

Malabar

**Model
60P10**

**aircraft
jack**

U.S. & Foreign Patents
& Patents Pending

Serial No. 101 Thru 999 &
1002 Thru 1013

SERVICE MANUAL

**WITH PARTS BREAKDOWN
INCLUDING
OPTIONAL EQUIPMENT**

60 TON (54.4 M.TON)
"FLOATING"™ AXLE JACK

Malabar Hydraulics Company

220 West Los Angeles Ave.

Simi Valley, CA. 93065

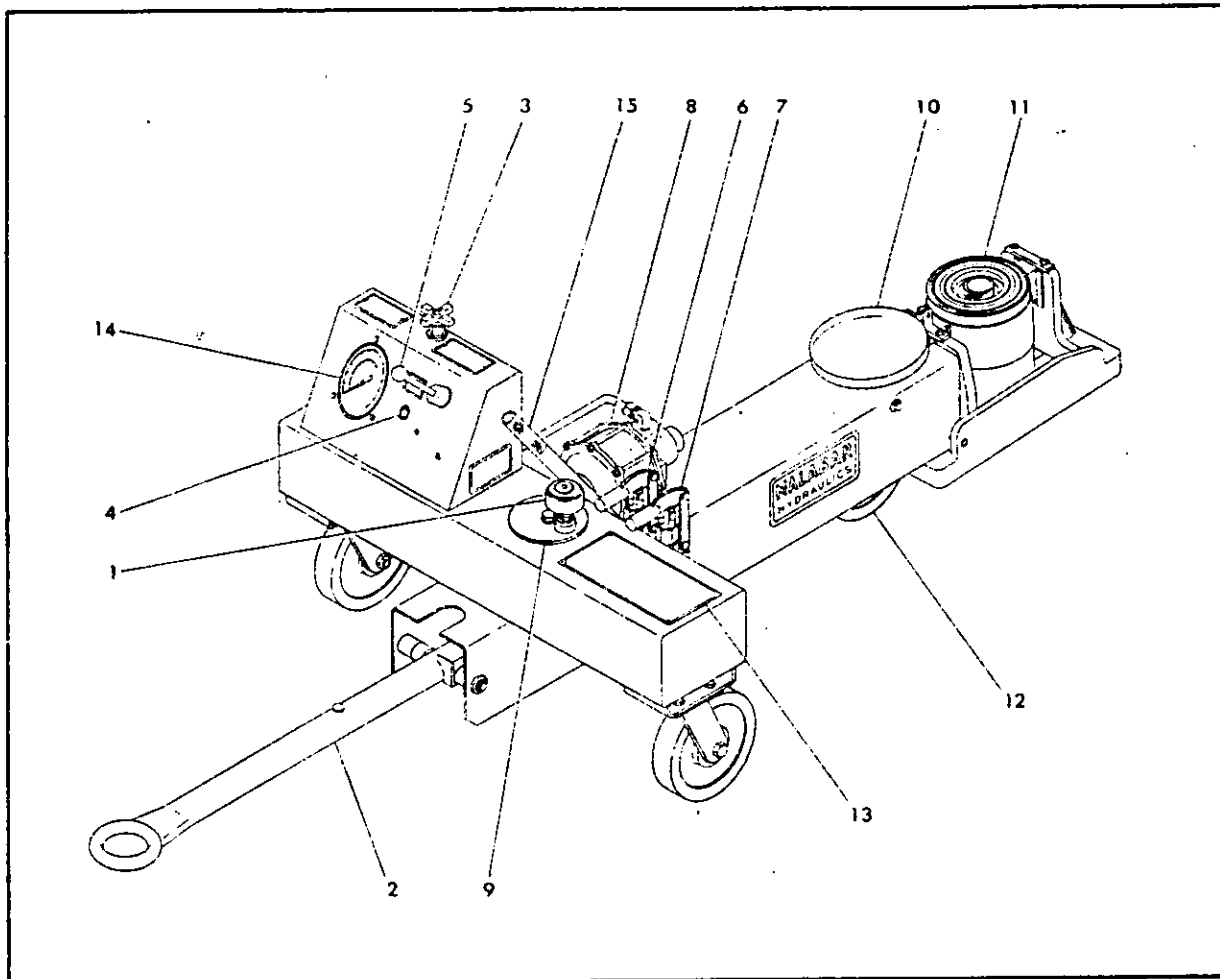


Fig. 1. MALABAR MODEL 60P10 "FLOATING"™ AXLE JACK

- | | |
|----------------------------|-----------------------------------|
| 1. Breather cap & dipstick | 9. Reservoir Cover |
| 2. Tow Bar | * 10. Rain Hat |
| 3. Release Valve | 11. Cylinder Assembly |
| * 4. 3/8 in. Air Inlet | 12. Front Wheel |
| * 5. Air Valve | 13. Instruction Plate |
| 6. High Speed Manual Pump | * 14. Load Gauge |
| 7. Low Speed Manual Pump | 15. Hand Pump Handle |
| * 8. Air Pump | * Lubricator
(not shown) |
| | * Air Relief Valve
(not shown) |
| * Optional Equipment | |

OPERATION, SERVICE AND OVERHAUL INSTRUCTIONS

MALABAR MODEL 60P10 60 Ton "Floating"TM Axle Jack

CAUTION: AIRCRAFT MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS MUST BE FOLLOWED. IN THE EVENT OF CONTRADICTION BETWEEN AIRCRAFT MANUFACTURER'S SPECIFICATION AND MALABAR'S, AIRCRAFT MANUFACTURER'S SPECIFICATION WILL PREVAIL.

SPECIFICATIONS

Rated Capacity	60 Tons (54.4 M.T.)
Side Load	15% of Vertical Load
Low Height	10 in. (254 mm)
Hydraulic Lift	11 in. (280 mm)
Screw Extension	5 in. (127 mm)
Extended Height	26 in. (661 mm)
Oil Pressure at Rated Capacity	6450 P.S.I.
Safety By-Pass Valve Setting	63 Tons (57.2 M.T.)
Floor Loading	760 P.S.I. at Rated Load
Weight	460 lbs. (208 kg)
Hydraulic Fluid	MIL-H-5606
Towing Speed	5 MPH Max. (8kms/hr)
Reservoir Capacity	5.5 U.S. Gallons (20.8 Liters)

GENERAL DESCRIPTION:

The Malabar Model 60P10 is a 60 ton two stage telescoping hydraulic axle jack designed primarily for use in jacking the main and/or nose landing gear of various aircraft. With optional "Floating"TM feature, this jack mates with the Malabar 60L4.5 "Floating"TM Beam Assembly for jacking certain aircraft in a dual flat or "on the rims" condition. The jack consists of a two stage hydraulic cylinder assembly mounted on a spherical bearing*, (This bearing allows the jack ship adapter to follow the arc of the aircraft jack point, thus greatly reducing the stress on the jack's cylinders and bearings as well as the aircraft axle and strut.) base assembly, reservoir assembly, air operated hydraulic pump*, load gauge*, hand pumps, control console and rain hat*. Leaf centering springs retain cylinder assembly in center position while under no load. The jack is mounted on two swivel casters at the rear and a retractable wheel (1-12) at the front, to provide portability. A tow bar and eye assembly allows easy towing of the jack. Raising or lowering the towbar retracts or extends the front wheel through a linkage*, thus controlling ground clearance and permitting rapid retraction of cylinders to free jack from jack point when under no load.

PROTECTING DEVICES:

1. A relief valve is incorporated in the jack (located in manual pump block) to prevent lifting of loads in excess of 63 Tons (57.2 M.T.)

* Optional equipment

PROTECTING DEVICES (Continued)

2. A hydraulic fuse is incorporated in the jack to prevent rapid retraction in the event of hydraulic line rupture.
3. Protection against the screw extension being inadvertently extended too far is provided through an internal stop.
4. An optional load gauge may be installed in order to monitor load being raised.

PREPARATION FOR USE:

1. Caution - As a safety and spillage precaution, the jack is shipped without hydraulic fluid. Do not operate air or hand pumps until reservoir is filled with MIL-H-5606 or approved hydraulic fluid. Jack must be fully retracted when filling reservoir. Remove filler cap (1-1) and fill to mark on dipstick. Note: Occasionally the air operated pump (2-21) may lose its prime during shipment. Reprime as follows:
 - a. Pump with bleedhole (See Fig. 2): Loosen bleedhole plug and operate air pump to bleed trapped air. Retighten plug.
 - b. Pump without bleedhole: Remove filler cap, install 3/4 NPT fitting and apply 50 PSI air pressure to reservoir filled with fluid. Open release valve (1-3) and operate air pump while reservoir is pressurized. Remove reservoir air pressure and replace filler cap after pump is primed.
2. Bleed air which may be trapped under the jack plungers and the hand pumps by opening the jack release valve (1-3) and operating the hand pumps a few strokes.

OPERATION:

1. Maximum ground clearance for towing jack will be obtained when tow bar is in normal towing position. Maximum towing speed is 5 mph.
2. Position the jack under the appropriate jacking pad of the aircraft. Positioning tow bar (1-2) in either full-up or full-down position will lower jack for minimum ground clearance. Extend screw extension.
3. Close the release valve (1-3) located on control console.
4. Connect air supply (110-125 psi) to the 3/8 inch NPT inlet (1-4) of the air valve (1-5) (located on control console).
5. Operate the air valve or use the hand pump until the ship adapter contacts the jacking pad.
6. Insure ship adapter and jacking pad are correctly mated.
7. To raise the load
 - a. Operate the air valve (1-4) as required.
 - b. The load may be raised manually by operating the hand pumps. Either Low (1-7) or High speed (1-6) hand pumps may be used with the removable pump handle.
 - c. Do not lift a load greater than the rated capacity of 60 tons (54.4 M.T.). On jacks equipped with optional load gauge (1-14) load can be read in tons. Read load on lower stage scale when only lower plunger is extended. Read load on upper stage scale when

OPERATION: (Continued)

upper plunger is extended. Fluid pressure in pounds per sq. in. may be read on outer scale for gauge calibration.

8. To lower the load
 - a. Slowly open the release valve to lower the load. (The speed of lowering is controlled by the amount the release valve is open.)
Note: It is important to lower the load slowly. Retracting the jack too fast will cause the hydraulic fuse to close and prevent jack from retracting. Should this occur, close release valve (this will automatically re-set fuse) and then open release valve again slowly.
9. After the load is fully lowered, the plungers may be retracted from under the jack point by lowering the tow bar. The jack may now be removed from under the aircraft.
10. Fully retract jack plungers. Retract Extension Screw. Close release valve. Cover jack when exposed to weather or not in use.

SERVICING:

Servicing the jack consists mainly of the following:

1. When in use, the reservoir should be kept at the proper hydraulic fluid level. Check with jack fully retracted.
2. Lubricate rear casters and front wheel bearings as required.
3. Lubricate tow bar linkage as required.

INSPECTION:

Prior to use, inspect for the following:

1. Hydraulic lines for leakage. Tighten as required. Reservoir, plungers, cylinder for leakage.
2. Missing or broken retaining rings or pins. Replace as required.
3. Loose nuts. Tighten as required.
4. Hand pump handle - locate or reorder, if missing.
5. Each time the jack is disassembled, inspect for the following:
 - a. Interior walls of all plungers and cylinder for rust, pits, scratches and/or excessive wear.
 - b. Exterior of plungers for excessive rust and/or excessive wear.
 - c. Upper bearings for excessive rust and/or excessive wear of interior walls.
 - d. Packings, seals, gaskets, wipers for distortion, wear, deterioration or dirt.
 - e. Oil Screens located in the reservoir for cleanliness. Air pump filter (2-25) is accessible through reservoir cover (2-5). Hand pump filter (4-31) is accessible by removing plug (4-32).
 - f. Valves and valve seats in the hand pump base block for scratches, dents and proper seating of the ball.
 - g. All pivot pins for wear, cracks, pits or evidence of damage or pending damage.
 - h. All areas for excessive dirt, oil, dust and chips.

REPAIR AND REPLACEMENT SCHEDULE:

No definite time schedule has been established for the overhaul of the jack or for the replacement of various moving parts. The usage of the jack and the amount of load raised each time materially affect the life of the working parts.

OVERHAUL INSTRUCTIONS:

1. To disassemble optional "Floating"TM cylinder assembly:
 - a. Unscrew Stop Ring-Outer (3-5) by means of a spanner wrench.
 - b. The inner (3-3) and outer (3-2) plungers may now be carefully removed as a unit. Do not cut or damage seals.
 - c. Unscrew Stop Ring- Inner (3-6) and remove inner plunger carefully. Do not cut or damage seals.
2. Should it be necessary to remove the cylinder assembly (3-1) from the base (3-7), proceed as follows: Disconnect hose from elbow (2-49). Entire hose assembly (3-21) may now be removed by unscrewing at nipple (3-40). Remove cap screws (3-30) lockwashers (3-31) and bars (3-14). Remove cap screws (3-32), lockwashers (3-33) and centering spring (3-13). Cylinder assembly may now be removed from the base. Do not loosen screw and nut (3-34 & 3-35).
3. For access to filter (2-25) and optional air/hydraulic pump mounting, remove reservoir cover (2-5).
4. To install plunger seals:

Note: Seals may not be removed and then replaced. Remove only if leaking or damaged.

 - a. The following tools are required to properly assemble plunger seals to minimize the possibility of damaging the seals during the assembly operation. (See Page 15).
 - Part No. 86385 Seal Expander, Inner Plunger
 - Part No. 86382 Seal Pusher, Inner Plunger
 - Part No. 86381 Seal Inserter, Inner Plunger
 - Part No. 86386 Seal Expander, Outer Plunger
 - Part No. 86383 Seal Pusher, Outer Plunger
 - Part No. 86380 Seal Inserter, Outer Plunger
 - b. Lubricate seals and cylinder walls with MIL-H-5606 or approved equivalent.
 - c. Mount seal expander on plunger as shown in Fig. 5. Place seal, spring side down, on expander. Tap seal into position in groove with pusher tool. Then install back-up ring into groove above the seal. Install seal inserter over seal and back-up ring to size seal. Let assembly stand for a few minutes prior to next step. With seal inserter over the seal, assemble inner and outer plungers as shown in Fig. 6.
5. When necessary to disassemble the jack:
 - a. Replace all defective parts.
 - b. Clean all metal parts with clean solvent and dry with compressed air.

OVERHAUL INSTRUCTIONS (Continued)

- c. Lubricate all threads. Use teflon tape carefully on all pipe threads. Remove excess tape - it can clog valves and orifices.
- d. If ball valves do not seat properly, they may be reseated by tapping the ball into the valve seat with a brass rod.
NOTE: The Safety by-pass valve, located in the pump block (Fig. 4), should not be removed unless absolutely necessary. This valve is set to by-pass oil back to the reservoir at 5% over rated capacity.
- e. Should any malfunction occur in the hydraulic fuse assembly (3-22) return to factory for repair or replacement.

TESTING:

Place the jack in a test fixture and load test with lower plunger fully extended and upper plunger partially extended. If the jack fails to operate properly, check for trouble as indicated in Trouble Shooting Chart. With plungers extended, and supporting the capacity load, allow the jack to stand for 10 minutes. Any excess settling indicates leakage in the pump, check valve, packing seals or gaskets. Check for oil leaks and replace defective parts.

Figure 2 60P10 Jack Assembly

Fig. & Index No.	Part Number	Part Name	No. Req'd.
2-	86300	Jack Assembly	
2-1	86301	Cylinder Assembly (See Fig. 3)	1
2-2	86399	Hand Pump & Valve Block Assy. (See Fig.4)	1
2-3	86330	Reservoir - Frame welded assembly	1
2-4	492-012	Swivel Caster	2
2-5	86361	Reservoir Cover	1
2-6	86370	Gasket	1
2-7	86378	Bridge	1
2-8	86339	Breather-Filler Cap w/Dipstick	1
2-9	86355	Towbar	1
2-10	86392	Bumper	1
2-11	86352	Link	1
2-12		(Deleted)	1
2-13*	86357	Pin	1
2-14	86353	Rod	1
2-15	492-002	Wheel	1
2-16	86350	Yoke	1
2-17	86371	Cushion Tube	1
2-18	86351	Pin	1
2-19	86354	Spring Pusher	1
2-20	52526	Spring	1
2-21	86387	Air/Hydraulic Pump (Modified SC 10-500-6B)	1
2-21a	-	Intake Valve - Air/Hydraulic Pump (Ref.)	
2-22	86368	Bracket	1
2-23	86369	Gasket	1
2-24	472-001	Muffler	1
2-25	481-002	Filter	1
2-26	86367	Cross Check Valve	1
2-27	79367	Spring	1
2-28	86329	Hydraulic Hose	1
2-29	424-005	Draincock	1
2-30	86375	Load Gauge	1
2-31	86379	Spacer	3
2-32	421-005	Air Valve	1
2-33	85416	Release Valve	1
2-34	86398	Placard - Instructions	1
2-35	86397	Placard - Air Valve	1
2-36	86396	Placard - Release Valve	1
2-37	86395	Placard - Aircraft	1
2-38	55998	Placard	1
2-39	55994	Placard - Fluid, Cap.	1
2-40	732-001	Tubing	A/R
2-41-45	731-001	Tubing	A/R
2-46	722-012	Elbow	1
2-47	722-013	Elbow	1
2-48	722-014	Elbow	1
2-49	729-001	Elbow	1

* Replaced by 85414 Bolt, 357-002 Nut and 372-002 Cotter pin S/N 315 & up.

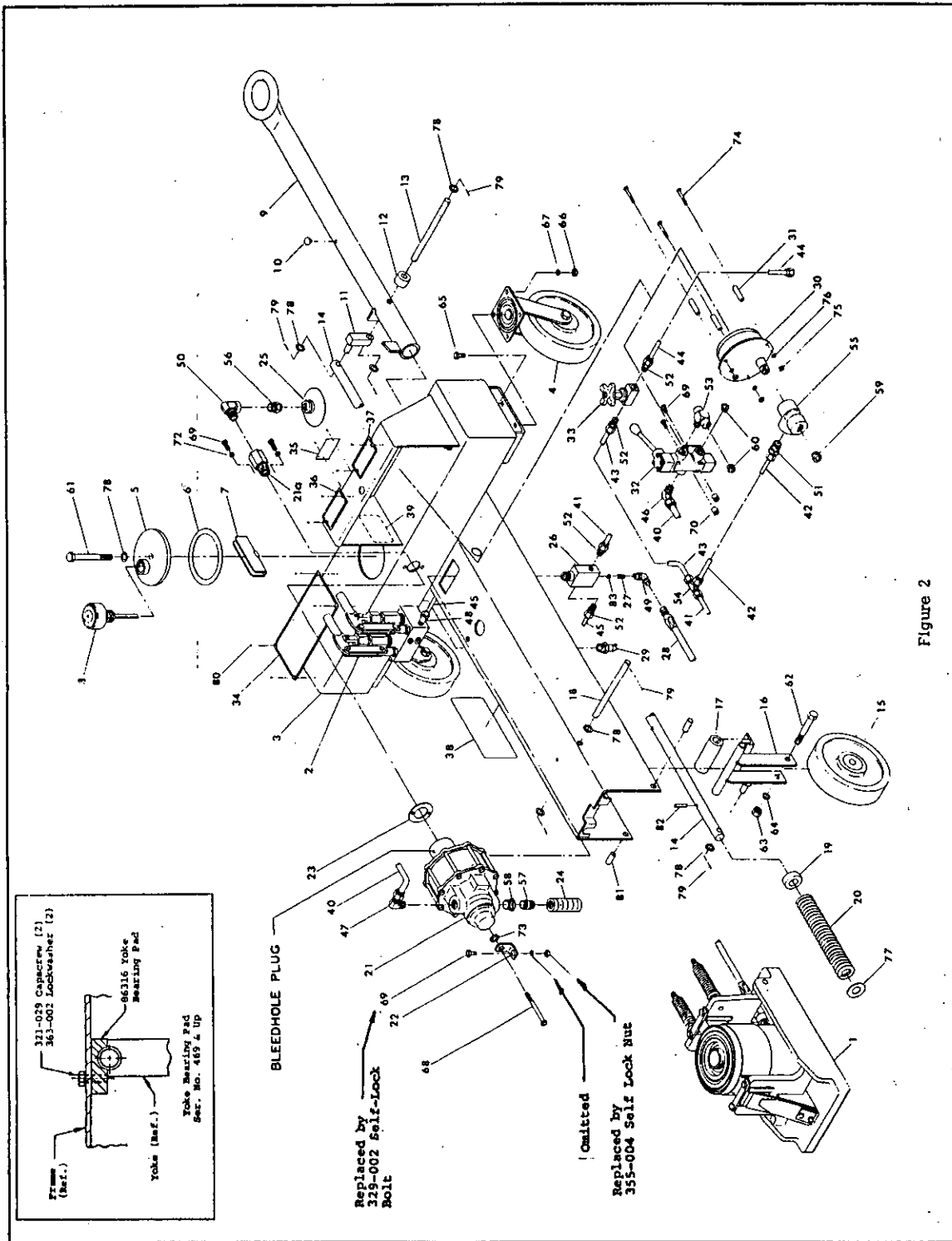


Figure 2

Continued:

Fig. & Index No.	Part Number	Part Name	No. Req'd.
2-50	712-003	Street Elbow	1
2-51	721-007	Connector	1
2-52	721-009	Connector	4
2-53	713-005	Tee	1
2-54	723-007	Tee	1
2-55	713-004	Tee	1
2-56	711-001	Nipple	1
2-57	711-013	Nipple	1
2-58	714-006	Reducer	1
2-59	717-008	Pipe Plug	1
2-60	717-007	Pipe Plug	2
2-61	321-048	Capscrew	1
2-62	321-055	Capscrew	1
2-63	351-003	Nut	1
2-64	363-004	Lockwasher	1
2-65	321-015	Capscrew	8
2-66	321-003	Nut	8
2-67	363-004	Lockwasher	8
2-68	321-045	Capscrew	1
2-69	321-029	Capscrew	5
2-70	359-001	Nut, Socket	2
2-71	351-012	Nut	1
2-72	363-002	Lockwasher	3
2-73	362-002	Flat Washer	1
2-74	321-025	Capscrew	3
2-75	351-001	Nut	3
2-76	363-001	Lockwasher	3
2-77	362-010	Flat Washer	A/R
2-78	362-005	Flat Washer	7
2-79	372-001	Cotter Pin	6
2-80	393-002	Drive Screw	10
2-81*	371-008	Roll Pin	2
2-82	371-007	Roll Pin	2
2-83	412-001	Ball	1

*2-81 Serial No. 101 through 173 replaced by:

321-005	Capscrew	2
355-008	Nut	2
86333	Spacer	2

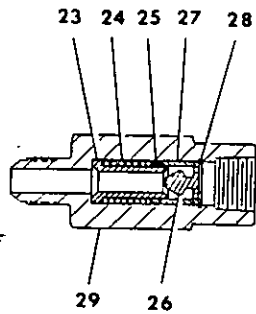
Serial No. 174 and up replaced by:

330-001	Shoulder Screw	2
353-003	Nut	2

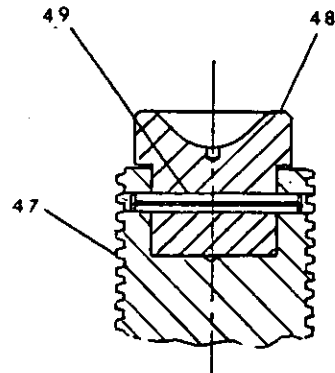
Rain Hat Kit P/N 86388 (Optional equipment not shown) includes:

Rain Hat	86372	Capscrew	321-058
Bracket Bar	86373	Nut	355-004
Bumper	86392		

Malabar



HYDRAULIC FUSE ASSEMBLY



EXT. SCREW/SHIP
ADAPTER ASSEMBLY
Replaces Item 4
Ser. No. 177 & Up

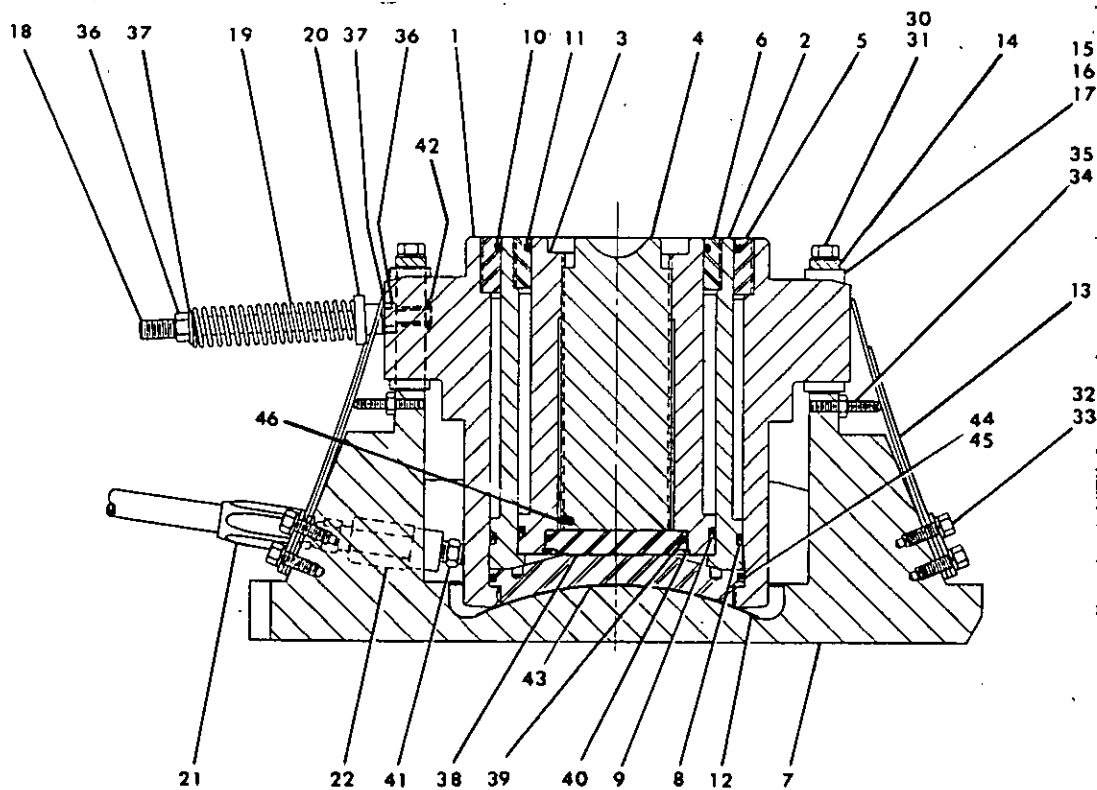


Figure 3

(JACKS & EXTENSION SCREWS SHIPPED AFTER 10/24/79 HAVE INCOMPLETE THREAD ON BOTTOM OF THE EXTENSION SCREW & DO NOT REQUIRE ROLL PINS. ALL EXTENSION SCREWS WITH A ROLL PIN HOLE IN THE BOTTOM THREAD)

Figure 3 60P10 Cylinder Assembly

Fig. & Index No.	Part Number	Part Name	No. Req'd.
3-	86301	Cylinder & Base Assembly	
3-1 a)	86302A	Cylinder/Diaphragm	1
3-2 a)	86310	Outer Plunger	1
3-3 a)	86312A	Inner Plunger	1
3-4	86309	Extension Screw S/N 101 to 176	1
3-4	86309A b)	Extension Screw S/N 177 & up	1
3-5 a)	86307A	Outer Stop Ring	1
3-6 a)	86308A	Inner Stop Ring	1
3-7	86314	Base	1
3-8 a)	86366A c)	Outer Plunger Seal with back-up ring	1
3-9 a)	86365A c)	Inner Plunger Seal with back-up ring	1
3-10	86364	Outer Scraper Ring S/N 101 to 185	1
3-10 a)	55931-256	Outer "O" Ring Wiper S/N 186 & up	1
3-11	86363	Inner Scraper Ring S/N 101 to 185	1
3-11 a)	55931-244	Inner "O" Ring Wiper S/N 186 & up	1
3-12 a)	86321	Bearing Pad	1
3-13	86323	Centering Spring	2 sets
3-14	86326	Bar	2
3-15	86358	Shoe	4
3-16	86359	Cushion	4
3-17	86360	Shim	A/R
3-18	86347	Stud	2
3-19	86349	Spring	2
3-20	86348	Spacer	2
3-21	86329	Pressure Hose (Ref.)	1
3-22	85415	Hydraulic Fuse Assembly	1
3-23	86328-1	Seat	1
3-24	86328-2	Spring	1
3-25	86328-3	Washer	1
3-26	85415-4	Valve	1
3-27	86328-5	Spacer	1
3-28	86328-6	Retaining Ring	1
3-29	86327	Body	1
3-30	321-011	Capscrew	4
3-31	363-003	Lockwasher	4
3-32	321-029	Capscrew	4
3-33	363-002	Lockwasher	4
3-34	331-012	Setscrew	2
3-35	352-001	Jam Nut	2
3-36	352-005	Jam Nut	4
3-37	362-004	Flat Washer	4
3-38 a)		Plg. Diaphragm (Ref. Part of 86312A)	
3-39 a)	86317	Seal - Diaphragm S/N 177 & up	1
3-40 a)	55904-381	Retaining Ring - S/N 177 & up	1
3-41	711-018	Nipple	1
3-42	372-001	Cotter Pin	2
3-43 a)		Cyl. Diaphragm (Ref. Part of 86302A)	
3-44 a)	55925-164	"O" Ring S/N 198 & up	1
3-45 a)	55929-164	Back-up Ring S/N 198 & up	1
3-46 a)	371-011	Roll Pin (SEE NOTE ON PAGE 3)	1
3-47 a)	86318	Extension Screw	1
3-48 a)	86320	Ship Adapter	1
3-49 a)	371-009	Roll Pin	1

Items marked a) may be purchased as an assembly. Order P/N 86390 Cyl. Ass'y.

b) 86309A replaced by Items 47, 48 and 49.

c) 86365A and 86366A seal with back-up ring assemblies replace and are interchangeable with 86365 and 86366 Seals (w/o back-up rings) respectively.

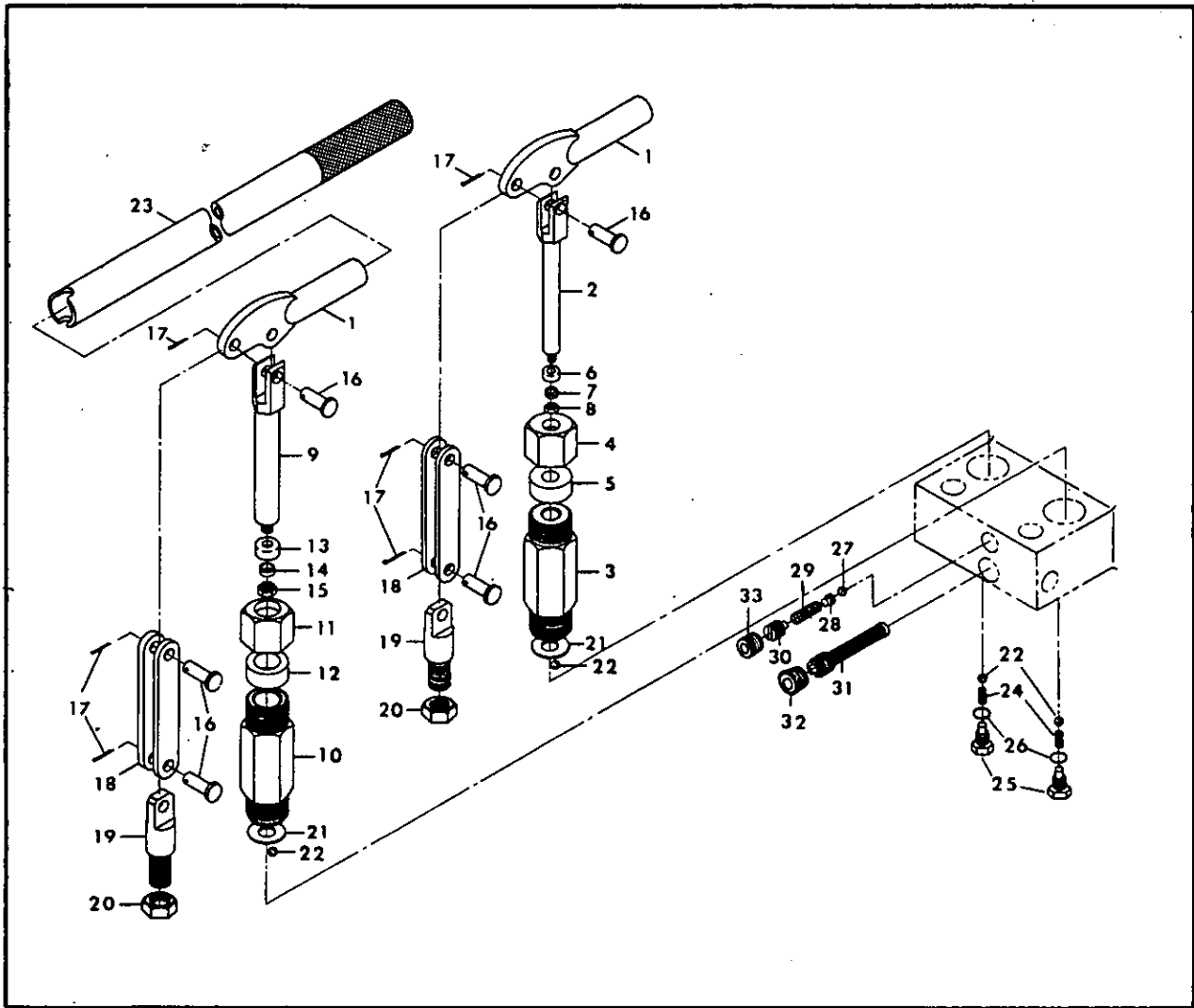


Figure 4

Figure 4 Hand Pump & Valve Block Assembly

Fig. & Index No.	Part Number	Part Name	No. Req'd.
4-	86399	Hand Pump/Valve Block Assembly (Ref.)	
4-1	55001	Fulcrum	2
4-2	55007	Plunger 7/16 Dia.	1
4-3	55006	Body 7/16 Dia.	1
4-4	55005	Gland 7/16 Dia.	1
4-5	55004	Packing 7/16 Dia.	1
4-6	55031	Cup 7/16 Dia.	1
4-7	55033	Cup Retainer 7/16 Dia.	1
4-8	351-010	Nut	1
4-9	55047	Plunger 3/4 Dia.	1
4-10	55046	Body 3/4 Dia.	1
4-11	55045	Gland 3/4 Dia.	1
4-12	55044	Packing 3/4 Dia.	1
4-13	55048	Cup 3/4 Dia.	1
4-14	55049	Cup Retainer 3/4 Dia.	1
4-15	351-001	Nut	1
4-16	55002	Flat Head Pin	6
4-17	372-001	Cotter Pin	6
4-18	55615	Link	2
4-19	55011	Anchor	2
4-20	352-004	Nut, Jam	2
4-21	55024	Gasket	2
4-22	412-004	Ball	4
4-23	86376	Pump Handle	1
4-24	55621	Spring	2
4-25	55620	Plug	2
4-26	55925-903	'O' Ring	2
4-27	412-003	Ball	1
4-28	55153	Guide	1
4-29	55154	Spring	1
4-30	55148	Set Screw	1
4-31	55568	Oil Screen	1
4-32	717-007	Pipe Plug	1
4-33	717-006	Pipe Plug	1

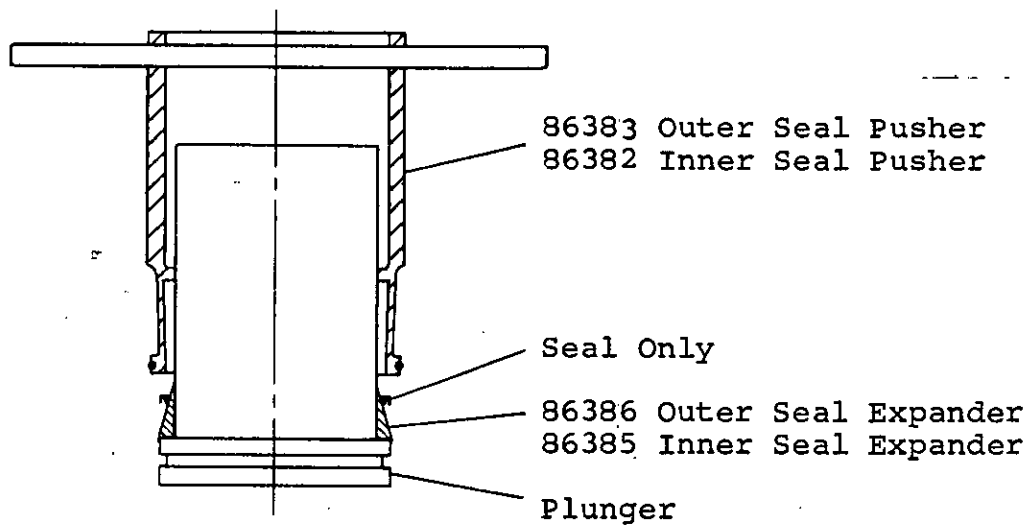


Figure 5

SEAL INSTALLATION

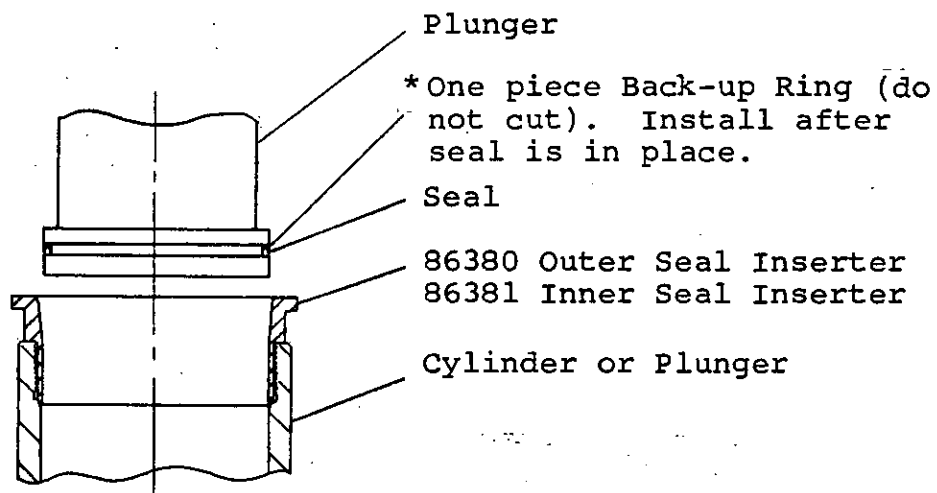


Figure 6

PLUNGER INSTALLATION

*Back-up ring required when 86365A or 86366A Seal Assembly is used. Back-up ring not required when installing 86365 or 86366 Seal.

Large Stop Ring Spanner Wrench Part No. 86308T
Small Stop Ring Spanner Wrench Part No. 86307T

TROUBLE SHOOTING CHART

TROUBLE	PROBABLE CAUSE	REMEDY
Jack will not raise.	Release valve open. (Oil passing back into reservoir.)	Close valve firmly.
	Intake valve open. (Oil passing back into reservoir.)	Pump rapidly to flush dirt off.
	Discharge valve open. (Oil passing back into pump chamber.)	Pump rapidly to flush dirt off.
	Sticking intake valve.	Remove pump from jack base. Un-screw valve block. Clean or replace valve.
	Clogged screen.	Remove and clean.
	Lack of oil. Air under plunger.	Refill. Check for leaks. Bleed air out by opening release valve. Pump rapidly a few times and close release valve.
Jack will not raise to full height.	Lack of oil.	Refill, check for leaks.
	Sticking intake valve.	Remove pump from jack base. Un-screw valve block. Clean or replace ball valves. Re-tighten or repair.
Jack will not raise capacity load.	High pressure leaks. (At pump or release valve.)	Reseat valve.
	Leaky release valve.	Reseat valve and clean valve block.
Jack raises and falls during each stroke	Leaky discharge valve.	Tighten or replace ball valve or packing.
Jack will not hold up load.	Leaky release valve.	Reseat valve.
	Defective plunger seal.	Replace plunger seal.
Jack will not lower the load.	Damaged release valve.	Remove and replace parts as needed.
	Hydraulic fuse.	Check fuse.
Jack will not close completely.	Air under plunger.	Bleed air out. Open release valve and pump rapidly several times. Close valve.
Handle stroke only partly effective.	Air in pump chamber.	Open release valve and pump rapidly several times. Close valve.
	Sticking intake valve.	Remove pump and clean valve block.
	Clogged screen.	Remove and clean.
Handle raises without effort.	Leaky intake valve.	Remove pump and clean valve block.
Handle snaps back.	Sticking intake valve.	Open release valve. Pump rapidly several times. Close valve.
	Clogged screen.	Remove and clean.

October 30, 1995

Subject: 60P10 jack tubing

This is to cover any questions regarding the the use of the old tubing part numbers referenced in the old model 60P10 Service Manual. These part numbers are:

85460	Tee to Gauge
85462	Air Valve to Air Pump
85457	Release Valve to Cross
85458	Release Valve to Tee
85459	Tee to Cross
85461	Release Valve to Reservoir

All of the above tube assemblies no longer exist for sales to the customer. The new Service Manual break all the tubing assemblies into individual components. The actual length and configuration of these tubes have also changed in many cases along with a new type of tube fitting.

In most cases, the tubing and fittings are interchangeable with the older style jacks with the exception of 85460 Tee to Gauge & 85462 Air Valve to Air Pump. These items are now rubber hose assemblies which will not attached to the old style plumbing. If the customer wishes to convert their jack over to the new design, see your manager and engineering for assistance.

In regard to the other tube assemblies, remember the actual length of the new tubing required for a specific area, may have gotten longer or shorter. I recommend that you advise the customer to purchase the new Tubing (732-010) and the new Tube Fitting (721-009). You will need to have the customer advise you of how much tubing they need. The customer will have to measure the area for tubing and they should order a foot longer than they need for safety. They have to take into account the bends of the tubing which will be required.

The following items are replace by: p/n 732-010, tubing (length determined by customer) and p/n 721-009, connector (qty 2 ea).

85457	Release Valve to Cross
85458	Release Valve to Tee
85459	Tee to Cross
85461	Release Valve to Reservoir

In regard to:

85460	Tee to Gauge
85462	Air Valve to Air Pump

The customer will have to order the following:

85460	Tee to Gauge	
12 inches		p/n 723-010, tubing
1 ea		p/n 721-007, connector male
1 ea		p/n 723-007, tee union
85462	Air Valve to Air Pump	
24 inches		p/n 723-010, tubing
1 ea		p/n 722-012, elbow HI SEAL
1 ea		p/n 722-013, elbow HI SEAL

The customer will have to due all tube cutting and bending at their facility at assure correct fit and length.

Jim Powers