ORIGINAL INSTRUCTIONS

G87D

Lockbolt® Power Tool
NSN 5130-00-760-1360

Instruction Manual CE
Pass on to user to read and keep for reference

MANUAL

CHERRY® AEROSPACE

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

THE G87D TOOL

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DESCRIPTION

The Cherry G87D pneumatic-hydraulic Lockbolt® Installation Tool is a heavy duty production tool designed for high-speed reliable installation of the most popular sizes of aircraft lock- bolts.

This extremely powerful tool, designed with many ergonomic features weighs only 10-3/4 lbs. (4.875 kg.) and fits comfort- ably in the operator's hand. It can be operated in any position with one hand.

By bending the rubber pin deflector (1) sideways, 1-1/2" additional clearance can be obtained.

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

SPECIFICATIONS FOR G87D

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

AIR PRESSURE	90 PSI (6.2 bar) Min. / 110 PSI (7,6 bar) Max.
STROKE	9/16 inch (14.3 mm)
PULLING FORCE	9,500 lbs. (42.3 kN) @ 90 PSI (6,2 bar),
WEIGHT	10.75 lbs. (4,875 kg)
NOISE LEVEL	74.2 dB (A)
VIBRATION	less than 2.5 m/s^2
AIR CONSUMPTION	0.60 SCF/cycle (17 L/cycle)

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/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 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 the pulling head correctly and securely attached.
- Do not operate the tool unless the handle base (76) is fully secured by cap screws (77).
- 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 when bleeding the tool.

HOW TO USE THE G87D

LOCKBOLTS

After selecting the proper pulling head and attaching it securely to the G87D, connect the air line to the tool. Place the Lockbolt® pin into the workpiece and place the collar over the pintail. It may be necessary to hold the Lockbolt® in the application to prevent it from backing out when placing the pulling head over the serrations.

If you are using a non-self-releasing pulling head, make certain the collar is placed on the Lockbolt® pintail before placing the pulling head on the pintail. Once the pintail is inserted into the pulling head the jaws will grip the pintail and prevent it from moving out of the front of the pulling head.

If there is sheet gap or a gap between the head of the Lockbolt® and the workpiece, it may require multiple stroking of the tool for complete installation. The pintail will eject through the rear of the tool when using H513 Series straight pulling heads. The pintail will eject through the rear of the H562-B offset pulling heads.

If the tool does not kick off the swaged collar, shims should be added behind the collet of the pulling head. See pulling head installation instructions.

BLIND BOLTS

Insert the blind bolt 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.

Once the blind bolt stem is inserted into the pulling head, the blind bolt must be installed. The jaws in the pulling head (H652-8MB) will prevent the mandrel from moving back out the front of the head.

Insert the blind bolt into the application and pull the trigger to activate the tool. Upon the release of the trigger, the stem will eject to the rear of the tool when using the H652-8MB straight pulling head.

MAINTENANCE AND REPAIR

The G87D 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 air supply to prevent wear of air valve, air cylinder and air piston.
3. Tool should be routinely inspected for fluid leaks. Fluid leaking around screws (29) indicates that a screw is loose or a washer gasket (28) needs replacing. Fluid leaking around the small by-pass hole near the base of the handle grip (42) would indicate worn or damaged quad rings (44).

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

DEXRON III FLUID 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 effect 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_2, 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

This fluid 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.

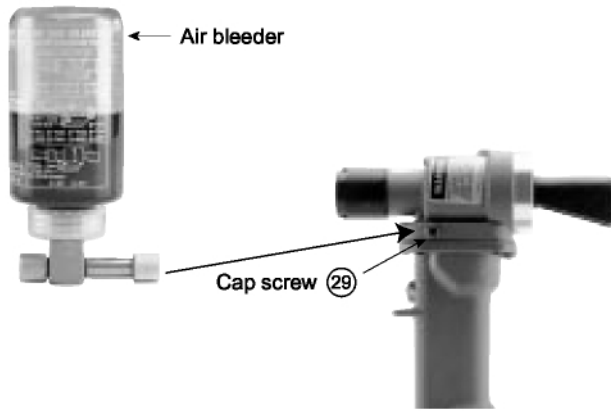
PROPERTIES

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

FILL AND BLEED INSTRUCTIONS

To replace a small amount of fluid in the tool, remove cap screw (29) from side of head (14), attach the Cherry air bleeder (700A77) with adapter (700A86). Connect the tool to the air line and cycle 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. Stand tool upright and connect to air line. Hold trigger down and when air piston (70) bottoms, disconnect tool from air line.
2. Head piston (9) should move to the rear position during Step 1. If it does not, push the piston back manually.
3. Remove screws (29) and (13) and plug (11) from front and side of head. Use a pressure fluid can, fill with ATF type “A”as recommended.
4. Force the fluid into the lower front fluid hole until it flows out the upper side hole.
5. If fluid does not pump in easily it indicates piston (48) is seated on rod sealing face. To open, inject a slight puff of air into the tool through the swivel (78) and continue to fill until fluid flows free of air bubbles.
6. Replace plug (11) on upper side of head.
7. Continue to pump fluid until it flows out of upper front hole.
8. Hold a cloth over the top hole of the head. Attach the tool to the air line. Excess fluid and air will be discharged into the cloth. Replace screws (13 and 29) and gaskets (12 and 28). Tighten all screws. Cherry Air Bleeder (700A77) with adapter (700A86) should be used for routine bleeding of air from G87D.

TROUBLESHOOTING

1. Check the airline for correct pressure at the tool. It must be 90 to 110 PSI (6.2 to 7.6 bar) at the tool.

2. Check the tool for lack of fluid (see “Fill and Bleed Instructions”)

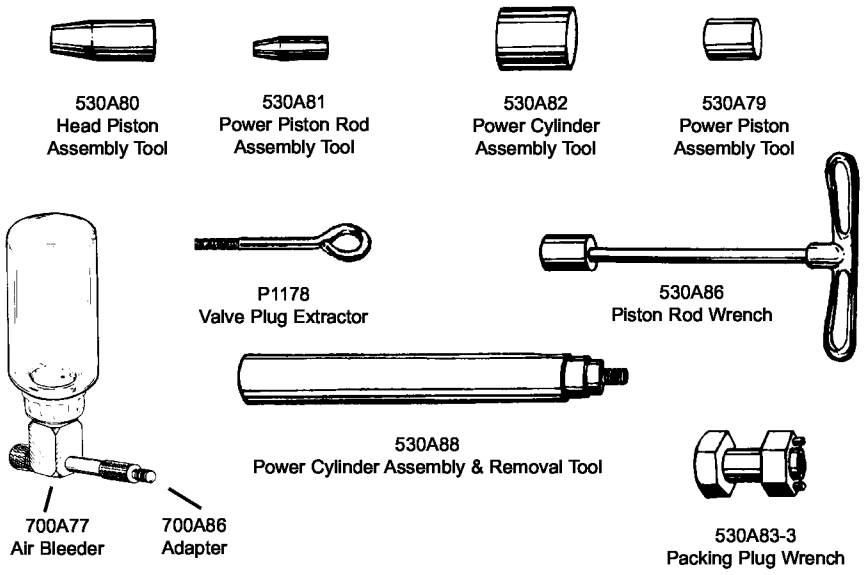
3. Check for fluid leakage:
   - Fluid leaking around the cap screw (29) in the head indicates that the screw is loose or the washer gasket (28) needs replacing.
   - If fluid should leak through the by-pass hole at the base of the handle (42) the quad rings (44) are worn or damaged
   - Fluid leaking from the front of the head (14) indicates that quad rings (15) are worn or damaged.

4. Check for excessive air leakage from the air valve:
   - If spring (53) 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 on Page 5.
   - If O-rings (54) on valve spool (55) are worn or damaged replace.

5. Check movement of the head piston (9). If it does not move freely or is slow in operation:
   - O-ring (8), or quad rings (7 and 15) may be damaged and require replacement.
   - Piston (9) may be mechanically locked due to damaged parts.
   - Power piston (48) may be held off its seat on rod (50) allowing fluid to bypass. Drain tool, flush thoroughly, check for contamination and refill with fresh fluid.
   - Muffler (60) or air filter (57) may be plugged with dirt. Clean thoroughly with normal solvent and back-blow with compressed air.

6. Lockbolt® stem sticks in the pulling head:
   - Pulling head components need maintenance. Disassemble the pulling head, clean and replace worn parts. Reassemble following pulling head instructions.
   - Spent Lockbolt® stems are wedged side by side in the head piston. Remove the pulling head, remove stems and re-assemble following the pulling head instructions.

THE G85KT TOOL KIT



OVERHAUL

The disassembly and reassembly procedures can be accomplished by following the instructions and drawings on pages 8 and 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 such as Lubriplate® 630A, or equivalent. It is recommended that special assembly tools, which can be ordered under part number G85KT, be used to overhaul this tool.

Virtually all of the moving parts in the tool ride on O-rings protected by back-up 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 tool life can be expected before any overhaul becomes necessary. At that time, complete overhaul can be achieved by the use of Service Kit G85D/G87D-KS which contains a complete set of O-rings, back-up rings, screws, washers and gaskets.

Not shown, but included: *836B530 Valve Spring Installation Tool, 837B530 Valve Sleeve Removal Tool.*

AIR VALVE

- To disassemble, first disconnect tool from its air source.
- Remove retaining ring (61) and muffler (60). Insert a valve plug extractor (P1178) or a 5/16-18 threaded rod or bolt into end of valve plug (59) and pull it out. Using the same procedures, pull out valve spool assembly (81).

  NOTE: It should never be necessary to remove valve sleeve (52) unless the ports in the sleeve have become plugged from contaminated air. The O-rings on this sleeve are static and hence do not wear.
- If it is suspected that the ports are plugged, use needle nose pliers to grasp end of spring (53), turn clockwise and pull to dislodge from groove in handle.
- With spring removed, valve sleeve (52) can be pulled out using the Valve Sleeve Removal Tool (837B530).

To re-assemble, reverse the above procedures being certain that all O-rings are properly lubricated. To avoid damaging the O-rings (51), carefully install sleeve (52) with your finger. Gently push and wiggle sleeve to allow O-rings to slip past inner ports. Spring (53) is best installed using a valve spring installation tool (836B530) to push the large diameter coil into the groove. This requires care as the G87D will not operate if this spring (53) is not anchored firmly.

HEAD SUB-ASSEMBLY

- Always remove the complete pulling head from the tool before attempting to disassemble the head assembly.
- Disconnect tool from air hose. Remove the six cap screws (5) holding the head to the handle. As the head cylinder (14) is removed, hold upper portion of the tool over a pan to catch fluid which will flow out. Dispose of the fluid according to environmental regulations.
- Remove six screws (5) from head cap and the head cap (6). Attach head piston assembly tool (530A80) to threaded end of piston (9) and force piston out rear end of head.
- O-ring (8), quad rings (7) and back-up rings (10) can now be removed using a bent hook.
- If the head piston does not return fully forward after the tool has been fully overhauled and it is certain that all air is removed from the system, it may be necessary to remove and service the pressure relief valve sub-assembly (22) through (27).
- Remove the pressure relief valve sub-assembly (22) through (27) from the head cylinder (14). Carefully unscrew the ball seat (23) from the head cylinder (14). Remove the O-ring (22) from the head cylinder (14). If damaged, replace. When all components have been removed, clean and dry thoroughly.
- Upon re-assembly, reverse the above procedures. Before installing the ball seat (23) into the head cylinder, make sure the O-ring (22) is seated concentrically inside of the valve cavity.

HEAD SUB-ASSEMBLY, CONT.

- Always lubricate all O-rings with Lubriplate® 630A or equivalent. The re-assembly sequence is the opposite of disassembly. This includes filling the handle (42) with fluid before replacing gasket (39) and O-ring (38), just before replacing the head sub-assembly onto the handle.
- Tighten the six socket-head cap screws (5) uniformly to prevent leakage around the gasket (39). When assembled, purge system of air by following the Fill and Bleed instructions on page 4.
- Deflector fitting (3) and spring (4) are held in position inside head piston with retaining ring (2). Push rubber pin deflector (1) onto deflector fitting (2) by hand.

HANDLE SUB-ASSEMBLY

For complete disassembly, follow the procedure below.

- Hold the tool upright and remove six socket head cap screws (5). Lift head assembly from handle (42) and set aside O-ring (38) and gasket (39). Empty all fluid into a container by pouring from handle. Dispose of fluid according to environmental regulations.
- Remove six flat head cap screws (77) from base and, using a screwdriver, carefully pry handle base (76) out of handle.
- Remove cotter pin (72). Engage and hold top of power piston rod assembly (82) with Piston Rod Wrench (530A86) and remove nut (71) using 9/16” socket wrench. Unscrew and remove power piston rod assembly (82) from air piston (70).
- Insert threaded end of Assembly Tool (530A88) into bottom of air piston (70). Using this as a handle, pull air piston out of bottom of tool.
- Place Power Piston Assembly Tool (530A81) on the end of power piston rod assembly (82) and push out through top.
- Using Packing Plug Wrench (530A83-3) together with a 1-1/16" socket wrench, remove packing plug (67) and lift out the exposed O-ring (66).
- Insert Power Cylinder Assembly and Removal Tool (530A88) into top end of power cylinder (43) and force power cylinder with quad rings (44) out bottom of tool.

To re-assemble the handle, reverse the above procedure being certain that all the O-rings are properly lubricated before installation.

- Insert power cylinder (43) with one quad ring (44) into bottom of handle by installing Power Cylinder Assembly Tool (530A82) over the quad ring so that the blunt end of the assembly tool is adjacent to the uppermost flange of the power cylinder. This will hold quad ring (44) snugly in its groove and prevent its being pinched against sharp edges of the handle bore as power cylinder is forced into position. Push the power cylinder into position using Power Cylinder Assembly Tool (530A88) as a pusher.
- Insert second quad ring (44) and O-ring (66) into position. Install quad rings (65), back-up rings (64), washers (63) and retaining rings (62) onto the packing plug (67). Seat packing plug assembly into position with the packing plug shoulders against the bottom of the power cylinder (43) and tighten securely using Packing Plug Wrench (530A83-3).
- Thread Power Piston Assembly Tool (530A81) onto small end of piston rod assembly (82). Slip Power Piston Assembly Tool (530A79), with tapered end up, over O-ring (46) and back-up ring (45) on power piston. Feed this assembly into top of power cylinder (43) forcing small end through packing plug (67).
- Using Power Cylinder Assembly & Removal Tool (530A88), push air piston (70) with quad ring (69) and back-up rings (68) into air cylinder until it engages threaded end of power piston rod assembly (82).
- Using Piston Rod Wrench (530A86), tighten piston rod assembly (82) into air piston (70). Install and tighten slotted nut (71) and set cotter pin (72).
- Insert handle base (76) with lubricated O-ring (75) and tap it into its proper seat. Tighten six cap screws (77) evenly.
- Using Piston Rod Wrench (530A86), push the power piston rod assembly (82) and air piston (70) to bottom of tool. Fill handle with fluid to about 1/8" above top of power cylinder (43).

Most important, to prevent damage to piston threads, the above assembly instructions must be followed and the slotted nut tightened between 50 in.-lb. (5.65 N-m) and 59 in.-lb. (6.67 N-m) of torque.

PULLING HEADS

NOSE ASSEMBLIES

Nose assemblies are not furnished and must be ordered separately. Make certain the nose assembly is kept clean as adhesives, chips, sealants, etc., will clog up the serrations of the jaws and may cause the stem to slip. Please refer to the pulling head charts below for the proper selection. All Huck pulling heads suitable for the 353 style tool will fit directly on this tool.

LOCKBOLT DIAMETER	LENGTH FROM TOOL FACE (EXCEPT COLUMN 3)	1. STRAIGHT NOSE			2. CHISEL NOSE	3. OFFSET
		SHORT PINTAIL	SWIVEL	SWIVEL SELF-RELEASING	SWIVEL SELF-RELEASING	
1/8”	2” 3-1/2 6”	H513-04-20* H513-04-35* H513-04-60*	- - -	- - -	- - -	H563-4B* H563SP-4B* -
5/32”	2” 3-1/2” 6”	- H513-05-35* H513-05-60*	H513S-05-20* H513S-05-35 -	H513SR-05-20* H513SR-05-35 -	H513SRC-05-20* H513SRC-05-35* -	H563-5B* H563SP-5B* -
3/16”	2” 2-3/8” 3-1/2” 4-13/16” 6”	H513-06-20* - - - H513-06-60*	H513S-06-20* H513S-06-24 H513S-06-35* H513S-06-48 -	H513S-06-20* H513S-06-24 H513S-06-35* H513S-06-48 -	H513S-06-20* - H513S-06-35* - -	H563-6B* H562-6B H563SP-6B* - -
1/4”	2-3/8” 3-1/2” 4-13/16	- H513-08-35* -	H513S-08-24 H513-08-35* H513S-08-48	H513S-08-24 - H513S-08-48	- - H513S-08-48	H562-8B - -
5/16”	2-11/16” 4-3/16”	- -	H513S-10-27 H513S-10-42	H513S-10-27 H513S-10-42	- -	- -
3/8”	2-11/16” 4-3/16”	- -	H513S-12-27 H513S-12-42	H513S-12-27 H513S-12-42	- -	- -

*These parts require the 552 adapter when used on Cherry G87D, G85D or Huck 353. Parts with an asterisk fit directly on the Cherry G83 or Huck 352 tools.

NOTES:
Parts with no asterisk fit directly on Cherry G87D, G85D and Huck 353 tools.
After the H513 in part numbers, S = Swivel, R = Self Releasing C = Chisel Nose
Straight Lockbolt pulling head part numbers indicate pulling head length and diameter.
Example: In Part No. H513-05-35 the -05 indicates 5/32 diameter and -35 indicates that the pulling head extends 3-1/2” beyond gun line.
After H563, SP = Short Pintail

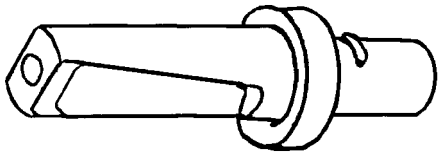
CHERRYMAX® PULLING HEADS AND ADAPTER

	PART NO.	CHERRYMAX	ADAPTER
OFFSET	H827-8	-8	560-070
RIGHTANGLE	H828-8	-8	560-070

MAXIBOLT PULLING HEADS

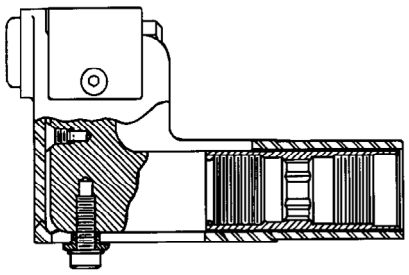
	PART NO	MAXIBOLT DIA,	ADAPTER
STRAIGHT PULLING HEADS	H652-8MB	-8	-
	H83-5MB	-5	552
	H83-6MB	-6	552
	H744-5MB	-5	560-070
	H744-6MB	-6	560-070
OFFSET	H856-6MB	-6	560-070
RIGHT ANGLE	H828-5MB	-5	560-070
	H828-6MB	-6	560-070
	H828-56MBP	-5 AND -6	560-070

H513 STRAIGHT PULLING HEADS



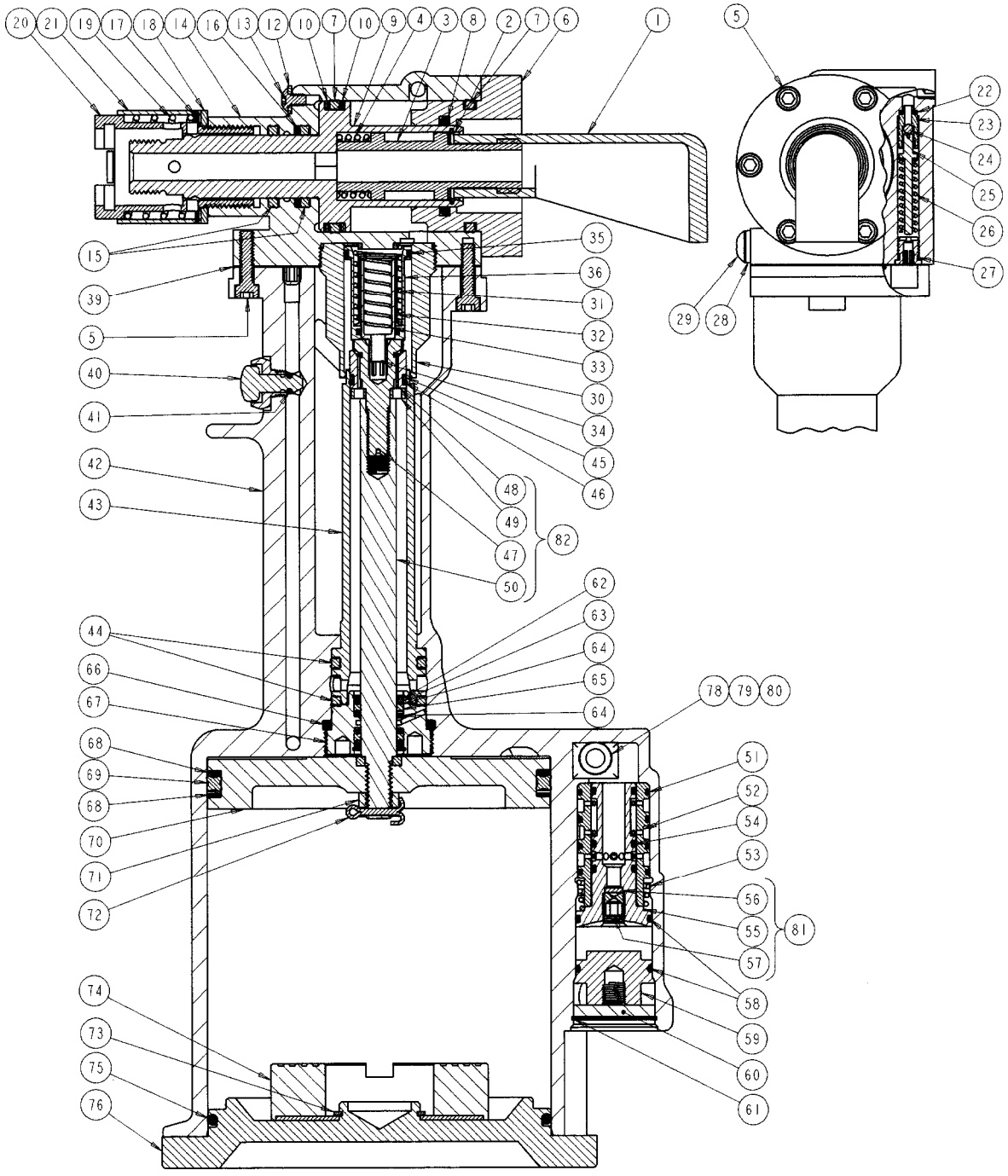
The H513 series pulling heads are available to accommodate the 1/8" diameter through 3/8" diameter Lockbolts® in varying lengths. The pictured head assembly is swivel, self-releasing, chisel nose.

H562-6B LOCKBOLT® OFFSET PULLING HEAD



The offset nose assemblies permit the installation of the -6 and -8 diameter lockbolts in many applications that are inaccessible to a straight head. They are of heavy cast stainless steel construction with a replaceable insert anvil. See the “Tool Sheet” enclosed with the pulling head for instructions.

CROSS SECTION OF G87D



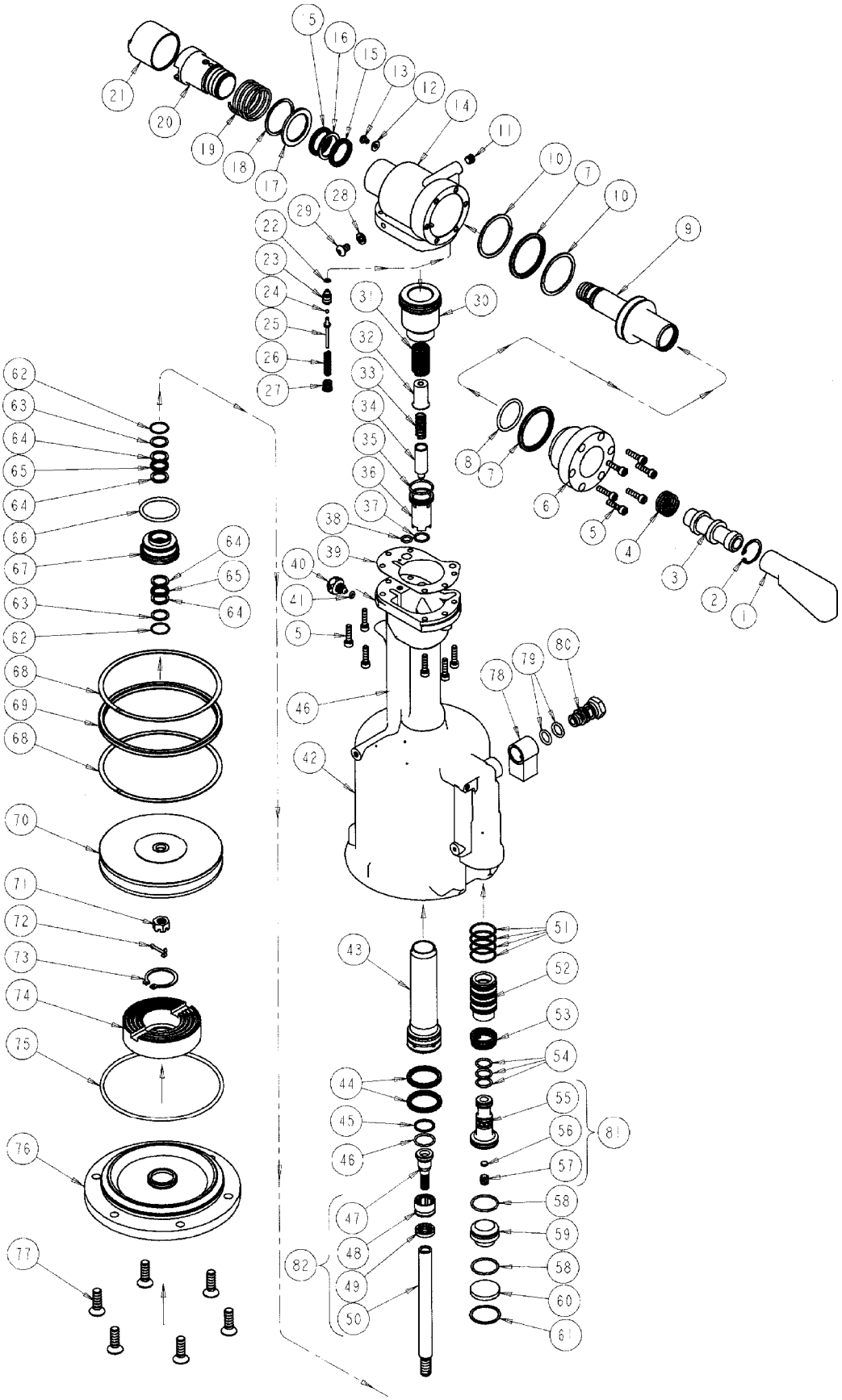
PART LIST FOR THE G87D (560D1C) RIVETER ASSEMBLY

ITEM NO	PART NO	DESCRIPTION	QTY
560C139 HEAD SUB-ASSEMBLY			
1	530A16	DEFLECTOR, PIN	1
2	P-300	RING, RETAINING (INT., 0.938 DIA.)	1
3	560A17	FITTING, DEFLECTOR	1
4	530A20-1	SPRING	1
5	P-64	SCREW, SOC. HD. CAP 10-24 X 3/4	12
6	560B7	CAP, HEAD	1
7	P-221	RING, QUAD (1.762, 1.484, .139)	2
8	P-299	O-RING (1.387, 1.109, .139)	1
9	560B4	PISTON, HEAD	1
10	P-212	RING, BACK-UP (1.742, 1.500, .121)	2
11	P-370	PLUG, SEAL, 1/16-27 NPTF	1
12	P-693	STAT-O-SEAL (.385, .164, .110)	1
13	P-413	SCREW, BUTTON HD. CAP, 8-32 X 1/4	1
14	530C2B	HEAD	1
15	P-217	RING, QUAD (1.137, .859, .139)	2
16	P-210	RING, BACK-UP (1.117, .875, .121)	1
17*	530A40	WASHER, THRUST	1
18*	P-236	RING, RETAINING (INT. 1.456 DIA.)	1
19*	530A42	SPRING, LOCKING	1
20*	530A5	EXTENSION, HEAD	1
21*	530A6	SLEEVE, LOCKING	1
22	P-595	O-RING (.254, .114, .070)	1
23	530A22-2	SEAT, BALL	1
24	P-164	BALL, STEEL, 1/8 DIA.	1
25	530A47	GUIDE, SPRING	1
26	530A20-3	SPRING	1
27	530A48	PLUG, 5/16-24	1
28	530A21-1	WASHER	1
29	P-225	SCREW, BUTTON HD., 1/4-20 X 3/8	1
30	560A9B	CYLINDER, RETURN	1
31	560A55	SPRING	1
32	560A54	HOLDER, SPRING	1
33	560A56	SPRING	1
34	560A53	PISTON, INNER	1
35	P-269	O-RING (.941, .801, .070)	1
36	560B52	PISTON, RETURN	1
37	P-298	O-RING (.566, .426, .070)	1
38	P-194	O-RING (.441, .301, .070)	1
39	530B8	GASKET, HEAD	1

*Items 17 through 21 may be ordered as assembly 530A5A. Shim 530A50 may be required to ensure alignment (not shown).
** Not sold separately.

ITEM	PART NO	DESCRIPTION	QTY
560D147 HANDLE SUB-ASSEMBLY			
40	703A33	ASSEMBLY, TRIGGER (INCLUDES P-223)	1
41	P-223	O-RING (.285, .145, .070)	1
42	530R140	HANDLE	1
43	560A1 3B	CYLINDER, POWER	1
44	P-218	RING, QUAD (1.324, 1.046, .139)	2
45	P-270	RING, BACK-UP (.776, .670, .053)	1
46	P-268	O-RING (.816, .676, .070)	1
82	560A60 SUB-ASSEMBLY, PISTON ROD		
47	560A65**	CAP, PISTON ROD	1
48	560A64**	PISTON, POWER	1
49	560A63**	STOP, PISTON	1
50	560A61**	ROD, POWER PISTON	1
51	P-848	O-RING (.941, .801, .070)	4
52	530B179	SLEEVE, VALVE	1
53	530A178	SPRING	1
54	P-701	O-RING (.629, .489, .070)	3
81	530B143 SUB-ASSEMBLY, VALVE SPOOL		
55	530B143-1**	SPOOL, VALVE	1
56	700A18**	FILTER	1
57	700A69**	SCREW, METERING	1
58	P-244	O-RING (1.066, .926, .070)	2
59	530A144	PLUG, VALVE	1
60	530A145	MUFFLER	1
61	P-699	RING, RETAINING (INT. 1.125 DIA.)	1
62	P-204	RING, RETAINING (INT. .687 DIA.)	2
63	530A21-3	WASHER	2
64	P-213	RING, BACK-UP (.676, .500, .088)	1
65	P-215	RING, QUAD (.693, .487, .103)	2
66	P-196	O-RING (1.574, 1.296, .139)	1
67	530B14	PLUG, PACKING	1
68	P-214	RING, BACK-UP (4.745, 4.375, .185)	2
69	P-222	RING, QUAD (4.770, 4.350, .210)	1
70	530B15	PISTON, AIR	1
71	P-302	NUT, SLOTTED 3/8-16	1
72	P-301	PIN, COTTER, 3/32 DIA. X 3/4	1
73	P-537	RING, RETAINING (EXT. 1.125 DIA.)	1
74	530B92	CUSHION, BONDED	1
75	P-197	O-RING (4.762, 4.484, .139)	1
76	530C141	BASE, HANDLE	1
77	P-700	SCREW, CAP, FLAT HD, 5/16-18 X 1	6
78	530A34	SWIVEL	1
79	P-195	O-RING (.630, .424, .103)	2
80	530A35	BOLT, SWIVEL	1

EXPLODED VIEW OF G87D



Declaration of Conformity

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

declare under our sole responsibility that the product

type **G87D**

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

CHERRY® AEROSPACE

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

Supplier's Federal Identification Code: 11815