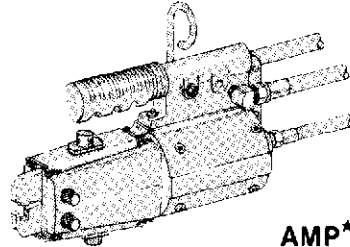




CM 2500	
RELEASED	11-19-73
REVISED	9-22-80



CM 2500

**AMP* PNEUMATIC TOOL
CATALOG NO. 68068-3**

This manual has been prepared to serve as both an instruction book for operation and maintenance, and as a source of general information for the AMP pneumatic tool No. 68068-3.

The customer shall be responsible for maintenance of the tool. Maintenance instructions include minor repairs, and replacement of damaged or broken parts as described in this manual.

For major repairs or production difficulties with the tool, field engineering assistance is available from AMP Incorporated at a nominal fee.

The following instructions should be read carefully before attempting to operate the tool for the first time. The performance of your tool will depend largely on the intelligent use of the information contained in this manual. All pneumatic tools and accessories are carefully tested and adjusted at the factory before shipment and, with proper maintenance, will give years of satisfactory service.

All illustrations and specifications contained in this manual are based on the latest product information available at the time of publication. If the information does not agree with the pneumatic tool being used, contact Field Engineering, AMP Incorporated, Harrisburg, Pennsylvania 17105.

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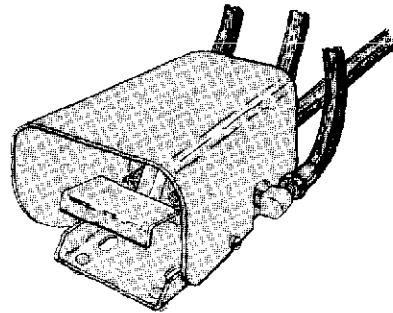
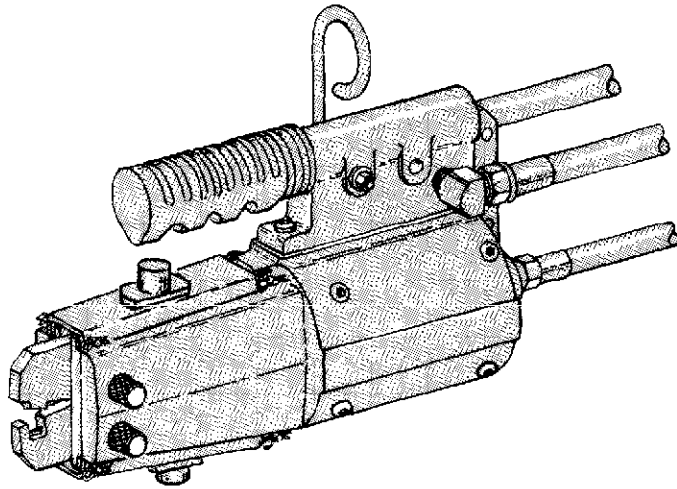
WARNING

SAFETY PRECAUTIONS PREVENT INJURY

Safeguards are designed into AMP tools to protect operators and maintenance personnel from hazards during normal tool operation. As with most tooling, certain precautions must be taken by the operator and repairman. Avoid personal injury or damage to the tool. Carefully observe the following safety precautions before and during operation of the tool:

- ALWAYS disconnect air supply when changing jaws or performing any maintenance on tool.
- ALWAYS keep fingers clear of crimping jaws when operating the tool.
- ALWAYS ensure that the correct type and size terminals or splices are used in the crimping jaws.
- ALWAYS ensure that crimping jaw pivot pins are fully inserted.
- NEVER operate tool without crimping jaws installed or damage to tool may occur.
- NEVER allow air pressure to exceed 100 P.S.I.

PNEUMATIC TOOL NO. 68068-3



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SECTION 1 GENERAL INFORMATION

1.1 INTRODUCTION

The 68068-3 tool shown in Figure 1-1 is a precision made air powered hand tool capable of crimping terminals and splices on solid or stranded aluminum or copper wire. The unique design of this tool features compactness, portability, interchangeable crimping jaws, and simplicity of operation.

All pneumatic tools are thoroughly inspected and calibrated before being shipped from the factory. Since there is a possibility of damage in shipment, AMP recommends that new tools be inspected for loose, bent, misaligned, or broken parts as soon as received in your plant. Refer to Section 4 of this manual for parts replacement information.

This section of the manual introduces the operator to the tool, its accessories, portable or bench mount features, and how it functions.

1.2 SPECIFICATIONS

Air Pressure — 80 PSI min. - 100 PSI max.
Air Displacement — 40 Cu. In. (Approx.)
Weight — Approximately 11 lbs. with jaws
Overall Dimensions — See Figure 1-1

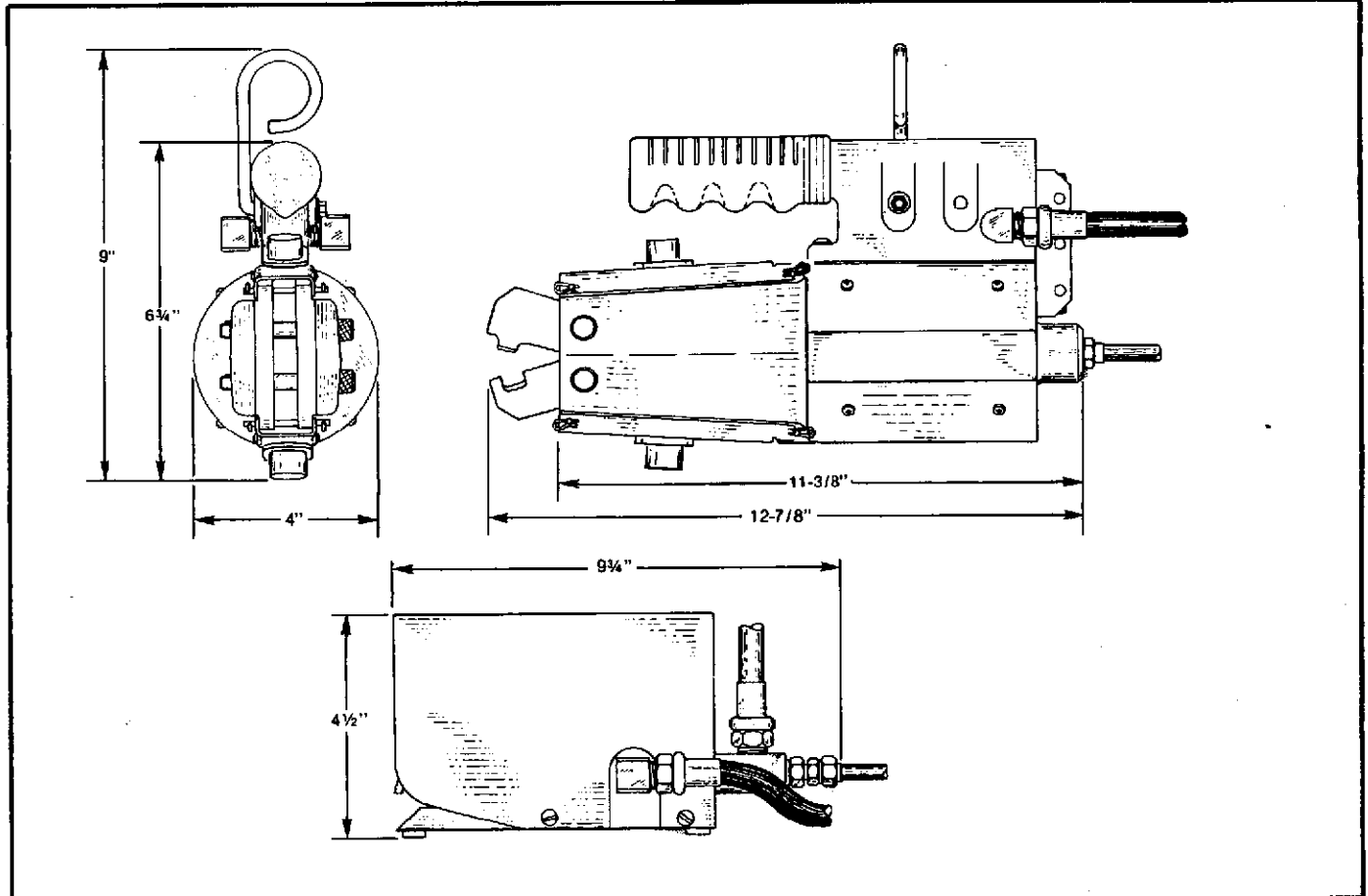
1.3 AIR LINE REQUIREMENTS

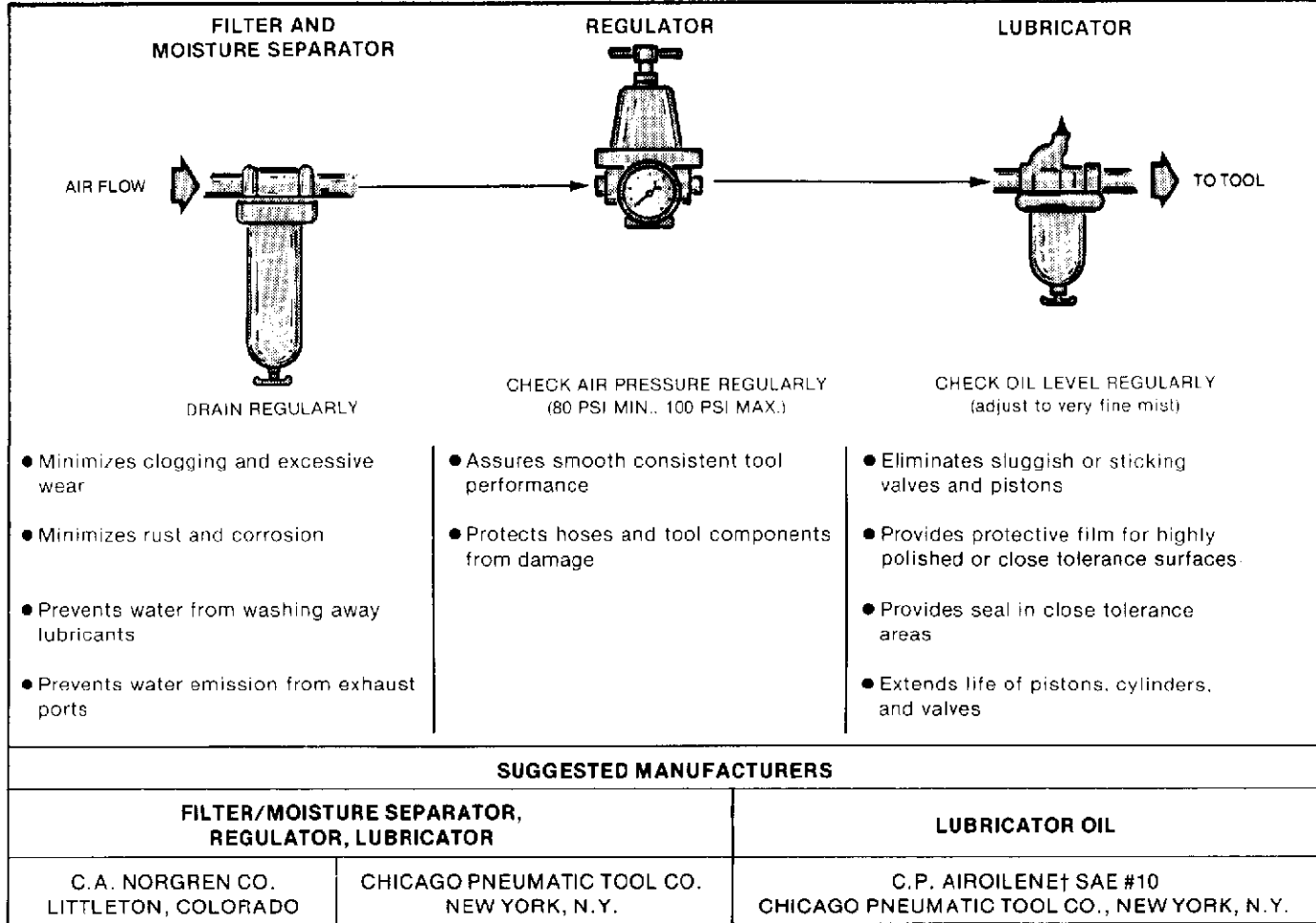
Use clean, dry, oil treated air, regulated between 80 and 100 PSI.

NOTE

It is important that air pressure is maintained constantly between 80 and 100 PSI. Pressure under 80 PSI will be insufficient for crimping operation. Pressure over 100 PSI may cause damage to the tool.

A filter and moisture separator, regulator and lubricator, (supplied by the customer) must be used with this tool to ensure dependable performance and long life. AMP strongly recommends the units be installed at each tool station in the order shown in Figure 1-2. Mount the units as close as possible to the tool, preferably where the tool hose is connected to the air system. Be sure units are checked regularly, on an assigned schedule, by the tool operator or maintenance personnel. Figure 1-2 lists the suggested manufacturers and benefits realized by the use of this equipment.





† Trademark of Chicago Pneumatic Tool Co.

Figure 1-2

1.3.1 Air Pressure Check List

Check air pressure right at tool station while tool is operating.

- (a) If air pressure is below 80 PSI:
 1. Check air compressor and air line pressure regulators for proper settings and mechanical condition.
 2. Check for clogged or "kinked" air lines or hoses.
 3. Check air lines, hoses, fittings or couplings for correct size. (May be too small).
 4. Check air compressor for sufficient capacity and mechanical condition.
- (b) If air pressure is above 100 PSI:
 1. Check air compressor and air line pressure regulators for proper settings and mechanical condition.

1.4 ACCESSORIES

1.4.1 Crimping Jaw Selection Data

Interchangeable crimping jaws for these air tools may be selected from the chart, Figure 1-3, and ordered as required. Figure 1-3 lists the available jaw assemblies and describes the products crimped in them. Refer to the instruction material packaged with the jaws for installation instructions, wire preparation, crimping instructions, maintenance inspection procedures, and parts replacement information.

Section 5 of this manual is provided to contain the instruction material received with your crimping jaws.

PRODUCT DESCRIPTION	WIRE RANGE	JAW ASSY. NO.	CMA RANGE
COPALUM * INSUL PIERCING CU/AL	20-18	68118-1	810 to 2,050
	16-14		2,050 to 5,180
	16-14	68100	2,050 to 5,180
	12-10		5,180 to 13,100
	12-10	68101	13,100 to 20,800
	8		
	8	68192-1	20,800 to 33,100
6	68102		
COPALUM BAR CRIMP CU/AL	16-14	68104	2,050 to 5,180
	12-10		5,180 to 13,100
	12-10	68105	13,100 to 20,800
	8		
	6	68106	20,800 to 33,100
	4	68107	33,100 to 52,600
SOLISTRAND * "W" CRIMP	8	68135	13,100 to 20,800
	6	68136	20,800 to 33,100
	16-10	68232-1	2,050 to 13,100
PLASTI-GRIP * "W" CRIMP	8	68229-1	13,100 to 20,800
	6	68233-1	20,800 to 33,100
	4	68254-1	33,100 to 52,600
CLOSED END SPLICE	18-8	68245-1	10,320 to 20,820
	18-6	68268-1 68290-1*	19,500 to 42,700

*Front loading

Figure 1-3

CAUTION

ALWAYS ensure that the correct type and size terminals or splices are used in the jaws or damage may occur to jaws.

1.4.2 Bench Mount

The tool may be bench mounted by removing the hanger bolt and using the two holes to attach a bench mounting bracket. AMP does not manufacture or sell bench mounting brackets. A suggested bracket design and dimensions are given in Figure 1-4, Detail A.

After tool is properly positioned on bench, (see Paragraph 1.5.2) mark and drill holes in bench to match holes of mounting bracket. Bolt bracket to bench.

NOTE

Front of crimping jaws should be approximately 6" to 8" behind edge of bench. See Figure 1-4, Detail B.

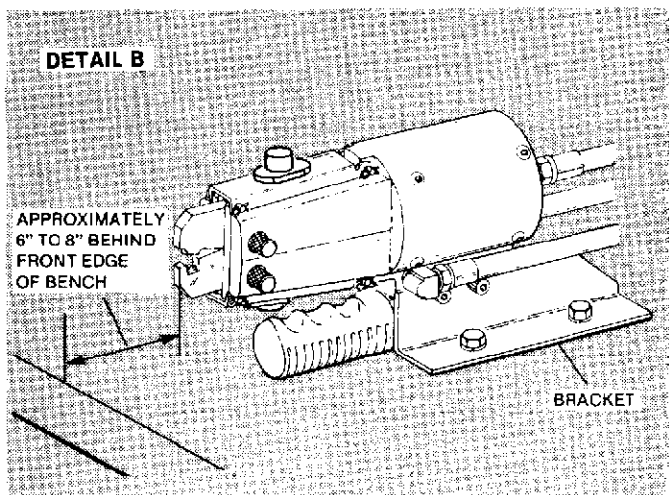
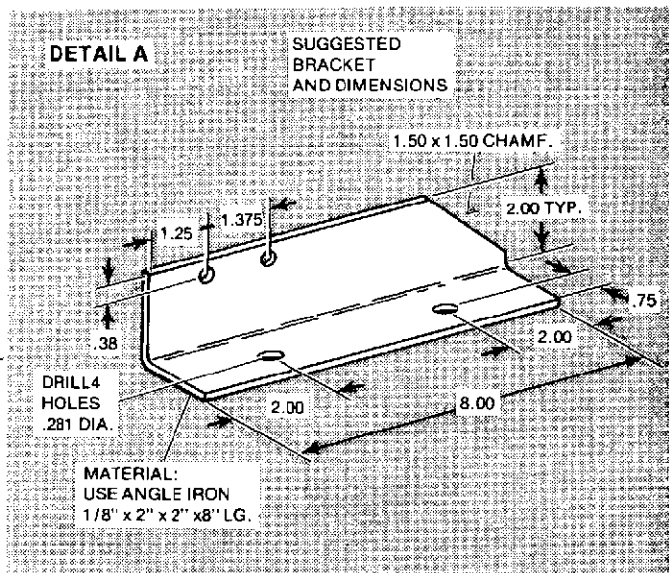


Figure 1-4

1.5 INSTALLATION/PERFORMANCE CONSIDERATIONS

If an operator is expected to operate a tool for extended periods each day, and maintain production rates — it is important that attention is focused on operator health, safety, and comfort. With these factors in mind, the following must be considered:

For Portable Operation [See Paragraph 1.5.1]

- (a) Tool/Work Area Orientation
- (b) Balance Reel

For Bench Mounted Operation [See Paragraph 1.5.2]

- (a) Bench height and construction
- (b) Tool location on the bench
- (c) Operator's chair
- (d) Pedal location
- (e) Ideal conditions

1.5.1 Portable Operation [With Balance Reel]

[a] Tool/Work Area Orientation

The tool is equipped with a two position hanger bolt and a three position hanger bracket as shown in Figure 1-5A. The hanger bolt may be located in either hole in the handle. Use these hangers to suspend and operate the tool in one of the various angles shown in Figure 1-5A.

When using the tool over a work bench, or at an assembly line, always locate tool and balance reel within easy reach of the operator. The tool should be able to be moved easily within the full working area of the operator as shown in Figure 1-5B.

NOTE

Longer hose lengths are available upon request. Contact your local AMP representative.

If the tool is used over a bench, the bench and operator's chair should meet the requirements discussed in Paragraph 1.5.2.

[b] Balance Reel

The balance reel, see Figure 1-5B, should be capable of suspending a tool weight of 12 lbs. or more. Install the balance reel so that tool can easily be moved within the full working area of the operator. Avoid operator fatigue by adjusting the balance so that operator need exert only minimum effort to move tool in any direction.

Depending on the portable usage of the tool, varying amounts of slack cable may be required. We, therefore, suggest purchasing an adjustable balance reel equipped with a locking feature. The locking feature should be able to be disengaged in the event that the unit is to be used as a conventional balance.

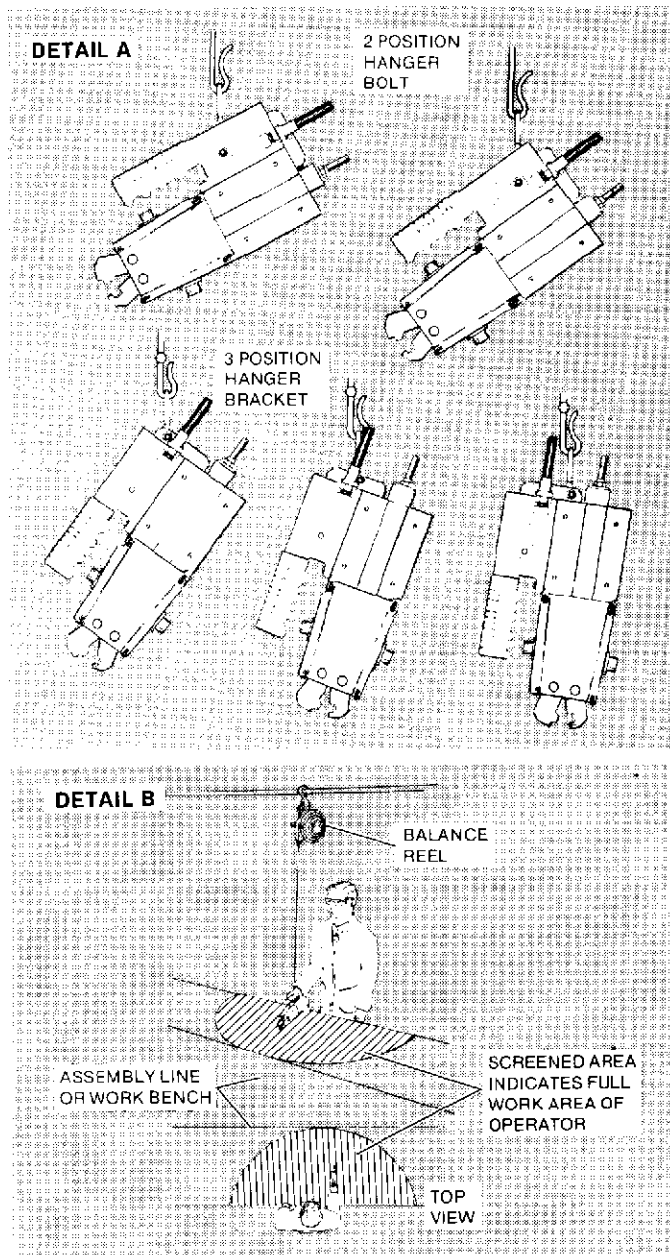


Figure 1-5

1.5.2 Bench Mounted Operation

[a] Bench Height and Construction Requirements

1. Sturdy construction.
2. Height range of 28 to 30 inches to allow operators feet to rest on floor.
3. Higher bench requires use of a platform type foot rest, large enough for adequate foot space and to allow foot pedal to be moveable.
4. Ample leg space under bench. (Avoid condition shown in Figure 1-6A.)

Conditions To Be Avoided

High bench and chair without platform type foot rest

Bench too low (Figure 1-6A)

Results

Operator's legs weigh too heavily on chair seat, impairing circulation and causing numbness. See Figure 1-6B.

Inadequate leg room and uncomfortable body position causes operator fatigue. Chair cannot be moved close enough.

[b] Tool Location on Bench Requirements

1. Adequate space around tool for maintenance purposes.
2. Access to air supply.
3. Tool must be near front of bench, approximately 6" to 8". See Figure 1-4 or 1-7.

Conditions To Be Avoided

Tool too far back on bench (Figure 1-6A)

Results

Target area could be difficult to see and/or excessive strain could result from operating while in an awkward position.

[c] Operator's Chair Requirements

1. Independent seat height and back rest adjustments.
2. Padded back rest capable of providing support above and below waist line.
3. Padded seat.
4. Chair far enough forward so that operator's back is straight and supported by back rest.

Conditions To Be Avoided

Chair too high (Figure 1-6B)

Results

When reaching for pedal, edge of seat presses into leg causing poor circulation and numbness.

Operator places one foot on chair rung to help overcome unbalanced position which leads to discomfort and fatigue.

Causes high visual angle and poor visibility.

Operator may not be able to depress pedal properly.

Chair too close (Figure 1-6C)

Cramped position for operator restricts freedom of movement and causes fatigue.

position. (Placing pedal on rubber mat keeps it moveable while preventing inadvertent sliding.)

[e] Ideal Conditions

[d] Foot Pedal Requirements

1. Locate so that leg is perpendicular to floor (natural position) or slightly in front of natural position.
2. To provide comfort and prevent fatigue, foot should be at approximately 90° (right angle) to calf when resting on pedal. (May require wedge shaped block under pedal for operators who prefer pedal slightly in front of natural position.)
3. To minimize fatigue, pedal should be moveable so location can be changed when operator shifts

Figure 1-6D shows the physical considerations as recommended, and the operator in a desirable position. Note that the chair height and back rest are properly adjusted and that the chair is properly located with respect to the bench. Thus, the operator's back is straight and supported by the chair.

The plan view, Figure 1-7, suggests typical locations for wire supply, terminal or splice supply, and finished leads.

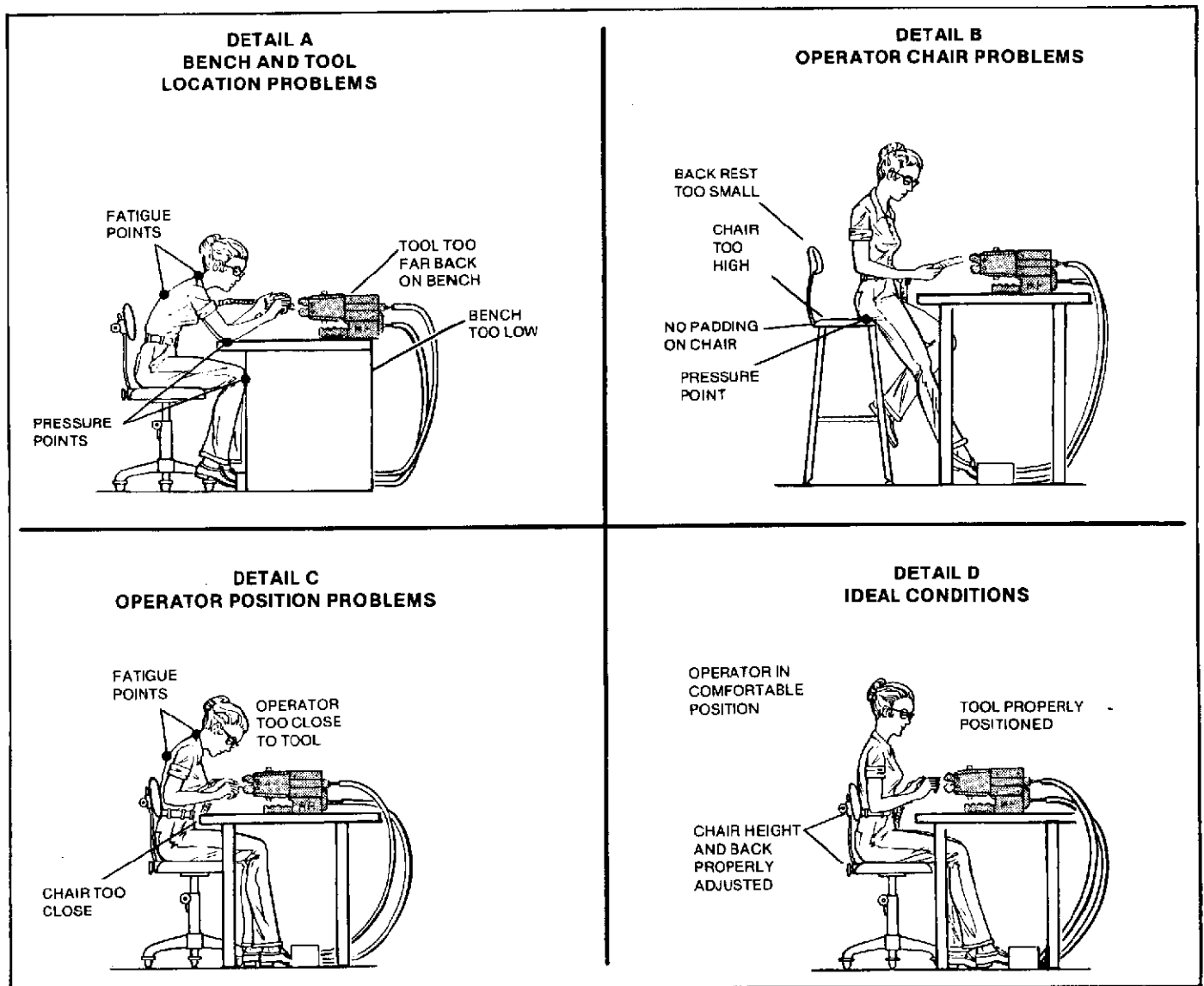


Figure 1-6

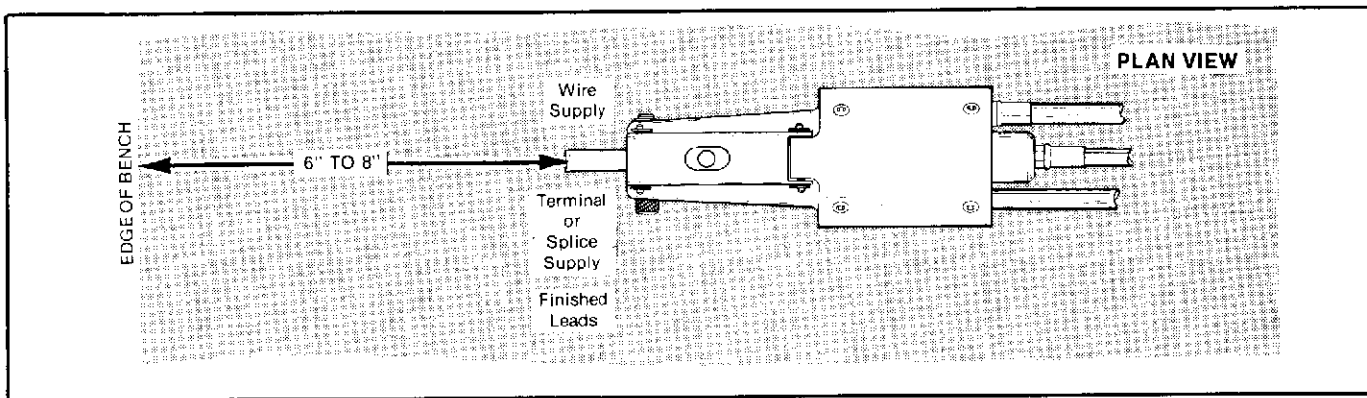


Figure 1-7

1.6 FUNCTIONAL DESCRIPTION

[Refer to Figure 1-8]

The complete tool assembly consists of the pneumatic crimping tool, four hoses, and a foot pedal control.

WARNING

Avoid personal injury. Always disconnect tool from air supply when changing crimping jaws. Always keep fingers clear of jaws during crimping operation.

When hose (a) is connected to the main air supply, air pressure is supplied to hose (b) "hold feature" (secondary piston), and hose (d) "return" (main piston). See Figure 1-8A. At this point the crimping jaws are in open position and ready to receive a terminal or splice. When the operator fully depresses the foot pedal, "return" valve N/O is actuated, exhausting air from the "return" side of tool's main piston. This air exhausts through a port in muffler

of valve N/O and lifts deflector and cam clear of "crimp" valve, N/C as shown in Figure 1-8B. With air pressure exhausted from "return" side of main piston, secondary piston can now advance the main piston and cam, closing crimping jaws to "hold" position and gripping terminal or splice as shown in Figure 1-8B. At this point the operator inserts stripped wire into terminal or splice. The crimp is completed when pedal is raised half way, see Figure 1-8C, and then depressed a second time to actuate "crimp" valve N/C. When the foot pedal was raised half way, the deflector dropped, bringing the deflector cam in position over "crimp" valve N/C. See Figure 1-8C. When the pedal was depressed to activate crimp valve N/C, air pressure was released through hose (c) to the crimp side of main piston, advancing the piston cam and closing the crimping jaws to crimp the terminal or splice as shown in Figure 1-8D. Releasing the pedal after the crimp is completed, actuates valve N/O, allowing full air pressure to pass through hose (d), moving the main piston and piston cam to the "return" position as shown in Figure 1-8A. The spring loaded jaws will open and the tool is ready for the next crimping cycle.

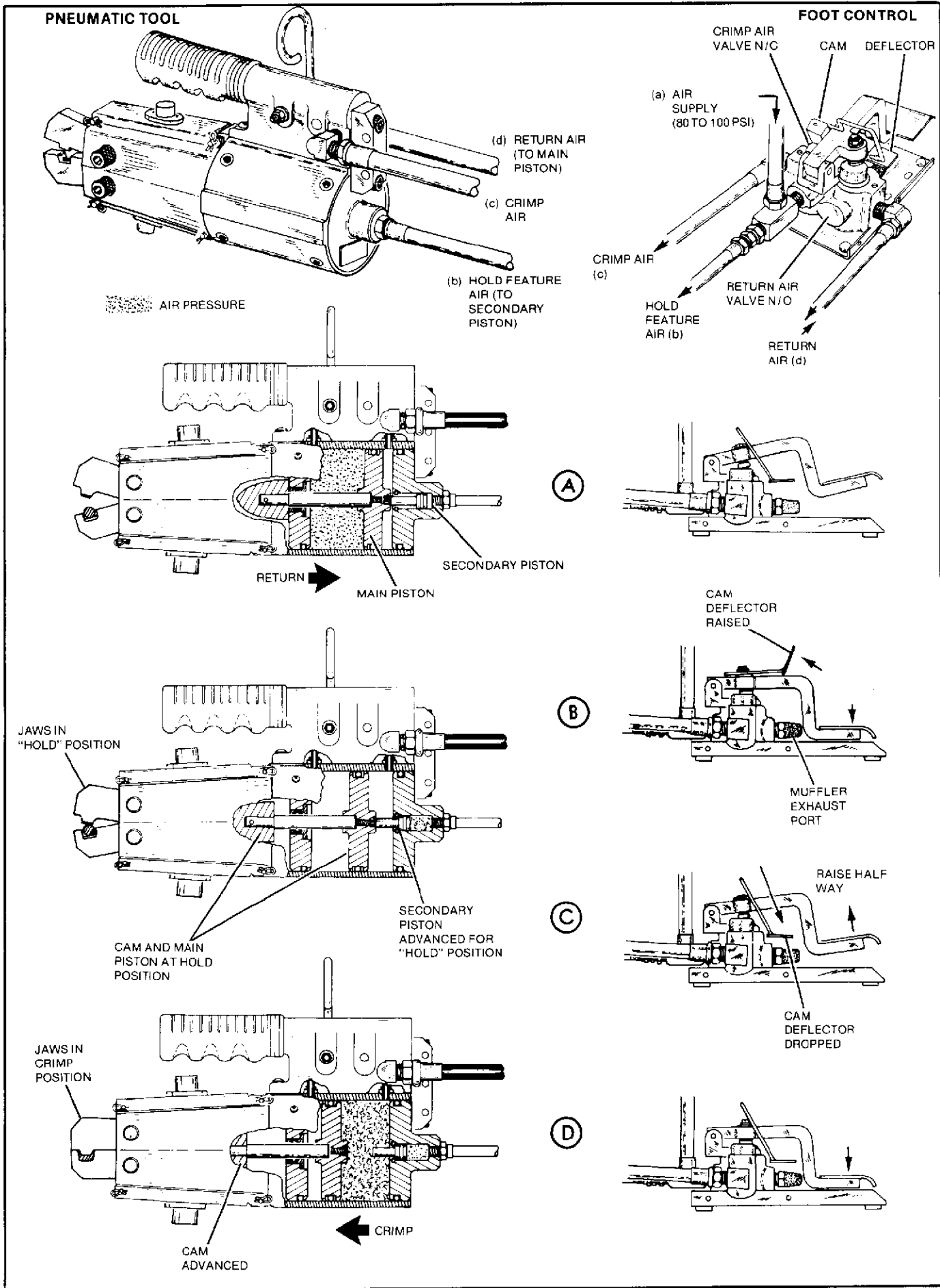


Figure 1-8

SECTION 2 OPERATING INSTRUCTIONS

2.1 INTRODUCTION

This section of the manual introduces the operator to the necessary safety precautions, set-up procedures and crimping operations.

2.2 SAFETY PRECAUTIONS

As with most tooling, certain precautions must be taken by the operator and repairman to avoid personal injury or damage to the tool. Carefully observe the following safety precautions before and during operation of the tool.

- ALWAYS disconnect air supply when changing jaws or performing any maintenance on tool.
- ALWAYS keep fingers clear of crimping jaws when operating the tool.
- ALWAYS ensure that the correct type and size terminals or splices are used in the crimping jaws.
- ALWAYS ensure that crimping jaw pivot pins are fully inserted.
- NEVER operate tool without crimping jaws installed or damage to tool may occur.
- NEVER allow air pressure to exceed 100 PSI.

2.3 INSTALL CRIMPING JAWS

Refer to the selection chart, Figure 1-3, and select the correct crimping jaws for the product being crimped.

Crimping jaws are coated with oil to prevent rust and corrosion. Wipe the oil from jaws, particularly from crimping area. Inspect die closure area, bottoming surfaces and cam rollers for deposits of dirt or other foreign particles and wipe with a clean cloth. See Figure 2-1, Detail A. Relubricate cam rollers as instructed in Paragraph 3.2.3.

- DISCONNECT TOOL FROM AIR SUPPLY.
- Pull one cowling pin and remove retaining pin from lower housing cover. Cover will swing open. See Figure 2-1, Detail A.
- Remove pivot pins.
- Orient jaws so that nest is on bottom and indenter is on top. See Figure 2-1, Detail B.
- Position crimping jaws in tool housing ensuring that cam rollers are properly mated with cam, see Figure 2-1, Detail B and pivot pin holes of jaws and tool housing are aligned.
- Insert pivot pins.
- Pivot lower housing cover into closed position and replace retaining pin and cowling pin.
- Connect air supply (80 to 100 PSI) and tool is ready for use.

2.4 REMOVE CRIMPING JAWS

- DISCONNECT AIR SUPPLY.
- Pull cowling pin and remove retaining pin from lower housing cover. Cover will swing open.
- Remove pivot pins.
- Remove crimping jaws.

2.5 CRIMPING PROCEDURE

The following crimping procedures are general information only. Refer to the instruction material packaged with jaw assemblies for specific wire preparation and crimping procedures, and crimp inspection instructions.

WARNING

Avoid personal injury. Keep fingers clear of jaw die closure during crimping cycle.

- Place terminal or splice in lower jaw die closure (nest).
- Depress foot pedal fully and hold it down. The "hold feature" will close the jaws enough to hold the terminal or splice in position.
- Insert stripped wire in terminal or splice.
- Raise pedal half way and again depress it fully to complete the crimp.

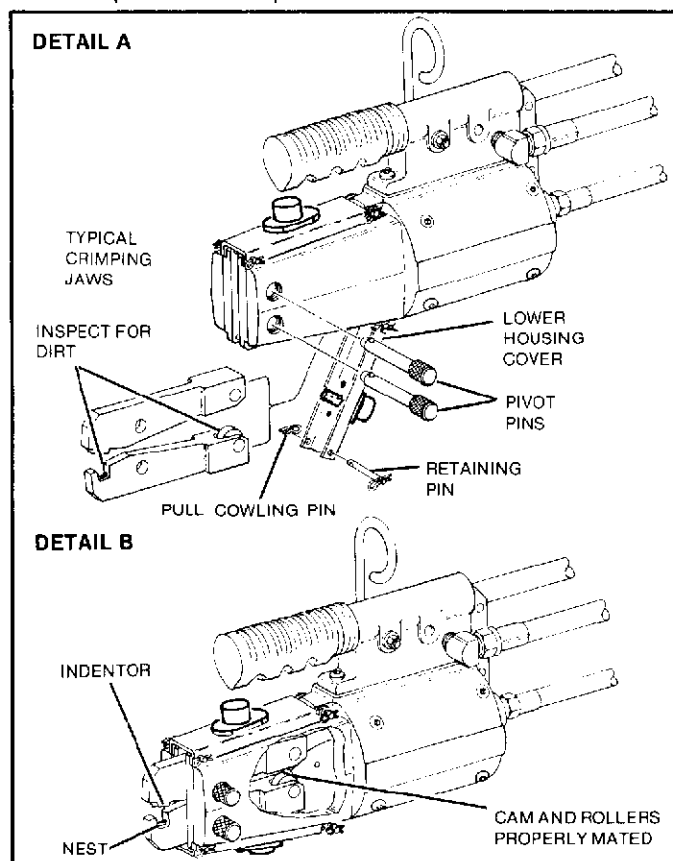


Figure 2-1

SECTION 3 PREVENTIVE MAINTENANCE, TROUBLESHOOTING AND PARTS REPLACEMENT

3.1 INTRODUCTION

It is important that a preventive maintenance program be performed at regular intervals to ensure the dependable performance of the tool. The preventive maintenance program consists of cleaning, visual inspection, and lubrication.



SAE No. 20 non-detergent motor oil.



CMD Anti-Scouring Extreme Pressure Lubricant No. 3†, or equivalent.

3.2 PREVENTIVE MAINTENANCE

WARNING

AVOID PERSONAL INJURY OR DAMAGE TO TOOL. ALWAYS disconnect tool from air supply before performing lubrication, cleaning or parts replacement.

3.2.1 Cleaning

Clean the jaw die closure areas daily. Do not allow deposits of dirt and other foreign matter to build up on bottoming surfaces and die closure surfaces.

Cam and roller surfaces, and housing of tool may be wiped clean with solvent and a clean cloth. Relubricate tool and crimping jaw rollers as instructed in Paragraph 3.2.3, before placing it back in service.

3.2.2 Visual Inspection (Monthly) Refer To Figure 3-1

Perform the following visual inspections of the tool and foot valve at least once a month. If parts need replacement, refer to Section 4 for parts identification and replacement part numbers.

- Inspect crimping jaw housing for worn or bent pins or worn bushings.
- Inspect cam for excessive wear or damage. If cam needs replacement, refer to Paragraph 3.4.
- Check tightness of all screws.
- Check jaw return plunger for binding.
- Insert jaw assembly, connect air supply, and cycle tool. Refer to troubleshooting chart if tool jaws do not function satisfactorily.
- With air supply connected, inspect all fittings and area around piston rod for air leaks. Refer to Paragraph 3.6 for main piston and piston rod "O" ring replacement procedure.
- Inspect cam deflector in foot valve for free movement.
- Inspect for metal particles in jaw housing. The presence of metal particles indicates a need of lubrication and/or parts are misaligned or worn.
- Check jaw cam rollers for binding and proper lubrication.

3.2.3 Lubrication

It is important that the tool is lubricated at regular intervals to ensure minimum wear and dependable service. The following symbols are used to indicate the area to be lubricated and the type of lubricant to be used. See Figure 3-1.

NOTE

Apply all lubricants sparingly, thereby avoiding "build-up" of lubricants, dirt, and possible tool malfunctions.

The air system of the tool must receive lubrication via an air line lubricator. See Section 1, Paragraph 1.3.

Frequency of lubrication should be as follows:

- Tools used in daily production — Lubricate daily
- Tools used daily (occasional) — Lubricate weekly
- Tools used weekly — Lubricate monthly

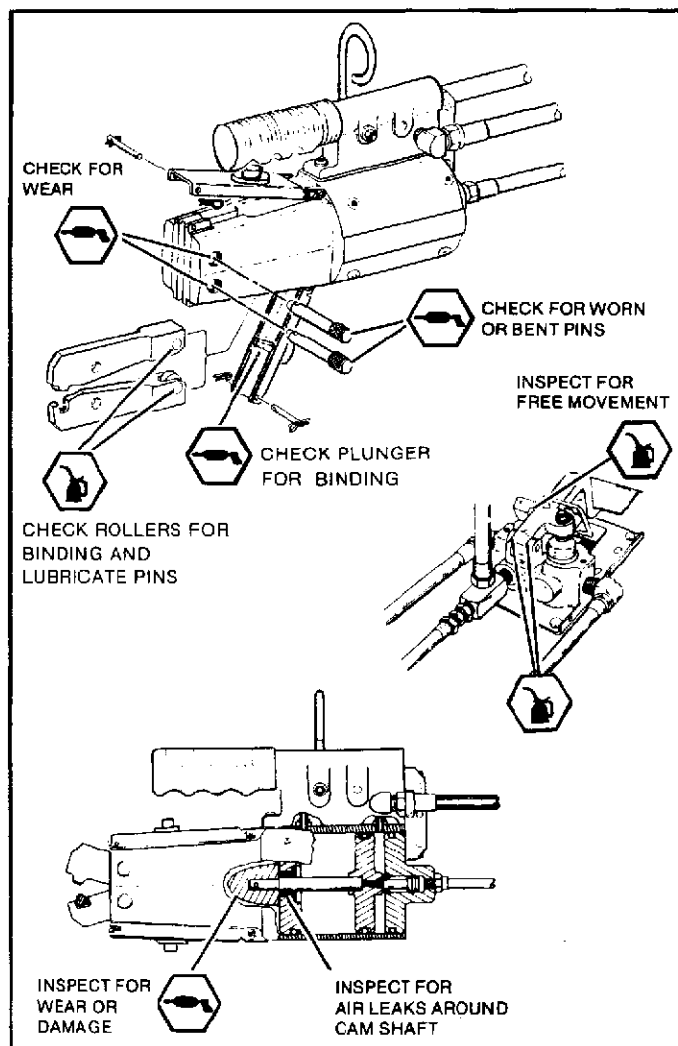


Figure 3-1

3.3 TROUBLESHOOTING

Careful observance of the Preventive Maintenance program will reduce the possibility of tool malfunctions. If a tool malfunction does occur, refer to the functional description, Paragraph 1.6, and troubleshooting chart. This chart lists the malfunctions, probable causes, and then gives the corrective actions. Refer to the exploded views and parts lists in Section 4 for parts identification and replacement information. If the malfunction cannot be remedied with the aid of the functional description and troubleshooting chart, contact Field Engineering, AMP Incorporated, Harrisburg, Pennsylvania 17105.

WARNING

Avoid personal injury or damage to the tool. ALWAYS disconnect tool from air supply before attempting to disassemble tool for parts replacement.

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

1. Ensure that air pressure is regulated at 80 PSI minimum to 100 PSI maximum.
2. Ensure that pivot pins are fully inserted.
3. Ensure that jaws are properly mated with cam.
4. Ensure that foot valve cam deflector moves freely.
5. Ensure that jaw rollers are not binding and are properly lubricated.
6. Ensure that cam is properly lubricated.

If the six-point visual inspection does not eliminate the malfunction, refer to the functional description and troubleshooting chart.

TROUBLESHOOTING CHART

Refer to functional description Section 1, Figure 1-8, and exploded view, Figure 4-1.

MALFUNCTION	PROBABLE CAUSE	CORRECTIVE ACTION
Main piston cam does not advance to "hold" position when pedal is depressed.	<ol style="list-style-type: none"> 1. Insufficient air pressure 2. Air is not exhausting from return air valve N/O 3. Secondary piston, Item No. 19 is binding or "O" ring, Item No. 20 is deteriorated. See Figure 4-1. 	<p>Ensure that air pressure is at least 80 PSI.</p> <ol style="list-style-type: none"> (a) Check for kink or obstruction in air hose (d) or (b). See Figure 1-8. (b) Check for obstruction in muffler exhaust port of valve N/O. (c) Check for faulty valve N/O. <p>Remove rear plug, Item No. 17, check piston for wear and replace "O" ring No. 20. Refer to Paragraph 3.5.</p>
When pedal is depressed, see Figure 1-8B, for "hold" position, main piston cam by-passes "hold" position and advances to crimp position.	<ol style="list-style-type: none"> 1. Deflector cam is binding and does not rise when air exhausts from muffler port in valve N/O 	<p>Check deflector cam pivot point for dirt or need of lubrication.</p>
When pedal is raised half way and again depressed for crimp position, see Figure 1-8 C and D, main piston cam will not advance to crimp position.	<ol style="list-style-type: none"> 1. Deflector cam is binding and does not drop when pedal is released. See Figure 1-8C. 2. Air valve N/C may be faulty. See Figure 1-8. 	<p>Check deflector cam pivot point for dirt or lack of lubrication.</p> <p>Inspect, repair or replace air valve N/C.</p>

(Continued)

TROUBLESHOOTING CHART [Continued]

MALFUNCTION	PROBABLE CAUSE	CORRECTIVE ACTION
Jaws close slowly or will not bottom and complete the crimp when pedal is depressed for crimp cycle. See Figure 1-8D.	<ol style="list-style-type: none"> 1. Insufficient air pressure 2. Main piston "O" ring Item No. 24 is deteriorated allowing too much "blow by" 3. Jaw rollers are binding or need lubrication 4. Cam Item No. 33 is damaged or needs lubrication. 	<p>Ensure that air pressure is at least 80 PSI.</p> <p>Replace main piston "O" ring. Refer to Paragraph 3.6.</p> <p>Clean, inspect and lubricate. See Paragraph 3.2.</p> <p>Replace cam (see Paragraph 3.4) or lubricate cam as needed (see Paragraph 3.2).</p>
Main piston cam will not retract to open crimping jaws or retracts very slowly. (Air leaks into crimping jaw housing from behind main piston cam.)	<ol style="list-style-type: none"> 1. Piston rod "O" ring, Item No. 28, is deteriorated 	<p>Replace "O" ring. Refer to Paragraph 3.6.</p>

3.4 MAIN PISTON CAM REPLACEMENT Refer to Exploded View — Figure 4-1

CAUTION

- (a) DISCONNECT TOOL FROM AIR SUPPLY.
- (b) Remove two screws (9) and rear hanger bracket (10).
- (c) Remove screw (3) and washer (2), then remove handle (7) from tool housing.

CAUTION

Observe the following precautions:

1. Protect exposed tubes from damage while handle is removed.
 2. Do not allow foreign matter to enter tubes or holes in handle.
- (d) Remove the four screws (4) from rear of tool housing.
 - (e) Remove rear plug (17) being careful not to damage "O" ring (24).
 - (f) Open both tool housing covers (40) as far as they will go.
 - (g) Push piston (25) toward front of tool far enough to permit access to cam retaining pin (32) through slot in tool housing.
 - (h) Insert allen wrench in screw (15). While observing cam (33), turn screw "clockwise" until cam retaining pin (32) is parallel with large slot in jaw housing.

NOTE

Do not turn screw (15) "counterclockwise" or main piston (25) may loosen on piston rod (26).

- (i) Brace and support cam from one side and drive retaining pin (32) out of piston rod and cam from opposite side.

Ensure that cam is properly and firmly supported before driving out pin (32) or:

1. Piston rod (26) may bend.
 2. Damage may occur to "O" ring (28), back up rings (29), or insert (27).
- (j) Replace damaged cam with a new one.
 - (k) Align hole of new cam with hole in piston rod and replace retaining pin (32).

NOTE

Ensure that cam is properly braced as as described in step (i).

- (i) Insert allen wrench in screw (15) and turn "clockwise" until cam retaining pin is perpendicular to large slot in tool housing.

NOTE

Do not turn screw "counterclockwise" or main piston may loosen on piston rod.

- (m) Examine rear plug "O" ring (24) for damage and replace, if necessary.
- (n) Apply a small amount of "O" ring lubricant to "O" ring.
- (o) Align holes of rear plug (17) with holes in tool housing and insert plug. Install screws (4) and tighten.
- (p) Carefully position handle (7) over tool housing tubes and secure with screw (3) and washer (2).
- (q) Replace hanger bracket (10) with screws (9).

3.5 SECONDARY PISTON "O" RING REPLACEMENT

Refer to Exploded View Figure 4-1

- (a) DISCONNECT TOOL FROM AIR SUPPLY.
- (b) Remove 2 screws (9) and rear hanger bracket (10).
- (c) Remove the four screws (4) from rear only of tool housing.
- (d) Remove rear plug (17) being careful not to damage "O" ring (24).
- (e) Remove retaining ring (22) from plug and pull piston (19) out of plug.
- (f) Remove "O" ring (20) and replace with a new "O" ring.
- (g) Apply "O" ring lubricant to new "O" ring.
- (h) Clean cylinder of rear plug with a lint free cloth and carefully replace piston in plug cylinder.
- (i) Replace retaining ring (22).
- (j) Examine rear plug "O" ring (24) for damage and replace if necessary.
- (k) Apply a small amount of "O" ring lubricant.
- (l) Align holes of rear plug with holes in tool housing and insert plug. Install screws (4) and tighten.
- (m) Replace hanger bracket (10) with screws (9).

3.6 MAIN PISTON AND PISTON ROD "O" RING REPLACEMENT

Refer to Exploded View Figure 4-1.

- (a) DISCONNECT TOOL FROM AIR SUPPLY.
- (b) Remove two screws (9) and rear hanger bracket (10).
- (c) Remove the four screws (4) from rear only of tool housing.
- (d) Remove rear plug (17) being careful not to damage "O" ring (24).
- (e) Loosen and remove the four screws (4) that mount front plug (30) at front of cylinder.
- (f) Remove cam (33), plug (30), and piston (25) as an assembly from cylinder.

- (g) Loosen and remove screw (15) and remove piston (25) from piston rod (26).
- (h) Slide front plug (30) off of piston rod.
- (i) Remove old "O" ring (28), inspect back-up rings (29) for wear or damage and replace if necessary.

NOTE

Stagger slits in back-up rings before installing "O" ring.

- (j) Install new "O" ring and apply "O" ring lubricant.
- (k) Slide front plug onto piston rod.
- (l) Remove old "O" ring (24) from piston, inspect back-up rings (23) for wear or damage and replace if necessary.

NOTE

Stagger slits in back-up rings before installing "O" ring.

- (m) Install new "O" ring and apply "O" ring lubricant.
- (n) Mount piston on piston rod, apply LOCTITE* #35 or equivalent to threads of screw (15), install and tighten screw to lock piston on piston rod.
- (o) Inspect "O" ring on front plug for damage and replace if necessary. Apply "O" ring lubricant.
- (p) Align screw holes of front plug with mounting holes at rear of cylinder.
- (q) Slide plug, cam, and piston as an assembly, all the way into cylinder until front plug screw holes are aligned with plug mounting holes at front of cylinder.
- (r) Install and tighten screws (4) to lock front plug in position.
- (s) Examine rear plug "O" ring (24) for damage and replace if necessary. Apply "O" ring lubricant.
- (t) Align holes of rear plug with holes in cylinder housing and insert plug. Install screws (4) and tighten.
- (u) Replace hanger bracket (10) with screws (9).

SECTION 4 PARTS LISTS AND DRAWINGS

4.1 INTRODUCTION

The parts list is a complete listing of all parts contained in the tool and includes item numbers, parts nomenclature, quantity required, and the part numbers. A numerical index is included for convenience of locating an item by part number.

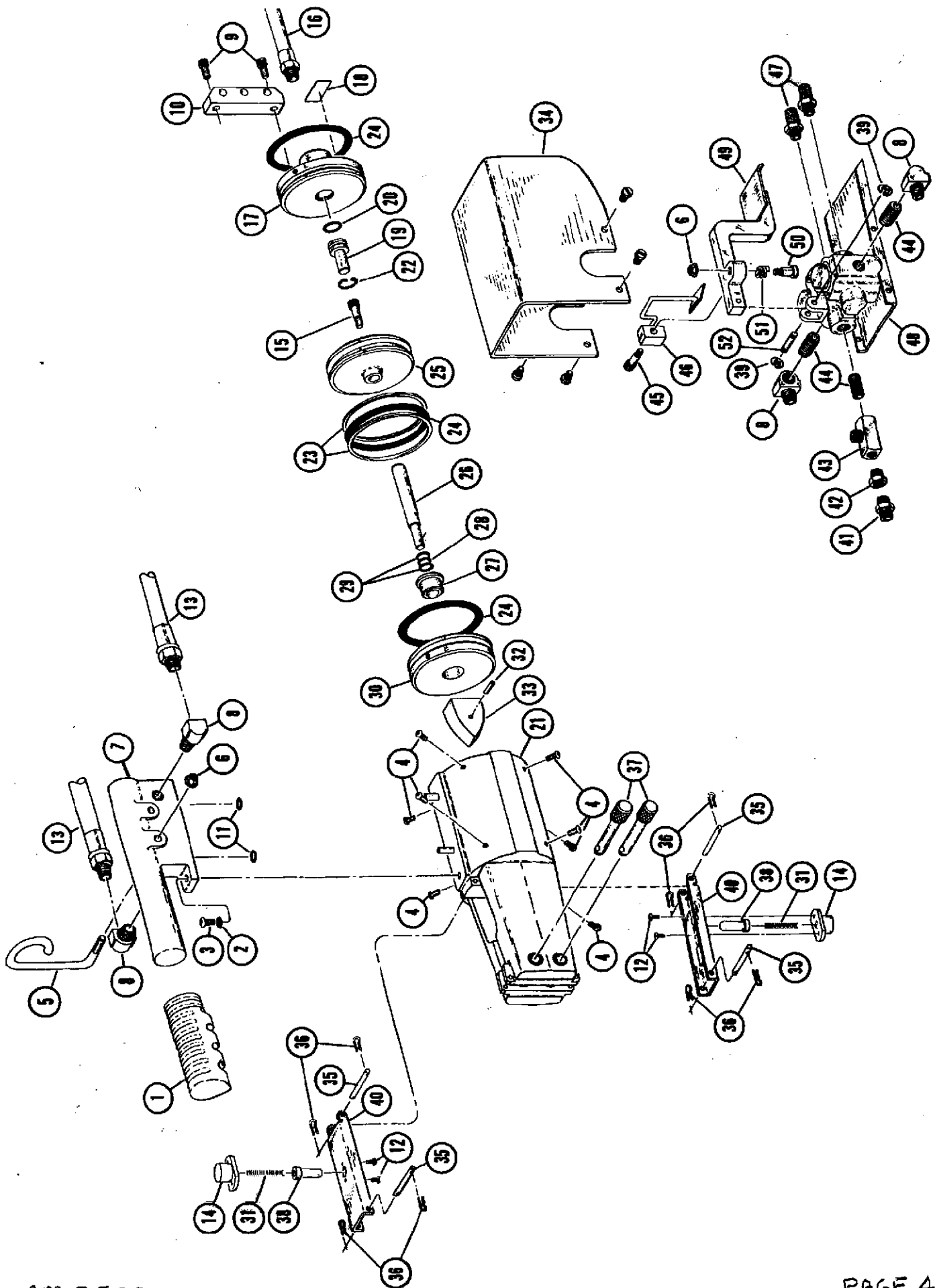
The exploded views are referred to throughout the manual and are used as a means of identifying the

parts locations and indicate how the parts are assembled.

For major tool repair service or adjustment, contact your local AMP field representative or return the tool to AMP Incorporated, Tool Repair Service, 1523 N. Fourth Street, Harrisburg, Pennsylvania 17105, or a wholly owned subsidiary of AMP Incorporated.

PARTS LIST FOR FIGURE 4-1

ITEM NUMBER	PART NUMBER	PART NAME	QUANTITY
1	26444-1	Grip, handle	1
2	21055-7	Washer, flat No. 10	1
3	6- 21002-5	Screw, button hd. 10-24 x .75 lg.	1
4	2- 21002-3	Screw, cap 8-32 x .63 lg.	8
5	308009-1	Bolt, hanger	1
6	26292-1	Nut, hex lock 1/4 - 28	2
7	308012-1	Handle, machined	1
8	22306-2	Elbow, street	4
9	5- 21000-5	Screw, cap 10-24 x .75 lg.	2
10	308010-1	Bracket	1
11	4- 21086-3	"O" ring	2
12	2- 21002-0	Screw, button hd. 8-32 x .250 lg.	4
13	300094	Hose, air (10' lg.)	3
14	308390-1	Retainer, spring	2
15	3- 21000-6	Screw, cap 10-32 x .625 lg.	1
16	38111	Hose, air (10' lg.)	1
17	308008-1	Plug, rear	1
18	25625-2	Plate, identification	1
19	308011-1	Piston	1
20	21086-9	"O" ring	1
21	237120	Housing, machined	1
22	1- 21047-1	Ring, retaining	1
23	3- 21107-5	Ring, back-up	2
24	1- 21976-4	"O" ring	3
25	237101	Piston	1
26	237099	Rod, piston	1
27	237106	Insert, front plug	1
28	5- 21084-0	"O" ring	1
29	2- 21106-6	Ring, back-up	2
30	237114	Plug, front	1
31	3- 22280-7	Spring	2
32	5- 21028-7	Pin, slotted .125 Dia. x .88 lg.	1
33	237131	Cam, machined	1
34	308007-1	Assembly, foot valve	1
35	237133	Pin, retaining	4
36	23138-2	Pin, cowling	8
37	306209-7	Pin, latch	2
38	308389-1	Plunger	2
39	21045-3	Ring, retaining	2
40	308391-1	Cover, assembly	2
41	24161-1	Adaptor	1
42	22307-1	Bushing	1
43	22308-2	Fitting, tee pipe	1
44	22311-2	Nipple	3
45	21004-3	Screw, shoulder 10-24 UNC x .625	1
46	308006-1	Cam, assembly	1
47	26524-2	Muffler	2
48	27594-1	Valve, foot	1
49	308002-1	Pedal, foot	1
50	307999-1	Screw, special	1
51	4- 22284-1	Spring	1
52	303862	Pin, retaining	1



NUMERICAL INDEX

PART NUMBER	FIG. & ITEM NUMBER	
3-21000-6	4-1	15
5-21000-5	4-1	9
2-21002-0	4-1	12
2-21002-3	4-1	4
6-21002-5	4-1	3
21004-3	4-1	45
5-21028-7	4-1	32
21045-3	4-1	39
1- 21047-1	4-1	22
21055-7	4-1	2
5-21084-0	4-1	28
21086-9	4-1	20
4-21086-3	4-1	11
2-21106-6	4-1	29
3-21107-5	4-1	23
1-21976-4	4-1	24
3-22280-7	4-1	31
4-22284-1	4-1	51
22306-2	4-1	8
22307-1	4-1	42
22308-2	4-1	43
22311-2	4-1	44
23138-2	4-1	36
24161-1	4-1	41
25625-2	4-1	18
26292-1	4-1	6
26444-1	4-1	1
26524-2	4-1	47

PART NUMBER	FIG. & ITEM NUMBER	
27594-1	4-1	48
38111	4-1	16
237099	4-1	26
237101	4-1	25
237106	4-1	27
237114	4-1	30
237120	4-1	21
237131	4-1	33
237133	4-1	35
237153	4-1	40
300094	4-1	13
303862	4-1	52
306209-7	4-1	37
307999-1	4-1	50
308002-1	4-1	49
308006-1	4-1	46
308007-1	4-1	34
308008-1	4-1	17
308009-1	4-1	5
308010	4-1	10
308011-1	4-1	19
308012-1	4-1	7
308389-1	4-1	38
308390-1	4-1	14
308391-1	4-1	40

PART NUMBER	FIG. & ITEM NUMBER	
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SECTION 5
INSTRUCTION SHEETS FOR
CRIMPING JAWS