

# G740A

PNEUMO-HYDRAULIC RIVETER

# MANUAL



**CHERRY**<sup>®</sup>  
AEROSPACE



# THE G740A TOOL

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## DESCRIPTION

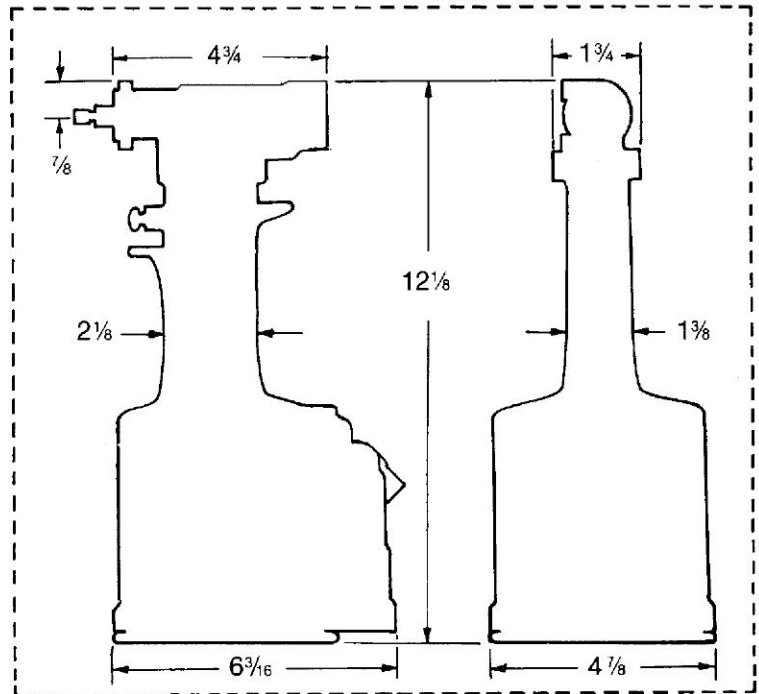
The Cherry® G740A pneumatic-hydraulic rivet installation tool is a production tool designed for high productivity, reliable installation of the most popular sizes of aircraft rivets.

This tool can also be used to install many different blind rivets. See the section on "Pulling Heads" for correct pulling head part number.

## SPECIFICATIONS FOR G740A

Cherry® Aerospace (CHERRY®) policy is one of continuous development. Specifications shown in this document may be subject to change which may be introduced after publication. For the latest information always consult CHERRY®.

AIR PRESSURE	90 psi (6.2 bar) Min. / 110 psi (7.6 bar) Max.
STROKE	1 1/4 inch (31,76 mm)
PULLING FORCE	2320 lbs. (10,3 kN) @ 90 psi,
WEIGHT	les than 6.5 lbs. (<2.94 kg)
NOISE LEVEL	less than 85 dB (A)
VIBRATION	less than 2.5 m/s <sup>2</sup>
AIR CONSUMPTION	0.32 SCF/cycle (9.06 L/cycle)



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## **SAFETY WARNINGS**

- Operating this tool with a damaged or missing stem deflector, or using the deflector as a handle, may result in severe personal injury. The pin deflector should be rotated until the aperture is facing away from the operator and other persons working in the vicinity.
- Approved eye protection should be worn when operating, repairing, or overhauling this tool.
- Do not use beyond the design intent.
- Do not use substitute components for repair.
- Any modification to the tool, pulling heads, accessories or any component supplied by CHERRY®, or their representatives, shall be the customer's entire responsibility. CHERRY® will be pleased to advise on any proposed modification.
- The tool must be maintained in a safe working condition at all times and examined at regular intervals for damage.
- Before disassembling the tool for repair, refer to the Maintenance and Repair instructions. All repairs shall be undertaken only by personnel trained in CHERRY® installation tools. Contact CHERRY® with your training requirement.
- Always disconnect the air line from the tool inlet before attempting to service, adjust, fit or remove any accessory.
- Do not operate the tool when it is directed at any person.
- Ensure that the vent holes do not become blocked or covered and that air line hoses are always in good condition.
- Excessive contact with the transmission fluid should be avoided to minimize the possibility of rashes. Care should be taken to wash thoroughly.
- Operating air pressure should not exceed 110 psi (7.6 bar).
- Do not operate the tool without pulling head correctly and securely attached.
- Do not operate the tool unless the handle base (22) is fully secured by retaining ring (23) and the base cover (24) is held in place by retaining ring (25).
- All retaining rings, screwed end caps, air fittings, trigger valves and pulling heads should be attached securely and examined at the end of each working shift.
- Do not pull rivet in the air.
- The precautions to be used when using this tool must be explained by the customer to all operators. Any question regarding the correct operation of the tool and operator safety should be directed to CHERRY®.
- Do not pound on the rear of the tool head to force rivets into holes as this will damage the tool.
- Do not depress the trigger while disconnecting the air bleeder and replacing the cap screw when bleeding the tool.

## **HOW TO USE THE G740A**

After selecting the proper pulling head and attaching it securely to the G740A, connect the air line to the tool. Insert the blind rivet stem into the proper pulling head until the head of the rivet is in contact with the pulling head nosepiece. This will ensure full engagement between the jaws and the rivet stem and will prevent slippage.

Insert the rivet into the application and pull the trigger to activate the tool. Upon release of the trigger, the stem will eject. When using an offset pulling head, the stem will eject through the rear of the pulling head or through the front. When using a right angle pulling head, the stem will eject out the front.

See pulling head installation instructions.

### REMOVAL OF COLLET FROM HEAD PISTON

At times it may become necessary to hold the head piston from turning while removing a collet.

# PULLING HEADS

Note: Pulling heads are not furnished with these tools but must be ordered separately.

In ordering heads be sure to specify the shank diameter and head style (universal or countersunk) of the rivets to be installed.

The following pulling heads will fit directly on the G-740A Riveter:

H40 Series.....for installing 100, 200, 300 and 500 Series Knob Stem Cherry Rivets.

H90 Series.....for 600, 700 and 800 Series High-Clinch Cherry Rivets.

H640 Series.....for 2000 Series Locked Spindle, Flush Fracturing Cherrylock Rivets.

H9040 Series.....for 9000 Series Serrated Stem Cherry Rivets.

In addition, the smaller screw-on pulling heads will fit the G-740A by using a 226 adapter.

## TOOL CAPACITY CHART

The numbers shown in the rivet columns below are the maximum grip length that can be installed with this tool.

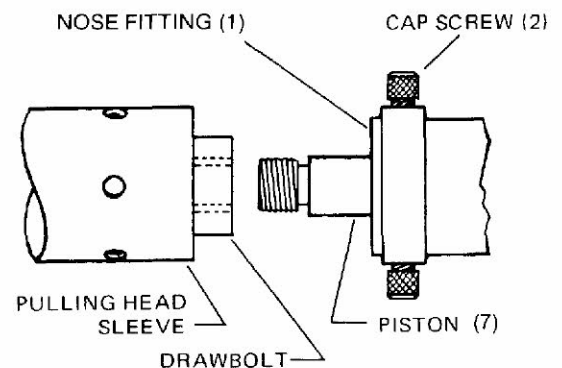
Dashes indicate sizes which cannot be installed in any grip length.

CHERRY RIVETER MODEL	STANDARD CHERRYLOCKS (NAS 1398 & 1399)								BULBED CHERRYLOCKS (NAS 1738 & 1739)												
	PULLING HEAD	RIVET DIAMETER	ALUMINUM		MONEL		ST. STEEL		PULLING HEAD	RIVET DIAMETER	ALUMINUM		MONEL								
			2163	2162	2563	2562	2643	2642			2239	2238	2539	2538							
			2263	2262			2653	2652			2663	2662			2249	2248					
UNIV. HEAD	CTSK. HEAD	UNIV. HEAD	CTSK. HEAD	UNIV. HEAD	CTSK. HEAD	UNIV. HEAD	CTSK. HEAD	UNIV. HEAD	CTSK. HEAD	UNIV. HEAD	CTSK. HEAD										
H640	—4	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL							
	—5	12	13	12	13	12	13	12	13	12	13	12	13	12							
	—6	12	13	12	13	12	13	12	13	12	13	12	13	12							
	—8	12	13	12	13	-	-	-	-	-	-	-	-	-							
G-740A	MS STYLE CHERRY RIVETS (MS 20600 SERIES)										HIGH CLINCH CHERRY RIVETS										
	KNOB STEM PULLING HEAD	SERRATED STEM PULLING HEAD	RIVET DIAMETER	SELF-PLUGGING						PULL-THROUGH				PULLING HEAD	RIVET DIAMETER	ST. STEEL		ALUM.	MONEL		
				ALUM.		STEEL		MONEL		ALUM.		STEEL				6634 6636	6624 6626	757 763	756 762	863	862
				157 163 9157 9163	156 162 9156 9162	363	362	563 9563	562 9562	117 127 9117 9127	116 126 9116 9126	317 517 9517	316 516 9516								
	UNIV. HEAD	CTSK. HEAD	UNIV. HEAD	CTSK. HEAD	UNIV. HEAD	CTSK. HEAD	UNIV. HEAD	CTSK. HEAD	UNIV. HEAD	CTSK. HEAD	UNIV. HEAD	CTSK. HEAD	UNIV. HEAD	CTSK. HEAD	UNIV. HEAD	CTSK. HEAD					
	H40	H9040	—4	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL			
			—5	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL			
			—6	20	22	20	22	20	22	28	30	28	30	H90	—6	-	-	24	26	24	26
			—8	16	20	16	20	16	20	22	26	22	26	—8	-	-	16	18	16	18	

\* Rivet diameters shown apply to either knob or serrated stem rivets. Grip lengths shown apply only to knob stem since all lengths of serrated stem rivets can be installed by cycling tool as many times as necessary.

## INSTALLING PULLING HEADS ON RIVETER

- Engage threads of pulling head drawbolt with end of piston (7) and turn pulling head clockwise until the threads bottom out. Make sure there is no gap left between the end of the drawbolt and the shoulder on the piston as this will shorten the available stroke.
- Slide outer sleeve of pulling head into end of nose fitting (1) and align holes to accept cap screws (2).
- Tighten cap screws snugly, making sure the pulling head sleeve is properly engaged.



## MAINTENANCE AND REPAIR

The G-740A Riveter has been manufactured to give maximum service with minimum care. In order that this may be accomplished, the following recommendations should be followed.

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

Use automatic transmission fluid (ATF ) type "A" (no substitutes). Cherry® Aerospace recommends using, Dexron® III ATF.

### DEXRON III OIL SAFETY DATA

#### FIRST AID

*Skin:* Wash thoroughly with soap and water as soon as possible. Casual contact requires no immediate attention. If irritation develops, consult a physician.

*Ingestion:* Seek medical attention immediately. DO NOT INDUCE VOMITING.

*Eyes:* Flush with copious amounts of water. If irritation develops, consult a physician.

*Inhalation:* No significant adverse health effects are expected to occur on short term exposure. Remove from contaminated area. Apply artificial respiration if needed. If unconscious, consult physician.

#### FIRE

*Suitable extinguishing media:* CO<sub>2</sub>, dry powder, foam or water fog. DO NOT use water jets.

#### ENVIRONMENT

*Waste Disposal:* In accordance with local, state and federal regulations.

*Spillage:* Prevent entry into drains, sewers and water courses. Soak up with diatomaceous earth or other inert material. Store in appropriate container for disposal.

#### HANDLING

Eye protection required. Protective gloves recommended. Chemically resistant boots and apron recommended. Use in well ventilated area.

#### COMBUSTIBILITY

Slightly combustible when heated above flash point. Will release flammable vapor which can burn in open or be explosive in confined spaces if exposed to source of ignition.

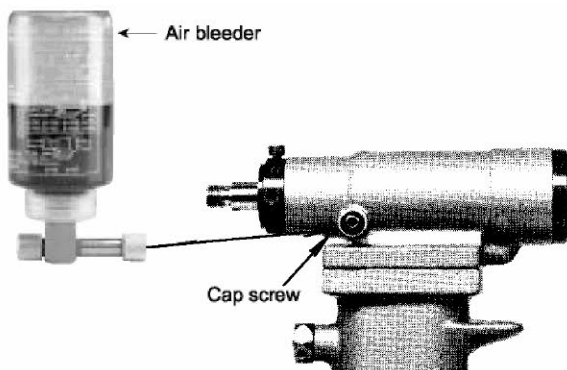
#### STORAGE

Avoid storage near open flame or other sources of ignition

#### PROPERTIES

<i>Specific gravity</i>	0.863
<i>Weight per gallon</i>	7.18 lbs.
<i>Open flash point</i>	200°C (392°F)

## TO FILL RIVETER WITH OIL (see parts list)



To replace a small amount of oil in the tool, connect tool to air line, remove cap screw (4), being sure NOT to cycle tool. Attach Cherry air bleeder 700A77 and cycle a number of times. This will insure the removal of any air from the hydraulic system and its replacement with fluid.

Should it become necessary to completely refill the tool (such as would be required after tool has been dismantled and reassembled), take the following steps:

1. Remove head assembly from handle assembly.
2. Fill handle assembly with automatic transmission fluid, Dexron III or equivalent, to within 1/8" of the top of the handle casting.
3. Replace head assembly, being sure gasket (27) and O-ring (26) are properly in place. Tighten cap screws (30) uniformly to prevent leakage around gasket.
4. Connect tool to air line and cycle ten times to fully circulate fluid through the hydraulic system.
5. With tool connected to air line, remove cap screw (4), being sure NOT to cycle tool.
6. Attach Cherry air bleeder, 700A77, and purge system of air by cycling the tool until it is free of air bubbles.

## TROUBLESHOOTING

1. Check air line for correct pressure at the tool. **It must be 90 to 110 psi.**
2. Check tool for lack of hydraulic fluid ( see oil filling instructions above).
3. Check for oil leakage.
  - a. Oil leaking around the cap screw (4) in the head indicates that the screw is loose or the washer gasket (5) needs replacing.
  - b. If oil should leak through the by-pass hole at the base of the handle (31) the O-Rings (13) are worn or damaged.
  - c. Oil leaking from the front of the nose fitting (1) indicates that O-Rings (3) are worn or damaged.
  - d. If head is taken apart for repair check all O-Rings and carefully clean all parts before reassembling. Be sure to make any replacements with the exact O-Rings shown in the parts list to insure that the correct material and hardness is used.
4. Check valve for air leakage. If air is escaping, remove retaining ring (50) and muffler (49). Insert a 5/16-18 threaded rod or bolt into end of valve plug (48) and pull it out. Using the same procedure pull out spool (46). Replace O-Rings (45 & 47) and reassemble.
5. Check movement of piston (7). If it does not move freely or is slow in operation:
  - a. O-Rings (8) or (9) may be damaged and require replacement.
  - b. Piston (7) may be mechanically locked due to damaged parts.
  - c. Power piston may be held off its seat on rod (38) allowing oil to by-pass. Drain tool, flush thoroughly and refill with fresh oil.
  - d. Muffler (49) or air filter inside spool (46) may be plugged with dirt. Clean them thoroughly with normal solvent and back-blow with compressed air.

### NOTE:

**We recommend the purchase of a G-740KS Service Kit which contains various gaskets, O-Rings, washers and similar parts likely to need replacing in time.**

**Note: It should never be necessary to remove the valve sleeve (43) unless the air supply has become so badly contaminated that the ports in the sleeve are plugged up. If this unlikelihood should occur, carefully remove spring (44) from its groove, using extreme caution not to distort the coils of the spring. Remove sleeve (43), clean thoroughly, replace O-Rings (42) and reassemble, making sure that spring (44) is seated in its groove correctly, otherwise valve will not function.**

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## PARTS LIST FOR G740A

REF NO.	PART No.	DESCRIPTION	QTY.
1	740B36	Nose Fitting	1
2	P258	Soc. Hd. Cap Screw, 8-32 x 1/4	2
3	P945	O-Ring (No Subs.)	2
4	P573	Soc. Hd. Cap Screw, 10-32 x 1/4	1
5	P572	Stat-O-Seal, 600-001-10	1
6	740D34	Head Cylinder	1
7	740A32	Head Piston	1
8	P107	O-Ring, 1/8 x 13/16 x 1-1/16	1
9	P108	Back-up Ring, MS28782-16	1
10	P946	O-Ring, 3/32 x 7/8 x 1-1/16	1
11	P244	O-Ring, 1/16 x 15/16 x 1-1/16	1
12	740B37	Head Cap	1
13	P838	O-Ring (No Subs.)	2
14	P115	Back-Up Ring, MS28782-8	2
15	P889	O-Ring, 3/32 x 1-5/16 x 1-1/2	1
16	740B13	Packing Plug	1
17	P909	Back-Up Ring, MS28782-47	2
18	P887	Quad Ring, 04344, 3/16 x 3-7/8 x 4-1/4	1
19	740B6	Air Piston	1
20	P737	Conelok Nut, 1/4-20	1
21	P890	O-Ring, 3/32 x 4 x 4-3/16	1
22	740C4	Handle Base	1
23	P886	Retaining Ring, Spir-O-Lox RRT-425	1
24	740B5	Base Cover	1
25	P884	Retaining Ring, Spir-O-Lox RS-337	1
26	P832	O-Ring (No Subs.)	1
27	700A22	Gasket	1
28	703A33	Trigger Assembly (Includes P223)	1
29	P223	O-Ring, 1/16 x 5/32 x 9/32	1
30	P71	Soc. Hd. Cap Screw, 10-32 x 1/2	4
31	743A11	Handle	1
32	P885	Retaining Ring, Spir-O-Lox RR78	1
33	74007	Power Cylinder	1
34	P833	O-Ring (No Subs.)	1
35	P892	O-Ring (No Subs.)	1
36	P908	Back-Up Ring, MS28782-11	1
37	P508	O-Ring, 3/32 x 9/16 x 3/4	1
38	740A8	Power Piston & Rod (Includes P908 and P508)	1
39	530A35	Swivel Bolt	1
40	P195	O-Ring, 3/32 x 7/16 x 5/8	2
41	530A34	Swivel	1
42	P654	O-Ring, 1/16 x 3/4 x 7/8	4
43	740B14	Valve Sleeve	1
44	740A18	Spring	1
45	P891	O-Ring (No Subs.)	3
46	740A15	Valve Spool	1
47	P848	O-Ring, 1/16 x 13/16 x 15/16	2
48	740B16	Valve Plug	1
49	740A17	Muffler	1
50	P321	Retaining Ring, Spir-O-Lox RR110	1

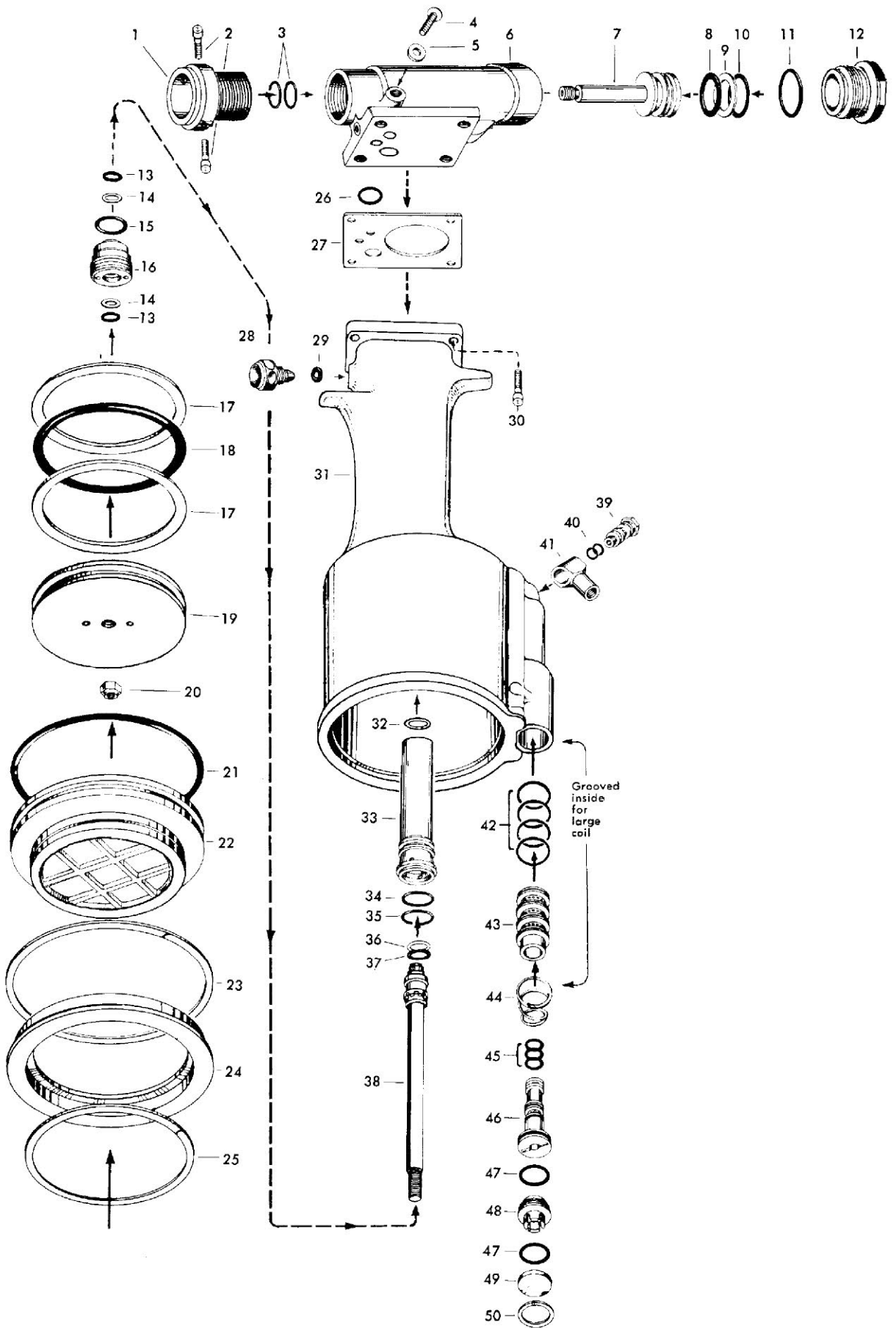
NOTES: Complete Head Assembly, (items 1 through 12) may be ordered as Part No. 740838.  
Head Sub-assembly (items 1, 6, 11 & 12) may be ordered as Part No. 740839-to convert 740 Riveter to a G-740A.  
Use Loctite® #242 or equivalent - when assembling Items 1 & 6.

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# EXPLODED VIEW OF G740A





## 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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