

Original Instructions

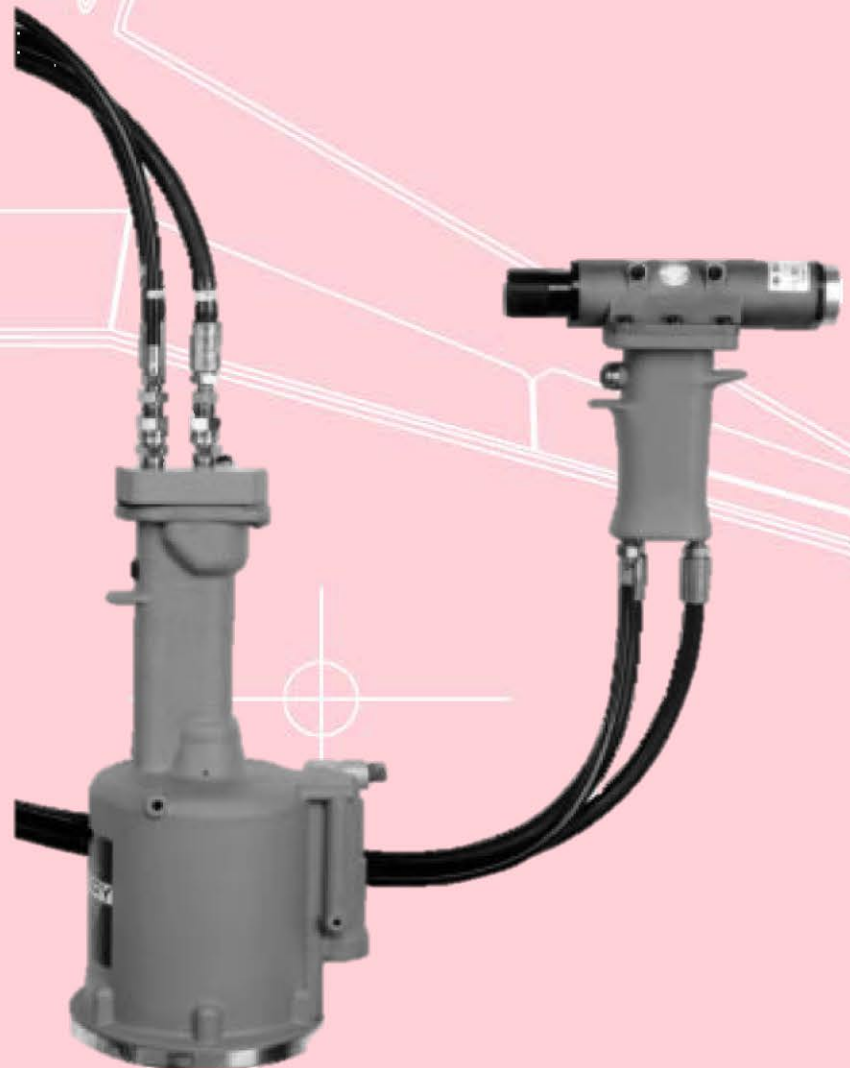


Instruction Manual 

Pass on to user to read and keep for reference

G686B-S

SPLIT DOUBLE ACTION CHERRYLOCK®
POWER TOOL



CHERRY®
AEROSPACE

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THE G686B-S 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.

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

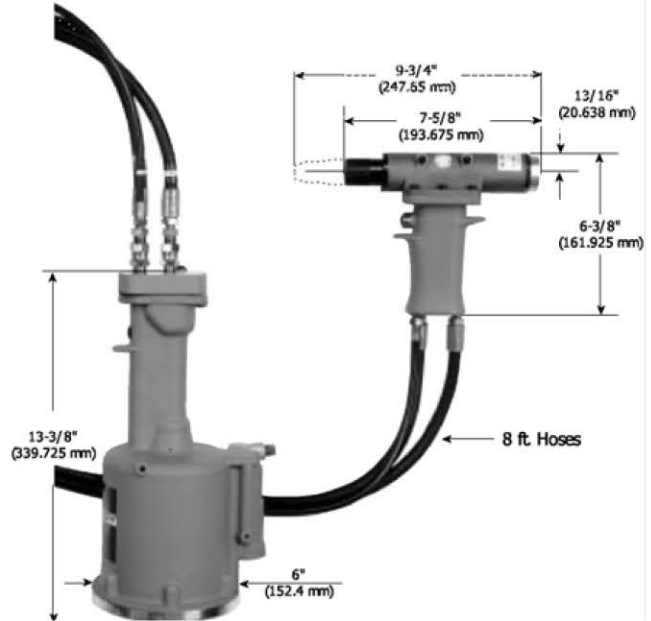
DESCRIPTION

The Cherry® G686B-S riveter is an ergonomic solution for installing the double action wiredraw and bulb type blind Cherrylock® fasteners (NAS1398, NAS1399, NAS1738 and NAS1739 equivalent to Cherry CR2XXX family of products).

TECHNICAL SPECIFICATIONS

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®.

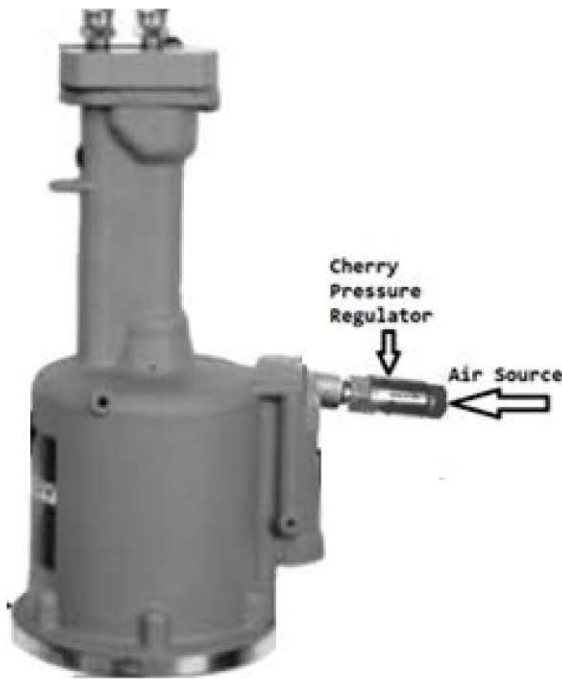
AIR PRESSURE	90 to 110 PSI (6,2 to 7,6 bar)
STROKE	1.44 inch (36,5 mm)
PULLING-FORCE:	2600 lbs @ 90 psi (11,57 kN @ 6,2 bar)
WEIGHT	
TOTAL	17 lbs. (7,71 kg)
HAND HELD UNIT	5 lbs. (2,27 kg)
CYCLE TIME	Approximately One Second
NOISE LEVEL	74.5 dB (A)
VIBRATION	Less than 2.5 m/s ²
AIR CONSUMPTION	0.5 SCF/cycle (14,2 liters/cycle)



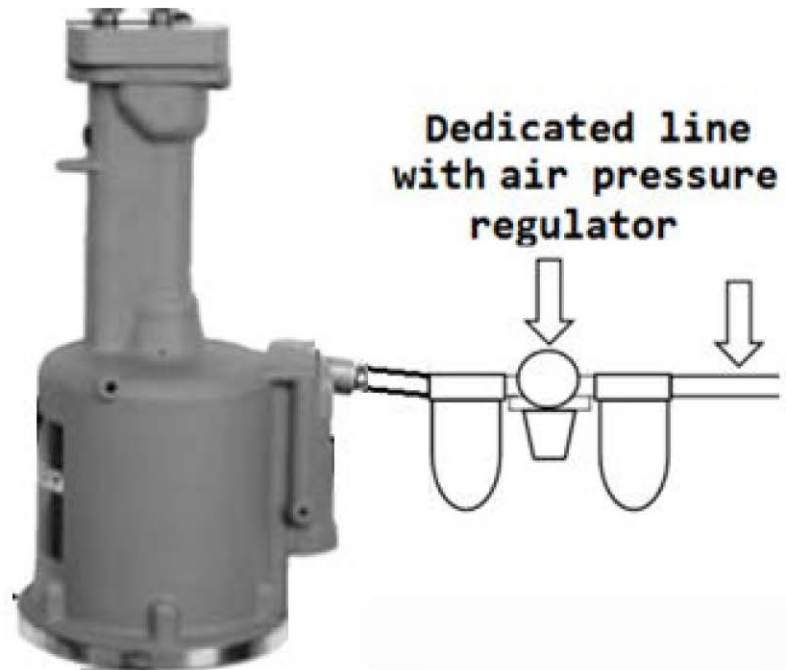
PUTTING THE TOOL IN SERVICE

The tool must be used with an air pressure regulator; pressure spikes in the shop air-lines could cause serious damage to the tool and create unsafe conditions.







Tools equipped with an in-line Air Pressure Regulator (P1505) may be attached to any shop air-line.



Tools NOT equipped with an in-line Air Pressure Regulator (P1505) MUST be connected to a dedicated regulated air-line.



GENERAL OPERATION and SAFETY WARNINGS

	<ul style="list-style-type: none"> • WEAR PROPER PPE(PERSONAL PROTECTION EQUIPMENT)
	<ul style="list-style-type: none"> • READ MANUAL; OPERATORS MUST BE TRAINED IN SAFETY AND CORRECT TOOL OPERATION
	<ul style="list-style-type: none"> • SERVICE AND REPAIRS SHALL BE PERFORMED ONLY BY TRAINED PERSONNEL.
	<ul style="list-style-type: none"> • DO NOT PULL RIVET IN THE AIR OR DIRECTED AT ANY PERSON.
	<ul style="list-style-type: none"> • DO NOT USE THE TOOL WITH A DAMAGED OR MISSING STEM DEFLECTOR
	<ul style="list-style-type: none"> • ROTATE THE STEM DEFLECTOR FACING AWAY FROM THE OPERATOR OR CRITICAL AIRCRAFT STRUCTURE; USE A STEM CATCHER IF POSSIBLE.
	<ul style="list-style-type: none"> • DO NOT POUND ON THE REAR OF THE TOOL HEAD TO FORCE RIVETS INTO HOLES.
	<ul style="list-style-type: none"> • MAKE SURE THAT THE AIR MUFFLER IS NOT OBSTRUCTED AND IS DIRECTED AWAY FROM PEOPLE.
	<ul style="list-style-type: none"> • DO NOT EXCEED THE RECOMMENDED AIR PRESSURE. TO ENSURE SAFETY, USE THE PRE-SET AIR PRESSURE REGULATOR P/N P1505.
	<ul style="list-style-type: none"> • MAKE SURE TO DISCONNECT FROM THE AIR SUPPLY BEFORE SERVICE OR REPAIR.
	<ul style="list-style-type: none"> • WASH THOROUGHLY AFTER HANDLING HYDRAULIC FLUID.
	<ul style="list-style-type: none"> • UNAUTHORIZED MODIFICATIONS, INCLUDING USING SUBSTITUTE COMPONENTS WILL VOID WARRANTY AND SHALL BE AT THE CUSTOMER'S ENTIRE RESPONSIBILITY.
	<ul style="list-style-type: none"> • DO NOT USE ANY SUBSTITUTIONS AS THEY WILL IMPACT THE TOOL SAFETY AND RELIABILITY LIFE.

OPERATING INSTRUCTIONS

⚠ CAUTION ⚠

- If this is the first time using this type of tool, read the instructions given in this manual prior to usage
- Comply to the the general safety rules applicable as well as the instructions given in this document
- Make sure the tool is connected to an air source operating within the recommended pressure range
- Check the correct tool adjustment regularly
- Before installing the permanent fasteners, make sure that the structure is properly clamped with temporary fasteners
- Make sure that the correct pulling head for the fastener to be installed is selected

TOOL SET-UP AND ADJUSTMENTS

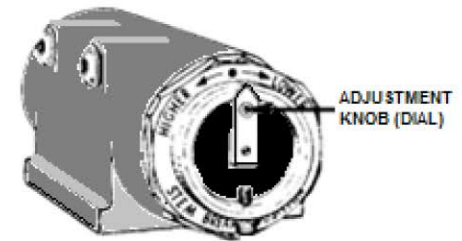
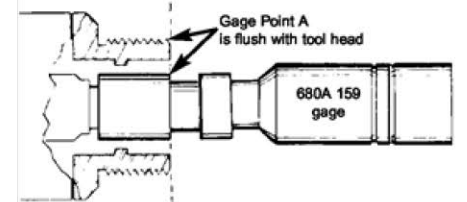
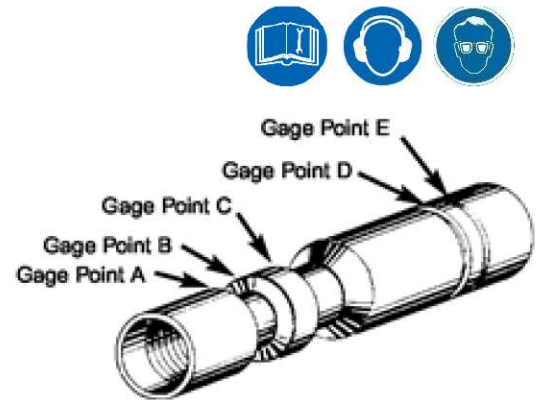
SHIFT POINT SETTING

Use this procedure to check proper set-up of the cylinder piston (14) in order to control the flushness of the stem break during fastener installation.

In order to perform this check, remove the pulling head and connect tool to pressurized air.

Use gage part number 680A159 (included with the tool) following the steps given below:

- Screw the threaded end of the gage onto the piston (hand-tight).
- Depress and hold the trigger and check the final position of the gage; Gage Point A should be flush with the front of the riveter as shown in the image on the right; release the trigger after check is completed.
- To adjust the gage position, using the adjuster dial from the back of head cylinder turn clockwise to bring the gage forward or counterclockwise to retract the gage; depress the trigger to complete adjustment



Fine-tuning the stem break flushness:

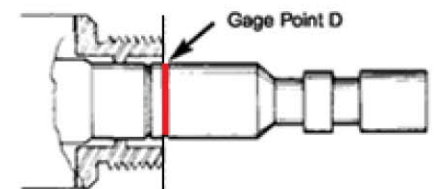
Should it be necessary to fine-tune the stem protrusion when installing fasteners, using the adjuster dial from the back of head cylinder

- Turn clockwise to decrease stem protrusion for the installed fasteners (break lower)
- Counterclockwise to increase stem protrusion for the installed fasteners (break higher)
- Depress the trigger in order to complete the adjustment.

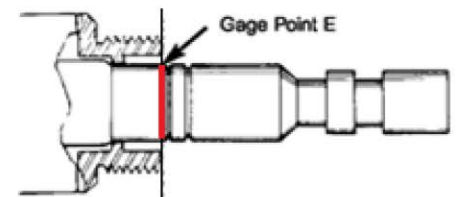
CHECKING FOR PROPER SHIFT PISTON OPERATION

Use this procedure to check the shift piston for proper function (critical for setting the locking ring of the fastener during installation).

- Push the larger, unthreaded end of the gage over the riveter piston until butting onto the surface of the shift piston inside of the riveter; if the shift piston is set properly, the gage point D of the gage will align to the front of the riveter



- While pushing the gauge onto the piston, depress the trigger; at the end of the cycle, the gage will be pushed out, aligning point E to the front of the riveter.



- If the Shift Piston does not gauge correctly see the troubleshooting guide at the end of this manual.

PULLING HEAD SELECTION

The lists given below are for reference only; for more up to date and detailed information, please check on the Cherry Aerospace webpage (<http://cherryaerospace.com>) under [Technical / Tooling Manuals](#) to find(links to current tool manuals) or, for an interactive database go to [Product Expert](#) in the home page of the same webpage.

WIREDRAW, DOUBLE ACTION, (STANDARD) CHERRYLOCK® BLIND FASTENERS PER NAS1398 & NAS1399

PULLING HEAD PART NUMBER	MATERIAL -->	ALUMINUM			MONEL			STAINLESS STEEL (A286)		
	FASTENER PART NUMBER -->	CR2163	CR2162	CR2164	CR2563	CR2562	CR2564	CR2643	CR2642	CR2664
		CR2263	CR2262					CR2653	CR2652	
	HEAD TYPE -->	UNIVERSAL HEAD	FLUSH (COUTERSUNK)		UNIVERSAL HEAD	FLUSH (COUTERSUNK)		UNIVERSAL HEAD	FLUSH (COUTERSUNK)	
RIVET DIA. CODE	STANDARD		REDUCED (NAS1097)	STANDARD		REDUCED (NAS1097)	STANDARD		REDUCED (NAS1097)	
H681-3C	-3	-	-	-	-	-	-	ALL GRIPS	ALL GRIPS	ALL GRIPS
H681-4C	-4	ALL GRIPS	ALL GRIPS	-	ALL GRIPS	ALL GRIPS	-	ALL GRIPS	ALL GRIPS	-
H681-4S		-	-	ALL GRIPS	-	-	ALL GRIPS	-	-	ALL GRIPS
H681-5C	-5	ALL GRIPS	ALL GRIPS	-	ALL GRIPS	ALL GRIPS	-	ALL GRIPS	ALL GRIPS	-
H681-5S		-	-	ALL GRIPS	-	-	ALL GRIPS	-	-	ALL GRIPS
H681-6C	-6	ALL GRIPS	ALL GRIPS	-	ALL GRIPS	ALL GRIPS	-	ALL GRIPS	ALL GRIPS	-
H681-6S		-	-	ALL GRIPS	-	-	ALL GRIPS	-	-	ALL GRIPS
H681-8C	-8	16	17	-	16	17	-	-	-	-
H681-8S		-	-	17	-	-	17	-	-	-

BULB TYPE, DOUBLE ACTION CHERRYLOCK® BLIND FASTENERS PER NAS1738 & NAS1739

PULLING HEAD PART NUMBER	MATERIAL -->	ALUMINUM		MONEL		INCONEL	
	FASTENER PART NUMBER -->	CR2235	CR2238	CR2539	CR2538	CR2839	CR2838
		CR2239					
		CR2245	CR2248	CR2545	CR2540	CR2845	CR2840
		CR2249					
RIVET HEAD TYPE -->	UNIVERSAL	CTSK.	UNIV.	CTSK.	UNIV.	CTSK.	
RIVET DIA. CODE	TOOL GRIP CAPABILITY						
H681-4C	-4	ALL GRIPS	ALL GRIPS	ALL GRIPS	ALL GRIPS	ALL GRIPS	ALL GRIPS
H681-5C	-5	ALL GRIPS	ALL GRIPS	ALL GRIPS	ALL GRIPS	ALL GRIPS	ALL GRIPS
H681-6C	-6	ALL GRIPS	ALL GRIPS	ALL GRIPS	ALL GRIPS	ALL GRIPS	ALL GRIPS

PULLING HEADS FOR OTHER PRODUCTS

PULLING HEAD PART NUMBER	PULLING HEAD TYPE	USE ADAPTER	BLIND RIVET TYPE	RIVET DIA.	MAX. GRIP CAPABILITY	
					UNIVERSAL HEAD RIVET	FLUSH HEAD RIVET
H9055-3	Straight	680B46	CherryLOCK® "A"	-3 (3/32")	ALL GRIPS	ALL GRIPS
H9055-4				-4 (1/8)	16	17
H9055-5				-5 (5/32)	16	17
H9055-6				-6 (3/16)	16	17
H9015-3C	Straight	680B46	NUTPLATE RIVETS	-3 (3/32")	ALL GRIPS	
H9015-4C				-4 (1/8)	ALL GRIPS	
H9015-5C				-5 (5/32)	ALL GRIPS	
H9015-6C				-6 (3/16)	ALL GRIPS	
H9040-4C	Straight	680B57	NUTPLATE RIVETS	-4 (1/8)	ALL GRIPS	
H9040-5C				-5 (5/32)	ALL GRIPS	
H9040-6C				-6 (3/16)	ALL GRIPS	
H9040-8C				-8 (1/4)	ALL GRIPS	
H680B200A	Straight	-	CherryMAX®	-4, -5, -6	ALL GRIPS	
H680B208	Straight	-		-8	ALL GRIPS	
H781A-456	Offset	680B205		-4, -5, -6	ALL GRIPS	
H753A-456	Right Angle	680B205		-4, -5, -6	ALL GRIPS	

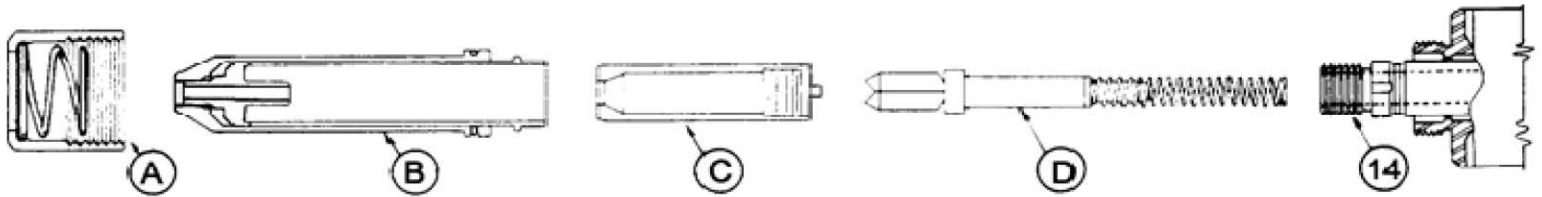
USATCO U.S. Air Tool Company, Inc.

Eastern Division60 Fleetwood Ct., Ronkonkoma, NY 11779-6907 tel: (631) 471-3300 fax: (631) 471-3308

Western Division1219 W. Mahalo Place, Rancho Dominguez, CA 90220-5446 tel: (310) 632-5400 fax: (310) 632-3900

PULLING HEAD MOUNTING INSTRUCTIONS

- The pulling heads to install different fastener types and diameters are not furnished and must be ordered separately. Make sure the pulling head is kept clean, especially at the active area and the internal jaws as adhesives and metal debris may clog up jaw serrations causing slippage and installation issues.



- Make sure to place jaw assembly (D) inside collet (C) before starting.
- Unthread the knurled cap (A) from front of the riveter
- Place the spring inside of the head piston (14). Thread the collet (C) onto the piston until it is locked; to remove it, push the locking tab back into collet using a screw driver while turning collet counterclockwise.
- Place sleeve assembly (B) over the collet and tightened with the knurled cap (A)

RIVET INSTALLATION



- Place the fastener into the prepared hole then place the pulling head over its stem and depress the trigger.

RIVETER REPAIR AND MAINTENANCE



This riveter has been manufactured to give maximum service with minimum care. In order to keep the tools in optimum operating condition, it is advisable to set-up a Preventive Maintenance check list including, at a minimum, the following:

- Visually inspect the tool to make sure it is in good working condition and there are no fluid leaks
- Make sure the tool is bled regularly
- Service the tools on a regular basis; the schedule should be adjusted to usage.

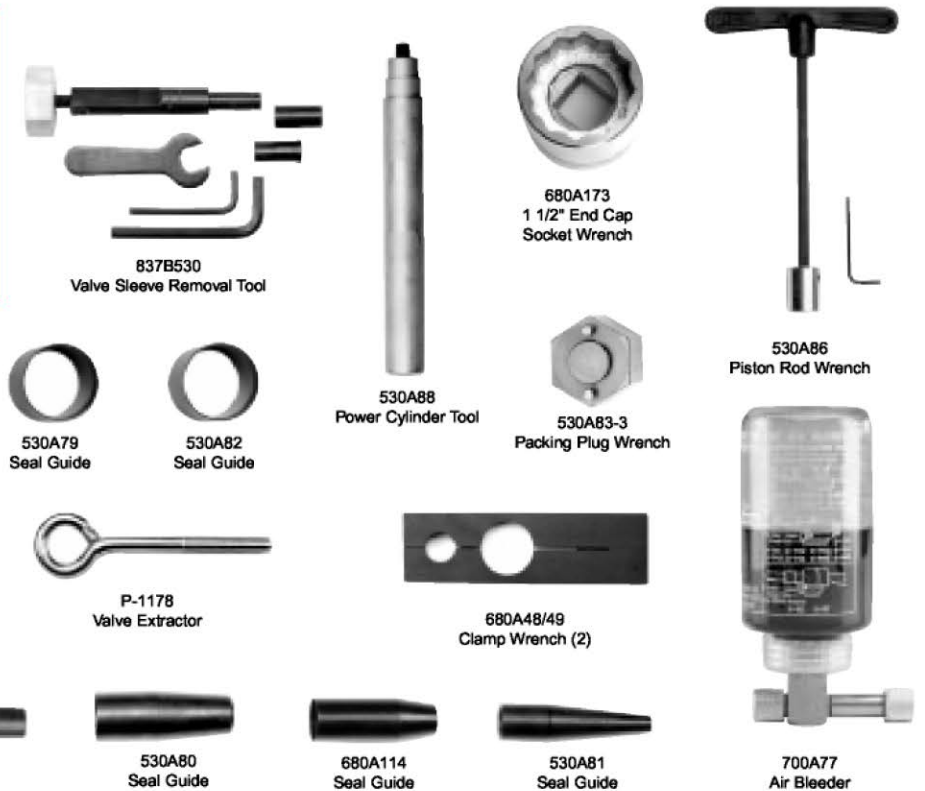
Should repair or service be necessary, follow the instructions given below.

CAUTION

- Read the tool manual instructions; it is advised that repair is conducted only by properly trained personnel.
- Make sure the air is disconnected.
- Protect the sealing surfaces to avoid damage.

Tools and Service Kits Needed

- Make sure that the proper service kit (ordered separately) and tools are available.
 - SERVICE KIT:**
G685B-S/G686B-SKS
 - TOOLS:**
G685KT and a Needle Nose pair of Pliers



SERVICE PROCEDURE

HANDLE ASSEMBLY

DIS-ASSEMBLING

- Remove the manifold (100) by unscrewing the screws (96); hold over a pan to prevent fluid spills and drain of fluid.
- Remove gasket (95) and O-ring (41).
- Remove the screws (57) from the base using a 3/16" hex key; pry the base plate (56) with the help of a flat screwdriver.
- Push the power piston (98) to its lowest position with the help of wrench (530A86) then remove the pin (52).
- Remove nut (51) with the help of a 9/16" socket wrench; keep the piston from turning wrench (530A86) until the nut is removed
- Unscrew the power piston assembly (98) from the air piston (50).
- Pull the air piston out of the bottom of the tool with the help of the threaded end of tool (530A88)
- Thread seal guide (530A81) onto the end of power piston assembly (98) and push from the bottom until it is out of the power cylinder.
- Remove the packing plug (47) with the help of wrench (530A83-3) and a 1-1/4" socket wrench.
- Push power cylinder (60) through the bottom of the handle with the help of tool (530A88) pushing onto its top

RE-ASSEMBLING HANDLE ASSEMBLY

- Place seal guide (530A82), with tapered bore facing down, over quad ring (61) and insert the power cylinder (60) with one quad ring (61) into bottom of power unit with the help of tool (530A88).
- Insert the second quad ring (61) and O-ring (46) into position. Install the new quad rings (45), back-up rings (44), washers (46) and retaining rings (42) inside the packing plug (47). Thread and tighten the packing plug assembly into position with the help wrench (530A83-3).
- Thread the seal guide (530A81) onto the small end of the power piston assembly (98). Slip seal guide (530A79), with tapered end down, over quad ring (63) and back-up rings (62) on power piston. Feed this assembly into the top of the power cylinder (60), forcing the small end through the packing plug (47). Remove seal guide (530A81) from the end of the power piston and rod sub-assembly (98).
- Using power cylinder tool (530A88), push air piston (50) together with quad ring (49) and back-up rings (48) into the bottom of the air cylinder and force part way up the cylinder until it engages threaded end of power piston and rod sub-assembly (98).
- Using piston rod wrench (530A86), tighten power piston and rod sub-assembly (98) into air piston (50) securely. Install and tighten slotted nut (51) and set cotter pin (52).
- Insert power unit base (56) with lubricated O-ring (55) and tap it into its proper seat. Insert and tighten six flat head cap screws (57) evenly.
- Using piston rod wrench (530A86), push power piston and rod sub-assembly (98) and air piston (56) to bottom of tool. Fill power unit with oil to about 1/8" above top of power cylinder (60).
- Install manifold assembly (100) onto power unit after placing gasket (95) and O-ring (41) with proper orientation between the two parts. Secure manifold with six socket head cap screws (96) and tighten evenly.

AIR VALVE ASSEMBLY

TO DISASSEMBLE

- Make sure the tool is disconnected from its air-source.
- Remove retaining ring (78) and muffler (77) and pull out plug (76) with the help of tool (P-1178)
- Using the same procedures, pull out valve spool assembly (99).
- If the valve sleeve (69) needs to be removed and cleaned, remove the spring (70) with needle-nosed pliers then pull the valve sleeve (69) with the help of tool (837B530).

TO RE-ASSEMBLE

- Reverse the above procedure; make sure to lubricate O-Rings prior to assembly.
- Use the spring installation tool (836B530) to snap the large part of this conical spring into its groove.
- Make sure that the Plug (76), O-Ring (101) and the air valve cavity are clean and free of grease.
- Place O-ring (101) on the Plug then carefully push the plug in (careful use of a mallet is acceptable if needed)
- Push in the Muffler (77) and snap the Retaining Ring (78) in to secure the valve in place.

HEAD CYLINDER ASSEMBLY

- Remove the head cylinder from the tool by unscrewing the six socket head cap screws (82).
- Remove the head cylinder (13) and O-Rings (41) from the handle grip (83) then drain the fluid into a proper container.
- Place the head cylinder in a vise, with the front end cap (3) oriented upwards.
- Use the socket wrench (680A173) to remove the end cap; it is recommended using a handle extension of about 30".
- Remove the front end cap (3) from the head cylinder (13). Remove the four piston stops (7).
- Unscrew screw (35) using a 3/32" hex key then remove the adjuster knob (37).
- Unscrew the additional screw (35) so the adjuster ring (36) can be removed
- Using the same procedure remove the rear end cap (30).
- Push on the head piston (14) and the shift piston assembly will slide out the other end.
- Caution: Do not disassemble the Shift Valve assembly (97) as its components are matched to work together. This valve must be ordered as an assembly.

To disassemble the Shift Piston Assembly:

- Place the polished surface of the shift piston assembly into the large hole of clamp wrench (680A48/49); tighten the wrench securely.
- Place the wrench in a vise with the piston assembly facing upwards.
- Use the small hole of the second clamp wrench (680A48/49) to remove the piston cap (8).
- Place the shift piston tool (700A63) over threads and against the shoulder of the head piston (14).
- When removing the piston cap (8), push firmly on the shift piston tool (700A63) to depress the head piston (14) and overcome the tension created by the piston spring (23). Caution should be used as spring will pop out if precautionary measures are not taken.
- Remove the valve seat (21) with an 11/16" wrench. Also remove the valve stem (18) and the valve spring (17).

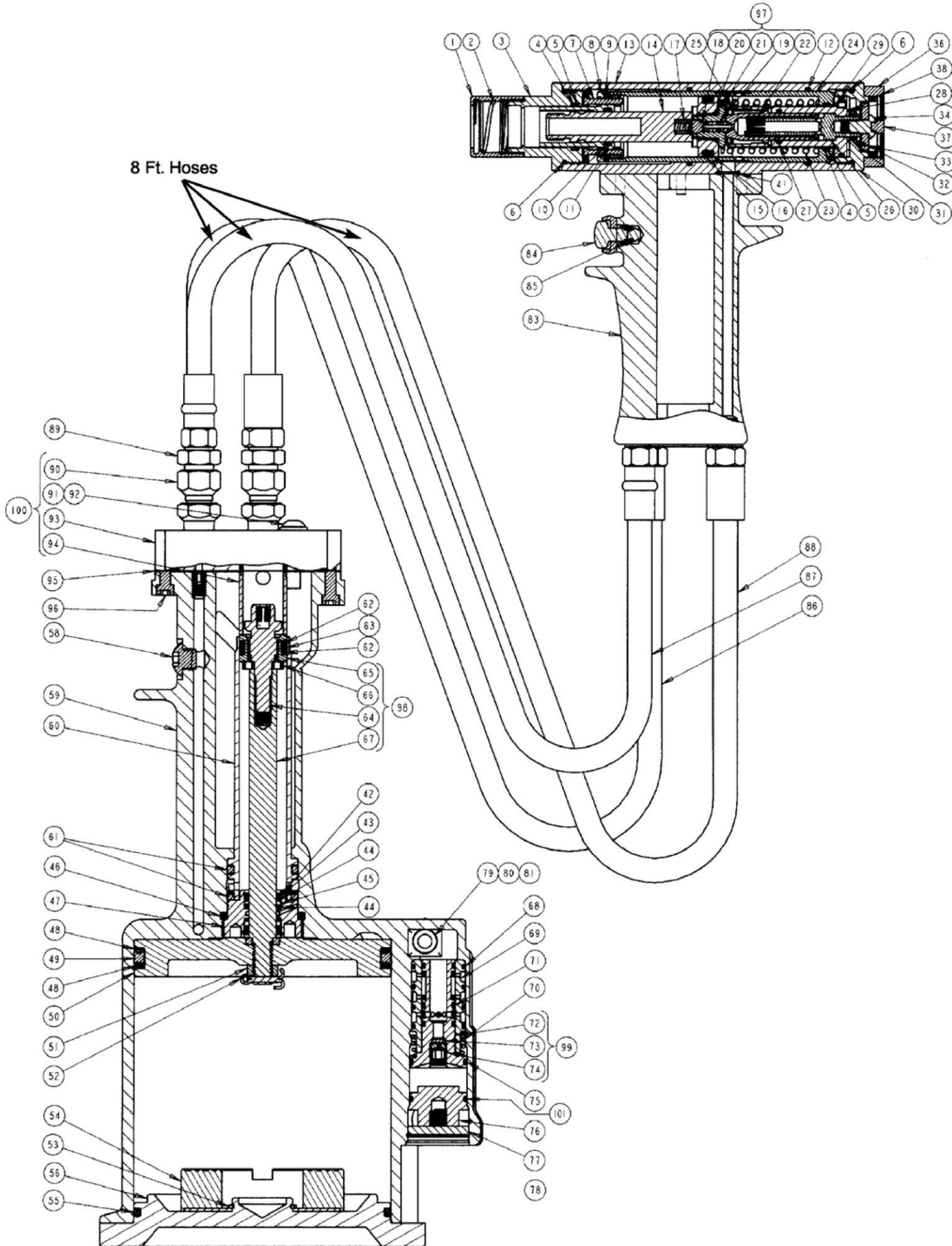
To disassemble the End Cap Assembly

- Using a 5/32" hex key, turn the button head cap screw (34) counterclockwise until it stops.
- Remove the retaining ring (25) with a sharp or pointed instrument.
- Using a 5/32" hex key in the same button head cap screw (34), turn clockwise until the shift stop (22) is remove.
- Loosen and remove the screw (34) from the shift screw (26) with the help of a 3/16" and a 5/32" hex key.
- Push the shift screw (26) out of the release piston assembly (28).
- Remove the release piston assembly (28) from the rear-cap (30) and check the filter for debris; back-blow with compressed air to clean.

To re-assemble the End Cap Assembly

- Reverse the above procedures. Insert release piston sub-assembly (28) into rear cap (30), making sure index pin in release piston sub-assembly (28) drops into recess in rear cap (30).
- Insert shift screw (26) into the release piston sub-assembly (28). Slip index washer (33) onto button head cap screw (34). Engage threads of button head cap screw (34) with shift screw (26) and firmly tighten. Then turn button head cap screw (34) counterclockwise to retract shift stop (22) fully into release piston (28). Ensure that the hex of the shift stop (22) is aligned with the hex of the release piston sub-assembly (28).
- Install piston cap (8) onto piston (14), threading seal guide (680A114) on head piston (14) to avoid damaging the O-rings as cap (8) is threaded into place.
- Hold shift piston (24) using the large hole in clamp wrench (680A48/49), being careful not to mar the polished seal surface of the piston. Insert and compress spring (23) with the cap assembly (8 and 14); tighten with the help of wrench (680A48/49)
- Insert the shift piston assembly (24) into front of the head cylinder (13) and thread-in the rear cap (30). Insert the piston stops (7) one every other hole. Thread-in the front end cap (3). Tighten the end caps using a vise and socket wrench (680A173)
- Assemble the adjuster ring (36), screw (35) and adjusting-knob (37) onto the back of the rear cap (30).
- Place the head sub-assembly onto the top of the pistol grip (83) being sure that O-rings (41) are set correctly.
- Tighten the six socket-head cap screws (82) uniformly to prevent leakage.
- Prime the system with fluid per instructions given at the end of this manual.

CROSS SECTION



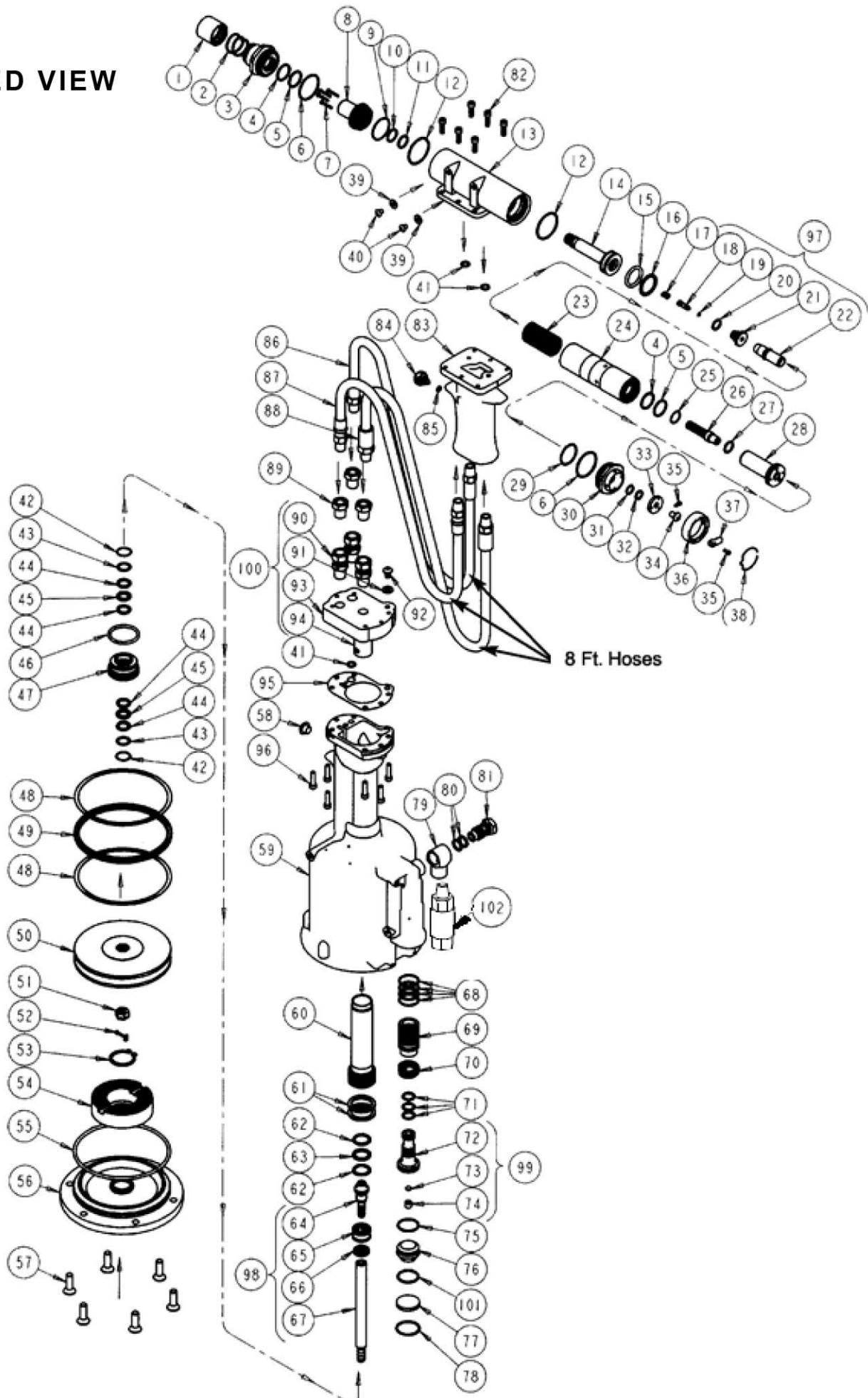
PARTS LIST

ITEM	PART NUMBER	DESCRIPTION	QTY
689C50A		HEAD CYLINDER ASSEMBLY	
1	680A103	SLEEVE CAP	1
2	680A105	COMPRESSION SPRING	1
3	680B107	FRONT CAP	1
4	P652	BACK-UP RING	2
5	P826**	O-RING (WHITE)	2
6	P691**	O-RING (WHITE)	2
7	680A21	PISTON STOP	4
8	680B110	PISTON CAP	1
9	P-266	O-RING	1
10	P-651	BACK-UP RING	1
11	P828**	O-RING (WHITE)	1
12	P904**	O-RING (WHITE)	2
13	680C71	HEAD CYLINDER	1
14	680B153	HEAD PISTON	1
15	P483	O-RING	1
16	P657	BACK-UP RING	1
17	680A111	VALVE SPRING	1
97	680A80	VALVE ASSEMBLY	1
	18 680A20*	VALVE STEM	1
	19 P706	O-RING	1
	20 P298	O-RING	1
	21 680A18*	VALVE SEAT	1
	22 680A77*	SHIFT STOP	1
23	680A79	PISTON SPRING	1
24	680C72	SHIFT PISTON	1
25	P768	RETAINING RING	1
26	680A109	SHIFT SCREW	1
27	P830**	O-RING (WHITE)	1
28	689A108	RELEASE PISTON SUB-ASSY	1
29	P690	O-RING	1
30	680B93	REAR CAP	1
31	P112	O-RING	1
32	P-650	BACK-UP RING	1
33	680A92	INDEX WASHER	1
34	P554	BUTTON HEAD SCREW	1
35	P356	SOCKET HEAD CAP SCREW	2
36	680A112	ADJUSTER RING ASSY	1
	38 680A112-2	FRICTION SPRING	1
37	680A113	KNOB, ADJUSTER	1
39	P572	STAT-O-SEAL	2
40	P573	BUTTON HEAD SCREW	2
41	P194	O-RING	2
530D149		POWER UNIT SUB-ASSEMBLY	
42	P204	RETAINING RING	2
43	530A21-3	WASHER	2
44	P213	BACK-UP RING	4
45	P215	QUAD RIING	2
46	P196	O-RING	1
47	530B14	PACKING PLUG	1
48	P214	BACK-UP RING	2
49	P222	QUAD RIING	1

ITEM	PART NO.	DESCRIP TION	QTY.
530D149		HANDLE ASSEMBLY	
50	530B15	AIR PISTON	1
51	P302	SLOTTED NUT	1
52	P301	COTTER PIN	1
53	P-537	RETAINING RING	1
54	530B92	BONDED CUSHION	1
55	P197	O-RING	1
56	530C141	HANDLE BASE	1
57	P700	FLAT HEAD SCREW	6
58	530A113	BUTTON HEAD SCREW	1
59	530A146	HANDLE	1
60	530A13B	POWER CYLINDER	1
61	P218	QUAD RING	2
62	P209	BACKUP RING	2
63	P216	QUAD RING	1
98	530A60	POWER PISTON & ROD ASSY	1
	64 530A62	PISTON ROD CAP	1
	65 530A11	POWER PISTON	1
	66 560A63	PISTON STOP	1
	67 560A61	POWER PISTON ROD	1
68	P-848	O-RING	4
69	530B179	VALVE SLEEVE	1
70	530A178	SPRING	1
71	P-701	O-RING	3
99	530B143	VALVE SPOOL ASSY	
	72 560B143-1*	VALVE SPOOL	1
	73 700A18*	FILTER	1
	74 700A69*	METERING SCREW	1
75	P244	O-RING	1
76	530A144	VALVE PLUG	1
77	530A145	MUFFLER	1
78	P699	RETAINING RING	1
79	530A34	SWIVEL	1
80	P195	O-RING	2
81	530A35	SWIVEL BOLT	1
82	P73	SOCKET HEAD CAP SCREW	6
83	680C28	HANDLE	1
84	703A33	TRIGGER ASSEMBLY	1
	85 P223	O-RING	1
86	530A123-8	HIGH PRESSURE HOSE	1
87	530A119-8	AIR HOSE	1
88	530A122-8	LOW PRESSURE HOSE	1
89	P579	BUSHING	3
100	680A37-1	SUB-ASSEMBLY, MANIFOLD	1
	90 P456	FITTING, HOSE	3
	91 P670	SLAT-O-SEAL	1
	92 P225	BUTTON HEAD SCREW	1
	93 680B34	BLOCK	1
	94 680A41	STOP	1
95	530B8	GASKET	1
96	P64	SOCKET HEAD CAP SCREW	6
101	P723	O-RING	1
102	P1505	INLINE PRESSURE REGULATOR	1

Notes: Items marked with a star (*) are not sold separately; they are supplied with an assembly

EXPLODED VIEW



PRIMING THE HYDRAULIC SYSTEM

RECOMMENDED HYDRAULIC FLUID

The riveter is supplied with Dexron® III ATF type “A”.

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














COMPATIBLE ALTERNATE FLUIDS

- **Automatic Transmission Fluids:** DEXRON IV, MERCON, Allison C4 or equivalent.
- **Hydraulic Fluids:** Hyspin® VG32 , Aeroshell fluid 4

⚠ CAUTION ⚠

- **DO NOT MIX DIFFERENT TYPES OF HYDRAULIC OILS AND TRANSMISSION; HYDRAULIC AND TRANSMISSION FLUIDS ARE NOT COMPATIBLE DIFFERENT TYPES OF FLUIDS MAY NOT BE COMPATIBLE WITH EACH OTHER.**
- **PHYSICAL PROPERTIES AND MATERIAL SAFETY DATA SHEETS FOR DIFFERENT FLUIDS MAY DIFFER FROM THE ONE GIVEN BELOW, BUT THE SAFETY INFORMATION STILL APPLIES; CHECK WITH THE FLUID MANUFACTURER FOR ADDITIONAL MSDS AND SPECIFIC PROPERTIES.**

FLUID HANDLING SAFETY

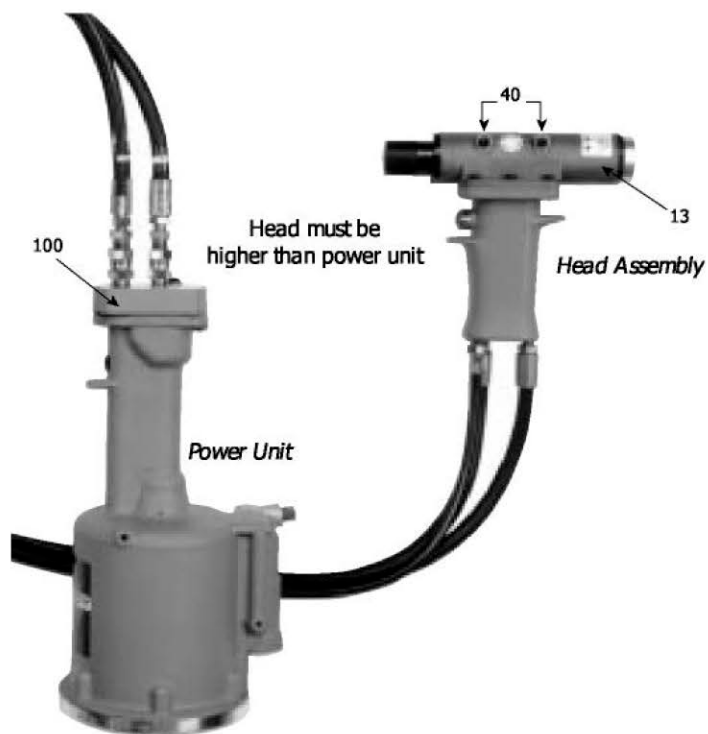
 ENVIRONMENTAL		<ul style="list-style-type: none"> • Waste Disposal in accordance with the applicable regulations
		<ul style="list-style-type: none"> • Soak up spills with diatomaceous earth or other inert materials. • Keep from drains, sewers and water courses. • Filter and recycle used fluid; otherwise store and dispose of according to the applicable regulations.
 HANDLING	 Approved Personal Protective Equipment must be worn	<ul style="list-style-type: none"> • Eye protection is required. • Protective gloves, chemically resistant boots and apron are recommended.
 FIRST AID		<ul style="list-style-type: none"> • Flush eyes thoroughly with water. • If irritation develops, consult a physician.
		<ul style="list-style-type: none"> • To prevent inhalation, use in well-ventilated area. • Short term exposure should pose no adverse health effects. • If inhalation occurs, remove the affected person from the contaminated area and apply artificial respiration if needed.
		<ul style="list-style-type: none"> • DO NOT INDUCE VOMITING. • Seek medical attention immediately.
		In case of skin contamination: <ul style="list-style-type: none"> • Wash thoroughly with soap and water as soon as possible. • Brief skin contact requires no immediate attention. • If irritation develops, consult a physician.
 COMBUSTIBILITY		<ul style="list-style-type: none"> • 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. • Do not store near open flames or other sources of ignition.
		<ul style="list-style-type: none"> • In case of fire, use only suitable extinguishing media: CO2, dry powder, foam or water fog. • CAUTION: DO NOT USE WATER JETS.

PRIMING THE TOOL

After service, the riveter must be primed with hydraulic fluid before re-assembling the manifold and the rest of the tool.

What is needed: 1/8" and 9/64" Hex Keys; 700A77 Bleed Bottle
 Before priming, push power piston (98) all the way down.

- Fill the handle with hydraulic fluid to about 1/8" below the top.
- Place the assembled manifold, making sure that the gasket (95) and O-ring (41) are properly placed. Tighten the screws (96) uniformly to prevent leakage around gasket.
- Connect tool to an airline.
- With cylinder head and hoses placed at the highest point, remove both cap screws (40).
- Using a pressurized fluid source connected to the front hole, run fluid until it flows freely from the rear hole without any air bubbles. If bubbles persist, move the pressurized fluid source to the rear hole and continue running fluid until no more air bubbles are noticed.



BLEEDING INSTRUCTIONS

This operation should be done as part of regular tool maintenance in order to replenish the hydraulic fluid and remove the air bubbles from the system.

- Remove the rear Cap Screw (40) and attach the Bleeder Bottle 700A77 upside down. Make sure to hold the hand unit in such way that the bleed bottle is the highest point of the system.
- Connect tool to an air supply and 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; note if there are air bubbles coming through the bleed bottle. Continue cycling the tool until no more air bubbles are released into the bottle.
- When done, remove the Bleed Bottle and re-seal with the Screw (40).

TROUBLESHOOTING GUIDE

PROBLEM	POSSIBLE CAUSE	LIKELY SOLUTION
Piston (14) does not move after depressing the trigger	<ol style="list-style-type: none"> 1. No air supply is connected 2. Faulty trigger (84) 3. Faulty power piston(61 through 67) 4. Valve Spring (70) not correctly installed 	<ol style="list-style-type: none"> 1. Make sure the riveter is connected to an air source. 2. Remove and replace trigger assembly. 3. Service the Handle assembly. 4. Service the Air Valve; make sure the Spring is properly engaged in its groove
Short piston stroke or low pulling force	<ul style="list-style-type: none"> • Low fluid level or air bubbles in the fluid 	<ul style="list-style-type: none"> • Bleed per instructions above
Head piston (14) is slow or it seizes	<ol style="list-style-type: none"> 1. Possible Head Cylinder damage. 2. Dirty/Clogged air muffler (77) 	<ol style="list-style-type: none"> 1. Service the Head Cylinder 2. Clean muffler thoroughly with solvent and back-blow with compressed air; replace if necessary.
Fluid leakage at the Head Cylinder (1)	<ol style="list-style-type: none"> 1. Leaks around the gasket (17) 2. Leaks at the front or back of head cylinder (1) 	<ol style="list-style-type: none"> 1. Tighten screws (82) until no more leaks are observed; if it still leaks, the seals must be replaced. 2. If leaks persist, service the tool.
Fluid leakage at the side hole of the handle	<ul style="list-style-type: none"> • Worn Packing Plug Seals (44,45) 	<ul style="list-style-type: none"> • Service Handle Assembly
Air leakage at the air valve	<ol style="list-style-type: none"> 1. Broken or dislodged valve spring (45) 2. Worn or damaged Valve Spool seals (46,51) 	<ul style="list-style-type: none"> • Service the Air valve (68 through 78)
Slow / Sluggish cycle	<ul style="list-style-type: none"> • Muffler(77) or Spool (99) are clogged up 	<ul style="list-style-type: none"> • Service the Air valve (68 through 78) • Remove and clean metering screw (74) from spool
Shift Piston does operate properly	<ol style="list-style-type: none"> 1. Worn Seals or seized Shift Piston Assembly: 2. Damaged compression spring (item 23) 3. Shift Valve malfunction spring (19) is damaged or broken 	<ul style="list-style-type: none"> • Disassemble and service the Head Cylinder • Inspect the valve seat, poppet and spring; clean and replace as necessary. Hole through valve stem (18) may be plugged by contaminants. Drain gun, flush thoroughly and refill with fresh fluid.
Tool seems to operate properly but it fails to install the fasteners properly	<ul style="list-style-type: none"> • Pulling Head malfunction 	<ul style="list-style-type: none"> • Disassemble and service the Pulling Head • Make sure the jaws are clean and not worn out and the active area is in good working condition.



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: G686B-S

Serial Number: _____ Date: _____

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,

Sr. Technical Services / Installation Tooling Engineer

Master of Science in Mechanical Engineering

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