

Fig. 1

1. INTRODUCTION (Figure 1)

The AMP Insulation Displacement Technique Applicator terminates insulated wires to contacts that have been pre-inserted in connectors with 2 to 24 positions on .156-in. centers.

When the end of an insulated wire is positioned over the double-slotted contact in a connector, and the machine is cycled, the applicator tooling pushes the wire down into the slots. This displaces the insulation and terminates the wire conductor with the contact.

The applicator is powered by a Modified AMP-O-LECTRIC ★ Terminating Machine. This instruction sheet, the parts list and exploded view drawing supplied with applicator, Customer Manual CM 5128 for the machine, and Application Specification 114-1020 provide all information needed to operate and maintain the applicator and machine.

2. APPLICATOR DESCRIPTION (Figure 2)

The applicator is secured to the machine base mount by two stops and a hold-down bracket. The post on top of the applicator ram is retained in the machine ram. Refer to CM 5128 and AI 8022 in the back of the manual.

Beneath the ram post is a wire disc which contains four pairs of pads, each pair being a different height. One pair will contact the two pads on the bottom of the machine ram when the disc is rotated to one of the four positions (A through D). This determines the depth of wire insertion into the contacts at the bottom of the ram stroke. The wire stuffer (tooling) is attached to the bottom of the applicator ram by the stuffer holder which is retained by two screws.

Connectors are manually fed into the track when the pusher is manually retracted. While filling the track, the pusher is held back by a positive latch, then released to apply pressure to the connectors. The pusher is attached to a cable which is connected to a spring-loaded reel retriever.

As the connectors enter the "target area," a locator in the track prevents overtravel until advanced by the feed finger. The feed finger releases the locator.

The feed finger is operated by a double-acting air cylinder that is controlled by air feed valves on the machine. With the machine in the standby condition, and with the air supply "on," the air cylinder is extended to fully advance the feed finger. This positions and retains the connectors in alignment with the tooling for the next cycle of operation.

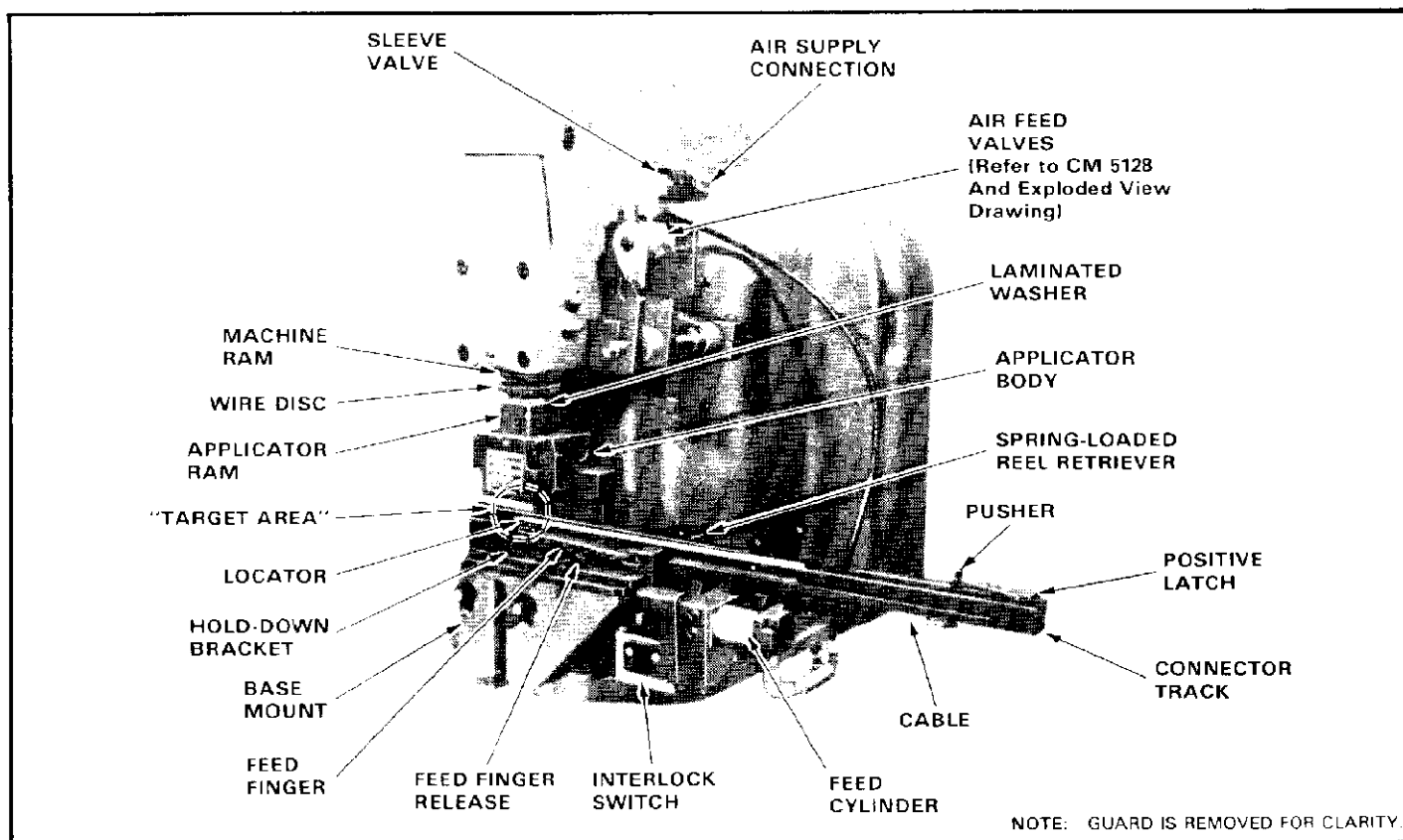


Fig. 2

The interlock switch mounted on the applicator is connected in series with the machine foot switch, and is actuated "closed" when the feed finger is fully extended. This prevents cycling until a connector is in proper position for wire insertion in each contact.

When a wire is placed over the contact in the "target area" and the foot switch is depressed, the ram comes down to insert the wire in the contact. As the ram reaches the bottom of the stroke, pressurization to the extension side of the air cylinder is stopped and the cylinder is retracted by pressure to the opposite side. This retracts the feed finger to pick up the next feed point in the connector.

After the ram bottoms to terminate the wire in the contact, it returns to the fully raised position to complete the cycle. On the upward stroke, the retraction air feed valve is actuated "closed," and the extension air feed valve is actuated "open" to again pressurize the extension side of the cylinder. This advances the feed finger and connector one increment (.156 in.).

3. APPLICATOR INSTALLATION AND REMOVAL

WARNING BE SURE electrical power and air supply to the machine are turned "off" BEFORE installing or removing the applicator.

The terminating machine must be equipped with Conversion Kit No. 690675-2 (less reel support assembly), plus a second air feed valve assembly, to adapt it for use with this applicator.

CAUTION DO NOT attempt to loosen two screws securing machine base mount to machine frame, or change shut height. The depth of wire insertion should be controlled by the wire disc on top of the applicator ram.

3.1. Installation

1. Turn "off" or disconnect power to machine.
2. Install air feed valve assembly between reel bracket and machine frame, then adjust as described in CM 5128.
3. Install movable stop on left end of base mount. Refer to AI 8022.
4. Place applicator on base mount, insert ram post in machine ram, then slide applicator into position against rear stops.
5. Secure applicator with hold-down bracket and two screws supplied with kit. Location of hold-down bracket differs for end-feed and side-feed applicators. Be certain it is located correctly.

6. Connect wiring from the applicator interlock switch, through the .88-in. knockout hole in the machine adapter plate, into the machine terminal block. Refer to the wiring diagram in CM 5128.
7. Connect air lines from applicator feed cylinder to air feed valves on machine.

CAUTION *MAKE SURE the air line from the extension side (right end) of the cylinder is connected to the front air feed valve, and the retraction side to the rear air feed valve.*

8. Load applicator, as described in Section 4.
9. Set the wire disc for the shallowest depth ("A") before cycling, then increase depth of insertion as may be required.
10. Install shroud and guard assembly.

3.2. Removal

1. Turn power "off" and disconnect power cord.
2. Unload applicator as described in Section 4.
3. Disconnect wiring that is connected to applicator interlock switch from terminal block on machine.
4. Slide sleeve valve "off," then disconnect air lines that connect to the applicator air cylinder from the air feed valves on the machine.
5. Remove hold-down bracket from machine base mount, then slide applicator away from rear stops until applicator ram post is clear of machine ram. Lift applicator from machine base mount.

4. APPLICATOR LOADING AND UNLOADING (Figure 2)

4.1. Loading

Loading of the applicator is performed as needed during operation. Several connectors should be maintained in the track at ALL TIMES to provide a constant and even flow into the "target area."

CAUTION *DO NOT attempt to load applicator during cycling of the machine. This could cause damage to a connector.*

1. Pull pusher to the RIGHT until it is retained by the positive latch.
2. Insert connectors into the track with slots of contacts UP and wire-entry side to FRONT of applicator. Fill track to capacity.
3. Release pusher from positive latch to apply pressure to last connector.

4.2. Unloading

1. Turn electrical power and air supply to machine "off."
2. Raise and hold the drag, while sliding connectors out of track to the LEFT.
3. After last connector has been removed, release the drag.

5. ADJUSTMENTS (Figure 2)

5.1. Wire Insertion Depth Adjustment

Set wire disc to align pads "A" with pads on machine ram, then place a wire in the "target area" and cycle machine. If greater depth is required, turn wire disc to next letter and cycle again. Repeat until desired depth is obtained.

NOTE

If sufficient wire depth cannot be obtained by rotating the wire disc, and the shut height HAS NOT been changed, perform wire depth repair as described in Section 6.

5.2. Feed Finger Tension Adjustment

If tension on feed finger is incorrect, simply loosen screw securing spring tension bar on front of finger, then slide tension bar to RIGHT for more tension or to LEFT for less tension. Tighten screw to secure tension bar after adjustment.

5.3. Contact-Tooling Alignment Adjustment

With the feed finger fully advanced and the extension side of the air cylinder pressurized, the contact in the connector must be centered under the tooling in the applicator ram. If not, refer to air feed adjustments in CM 5128 which are basically the same as required for this applicator.

5.4. Interlock Switch Adjustment

The interlock switch MUST BE actuated CLOSED with the feed finger fully extended. This is to assure that each position in the connector is in alignment with the "tooling" before the machine can be cycled. For horizontal or vertical adjustment, loosen the respective two screws while moving switch UP or DOWN, and switch bracket RIGHT or LEFT as may be required.

6. REPAIR AND REPLACEMENT OF PARTS (Figure 2)

WARNING

BE SURE electrical power and air supply to the machine are turned "off" BEFORE attempting repairs or replacements to the applicator.

6.1. Wire Depth Repair

Under the wire disc and spacer disc is a laminated washer which may break or compress, causing the applicator to produce wire insertions of LESS depth than is required for the wire disc setting. To correct this problem, perform the following.

1. Determine the additional depth of wire insertion required for the wire disc setting. This difference will be the thickness of washer(s) (No. 690125-1) to be added under the discs.

NOTE

Washer No. 690125-1 is a peel-type, laminated washer consisting of five layers, with each layer being .002 in. thick.

2. Remove ram assembly from applicator, then loosen ram post locking screw in side of ram.
3. Hold ram assembly with ram post down, unscrew ram from ram post, leaving wire and spacer discs in place. If necessary, end of ram post may be secured in a vise to free both hands for turning ram.

CAUTION

DO NOT remove wire disc from ram post. Detent ball and spring will pop out and may become lost if disc is removed.

4. Place washer(s) of thickness determined in Step 1 on ram post. If old washer is broken and must be replaced, measure thickness of broken washer with a micrometer. Add this measurement to amount to be added (determined in Step 1), then select a new washer of this thickness. Place new washers on ram post.
5. Install ram on ram post and tighten by hand until snug. Check that letters (A, B, C, or D) on wire disc are CENTERED on SIDES of ram (sides which align with bosses on ram post adapter), and that disc is held in this position by detent ball. If necessary to align, turn ram back slightly until letters are centered, then tighten ram post locking screw to hold ram post in position.

NOTE

Turn wire disc to other positions. When a "click" is heard, check for letter centering on sides of ram.

6. Re-install ram assembly in applicator.

7. After applicator has been installed in machine and loaded with connectors, adjust wire disc as described in Section 5. Insert several wires and check for proper depth in contacts.

6.2. Wire Stuffer (Tooling) Replacement

1. Unload applicator as described in Section 4.
2. Hand-cycle machine as described in CM 5128 to fully lower applicator ram.
3. Remove two screws securing stuffer to applicator ram.
4. Install new stuffer in holder, then install holder on applicator ram with two screws. Return ram to the fully raised position by continuing to hand-cycle the machine.
5. Check contact-tooling alignment and wire insertion depth adjustments as described in Section 5.

7. CLEANING AND LUBRICATION

For best performance and minimum downtime, applicator should be cleaned, inspected, and lubricated after each eight hours of operation, and each time it is removed from the machine.

7.1. Cleaning

1. Remove applicator from machine as described in Section 3.
2. Remove ram assembly from applicator by pulling upward.
3. Using a clean, dry cloth, wipe entire applicator to remove dirt and contamination that may have collected. The applicator (less air and electric components) may be immersed in a suitable commercial solvent to flush.
4. After cleaning, lubricate applicator, as described in Paragraph 7.2, before re-installing in machine.

7.2. Lubrication

Lubricate the applicator at the points indicated and with the lubricants specified on the exploded view drawing.

CAUTION

Lubricants MUST be used sparingly, and ONLY at those points indicated. Any excess lubricant MUST BE wiped off BEFORE placing applicator back in service.