

G749A

CHERRYMAX[®] HAND RIVETER

NSN 5120-01-148-5847

M A N U A L



CHERRY[®]
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G749A CHERRYMAX® HAND RIVETER

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DESCRIPTION

The Cherry G 749A is a heavy-duty, hand operated hydraulic riveter designed specifically for the most efficient installation of CherryMAX®. It weighs 2 3/4 pounds, is 15" long without a pulling head and has a 0.518" stroke.

Pulling heads are not furnished with this riveter and must be ordered separately. H749A-456 (straight), H753A-456 (right angle) and H781-456 (offset) pulling heads fit directly on the G 749A Riveter. Pulling head extensions are also available to reach into limited access areas; see CherryMAX® catalog for part numbers.

The G 749A riveter with above listed pulling heads will install Bulbed CherryMAX® rivets in 1/8", 5/32" and 3/16" nominal and oversized diameters, in all materials, head styles and grip lengths.

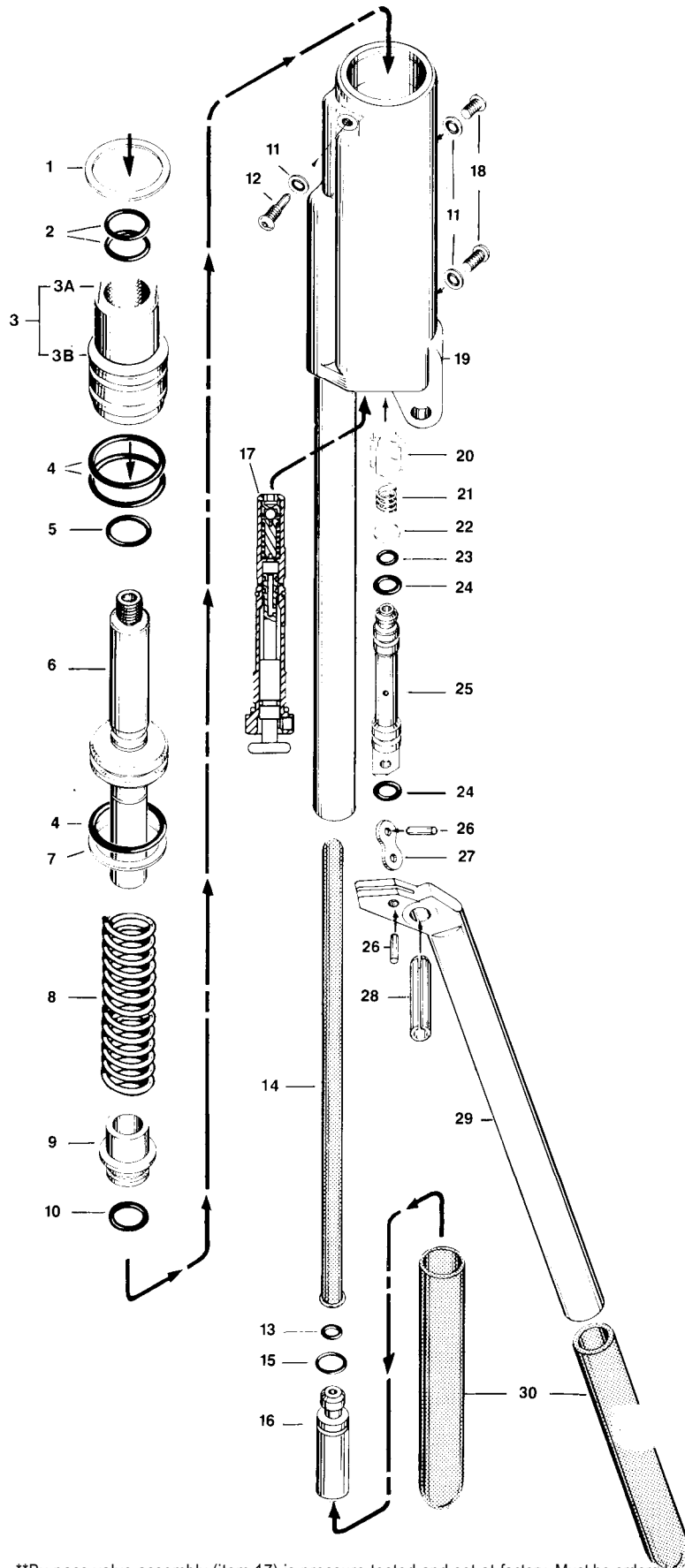
The G 749A riveter with the H749A-456 or H753A-456 pulling heads will install 1/8", 5/32" and 3/16" Wiredraw CherryMAX® 'A' rivets in all head styles and materials up to a -4 grip length. With the H781-456 pulling head it will install 1/8" and 5/32" Wiredraw CherryMAX® 'A' rivets in all head styles and materials up to a -4 grip lengths.

To install serrated stem MS-type rivets, use adapter 704A9 and a screw-on type serrated stem pulling head of the correct size.

PARTS LIST FOR G749A RIVETER

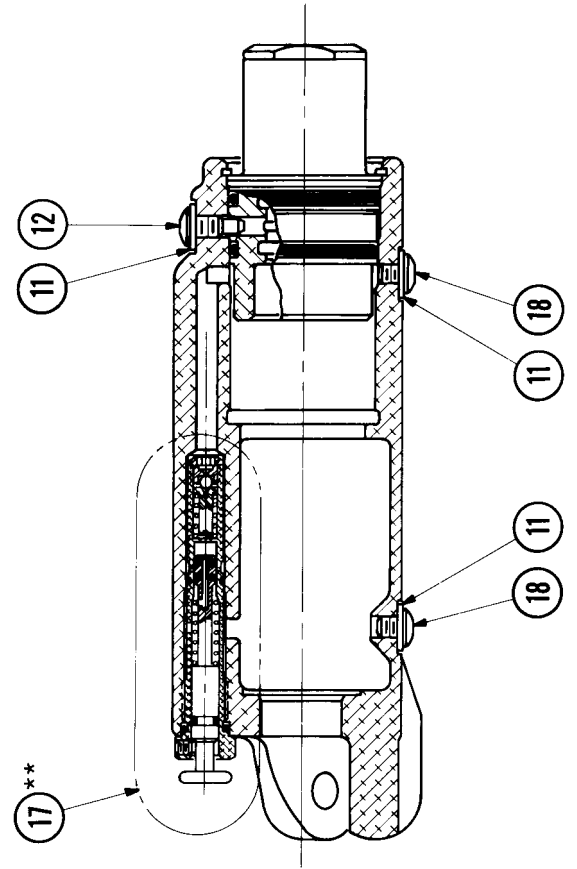
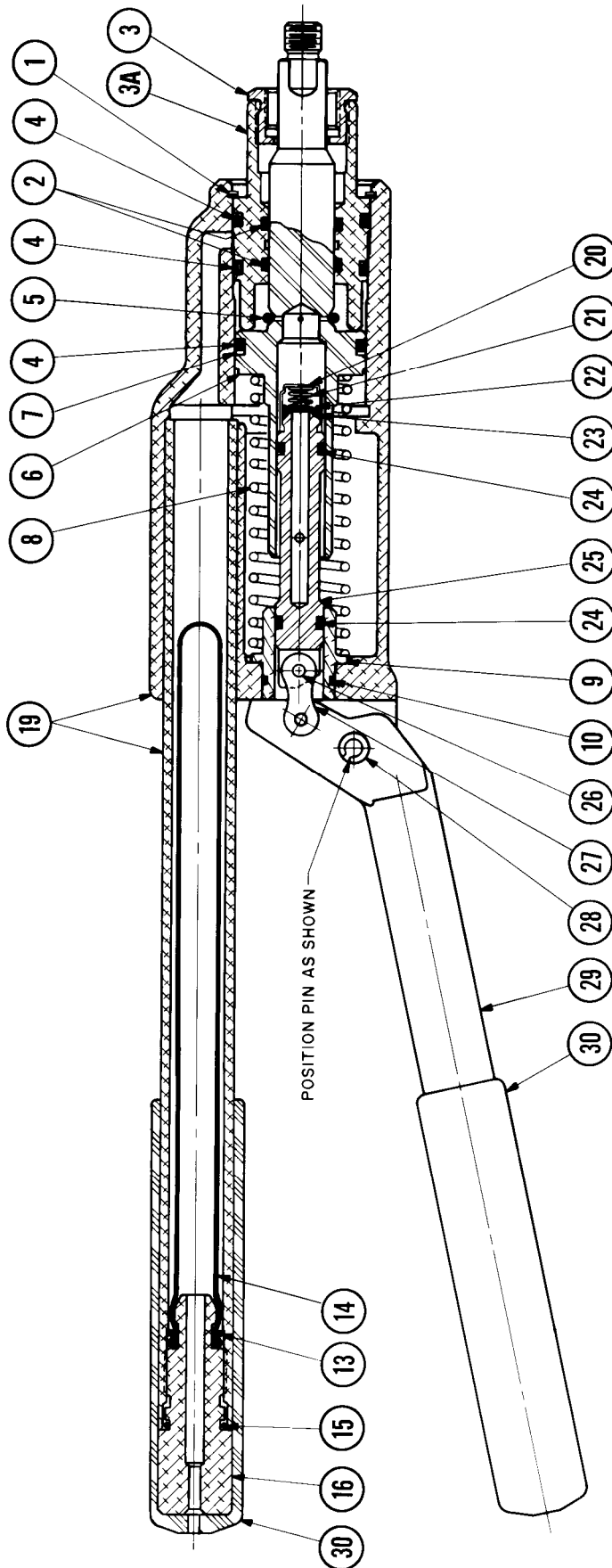
REF. NO.	PART NUMBER	DESCRIPTION	QTY REC
1	P307	Retaining Ring	1
2	P882	O-Ring	2
3	749C11	Eng Plug Assembly	1
*3A	704B2-2	Nose Fitting	1
*3B	749C11-1	End Plug	1
4	P877	O-Ring	3
5	P921	O-Ring	1
6	749C63	Drawbolt Piston	1
7	P878	Back-up Ring	1
8	755A9	Spring	1
9	745A7	Pump Bushing	1
10	P721	O-Ring	1
11	P572	Stat-O-Seal	3
12	745A12	Screw Lock	1
13	P383	O-Ring	1
14	745A5	Bladder	1
15	P701	O-Ring	1
16	745842	Vent Plug	1
17	745C51	Valve Sleeve Assembly	1
18	P573	Button Hd. Cap Screw	2
19	745C3A	Housing Subassembly	1
20	745A28	Spring Retainer	1
21	745M6	Spring	1
22	P977	Poppet Valve	1
23	P111	O-Ring	1
24	P1007	O-Ring	2
25	745815	Pump Piston	1
26	745A21	Link Pin	2
27	P954	Link Plate	1
28	P1138	Roll Pin	1
29	745C19	Pivot Handle	1
30	P1011	Handle Grip	2

*Use Loctite No. 271, or equivalent, when assembling items 3A and 3B, when ordered separately.



**By-pass valve assembly (item 17) is pressure tested and set at factory. Must be ordered as an assembly only.

G749A HAND RIVETER



An assortment of O-rings, seals, screws, washers and gaskets likely to need replacing in time, is available in kit form for each Cherry power riveter. To avoid unnecessary downtime, it is advisable to have these kits on hand for the tools to be serviced:

CHERRY TOOL	SERVICE KIT NUMBER
G749A	G749KS

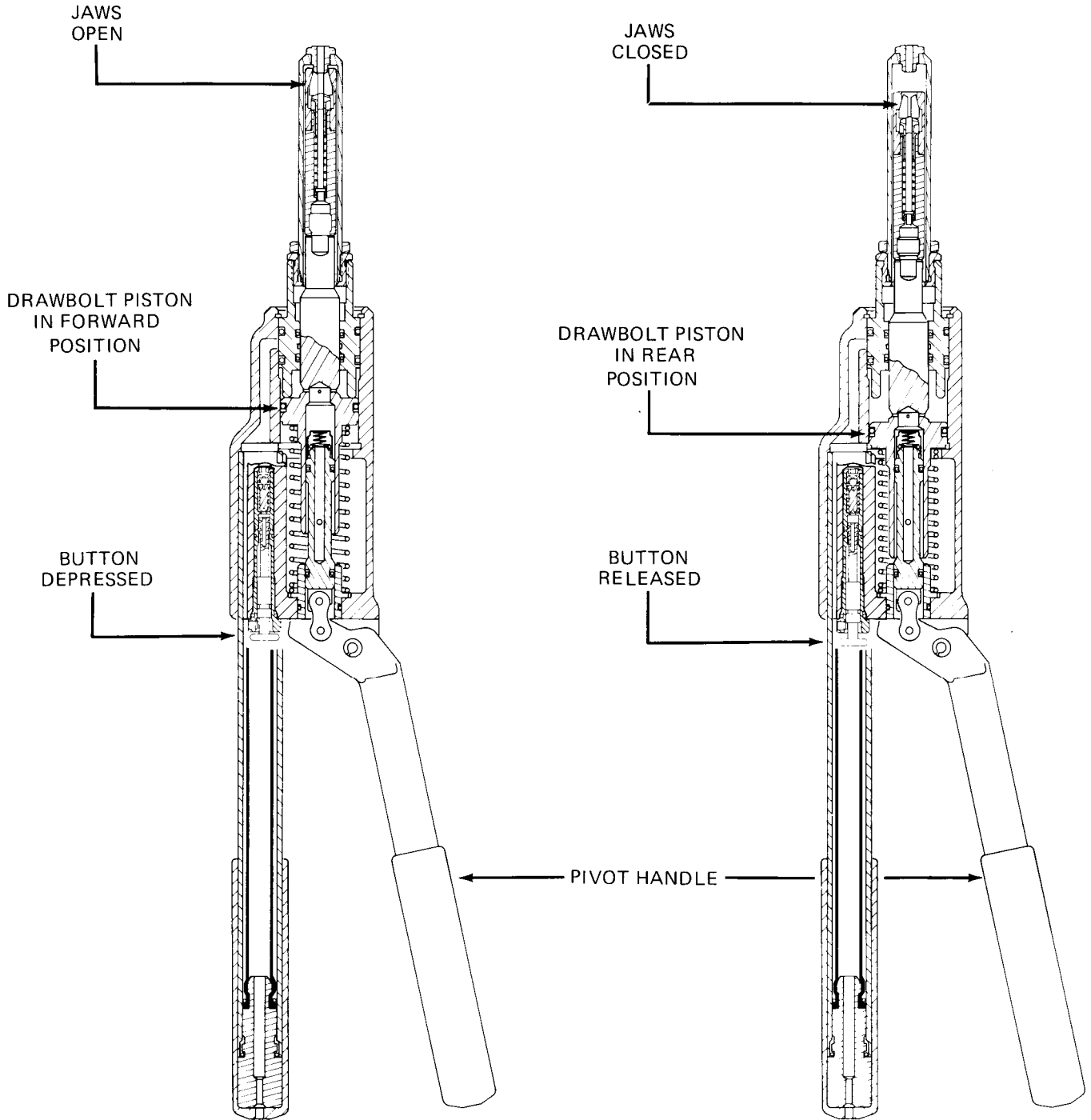
HOW THE G749A OPERATES

By-pass valve button is pressed, permitting a strong spring to push the drawbolt piston to its forward position. This opens the jaws in the pulling head to accept the rivet stem.

When pivot handle is "pumped" ATF (Automatic Transmission Fluid) is forced into the front of the housing cylinder. The pressure of the ATF fluid pushes the drawbolt piston back in a full .518" setting stroke. At

the end of the setting stroke, a pressure relief valve is opened allowing ATF fluid to move within the hydraulic system preventing a hydraulic locked condition and possible damage to the tool.

When the rivet is set, a touch of the by-pass valve button releases the hydraulic pressure, permitting the spring to return the drawbolt piston to its starting position, ready to install the next rivet. Tilt nose of tool down to permit spent stem to drop out.

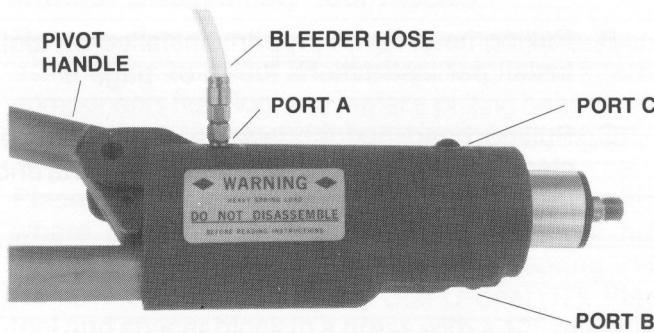


G749A HAND RIVETER

OPERATION

1. Press by-pass valve button.
2. Insert rivet stem into nosepiece.
3. Insert rivet into work with riveter nosepiece held firmly against head of rivet.
4. Pump pivot handle to set rivet. It may be necessary to repeat cycle if rivet is extra long.
5. When rivet is set, press the by-pass valve button to release hydraulic pressure. Tilt nose of tool down to permit spent stem to drop out.

HOW TO FILL RIVETER WITH FLUID



Air Bleeder 745A45 should be used for proper refilling
Fill unit transmission fluid type ATF 220 or equivalent

1. Remove two cap screws and Stat-O-Seals from ports A (rear) and B (front opposite side).
2. Attach 745A45 air bleed hose to port A (rear) and force fluid into tool. Fluid (and probably air bubbles) will come out of port B. When there are no more bubbles, replace cap screw and Stat-O-Seal in port B. Do not disconnect 745A45 air bleeder from port A.

3. Remove cap screw and Stat-O-Seal from port C (other front screw). With 745A45 air bleeder, force fluid into port A and out of port C, while at the same time actuating pump handle. When there are no more bubbles, replace screw and Stat-O-Seal in port C.

4. With both ports B and C now closed, force a little more fluid into tool to partially collapse reservoir bladder. Remove bleeder and quickly replace screw and Stat-O-Seal, retaining as much fluid as possible in tool.
5. If tool does not pull properly after cycling pump handle several times, repeat all steps.

Note: In forcing fluid into tool, be careful to prevent air from entering. Be sure bleeder hose fitting is tightened sufficiently in port A before proceeding.

MAINTENANCE AND REPAIR

The G 749A Hand Riveter has been manufactured to give maximum service with minimum care. Virtually all of the moving parts in this tool ride on O-rings, protected by backup rings where high pressure dictates. This means no metal to metal wear. By use of close tolerances and low micro-inch surfaces against which the O-rings seal, a long service life can be expected before any overhaul becomes necessary. In order to enhance the service life of the G-749A, the following recommendations should be followed:

1. The hydraulic system should be full and free from air at all times.
2. Do not pound on the rear of the tool head to force rivets into holes as this will damage the tool.
3. Make sure the pulling head is correctly and securely attached.

TROUBLESHOOTING

1. Drawbolt piston does not move when pivot handle is pumped.

- A. Drawbolt piston is at end of stroke. Press by-pass valve button.
- B. Air in hydraulic system. (See oil filling instructions.)
- C. O-rings in pump and drawbolt piston are worn. (See disassembly instructions.)

2. Hydraulic fluid leaks from tool.

- A. If ATF fluid is leaking around cap screws, tighten screws. If after cap screws have been tightened, leaks persist, replace Stat-O-Seal washers.
- B. If fluid leaks from handle grip, the bladder must be replaced. (See disassembly instructions.)
- C. If fluid leaks from pump bushing, O-rings in pump piston are worn and must be replaced. (See disassembly instructions.)

- D. If fluid leaks from end plug, the O-rings on drawbolt piston and in end plug are worn and must be replaced. (See disassembly instructions.)

3. Pulling head does not grip rivet stem.

If pulling head does not grip rivet stem, disassemble and clean pulling head components. Replace worn or damaged parts as required. Install per instructions on page 8.

4. Pulling head does not release stem.

- A. Drawbolt piston is not fully forward. Press by-pass valve button.
- B. Pulling head is not properly installed on tool. Install per instructions found on page 8.
- C. Pulling head needs cleaning. Disassemble, clean and replace worn or damaged parts and install per instructions on page 8.

OVERHAUL

WARNING: Do not disassemble tool before reading instructions thoroughly. Injury could result from heavy spring pressure on drawbolt piston and end plug. Approved eye protection should be worn.

NOTE: 749C64 Assembly/Disassembly tool is recommended for any repair on the G 749A riveter.

It should never be necessary to dismantle this rivet tool completely. However, if it develops a problem in one of the areas mentioned under Trouble Shooting, the tool may be disassembled by section utilizing the following instructions and the drawings on pages 4 and 5.

Before doing any disassembly—remove screws (31) and Stat-O-Seals (17). Drain transmission fluid from the riveter. During disassembly use care not to mar, nick or burr any smooth surface that comes in contact with O-rings.

1. Pivot Handle & Pump Piston

Carefully press out roll pin (41) in order to remove pump piston (38) and pivot handle (42) subassembly from housing (32). Drive out link pins (39) to remove link plate (40) from pump piston (38) and pivot handle (42).

Items 34, 35, 36 and 37 can be removed from pump piston (38) once spring retainer (33) is removed. Handle grip (43) slips off handle (42) if replacement is necessary.

To reassemble, reverse above procedure, being certain that all O-rings are lubricated with a good rubber lubricant. Install roll pin (41) as shown on page 5. To refill tool with ATF fluid, see refilling instructions for proper procedure.

2. By-pass Valve Assembly

Remove by-pass valve assembly (19-26) from housing (19) and check parts and O-rings for wear or damage and replace as necessary.

To remove valve actuator (26), first loosen valve sleeve (23) and remove from housing (32). Remove screw (19) to remove items 20, 21 and 26. Remove O-ring (22) from sleeve (23) and O-ring (25) from actuator (26).

Be sure to apply good rubber lubricant to all O-rings prior to reassembling. It is advised that No. 222 Loctite be applied to ball seat (31) and set screw (36) threaded components when reassembling. Allow 24 hour curing time for loctited components before assembling by-pass valve assembly (745651) into housing (19).

3A. End Plug and Drawbolt Piston Assembly without Disassembly Tool 749C63

Remove pivot handle, pump piston and by-pass valve assemblies from tool. Remove pulling head internal components from tool and replace pulling head sleeve, with nosepiece removed, back in nose fitting (3).

Place a spacer block ($7/16" \times 1\frac{1}{8}" \times 1/8"$) in position where pivot handle was mounted. This will help stabilize tool during compression of spring (14). Remove screw lock (18) and Stat-O-Seal (17). Place tool and spacer block in a press with a 12" minimum opening capacity. Press pulling head sleeve and end plug (3A) into tool enough to relieve pressure or to allow removal of retaining ring (1) and allow its removal.

WARNING: Spring (14) is compressed under very heavy pressure. Remove with care! Approved eye protection should be worn.

Carefully raise press anvil allowing pulling head sleeve, end plug and drawbolt piston. Assembly (2-14) will be forced from tool by 60 pounds pressure applied by spring (14). Remove tool from press and remove pulling head sleeve from nose fitting (3).

Remove end plug (3A) from drawbolt piston assembly (5-13). Remove drawbolt piston assembly from housing. Remove O-ring (5) and retaining ring (6) in order to remove spring (8) and valve stem (9). Remove retaining ring (13) in order to disassemble springs (8), valve actuating washer (11) and spring seat (12). Remove O-ring (4) and back-up ring (10). Spring (14) is also removed from housing at this time.

Carefully inspect all the components 1 through 15 for wear or damage and replace as required. To reassemble reverse above procedure being sure all O-rings are coated with a good rubber lubricant.

3B. End Plug and Drawbolt Piston Assembly. Disassembly Instructions Using Disassembly Tool 749C64.

Prior to any disassembly...remove screws (18) and Stat-O-Seals (11). Drain transmission Fluid from the riveter. During disassembly, use care not to mar, nick or burr any smooth surface that comes in contact with O-rings.

Attach 749B68 cap to nose fitting (3). Slide disassembly tool over riveter housing. Attach tool to riveter by installing hex soc. cap screw (P-1200) thru roll pin (28) and securing with wing nut (P-1199). Turn toggle screw (P-1201) through crossbar (745B67) until it tightens into cap 749B68. Turn toggle screw with $3/16"$ hex key (P-1187) clockwise until pressure has been relieved on retaining ring (1) allowing its removal.

<p>WARNING: Spring (8) is compressed under very heavy pressure. Remove with care! Approved eye protection should be worn.</p>
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Remove screw lock (12) and Stat-O-Seal (11). Carefully turn $3/16"$ hex key (P-1187) counter-clockwise allowing end plug and drawbolt piston assembly (2-7) to be forced from tool by 60 pounds spring (8) pressure. Remove disassembly tool from riveter.

Remove end plug (3A) from drawbolt piston assembly (4-7). Remove drawbolt piston from housing. Remove O-ring (5). Remove O-ring (4) and back-up ring (7). Spring (8) is also removed from housing at this time.

Carefully inspect all parts (1 thru 10) for wear or damage and replace as required. To reassemble reverse above procedure being sure all O-rings are coated with a good rubber lubricant.

4. Bladder Assembly

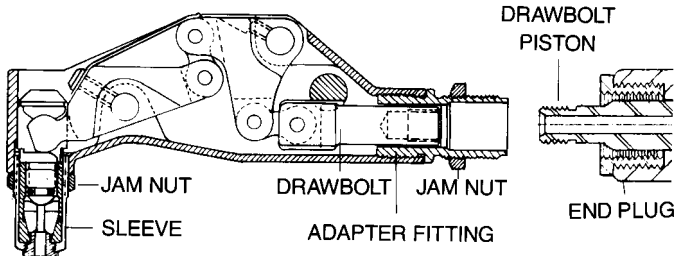
Remove handle grip (43) on stationary handle. Remove retaining ring (30). Thread on 8-32 bolt into vent plub (29) and extract bladder assembly. Check components 27 through 30 for damage and replace as necessary. To reassemble, reverse procedure being sure all O-rings are coated with a good rubber lubricant.

INSTALLING PULLING HEADS

H749A-456 PULLING HEAD

1. Screw collet and collet bolt assembly onto end of drawbolt piston. Tighten securely, using wrenches on the flats provided.
2. Thread sleeve into end plug until it bottoms. Tighten jam nut securely.

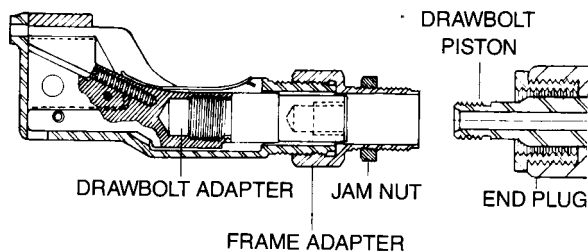
H753A-456 PULLING HEAD



- adapter fitting seats on piston, resistance to turning will become greater. Continue turning until adapter fitting seats in end plug. Rotate pulling head to position it is to be used and tighten jam nut securely.
2. After attaching the H753A-456 to the riveter, adjust sleeve by loosening jam nut. Insert largest diameter CherryMAX to be installed into sleeve and rotate sleeve until the jaws start to grab the rivet stem. Tighten the jam nut securely. By this sleeve adjustment, the stem can be made to release or to stay in the head after installation.

1. Thread drawbolt onto end of drawbolt piston one or two turns, then insert adapter fitting into end plug. As the pulling head is threaded onto the riveter and

H781-456 PULLING HEAD*



- As the pulling head is threaded onto the riveter and drawbolt adapter seats on piston, resistance to turning will become greater.
2. Continue turning until frame adapter seats in end plug. Rotate pulling head to position it is to be used and tighten jam nut securely.

1. Thread drawbolt adapter clockwise onto end of drawbolt piston one or two turns, then insert frame adapter into end plug.

*H781-456 replaces H763-456

WARRANTY

Seller warrants the goods conform to applicable specifications and drawings and will be manufactured and inspected according to generally accepted practices of companies manufacturing industrial or aerospace fasteners. In the event of any breach of the foregoing warranty, Buyer's sole remedy shall be to return defective goods (after receiving authorization from Seller) for replacement or refund of the purchase price, at the Seller's option. Seller agrees to any freight costs in connection with the return of any defective goods, but any costs relating to removal of the defective or nonconforming goods or installation of replacement goods shall be Buyer's responsibility. SELLER'S WARRANTY DOES NOT APPLY WHEN ANY PHYSICAL OR CHEMICAL CHANGE IN THE FORM OF THE PRODUCT IS MADE BY BUYER.

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