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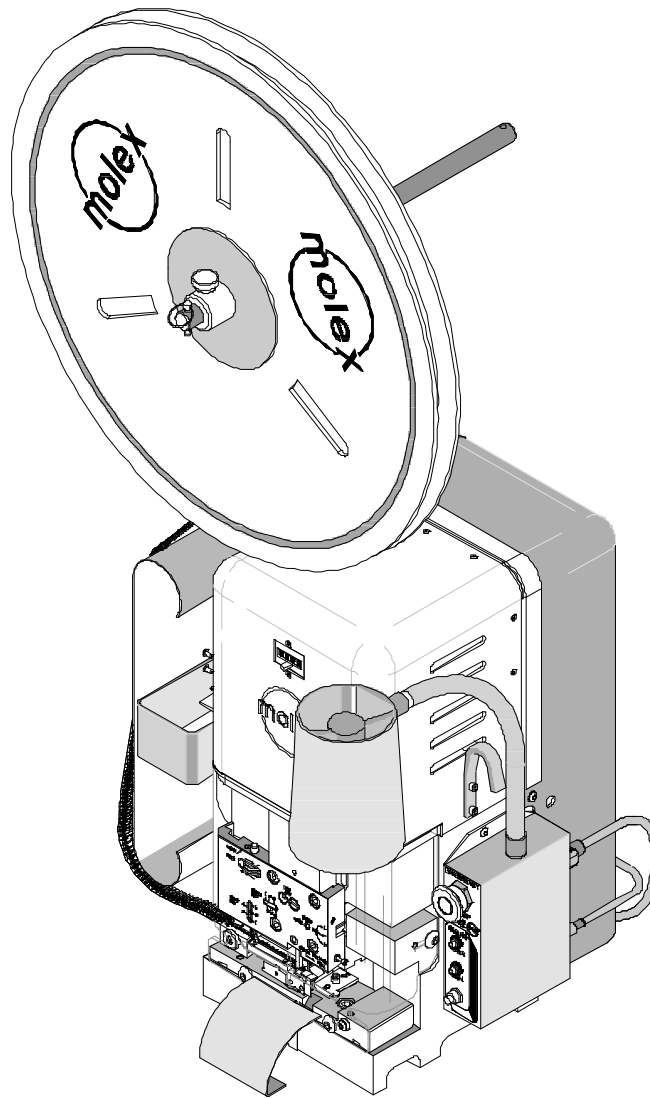
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Tm42 Termination Press
Use with Molex T2, and all Terminator Dies
Operation Manual
Order No.69002-5099




- % Description
- % Operation
- % Maintenance

Safety Warnings and Information

	<p>Read and understand all of the instructions and safety information in this manual before operating or servicing this tool.</p> <p style="text-align: center;"><u>Keep this manual available when using this tool.</u></p> <p>Replacement manuals are available for download at no charge at www.molex.com.</p>
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SAFETY ALERT SYMBOL	
<p>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.</p>	
 DANGER	<p>DANGER: Indicates an imminently hazardous situation which, if not avoided, could result in death or serious injury.</p>
 WARNING	<p>WARNING: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.</p>
 CAUTION	<p>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.</p>

	<p> WARNING</p> <p>Always wear proper eye protection when Operating or servicing this equipment.</p> <p>Failure to wear eye protection could result in serious eye injury from flying debris.</p>		<p> WARNING</p> <p>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.</p>
	<p> WARNING</p> <p>Never wear clothing or jewelry that is loose or That could potentially hang into the equipment and get caught.</p> <p>Failure to observe this warning could result in Severe Injury or death.</p>		<p> WARNING</p> <p>Never install or service this machine while connected to any electrical power source. Disconnect power by unplugging the press from its power source.</p> <p>Failure to observe this warning could result In severe injury or death.</p>
	<p> WARNING</p> <p>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.</p>		<p> WARNING</p> <p>Always hand cycle the applicator in the equipment to ensure the tooling is properly aligned.</p> <p>Failure to observe these precautions may result in Injury or property damage.</p>

	<p>! WARNING</p> <p>Never use this press or wire processing machine without guards or safety devices that are intended to prevent hands from remaining in the die space.</p> <p>Failure to observe this warning could result in Severe injury or death.</p>	<p>! WARNING</p>  <p>Do not use compressed air to clean this equipment. The forces created by compressed air can force debris into the tool.</p> <p>Failure to observe these precautions may result in injury or property damage.</p>
	<p>! WARNING</p> <p>Always wear proper ear protection when Operating or servicing this applicator.</p>	
<p>! CAUTION</p> <p>NEVER install or remove terminator dies with the flywheel in motion or the motor running.</p> <p>Never install or remove terminator dies or service this machine without manually cycling the press to verify that the clutch control collar is in the locked position (past top dead center) block the press ram in the full up position if a defective clutch is suspected.</p> <p>Caution the TM42 press is shipped from the factory for operation with US standard tooling. When using European Standard tooling, the spacer shim (69002-5560) supplied with the unit must be added between the bolster plate and the press frame</p> <p>Failure to remove this shim before installing US standard tooling may result in severe damage to the tooling and/or press.</p>		
<p>! CAUTION</p> <p>Never perform any service or maintenance other than as described in this manual.</p> <p>Never modify, alter or misuse the equipment</p> <p>Molex crimp specifications are valid only when used with Molex terminals, applicators and tooling.</p> <p>Failure to observe this precaution may result in injury and property damage.</p>		

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 Molex Press. 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 *Tooling 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
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 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

General Description

1.1 Description

The 69002-5000 (240V AC Version) and the 69002-5001(120V AC Version) TM42 Termination Machine is an electrically operated, single-cycle, flywheel press. It is designed to provide an effective method of terminating a wide range of Molex side-feed crimp terminals to pre-stripped discrete wire and cable.

Production flexibility is obtained through the use of interchangeable modular terminator dies. These dies are inexpensive because, unlike a modular applicator, all crimp height and terminal feed adjustments are located in the press. The TM42 is ideally suited for mid-volume, semi-automatic operation.

The TM42 will complete one crimping cycle with each depression of the foot pedal. Safe operation is provided by an interlock switch that renders the press inoperative if the safety guard is removed.

1.2 Features

- % Utilizes Molex TM40, TM42, T2, and FFC Terminator Dies.
- % Independent conductor and insulation adjustments with position reference indicators.
- % Bench-mounted unit requires electrical power only. Meets OSHA safety and noise standards. European CE rated.
- % Quick-release tooling for fast and simple changeover. Ability to remove upper crimp tooling without removing lower die.
- % Ideal for mid-volume and semi-automatic applications.
- % 38.1 mm Stroke, No ram adjustment required.
- % Meets ISO Standards.
- % Flexible external work light.
- % Universal feed adjustment to accept Molex side-feed terminals.
- % Totally enclosed for operator safety, including a power interlock switch for the front guard with "GUARD OPEN" indicator light.
- % Resettable counter for accurate batch-counting.
- % Modular solid-state controls. Power cord and foot pedal plug in easily.

1.3 Technical Specifications

Dimensions with reel mounted

Width: 540.00mm (21.30")
 Depth: 330.00mm (13.00")
 Height: 1,150.00mm (45.00")

(Without reel mounted)

Width: 330.00mm (13.00")
 Depth: 330.00mm (13.00")
 Height: 914.00mm (36.00")

Weight

100kg (220 lbs.) Unpacked
 110kg (242 lbs.) Gross

Power Requirements

69002-5001 120V AC, 1Ph, 60 Hz, 5.8/2.9 Amp
 Note: Press shipped setup for 120V service.

69002-5000 240V AC, 1Ph, 50 Hz, 3.8 Amp
 European CE Rated.

Production Rate

Depending on the operator skill and the wire length, 2500 terminations per hour maximum.
 Flywheel rotation: 210 RPM.

Processing Capability

Up to 4.0mm² of copper conductor in solid or stranded wire.

Sound Level

Operator will be exposed to less than 85 DB.

1.4 Delivery Check

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

Description	Qty
Main press body	1
Reel support assembly	1

Two cartons are included that contain the following;

Carton 1

69002-5715 Foot switch assembly 1

Carton 2

Power cord 1

69018-6237 (for 69002-5001)

OR

62500-0113 (for 69002-5000)

69002-5547 Hand rest 1

TM-690025099 TM42 Operation Manual 1

69002-5560 Shim 1

69001-0106 Feed finger crank 1

69018-8235 10mm hex wrench 1

* For International applications, the power cord/plug may need to be replaced or adapted with the appropriate connection.

1.5 Tools

The following tools may be needed for setup and adjustment of the TM42 press and terminator die.

- E** Metric hex wrench set
- E** English hex wrench set (for older terminator die set designs)
- E** Large and small standard screwdriver
- E** Adjustable wrench
- E** Needle nose pliers
- E** Crimp micrometer
- E** Eye loupe (10x)
- E** Wire stripper/cuter

Section 2

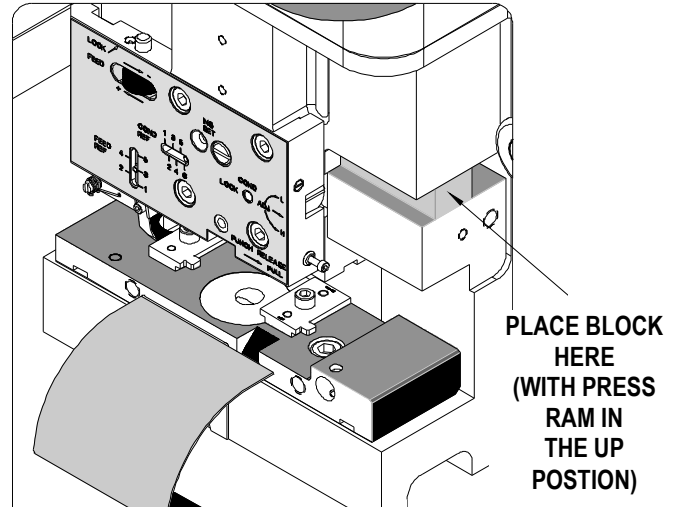
Installation

- 2.1 Lifting/Mounting
- 2.2 Reel Support
- 2.3 Foot Pedal and Power Connection
- 2.4 Hand Rest
- 2.5 Safety and Work Area Check
- 2.6 Bolster Shim Installation and Removal



CAUTION: To avoid serious injury support the ram in the upper position with a hardwood wedge (approximately 1 7/8" high).

When changing tooling or working on the clutch, a block should be inserted under the ram (See Illustration). This also pertains when the guards are taken off. The block supports the ram and the tooling, if block is not inserted the Ram can fall suddenly and cause serious injury. When procedure is complete be sure to remove the block prior to cycling the Press.



2.1 Lifting/Mounting



WARNING: The TM42 press weighs over 100 kg. (220 lbs.) and is NOT intended to be lifted by an individual. The guarding is not attached to provide support for lifting purposes. Mechanical lifting devices should be used. A person lifting the press can sustain severe back or other injuries.

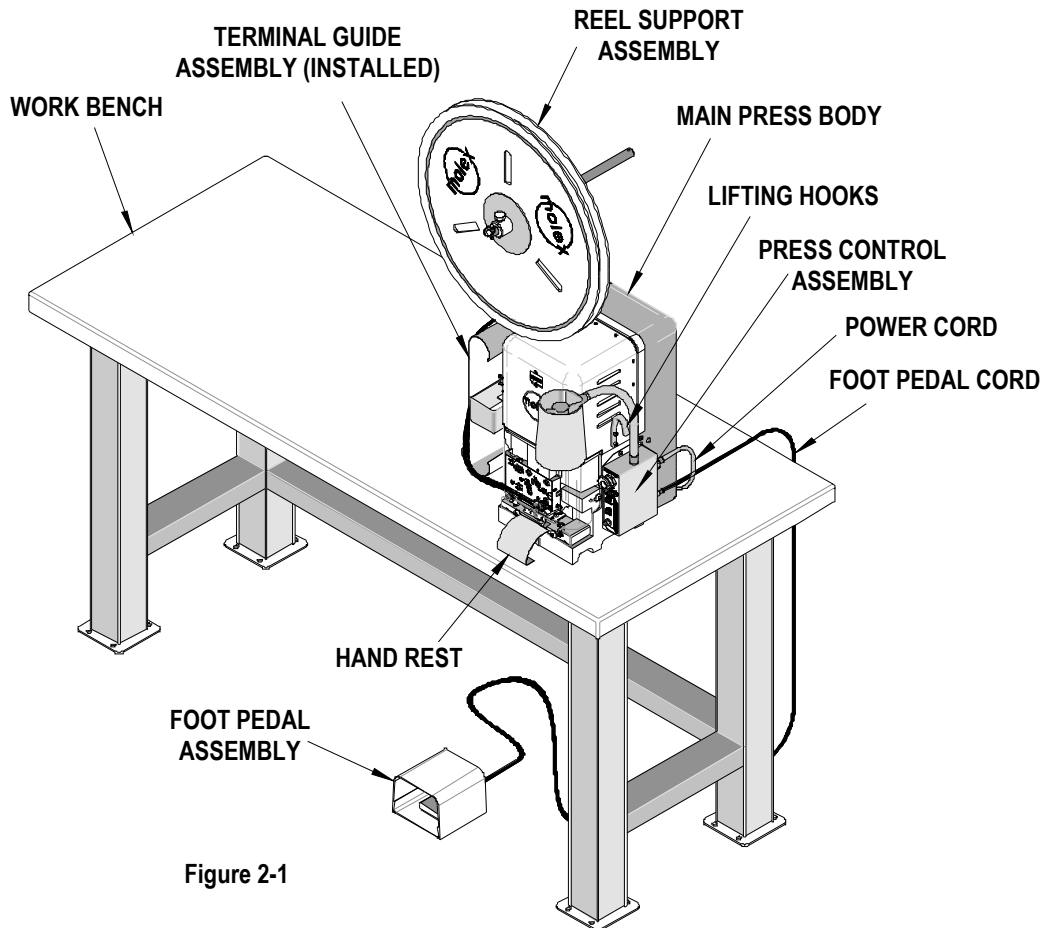


Figure 2-1

Lifting hooks are provided on each side of the press. See Figure 2-1. 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 12.0mm (0.50") 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 minimum 25.00mm (1.00") thick wooden bench top will offer quiet vibration-

free operation. TM42 should be attached to the table with (2) 12.0mm bolts and washers. For marking the tabletop (See Figure 2-2), or use the removable template at the back of the manual. Drill the clearance holes for the 12.0mm bolts and secure the press to the table. Bolts are not supplied by Molex.

2.2 Reel Support Assembly

Install the reel support assembly by inserting the support tube in the hole located on the left side of the top cover.

2.3 Foot Pedal and Power Connection

1. Connect the 4-pin plug for the foot pedal in the rear of the press control assembly.
2. Turn the Locking Ring clockwise until tight.
3. Connect the power cord plug to the socket in the back of the control assembly. Use a grounded electrical outlet as the power source.
4. Two fuses are located in the fuse drawer directly above the power socket. To replace the fuses, use a small screwdriver to open the fuse drawer, remove damaged fuses and replace.

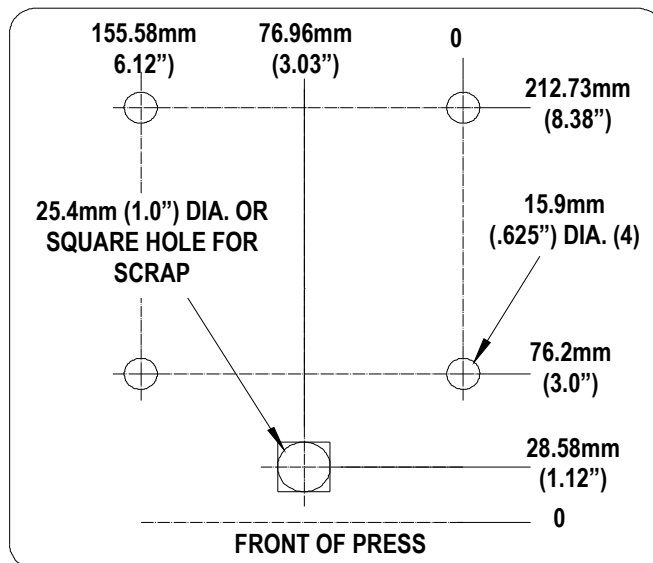


Figure 2-2
Table Top Mounting Pattern

2.4 Hand Rest

Attach the hand rest with one M6 x 10.0mm BHCS located at the front center of the press. See Figure 2-1.

2.5 Safety and Work Area Check

1. Check that the work area is well lighted. Adjust the work light for best visibility.
2. Check that the work area is clean and free of debris.
3. Check that no tools have been left in the machine or work area.



Never operate in areas of excess moisture or water. Check that all safety guards are in place. NEVER operate this press without press guards in place. The guard indicator light is located on the front of the press control assembly. See Figure 2-3.

4. 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.
5. Check that the press position is located approximately 150.00mm (6 .00") 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. Observe where the emergency stop button is on the control panel. See Figure 2-3.

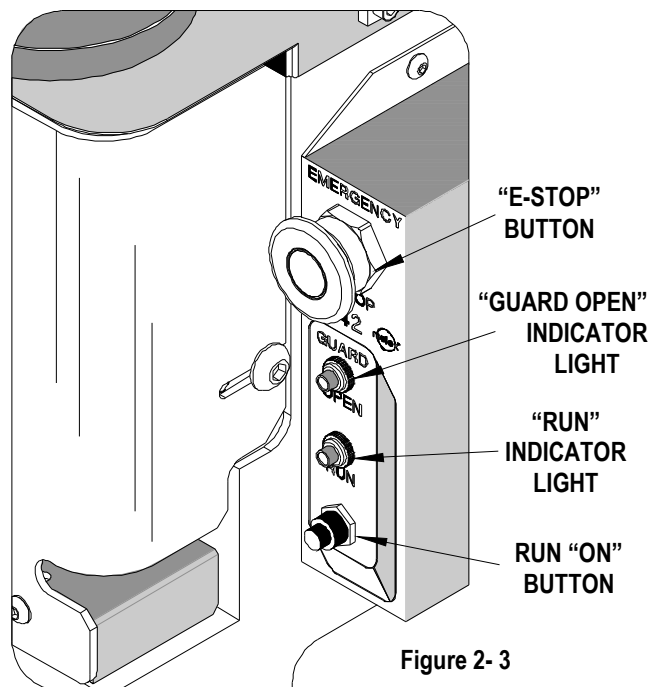


Figure 2-3



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

2.6 Bolster Shim Installation and Removal



CAUTION: Before installing any tooling in this press, determine the presence or absence of the .50mm (.020") shim. This shim is in addition to the .25 mm (.010") that should always be present. The TM42 is shipped from the factory for operation with U.S. designed terminator dies (order numbers 11-40-2XXX, 6384X-XXXX, or 6385X-XXXX).

When using European designed tooling (order number 69001-XXXX), an additional .50mm (.020") Shim (P.N. 69002-5560), supplied with the unit must be added between the bolster plate and the press frame to set the shut height. Do not remove the .25.00mm (.010") shim.



WARNING: Failure to install the shim 69002-5560 for European tooling may result in a nonfunctional terminator die set. Failure to remove the .50mm (.020") shim before installing U.S. terminator dies may result in damage to the tooling and/or press.

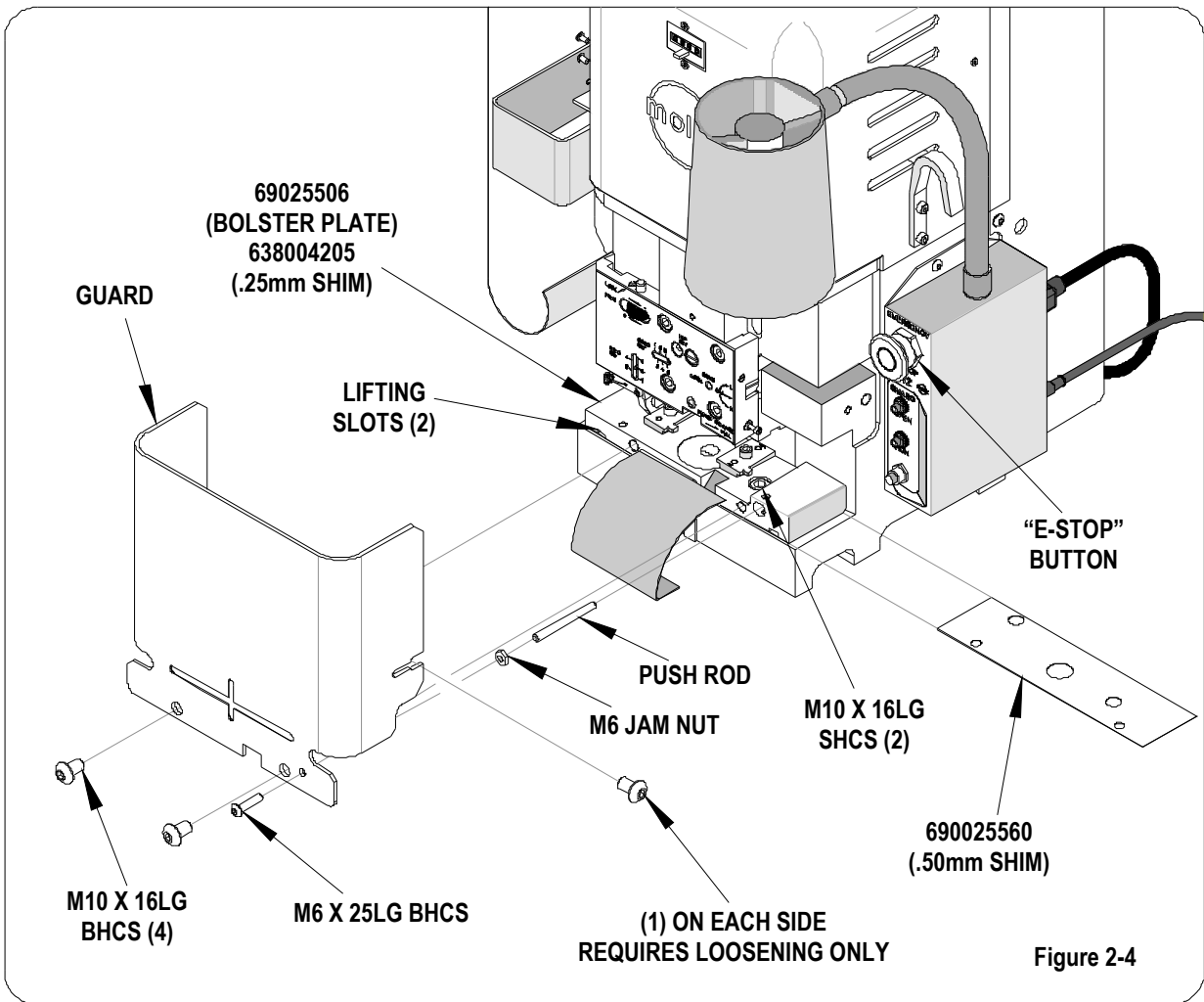


Figure 2-4

Refer to Section 3 for setup, manual cycling, and operation before attempting any crimp terminations under power. If the press is running, push the emergency stop button located on the front of the press control assembly. The motor and flywheel will stop. The work light will still operate.

1. Remove the press guards by removing the (2) M10 BHCS (See Figure 2-4) located on the front bolster plate, and loosen (1) on each side. Once removed, the guard interlock switch will disconnect power to both the motor and clutch.
2. Remove the push rod from the hole on the right side of the bolster plate. If necessary, remove any tooling, and then remove (2) M10 SHCS attaching the bolster plate to the press frame.
3. Lift the bolster plate away from the locating dowels by placing a screwdriver in the (2) lifting slots on the underside of the bolster plate. Remove or install the .50mm (.020") spacer and verify the presence of the .250mm (.010") spacer.
4. Position the bolster plate on the locating dowels and refasten with the (2) M10 SHCS. Replace the push rod. Follow the tooling setup procedures in Section 3.



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

Section 3

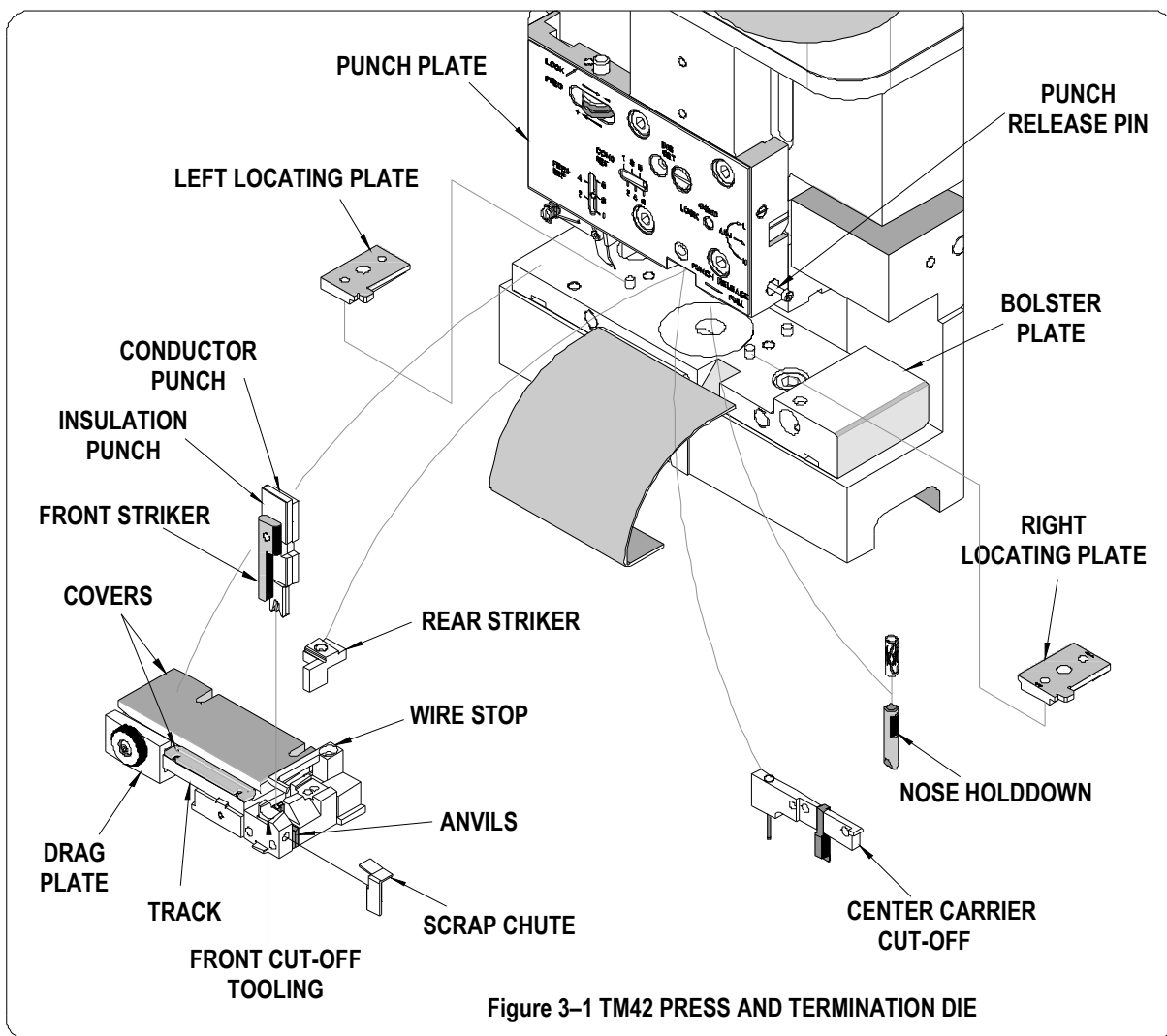
Setup and Operation

- 3.1 Termination Die Set Installation and Removal
- 3.2 Loading the Terminal Strip
- 3.3 Punch and Anvil Alignment
- 3.4 Feed Finger Adjustment
- 3.5 Forward Feed Adjustment
- 3.6 Back Stroke Adjustment
- 3.7 Manually Cycling Press
- 3.8 Conductor Crimp Punch Adjustment
- 3.9 Insulation Crimp Punch Adjustment
- 3.10 Operation

3.1 Termination Die Set Installation and Removal



Always turn off and disconnect the power supply to the press. Power down the press by pressing the emergency stop button located on the front of the control panel.



Termination Die Removal

1. Remove the press guards by removing the (2) M10 BHCS (See Figure 1-4) located on the front bolster plate, and loosen (1) on each side.

NOTE: Once removed, the guard interlock switch will disconnect power to both the motor and clutch. The work light will still operate if the unit is still connected to the power source.

2. Set both the conductor and insulation indicators to a reference setting of "1". See Figure 3-3.
3. Loosen the M5 BHCS and remove the right locating plate.
4. Lift the feed finger clear and slide the terminator die out of the press.
5. Remove the punches, nose hold-down, rear striker, and center carrier cutoff tooling.
6. The terminator die is best stored in its original container.

Termination Die Installation

Before any die is installed make sure the cover alignment procedure and the track adjustment procedure, (when applicable) have been completed. See the appropriate terminator die instruction manual for these procedures.

1. Power down the press and remove the guards as described in Section 3.1.1, steps 1 and 2.
2. Not all terminator dies have contact nose hold down, rear strikers, or center carrier cutoff tooling. If present on the terminator die, attachment points are located behind the punches either in the front of or on the bottom of the ram See Figure 3-1. Refer to the assembly drawing supplied with each individual terminator die for parts supplied with that terminator.
3. Fit the (2) punches in the opening on the underside of the ram. The conductor punch should be positioned in the rear See Figure 3-1. A click will be heard when the punch retaining/release pin engages.
4. Set both the conductor and insulation indicators to a reference setting of "1". See Figure 3-3.
5. The front striker slides in front of the punches and is attached with a screw through the hole in the punch plate.
6. Make sure the bolster plate is clean and free of debris.
7. Lift the feed finger clear and slide the terminator die onto the left locating plate.
8. Attach the right locating plate and tighten the M5 BHCS.

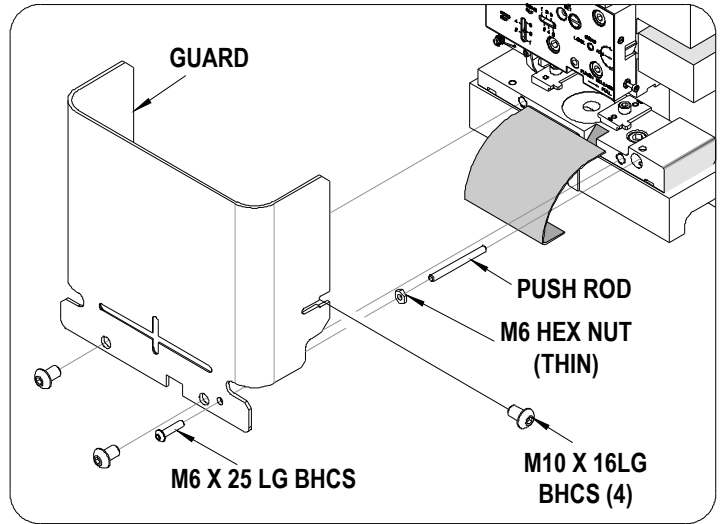


Figure 3-2 GUARD REMOVAL

3.2 Loading the Terminal Strip



CAUTION: The specified terminal is printed on the setup sheet supplied with the terminator die. Do not use any terminal not indicated on that setup sheet.

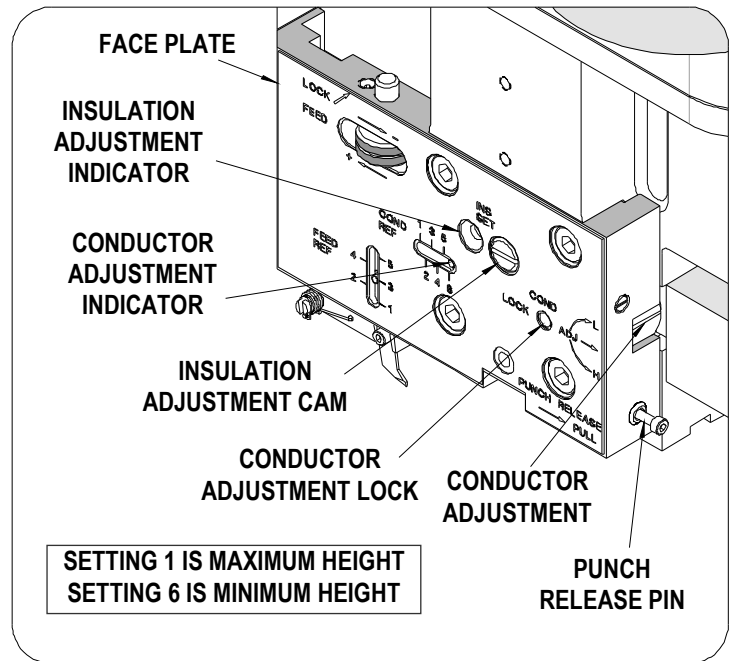
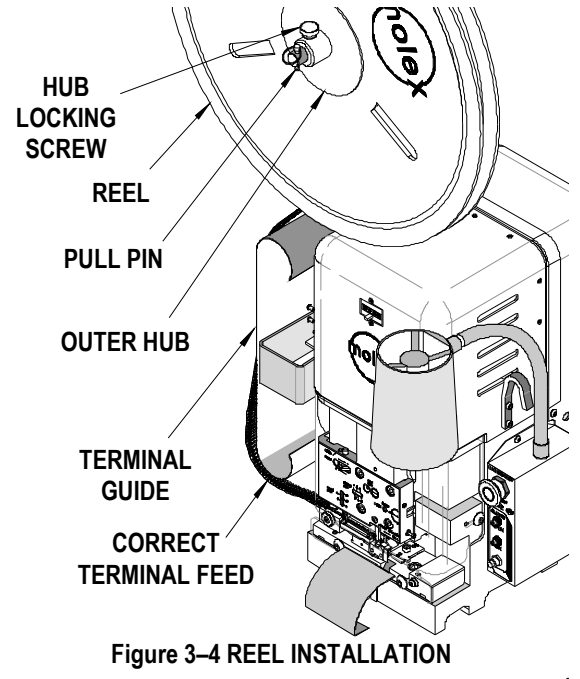
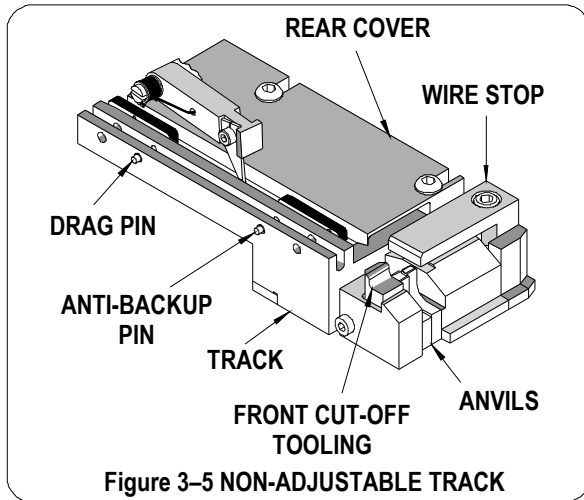


Figure 3-3 HEIGHT SETTING

1. Power down the press and remove the guards as described in Section 3.1.1, steps 1 and 2.
2. Remove the pull pin and outer hub on the press reel support.
3. Remove all tape on the edge of the reel.
4. Place the terminal reel on the exposed shaft so the terminal strip comes off the reel in proper orientation.
5. Place the outer hub back on the shaft and lock in position so there is enough tension so that the reel does not freely rotate and unwind the terminals. The tension should be loose enough that a light pull on the terminals will rotate the reel.
6. Place the pull pin back on the end the shaft. This will prevent the hub from falling off should the hub locking screw become loose.
7. Unwind the terminal strip under the terminal guide. See Figure 3-4. Be careful not to distort the terminals or the strip while feeding the terminals into the terminator die.

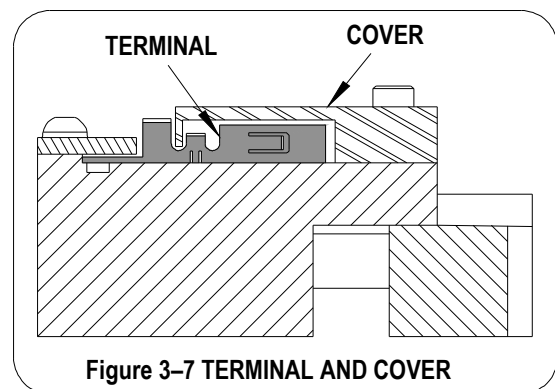
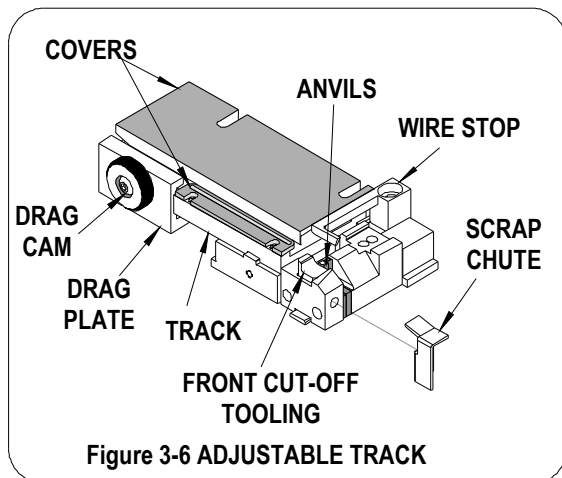
8. Most terminator dies do not have any track adjustment features. For this type, lift both the drag and anti-back-up pins located on the front of the terminator die. This will allow the terminals to slide freely through the terminator die track. See Figure 3-5.
9. For track adjustment type terminator dies rotate the drag cam until the drag frame is fully raised. See Figure 3-6. This will allow the terminal to slide freely through the terminator die track.



10. Load the terminal strip under the rear cover plate until the first terminal comes to rest centered above the anvil. See Figure 3-7.
11. Release the terminal drag and anti-backup pins for non-adjustment terminators, or rotate the drag cam to engage the terminal drag frame on the track adjustment style dies.



CAUTION: Terminals and terminal carrier strips may have sharp edges that can scratch or cut. Use caution while handling terminals.



12. To remove the terminal strip, raise the terminal drag and/or anti-back-up finger. Lift the feed finger and pull the terminal carrier strip back using needle nose pliers until disengaged from the terminator track. If preferred, cut the terminal carrier strip and pull it through the terminator die.

3.3 Punch and Anvil Alignment

The following procedure will align the punch and anvil profiles.

1. Power down the press and remove the guards as described in Section 3.1.1, steps 1 and 2.
2. With a terminal in position over the anvils, slightly loosen the front and/or back anvil mounting screws (See Figure 3-8) and center carrier cut-off tooling when applicable. See Figure 3-1.
3. Slowly hand cycle the ram of the press to the bottom of its stroke.
4. In this position, tighten the anvil mounting screws and center carrier cut-off tooling when applicable to ensure proper alignment of punches, anvils, and cut-off tooling.

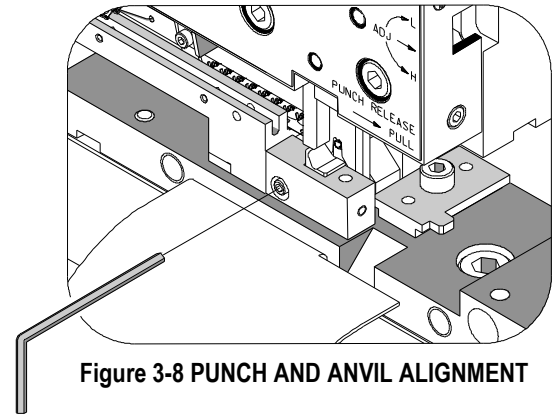


Figure 3-8 PUNCH AND ANVIL ALIGNMENT

3.4 Feed Finger Adjustment

1. Power down the press and remove the guards as described in Section 3.1.1, steps 1 and 2.
2. Loosen the terminal feed finger shaft locking screw (M4) and slide the feed finger shaft in or out. See Figure 3-9.
3. Position the feed finger to pick up the best feeding position. This may differ from terminal to terminal. Typically, terminals are fed via carrier strip holes or by the tab between the insulation terminal section and the carrier strip.
4. With a small screwdriver, rotate the feed finger shaft CW to increase or CCW to decrease spring tension on the feed finger. Tighten the feed finger shaft locking screw to lock the feed finger in position. See Figure 3-10.

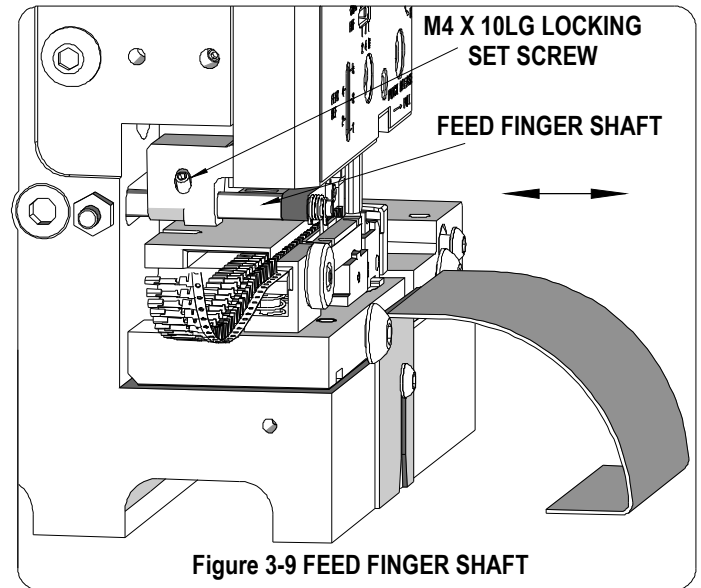


Figure 3-9 FEED FINGER SHAFT

5. Cycle the press by hand (See Section 3.7) to be certain that the feed finger transfers the next terminal to be aligned over the anvil.
6. Check that all other parts slide and engage without any interference.
7. Repeat this procedure several times.
8. If a manual cycle cannot be completed, or the terminal is not positioned over the anvil, refer to Sec 3.4 to 3.7.

3.5 Forward Feed Adjustment

A forward or backstroke feed adjustment may be necessary if the terminal is not centered over the anvil during the manual cycle.

1. Power down the press and remove the guards as described in Section 3.1.1, steps 1 and 2.
2. To check the forward feed position, the terminal being crimped should be positioned exactly over the anvil and the ram in the up position.

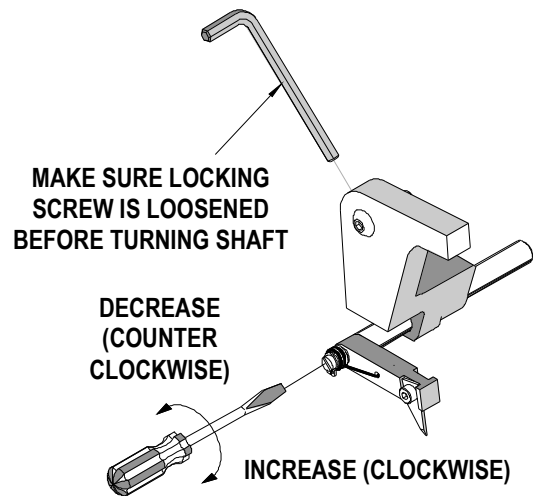


Figure 3-10 FEED FINGER ADJUSTMENT

3. Loosen the M6 forward feed adjustment lock screw located on the top of the punch plate. See Figure 3-11.
4. Rotate the forward feed adjustment wheel to center the terminal over the anvil.
5. After adjusting the forward feed position of the terminal, tighten the M6 forward feed adjustment lock screw.
6. For future reference, document the feed position on the forward feed adjustment indicator

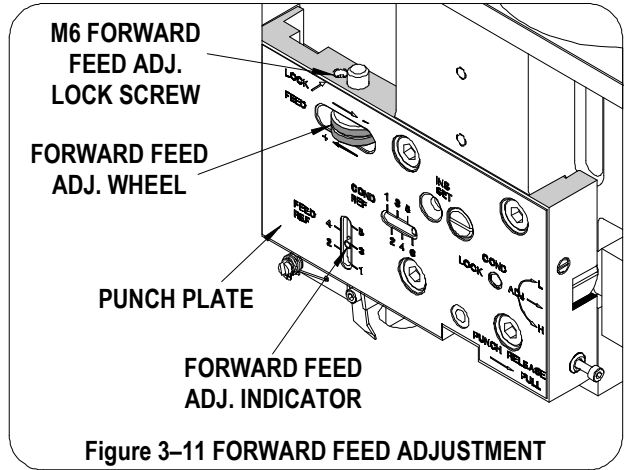


Figure 3-11 FORWARD FEED ADJUSTMENT

3.6 Back Stroke Feed Adjustment

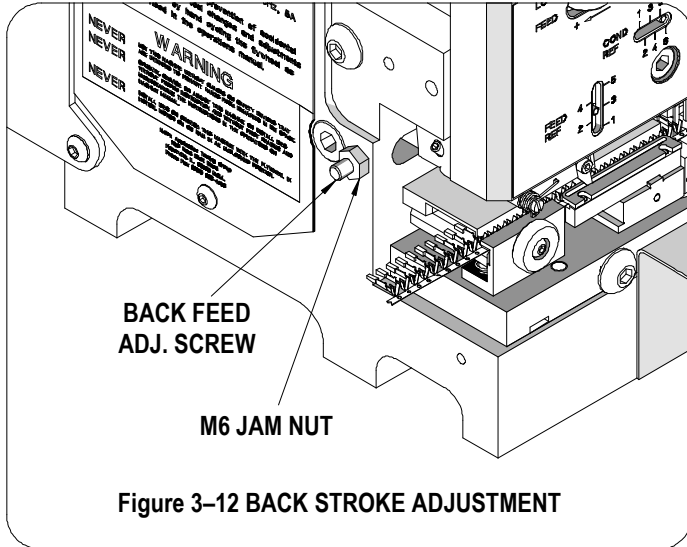


Figure 3-12 BACK STROKE ADJUSTMENT

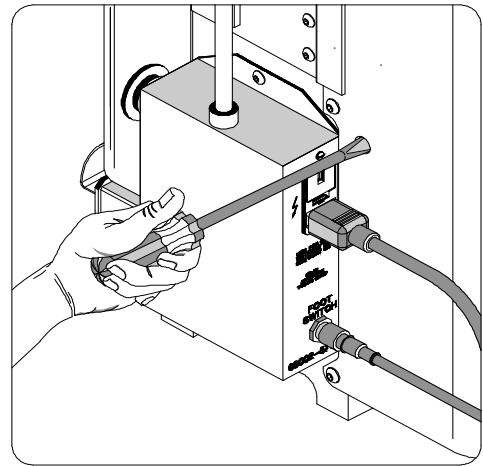


Figure 3-13 MANUAL CYCLE CLUTCH RELEASE

1. The feed finger requires over-travel on the backstroke to pick up the next position on the loaded terminal strip.
2. Manually cycle the press 180 degrees to the bottom dead center position.
3. With the press in the down position, loosen the M6 hex jam nut. See Figure 3-12.
4. Adjust the M6 back feed adjustment screw to change the backstroke position of the feed finger.
5. After the stroke is adjusted, tighten the M6 hex jam nut.
6. Verify the forward stroke position readjust if necessary.

3.7 Manually Cycling the Press



CAUTION: By disengaging the actuator (See Figure 4-2) the ram will be free to move. The weight of the ram can result in downward motion. Use caution to ensure that the area under the ram is clear of fingers and hand tools. The machine guard should be in place.

1. Power down the press by pressing the emergency stop button located on the front of the control panel.
2. Release the clutch by inserting a screwdriver through the access hole to trip the locked actuator. See Figure 3-13.

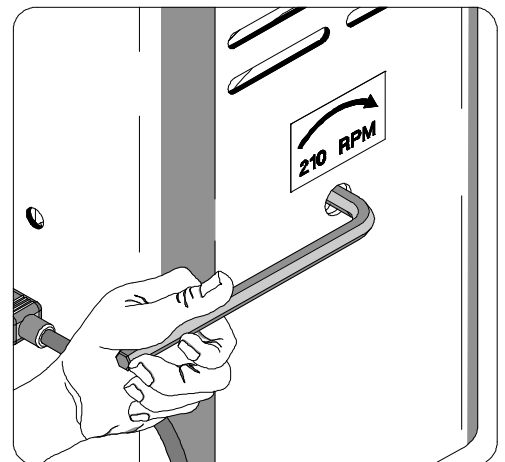


Figure 3-14 MANUAL CYCLING

3. Insert the 10mm hex wrench through the hole in the center of the rear cover and engage it in the socket in the press flywheel. See Figure 3-14.
4. Rotate the press flywheel to move the ram as desired.



WARNING: Never insert anything through this hole while the press is under power.

3.8 Conductor Crimp Punch Adjustment

1. With the guards in place, insert a stripped length of specified wire into the terminal and terminate the wire under power. Refer to the terminal specification sheet supplied with the terminator die.
2. Examine the quality of the initial conductor crimp and measure the crimp height (See Appendix A: Crimp Terminations).
3. Power down the press and remove the guards as described in Section 3.1.1, steps 1 and 2.

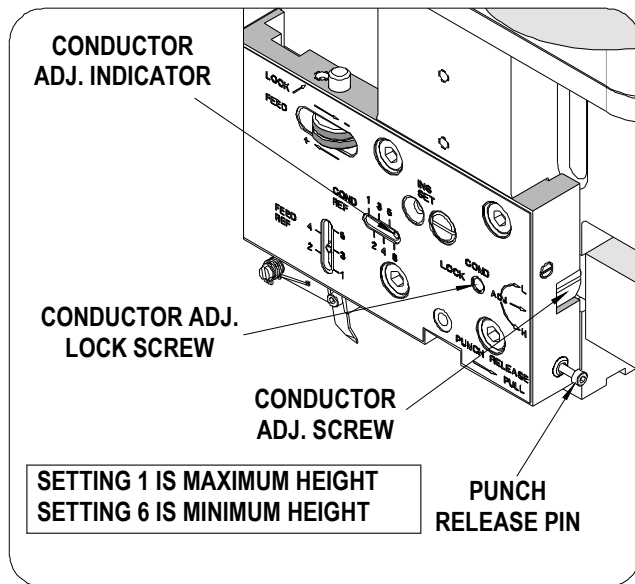


Figure 3-15 CONDUCTOR CRIMP HEIGHT ADJUSTMENT

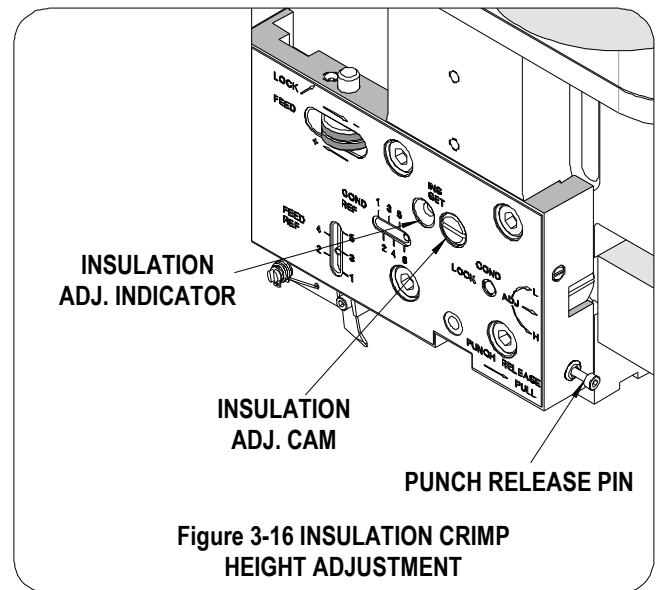


Figure 3-16 INSULATION CRIMP HEIGHT ADJUSTMENT

4. Loosen the M6 conductor adjustment lock screw located on the front of the punch plate. See Figure 3-15.
5. With a screwdriver, turn the conductor adjusting screw located on the right side of the punch plate. Rotating the adjusting screw clockwise one full turn will lower the crimp height approximately .03mm (.001"). Each increment in the reference window represents approximately .13.00mm (.005") for a total adjustment of .65.00mm (.026"). The "1" setting, on the Conductor Adjustment Indicator, equates to the largest crimp height and the "6" setting is the smallest.
6. Tighten the M6 locking screw.
7. Replace the machine guards and repeat the above steps until the desired crimp height is obtained (See Appendix A, Crimp Terminations).
8. Perform a pull force test to verify the mechanical integrity of the crimp. (See Appendix A, Crimp Terminations).

3.9 Insulation Crimp Punch Adjustment

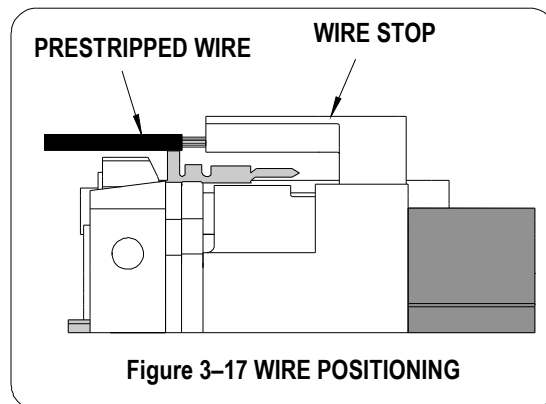
1. Place a stripped length of wire into the terminal and terminate under power.
2. Examine the quality of the initial insulation. See Appendix A, Crimp Terminations.
3. Power down the press and remove the guards as described in Section 3.1.1, steps 1 and 2.

4. Rotate the insulation adjusting screw to obtain the required insulation crimp height. Each increment in the reference window represents approximately .200mm (.0078") for a total adjustment of 1.60mm (.063"). The "1" setting, on the Insulation Adjustment Indicator, equates to the largest crimp height and the "8" setting is the smallest. See Figure 3- 16.
5. Repeat the above steps until the desired insulation crimp height is obtained.

NOTE: Due to the large variety of insulation wall thickness, material, and durometers, Molex does not specify insulation crimp height. The insulation crimp height should be inspected, measured, and documented as a quality indicator for all wire types and sizes.

3.10 Operation

1. Check that all setup procedures were followed and that the terminations are meeting specification.
2. Verify the machine was manually cycled before operating under power.
3. With guards in place, turn on the press by pressing the run button on the front of the press control assembly. The motor starts and the run light comes on. Pressing the Emergency Stop button disconnects power to the motor and the clutch. The run light goes off.



NOTE: To fully remove power to the press, unplug the power cord from the press control assembly.

4. Place the pre-stripped wire through the slot in the guard above the terminal and touch the wire stop. See Figure 3-17.
5. Press the foot pedal down once and release. The press will cycle once. Keep the foot raised or remove it from the foot pedal to prevent unwanted crimp cycles.



CAUTION: Call maintenance immediately if the press cycles more than once. Do not operate the press. See Section 4.5 Clutch Unit.

6. The press is set up to have a terminal over the anvil before beginning the crimp cycle. During the crimp cycle, but after the wire is terminated, the operator should make a slight rightward motion of the crimped wire/terminal. This rightward motion should take place during the upward cycle of the press. This will prevent the next indexing terminal from being tangled during the upward cycle of the press.
7. Be sure to remove the crimped terminal out of the slot in the guard before the next termination.
8. Periodically check the terminations for crimp height and visual attributes described in Appendix A: Crimp Terminations, and Appendix B: Statistical Process Control.

Section 4

Maintenance and Clutch Unit Service

- 4.1 Cleaning
- 4.2 Lubrication
- 4.3 Perishable Orders
- 4.4 Spare Orders
- 4.5 Clutch Unit Service/Adjust and Repair
- 4.6 Oiler

4.1 Cleaning



WARNING: Disconnect the power cord from the power source during all maintenance operations.

For efficient operation, the TM42 press should be cleaned daily with a soft bristle brush to remove any carrier strip debris and terminal plating dust from the tooling area. For continuous operation, this may have to be done more frequently.

When it is necessary to change a terminator die, use caution removing any debris from tapped holes in the press base where the applicator mounts. Debris can prevent tooling from being properly locked into position.



CAUTION: Cleaning using compressed air is not recommended. Chips can wedge in the tooling and/or cause injury.

NOTE: Do not use solvents to clean the guards. Window cleaner and a soft cloth should be used. If the guarding becomes scratched or scuffed, replacement may be necessary.

4.2 Lubrication

(Excluding clutch assembly) All bearing areas are pre-lubricated and sealed for life.

An example of a maintenance chart is shown below. Copy and use this chart to track the maintenance of your TM42 Press or use this as a template to create you own schedule or use your company’s standard chart, if applicable.

Preventive Maintenance Chart

Daily: Clean. See Section 4.1.

As Required: Lubricate. See Section 4.2)

CHECK SHEET MONTH _____ YEAR _____

Week	Daily Cycles	Daily Clean	Days of the Week							Solution
			MON	TUE	WED	THU	FRI	SAT	SUN	
1										
2										
3										
4										
Cleaning Reapply grease Reapply oil	25,000	Yes								Soft Brush Industrial Degreaser
Inspect all tooling, Feed fingers etc. for wear	25,000	Yes								Replace if signs of wear.



Schedule should be adjusted up or down depending on usage. Molex recommends that a log of preventive maintenance be kept with the press.

4.3 Perishable Orders

Perishable parts are those parts that come into contact with the product and may wear over time. The customer is responsible for maintaining these parts and Molex recommends that they keep at least one set in stock at all times. There are no perishable parts on the TM42 press. However there are perishable parts on the termination die sets. Refer to the instructions that come with the dies.

4.4 Spare Orders

Spare parts are available to support the TM42 Termination Machine. Moving and functioning parts can be damaged or malfunction. Molex recommends that the customer keep some or all of them in stock to reduce down time. These parts are identified in the Orders List in Section 5.

4.5 Clutch Unit Service Adjust/Repair



CAUTION: Disconnect power cord from power source during all maintenance.

Operational Check 1

1. Remove the rear cover of the TM-42 unit. Verify that the clutch control collar is in the locked position (See Figure 4-2). Insert the 10mm hex wrench into the socket head cap screw. This screw is located in the center of the flywheel (See Figure 4-1). This screw is spring loaded to prevent being left in the unit.
2. Attempt to rotate the hex wrench clockwise. If the unit will not turn, it is functioning properly.
3. Next rotate the input hub/flywheel clockwise by hand. The input hub/flywheel should be free to rotate. During this portion of the operational check, the black spring housing should not rotate. See Figure 4-1.
4. If the unit fails operational check 1, the clutch unit has failed internally or the actuator is not functioning properly and the clutch unit must be replaced.



CAUTION: By disengaging the actuator (See Figure 4-2) the ram will be free to move. The weight of the ram can result in downward motion. Use caution to ensure that the area under the ram is clear of fingers and hand tools. The machine guard should be in place.

Operational Check 2

1. Verify that the clutch control collar is unlocked. See Figure 4-2. The crankshaft, input hub/flywheel, and black spring housing should rotate freely with the 10mm wrench moving the ram down and up.
2. After 360 degrees of clockwise rotation, the actuator will engage the clutch control collar and rotation will stop. This is normal operation.

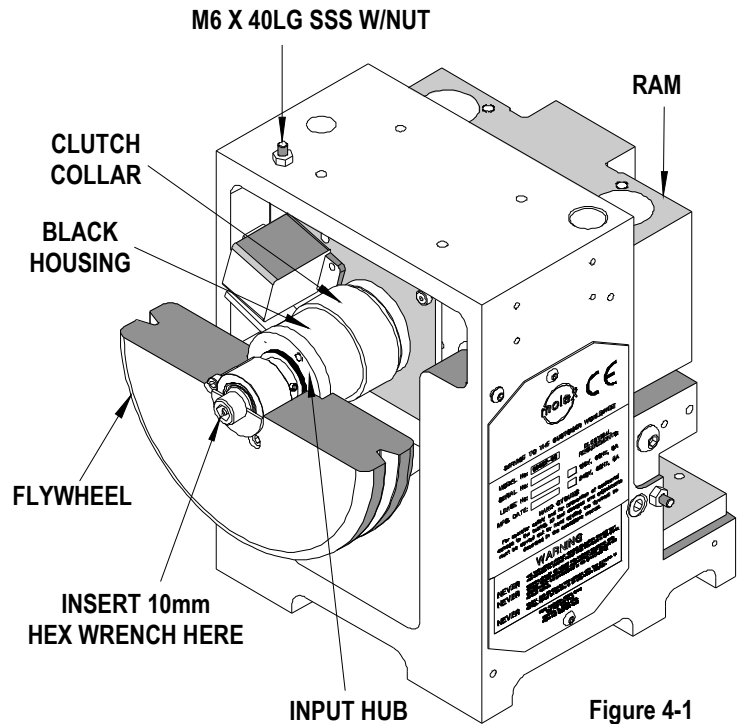


Figure 4-1

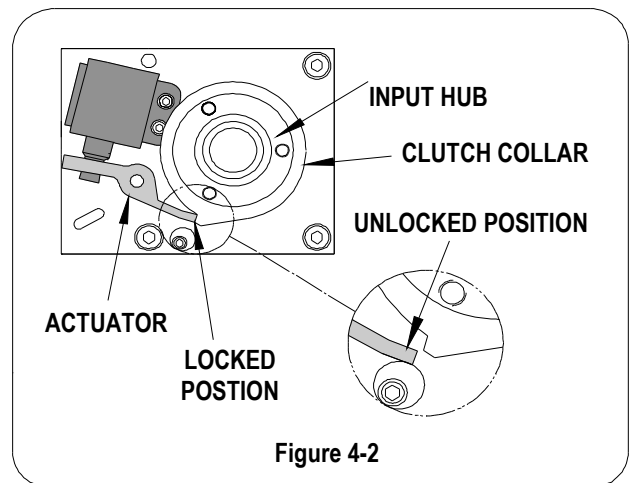


Figure 4-2

- If rotation with the 10mm wrench is not possible and the actuator is disengaged, the clutch unit is demonstrating early signs of failure and must be replaced.

Removing the Clutch Unit



WARNING: This procedure should be followed to ensure compliance with safety instructions. Molex cannot accept liability in the event of a subsequent accident caused by clutch failure when improperly serviced by the customer.

See Figure 4-4 for the following steps.

- Power down the press and remove the guards as described in Section 3.1.1, steps 1 and 2.
- Support the ram in the upper position with a hardwood wedge (approximately 1 7/8" high). See Figure 4-3.
- Remove the terminal reel support arm and the top and rear covers, separate connector from counter.
- Disconnect leads from solenoid.
- Leave the V-belt in a position to support weight when removing and replacing the flywheel.
- Remove the Flywheel Bearing Retainer Screw and washer from the end of the crankshaft.
- Remove (3) M6 x 40 Long SHCS from the Flywheel.
- Remove the flywheel. The inner race of the flywheel may stay on the crankshaft when the flywheel is removed.
- Remove the 5.0mm x 35 Long spiral pin from the clutch and crankshaft using a drive punch.
- Remove the (3) M6 x 16 Long SHSS (socket head shoulder screw) from the clutch plate.
- Pull the clutch/solenoid assembly from the crankshaft. This may require pry bars to push from the rear side of the clutch plate. If the inner race of the flywheel remained on the crankshaft, it will be pushed off before the solenoid/clutch assembly.
- Determine if the inner race for the flywheel can be reused or be replaced.

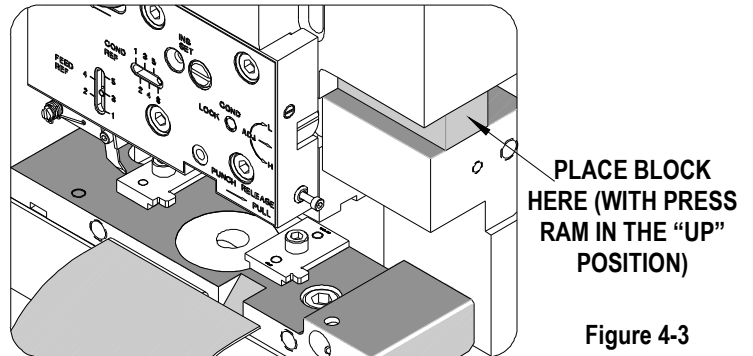


Figure 4-3

Installing the Clutch Unit

Note: The (3) M6 x 16 Long SHSS (socket head shoulder screw) used to mount the clutch plate permit free axial and radial movement around the crankshaft. This allows the friction surfaces to be in perfect alignment for the wrap-up function of the springs. Free movement of the unit is necessary because the brake hub is rigidly attached to the clutch plate and any restrictions could result in malfunction and possible damage to the springs.

See Figure 4-4 for the following steps.

- Slide the solenoid/clutch assembly onto the crankshaft.
- Replace (3) M6 x 16 Long SHSS
- Secure the clutch to the crankshaft by inserting a new 5mm x 35 Long spiral pin.
- Adjust the clutch timing. See Section 4.5.5, Solenoid/Clutch Assembly Adjustment.
- Slide the inner race onto the crankshaft followed by the flywheel.
- Replace the (3) M6 x 40 Long SHCS in the flywheel.

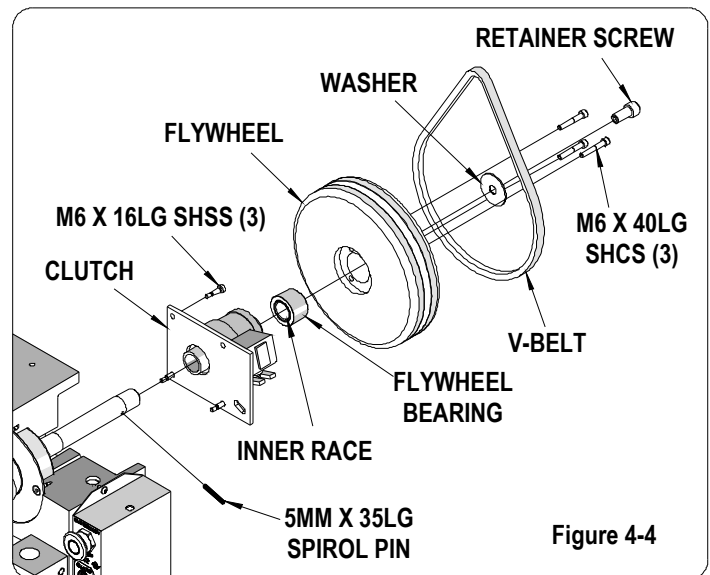


Figure 4-4