

Original Instructions

G83A

Lockbolt Power Tool

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CHERRY®
AEROSPACE

1224 E. Warner Ave,
Santa Ana, Ca 92705
Tel: 1-714-545-5511
Fax: 1-714-850-6093
www.cherryaerospace.com

THE G83A TOOL

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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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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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DESCRIPTION

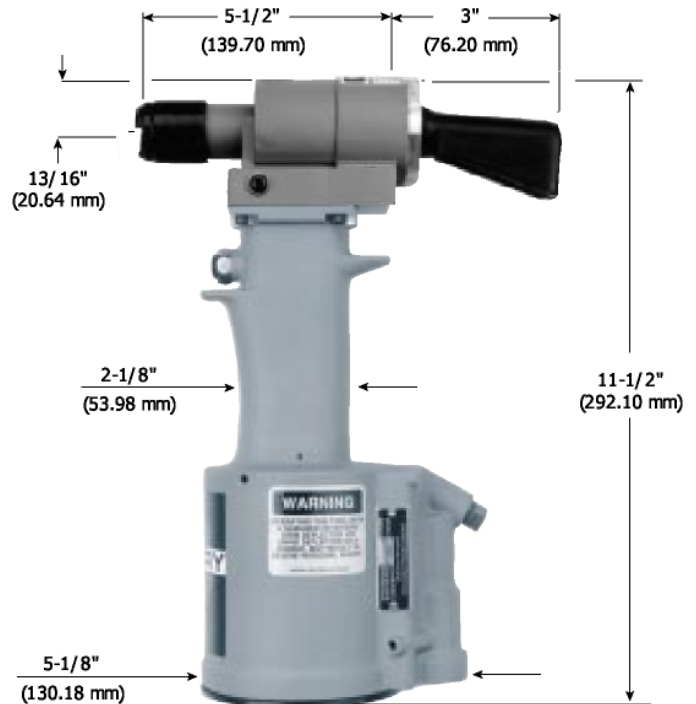
The Cherry® G83A Lockbolt® riveter is a compact but powerful production tool designed for high productivity, reliable installation of the most popular sizes of aircraft lockbolts and blind bolts.

This powerful tool has many ergonomic features: light weight (4.95 Lbs. / 2.25 kg), low recoil and noise, a comfortable fit in the operator's hand.

SPECIFICATIONS FOR G83A

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 to 110 PSI (6.2 to 7.6 bar) .
STROKE	7/16 inch (11.1 mm)
PULLING FORCE	3,750 lbs. min @ 90 PSI (16.7 kN min. @ 6.2 bar),
RETURN FORCE	800 lbs. min @ 90 PSI (3.56 kN min. @ 6.2 bar).
CYCLE TIME	Approximately one second
WEIGHT	4.95 lbs. (2.25 kg)
NOISE LEVEL	78.4 dB (A)
VIBRATION	less than 2.5 m/s ²
AIR CONSUMPTION	3.9 CFM (110.5 liters/M) at 20 Cycles/Minute

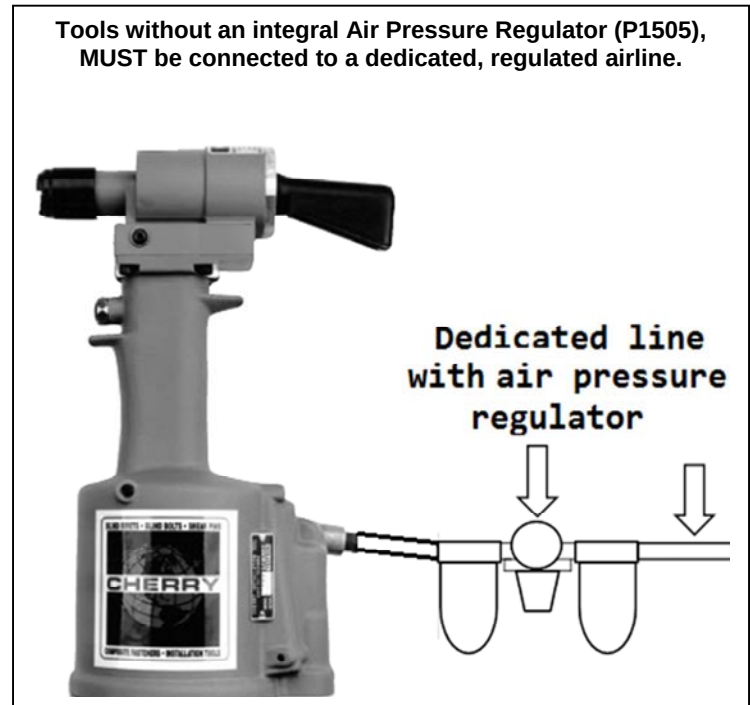
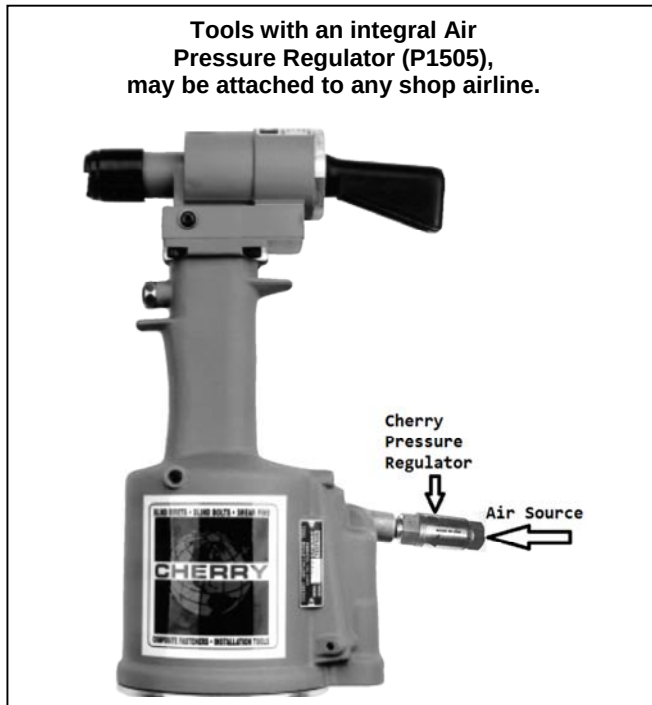


SAFETY WARNINGS

- Do not use beyond the design intent; do not use substitute components for repair.
- Operating this tool with a damaged or missing stem deflector, or using the deflector as a handle, may result in severe personal injury. Rotate the pin deflector facing away from the operator
- Wear proper PPE when operating, repairing, or overhauling this tool (  )
- Any modification will void warranty and shall be at the customer's entire responsibility.
- Maintain the tool 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.
- Disconnect the air line from the tool inlet before servicing, adjusting, fitting or removing any accessory.
- Ensure that the vent holes do not become blocked or clogged and the hoses are in good condition.
- Wash thoroughly after handling the fluid; excessive contact could cause rashes.
- Operating air pressure not to exceed 110 psi (7.6 bar); use of a pre-set regulator (P-1505) is recommended
- Do not operate the tool without the pulling head in place.
- 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 or directed at any person.
- Do not pound on the rear of the tool head to force rivets into holes as this will damage the tool.
- Safety warnings must be explained all operators as part of training.

PUTTING THE TOOL IN SERVICE

The tool must be used with an air pressure regulator. Even if your shop air pressure is below the maximum recommended range, pressure spikes in your airlines could cause serious damage to the tool or cause safety concerns.



HOW TO USE THE G83A



LOCKBOLT INSTALLATION

After selecting the proper pulling head, attach it securely to the riveter and connect the air-line to the tool.

For Lockbolts: Place the lockbolt pin into the workpiece and place the collar over the pintail.

While holding the back end of the lockbolt in place, push the pulling head onto the serrated area of the stem.

- **Caution:** When using a non-self-releasing pulling head once the tool is placed onto the serrated end, it cannot be removed unless going through the installation cycle which breaks the serrated end of the bolt. The broken part (pintail) will eject through the rear of the riveter when using a straight pulling head and through the rear of the active area of the tool for when using offset pulling heads.

If the tool does not release the swaged collar after installation, it can be adjusted by adding shims behind the pulling head collet. Otherwise, the tool may need to be serviced.

BLIND BOLTS AND RIVETS

- Insert the blind fastener into the prepared hole and place the tool onto the serrated stem.
- Pull the trigger to activate the tool. Upon release of the trigger, the stem will eject to the rear of the riveter when using straight pulling heads, and from the rear of the active area of the tool when using offset pulling head. Right angle pulling heads eject the stems through the front.



MAINTENANCE AND REPAIR

This riveter has been manufactured to give maximum service with minimum care. For optimum function:

1. The hydraulic system to be full of oil and free from air at all times.
2. Use clean and dry air to prevent premature wear and clogging of the air components.
3. Inspect the riveter for fluid leaks routinely

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

FIRE

Suitable extinguishing media: 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 the spent fluid in appropriate containers for disposal.

HANDLING

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

COMBUSTIBILITY

It is slightly combustible when heated above flash point. It will release flammable vapors 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.

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.

PROPERTIES

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

FILL AND BLEED INSTRUCTIONS



Priming the tool- After service, the riveter needs to be primed with fluid.

What is needed: a 1/8" Allen Wrench; the 700A77 Bleed Bottle

- Make sure that the power piston is lowered before priming (watch for fluid squirting from the pressurized port).
- Fill the handle subassembly with fluid almost to the gasket (about 1/8" below is also acceptable).
- Place the Return Spring, Piston and Head Cylinder on the gasket and tighten the four cap screws uniformly.
- Bleed the air; make sure to do this operation until the tool has full stroke and no more air bubbles are released into the bottle; you may need to help move the piston back in forth a few times before the tool is fully primed.

Air Bleeding (air removal and fluid refill)

What is needed: a 1/8" Allen Wrench; the 700A77 Bleed Bottle

- Remove screw 19 and attach the bleed bottle bottom up (see picture).
- Cycle several times, changing the position of the tool every few cycles; make sure the empty part of the bleed bottle is always the highest part of the tool.
- Stop the process if the tool has full piston stroke and there are no more air bubbles released in any tool position.



TROUBLESHOOTING GUIDE

Piston (6) does not move after depressing Trigger	No air supply is connected	Make sure the riveter is connected to an air source
	Faulty trigger (28)	Remove and replace trigger assembly.
	Faulty power piston(50-52)	Service the Handle Subassembly (25).
	Valve Spring (34) not correctly installed	Service the Air Valve; make sure the Sprint is snapped in properly
Short piston stroke or low pulling force	Air in the hydraulic system	Bleed per page 5
Head piston (6) is slow or it seizes	Damage inside the Head Cylinder (1)	Service the Head Cylinder.
	Clogged air muffler (44)	Remove, clean thoroughly with solvent and back-blow with compressed air
Fluid leakage at the Head Cylinder (1)	Leaks around the gasket (23)	Tighten screws (24) until no more leaks are observed; if it still leaks, the gasket and pressure O-Ring (22, 23) must be replaced.
	Leaks at the front or back of head cylinder (1)	Service Head Cylinder (1).
Fluid Leakage at the side hole of the handle	Packing Plug and Seal (46 through 49) damage	Service Handle (25).
Air leakage at the spool valve (items 32 through 43)	Broken or dislodged valve spring (36)	Service Air Valve; items (39, 40) inside of the spool and Muffler item 43 may need to be cleaned or replaced
	Worn or damaged valve spool seals	
Slow / Sluggish cycle	Muffler(44) or Spool (38) are clogged up	
Head Piston (64) does not return, or it only returns partially (short stroke)	Compression Spring (19) is damaged or broken	Remove head assembly (1), replace the spring (19).
	Return Piston (20, 21) or its seals are damaged or broken:	Remove the Head Assembly (1), replace the damaged components.

TOOL SERVICE

Tool must be serviced in case of malfunction, massive fluid loss or as part of your routine maintenance program.

REPLACEMENT PARTS: **G83AKS** – service kit (it contains Springs, Seals, O-Rings, Back-up Rings)

TOOLS NEEDED: **G701/G704KT** – tool kit (see pictures below), **Needle Nose Pliers**



SERVICE PROCEDURE



Caution:

- **Maintenance and repair to be conducted only by trained personnel.**
- **Prior to attempting any repair or maintenance work, make sure the air is disconnected.**
- Use special care handling sealing surfaces to avoid damage.
- Replace all seals; before re-assembly, apply an O-ring lubricant (Parker® silicone lube or equivalent) on all O-rings
- Apply a small amount of Loctite® 242 on the threaded components; curing time about 30 to 60 minutes.
- After service, the riveter must be primed and the air bled (see page 5)

AIR VALVE SUB-ASSEMBLY

Disassembly Instructions:

- Remove retaining ring (44) and muffler (43).
- Pull out the valve plug (42) and spool subassembly (37) with the help of tool P1178;
- If necessary, pull the valve sleeve (34) with I tool 837B700 after dislodging the spring (35) with a needle-nose pliers and pulling it out.

Assembly Instructions:

- Reverse the above procedures. Use Install tool 836B700 to push spring (35) into its groove; if the spring is not snapped into its place properly, the tool will not function.

HEAD SUB-ASSEMBLY

Disassembly:

- Remove end cap (10); push the head piston (6) out carefully.
- O-rings and back-up ring can be removed using a bent hook. Replace all seals.

Re-assembly:

- Reverse the above directions, being very careful not to damage the seals during re-assembly; before re-attaching, fill the handle with fluid to the top (see priming instructions on page 5).

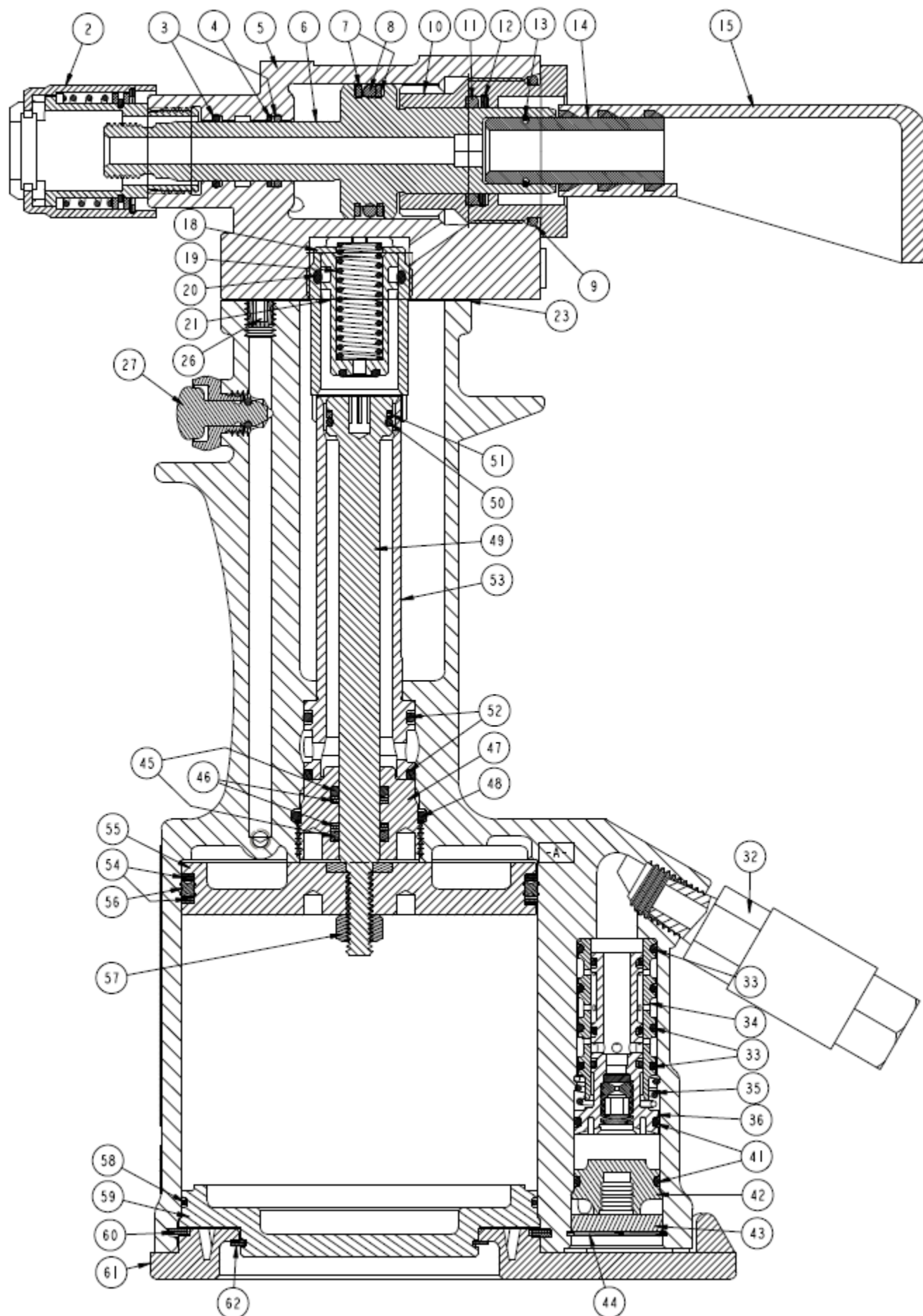
HANDLE SUB-ASSEMBLY

Disassembly:

- Remove the Head Cylinder (1) drain of fluid then remove the bottom covers (58 through 62); push the power piston down.
- Unthread the locknut (57) with a 1/2" socket wrench and then remove the air piston (55) by using wrench 700B65; hold the top of the piston with tool 700A61 to prevent from turning. Push piston out when completely unthreaded
- Push the power piston (49) all the way up and remove packing plug (47) with the help of wrench 700B65.
- Tap the power cylinder (53) from the top (use tool 700A62); when loosened, it will fall through the bottom.
- Remove all the seals using a bent hook tool and inspect all components for wear. Replace all sealants and worn components

Assembly:

- The re-assembly sequence is the opposite of disassembly; to prevent damage to piston threads, the tightening torque for the locknut (57) must be between 50 and 59 in.-lb. (5.65 and 6.67 N-m).

CROSS SECTION

PART LIST

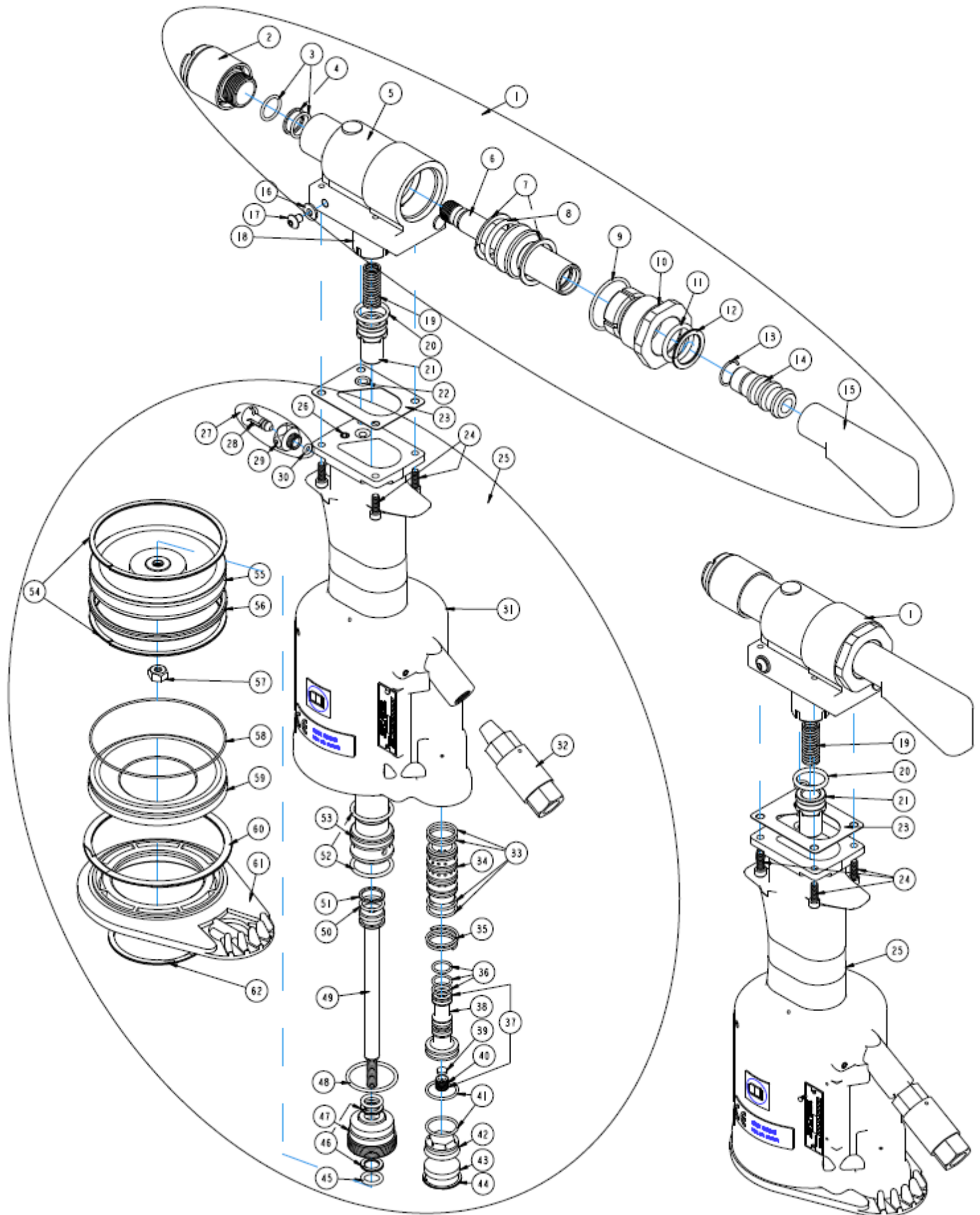
Model No: G83A

Item	P/N	Description	Qty
1	700-264	Head Cylinder Sub-Assembly	
2	700-211	Bayonette Adaptor Assy	1
3	P828	O-Ring	2
4	P883	Back-up Ring	1
5	700-266	Head Cylinder	1
6	700-265	Head Piston	1
7	P932	Back-up Ring	2
8	P113	O-Ring	1
9	P1373	O-Ring	1
10	700-212	End Cap	1
11	P107	O-Ring	1
12	P108	Back-up Ring	1
13	P880	Circular Spring	1
14	703A13	Deflector Fitting	1
15	530A16	Pintail Deflector	1
16	P572	Stat-O-Seal	1
17	P573	Button Head Screw	1
18	700-204	Return Cylinder	1
19	P1367	Compression Spring	1
20	P508	O-Ring	1
21	700-267	Return Piston	1
22	P832	High Pressure O-Ring	1
23	700-230	Gasket	1
24	P27	Cap Screw	4

For optimum operation and safety,
do not use any substitutions.

Item	P/N	Description	Qty
25	700-268	Handle Sub-Assembly	1
26	P428	Set Screw	1
27	703A33	Trigger Sub-Assy	1
	28 530A38	Trigger	1
	29 703A32	Trigger Sleeve	1
	30 P223	O-ring	1
31	703A11	Handle	1
32	P1505	Air Pressure Regulator	1
33	P653	O-Ring	4
34	700B73	Valve Sleeve	1
35	700A67	Spring	1
36	P829	O-Ring	3
37	700A15	Valve Spool Sub-Assy	1
	38 700D15-2	Spool	1
	39 700A18	Mufler/Filter	1
	40 700A69	Metering Screw	1
41	P834	O-Ring	2
42	700A16	Valve Plug	1
43	700A17	Muffler	1
44	P279	Retaining Ring	1
45	P838	High Pressure O-Ring	2
46	P115	Back-up Ring	2
47	700B93	Packing Plug	1
48	P727	O-Ring	1
49	700-248	Power Piston	1
50	P830	High Pressure O-Ring	1
51	P739	Back-up Ring	1
52	P833	High Pressure O-Ring	2
53	700-247	Power Cylinder	1
54	P731	Back-up Ring	2
55	700B6	Air Piston	1
56	P730	Quad Ring	1
57	P737	Lock Nut	1
58	P725	O-Ring	1
59	700B4	Handle Base	1
60	P735	Retaining Ring	1
61	700D107	Base Cover	1
62	P736	Retaining Ring	1

EXPLODED VIEW OF G83A



PULLING HEADS

Pulling heads are not furnished with the riveter and must be ordered separately. All Huck nose assemblies suitable for the 352 and 230 style tools will fit directly on this tool

ACCESS TYPE	LOCKBOLT DIA.	LOCKBOLT TOOL SELECTION CHART			
		BASIC	SWIVEL TYPE	SELF-RELEASING SWIVEL TYPE	SELF-RELEASING, CHISEL SHAPE SWIVEL
STRAIGHT	-4	H513-04-20			
		H513-04-35			
		H513-04-60			
	-5	H513-05-35	H513S-05-20	H513SR-05-20	H513SRC-05-20
		H513-05-60			H513SRC-05-35
	-6	H513-06-20	H513S-06-20	H513SR-06-20	H513SRC-06-20
		H513-06-60	H513S-06-35	H513SR-06-35	H513SRC-06-35
	-8	H513-08-35*	H513S-08-35		
OFFSET	-5	H563-5B			
	-6	H563-6B			
	-5	H563SP-5B			
	-6	H563SP-6B			
Part numbers with an asterisk (*) only install the aluminum Lockbolt version when used with G83A.					

MAXIBOLT PULLING HEADS & ADAPTORS			
STRAIGHT PULLING HEADS	PART NO.	MAXIBOLT DIA.	ADAPTER
STRAIGHT	H83B-5MB/5MBU	-5	NONE
	H83B-6MB/6MBU	-6	
	H84B-568	-5, -6, -8 MB Plus	
OFFSET	H856-6MB	-6	744-200
RIGHT ANGLE	H828-5MB	-5	744-200
	H828-6MB	-6	744-200

Note: Only 5 and 6 diameter Maxibolt Plus can be installed with this riveter. Use G84 or G84-LS for 8 diameter

CHERRYMAX® PULLING HEADS & ADAPTERS			
PULLING HEAD	PART NO.	CHERRYMAX® DIAMETER	ADAPTER
STRAIGHT	H701B-456	-4, -5, -6	744-300
OFFSET	H781-456	-4, -5, -6	744-300
	H782	-4, -5, -6	744-300
RIGHT ANGLE	H753A-456	-4, -5, -6	744-300

ADAPTER MOUNTING INSTRUCTIONS

STEP 1



STEP 2



STEP 3



STEP 4

**STEP 1**

Remove Bayonet mount with square shank screwdriver. Use even force to turn the bayonet mount free from the thread locking compound. Do not hammer on the screw driver or bayonet mount. We recommend placing the tool carefully in a vise equipped with soft jaws.

STEP 2

Keep Bayonet mount for future use.

STEP 3

Attach drawbolt adapter to head piston and tighten securely with wrenches.

STEP 4

Attach sleeve adapter to tool housing and tighten with wrenches

The pulling head may now be installed on the adapted tool.



CHERRY® AEROSPACE
SPS Fastener Division, a PCC Company



Declaration of Conformity

We, **Cherry Aerospace**

Located at **1224 East Warner Avenue, Santa Ana, CA 92705-0157, USA,**

In accordance with the provisions of

Machine Directive 2006/42/EC

Hereby declare under our sole responsibility that:

Equipment: Pneumatic Hydraulic Hand Riveter

Model Number: G83A

Serial Number: _____

Is in conformity with the applicable requirements of the following standards:

EN ISO 12100:2010	Safety of Machinery; General Principles; Risk Assessment and Reduction
ISO/TR 14121-1&2:2007	Safety of Machinery, Risk assessment
EN 792-1:2000 + A1:2008	Safety requirements; Assembly power tools for non-threaded mechanical fasteners
ISO 8662-11	Hand-held portable power tools -- Measurement of vibrations at the handle
ISO 3744	Acoustics – Determination of sound power levels of noise sources
ISO 4413:2010.	Hydraulic fluid power - General Rules of safety
ISO 4414:2010.	Pneumatic fluid power - General Rules of safety

Signed by: _____

Cris Cobzaru,

Master of Science in Mechanical Engineering

Sr. Technical Services / Installation Tooling Engineer

The Technical documentation for the machinery is available from:

Name: Chris Houghton

Position: CE Representative and Western Europe Sales Manager

Address: 10 The Beeches, Harbury, Leamington Spa, Warwickshire, UK

Phone 01926 612218, Mobile Phone 07860 725559