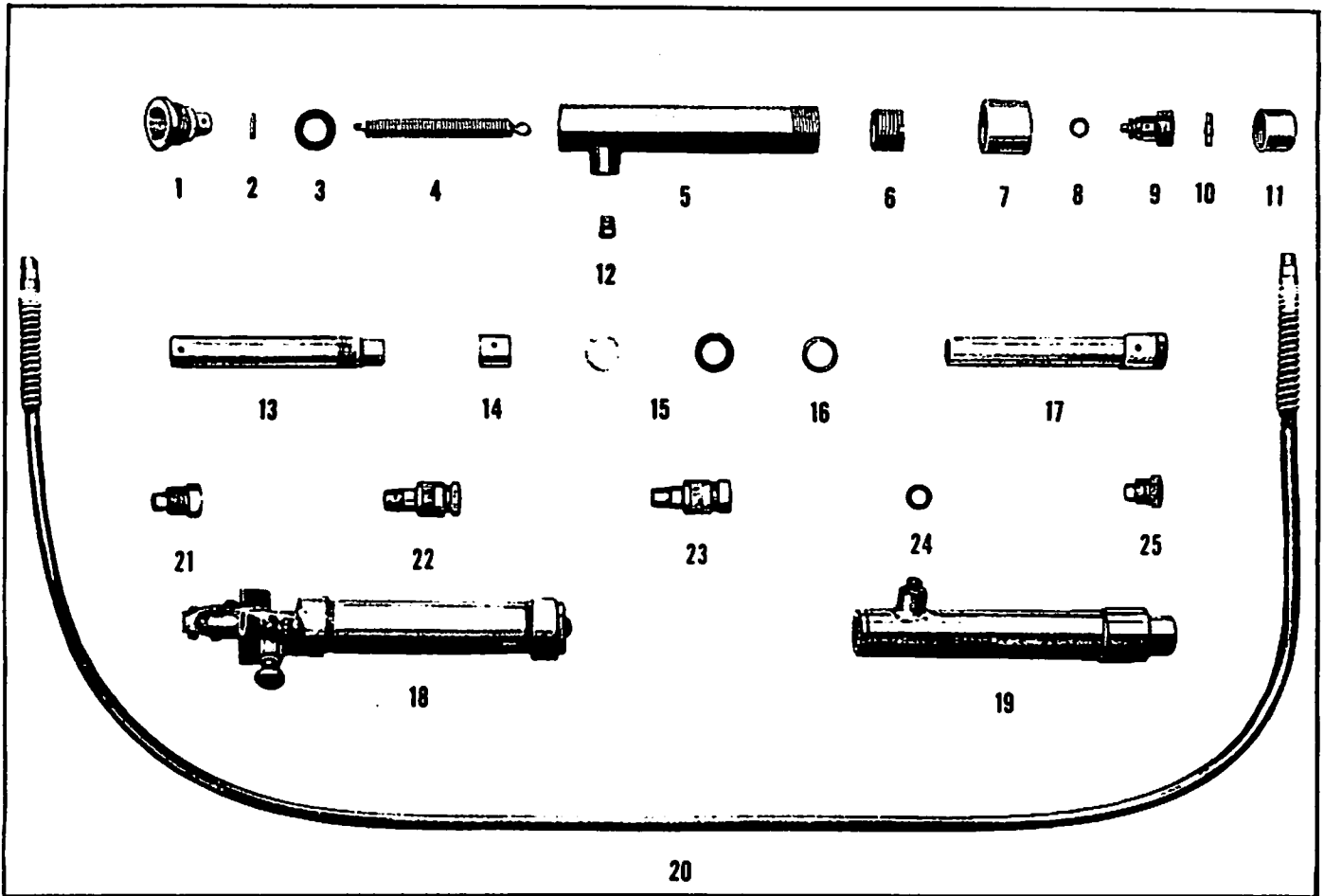
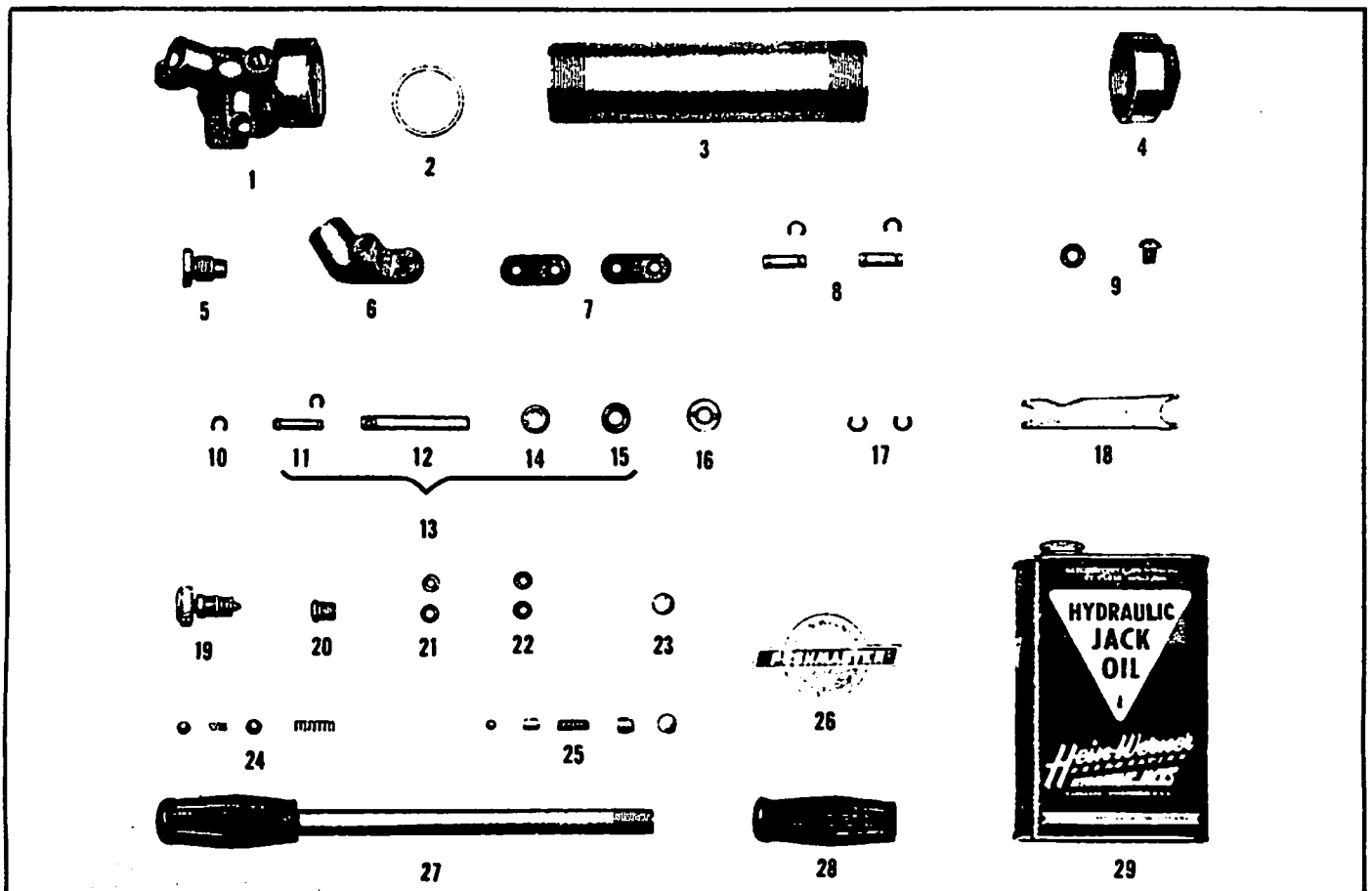


# RAM UNIT PARTS

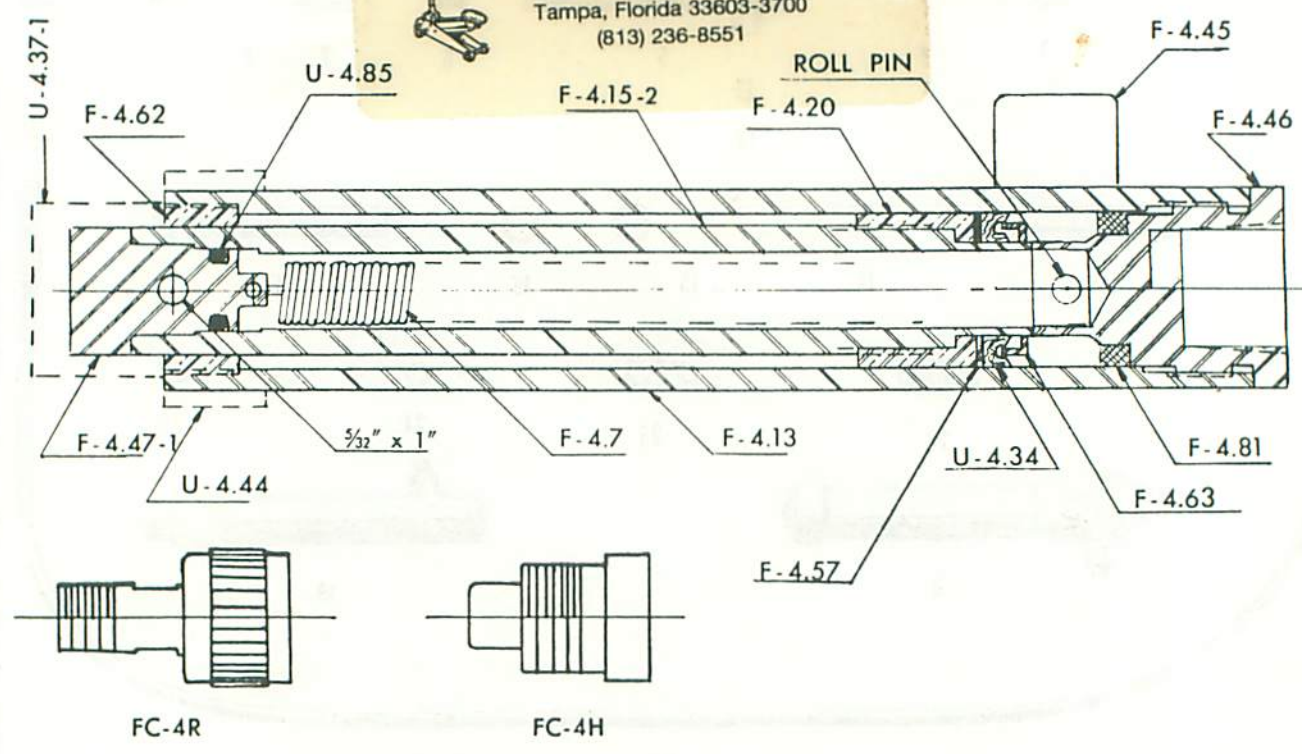


# PUMP UNIT PARTS

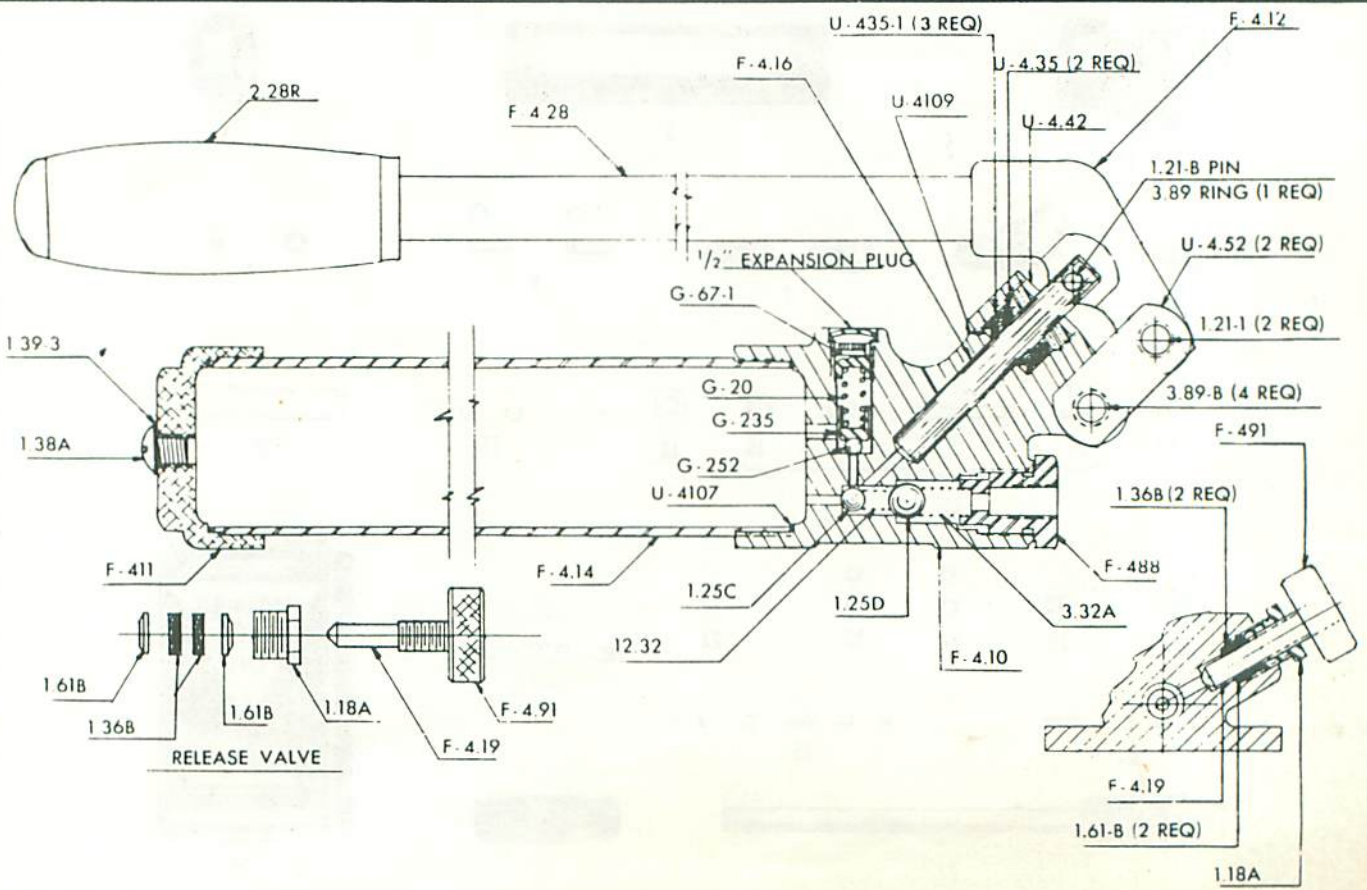


# FR-410 RAM UNIT

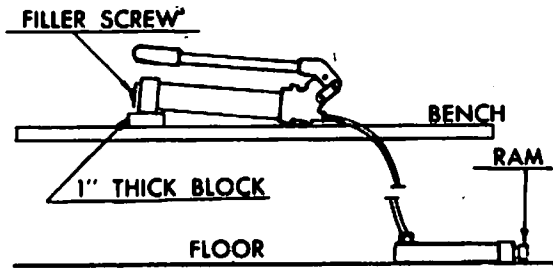

**TRI-CITY HYDRAULIC JACK SERVICE**  
 4628 N. Florida Avenue  
 Tampa, Florida 33603-3700  
 (813) 236-8551



# FP-4 PUMP UNIT



## FILLING INSTRUCTIONS



Maintenance of proper oil level is essential for efficient operation. Lack of sufficient oil may cause the following conditions:

1. Pump misses stroke or but partly fills.
2. Ram movement is jerky and slower than normal.
3. Ram does not travel full distance.

To refill properly, follow the procedure described below:

1. Leaving ram on floor, place pump on bench with filler screw end raised as shown in above sketch.
2. Open release valve and completely retract ram.
3. Remove filler screw slowly and add oil to level of hole.
4. Keep pump in same position and close release. Pump ram to extended position and retract to expel any excess air accumulated during filling. Replace filler screw securely.

## AIRBOUND CONDITION

Occasionally, the ram may not extend properly because of an airbound condition. This sometimes happens to jacks in transit, when upset or when the release valve is left open for extended periods. To correct, place the jack in the position illustrated above. Extend and retract ram fully three times to expel excess air.

## PUMP PISTON

Occasionally, some oil leakage appears around the pump piston when "V" Packings are new and stiff. This can be corrected by slightly tightening the packing nut using the wrench supplied with each new jack.

Worn pump piston packing can be detected by leakage of oil around the packing nut on pressure stroke. To replace, open release valve and fully retract ram. Remove piston pin and packing nut. Pull out old packings and examine chamber for any loose shreds. Insert new packings starting with neoprene and alternating leather and neoprene. Take care when inserting so packings are not damaged by machined threads. Be sure each packing is firmly nested on the preceding one.

## RELEASE VALVE

Your jack may fail to lift or hold a load if the release screw is worn. To inspect, remove the old screw by turning it out by the hex packing nut. Examine

chamber for any loose packing shreds, inspect valve seat and point of release screw. A slight ring on this point is not harmful. A nicked screw should be replaced. Proper assembly of washers and packing on release screw is shown at bottom of pump unit drawing on opposite page.

## HOSE

To replace a worn or damaged hose, first open release valve to retract ram fully. Turn out old hose. Coat connections of new hose with a sealing material and turn in firmly. If considerable oil is lost in changing hose, check ram travel and add oil as necessary to proper level.

## PUMP VALVES

If your Pushmaster Jack fails to lift or lowers under a load, the pump valves may need cleaning. These are located behind the hex shaped hose connection in the pump unit casting. To clean, open release and remove hose by turning out hex bushing in unit body. Remove balls and springs. Clean chamber thoroughly being careful not to damage valve seats. Be sure balls and springs are clean before reassembling. Use sealing material on threads of hex bushing and tighten securely to unit.

## RAM PARTS

To replace threaded head, place ram unit horizontally in vise. Remove adapter collar and extend ram one inch. Punch out cross pin and open release to retract ram completely. Attach ram cap to threaded head as a grip and pull out head, holding ram in place, until saw blade or similar flat piece can be inserted between coils to lock return spring at top of cylinder

Dip "O" ring seal of new head in oil and hook head to spring. Release spring slowly. Extend ram sufficiently to insert cross pin.

To replace bottom threaded plug or worn ram cup, first open release valve, turn out bottom threaded plug and pull complete ram assembly from cylinder. Punch out cross pin, draw out threaded head and detach from spring. Also punch out grooved pin to detach bottom plug from spring.

To change ram cup, file off stakings on ram to remove retainer and old cup. Install new backing washer and cup. Install retainer and restake ram in new places.

Before installing new bottom plug, be sure old seal is undamaged and in proper place on the new plug.

To reassemble, insert spring through ram. Make loop of strong wire, catch top of spring and extend to attach threaded head. Install cross pin, insert ram assembly into cylinder and tighten bottom plug firmly.

## SERVICE STATIONS

When general repairs are necessary, ask your jobber or write us for the name of the nearest Hein-Werner Official Service Station where complete facilities are available to restore your Pushmaster Jack to good working condition.





TRI-CITY HYDRAULIC JACK SERVICE

4628 N. Florida Avenue  
Tampa, Florida 33603-3700  
(813) 232-1280

# MODEL F-4



## PUSHMASTER HYDRAULIC JACK

### REPAIR PARTS LIST AND SERVICE INSTRUCTIONS

#### Capacity 4-tons

Order by PART NUMBER—not the item number—and give complete name of part and model number of jack. Item numbers shown on parts photos are only for your convenience in locating the part on parts list.

Order repair parts direct from nearest Official Service Station.

#### RAM UNIT PARTS

ITEM NO.	OLD PART NO.	NEW PART NO.	DESCRIPTION	NO. REQ.	ITEM NO.	OLD PART NO.	NEW PART NO.	DESCRIPTION	NO. REQ.
1	F-446	16765	Bottom Plug	1	14	F-420	16735	Spacer	1
2	5/32"x7/8"	26675	Grooved Pin for Bottom Plug	1	15	U-434	23125	Ram Cup, F457 Backing Washer	1
3	F-481	16790	Seal for Ram Cylinder	1					
4	F-47	16785	Return Spring for Ram	1	16	F-463	16780	Retainer for Ram Cup	1
5	F-413	16710	Ram Cylinder	1	17	O-F-415-2	80203	Ram Assembly	1
6	F-462	16775	Ram Stop	1	18	FP-4	FP-4	Pump Unit complete w/hdle.	1
7	U-444	23215	Adapter Collar	1	19	FR-410	FR-410	Ram Unit complete	1
8	U-485	80158	"O" Ring for Threaded Head	1	20	F-4120	81023	6' Hose	1
9	F-447-2	16760	Thread Head for Ram w/"O" ring	1	21	FC-4H	80597	Hose Half-Quick Coupler	1
10	7/32"x1"	26815	Roll Pin for Threed Head	1	22	FC-4R	80588	Ram Half-Quick Coupler	1
11	U-437-1	23170	Ram Cap	1	23	FC-4	80599	Quick Coupler complete	1
12	F-402	80198	1/8" to 1/4" Adapter	1	24	F-485-1	16792	"O" Ring for Quick Coupler	1
13	F-415-2	17620	Ram only	1	25	F-401	16685	Plug for Quick Coupler	1

#### PUMP UNIT PARTS

1	F-410-1	16690	Pump Base only	1	16	U-442	23195	Piston Packing Nut	1
2	U-4107	22825	Copper Gasket for Res. Tube	1	17	389-B	12415	5/16" Pin Ring	2
3	F-414	16715	Reservoir Tube	1	18	U-4122	22985	Wrench for Piston Packing Nut	1
4	F-411	16695	End Cap for Res.	1	19	F-419	16730	Release Valve complete	1
5	F-488-1	16795	Adapter	1	20	118-A	1290	Packing Nut for Release Valve	1
6	F-412	16705	Handle Socket	1	21	161-B	6230	Washer for Release, set of 2	2
7	U-452	80164	Pump Links, set of 2	2	22	136-B	4335	Packing for Release, set of 2	2
8	121-1	1735	Link Pin, 389B Ring, set of 2	2	23	1/2"	25370	Expansion Plug for Safety Valve	1
9	138-A	80007	Filler Screw, 139-3 Washer	1					
10	389	12165	1/4" Pin Ring	1	24	25-A	80127	Pump Valves, per set	1 set
11	121-B	1725	Piston Pin, 389 Pin Ring	1	25	G-67-1A	80360	Safety Valves complete	1
12	F-416	16725	Piston only	1	26	F-440	80201	Decal	1
13	O-F-416	80199	Piston Assembly	1	27	F-428	80202	Handle, 228-R Grip	1
14	U-4109	22840	Spreader Ring for "V" Pkg.	1	28	228-R1	9330	Rubber Grip	1
15	U-435	80163	Piston "V" Pkg., set of 5	5	29	Quart	80123	Hydraulic Jack Oil	1

FORM 15-035

USE NEW PART NUMBER ONLY WHEN ORDERING PARTS

REV. 7-1-68

Order parts from the nearest Hein-Werner Official Service Station. Always state both model and serial number.

USE ONLY GENUINE HEIN-WERNER HYDRAULIC JACK OIL IN ANY HEIN-WERNER JACK

HEIN-WERNER CORPORATION

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