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customer manual

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SAFETY PRECAUTIONS AVOID INJURY

Safeguards are designed into this application equipment to protect operators and maintenance personnel from most hazards during equipment operation. However, certain safety precautions must be taken by the operator and repair personnel to avoid personal injury, as well as damage to the equipment. For best results, application equipment must be operated in a dry, dust-free environment. Do not operate equipment in a gaseous or hazardous environment.

Carefully observe the following safety precautions before and during operation of the equipment:

- ALWAYS wear appropriate ear protection.
- ALWAYS wear approved eye protection when operating powered equipment.
- ALWAYS keep guard(s) in place during normal operation.
- ALWAYS insert power plug into a properly grounded receptacle to avoid electrical shock.
- ALWAYS turn off the main power switch and disconnect electrical cord from the power source when performing maintenance on the equipment.
- NEVER wear loose clothing or jewelry that may catch in moving parts of the application equipment.
- NEVER insert hands into installed application equipment.
- NEVER alter, modify, or misuse the application equipment.

TOOLING ASSISTANCE CENTER

CALL TOLL FREE 1-800-722-1111 (CONTINENTAL UNITED STATES AND PUERTO RICO ONLY)

The **Tooling Assistance Center** offers a means of providing technical assistance when required.

In addition, Field Service Specialists are available to provide assistance in the adjustment or repair of the application equipment when problems arise which your maintenance personnel are unable to correct.

INFORMATION REQUIRED WHEN CONTACTING THE TOOLING ASSISTANCE CENTER

When calling the Tooling Assistance Center regarding service to equipment, it is suggested that a person familiar with the device be present with a copy of the manual (and drawings) to receive instructions. Many difficulties can be avoided in this manner.

When calling the Tooling Assistance Center, be ready with the following information:

1. Customer name
2. Customer address
3. Person to contact (name, title, telephone number, and extension)
4. Person calling
5. Equipment number (and serial number if applicable)
6. Product part number (and serial number if applicable)
7. Urgency of request
8. Nature of problem
9. Description of inoperative component(s)
10. Additional information/comments that may be helpful

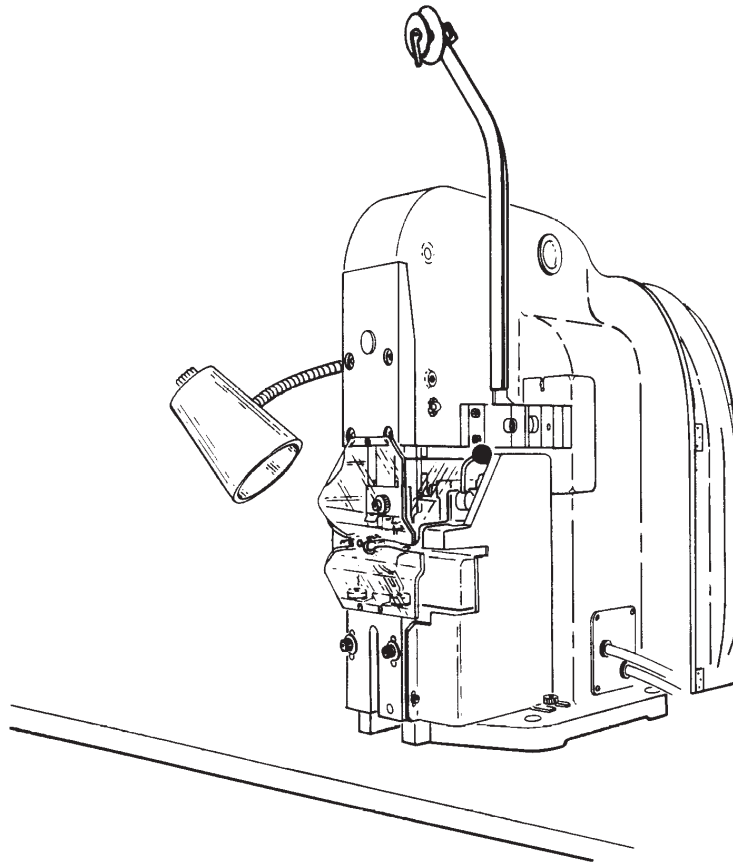


Figure 1

1. INTRODUCTION

AMP-TAPETRONIC Machines No. 69875 and 69875-1 (see Figure 1) were designed to crimp a variety of tape-mounted products onto solid and stranded wires from No. 26 through No. 8 AWG by using replaceable die sets.

The AMP-TAPETRONIC machines consist of a basic AMP-O-LECTRIC* Model "K" Terminating Machine and the application tooling required to crimp PIDG* and PLASTI-GRIP* Terminals and Splices, AMPLI-BOND* Terminals, DIAMOND GRIP* Terminals, STRATO-THERM* Terminals and Closed End Splices. See Figure 2.

This manual pertains to the applicator portion of the AMP-TAPETRONIC machine. For information about the Model "K" AMP-O-LECTRIC machine, refer to Customer Manual 409-5128. For information beyond the scope of these manuals, contact the Tooling Assistance Center at 1-800-722-1111.

Read this manual thoroughly before operating the machine. The performance of this machine will depend largely upon the intelligent use of the information contained in this manual.

When reading this manual, pay particular attention to **DANGER**, **CAUTION**, and **NOTE** statements.

DANGER

Denotes an imminent hazard which may result in moderate or severe injury.



CAUTION

Denotes a condition which may result in product or equipment damage.



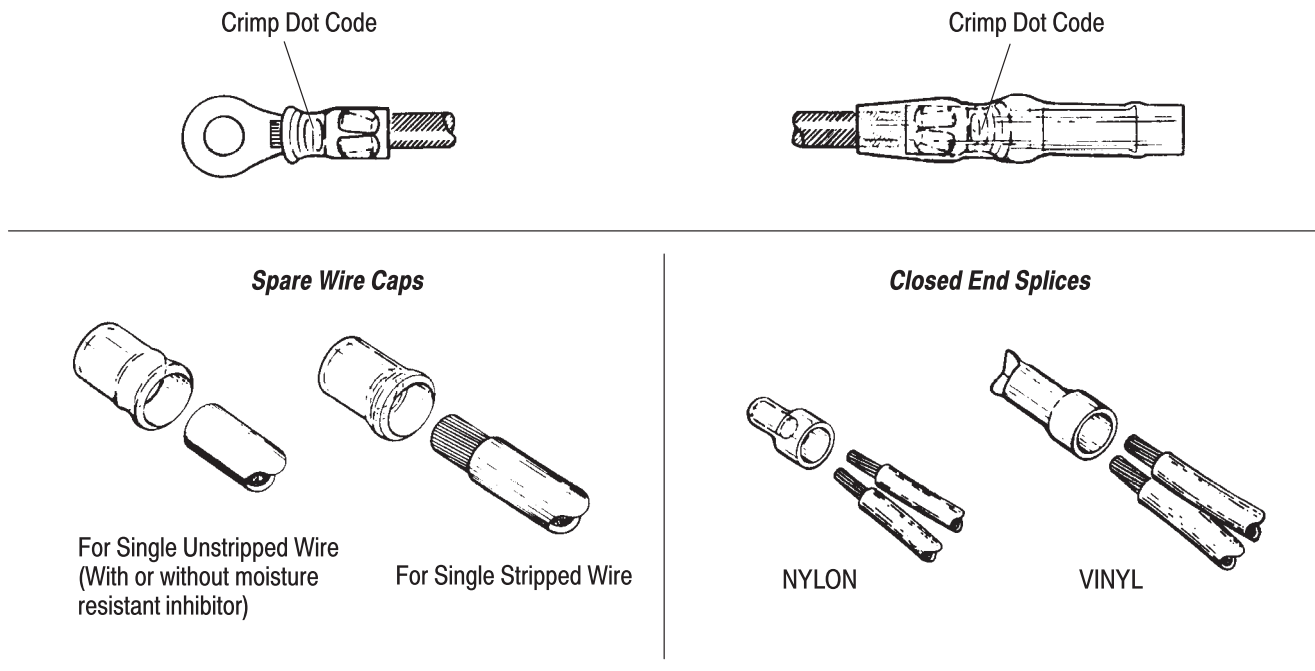
Crimped PIDG Terminal and Splice

Figure 2

NOTE

Highlights special or important information.

**1.1. Dimensions and Specifications**

Dimensions in this manual are in metric units [with U.S. customary equivalents in brackets.] unless otherwise specified. Refer to Figure 3 for dimensions and specifications.

Reasons for revision to this manual are provided in Section 10, REVISION SUMMARY.

1.2. Machine Accessories**A. Crimping Dies**

Interchangeable crimping dies are available for crimping terminals and butt splices on solid and stranded wires ranging from No. 26 through No. 8 AWG. Dies, terminals, and splices are color-coded for a given wire range. Products must be crimped in dies that carry the same color code dot. Refer to the instructions packaged with the dies for terminal and splice crimp inspection procedures, maintenance/inspection procedures, and parts replacement information.

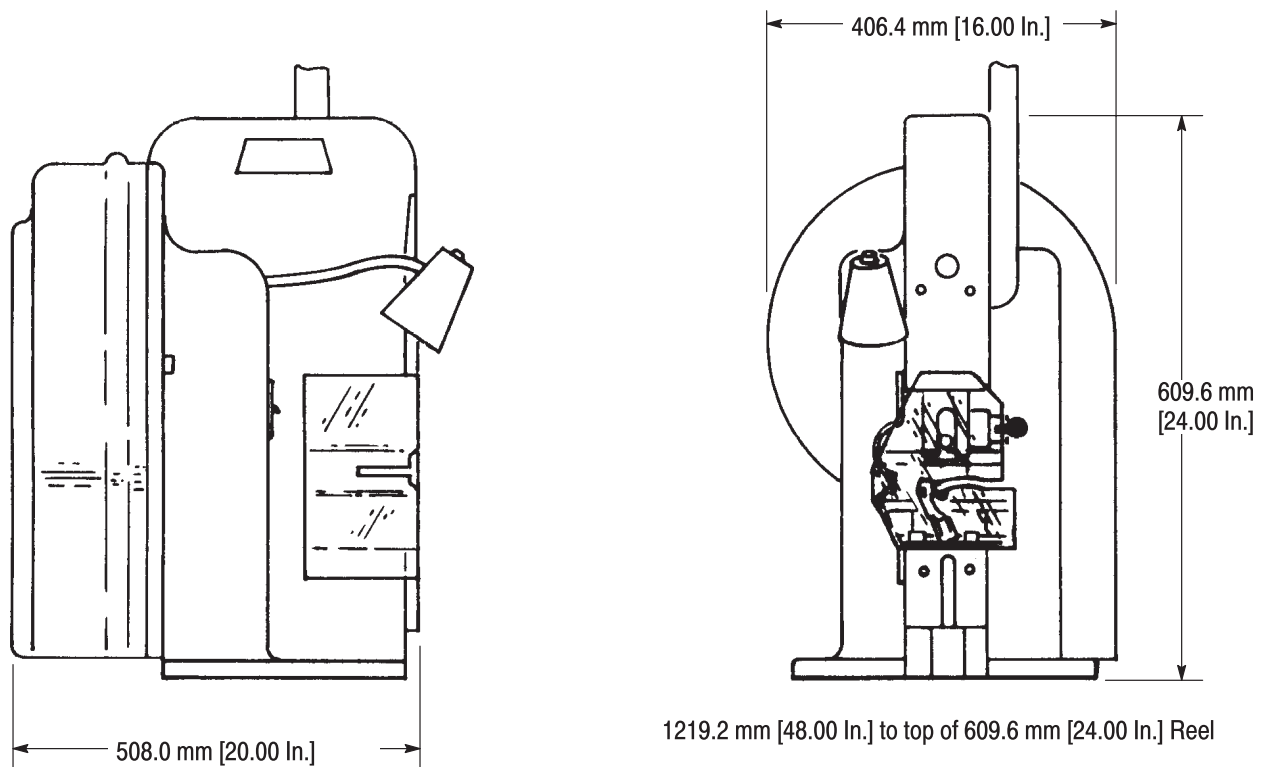
CAUTION

Make sure the **CORRECT** type and size terminals or splices are used in dies, or damage may occur to dies. Contact your service representative to verify die selection.



When crimping Closed-End Splices and Spare Wire Caps, the foot switch must be depressed and released for each cycle of machine operation. Dies for closed end splices are supplied with a lower tool holder, a wire stop, and an extractor to replace the wire funnel. Dies for spare wire caps are supplied with a lower tool holder and stop.

Refer to Section 8 for die replacement procedures for terminal and butt splice dies, and for machine conversion procedure when converting to run closed end splices and spare wire caps. Refer to Section 7 for any adjustments that may be necessary.



Power Requirements:3	Machine No. 69875 — 115 Vac, Single phase with ground, 60 Hz
	Machine No. 69875-1 — 230 Vac, Single phase with ground, 50 Hz
Production Rate:	Up to 2,500 – 3,000 terminations per hour, depending on operator experience and general working conditions.
Wire Range:	No. 26 through No. 8 AWG, solid or stranded.
609.6-mm [24-in.] Dia. Reel Capacity:	1,500 to 5,000 terminals or splices, depending on wire size.
431.8-mm [17-in.] Dia. Reel Capacity:	1,500 to 5,000 terminals or splices, depending on wire size.
Magazine Capacity:	500 to 1,000 terminals or splices, depending on the wire size.
Weight:	Approximately 113.40 kg [250 lb.]

Figure 3

B. Wire Funnels

The wire funnel permits easier and faster wire entry into product wire barrels prior to the crimping operation, and it acts as an extractor by sweeping the crimped product out of the die closure after crimping. Wire Funnel No. 68299-1, for wire range 22 through 14 AWG, is installed on the machine at the factory. Wire Funnel No. 68306-1, for wire range 12 and 10 AWG, must be ordered separately. Refer to Section 8 for replacement procedure.

C. Electric Counter

An electric counter may be connected to the machine electrical system as shown in the wiring diagram in Section 2. The counter must be supplied by the customer. The customer must ensure that the counter voltage is of the correct rating.

2. DESCRIPTION

NOTE



Machines 69875 and 69875-1 are identical except for the electrical systems required to power the machines. Machine 69875 operates on 115 Vac, 60 Hz; Machine 69875-1 operates on 230 Vac, 50 Hz power.

2.1. Physical Description (Figure 4)

Added to a basic AMP-O-ELECTRIC Model "K" Terminating Machine is a linkage which actuates the indexing mechanism from front to back during each cycle of operation. This action pulls the tape from the product and raises the wire stop assembly to allow for removal of the crimped product by the wire funnel (or extractor).

Linkage attached to the mechanical feed on the machine operates a ratchet which advances the tape feed belt one increment during each cycle of operation. This positions the product in the crimping dies. In the standby condition, the machine ram is lowered to the holding position to retain the product during wire insertion and crimping.

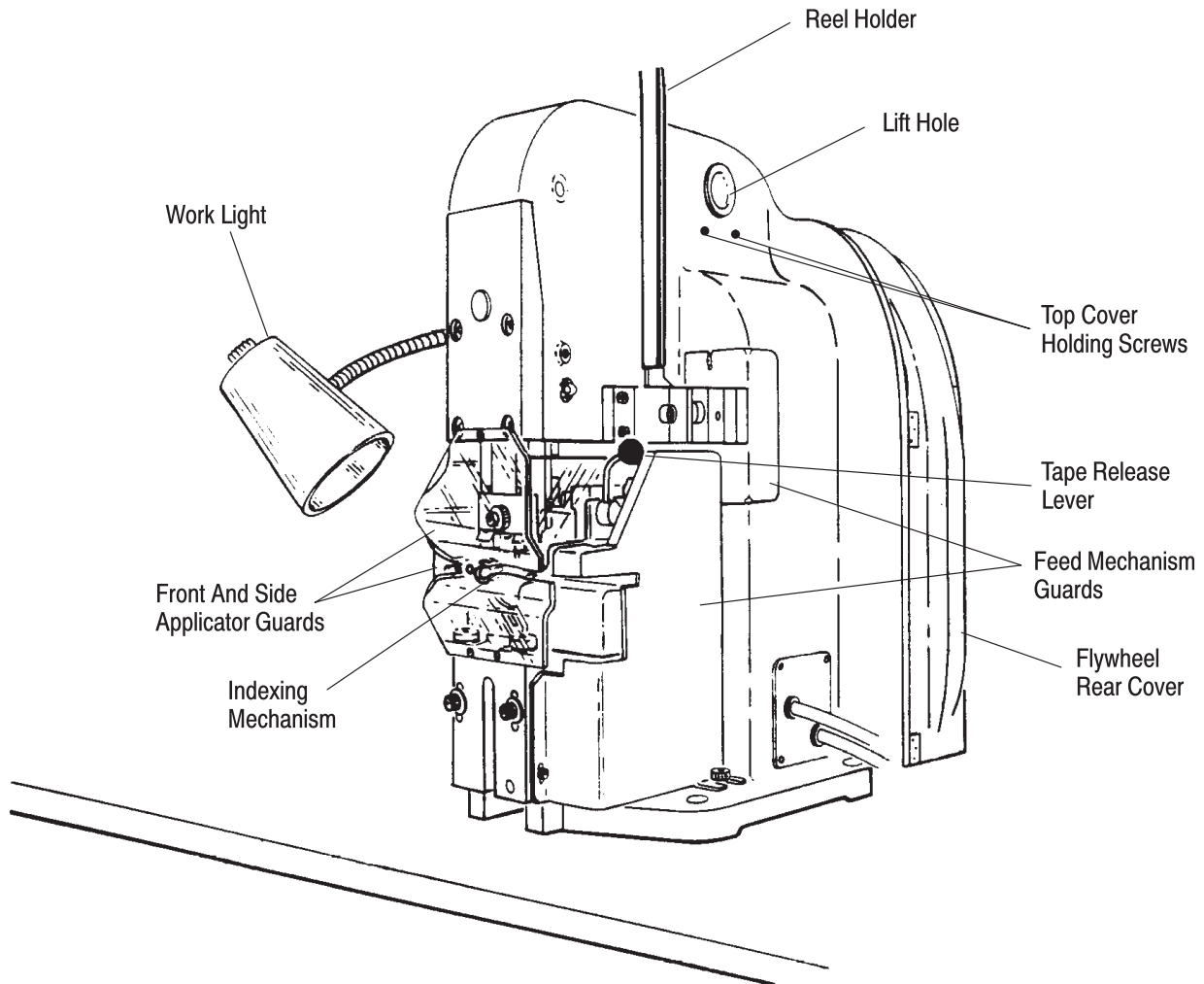


Figure 4

The applicator is enclosed in guards for personnel protection.

2.2. Functional Description

A. Basic Machine

Refer to Customer Manual 409-5128 for the functional description of the basic AMP-O-ELECTRIC machine.

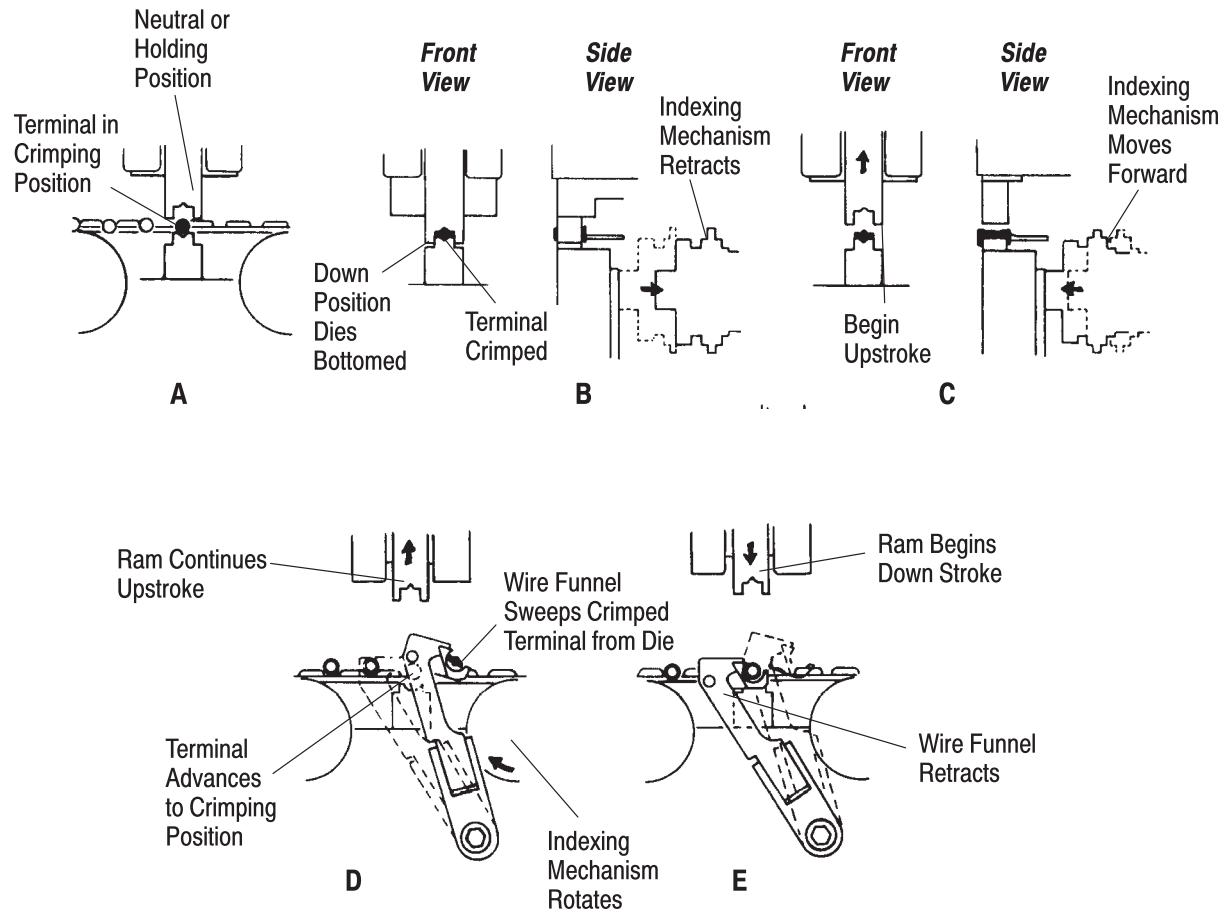
B. Applicator (Figure 5)

At the beginning of a machine cycle, the flywheel is rotating, the ram is in the neutral or holding position, and a product is in the crimping position. When the foot switch is depressed, the machine solenoid is

energized, cycling the machine one revolution. The upper die will bottom to crimp the product. At the same time, the indexing mechanism is retracted and the wire stop assembly is raised by the mechanical linkage to the machine transmission.

After the product is crimped, the machine ram begins to raise the upper tooling and the indexing mechanism moves forward. As the ram continues the upward stroke, linkage to the machine mechanical feed is actuated to ratchet the tape feed belt forward one increment to position the next product in the crimping area. In addition, the wire funnel is actuated to eject the crimped product from the lower die.

As the machine ram reaches the end of the upward stroke and begins the downward stroke to return to the neutral or holding position, the wire funnel retracts to align with the product wire barrel for the next cycle of operation.



Applicator Crimping Cycle

Figure 5

C. Electrical System

The machine is operated by a foot switch. The foot switch must be depressed and released to perform each cycle of operation. For further information, refer to the wiring diagram in Figure 6 and the electrical schematic in Figure 7.

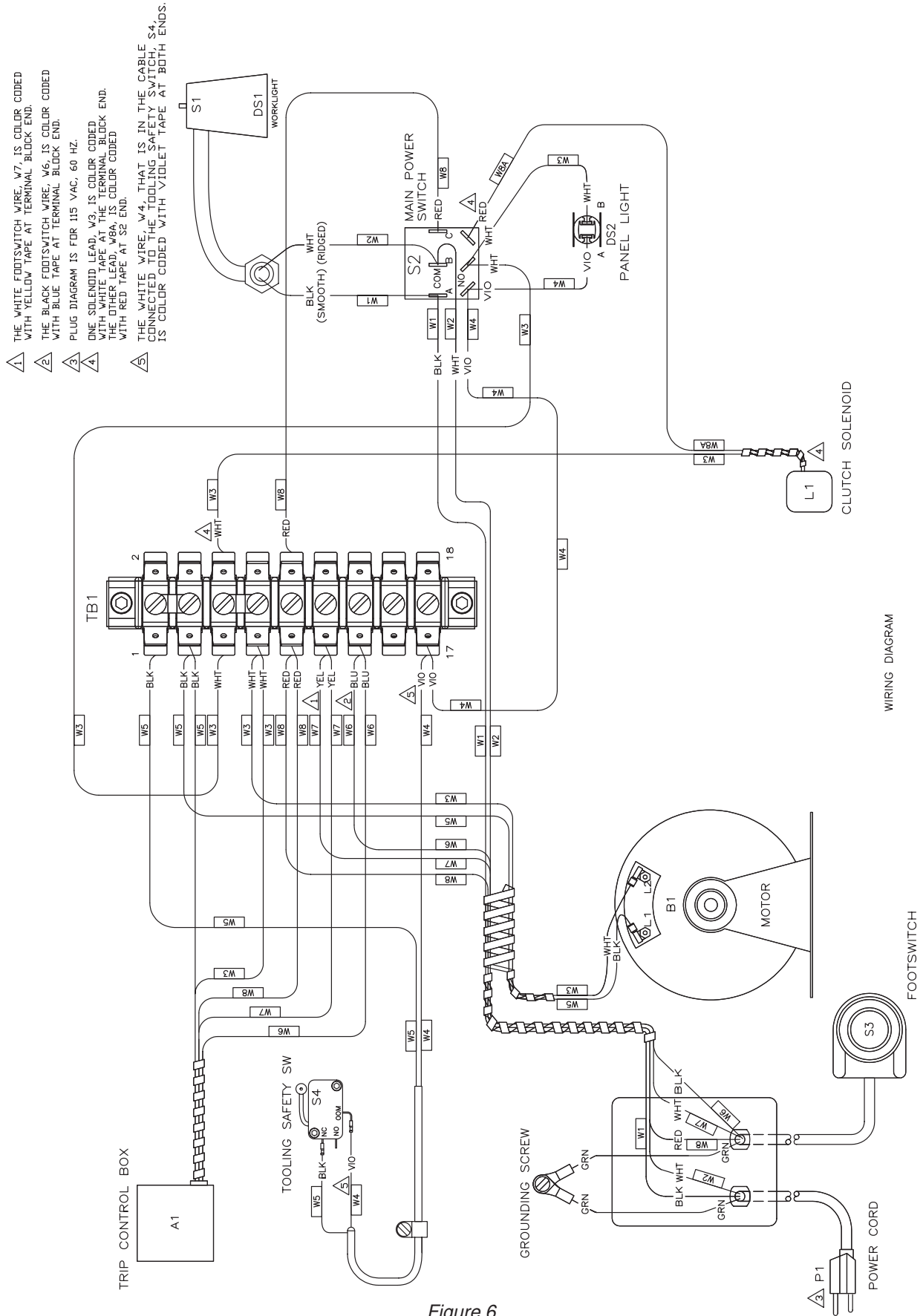


Figure 6

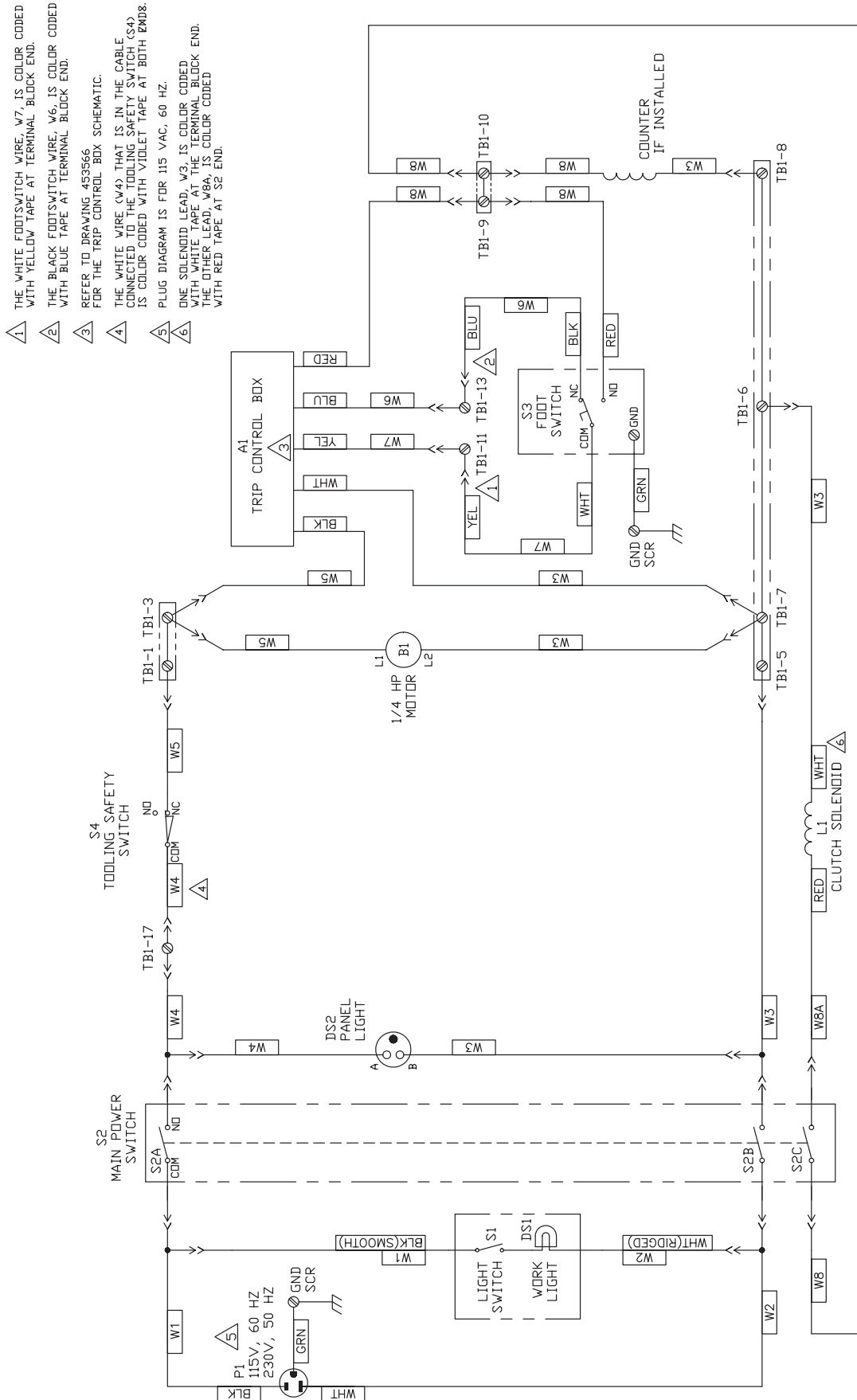


Figure 7

3. RECEIVING INSPECTION AND INSTALLATION

3.1. Receiving Inspection

The machine is thoroughly inspected during and after assembly. Before it is shipped, final tests and inspections are made to ensure proper functioning. Still, the following inspection should be performed as a safeguard against problems generated during shipment.

1. Carefully uncrate the machine and place it on a sturdy bench where there is enough light to permit a careful examination.
2. Thoroughly inspect the entire machine for evidence of damage that may have occurred during transit. If the machine is damaged, file a claim against the carrier and notify Tyco Electronics immediately.
3. Check all components and parts to be certain they are secure.
4. Check all wiring for loose connections and for frayed or broken wire and insulation.
5. If applicable, check all air lines for evidence of loose connections or leaks.

NOTE

It is IMPORTANT that this manual, other documents shipped with the machine (e.g., drawings, parts lists, etc.), and any enclosed product samples remain with the machine for the benefit of personnel responsible for installation, operation, and maintenance.

3.2. Considerations Affecting Machine Placement

The location of the machine in relation to the operator is essential to both safety and efficiency. Studies have repeatedly shown that fatigue will be reduced and efficiency increased if particular attention is paid to the bench, the operator's chair, and the placement of the foot switch if one is used.

A. Bench

A sturdy bench, 711 to 762 mm [28 to 30 in.] high, aids comfort by allowing the operator's feet to rest on the floor. The operator's weight and leg position can be easily shifted. The bench should have rubber mounts to reduce noise. The open area under the bench should allow the chair to slide far enough in for the operator's back to be straight and supported by the back rest.

B. Machine Location on Bench

The machine should be located near the front of the bench and the tooling area (the area where product is applied) should be 152 to 203 mm [6 to 8 in.] from the front edge. Access to the back of the machine must be provided.

C. Operator's Chair

The operator's chair should swivel, and the seat and back rest should be padded and independently adjustable. The back rest should be large enough to support the back both above and below the waist.

In use, the chair should be far enough under the bench so that the operator's back is straight and supported by the back rest.

D. Foot Switch

When the operator is correctly positioned in front of the machine, the foot should rest on the switch comfortably and easily. The switch should be placed on a rubber mat. This allows the switch to be movable and permits the operator to shift positions to minimize fatigue. At the same time the mat prevents the switch from sliding unintentionally.

The preference for locating the switch varies among operators. Some like the switch located so that their foot rests on the switch when their legs are in the natural sitting position (calf perpendicular to the floor). Others prefer it slightly in front of the natural position. The important thing is that the foot be about 90° to the calf when resting on the switch. Those who prefer the switch slightly forward may require a wedge-shaped block placed under it.



Figure 8

Materials Locations — Plan View

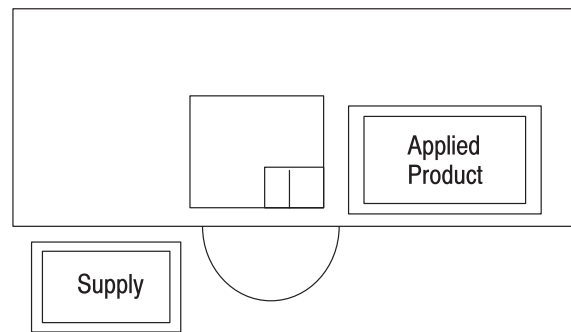


Figure 9

Figure 8 shows proper location and position for foot and switch.

Figure 9 shows a typical layout for the efficient handling of materials.

3.3. Machine Installation

This machine is installed in the same manner as described in Customer Manual 409-5128. If the reel holder is to be used, attach it with the same two screws that secure the guard to the right side of the machine frame as shown in Figure 10,A. If a magazine holder is required, it must be ordered separately, then installed on the bench with bolts or screws approximately 101 mm [4 in.] from the left side of the machine as shown in Figure 10,B.

4. OPERATION

4.1. Hand-Cycling Machine (Figure 11)

During normal operation, the machine stops with the ram down (in “holding” position). The machine must be hand-cycled on occasion for various adjustments. Hand-cycle the machine as follows:



The upper and lower tooling of the machine is aligned at the factory and will not normally require further adjustment. If, however, the lower tooling holding screws or base-mount adjustment screws are disturbed, the dies will not align or bottom properly, causing damage to the dies. Tooling alignment should be checked and adjusted by your local field service engineer.

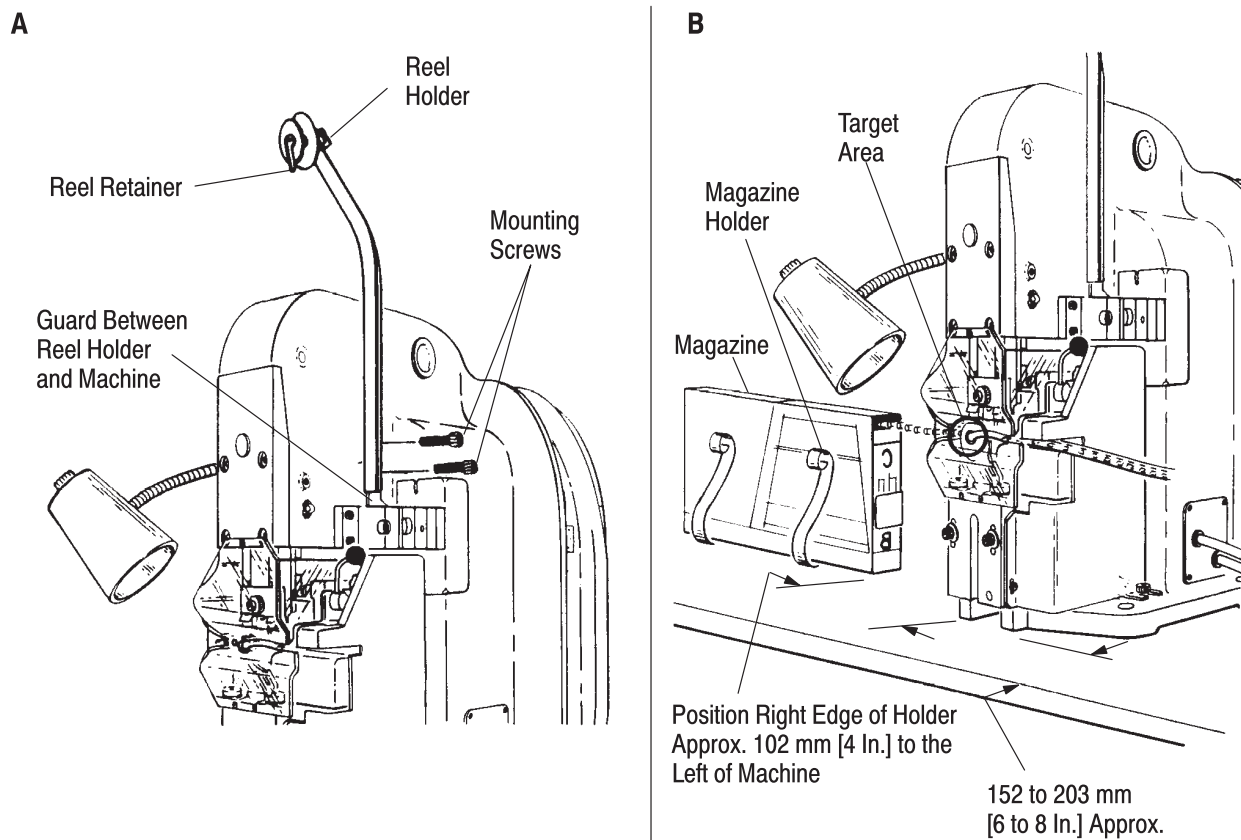


Figure 10

DANGER

To avoid personal injury, be sure to turn off the machine and disconnect the machine from the power supplies.



1. Unlatch and open flywheel cover on rear of machine.
2. Make sure the tape release lever is in the "down" position. See Figure 11.

CAUTION

If machine is hand-cycled with the tape release lever in the "up" position, the shear pin on the ram will be broken, preventing further damage to the machine. Refer to Section 8 for shear pin replacement.



3. Raise the stop bar, located below the solenoid, and turn the flywheel in the direction of arrow to cycle the machine. The clutch will release at the end of the cycle.

CAUTION

Turning the flywheel in the direction opposite of the arrow may cause damage to the machine.



4. Repeat Step 3 as necessary to complete the operation being performed.

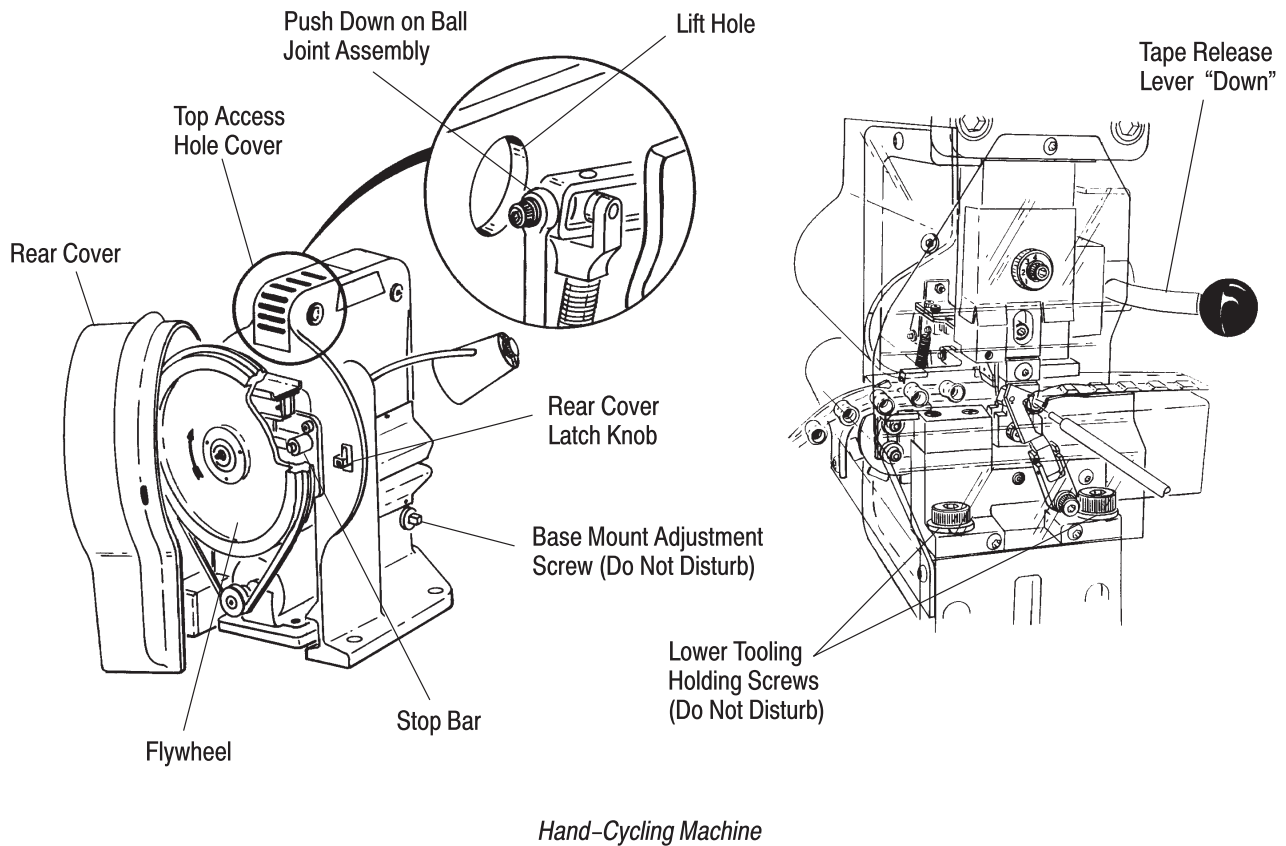


Figure 11

4.2. Product Loading and Unloading

A. Loading

DANGER

To avoid personal injury, be sure the machine is turned off and disconnected from the power supplies.



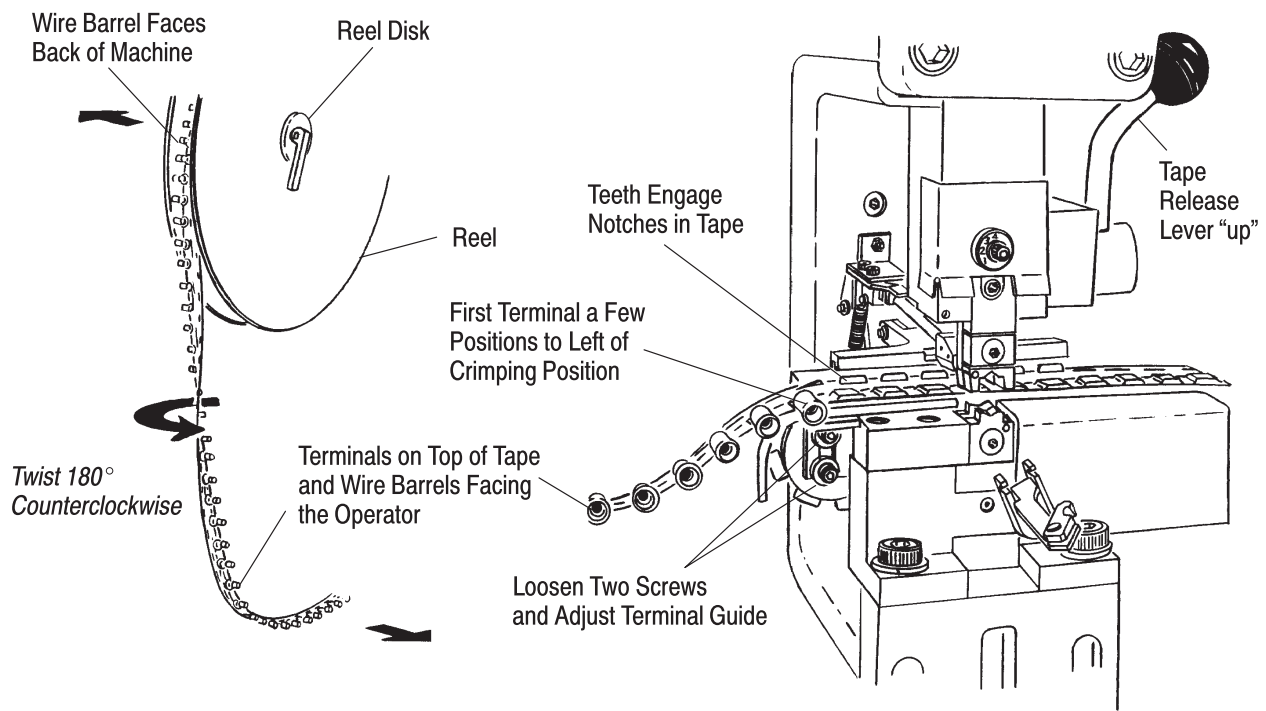
1. Loosen the reel disk thumbscrew and remove the disk. See Figure 12.
2. Position reel so that terminal wire barrels face the rear of machine, then slide reel onto reel support pin.
3. Replace reel disk and lock by tightening the thumbscrew.
4. Facing the front of the machine, twist the tape counterclockwise 180° so terminals are on top of tape and wire barrels face the operator's position. Feed tape through side guard and into indexing mechanism.

NOTE

No. 8 PLASTI-GRIP terminals will be upside down on tape and must be crimped using the foot switch.



5. Position first product in tape a few positions to the left of the crimping area. **MAKE SURE** feed notches in tape engage with teeth on feed belt.
6. Adjust terminal guide to feed product straight into the crimping dies as shown in Figure 12.



Applicator Guard Removed for Clarity. Always Keep Guards in Place When Operating Machine.

Figure 12

7. Lower tape release lever to secure tape in position.
8. Connect the machine power supply and place the main power switch in the "ON" position.
9. Depress and release the foot switch as many times as necessary to index the first product into the crimping area.
10. **Replace the front guard** before beginning production operation of the machine.

B. Unloading

DANGER



To avoid personal injury, be sure to turn off the machine and disconnect the machine from the power supplies.

1. Remove front guard and raise tape release lever.
2. Remove tape from indexing mechanism.
3. Cut excess lead from tape and discard.
4. Secure end of tape to reel with masking tape.
5. Remove reel from reel support.

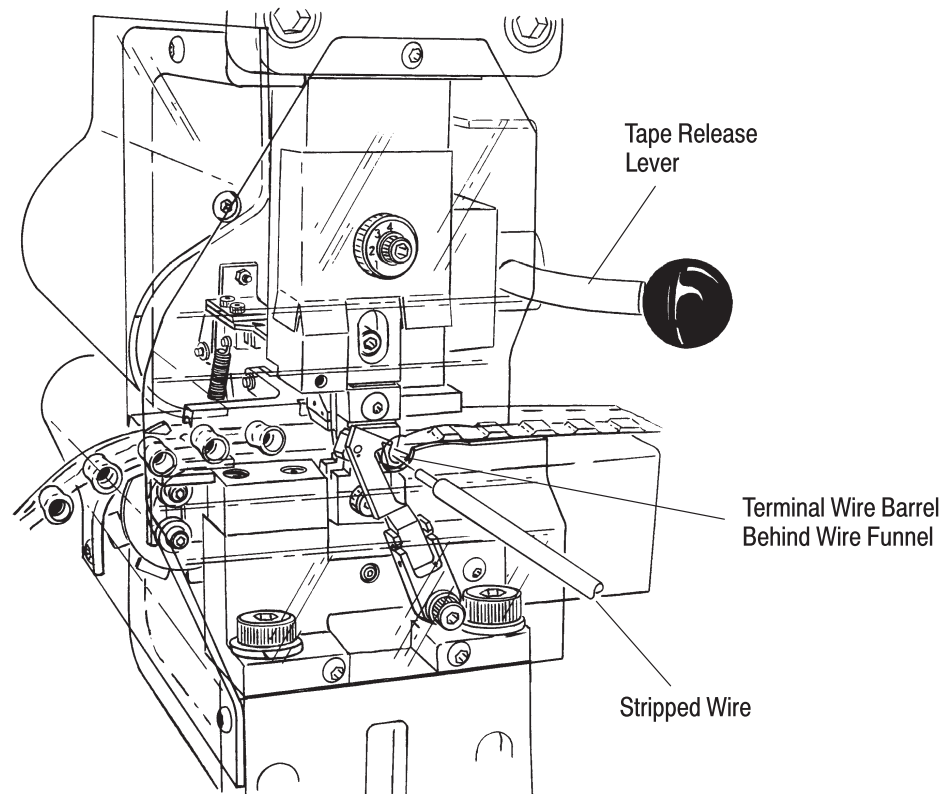


Figure 13

4.3. Production Operation



To avoid personal injury, **always** keep guards in place while operating the machine under power. The guards cover moving parts that could cause personal injury.

1. Check the machine to ensure that correct dies are installed. If necessary, refer to Section 8 for die replacement procedure. To convert the machine to run closed-end splices or spare wire caps, refer to the conversion procedure in Section 8.
2. Strip wire ends to length specified in the instruction material packaged with the dies.
3. With the machine connected to the power supply, place the main power switch in the ON position.
4. Insert the pre-stripped wire into the product wire barrel until the wire end contacts the internal wire stop. See Figure 13. Depress and release the foot switch to cycle the machine.
5. Remove the crimped product and inspect for proper crimping. Refer to the crimp inspection procedure packaged with the dies.
6. Repeat Steps 4 and 5 until the desired number of terminations has been made.
7. Upon completion, place the main power switch in the OFF position. If it is not to be used in the near future, DISCONNECT MACHINE FROM THE POWER SUPPLY.

4.4. Clearing Jammed Product

Products not crimped onto wire are difficult to remove from crimping dies. To prevent terminal jams during setup and maintenance procedures, **always** insert a wire into the product wire barrel when crimping.

Product may also jam or pile up in the moving die if vertical movement of the wire stop is out of adjustment. Refer to Section 7 for any adjustments that may be necessary.

Remove a jammed product as follows:

DANGER

DO NOT cycle the machine with product jammed in dies, or personal injury, as well as damage to the dies, may occur.



DANGER

To avoid personal injury, be sure to turn off the machine and disconnect the machine from the power supplies.



1. Remove front guard and raise the tape release lever.
2. Remove jammed product from crimping dies.
3. Visually inspect the die crimping surfaces for flattened, broken, or chipped conditions. Worn or damaged crimping surfaces are objectionable and can affect the quality of the crimp. Refer to Figure 14 for examples of possible damage.

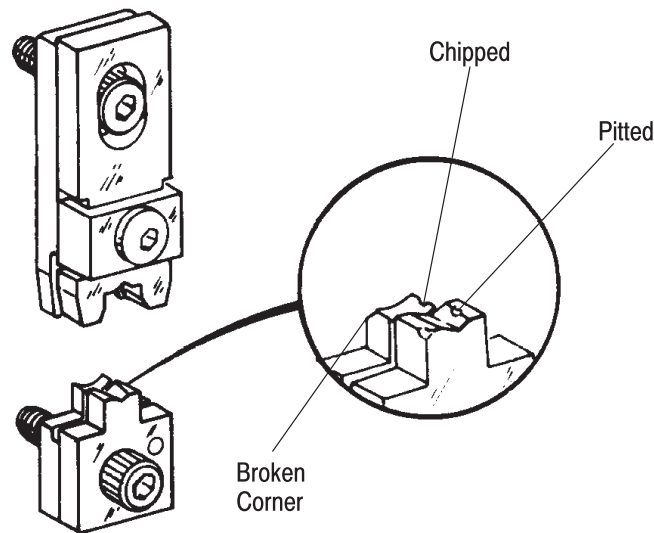


Figure 14

4. If necessary, replace dies as described in Paragraph 8.1.
5. After problem is corrected, replace the front guard and lower the tape release lever before continuing operation.

5. PREVENTIVE MAINTENANCE

It is important that a preventive maintenance program be performed at regular intervals to ensure efficient, dependable performance of the machine. The preventive maintenance program consists of cleaning, visual inspection, and lubrication.

DANGER

To avoid personal injury, always turn off main power switch and disconnect machine from power source when performing lubrication, cleaning, or parts replacement.



5.1. Cleaning

Clean the dies daily. Do not allow deposits of dirt to build up on bottoming surfaces and die closure surfaces.

Except in abnormally dusty and dirty conditions, it will be necessary to clean the machine only when it is disassembled for repairs. Wash the parts in solvent and dry thoroughly. Lubricate machine as instructed in Paragraph 5.3 before placing it back in service.

5.2. Visual Inspection (Monthly)

Perform an *overall* visual inspection of the machine at least once a month, prior to performing the monthly lubrication program (Paragraph 5.3).

1. Starting at the front and moving clockwise around the machine, check tightness of all mounting screws and electrical connections. Check tightness of crimping die mounting screws at least twice daily.
2. Inspect all moving parts for excessive wear. The presence of metal particles indicates a need for lubrication or a need to align parts.
3. Inspect the motor mounting screws, the connecting rod retainer nuts, and the flywheel and main-shaft retaining ring.
4. Check for loose or missing cowling pins and retaining rings on transmission.

5.3. Lubrication

NOTE

Apply all lubricants sparingly, avoiding a "build-up" of lubricants and dirt. Be sure to wipe off excess lubricant.



The moving components in the machine require regular lubrication to ensure reliable service. Use the lubrication chart in Figure 16 as a guide to establish a lubrication schedule suited to your operating conditions and for identification of lubrication points.

Refer to the lubricant specification chart, in Figure 15, for specific lubricant requirements.

If the machine has not been used for several days, it is a good policy to lubricate it before starting operation.

IDENTIFYING LETTER	LUBRICANT
A	TEXACO (Texas Company) MARFAX Multipurpose No. 2 Grease, NLGI● No. 2 Base Lithium Soap, 5.2% average Oil Viscosity 80 Sec at 99°C [210°F] Additive Oxidation Inhibitor Consistency No. 2. NLGI Dropping Point Over 185°C [365°F] Steady Usable Temperature 121°C [250°F]
B	1 Part SAE 20 Motor Oil and 1 Part STP■
C	VALVOLINE◆ X-5 Light

- National Lubrication Grease Institute
- STP Lubricant, STP Corporation
- ◆ VALVOLINE Oil Company, Division of Ashland Oil and Refining Company

Figure 15




LUBRICATION POINT	LOCATION	ACCESS	INTERVAL	RECOMMENDED LUBRICANT	
1. Grease Fittings (a) Ram 	Right side of machine in front of feed mounting bracket (Figure 16,B).	—	Daily	A	
	(b) Toggle lever pin	Left side of machine (Figure 16,B).	—	Daily	A
	(c) Upper end of ball joint assembly	Inside machine (Figure 16,B).	Cycle machine by hand to raise ram. Gain access through lift hole.	Daily	A
	(d) Drive shaft mounting plate	Fitting on plate beside eccentric (Figure 16,B).	Remove top access cover.	Daily	A
	(e) Lower end of ball joint assembly	Inside machine (Figure 16,B).	Cycle machine by hand to lower ram. Then remove side access cover.	Daily	A
	(f) Toggle link	Front of machine (Figure 16,B).	Cycle machine by hand to lower ram. Then remove dust cap.	Daily	A
	(g) Transmission	Inside machine (Figure 16,B).	Through hole in flywheel guard.	Daily	A
2. Grease (Applied by hand) Ram Guide	Side of machine (Figure 16,A).	—	Monthly	A	
3. Oil Points (Machine) (a) Toggle lever clevis pin 	Inside machine at top of connecting rod (Figure 16,B).	Remove top access cover.	Monthly	B	
	(b) Connecting rod	Inside machine (Figure 16,B) behind flywheel.	Open flywheel guard.	Monthly	B
	(c) Stud	On feed actuating block (Figure 16,B).	Open flywheel guard.	Monthly	B
	(d) Feed mounting block	Right side of machine (Figure 16,B).	—	Monthly	B
	(e) Back-up latch pivot pin	Inside machine behind flywheel (Figure 16,B).	Open flywheel guard.	Monthly	B
	(f) "O" rings	In stop bar (Figure 16,B).	Open flywheel guard and remove flywheel.	Monthly	C
4. Oil Points (Indexing Mechanism) (a) Ball joint assembly fittings and pivot points 	Feed linkage on right side of machine (Figure 16,A).	—	Monthly	B	
	(b) Slide bar●	Indexing mechanism	—	Monthly	B

Figure 16 (cont'd)

NOTE: Be sure to replace all guards after lubricating machine.

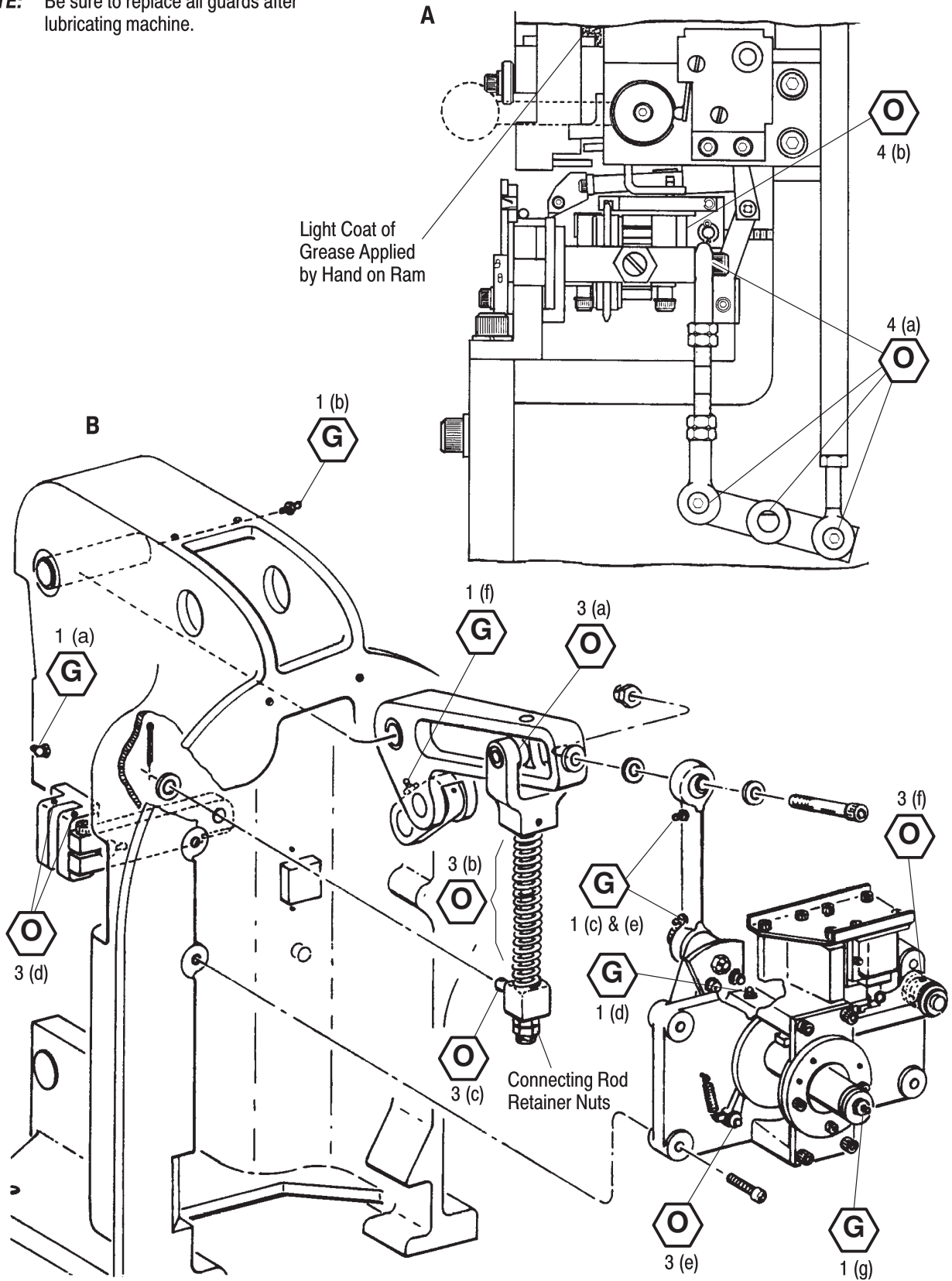


Figure 16 (end)

6. TROUBLESHOOTING

Careful observance of the preventive maintenance program will reduce the possibility of machine malfunctions. Refer to the electrical schematic, wiring diagram, and exploded views and parts lists for parts identification.



When guards are opened or covers removed for troubleshooting, avoid contact with moving parts and exposed electrical terminals. When making repairs or replacing a part, MAKE SURE THE MAIN POWER SWITCH IS "OFF" AND THE MACHINE IS DISCONNECTED FROM THE POWER SUPPLY.

6.1. Visual Inspection

In the event of a machine malfunction, perform the following six-point visual inspection before attempting a detailed troubleshooting procedure. If the visual inspection does not reveal the cause of the malfunction, then refer to the troubleshooting chart.

1. Make sure the tape release lever is all the way down.
2. Be sure that the machine is connected to a properly grounded power supply (appropriate to the machine, 115 Vac for 69875; and 230 Vac for 69875-1).
3. Inspect for burnt or loose electrical connections.
4. Inspect the machine for worn or damaged mechanical components.
5. Inspect all lubrication points for excessive build-up of lubricants or dirt.
6. Inspect for insufficient lubrication.

6.2. Troubleshooting Table

A troubleshooting table can be found in Figure 17.

MALFUNCTION AND/OR SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Drive motor does not operate when power switch is set to the "ON" position.	<ol style="list-style-type: none"> 1. If power indicator is lit: <ol style="list-style-type: none"> (a) tape release lever is raised. (b) drive motor is defective 2. If power indicator is not lit and the work light lights when the work light switch is set to the "ON" position, the power switch is defective. 3. If power indicator is not lit and work light does not light when work light switch is set to the "ON" position, the line cord is defective. 	<p>Lower tape release lever. Replace drive motor.</p> <p>Replace power switch.</p> <p>Replace line cord.</p>
Machine does not cycle with main power switch in "ON" position — (drive motor not operating).	<p>One of the following components is defective:</p> <ol style="list-style-type: none"> (a) drive motor. (b) power switch. (c) line cord. 	Repair or replace as necessary.
Machine does not cycle (drive motor operating and flywheel not rotating).	<ol style="list-style-type: none"> 1. Broken belt 2. Loose motor pulley 	<p>Replace belt as described in 409-5128. Tighten setscrew.</p>
Machine does not cycle (drive motor operating and flywheel is rotating).	<ol style="list-style-type: none"> 1. One of the following conditions exists in the transmission: <ol style="list-style-type: none"> (a) broken or missing solenoid link pins. (b) broken, missing, or weak back-up latch return spring. (c) broken, missing or weak clutch dog spring. (d) worn or broken clutch dog. (e) worn or broken stop bar. (f) excessive accumulation of lubricant. (g) excessive accumulation of dirt or other foreign residue. 	<p>Refer to 409-5128 and perform the following corrective action.</p> <p>Check for broken or missing solenoid link pins. Replace pins, as required.</p> <p>Check for broken, missing, or weak back-up latch return spring, causing back-up latch not to engage stop collar. Replace spring if required.</p> <p>Check for broken, missing, or weak clutch dog spring, causing clutch dog not to engage drive plate. Replace spring, if required.</p> <p>Check for worn clutch dog and/or stop bar by raising stop bar and observing clutch dog for motion. Replace clutch dog and/or stop bar as required.</p> <p>Hand cycle the machine (Section 4) and observe whether or not excessive accumulation of lubricant, dirt or other foreign matter prevents clutch dog from moving when released by stop bar. Clean transmission, if required.</p>
	<ol style="list-style-type: none"> 2. One of the following electrical components may be defective: <ol style="list-style-type: none"> (a) solenoid. (b) foot switch. (c) trip control box. 	Refer to Figure 6 and Figure 7 (the wiring diagram and schematic, respectively) for troubleshooting electrical components.
	<ol style="list-style-type: none"> 3. Machine may have been hand-cycled, resulting in the stop collar not contacting the stop bar. This will produce a "clicking" noise. 	<p>Turn "OFF" main power switch and disconnect machine from power supply. Gain access through either of the lift holes of machine and push down on top of ball joint assembly until assembly bottoms. Connect power cord, place power switch in the "ON" position and operate machine.</p>

Figure 17 (cont'd)

MALFUNCTION AND/OR SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Machine does not complete a cycle or cycles too slowly.	<ol style="list-style-type: none"> Loose motor pulley. Machine and/or drive motor needs to be cleaned or lubricated. 	<p>Tighten setscrew.</p> <p>Clean and lubricate machine and/or drive motor, as required. Refer to Section 5.</p>
Machine cycles more than once when foot switch is depressed only one time.	<p>One of the following conditions exists in the transmission:</p> <ol style="list-style-type: none"> worn or broken clutch dog worn or broken stop bar and/or stop collar. 	<p>Refer to 409-5128 and perform the following corrective action.</p> <p>Cycle machine by hand to observe transmission operation.</p> <p>Replace defective components as required.</p>
Transmission chatters.	<p>One of the following conditions exists in the transmission:</p> <ol style="list-style-type: none"> worn or broken back-up latch. loose, missing or weak back-up latch return spring. 	<p>Refer to 409-5128 and perform the following corrective action.</p> <p>Cycle machine by hand, and observe operation of back-up latch at the completion of the operating cycle. Back-up latch must snap into position behind curved boss on stop collar. Replace defective spring or latch, as required.</p>
Machine cycles but indexing unit does not move terminal into crimping position.	Feed yoke (ratchet) adjustment screw needs adjusting.	Refer to Section 7.
Terminals are positioned too far to the left or right of center of dies.	Indexing mechanism is not properly adjusted.	Adjust indexing mechanism. Refer to Section 7.
Terminals are positioned too far front or back of dies.	Varying positions of terminals on tape from one reel to another.	Perform Crimp Location Adjustment. Refer to Section 7.
Terminals jam (pile up) in moving die. (See Section 4 for clearing jammed terminals or splices from dies.)	<ol style="list-style-type: none"> Pin (No. 16, Figure 32) is broken. Wire stop assembly needs vertical travel adjustment. Stripped wire conductor was not inserted in terminal or splice wire barrel before crimping. 	<p>Replace pin. (Before starting machine, check probe vertical travel adjustment, Section 7.)</p> <p>Refer to Section 7 for vertical travel adjustment.</p> <p>Always insert stripped wire conductor in wire barrel of terminal or splice before crimping.</p>

Figure 17 (end)

7. ADJUSTMENTS

The adjustment procedures contained in this section may be required to maintain continuous operation, when performing troubleshooting, and/or following the replacement of parts.



To avoid personal injury, **MAKE SURE** the machine is turned "off" and disconnected from the power supply **BEFORE** attempting to make any adjustment, unless otherwise specified.

7.1. Basic Machine Adjustments to the Model "K" AMP-O-LECTRIC Machine

For adjustments to the basic machine, refer to Customer Manual 409-5128.

7.2. Insulation Crimp Adjustment (Figure 18)

The machine contains a four-position insulation crimp adjustment, located on the front of the ram, that ranges from No. 1 (tight) to No. 4 (loose).

- Remove the front guard to gain access to the tooling.

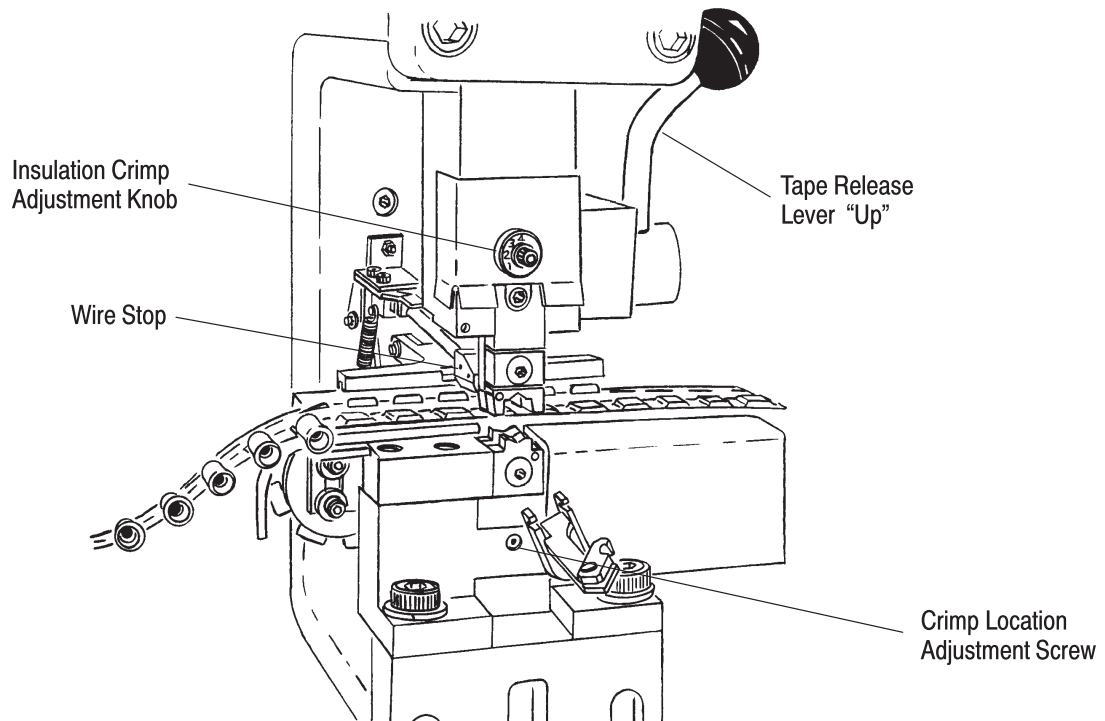


Figure 18

2. Raise the tape release lever to prevent machine operation.
3. Turn the insulation crimp adjustment knob to No. 4 (loose) position.
4. Lower the tape release lever.
5. For PIDG terminals and splices, insert an unstripped wire into only the insulation “grip” portion of the product.

NOTE

PIDG terminals and splices provide a “grip” on the wire insulation. PLASTI-GRIP terminals and splices provide a support for the wire.

6. For PLASTI-GRIP terminals and splices, insert a *stripped* wire into the product.
7. Hand-cycle the machine to crimp the wire into the product.
8. For PIDG products, bend the wire back and forth once. The product sleeve should retain grip on wire insulation. If not, raise the tape release lever and turn the insulation crimp adjustment knob to the next lower number; then repeat Steps 4 through 8.
9. For PLASTI-GRIP products, visually inspect the crimped product. The insulation crimp should support (be in contact with) wire insulation. If not, raise release lever and turn the insulation adjustment knob to the next lower number; then repeat Steps 4 through 7 and Step 9.
10. After obtaining the proper crimp, **replace the front guard.**

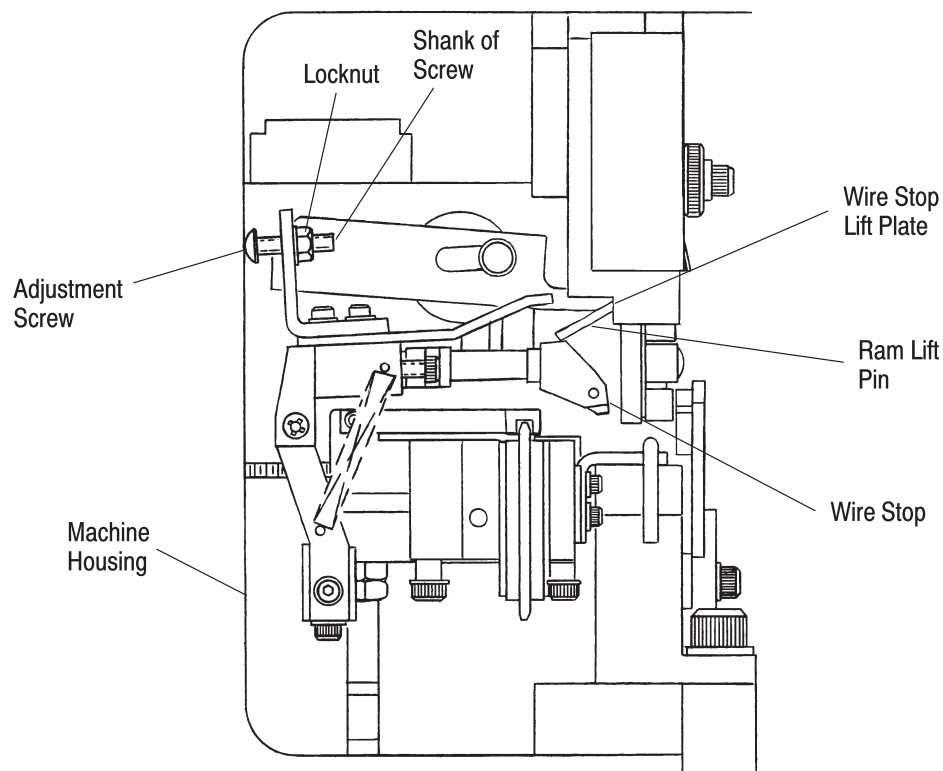


Figure 19

7.3. Wire Stop Vertical Lift Adjustment (Figure 19)

As the ram rises after crimping the product, the wire stop clears the crimped product from the moving (upper) die before the next product is advanced into the crimping position. If the wire stop does not clear the product from the upper die, products will jam in the die and may cause damage to the dies.



Should a jam occur, IMMEDIATELY shut down the machine until the jam has been cleared. Remove the dies, as described in Section 8, and inspect them for possible damage after a jam has occurred.



To avoid personal injury, be sure to turn off the machine and disconnect the machine from the power supplies.

1. Remove guards from front and left side of the machine.



The ram lift pin will bend after the first cycle of operation. Replace the pin only if it is broken.

2. Lower the tape release lever, then hand-cycle machine as described in Section 4 until ram is fully raised.

3. Loosen the locknut on the adjustment screw, then turn adjustment screw until the screw head touches the machine frame and wire stop lift plate touches the ram lift pin. Tighten the locknut to secure the adjustment screw.

4. **Replace the guards** removed in Step 1 and connect machine to power supply.
5. Crimp a few products, being sure to insert a stripped wire into the wire barrel of each. If wire stop does not clear product from upper die, additional adjustment may be made as described in Steps 5 through 7.
6. Disconnect power and repeat Step 1.
7. With the ram down, loosen the locknut on the adjustment screw, then turn the screw clockwise (toward frame) approximately one full turn. Tighten locknut to secure screw.
8. Repeat Steps 4 and 5.



The ram lift pin may bend slightly when the adjusting screw is moved closer to the machine frame.

9. If necessary, repeat Steps 6 through 8 until the wire stop clears product from upper die.

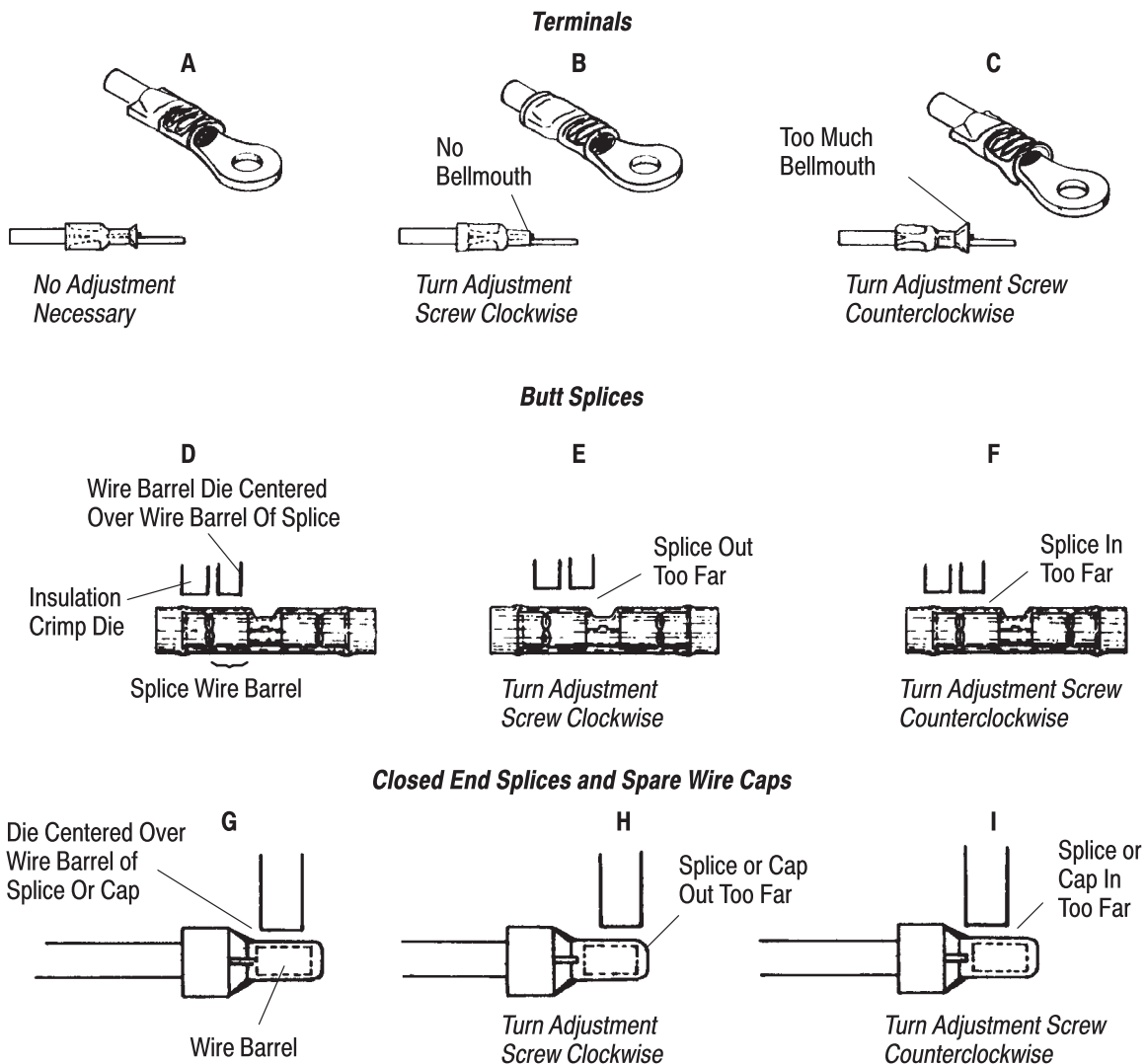


Figure 20