

Keep with Operator's Manual

VALVE & PLUMBING KIT FOR SMC & RHINO 2408 LOADER ON MASSEY FERGUSON 1433V & 1440V FWA TRACTORS

TRACTOR AND VALVE & PLUMBING KIT GENERAL INFORMATION

Valve and plumbing kit can be installed using tools ordinarily available. Valve control handle has been factory pre-assembled for ease of installation. Shut off engine and engage brakes during installation.

NOTE: Apply sealant only to all tapered threads unless coupled with swivel adapters. When using teflon tape, wrap tape clockwise (as viewed from end) and wrap tape only twice. Keep sealant away from first two threads of tapered end to prevent contamination of hydraulic fluid. Do not use sealant on o-ring of flare adapter threads.



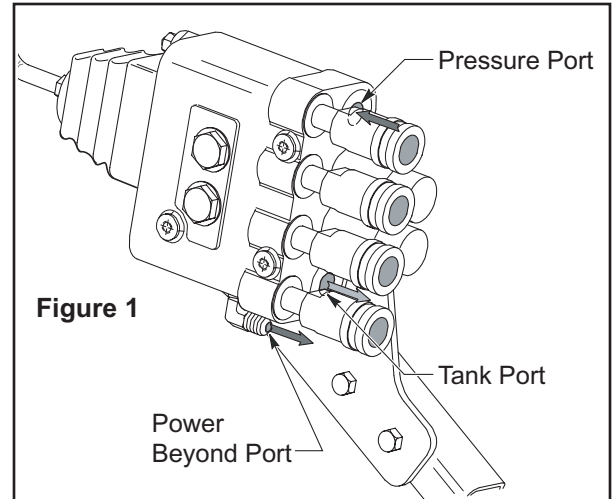
WARNING: Escaping hydraulic fluid under pressure can penetrate skin causing serious injury.

- DO NOT use your hand to check for leaks. Use a piece of cardboard or paper to search for leaks.
- Stop engine and relieve pressure before connecting or disconnecting lines.
- Tighten all connections before starting engine or pressurizing lines.

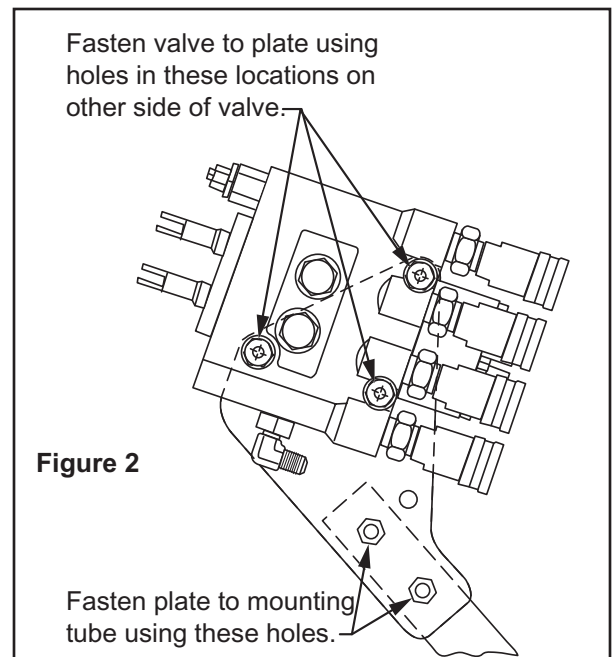
If any fluid is injected into skin, obtain medical treatment immediately or gangrene may result.

ASSEMBLING VALVE FITTINGS & ATTACHING TO TRACTOR (Figures 1, 2 & 3)

1. Remove three 12mm bolts from expansion plate on right side of tractor frame below foot platform. Fasten valve mounting plate (33) to expansion plate using 12mm x 35mm cap screws (34) and 1/2" lock washers (35).
2. Attach valve mounting tube (24) to valve mounting plate (33) using 1/2 x 2-1/2 cap screws (11), flat washers (31) and lock nuts (30).
3. Install 3/4 x 9/16 elbow fitting (9) to power beyond port of valve (1). Install adapter fittings (22), female quick couplers (15) and 1-inch colored bands (16) to working ports of valve (1).
4. Fasten valve mounting plate (23) to valve mounting tube (24) using 3/8 x 2-1/4" cap screws (2) and lock nuts (5).



5. Fasten valve (1) with elbow (9) in power beyond port toward bottom, to valve mounting plate (23) using 5/16 x 3/4" cap screws (6) and lock washers (7).



6. Fasten decal mounting plate (4) to valve using 5/16 x 3/4" cap screw (6) and lock washer (7). Making sure surface of decal mounting plate (4) is clean and dry, remove backing from operation decal (20) and apply it to decal mounting plate (4).
7. Thread nut (13) onto handle (3). Attach handle (3) to valve (1). Slip boot (14) over handle and cover handle assembly. Attach ball (8) to handle (3).

PLUMBING CONTROL VALVE TO TRACTOR HYDRAULICS

1. Remove hydraulic plugs from tractor ports on right side below platform. Install diverter plug (36) into center port. Install 3/8 straight adapter fittings (28) into remaining two holes. Install 90° elbow fittings (29) onto adapter fittings (28).
2. Remove return plug from right side of tractor to rear of valve ports. Fasten 90° elbow adapter fitting (27) into return port.
3. Slide 42" sleeve (37) over pressure, return, and power beyond hoses (32, 10 & 12).
4. Connect pressure, return, and power beyond hoses (32, 10 & 12) to pressure, return, and power beyond ports of valve.
5. Route hoses down valve mounting tube (24), over loader mid mounting bracket, and back to hydraulic ports.
6. Connect pressure hose (32) to pressure port fitting (29) on tractor. Connect power beyond hose (12) to power beyond port fitting (29). Connect return hose (10) to return port fitting (27) on tractor.
7. Secure hoses to valve mounting tube (24) and tractor frame using plastic tie straps (21).

PLUMBING LOADER TO CONTROL VALVE

1. Install 3/8 x 72" hoses onto boom oil line tubes. Install and tighten hose fittings one at a time from bottom up. Loosening closes oil line clamp will ease installation.
2. Install spiral bands (18) onto free ends of hoses (17) to match bands on female quick couplers (15). Slide nylon sleeve (25) over hoses (17) and install male quick couplers (19) onto free ends of hoses.
3. Connect hoses from upper two boom oil lines to upper quick couplers and connect hoses from lower two boom oil lines to lower quick couplers. Wrap rubber strap (26) around nylon sleeve (25) over hoses (17) and hook onto itself. Attach free end of rubber strap to hole provided in right side frame channel.
4. After all plumbing has been completed, slowly cycle lift and bucket cylinders several times to purge air from hydraulic system. Retract cylinders and shut off tractor engine. Replenish tractor hydraulic system.

NOTE: *When cycling loader, operate loader according to operation decal (20). If direction of control lever is wrong, or loader will not lower, recheck connections shown.*

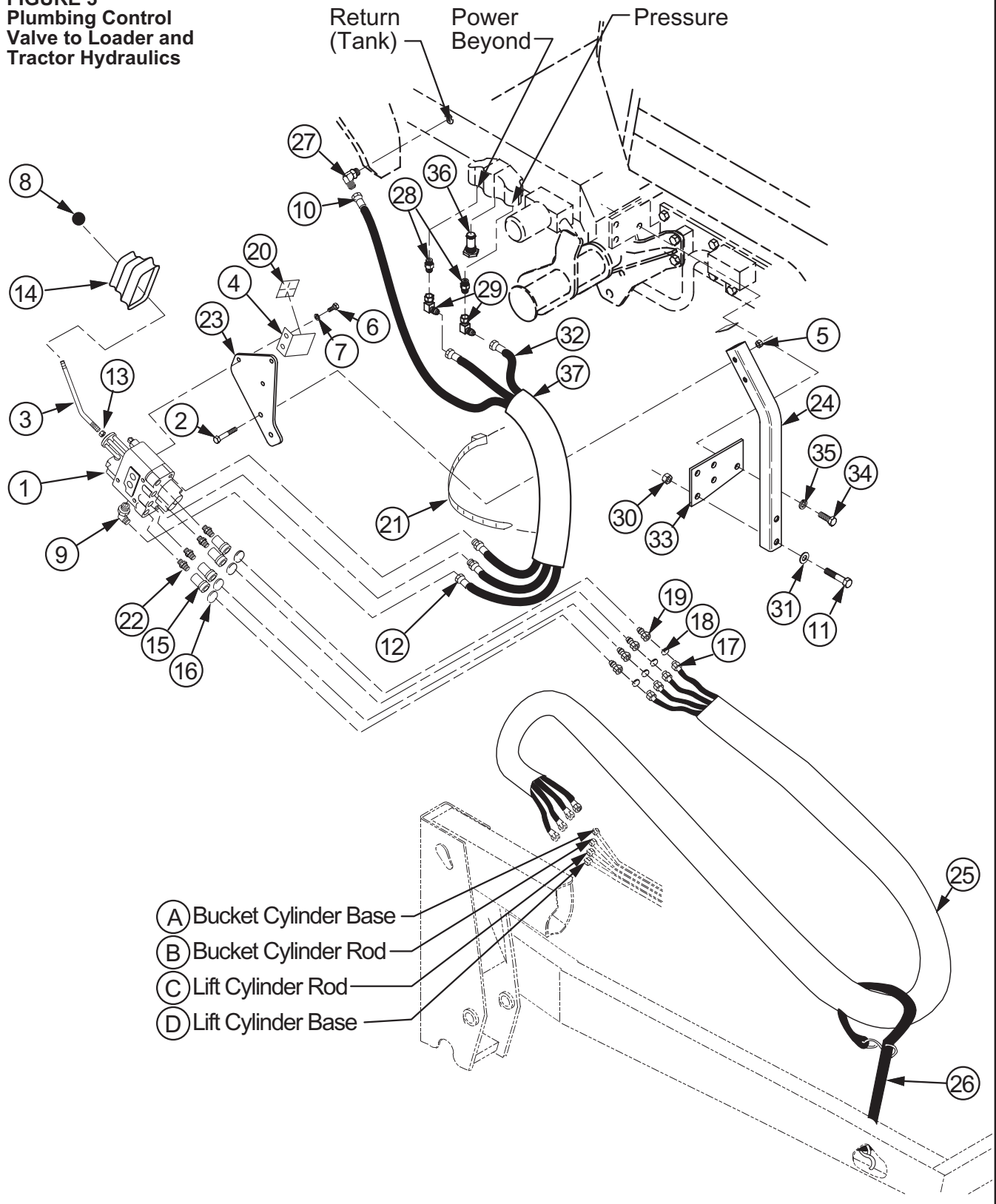


WARNING: *Escaping hydraulic fluid under pressure can have sufficient force to penetrate skin causing serious personal injury. If injured by escaping hydraulic fluid, obtain medical treatment immediately.*

PARTS LIST – VALVE & PLUMBING KIT

Item	Part No.	Description	Qty.
1	53585	VALVE, Prince LVR (2500 psi)	1
2	41838-19	SCREW, Cap, 3/8-16 x 2-1/4	2
3	43517	HANDLE, Standard	1
4	43451	ANGLE, Decal Mounting	1
5	41840-3	NUT, Lock, 3/8-16	2
6	41838-26	SCREW, Cap, 5/16-18 x 3/4"	4
7	41837-2	WASHER, Lock, 5/16"	4
8	38902	BALL, Valve Handle	1
9	32845-7	FITTING, Elbow, 9/16-18 JIC x 3/4-15 O-Ring, 90°	1
10	43454-3	HOSE, 3/8 x 60" Return (Tank)	1
11	41838-25	SCREW, Cap, 1/2-13 x 2-1/2"	2
12	36386-23	HOSE, 3/8 x 54" Power Beyond	1
13	G271506	NUT, Hex, 7/16-20	1
14	43635	BOOT, Valve Handle	1
15	6147-4	COUPLER, Quick, Female, 3/8"	4
16	36240-9	BAND, Spiral Plastic, 1" Blue	1
	36240-10	BAND, Spiral Plastic, 1" Red	1
	36240-11	BAND, Spiral Plastic, 1" Yellow	1
	36240-12	BAND, Spiral Plastic, 1" Green	1
17	36336-3	HOSE, 3/8 x 72"	4
18	36240-5	BAND, Spiral Plastic, 5/8" Blue	1
	36240-6	BAND, Spiral Plastic, 5/8" Red	1
	36240-7	BAND, Spiral Plastic, 5/8" Yellow	1
	36240-8	BAND, Spiral, Plastic, 5/8" Green	1
19	6137-4	COUPLER, Quick, Male, 3/8"	4
20	43453	DECAL, Single Handle Control	1
21	8137-1	STRAP, Adjustable	3
22	39280-7	FITTING, Adapter, 3/4-16 O-Ring x 3/8 NPT	4
23	43450	PLATE, Valve Mounting	1
24	51050	TUBE, Valve Mounting	1
25	34853-2	SLEEVE, Hose	66"
26	7438-1	STRAP, Tarp	1
27	39609-7	FITTING, Elbow, 90°, 1/2-14 NPTF x 9/16-18 JIC	1
28	43518-1	FITTING, Straight, 3/8-19 BSPT x 9/16-18 JIC	2
29	34128-3	FITTING, Elbow, 90°, 9/16-18 JIC x 9/16-18 JIC	2
30	41840-5	NUT, Lock, 1/2-13	2
31	42502-10	WASHER, Flat, 1/2	2
32	43454-15	HOSE, 3/8 x 56" Pressure	1
33	51051	PLATE, Valve Tube Mounting	1
34	42672-30	SCREW, Cap, 12mm-1.75 x 35mm	3
35	41837-5	WASHER, Lock, 1/2	3
36	51056	DIVERTER Plug, with O-Rings (Massey Ferguson Part Number 71515036)	1
37	34853-5	SLEEVE, Hose, 42"	1

FIGURE 3
Plumbing Control
Valve to Loader and
Tractor Hydraulics



PRINCE LVR VALVE SERVICE

Following is an outline procedure for disassembling and reassembling valve.



WARNING: Valve has a valve relief setting pre-set at the factory. Tampering with this setting can cause serious injury to operator and damage to tractor or loader. Unauthorized adjustments or service to valve relief will VOID Warranty of both loader and tractor. If adjustments or service to valve relief are required during warranty period, an authorized service department must be consulted for authorization.

VALVE DISASSEMBLY (Figure 4)

NOTE: It is advisable to mark or tag all parts so they will be reinstalled in their proper position.

NOTE: Handle linkage parts have been assembled using Loctite® 262 or equivalent.

1. Slide boot (6) to top of handle (34). Remove hex head cap screws (36) from rod ends (9 & 10). Remove handle with boot and adapter plate (8). Remove nuts (28) and shim washer (31) from spool stud (7) and rod end assemblies (10) from valve.

NOTE: Spool adapters (33) are factory assembled using Loctite 222 or equivalent. Removal from spools is not necessary. If replacing a damaged adapter, clean threads with alcohol and loctite primer and install using Loctite 262.

2. Remove hex head cap screws (13) and detent end caps (14) from both spools. Remove detent sleeve (12) from regen spool. Remove steel balls (20), poppet (21), and poppet spring (19) from detent retainer (24). Remove retaining flat (15) and detent spacer (16) from regen spool.
3. Secure handle end of regen spool. Using a rod through retainer ball holes, remove detent retainer (24) from regen spool.

NOTE: Detent retainers (18 & 24) are installed on spools using loctite 222 or equivalent. If spool adapter comes loose instead of detent retainer, pull spool completely out of valve and secure spool using locking pliers (vise grips, for example) on land section of spool not machined for valve bore.

4. Remove washer (17), centering spring (26), and stop cup (23) from regen spool.
5. Holding in on float detent sleeve (22), push in on float spool from handle end and remove steel balls (20) from float detent retainer (18). Remove float

detent sleeve (22), poppet (21), poppet spring (19), retaining flat (15) and spacer (16) from float spool.

6. Secure handle end of float spool. Using a rod through retainer ball holes, remove detent retainer (18) from float spool.

NOTE: Detent retainers (18 & 24) are installed on spools using Loctite 222 or equivalent. If spool adapter comes loose instead of detent retainer, pull spool completely out of valve and secure spool using locking pliers on land section of spool not machined for valve bore.

Remove washer (17), centering spring (26), and stop cup (23) from float spool.

7. Push spools in from handle end until rear spool seals (1) are exposed. Using wire hook and screwdriver, remove rear spool seals. Push spools in from the rear until front spool seals (1) are exposed. Using wire hook and screwdriver, remove front spool seals.
8. Clean all parts, including valve body, in suitable cleaning solvent. After cleaning parts with solvent, use air pressure to blow any dirt or excess solvent from all parts, including inside of valve body.

VALVE REASSEMBLY (Figure 5)

1. Examine all parts for wear and damage and replace if necessary.
2. Lubricate all o-rings and spools with oil to prevent damage when assembling.
3. Lubricate all detent and spring centering parts with a light coat of grease before disassembling.
4. Reassemble all parts in reverse order of disassembly.

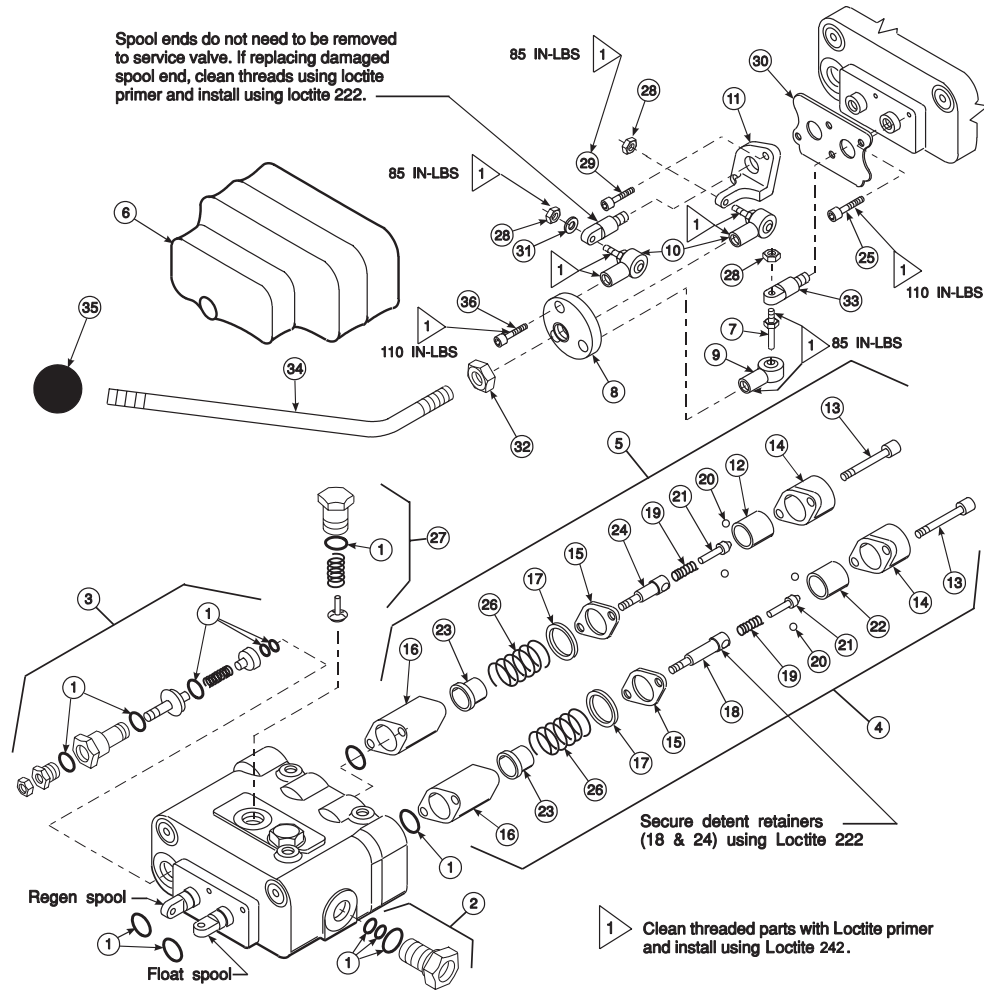
NOTE: Use Loctite 222 or equivalent when installing detent retainers (18 & 24).

RELIEF VALVE, LOAD CHECK PLUGS, AND POWER BEYOND SLEEVE

NOTE: Relief valve (3), load check plugs (27), and power beyond sleeve (2) may be removed separately to clean, inspect, or replace parts without removing valve spools.

NOTE: If repairing or replacing relief valve (3), torque larger hex nut (relief body) to 20-25 ft.-lbs.

**FIGURE 4
Prince LVR
Valve**



PARTS LIST – PRINCE LVR VALVE

Item	Part No.	Description	Qty.
1	43633	SEAL KIT, Valve, Prince LVR (2500 psi)	1
2	43636	POWER BEYOND SLEEVE	1
3	51033	RELIEF Valve (2500 psi)	1
4	43638	FLOAT KIT (Includes items 13,14, 15, 16, 17, 18, 19, 20, 21, 22, 23 & 26)	1
5	43639	REGEN KIT (Includes items 12, 13, 14, 15, 16, 17, 19, 20, 21, 24, & 26)	1
6	43635	BOOT	1
7	43640	STUD, Spool	1
8	43641	ADAPTER PLATE	1
9	38900-5	ROD END	1
10	43642	ROD END, Assembly	2
11	43643	CLEVIS	1
14	44476-6	END CAP (MFR's P/N, HC-V-AA23, stamped on end cap with valve & relief setting)	2
25	44743-5	SCREW, Cap, Socket Head, 1/4-20 x 1/2"	2
26	44460	PLUG, Load Check	2
28	41836-2	NUT, Hex, 5/16-18	3
29	44743-3	SCREW, Cap, Socket Head, 1/4-20 x 7/8"	2
30	51080	PLATE	1
31	51081	WASHER, Shim, 5/16"	1
32	G271506	NUT, Hex, 7/16-20	1
33	51077	END, Spool	2
36	44743-4	SCREW, Cap, Socket Head, 5/16-24 x 3/4"	3

NOTE: Individual items not listed in repair parts listing are not available separately.