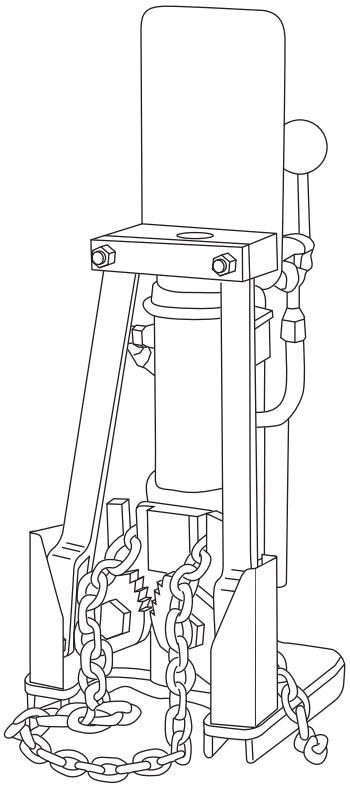
SERVICE MANUAL

GREENLEE®
UTILITY
A Textron Company



H4905A
Sign Post Puller

Read and **understand** all of the instructions and safety information in this manual before operating or servicing this tool.

Register this product at www.greenlee.com

99916045 REV 6
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Table of Contents

Safety

Safety is essential in the use and maintenance of Greenlee Utility tools and equipment. This instruction manual and any markings on the tool provide information for avoiding hazards and unsafe practices related to the use of this tool. Observe all of the safety information provided.

Purpose of this Manual

This manual is intended to familiarize personnel with the safe service procedures for the following Greenlee Utility tool:

H4905A (42237) Sign Post Puller

Keep this manual available to all personnel.

Replacement manuals are available upon request at no charge at www.greenlee.com.

Other Publications

Instruction Manual: Publication 99936755

SAE Standard J1273 (Hose and Hose Assemblies): Publication 99930323

All specifications are nominal and may change as design improvements occur. Greenlee Textron Inc. shall not be liable for damages resulting from misapplication or misuse of its products.

KEEP THIS MANUAL

IMPORTANT SAFETY INFORMATION

SAFETY ALERT SYMBOL

This symbol is used to call your attention to hazards or unsafe practices which could result in an injury or property damage. The signal word, defined below, indicates the severity of the hazard. The message after the signal word provides information for preventing or avoiding the hazard.

⚠DANGER

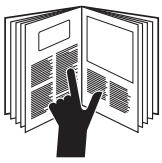
Immediate hazards which, if not avoided, WILL result in severe injury or death.

⚠WARNING

Hazards which, if not avoided, COULD result in severe injury or death.

⚠CAUTION

Hazards or unsafe practices which, if not avoided, MAY result in injury or property damage.



⚠WARNING

Read and understand all of the instructions and safety information in this manual before operating or servicing this tool. Refer also to the Instruction Manual, which is listed under “Other Publications.”

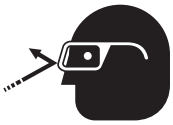
Failure to observe this warning could result in severe injury or death.

⚠WARNING

Skin injection hazard:

- Do not use hands to check for leaks.
- Do not hold hose or couplers while the hydraulic system is pressurized.
- Depressurize the hydraulic system before servicing.

Oil under pressure easily punctures skin, causing serious injury, gangrene, or death. If you are injured by escaping oil, seek medical attention immediately.



⚠WARNING

Wear eye protection when operating or servicing this tool.

Failure to wear eye protection could result in serious eye injury from flying debris or hydraulic oil.

⚠WARNING

Use chains with the following characteristics:

- 7.1 mm (9/32") link thickness
- Alloy steel material
- 64 kN (14,400 lb) minimum breaking strength

An underrated chain may break during operation.

Failure to observe this warning could result in severe injury or death.

IMPORTANT SAFETY INFORMATION

⚠WARNING

Do not exceed the following hydraulic power source maximums:

- Hydraulic flow: 22.7 l/min (6 gpm)
- Pressure relief: 138 bar (2000 psi)
- Back pressure: 13.8 bar (200 psi)

Failure to observe this warning could result in severe injury or death.

⚠WARNING

Do not disconnect tool, hoses, or fittings while the power source is running or if the hydraulic fluid is hot. Hot hydraulic fluid could cause serious burns.

⚠WARNING

Do not reverse hydraulic flow. Operation with hydraulic flow reversed could cause tool malfunction. Connect the pressure (supply) hose and tank (return) hose to the proper ports.

⚠WARNING

Do not change accessories, inspect, adjust, or clean tool when it is connected to a power source. Accidental start-up can result in serious injury.

Failure to observe this warning could result in severe injury or death.

IMPORTANT

Procedure for connecting or disconnecting hydraulic hoses, fittings, or components:

1. Move the flow lever on the hydraulic power source to the OFF position.
2. Stop the hydraulic power source.
3. Follow the sequence under “Hose Connections” in the Instruction Manual to prevent pressure buildup. In case some pressure has built up, loosen hoses, fittings, or components slowly.

Note: Keep all decals clean and legible, and replace when necessary.

When disposing of any components (hydraulic hoses, hydraulic fluid, worn parts, etc.), do so in accordance with federal, state, and local laws or ordinances.

Disassembly

Complete disassembly of the tool is not recommended. If a complete overhaul is necessary, return the tool to your nearest Greenlee Utility Authorized Service Center or to Greenlee Utility.

The disassembly procedure is divided into sections of the tool. Disassemble only the section(s) necessary to complete the repair.

Disassemble the tool on a flat, clean surface. Take care not to lose or damage any parts that may fall free during disassembly.

1. Remove four socket head cap screws (42), and remove control valve. O-rings (41) may fall free.
2. Remove roll pins (38, 39), and remove control handle (37, 40). Remove control handle ball (40) from lever (37), only if necessary.
3. Remove eight socket head cap screws (30), and remove lever bracket (29) and cap (35).
4. Remove shoulder bolt (34), two washers (31), spring (33), and spacer (32) from spool (27).
5. Slide spool (27) from valve body (26), only far enough to remove one O-ring (28). Slide spool (27) from valve body (26) in the opposite direction. Remove one O-ring (28) from spool (27).
6. Remove pipe plug (36) from valve body (26), only if necessary.
7. Disconnect two hoses (43A, 43B) from elbows (24, 25).
8. Remove two cap screws (20), two lock washers (21), two hex grip nuts (19), and U-bolt (17). Remove junction block (18).
9. Remove two flat socket head cap screws (53), plate (54), and two 90° elbows (24) from junction block (18).
10. Remove two hex nuts (16), two cap screws (15), and handle (14) from cylinder tube-base (1).
11. Remove four elastic stop nuts (50) from both ends of links (47), and remove bar (51).
12. Remove two cap screws (49) from jaws (45) and links (47).
13. Remove two cap screws (48) from jaws (45) and links (47).
14. Remove two shoulder bolts (46). Remove jaws (45).
15. Remove two 90° elbows (25), adapters (22, 23) from cylinder tube-base (1).
16. Using wrench flats provided to hold cylinder rod (2), unscrew adapter (44). Slide guide (13) from cylinder tube-base (1).
17. Remove snap ring (12) from cylinder tube-base (1). Slide cylinder rod and all internal parts from cylinder tube-base (1).
18. Slide packing gland (7) from cylinder rod (2). Remove U-cup (10) and rod wiper (11) from inside of gland. Remove O-ring (8) and backup rings (9) from piston (4).
19. Unscrew hex elastic stop nut (5) from cylinder rod (2). Slide piston (4) and seal (3) from cylinder rod (2). Remove O-ring (8) and backup rings (9) from piston (4).

Inspection

1. Cylinder Tube-Base (1): Bore must be smooth and free of grooves and nicks. All surfaces must be free of cracks. If not, replace the components.
2. Piston (4), Spacer (6), Cylinder Rod (2), and Packing Gland (7): All bores and surfaces must be smooth and free of grooves, nicks and cracks. If not, replace the component.
3. Valve Body (26): All bore and surfaces must be smooth and free of grooves, nicks and cracks. If not, replace the component.
4. Spool (27): All surfaces must be smooth and free of grooves, nicks, and cracks. If not, replace the component.
5. All Other Components: All mating surfaces must be smooth and free of grooves and nicks. All surfaces must be free of cracks. If not, replace the component.
6. O-Rings and Seals: Always replace O-rings and seals in components that have been disassembled with new O-rings and seals during assembly. A packing kit is available that includes all O-rings and seals.

Assembly

Refer to “Illustration” and “Parts List” for correct orientation and placement of parts.

Clean all parts with solvent, and then dry thoroughly. Do not expose O-rings or other packing components to solvent for long periods of time.

Inspect all parts as they are assembled for signs of damage, wear, cracks, etc. Do not install any parts which appear to be damaged.

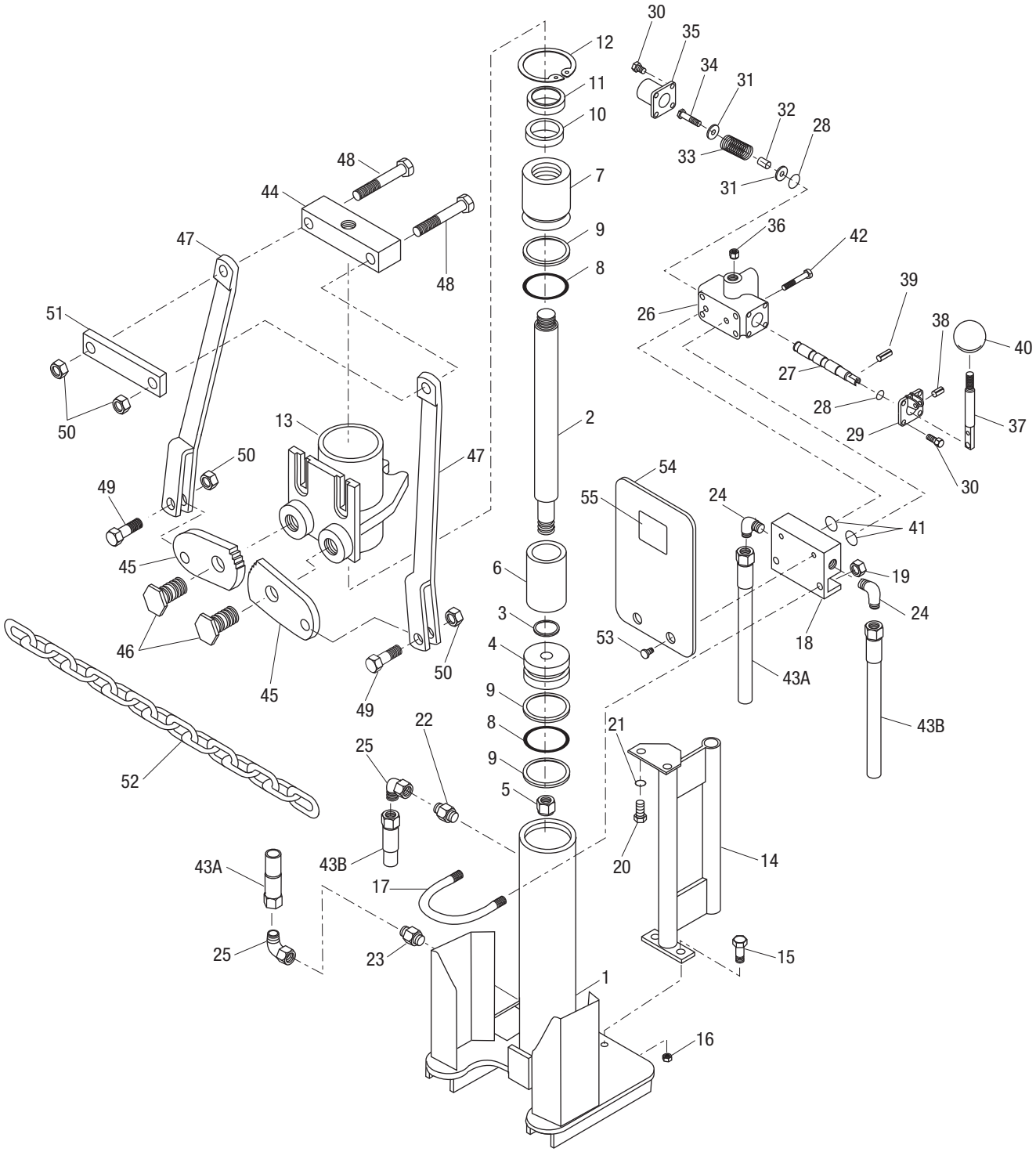
Apply hydraulic fluid or O-ring lubricant to all seals and all metal surfaces which seals must slide over. When installing an O-ring over a sharp edge, use a rolling action to avoid damage to the O-ring.

Wherever assembled parts cause metal to metal contact, coat the surfaces with hydraulic fluid or O-ring lubricant.

1. Slide seal (3) and piston (4) onto cylinder rod (2). Thread elastic stop nut (5) onto cylinder rod (2) and tighten. Install O-ring (8) and backup rings (9) onto piston (4). Slide spacer (6) onto cylinder rod (2). Slide piston and cylinder rod into cylinder tube-base (1).
2. Install U-cup (10) and rod wiper (11) into bore of packing gland (7). Install O-ring (8) and backup ring (9) onto packing gland (7). Install packing gland (7) over cylinder rod (2) and into bore of cylinder tube-base (1). Install snap ring (12) into cylinder tube-base (1).
3. Slide guide (13) onto cylinder tube-base (1). Using the wrench flats provided to hold cylinder rod (2), thread adapter (44) onto cylinder rod and tighten.
4. Install adapters (22, 23) into cylinder tube-base (1). Install two 90° elbows (25) onto adapters (22, 23).
5. Install both jaws (45) using two 7/8" shoulder bolts (46).
6. Install both links (47) and bar (51) to adapter (44) using two cap screws (48). Thread two hex elastic stop nuts (50) onto cap screws and tighten.
7. Install links (47) to both jaws (45) using two cap screws (49). Thread two hex elastic stop nuts (50) onto cap screws (49) and tighten.

   Note: Links must have free movement at pivot points at adapter (44) and jaws (45).
8. Install handle (14) onto cylinder tube-base (1) using two cap screws (15). Thread two hex nuts (16) onto cap screws (15) and tighten.
9. Install two 90° elbows (24) into junction block (18). Install plate (54) onto junction block (18) using two flat socket head cap screws (53).
10. Install junction block (18) to handle (14) using two hex head cap screws (20) and two lock washers (21). Install U-bolt around cylinder tube and into junction block (18). Thread two hex grip nuts (19) onto U-bolt and tighten.
11. Install hoses (43A, 43B) from elbows (24). Note orientation of hoses on “Illustration”.
12. Install pipe plug (36) into valve body (26), if removed.
13. Install one O-ring (28) onto lever end of spool (27). Slide spool into and through valve body (26) only far enough to install second O-ring (28). Slide spool back so both O-rings are inside valve body. Install one washer (31), spring (33), spacer (32), and second washer (31) onto shoulder bolt (34). Thread shoulder bolt into spool (27) and tighten.
14. Install cap (35) using four hex socket head cap screws (30). Install lever bracket (29) using four hex socket head cap screws (30).
15. Install control handle ball (40) onto lever (37), if removed. Install control handle (37, 40) onto lever bracket (29) and spool (27) using roll pins (38, 39).
16. Using four hex socket head cap screws (42), install control valve onto junction block (18), making sure O-rings (41) are located properly. Tighten cap screws.

Illustration



Parts List

Key	UPC No. 78-3310-	Part No.	Description	Qty
1	43847	50438476	Cylinder tube base	1
2	43171	50431714	Cylinder rod	1
3*			Seal, rubber, .726 x .062 x .075"	1
4	43823	50438239	Piston	1
5			Nut, hex, 5/8–18 lock	1
6	43849	50438492	Spacer, 1.505 x 2.25 x 3.19"	1
7	43824	50438247	Packing gland	1
8*			O-ring, 2.125 x 2.50 x .187"–70	2
9*			Backup ring, single turn, 2.138 x 2.506 x .075"	3
10*			Seal, U-cup, 1.50 x 2.00 x .375"	1
11*			Rod wiper, 1.500 x 1.875 x .281"	1
12	43825	50438255	Retaining ring, 2.625" internal	1
13	43838	50438387	Guide	1
14	40495	50404951	Handle	1
15			Screw, cap, 5/16–18 x 1.25" hex head	2
16			Nut, hex, 5/16–18 elastic stop	2
17	42055	50420552	U-bolt, 3/8–16 x 3.62"	1
18	43822	50438220	Junction block	1
19			Nut, hex, 3/8–16 lock	2
20			Screw, cap, 5/16–18 x .75" hex head	2
21			Washer, lock, .318 x .586 x .078"	2
22	41380	50413802	Adapter, 3/8 M NPTF x 9/16–18 M JIC	1
23	41341	50413413	Adapter, 1/4 M NPTF x 9/16–18 M JIC	1
24	41340	50413403	Elbow, 90°, 1/4 M NPTF x 9/16–18 M JIC	2
25	41396	50413961	Elbow, 90° swivel, 9/16–18 M JIC x 9/16–18 F JIC	2
26	40255	50402553	Valve body	1
27	43151	50431510	Spool	1
28*			O-ring, .437 x .562 x .062–70	2
29	40258	50402582	Lever bracket	1
30			Screw, cap, 1/4–20 x .500" socket head	8
31	43429	50434292	Washer, flat, .265 x .734 x .059"	2
32	43836	50438360	Spacer, .271 x .437 x .656"	1
33	41663	50416631	Spring, compression, .576 x .720 x 1.75"	1
34			Shoulder bolt, .250 x 1.00 x #10-24	1
35	40257	50402572	Cap	1
36	43787	50437879	Pipe plug, 1/4 M NPTF	1
37	40469	50404691	Lever	1
38			Roll pin, .187 x .750"	1
39			Roll pin, .250 x 1.00"	1
40	41418	50414182	Control handle ball	1
41*			O-ring, .562 x .750 x .093"–70	2
42			Screw, cap, 5/16–18 x 2.00" socket head	4
43A	40009	50400094	Hose, 5/16" I.D. x 14-1/2" length with 9/16–18 female JIC swivels at both ends	1
43B	40009	50400094	Hose, 5/16" I.D. x 14-1/2" length with 9/16–18 female JIC swivels at both ends	1
44	43848	50438484	Adapter	1
45	41150	50411503	Jaw	2
46	41081	50410813	Shoulder bolt, 7/8–14 x 1.781"	2
47	40498	50404980	Link	2
48			Screw, cap, 1/2–13 x 3.50" hex head	2
49			Screw, cap, 1/2–13 x 1.75" hex head	2
50			Nut, hex, 1/2–13 lock	4
51	43956	50439561	Bar	1
52	42014	50420144	Chain, 9/32 x 48" alloy steel	1
53			Screw, cap, 1/4–20 x .750" flat head socket	2
54	43094	50430947	Plate	1
55	41547	50415471	Decal, Greenlee Utility	1
	45691	50456911	Decal, warning	1
	45690	50456903	Decal, flow/pressure/wt.	1
*	41173	50411732	Packing kit (includes items marked with an asterisk)	
	43846	52000932	Cylinder assembly (includes items 1–12)	1
	40468	50404681	Valve (includes items 26–40)	1

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