

OPERATING INSTRUCTION MANUAL QUICK-KON™ AUTOMATED CRIMPING SYSTEM

for Catalog Number: TNB170-ELECDIE



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

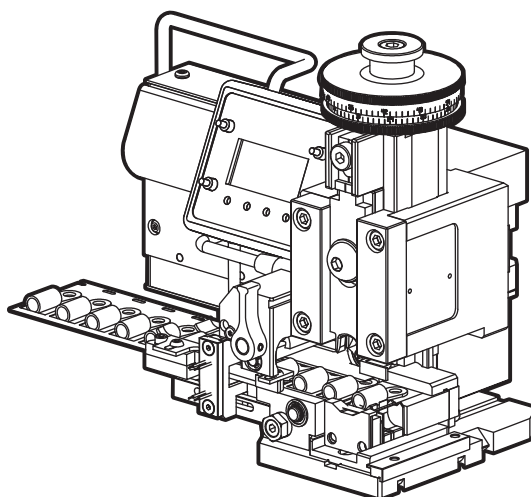


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1.0

GENERAL CHARACTERISTICS

1.1

DESCRIPTION

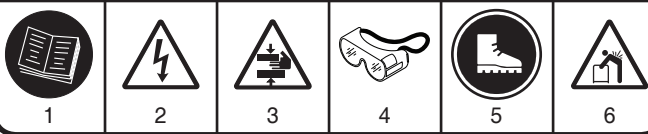
The QUICK-KON™ Automated Crimping System is a left-to-right side feed applicator which installs in most industry standard presses, which is comprised of the Electric Die, the Stock Guide Assembly and the Ram Tool. As a result, one unit can be used to crimp a large variety of terminals - simply through the purchase of additional tool packs.

Unlike traditional applicators, which use mechanical designs to feed terminals, the Thomas & Betts® Electric Die uses a patented feeding method that electronically performs feeding operations pre-termination. The stepper motor driven pinch rollers engage the carrier strip and push the terminals into place for crimping. Microprocessor based electronics, in conjunction with sensors, initiate a feeding cycle on the upward motion of the ram and control the stepper motor to precisely position the next terminal to be crimped. A feed controller allows the operator to set feeding parameters electronically. As a result of this superior terminal feeding system, tool packs are readily accessible and easy to swap...set-up is quick and easy.

1.2

⚠ WARNING ⚠

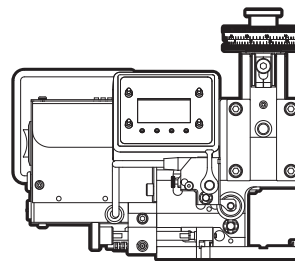
1. BEFORE USING THE TOOL, CAREFULLY READ INSTRUCTIONS IN THIS MANUAL.
2. ALWAYS DISCONNECT POWER AND DE-ENERGIZE UNIT WHILE PERFORMING MAINTENANCE OR TOOLING CHANGES.
3. WHEN OPERATING THE TOOL NEVER PLACE HANDS OR OTHER BODY PARTS BETWEEN THE CRIMPING DIES.
4. WEAR EYE PROTECTION WHEN OPERATING OR PERFORMING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



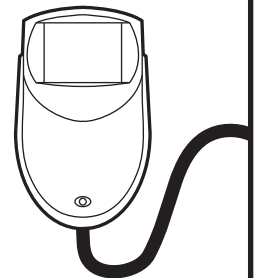
1.3

QUICK-KON™ AUTOMATED CRIMPING SYSTEM INCLUDES

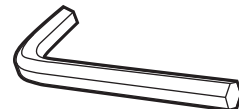
ELECTRIC DIE



POWER SUPPLY



M5 HEX WRENCH



2.0

INSTALLING AUTOMATED CRIMPING SYSTEM

2.1

INSTALLATION

1. The QUICK-KON™ Automated Crimping System is designed be used with Thomas & Betts Press Assembly (TNB010-press). Refer to the Press Assembly manual for proper installation.

3.0

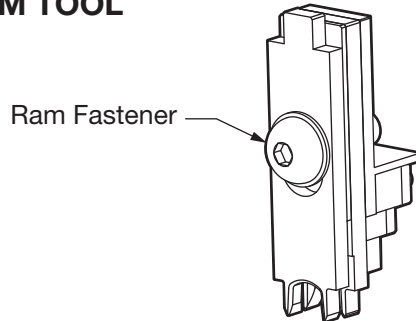
TOOL PACK

3.1

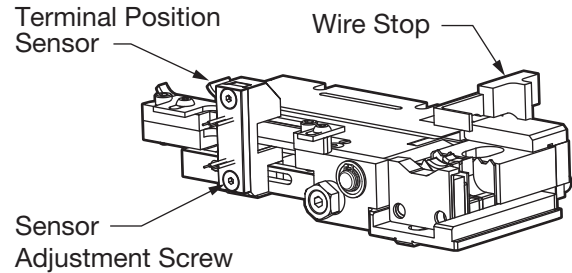
Tool Pack Features

IMPORTANT: The QUICK-KON™ Automated Crimping System is to be used in conjunction with the Thomas & Betts Tool Packs, purchased separately.

RAM TOOL



STOCK GUIDE



3.2

TABLE I
STA-KON® TOOL PACK CAT NO's

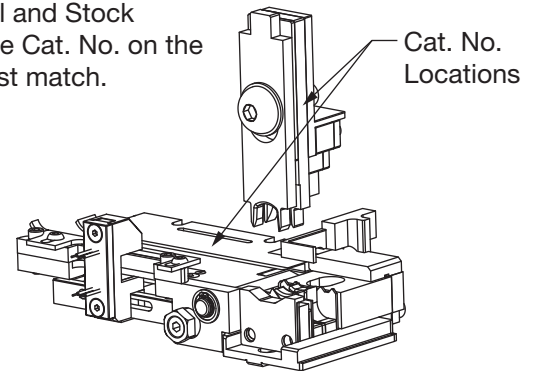
TOOL PACK CAT. NO.	DISCONNECT REEL		WIRE RANGE (AWG)	
TNB177D01	RA-NYLON	RA-VINYL	22	18
TNB177D02	RB-NYLON	RB-VINYL	16	14
TNB177D03	RC-NYLON	RC-VINYL	12	10

TOOL PACK CAT. NO.	TERMINAL REEL		WIRE RANGE (AWG)	
TNB177T01	RA-NYLON		22	16
TNB177T02	RB-NYLON	RB-VINYL	18	14
TNB177T03	RC-NYLON	RC-VINYL	12	10
	RBC-NYLON	RBC-VINYL	16	12
TNB177T04	RA-VINYL		22	16
TNB177T05	A-NON INSULATED		22	16

3.3

CAT. NO. LOCATION

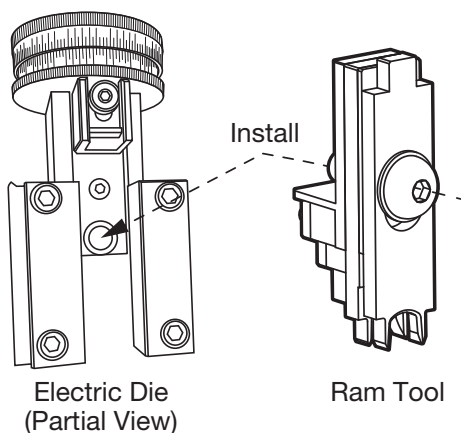
IMPORTANT: Before using Ram Tool and Stock Guide, the Cat. No. on the parts must match.



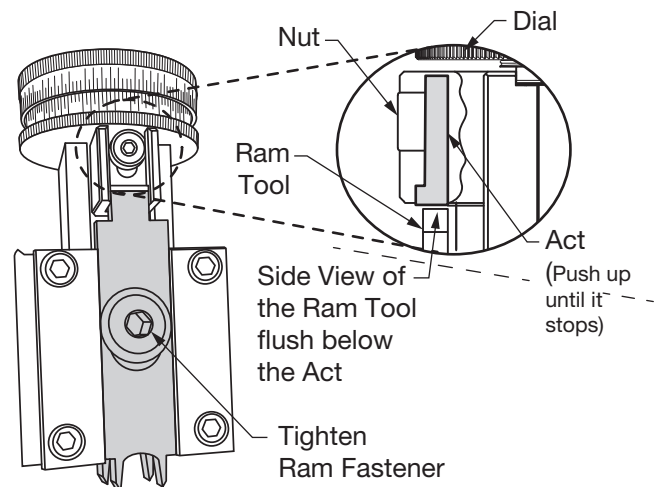
3.4

INSTALLING RAM TOOL

1. Push Actuator up until it stops and remains in the up position.
2. Install Ram Tool into Electric Die as shown and tighten Ram Fastener with supplied Hex Wrench.



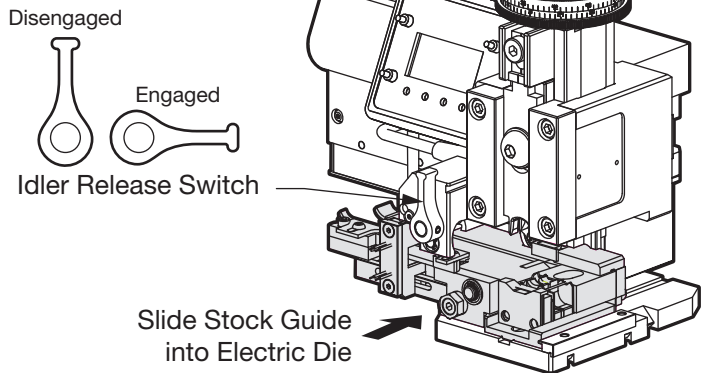
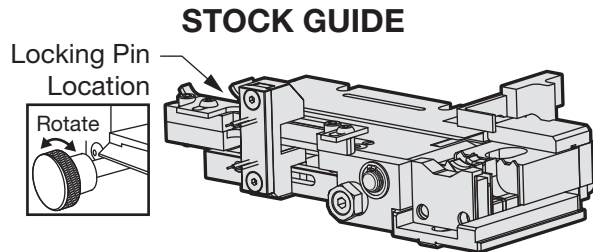
3. Ensure that the top of the Ram Tool is flush below the Act.



3.5

INSTALLING STOCK GUIDE

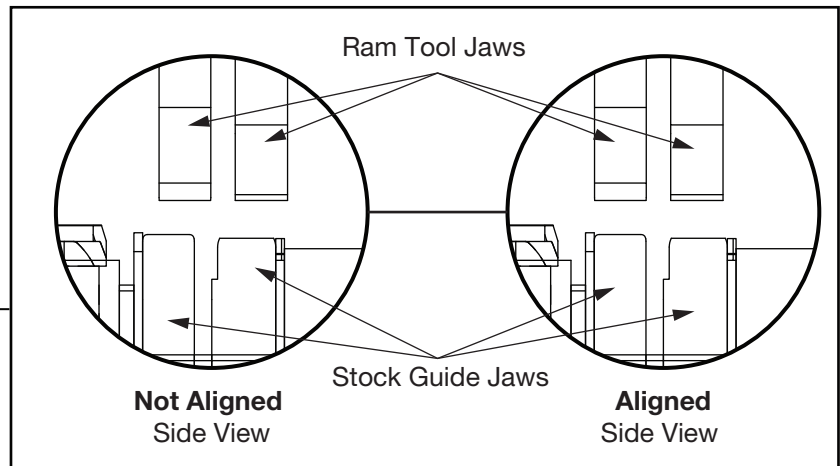
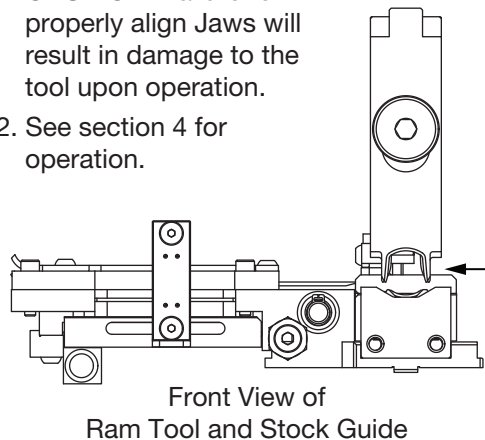
1. Disengage the Idler Release on the Automated Crimping System.
2. Slide Stock Guide assembly into place and rotate Locking Pin on Stock Guide to secure onto the Automated Crimping System.



3.6

ALIGNMENT OF TOOL PACKS

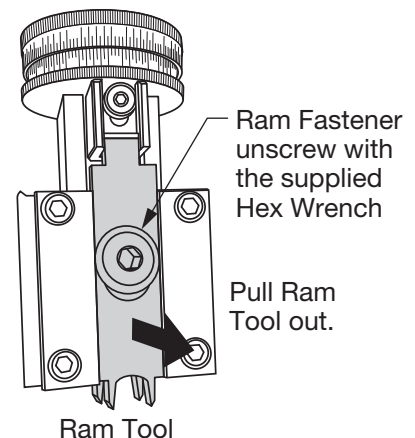
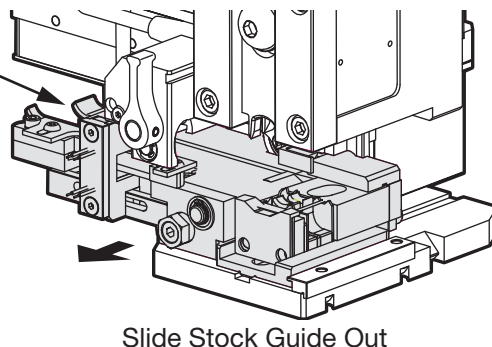
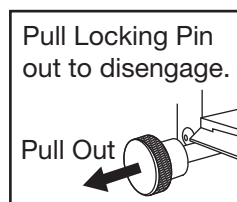
1. Verify that the Ram Tool and the Stock Guide Jaws are aligned vertically.
CAUTION: Failure to properly align Jaws will result in damage to the tool upon operation.
2. See section 4 for operation.



3.7

UN-INSTALLING TOOL PACKS

1. Turn Power OFF to Electric Die and Press Assembly.
2. Remove Stock Guide by disengaging Idler Release Switch (Step 3.5). Disengage Locking Pin by pulling out Locking Pin and rotating into Locked position.
3. Remove Ram Tool by unscrewing Ram Fastener and pulling Ram Tool out.



4.0

TERMINALS & DISCONNECTS

4.1

OVERVIEW

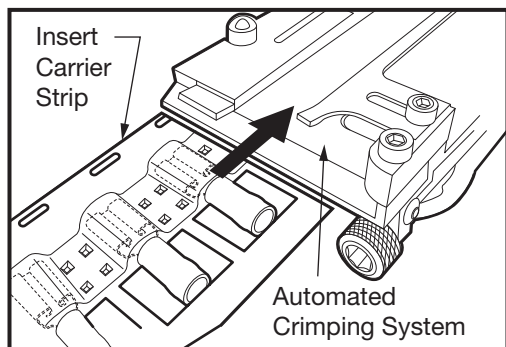
Thomas & Betts® Terminals & Disconnects are available on Mylar tape rolls in quantity of 1,000 pieces. These left hand feed reels are designed to work with the Automated Crimping System. See **TABLE I** in Step 3.2 for Terminal & Disconnect Tool-Pack catalog numbers.

4.2

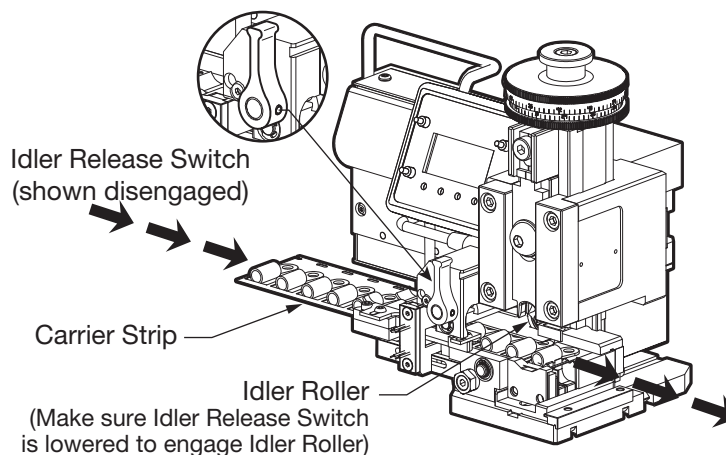
INSERTING CARRIER STRIP

Inserting:

1. **WARNING:** Turn Power off to Automated Crimping System and Press Assembly.
2. Verify that the installed Tool Pack is appropriate for the selected Terminal or Disconnect Reel (see section 3.2).
3. Place selected Terminal or Disconnect Reel onto Terminal Reel Support Arm which is connected to the Press Assembly (see instruction manual supplied with Press Assembly).
4. On Press Assembly, position ram at top of stroke (see instruction manual supplied with Press Assembly).
5. Raise the Idler Release Switch in the disengaged position (see Step 3.5).
6. Slide Terminal or Disconnect Carrier Strip from the Reel into the Automated Crimping System.
7. When Carrier Strip is in place, lower the Idler Release Switch (see Step 3.5) to engage Idler Roller onto the Carrier Strip.
8. See section 5 for crimping.



BACK END OF AUTOMATED CRIMPING SYSTEM

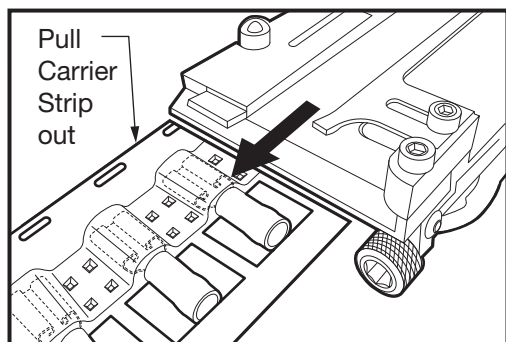


4.3

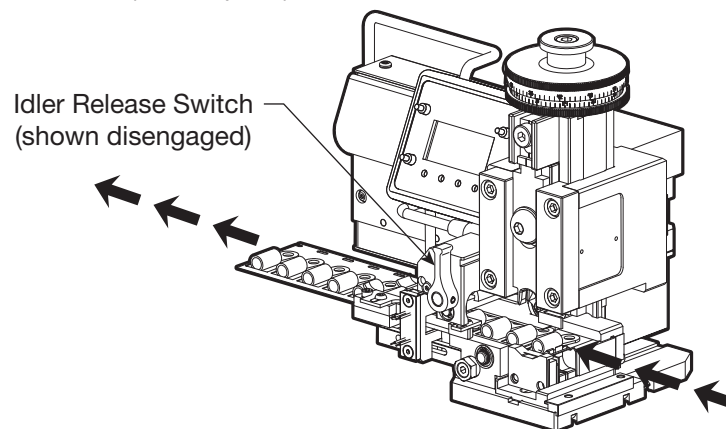
REMOVING OF CARRIER STRIP

Removal:

1. **WARNING:** Turn Power off to Automated Crimping System and Press Assembly.
2. Raise Idler Roller by disengaging the Idler Release Switch (see Step 3.5).
3. Pull Carrier Strip out of the Stock Guide.



BACK END OF AUTOMATED CRIMPING SYSTEM



5.0

CRIMPING

5.1

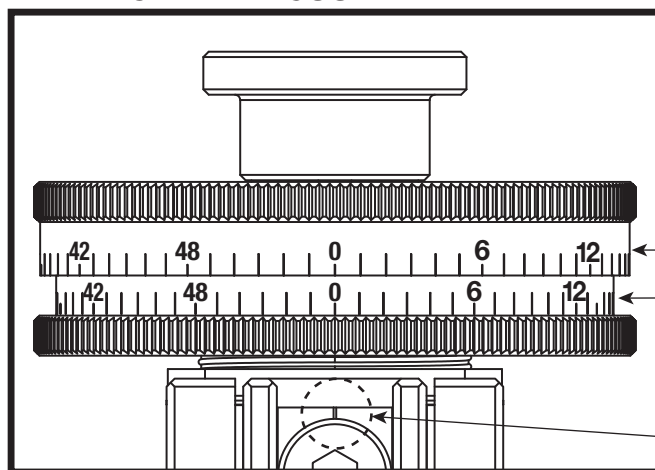
DETERMINE PROPER CRIMP SETTINGS

IMPORTANT: Recommended crimp height settings, specific to terminal or disconnect tooling, are provided with tool packs. Before crimping with recommended settings, calibrate per instructions below.

Crimp Setting:

1. Set Conductor Dial and Insulator Dial to “0”.
2. If applicable, close safety guards. Restore power.
3. Crimp terminal/disconnect or 1/4” diameter solder.
4. Measure the crimp height and compare values to layout provided with the appropriate Tool Pack.
5. Record Settings for future use.

CRIMP ADJUSTMENT DIAL



CONDUCTOR DIAL

The higher the value is set, the tighter the crimp will be.

INSULATION DIAL

The higher the value is set, the tighter the crimp will be.

DIAL INDICATOR

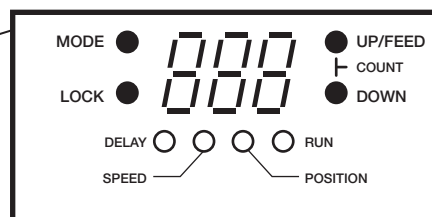
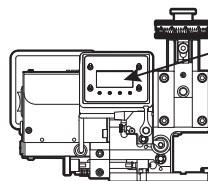
6.0

SETTING ADJUSTMENTS

6.1

FEED CONTROL

1. The Automated Crimping System has (4) adjustable ‘MODES’.
2. Select desired mode with ‘MODE’ button on feed control screen display.
3. Mode values are adjusted via the ‘UP/FEED’ & ‘DOWN’ buttons.
4. Pressing the ‘UP/FEED’ & ‘DOWN’ buttons simultaneously will display the total number of feed cycles completed.



6.2

RUN MODE

1. Terminals/disconnects will automatically feed when Run Mode is selected.
2. Run Mode will also be auto initiated by movement of the ram.
3. Run mode will run with the speed, delay, and position values that have been programmed. If no adjustments have been made, run mode will function with default values.

6.3

SPEED MODE CALIBRATION

IMPORTANT: The feed cycle is the advancing movement of the carrier strip. This cycle is initiated after crimping in order to feed a new terminal/disconnect into alignment with crimp tooling.

1. Set and adjust the Speed of the carrier strip during the feed cycle.
2. There are 9 Speeds available as defined in Table II.

TABLE II

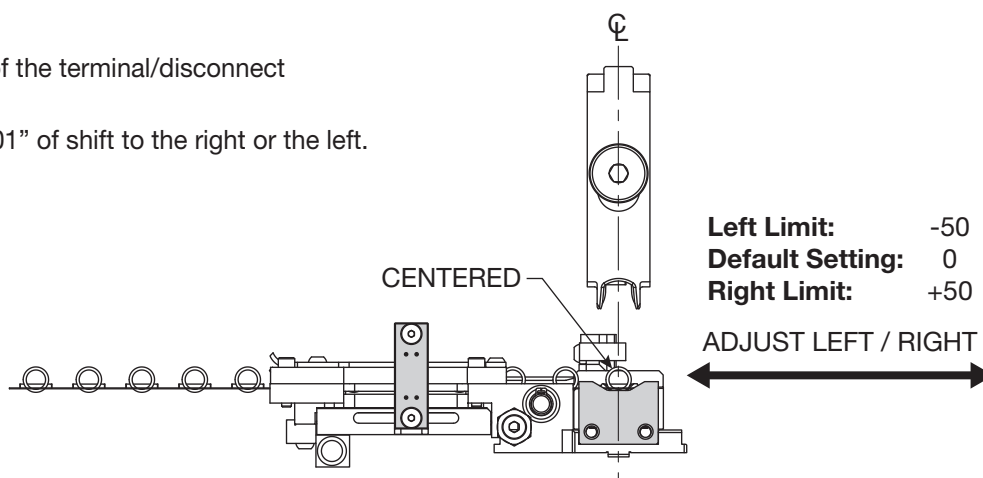
Speed Selection	Approximate Speed (mm / second)	Approximate Speed (inches / second)
1	6.35	0.25
2	12.70	0.50
3	19.05	0.75
4	25.40	1.00
5	31.75	1.25
6	38.10	1.50
7	50.80	2.00
8	63.50	2.50
9	76.20	3.00

6.4

POSITION MODE CALIBRATION

Position Mode Calibration:

1. Left-to-right adjustments of the terminal/disconnect relative to the tooling.
2. Each value represents 0.001" of shift to the right or the left.



6.5

DELAY MODE CALIBRATION

1. Set and adjust the Delay that occurs between the triggering of the feed cycle and the start of the feed cycle (Feed cycle is triggered by movement of ram or by pressing 'FEED' button on display).
2. There are 9 Delays available as defined in Table III.

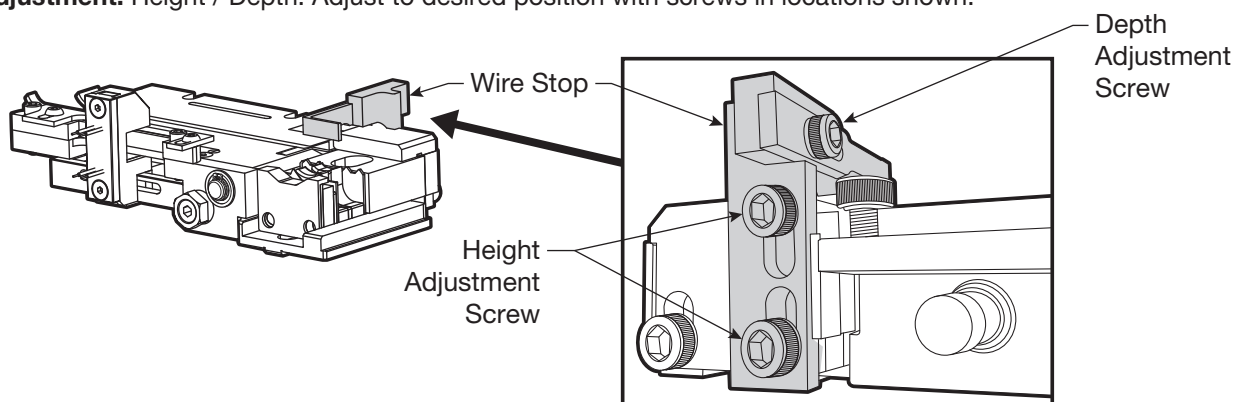
TABLE III

Delay Selection	Approximate Delay (seconds)
0	0
1	0.2
2	0.4
3	0.6
4	0.8
5	1
6	1.5
7	2
8	3
9	5

7.1

WIRE STOP ADJUSTMENTS

1. **Bench Top Presses:** Wire stop will allow user to insert the wire into the terminal/disconnect at correct depth (See terminal/disconnect documentation for depth value).
2. **Automated Presses:** Wire stop will aid in the removal of the terminal/disconnect from ram tooling.
3. **Adjustment:** Height / Depth: Adjust to desired position with screws in locations shown.



BACK END OF STOCK GUIDE

7.2

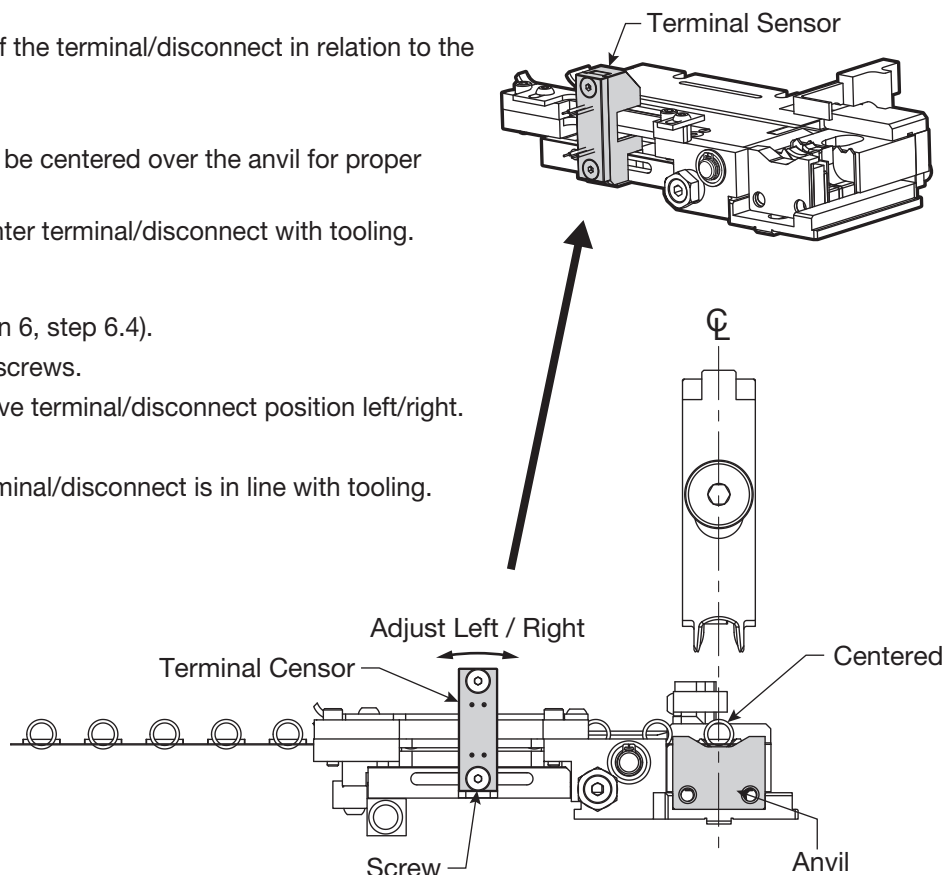
TERMINAL SENSOR ADJUSTMENT

Overview:

1. Sensor locates the position of the terminal/disconnect in relation to the tooling.
2. Default position setting of '0'.
3. The terminal/disconnect is to be centered over the anvil for proper crimp.
4. Adjust as needed to align center terminal/disconnect with tooling.

Adjustment:

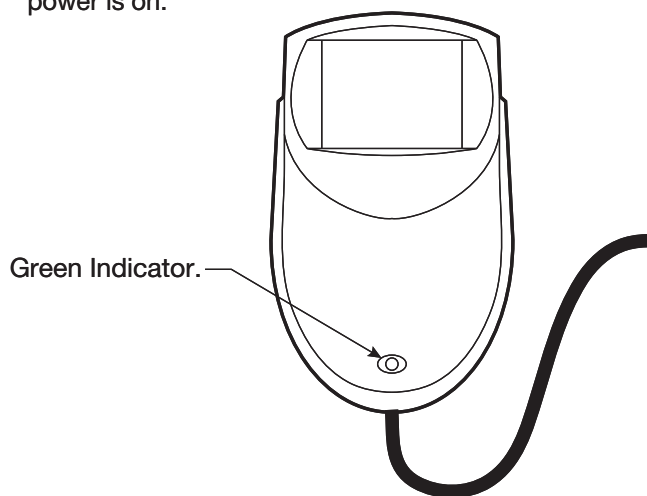
1. Set position to '0' (see section 6, step 6.4).
2. Loosen terminal sensor lock screws.
3. Adjust sensor left/right to move terminal/disconnect position left/right.
4. Tighten screw.
5. Visually confirm center of terminal/disconnect is in line with tooling.



FRONT OF STOCK GUIDE

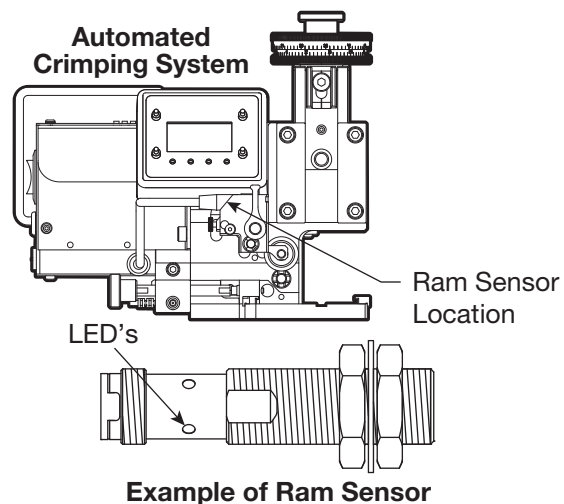
8.1 POWER SUPPLY

1. The Power Supply indicator lights up green when power is on.



8.2 RAM SENSOR

1. The LEDs toggle on-off when the ram moves up and down.

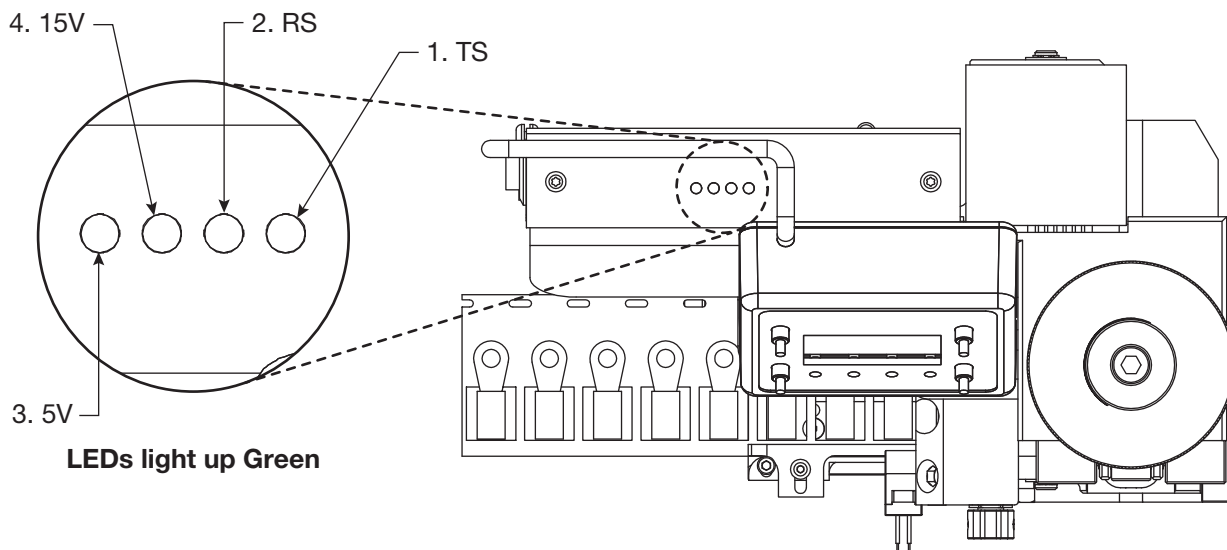


8.3 STATUS LED's

Overview:

There are four LEDs on Automated Crimping System that provide the status of supply, voltages, and sensors.

1. TS: Toggles on-off as terminals pass the terminal sensor.
2. RS: Toggles on-off as the Ram moves up and down.
3. 5V: 5 Volt Supply.
4. 15V: Volt Supply



Top View of Automated Crimping System

IMPORTANT: The Automated Crimping System and tool packs should be cleaned, inspected for visible signs of wear/damage and lubricated every (8) hours of operation.

IMPORTANT: For parts or service, contact the tool service center at (800) 284 - TOOL (8665).

⚠ WARNING: TURN OFF POWER.

9.1 CLEANING

IMPORTANT: DO NOT use solvents when cleaning the Automated Crimping System and Tool Packs

Recommended Cleaning Aid: Clean cloth or equivalent material.

1. Remove the Ram from the Automated Crimping System Assembly.
2. Remove the Crimp Dial from the Ram.
3. Remove the tool pack from the Automated Crimping System Assembly.

9.2 INSPECTION

IMPORTANT: Portions of the tooling that make contact during the crimping process are more prone to visual signs of wear.

1. Remove the Tool Packs from the Automated Crimping System Assembly.
2. Clean Tool Packs, refer to step 9.1 above.
3. Inspect Stock Guide Assembly and Ram Tooling for visible signs of wear/damage.
4. Replace any worn/damaged parts.

9.3 LUBRICATION

Recommended lubricant: NLGI #2 Grade Lithium Complex EP grease or equivalent.

1. Apply light coating of lubricant to each corner of the Ram.
2. Apply a light coating of lubricant to each corner of the Ram Guide.
3. Remove any excess lubricant and re-insert Ram into Assembly.

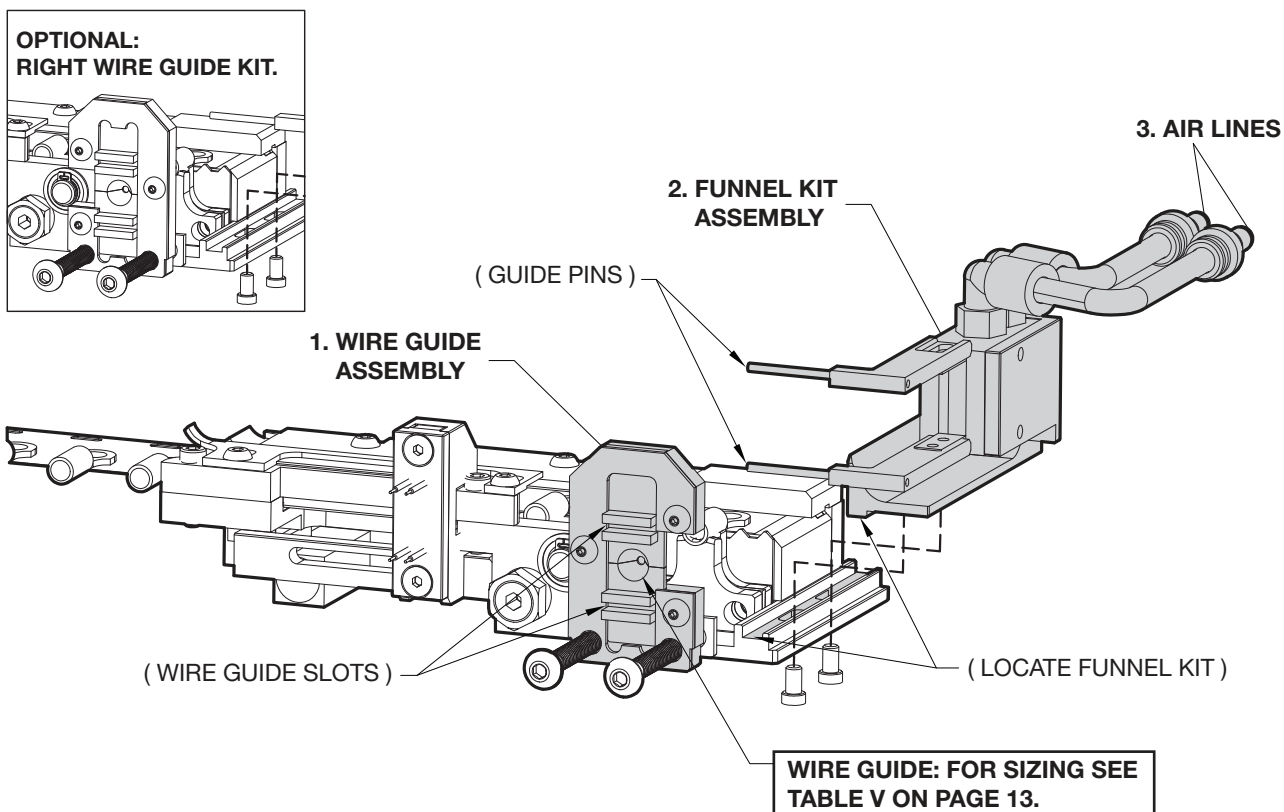
10.1

TABLE IV

Tool Pack	Left-to-right side feed Tool Pack. Stand-alone operation (no need for host controller)
Automatic Crimping System	Fits in most industry-standard presses with a shut height of 135.8 mm (5.35") NOTE: Modifications to guards may be necessary.
Tooling Type	Quick change Tool Pack.
Terminal Feed Mechanism	Electronic / stepper motor Delay - 10 selections, ranging from: 0 to 5 seconds Speed - 9 selections, ranging from • 6.35 to 76.2 (mm/sec) • 0.25 to 3.0 (in/sec) Position Offset from: • ± 12.7 mm in ± 0.024 mm increments • ± 0.50" in ± 0.01 increments
Crimp Heights (Both Conductor and Insulator)	Range: 1.0 mm (0.039") Max Adjustment. Resolution: 0.015 mm (0.005") Min. Adjustment.
Power Requirements	Single Phase AC, 90 to 240 V @ 50-60 Hz
Environmental	Temperature: • 4 to 40 degrees Celsius • 40 to 104 degrees Fahrenheit Humidity (non-condensing): • 10% to 90% relative humidity

11.1

TNB197 - FUNNEL KIT ASSEMBLY

**ASSEMBLY:**

1. Place wire guide assembly and secure.
2. Locate funnel kit onto the tool pack and align pins with wire guide slots.
3. Connect air lines.

(LEFT - WIRE GUIDE KIT IS SHOWN)

REFER TO:

TNBD0C16-11 FOR WIRE GUIDE KIT - LEFT

TNBD0C16-12 FOR WIRE GUIDE KIT - RIGHT

★ MATING AIR CONNECTION QUICK
COUPLER - USE BF63 FOR M4 TUBE
OR BF64 FOR M6 TUBE

TABLE V
WIRE GUIDE KIT (LEFT/RIGHT HAND) SELECTION GUIDE

TNBD0C16-11			
LEFT HAND ASSEMBLY (30 DEG LEAD-IN)			
Wire Guide Kit	REF. AWG	Conductor Dia	Wire Dia
TNB189-018	22	0.028 - .034	0.028 - .034
TNB189-022	20	0.035 - .040	0.035 - .042
TNB189-025	18	0.041 - 0.048	0.043 - 0.048
TNB189-031	16	0.049 - 0.064	0.049 - 0.060
TNB189-039	14	0.065 - 0.073	0.069 - 0.076
TNB189-050	12	0.074 - 0.095	0.089 - 0.098
TNB189-062	10	0.096 - 0.120	0.109 - 0.122

TNBD0C16-12			
RIGHT HAND ASSEMBLY (30 DEG LEAD-IN)			
Wire Guide Kit	REF. AWG	Conductor Dia	Wire Dia
TNB190-018	22	0.028 - .034	0.028 - .034
TNB190-022	20	0.035 - .040	0.035 - .042
TNB190-025	18	0.041 - 0.048	0.043 - 0.048
TNB190-031	16	0.049 - 0.064	0.049 - 0.060
TNB190-039	14	0.065 - 0.073	0.069 - 0.076
TNB190-050	12	0.074 - 0.095	0.089 - 0.098
TNB190-062	10	0.096 - 0.120	0.109 - 0.122

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.