

# moLEX®

## Terminal Singulation Press Operation Manual Order No. 63801-9400

- Description
- Operation
- Maintenance

## **WARNING**

- NEVER USE THIS PRESS WITHOUT SAFETY DEVICES THAT ARE INTENDED TO PREVENT HANDS FROM REMAINING IN THE CRIMPING AREA.**
- NEVER OPERATE, SERVICE, OR ADJUST THIS PRESS OR INSTALL TOOLING WITHOUT PROPER INSTRUCTION AND WITHOUT FIRST READING AND UNDERSTANDING THE INSTRUCTIONS IN THIS MANUAL.**

**WORK SAFELY AT ALL TIMES**

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

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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 63801-9400 is the Molex TM-3000 Press with the Terminal Singulation Applicator (63801-9420) installed.

### 1.2 Features

- 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	Press with tooling
Dimensions with reel mounted	
Height	1210mm (47.60")
Width	648mm (25.50")
Depth	559mm (22.00")
Unpacked weight	100kg (220 lb)

#### Power Requirements

Voltage: 240V AC 50 – 60 Hz

#### Pneumatic Requirements

75 psi min. (366 kN/cm<sup>2</sup>) min.

1.0 SCFM (28.3 L/min)

¼" NPT inlet 12.7mm (1/2") supply pipe minimum.

#### Production Rate

1800 terminals cut off per hour maximum, depending on operator skill.

#### 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>
Reel Support Assembly	1
"T" wrench for manual cycling	1

Carton Contents	<u>Quantity</u>
63801-9400 Singulation Press	1
TM-638007299 Instruction Manual	1
TM-638019400 Operation 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
- ✓ Eye loupe (10x)

## Section 2

### Installation

- 2.1. Installation
- 2.2. Set-Up
- 2.3. Operation
- 2.4. Adjustments

## 2.1 Installation

Install the press, as described in section 2 of the TM-3000 manual (TM-638017299). Connect electrical power and the compressed air supply to the press.

With press power OFF, hand-cycle the press (using the wrench supplied with the press). The press ram must fully cycle down and up with little resistance. If excessive resistance is felt, stop turning the wrench and find the cause.

When hand-cycling is complete, be sure to leave the press ram fully up.

## 2.2 Set Up

### Loading the Terminal Strip

1. Mount the terminal reel to the reel support arm on the press. As the reel unwinds, the terminal carrier strip must be towards the operator.
2. Turn off the press power (press in the "O" on the green POWER switch) and open the press front guard.
3. Raise the terminal drag by turning the lever and feed the terminal strip into the track. See Figure 1.
4. By hand, push the terminal strip through the track until the first terminal is in-line with the cutoff tooling. At this time, the feed pawl should be in the carrier hole. See Figure 2.
5. When the terminal is in position, close the terminal drag by turning the lever.
6. Close the press guard and restore power to the press (turn on the POWER switch and push the green MOTOR ON button).

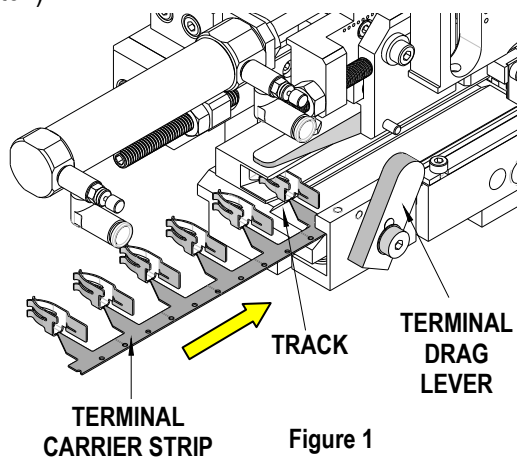


Figure 1

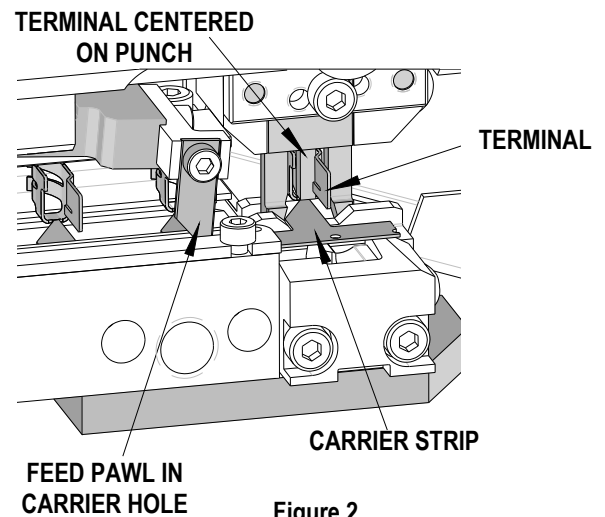


Figure 2

## 2.3 Operation

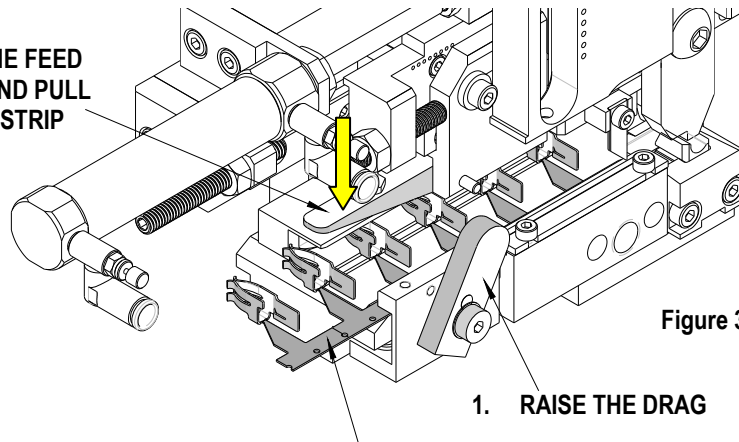
To operate the Terminal Singulation Press, use the following procedure:

1. Make sure the press front guard is closed and the hand-cycle wrench is removed from the motor (the press will not operate if the guard is open or if the wrench is not removed).
2. Check for adequate slack in the terminal strip between the terminal reel and the track entrance. If the strip becomes taut, the terminal feed may be affected.
3. Press and release the press foot pedal. The press will cycle only once, regardless of how long the foot pedal is held down.
4. Observe the cut-off and feeding of the terminal. Do not proceed if the terminal did not fall into the exit chute, or if the terminal feed did not properly position the next terminal. If the cut-off and feed are successful, repeat

steps 3 and 4 until the required amount of terminals have been singulated. Remember to occasionally turn the terminal reel to maintain a slack loop and keep the terminal interleaf paper clear of the work area.

5. During operation, pay attention to the carrier strip scrap – do not let it accumulate excessively around the tooling.
6. As the reel becomes empty, pay close attention to the terminal feed. When the end of the terminal strip goes past the terminal drag, the terminal feed will not properly position the terminal. If the terminal is not properly positioned, tooling damage may result. Stop operating the press and remove the left-over terminals from the track.

2. **HOLD DOWN THE FEED PAWL LEVER AND PULL THE TERMINAL STRIP**



1. **RAISE THE DRAG**

**TERMINAL STRIP**

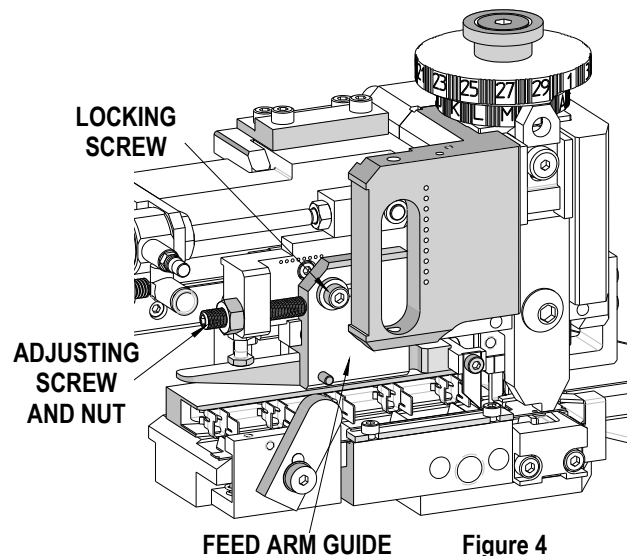
### Removing the Terminal Strip

1. Turn off the press power (press in the “O” on the green POWER switch) and open the press front guard.
2. Make sure the press ram is fully up. If the ram is not fully up, use the hand-cycle wrench to raise the ram.
3. Press down the feed pawl lever to disengage the feed pawl from the carrier strip hole.
4. While holding down the feed pawl lever, pull the terminal strip to the left until it is out of the track. See Figure 3.
5. Wind the terminal strip back onto the reel. Use the terminal interleaf paper to hold the terminal strip against the reel and tape the paper to the outside of the reel.

## 2.4 Adjustments

### Terminal Feed

1. The back stroke of the feed should not require adjustment.
2. The forward stroke of the feed determines the position of the terminal in the cut-off tooling and may require adjustment. See Figure 4.
  - a. Make sure the air supply is connected to the press.
  - b. Loosen the locking screw on the feed arm guide.
  - c. Loosen the lock nut on the adjusting screw.
  - d. To increase the feed position (move terminal farther to the right), turn the adjusting screw clockwise.
  - e. To decrease the feed position (move terminal farther to the left), turn the adjusting screw counter-clockwise, and pull the feed arm guide to the left until it stops against the adjusting screw.
  - f. Make sure the feed arm guide is against the adjusting screw and tighten the lock nut and locking screw.
3. Always check terminal feed position after adjustments.





### Terminal Track

1. The position of the terminal track determines the size of the cut-off tab left on the terminal.
2. To adjust the track position, loosen the track lock screw. See Figure 5.

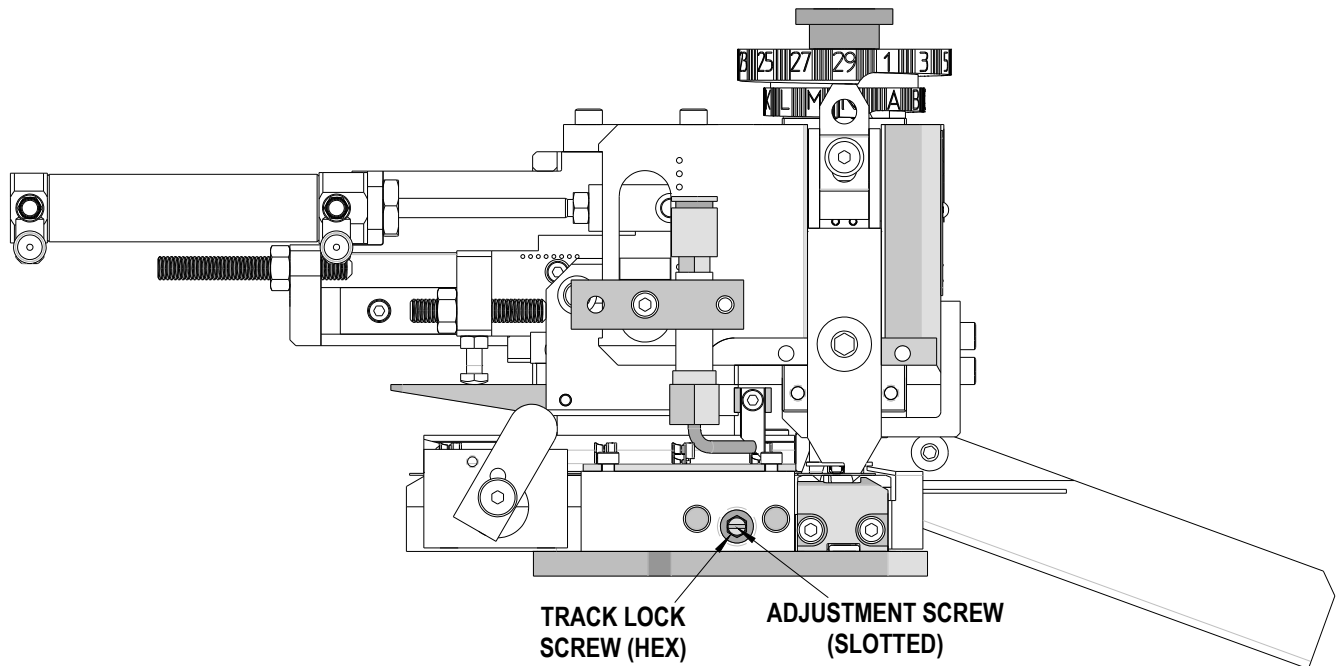


Figure 5

3. To increase the cut-off tab, adjust the track in (toward the press) by turning the adjustment screw counterclockwise.
4. To decrease the cut-off tab, adjust the track out (away from the press) by turning the adjustment screw clockwise
5. **Any track adjustment must be made in small increments (1/4 turn or less). An adjustment that is too large can cause terminal and/or tooling damage.**
6. When adjustment is complete, tighten the track lock screw.

### Applicator Cams

1. The applicator cams have no influence on the singulation of the terminal. No adjustment is necessary.

## Section 3

### Maintenance

- 3.1. Cleaning
- 3.2. Lubrication
- 3.3. Perishable Parts
- 3.4. Spare Parts
- 3.5. Troubleshooting

### 3.1 Cleaning

For efficient operation, the Terminal Singulation Press should be cleaned daily. Use a soft bristle brush to remove debris from the terminal track and the terminal cut-off tooling.

See Chart 3.1 for recommended Preventive Maintenance Schedule.

**NOTE:** Using compressed air to clean tooling is *not* recommended. Debris can be forced into the tooling and/or fly at an operator.

### 3.2 Lubrication

Lubricate the press as shown in the press manual. See Section 4.1 of TM-638017299.

**WARNING:** Never use a penetrant (such as WD-40) for any lubrication on the machine.

Check the sharpness of the cut off punch and anvil every 10,000 cycles or if the cut is not clean. Replace any dull tooling.

An example of a maintenance chart is shown below. Copy and use this chart to track the maintenance of your 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 3.1.

**As Required:** Lubricate. See Section 3.2.

**CHECK SHEET**    MONTH \_\_\_\_\_ YEAR \_\_\_\_\_

Week	Daily Clean	Day of the Week							Comments
		MON	TUE	WED	THU	FRI	SAT	SUN	
1									
2									
3									
4									
Cleaning Reapply grease Reapply oil	Yes								Soft Brush Teflon-based grease SAE 30W oil
Inspect all tooling for wear	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.

### 3.3 Perishable Parts

The Molex customer is responsible for maintaining the Terminal Singulation Press. Perishable parts are those parts that come in contact with the product and will wear out over time. Molex recommends that the customer keeps at least one set of perishable tools on-hand at all times. **For specific perishable tool information, refer to the 63801-9420 Tooling Specification Sheet.**

### 3.4 Spare Parts

Spare parts are available for the Terminal Singulation Press. Moving and functioning parts can be damaged or wear out over time and will require replacement. Molex recommends that the customer keeps a reasonable amount of spare parts on-hand to reduce production down time. **These parts are identified in the Parts List of the 63801-9420 tooling.**

### 3.5. Troubleshooting

Symptom	Cause	Solution
Terminals damaged	▪ Incorrect terminal feed	Adjust terminal feed (Section 2.4). Adjust feed cylinder speed slower.
Poor cut-off quality	▪ Punch and/or die is dull	Inspect cutting edges – replace tool if worn.
	▪ Incorrect track position	Adjust terminal track (Section 2.4).

## Section 4

4.1 Parts List

4.2 Assembly Drawings

### 4.1 Parts List

Terminal Singulation Press 63801-9400				
Item	Order No.	Engineering No.	Description	Quantity
1	63801-7300	63801-7300	TM-3000 Universal Press (220V)	1
2	63801-9420	63801-9420	Terminal Singulation Applicator	1

### 4.2 Assembly

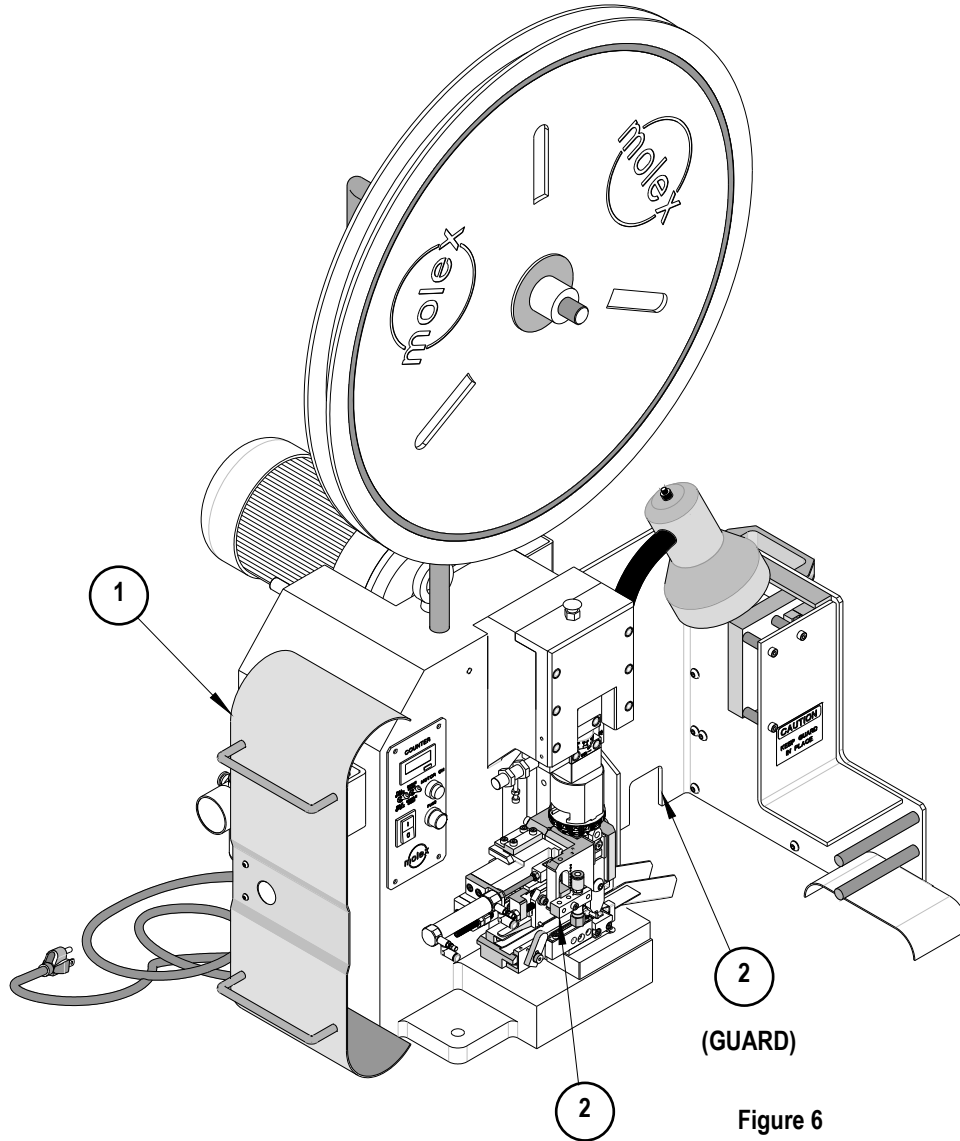


Figure 6

<http://www.molex.com>