

ORIGINAL INSTRUCTIONS

G746A

CherryMAX® Power Riveter
N S N 5130-01-338-3403



Instruction Manual CE

Pass on to user to read and keep for reference

MANUAL



CHERRY®
AEROSPACE

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THE G746A TOOL

TABLE OF CONTENTS

Description	2
Specifications	2
Safety Warnings	3
Riveter usage	4
Maintenance and Repair	4
Fill and Bleed Instructions	5
Trouble Shooting	5
Overhaul	6
Air Valve	6
Head Sub-Assembly	6
Handle Sub-Assembly	7
G746A Pulling Heads	7
Cross Section Drawing	8
Parts List	9
Exploded View	10
Declaration of Conformity	Back Cover

DESCRIPTION

The Cherry G746A is a pneumatic-hydraulic tool designed specifically for the most efficient installation of CherryMAX® Bulb, CherryMAX® "A" wiredraw, and CherryLOCK® "A" wiredraw rivets. This riveter utilizes the straight, offset and right-angle pulling heads. Refer to the pulling head section for the correct pulling head part number for the rivet to be installed.

The G746A has a durable metal housing that makes this tool extremely robust for use in a shop environment.

SPECIFICATIONS FOR G746A

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	.875 inch (22.23 mm)
PULLING FORCE	1850 Pounds (8.23 kN) @ 90 PSI (6.2 bar)
CYCLE TIME	Approximately one second
WEIGHT	4 1/4 Pounds (1.93 kg)
NOISE LEVEL	72 dB (A)
VIBRATION	2.5 m/s ²
AIR CONSUMPTION	3.9 CFM (110.5 liters/M) at 20 Cycles per Minute



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 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 hydraulic oil 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 the pulling head correctly and securely attached.
- Do not operate the tool unless the handle base (45) is fully secured by the retaining ring.
- 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 questions 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.

HOW TO USE THE RIVETER

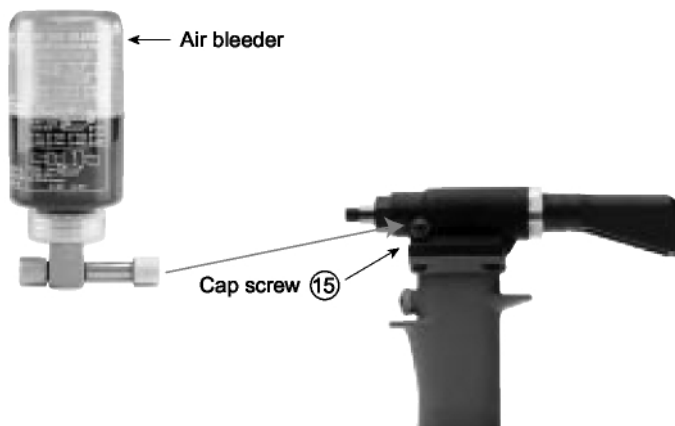
After selecting the proper pulling head and attaching it securely to the riveter, connect the tool to an air line. Recommended air pressure is between 90 and 110 psi. Insert the rivet stem into the pulling head until the head of the rivet is in contact with the nosepiece. This will ensure full engagement between the jaws and the rivet stem and preventing slippage.

Insert the rivet into the application and depress the trigger to activate the tool. Upon the release of the trigger, the stem will eject to the rear of the tool when straight, pulling heads with no side eject feature are used. Other pulling heads (offset, right angle) will either captivate the stem or allow stem removal through the front only. See the appropriate tooling sheet for the selected pulling head.

If unclear, contact a CHERRY® representative.

MAINTENANCE AND REPAIR

The G746A 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 oil and free from air at all times.
2. Keep excessive moisture and dirt out of air supply to prevent wear of air valve, air cylinder and air piston.
3. Tool should be routinely inspected for oil leaks.

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

PROPERTIES OF DEXRON III ATF

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

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

Use only suitable extinguishing media like CO₂, 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 spent fluid in an appropriate container for disposal.

HANDLING

Eye protection required. It is recommended to wear protective gloves and chemically resistant boots and apron while working with the fluid.
Use in well ventilated area.

COMBUSTIBILITY

It is slightly combustible when heated above flash point. It 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.

FILL AND BLEED INSTRUCTIONS

To replace a small amount of oil in the tool, connect the tool to the air line, remove cap screw (15). (CAUTION: Do not depress trigger without cap screw or air bleeder attached.) Attach the Cherry air bleeder (700A77), and slowly cycle tool several times. This will ensure 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 the tool has been dismantled and reassembled), take the following steps:

1. After removing the head assembly, fill handle assembly (18) with the recommended oil to within 1/8" (3 mm) of the top of the handle casting.
2. Replace head assembly, being sure gasket (51) and O-ring (50) are properly in place. Tighten cap screws (49) uniformly to prevent leakage around gasket.
3. Remove cap screw (15) then attach Cherry Air Bleeder (700A77). Bleeder (700A77) should not be filled past safety line on bottle.
4. Connect tool to air line, purge system of air by cycling ten times slowly or until bottle is free of air bubbles to fully circulate fluid through the hydraulic system.

DO NOT depress trigger while disconnecting the Air Bleeder and replacing the cap screw (15).

TROUBLESHOOTING

1. Check the airline for correct pressure at the tool. It must be 90 to 110 PSI (6.2 to 7.6 bar).
2. Check for oil leakage:
 - Oil leaking around the cap screw (15) in the head indicates that the screw is loose or the washer gasket (14) needs replacing.
 - If oil should leak through the by-pass hole at the base of the handle (18) the O-rings (30) are worn or damaged.
 - Oil leaking from the front of the head (1) indicates that O-rings (2) are worn or damaged.
3. Check for excessive air leakage from the air valve:
 - If spring (20) is broken or dislodged, air will bleed directly through the bottom of the air valve and the head piston retreats to its full stroke without returning. See "Air Valve Instructions".
 - If the O-ring (25) on plug (26) is worn or damaged, replace. If O-rings (21) on valve spool (22) are worn or damaged, replace.
4. Check movement of the head piston (4). If it does not move freely or is slow in operation:
 - O-rings (56), (7), (8) and (9) may be damaged and require replacement.
 - Head piston (4) may be mechanically locked due to damaged parts.
 - Muffler (27) or air filter (23) inside valve spool (22) may be plugged with dirt. Clean them thoroughly with normal solvent and back-blow with compressed air.
 - Hole in metering screw (24) in valve spool (22) may be blocked or damaged. Hole diameter should be .028" (0,7 mm). Clear and size or replace valve spool assembly (54). Metering screw (24) and filter (23) are not sold separately.
5. If the rivet stem stick inside the pulling head, or stems slip during installation, the pulling head needs maintenance. Please refer to the Tool Sheet of the pulling head for details.

OVERHAUL

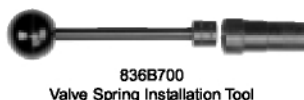
CAUTION: Always disconnect the air supply before any overhaul or maintenance. The disassembly and reassembly procedures can be accomplished by following the instructions below and the drawings on pages 9 & 10. **Use extreme care during disassembly and reassembly not to mar, nick or burr any smooth surface that comes in contact with O-rings.** Before installing O-rings, be sure to apply an O-ring lubricant. It is recommended that special assembly tools, which can be ordered under part number **G701/G704KT**, be used to overhaul this tool.

Service kit, **G746KS**, which contains a complete set of O-rings, back-up rings, screws, washers and gaskets should be ordered.

Not shown, but included:

- 701A67 Seal Guide
- 702B62 Power Cylinder Tool,
- 703A53 Seal Guide
- 702A64 Seal Guide

G701/G704KT TOOL KIT



836B700
Valve Spring Installation Tool



837B700
Valve Sleeve Removal Tool



700A62
Power Cylinder Tool



700A61
Piston Rod Wrench



700B65
Packing Plug Wrench



P1178
Valve Plug Extractor



700A60
Seal Guide



700A77
Air Bleeder

AIR VALVE

- Disconnect tool from air supply. Remove retaining ring (28) and muffler (27). Insert a valve plug extractor (P-1178) into end of valve plug (26) and pull it out. Using the same procedures, pull out spool assembly (54).
- Use needle nose pliers to grasp the end of the spring (20), turn clockwise and pull out to dislodge from groove in handle.
- With spring removed, valve sleeve (19) can be pulled out using the valve sleeve removal tool (837B700).

To re-assemble, reverse the above procedures being certain that all O-rings are properly lubricated. To avoid damaging the O-rings (56), carefully install sleeve (19) with your finger. Gently push and wiggle sleeve to allow O-rings to slip past inner ports. Spring (20) is best installed using a valve spring installation tool (836B700) to push the large diameter coil into the groove. This requires care as the tool will not operate if the spring is not anchored firmly.

HEAD SUB-ASSEMBLY

- Disconnect air supply and remove the complete pulling head from the tool before attempting to disassemble the head assembly.
- Remove the four socket head cap screws (49). Lift head assembly from the handle (18). Remove O-ring (50) and gasket (51). Empty the oil into a container by pouring from the handle. Dispose of the oil according to environmental regulations.
- Remove end cap (10). Push against threaded end of head piston (4) and slide it out of head body (1). Be careful not to damage threads or cause burrs on polished head piston rod surface.
- O-rings (2) and back-up rings (3) can now be removed using a bent hook. O-ring (8) can be removed in the same manner.
- Upon re-assembly, be sure to install O-rings and back-up rings carefully to avoid cutting them. Always lubricate all O-rings. Just prior to placing the head sub-assembly on to the handle, see Fill and Bleed Instructions. Also make sure to place O-ring (50) and the gasket (51) on the top of the handle, and that they are properly oriented.
- Tighten the four socket-head cap screws (49) uniformly to prevent leakage around the gasket.
- Purge system of air using Cherry air bleeder (700A77) according to the "Fill and Bleed Instructions".

HANDLE SUB-ASSEMBLY

- Disconnect tool from air supply.
- Holding tool upright, remove four socket-head cap screws (49). Lift head assembly from handle (18) and set aside O-ring (50) and gasket (51). Empty all oil into a container by pouring from handle.
- Remove parts (44) through (48).
- Place piston rod wrench (700A61) down into the top of the handle (18), into the hex socket in the head of the power piston rod (33). While holding this wrench remove the locknut (43) using the 7/16" socket in packing plug wrench (700B65).
- Still holding the piston wrench, remove the air piston (41) using the packing plug wrench (700B65) by turning counterclockwise. When air piston is completely freed from the piston rod, tap or push on the piston rod wrench ejecting the piston from bottom of handle.
- Slide power piston rod (33) back up to the end of its travel. Using the packing plug wrench (700B65), remove packing plug (35). It may be necessary to hold the handle upside down in a vise while removing the packing plug.
- Power cylinder (29) can be tapped out by lowering power cylinder tool (700A62) down into the top of the handle onto top of cylinder. The O-rings (36) and back-up rings (37) are best removed and replaced by using a thin bent hook.

To re-assemble the handle, reverse the above procedure, being certain that all the O-rings are properly lubricated before installation. Attach the seal guide (700A60) to the piston rod (33) and with a mallet, tap the piston rod through the packing plug (35). When re-assembling a replacement air piston, items (38) through (42), follow the instructions given below:

- Clamp piston rod wrench (700A61) in a vise with the hex shaft pointed up.
- Turn the handle upside down and place the hex end of the piston rod (33) onto the wrench (700A61). Push handle casting down until it stops.
- Assemble seal (39) and back-up rings (38) to air piston (41).
- Place small washer (40) over the threaded end of the piston rod (33) so the counterbore side will face the air piston.
- Place the air piston (41) into the handle bore. IMPORTANT: Be sure that the radial pattern embossed on the side of air piston is facing downwards towards the small washer (40) and the smooth side of the air piston facing you.
- Place the large washer (42) over the threaded shaft with the counterbore side toward the air piston. Thread the locknut (43) onto the piston rod and tighten at 50 in.-lb and 59 in.-lb (5.65 N-m to 6.67 N-m) of torque.

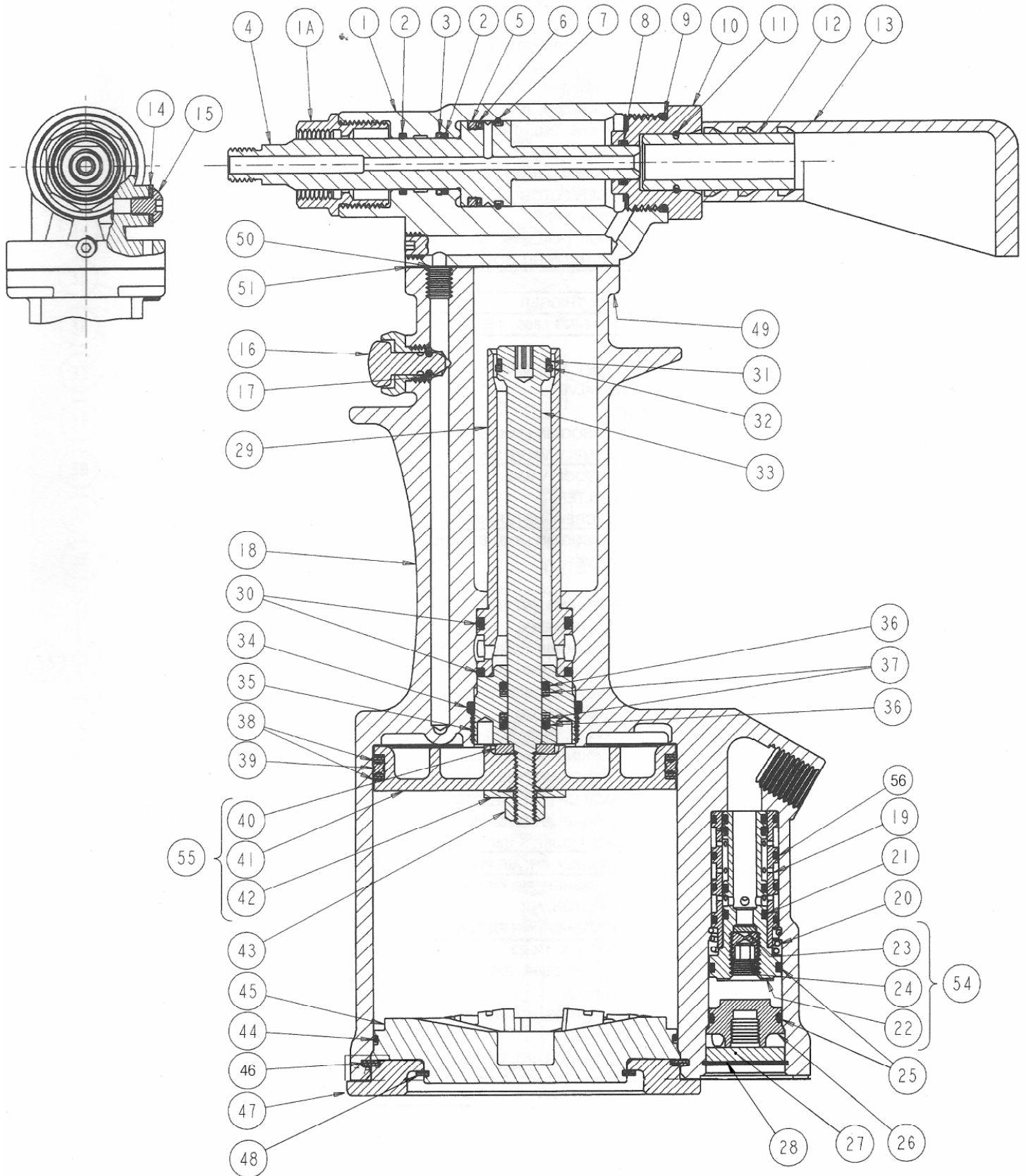
G746A PULLING HEADS

Pulling Heads are not furnished with this riveter and must be ordered separately. Make certain the pulling head is kept clean, especially around the riveting end, as adhesives, chips, sealants, etc., will clog up the serrations of the jaws and may cause slippage of the stem.

Pulling Head	Type	Adapter	Rivet	Rivet Diameters	Maximum Grip
H701 B-456	Straight	-	CherryMAX® Bulb CherryMAX® "A" InterMAX	1/8, 5/32, 3/16 ^{2,3} 1/8, 5/32, 3/16 ³ 1/8, 5/32, 3/16	All -9 ¹ -9 ¹
H753A-456	Right Angle	-	CherryMAX® Bulb CherryMAX® "A" InterMAX	1/8, 5/32, 3/16 ^{2,3} 1/8, 5/32, 3/16 ³ 1/8, 5/32, 3/16	All -4 ¹ -4 ¹
H781-456	Offset	-	CherryMAX® Bulb CherryMAX® "A" InterMAX	1/8, 5/32, 3/16 ^{2,3} 1/8, 5/32, 3/16 ³ 1/8, 5/32, 3/16	All -4 ¹ -4 ¹
H9015	Straight	704A9	MS	3/32, 1/8, 5/32, 3/16	All
H955 -3, -4, -5, -6			CherryLock® "A" ⁴	3/32, 1/8, 5/32, 3/16 ³	-9 ¹

- ¹. On the first stroke.
- ². Nominal and oversize.
- ³. No 3/16 aluminum. Alloy steel and Monel only.
- ⁴. When installing CherryLock "A" rivets, the proper diameter pulling head must be used.

G746A CROSS SECTIONAL VIEW



G746A PARTS LIST

ITEM NO.			DESCRIPTION	QTY.		
845-016 SUB-ASSEMBLY, HEAD						
	845-019 SUB-ASSEMBLY, HEAD CYLINDER					
		1	845-018	CYLINDER, HEAD	1	
		1A	845B6	FITTING, NOSE	1	
	2	P-701		0-RING	2	
	3	P-998		RING, BACK-UP	1	
	4	845-017		PISTON, HEAD	1	
	5	P-304		RING, QUAD (.943, .737, .103)	1	
	6	P-106		RING, BACK-UP (.926, .750, .088)	1	
	7	P-848		0-RING (.941_801_070)	1	
	8	P-244		0-RING (1.066, .926, .070)	1	
	9	P-112		0-RING (.504, .364, .070)	1	
	10	701B4		CAP, HEAD CYLINDER	1	
	11	P-880		RING,RETAINING (NON-STANDARD)	1	
	12	703A13		FITTING, DEFLECTOR	1	
	13	530A16		DEFLECTOR, PIN	1	
	14	P-572		STAT-O-SEAL	1	
	15	P-573		SCREW, BUTTON HD. SOC. 10-32 x 1/4	1	
	704-086 SUB-ASSEMBLY, HANDLE					
	16	703A33		ASSEMBLY, TRIGGER (INCLUDES P-223)	1	
	17	P-223 10-RING			1	
	18	703A11		HANDLE	1	
	56	P-653		0-RING (.691, .551, .070)	4	
	19	700B96		SLEEVE, VALVE	1	
	20	700A67		SPRING	1	
	21	P-829"		0-RING, DISOGRIN (.504, .364, .070)	4	
	54	700A94			SUB-ASSEMBLY, VALVE SPOOL	
		22	700B95**.		SPOOL, VALVE	1
		23	700A18**		FILTER	1
		24	700A69**		SCREW, METERING	1
	25	P-834"		0-RING, DISOGRIN (.816, .676, .070)	2	
	26	700A16		PLUG, VALVE •	1	
	27	700A17		MUFFLER	1	
	28	P-279		RING, RETAINING (INT. 0.906)	1	
	29	700-247		CYLINDER, POWER	1	
	30	P-833"		0-RING, DISOGRIN (1.068, .862, .103)	2	
	31	P-739		RING, BACK-UP (.624, .518, .053)	1	
	32	P-830**		0-RING, DISOGRIN (.629, .489, .070)	1	
	33	700-248		ROD, POWER PISTON	1	
	34	P-727		0-RING (1.318, 1.112, .103)	1	
	35	700893		PLUG, PACKING	1	
	36	P-838"		0-RING, DISOGRIN	2	
	37	P-115		RING, BACK-UP	2	
	38	P-731		RING,BACK-UP	2	
	39	P-730		RING, QUAD	1	
	55	700A115			SUB-ASSEMBLY, KIT, AIR PISTON	
		40	700A110		WASHER, AIR PISTON	1
		41	700C106		PISTON, AIR	1
		42	700A111		WASHER, AIR PISTON	1
	43	P-737		NUT, CONELOCK, 1/4-20	1	
	44	P-725		0-RING	1	
	45	700C112		BASE, HANDLE	1	
	46	P-735		RING, RETAINING	1	
	47	700D107		COVER, BASE	1	
	48	P-736		RING, RETAINING	1	
	49	P-27		SCREW, SOC. HD. CAP, 8-32 x 1/2	4	
	50	P-832"		0-RING, DISOGRIN	1	
	51	700A22		GASKET	1	
	52	P-948*		HOSE, AIR	1	
	53	670A20*		BAG, STEM CATCHER	1	

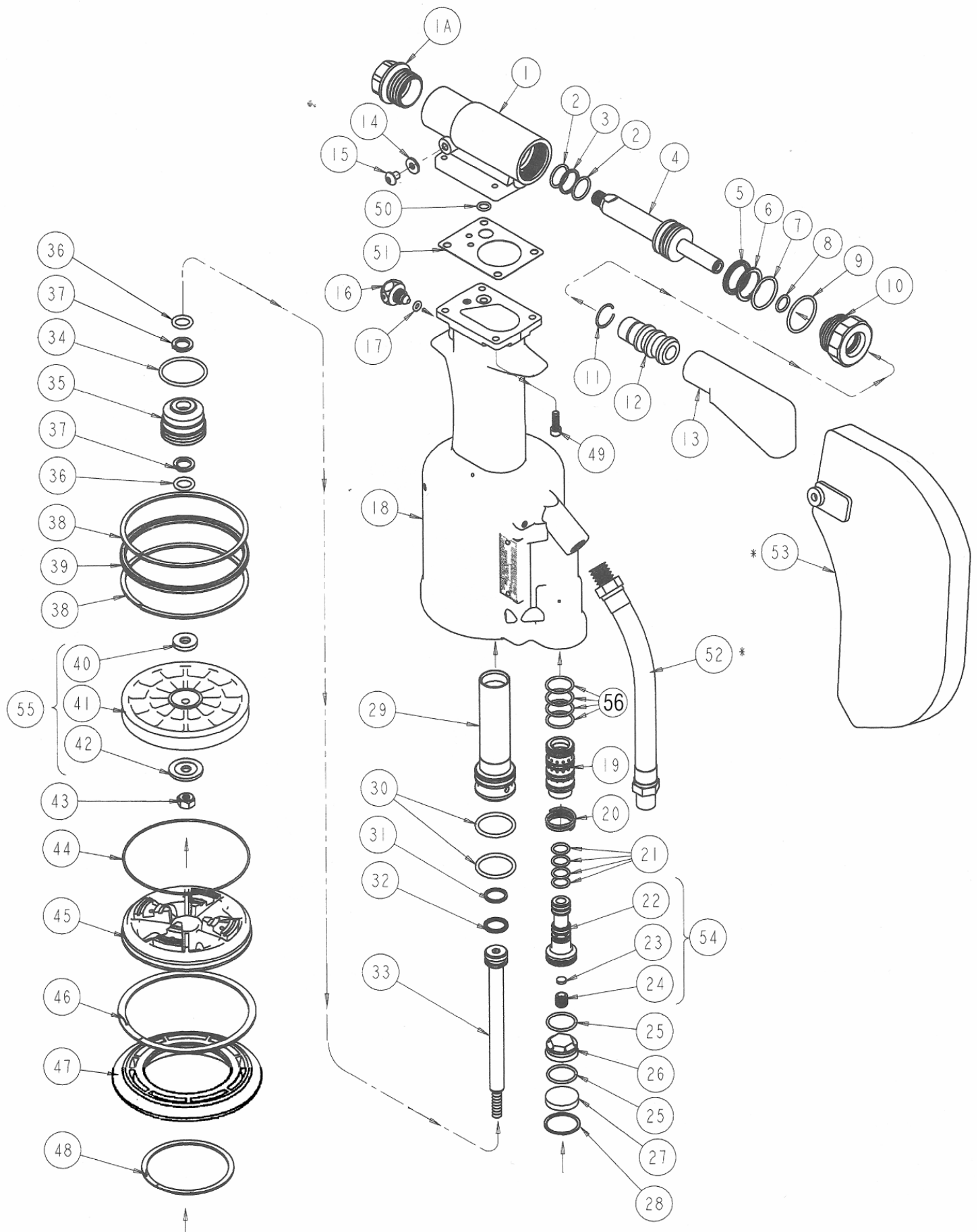
*Not furnished with riveter. Must be ordered separately if desired.

"No Substitutions.

**Not sold separately

Note: Use Loctite® #271 or equivalent when assembling items 1 and 1A.

G746A EXPLODED VIEW



Declaration of Conformity

We, Cherry® Aerospace, 1224 E. Warner Ave., Santa Ana, CA 92705

declare under our sole responsibility that the product

type G746A

Serial No.-

to which this declaration relates is in conformity with the following standards

EN292 part 1 and part 2
ISO 8662 Part 1
ISO 3744

following the provisions of the Machine Directive 89/392/EEC
(as amended by Directive 91/368/EEC) and 93/68/EEC

Santa Ana, CA -
date of issue

Original certification and signatures on file

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.

THE FOREGOING EXPRESS WARRANTY AND REMEDY ARE EXCLUSIVE AND ARE IN LIEU OF ALL OTHER WARRANTIES AND REMEDIES; ANY IMPLIED WARRANTY AS TO QUALITY, FITNESS FOR PURPOSE, OR MERCHANTABILITY IS HEREBY SPECIFICALLY DISCLAIMED AND EXCLUDED BY SELLER. THIS WARRANTY IS VOID IF SELLER IS NOT NOTIFIED IN WRITING OF ANY REJECTION OF THE GOODS WITHIN ONE (1) YEAR AFTER INITIAL USE BY BUYER OF ANY POWER RIVETER OR NINETY (90) DAYS AFTER INITIAL USE OF ANY OTHER PRODUCT.

Seller shall not be liable under any circumstances for incidental, special or consequential damages arising in whole or in part from any breach by Seller, AND SUCH INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES ARE HEREBY EXPRESSLY EXCLUDED.

For more information please contact our Technical Services Department at Tel. 714-850-6022

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