

AMP

***customer
manual***

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DANGER**SAFETY PRECAUTIONS PREVENT INJURY**

Safeguards are designed into AMP* machines to protect operating personnel from most hazards during normal machine operation. However, as with most machinery, certain precautions must be taken by the operator and repairman.

Never insert hands into an installed machine/applicator, or any part of a machine that is operated by electricity or compressed air, without first pulling the machine power cable plug from the outlet receptacle and/or shutting off the compressed air at the line valve and disconnecting the air hose. This will prevent injury in the event that switches or other controls are accidentally activated.

A grounded electrical outlet should always be used to receive the plug on the machine power cable.

To improve clarity, photographs and drawings may not show machine/applicator guards. In some cases, it is impractical to show the variety of guards designed to meet specific safety requirements, as set forth in codes and standards adopted by customers and/or enforced in a given locale.

Though a guard may not be shown, and procedures may not reflect the need for its removal, the guard **must** be in place during normal operation of the machine/applicator.

TECHNICAL ASSISTANCE CENTER

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

GENERAL MACHINE POLICY

All machines remain the property of AMP Incorporated. The customer shall have no title to the machine(s) and his interest shall be limited to the use of said machine(s) for the purpose indicated, during the stated term, at the specified plant.

No major change or modification shall be made without written consent of AMP Incorporated. Spare and component parts are available at nominal prices.

A list of component parts is included in the instructional material or drawings supplied with each machine.

The customer shall be fully responsible for the maintenance of the machine(s) including servicing, repair, and replacement of damaged or broken parts. Each machine shall be returned in usable condition — reasonable wear and tear excepted. Before returning the machine, contact AMP Incorporated, Harrisburg, Pennsylvania requesting instructions for shipping and disposition.

AMP Field Service Engineers are available to provide assistance in the adjustment or repair of the machine when problems arise which your maintenance personnel are unable to correct. Contact AMP Incorporated.

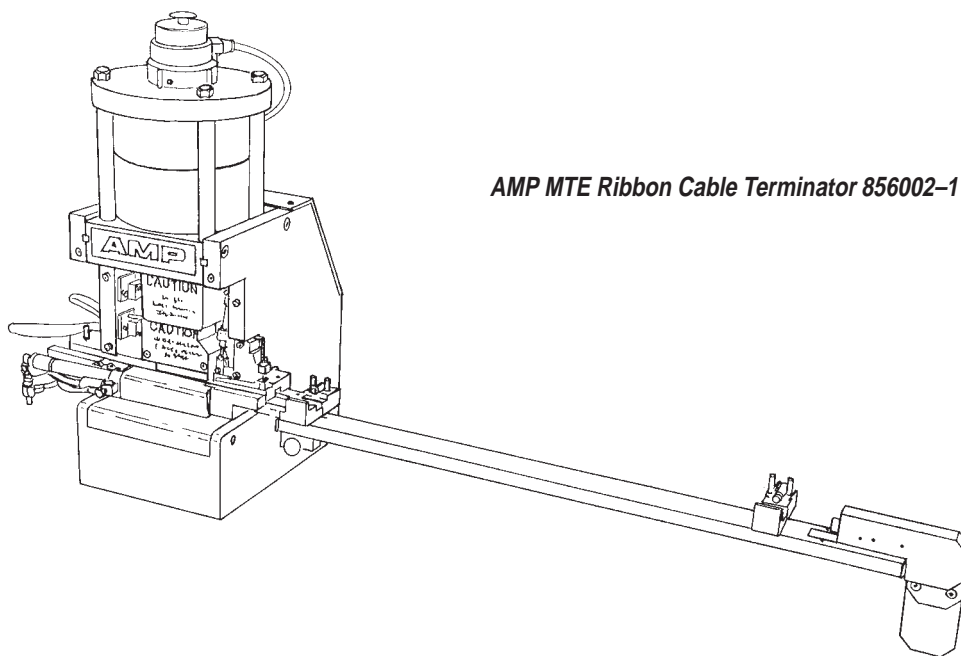
INFORMATION REQUIRED WHEN CONTACTING AMP INCORPORATED

AMP Incorporated offers the **Technical Assistance Center** as a means of providing technical assistance when required.

When contacting AMP Incorporated by telephone regarding service to a machine or tool, 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 corrected in this manner.

When calling the Technical 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. Machine or tool 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



AMP MTE Ribbon Cable Terminator 856002-1

Figure 1

93-1

1. INTRODUCTION (Figure 1)

AMP MTE Ribbon Cable Terminator 856002-1, designed for bench applications, is used to terminate AMPMODU MTE strip-form connectors and individual assemblies onto notched ribbon cable. Two through 25 position connectors are supplied from plastic product tubes, and are fed into the machine in a sequence of 13 or more consecutive positions per termination. Cable used in the machine is end-notched ribbon cable (22-30 AWG) on 25.4 mm [.100 in.] centerlines.

The entire machine assembly consists of three distinct subassemblies: the tube feed station; the termination station; and the seating station. The tube feed station is a constant force spring-driven unit which conveys connectors through the product tube to the termination station. The termination station is a pneumatically-operated unit which positions and terminates contacts onto the cable. The seating station is manually-operated assembly which seats connector housings on terminated contacts.

The termination station is entirely pneumatically operated, and is controlled by a foot pedal. The machine requirements and dimensions are as follows:

Reasons for revision are contained in Section 9, REVISION SUMMARY.

NOTE

Measurements are in metric units [followed by U.S. customary units in brackets].

Read this manual thoroughly before operating Ribbon Cable Terminator 856002-1. The performance of the terminator 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.

NOTE

Highlights special or important information.

1.1. Specifications (Figure 2)

Air: 552 kPa, min. 2.4 x 10⁻⁴ m³/5 min. [80 psi, min., .5 cfm, min.]

Length: 1092.2 mm [43 in.] with tube feed and seating stations installed

Width: 254 mm [10 in.]

Height: 533.4 mm [21 in.]

Weight: 27.18 kg [60 lb]

Noise: An average of between 82 and 87 dB at the operator location

AMP Product: AMPMODU MTE Single-row Receptacle (plain, polarized/latching, and guide rib) and pin (shrouded or guide rib) assemblies pre-loaded with 2-through-12 contacts in strip form or 13-through-25 contacts in individual assemblies. Refer to AMP Product Catalog 65816 for more information about AMPMODU MTE connectors.

NOTE *Thirteen or more consecutive contact positions per segment are required for proper machine feed indexing. As a result, 2-through-12 position housings must be supplied in strip form with at least thirteen total positions per segment. For example, three position housings must be grouped together (in strip form) so the overall position number is greater than or equal to thirteen. In this example, three position housings are grouped five housings to one strip (individual segment). Three positions per housing multiplied by five housings equals 15 positions per segment, which is greater than 13 and will properly index through the machine. Other examples include, but are not limited to:*

Number of Positions Per Contact Housing	Housing Quantities per Strip Segment
2	10
3	5
4	5
5	4

Cable: 22-30 AWG ribbon cable on 2.54mm [.100 in.] centerlines, end-notched according to requirements. AMP Incorporated offers a ribbon cable notcher (P/N 854449-[]) designed for this application. Refer to AMP Instruction Sheet 408-9515 for particulars regarding the notcher.

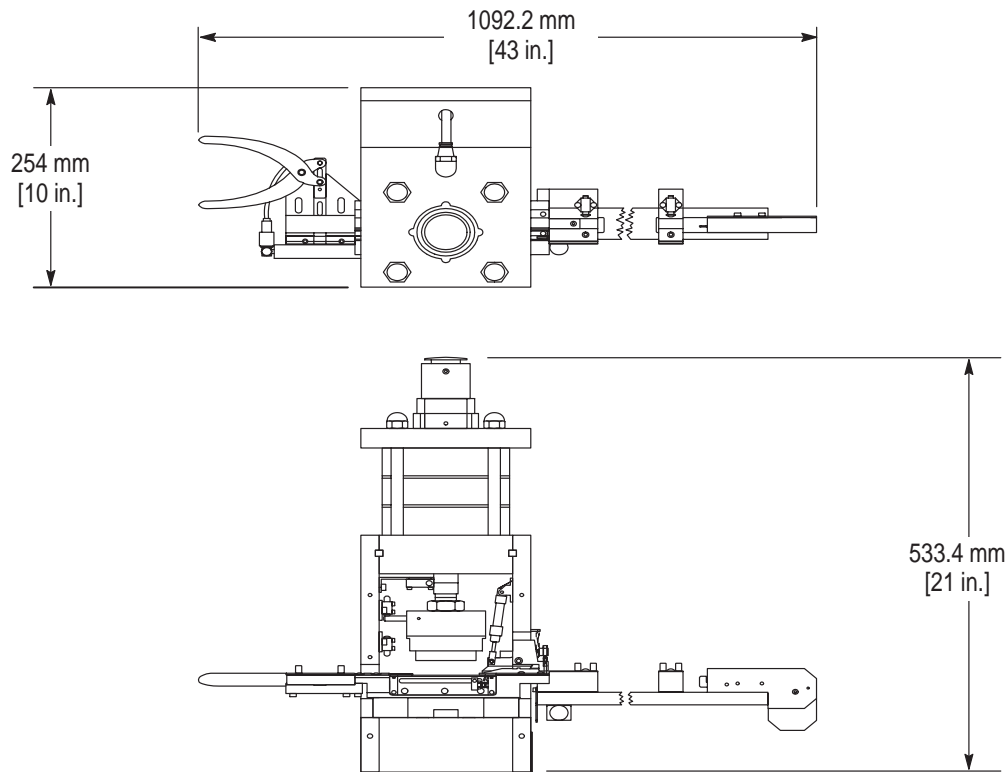


Figure 2

1.2. Documentation

Each machine is shipped with a documentation package which should be retained for customer reference. The package includes drawings of the machine, along with this manual which includes information for receiving, installation, operation, safety, and maintenance of the machine. For technical assistance and information beyond the scope of this manual contact your local AMP Field Engineer or:

AMP Incorporated
 AMP Tooling Support
 P.O. Box 3608
 Harrisburg, PA 17105-3608
 Tooling Assistance Center 1-800-722-1111

2. DESCRIPTION

2.1. Physical Description (Figure 3)

The machine is guarded for personnel protection. The clear plastic guard over the "target area" of the termination station is pneumatically interlocked to prevent machine operation if the guard is removed.

The air supply is connected to an "off-lockable" safety valve at the back of the machine that provides a means of turning the air on and off. A foot pedal controls all mechanical movement of the termination station.

Between the two side members of the frame is a large cylinder that is fixed to the applicator ram. At the bottom of the frame side members is another cylinder which controls the box supports for the contacts in the termination station. A third, smaller, cylinder controls the action of the feed fingers which locate the connector strip for termination. A fourth, small, cylinder at the side of the termination station controls the escapement at the terminus of the feed track.

The tube feed station consists of a frame containing a constant-force spring which drives a metal tape pusher to move unterminated connectors through a plastic product tube. A product tube is installed in the track and replaced by the machine operator each time the supply of connectors is exhausted. A control knob attached to the constant-force spring and metal pusher tape is used to retract the pusher for a product tube change. A magnet located on the bottom side of the track retains the control knob and thereby prohibits travel of the pusher into the tube when changing product tubes. Two adjustable spring stops hold a product tube in position in the track for feeding connectors.

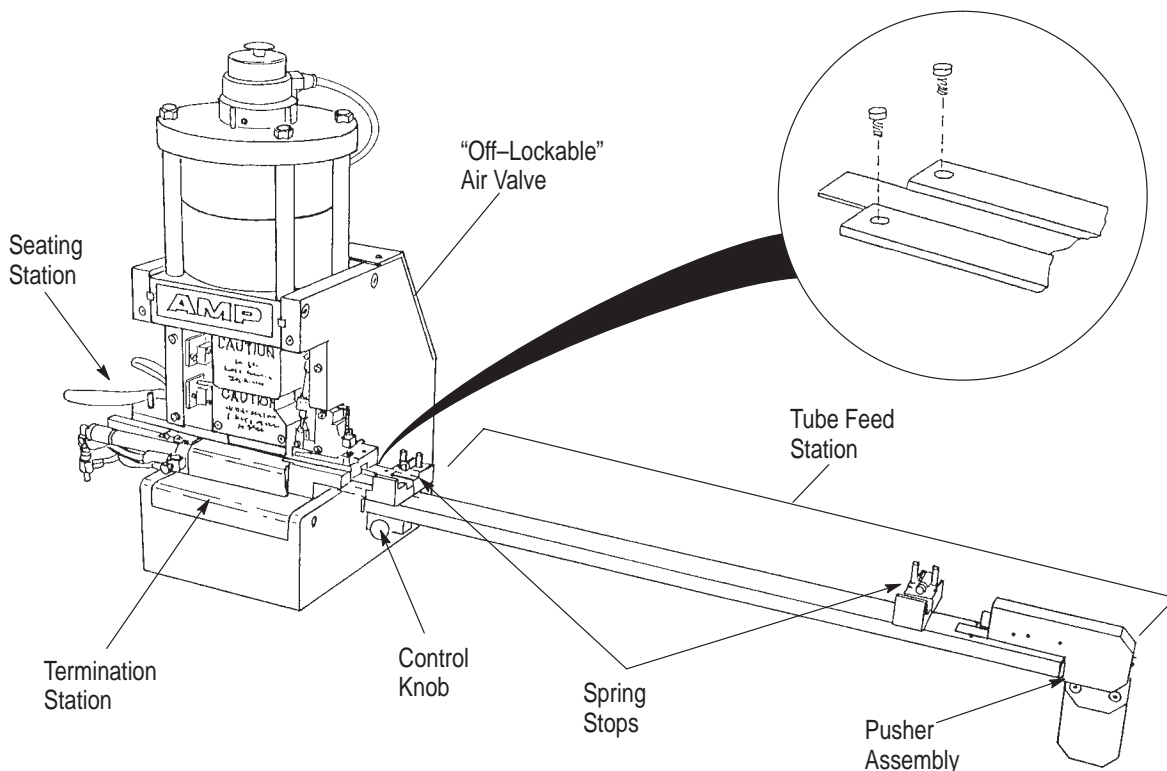


Figure 3

93-2

The termination station, an integral portion of the pneumatic terminator, consists of: a ram assembly attached to the main (upper) machine ram; a box support assembly attached to the lower cylinder; a feed finger assembly controlled by a smaller cylinder; and an escapement and product clamp controlled by a smaller cylinder.

The seating station is used to manually seat connector housings on terminated contacts after they have been through the termination station of the applicator. The unit retains the connector housing and terminated contacts in alignment for seating while plier-type handles actuate a sliding plate which pushes the connector housing(s) onto the contacts to seats them in the housing(s).

2.2. Machine Component Identification

Use the following figures as a guide for operation and repair. Figure 4 shows the basic subassemblies. Figure 5 shows the application tooling subassemblies. For identification beyond the scope of these illustrations, refer to the drawings supplied with the machine.

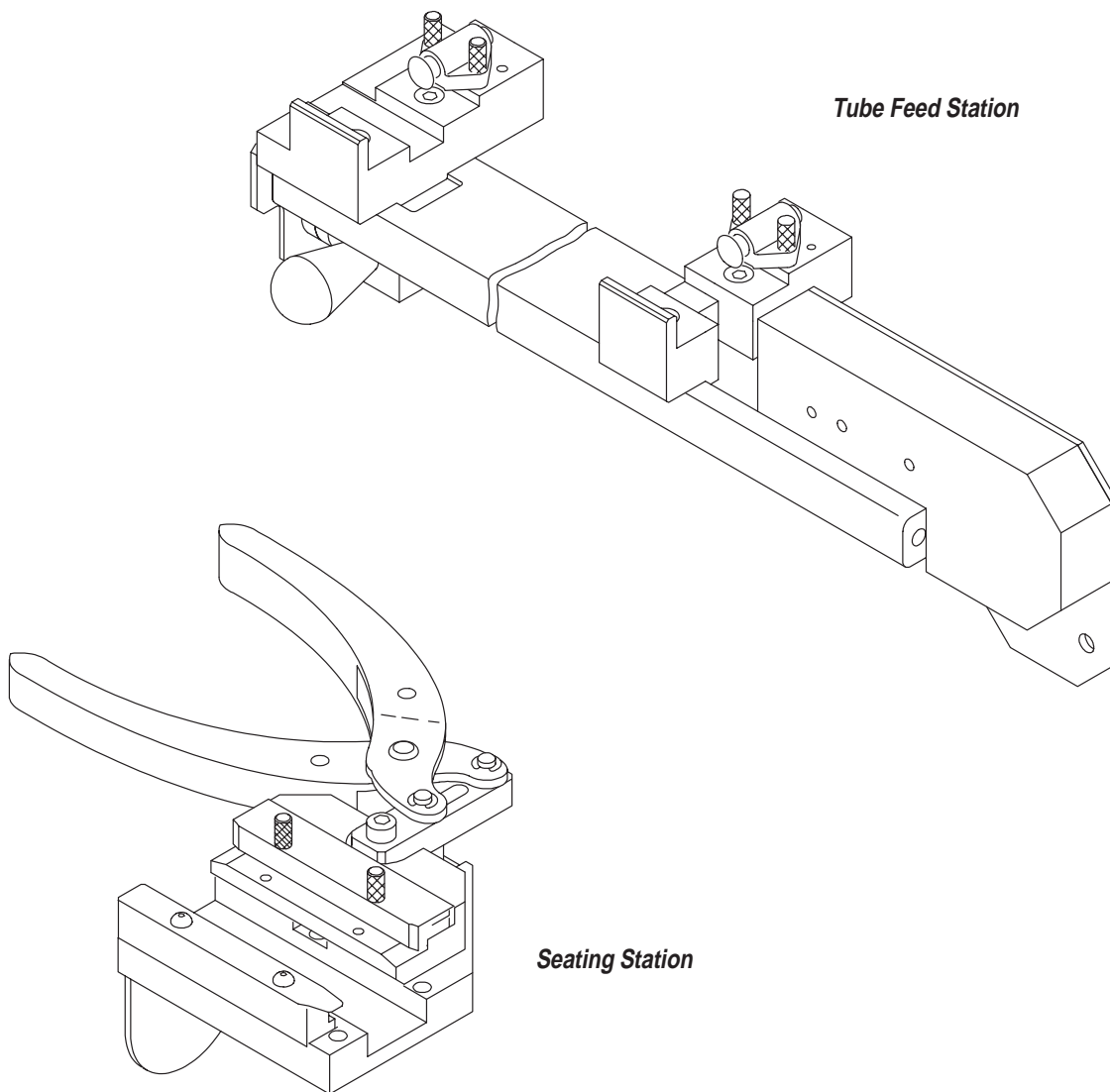


Figure 4

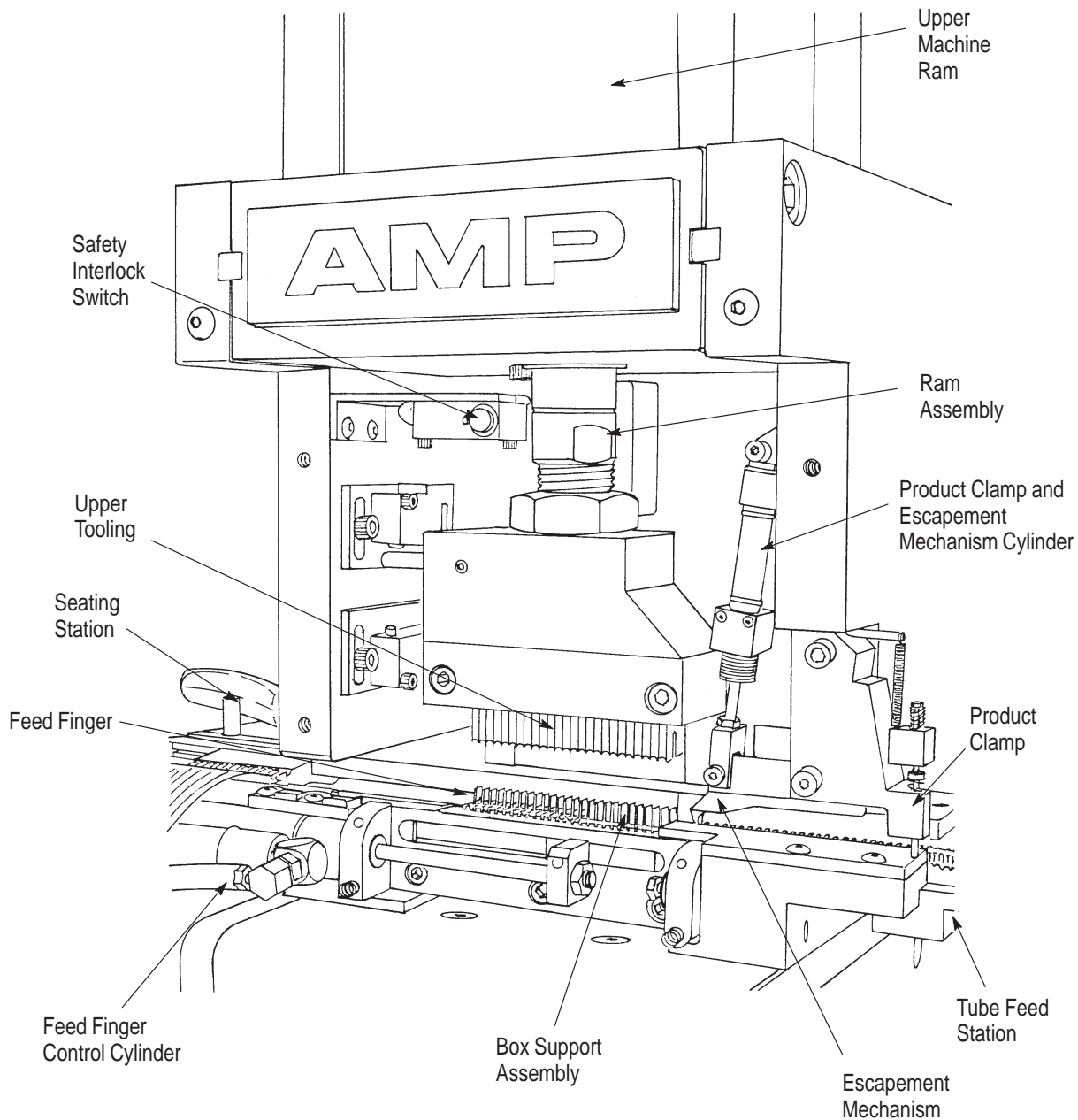


Figure 5

93-3

2.3. Functional Description

With the tube feed station loaded with a product tube, a reeled tape extends and pushes the product through the tube to the termination station. An escapement mechanism allows one connector to enter the termination area and retains the remainder in the product tube. A pneumatically controlled feed finger extends and locates on the product strip beneath the carrier strip and pulls the connector into position at the extreme left (as the operator faces the machine) of the termination area. At this point the lower cylinder is activated to extend the box supports up through the contact strip.

The operator obtains a pre-notched cable and lays the end over the contacts. After determining that all conductors are located in the corresponding contacts, the operator depresses the foot switch to activate the inserting cylinder. The ram descends to terminate the cable conductors in the contacts. After dwelling momentarily at the bottom of its stroke, the insertion cylinder will retract to the "up" position. The feed finger will extend to the right and the box supports will retract. The escapement cylinder also retracts, causing the stop

pin to press on the carrier strip of the connector ready to exit the product tube in the tube feed station. This action lifts the escapement pawl, clearing the feed track for the next connector to be pulled into terminating position by the feed finger.

At full extension, the feed cylinder will latch into the holes of the carrier strip of the next connector assembly. The feed cylinder will then reverse its direction, pulling the new connector assembly to the termination area and, at the same time, push the terminated connector/cable assembly toward the seating station. When the feed cylinder returns to its fully retracted position, the box support cylinder extends, raising the box supports between the individual terminals of the connector housing assembly. The escapement cylinder will extend, lowering the stop pawl and raising the stop pin. The pusher tape of the tube feed station will advance the next connector assembly against the stop pawl of the escapement.

Depressing the foot switch will cause the machine to make a single, complete cycle and reset itself.

The terminated harness is manually moved to the seating station where the operator visually examines the terminated contacts. If all contacts are acceptable, the operator squeezes the plier-type handles of the seating station and seats the connector housing(s) on the terminated contacts. The handles are released and the operator rotates the terminated assembly downward to bend the contact carrier strip at an angle to the seated connector housing. The operator then removes the completed connector assembly from the seating station and manually presses the carrier strip back toward the housing to break it off and remove it from the connector assembly.

3. RECEIVING INSPECTION AND INSTALLATION

3.1. Receiving Inspection

The machine is thoroughly inspected during and after assembly. Before it is shipped, a final series of inspections is made to ensure proper functioning of the machine. 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 inspection.
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 AMP Incorporated immediately.
3. Check all parts to be sure that they are secure.
4. Check all air lines for evidence of loose connections or leaks.

3.2. Machine Placement

Proper location of the machine in relation to the operator is essential to both safety and efficiency. Studies have 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.

A. Bench

A sturdy bench 686 mm to 762 mm [27 to 30 in.] high aids comfort by allowing the operator's feet to rest on the floor and the weight and leg position to 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 machine work area (the area where the product is applied) should be 152mm to 203mm [6 to 8 in.] from the front edge. Access to the back of the machine must be provided for maintenance purposes, in most cases, and to allow the operator to turn the air to the machine on and off at the lockout valve.

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 it to be movable and permits the operator to shift position to minimize fatigue, while at the same time the mat prevents the switch from sliding unintentionally.

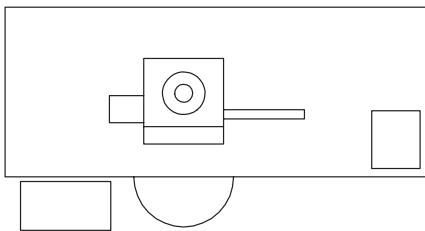
The preference for locating the switch varies among operators. Some prefer the switch located so that their foot rests on the switch when their legs are in the natural sitting position (calf perpendicular to the floor). Others prefer it slightly in front of the natural position. The important thing is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

Figure 6 shows recommended location and position of the operator, as well as a typical layout for the efficient handling of materials.



Note that the chair height and back rest are properly adjusted. The operator's back must be straight and supported by the chair and the upper arms are in a direct line with the torso.

Recommended Operator Position, Chair and Table Adjustments, and Machine Location



This figure is a typical plan view to illustrate the convenience of handling materials afforded by the proper setup.

Materials Locations – Plan View

Figure 6

3.3. Machine Installation

1. Select a location with an adequate air supply. See Paragraph 1.1 for air supply requirements and Figure 7 for filter/regulator/lubricator requirements.
2. Place the machine on the bench following the recommendations in 3.2,B, Machine Placement.
3. Install the tube feed station assembly on the right side of the machine (on the operator's right, facing the machine) by securing it with the two socket head screws supplied with the track. Align the track holes with the corresponding holes on the bracket on the applicator and tighten the screws. The other end of the feed track is supported by the leg which rests on the bench. This leg is adjustable to accommodate variation in bench surface.

NOTE

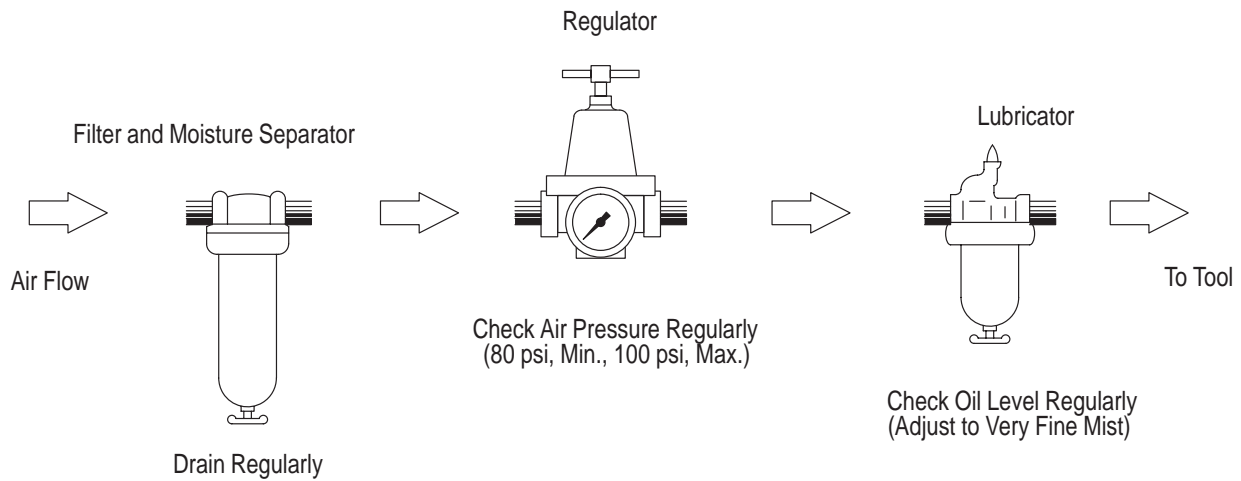
Allow sufficient clear space on the bench to the right of the machine to accommodate the length of the feed track. It must be level with the termination station for proper feeding of product.

4. Install the seating station (if not installed) on the left side of the machine with the two socket head screws supplied with the assembly. Attach the seating station by supporting it and aligning the two holes with the corresponding holes on the left side of the applicator. Thread the screws up through bottom side of the seating station and tighten.
5. Attach the air line to the fitting on the back of the machine and open the safety air valve.

CAUTION

An approved filter/regulator/lubricator is required on the air supply to the machine. Refer to Figure 7 for specific requirements.

6. With no product tube installed in the tube feed station, momentarily depress the foot switch to start the machine cycle. The machine should complete a cycle of operation and return the upper ram to the fully raised position before stopping.



SUGGESTED MANUFACTURERS

FILTER/MOISTURE SEPARATOR, REGULATOR, LUBRICATOR		LUBRICATOR OIL
C.A. NORGREN CO. LITTLETON, COLORADO	CHICAGO PNEUMATIC TOOL CO. NEW YORK, NY	C.P. AIROILENE† SAE #10 CHICAGO PNEUMATIC TOOL CO., NEW YORK, NY

† Trademark of Chicago Pneumatic Tool Co.

Figure 7

4. MACHINE SETUP AND PRODUCTION OPERATION

4.1. Machine Setup

The setup procedure ensures that the machine functions properly and that the operator is familiar with machine operations prior to a production run.

1. Turn air to the machine “on” using the sleeve valve.
2. Obtain a product tube of the type connectors to be used in a production operation.
3. Obtain notched cable of the type to be used in a production operation. See Figure 8 for notching requirements.

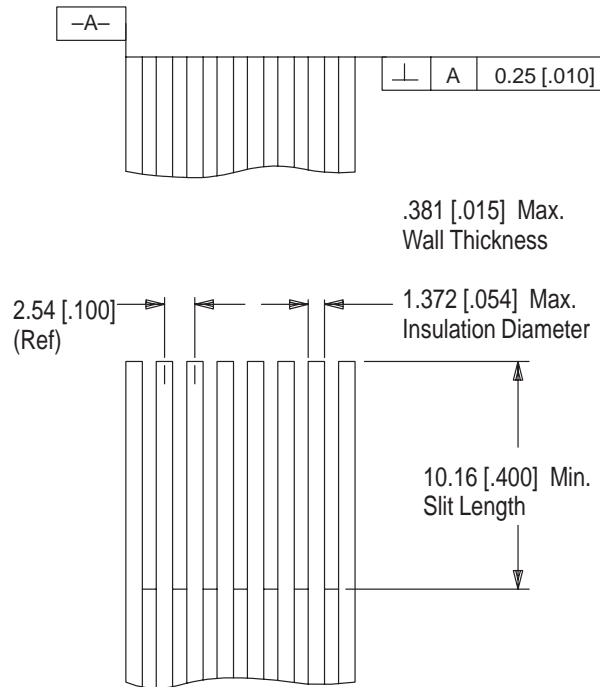


Figure 8

4. Install the product tube in the tube feed station by:
 - a. grasping the control knob below the feed track and sliding toward the machine until the magnet holds it in position;
 - b. bending down the retaining tabs on both ends of the product tube (see Figure 9 for detail), taking care not to let the connectors fall out of the tube ends;
 - c. placing the product tube in the tube feed station (with the termination slots of the contacts closest to the operator and facing upwards) by pushing it against the spring stops and down onto the track. See Figure 10.

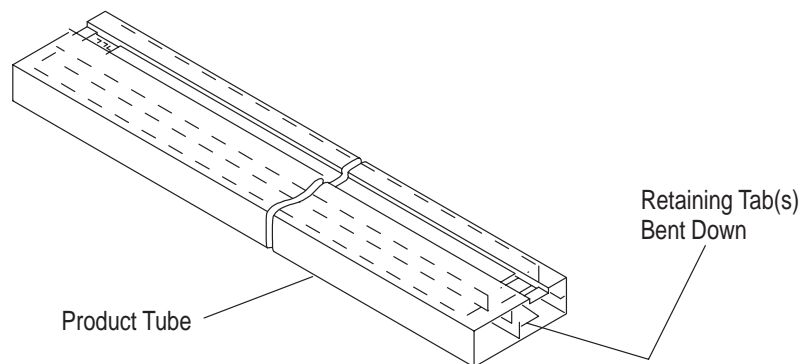


Figure 9

CAUTION

There are two positions for the spring stops. If using **shrouded connectors**, move the two screws holding each spring stop to the **outer** positions. If using **any other product**, move the two screws holding each spring stop to the **inner** position. Additionally, if using any product other than shrouded connectors, place the **insert** in the tooling as shown in Figure 11. Secure all screws after moving spring stops.

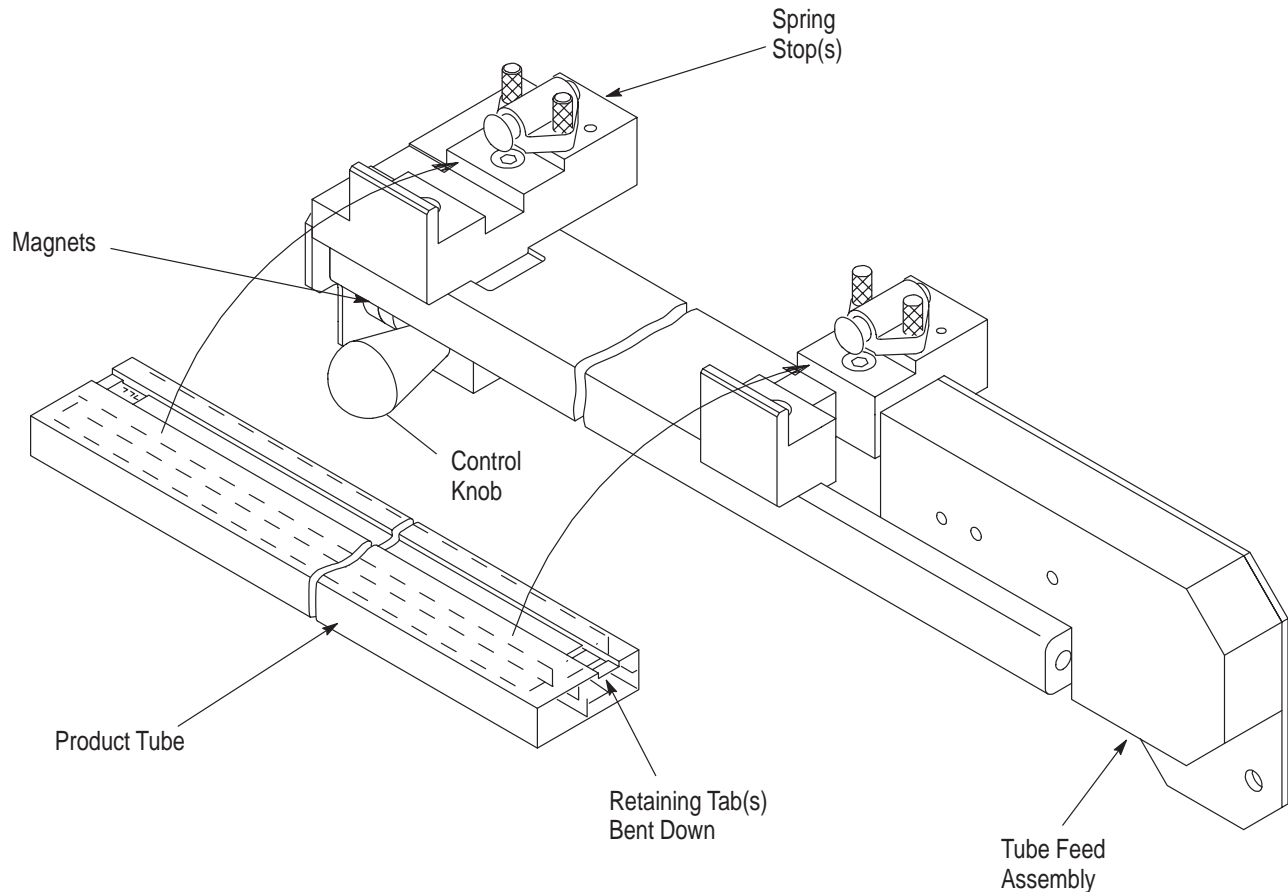


Figure 10

5. Pull the control knob off of the magnet and allow the spring tension of the feed track to push the metal tape into the product tube by simply releasing the control knob. The internal spring of the feed track will hold the connectors in position in the feed track and continue to move them into the termination area as they are used.
6. Depress the foot switch once and allow the machine to cycle, placing a connector assembly in the termination station.
7. Obtain a cable and lay the notched end over the slots of the contacts, holding the cable squarely against the cover of the feed track.
8. Depress the foot switch once to cycle the machine, releasing the cable as the tooling begins to insert the cable conductors in the contacts.
9. Slide the terminated assembly to the seating station and, without seating the housing(s) on the contacts, examine the terminated contacts for correct termination crimp height, if necessary, to ensure that proper insertion has been achieved. Refer to AMP Application Specification 114-25026 for specific examination criteria. that proper insertion has been achieved. Refer to AMP Application Specification 114-25026 for specific examination criteria.

If acceptable terminations are evident, the machine is properly set up and ready for production operation. If insertion depth is not acceptable refer to Section 7, ADJUSTMENTS. If terminations are unacceptable and it is determined that the cause is not operator-related due to training or inexperience, contact AMP Tooling Support via the Tooling Assistance Center number provided in the beginning of this manual.

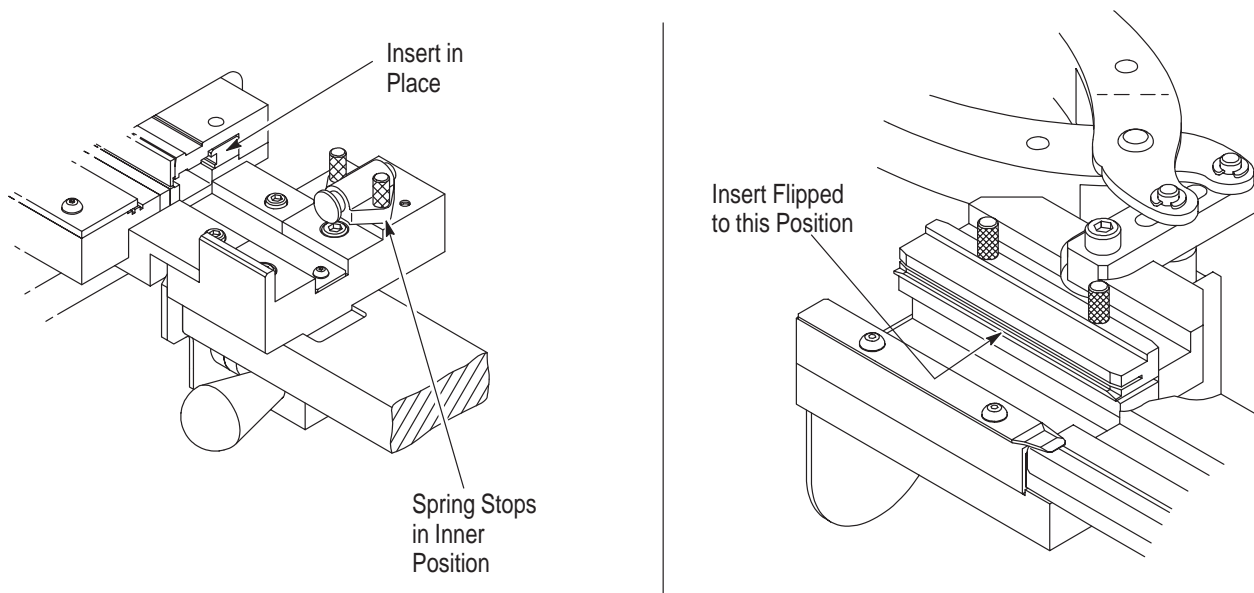


Figure 11

4.2. Changeover to Shrouded Product (Figure 12)

To change the machine over for use with shrouded product, three things must occur: the tube feed station must have the spring stops moved; the insert in the termination station must be removed; the insert in the seating station must be flipped to the opposite position. Refer to Figure 12 and proceed as follows:

1. Remove the spring stops on the tube feed station and install them with the thumbscrews in the outer holes.
2. Remove the insert from the termination station. You will have to remove the spring stop closest to the termination station to do this.
3. Remove the insert from the seating station and flip it over. Replace the screws and secure it in position.

To convert the machine back to unshrouded product, install the termination station insert, move the spring stops, and flip the seating station insert.

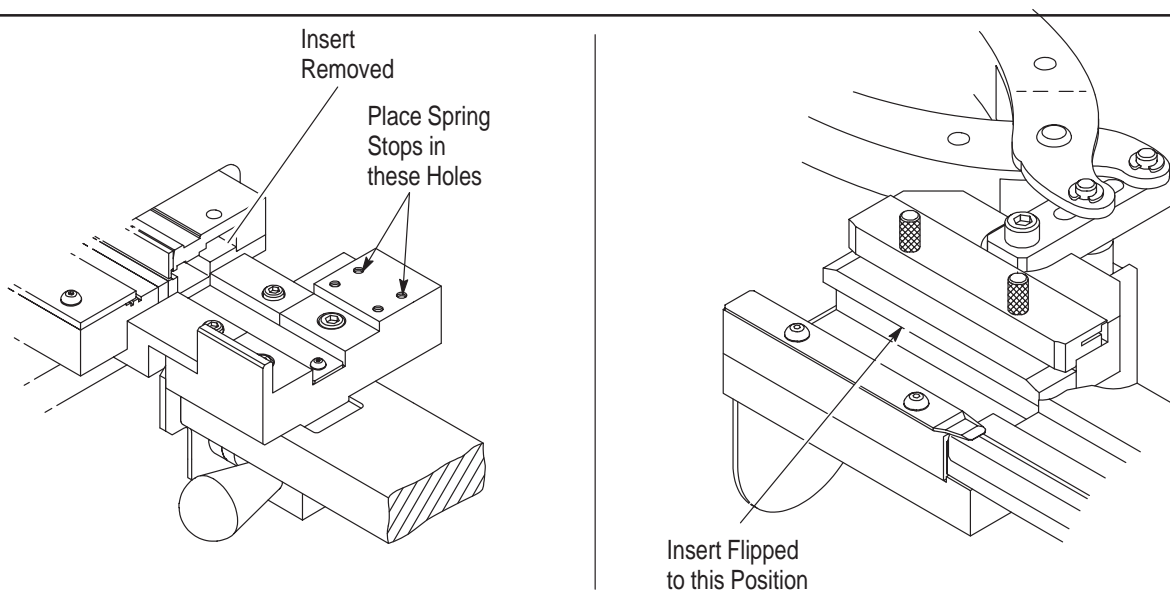


Figure 12

4.3. Production Operation

It is recommended that a sufficient quantity of prepared cables and product tubes be placed in the vicinity of the machine and a receptacle for finished cable assemblies be provided to create a work "flow" environment for efficient production operation.

1. Setup the machine using procedure described in 4.1, Machine Setup (and 4.2, Changeover to Shrouded Product, if necessary).
2. Place the cable end squarely on the contact slots between the box supports(guides) with the conductor ends against the cover centerline of the feed track. See Figure 13.

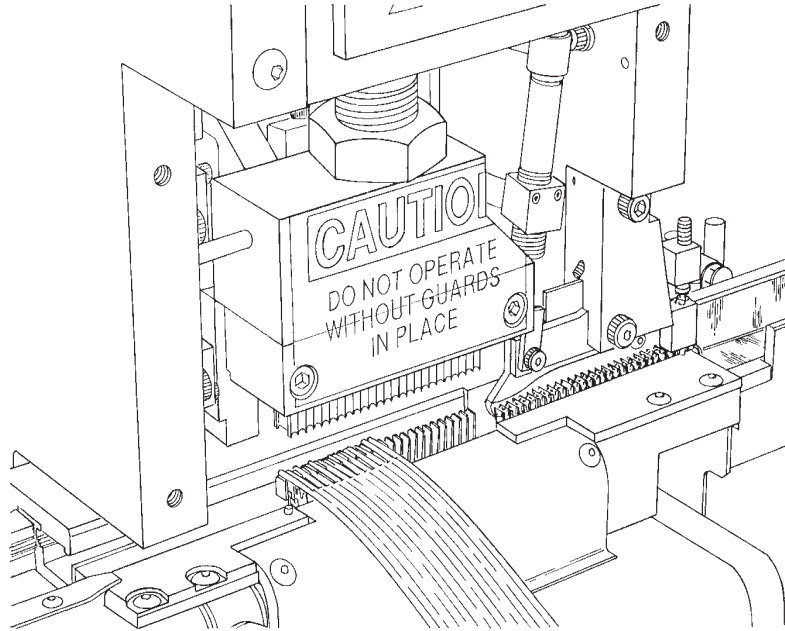


Figure 13

93-4

3. Depress the foot switch once to cycle the machine.
4. Slide the terminated contact assembly to the seating station and examine the terminations for quality and workmanship. See Figure 14.

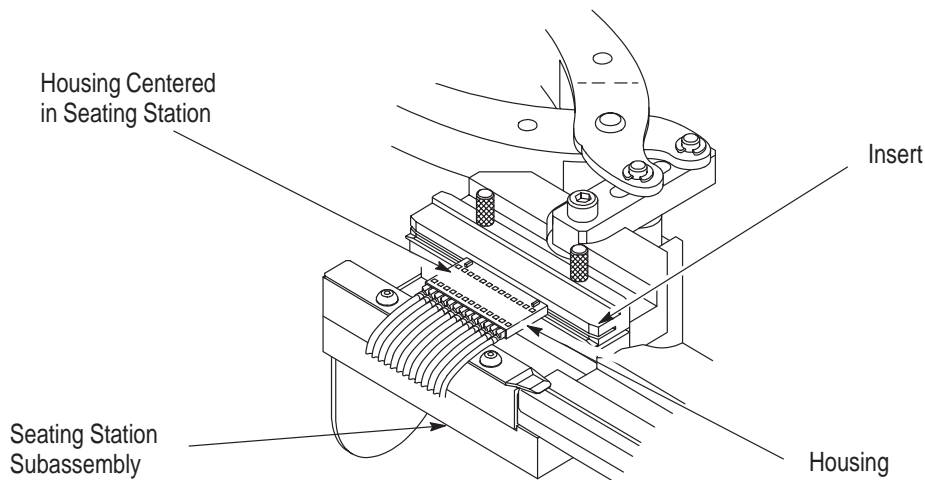


Figure 14

5. Squeeze the handles of the seating station to seat the connector housing(s) on the terminated contact assembly.
6. Rotate the housing downward to bend the carrier strip at an angle to the connector assembly. See Figure 15.

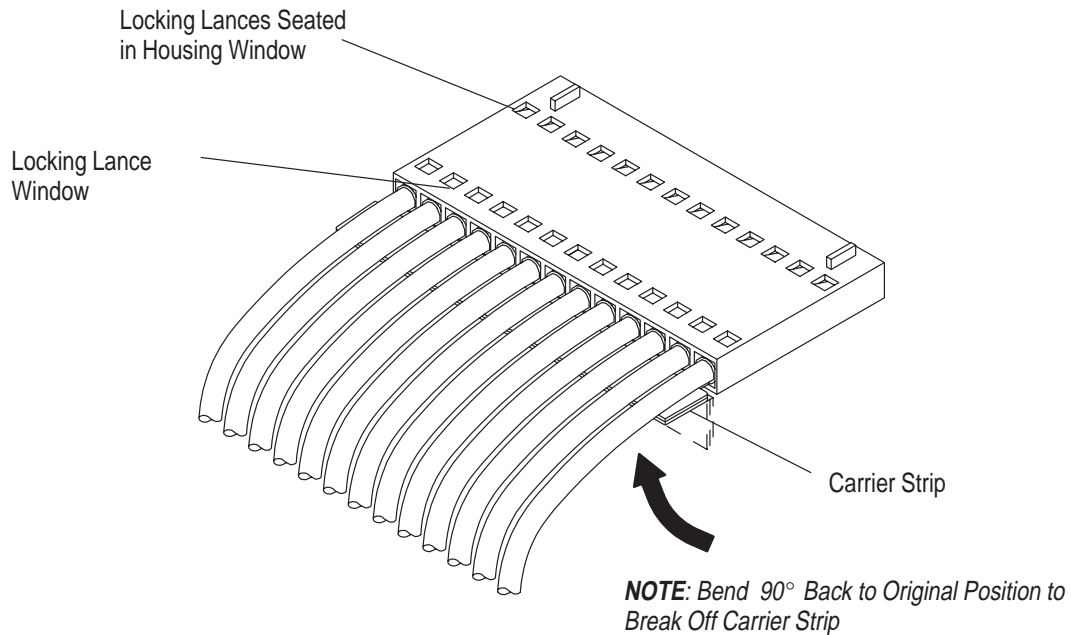


Figure 15

7. Remove the connector assembly from the seating station and push the carrier strip back to its original position, thereby breaking it off the contacts in the connector assembly.
8. Repeat Steps 2 through 7 until the product tube is exhausted.
9. Remove product tube by:
 - a. grasping feed track control knob and pulling it to the magnet;
 - b. lifting the empty tube out of the feed track.
10. Install a full product tube by:
 - a. bending the retaining tabs downward (see Figure 9), taking care not to allow the connectors to fall out;
 - b. pushing it against the spring stops of the feed track and down onto the feed track;
 - c. releasing the control knob of the feed track and allowing the metal tape to push the connectors in the product tube up against the stop pawl of the escapement mechanism.

Continue to terminate connectors and resupply the feed track until the desired number of finished cable assemblies has been manufactured.

NOTE

The tube feed mechanism will not push all product into the termination station. There will always be one connector left in the escapement when a tube is emptied and requires replacement with a fully loaded tube.

5. PREVENTIVE MAINTENANCE

Preventive maintenance of the machine is limited to periodic cleaning, inspection, and lubrication. Depending on the amount of use, a regular maintenance program should be established and maintained, whether daily, weekly, or monthly. This will greatly reduce downtime for repairs and replacement of parts. When performing preventive maintenance, remove all covers and guards to gain access to the machine.

DANGER

When performing preventive maintenance, MAKE SURE that air supply is turned "off."

5.1. Cleaning

Prior to operation, or on a daily basis, perform the following:

1. Use a CLEAN, dry cloth to wipe the entire machine. Remove any evidence of dust or other contaminants.
2. Use a solvent or similar cleaning fluid to remove any evidence of oil or grease from areas not requiring lubrication, particularly on the inserters in the termination station.
3. Use an approved-type air hose or vacuum to remove any chips or metal particles that may be in the machine.

DANGER

Compressed air used for cleaning must be reduced to less than 207 kPa [30 psij], and effective chip guarding (including eye protection) must be used.

5.2. Lubrication

1. Lubricate the ram and upper tooling guide with a THIN coat of light grease. Remove any excess grease before operating the machine.
2. Lubricate machine pivot points and seating station sliding surfaces with a few drops of SAE 20 motor oil. Remove any excess oil before operating the machine.

CAUTION

Do NOT allow lubricants to get on the feed tracks or inserters in the termination station. If lubricants get into the "target area," clean the area immediately.

6. TROUBLESHOOTING

TROUBLE	PROBABLE CAUSE	REMEDY
Wire and/or Product Related		
1. Wire not properly terminated in contact slot.	Ram did not descend sufficiently	See Paragraph 7.1, Ram Height Adjustment
	Operator did not properly orient wire	
2. Product damaged during cycle	Connectors loaded improperly	Reload product tube in correct orientation
	Feed finger improperly adjusted or worn	Adjust or replace feed finger
Tooling Related		
1. Contacts not seated properly in housing	Incorrect component in seating station	Install correct seating station components
2. Improper Crimp Height	Ram descending excessively or insufficiently	See Paragraph 7.1, Ram Height Adjustment
	Inserters worn	Replace inserters as described in Section 8
Logic Related		
1. Machine will not operate	No air to machine	Turn lockout valve or shop air "on"
	Machine interlock has been triggered	Replace machine guard
2. Incomplete cycle; general problems	Broken or kinked tubing, defective cylinder or mechanical binding	Repair, replace, or adjust as necessary

7. ADJUSTMENTS

The following adjustments may be required following the replacement of parts as described in Section 8.

7.1. Ram Height Adjustment

Although the ram height is preset at the factory, it may require adjustment as the inserters wear to achieve correct insertion depth. To adjust the ram, perform the following:

1. Loosen the setscrew located on the side of the ram collar sufficiently to allow the ram collar to rotate. To INCREASE the depth of insertion, turn the ram collar in a COUNTERCLOCKWISE direction. To DECREASE the depth of insertion, turn the collar in a CLOCKWISE direction. See Figure 16.

NOTE

Each full revolution of the ram collar results in 1.60 mm [.063 in.] change in insertion depth (.066 mm [.0026 in.] per 15°).

2. Rotate the ram collar in the required direction and tighten the setscrew.
3. Terminate a sample and measure. If insertion depth is unacceptable, repeat Steps 1 and 2 until an acceptable depth is achieved (adjust in 15° increments at a time and then terminate a sample and inspect).

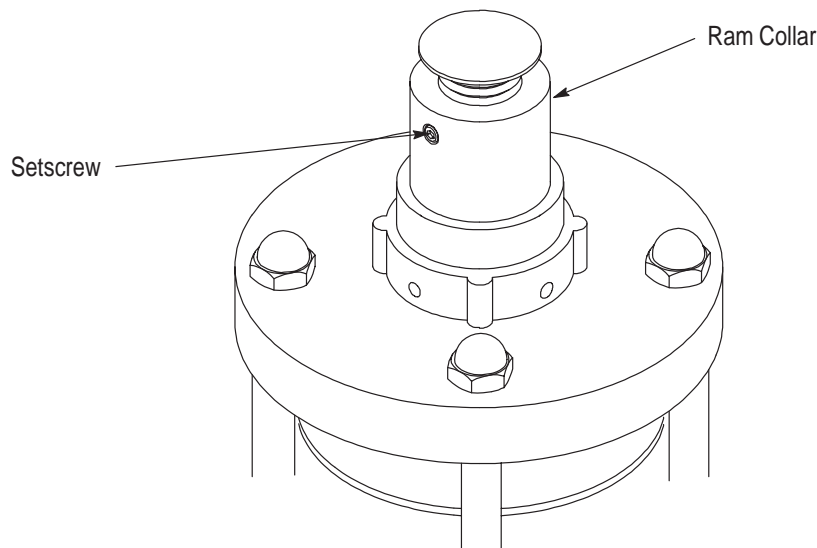


Figure 16

CAUTION

It is possible to adjust the ram so that the inserters will contact the feed track. Adjustments should be made in small increments to avoid damaging the tooling by allowing the inserters to hit the feed track.

7.2. Box Support Adjustment (Figure 17)

In the event that the box supports do not extend fully between the contacts in the “target area” of the insertion station, perform the following:

1. Remove the flat metal plate on the front of the machine below the main frame base plate by removing the two screws which hold it in position.
2. Cycle the machine to make certain that the lower ram is extending and retracting properly.

DANGER

KEEP HANDS CLEAR of this area while observing ram operation.

3. To adjust the height of the box supports:
 - a. *TURN OFF AIR to machine;*
 - b. loosen large locknut at base of ram shaft;
 - c. insert an appropriately-sized rod through the drilled hole in the threaded portion of the shaft;

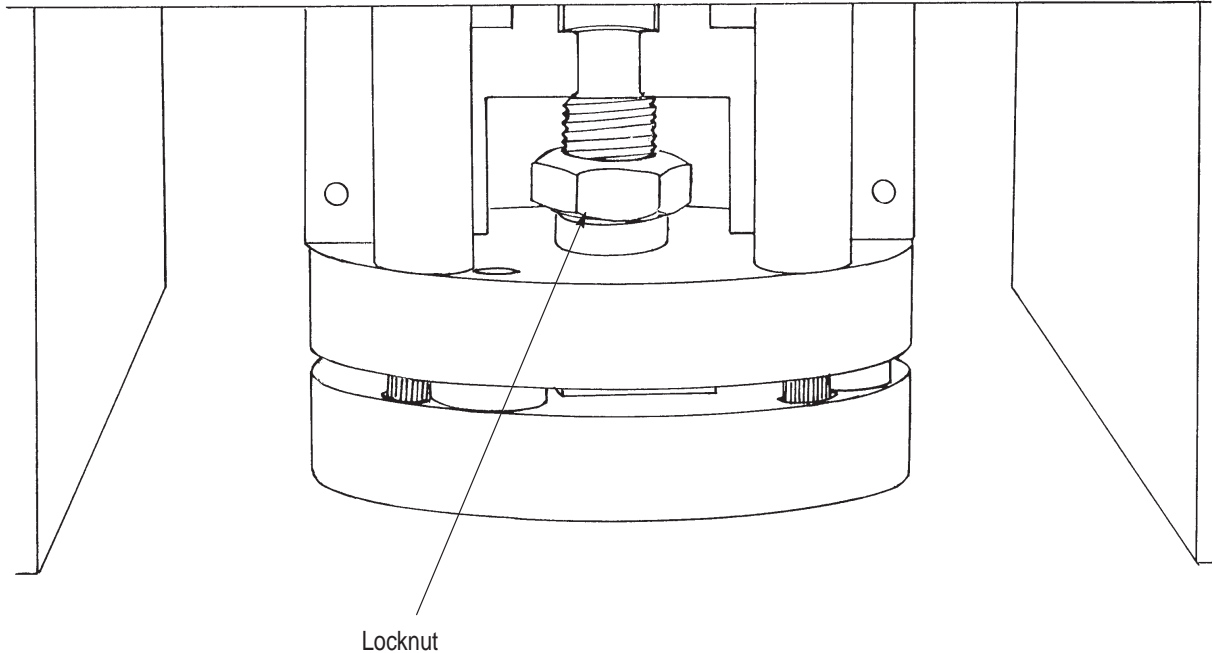


Figure 17

93-5

- d. turn shaft and observe corresponding height adjustment of box supports;
- e. when desired height is achieved, tighten locknut and replace metal plate on front of machine.

7.3. Feed Finger Adjustment (Figure 18)

Although the feed finger is adjusted at the factory, it may eventually require adjustment. It will require adjustment if the feed finger is replaced (see 8.3, Feed Finger Replacement). To adjust the feed finger, perform the following procedure:

1. Turn off air to the machine by either disconnecting the shop air line or switching the “off-lockable” air valve to the OFF position.
2. Loosen the two screws which retain the curved connector drag cover below the box supports of the termination tooling (the screws have retention clips which will keep them with the cover when it is removed). Be careful not to lose the two springs thus revealed; they provide the drag force.
3. Turn on the air and, **KEEPING FINGERS CLEAR**, cycle the machine to observe the travel of the feed finger and determine the distance to be adjusted.
4. If connectors are not properly positioned in the termination tooling, turn air OFF and loosen the locknut on the end of the air cylinder shaft.
5. Grasp the air cylinder shaft and turn it to extend or retract the feed finger by moving the feed slide on the threads of the air cylinder shaft.
6. When the feed finger is positioned properly to locate the connector in the box supports, tighten the locknut against the feed slide without changing the position of the air cylinder shaft.

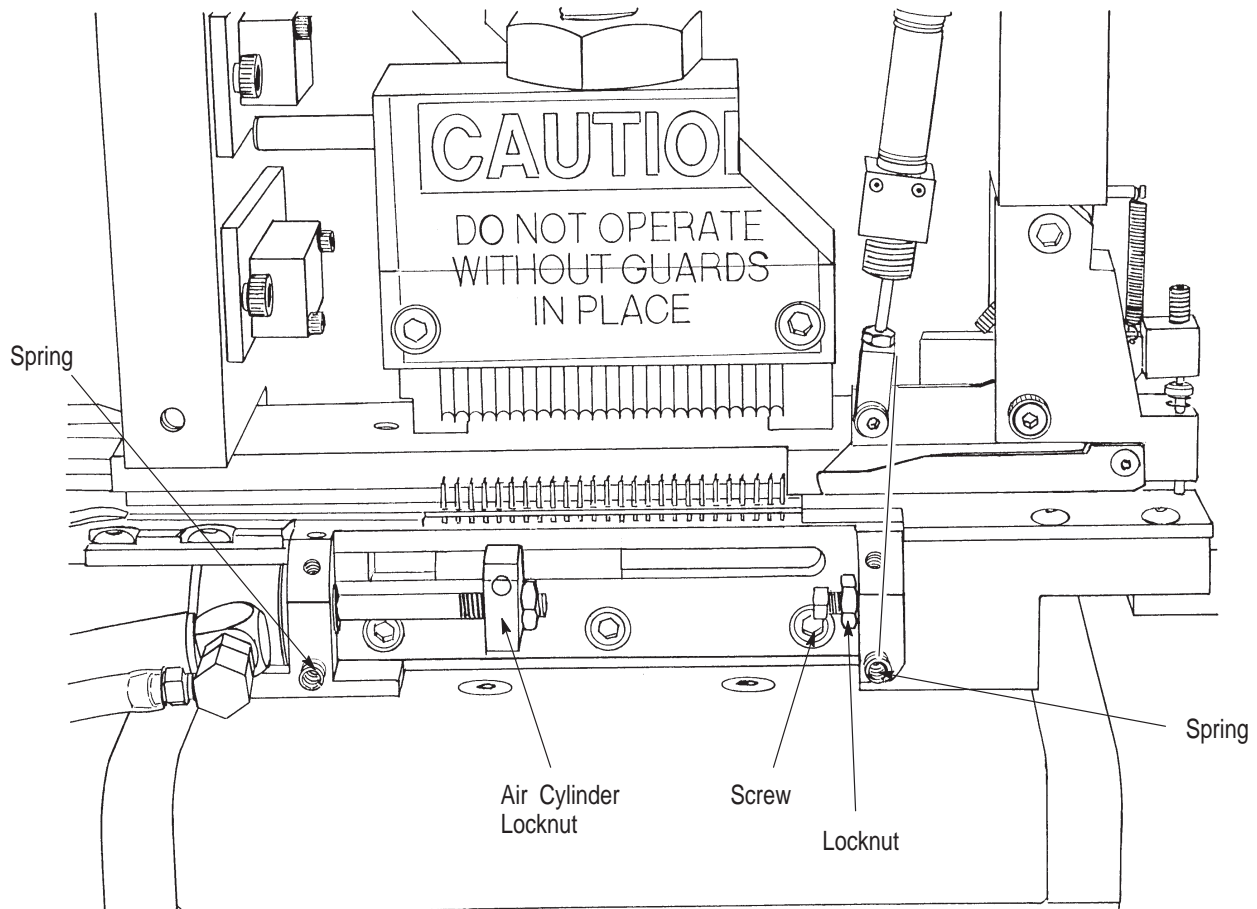


Figure 18

93-6

7. It may be necessary to adjust the screw which limits the travel of the air cylinder shaft. To increase or decrease the distance, loosen the locknut and turn the screw in or out, and tighten the locknut. This adjustment is necessary if the feed finger does not pick up the next connector properly. The teeth on the feed finger should engage the *first two holes* in the connector carrier strip.

8. Replace the curved connector drag cover and secure it with the two screws.

8. REPAIR, ALIGNMENT, AND REPLACEMENT OF PARTS

A set of drawings and parts list is supplied with each machine. Refer to these items for part name and number to order parts requiring replacement. Recommended spares are indicated on the parts list, and are the customer's responsibility to stock and replace as necessary. To make sure that pneumatic connections are correct, refer to the pneumatic assembly and pneumatic diagram, as supplied, when it is necessary to make repairs. For major service, contact your local AMP Field Representative, or AMP Incorporated on the Tooling Assistance Center number provided at the beginning of this manual.

DANGER

When making repairs or replacing parts, MAKE SURE that the air supply has been disconnected from the machine, or that the safety valve at the rear of the machine is locked OFF.

8.1. Mechanical Parts

Tooling is aligned during assembly and should require no further alignment. When tooling is replaced, it is wise to recheck the tooling alignment prior to running the machine under power. *Always perform the work with the air supply disconnected.*

When replacing tooling or checking alignment, remove only one tool or tooling assembly at a time. This ensures that re-alignment can be done quickly and easily by aligning the replaced tooling to the unmoved tooling.

8.2. Replacing Inserters (Figure 19)

Due to their function, the inserters will eventually become worn and require replacement. The replacement procedure is as follows:

1. Remove the three screws which retain the clear plastic guard and remove the guard from the machine.

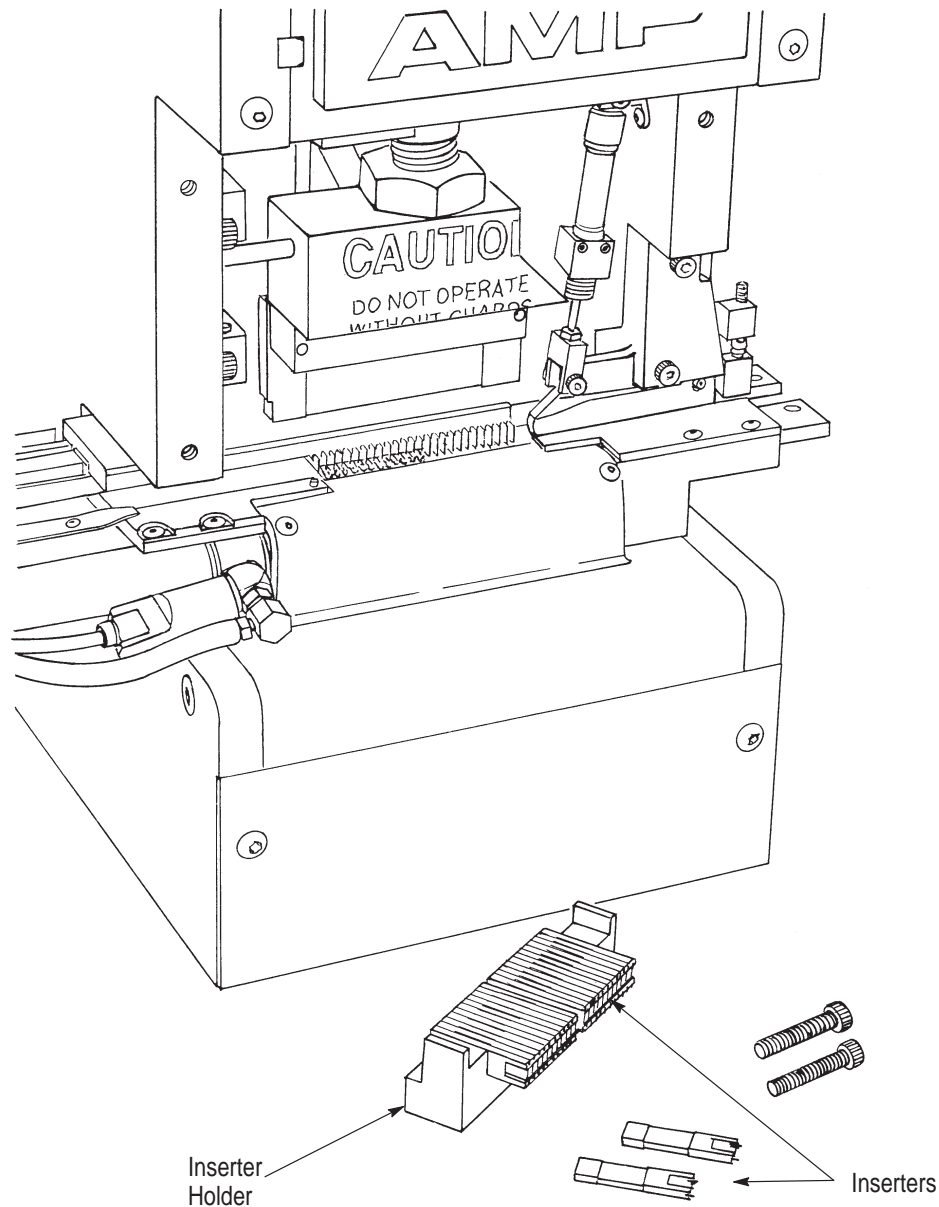


Figure 19

93-7

2. Remove the two screws in the front of the inserter holder.
3. Pull the inserter holder straight out of the machine.
4. Remove worn inserters from the inserter holder.

NOTE

If the machine has been running connectors that have fewer overall number of positions than the available number of inserters (for example: a 15 position segment in the 25 positions available) it is acceptable to move the unworn inserters into the positions occupied by the worn inserters, rather than replacing all of the inserters each time.

5. Install new inserters in the inserter holder and replace the assembly in a reverse of Steps 1 through 3.

8.3. Feed Finger Replacement (Figure 20)

1. **TURN AIR SUPPLY OFF.**
2. Remove connector drag (curved cover below box supports). Remove two springs which provide connector drag force.
3. Remove the three screws securing the connector feed cylinder assembly to the machine.

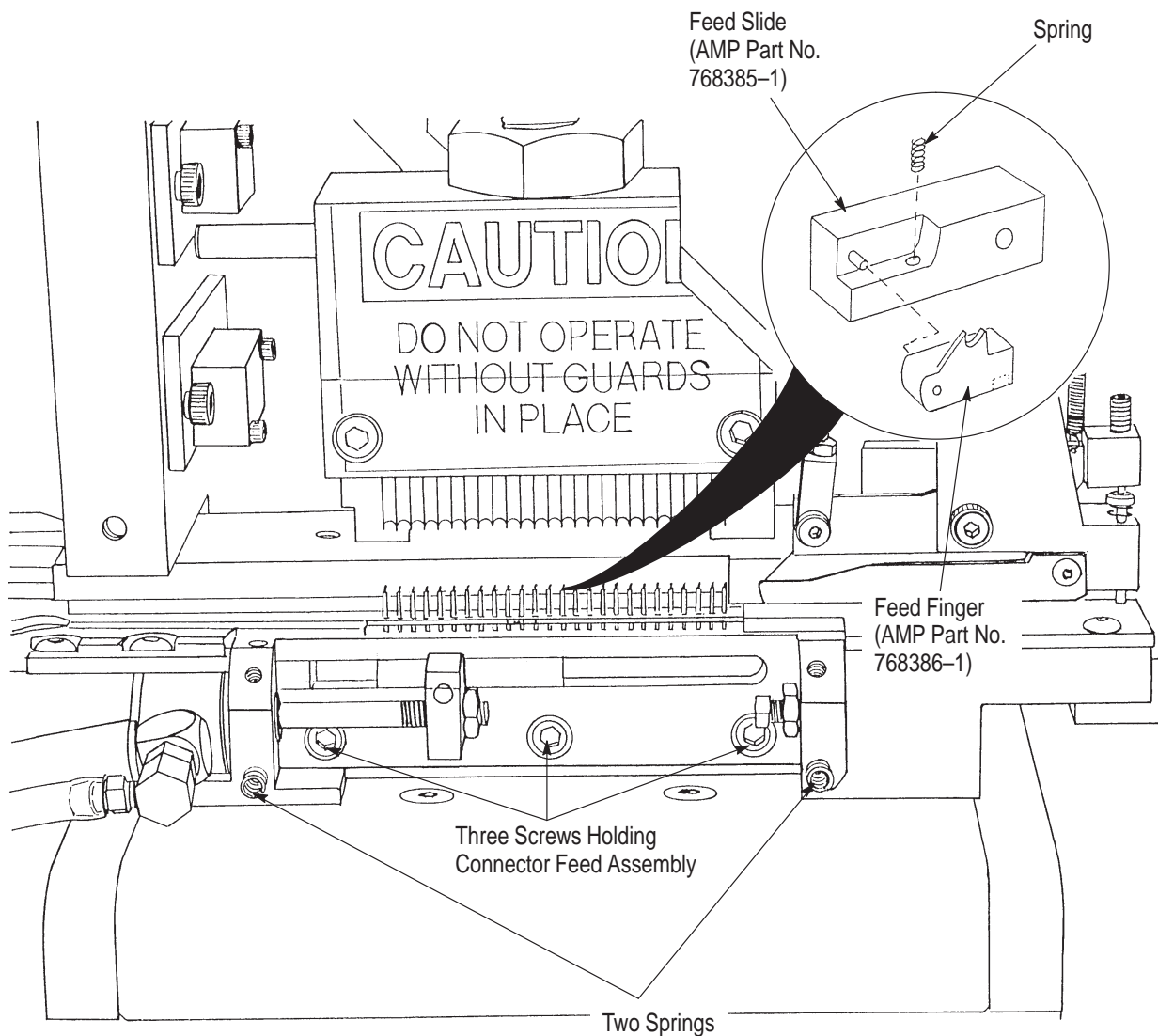


Figure 20

93-8

4. Carefully remove the connector feed assembly from the machine and lay it on the bench without removing the air hoses.
5. Remove the feed finger assembly from the feed cylinder assembly. Replace the finger, making sure that the spring is in place. Replace feed finger assembly and re-install feed cylinder assembly in machine.
6. Perform the procedure described in Paragraph 7.3, Feed Finger Adjustment.

9. REVISION SUMMARY

This manual has been revised per EC 0990-0910-95:

- Added to Paragraph 1.1. Specifications:
Refer to AMP Product Catalog 65816 for more information about AMPMODU MTE connectors.

NOTE

Thirteen or more consecutive contact positions per segment are required for proper machine feed indexing. As a result, 2-through-12 position housings must be supplied in strip form with at least thirteen total positions per segment. For example, three position housings must be grouped together (in strip form) so the overall position number is greater than or equal to thirteen. In this example, three position housings are grouped five housings to one strip (individual segment). Three positions per housing multiplied by five housings equals 15 positions per segment, which is greater than 13 and will properly index through the machine. Other examples include, but are not limited to:

<i>Number of Positions Per Contact Housing</i>	<i>Housing Quantities per Strip Segment</i>
2	10
3	5
4	5
5	4

- Changed dimensions in Figure 8 to:
.381 [.015] Max. Wall Thickness
1.372 [.054] Max. Insulation Diameter
10.160 [.400] Min. Slit Length.
- Revised NOTE in Section 8.2:

NOTE

If the machine has been running connectors that have fewer overall number of positions than the available number of inserters (for example: a 15 position segment in the 25 positions available) it is acceptable to move the unworn inserters into the positions occupied by the worn inserters, rather than replacing all of the inserters each time.

Notes: