

~~44~~ LP 216

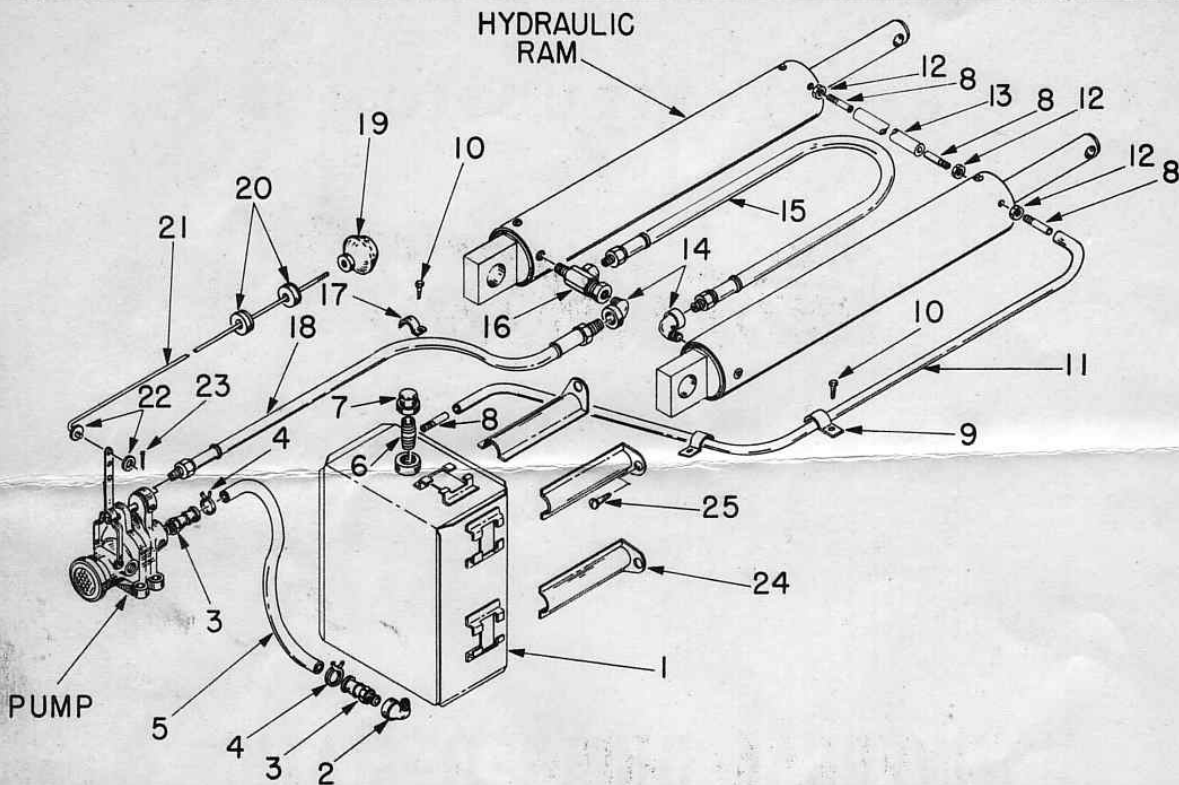
**PARTS and INSTRUCTION BOOK  
for**



**UNIVERSAL DUMP-O-MATIC  
with  
PUMP and VALVE ASSEMBLY**

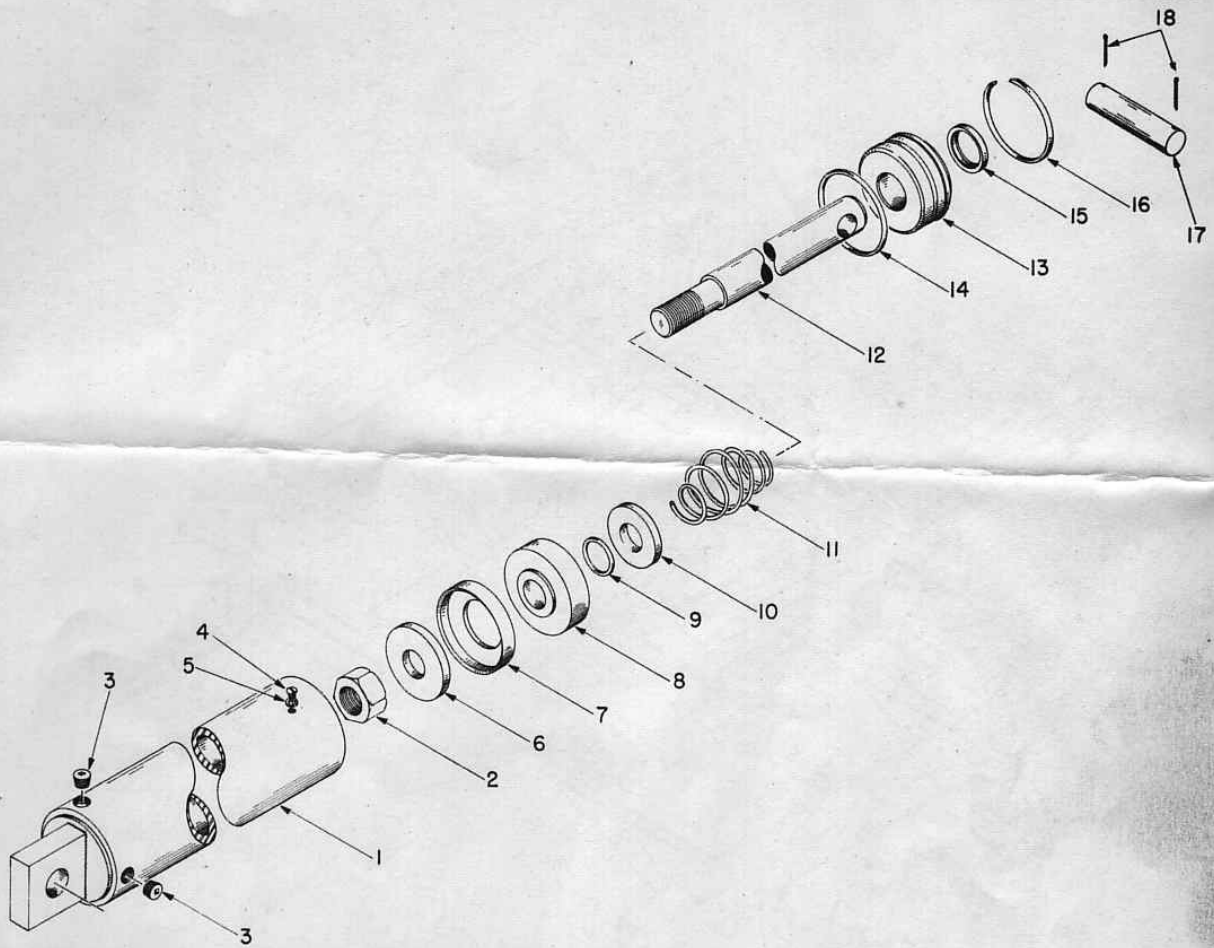
**GAR WOOD INDUSTRIES, INC.  
WAYNE, MICHIGAN**

# HYDRAULIC ASSEMBLY



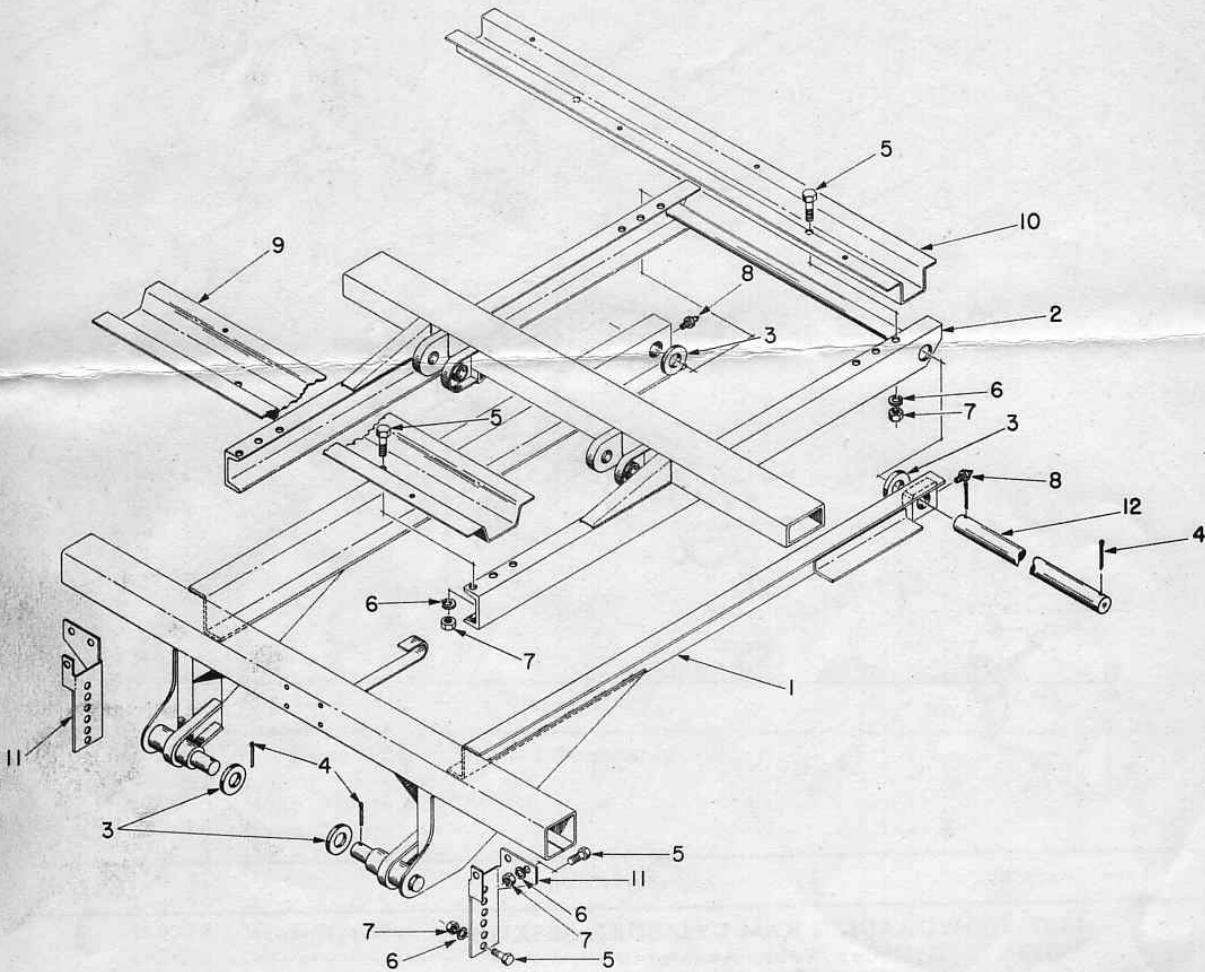
Item	Part No.	Description	Qty.
1	750080	Oil Reservoir - Welded Assembly	1
2	100061	Elbow - 1/2" x 90°	1
3	20045	Hose Nipple - 1/2"	2
4	750670	Hose Clamp	2
5	20075	Hose (reservoir to pump)	1
6	750671	Nipple	1
7	750675	Pipe Cap	1
8	750098	Vent Nipple	4
9	750498	Clip	2
10	103928	Screw - #14 x 1/2" Type B- Hex. Hd.	3
11	750134	Vent Hose	1
12	750530	Nut	3
13	750097	Vent Hose	1
14	100060	Elbow - 3/8" x 90°	2
15	750187	High Pressure Hose	1
16	750188	Union Tee	1
17	750497	Clip	1
18	750195	High Pressure Hose	1
	750707	CONTROL ROD ASSEMBLY	1
19	20052	Knob	1
20	20051	Grommet	2
21	40049	Control Rod	1
22	102970	Washer - 3/8"	2
23	103028	Cotter Pin - 3/32" x 1"	1
24	40346	Tank Clip	3
25	106784	Screw - #14 x 1/2" RD. HD. Type "A" S. M.	3

# CYLINDER ASSEMBLY



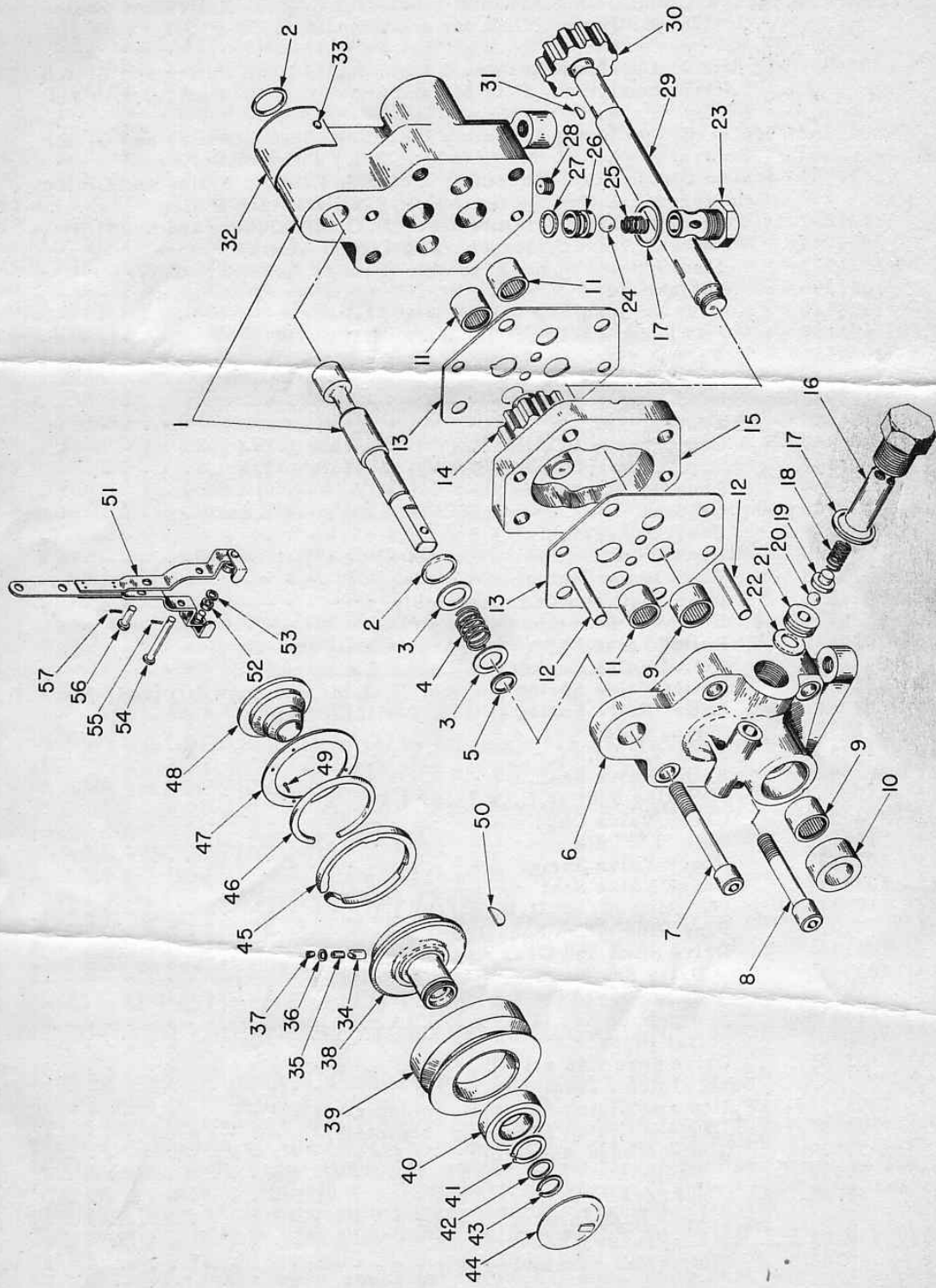
Item	Part No.	Description	Qty.
	750784	HYDRAULIC RAM CYLINDER ASSEMBLY	2
1	750138	Cylinder Weld. Assembly	2
2	104475	Nut - 1-1/4"-12	2
3	750762	Dry Seal Plug	4
4	750131	Screw - 1/4"-28	4
5	102757	Lockwasher - 1/4"	4
6	750858	Retainer	2
7	750780	Cup Packing	2
8	750781	Piston	2
9	104513	"O" Ring	2
10	750859	Thrust Washer	2
11	40009	Spring	2
12	750774	Shaft	2
13	750790	Guide	2
14	105542	"O" Ring	2
15	20217	Seal	2
16	40010	Snap Ring	2
17	45229	Hinge Pin (cylinder to lift frame)	2
18	103059	Cotter Pin	4

# SUBFRAME AND UNDERSTRUCTURE



Item	Part No.	Description	Qty.
1	750173	Subframe Assembly	1
2	750172	Box Frame Assembly	1
3	750157	Spacer	4
4	103059	Cotter Pin	4
5	103275	Bolt - 1/2"-13 x 1-1/4"	10
6	102761	Lockwasher - 1/2"	10
7	102720	Nut - 1/2"-13	10
8	105397	Grease Fitting - 1/8"-27	2
9	750146	Front Cross Member	1
10	750147	Rear Cross Member	1
11	750150	Front Mounting Bracket	2
12	750168	Body Hinge Shaft	1

# HYDRA-CLUTCH PUMP AND VALVE ASSEMBLY



# HYDRA-CLUTCH PUMP AND VALVE ASSEMBLY

Item	Part No.	Description	Qty.
	2039950	Hydra-Clutch Pump Assembly Including Clutch, Pulley and Clutch Control for Jumbo, D.O.M. and Snowlift (1500 P.S.I.) with #16 Pulley	
	2039951	Hydra-Clutch Pump Assembly Including Clutch, Pulley and Clutch Control for Jumbo, D.O.M. and Snowlift (1500 P.S.I.) with #11 Pulley	
	2039952	Hydra-Clutch Pump Assembly Including Clutch, Pulley and Clutch Control for Lift-O-Matic (600 P.S.I.) with #16 Pulley	
	2039953	Hydra-Clutch Pump Assembly Including Clutch, Pulley and Clutch Control for Lift-O-Matic (600 P.S.I.) with #11 Pulley	
	2031897	Pump and Valve Assembly (For D.O.M., Jumbo and Snowlift)	1
	2039948	Pump and Valve Assembly (For Lift-O-Matic)	1
1	2031777	Manifold and Spool Assembly (Sold as Assembly Only)	1
	2031896	Manifold	1
	2029546	Valve Spool	1
2	105159	"O" Ring, 13/16" O.D. x 1/2" I.D.	2
3	2029551	Valve Centering Washer	2
4	2029536	Control Valve Spring	1
5	105948	Snap Ring	1
6	2031895	Front Cover	1
7	106350	Cap Screw - Hex Hd. Soc. 7/16"-14 x 2-1/4"	3
8	106351	Cap Screw - Hex Hd. Soc. 7/16"-14 x 1-3/4"	1
9	2029544	Bearing Assembly	2
10	2031783	Oil Seal	1
11	2029541	Bearing Assembly	3
12	104835	Dowel Pin	2
13	2023235	Wear Plate	2
14	2029533	Idler Shaft and Gear Assembly	1
15	2029523	Body	1
16	2029549	Relief Valve Cap	1
17	2031894	Relief Valve Gasket	2
*18	2029538	Relief Valve Spring (Jumbo, D.O.M. and Snowlift) (red)	1
*18	2029891	Relief Valve Spring (Lift-O-Matic) (blue)	1
19	2029552	Spring Guide	1
20	104888	Ball, 1/2" dia.	1
21	2029545	Relief Valve Seat	1
22	106064	"O" Ring 5/8" O.D. x 7/16" I.D.	1
23	2029550	Check Valve Cap	1
24	104170	Ball, 1/2" dia.	1
25	2029537	Check Valve Spring	1
26	2029547	Check Valve Seat	1
27	105570	"O" Ring 11/16" O.D. x 1/2" I.D.	1
28	100026	Pipe Plug - Hex Soc 1/8"	1
	2031341	Drive Shaft and Gear Assembly	1
29	2029540	Drive Shaft	1
30	2029532	Gear	1
31	2029539	Woodruff Key (1/8" x 3/8")	1
32	106307	Serial Plate	1
33	103147	Drive Screw #6 x 1/4"	2
		Band Clutch Assembly	2
	750657 (#11)	Pulley and Clutch Assembly (complete)	1
	750658 (#16)	Pulley and Clutch Assembly (complete)	1
	30189	Clutch Wedge Assembly	1
34	30030	Wedge	1
35	30055	Set Screw	1
36	30131	Lock Ring (brass)	1
37	30122	Lockscrew, 5/16"-18	1
38	30200	Clutch Hub Assembly	1

# HYDRA-CLUTCH PUMP AND VALVE ASSEMBLY

Item	Part No.	Description	Qty.
39	750634	#11 Pulley (3/8" to 3/4" belt widths) - - - - -	1
39	750639	#16 Pulley (25/32" to 1-1/16" belt widths) - - - - -	1
40	106793	Bearing - - - - -	1
<b>Band Clutch Detail Parts</b>			
41	105278	Snap Ring (large) - - - - -	1
42	30123	Shim - - - - - (as required)	
43	105306	Snap Ring (small) - - - - -	1
44	30172	Expansion Plug - - - - -	1
45	30198	Clutch Band (9/16" wide) - - - - -	1
46	30147	Clutch Band Spring - - - - -	1
47	30032	Cover - - - - -	1
48	750557	Shifter Ring - - - - -	1
49	106788	Screw #6 Self Tapping 1/4" Pan Head - - - - -	3
50	102512	Woodruff Key - S. A. E. 90 3/16" x 3/4" - - - - -	1
	750457	Clutch Yoke and Lever Control Assembly - - - - -	1
51	750458 <del>750773</del>	Handle - - - - -	1
52	30136	Roller Bearing - - - - -	2
53	30050	Retaining Ring - - - - -	2
54	750472	Hinge Pin - - - - -	1
55	103025	Cotter Pin, 3/32" x 1/2" - - - - -	1
56	104558	Link Pin, 1/4" Std. - - - - -	1
57	103022	Cotter Pin, 1/16" x 1/2" - - - - -	1

\* Snowlift, Dump-O-Matic and Jumbo require spring designed to relieve at 1500 psi (spring identified as 2029538 and painted red).  
Lift-O-Matic requires spring designed to relieve at 600 psi (spring identified as 2029891 and painted blue).

## CLUTCH SERVICE INSTRUCTIONS

1. Remove expansion plug (item 44) by tapping screw driver under open end of welded tab. Pry against pulley to force plug out and off.
2. Remove snap ring (item 43).
3. Tap pulley gently until it slips off shaft. Remove kep (item 50) and shifter ring (item 48).
4. Remove snap ring (item 41).
5. Remove the three screws (item 49) in pulley cover. Take off cover. Press out items 40 and 38 - - remove items 45 and 46.
6. With file or oil stone, remove sharp edges or burrs from drive shaft and keyway.
7. Reassemble by reversing procedure, replacing worn parts Tap center of expansion plug to seat firmly after assembly.

## CLUTCH ADJUSTMENT INSTUCTIONS

NOTE: CLUTCH ADJUSTMENT REQUIRES SPECIAL ALLEN WRENCH (order #20084)

1. Line up dimple on back of clutch (item 38) with hole in pulley. (Do not confuse dimple with rivet heads.)
2. Using short twisted end of Allen wrench, back off short top lock screw (item 37).
3. Place straight end of Allen wrench in adjustment set screw (item 35) and screw in clockwise until wedge (item 34) causes slight drag on clutch when rotated. Usually 1/8 turn is sufficient. Then back off screw slightly. (Be sure brass lock ring (item 36) is between set screw and lock screw.)
4. Engage clutch fully to hold adjustment set screw in place. Tighten lock screw securely.
5. IMPORTANT - make sure energizer (item 49) does not rotate when clutch is not engaged.

## PUMP SERVICE INSTRUCTIONS

Clean outside of pump with an oil solvent and dry thoroughly. With file or oil stone, remove sharp edges or burrs from drive shaft and keyway.

### To Replace Drive Shaft Oil Seal (item 10)

1. Remove oil seal carefully with screwdriver or other sharp tool. Do not damage seal bore.
2. Press in new seal, using a sleeve, until seal is flush with casting.

### To Replace Relief Valve Assembly Parts

1. Unscrew relief valve cap (item 16), remove spring (item 18), spring guide (item 19) and ball (item 20).
2. Remove valve seat (item 21) with "Easy Out".
3. Install new "O" ring (item 22) around seat.
4. Install new seat, pressing until firmly bottomed.
5. Place ball in position; tap firmly with brass drift punch to seat. Assemble spring guide, spring, gasket (item 17) and relief valve cap; tighten securely.

### To Replace Check Valve Assembly Parts

1. Unscrew check valve cap (item 23), remove spring (item 25) and ball (item 24).
2. Remove valve seat with "Easy Out".
3. Install new "O" ring (item 27) around seat.
4. Install new seat, pressing until firmly bottomed.
5. Assemble ball, tapping firmly with brass drift punch to seat. Assemble spring, gasket (item 17) and check valve cap, tightening securely.

### To Disassemble Pump

1. Mark sections of pump with prick punch for proper reassembly.
2. Remove four capscrews (items 7 and 8). Do not use screwdriver to pry the sections apart. Tap with plastic hammer, if necessary, to loosen.
3. Remove spool from manifold housing (item 1). Remove the two "O" rings (item 2) from manifold housing.

4. Discard any gaskets and worn or scored wear plates (item 13).
5. Wash all parts in oil solvent and dry thoroughly with clean cloth.

### Inspect and Check Pump Parts for Wear

1. Check pump body (item 15) for scoring or excessive wear. Replace if necessary.
2. Inspect shafts and gears (items 14, 29 and 30) at bearing points and seal area for rough surface or excessive wear. Inspect edge of teeth and face of gears for scoring. Replace if necessary. Stone face of gears before reassembly to remove burrs or rough surface.
3. Inspect bearings (item 9 and 11) and if worn, remove with bearing puller.

### Reassemble Pump

1. Clean faces of cover (item 6), body (item 15) and manifold (item 1) with flat file or oil stone.
2. Insert bearings with the numbered end of race out. Press in bearings.
3. Install new "O" rings (item 2) in manifold housing.
4. ~~Apply very thin coat of #2 Permatex to face of cover, body and manifold.~~
5. ~~Place gaskets on face of cover and manifold.~~
6. Place wear plates on face of cover and manifold. Note: If gaskets are used, coat outer edge of face of wear plates placed against gaskets.
7. Insert valve spool from machined face side of manifold; blank end of spool first. The blank end of spool valve has leading edges beveled to prevent damage to "O" rings. Place valve washer (item 3), spring (item 4) and snap ring (item 5) on valve spool stem.
8. Insert dowels (item 12) in manifold.
9. Insert gear and shaft assemblies in manifold. Be sure notch on edge of center body always faces manifold.
10. Assemble body against manifold and cover against body and insert and securely tighten four bolts.

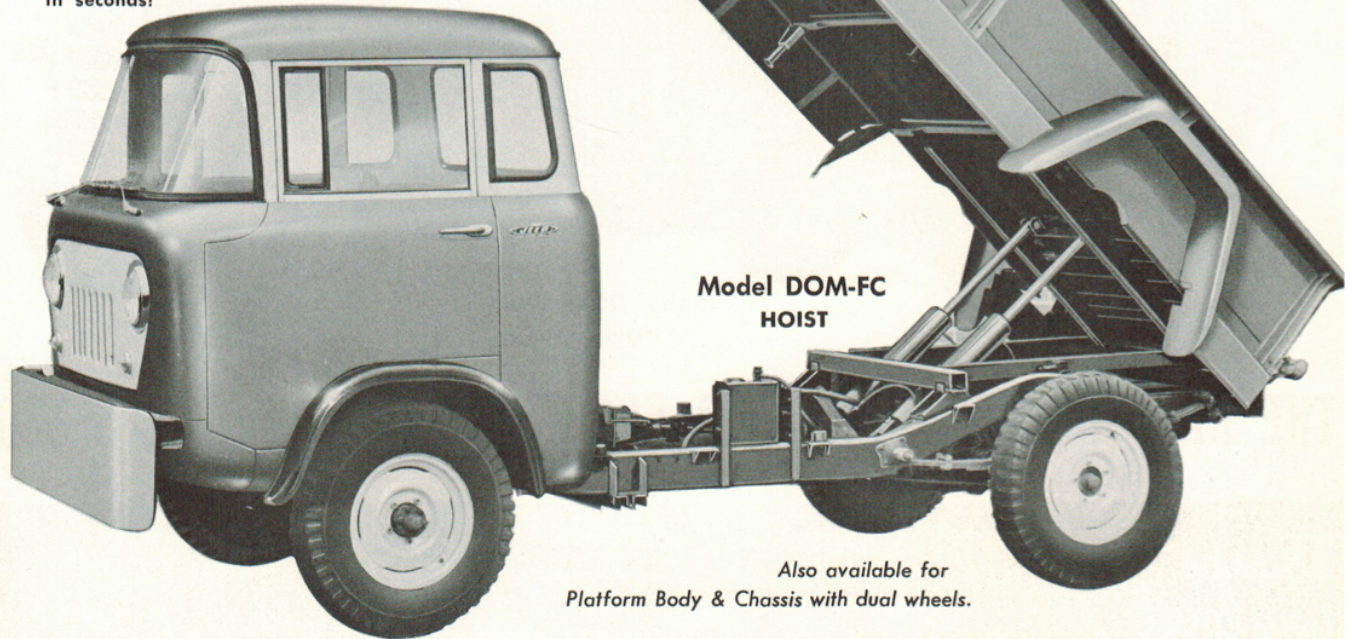


**GarWood**  
**- St. Paul -**

# DUMP-O-MATIC

TWIN-CYLINDER, DIRECT-LIFT HOIST

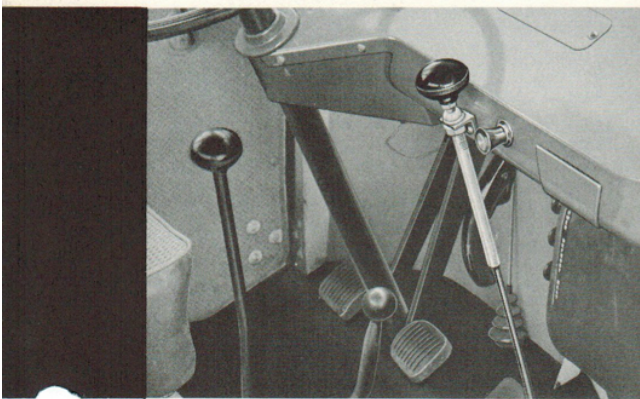
Install a Dump-O-Matic hydraulic hoist on your new Willys pick-up . . . convert your new or present Willys into a money-making self-unloader! Thousands of Willys owners the world over have discovered that they save time . . . money . . . labor with a modern hydraulic hoist. Just pull a lever, and presto — your load of sand, feed, fertilizer, etc. is piled or spread exactly where you want it — in seconds!



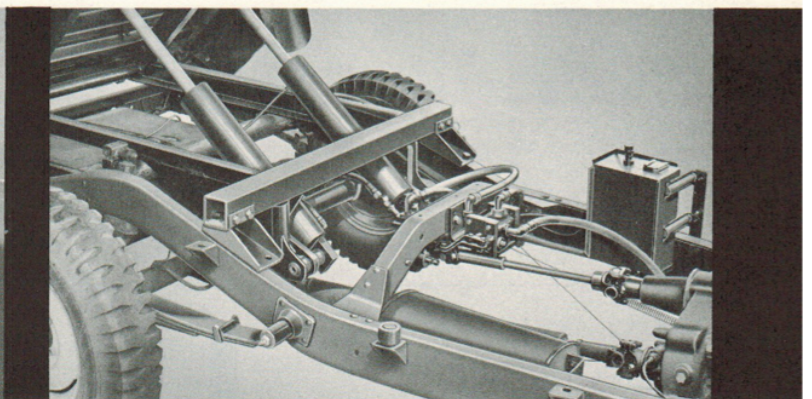
Model DOM-FC  
HOIST

Also available for  
Platform Body & Chassis with dual wheels.

**SPECIALLY ENGINEERED! THE BEST HOIST FOR USE WITH THE WILLYS FC-170**



**HANDY CAB CONTROL** — convenient lever hoist control in Model FC-170 cabs provide positive control of dumping. Driver does not have to leave cab. Speeds unloading.



**PTO DRIVE** — rugged Willys power take-off and Gar Wood 5.8 GPM heart-shaped pump enable the Model FC-170 to dump in seconds. Engineered for years of trouble-free service.

**CONVERTS ANY WILLYS PICK-UP INTO A DUMP TRUCK**