

IONOTRON STATIC ELIMINATORS

DESCRIPTION AND INSTALLATION

1. GENERAL

1.01 This section describes the T-100, T-35, and T-35A ←
Ionotron Static Eliminators and gives instructions on
shipping, installing, and removing.

1.02 This section is reissued to: ↗

- (a) Add the advice that local procedures be checked and followed in regard to city and state regulations concerning radioactive material.
- (b) Bring the drawing figures up to date.
- (c) Add information and drawings about placing the paper decal warning labels (Figs. 1, 2, and 3).
- (d) Explain the wording of the precautionary shipping label (Fig. 8). ↘

Changes are indicated by marginal arrows.

1.03 Static eliminators for removing static charges from teletypewriter paper or tape are designated as Ionotrons by the U. S. Radium Corporation. They employ a minute quantity of radium salt incorporated in a strip of metal. The radium salt emits radiations which ionize the air in the immediate vicinity so as to make the air conducting. The effect is to continuously discharge the static as it is formed. The amount of radium salt in each static eliminator is small, and with proper handling there is no hazard involved. Static eliminators are equipped with protective covers which absorb much of the radiation. This permits an eliminator to be handled during installation without possibility of personal harm. However, the Ionotron static eliminator is a radiating device and as such ↗
may be subject to regulations that some cities and states have enacted regarding radioactive material. Local procedures should be checked and followed if applicable in addition to the information contained in this section. ↘

Caution: In order to avoid possibility of mishandling the material, the precautions given below should be followed. The shipping regulations require that a label be attached to packages containing radium materials. This label is printed in RED and is used on packages containing teletypewriter static eliminators in the same way that it is used on packages containing large amounts of radium. The following precautions provide a liberal safety factor.

(1) Keep the protective cover in place at all times until the eliminator is installed in the teletypewriter. At this time open or remove the cover in order for the eliminator to become effective. On the 15 teletypewriter, the cover should be held in the auxiliary clips to be readily available if required later (Figs. 4 and 5). On the 28 teletypewriter the protective cover should be clipped behind the static eliminator as shown in Fig. 7. On the 14 teletypewriter or 14 typing reperforator, the protective cover is hinged and hangs downward when opened (Fig. 6).

Figs. 4, 5, 6, and 7

(2) In case any work is done on the teletypewriter unit or its cover, on which an Ionotron is mounted, the protective cover should be replaced over the active strip to protect it from harm and to cut off radiation. In replacing the cover, care should be exercised to prevent scratching the active surface. **Covers for the T-35 and the T-35A Ionotrons that are being manufactured at the present time have the clips at the extreme ends to eliminate scratching the surface.**

Note: It is not necessary to place the protective cover over the active surface when replacing paper or ribbon.

(3) When not installed in a machine, store the units in the original shipping containers provided by the manufacturer, or containers obtained from the Western Electric Company as described later, and place them in a metal locker away from the immediate space regularly occupied by personnel.

(4) When reshipping units, pack them in the original containers as furnished by the manufacturer or in containers obtained from the Western Electric Company. **Do not ship by U. S. mail.**

(5) In carrying static eliminators to a customer's office for installation, place them in the tool kit, not in a pocket of clothing.

(6) Do not carry sensitive photographic materials in the same tool kit with a static eliminator or store them in the same locker. The photographic material may become fogged.

(7) Individuals handling Ionotrons should wear thin cotton gloves or equivalent. In no case should persons having cuts or open sores on their hands or lower arms handle Ionotrons.

(8) Ionotrons should not be cleaned or dusted in the field.

(9) To provide a generous factor of safety any one craftsman should be limited to 50 installations in any one day.

1.04 The Ionotron static eliminator should be used only as specifically authorized by this section. Do not install it in any type of apparatus except as approved by this section or by other official instructions.

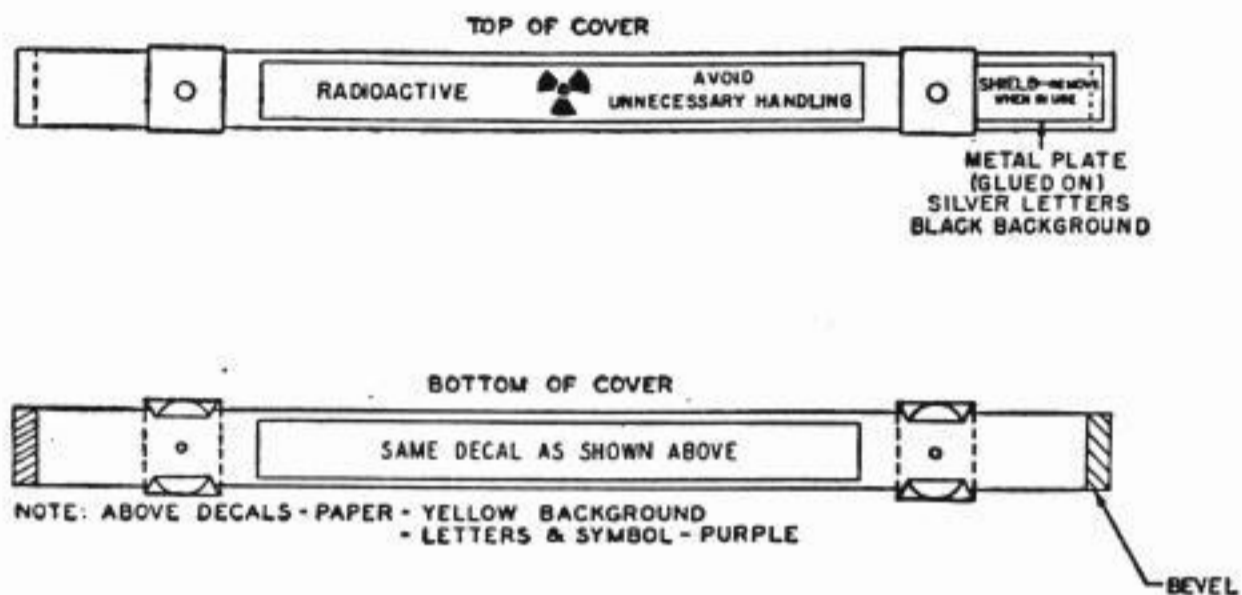
1.05 With proper handling the static eliminator should last indefinitely since the life of the active material is extremely great.

1.06 If the paper decal warning labels on the Ionotron units are torn, illegible, or missing, new labels should be attached as shown in the following figures. Fig. 1 shows the proper location for the labels on the older style protective cover for the T-35 Ionotron. Fig. 2 shows the location for the labels on the newer style protective cover which is used on both the T-35 and the T-35A Ionotron units. The same warning label should be used on the T-100 Ionotron unit but should be cut in two before being immersed in water. The first part of the label bearing the word RADIOACTIVE should be attached to the top side of the T-100 unit as shown in Fig. 3, and the second part bearing the radioactive symbol and the words AVOID UNNECESSARY HANDLING should be attached to the bracket as shown in Fig. 3. The decal label is applied in the usual manner by being immersed in water, slid off its backing and onto the desired surface.

Figs. 1, 2, and 3

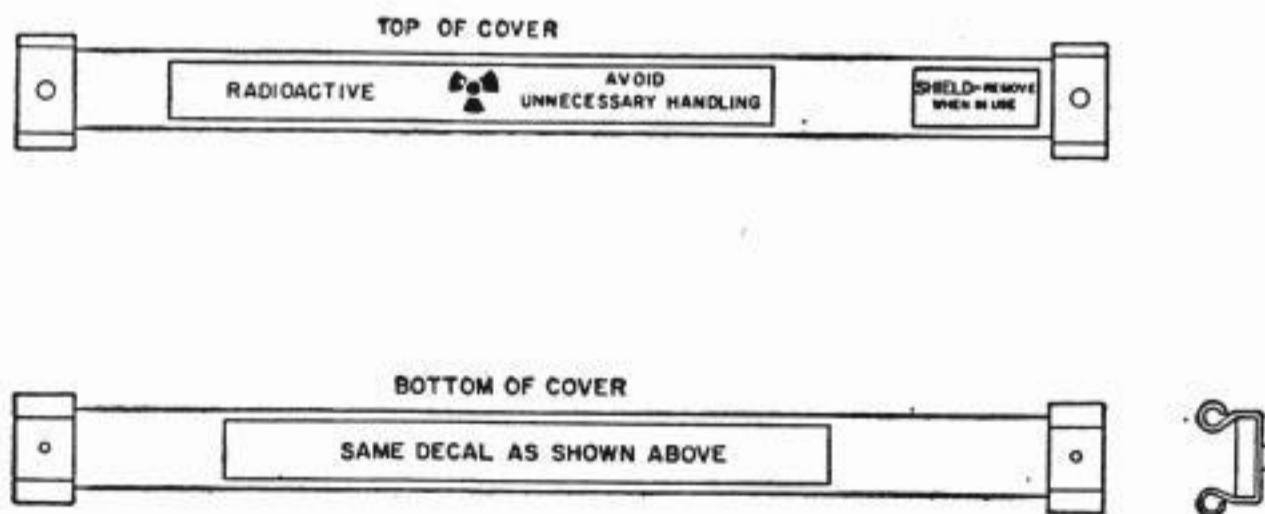
1.07 The labels should be ordered from a Western Electric Distributing House by description as follows:

Radioactive paper decal warning label (Quantity)
4 inches by 3/8 inch, purple letters and symbol on
yellow background.



T-35 Protective Cover, Old Arrangement (15 TTY)

Fig. 1



PROTECTIVE COVER, NEW ARRANGEMENT

Used with both T-35 and T-35A Ionotrons

Fig. 2

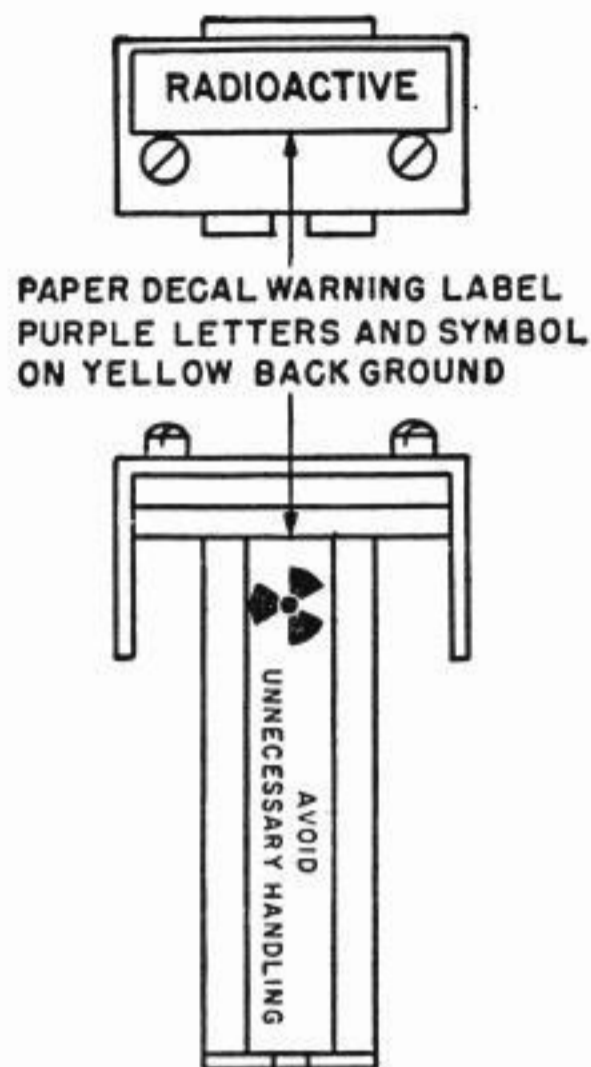


Fig. 3

1.08 The designation and serial numbers for Ionotron static eliminators covered in this section are:

| <u>Ionotron Designations</u> | <u>Used on</u> | <u>Serial Nos. Begin with</u> |
|------------------------------|-------------------------------------------|-------------------------------|
| T-100 | 14 Teletypewriter and Typing Reperforator | 21 |
| T-35 | 15 Teletypewriter | 601 |
| T-35A | 28 Teletypewriter | 1 |

1.09 See P31.154.1 for further information on numbering. ←

2. INSTALLATION OF T-35 IONOTRON STATIC ELIMINATOR IN 15 TELETYPEWRITER

2.01 Raise the rear cover lid and remove the two inner TP83885 nuts that hold the paper guide plate (cover lip). Retain the TP76099 washers and TP83885 nuts. **Fig. 4**

2.02 Without removing the protective cover, place the T-35 static eliminator on the two screws that hold the paper guide (cover lip) to the cover so that the parts are in position as shown in Fig. 4. Put back the washers and nuts. **Fig. 4**

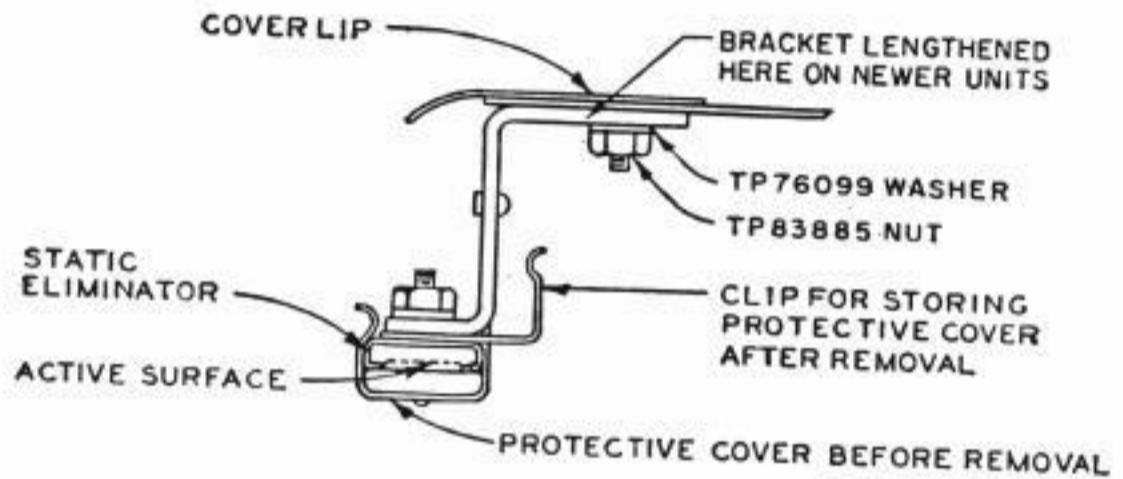


Fig. 4

2.03 Remove the protective cover and slip it under the spring clips on the brackets. When the cover lid is closed the active surface of the static eliminator should be above and slightly to the front of the paper straightening rod. **Figs. 4 and 5**

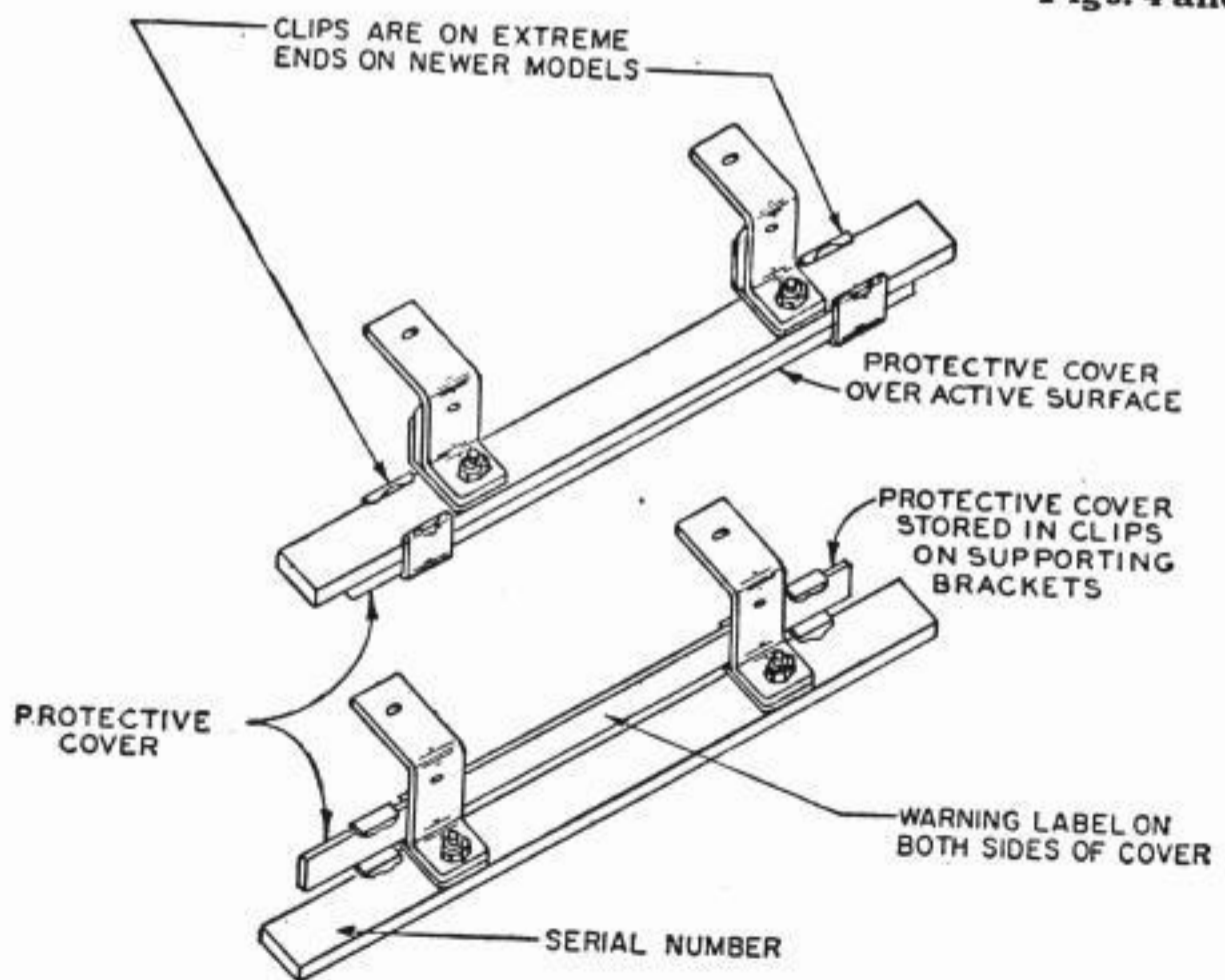


Fig. 5

3. INSTALLATION OF T-100 IONOTRON STATIC
ELIMINATOR IN 14 TELETYPEWRITER OR
14 TYPING REPERFORATOR

3.01 A TP8539 screw and a TP70314 washer will be required.

3.02 Remove the right-hand TP6746 screw and TP2191 lockwasher which mount the tape chute or tape platform. Retain the TP2191 lockwasher. Place the slot in the bracket portion of the static eliminator over the hole from which the TP6746 screw was removed, with the open end of the slot forward. Mount the static eliminator using a TP8539 screw, TP70314 washer, and the TP2191 lockwasher. Tighten the screw friction tight. Position the eliminator so that its active surface is centered over the tape. Fasten the screw securely. If the machine is equipped with a scissors guard instead of a tape chute, the installation is the same except that the bracket should be moved backward so as to rest against the guard. Open the protective cover.

Fig. 6

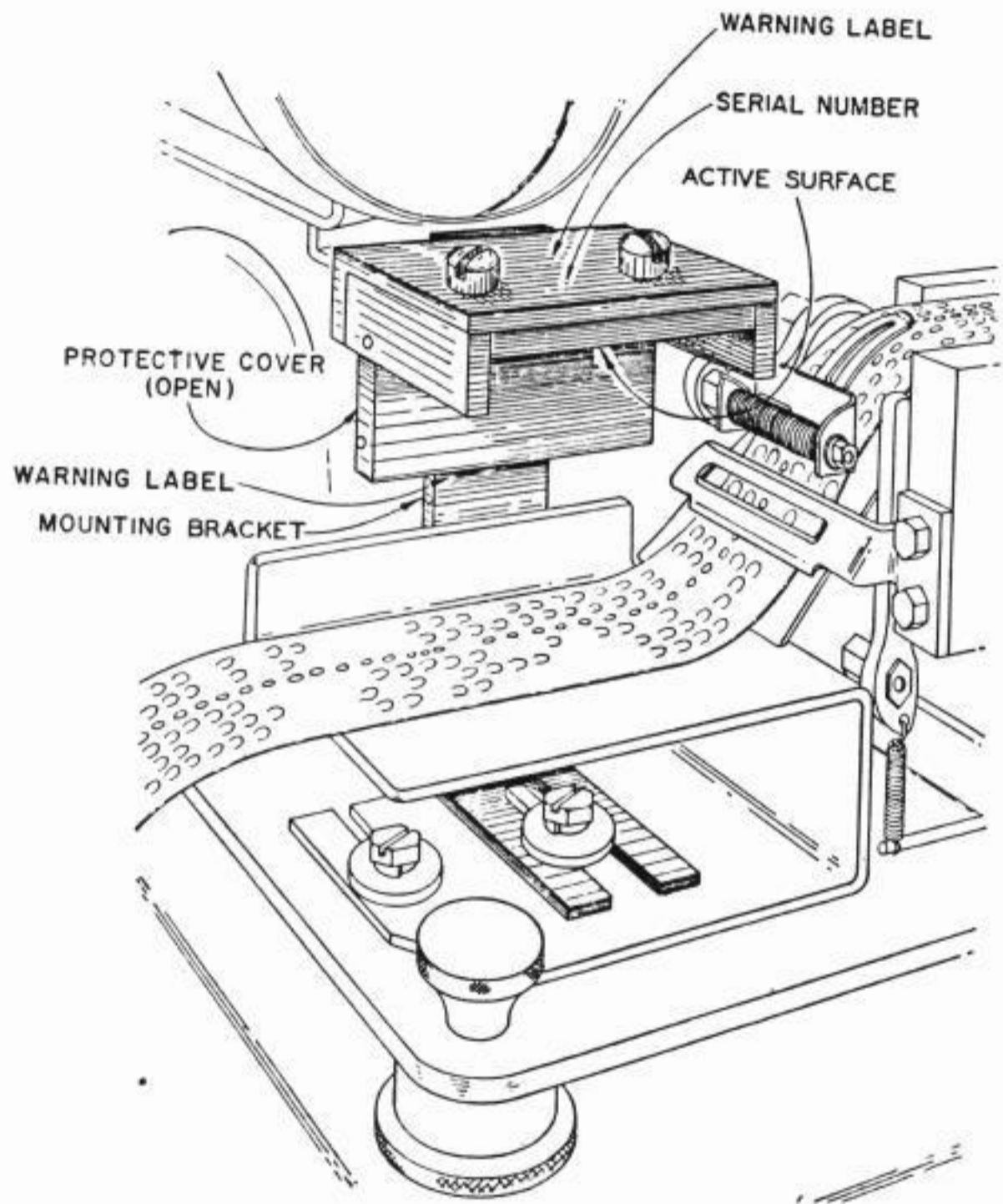


Fig. 6

3.03 For machines with tape chutes having TP7691 transparent covers, remove about 1-1/2 inches of the transparent cover at the right, so as to expose the tape to the eliminator. This is necessary in order to obtain effective results.

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4. INSTALLATION OF T-35A IONOTRON STATIC ELIMINATOR IN 28 TELETYPEWRITER

- 4.01 Raise the lid of the 28 teletypewriter cabinet.
- 4.02 Remove the two outer TP1176 screws which hold the TP151545 paper guide to the lid, and retain the screws and lockwashers.
- 4.03 Without removing the protective cover, mount the static eliminator on the underside of the paper guide as shown in Fig. 7 reusing the screws and lockwashers. In this operation be sure that the unit is positioned so that the active surface will face the platen (downward) when the lid is closed. The middle screw of the paper guide fastener will serve to retain the paper exit slot adjustment while this work is being done. **Fig. 7**
- 4.04 Remove the protective cover and clip it behind the static eliminator as shown in Fig. 7. **Fig. 7**

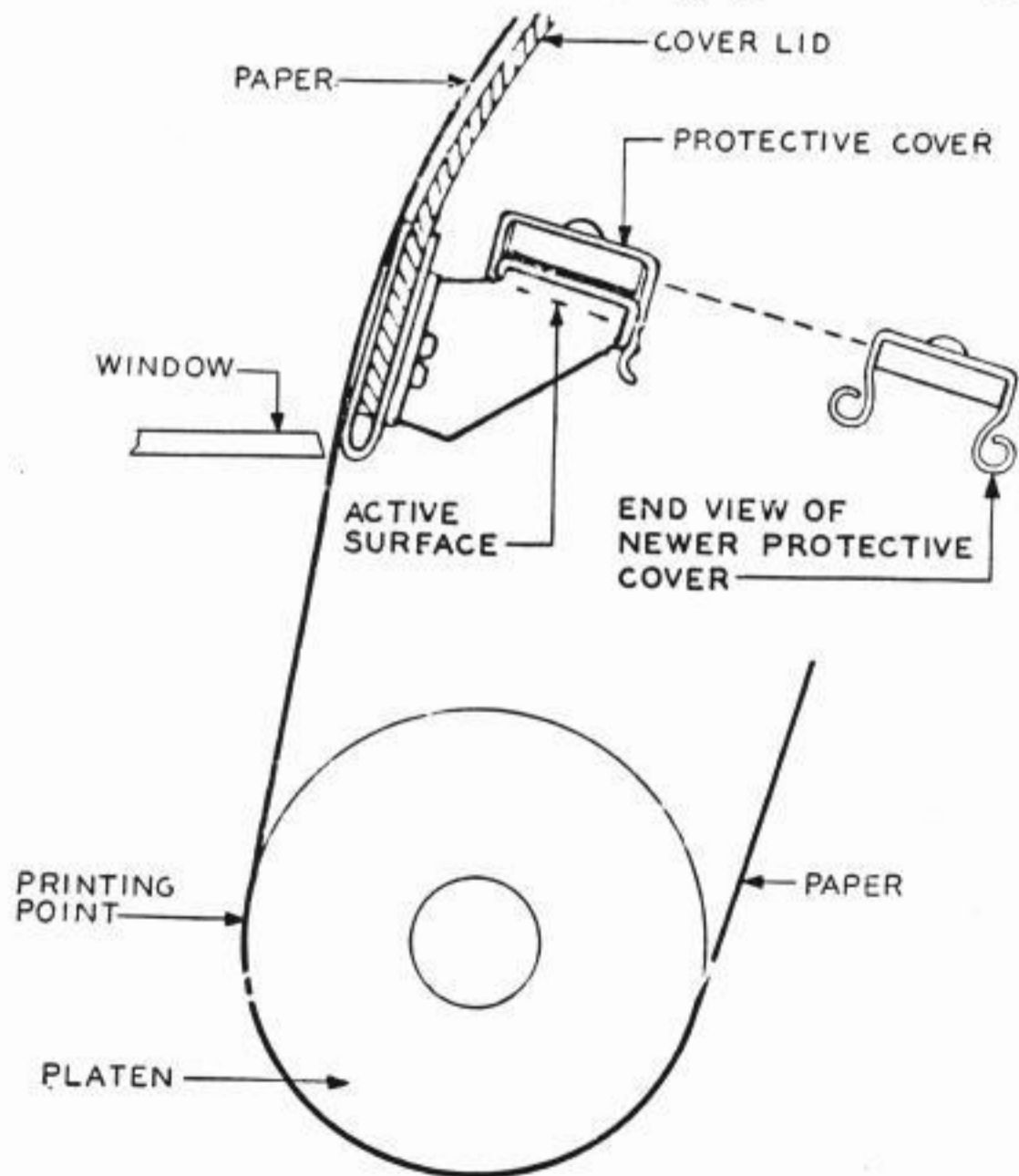


Fig. 7

5. REMOVAL OF IONOTRON STATIC ELIMINATOR

5.01 If it is necessary to remove a static eliminator, the protective cover should first be snapped into place over the active material. The nuts or screws holding the bracket may then be unscrewed and the eliminator removed. [See 1.03(3).]

5.02 While it is not expected that such shipments normally will be made, if a teletypewriter equipped with an Ionotron static eliminator should be removed from service and returned to the Western Electric Company, the Ionotron should be listed separately on the Returned Material Notice. This will serve to notify the Western Electric people of its presence so that the Ionotron may be removed for proper storage.

5.03 An Ionotron included as part of a shipment to another telephone company location should be listed separately on Material Transfer papers, so that the receiving station may handle the equipment properly.

5.04 It is desirable to place the protective cover over the active surface of the static eliminator during nonstatic seasons in order to keep the eliminator clean.

5.05 If for any reason an eliminator is to be junked, it should be packed in an original packing container or a container obtained from the Western Electric Company as described later, and returned to the Western Electric Company for such junking in order to make sure that it is properly disposed of. **Do not ship by U. S. mail.**

6. SHIPPING CONTAINERS

6.01 Packing materials for Ionotron static eliminators consist of a preliminary chipboard carton to hold an individual Ionotron and a corrugated fiberboard or wooden shipping container into which the preliminary carton or several of these are placed for shipment.

Preliminary cartons are available from the Western Electric Company under the following designations:

| <u>Carton No.</u> | <u>To Be Used for</u> | <u>Size (Inches)</u> |
|-------------------|-----------------------|-------------------------|
| RM-576678 | T-35 Ionotron | 10 by 3-1/4 by 2-5/8 |
| | T-35A Ionotron | |
| RM-576134 | T-100 Ionotron | 2-3/4 by 2-1/4 by 4-1/2 |

6.02 The carton numbers and sizes listed above are for Telephone Company reference for obtaining cartons for shipment and are not necessarily the size of cartons used for initial shipment and storage by the supplier.

6.03 Each Ionotron shall be centrally located in the chip-board carton utilizing tissue or other suitable dust-free stuffing medium to completely fill the void.

6.04 The shipping containers for overpacking the chip-board cartons may be obtained locally. No outside dimension of the containers shall be less than 4 inches. The empty space between the preliminary cartons and the shipping containers should be filled with a suitable stuffing material. Except for the label described in the next paragraph and shipment by express, no other precautionary measures are required.

6.05 Government regulations require that a label be affixed to each shipping container when shipped by express. Labels like or similar to the one shown here are available from the Western Electric Company by specifying: **Precautionary Label Required for Radioactive Material**. Fig. 8 shows the information to be entered on the label. Fig. 8



Fig. 8

FOR T-35 AND T-35A IONOTRONS

| <u>Number in Package</u> | <u>A</u> | <u>B</u> | <u>C</u> | <u>D</u> |
|----------------------------------|----------|----------|----------|-------------------------------------|
| 1 | Radium | .060 mg. | .05 | Insert the Telephone Co. name |
| 2 | " | .120 " | .10 | |
| 3 | " | .180 " | .15 | |
| 4 | " | .240 " | .20 | |

FOR T-100 IONOTRON

| <u>Number in Package</u> | <u>A</u> | <u>B</u> | <u>C</u> | <u>D</u> |
|----------------------------------|----------|----------|----------|-------------------------------------|
| 1 | Radium | .030 mg. | .025 | Insert the Telephone Co. name |
| 2 | " | .060 " | .050 | |
| 3 | " | .090 " | .075 | |
| 4 | " | .120 " | .100 | |
| 5 | " | .150 " | .125 | |
| 6 | " | .180 " | .150 | |
| 7 | " | .210 " | .175 | |
| 8 | " | .240 " | .200 | |

6.06 The expression "40 units" mentioned in the label in Fig. 8 and referred to in column C, does not mean 40 Ionotrons but 40 radiation units. A radiation unit equals one milliroentgen of radiation per hour at a distance of one meter. Accordingly it is possible to have as much as 800 T-35 or T-35A Ionotrons, or double that number of T-100 Ionotrons, in one location during the shipment without exceeding the 40-unit limit. However, it is recommended that shipments be kept far below the maximum of 800 or 1600 units to provide additional margins of safety.