (orifice .085 in.) |
| 7 | 1 | 675549 | Shell |
| 8 | 1 | 553449 | Rod |
| 9 | 1 | 2785 | ■ O-Ring |
| 10 | 1 | 615128 | ■ Back-up Ring |
| 11 | 1 | 553500 | Retainer |
| 12 | 1 | 553856 | Retaining Ring |
| 13 | 1 | 7202 | Snap Ring |
| 14 | 1 | 641835 | ■ Seal |
| | | 553861 | Service Kit |

■ Included in Service Kit 553861.

Mechanism Group



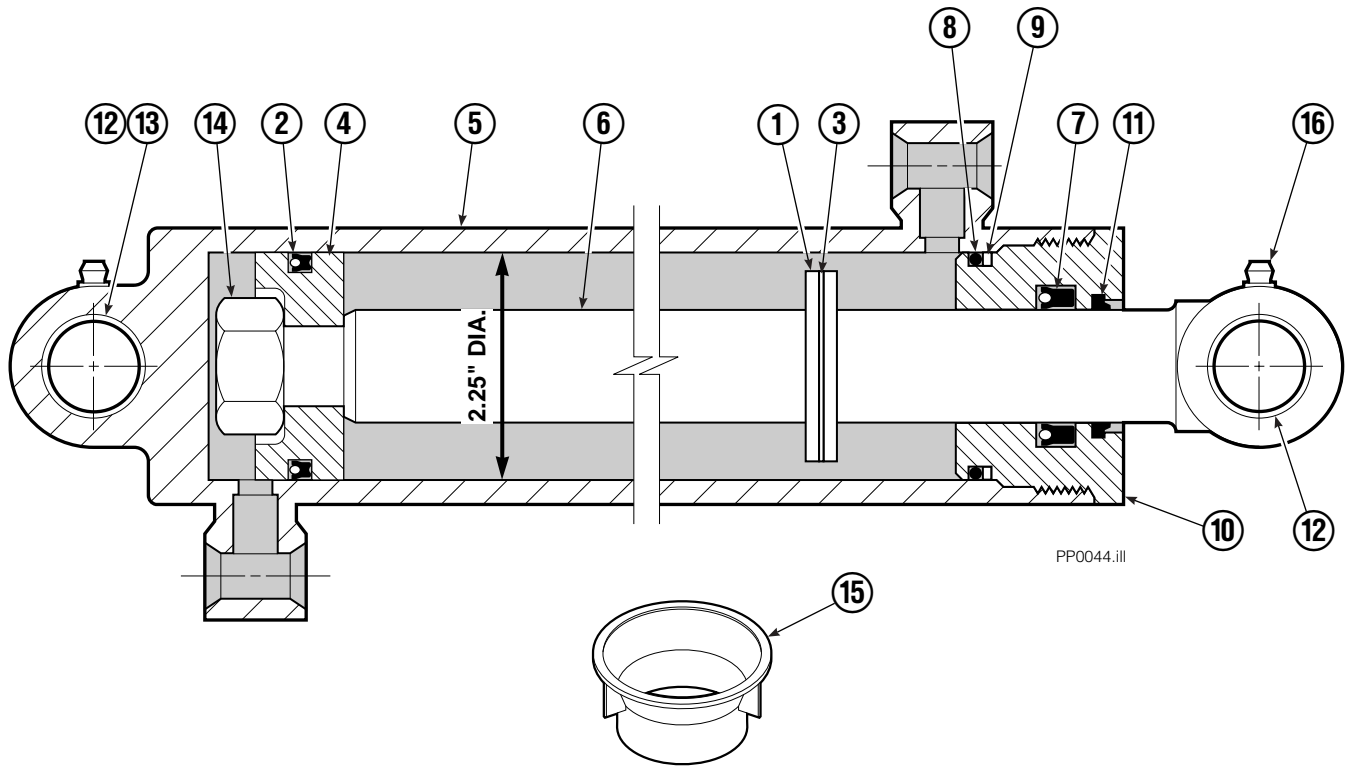
PP0086.III

Mechanism Group

| 35E/45E | | | |
|---------|-----|----------|----------------------------|
| REF | QTY | PART NO. | DESCRIPTION |
| | | 368060 | Mechanism Group |
| 1 | 1 | 364240 | Arm-Inner Secondary R. H. |
| 2 | 1 | 204692 | Arm-Secondary Outer R. H. |
| 3 | 4 | 683154 | ■ Bushing |
| 4 | ● | 683161 | Shim (.030) |
| 5 | ● | 683162 | Shim (.060) |
| 6 | 4 | 205070 | Roller |
| 7 | ● | 683163 | Shim (.030) |
| 8 | ● | 683164 | Shim (.060) |
| 9 | 4 | 683155 | ■ Bushing |
| 10 | 1 | 682821 | Pin |
| 11 | 15 | 6229 | Washer |
| 12 | 2 | 685661 | Capscrew |
| 13 | 15 | 689954 | Eye-Pin |
| 14 | 2 | 682822 | Pin-Head |
| 15 | 2 | 205065 | Pin |
| 16 | 6 | 683153 | ■ Bushing |
| 17 | ● | 204532 | Shim (.12) |
| 18 | 2 | 204694 | Arm-Outer Primary |
| 19 | 4 | 204533 | Pin-Frame |
| 20 | 4 | 204535 | ■ Bushing |
| 21 | 4 | 204695 | Pin |
| 22 | 1 | 368062 | Arm-Inner Primary |
| 23 | 1 | 204693 | Arm-Secondary Outer L. H. |
| 24 | 1 | 364239 | Arm-Inner Secondary L. H. |
| 25 | 2 | 204696 | Pin-Outer |
| 26 | 2 | 682823 | Pin-Rod |
| 27 | 2 | 683165 | Spacer |
| 28 | 13 | 685661 | Capscrew |
| 29 | 6 | 7401 | Grease Fitting (not shown) |

- Quantity as required.
- Included in Bushing Service Kit 205075.

Cylinder



PP0044.iii

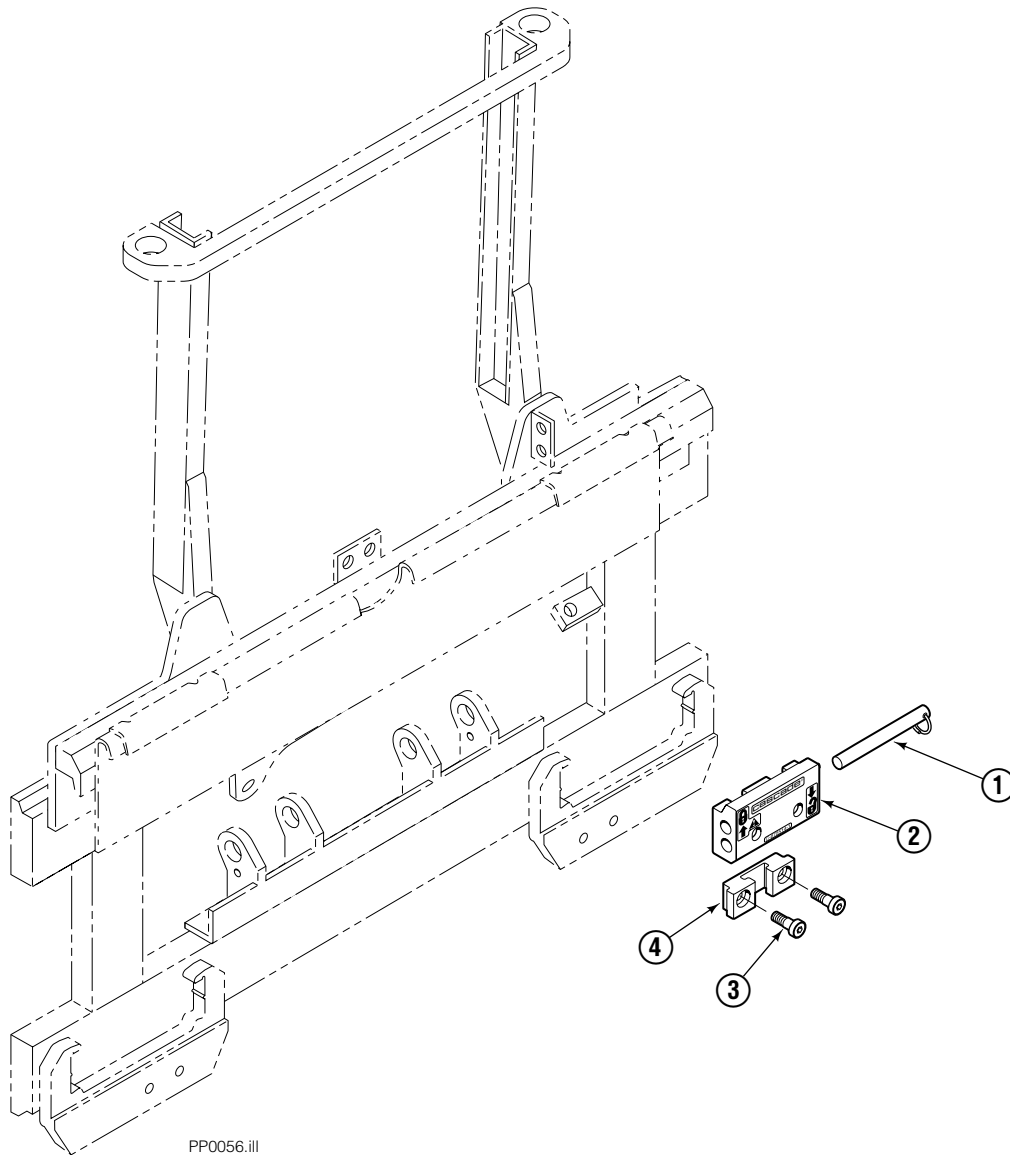
| REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|---------------------|
| | | 358091 | Cylinder Group |
| | | 358093 | Cylinder Modified ● |
| 1 | 1 | 685379 | Spacer |
| 2 | 1 | 562553 | ■ Seal |
| 3 | 1 | 7348 | Snap Ring |
| 4 | 1 | 564161 | Piston |
| 5 | 1 | 562717 | Shell |
| 6 | 1 | 558626 | Rod |
| 7 | 1 | 559705 | ■ Seal |
| 8 | 1 | 2787 | ■ O-Ring |
| 9 | 1 | 615130 | ■ Back-Up Ring |
| 10 | 1 | 558628 | Retainer |
| 11 | 1 | 636853 | ■ Wiper |
| 12 | 4 | 559697 | Bearing |
| 13 | 1 | 559698 | Spacer |
| 14 | 1 | 678019 | Nut |
| 15 | 1 | 671048 | ■ Seal Loader Kit |
| 16 | 2 | 7401 | Grease Fitting |

● Cylinder 582636 shell and rod has had special machining applied to it.

■ Included in Service Kit 562339.

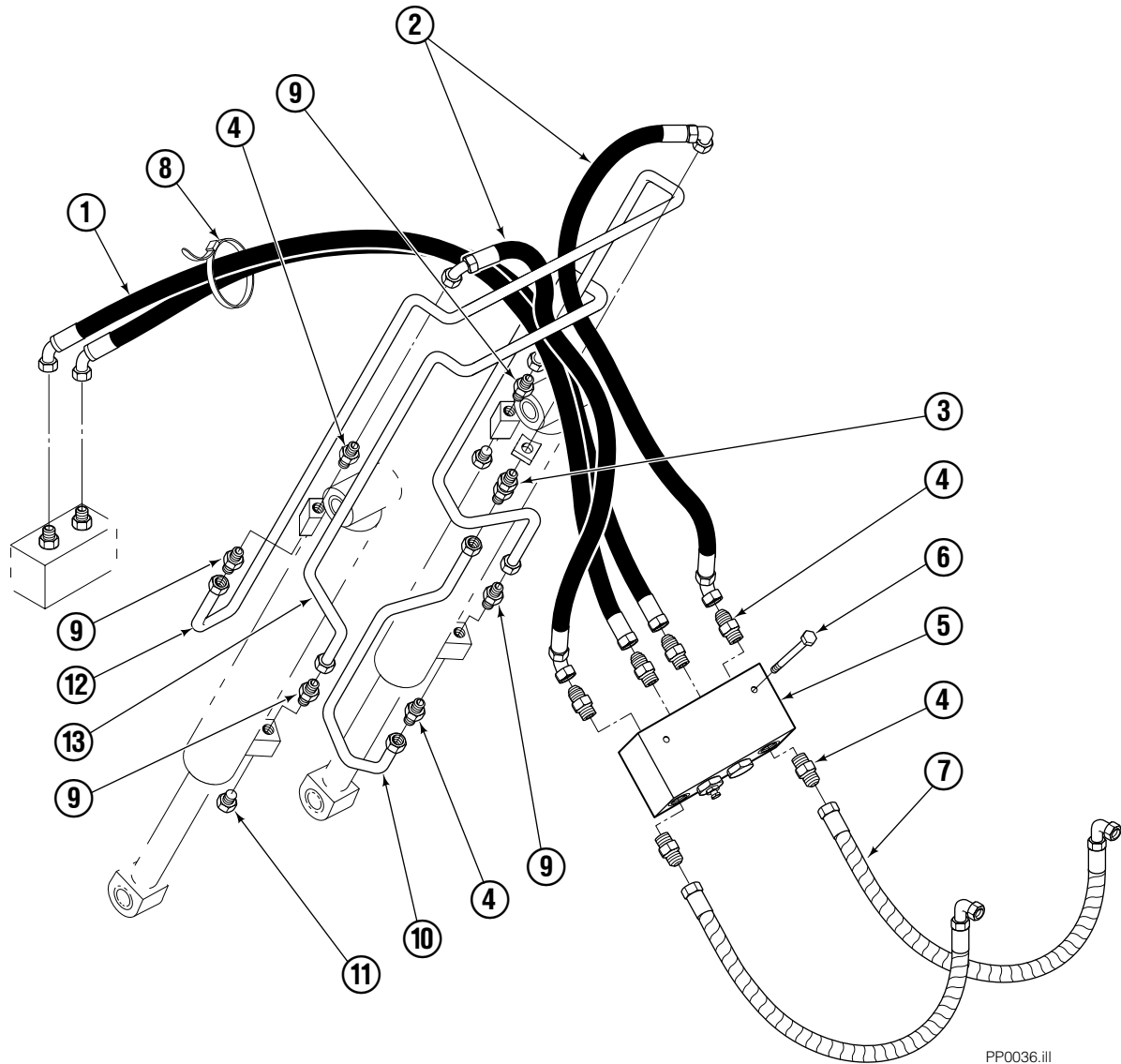
Reference: S-8434.

Quick-Change Lower Hook Group ITA II



| REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|-------------------------|
| | | 683179 | Lower Hook Group ITA II |
| 1 | 2 | 678832 | Pin |
| 2 | 2 | 675514 | Hook |
| 3 | 4 | 683182 | Capscrew |
| 4 | 2 | 675515 | Guide |

Hydraulic Group



PP0036.ill

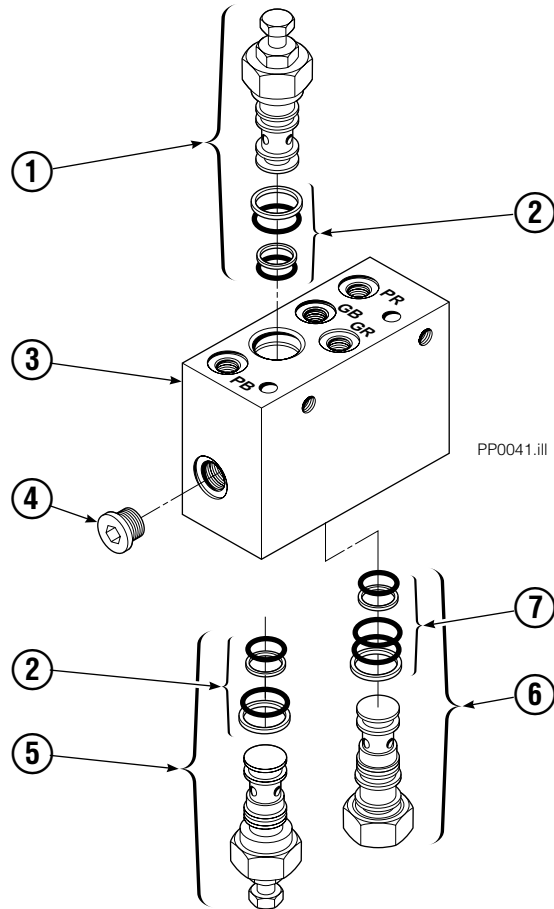
35E/45E

| REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|--------------------------|
| | | 685828 | Hydraulic Group ITA II |
| 1 | 1 | 685831 | Hose |
| 2 | 2 | 683173 | Hose |
| 3 | 1 | 2375 | Fitting, 6-6 |
| 4 | 8 | 604511 | Fitting, 6-6 |
| 5 | 1 | 682812 | ■ Valve |
| 6 | 2 | 765329 | Capscrew, M8x1.25x20-8.8 |
| 7 | 2 | 685978 | Hose ITA II |
| 8 | 2 | 684956 | Cable tie |
| 9 | 4 | 605235 | Fitting 5-6 |
| 10 | 1 | 200647 | Tube |
| 11 | 2 | 604510 | Plug, 6 |
| 12 | 1 | 200649 | Tube |
| 13 | 1 | 200648 | Tube |

■ See Valve page for parts breakdown.

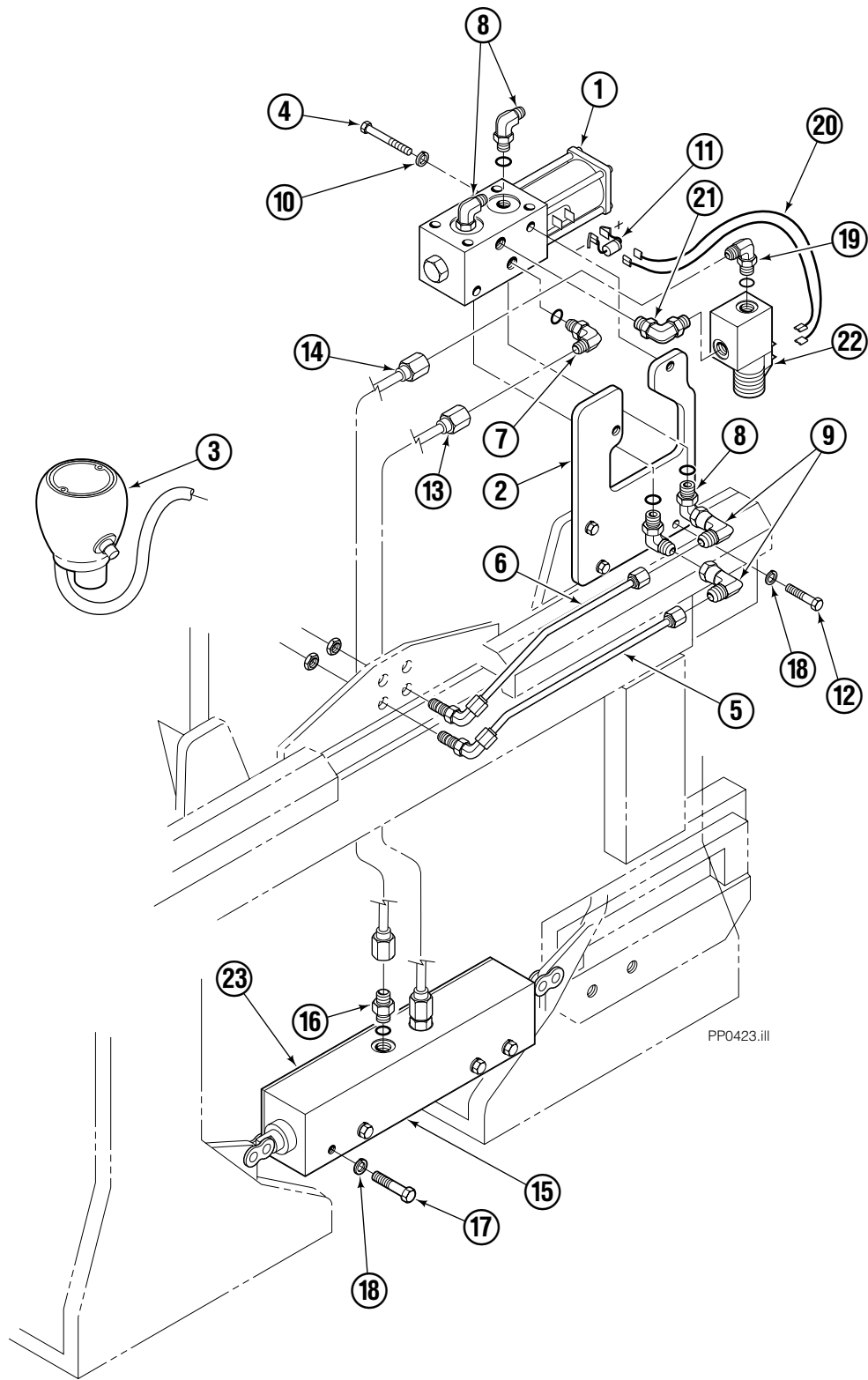
Valve

Load Push/Pull



| REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|--------------------------|
| | | 682812 | Valve Assembly |
| 1 | 1 | 677125 | Sequence Valve (Retract) |
| 2 | 2 | 669597 | Service Kit |
| 3 | 1 | 682813 | Body |
| 4 | 5 | 663694 | Fitting, 3 |
| 5 | 1 | 677124 | Sequence Valve (Extend) |
| 6 | 1 | 659058 | Gripper Check Valve |
| 7 | 1 | 667516 | Service Kit |

Solenoid Adaption



Solenoid Adaption

| 35/45E | | | |
|--------|-----|----------|-------------------------|
| REF | QTY | PART NO. | DESCRIPTION |
| | | 368006 | Solenoid Adaption Group |
| 1 | 1 | ◆ | Solenoid Valve |
| 2 | 1 | 683222 | Plate |
| 3 | 1 | 355058 | ■ Knob |
| 4 | 2 | 768521 | Capscrew, M6x80 |
| 5 | 1 | 356817 | Tube |
| 6 | 1 | 356818 | Tube |
| 7 | 1 | 666984 | Fitting, 4-6 |
| 8 | 4 | 601676 | Fitting, 6-6 |
| 9 | 2 | 2680 | Fitting, 6-6 |
| 10 | 2 | 6201 | Lockwasher, M6 |
| 11 | 1 | 669432 | Diode |
| 12 | 3 | 765329 | Capscrew , M8x1,25x20 |
| 13 | 1 | 355500 | Tube |
| 14 | 1 | 364229 | Tube |
| 15 | 1 | 350731 | ▲ Cylinder |
| 16 | 2 | 617915 | Fitting, 4-4 |
| 17 | 4 | 768527 | Capscrew, M8x1,25x50 |
| 18 | 7 | 6287 | Lockwasher, M8 |
| 19 | 1 | 617917 | Fitting, 4-4 |
| 20 | 2 | 357541 | Wire |
| 21 | 1 | 619235 | Fitting |
| 22 | 1 | ◆ | Solenoid Valve |
| 23 | ● | 209665 | Shim |

◆ See Coil and Solenoid Valve page for parts breakdown.

▲ See Cylinder page for parts breakdown.

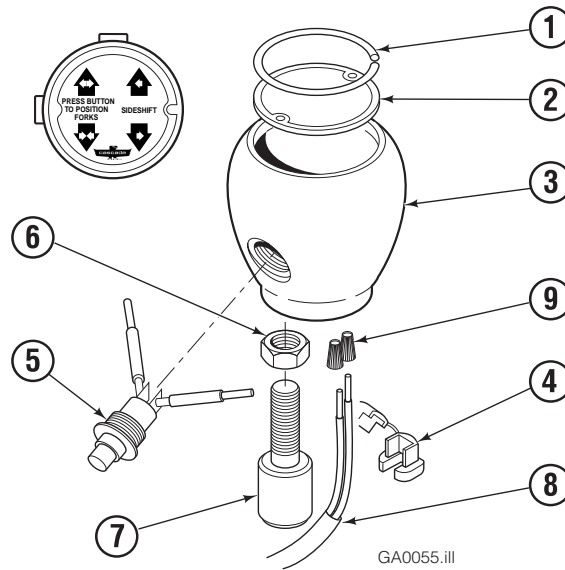
■ See Control Knob page for parts breakdown.

● Quantity as needed.

Reference: 364066, SK-5396.

Control Knob

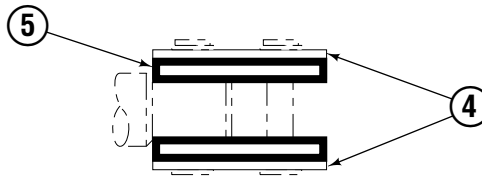
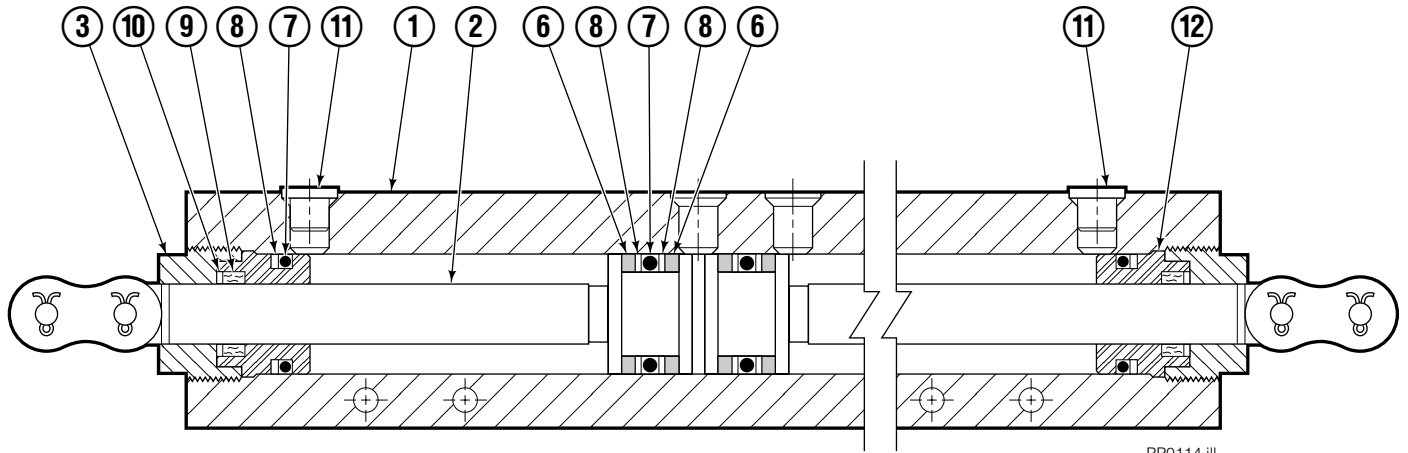
Two Function – Sideshift Only



| 35E/45E | | | |
|----------------|-----|----------|----------------|
| REF | QTY | PART NO. | DESCRIPTION |
| | | 355058 | Knob Group |
| 1 | 1 | 665250 | Snap Ring |
| 2 | 1 | 355059 | Cover |
| 3 | 1 | 665012 | Knob |
| 4 | 1 | 665076 | Strain Relief |
| 5 | 1 | 677112 | ■ Switch |
| 6 | 1 | 5902 | Nut, 3/8 NC |
| 7 | 1 | 665081 | Adapter |
| 8 | 1 | 667718 | Cable Assembly |
| 9 | 2 | 667752 | Connector-Gray |

■ This switch may be purchased without wires. Order part number 665004. Soldering is required.

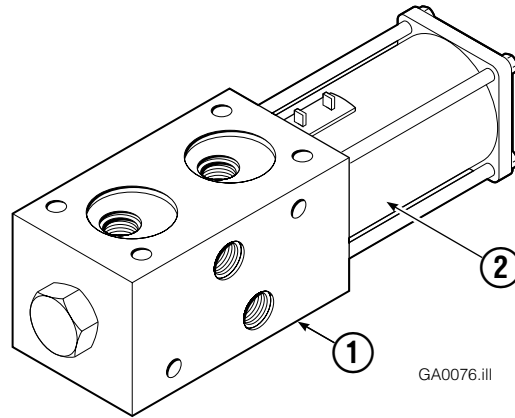
Hydraulic Adjustable Platen Cylinder



| REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|-------------------|
| | | 350731 | Cylinder Assembly |
| 1 | 1 | 361843 | Shell |
| 2 | 2 | 361844 | Rod |
| 3 | 2 | 560306 | Retainer Nut |
| 4 | 2 | 667733 | Link |
| 5 | 4 | 667734 | Side Plate |
| 6 | 4 | 683238 | ■ Nylon ring |
| 7 | 4 | 2712 | ■ O-Ring |
| 8 | 6 | 615116 | ■ Back-Up Ring |
| 9 | 2 | 560307 | ■ Rod Seal |
| 10 | 2 | 560309 | ■ Back-Up Ring |
| 11 | 2 | 609234 | Plug |
| 12 | 2 | 560305 | Retainer |

■ Included in Service Kit 560308.

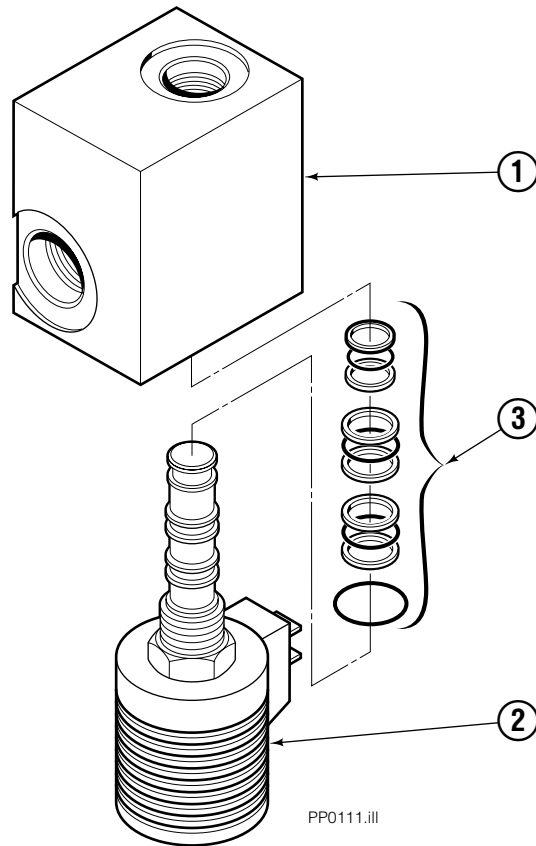
Solenoid Valves



Racine

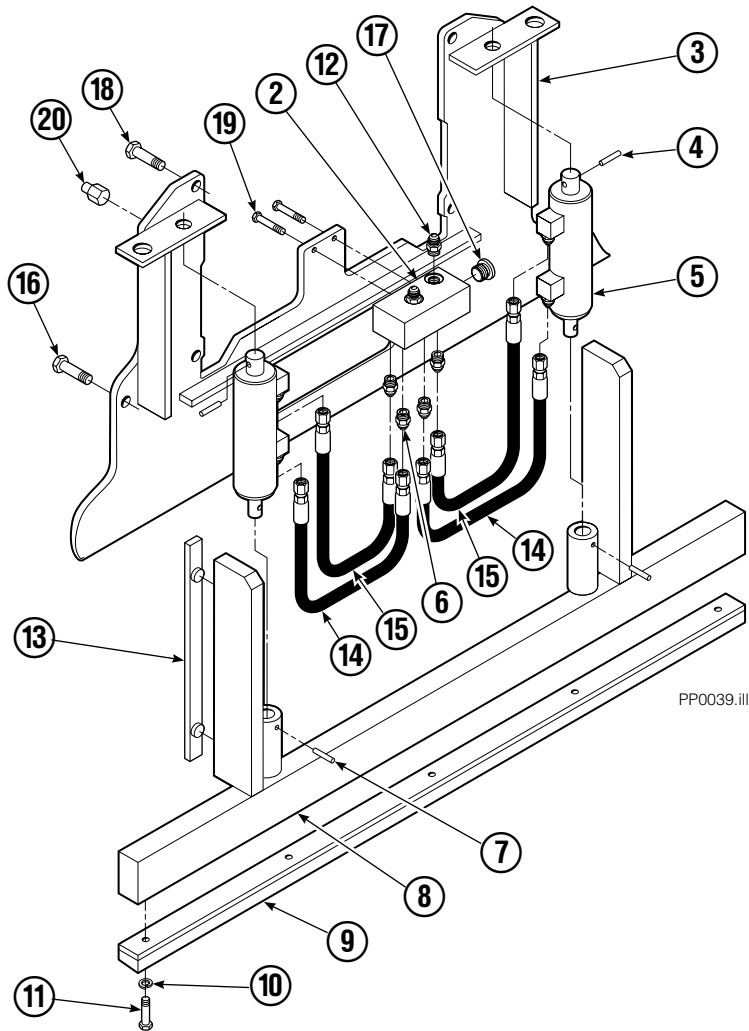
| REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|----------------------|
| 1 | 1 | 614093 | Solenoid Valve - 48V |
| 2 | 1 | 665047 | Coil - 48V |
| | | 685012 | Service Kit |

Solenoid Valves



| REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|---------------|----------------------|
| 1 | 1 | 204991 | Solenoid Valve - 12V |
| 1 | 1 | 204992 | Solenoid Valve - 24V |
| 1 | 1 | 204993 | Solenoid Valve - 36V |
| 1 | 1 | 204994 | Solenoid Valve - 48V |
| 1 | 1 | 204995 | Solenoid Valve - 72V |
| 2 | 1 | 204980 | Coil - 12V |
| 2 | 1 | 204981 | Coil - 24V |
| 2 | 1 | 204982 | Coil - 36V |
| 2 | 1 | 204983 | Coil - 48V |
| 2 | 1 | 204984 | Coil - 72V |
| 3 | 1 | 204990 | Service Kit |

Faceplate Group



35E/45E

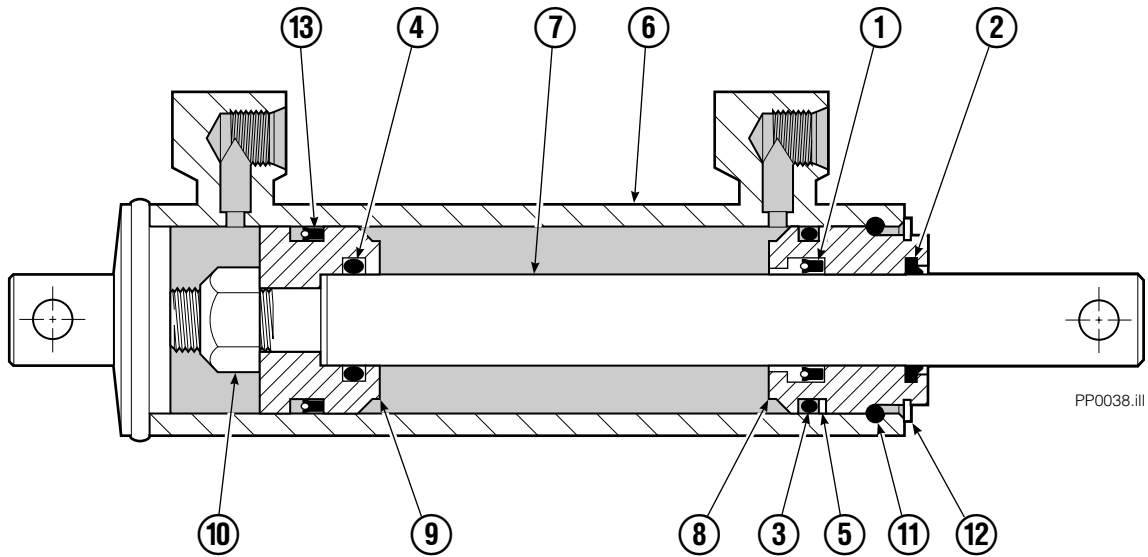
| REF | QTY | PART NO. | DESCRIPTION | REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|-----------------------------|-----|-----|----------|--------------------------|
| | | 205967 | Faceplate Group 40" x 48" ■ | 10 | 5 | 6444 | Lockwasher |
| | | 205961 | Gripper Jaw Assembly ● | 11 | 5 | 768794 | Capscrew, M8x1,25x20-8.8 |
| 1 | 1 | 204639 | Faceplate 40" x 48" ■ | 12 | 2 | 604511 | Fitting, 6-6 |
| 2 | 1 | 205959 | Junction Block | 13 | 2 | 686573 | Bearing |
| 3 | 1 | 206396 | Gripper Jaw | 14 | 2 | 205957 | Hose |
| 4 | 2 | 673385 | Drive Pin | 15 | 2 | 205958 | Hose |
| 5 | 2 | 682844 | Gripper Cylinder ▼ | 16 | 2 | 768710 | Capscrew |
| 6 | 8 | 617915 | Fitting, 4-4 | 17 | 2 | 609234 | Plug, 4 |
| 7 | 2 | 200877 | Drive Pin | 18 | 2 | 779010 | Capscrew |
| 8 | 1 | 206403 | Gripper Bar | 19 | 2 | 763166 | Capscrew, M8x1,25x25-8.8 |
| 9 | 1 | 672712 | Gripper Pad | 20 | 4 | 682850 | Stop |

■ Width x height.

● Includes items 2 through 20.

▼ See Gripper Cylinder page for parts breakdown.

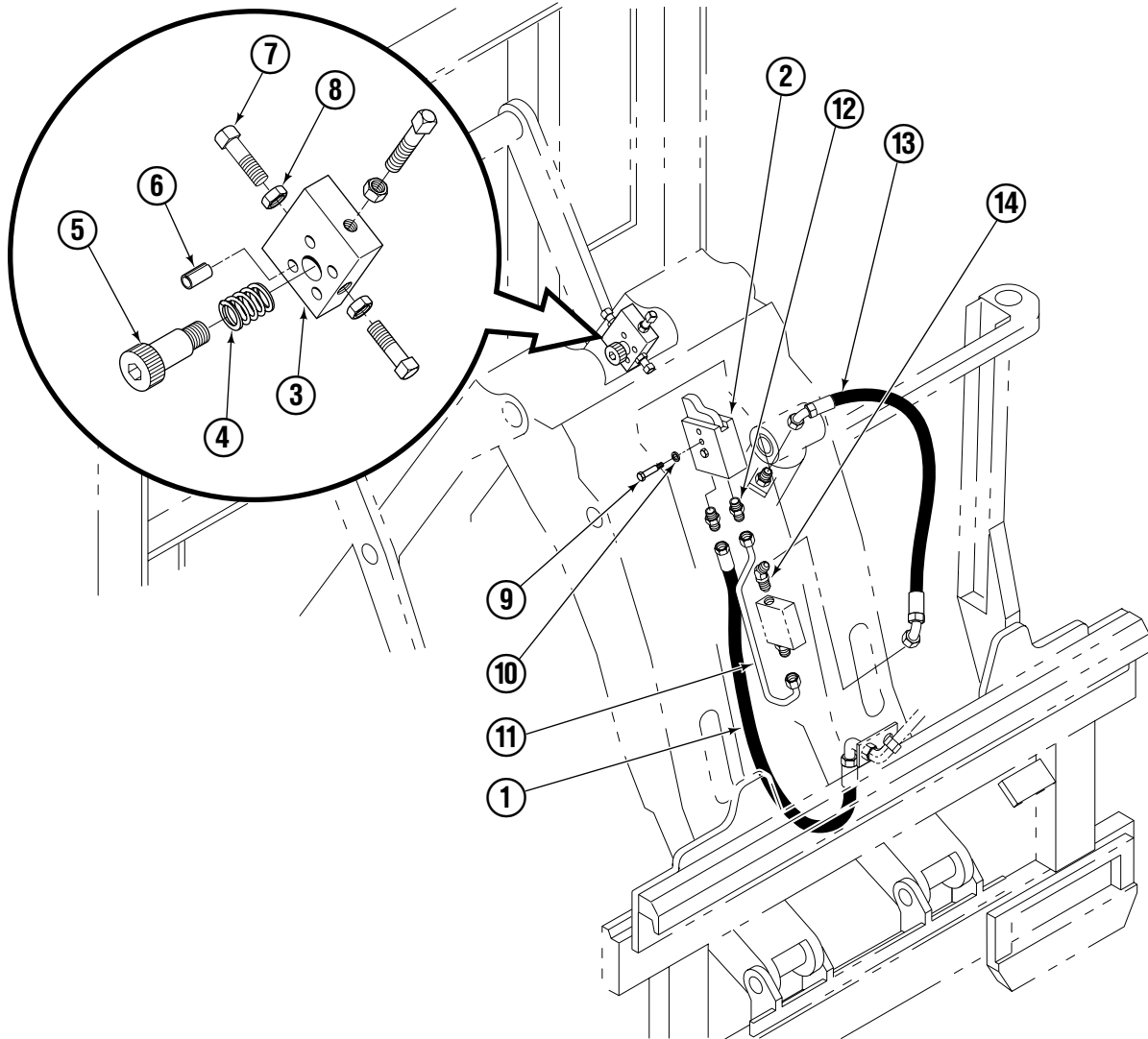
Gripper Cylinder



| 35E/45E | | | |
|---------|-----|----------|------------------|
| REF | QTY | PART NO. | DESCRIPTION |
| | | 682844 | Gripper Cylinder |
| 1 | 1 | 646540 | ▼ Seal |
| 2 | 1 | 636850 | ▼ Wiper |
| 3 | 1 | 2718 | ▼ O-Ring |
| 4 | 1 | 2710 | ▼ O-Ring |
| 5 | 1 | 615122 | ▼ Back-Up Ring |
| 6 | 1 | 685662 | Shell |
| 7 | 1 | 685663 | Rod |
| 8 | 1 | 685664 | Retainer |
| 9 | 1 | 685665 | Piston |
| 10 | 1 | 563462 | Nut |
| 11 | 1 | 563916 | Ring |
| 12 | 1 | 684284 | Snap Ring |
| 13 | 1 | 663728 | ▼ Piston Seal |

▼ Included in Service Kit 684827.

Hydraulic Stop Group

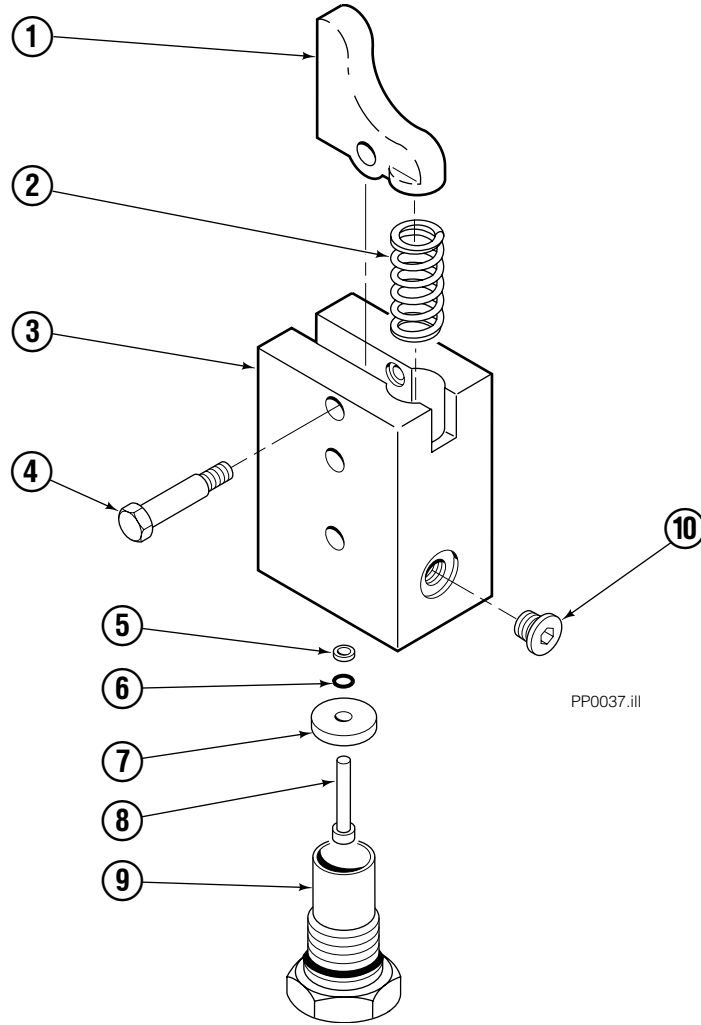


PP0034.ill

| REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|-------------------------------|
| | | 684567 | Hydraulic Stop Group – ITA II |
| 1 | 1 | 684568 | Hose – ITA II |
| 2 | 1 | 684572 | ■ Valve |
| 3 | 1 | 684578 | Selector Body |
| 4 | 1 | 684580 | Spring |
| 5 | 1 | 685659 | Shoulder Bolt |
| 6 | 1 | 769026 | Roll Pin |
| 7 | 3 | 684582 | Capscrew |
| 8 | 3 | 684583 | Nut |
| 9 | 2 | 768527 | Capscrew, M8x1,25x50-8.8 |
| 10 | 2 | 6287 | Lockwasher |
| 11 | 1 | 684584 | Tube |
| 12 | 2 | 604511 | Fitting, 6-6 |
| 13 | 1 | 211970 | Hose |
| 14 | 1 | 611302 | Fitting, 6 |

■ See Valve page for parts breakdown.

Hydraulic Stop Valve



| REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|----------------------|
| | | 684572 | Hydraulic Stop Valve |
| 1 | 1 | 684575 | Actuator |
| 2 | 1 | 630041 | Spring |
| 3 | 1 | 684573 | Body |
| 4 | 1 | 684576 | Shoulder Screw |
| 5 | 1 | 615000 | Back-up Ring |
| 6 | 1 | 2696 | O-Ring |
| 7 | 1 | 669310 | Spacer |
| 8 | 1 | 684577 | Plunger |
| 9 | 1 | 671690 | Valve Cartridge |
| 10 | 1 | 663694 | Fitting, 3 |

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