

customer manual

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SAFETY PRECAUTIONS AVOID INJURY

Safeguards are designed into this application equipment to protect operators and maintenance personnel from most hazards during equipment operation. However, certain safety precautions must be taken by the operator and repair personnel to avoid personal injury, as well as damage to the equipment. For best results, application equipment must be operated in a dry, dust-free environment. Do not operate equipment in a gaseous or hazardous environment.

Carefully observe the following safety precautions before and during operation of the equipment:

- ALWAYS wear appropriate ear protection.
- ALWAYS wear approved eye protection when operating powered equipment.
- ALWAYS keep guard(s) in place during normal operation.
- ALWAYS insert power plug into a properly grounded receptacle to avoid electrical shock.
- ALWAYS turn off the main power switch and disconnect electrical cord from the power source when performing maintenance on the equipment.
- NEVER wear loose clothing or jewelry that may catch in moving parts of the application equipment.
- NEVER insert hands into installed application equipment.
- NEVER alter, modify, or misuse the application equipment.

TOOLING ASSISTANCE CENTER

CALL TOLL FREE 1-800-722-1111 (CONTINENTAL UNITED STATES AND PUERTO RICO ONLY)

The **Tooling Assistance Center** offers a means of providing technical assistance when required.

In addition, Field Service Engineers are available to provide assistance in the adjustment or repair of the application equipment when problems arise which your maintenance personnel are unable to correct.

INFORMATION REQUIRED WHEN CONTACTING THE TOOLING ASSISTANCE CENTER

When calling the Tooling Assistance Center regarding service to equipment, it is suggested that a person familiar with the device be present with a copy of the manual (and drawings) to receive instructions. Many difficulties can be avoided in this manner.

When calling the Tooling Assistance Center, be ready with the following information:

1. Customer name
2. Customer address
3. Person to contact (name, title, telephone number, and extension)
4. Person calling
5. Equipment number (and serial number if applicable)
6. Product part number (and serial number if applicable)
7. Urgency of request
8. Nature of problem
9. Description of inoperative component(s)
10. Additional information/comments that may be helpful

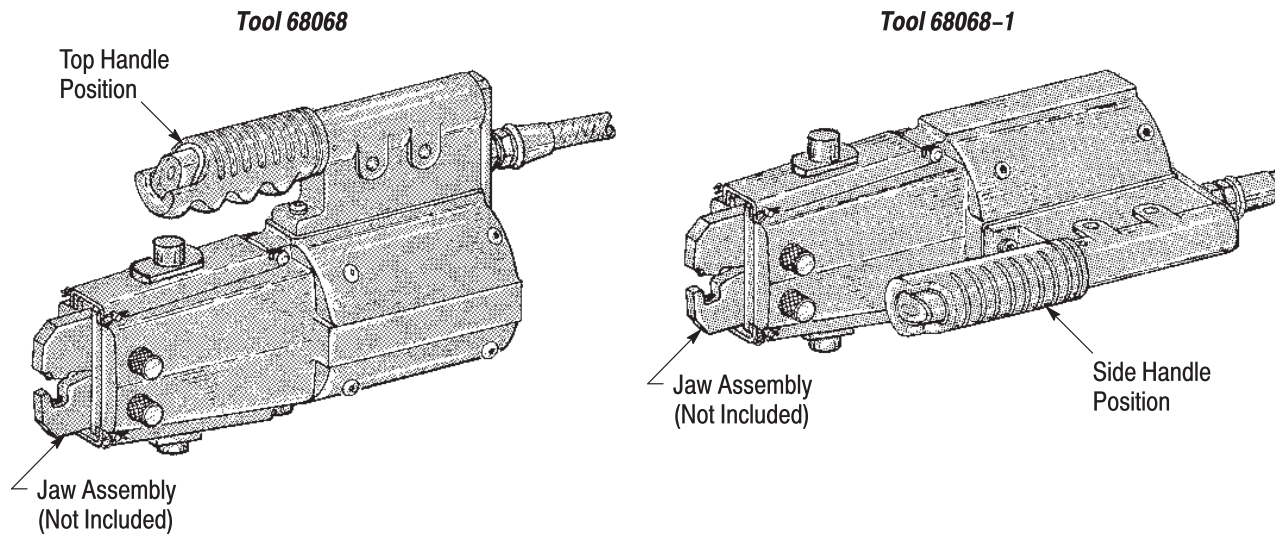


Figure 1

1. INTRODUCTION

Pneumatic Tools 68068 and 68068-1 (shown in Figure 1) are light weight portable hand tools that accept an interchangeable jaw assembly. The jaw assembly provides the tool with a versatility for crimping a wide variety of types and sizes of terminals or splices. Tool 68068 has a top handle position, and Tool 68068-1 has a side handle position.

When reading this manual, pay particular attention to **DANGER**, **CAUTION**, **NOTE** statements.

DANGER Denotes an imminent hazard which may result in moderate or severe injury.



CAUTION Denotes a condition which may result in product or equipment damage.



NOTE Highlights special or important information.



Reasons for reissue of this customer manual are provided in Section 9, REVISION SUMMARY.

NOTE All numerical values in this instruction sheet are in metric units [with U.S. customary units in brackets]. Dimensions are in millimeters [and inches]. Figures are not drawn to scale.



1.1. Specifications

Specifications for the pneumatic tools are given in Figure 2.

Specifications

Air Pressure Range	552-689 kPa [80-100 psi]
Air Displacement	40 cu in. (Approx)
Weight	5 K [11 lb] (Approx) (Including Jaw Assembly)

Figure 2 (Cont'd)

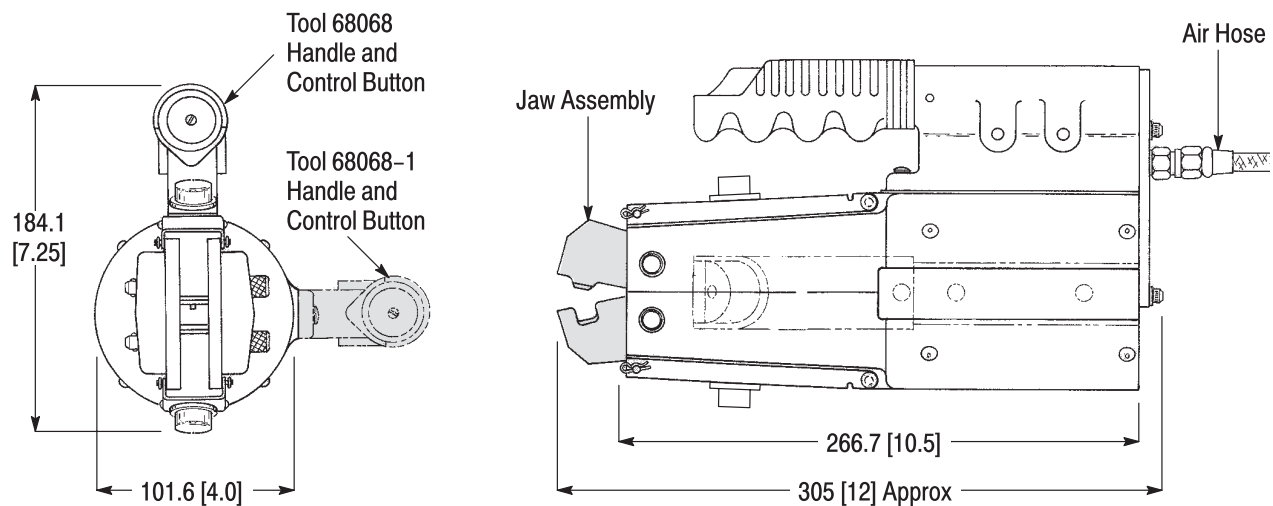


Figure 2 (End)

1.2. Air Line Requirements

Use clean, dry, oil treated air, regulated between 552 kPa [80 psi] and 689 kPa [100 psi]. It is important that the air pressure is maintained constantly within the required air pressure range. Pressure lower than stated will be insufficient for the crimping operation. Pressure higher than stated may cause damage to the tool.

A filter and moisture separator, regulator, and lubricator (customer supplied) must be used with this tool to ensure dependable performance and long life. It is strongly recommended that the units be installed at each tool in the order shown in Figure 3. Mount the units as close as possible to the tool, preferably where the tool hose is connected to the air system. Make sure that the units are checked regularly on an assigned schedule.

Suggested manufacturers and benefits realized by the use of this equipment is given in Figure 3.

1.3. Air Pressure Check List

Check the air pressure at the tool while the tool is operating.

A. If the Air Pressure is Below 552 kPa [80 psi]

1. Check the air compressor and air line pressure regulator for sufficient capacity, proper settings, and mechanical condition.
2. Check for clogged or kinked air lines or hoses.
3. Check the air lines, hoses, and fittings or couplings for correct size (may be too small).

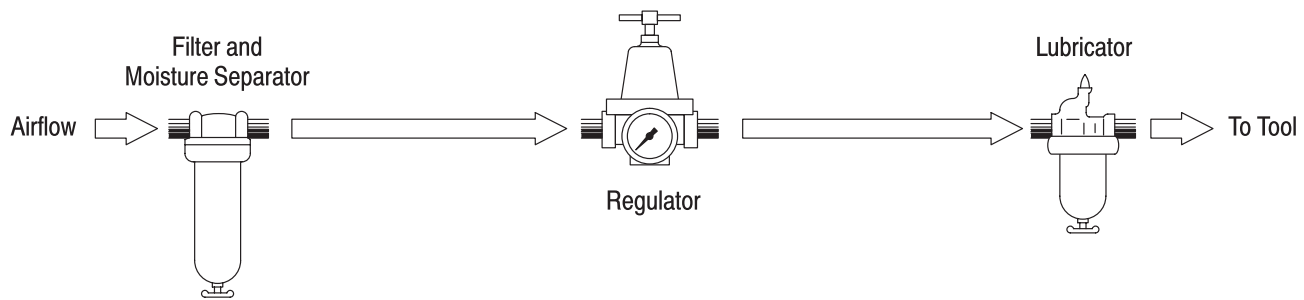
B. If the Air Pressure is Above 669 kPa [100 psi]

Check the air compressor and air line pressure regulator for proper settings and mechanical condition.

1.4. Safety Precautions

To avoid personal injury or damage to the tool, carefully observe the following safety precautions before and during operation of the tool.

- ALWAYS disconnect the air supply before changing the jaw assembly or performing any maintenance on the tool
- ALWAYS keep fingers clear of the jaws when operating the tool
- ALWAYS ensure that the correct type and size terminal or splice is used in the jaw assembly
- ALWAYS ensure that the pivot pins are fully inserted into the jaws
- NEVER operate the tool without the jaw assembly installed; otherwise, damage to the tool could occur
- NEVER allow air pressure to exceed 689 kPa [100 psi]

**DRAIN REGULARLY**

- Minimizes clogging and excessive wear
- Minimizes rust and corrosion
- Prevents water from washing away lubricants
- Prevents water emission from exhaust ports

**CHECK AIR PRESSURE REGULARLY
(552 kPa [80 psi] Min–689 kPa [100 psi] Max)**

- Promotes smooth, consistent performance
- Protects hoses and components from damage

**CHECK OIL LEVEL REGULARLY
(Adjust to Very Fine Mist
Approximately 1 Drop per 15–20 Cycles)**

- Eliminates sluggish or sticking valves and pistons
- Provides protective film for highly polished or close tolerance surfaces
- Provides seal in close tolerance areas
- Extends life of pistons, cylinders, and valves

SUGGESTED MANUFACTURERS

Filter and Moisture Separator, Regulator, Lubricator	Lubricator Oil (Only Use Good Quality, Non-Synthetic Air Lubricant)
C.A. Norgen Co., Littleton, CO Chicago Pneumatic Tool Co., New York, NY	(C.P. Airoilene SAE 10) Chicago Pneumatic Tool Co., New York, NY

Airoilene is a trademark of Chicago Pneumatic Tool Co.

Figure 3

2. DESCRIPTION

2.1. Physical Description

The tool consists of a housing, handle, and air hose that connects to an air supply. The housing contains the cylinder, piston, and cam. The front of the housing accepts an interchangeable jaw assembly that is secured to the housing by two pivot pins. The back of the housing features an identification plate. The handle has a control button that actuates the tool. Refer to Figure 4.

2.2. Functional Description

⚠ DANGER



To avoid personal injury, ALWAYS DISCONNECT the tool from the air supply when changing the jaw assembly. Always keep fingers clear of jaws during the crimping operation.

When the tool is connected to the air supply, air pressure on the return side of the cylinder maintains the piston and cam in a neutral position and allows the spring-loaded jaws to remain open. Refer to Figure 4, Detail A. The operator can now position the wire-loaded terminal or splice in the jaws.

When the control button is depressed, full air line pressure is directed into the power side of the cylinder, closing the jaws to the crimp position. Refer to Figure 4, Detail B.

Releasing the control button allows full air line pressure to enter the return side of the cylinder, returning the piston and cam to neutral position. The spring-loaded jaws will open and the tool is ready for the next crimping operation.

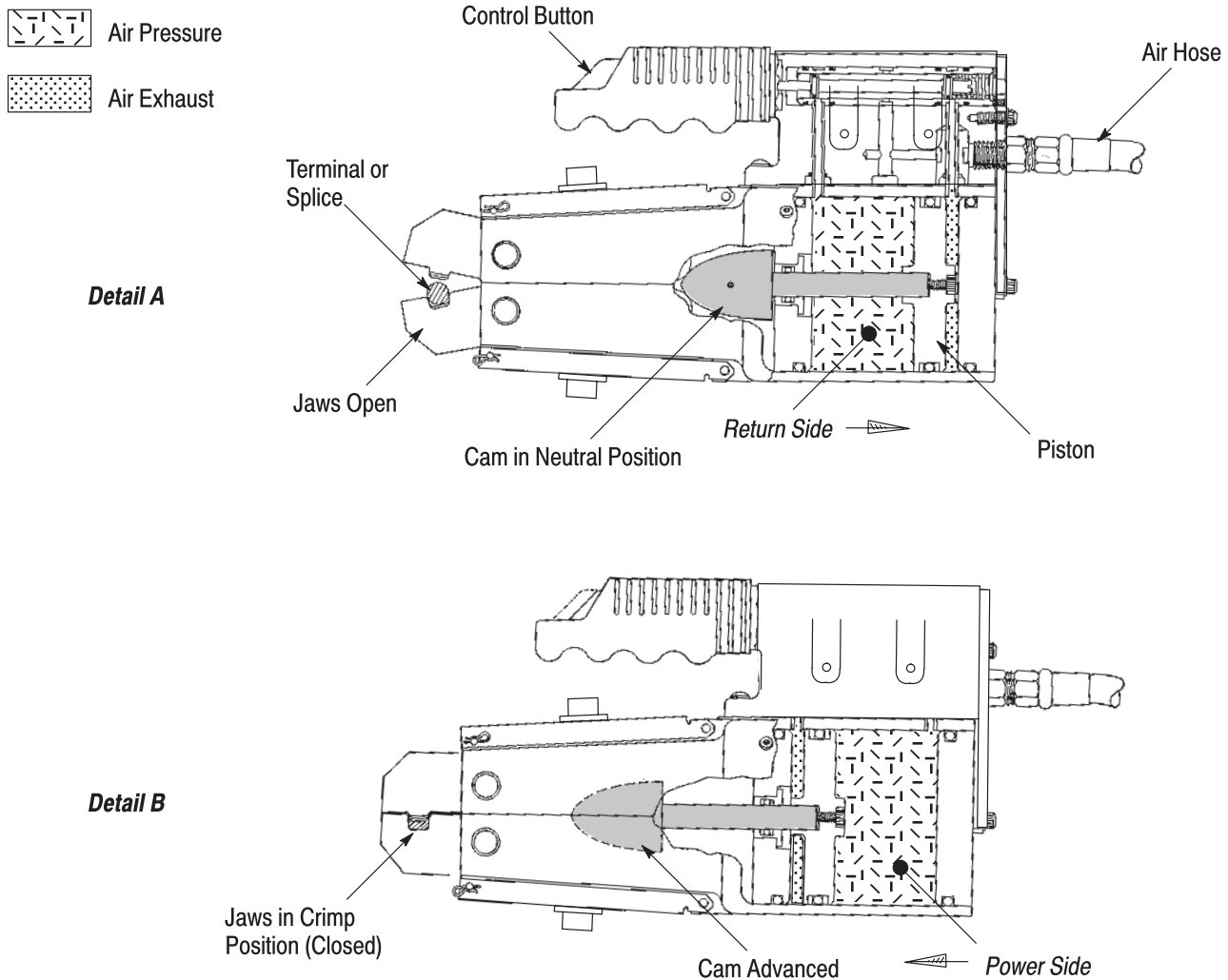
Physical and Functional Description

Figure 4

3. INSTALLING AND REMOVING JAW ASSEMBLY**3.1. Installing Jaw Assembly**

1. DISCONNECT the tool from the air supply.



To prevent personal injury, ALWAYS DISCONNECT the tool from the air supply when installing the jaw assembly.

2. Refer to Figure 5, and select the applicable jaw assembly for the terminal or splice and wire size being crimped. For detailed information about the jaw assembly, refer to the instruction sheet listed.



The jaw assembly is coated with a preservative to prevent rust and corrosion. Wipe the preservative from the jaws, particularly from the crimping area.

TERMINAL OR SPLICE	WIRE RANGE		JAW ASSEMBLY	
	SIZE (AWG)	CMA	PART NUMBER	INSTRUCTION SHEET
COMPALUM* Insulation Piercing Terminal and Splice	12-10	5,180-13,100	68101	408-2393
	8	13,100-20,800		
	8	13,100-20,800	68192-1	
	6	20,800-33,100	68102	
COMPALUM Bar Crimp Terminal and Splice	6	20,800-33,100	68106	408-2394
SOLISTRAND* Terminal and Splice	8	13,100-20,800	68135	408-2395
	6	20,800-33,100	68136	
PLASTI-GRIP* Terminal	6	20,800-33,100	68233-1	408-2532
	4	33,100-52,600	68254-1	
Pre-Insulated Vinyl (ECV) Closed End Splice	12-6	19,500-42,700	68268-1	408-2564

Figure 5

- Inspect the jaw closure surfaces, jaw bottoming surfaces, and jaw cam rollers for deposits of dirt or other foreign particles. If necessary, wipe clean with a clean cloth. Re-lubricate the jaw cam rollers according to Paragraph 5.3. Make sure the jaw cam rollers are not binding.
- Pull one cowling pin and remove the retaining pin from the lower housing cover. The cover will swing open. See Figure 6.
- Remove the pivot pins.
- Orient the jaws as described in the instruction sheet packaged with the jaw assembly (refer to Figure 5). Position the jaws in the tool housing ensuring that the jaw cam rollers are properly mated with the tool cam and the pivot pin holes of the jaws and the tool housing are aligned. See Figure 6.
- Insert the pivot pins.

CAUTION

To avoid damage to the tool or pivot pins, make sure that the pivot pins are fully inserted.



- Pivot the lower housing cover into the closed position, and re-install the retaining pin and cowling pin.

3.2. Removing Jaw Assembly

- DISCONNECT the tool from the air supply.

DANGER

To prevent personal injury, ALWAYS DISCONNECT the tool from the air supply when removing the jaw assembly.



- Pull one cowling pin and remove the retaining pin from the lower housing cover. The cover will swing open.
- Remove the pivot pins, then remove the jaws.

Installing Jaw Assembly

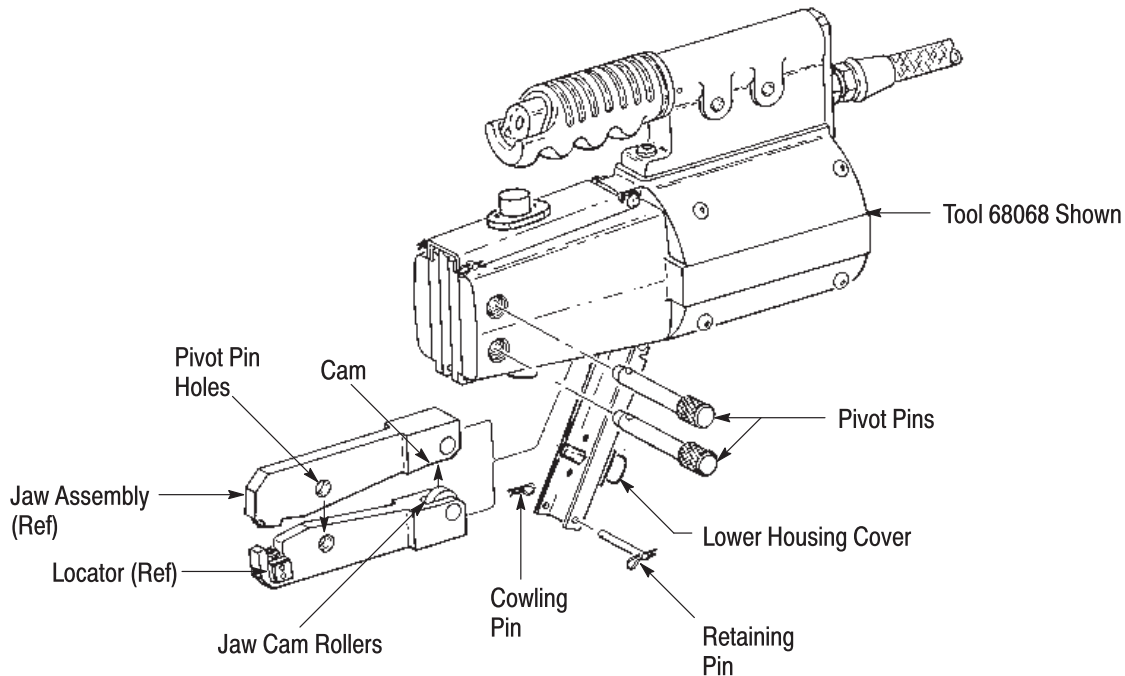


Figure 6

4. OPERATING PROCEDURE

Make sure to follow safety precautions (refer to Paragraph 1.4) before and during operation of the tool. Refer to the instructions included with the jaw assembly for specific wire preparation and crimp inspection requirements.

DANGER



To avoid personal injury, ALWAYS keep fingers clear of the jaw closure during crimping cycles.

1. Connect the tool to the air supply according to Paragraph 1.2, and check the air pressure according to Paragraph 1.3.
2. Insert the wire into the wire barrel of the terminal or splice.
3. Place the terminal or splice in the lower jaw (refer to the instructions included with the jaw assembly for specific location in the jaw).
4. FULLY depress the tool control button (the jaws will close).
5. Release the tool control button to open the jaws, then remove the crimped terminal or splice.

5. PREVENTIVE MAINTENANCE

It is important that a preventive maintenance program be performed at regular intervals to ensure efficient dependable performance of the tool.



To avoid personal injury or damage to the tool, ALWAYS DISCONNECT the tool from the air supply before performing any preventive maintenance on the tool.

5.1. Daily Cleaning

1. Clean the jaw closure surfaces. DO NOT allow deposits of dirt or other foreign matter to build up on the bottoming surfaces of the jaws.
2. Wipe clean the surfaces of the jaw cam, jaw cam rollers, and housing of the tool with a solvent and a clean cloth. Re-lubricate the tool and jaws as instructed in Paragraph 5.3.

5.2. Visual Inspection (Perform Monthly)

1. Inspect the jaw housing for worn or bent pins or worn bushings.
2. Inspect the cam for lubrication, excessive wear, or damage. If necessary, replace the cam.
3. Check the jaw return plunger for binding.
4. Make sure that all screws are tight.
5. Cycle the tool to ensure that the jaws function satisfactorily.
6. With the air supply connected, inspect the air fitting, exhaust ports, and the area around the piston rod for air leaks. If necessary, replace the main piston or piston rod "O" ring.
7. Inspect the jaw housing for metal particles. The presence of metal particles indicates that the jaws should be lubricated or parts are misaligned or worn.
8. Check the jaw cam rollers for binding and proper lubrication.

5.3. Lubrication

Refer to Figure 7 for areas of the tool that should be lubricated and the type of lubricant to use.



Apply lubricant sparingly; thereby avoiding build-up of lubricant and dirt and possible tool malfunction.

The air system of the tool must receive lubrication via an air line lubricator. Refer to Paragraph 1.2.

Frequency of lubrication should be as follows:

- Tools used daily — lubricate daily
- Tools used occasional — lubricate weekly
- Tools used weekly — lubricate monthly

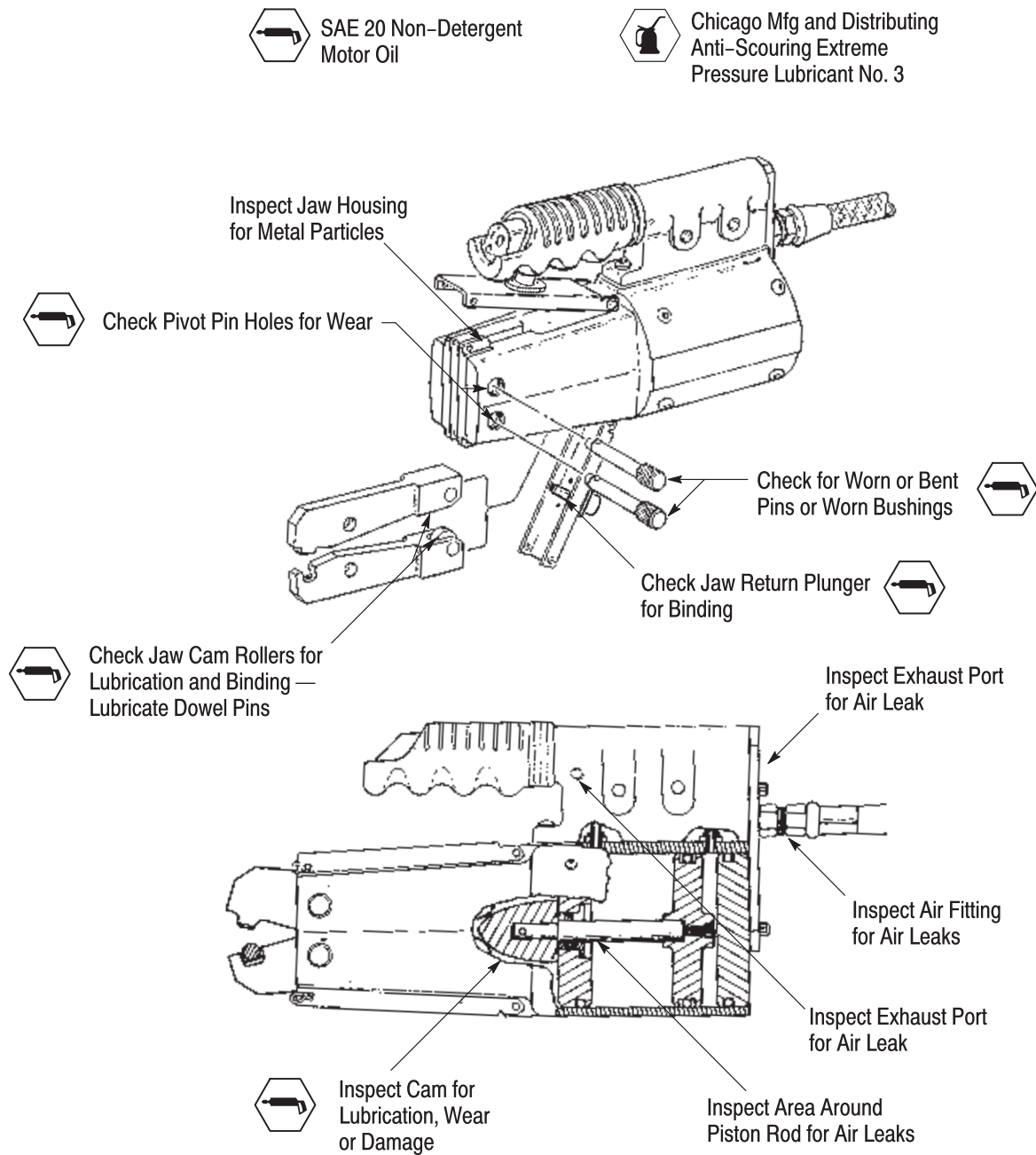
Visual Inspection and Lubrication

Figure 7

6. TROUBLESHOOTING

In the event of tool malfunction, perform the following five-point visual inspection of the tool before attempting a detailed troubleshooting procedure.

1. Ensure that the air pressure is regulated at 552 kPa [80 psi] minimum to 689 kPa [100 psi] maximum.
2. Ensure that the pivot pins are fully inserted.
3. Ensure that the jaws are properly mated with the cam.
4. Ensure that the jaw cam rollers are not binding and are properly lubricated.
5. Ensure that the cam is properly lubricated.

If the five-point visual inspection does not eliminate the malfunction, refer to Paragraph 2.2, Functional Description; Figure 8 (troubleshooting table); and Section 7, Parts List (which contains an exploded view of the tool). If the malfunction cannot be remedied with these aids, contact TOOLING ASSISTANCE CENTER at the number at the bottom of page 1.

DANGER



To avoid personal injury or damage to the tool, ALWAYS DISCONNECT the tool from the air supply before attempting to disassemble the tool for parts inspection or replacement.

MALFUNCTION	PROBABLE CAUSE	REMEDY
Jaws close too slowly or will not bottom and complete the crimp.	Insufficient air pressure.	Ensure that the air pressure is at least 552 kPa [80 psi].
	Piston "O" ring is deteriorated allowing too much "blow-by."	Replace piston "O" ring. Refer to Paragraph 8.2.
	Air valve spool "O" rings are deteriorated allowing too much "blow-by."	Replace air valve spool "O" rings. Refer to Paragraph 8.3.
	Air valve spool needs to be adjusted.	Adjust air valve spool. Refer to Paragraph 8.4.
	Jaw cam rollers are binding or need to be lubricated.	Clean, inspect, and lubricate the jaw cam rollers. Refer to Section 5.
	Cam is damaged or needs to be lubricated.	Replace the cam (refer to Paragraph 8.1) or lubricate the cam (refer to Paragraph 5.3).
Piston cam will not retract to open jaws or retracts too slowly.	Piston rod "O" ring is deteriorated (air leaks into jaw housing from behind the main piston cam).	Replace piston rod "O" ring. Refer to Paragraph 8.2.
	Air valve spool "O" rings are deteriorated allowing too much "blow-by."	Replace air valve spool "O" rings. Refer to Paragraph 8.3.
	Air valve spool needs to be adjusted.	Adjust air valve spool. Refer to Paragraph 8.4.
	There is insufficient air pressure.	Ensure that the air pressure is at least 552 kPa [80 psi].

Figure 8

7. PARTS LIST

Figure 9 is a complete list of all parts contained in the tools. The exploded view should be used to identify location and assembly of parts.

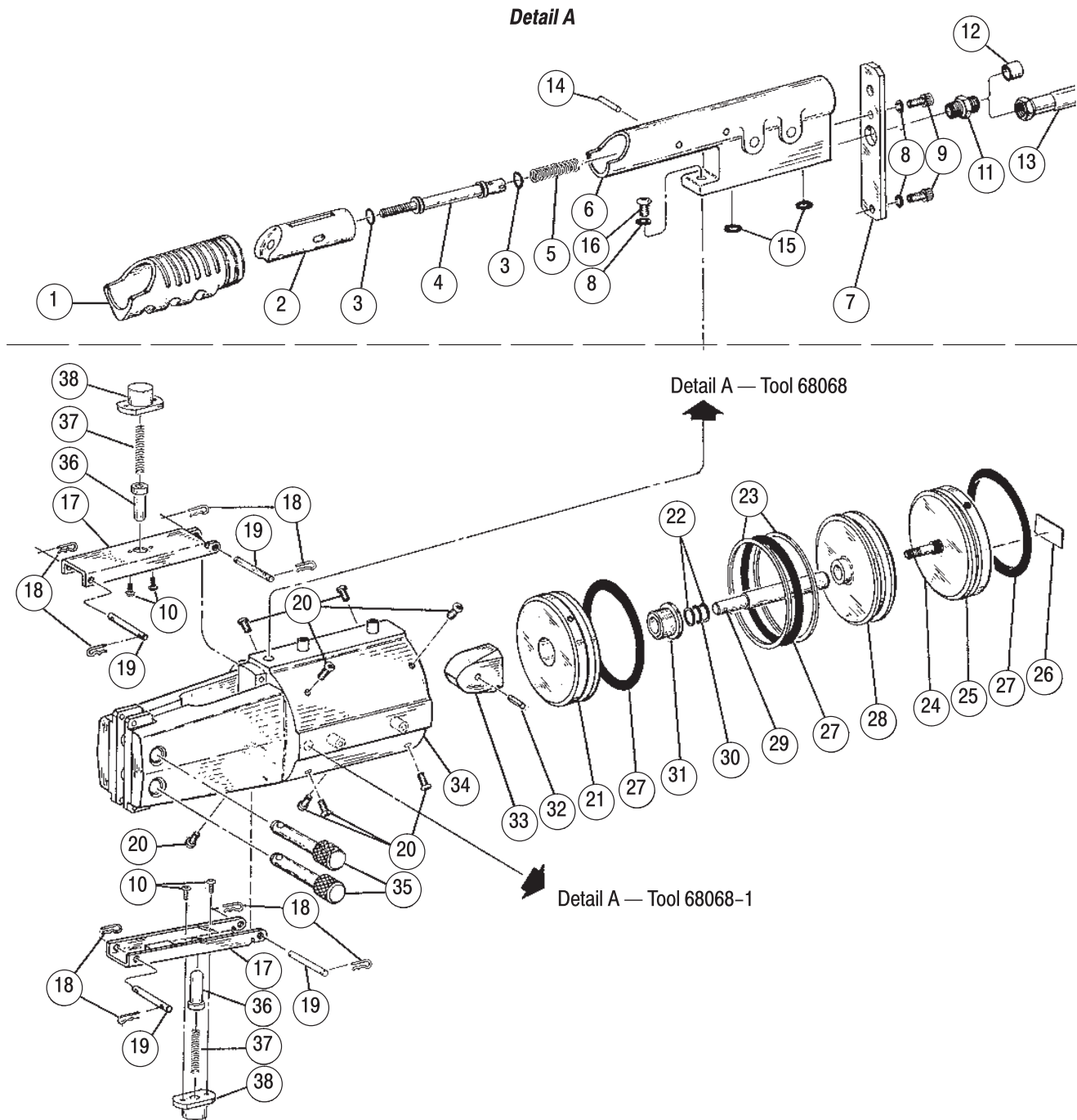


Figure 9 (Cont'd)

PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY PER TOOL
1	237130	GRIP, Handle	1
2	237116	BUTTON	1
3	4-21086-5	"O" RING, Air Valve Spool	2
4	237134	SPOOL, Air Valve	1
5	22284-7	SPRING, Compression	1
6	237118	HANDLE	1
7	237111	STRAP	1
8	21055-7	WASHER, Flat, No. 10	3
9	5-21000-3	SCREW, Socket Head Cap, 10-24 $\times$.500 in. Long	2
10	2-21002-0	SCREW, Button Head, 8-32 $\times$.250 in. Long	4
11	300093	HOSE, Coupling	1
12	302222	CAP, Plastic	1
13	300094	HOSE, Air, 10 ft	1
14	21030-7	PIN, Dowel, .125 in. Dia. $\times$ 1.125 in. Long	1
15	4-21086-3	"O" RING	2
16	6-21002-5	SCREW, Button Head, 10-24 $\times$.750 in. Long	1
17	308391-1	COVER, Housing	2
18	23138-2	PIN, Cowling	8
19	237133	PIN, Retaining	4
20	2-21002-3	SCREW, Button Head Socket Cap, 8-32 $\times$.630 in. Long	8
21	237114	PLUG, Front	1
22	2-21106-6	RING, Back-Up	2
23	3-21107-5	RING, Back-Up	2
24	3-21000-6	SCREW, Socket Head Cap, 10-32 $\times$.625 in. Long	1
25	237113	PLUG, Rear	1
26	25625-2	PLATE, Identification	1
27	1-21976-4	"O" RING, Piston	3
28	237101	PISTON	1
29	237099	ROD, Piston	1
30	5-21084-0	"O" RING, Piston Rod	1
31	237106	INSERT, Front Plug	1
32	5-21028-7	PIN, Slotted Spring, .125 in. Dia $\times$.880 in. Long, Cam Retaining	1
33	237131	CAM	1
34	237156	HOUSING	1
35	306209-7	PIN, Pivot	2
36	308389-1	PLUNGER	2
37	3-22280-7	SPRING, Compression	2
38	308390-1	RETAINER, Spring	2

Figure 9 (End)

8. REPLACEMENT AND REPAIR

Customer-replaceable parts are listed in Figure 9. A complete inventory should be stocked and controlled to prevent lost time when replacement of parts is necessary. Parts other than those listed should be replaced by Tyco Electronics Corporation to ensure quality and reliability. Order replacement parts through your representative, or call 1-800-526-5142, or send a facsimile of your purchase order to 717-986-7605, or write to:

CUSTOMER SERVICE (038-035)
TYCO ELECTRONICS CORPORATION
PO BOX 3608
HARRISBURG PA 17105-3608

For customer repair service, call 1-800-526-5136.

8.1. Cam Replacement

1. DISCONNECT the tool from the air supply.

DANGER

To prevent personal injury, ALWAYS DISCONNECT the tool from the air supply when making replacements.

2. Remove the two screws (Item 9), washers (Item 8), and strap (Item 7) from the handle.
3. Remove screw (Item 16) and washer (Item 8) from the handle, then remove the handle from the tool housing.

CAUTION

Observe the following precautions while removing the handle:

- *Protect exposed tubes from damage.*
- *DO NOT allow foreign matter to enter the tubes or holes of the handle.*

4. Remove the screws (Item 20) from the rear of the cylinder housing.
5. Remove the rear plug (Item 25) being careful not to damage the piston “O” ring (Item 27).
6. Open both tool housing covers (Item 17) as far as they will open.
7. Push the piston (Item 28) toward the front of the tool until access to the cam retaining pin (Item 32) is permitted through the slot in the tool housing.
8. While observing the cam (Item 33), use a hex wrench to turn the screw (Item 24) **CLOCKWISE** until the cam retaining pin (Item 32) is parallel with the large slot in the jaw housing.

NOTE

DO NOT turn the screw COUNTER-CLOCKWISE; otherwise, the piston may loosen on the piston rod (Item 29).

9. Brace and support the cam from one side, and drive the cam retaining pin (Item 32) out of the piston rod and cam from the opposite side.

CAUTION

Make sure that the cam is properly braced and supported before driving the cam retaining pin out of the piston; otherwise, the piston rod could bend or damage could occur to the piston rod “O” ring, back-up rings, or insert.

10. Replace the cam. Align the hole of the new cam with the hole of the piston rod, and re-install the cam retaining pin (Item 32).
11. Using a hex wrench, turn the screw (Item 24) **CLOCKWISE** until the cam retaining pin is perpendicular to the large slot of the tool housing.

NOTE

DO NOT turn the screw COUNTER-CLOCKWISE; otherwise, the piston may loosen on the piston rod (Item 29).

12. Examine the piston “O” ring (Item 27) for wear and damage. If necessary, replace it. Apply a small amount of “O” ring lubricant to the “O” ring.
13. Align the holes of the rear plug with the holes of the cylinder housing, and insert the rear plug. Install and tighten the screws (Item 20).
14. Carefully position the handle over the tubes and secure with the screw (Item 16) and washer (Item 8).
15. Re-install the strap (Item 7) using the two screws (Item 9) and washers (Item 8).

8.2. Piston and Piston Rod “O” Ring Replacement

1. DISCONNECT the tool from the air supply.

DANGER

To prevent personal injury, ALWAYS DISCONNECT the tool from the air supply when making replacements.



2. Remove the two screws (Item 9), washers (Item 8), and strap (Item 7) from the handle.
3. Remove the screws (Item 20) from the rear of the cylinder housing.
4. Remove the rear plug (Item 25), being careful not to damage the piston “O” ring (Item 27).
5. Remove the screws (Item 20) that mount the front plug (Item 21) to the front of the cylinder.
6. Remove the cam (Item 33), front plug (Item 21), and piston (Item 28) as a unit from the cylinder.
7. Remove the screw (Item 24), and remove the piston from the piston rod (Item 29).
8. Slide the front plug off of the piston rod.
9. Remove the piston rod “O” ring (Item 30) from the front plug insert (Item 31), and inspect the back-up rings (Item 22) for wear and damage. If necessary, replace the back-up rings.

NOTE

Stagger the slits in the back-up rings before installing the “O” ring.



10. Install the new piston rod “O” ring, and apply “O” ring lubricant.
11. Slide the front plug onto the piston rod.
12. Remove the piston “O” ring (Item 27) from the piston, and inspect the back-up rings (Item 23) for wear and damage. If necessary, replace the back-up rings.

NOTE

Stagger the slits in the back-up rings before installing the “O” ring.



13. Mount the piston on the piston rod. Apply a heavy-duty anti-seize lubricant to the threads of the screw (Item 24), and install and tighten the screw to lock the piston onto the piston rod.
14. Inspect the piston “O” ring (Item 27) on the front plug for wear and damage. If necessary, replace the “O” ring. Apply “O” ring lubricant.
15. Align the screw holes of the front plug with the mounting holes at the rear of the cylinder.
16. Slide the front plug, cam, and piston as a unit into the cylinder until the front plug screw holes are aligned with the mounting holes at the front of the cylinder.
17. Install and tighten the screws (Item 20) to lock the front plug into position.
18. Examine the piston “O” ring (Item 27) for wear and damage. If necessary, replace the “O” ring, and apply “O” ring lubricant to the “O” ring.

19. Align the holes of the rear plug with the holes of the cylinder housing, and insert the rear plug. Install the screws (Item 20), and tighten.
20. Re-install the strap (Item 7) using the two screws (Item 9) and washers (Item 8).

8.3. Air Valve Spool "O" Ring Replacement

1. DISCONNECT the tool from the air supply.

DANGER

To prevent personal injury, ALWAYS DISCONNECT the tool from the air supply when making replacements.

2. Remove the handle grip (Item 1).
3. Remove the dowel pin (Item 14) from the valve housing.
4. Slide the button (Item 2) and attached air valve spool (Item 4) out of the valve housing.
5. Remove the compression spring (Item 5) from inside of the valve housing, and inspect it for excessive wear or breakage. If necessary, replace the compression spring.

NOTE

DO NOT disturb the air valve spool adjustment within the button. If the spool adjustment is disturbed, refer to Paragraph 8.4 to re-adjust it.

6. Replace both air valve spool "O" rings (Item 3), then apply "O" ring lubricant to the new "O" rings.
7. Re-install the compression spring (Item 5).
8. Slide the air valve spool and button into the valve housing until the slot of the button is aligned with the dowel pin hole of the valve housing. See Figure 10.
9. Insert the dowel pin (Item 14) all of the way into the valve housing. The ends of the dowel pin must be flush with the sides of the valve housing.
10. Re-install the handle grip.

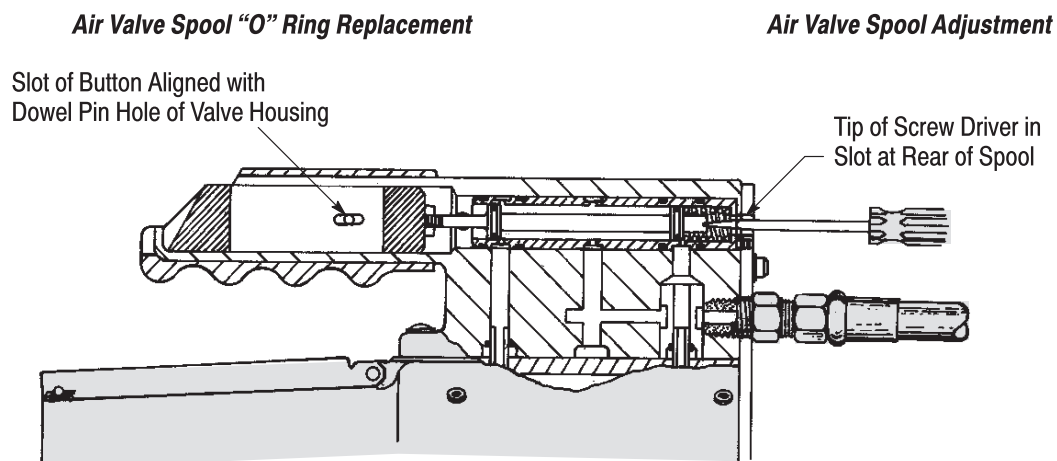


Figure 10

8.4. Air Valve Spool Adjustment

A. Crimp Function

If the jaws *close* too slowly or not at all the control button is fully depressed, perform the following:

1. Make sure that the air pressure is regulated at 552 kPa [80 psi] minimum to 689 kPa [100 psi] maximum.
2. With the control button fully depressed, insert the tip of a screw driver through the rear exhaust port and into the slot at the rear of the air valve spool. See Figure 10.
3. Turn the screw driver *COUNTER-CLOCKWISE* until the jaws are fully closed. Stop turning the screw driver as soon as the jaws are closed and when there is no evidence of air escaping through the exhaust ports.
4. Cycle the tool a few times to ensure that the tool is functioning properly.

B. Cam Return Function

If jaws *open* too slowly or not at all when the control button is released, perform the following:

1. Make sure that the air pressure is regulated at 552 kPa [80 psi] minimum to 689 kPa [100 psi] maximum.
2. With the control button fully depressed, insert the tip of a screw driver through the rear exhaust port and into the slot at the rear of the air valve spool. See Figure 10.
3. Turn the screw driver *CLOCKWISE* until the jaws are fully open. Stop turning the screw driver as soon as the jaws are open and when there is no evidence of air escaping through the exhaust ports.
4. Cycle the tool a few times to ensure that the tool is functioning properly.

9. REVISION SUMMARY

Revisions to this customer manual include:

- Updated document to corporate requirements
- Removed obsolete Tool 68068-4
- Removed obsolete jaw assemblies and added instruction sheet referenced to Figure 5
- Added jaw position to Figure 6
- Removed obsolete items or items related to obsolete tool from Figure 9
- Added Paragraph 2.1
- Changed “rear plug” to “piston” in Paragraph 8.1, Step 12 and Paragraph 8.2, Step 18
- Added lubrication symbol to jaw cam rollers in Figure 7
- Added ordering parts information and changed customer repair service information in Section 8