

OPERATING INSTRUCTION MANUAL Thomas & Betts® ELECTRIC PRESS for Catalog Number: TNB010-PRESS



IMPORTANT: Read and understand all of the instructions and safety information in this manual before operating or servicing this tool.

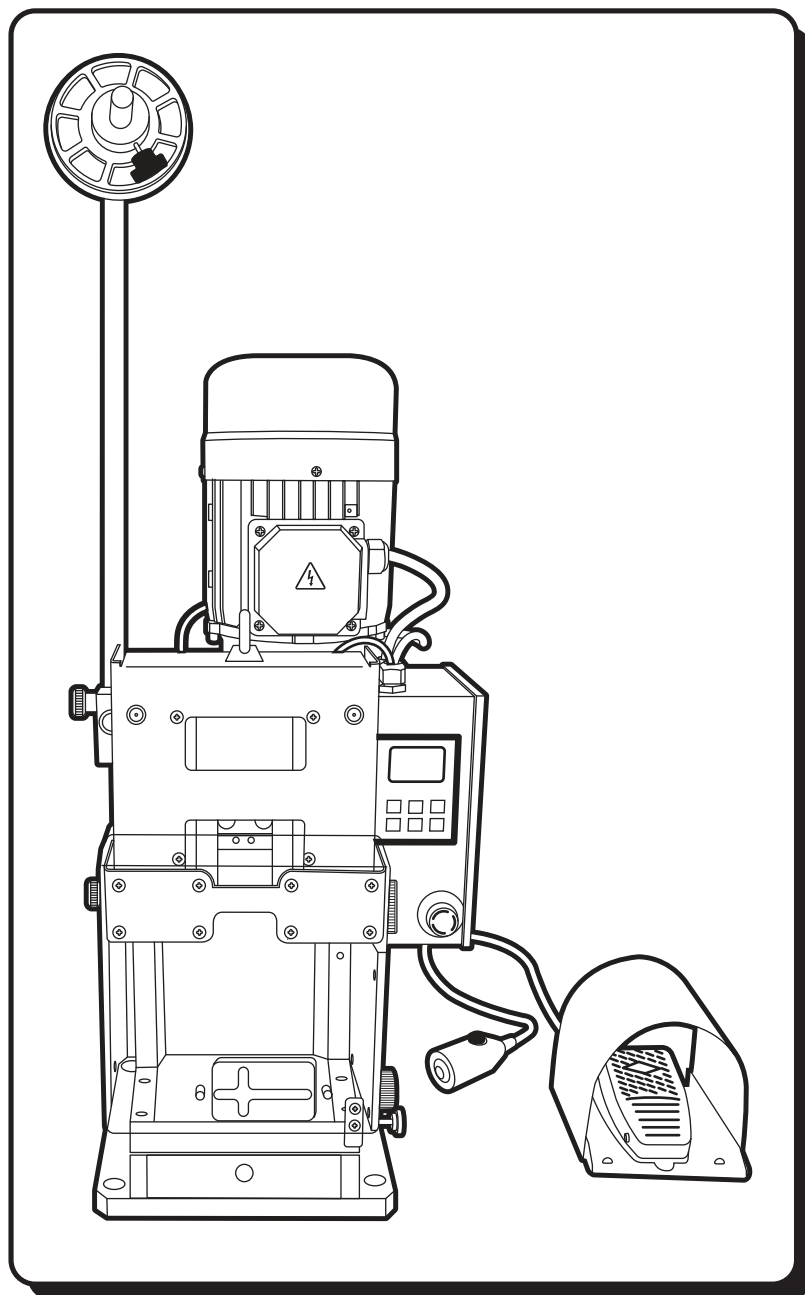


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1.0

GENERAL CHARACTERISTICS

1.1

DESCRIPTION

The Thomas & Betts® Electric Press is meant to be used in conjunction with the Thomas & Betts® Electric Die System (cat.no. TNB170-ELECDIE).

1.2

⚠ WARNING ⚠

1. BEFORE USING THE TOOL, CAREFULLY READ INSTRUCTIONS IN THIS MANUAL.
2. ALWAYS DISCONNECT POWER AND DE-ENERGIZE UNIT WHILE PERFORMING MAINTENANCE OR TOOLING CHANGES.
3. WHEN OPERATING THE TOOL NEVER PLACE HANDS OR OTHER BODY PARTS BETWEEN THE CRIMPING DIES.
4. WEAR EYE PROTECTION WHEN OPERATING OR PERFORMING MAINTENANCE.
5. WEAR FOOT PROTECTION WHEN MOVING OR OPERATING THE UNIT.
6. CAUTION IS REQUIRED WHEN MOVING OR LIFTING THE ELECTRIC PRESS.



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2



3



4



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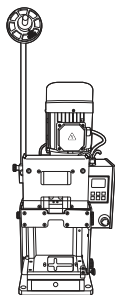


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1.3

INCLUDES

TNB010-PRESS



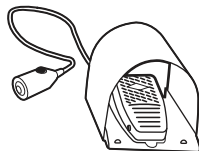
110V POWER CORD



17mm Hand Wrench



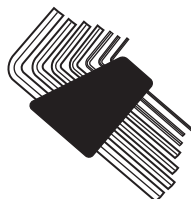
Foot Pedal



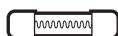
Shut Height Adjustment Key



90° Metric Hex Keys



Fuse



20A 250 VAC,
Length 30 mm, Dia. 6.35mm

1.4

PRESS BASICS

1. Basic Features

ENVIRONMENTAL	
Press Location	DO NOT Operate or store Electric Press in rooms with any corrosive or combustible gas, oil, or dust.
Operating Temperature	-10°C to 45°C (14°F to 113°F)
Storage Temperature	-20°C to 60°C (-4°F to 149°F)
Humidity	Below 90% RH (No Condensation)
Altitude	Below 1,000 M (3,281 ft)

MOTOR SPECIFICATIONS

Power Supply	1P / 110V @ 60 Hz
Voltage Fluctuation	110V to 120V
Power (kW)	0.75
Current Fluctuation	±5%
Surface Finish	Nickel Plated
Brake Style	Dynamic Brake

PRESS SPECIFICATION

Force (kN)	20
Stroke Length (mm)	30
Stroke per Minute (s.p.m.)	160
Shut Height (mm)	135.8
Weight (kg)	75
Width (mm)	325
Depth (mm)	280
Height (mm)	730

2.0

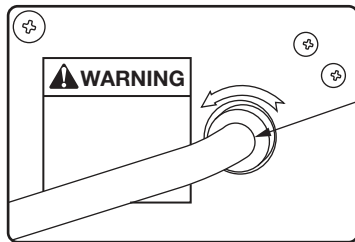
INSTALLING ELECTRIC PRESS

2.1

INSTALLATION

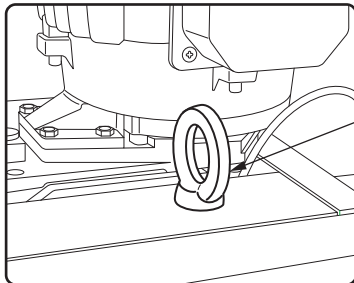
IMPORTANT: Press should have access to appropriate power supply (see Section 1.4, Motor Specifications). Press should be located with 1m (3.28 ft) radius free space around it. Work station must be suitable for 75 kg (165 lbs) load.

- Before moving Electric Press, verify:
 - Power Switch is in the **OFF** Position.
 - Press Guard is Closed.
 - Ram path is free of obstruction.
 - Move ram into TDC (Top Dead Center) position by using supplied 17 mm Hand Wrench, see below.



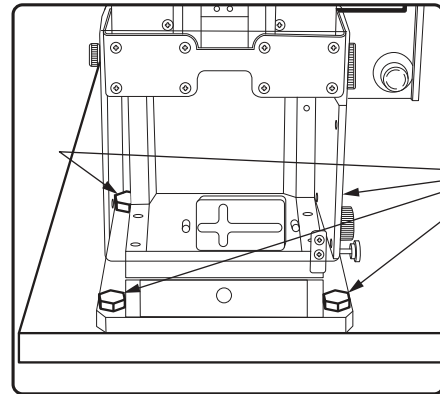
17mm Hand Wrench
(Adjustment locate on back side of Electric Press.)

- Hoist Electric Press onto work station by using Eye Bolt provided.



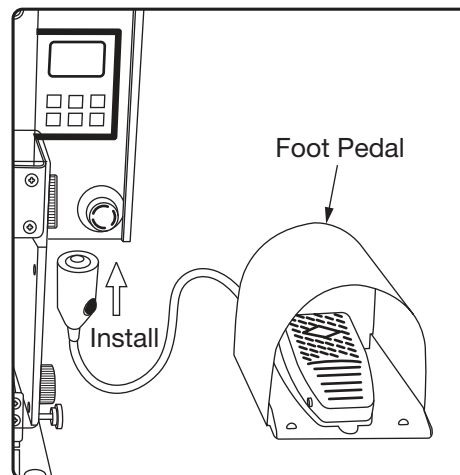
Eye Bolt
(Located on front of Electric Press, above the Guard.)

- Securely bolt Electric Press to applicable work station.



(4) Bolts
(not supplied)

- Install Foot Pedal Safety Switch (If Electric Press is automated, Foot Pedal is not needed).

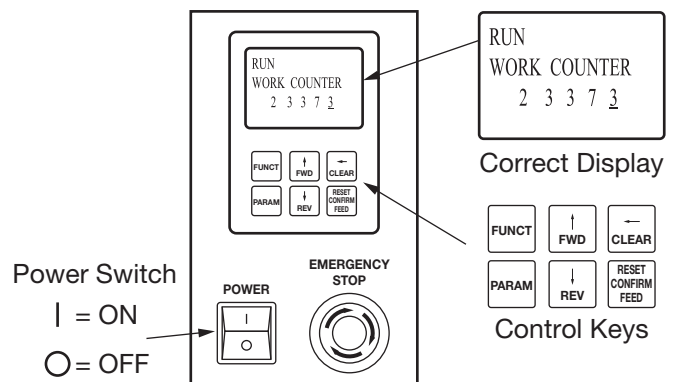


2.2

CONNECTING THE POWER SOURCE

IMPORTANT: See Warning Section 1.2 before connecting the Electric Pump to a power source.

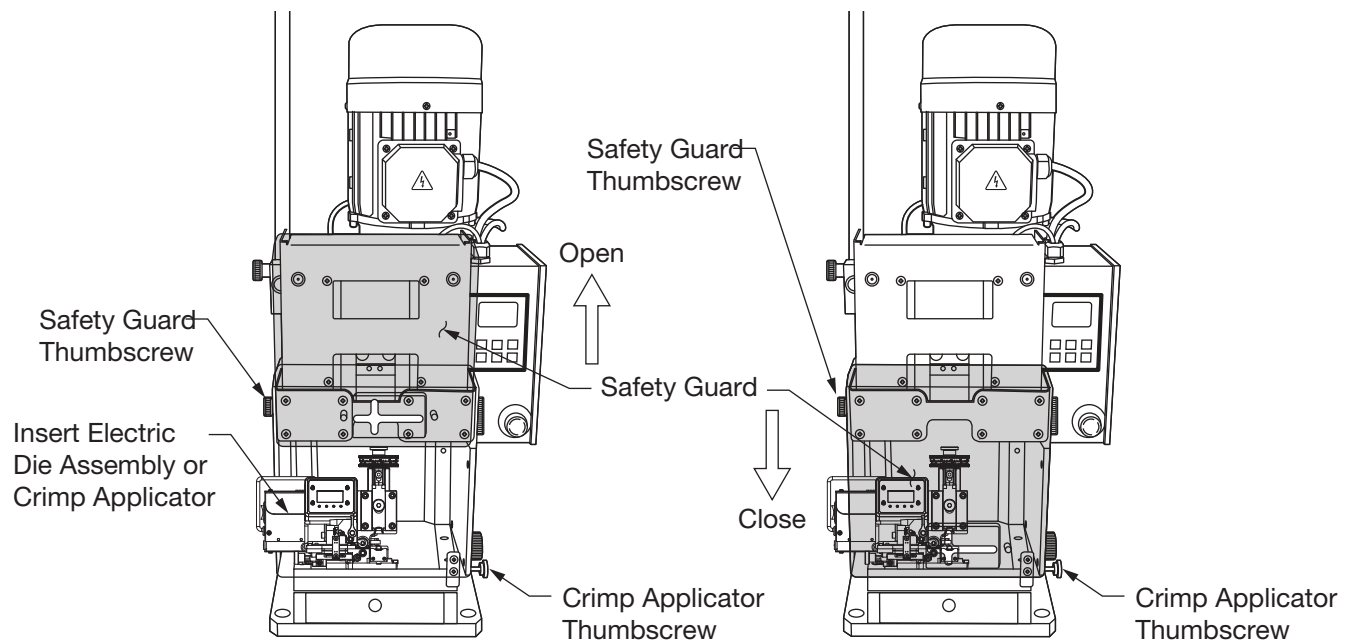
- Shut Power **OFF** using the Power Switch.
- Plug the 110V Power Cord provided with the Electric Press into an outlet with the appropriate power supply (see Section 1.4, Motor Specifications).
- Ensure that Electric Press is free from obstructions and hands are clear of any moving parts.
- Turn the Power Switch **ON**.
- Ensure the Display Screen reads correct.
- Using the Safety Foot Switch, cycle the press (1) time to ensure function.



3.1

INSTALL ELECTRIC DIE ASSEMBLY

1. Turn Power **OFF**.
2. Loosen Safety Guard Thumbscrew and open by sliding the Safety Guard up.
3. If applicable, loosen Crimp Applicator Thumbscrew and remove applicator.
4. Insert Thomas & Betts® Electric Die Assembly or Crimp Applicator to Press' Adapter Plate and Ram.
5. Tighten Crimp Applicator Thumbscrew.
6. Close Safety Guard by sliding the guard down over Electric Die Assembly.
7. Tighten Safety Guard Thumbscrew.



3.2

REMOVE ELECTRIC DIE ASSEMBLY

1. Turn Power **OFF**.
2. Loosen Safety Guard Thumbscrew and open Safety Guard.
3. Loosen Crimp Applicator Thumbscrew.
4. Remove Electric Die Assembly or Crimp Applicator from Press' Adapter Plate and Ram.
5. Close Safety Guard.
6. Tighten Safety Guard Thumbscrew.

4.0

RUNNING

4.1

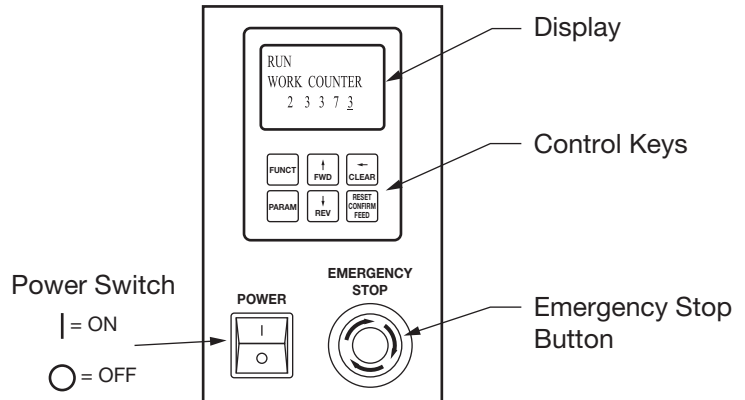
STARTING PRESS FOR CYCLE/OPERATION

1. Confirm there are no obstructions to interfere with the press cycle.
2. Toggle the power switch from **OFF** to **ON**.
3. Verify the Emergency Button is reset. See Section 4.2, Step 3.
4. If applicable, reset the piece counter to zero. (See 5.4, RUN Mode)
5. Cycle the Electric Press by using Foot Pedal Switch.

4.2

PRESS CONTROLS

1. Display
2. Control Keys
 - Function Key [FUNCT]
 - Parameter Key [PARAM]
 - Forward Key [FWD]
 - Reverse Key [REV]
 - Clear Key [CLEAR]
 - Reset Key [RESET / CONFIRM / FEED]
3. Power Switch
4. Emergency Stop Button



4.3

PRESS MODES

NOTE: The Electric Press has 4 Modes.

1. **RUN MODE:** is the default mode for crimping.
 - Press the Foot Pedal to cycle press.
 - Each cycle increases the counter by one.
 - The count is stored in memory, even after powering off the press.
 - Pressing the **CLEAR Key** will reset the piece counter to zero.
2. **JOG MODE:** is a slow cycle mode.
 - Tapping the foot pedal, moves the press forward a fraction of a cycle.
 - Holding the foot pedal, completes an entire cycle at a fraction of the speed.
 - Move forward or reverse incrementally in this mode.
 - Pressing the FWD key sets the motor to forward movement.
 - Pressing the REV key sets the motor to reverse movement.
3. **FEED MODE:** is used to interface with the air control module.
 - Press the **RESET key** to increment the counter number. **ATTENTION:** Powering off the press will reset the counter.
 - Pressing the **CLEAR key** will reset the counter to zero.
4. **PARAMETER SETTING MODE:** If adjustments are needed, contact Thomas & Betts Tool Service for assistance. 1-800-284-TOOL (8665)

4.4

EMERGENCY STOP AND RESTART

1. Press Emergency Button to stop the press mid-cycle.
2. Correct the cause of failure.
3. Reset the Emergency Stop
 - Rotate the Emergency Button clockwise until the button clicks.
 - Press the RESET button.
 - Push the foot pedal to return the press to its start position.

5.1

GENERAL ISSUES

PROBLEM 1: The Electric Press does not work.
The Power Light is **OFF**.

CAUSE 1: The Press is not plugged in.

- Solution: Connect Press to power source and/or validate power source connection.

CAUSE 2: The Press' main fuse has blown.

- Solution: Replace with fuse supplied with the Press (20A 250 VAC, Length 30mm, Dia. 6.35mm).

PROBLEM 2: The press does not start. The power light is **ON**.

CAUSE 1: The emergency stop has been triggered.

- Solution: Reset the emergency stop (see Step 4.4).

CAUSE 2: The motor cam notch is positioned directly beneath the proximity sensor.

- Solution: Adjust the cam position (see xx).

CAUSE 3: The proximity sensor is positioned too far from cam surface.

- Solution: Position the cam surface at 1.5mm distance from proximity sensor.

CAUSE 4: The motor control board is damaged.

- Solution: Contact Thomas & Betts tool Service Center at 1-800-284-TOOL (8665).

PROBLEM 3: Press did not stop cycle at TDC and cannot cycle when triggered.

CAUSE 1: The proximity sensor is positioned too far from cam surface.

- Solution: Position the cam surface at 1.5mm distance from proximity sensor.

PROBLEM 4: With press in "Run Mode", Foot Pedal will not initiate cycle (alarm code 00008 present).

CAUSE 1: The motor control board is damaged.

- Solution: Contact Thomas & Betts tool Service Center at 1-800-284-TOOL (8665).

PROBLEM 5: With press in "Run Mode", foot pedal will not initiate cycle (no alarm present).

CAUSE 1: Ram is not at TDC.

- Solution: Adjust ram to TDC position.

5.2

ALARM CODES

When the press encounters abnormal operating conditions an alarm code will appear on the Display screen.

CODE	MEANING
00001	High Voltage Alarm
00002	Low Voltage Alarm
00003	IGBT High Temperature Alarm
00004	Emergency Stop Engaged
00005	Power Button Off

CODE	MEANING
00006	Safety Guard Open Alarm
00007	Wrench Safety Alarm
00008	Working Overtime Alarm Cycle
00009	PWM Fault Alarm

5.3

RESPONDING TO ALARM CODESContinues on next page.

NOTE: Once the issue is resolved, use the RESET key to reset the press. Using the reset key exits the alarm mode, resets the press, and sets the press to RUN mode.

ALARM 00001:

Voltage exceeds 380V. If the voltage exceeds the maximum setting for the press, the press automatically shuts down. Plugging the press into an inappropriate power supply will cause this alarm. Verify the outlet is a grounded 1PH / 110 V AC.

ALARM 00002:

Voltage is below 110V. The power outlet failed to provide the required 110-120V. Verify the outlet is a grounded 1PH / 110 V AC. If the power loss is

temporary, and the voltage returns to normal, press the RESET key to resume crimping.

ALARM 00003:

The controller heat sink temperature exceeds 67 °C. Note the environmental temperature. Verify the press has adequate ventilation.

ALARM 00004:

Emergency Stop Engaged. See "Emergency Stop and Restart" (5.2)

5.3

RESPONDING TO ALARM CODESContinued

ALARM 00005:

Controller Power Button is off. The press entered shut down mode and is powering off. The motor locks during shutdown and will not cycle, even if power remains in the capacitors.

ALARM 00006:

Safety Guards Open. Close the Safety Guard and press the RESET key.

ALARM 00007:

Wrench Safety Alarm. The crank still has the wrench attached. Remove the wrench from the press crank and press the RESET key.

ALARM 00008:

Crimp Cycle Exceeds Threshold Alarm. When a crimp cycle requires more than 0.65 seconds, the controller considers the crimp a failure and automatically stops the press. Press the RESET key to continue crimping. If this alarm persists, a press with higher force may be required for this crimp application, or the applicator may need repair.

ALARM 00009:

PWM Fault Alarm is active. If this alarm persists, the motor circuit has shorted. Please contact Thomas & Betts for repair service.

6.0

MAINTENANCE

6.1

ROUTINE MAINTENANCE

IMPORTANT: Periodically, clean the press with a non-corrosive, non-abrasive cleaner.

1. As Required:

- Clean the crimping area of debris with a brush.
- Clean guards with soap and water.
- Do not use corrosive or abrasive cleaners.
- Do not use cleaners containing alcohol (Alcohol weakens the guard, causing premature breakage).

2. Every Crimp Applicator Changeover:

- Check the Press Shut Height.
- If you do not have a Shut Height Gauge, please contact Thomas & Betts.

3. Every Week:

- Verify the distance between the proximity sensor and cam's surface is 1.5 mm.
- Verify there is no dust, dirt, or debris on the surface of the proximity sensor or cam.

4. Every 50,000 cycles

- Verify the distance between the proximity sensor and cam's surface is 1.5 mm.
- Verify there is no dust, dirt, or debris on the surface of the proximity sensor or cam.

5. Every 50 working hours:

- Apply grease to the grease fittings

6. Every 1,000 Working Hours:

- Verify press assembly for visible signs of wear.
- If signs of wear are present, contact Thomas & Betts Tool Service Center at 1-800-284-TOOL (8665).

⚠ WARNING ⚠
Turn Power OFF before performing maintenance.

6.2

SHUT HEIGHT ADJUSTMENTContinues on next page.

The "Standard Shut Height" value from the table below is a measurement between the press' base plate and the "T" ("O") shank, when the press ram is at its Bottom Dead Center.

PRESS MODEL No.	STANDARD SHUT HEIGHT	SHUT HEIGHT GAUGE
PRS010-T2.2T30M	135.78±0.02mm	PRS010-SHG-135.78
PRS010-T2.240M	135.78±0.02mm	PRS010-SHG-135.78

1. Prepare the Press :

- Verify the power switch is OFF (See Step 4.3).
- Unplug the power cable from the power outlet.
- Open the safety guard.
- If applicable, remove the crimp applicator from the press.
- Verify the press' base plate is clean and level.

2. Check the Press Shut Height:

- Chuck the crank with the supplied wrench and rotate the crank, clock-wise, bring the press ram to its Top Dead Center.

- Place the shut height gauge on the press' base plate precisely under the "T" ("O") shank.
- Rotate the supplied wrench clockwise, moving the press' ram down, until you reach Bottom Dead Center. The ram should be touching the gauge's top surface.
- Note the dial's position while at Bottom Dead Center. Typically, this should be at 0 ±0.02mm
- If the dial is at zero, then the press shut height is correct.

6.2

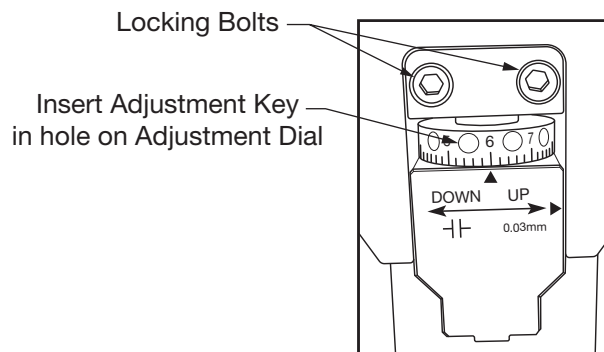
SHUT HEIGHT ADJUSTMENTContinued

- If the dial did not reach zero or passed zero, then the press requires adjustment (See Step 3, below).
- After completing Section 4, refer to step 4.3.
- Continue rotating the wrench clockwise until you return to Top Dead Center.

3. Adjust the Press Shut Height:

- Release Locking Bolt
 - Loosen the bolts on the ram with the hex wrench.
 - Insert the Adjustment Key into the hole.
 - If the shut height gauge did not reach zero, using the Adjustment Key, turn the Adjustment Dial left or right to raise or lower the Ram as needed.

- Tighten Locking Bolt
 - Tighten the locking bolt on the ram.
 - Repeat the steps in Section 6.2, Step 2 on page 7.

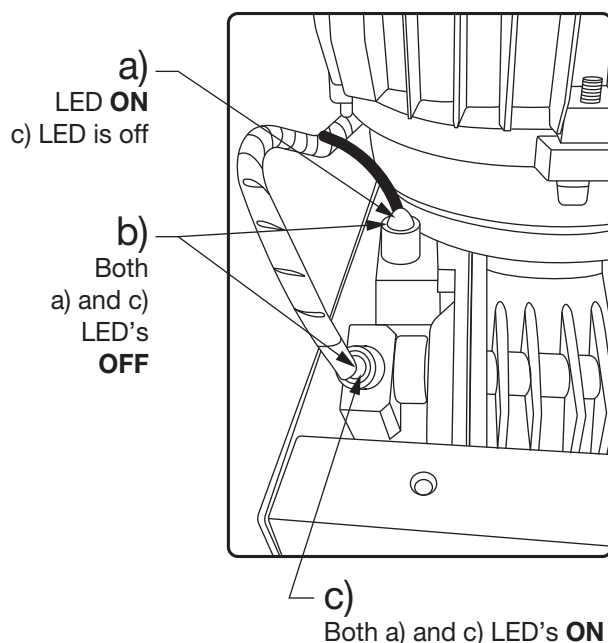


6.3

CAM ADJUSTMENT

1. Cam Sensor LED Adjustment:

- If Indicator light is **ON**, Press is ready for operation.
- If Indicator light is **OFF**, the cam is out of position and requires adjustment.
- If the wrench LED is active, a wrench is preventing the Press from activating.



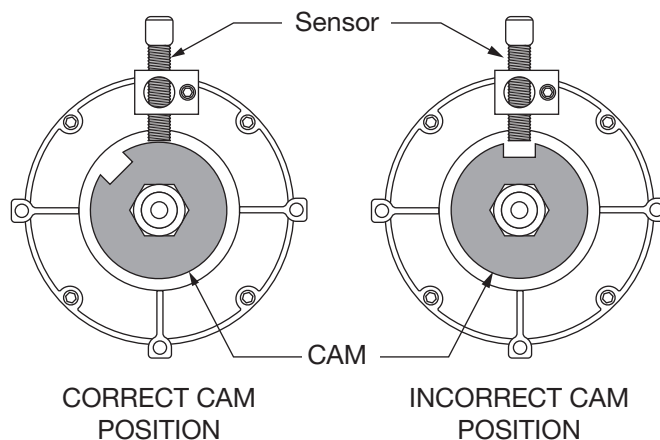
2. Cam Position:

- The cam, mounted on the crank, controls press cycling. (back of motor gearbox)
- If the notch of the cam is under the sensor, the press will not cycle, see below.
- Turn the Press **OFF** (Step 4.3).
- Unplug the power cable from the power outlet.

! WARNING !

Do not manually cycle the press while under power.

- Use the supplied wrench to rotate the crank, adjusting the cam notch away from the sensor.



IN ORDER TO OBTAIN WARRANTY SERVICE YOU MUST REGISTER YOUR PRODUCT BY LOGGING IN ON www.tnb.com/toolregistration. FAILURE TO REGISTER YOUR PRODUCT VOIDS ALL WARRANTIES.

For Parts or Service, contact Thomas & Betts Tool Service Center at 1-800-284-TOOL (8665)

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