

**TM-3000 UNIVERSAL PRESS
TM-4000 UNIVERSAL PRESS**

Use with Molex FineAdjust, Mini-Mac Applicators and the Molex
Tape Terminal Crimp Module

**Instruction Manual
Order No.63801-7299**

- Description
- Operation
- Maintenance

WARNING

- NEVER** USE THIS MACHINE WITHOUT THE GUARDS OR SAFETY DEVICES THAT ARE INTENDED TO PREVENT HANDS FROM REMAINING IN THE DIE SPACE. RUNNING THIS MACHINE WITHOUT GUARDS, UNDER ANY CIRCUMSTANCES, CAN CAUSE SERIOUS INJURY.
- NEVER** LIFT THIS PRESS WITHOUT THE AID OF MECHANICAL LIFTING DEVICES.
- NEVER** OPERATE, SERVICE, OR ADJUST THIS MACHINE OR INSTALL APPLICATOR DIES WITHOUT PROPER INSTRUCTION AND WITHOUT FIRST READING AND UNDERSTANDING THE INSTRUCTIONS IN THIS MANUAL.
- NEVER** SERVICE THIS MACHINE WHILE IT IS CONNECTED TO ANY ELECTRICAL POWER SOURCE. DISCONNECT POWER BY UNPLUGGING THE PRESS FROM ITS POWER SOURCE AND FROM THE COMPRESSED AIR SUPPLY.
- NEVER** INSTALL OR REMOVE APPLICATOR DIES WITH THE MOTOR RUNNING, OR AIR SUPPLY CONNECTED.
- CAUTION** THIS PRESS IS SHIPPED FROM THE FACTORY AT A SHUT HEIGHT OF 135.80mm (5.346"). FAILURE TO HAND CYCLE THE PRESS WHEN INSTALLING APPLICATORS CAN CAUSE SEVERE DAMAGE TO THE TOOLING AND/OR PRESS.
- CAUTION** MOLEX CRIMP SPECIFICATIONS ARE VALID ONLY WHEN USED WITH MOLEX TERMINALS, APPLICATORS AND TOOLING.

WORK SAFELY AT ALL TIMES

**For Service, Contact Your
Local Molex Sales Office**

Molex Application Tooling Group
2200 Wellington Court
Lisle, Illinois 60532
Tel: 630-969-4550
Fax: 630-505-0049

Table of Contents

SECTION

- 1 General Description
- 2 Installation
- 3 Setup - Operation
- 4 Maintenance and Troubleshooting
- 5 Parts List, Assembly Drawings, Electrical Schematics
- 6 EC Declaration of Conformity

APPENDIX

- A Options
 1. Taped Terminal Crimp Module

Section 1

General Description

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

General Description

1.1 Description

The 63801-7200 (120V AC version), the 63801-7300 (240V AC version) TM-3000 Universal Press and the 63801-7600 (240V AC version) TM-4000 Universal Press are economical, electrically-operated, single-cycle and split cycle direct drive presses. They are designed to provide an effective method of applying a wide range of side-feed and rear-feed terminals to a pre-stripped discrete wire or cable. Both the TM-3000 and the TM-4000 are suited to mid-volume semi-automatic operations.

Production flexibility is obtained using interchangeable FineAdjust or Mini-Mac applicators and most Industrial Standard Applicators.

These presses will complete one crimping cycle with each depression of the foot pedal and two depressions for split cycle. Safe operation is provided by an interlock switch that renders the press inoperative if the safety guard is opened or removed.

1.2 Features

- Utilizes both FineAdjust and Mini-Mac applicators side and rear feed, and most industry standard applicators
- Press is shipped set to Industry shut height of 135.80mm (5.346")
- Ideal for mid-volume, semi-automatic applications
- Meets O.S.H.A. safety standards is ANSI-Z535.2-2002 compliant
- Totally enclosed for operator safety, including a power interlock switch for the front guard
- Resettable counter for accurate batch counting
- Modular solid state controls with an easy plug in power cord and foot switch.
- "CE" Certified

1.3 Technical Specifications

Dimensions with reel mounted

Height	1210mm (47.60")
Width	648mm (25.50")
Depth	559mm (22.00")
Unpacked weight	100kg (220 lb)

Power Requirements

Voltage: 63801-7200-120V AC 60 Hz
 Voltage: 63801-7300-240V AC 50 – 60 Hz
 Voltage: 63801-7600-240V AC 50 – 60 Hz

Note:

If 240V power is not available, then 120V power may be used with an appropriate (1000VA minimum) step-up transformer.
 Recommended step-up transformer: Allied Electronics #836-0181 (phone: 1-800-433-5700).

Pneumatic Requirements (Air Feed Applicators only)

75 psi min. (366 kN/cm²) min.
 1.0 SCFM (28.3 L/min)
 1/4" NPT inlet 12.7mm (1/2") supply pipe minimum.

Production Rate

2400 terminations per hour maximum, depending on operator skill and wire length.

Processing Capability

TM-3000 Press output = 4000 lbf (18kN).
 Copper conductors up to 10 AWG (5.0mm²) in solid or stranded wire.

TM-4000 Press output = 7000 lbf (31kN).
 Copper conductors up to 4 AWG (21.0mm²) in solid or stranded wire.

Sound Level

Operator will be exposed to less than 85 dBA.

1.4. Delivery Check

After removing the packaging band, the top and sides of the box should lift off easily. The following items are included in this package :

	<u>Quantity</u>
Main Press Body	1
Reel Support Assembly	1
"T" wrench for manual cycling	1

Carton Contents **Quantity**

69018-6237 PowerCord
(for 63801-7200) 1

OR

62500-1774 Power Cord 220V 10A
(for 63801-7300 and 63801-7600) 1

63801-7271 Foot Pedal 1

TM-638007299 Instruction Manual 1

1.5 Tools

The following tools are recommended for setup and adjustments to the applicator in this press

- ✓ Metric hex wrench set
- ✓ Small standard screwdriver
- ✓ Adjustable wrench
- ✓ Needle nose pliers
- ✓ Crimp micrometer
- ✓ Eye loupe (10x)
- ✓ Wire stripper/cutter
- ✓ English hex wrench set for some non-metric applicators

Section 2

Installation

- 2.1 Lifting/Mounting
- 2.2 Reel Support
- 2.3 Foot Pedal and Power Connection
- 2.4 Pneumatic Supply Hook-up
- 2.5 Terminal Feed Guide
- 2.6 Function Test
- 2.7 Safety and Work Area Check

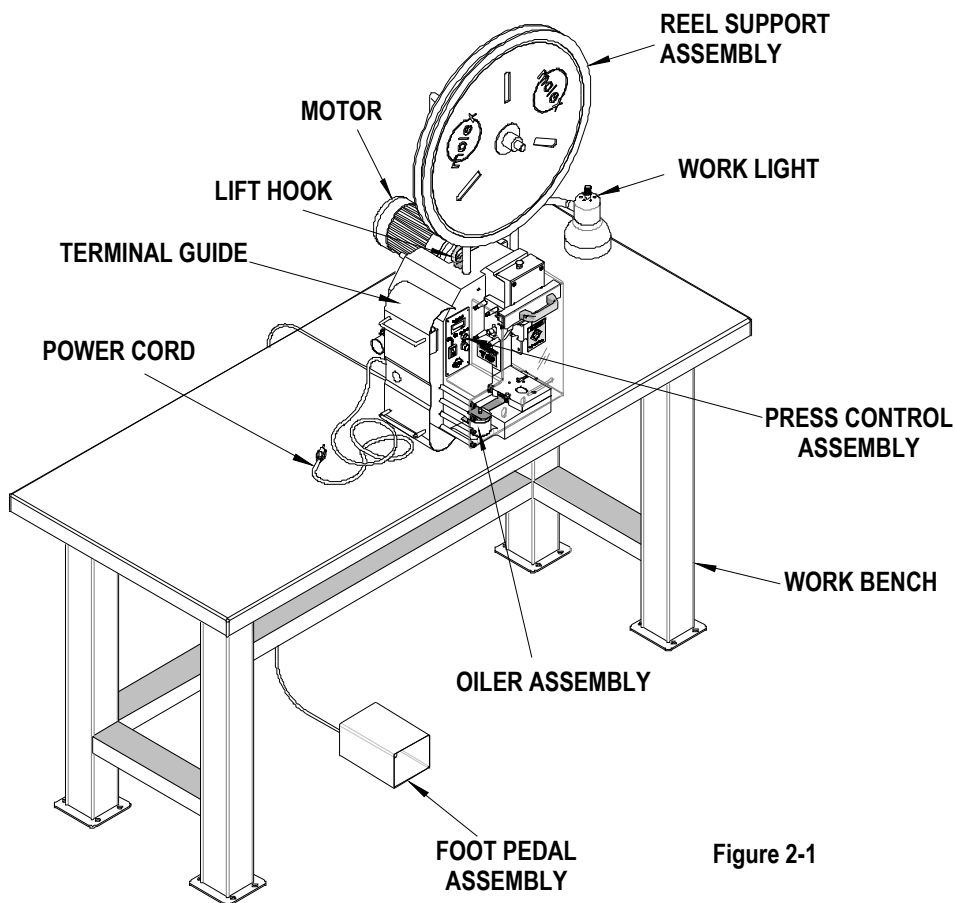


Figure 2-1

2.1 Lifting/Mounting

WARNING: This Press weighs over 100 kg (220 lb); it should not attempt to be lifted by one individual. Mechanical lifting devices should be used. A person lifting the press can sustain severe back or other injuries.

A lifting hook is provided on the top of the press. A heavy-duty chain, rope, cable, or belt can be used with loops, links, or rings on each end that can securely attach to the lifting hooks. An electric, hydraulic, or mechanical crane should be used to lift the press. Lift the press up approximately 12mm (.50") and verify that the press is well balanced. Upon verification, the press can be lifted onto a sturdy workbench. Access to the back of the machine is required for manual cycling. A wooden bench that is a minimum of 25mm (1.00") thick will offer quiet vibration-free operation. For thinner or sheet metal tops, the TM-3000 can be

attached to the table with two 12mm bolts. Bolts are not supplied by Molex.

2.2 Reel Support

Install the reel support in the hole located on the top of machine frame. For rear feed, rotate the reel support as required. See Figure 2-3. Loosen the M10 set screw that holds the reel support. Pull up from the hole and rotate for the proper feeding orientation. Then slide down back into the hole and tighten the M10 set screw.

2.3 Foot Pedal and Power Connection

Connect the 3-pin plug for the foot pedal in the rear of the press control assembly. Turn the locking ring clockwise until tight. Connect the power cord plug to the socket in the back of the control assembly. Use a grounded electrical outlet as the power source. See Figure 2-2.

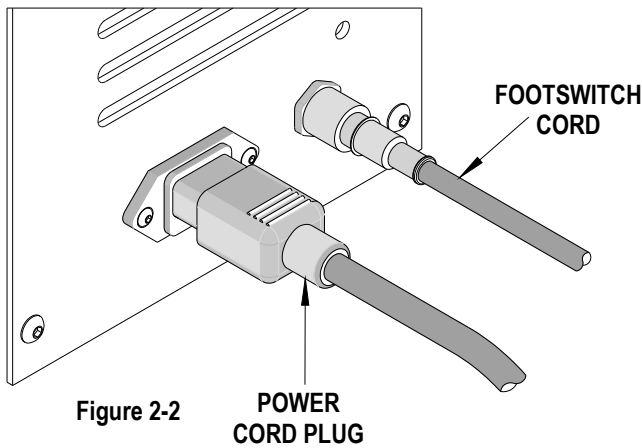


Figure 2-2
POWER CORD PLUG

2.4 Pneumatic Supply Hook-Up

A compressed air supply is required if air feed or other air powered applicators will be used. The press comes equipped with an air supply system, which consists of filter, regulator, lubricator and a valve to actuate the air feeds at the proper time in the press cycle.

Due to the considerable types of air connection and quick connect fittings available; Molex only supplies the press with a 1/4 NPT female threaded fitting. The customer may attach whatever type of air connections that are commonly used in their plant to this port.

The minimum flexible tube size used to connect the press should be 8mm or 5/16" to assure adequate flow rate.

A filter-regulator-lubricator unit is supplied to properly condition the incoming air. The filter will remove particulate and moisture from the air that can damage or reduce the life of cylinders and valves. This filter and bowl should be serviced on a regular schedule. (See section 4.1) The filter has an automatic drain at the bottom of the bowl that will automatically open and expel fluid when the bowl is getting full. It is recommended that, a 6mm or 1/4" flexible tube, be attached to the drain hose barb and run to a container if the air system contains excessive moisture.

The regulator adjusts the pressure of the incoming air to what the applicators require usually 60-80 PSI (refer to the applicator manual for recommended pressures.) Adjustment is accomplished by pulling up on the knob, rotating it until the gauge indicates the desired pressure, then pushing it down to lock the setting.

A lubricator is supplied for those applicator air feeds that need lubrication. Molex air-feed applicators do not require lubrication. The lubricator is shipped without lubricant in it. To use, fill the lubricator (make sure the main air supply is disconnected or that the slide valve provided is in the off position before adding lubricant) through the fill plug on the top of the unit, with high quality SAE 10 W oil. The lubricator has a graduated dial on top, turn the dial to the 1 or 2 setting.

Caution: Do not over lubricate. Only a very small amount of lubricant is required to assure smooth operation. Excess lubricant is exhausted to the atmosphere.

If lubrication is not required set the dial to 0 to turn off the lubricator.

2.5 Terminal Feed Guide

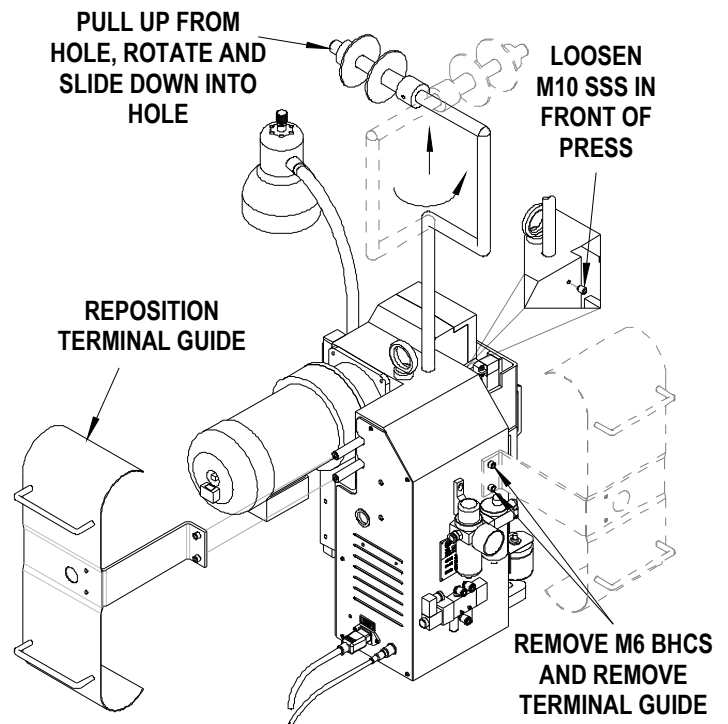


Figure 2-3

Depending on side or rear-feed applications, the terminal guide plate and bracket must be repositioned. The press is set for side-feed applicators when shipped from the factory. When rear-feed applicators are used, the two M6 BHCS from the terminal guide-mounting bracket are to be removed. See Figure 2-3. The guide bracket is rotated 180 degrees and the assembly is then mounted on the two standoffs in the

rear of the press with the two M6 SHCS. See Figure 2-3.

2.6 Function Test

When the press is shipped from the factory, it is set to the industry shut height of 135.80 mm (5.346”) with a calibrated load gauge. The press shut height gauge is spring loaded to give an accurate reading on the press shut height. See Figure 2-4. Molex recommends hand cycling the press each time an applicator is installed. See Section 3-3.

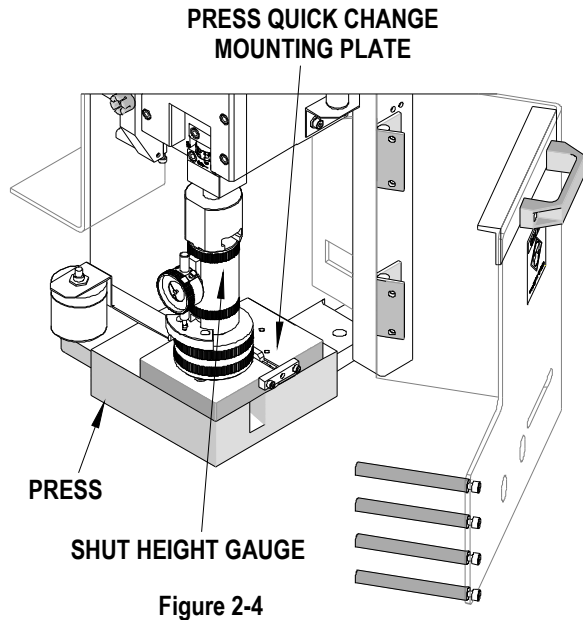


Figure 2-4

CAUTION: Always manually cycle the press before restoring power to the machine.

2.6.1 Verification of Press Shut Height

FACTORY SETTING IS
DXX
DXX IS THE SHUT HEIGHT
OF 135.80MM (5.346 INCH)

This press comes factory set at an Industry Standard shut height of 135.80mm (5.346”). A label is attached to the front of each press indicating the factory settings. This press has an adjustable shut height, see Section 3.4.3 for crimp height adjustment. Always return the press to the factory setting on the label before installing applicators to avoid tooling

damage. Check the factory setting periodically with a calibrated shut height gauge.

Shut height gauges may be purchased from:

Artos Eng. 602-581-0070

Komax Corp. 847-537-6640

2.7 Safety and Work Area Check

Check that the crimping position is ergonomic for the operator’s size. A bench height of 762.00 to 813.00mm (30.00 to 32.00”) will provide operator comfort, and allows both feet to rest on the floor. The foot pedal should be placed in a comfortable position. Check that the press position is located approximately 150mm (6”) from the edge of the bench. A chair or stool with adjustable height and backrest should be provided for maximum comfort and back support for the operator.

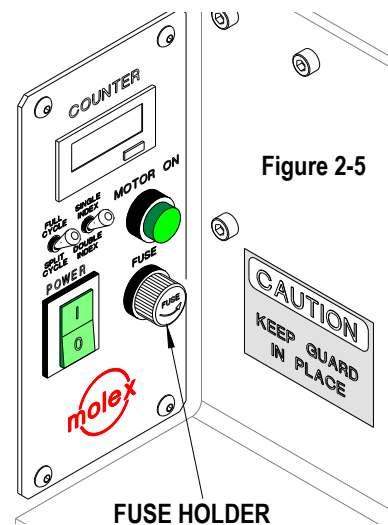


Figure 2-5

FUSE HOLDER

CAUTION: Molex recommends that the operator and observers wear eye protection when the press is in operation or being serviced.

The fuse is located on the control panel. To replace the fuse (10AMP on 110 V models and 5AMP on 220V models), turn the holder in the direction as shown. Turn clockwise to secure holder in place when replaced. See Figure 2-5.

Section 3

Setup and Operation

- 3.1 Applicator Installation
- 3.2 Air Feed Applicator Installation
- 3.3 Manually Cycling the Press
- 3.4 Operation

3.1 Applicator Installation

Power down the press by turning off the “POWER” switch located on the control panel.

Note: Once the press guard is open the guard interlock switch will disconnect power to the motor.

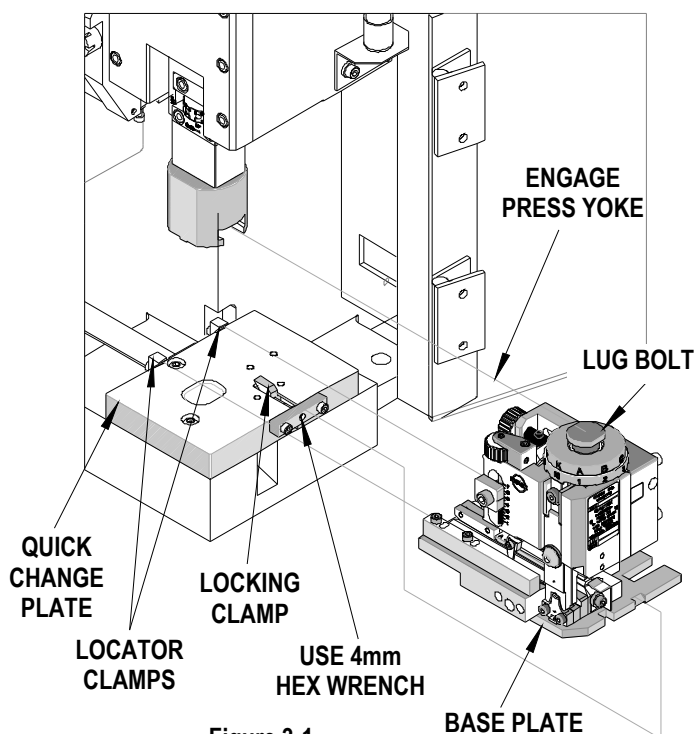


Figure 3-1

Steps

1. Swing the press guard open.
2. Verify that the applicator is correctly tooled for the terminal being used. (Reference specification sheets supplied with the applicator).
3. Clean the press quick change mounting plate of scrap or chips that may interfere with the applicator installation.
4. Using a 4mm hex wrench, turn the M5 SHCS clockwise until the locking clamp is fully opened.
5. Locate the applicator lug bolt in the press yoke. See Figure 3-1.
6. Align the applicator base plate slots with the locator clamps on the press quick change plate.
7. To lock applicator, turn M5 SHCS counter clockwise until tight.
8. Confirm that the applicator is secured properly.

3.2 Air Feed Applicator Installation

Power down the press by turning off the “POWER” switch, located on the control panel.

Note: Once the press guard is open the guard interlock switch will disconnect power to the motor.

Warning: When using air feed applicators, always use the slide valve supplied to shut-off and vent air pressure to the air feed before servicing. The guard interlock switch **DOES NOT** remove air pressure. If an air feed is jammed and air pressure is not removed before servicing, the feed could move unexpectedly and cause injury.

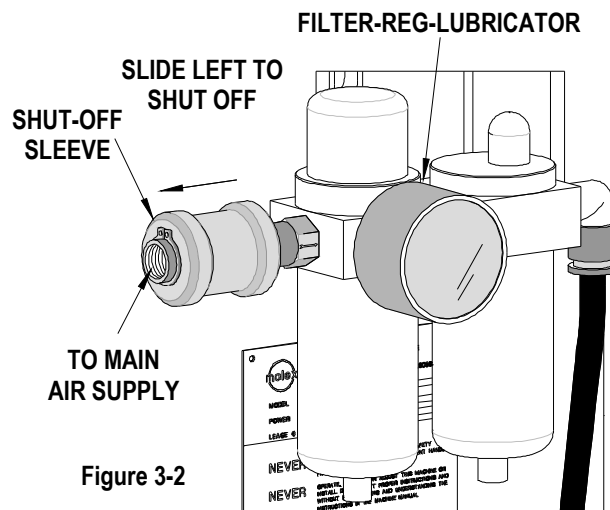


Figure 3-2

Steps

1. Swing the press guard open.
2. Verify that the applicator is correctly tooled for the terminal being used. (Reference specification sheets supplied with the applicator).
3. Clean the press quick change mounting plate of scrap or chips that may interfere with the applicator installation.
4. Using a 4mm hex wrench, turn the M5 SHCS clockwise until the locking clamp is fully opened.
5. Locate the applicator lug bolt in the press yoke. See Figure 3-1.
6. Align the applicator base plate slots with the locator clamps on the press quick change mounting plate.

7. To lock applicator, turn M5 SHCS counter clockwise until tight.
8. Confirm that the applicator is secured properly.
9. Disconnect the air supply from the filter-regulator-lubricator supplied with the press, by sliding the shutoff valve sleeve to the left, as shown in Figure 3-2. Remove the plugs from the fittings on the air valve. Do not discard the plugs; when the air applicator is not being used, the fittings should be plugged.

“DOUBLE”, depending on the spacing of the taped terminals. See Figure 3-5.

12. Connect the main air supply to the filter regulator-lubricator. (Customer supplied fitting)
13. Adjust the regulator to 75-80 PSI (366-390 kN/cm²).
14. Check that the tubing for the applicator is properly connected by dry cycling the press and observing the feed motion.

3.3. Manually Cycling the Press

Turn off the “POWER” switch which is located on the control panel to power down the press.

Note: Once the press guard is open the guard interlock switch will disconnect power to the motor.

Hand cycling the press is necessary to confirm correct tool alignment and terminal feed adjustment. It also gives the setup person the ability to step through the press cycle manually.

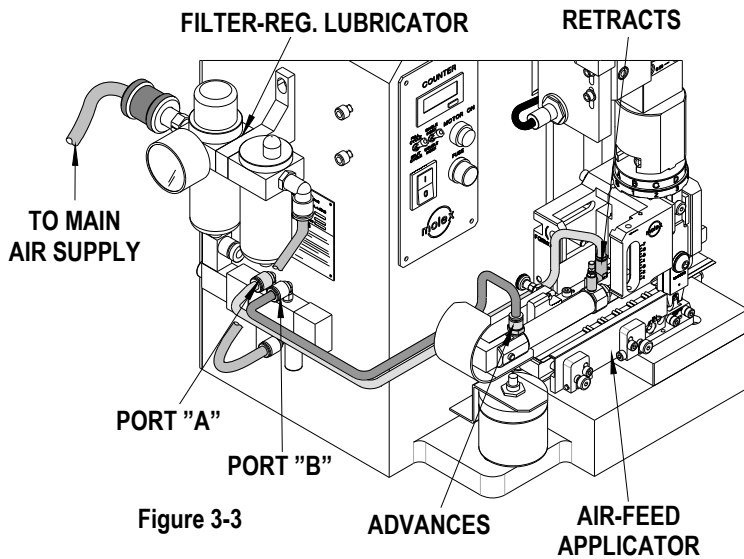


Figure 3-3

Note: When not using an air feed applicator always shutoff the air supply to the filter-regulator-lubricator by sliding the shutoff valve sleeve to the left, the opposite direction of the airflow, as shown in Figure 3-2.

Note: Some applicators feed terminals in the retracted position, for those air tubes must be reversed. In addition, some applicators are air advance and spring return, on these applicators one port will need to be plugged.

10. Insert the “A” port of the air valve with the tube that retracts the feed mechanism of the applicator. See Figure 3-3.
11. Insert the “B” port of the air valve with the tube that advances the feed mechanism of the applicator. See Figure 3-3.

Note: When using the 64016-2000 Crimp Module, set the feed selector on the control panel to “SINGLE” or

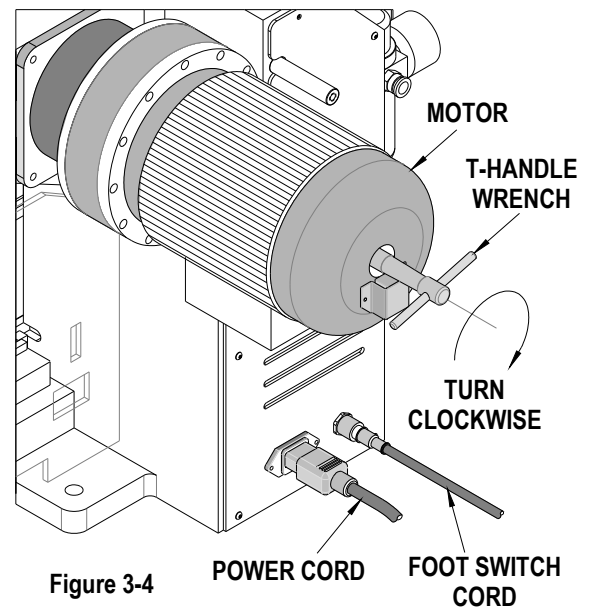


Figure 3-4

Steps

1. Insert the 8mm square socket T-handle wrench through the access hole in the center of the rear cover on the motor and locate it in the shaft motor. See Figure 3-4.

2. Rotate the wrench clockwise. This turns the motor and moves the ram down and up.
3. Always return the press back to top dead center insuring that the ram is in the start up position.
4. Remove the T-handle wrench.

NOTE: When the T-handle is put into the motor shaft the motor turns off automatically.

3.4. Operation

3.4.1 Full Cycle Operation

CAUTION: Make sure the press guard is in position and all setup procedures are followed. Follow the safety and work area instructions.

Steps:

1. Push the toggle switch on the control panel to "Full Cycle". See Figure 3-5.

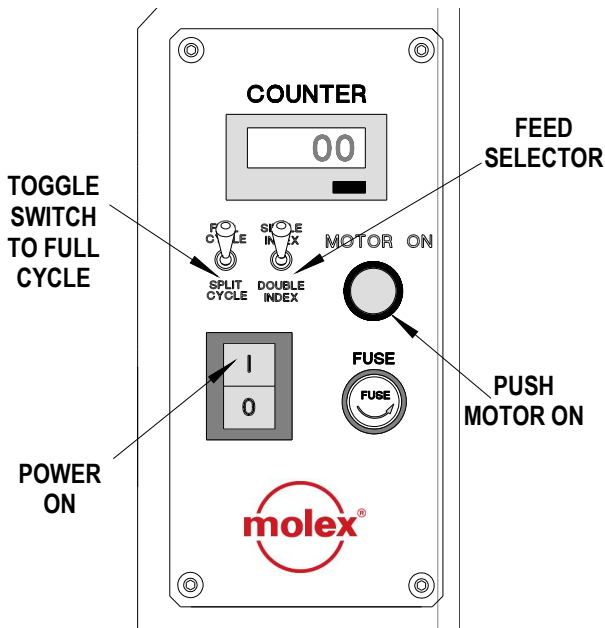


Figure 3-5

2. Turn the "Power " switch on, the power indicator light will light up.
3. Press the "Motor On" push button, the motor indicator light will light up. After a 5 second delay the press will be ready to cycle.
4. Place the prestripped wire through the slot in the press guard and push until it contacts the wire stop. See Figure 3-6.

5. Press the foot pedal down once. Use a sweeping motion to the right with the crimped wire and remove.
6. Check the crimped wire and confirm that it meets the applicator specifications and visual inspection.
7. Repeat steps 4 and 5 for the next crimp.

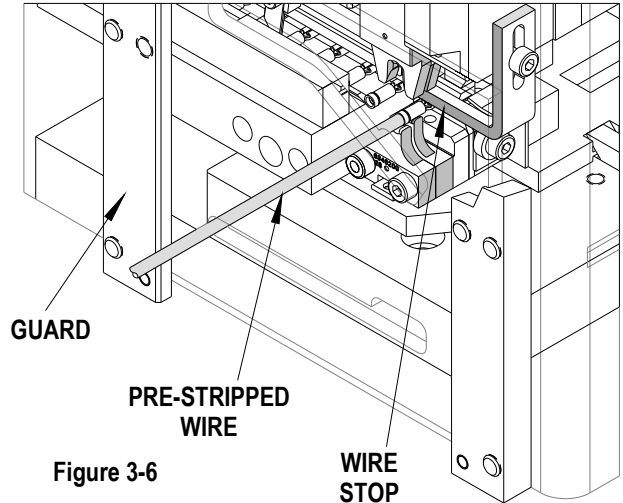


Figure 3-6

3.4.2 Split Cycle Operation

Description:

The split cycle is used mostly for closed barrel terminals. This makes it easier to locate the terminal before crimping the wire. The punch/ram will close partially to assist in locating the terminal for the termination. Then the wire can be placed into the terminal and be terminated. To setup the machine for split cycle push the toggle switch on the control panel to "Split Cycle". See Figure 3-5.

Steps:

1. Depress the foot switch once, the ram will lower partially, positioning the terminal for termination.
2. Place the prestripped wire into the terminal.
3. Depress the foot switch a second time. The ram will complete its downward stroke and return to the top position to complete the cycle of terminating the crimp.

CAUTION: Make sure the press guard is in position and all setup procedures are followed. Follow the safety and work area instructions.

Split Cycle Ram Adjustment

When setting up an applicator for split cycle operation it may be necessary to adjust the ram for a partially closed position (1st position), so the terminal will be captivated in the punch and not terminated. For adjustment, the prox sensor located on the left side of the ram cover, needs to be adjusted. See the following steps:

Steps:

1. Depress the foot switch once, with the terminals in the applicator. See where the punch is located in the 1st position of the cycle.
2. If the punch is too high and does not center the terminal so that the prestripped wire can be inserted in the closed barrel or the punch is too low partially crimping the terminal, the prox sensor needs to be adjusted.
3. Open the press guard.
4. Loosen the two M12 jam nuts on the split cycle prox, located on both sides of the prox bracket. Then loosen the M4 jam nut holding the M4 X 25 SHCS. Turn the screw clockwise to raise the prox or counter-clockwise to lower the prox. See Figure 3-7. Raise the prox if the punch is partially crimping the terminal; or lower the prox if the ram is not closing far enough and not centering the terminal punch.

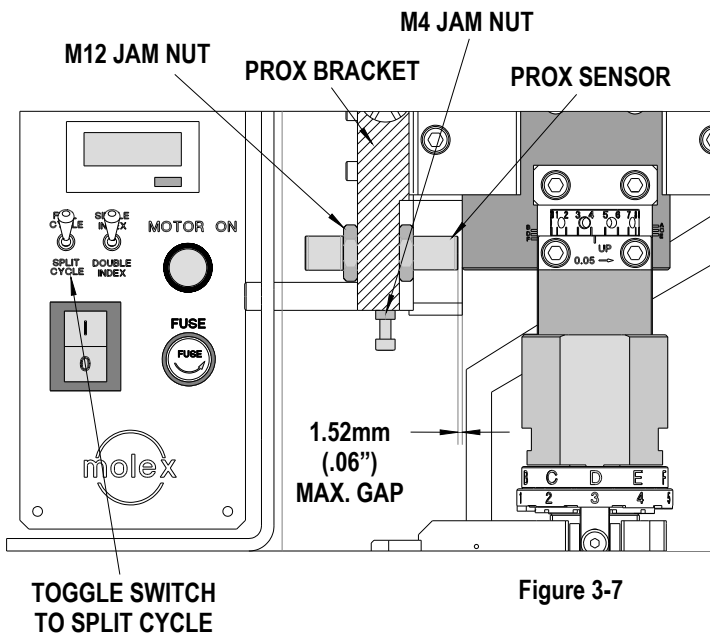


Figure 3-7

5. Retighten the M4 SHCS and the (2)M12 jam nuts positioning the prox for the 1st position of the split cycle. See Figure 3-7.
6. Close the press guard.
7. Repeat step 1 to check for the correct position of the ram. (Be sure Ram is at Top-Dead-Center first.)

Note: The gap between the prox and the ram should be 1.52mm (.06") Max. See Figure 3-7.

CAUTION: Always return the ram to the top dead center position or start position of the cycle before recycling the press. This is done by manually cycling the press. See section 3.3.

3.4.3 Crimp Adjustment

See Section 2.6.1 for Industry standard shut height.

Crimp Adjustment Full and Split Cycle

If crimp adjustment is required and cannot be made by the cam adjustment on the applicator, the fine adjustment dial on the press ram can be adjusted by following the steps below.

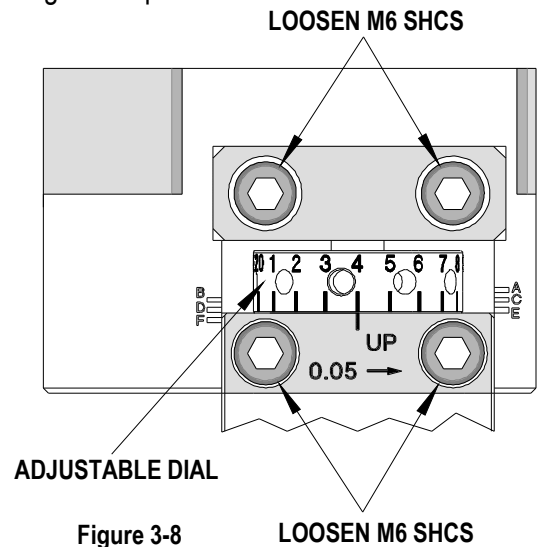


Figure 3-8

Steps:

1. Open the press guard.
2. Loosen the four M6 SHCSs on the front of the press.
3. Rotate the adjustment dial to the right to raise crimp height or to the left to decrease. Dial indicator lines represent increments of .05mm (.002"). See Figure 3-8.

4. When adjustment is complete, retighten the four M6 SHCSs.
5. Close the guard.
6. Place a prestripped wire into the terminal and terminate under power. Examine the quality of the crimp.
7. Repeat steps 1 thru 6 if the desired crimp is not achieved.

Use caution adjusting the ram downward. Over adjustment in this direction may cause tooling damage or breakage.

Always return the adjustment to the factory setting before installing another applicator, or recalibrating shut height. See Section 2.6.1.

Section 4

- 4.1 Maintenance
- 4.2 Oiler
- 4.3 Troubleshooting

4.1 Maintenance

Power down the press by pressing the **power** button to off “O” located on the control panel.

For efficient operation the press should be cleaned daily with a soft bristle brush to remove any carrier strip debris and terminal plating dust from the tooling area.

Maintenance Schedule

The following is offered as a general guideline for maintenance. Tool life can be increased with good maintenance practices or decrease with lack of maintenance.

Item	Frequency Cycles	Frequency Time	Materials
Air Filter	100,000	Weekly	Clean bowl and sintered filter with denatured alcohol
Air Lubricator	100,000	Weekly	SAE 10W oil. Check and refill if used
Ram	25,000	Daily	SAE 10W oil Oil Cup (Top of ram)
Main Bearing	25,000	Daily	Grease fitting right side of Press bearing lube
Cleaning	25,000	Daily	Use soft bristle brush on Applicator mounting plate

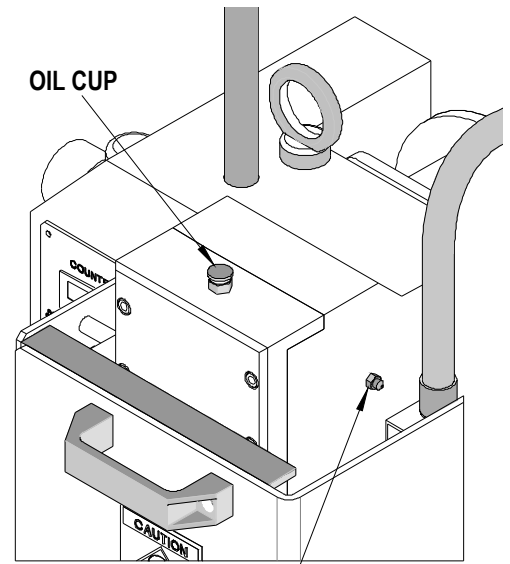


Figure 4-8 GREASE FITTING

4.2. Oiler

Description

The wick action oiler is included with the press. The oiler applies a thin coat of lubricant to the terminals, which helps with feeding and better release from termination punches. The oiler is primarily used for terminals with gold plating. To avoid contamination when shipped and during setup, the oiler is shipped from the factory with no lubricant oil. The oiler should only be used on applicators that require lubrication for smooth trouble-free operation.

Oiler Position

Adjust the position of the oiler unit using the mounting screw that attaches the oiler to the quick change mounting plate. Simply loosen the screw, slide the unit to the desired position, and tighten the screw. The unit can be removed and placed on the rear side of the quick change mounting plate for rear-feed applications.

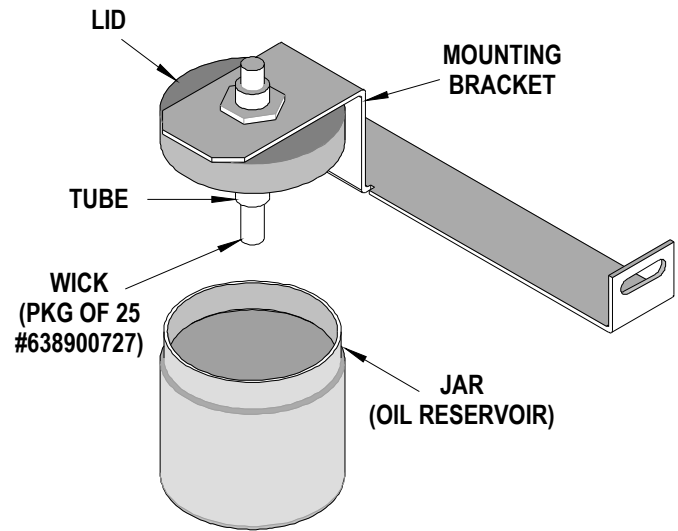


Figure 4-9 OILER ASSEMBLY

Oiler Wick

Adjust the height of the oiler wick by pulling up or pushing down on the wick to the appropriate height. The wick can be moved using pliers or simply grab it with your fingers.

Filling the Reservoir

While firmly holding the lid, screw the jar (oil reservoir) counter clockwise until it is removed. Fill the jar with the desired lubricant oil and replace the lid.

Replacing the Wick

While firmly holding the lid, screw the jar oil reservoir) counter clockwise until it is removed. Feed a new wick up into the tube until it protrudes from the top end of the tube and replace the lid.

Package of 25 Wicks:
Molex Order No: 63890-0727

Lubricant Oil

Recommended oil: Transdraw B-19
 Vendor: Sure Lubricants Inc.
 356 South Lively Boulevard
 Elk Grove Village, IL 60007-2010
 Phone: 888-787-3582
 Fax: 847-956-6655
 E-mail: surelub@aol.com

4.3 Troubleshooting

Symptom	Cause	Solution
Motor will not run	Power/Power cord failure	Check supply
	Loose connection	Refer to control schematic
	Guard interlock switch disengaged	Re-Install guard
	Fuse blown	Replace
	On/Off switch failure	Replace
	Motor failure	Replace
	T-wrench not removed from motor	Removed T-wrench from motor
	Control PCB not working	Replace
	Solid state relay not working	Replace
	Control board for motor	Repair or replace
Press will not cycle	Guard interlock switch disengaged	Re-Install guard
	Faulty footswitch	Check Connection. Repair or replace
	Control PCB not working	Replace
	Fuse blown	Replace
Press partially cycles	Toggle switch set to split cycle	Reset the toggle switch to full cycle

Section 5

- 5.1 Parts List
- 5.2 Assembly Drawings
- 5.3 Electrical and Pnuematic Schematics

5.1. Parts List

TM-3000 Main Assembly (Figure 5-1 and 5-2)				
Item No.	Order No.	Ref. No.	Description	Quantity
1	63801-7200	FE-2TC (110VAC)	Universal Press (110VAC)	See Notes Below
2	63801-7300	FE-2TC (220VAC)	Universal Press (220VAC)	See Notes Below
3	63801-7201	A01	Press Frame	1
4	63801-7202	A02	Ram	1
5	63801-7203	A03	Follower	1
6	63801-7204	A04	Front Cap	1
7	63801-7205	A05	Press Face Plate	1
8	63801-7206	A06	Switch-TDC	1
9	63801-7207	F05	Flag Pickup	1
10	63801-7208	A08	Access Cover	1
11	63801-7209	F17	Oil Fill Cap	1
12	63801-7210	A10	Flag-Position	1
13	63801-7211	(M) B01	Split Cycle Prox	1
14	63801-7212	(M) B03	Guard Handle	1
15	63801-7213	B02	Yoke Adapter	1
16	63801-7214	B03	Mounting Block Cover	1
17	63801-7215	B04	Mounting Block	1
18	63801-7216	(M) A01	Press Yoke	1
19	63801-7217	B01	Press Shaft	1
20	63801-7218	A021-R80	Shaft E-Ring	1
21	63801-7219	A007-NA6911	Front Bearing	1
22	64016-2501	---	Guard Slide	2
23	64016-2502	---	Guard Front	1
24	64016-2503	---	Front Guard Insert	1
25	63801-7281	(M)	Rear Guard	1
26	63801-7222	(M) A02	Quick Change Plate	1
27	63801-7283	(M)	Side Guard	1
28	63801-7224	(M)	Name Plate (Universal Press)	1
29	63801-7284	(M)	Hinge Mounting Bracket	1
30	63801-7285	(M)	Guard Hinge	2
31	63801-7286	(M) A06	Guard Sensor Bracket	1
32	63801-7287	(M)	Guard Bracket	1
33	63801-7288	(M)	Stand-off, Guard Side	3
34	63801-7631	---	Control Panel	1
35	63801-7232	F12	Eye Bolt	1
36	63801-7233	C04	Stand off	2
37	63801-7234	C01	Terminal Guide	1
38	63801-7235	C03	Guide	2
39	63801-7236	C02	Terminal Guide Bracket	1
40	63700-3845	(M)	Rotor Magnet	1
41	63801-7237	F06	Press Lamp	1
42	63801-7238	E05	Lamp Mounting Bracket	1
43	63801-7239	(M) B02	Guard Switch Prox	1
44	63801-7240	(M)	Oiler Assembly (Figure 5-3)	1
45	63801-7241	F07A	*Bulb-110 VAC	1
46	63801-7242	F07B	**Bulb-220 VAC	1
47	63801-7243	(M) A03	Alignment Block	2
48	63801-7244	(M) A04	Locking Clamp	1
49	63801-7245	(M) A05	Clamp Retainer	1

TM-3000 Main Assembly (Figure 5-1 and 5-2)				
Item No.	Order No.	Ref. No.	Description	Quantity
50	63801-7246	A021-R68	E-Ring	2
51	63801-7247	A007-A6909ZZ	Rear Bearing	2
52	63801-7248	(M) F01	Motor with Gear Reducer	1
	63801-7648	(M) F01	*** Motor with Gear Reducer	1
53	63801-7249	A021-S45	Small E-Ring	1
54	63801-7250	F02	* Motor Controller 110VAC	1
55	63801-7251	F02A	** Motor Controller 220 VAC	1
56	63801-7252	F03	Relay - Motor On	1
57	63801-7253	F04	Transformer (18V)	1
58	63801-7254	(M) E04	PCB-Machine	1
59	63801-7256	E03	Sensor Flag -Motor	1
60	63801-7257	F08	Motor Shutoff Prox	1
61	63801-7258	E02	Prox Motor Shutoff Bracket	1
62	63801-7259	A09	Rear Cover	1
63	63801-7260	D01	Reel Support	1
64	63801-7261	D02	Reel Boss	2
65	63801-7262	D03	Reel Disc	2
66	63801-7263	D04	Reel-Spring	1
67	63801-7269	(M)	Filter-Regulator-Lubricator	1
68	63801-7270	(M)	Air Valve-3 Way	1
69	63801-7271	(M)	Foot switch with cord	1
70	69018-6237	---	* Power Cord (110VAC) 20 AMP	1
71	62500-1774	---	** Power Cord (220VAC) 10 AMP	1
72	63801-7272	(M)	Slide Valve	1
73	63801-7273	(M)	Label (Lightning Bolt) 1-1/2" Triangle	1
74	63801-7274	(M)	Label (Eye-Glasses)	1
75	63801-7275	(M)	Label (Caution)	2
76	63801-7276	(M)	Plug (1/4" Tube)	2
77	63801-7277	(M)	Elbow Male (1/4" Tube) for Filter-Reg.-Lubricator	1
78	63801-7278	(M)	Elbow Male (1/4" Tube) for 3-Way Valve	3
79	63801-7279	(M)	Terminal Guide Standoff	4
80	63801-7600	---	Universal Press (220VAC)	See Notes Below

Note:

1. For TM-3000 Press 220VAC use assembly no. 63801-7300.
2. For TM-4000 Press (220VAC only) use assembly no. 63801-7600.
3. All parts for both 63801-7200 and 63801-7300 Presses unless otherwise specified.
4. * Indicates parts for 63801-7200 (110VAC) Press only.
5. ** Indicates parts for 63801-7300 (220VAC) Press only.
6. *** Indicates parts for 63801-7600 (220VAC) Press only.

5.2. Assembly

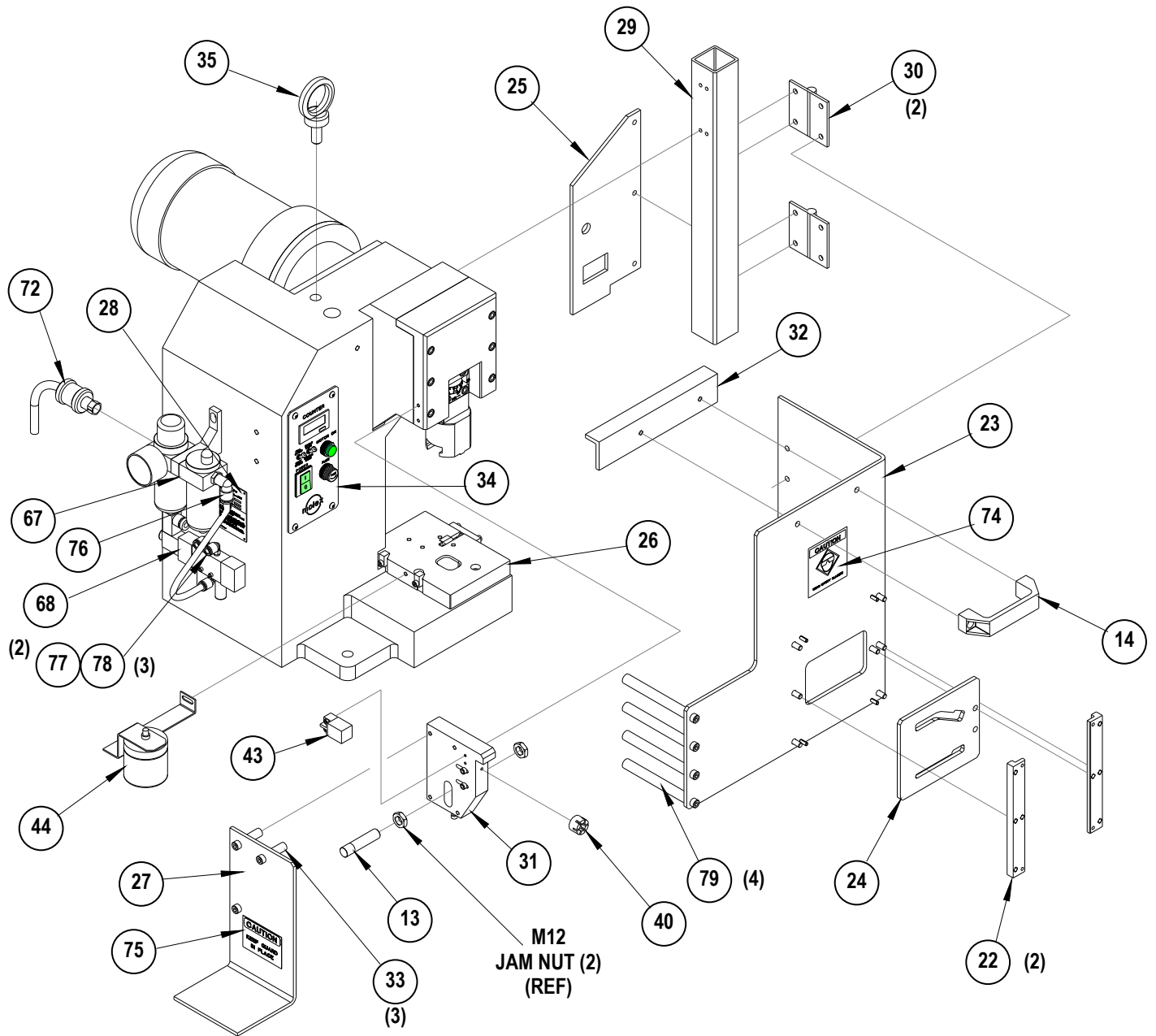
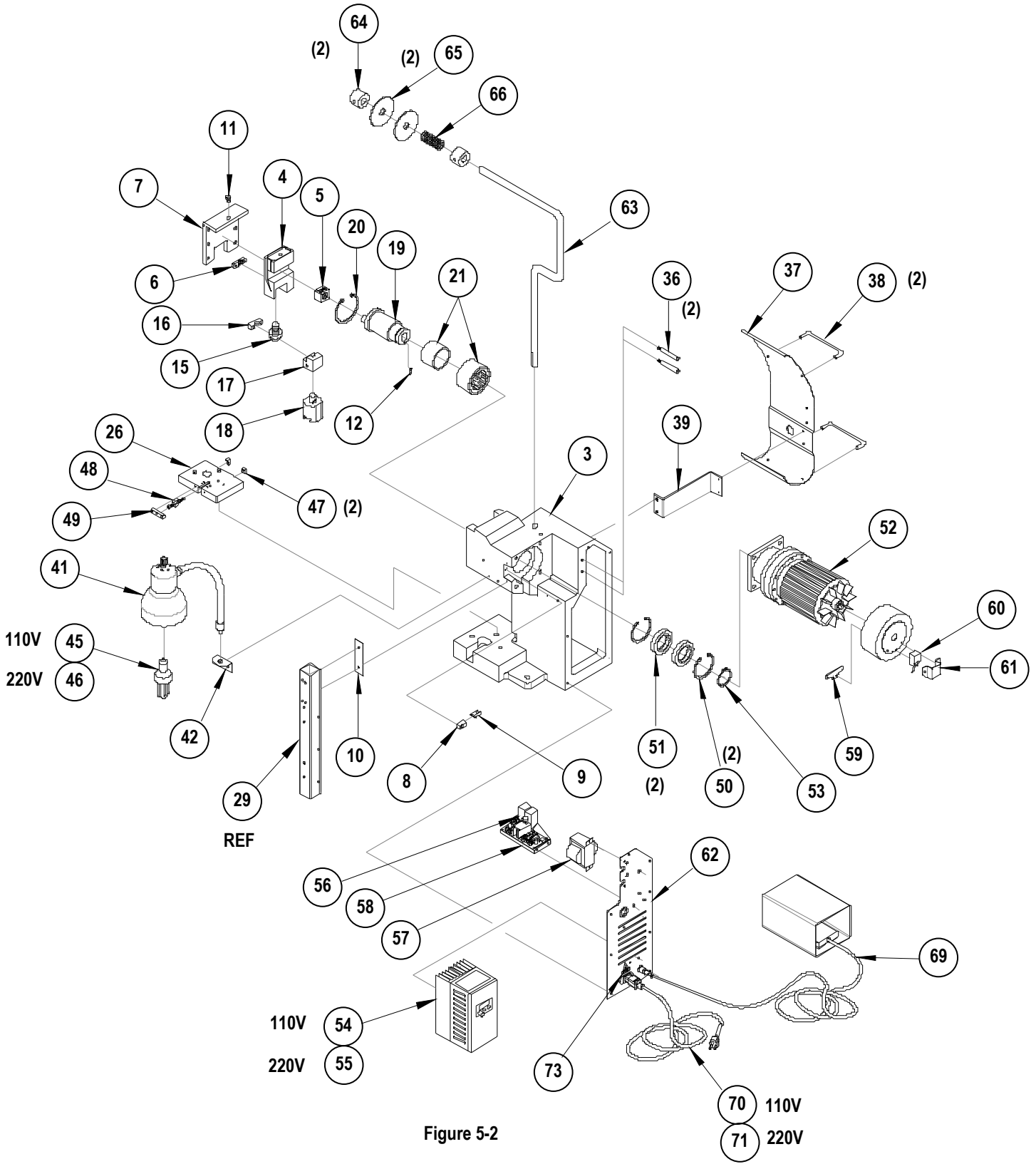


Figure 5-1

5.2 Assembly (Continued)



Assembly (continued)

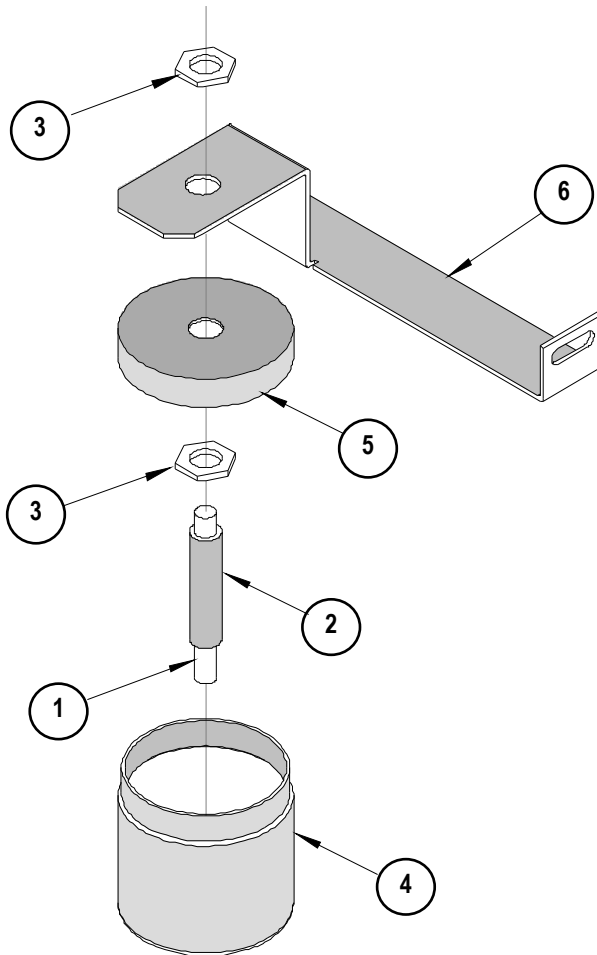
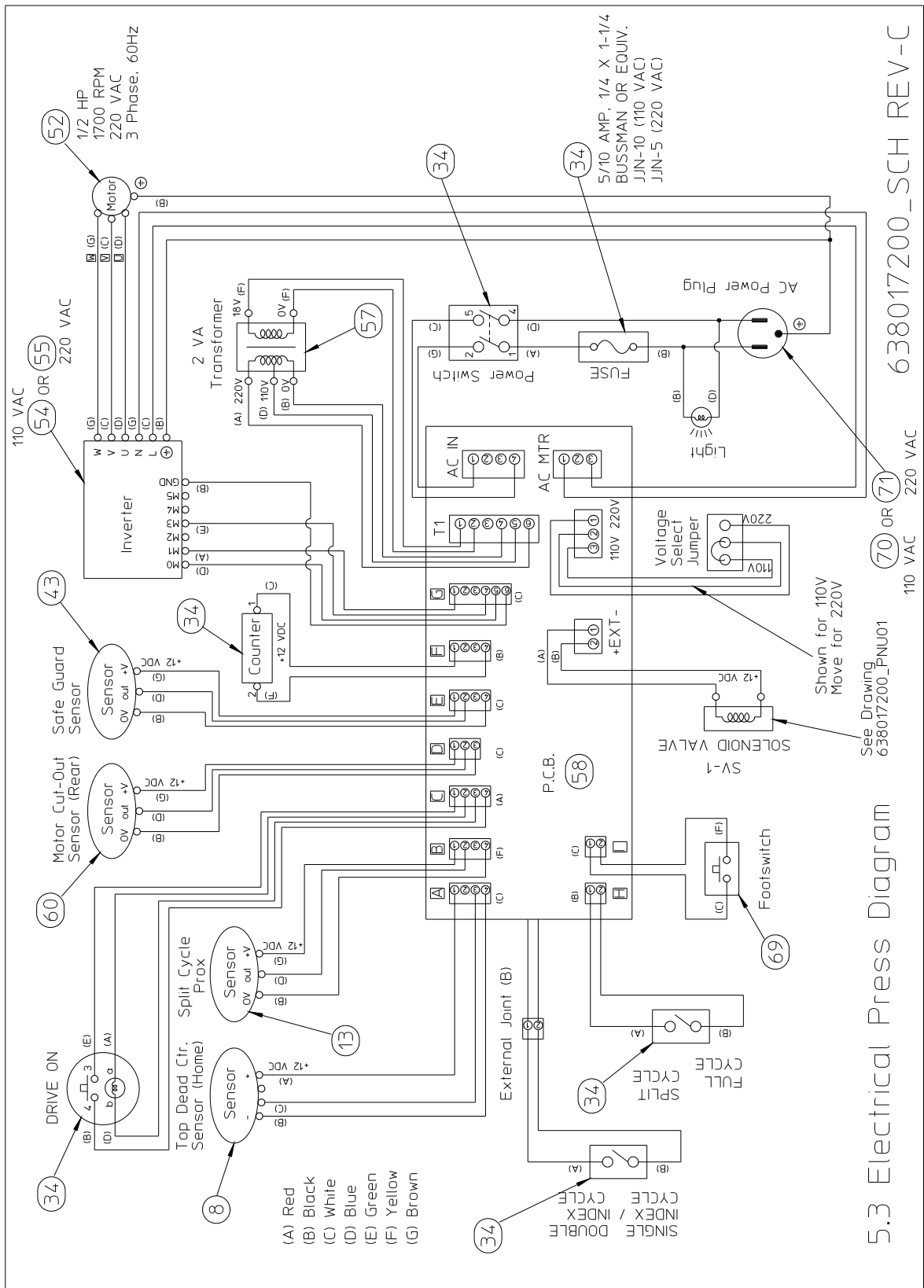


Figure 5-3

**Oiler Assembly
Item No. 43 (63801-7240)**

Item No.	Description	Quantity
1	Oiler Wick	1
2	Oiler Lamp Tube	1
3	Oiler Lamp Tube Nut	2
4	Wide Mouth Glass Jar	1
5	Oiler Glass Jar Lid	1
6	Oiler Bracket	1

5.3. Electrical Schematic



5.3 Electrical Press Diagram

See Drawing
638017200_PNU01

5.3. Pnuematic Schematic

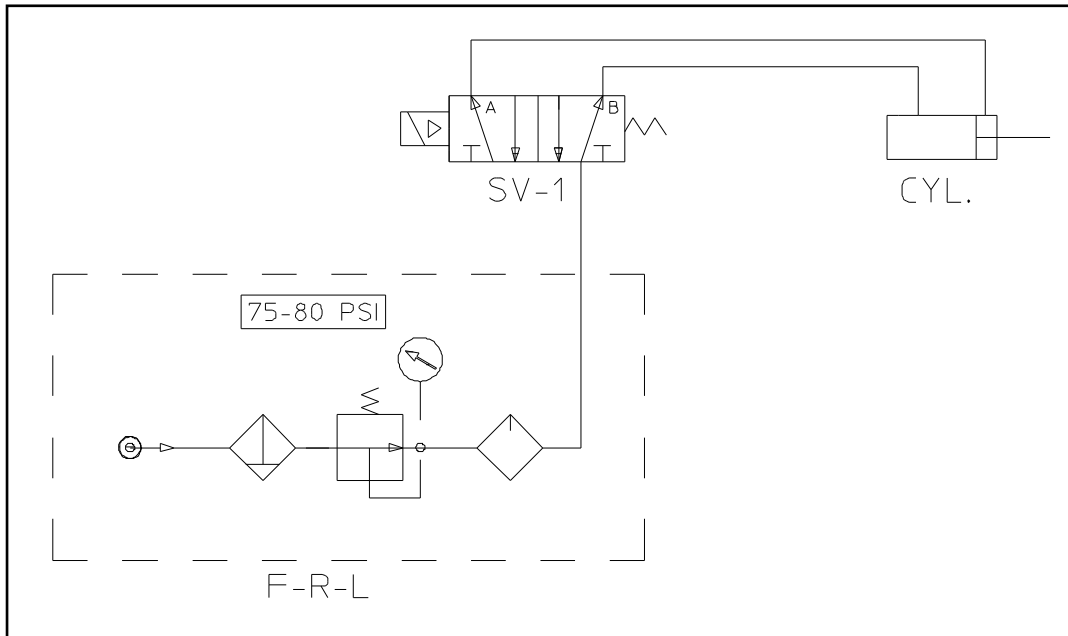


Figure 5-5

Americas Headquarters
 Lisle, Illinois 60532 U.S.A.
 1-800-78MOLEX
 amerinfo@molex.com

Far East North Headquarters
 Yamato, Kanagawa, Japan
 81-462-65-2324
 feninfo@molex.com

Far East South Headquarters
 Jurong, Singapore
 65-6-268-6868
 fesinfo@molex.com

European Headquarters
 Munich, Germany
 49-89-413092-0
 eurinfo@molex.com

Corporate Headquarters
 2222 Wellington Ct.
 Lisle, IL 60532 U.S.A.
 630-969-4550
 Fax: 630-969-1352

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

Section 6

6.1 EC Declaration of Conformity

6.1 EC Declaration of Conformity

EC Declaration of Conformity

We hereby declare that the following product is in conformity with the requirements of the following EC Directives:

Product:	Termination Machine
Type:	TM-3000
Title and No. Of Directive:	
Machinery Directive	98/37/EC
Low Voltage Directive	73/23/EEC
EMC Directive	89/336/EEC

Provided that it is used and maintained in accordance with the general accepted codes of good practice and the recommendations of the instructions manual, meets the essential safety and health requirements of the Machinery Directive, Low Voltage Directive and Electromagnetic Compatibility Directive.

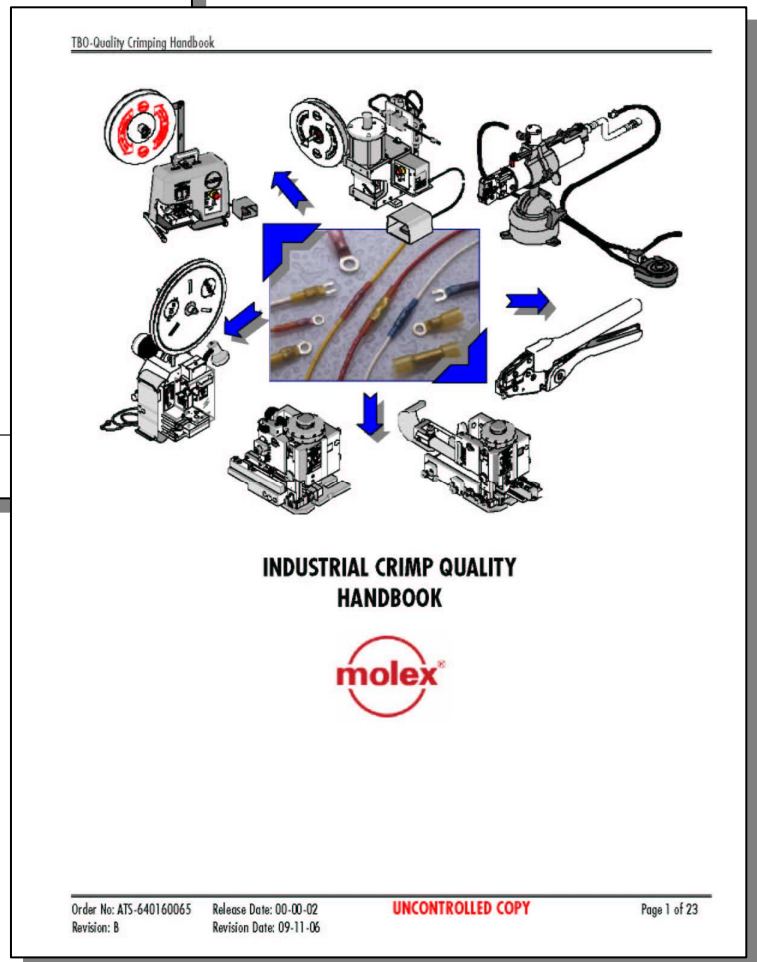
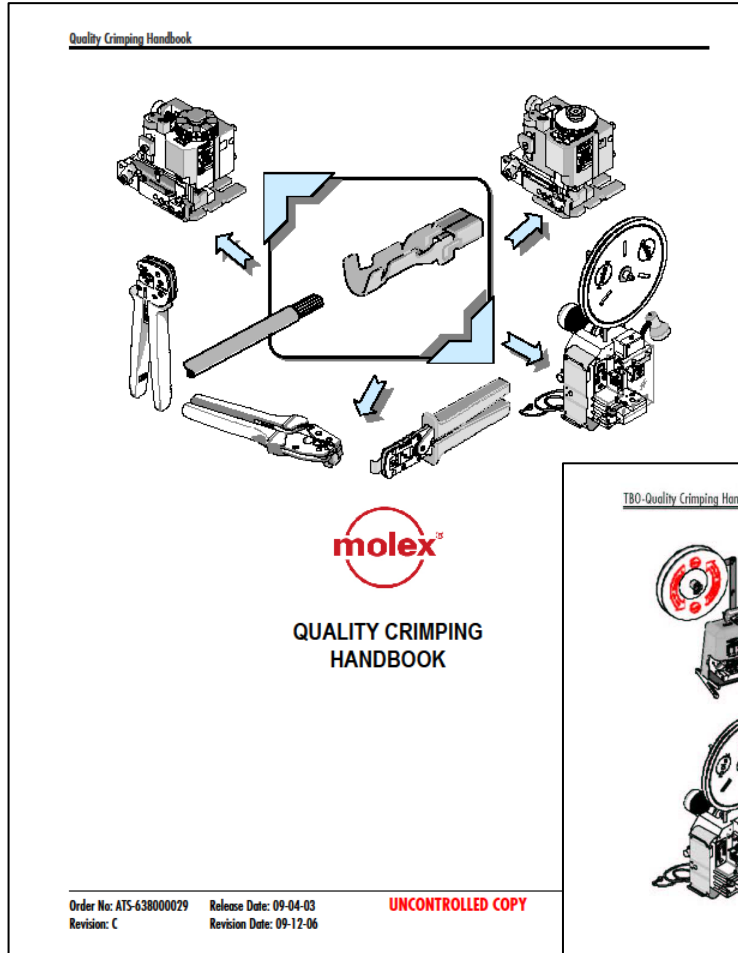
For the most specific risks of this machine, safety and compliance with the essential requirements of the Directive has been based on elements of:

- . EN ISO 12100-1 : 2003 / Safety of Machinery - Basic concepts, general principles for design - Part 1 : Basic terminology, methodology.
- . EN ISO 12100-2 : 2003 / Safety of Machinery - Basic concepts, general principles for design - Part 2 : Technical principles and specifications.
- . EN 294 : 1992 / Safety of machinery - Safety distance to prevent danger zones being reached by the upper limbs
- . EN 418: 1992 / Safety of machinery - Emergency stop equipment, functional aspects - Principles for design
- . EN 1037 : 1995 / Safety of machinery - Prevention of unexpected start-up
- . EN 1050 : 1996 / Safety of machinery - Principles for risk assessment
- . EN 60204-1 : 1997 / Safety of machinery - Electrical equipment of machines - Part 1 : General requirements.
- . EN 55011: 1998 / Limits and methods of measurement of radio interference characteristics of industrial electrical device.
- . EN 61000-6-2 : 2001 / Electromagnetic compatibility (EMC)
Part 6-2 : Generic standards . Immunity for industrial environments
- . EN 61000-6-4 : 2001 / Electromagnetic compatibility (EMC)
Part 6-4 : Generic standards . Emission standard for industrial environments

Supplier Name:	Molex Application Tooling Group
Address:	2200 Wellington Ct. Lisle, IL 60532 USA
Date:	June 19, 2007
Signed:	<i>Hasmukh Shal</i>
Typed Name:	Hasmukh Shal
Title:	Engineering Group Manager.

For more information use the Quality Crimping Handbook And Industrial Crimping Handbook

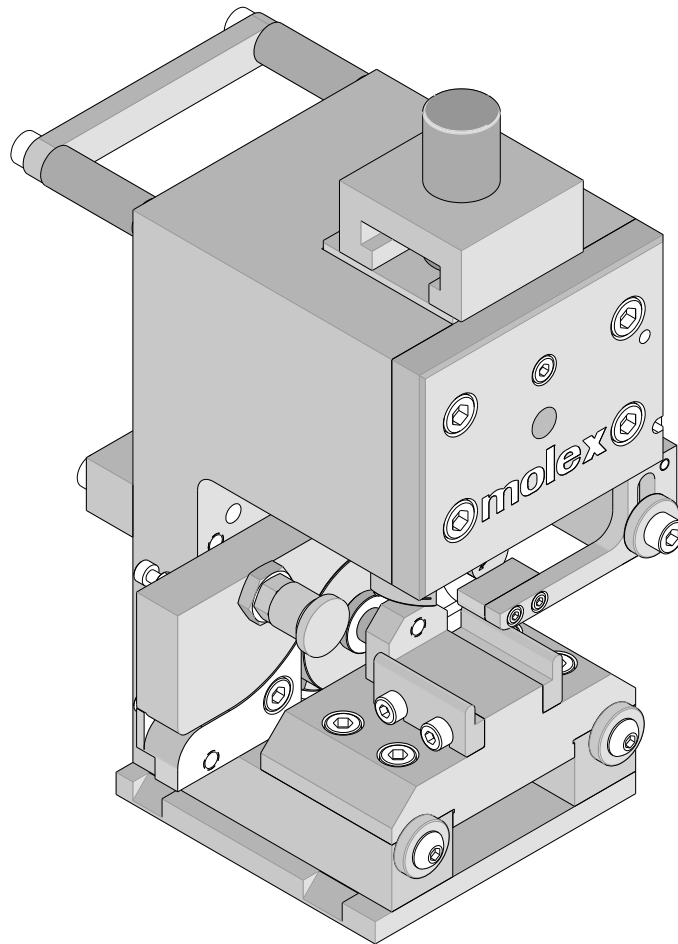
There is no charge for these books, they can be found on the Molex Website (www.molex.com) or contact you local Molex sales engineer



APPENDIX A

OPTIONS

1. Taped Terminal Crimp Module



TAPED TERMINAL CRIMP MODULE
Order Number 64016-2000
Instruction Manual

- Description
- Operation
- Maintenance

WARNING

- NEVER** USE THIS CRIMP MODULE IN A PRESS WITHOUT GUARDS OR SAFETY DEVICES THAT ARE INTENDED TO PREVENT HANDS FROM REMAINING IN THE DIE SPACE.
- NEVER** OPERATE, SERVICE, INSTALL, OR ADJUST THIS CRIMP MODULE WITHOUT PROPER INSTRUCTION AND WITHOUT FIRST READING AND UNDERSTANDING THE INSTRUCTIONS IN THIS MANUAL AND ALL APPLICABLE PRESS MANUALS.
- NEVER** INSTALL OR SERVICE THIS CRIMP MODULE WHILE CONNECTED TO ANY ELECTRICAL POWER SOURCE. DISCONNECT POWER BY UNPLUGGING THE PRESS FROM ITS POWER SOURCE.
- CAUTION** THE MOLEX CRIMP MODULE IS DESIGNED TO OPERATE ONLY IN THE MOLEX TM-3000 OR TM-4000 PRESSES. INSTALLATION IN OTHER CRIMP PRESSES CAN CAUSE SEVERE TOOL DAMAGE. IT IS ADVISABLE THAT BEFORE INSTALLATION, A CHECK OF THE PRESS SHUT HEIGHT BE PERFORMED. MOLEX WILL NOT BE LIABLE FOR ANY DAMAGES AS A RESULT OF INSTALLATION IN A PRESS WITH AN IMPROPERLY SET SHUT HEIGHT.
- CAUTION** MOLEX CRIMP SPECIFICATIONS ARE VALID ONLY WHEN USED WITH MOLEX TERMINALS AND MOLEX APPLICATION TOOLING.

WORK SAFELY AT ALL TIMES

For Service, Contact Your
Local Molex Sales Office

Molex Application Tooling Group

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

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

Table of Contents

SECTION

- 1 General Description
- 2 Setup, Adjustments, and Operation
- 3 Maintenance
- 4 Parts List, Assembly Drawings, Troubleshooting, and Guard upgrade

APPENDIX

- A Pull Force Testing

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

Principal Mechanical Parts of the Taped Terminal Crimp Module

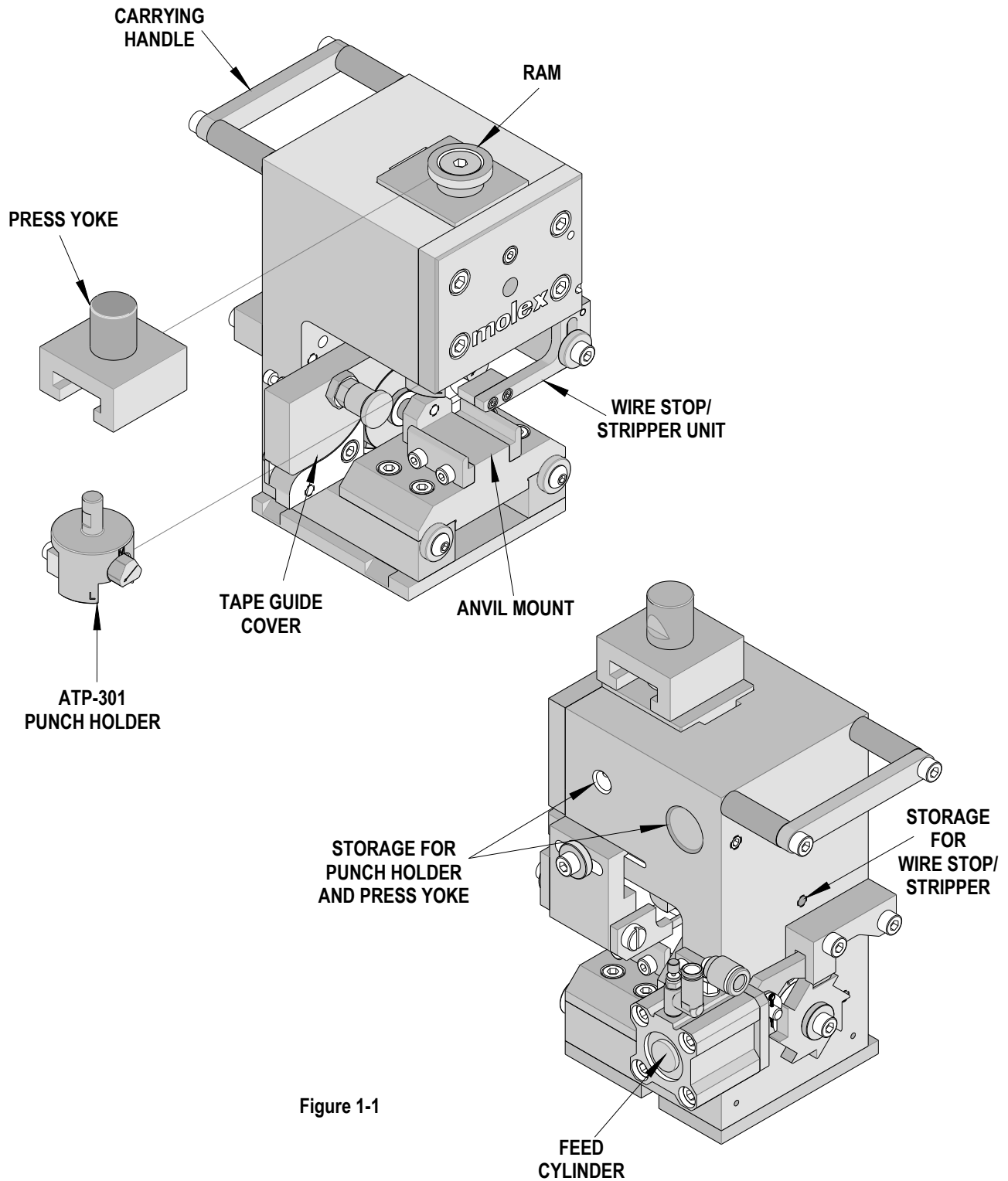


Figure 1-1

Uses crimp tooling from existing Molex ATP-201 and ATP-301 crimp presses.

General Description

Description

The taped terminal crimp module provides an effective method of applying a wide range of side feed tape-mounted terminals to pre-stripped discrete wire(s) from 4 to 30 AWG.

The crimp module and press combination replaces the Molex ATP-301 Press (19228-0030) and the Molex ATP-201 Press (19047-0001).

This crimp module operates only in the Molex TM-3000 and TM-4000 Universal Presses. The crimp module uses quick-change modular tooling, requires little or no adjustments, and is intended for mid-volume to high-volume, semi-automatic operations.

Molex offers the following crimp presses for operating the crimp module:

TM-3000 Universal Press 120V 50-60 Hz.
63801-7200

TM-3000 Universal Press 240V 50-60 Hz.
63801-7300

The TM-3000 should be used for 10-30 AWG terminals.

TM-4000 Universal Press 240V 50-60 Hz.
63801-7600

The TM-4000 should be used for 4-30 AWG terminals.

General Features

Independent adjustment of insulation crimp height. Tooling is accessed from the front of the module, simplifying change over.

No track adjustment is required.

Compatible with the Molex TM-3000 and TM-4000 Universal Presses only. It does NOT fit into Molex TM-40, TM-42, or TM-2000 presses.

No terminal feed adjustment is required.

Technical Specification

Dimensions

Crimp Module Only

Width:	140mm	(5.5")
Depth:	136mm	(5.3")
Height:	175mm	(6.9")
(ram down)		

Weight 4.1kg (9lb)

Guarding

The crimp module is intended to be used with the guards supplied on the TM-3000 or TM-4000 Universal Press. A special retrofit guard kit is available when the crimp module is installed on earlier TM-3000 press models. See Section 4.3.

Caution: DO NOT operate the crimp module without press guards in place.

Delivery Check

Carefully remove the crimp module from its shipping container and determine that the following items are included in the package.

Crimp Module	1
Air line Kit	1
Press Guard Kit (if required)	1
Instruction Manual	1

NOTE: Terminal crimp tooling is not included with the crimp module and must be ordered separately.

Tools

The following tools are recommended for setup and adjustments to the crimp module:

1. Metric standard hex wrench set
2. Inch standard hex wrench set
3. Wire stripper / cutter
4. Crimp Micrometer or caliper

Specification Sheets

Specification sheets are available for all crimp tooling. The specification sheet contains the following:

- ✓ Applicable terminal numbers
- ✓ Wire AWG ranges
- ✓ Insulation diameter ranges
- ✓ Pull Force specification
- ✓ Strip lengths
- ✓ Slug height specification
- ✓ Tooling parts lists and assembly drawings

The specification sheet is available on the Molex website (www.molex.com).

Molex Mini-Max Applicator Application Testing Specification Mechanical Feed-Metal Strip
Order No. 63881-0100

FEATURES

- Newly adapted to meet strip process and network wire process.
- Applicator designed to industry standard practices and strip length of 133.00mm (5.240").
- Conducter and insulation strip allow quick adjustment for conductor and insulation strip height change.
- Quick wire trim after strip height trim and bond adjustment can be achieved without the applicator from the crimp press.

SCOPE
This document is a test method for Female Quick Disconnect Terminal 24, 28, 30G.

Testing Mechanical
This test method is used to measure the mechanical properties of the crimped connection. The following chart shows the test parameters specified in MIL-STD-883C (2000) for various wire sizes.

Wire Size	Wires (AWG)	Wire Dia. (mm)	Wire Dia. (in)	Strip Length (mm)	Strip Length (in)
24	24	0.762	0.030	133.00	5.240
28	28	0.508	0.020	133.00	5.240
30	30	0.427	0.017	133.00	5.240
32	32	0.357	0.014	133.00	5.240
34	34	0.295	0.012	133.00	5.240
36	36	0.254	0.010	133.00	5.240
38	38	0.213	0.008	133.00	5.240
40	40	0.178	0.007	133.00	5.240
42	42	0.149	0.006	133.00	5.240

CRIMP SPECIFICATIONS

Wire Size	Strip Length (mm)	Strip Length (in)	Strip Force (N)	Strip Force (lbf)
24	133.00	5.240	10.0	2.25
28	133.00	5.240	10.0	2.25
30	133.00	5.240	10.0	2.25
32	133.00	5.240	10.0	2.25
34	133.00	5.240	10.0	2.25
36	133.00	5.240	10.0	2.25
38	133.00	5.240	10.0	2.25
40	133.00	5.240	10.0	2.25
42	133.00	5.240	10.0	2.25

UNCONTROLLED COPY
Doc No. 63881-0100 Release Date: 12-15-04
Revision: A

UNCONTROLLED COPY
Doc No. 63881-0100 Release Date: 12-15-04
Revision: A

UNCONTROLLED COPY
Doc No. 63881-0100 Release Date: 12-15-04
Revision: A

Section 2

Set-Up and Operation

- 2.1 Shut Height
- 2.2 Setup
- 2.3 Crimp Height Adjustments
- 2.4 Crimp Tooling Installation and Removal
- 2.5 Specific Crimp Module Adjustments
- 2.6 Operation

Read the following instructions before attempting to operate the crimp module.

2.1. Shut Height

The Molex Taped Terminal Crimp Module operates only in the TM-3000 and TM-4000 presses with standard shut height of 135.80mm (5.346"). Installation in crimp presses with other than standard shut heights can cause severe tool damage. **Before installing the crimp module, the press shut height must be verified.** The correct shut height is required for proper crimping without causing tool damage.

The shut height of the TM-3000 and the TM-4000 presses are preset at the factory and labeled on the front of the press. Over time, however, the press may wear causing a change in the shut height.

The shut height of the press can be checked with a shut height gauge, which is calibrated under load to achieve the 135.80mm (5.346") measurement. It is recommended that the shut height be checked monthly. A shut height gauge is available from most press manufacturers.

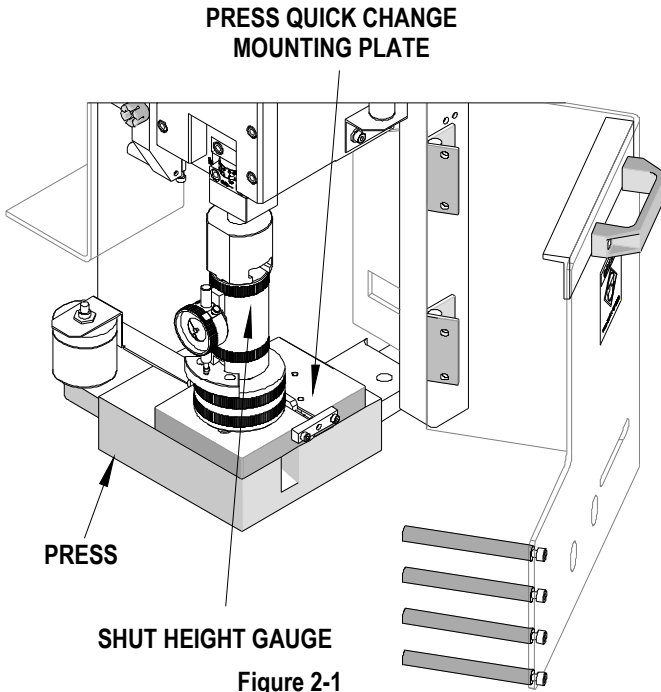


Figure 2-1

Measuring Press Shut Height

1. Disconnect the power supply from the press. Remove the machine guards if necessary.

2. Remove the applicator from the press. Make sure that the bottom of the press ram and quick change mounting plate are free of foreign material.
3. Place the shut height gauge into the press on the press quick change mounting plate. See Figure 2-1.
4. Manually cycle the press to the full down stroke position. (See the TM-3000 press instructions on manually cycling the press.)
5. Read the shut height measurement from the front of the gauge. Follow gauge manufacturer's instructions; usually the gauge reads "0" at the correct shut height.
6. If shut height adjustment is necessary:

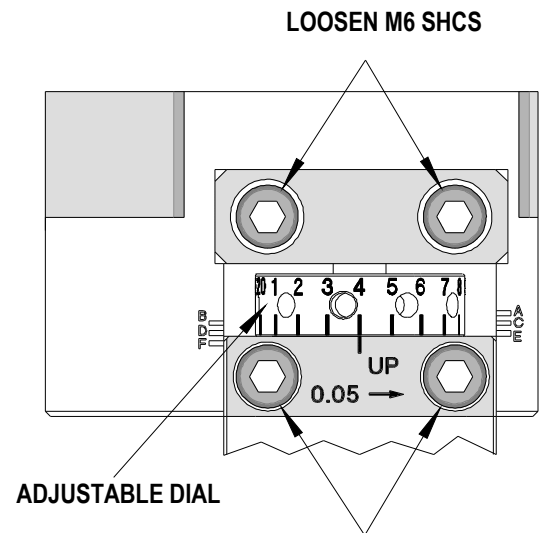


Figure 2-2

LOOSEN M6 SHCS

- a. Loosen the four M6 SHCS on the front of the press.
 - b. Rotate the adjustment dial to the right to raise shut height or to the left to decrease. Dial indicator lines represent increments of .05mm (.002"). See Figure 2-2.
 - c. When adjustment is complete, retighten the four M6 SHCS.
7. Repeat the above steps until the correct shut height is obtained.
 8. Shut height gauges must be calibrated on a regular basis.

2.2. Set-Up

The principal mechanical parts of the crimp module are illustrated in the assembly drawings (Section 4-1).

Crimp Module Installation and Removal

1. Turn off the press and disconnect the power. Open the press guard.
2. Clean the quick-change mounting plate of scrap or chips that may interfere with the crimp module installation.
3. Using a 3mm hex wrench, loosen the set screw holding the press yoke. Pull the press yoke straight down and remove it from the press. (Note: a storage hole is provided on right side of the crimp module frame to keep the press yoke)
4. Install the press yoke furnished with the crimp module in the press ram. Tighten the set screw securely.
5. Using a 4mm hex wrench, turn the M5 SHCS clockwise until the locking clamp is fully opened.
6. Visually align the crimp module's base plate slots with the location clamps on the press quick-change mounting plate.

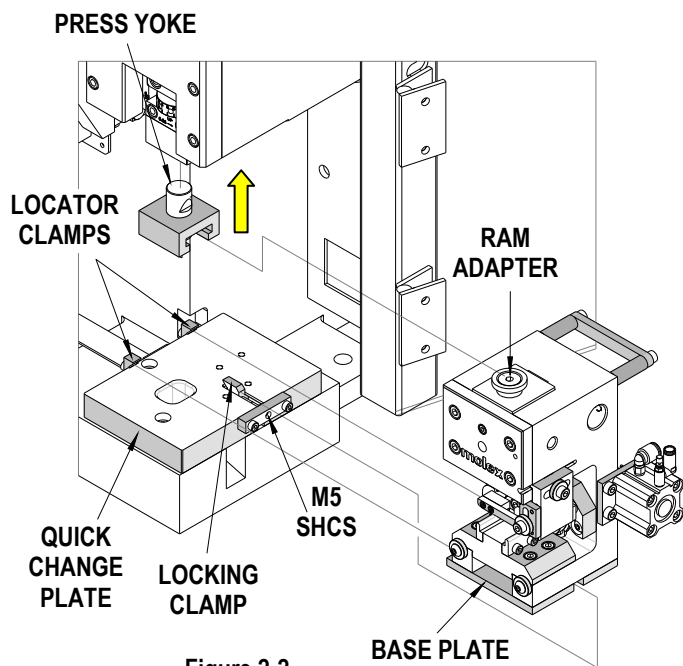


Figure 2-2

7. Slide the crimp module onto the quick-change mounting plate until the two notches on the left side engage against the stops, and at the same time, guide the ram adapter into the press yoke. See Figure 2-2.
8. To lock the crimp module, turn the M5 SHCS counterclockwise until tight.
9. Connect the air lines from the feed cylinder to the press air valve. The cylinder port closest to the module frame must be connected to the “normally

open” valve port. The other cylinder port (with the flow control valve) must be connected to the “normally closed” valve port.

10. Close the press guard.
11. Remove the crimp module by reversing the previous steps. When storing the crimp module, always leave a strip of terminals in the module on the anvils to prevent damage to the tooling. See Section 3.5 Storage.

Punch and Anvil Alignments

Note: Always clean mounting surfaces of crimp tooling and tooling holders prior to alignment.

1. Disconnect power from the press and open the machine guard.
2. Using a 5/32” hex wrench, slightly loosen the anvil mounting screw. See Figure 2-3.
3. Slowly hand-cycle the ram of the press to bottom of its stroke. With the punches engaging the anvils, securely tighten the anvil mounting screw to ensure alignment of punches and anvils.
4. Hand cycle the press ram to its up position.
5. Close the machine guard and restore power to the press.

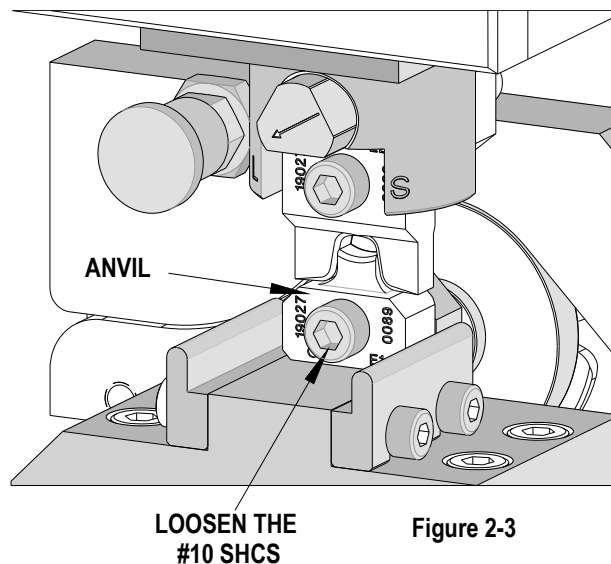


Figure 2-3

2.3. Crimp Height Adjustments

Conductor Crimp Height Adjustment

1. Obtain a piece of solder, approximately 40mm (1.5”) long and approximately 0.5mm (.02”) larger in diameter than the crimped slug height. If the solder

diameter is too large the crimped slug will have large extrusions, making it difficult to measure the overall slug height.

2. With no terminals in the applicator, lay the solder across the anvils and cycle the press (by hand or under power).
3. Using a crimp micrometer or dial caliper, measure the solder slug height and compare to specification.
4. If adjustments are necessary, turn off the press and open the machine guard.
5. The conductor crimp height is based on the conductor punch contacting the conductor anvil. If the press shut height was correctly set prior to crimp module installation (see section 2.1) there should be no need to adjust conductor crimp height. However, some of the larger terminal crimps may cause minor press frame deflection which can be compensated by adjusting the press shut height. See section 2.1 for shut height adjustment.

NOTE: Crimp height adjustments for closed-barrel industrial terminals are always based on solder slug heights, not terminal crimp heights.

1. Load the terminals, close the machine guard, and crimp several wires under power.
2. Perform a pull test on the conductor crimp to verify the mechanical integrity of the crimp. See Appendix A-Pull Force Test.

Insulation Crimp Height

1. Place a stripped length of the appropriate wire into the terminal and crimp under power.
2. Observe quality of insulation crimp.
3. If adjustments are necessary, turn off the press. Open the machine guard.
4. Using a 5/32" hex wrench, loosen the #10 SHCS holding the punches.
5. Rotate the insulation adjusting cam to achieve the desired insulation height. There are three cam positions (marked L, M, and S) for large, medium, and small diameter wires. The cam must be in one of the three positions; do not adjust it between positions. See Figure 2-4.
6. While holding the punches up against the punch holder, securely tighten the #10 SHCS.
7. Close the machine guards, restore power, and crimp a wire under power. Inspect the insulation crimp and make further adjustments if needed.

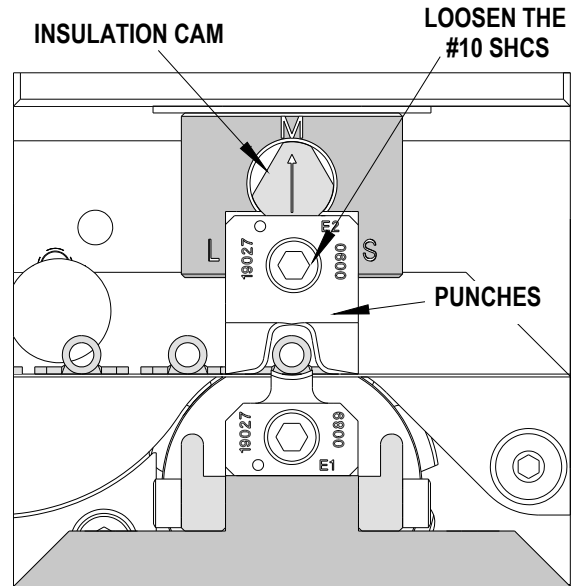


Figure 2-4

Note: Due to the large variety of insulation wall thickness, materials, and durometers, Molex does not specify insulation crimp height.

2.4. Crimp Tooling Removal and Installation

Caution: Always disconnect power before installing or removing tooling.

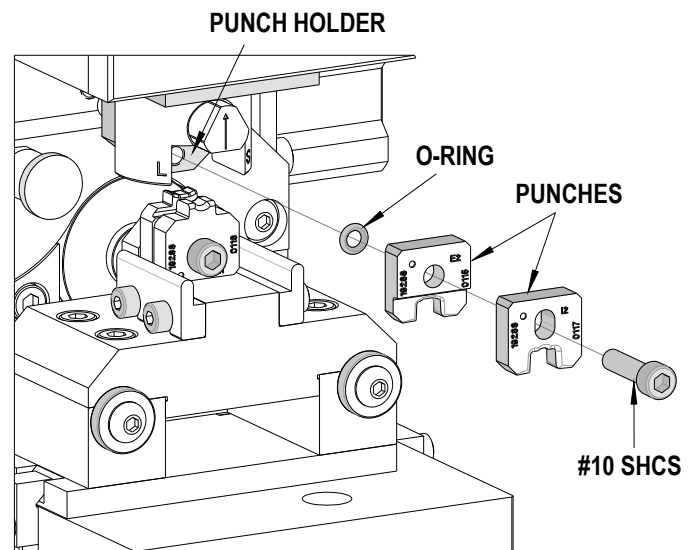


Figure 2-5

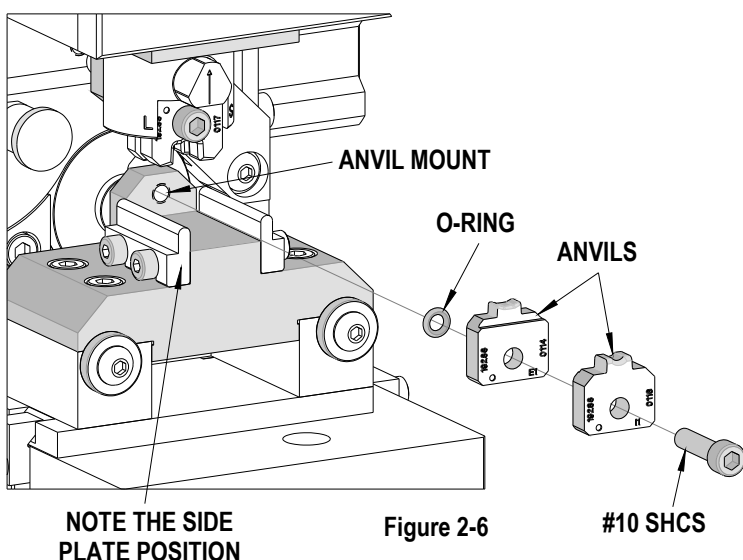
Removal and Installation of ATP-301 Style Punches

NOTE: Always clean mounting surfaces of crimp tooling and tooling holders prior to installation.

1. Disconnect power from the press. Open the machine guard.
2. If the ram is down, move it manually to the full up position.
3. To remove the punches, use a 5/32" hex wrench to remove the #10 SHCS holding the punches to the punch holder. See Figure 2-5.
4. Remove the screw, punches, and O-ring together. Some tool kits may include a spacer plate (behind the conductor punch).
5. To install, place the punches with the spacer (if used) and O-ring against the punch holder and securely tighten the #10 SHCS. The conductor punch ("E2") goes against the punch holder and the insulation punch ("I2") is stacked on the conductor punch. Make sure the etched "E2" or "I2" on each punch faces outward.

Note: The press should be hand-cycled after installing punches to insure a free fit between punch and anvil. If excessive resistance is felt, check for an incorrectly installed punch and/or anvil misalignment.

Removal and Installation of ATP-301 Style Anvils

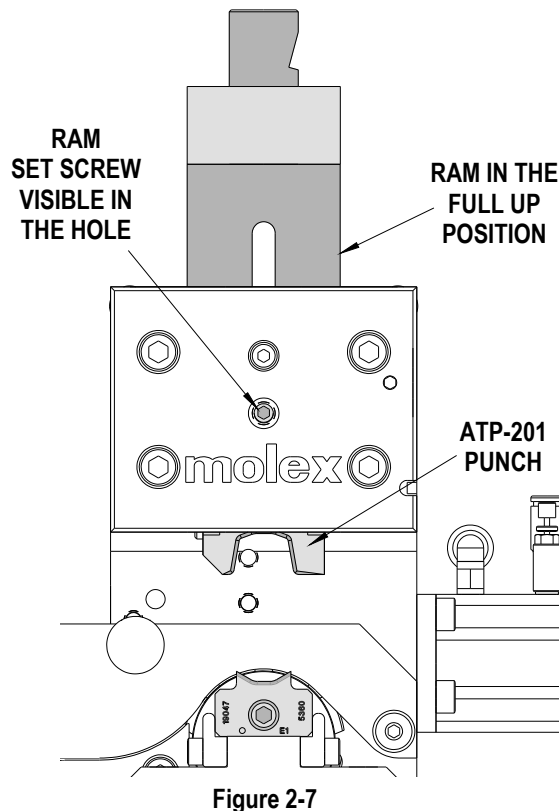


3. To remove the anvils, use a 5/32" hex wrench to remove the #10 SHCS holding the anvils to the anvil mount. See Figure 2-6.
4. Remove the screw, anvils, and O-ring together. Some tool kits may include a spacer plate (behind the conductor anvil).
5. To install, place the anvils with the spacer (if used) and O-ring against the anvil mount, leaving the mounting screw slightly loose. The conductor anvil ("E1") is installed first and the insulation anvil ("I1") is stacked onto it. Make sure the etched "E1" or "I1" on each anvil face outward.

WARNING: Use the mounting screws that are furnished with the ATP tool kit. The feed mechanism may become damage when using screws that are too long.

6. The side plates must be a close fit to the width of the anvils. For the ATP-301 style anvils, the step on the side plates must be toward the outside. If it is not, loosen the M4 SHCS and reverse the side plate.
7. The anvils must be aligned to the punches before tightening the screws. See section 2.2 (Set Up; Punch and Anvil Alignments).

Removal and Installation of ATP-201 Style Punches



NOTE: Always clean mounting surfaces of crimp tooling and tooling holders prior to installation.

1. Disconnect power from the press. Open the machine guard.
2. If the ram is down, move it manually to the full up position.

1. Disconnect power from the press. Open the machine guard.
2. If the ram is down, move it manually to the full up position.
3. To remove the punch assembly, use a 3mm hex wrench to loosen the set screw on the front of the ram. This screw is accessible through the module's front cover. See Figure 2-7.
4. With the set screw loosened, pull the punch assembly straight down.
5. To install the punch assembly, orient the assembly so the flat on the round stub faces forward. Put the stub into the hole in the bottom of the ram and push the punch assembly up against the bottom of the ram. See Figure 2-8.

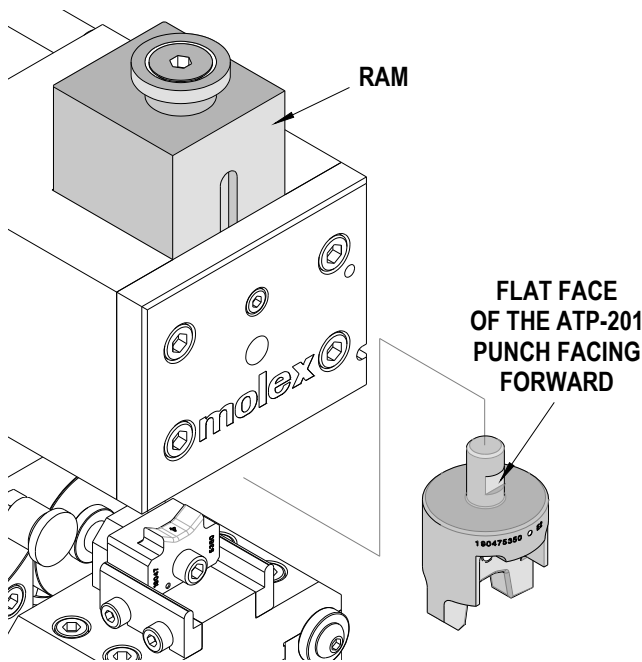


Figure 2-8

6. With the punch assembly in the ram, tighten the set screw securely.

Note: The press should be hand-cycled after installing the punch assembly to insure a free fit between punch and anvil. If excessive resistance is felt, check for an incorrectly installed punch and/or anvil misalignment.

Removal and Installation of ATP-201 Style Anvils

NOTE: Always clean mounting surfaces of crimp tooling and tooling holders prior to installation.

1. Disconnect power from the press. Open the machine guard.
2. If the ram is down, move it manually to the full up position.
3. To remove the anvils, use a 5/32" hex wrench to remove the #10 SHCS holding the anvils to the anvil mount. See Figure 2-9.

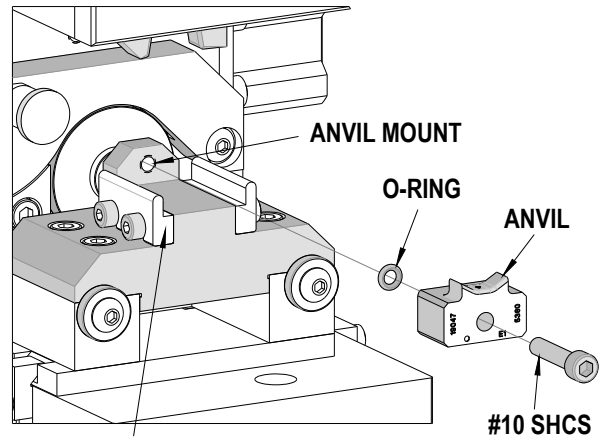


Figure 2-9

4. Remove the screw, anvil(s), and O-ring together.
5. To install, place the anvil(s) and O-ring against the anvil mount, leaving the mounting screw slightly loose. The conductor anvil ("E1") is installed first and the insulation anvil ("I1") is stacked onto it. Make sure the etched "E1" or "I1" on each anvil face outward.

WARNING: Use the mounting screws that are furnished with the ATP tool kit. Screws that are too long may damage the feed mechanism.

6. The side plates must be a close fit to the width of the anvils. For the ATP-201 style anvils, the step on the side plates must be toward the inside. If it is not, loosen the M4 SHCS and reverse the side plate.
7. The anvils must be aligned to the punches before tightening the screws. See section 2.2 (Set Up; Punch and Anvil Alignments).

2.5. Crimp Module Adjustments

Terminal Feed Adjustments

The tape feed mechanism is a ratcheting wheel and has no adjustable features.

Feed Speed Adjustments

Terminal feed speed is controlled by the flow control valve on the feed cylinder. Loosen the locking ring, then turn the adjustment knob clockwise (CW) to reduce the feed speed or counterclockwise (CCW) to increase the feed speed. See Figure 2-10.

Adjustments to the feed speed should be made gradually.

When adjustment is complete, turn the locking ring until it is finger-tight.

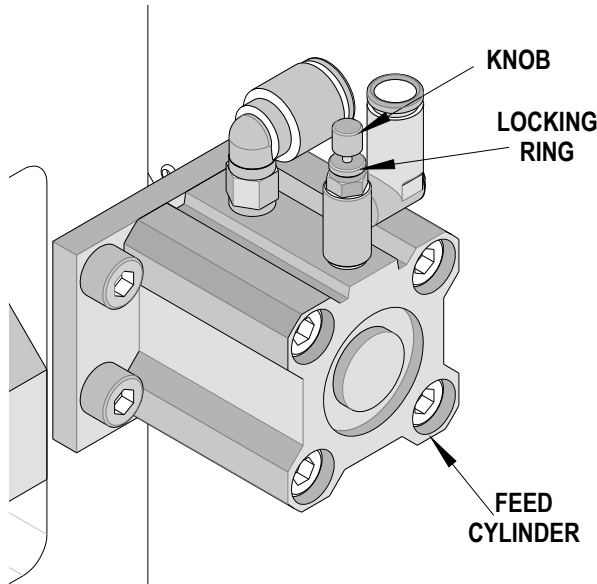


Figure 2-10

Terminal Stripper Adjustment

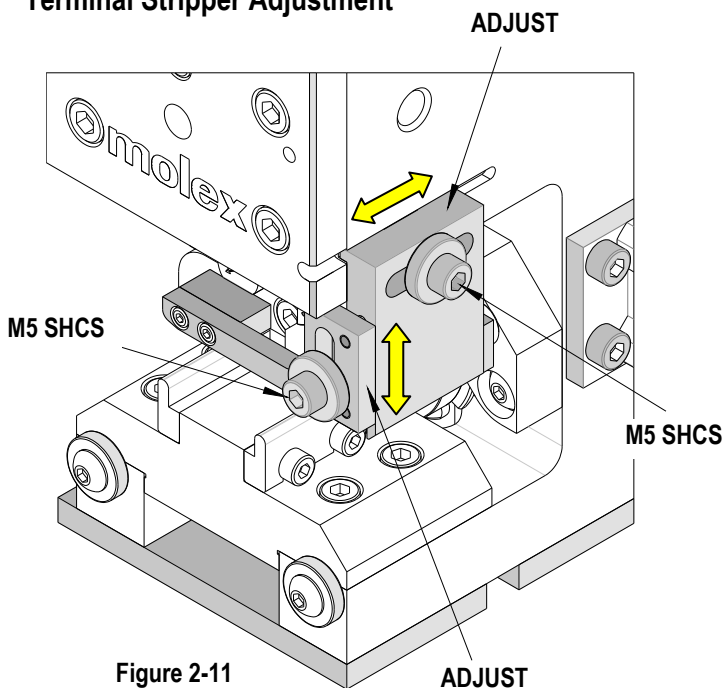


Figure 2-11

Some terminals have a tendency to stick in the conductor punch after being crimped. The terminal stripper is used to shed the terminal away from the retracting punches.

1. Disconnect power from the press. Open the machine guard.
2. If the ram is down, move it manually to the full up position.
3. To adjust the stripper in and out, use a 4mm hex wrench to loosen the M5 SHCS on the side of the stripper. Move the stripper toward the punches, but not too close or it could interfere with the ram stroke. See Figure 2-11. Tighten the M5 SHCS when adjustment is complete.
4. To adjust the stripper up and down, use a 4mm hex wrench to loosen the M5 SHCS on the front of the stripper. Move the stripper down until it is just above the taped terminal on the anvils. See Figure 2-11. Tighten the M5 SHCS when adjustment is complete.

NOTE: If the stripper is adjusted down too far it may interfere with the terminal feed motion.

Wire Stop Adjustment

The wire stop is used when the terminal being crimped does not have an internal wire stop tab. Some larger ring terminals fall into this category.

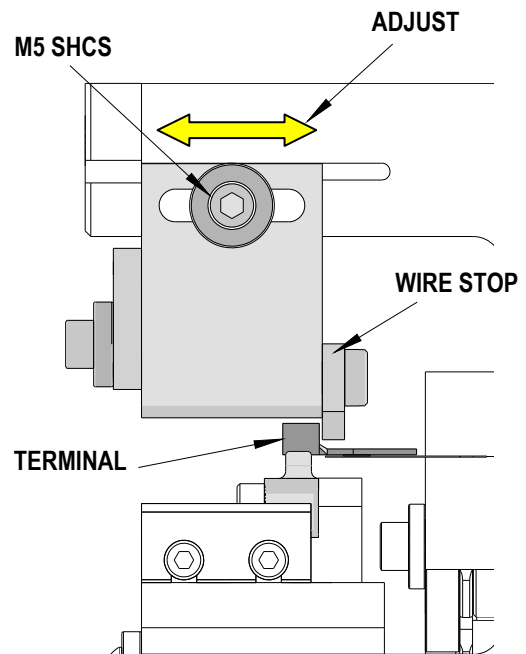


Figure 2-12

1. Disconnect power from the press. Open the machine guard.
2. If the ram is down, move it manually to the full up position.
3. To adjust the wire stop, loosen the M5 SHCS on the side of the stripper. Move the wire stop in or out until it is near the end of the terminal barrel. See Figure 2-12. Tighten the M5 SHCS when adjustment is complete.

NOTE: Since they are mounted to the same block, adjustments to the wire stop will also influence the terminal stripper. To achieve full adjustment of the wire stop, the stripping tool may need to be removed from the block.

2.6 Operation

Loading and Unloading Tape

1. Applicable terminals are listed on the Crimp Tooling Specification Sheet. Do not crimp terminals that are not listed on the Specification Sheet.
2. Disconnect power from the press. Open the machine guard.
3. The tape will be easier to “start” in the track if the corner of the tape is trimmed as shown in Figure 2-13.

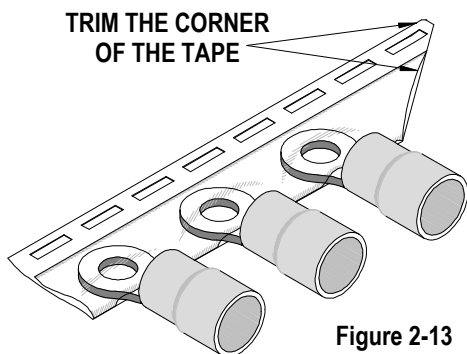


Figure 2-13

4. Open the tape track cover by pulling out the spring-loaded knob and lifting the cover up. A hole is provided in the module frame for the knob’s pin to enter to hold the track cover open. See Figure 2-14.
5. Load the taped terminal strip from the front of the module, engaging the slots in the tape with the teeth on the feed wheel. Make sure the terminal is also centered above the crimp anvils. See Figure 2-15.

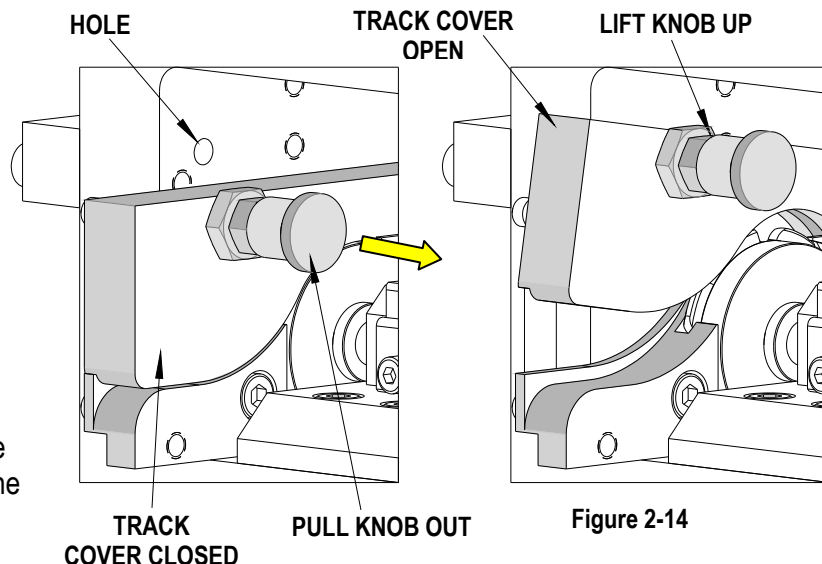


Figure 2-14

6. Pull out the spring-loaded knob and lower the track cover, allowing the pin to engage the lower hole.
7. Unloading the tape is the reverse process.

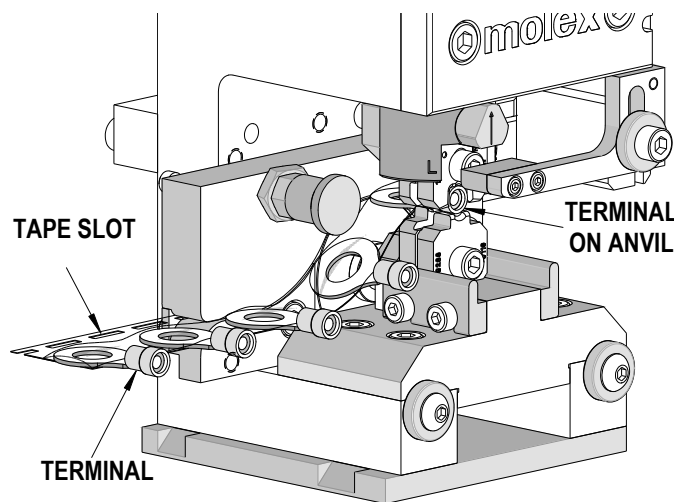


Figure 2-15

Tape De-Reeling Information

The tape reel should be mounted on the reel arm of the press, with the printed side of the reel facing the operator. The tape de-reels counterclockwise (CCW).

To prevent tape feed jams, the tape should enter the press guard below the bottom horizontal bar. If the tape is threaded between the bars, a terminal may become snagged on the bar during feeding. See Figure 2-16.

While operating the crimp module, the tape entering the press should not become taut. The operator should occasionally turn the terminal reel to maintain a slack loop.

The scrap tape exits below the press guard.

Removal of Crimped Terminals from Tape

After being crimped, the tape feed will advance the terminal one position to the right. It is the operator's responsibility to remove the crimped terminal from the tape.

If crimped wires are allowed to accumulate on the tape they will eventually cause a tape feed jam.

To prevent tape damage, the terminal should be pulled off the tape towards the operator's right. This sideways action makes it easier for the terminal to break free from the adhesive holding it to the tape.

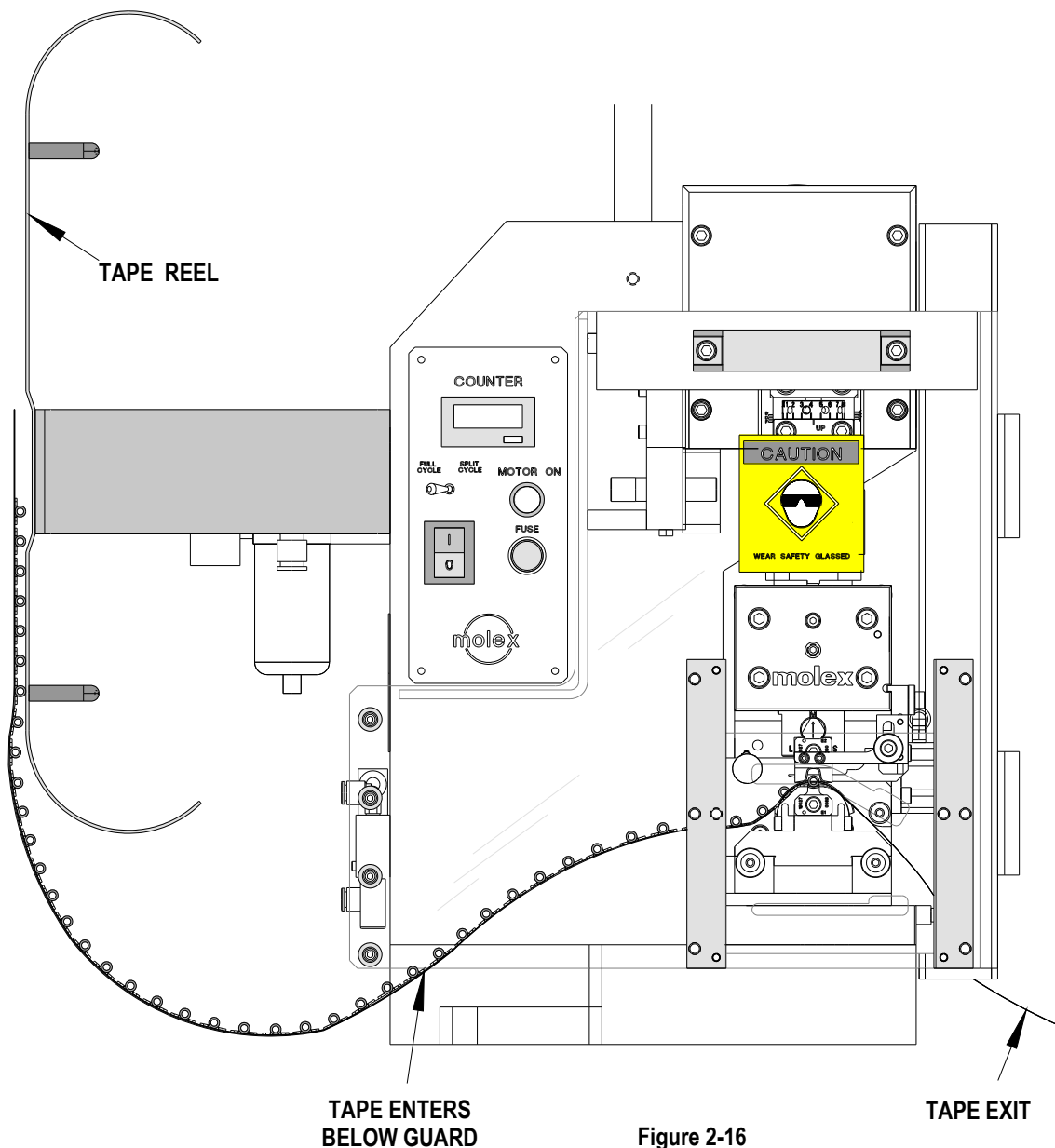


Figure 2-16