

Installation and Service Manual Heavy Duty Hydraulic Stabilization Legs

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Part # 3010003129 REV 0E

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5.0" and 6.0" Bore Heavy Duty Hydraulic Stabilization Legs

(800) 745- 4142
info@powerpackerus.com
www.powerpackerus.com

1.0 Important Receiving Instructions

Visually inspect all components for shipping damage prior to installation. Shipping damage is not covered by warranty. If shipping damage is found, notify carrier at once. The carrier is responsible for all repair and replacement costs resulting in damage from shipment. For most current manual, see <http://www.powerpackerus.com>

Product descriptions and specifications are subject to change. For specific versions related to your product, contact us.

2.0 Safety Issues

Read all instructions, warnings and cautions carefully. Follow all safety precautions to avoid personal injury or property damage during system operation. Power-Packer cannot be responsible for damage or injury resulting from unsafe product use, lack of maintenance or incorrect product and/or system operation. Do not remove warning labels, tags or decals. Contact Power-Packer when in doubt as to the safety precautions and operations.

This manual follows a system of safety alert symbols, signal words and safety messages to warn the user of specific hazards. Failure to comply with these warnings could result in serious personal injury or death, as well as damage to equipment or other property.

This is a Safety Alert Symbol that appears throughout this manual. It is used to alert you to potential physical injury hazards. Pay close attention to Safety Alert Symbols and obey all safety messages that follow this symbol to avoid possible serious personal injury or death.

Safety Alert Symbols are used in conjunction with certain Signal Words that call attention to safety messages or property damage messages and designate a degree or level of hazard seriousness. The Signal Words used in this manual are WARNING, CAUTION, and NOTICE.

WARNING indicates a hazardous situation that, if not avoided, could result in death or serious injury.

CAUTION indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

NOTICE indicates information considered important, but not hazard-related (e.g. messages related to property damage.)



⚠ WARNING

⚠ CAUTION

NOTICE

⚠ WARNING**2.1 Safety Precautions**

Failure to observe and comply with the following precautions could result in death or serious personal injury, as well as property damage.

- Keep hands and feet away from hydraulic legs during operation.
- Do not handle pressurized hoses. Escaping oil under pressure can penetrate the skin. If oil is injected under the skin, see a doctor immediately.
- Do not exceed equipment ratings. Never attempt to lift a load weighing more than the capacity of the system. Overloading can cause equipment failure.
- Never set relief valve to a higher pressure than specified. Higher settings may result in equipment failure.
- Be sure setup is stable before lifting load. Hydraulic legs should be placed on a flat surface that can support the load. Do not bridge. Where applicable, use support pads for added stability. Do not weld or otherwise modify the hydraulic leg to attach a base or other support.
- Immediately replace worn and damaged parts. To protect warranty, use only Power-Packer parts.

Failure to observe and comply with the following precautions could result in minor or moderate personal injury, as well as property damage.

⚠ CAUTION

- Avoid damaging hydraulic hose. Avoid sharp bends and kinks when routing hydraulic hoses. Using a bent or kinked hose will cause severe back pressure. Sharp bends and kinks will internally damage the hose leading to premature hose failure.
- Do not drop heavy objects on hose. A sharp impact may cause internal damage to hose wire strands. Applying pressure to damaged hose may cause it to rupture.
- Keep hydraulic equipment away from flames and heat. Excessive heat will soften packings and seals, resulting in fluid leaks. Heat also weakens hose materials and packings. Protect hoses and hydraulic legs from weld spatter.

NOTICE

Hydraulic equipment must only be serviced by a qualified hydraulic technician.

Specific safety messages appear throughout this manual in the left hand column.

NOTICE

Mixtures of hydraulic fluid and fuel oil can cause seal damage resulting in subsequent sticking or sluggish action of the system (and voids warranty). Damaged seals must be replaced.

⚠ WARNING

Stabilization systems must be installed and operated within the design parameters of the crane and vehicle that they are intended to stabilize. Failure to do so could result in death or serious personal injury, as well as property damage.

NOTICE

Always grease leg in the **fully** retracted position.

⚠ WARNING

To avoid serious personal injury, do not place any body parts below leg shoe while in operation. The operator must be fully aware of people positioned in the vehicle/machine area at all times prior to and during operation.

3.0 Hydraulic Fluid Specifications

RECOMMENDED HYDRAULIC FLUIDS FOR POWER-PACKER

Power-Packer recommends using a quality ISO 32 Anti-wear hydraulic fluid for most applications. If operating in cold temperatures (below freezing) slow operation will occur. If slower operation in cold weather affects your operations, we recommend using a fluid specially-formulated for cold temperatures. We have found that ISO 15 High Viscosity Index Anti-wear hydraulic fluids work well with Power-Packer systems to -20° F. Some examples of these are:

- Mobil DTE 10 Excel 15
- Chevron Rando HDZ 15
- Kendall Hyken Glacial Blu

If consistently operating at temperatures below -20°F, then we recommend hydraulic fluids conforming to MIL-PRF-5606H or MIL-H-5606A (obsolete). If you have any questions regarding fluid recommendations, please call us.

4.0 Stabilization System Operating Parameters

Stabilization legs must be operated within design parameters. Design parameters may vary from leg to leg and must be followed to ensure expected behavior and a safe operating environment. Leg parameters are documented on each part number specific drawing.

5.0 Maintenance Instructions

MAINTENANCE

1. Clean exposed threads of mechanically locking legs prior to retraction.
2. Grease the legs every 2 months with an NLGA Grade "0" or "00" grease. Always grease the leg in the fully retracted position.
3. Seals and Counterbalance Valves – no maintenance or adjustment is necessary. Repair / replace if leakage or malfunction is observed. Evidence of tampering or field adjustment of the counterbalance valve will void all warranty.

⚠ WARNING

Stabilizer components are heavy. To avoid death or serious personal injury, always follow safe rigging and lifting practices.

⚠ WARNING

Do not use gage ports to run the cylinders

NOTICE

Always grease leg in the **fully** retracted position.

NOTICE

Do not weld on a fully assembled leg. Weld on empty well tube only or damage to internal components may occur.

6.0 Installation Instructions For 5" **and** 6" Bore Legs

The following instructions are furnished as a helpful guide for installation of your stabilizer system. Check shipment to be sure there has been no damage or loss in shipping. Always provide serial number and part numbers when ordering parts or requesting technical assistance.

1. **Stabilizer Leg Mounting** Install stabilizer legs to matching mount. Unless otherwise stated on part number specific fasteners are to be installed in all mounting holes. Use 3/4-16 X 2.0 grade 8 fasteners with locking hardware. Torque to 375 ft.-lbs.
2. Connect hydraulic supply lines to the appropriate work ports on the stabilizer leg. Grease the stabilizer leg.
3. Do not use gage ports to operate cylinders. Use SAE and JIC hoses and fittings, minimum 4,000 psi rated.

The stabilizer legs are designed to automatically purge air during operation. It is recommended that the legs be fully extended and retracted 1-3 times to fully purge them of air before putting them into service. Check and refill reservoir with hydraulic fluid as needed with the stabilizer legs in the fully retracted position.

6.1 Replacement Shoes

A variety of footpads are available in fixed, articulated, and removable styles.

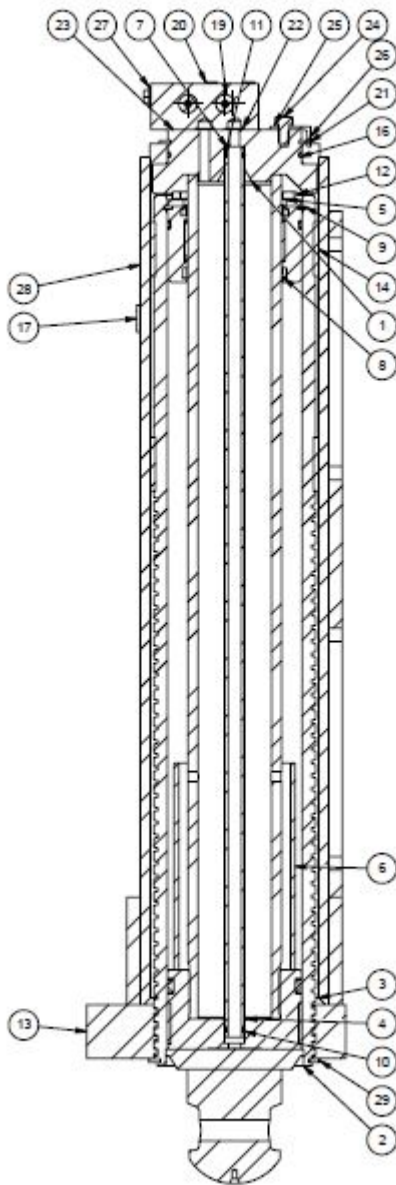


20° Swivel Footpad



14° Crane Style Footpad

7.0 Heavy Duty Leg Parts List For 5.0" Bore Legs

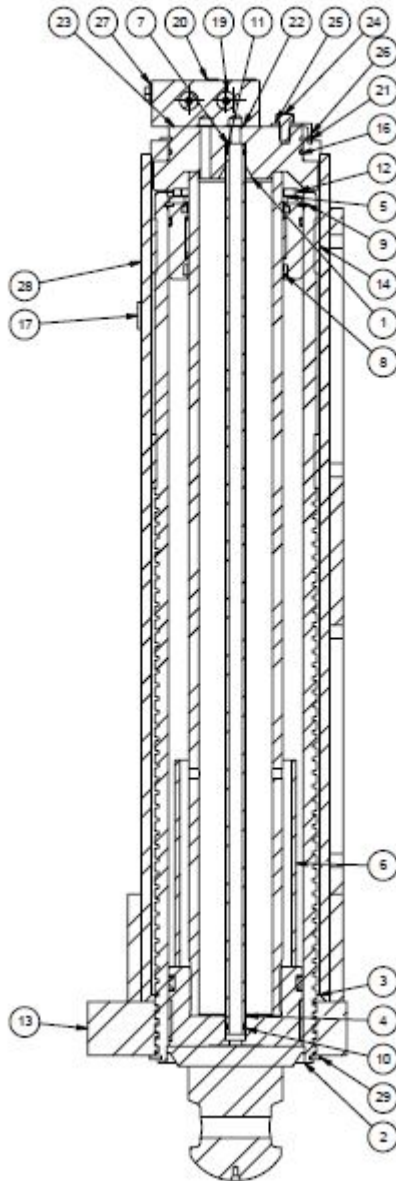


ITEM NO.	NOTES	DESCRIPTION	QTY.
1	1	ROD WELD HOLLOW 5" B XX" ST	1
2	1	CYLINDER WELD HD 5" B XX" ST	1
3	1	WELL TUBE 5.00" BORE XX" STROKE	1
4	2	PISTON ASSEMBLY 5 B	1
5	2	RETAINING RING INTERNAL 5" B	1
6	1	STOP TUBE 5 (X.XX")	1
7	1	TRANSFER TUBE	1
8	2	GUIDE ROD 5" ASSEMBLY	1
9	2	RETAINING RING INTERNAL	1
10	2	WASHER BACKUP UNCUT 016	4
11	2	RING 016 70 QUAD	2
12		SCREW HHC 1/2-20 X 1.5" GR8	6
13		COUPLING HD 5.00"	1
14	2	RING WEAR 5"	2
15		FITTING GREASE .125 P SELF	2
16	2	O-RING 4.8" 5.0" .139 C.S. -250	1
17		DECAL POWER-PACKER	1
18		DECAL BLANK .85 X 1.75	1
19	1	VALVE ASM OH STAB DCBV	1
20		SHCS 5/16-18 X 2.0	4
21	2	SNAP RING 5.75 OD	1
22	3	RING O 015 90	2
23	3	GASKET OH LEG DUAL CB VALVE	1
24		SCREW HHC 3/8-16 X .75" GR5	1
25		WASHER LOCK .375	1
26		STOPPER CLIP	1
27		SHIPPING PLUG #6 PLASTIC	2
28		DECAL MASK .85 x 1.75	1
29	2	SNAP RING	1
	3	DCBV VALVE CARTRIDGE	2
	3	PLUG SAE #6	2

Product Notes:

1. State leg part number and part description when ordering these items. Indicate date code when ordering to ensure proper revision level.
2. These items contained in leg repair kit 1010003572 and are not available on an individual basis.
3. These items are contained in counterbalance valve repair kit 1010003571 and are not available on an individual basis.

7.1 Heavy Duty Legs **Parts List For 6.0" Bore Legs**



ITEM NO.	NOTES	DESCRIPTION	QTY.
1	1	ROD WELD HOLLOW 6.0 B XX ST	1
2	1	CYLINDER WELD HD 6" BORE XX ST	1
3	1	WELL TUBE WELD 6.0 B XX ST	1
4	2	PISTON ASSEMBLY 6"	1
5	2	RING RETAINING 6"	1
6	1	STOP TUBE 6" (X.XX)	1
7	1	TRANSFER TUBE	1
8	2	GUIDE ROD 6" ASSEMBLY	1
9	2	RETAINING RING 6" BORE	1
10	2	WASHER BACKUP UNCUT 016	4
11	2	RING 016 70 QUAD	2
12		SCREW HHC 1/2-20 X 1.5" GR 8	6
13	1	COUPLING HD 6.0 B	1
14	2	RING WEAR 6"	2
15		FITTING GREASE .125 P SELF	2
16	2	RING O 256 70	1
17		DECAL POWER-PACKER	1
18		DECAL BLANK .85 X 1.75	1
19	1	VALVE DCBV BOLT ON	1
20		SHCS 5/16-18 X 2.0 GR 8	4
21	2	SNAP RING 6.0 OD	1
22	3	RING O 015 90	2
23	3	GASKET DCB VALVE BOLT-ON	1
24		SCREW HHC 3/8-16 X .75" GR5	1
25		WASHER LOCK .375	1
26	1	STOPPER CLIP	1
27		SHIPPING PLUG #6 PLASTIC	2
28		DECAL MASK .85 x 1.75	1
29	2	RETAINING RING 6" HD LEG	1
	3	DCBV CARTRIDGE	2
	3	PLUG SAE #6	2

Product Notes:

1. State leg part number and part description when ordering these items. Indicate date code when ordering to ensure proper revision level.
2. These items contained in leg repair kit 1010003573 and are not available on an individual basis.
3. These items are contained in counterbalance valve repair kit 1010003571 and are not available on an individual basis.

⚠ WARNING

Stabilizer components are heavy. To avoid death or serious personal injury, always follow safe rigging and lifting practices.

⚠ CAUTION

To avoid personal injury always.

1. Use eye protection.
2. Crack all hydraulic connections gradually to allow trapped pressure to bleed completely down. Slowly remove hose fitting connections completely.
3. Properly dispose of any fluid that may be released.

8.0 Repair Procedure For 5.0" and 6.0" Bore Legs

5.0" Leg Repair Kit No. 1010003572 (NOT SHOWN)

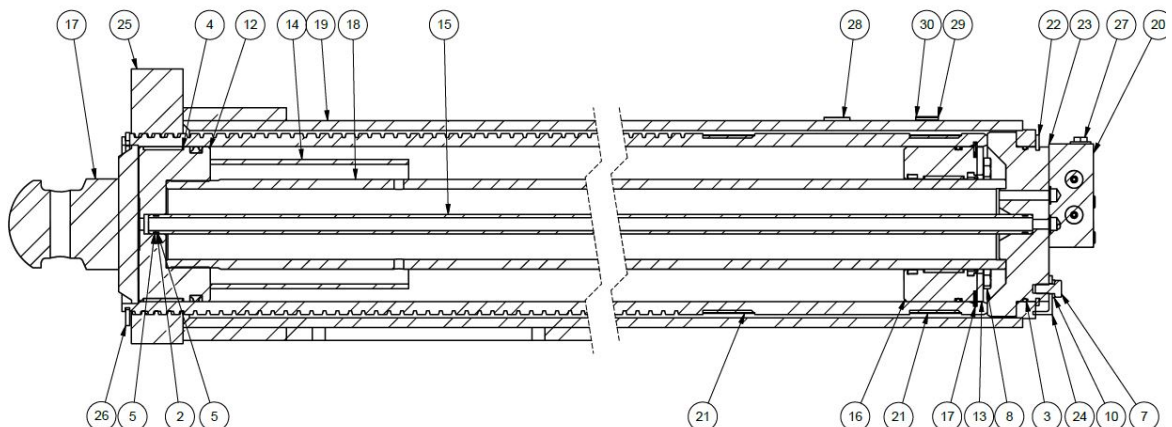
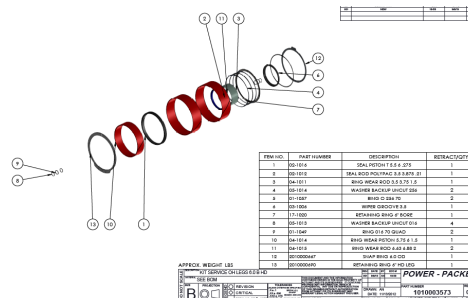
6.0" Leg Repair Kit No. 1010003573 (SHOWN BELOW)

Each kit contains the necessary soft parts (seals) and associated parts to repair one (1) leg. Some items will not be used in a particular leg, but are included to form a universal kit.

Be sure that no load is being supported by leg before servicing. With the pump off, cycle valve to relieve any pressure. Disconnect hydraulic lines from leg. Remove leg from equipment.

Remove valve assembly from leg. Remove cylinder from well tube by removing retaining ring and stopper clip. Lift well tube off of cylinder tube. Lift piston rod assembly then remove the 6 hex head screws, and the retaining ring. Lift piston rod assembly out of cylinder tube. Remove wear ring from piston and screw piston off rod.

Clean and inspect all metal parts and replace any damaged parts. Replace all seals and lightly coat with grease. Assemble leg in reverse order. Coat bottom of lock valve and top of cylinder head with anti-seize. Remount leg to equipment. Cycle legs and check for leaks.



CAUTION

To avoid personal injury always.

1. Use eye protection.
2. Crack all hydraulic connections gradually to allow trapped pressure to bleed completely down. Slowly remove hose fitting connections completely.
3. Properly dispose of any fluid that may be released.

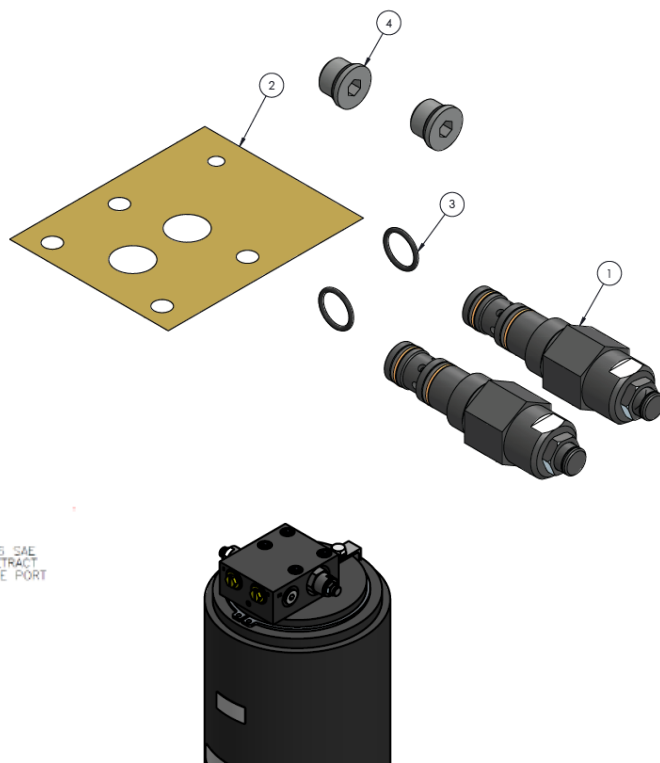
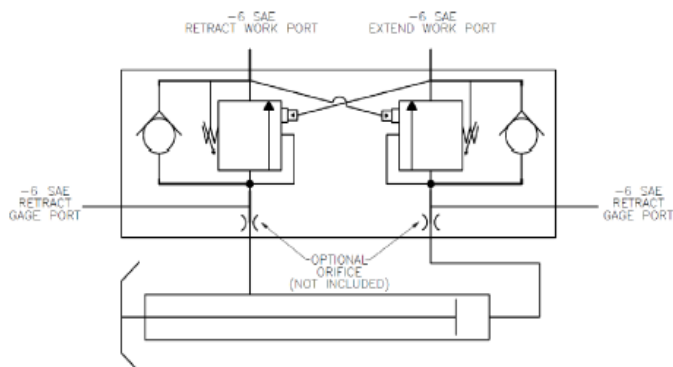
9.0 Counterbalance Valve**Lock Valve Service Kit 1010003571 for 5" or 6" Bore Legs**

This kit contains the necessary parts to replace the counterbalance valves on (1) leg.

Lock Valve Repair Procedure

Be sure that no load is being supported by leg before servicing. With pump off, cycle valve to relieve any pressure. Disconnect hydraulic lines from leg.

1. Remove valve block, (not shown)
2. Remove counterbalance valve cartridges (Item 1)
3. Install new counterbalance valve cartridges. Lubricate seals with clean hydraulic oil. Torque 12-15 ft.-lbs.
4. Replace gasket and orings when reassembling valve block onto cylinder and lightly coat with grease. Coat bottom of lock valve and top of cylinder head with anti-seize.
5. Apply Loctite 242 to valve block bolts (4) and torque to 18-24 ft.-lbs.
6. Replace both top plugs on block. Torque 12-15 ft.-lbs.

**HYDRAULIC SCHEMATIC**

10.0 DC Installation

Control Box Mounting

Determine desired control box location. No part of the control box or handles should extend beyond the sides of the equipment. Hold control box in desired location. Be sure cross members are free of rust and undercoating where control box hanger straps make contact. Tack weld hang straps in place. Replace bolts for hanger straps and lower control box. Finish welding hanger straps to cross members and remount control box. Torque mounting bolts to 20 ft.-lbs.

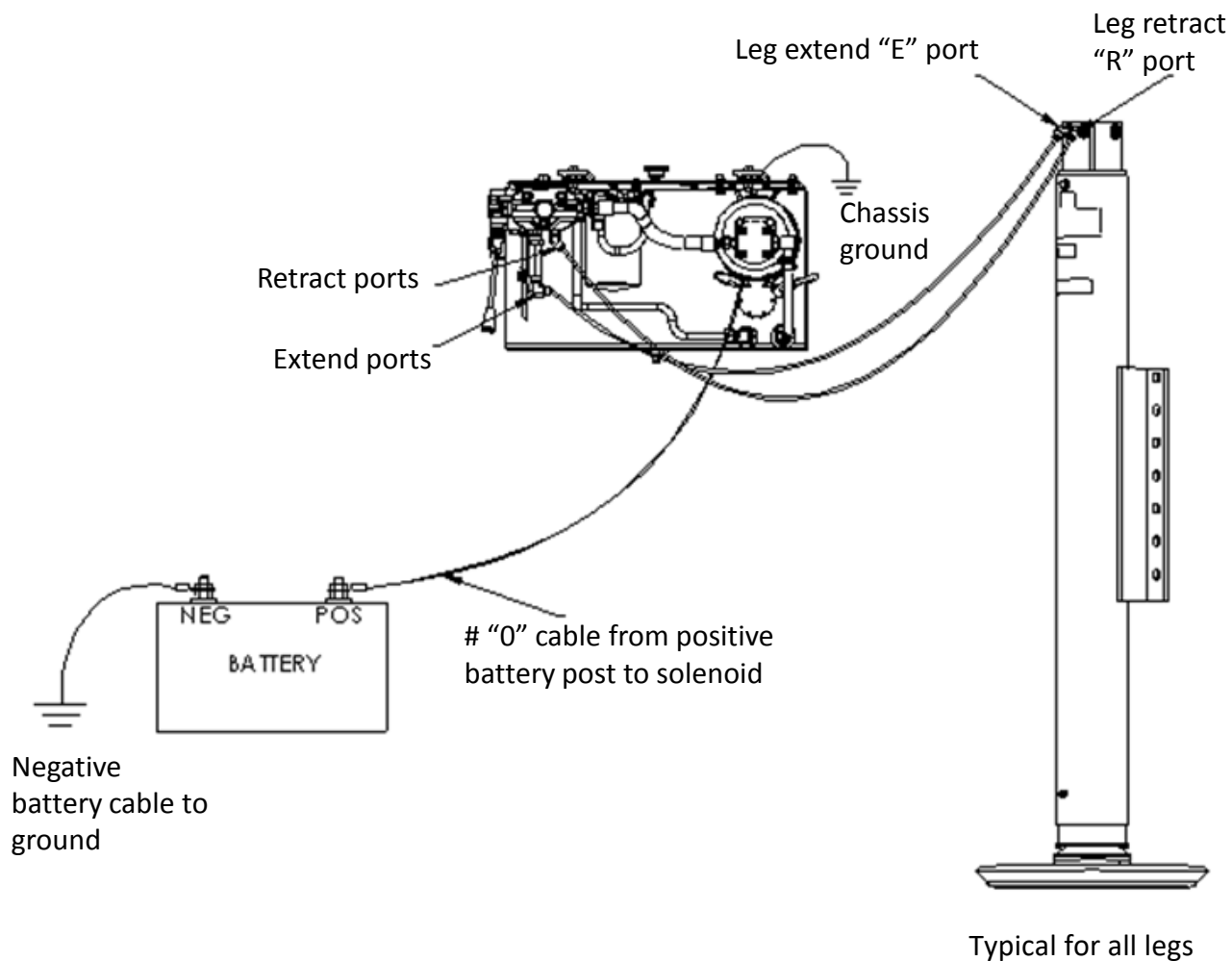
Plumbing

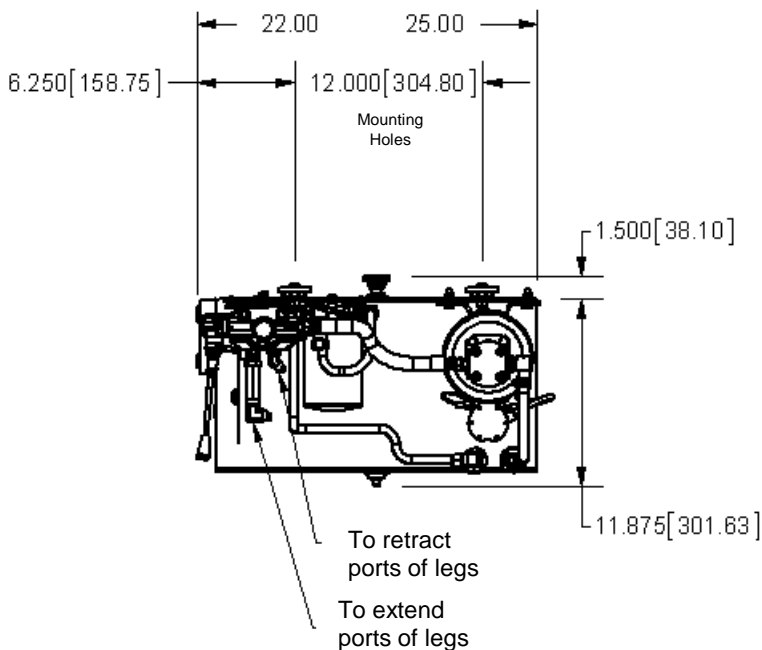
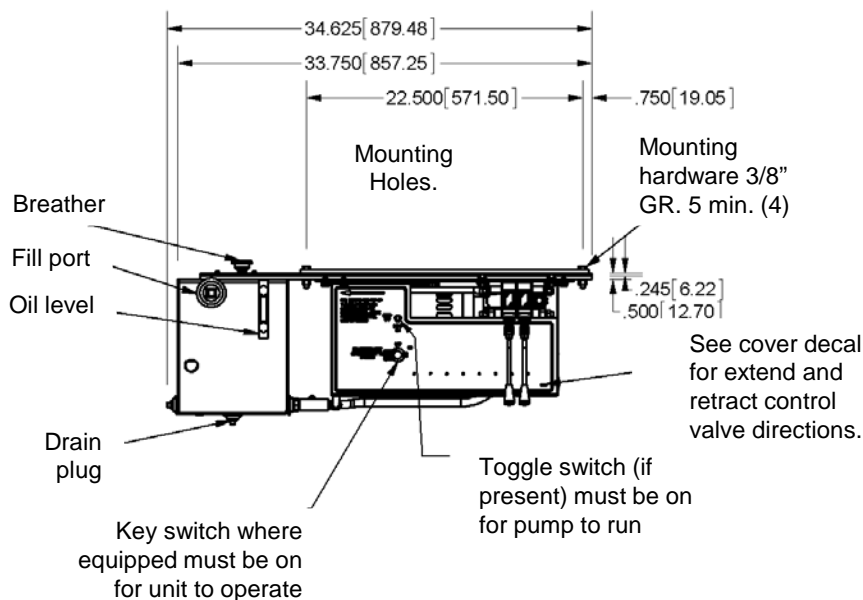
Determine lengths of high pressure hose required. Hoses should be minimum 5/16 i.d. min. rated at 2,500 PSI working pressure with #6 37' SAE Flare Female Swivel ends. Hoses to be supplied by the customer

Filling

1. Remove pipe plug in front of oil tank.
2. Fill with approved oil until oil is at the top of sight gauge.
3. Cycle legs twice to bleed air from system (If legs do not fully extend to full stroke after first fill, add oil until full stroke is able to be reached).
4. With legs fully retracted recheck oil level at sight gauge.
5. Replace plug.
6. Check fittings and hoses for leaks and tighten as required.
7. Secure all hoses in a manner that will not cause chafing.

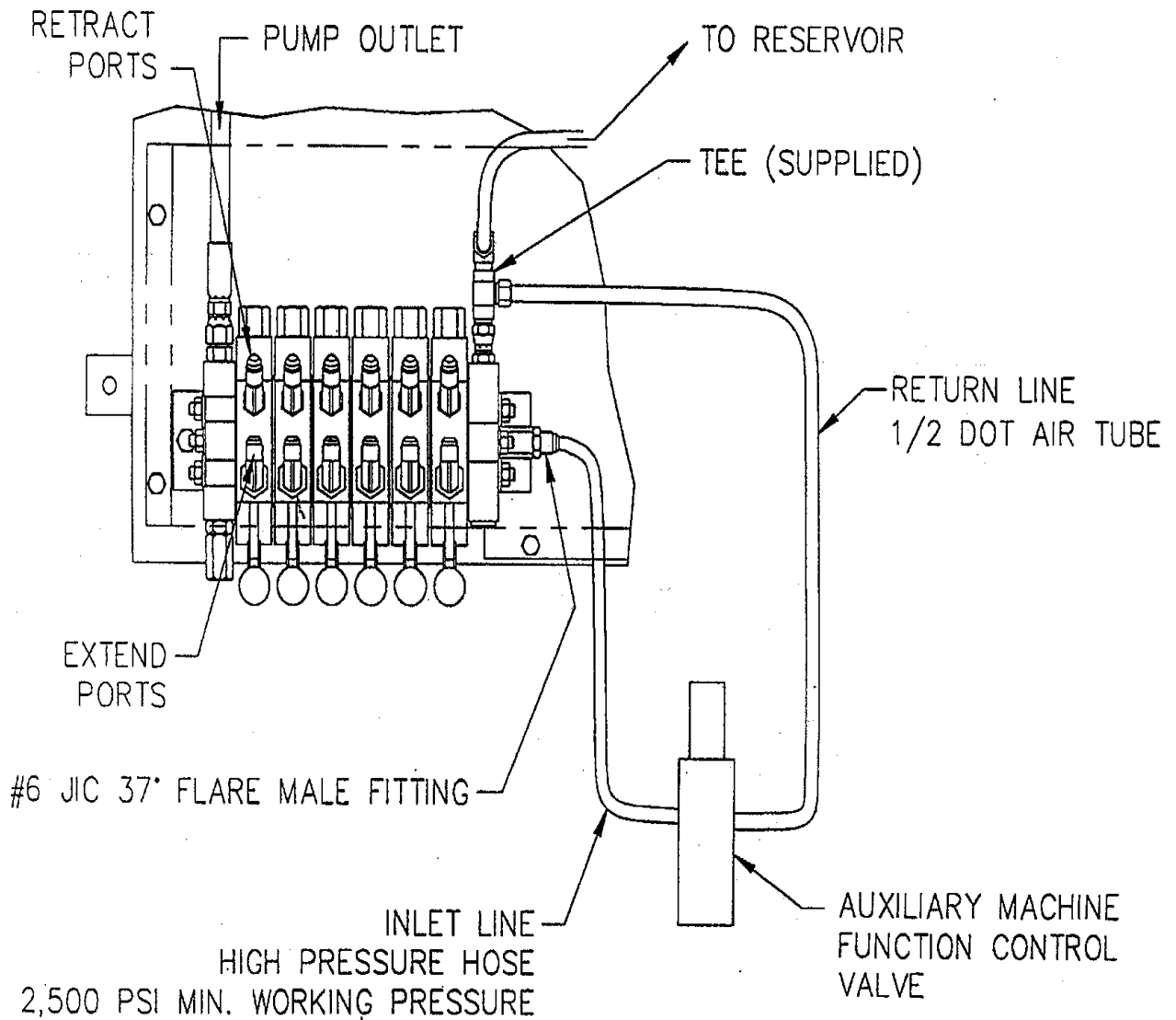
10.0 DC Installation (Continued)



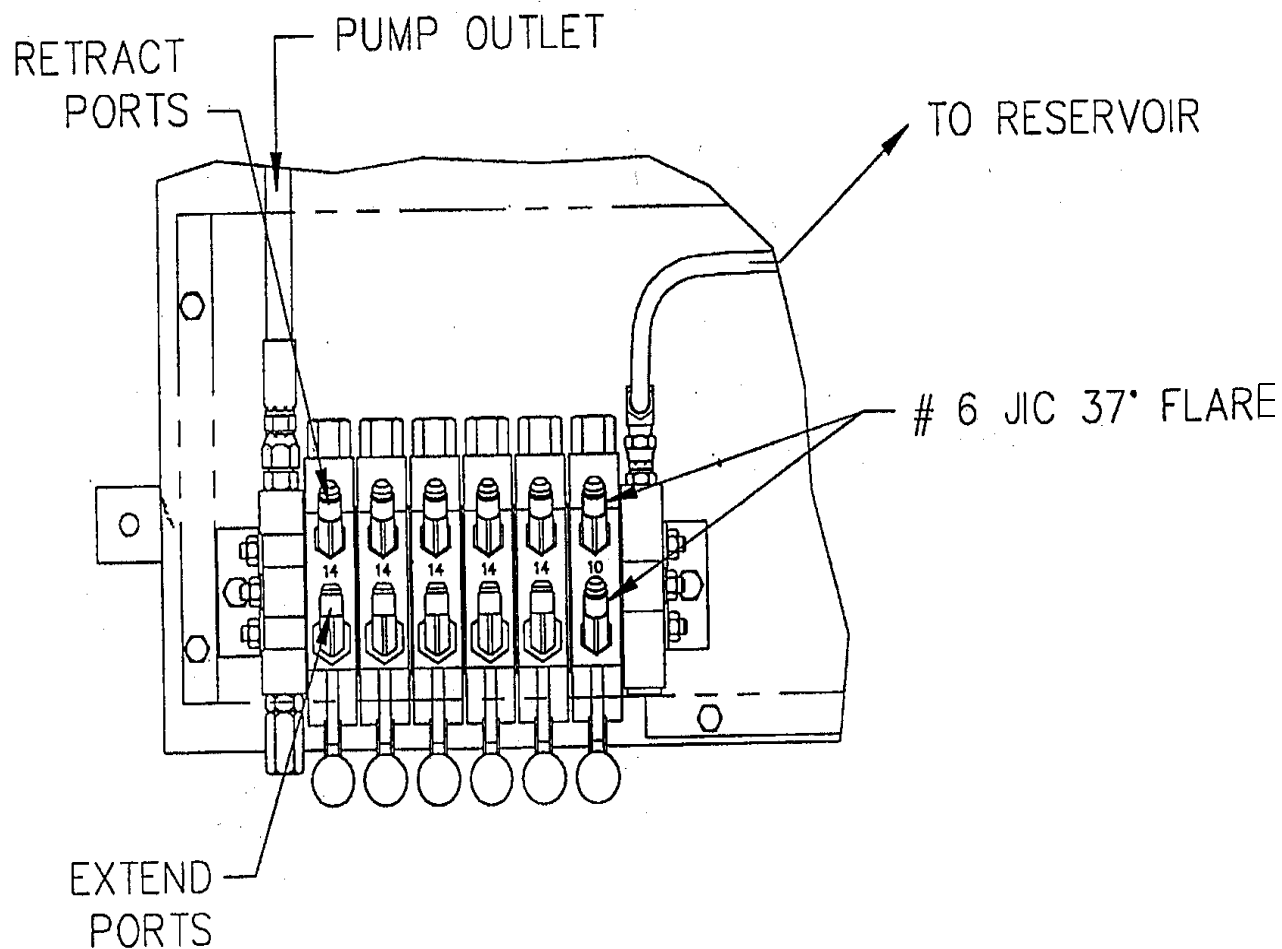
11.0 Stabilizer Control Box for DC Units**Product Notes:**

1. All hydraulic connections are number 6 (9/16-18 FHD.) 37" J.I.C. male flare (Hose assembly must have female swivel).
2. Dimensions apply for 1-6 bank valves on stabilizer control boxes.

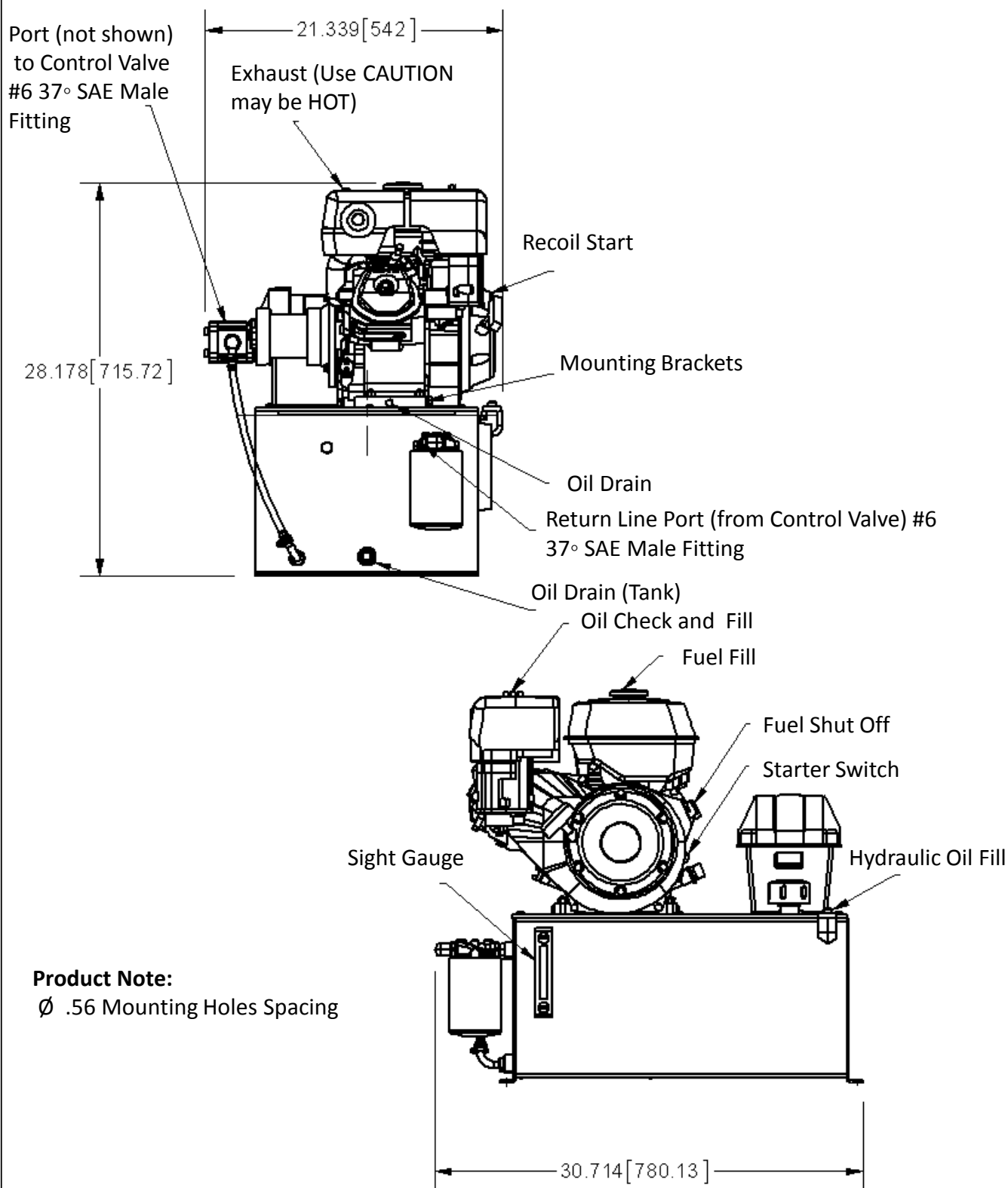
12.0 Application for Power Beyond Valves



13.0 Application for Last Section Closed Valves



14.0 8 HP Honda Gas Engine Control Box Drawing



14.1 8 HP Honda Gas Engine Installation

Plumbing

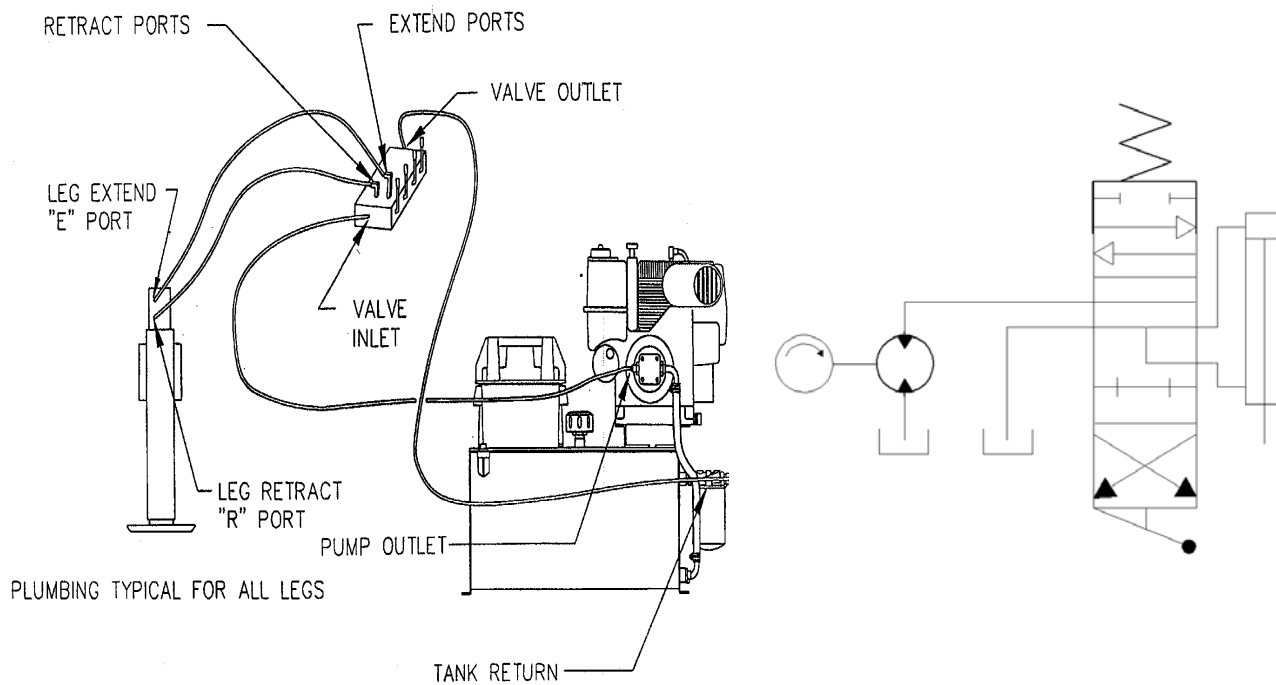
Determine length of high pressure hose required. Hoses should be minimum 5/16 i.d. high pressure (rated at 4,000 psi or above) with #6 37° SAE flare female swivel ends. Hoses to be supplied by the customer.

Engine

Make certain engine is ready to run according to engine manual (i.e. gas and oil). Do not run until hydraulic reservoir is filled, see filling.

Filling

1. Remove pipe plug in front of oil tank.
2. Fill reservoir to top of sight glass.
3. Cycle legs twice to bleed air from system.
4. With legs fully retracted, refill reservoir to top of sight glass.
5. Replace plug.
6. Check fitting and hoses for leaks and tighten as required.
7. Secure all hoses in manner that will not cause chafing.
8. Your system is now ready to use.



15.0 Warranty

For warranty information, please contact the Power-Packer
Warranty Claims Department.

POWER-PACKER®

**Warranty Claims Department
516 Hillcrest Drive
Westfield, WI 53964
(608) 296-1107
FAX: (608) 296-1798
EMAIL: techservice@powerpackerus.com**

**Customer Service
(800) 745-4142
Fax: (574) 256-1248
EMAIL: info@powerpackerus.com**

www.powerpackerus.com