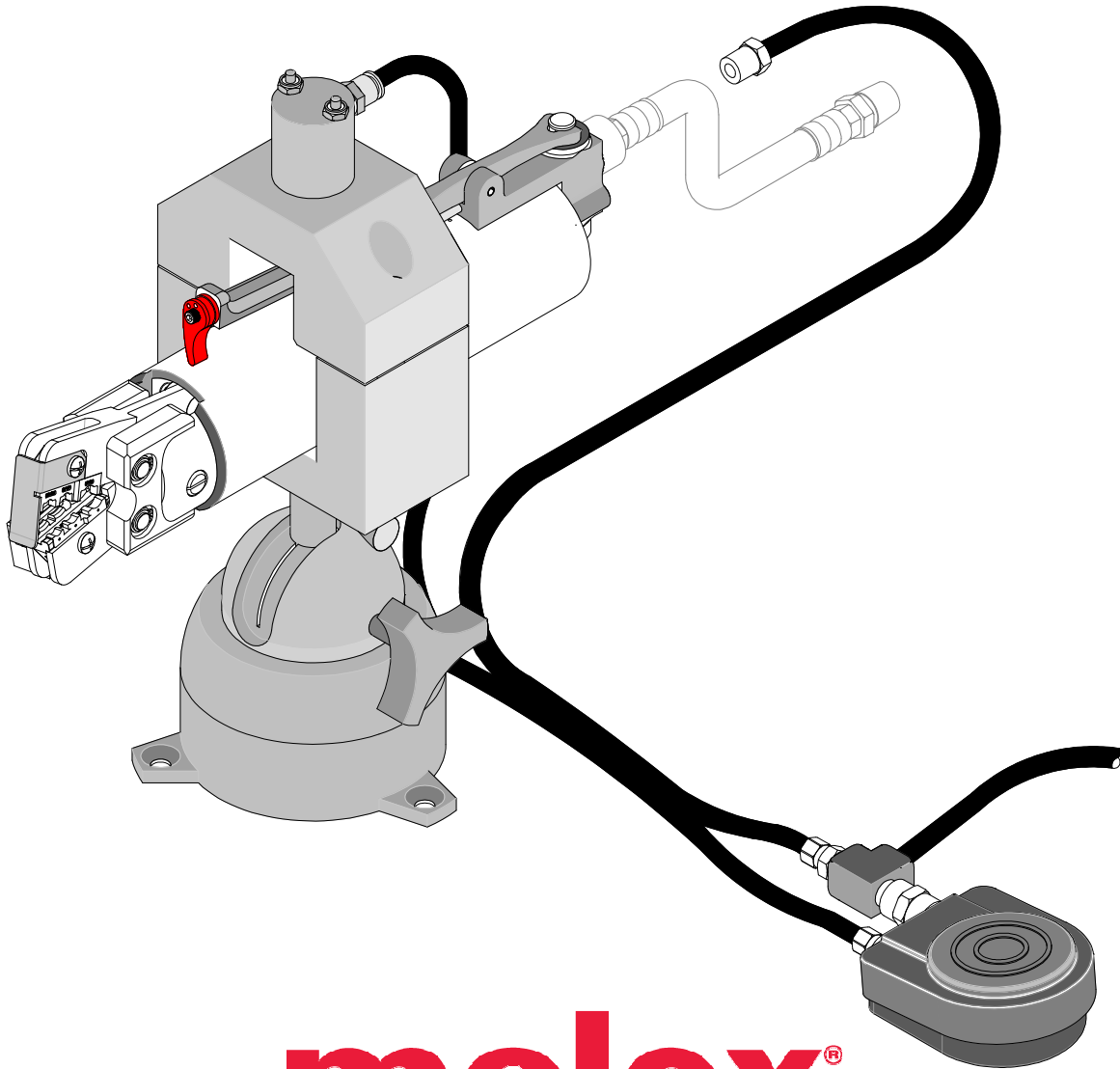




molex®

AT-200 AIR-POWERED CRIMPING TOOL
Operating and Maintenance Instructions with
Optional Bench Adapter and Foot Switch
Order No. 19279-0001

- Description
- Operation
- Maintenance

Safety Warnings and Information

	Read and understand all of the instructions and safety information in this manual before operating or servicing this tool. <u>Keep this manual available when using this tool.</u> Replacement manuals are available for download at no charge at www.molex.com.
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SAFETY ALERT SYMBOL

This symbol is used to call your attention to hazards or unsafe practices which could result in an injury or property damage. The signal word, defined below, indicates the severity of the hazard. The message after the signal word provides information for preventing or avoiding the hazard.

 DANGER	DANGER: Indicates an imminently hazardous situation which, if not avoided, could result in death or serious injury.
 WARNING	WARNING: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
 CAUTION	CAUTION: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. CAUTION may also be used to alert against unsafe practices associated with events that could lead to personal injury.

	 WARNING Always wear proper eye protection when Operating or servicing this equipment. Failure to wear eye protection could result in serious eye injury from flying debris.		 WARNING Heavy Object To avoid muscle strain or back injury, use lifting aids and proper lifting techniques when removing or replacing. Failure to observe these precautions may result in injury or property damage.
	 WARNING Never wear clothing or jewelry that is loose or That could potentially hang into the equipment and get caught. Failure to observe this warning could result in Severe Injury or death.		 WARNING Never install or service this machine while connected to any electrical power source. Disconnect power by unplugging the press from its power source. Failure to observe this warning could result In severe injury or death.
	 WARNING Never operate, service, install, or adjust this machine without proper instruction and without first reading and understanding the instructions in this manual and all applicable press and/or wire processing machine. manuals.		 WARNING Never Install or service this machine while connected to the compressed air source. Failure to observe this warning could result In severe injury or death.

	 WARNING Never use this machine without guards or safety devices that are intended to prevent hands from remaining in the die space. Failure to observe this warning could result in Severe injury or death.	 WARNING Do not use compressed air to clean this equipment. The forces created by compressed air can force debris into the tool. Failure to observe these precautions may result in injury or property damage.
	 WARNING Always wear proper ear protection when Operating or servicing this equipment.	
 CAUTION The Molex at-200 air powered crimping tool is designed to be used with air powered crimp tools heads and tooling supplied by Molex. Use of tool heads or tooling from any other source may result in damage or injury. Molex will not be liable for any damage or injury from use of non-Molex components in this tool.		
 CAUTION Never perform any service or maintenance other than as described in this manual. Never modify, alter or misuse this tool Molex crimp specifications are valid only when used with Molex terminals, applicators and tooling. Failure to observe this precaution may result in injury and property damage.		

Tooling Technical Assistance

Molex offers tooling technical assistance for customers who may need some guidance for tooling adjustments. This support can be obtained by calling either of the two numbers listed below and asking for the Molex Tooling Group. Call Toll Free 1-800-786-6539 (US) 1-630-969-4550 (Global).

This assistance is limited to the operation and set-up of a customer's tool. Questions with regard to Molex connector products or how to identify the proper tooling and/ or tooling documentation should be directed to your local Molex personnel or Customer Service Representative.

When calling for service on the press a copy of the Operation Manual and Specific Applicator Tooling Specification Sheet should be present and a person that is familiar with the applicator should be present. Be sure the following information is supplied:

1. Customer name
2. Customer address
3. Person to contact such as (name, title, e-mail, and telephone number)
4. Applicator order number (Lease number also if applicable)
5. Serial number (Lease number also if applicable)
6. Molex Connector product order number
7. Urgency of request
8. Nature of problem

Molex Application Tooling Group

2200 Wellington Court
Lisle, IL 60532, USA
Tel: +1 (630) 969-4550
Fax: +1 (630) 505-0049

Visit our Web site at <http://www.molex.com>

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Section 1

General Description

- 1.1 Description
- 1.2 Features
- 1.3 Technical Specifications
- 1.4 Delivery Check
- 1.5 Tools
- 1.6 Specification Sheets

General Description

1.1 Description

The AT-200 Air-Powered Crimping Tool is a hand held pneumatic tool weighting less than two pounds. It is designed to crimp high quality and consistent crimped terminals. This tool operates on standard shop air (85 to 95 PSI) and crimps wire ranges from 26 to 8AWG.

1.2 Features

- Crimping dies are easily and quickly interchanged to reduce production down time.
- Complete portable system that allows tool to be moved and stored easily.
- Tool may be used as a Potable tool, suspended over head or bench mounted.
- Higher volume output with less operator fatigue.

1.3 Technical Specification

Pneumatic:

Supply Pressure: 100 PSI (6.9 Bars) max

Cycle Time:

15 seconds

Weight

0.9kg (2lbs)

1.4 Delivery Check

Carefully remove the AT-200 Air-Powered Crimping Tool from its shipping container and determine that the following items are included in the package.

- ✓ 19279-0001 Air-Powered Crimping Tool
- ✓ 19279-0140 Air Hose 1/8 NPT Male
- ✓ TM-192790001 Instruction Manual

1.5 Tools

The following tools are recommended for setup and adjustments to this tool.

1. Metric standard hex wrench set
2. Inch standard hex wrench set
3. Adjustable wrench
4. Wire stripper / cutter
5. Screw driver

Can Also Be Used With:

19078-0307 Bench Adapter Assembly with Foot Switch
64001-4000 Electrical Control Box

1.6 Specification Sheets

Molex ships specification sheets with every Air Crimp Tool Head. These Tool Heads are not included with the AT-200 Air-Powered Crimp Tool. They are ordered separately. The specification sheet contains the following:

- Terminal numbers
- Wire AWG ranges
- Insulation diameter ranges
- Strip lengths
- Pull Force
- Crimp heights
- Bell mouth
- Bend, twist and roll limits
- Tooling parts list and assembly

These are available on the Molex website (www.molex.com).

Section 2

2.1 Setup

2.2 Operation

Set-Up



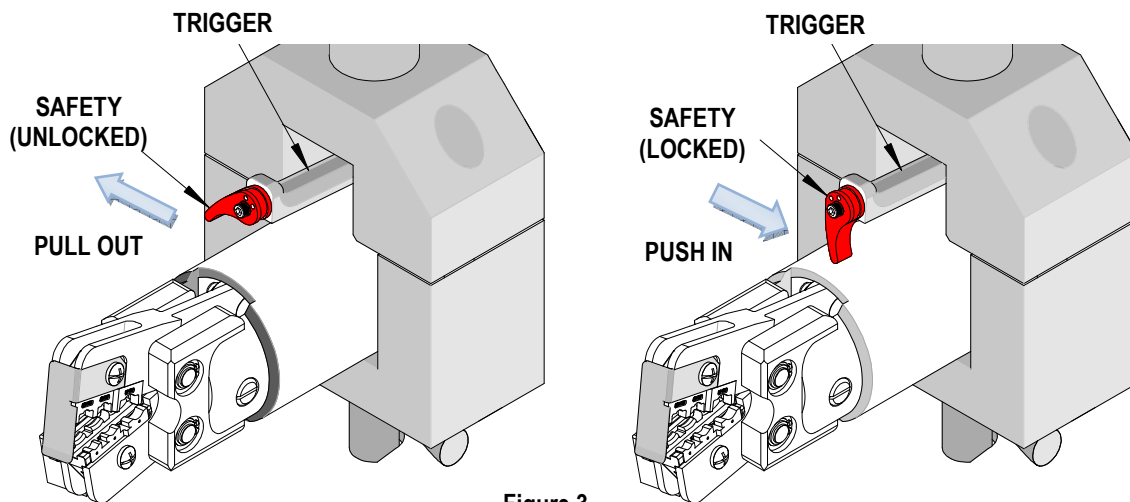
-
- Diagram illustrating the air hose assembly components:
- TRIGGER SAFETY**: A red safety lever on the trigger gun.
 - TRIGGER**: The main handle of the trigger gun.
 - AIR HOSE (19279-0140)**: The flexible hose connecting the trigger gun to the filter regulator.
 - FILTER REGULATOR (NOT SUPPLIED)**: A device with a pressure gauge and a top cap, used to regulate air pressure.
 - TO AIR SUPPLY**: An arrow indicating the connection point to the air source.

Diagram illustrating the connection of the Trigger Tool to the air supply:

- CONNECT TUBING FROM FOOT SWITCH WITHOUT FITTING**: Shows the top connection point on the Trigger Tool.
- CONNECT TUBING FROM FOOT SWITCH WITH FITTING**: Shows the connection point on the Trigger Tool where the tubing is secured with a fitting.
- 3/8-16 CAP SCREW**: Points to the screw used to secure the tubing connection.
- TRIGGER**: Points to the red trigger lever on the side of the Trigger Tool.
- SECURE AIR CRIMPING TOOL IN POSITION**: Points to the air crimping tool used to secure the tubing connection.
- BENCH ADAPTER**: Points to the base of the Trigger Tool.
- FOOT SWITCH**: Points to the foot pedal used to operate the Trigger Tool.
- FILTER REGULATOR (NOT SUPPLIED)**: Points to the air filter and pressure regulator.
- (NOT SUPPLIED)**: Points to the air hose connection on the filter/regulator.
- TO AIR SUPPLY**: Points to the blue arrow indicating the direction of air flow.

Figure 2

2. Lock the trigger by engaging the red aluminum safety. Pull the safety outward from the end of the trigger and rotate it until the next detent position engages. See Figure 3.



Note: Always use the safety or disconnect air supply when changing crimping heads.

Operation

1. For the proper crimping head, use the order number located on the label of the terminal/connector container.
2. Strip the proper wire to the minimum length located on the label of terminal/connector container or on the air powered crimp tool head specification sheet.

Section 3

Adjustments

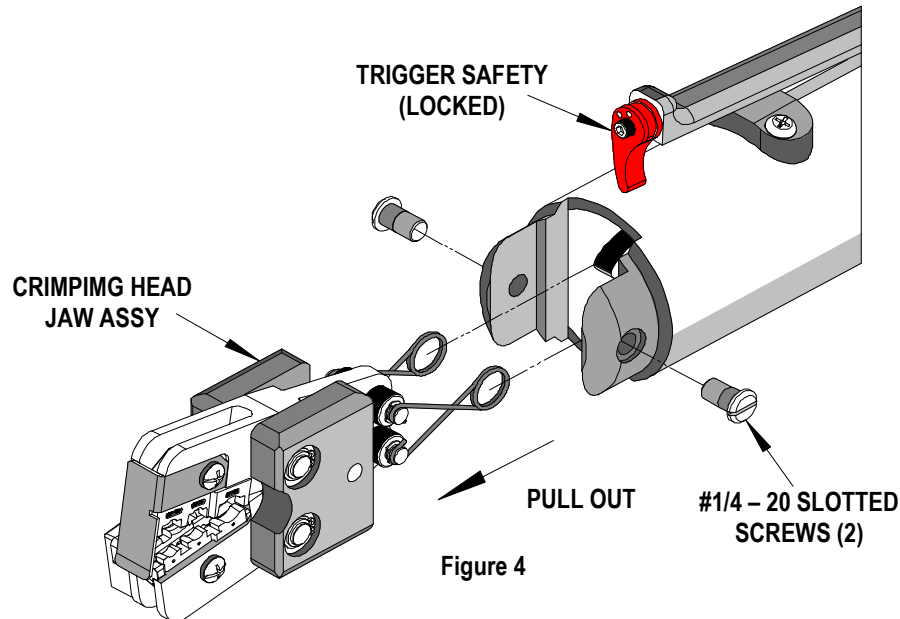
- 3.1. Changing Crimp Tool Heads
- 3.2. Insulation Support Crimp Adjustment
(Older style fixed jaw air powered crimp tools heads)
- 3.3. Insulation Support Crimp Adjustment
(Newer style insertion air powered crimp tools heads)
- 3.4. Terminal Crimping
- 3.5. Maintenance



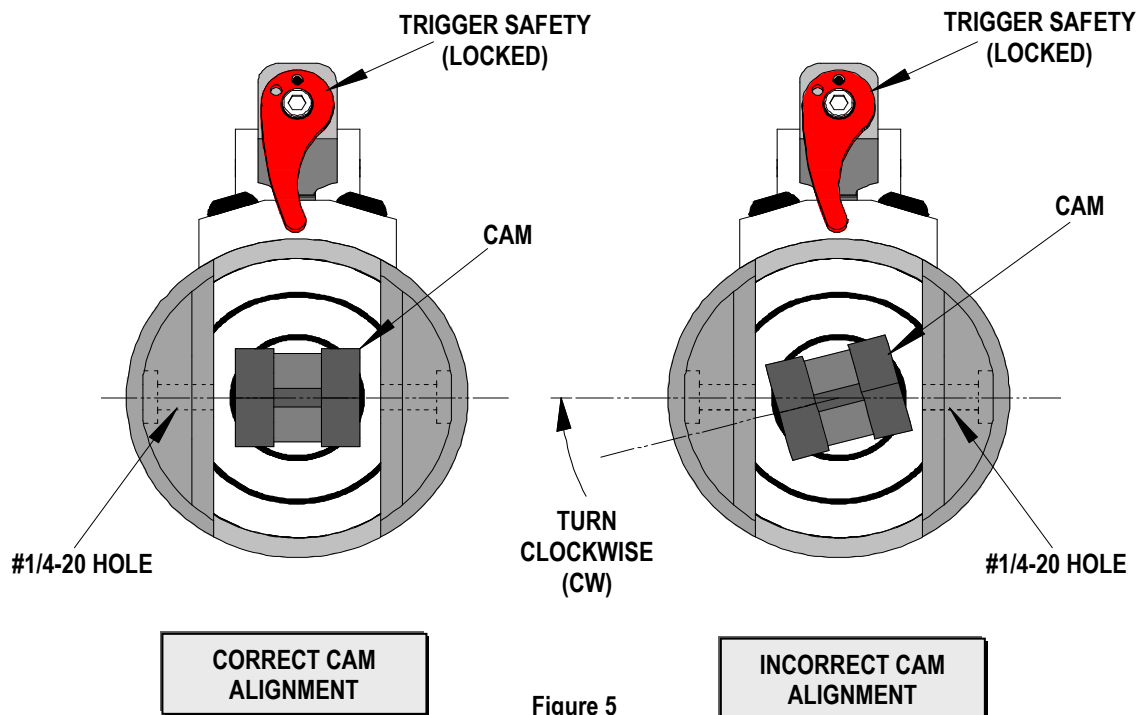
CAUTION: Always disconnect air supply before all maintenance.

3.1 Changing Crimp Tool Heads

1. Engage the trigger safety or disconnect the air supply.
2. Remove the (2) #1 /4-20 slotted screws on both sides of the power unit. Pull the crimp tool head jaw assembly out of the tool. See Figure 4.



3. Before attempting to replace the dies, make sure the wedge points of the cam line up with the (2) #1/4-20 holes in the front of power unit. See Figure 5.



If the cam is not lined up, use the following procedure.

- a) Disconnect the air supply with the cam in the retracted position trigger is up.
 - b) Grasp the center section of the cam with a long nose plier and rotate the cam clockwise (CW) until the center line of the wedge line up with (2) #1/4-20 holes in power unit. See Figure 5 for the correct alignment.
 - c) Replace the head before cycling the tool. Be sure both screws are in place and tightened.
4. To replace the crimp tool head, hold power unit in left hand as shown in Figure 6.
 5. Grasp the crimp tool head with the right hand and with the terminal locator facing you. Slide the crimp tool head assembly into the body of the power unit until the side plates of the crimp tool head butt against the steps in the power unit. Be sure the jaw return springs clear the cam in the power unit. See Figure 6.
 6. Line up the holes in the crimp tool head with the holes in the housing of the power unit.
 7. Replace the (2) #1/4-20 screws and tighten securely. The tool is now ready for use.

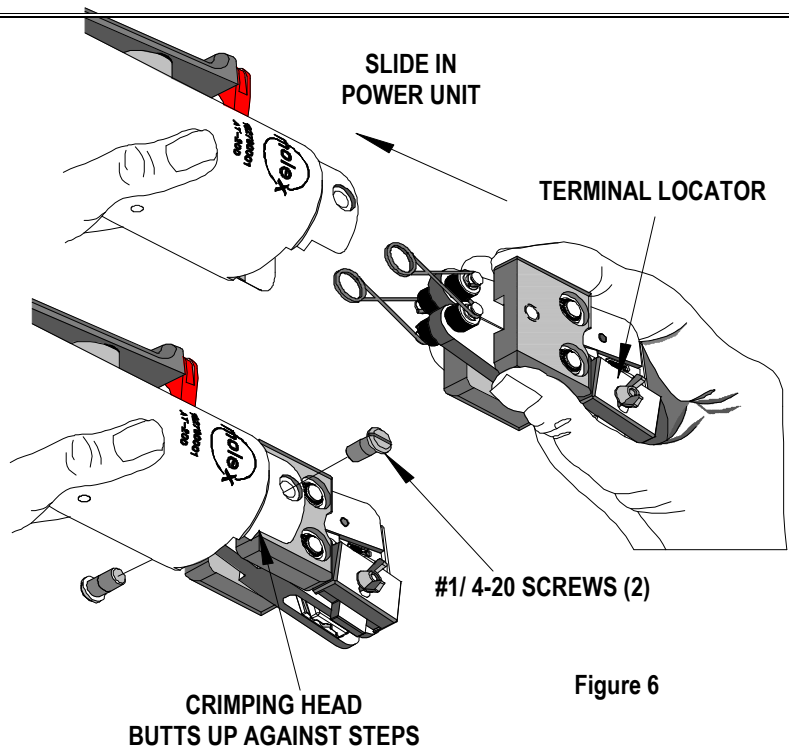


Figure 6

3.2 Insulation Support Crimp Adjustment

(Older style fixed jaw air powered crimp tools heads)

1. The crimp tool heads for the insulated terminals and the connectors feature an adjustable insulation support crimp to accommodate varying wire insulation diameters (See Figure 7) for old style crimp tool head.
2. The adjustment screw on each crimp head tool is set at the factory at the M position. This setting will give the best crimp on most wires. Two other adjustment settings are available: S, the smallest configuration and L, the largest configuration.
3. Crimp a terminal or connector and inspect the insulation support sleeve crimp or configuration. A properly crimped sleeve snugly grasps the wire insulation.
4. If the crimp configuration is too loose, change the adjustment setting by removing the air powered crimp tool head from the AT-200 and setting adjustment screw to the S position. Re-insert the air powered crimp tool head into the AT-200 and crimp, and inspect the insulation support sleeve.
5. If crimp configuration is too tight, change adjustment setting by removing the air powered crimp tool head from the AT-200 and setting adjustment screw to the L position. Re-insert the air powered crimp tool head into the AT-200 and crimp, and inspect insulation support sleeve.

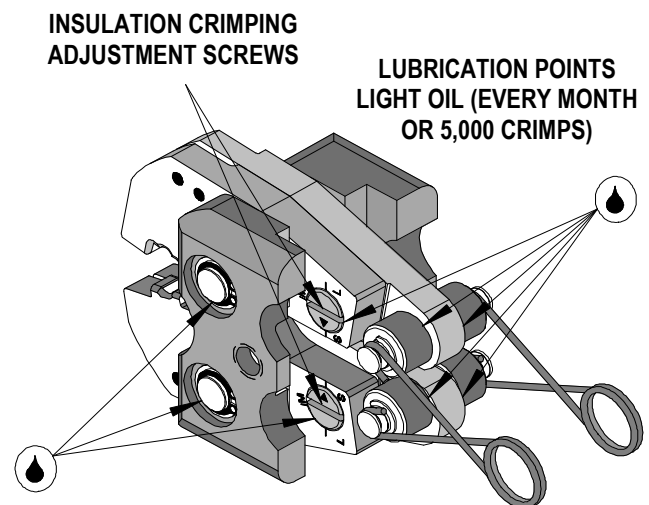


Figure 7

3.3 Insulation Support Crimp Adjustment

(Newer style insertable jaw air powered crimp tools)

For the new style crimp head tools, if the insulation part of the crimp needs to be adjusted, first loosen the M4 screw on the bottom tool jaw, then insert a 3/32" Hex wrench (supplied) into the bottom of the lower die. See Figure 4. A clockwise (CW) rotation decreases the insulation crimp while a counter-clockwise (CCW) rotation increases the insulation crimp. After adjusting retighten the M4 screw.

3.4 Terminal Crimping

Specifications and Instructions for crimping are included with the individual air powered crimp tool heads.

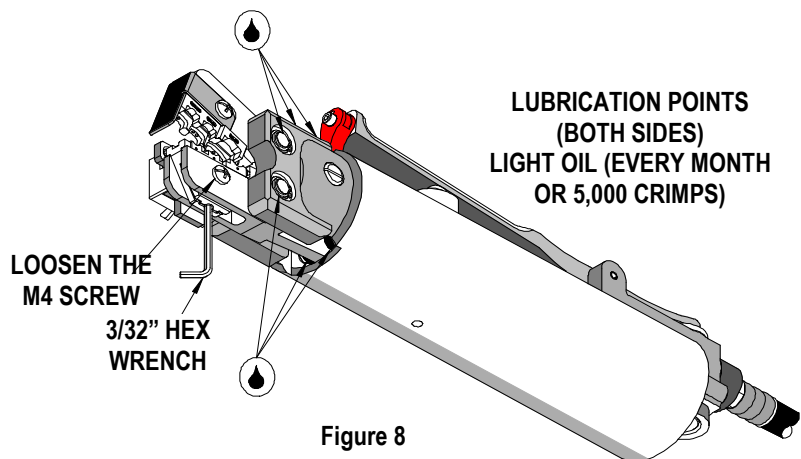
3.5 Maintenance



CAUTION: Always disconnect air supply before all maintenance.

It is recommended that each operator of the tool be made aware of, and responsible for, the following maintenance steps:

1. Remove dust, moisture and other contaminants with a clean brush, or soft, lint-free cloth.
2. Do not use any abrasive materials that could damage the tool.
3. Make certain all pins; pivot points and bearing surfaces are protected with a thin coat of high quality machine oil. Do not oil excessively. This tool needs cleaning and lubrication for a maximum service life of trouble-free crimping. A light oil, such as 30 weight automotive oil used at the oil points shown in Figure 8, every 5,000 crimps or monthly will significantly enhance the tool life and ensure a stable calibration.
4. When tool is not in use store the tool in a clean, dry area.



Warranty

This tool is for electrical terminal crimping purposes only. This tool is made of the best quality materials. All vital components are long-life tested. All tools are warranted to be free of manufacturing defects for a period of **30 days**. Should such a defect occur, we would repair or exchange the tool free of charge. This repair or exchange will not be applicable to altered, misused or damaged tools.

If seals are damaged the warranty is invalid.



CAUTION: Molex crimp specifications are valid only when used with Molex terminals and tooling.

Section 4

- 4.1 19279-0001 Parts List and Assembly Drawings
- 4.2 19279-0135 Parts List and Assembly Drawings
- 4.3 19078-0307 Parts List and Assembly Drawings

4.1 19279-0001 Parts List and Assembly Drawings

19279-0001-Air Power Crimp Tool Assembly Figure 9					
Item	Order No.	Engineering No.	Description	Qty	Notes
1	19279-0080	19279-0080	Cam For AT-200 Air Tool	1	
2	19279-0135	19279-0135	AT-200 Air Powered Crimping Tool	1	Figure 10
3	19279-0140	19279-0140	Air Hose 1/8 NPT Male FTG	1	
4	19279-0161	19279-0161	Screw Silver Slotted	2	
5	N/A	N/A	#1/4-1/8 Hex Bushing	1**	
6	N/A	N/A	#1/4-28 by 3/4 Cup Point SSS	1**	
** Available from an industrial supply company such as MSC (1-800-645-7270).					

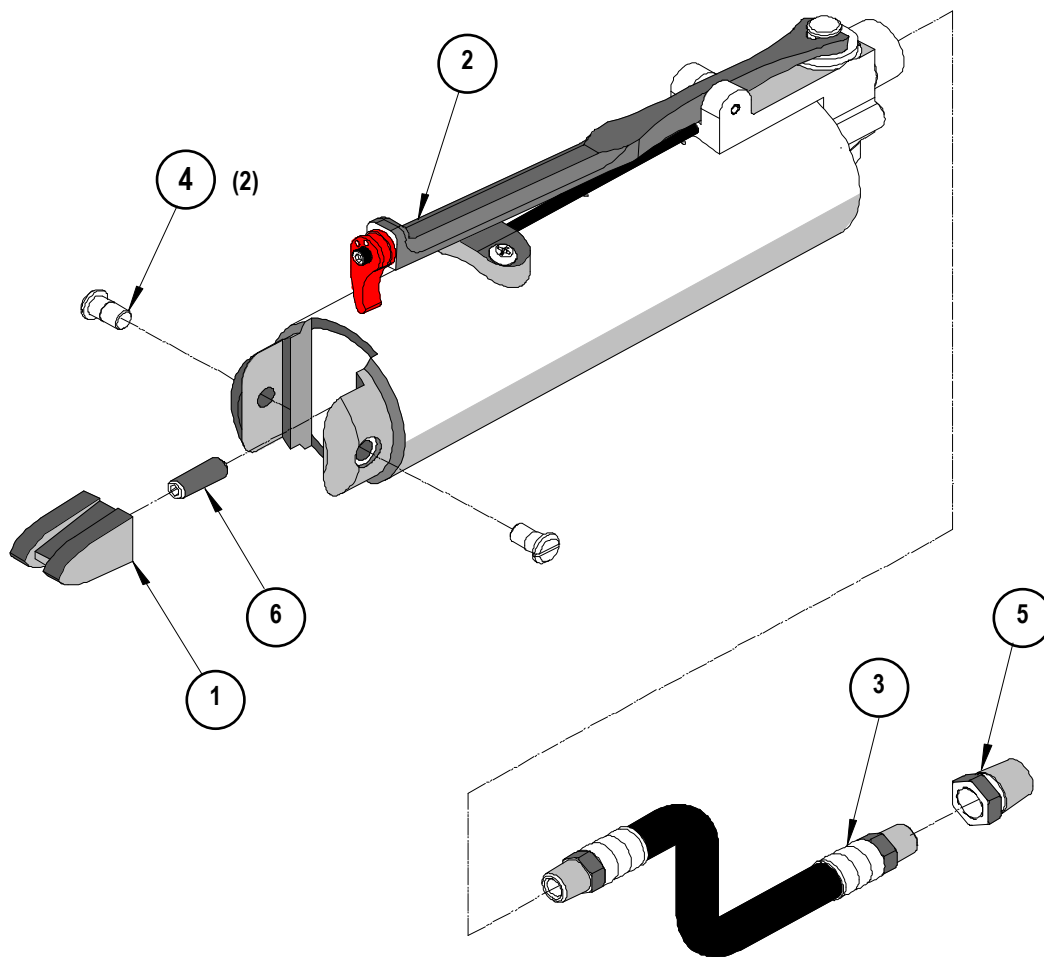


Figure 9

4.2 19279-0135 Parts List and Assembly Drawings

19279-0135-AT-200 Air Powered Crimping Tool Figure 10				
Item	Order No.	Eng. No.	Description	Qty
1	N/A	N/A	1/4 ID by 3/8 OD by 1/16" Cross Section Buna O-Ring	4**
2	N/A	N/A	5/32 ID by 9/32 OD by 1/16" Cross Section Buna O-Ring	2**
3	N/A	N/A	3/8 ID by 1/2 OD by 1/16" Cross Section Buna O-Ring	2**
4	N/A	N/A	1/2 ID by 11/16 OD by 3/32" Cross Section Buna O-Ring	1**
5	N/A	N/A	1.0 ID by 1-13/16 OD by 3/32" Cross Section Buna O-Ring	4**
6	N/A	N/A	1-5/8 ID by 1-3/4 OD by 1/16" Cross Section Buna O-Ring	3**
7	N/A	N/A	.180 OD by .016 WD by .25" FL Compression Spring	1**
8	N/A	N/A	.455 OD by .038 WD by .625" FL Compression Spring	1**
9	N/A	N/A	Retaining Ring 2.012 OD by .062" Thick	5**
10	N/A	N/A	#4-40 by .50 Long SHCS	1**
11	N/A	N/A	#6-32 by .25" Long Flat Head Phillips	1**
12	N/A	N/A	#6-32 by .88" Long Flat Head Phillips	2**
13	N/A	N/A	#8-32 by .375" Long Round Head Phillips	2**
14	N/A	N/A	1/16 Diameter by .187" Long Dowel Pin	1**
15	N/A	N/A	1/16 Diameter by .25" Long Dowel Pin	1**
16	N/A	N/A	1/8 Diameter by .75" Long Spring Pin	1**
** Available from an industrial supply company such as MSC (1-800-645-7270).				

4.2 Parts List and Assembly Drawings

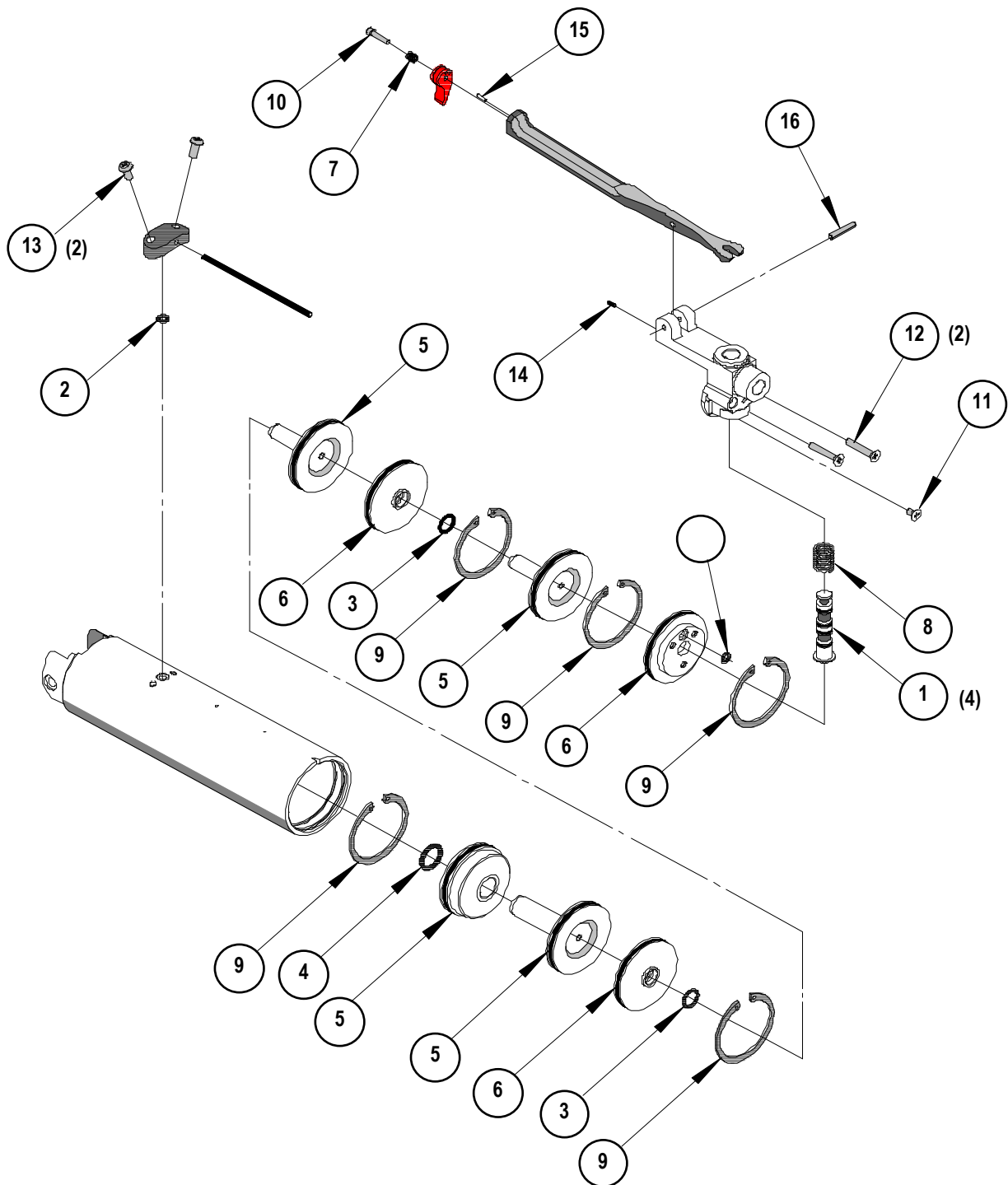
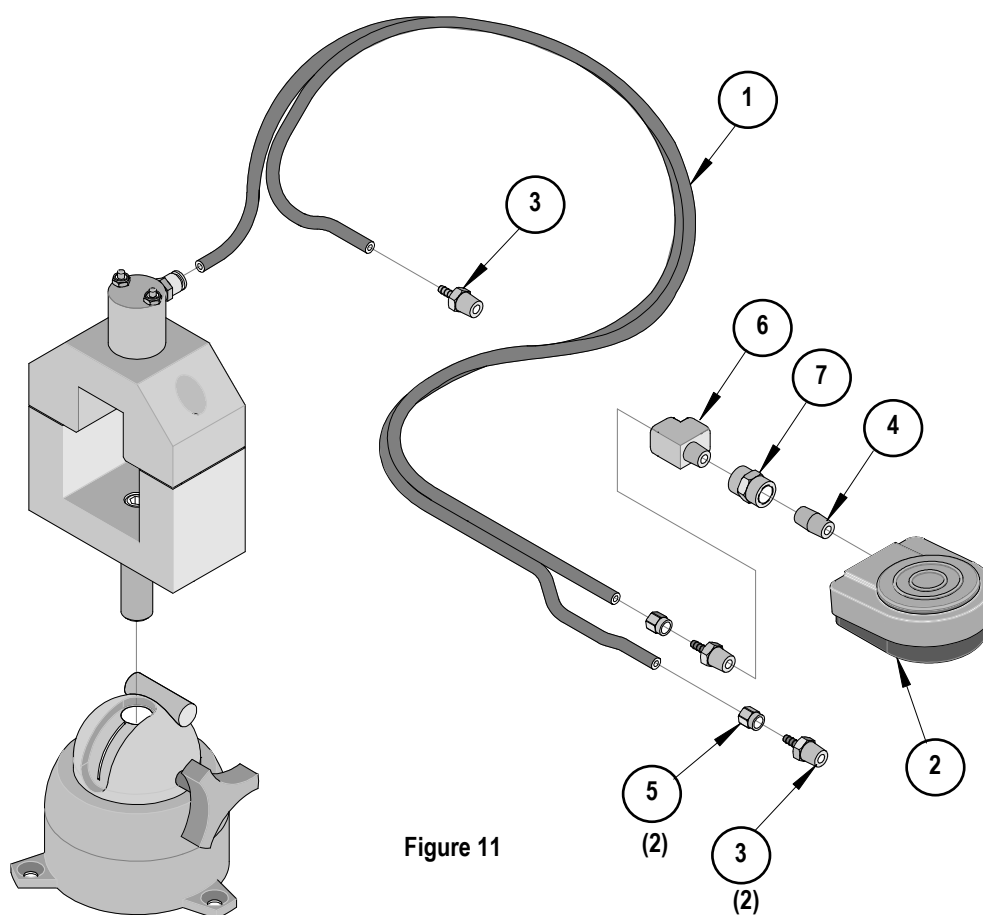


Figure 10

4.3 19078-0307 Parts List and Assembly Drawings

19078-0307-Optional Bench Adapter Figure 11				
Item	Order No.	Engineering No.	Description	Qty
1	N/A	N/A	Dual Air Hose (1/8 ID by 8')	1**
2	N/A	N/A	Air Foot Switch (3B – 30A2 – S)	1**
3	N/A	N/A	1/8" NPT – M Fitting, by 1/8 Barb	3**
4	N/A	N/A	1/8" Close Nipple (M/M)	1**
5	N/A	N/A	Clippard Thread on Hose Clamp	2**
6	N/A	N/A	1/8" Fitting Brass Pipe Tee M/F/F	1**
7	N/A	N/A	1/8" Brass Coupling - 1/8 (F/F)	1**

** Available from an industrial supply company such as MSC (1-800-645-7270).



Appendix A

Options

1. Accessories

64001-4000 - Full Cycle/Pressure Electrical Control Box Specification Sheet

Full Cycle/Pressure Electrical Control Box	Application Tooling Specification Sheet	Order No. 64001-4000
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Features

- The 64001-400 Full Cycle Electrical Control Box is an option for use on Air Power Crimp Tool (AT200) Order No.19279-0001 equipped with Bench Adapter Order No.19078-0307.
- This control box will assure that the air tool completes a full crimp cycle. Applying the air pressure for a long enough cycle to assure a successfully completed crimp.
- Prevents actuation if sufficient pneumatic pressure is not available to produce good crimps.
- Eliminates the operators' judgment and low line pressure as sources of variability for critical applications.

OPERATION

1. To install the control box remove the pneumatic foot switch and all of the tubing.
2. Replace with the components, fittings and the tubing. See Figures 1 and 3.
3. Make sure they are correctly connected in the right positions, which are clearly marked on the each side of the Cycle Box in Figure 1.
4. The power is on if the "Green" indicator light is on.
5. If the "Yellow" indicator light turns on, the air pressure is low (90 PSI – Min.). Check the pressure gauge and reset if necessary.
6. To change the cycle time, the timer has to be readjusted. This is done by removing the (4) screws on the top cover. Place the cover aside and locate the timer. See Figure 2. Using a Phillips screwdriver insert it in the slot on top of the timer. Turn the timer clockwise (CW) to increase time or counterclockwise (CCW) to decrease time. The dial can be turned by hand if a screwdriver is not available. Place the cover back and re-install the (4) screws.
7. Push the foot switch to start the crimp cycle.
8. When the crimp cycle is complete the circuit will release and the jaws of the air tool will open.
9. To stop the cycle before complete, push the emergency stop button. To reset, rotate the button clockwise (CW) as indicated by the arrows on the button.

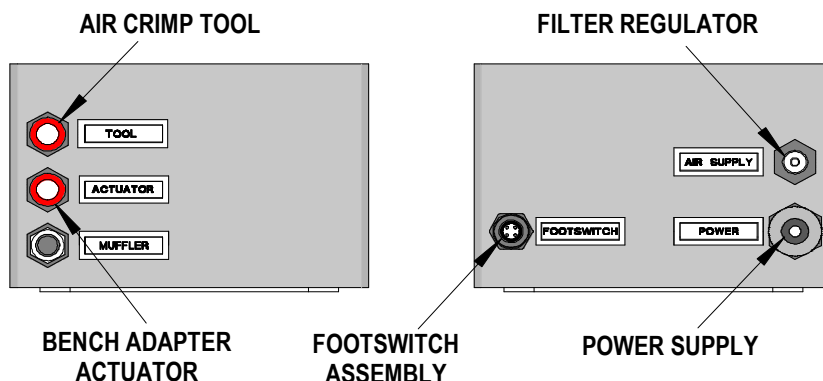


Figure 1

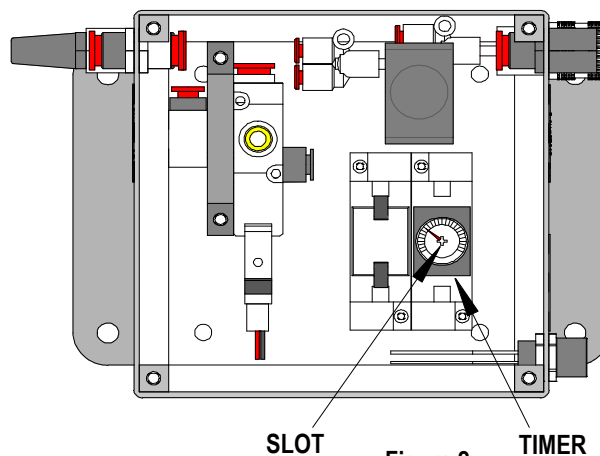
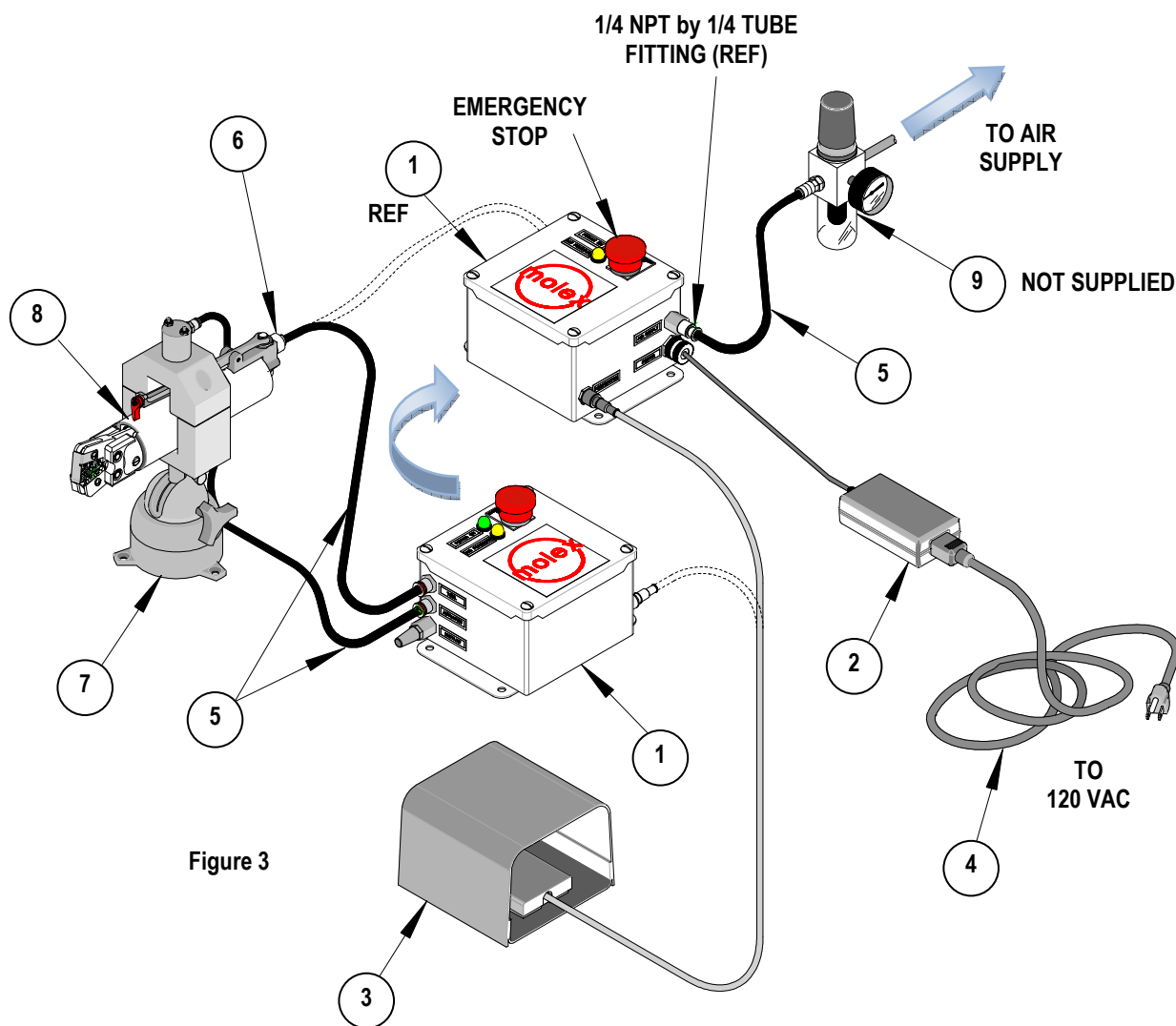


Figure 2

64001-4000 Parts List

Electrical Control Box (Timed Cycle) Figure 3			
Item	Order No.	Description	Qty
1	64001-4000	Electrical Controls	Ref
2	62500-1265	Power Supply	1
3	63800-8394	Footswitch Assembly	1
4	69018-6237	Power Cord	1
5	N/A	1/4" OD Tubing	**
6	N/A	1/8 NPT by 1/4 Tube Fitting	**
7	19078-0307	Bench Adapter	Ref
8	19279-0001	Air Power Crimp Tool	Ref
9	N/A	Filter Regulator	Ref

** Available from an industrial supply company such as MSC (1-800-645-7270).



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