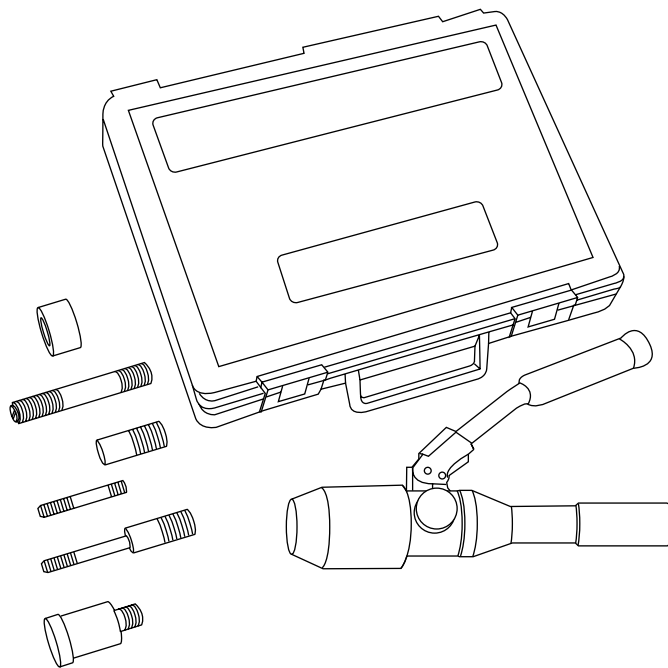


OPERATION, SERVICE AND PARTS INSTRUCTION MANUAL



7804SB/7806SB QUICK DRAW™ HYDRAULIC PUNCH DRIVER SERIAL CODE "WY"



Read and understand this material before operating or servicing this equipment. Failure to understand how to safely operate this tool could result in an accident causing serious injury or death.

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Description

The Quick Draw™ is a self-contained hydraulic punch driver. The Quick Draw™ and Greenlee punches, dies, and draw studs form a complete system for punching holes of various shapes and sizes through mild steel, aluminum, fiberglass and plastic. Slug Splitter® punches, dies and studs are available for punching all of these materials and stainless steel.

Various Quick Draw™ kits are available:

7804SB	Quick Draw™ Hydraulic Punch Driver, draw studs and step-saver adapter
7806SB	Quick Draw™ Hydraulic Punch Driver, draw studs, conduit-size punches and dies
7804E	Quick Draw™ Hydraulic Punch Driver and draw studs
7804ESB	Quick Draw™ Hydraulic Punch Driver, draw studs, Pg size punches and dies
7804ISO	Quick Draw™ Hydraulic Punch Driver, draw studs, ISO size punches and dies

IMPORTANT SAFETY INSTRUCTIONS



SAFETY ALERT SYMBOL

The symbol above is used to call your attention to instructions concerning your personal safety. Watch for this symbol. It points out important safety precautions. It means **“ATTENTION! Become alert! Your personal safety is involved!”** Read the message that follows and be alert to the possibility of personal injury or death.

⚠ DANGER

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

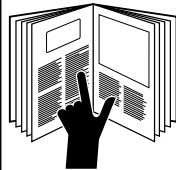
⚠ WARNING

Hazards or unsafe practices which, if not avoided, **COULD** result in severe personal injury or death.

⚠ CAUTION

Hazards or unsafe practices which, if not avoided, **COULD** result in minor personal injury or property damage.

Safety is a critical factor in the design of Greenlee equipment. The best program starts with a safety-conscious operator. The information highlighted in this bulletin describes operating practices for the benefit of the workers who will use our equipment in their daily jobs. Comments from users are appreciated.



⚠ WARNING


A person who has not read and does not understand all operating instructions is not qualified to operate this tool.

Failure to read and understand safety instructions may result in injury or death.

SAVE THESE INSTRUCTIONS

Additional copies of this manual are available upon request at no charge.

IMPORTANT SAFETY INSTRUCTIONS

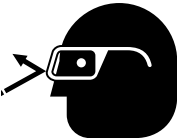
	⚠ WARNING
	Electric shock hazard: Do not use near live circuits. Contact with live circuits can result in severe injury or death.

⚠ WARNING
Do not operate the pump lever after the ram motion stops. Continuing to operate the pump lever after the ram motion stops will damage the driver and could propel internal parts with great force, striking nearby personnel.

⚠ WARNING
<ul style="list-style-type: none">• Do not exceed the rated capacity of the tool. Exceeding the capacity of the tool could cause tool or component to break and strike nearby personnel.• Do not add extensions or cheaters to the handles. Using cheaters or applying more than 80 pounds (356 N) of handle force will damage the driver and could propel internal parts with great force, striking nearby personnel.• Do not allow anyone to stand directly in front of the punch. A component failure could propel the punch and draw stud with great force, and could strike nearby personnel.• Use only Greenlee punches, dies, and draw studs. Other punches, dies, and draw studs may not withstand the force capacity of the driver and could break, striking nearby personnel.

⚠ WARNING
<ul style="list-style-type: none">• Inspect tool for wear or damage. Replace any worn, damaged, or missing components with Greenlee replacement parts. A damaged or improperly assembled tool can break and strike nearby personnel with sufficient force to cause severe injury or death.• Inspect the punch, die, draw stud and spacers for wear or damage. Replace any worn or damaged items with Greenlee replacement parts. Replace any punches that have dull cutting surfaces.

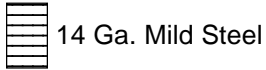
⚠ CAUTION
Use this tool for manufacturer's intended use only. Use other than that which is described in this manual can result in injury or property damage.

	⚠ WARNING
	Wear eye protection when using this tool. Failure to wear eye protection can result in serious eye injury from flying debris or hydraulic oil.

SAVE THESE INSTRUCTIONS

Additional copies of this manual are available upon request at no charge.

Specifications— Capacity and Draw Stud Selection Guide



14 Ga. Mild Steel



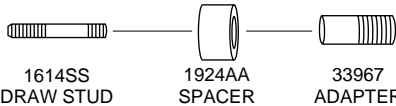

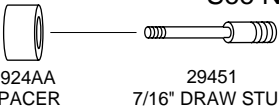

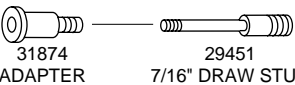
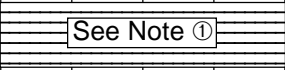
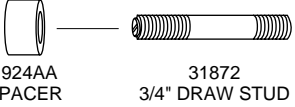
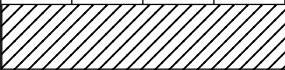
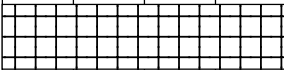
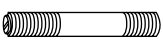
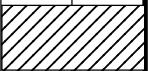
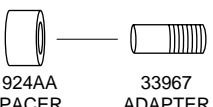

10 Ga. Stainless Steel



10 Ga. Mild Steel



16 Ga. Mild Steel &
1/18" Soft Aluminum

Studs and Accessories	Standard & Slug-Buster® Punches							Slug-Splitters®						
	1/2" con.	3/4" con.	1-7/32" con.	1" con.	1-1/4" con.	1-1/2" con.	2" con.	1/2" con.	3/4" con.	1-7/32" con.	1" con.	1-1/4" con.		
 <p>1614SS DRAW STUD 1924AA SPACER 33967 ADAPTER</p>														
 <p>1924AA SPACER 29451 7/16" DRAW STUD</p> <p>See Note ②</p>														
 <p>31874 ADAPTER 29451 7/16" DRAW STUD</p> <p>See Note ②</p>														
 <p>1924AA SPACER 31872 3/4" DRAW STUD</p>														
 <p>31872 3/4" DRAW STUD</p>														
 <p>1924AA SPACER 33967 ADAPTER</p>														

Electronic Connector Punches
RS-232, 229, 231, 234, 238.

- ① The Slug-Buster® punches may not split the slug when used with this adapter, because of the smaller pilot hole.
- ② The 31874 step-saver adapter and 29451 draw stud are included with the 7804SB only. They may be purchased separately and used with any Quick-Draw™ hydraulic punch driver kit.

Operation

The 1/2" conduit-size punch is often used to increase the size of the pilot hole; this is called "step-up punching". After enlarging the pilot hole, the 3/4" draw stud is used to punch the final hole. See steps 1-6.



1. Drill 1/2" pilot hole using Greenlee Kwik-Stepper® step bit.



2. Install 3/8" draw stud, 3/4" x 3/8" adapter, spacer and 1/2" conduit die and insert into pilot hole. Turn the release knob counterclockwise to make sure the ram is fully extended.



3. Thread 1/2" conduit punch on draw stud until tight. Make sure draw stud threads are fully engaged in the punch.



4. Close the release valve knob by turning clockwise. Rotate driver to best operating position, and then pump lever handle until the punch is completely through the material.



5. Release by turning release valve knob counterclockwise and remove the punch, die, adapter and draw stud.



6. Install 3/4" draw stud and select proper size punch and die for desired size hole and repeat steps 4 and 5.

Operation (cont'd)

Using the 29451 draw stud and 31874 step-saver adapter

After drilling the pilot hole, use the 29451 draw stud and 31874 step-saver adapter as shown here. These components eliminate the need for step-up punching.

Note: The stud and adapter are rated to drive the 1-1/4" punch through 14 gauge mild steel .

⚠ WARNING

Do not exceed the rated capacity of the 29451 draw stud and 31874 step-saver adapter. Exceeding the maximum rated capacity could cause The stud and adapter to break and strike nearby personnel.



1. Drill 1/2" pilot hole using Greenlee Kwik-Stepper® step bit.



2. Thread adapter into punch.



3. Thread 7/16" draw stud tightly into driver. Place die on draw stud.



4. Turn release valve knob counterclockwise, to make sure the draw stud is fully extended. Insert stud through pilot hole.



5. Thread the adapter with punch onto the draw stud as shown.

Operation (cont'd)

Using the 29451 draw stud and 31874 step-saver adapter (cont'd)



6. Make sure draw stud threads are fully engaged in the adapter.



7. Close release valve knob by turning clockwise. Pump lever handle until the punch is completely through material.



8. Release by turning release valve knob counter-clockwise.



9. Remove punch and die.

Maintenance

Maintenance and repairs should be performed by qualified technicians in a dust free area.

This unit requires minimum maintenance because it has a closed hydraulic system and all internal parts are lubricated by the hydraulic fluid. Keep lever pins lubricated lightly. Keep contaminants away from ram and housing. Store with lever down and ram released.

Adding Hydraulic Oil

1. Place driver in vise in with bladder handle (1) upward. Unscrew bladder handle (1). Remove bladder plug (20).
2. Fill rubber bladder to point of overflow with Greenlee Hydraulic Oil.
3. Purge air from system.
Open release valve knob (27) and pump lever handle several times to remove air from the pumping chamber. Then close release valve knob and pump lever handle until piston (6) completes its full travel. Repeat as necessary.

Note: Open release valve knob slowly so piston extends slowly. Rapid return of oil and air may cause oil to overflow the rubber bladder.

If above fails to remove air, remove bladder plug and open release valve knob. Place thumb over plug hole in bladder and squeeze bladder while pumping lever handle several times. Then close release valve knob and pump lever handle until piston completes its full travel. Repeat if necessary.

If this does not remove air, remove plunger (24) and fill plunger cavity with clean oil as described in Reassembly Instructions.

4. Fill rubber bladder to overflowing and replace bladder plug. Wipe bladder clean of excess oil and reassemble bladder handle.

Troubleshooting and Repair

To function properly, the Punch Driver must:

- a) be free of oil leaks, and
- b) build oil pressure.

Oil Leaks

- Check for external oil leaks.
- Check that release valve knob and stem are closed tightly and seating properly.
- Remove bladder handle (1) and check for oil leaks around rubber bladder (29) and bladder plug (20).

Failure to Build Pressure

- Check to assure the rubber bladder is full of oil (see steps 1, 2, and 4 of Adding Hydraulic Fluid).
- Purge air from system (see step 3 of Adding Hydraulic Fluid).

Maintenance (cont'd)

Rebuilding

If no leaks are visible and the unit will not build oil pressure, disassembly and rebuilding are needed.

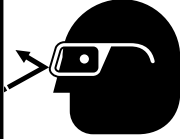
Disassembly

1. Unscrew bladder handle (1) and bladder plug (20); drain oil from the rubber bladder (29).
2. Remove O-ring (35) and the rubber bladder (29). Remove retaining rings (21) from one end of both handle pins (30) and disassemble handle pins and lever handle (2).
3. Grasp plunger (24) with pliers; pull and twist to remove. Loosen set screw (12) from release valve knob (27); remove knob. Unscrew release valve stem (28) to remove from pump block (5).
4. Loosen set screw (12) from cylinder (4) and unscrew the cylinder from pump block (5).
5. Screw a draw stud into end of piston (6); push the piston out of the cylinder (4). Remove compression spring (7). Unscrew intake screen assembly (3 and 40) and remove ball (32), spring (31) and copper washer (13).
6. Unscrew discharge check retainer (26). Remove spring (23) and ball (37).

You have now disassembled the Punch Driver. Thoroughly clean all parts and inspect the three ball seats (intake, discharge and release valve stem) for nicks, scratches or other damage.

Ball Seat Repair/Reseating

Minor seat imperfections may be corrected by reseating. Use a soft metal rod and hammer to tap the ball against its seat.

	⚠ WARNING
	Wear eye protection when servicing this tool. Failure to wear eye protection can result in serious eye injury from flying debris or hydraulic oil.

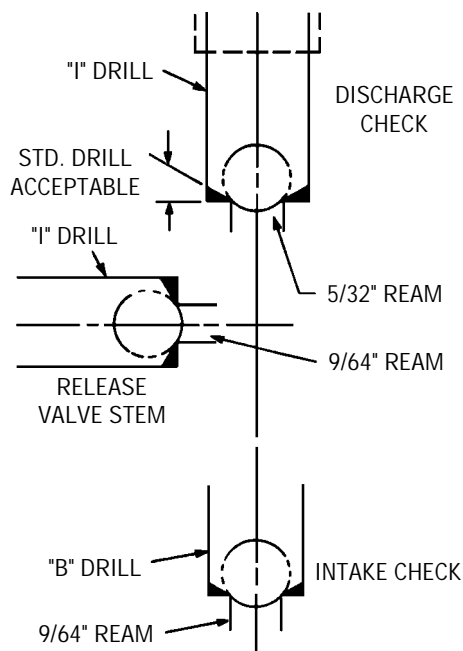
Maintenance (cont'd)

Redrilling

Badly worn or damaged seats may be reworked by redrilling.

- To redrill the 7/32" ball seat for release valve stem (28): Use an "I" drill and a 9/64" diameter reamer.
- To redrill the 7/32" ball seat for the discharge check: Use an "I" drill and a 5/32" diameter reamer.
- To redrill the 3/16" ball seat for the intake check: Use a "B" drill and a 9/64" diameter reamer.

When drilling, remove a minimum of material to obtain maximum seat life. Reseat the balls before reassembly.



Reassembly

Reassembly is done in reverse sequence of disassembly.

1. Inspect all O-ring seals for cuts and wear; replace as needed.
2. Inspect drilled oil passage in piston (6); be sure this passage is not blocked.
3. Before re-inserting piston (6) in cylinder (4), lightly coat O-ring seals and bores of the cylinder with clean hydraulic oil.
4. Fill plunger bore in pump block (5) with clean oil. Then coat plunger O-ring seals with clean oil, and re-insert in the pump block with release valve knob (27) closed.
5. Fill unit with clean oil and purge air (see Adding Hydraulic Fluid).

Maintenance (cont'd)

Inspection and Adjustments

After reassembly, the following checks should be made:

Piston Travel Inspection

Piston Extended

With the draw stud removed and release valve knob open, observe whether end of piston (6) is flush to 1/64" below the end of cylinder (4). If it is not, the rubber bladder (29) contains too much oil.

To remove excess oil:

- Remove bladder handle (1) and bladder plug (20).
- Slowly open release valve knob (27); excess oil should come out of the rubber bladder and the piston should move to become flush to 1/64" below the end of cylinder (4).
- If excess oil does not come out, this indicates a weak compression spring (7) which should be replaced.

Piston Retracted

Measure piston travel distance (difference between piston completely extended and completely retracted). Adjust cylinder (4) so travel distance is .830" to .930". Tighten set screw (12).

Pump Section Inspection

Intake Check Valve

- Close release valve knob and operate lever handle (2) until piston (6) bottoms, and increased force is needed on the lever handle.
- If the piston bottoms in 30 or fewer strokes, the intake check valve is operating properly.
- More than 30 strokes indicates an intake check leak. This may be corrected by reseating or redrilling the intake check seat, polishing the 3/16" check ball (32), replacing the copper washer (13), replacing the intake compression spring (31) or a combination of these.

Discharge Check Valve

If the lever handle (2) returns to the raised position by itself, this indicates a discharge check valve leak. This may be corrected by reseating or redrilling the discharge check seat, polishing the 7/32" check ball (37), replacing the discharge compression spring (23), or a combination of these.

Release Valve

When testing for 30 or fewer strokes, the piston will bottom. At this point, gently apply and maintain additional force on lever handle (2). If the lever handle remains solid, the release valve ball (37) is operating properly. Should lever handle (2) go down slowly, this indicates leakage at the release valve. Correction is done by reseating or redrilling the release valve stem seat, polishing the 7/32" check ball (37), replacing O-ring (33) or a combination of these.

Troubleshooting

PROBLEM	PROBABLE CAUSE	POSSIBLE REMEDY
Will not punch hole.	Improper assembly or use of punch, die or accessories.	See Operating Instructions and Capacity Chart. Low oil level. See Adding Hydraulic Oil in Maintenance Section.
Requires excessive lever force.	Improper assembly or use of punch, die or accessories.	See Operating Instructions and Capacity Chart. Material being punched is too thick or too hard. See Capacity Chart.
Pump will not build pressure.	Air in system.	See step 3, Adding Hydraulic Oil.
Excessive number of strokes strokes are required to punch hole.	Inoperative intake check valve.	See Inspection and Adjustments, Intake Check Valve Inspection.
	Inoperative discharge check valve.	See Inspection and Adjustments, Discharge Check Valve Inspection.
	Leaking Release Valve.	See Inspection and Adjustment, Release Valve Inspection.
	Damaged piston, piston extension, pump plunger seals or mating surfaces.	See Maintenance and Repairs, Cylinder and Pump Block sections. Clogged filter screen. Clean or replace filter screen (39).

Troubleshooting (cont'd)

PROBLEM	PROBABLE CAUSE	POSSIBLE REMEDY
Will not return piston.	Weak or damaged return spring, excess oil in unit.	See Piston Travel Inspection.
External oil leaks.	Damaged seals or surfaces.	<p>Damaged piston, piston extension, pump plunger seals or mating surfaces. See Maintenance and Repairs, Cylinder and Pump Block sections.</p> <p>Damaged Release Valve Stem seal. See Inspection and Adjustment, Release Valve Inspection.</p>

Parts Breakdown

Serial No. Series WY

The 7804/7806 Punch Driver System includes a self-contained hand operated pump/driver unit, draw studs and the spacers necessary to punch 1/2" through 2" conduit size holes with Standard Greenlee Knockout Punches and Slug-Buster® Knockout Punches, and 1/2" through 1-1/4" conduit size holes with Slug-Splitter® Knockout Punches. See Capacity Chart in Specifications section for punching capacity and draw stud selection.

7804SB Parts Breakdown

1614SS DRAW STUD
33967 ADAPTER
31874 ADAPTER
29451 7/16" DRAW STUD
1924AA SPACER
31872 3/4" DRAW STUD

Typical Setup Using Draw Stud

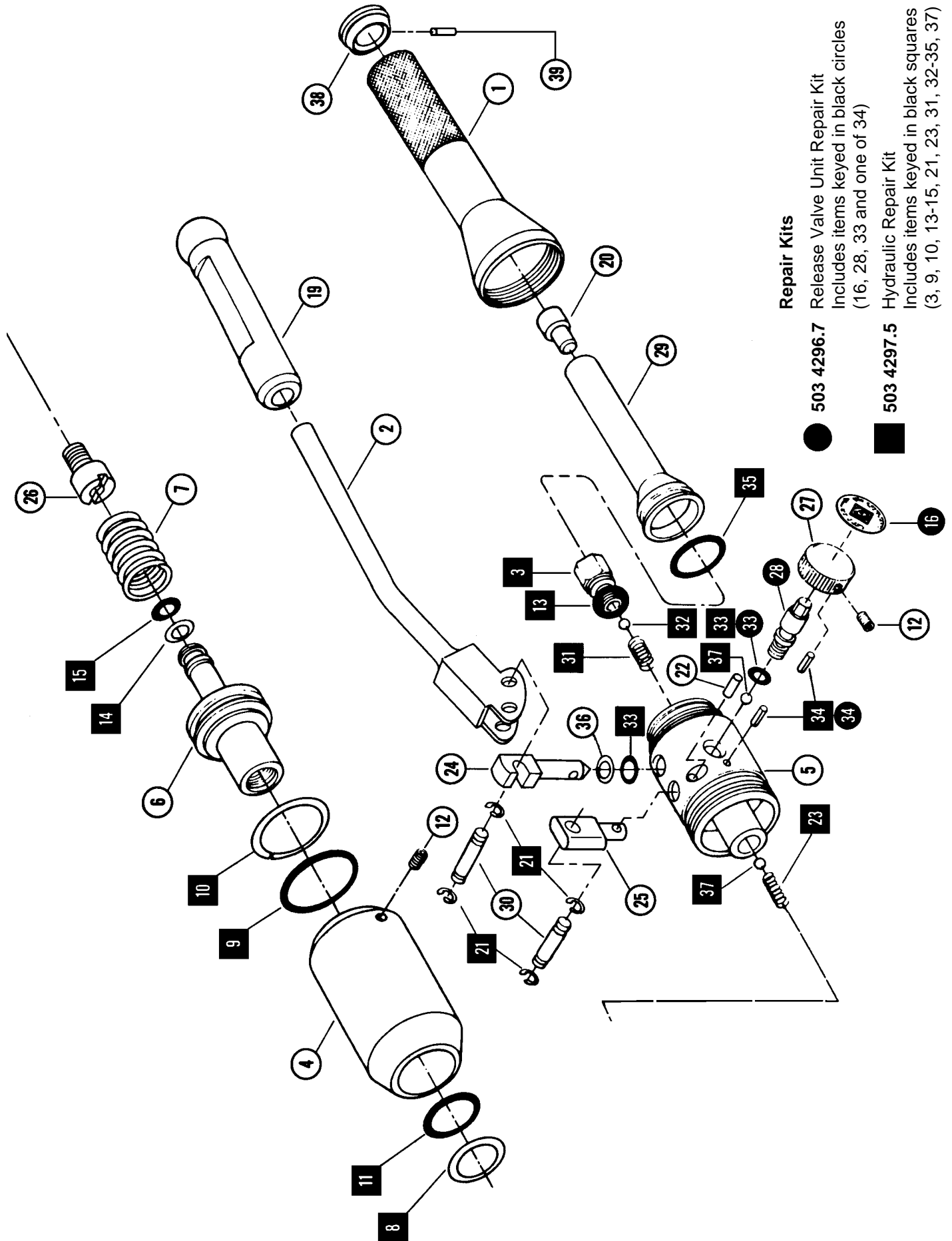
SHEET METAL
1614SS DRAW STUD
1924AA SPACER
33967 ADAPTER
PUNCH
DIE
1924AA SPACER
31872 3/4" DRAW STUD

7806SB Parts Breakdown

1614SS DRAW STUD
33967 ADAPTER
1924AA SPACER
31872 3/4" DRAW STUD

Plus 1/2"-2" Slug-Buster® Punches and Dies

GREENLEE 7804SB/7806SB Quick Draw™ Hydraulic Punch Driver



Repair Kits

503 4296.7 Release Valve Unit Repair Kit

Includes items keyed in black circles
(16, 28, 33 and one of 34)

503 4297.5 Hydraulic Repair Kit

Includes items keyed in black squares
(3, 9, 10, 13-15, 21, 23, 31, 32-35, 37)

Parts List

KEY	PART NO.	DESCRIPTION	QTY.
1	503 4281.9	Bladder Handle	1
2	503 4285.1	Lever Handle Weldment	1
3	503 4275.4	Intake Seat	1
4	503 4271.1	Cylinder	1
5	503 4273.8	Pump Block	1
6	503 4270.3	Piston	1
7	503 4272.0	Compression Spring	1
8	905 3847.1	Back-up Ring (1.000" I.D.)	1
9	905 1316.9	O-Ring, 1-1/2" x 1-3/4" x 1/8"	1
10	905 3849.8	Back-up Ring (1.500" I.D.)	1
11	905 1330.4	O-Ring, 1" x 1-1/4" x 1/8" (90 Duro.)	1
12	905 1032.1	Socket Set Screw, #8-32 x .187"	2
13	905 3852.8	Copper Washer	1
14	905 0883.1	Back-up Ring (.375" I.D.)	1
15	905 0168.3	O-Ring, 3/8" x 1/2" x 1/16"	1
16	503 1878.0	Punch Release Decal	1
19	502 3258.4	Grip	1
20	503 2488.8	Bladder Plug	1
21	905 3844.7	Retaining Ring	4
22	905 3846.3	1/4" Diameter x 1.00" Long Drive-Lok Pin	1
23	905 3845.5	Discharge Compression Spring	1
24	503 4268.1	Plunger	1
25	503 4274.6	Fulcrum Post	1
26	503 4276.2	Discharge Check Retainer	1
27	503 4266.5	Release Valve Knob	1
28	503 4265.7	Release Valve Stem	1
29	503 4269.0	Rubber Bladder	1
30	503 4286.0	Handle Pin	2
31	503 4287.8	Intake Compression Spring	1
32	905 0678.2	Ball, 3/16" Diameter	1
33	905 3854.4	O-Ring, 1/4" x 3/8" x 1/16"	2
34	905 0458.5	Roll Pin, 1/8" Diameter x .375" Long	2
35	905 1456.4	O-Ring, 1-1/8" x 1-5/16" x 3/32"	1
36	905 3853.6	Back-up Ring (.250" I.D.)	1
37	905 0292.2	Ball, 7/32" Diameter	2
38	503 4278.9	End Cap	1
39	905 3855.2	Drive Pin, 1/8" Ø x 1/4" Long	1

Parts List (cont'd)

Draw Studs and Accessories

PART NO.	DESCRIPTION	QTY.
502 9451.2	7/16" Draw Stud (optional 7806SB)	1
503 1872.1	3/4" Draw Stud	1
503 1874.8	Step Saver Adapter (adapts punches for 3/4" studs to 7/16" studs) (Optional 7806SB)	1
500 3248.8	Spacer (1924AA)	1
503 0043.1	3/8" Screw (1614SS)	1
503 3967.2	Adapter (adapts punches for 3/8" studs to driver)	1