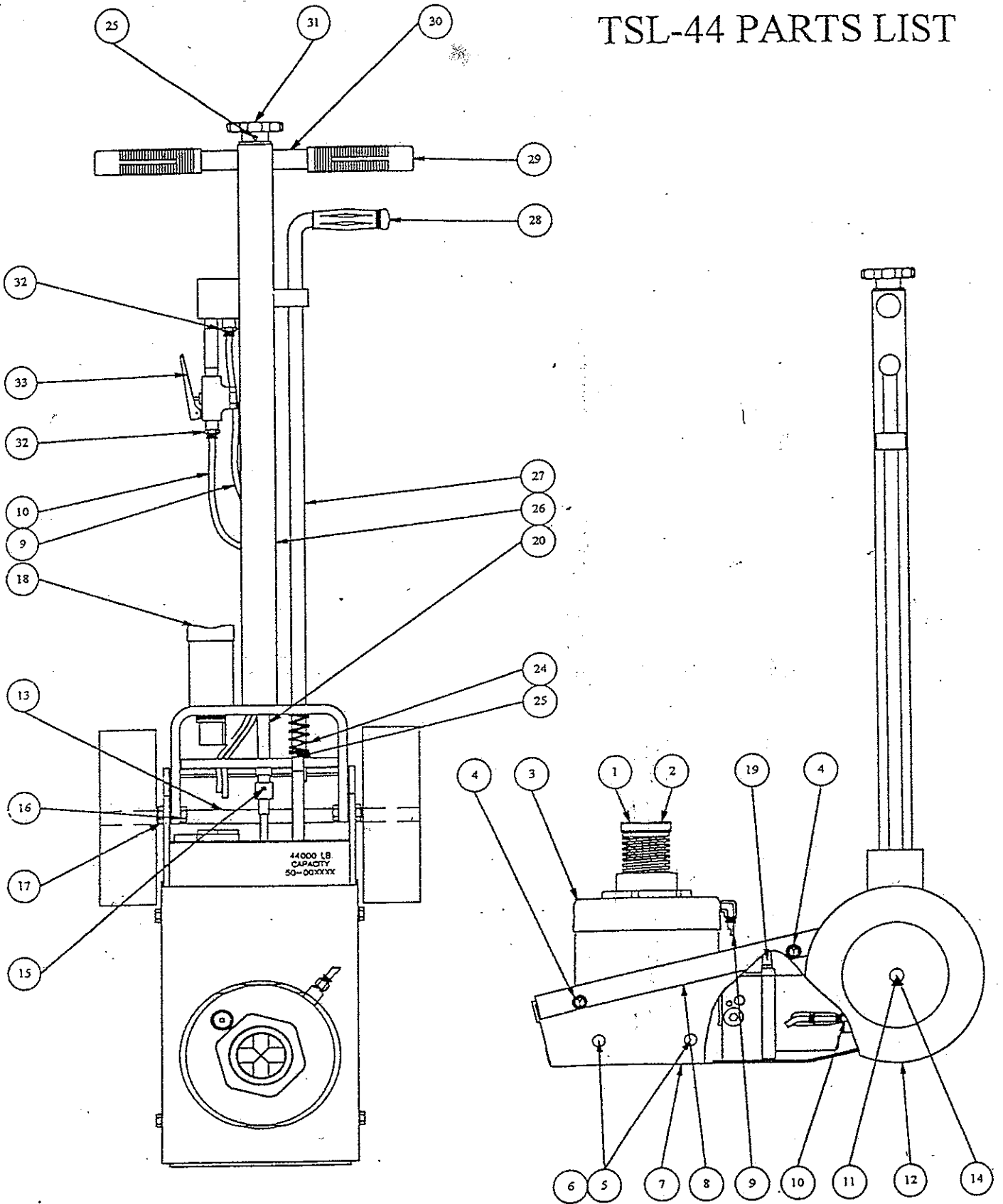


SECTION 7

TSL-44 PARTS LIST





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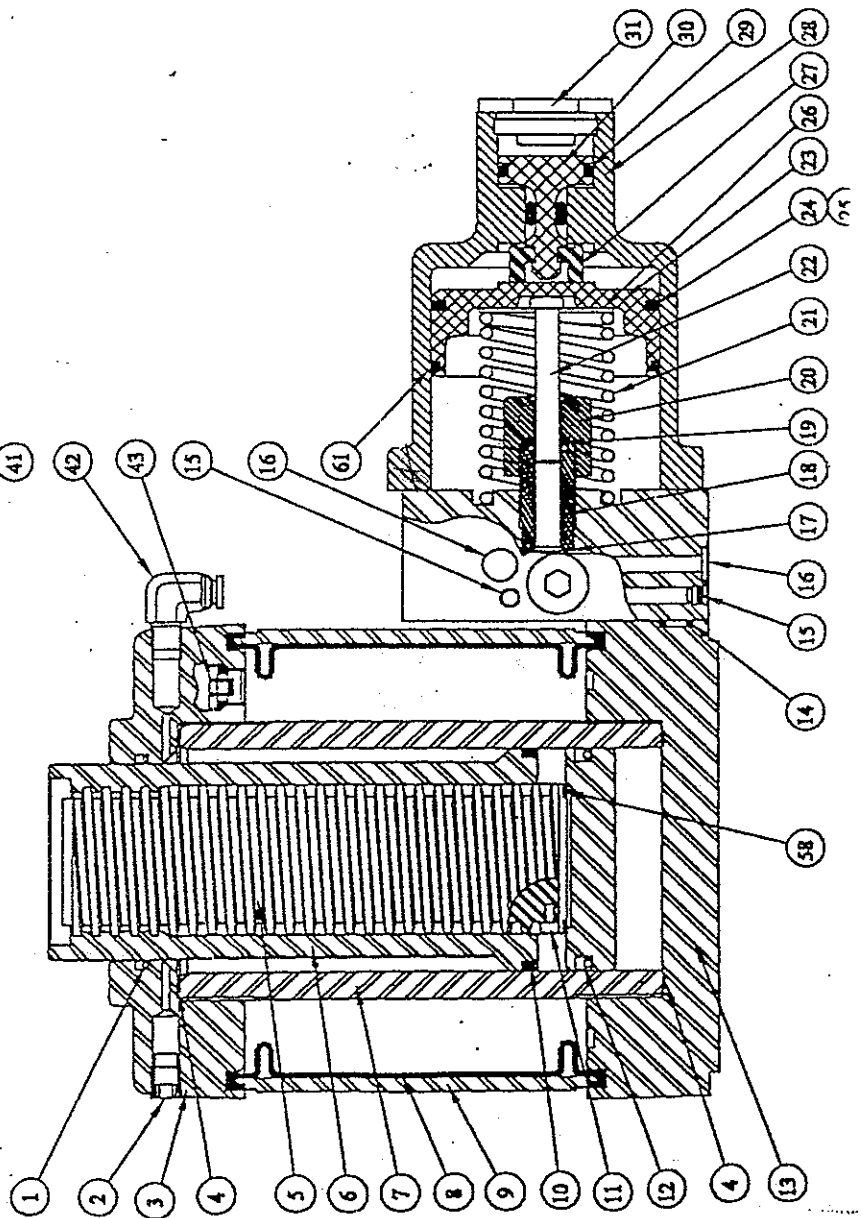
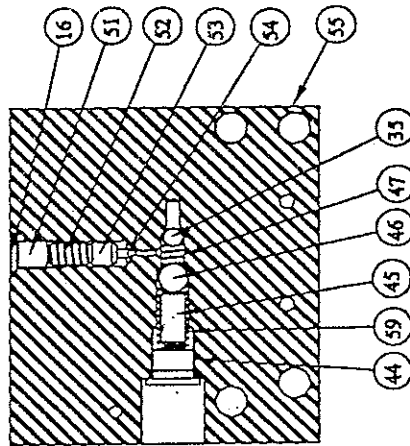
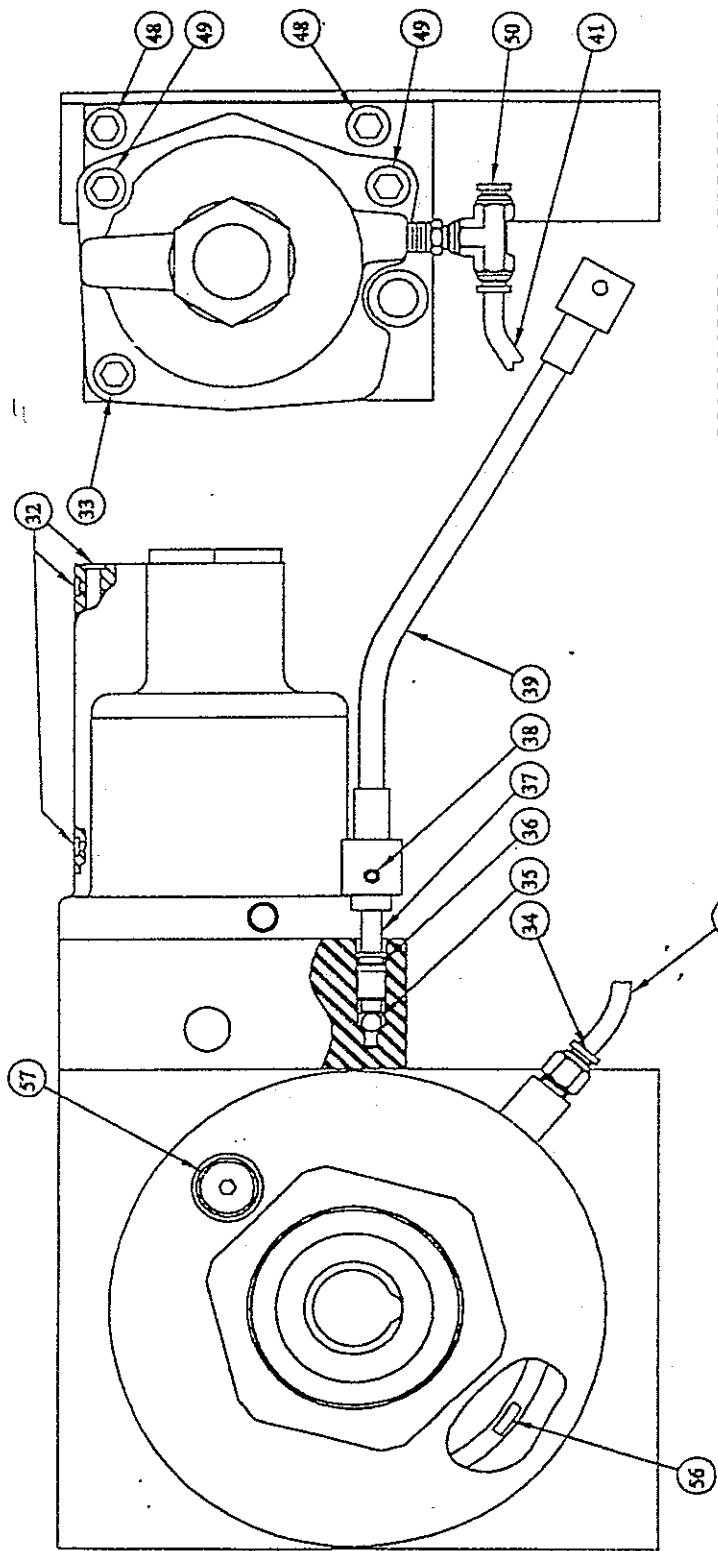
TSL-44

Parts List

Serial # 50-00000 & up to 50-004999

All Prices Subject to Tax & Freight

	ITEM	PART NUMBER	PART DESCRIPTION	QTY
	1	015-5008	Lift Pad Casting	1
3501 S. Leonard Rd.	2	390-01047	O-Ring, 1-1/16 ID x 1-1/4 OD x 3/32	1
	3	353-40043	Power Unit, TSL-44	1
	4	202-01103	Screw, Self Tapping, 5/16-18	4
P.O. Box 728	5	200-31406	1/2x 13 x 1" Long, Hex Head	4
	6	204-11400	1/2 Med Lockwasher, Plated	4
St. Joseph, MO U.S.A. 64502	7	850-02003	Base Frame Weldment	1
	8	850-04004	Top Cover, TSL-44	1
	9	8-082-30022	Tubing, Nylon 1/4 OD x .035 Wall NB-4-035, 60" Long	1
1-800-821-7320	10	8-082-30021	Tubing, Nylon 1/4 OD x .035 Wall NB-4-035, 45-1/2" Long	1
(816) 233-6121	11	203-51500	Washer Cap, Palnut, 5/8" Dia	2
	12	480-02006	Wheel, 8" Dia x 2.5 Hub, 5/8 Bore	2
FAX (816) 233-7251	13	8-009-63060	Bar Round, 5/8 Dia, x 14" Long	1
	14	204-01614	Washer Plain, 5/8, Type "B", Narrow Rim, Plated, 1-1/4 OD	4
or (816) 387-8157	15	235-21004	Roll Pin, 3/16 Dia x 3/4 Long	1
	16	202-01304	Capscrew, Hex Head, Special, 7/16-14-UNC-2A, Grade 5	2
www.grayusa.com	17	203-11204	Nut, Hex, Special Jam 7/16-14 UNC	2
	18	8-850-01002	3" Hi-Rise Extension	1
	19	310-91007	Filter, 1/8" 27 NPT	1
	20	353-49159	Release Control Rod	1
	24	233-14012	Spring Compression, 53/64 OD	1
	25	235-21011	Roll Pin, 3/16 Dia x 1-1/8" Long	1
	26	850-02006	Handle Weldment, TSL-44	1
	27	850-02007	Handle Release Rod Weldment	1
	28	232-20005	Handle Grip, 5/8 ID x 3-12" Long	1
	29	232-20001	Handle Grip, 7/8 ID x 5" Long	2
	30	850-04010	Handle Bar, Drilled	1
	31	232-20094	Hand Wheel, Drilled 2-1/2 Dia	1
	32	275-11004	Male Connector, 1.4-18 NPTF	2
	33	312-00002	Air Valve	1
	34	275-01004	Nipple, 1/4 x 3" Long	1





Professional
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Equipment

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Parts List

Serial # 50-00000 up to 50-005000

All Prices Subject to Tax & Freight

	Item	Part Number	Part Description	Qty
3501 S. Leonard Rd.	1	390-11092	Seal, Loaded Lip, 2-5/8x2-7/8x1/8	1
	2	27520010	Hollow Head Hex Plug, 1/8 NPT	2
	3	353-43019	Jack Cap	1
P.O. Box 728	4	390-11083	Backup, Ring, 3-1/8 x 3/16 x 3-1/2	2
	5	850-04002	Extension Screw	1
St. Joseph, MO U.S.A. 64502	6	353-42027	Hydraulic Ram	1
	7	353-41036	Hydraulic Cylinder	1
	8	353-49155	Bladder	1
1-800-821-7320	9	850-02002	Outer Barrel Weldment	1
	10	390-01045	Quad Ring, 2-3/4 x 1/8 x 3	1
	11	201-00602	Capscrew, Sck Hd, #6-32 x 1/4 Lg	1
(816) 233-6121	12	390-11102	Seal, 2- 1/4 ID x 3 OD x 1/4 Deep	1
	13	353-49153	Base Plate	1
FAX (816) 233-7251	14	390-10056	Quad Ring, 1-7/16 x 1/4 x 3/32	2
	15	230-40001	Plug	2
	16	353-49089	Expansion Plug	3
or (816) 387-8157	17	390-10060	Backup Ring, 11/16 x 1/2 x .040 Thk	1
	18	353-43030	Pump Housing	1
	19	390-10055	Seal, 9/16 x 5/16 x 1/8	1
www.grayusa.com	20	353-43029	Pump Housing Cap	1
	21	233-15003	Spring, Compression, 1-3/4 OD	1
	22	353-49156	Pump Plunger	1
	23	310-41011	Motor Piston	1
	24	390-01048	O-Ring, 2-3/4 x 2- 9/16 x 3/32	1
	25	390-11082	Piston Ring, Teflon	1
	26	204-01106	Washer, 1.750 x .320 x .064	1
	27	315-00002	Seal, Shuttle Valve	1
	28	8-850-01012	Motor Housing	1
	29	390-01043	O-Ring, 1-1/4 x 1/8 x 1, TFE Coated	1
	30	310-40001	Air Shuttle Piston	1
	31	310-31005	Shuttle Valve End Cap	1
	32	353-49158	Expansion Plug, 5/16 Dia	3
	33	201-11206	Capscrew, Socket Head, 3/8-24 UNF	1
	34	275-10001	Male Connector, 1/8-27 NPTF	1
	35	236-00005	Ball, 1/4 Dia., 440C, Stainless Steel	2
	36	390-00002	O-Ring, 3/8 OD x 1/4 ID x 1/16 Dia	1
	37	353-49166	Release Stem	1
	38	235-21004	Roll Pin, 3/16 Dia x 3/4" Long	1
	39	850-04024	Flex, Shaft, TSL-44	1
	41	8-082-30020	Tubing, Nylon, 1/4OD x .035 x 5" Lg	1



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TSL-44

Parts List (cont)

All Prices Subject To Tax & Freight

	Item	Part Number	Parts Description	QTY	
3501 S. Leonard Rd.	42	275-11005	Male, Elbow, 90 Deg, 1/8-27 NPTF	1	
	43	274-32001	Plug, SAE #4 With O-Ring	1	
P.O. Box 728	44	274-34001	Plug, Straight Thd. With O-Ring	1	
	45	353-49162	Check Valve Spacer	1	
	46	236-00006	Ball, 3/8 Dia., 440C, Stainless Steel	1	
St. Joseph, MO U.S.A. 64502	47	233-10012	Spring, Comp., 1/4 Dia x 3/8 Long	1	
	48	201-11211	Capscrew, Soc, Hd 3/8-24 x 2-1/4" Lg	2	
	49	201-11213	Capscrew, Soc, Hd 3/8-24 x 2-5/8" Lg	2	
1-800-821-7320	50	275-11006	Branch Tee, 1-1/8 NPT, Male Thread	1	
	51	201-31202	Set Screw Steel, 3/8-24 UNF, 3/8 Lg	1	
(816) 233-6121	52	233-11007	Spring Compression, .312 Dia	1	
	53	353-49057	Release Guide	1	
	54	353-49056	Rod, Tapered Release	1	
FAX (816) 233-7251	55	353-49160	Hydraulic Block	1	Not Avail.
	56	353-49010	Magnet, 1/8 Dia., x 7/16 Long	1	
	57	680-00120	Plug Plastic	1	
or (816) 387-8157	58	390-11085	Backup Ring, 1-5/8 x 1/16 x 2	1	
	59	233-12002	Spring, Compression, .406 OD	1	
www.grayusa.com	60	8-071-06022	Strip, 1/8 x 3/8, EMS 1-2 x 1-9/16 Lg	1	
	61	390-11093	Piston Ring, 2-7/8 Dia	1	

SECTION 5

HYDRAULIC FLUID CHECKING / FILLING PROCEDURES

NOTICE:

The oil reservoir in the TSL-50 jack is sealed and pressurized when in use. When checking the fluid level, **DO NOT** have the jack connected to the air supply.

1. Make sure ram is fully retracted.
2. Disconnect air line.
3. Carefully remove the plastic cover from the oil fill hole located on the top surface of the jack body.
4. Make sure the hole for the oil reservoir plug is clean and dry before removing plug. Water and dirt destroy hydraulic parts.
5. Remove plug using a 3/16 Hex wrench.
6. Check fluid level. **RAM MUST BE FULLY RETRACTED.** The oil should be within 1/4 inch of the bottom of the oil fill hole. If fluid is low, add a high grade hydraulic fluid equivalent to Mobil DTE #11 oil. **Do NOT** use brake or transmission fluid.
7. Reinstall and secure the fill plug, replace the plastic hole cover, and connect to air supply and test for normal operation.

TSL-44 / TSL-50 TROUBLE SHOOTING

PROBLEM: WILL NOT LIFT LOAD

Possible Solutions:

- Release stem is bent or damaged. Replace if needed
- Release knob is not tight enough. Tighten release knob.
- Check ball is missing from behind the release stem. Install ¼” steel check ball.
- Unit is low on hydraulic fluid. Replenish with **hydraulic oil only**.
- Air pressure is too low. Raise the PSI going to the jack. PSI should range from 90-175 PSI.
- Lifting too much weight. Use a lifting device with a higher lifting capacity.
- Check balls not seating. Remove, clean and re-seat check balls.
- Seals are worn. Replace any worn parts if needed.

PROBLEM: RAM WILL NOT RETRACT

Possible Solutions:

- Main air supply to jack is not attached. These units have an air powered ram retract feature which requires the main air supply to be attached to the jack for lowering.
- Oil reservoir is air bound (air has mixed with the hydraulic fluid). Follow this bleeding procedure:
 - Leave main air supply attached to the jack. Located the oil fill plug next to the main lifting ram on the jack. Slowly open the fill plug allowing any air to escape. If air or oil continues to escape then there is possibly an internal problem which may require rebuilding the unit. If not replenish oil supply with **hydraulic fluid only** and re-install fill plug.

PROBLEM: AIR MOTOR IS STALLING

Possible Solutions:

- Air pressure is too low. Raise the PSI going to the jack. PSI should range from 90 to 175 PSI.
- Air motor piston needs lubricating. Insert a few drops of air tool oil into the airline and cycle jack.
- Seals or parts are worn. Replace if needed.

PROBLEM: JACK IS SLOWLY LEAKING DOWN

Possible Solutions:

- Check balls are not seating. Remove, clean and re-seat check balls.
- Check ball is missing from behind the release stem. Install ¼” steel check ball.
- Release knob is not tight enough. Tighten release knob.

PROBLEM: AIR IS ESCAPING FROM JACK

Possible Solutions:

- If air escapes from the lift pad area, the quad ring needs replaced.
- If air escapes around the ram, the loaded lip seal needs replaced.



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TSL-44/TSL-50 Air Bleeding Procedure

1. Leave air hose hooked up to jack.
2. Open release knob on top of handle as if you were letting the jack down.
3. Slowly open hydraulic fill plug located near lifting ram underneath yellow plastic plug.
4. Allow air to escape and make sure air and/or oil stops bubbling out.
5. If air and/or oil stops bubbling out, close fill plug and continue use.
6. If air and/or oil continues to bubble out, the unit is in need of rebuilding.
Contact Gray's Customer Service Department for parts or service.

3501 S. Leonard Rd.

P.O. Box 728

St. Joseph, MO U.S.A. 64502

1-800-821-7320

(816) 233-6121

FAX (816) 233-7251

or (816) 387-8157

www.grayusa.com

Field Service Instructions, TSL-44

The following are precautionary notes to aide you in the reassembly of your TSL-44 jack. All part numbers referred to are found on the Gray TSL-44 POWER UNIT Parts Lists. Be sure to select the correct parts list for your power unit. Upon disassembly you will be able to tell which list to use by the shape of the hydraulic pump housing parts.

Do not remove any permanently installed plugs. There are no serviceable parts under these plugs.

Do not remove hydraulic cylinder, item 7, if it remains tight in the base plate, item 14.

After complete disassembly all parts should be thoroughly cleaned and dried before reassembly. Care should be taken to keep all contaminants out of the unit. Be sure you install all seals correctly. An inverted seal or twisted quad ring will cause the unit to leak, operate abnormally, or not operate at all.

When installing the bladder, item 9, and outer barrel, item 8, the bottom sealing surface of the bladder and the groove in the base plate, item 14, must be completely dry. Set the assembly in place with item 39 located as shown. Then lubricate the top sealing surface and the top 1/4" of the inside surface of the bladder with a 50-50 mixture of STP and hydraulic oil. This will allow the jack cap, item 3, to spin onto the bladder without twisting it. If the bladder twists, the reservoir will not hold sufficient oil to get full stroke out of the ram. The outer barrel, item 8, must be held to prevent it from turning when tightening the jack cap, item 3. Be sure you have item 4 positioned correctly before tightening the jack cap. The jack cap should be tightened to 200-300 ft-lbs. After the cap is tight, the reservoir should be filled with 32 oz. of Mobil DTE-11 hydraulic oil or equivalent. Consult the owner's manual for proper filling procedures.

When installing the hydraulic block, item 17, to the base plate, item 14, be sure the two mating surfaces are clean. Also make sure the quad rings, item 15, are installed properly. Assemble the parts using capscrews, item 48, and tighten to 35-40 ft-lbs. Install the air motor assembly using capscrews, item 46 and 49, to the hydraulic block. Use thread locking compound on all capscrews and tighten to 35-40 ft-lbs. Do not add lock washers.

The seal, part number 1-390-11089, is used to replace the quad ring seal in the end cap of all power units. Be sure the lips point downward during assembly. Care should be used to protect the lips from damage during assembly.