

TELETYPEWRITER  
14 TYPE TRANSMITTER-DISTRIBUTORS  
INSTALLATION AND ADJUSTMENT OF  
101481M SET OF PARTS

1. GENERAL

1.01 This section covers the installation and adjustment of the 101481M set of parts and associated spark suppressor on 14 type transmitter-distributors.

1.02 The 101481M set of parts which includes a set of "tape-out contacts", provides a means for automatically stopping the transmitter-distributor when the end of a tape is reached.

1.03 The 101481M set of parts is designed to be applied only to transmitter-distributors equipped with the 101398M set of parts (the parts for chadless tape).

1.04 The spark suppressor is required only when the tape-out contacts are connected in the start magnet circuit of the 14 type transmitter-distributor. The following parts are required for the spark suppressor:

(a) For transmitter-distributor equipped with a synchronous motor and D.C. operation of the start magnet circuit.

- 1 - 82391M Condenser
- 1 - 76217M Bracket
- 2 - 6746M Screws
- 2 - 21919M Lock Washers
- 2 - 2986M Bushings
- 2 - 71155M Screws
- 1 - 122-276M Strap
- 3 - 3094M Insulators

(b) For transmitter-distributor equipped with D.C. shunt or A.C. series motor and D.C. operation of the start magnet circuit.

1 - 82391M Condenser

(c) For transmitter-distributor equipped with a synchronous motor and A.C. operation of the start magnet circuit.

1 - 19LB Resistance (in addition to all the items in (a) above)

(d) For transmitter-distributor equipped with A.C. series motor and A.C. operation of the start magnet circuit.

1 - 19LB Resistance  
1 - 82391M Condenser

(e) The mounting arrangements of these spark suppressors as covered in 2.21 and 2.26 are to be regarded as a temporary expedient, as there is now no standard arrangement available.

## 2. INSTALLATION

### (A) Installation of Contact Bracket Assembly and Contact Pin Guide Assembly

2.01 Remove the snap panel transmitter cover, top plate assembly (held by four 1160M screws) and the base plate.

2.02 Remove the two 1162M screws that clamp the front feed roll bearing to the top plate.

2.03 Using the two 1168M screws, two 103-27M washers and two 3640M lockwashers supplied with the set of parts, mount the 97448M contact pin guide on the feed roll bearing with the two holes in the contact pin guide in line with the hole for the tape-out pin in the tape guide plate. The 97448M contact pin guide should be between the bearing block and the washers, and lockwashers placed under the heads of the mounting screws.

2.04 Mount the 97467M contact bracket assembly on

the front 77004M bracket casting with the two 1161M screws and the two 2191M lockwashers furnished, using the two mounting holes located near the front edge of the bracket and the insulator on the 97721M contact spring positioned upward.

2.05 Install the 97447M contact pin in the 97448M contact pin guide with the larger diameter of the pin resting on the insulator of the contact, and replace the top plate.

(B) Installation of 97449M Cable When Tape-Out Contacts Are Connected to External Control Circuit of the 81-A-1 Teletypewriter Switching System

2.06 Unsolder the green and black leads from slip connector Terminal No. 7 and splice together and tape.

2.07 Solder the two leads at one end of the 97449M cable to the soldering lugs of the tape-out contact springs, the red lead to the upper spring, the white to the lower.

2.08 Run the 97449M cable along the existing cable from the tape stop switch to the slip connector terminal block, tying where necessary.

2.09 Solder the red wire to slip connector Terminal No. 4, the white wire to slip connector Terminal No. 7.

(C) Installation of 97449M Cable When Tape-Out Contacts Are Connected to External Control Circuit of the 81-B-1 Teletypewriter Switching System

2.10 Unsolder the black lead from slip connector Terminal No. 1 and tape.

2.11 Solder the two leads at one end of the 97449M cable to the soldering lugs of the tape-out contact springs, the red lead to the upper spring, the white lead to the lower.

2.12 Run the 97449M cable along the existing cable from the tape stop switch to the slip connector terminal block, tying where necessary.

2.13 Solder the red wire to slip connector Terminal No. 4, the white wire to slip connector Terminal No. 1.

(D) Installation of 97449M Cable When Tape-Out Contacts are Connected in Start Magnet Circuit Including the Addition of Spark Suppressor Condenser on Transmitter-Distributors (No External Control Circuit and With Transmitter-Distributor Start Magnet Arranged for D.C. Operation.

2.14 Connect the one end of the 97449M cable to the tape-out contact springs as in 2.07.

2.15 Run the 97449M cable along the existing cable and tie as in 2.08.

2.16 Disconnect the black lead from slip connector Terminal No. 8.

2.17 Connect the black lead referred to in 2.16 and the red lead of the 97449M cable to slip connector Terminal No. 4.

2.18 Connect the white lead of the 97449M cable to slip connector Terminal No. 8.

2.19 Assemble the parts required for the spark suppressor for a transmitter-distributor equipped with synchronous motor as follows:

Arrange the 3094M flat bakelite insulators so that one is between the 82391M condenser and the 76217M bracket and two are between the 82391M condenser and 122-276M strap. The 2986M bakelite bushings are to be used on the 7115M strap mounting screws to prevent contact between them and any part of the condenser.

2.20 Where the transmitter-distributor is equipped with a synchronous motor mount the above equipment to the right of the motor unit, using the two tapped holes provided in the base casting, with the two 6764M screws and 2191M lockwashers.

2.21 Where the transmitter-distributor is equipped with a DC shunt or an AC series motor locate the 82391M condenser, required for the spark suppressor, to the back of and in line with the 82378M assembly and fasten it by means of a locally made thin metal strap secured under the 76217M bracket and 122-276M strap of the assembly. Insulate the thin metal strap from any contact with the condenser by at least two thicknesses of friction tape or the equivalent.

2.22 Strap the two outside terminals of the 82391M condenser (1/2 mf - 1/2 mf) and connect to one terminal of the start magnet. Connect the mid-terminal of the condenser to the other terminal of the start magnet. It is preferable to use either No. 18 or No. 20 Deltabeston wire, taking care to run the wire so as not to interfere with any moving parts.

(E) Installation of 97449M Cable When Tape-Out Contacts Are Connected in Start Magnet Circuit Including the Addition of Spark Suppressor Condenser on Transmitter-Distributors (No External Control Circuit and With Transmitter-Distributor Start Magnet Arranged for A.C. Operation)

2.23 Proceed as outlined in 2.14 to 2.18, inclusive.

2.24 Assemble the parts required for the spark suppressor for a transmitter-distributor equipped with synchronous motor as covered in 2.19, and in addition mount the 19LB Resistance between the two insulators under the 122-276M strap.

2.25. Where the transmitter-distributor is equipped with a synchronous motor mount the above equipment as described in 2.20.

2.26 Where the transmitter-distributor is equipped with a DC shunt or an AC series motor locate

the 82391M condenser and the 19LB resistance required for the spark suppressor to the back of and in line with the 82378M assembly and fasten it by means of a locally made arrangement similar to the one described in 2.21, taking care that the resistance and condenser are insulated from contact with each other and from any other surrounding metal by at least two thicknesses of friction tape or the equivalent.

2.27 Strap the mid-terminal of the 19LB resistance to the mid-terminal of the 82391M condenser. Connect one of the outside terminals of the condenser to one of the start magnet terminals and one of the outside terminals of the resistance to the other terminal of the start magnet. It is preferable to use either No. 18 or No. 20 Deltabeston wire. This will connect a spark suppressor consisting of a 150 ohm resistance and a 1/2 MF condenser in series across the magnet winding.

### 3. ADJUSTMENTS

3.01 Contact Guide Pin shall be located in the hole in the tape guide plate minimum .010" to maximum .020" from the edge of the tape guide plate shoulder. Gauge by eye.

(a) Adjust by means of guide mounting screw.

3.02 Feed Wheel shall be free to rotate in its bearings with a maximum end play of .002", when the detent roller is not engaged with its ratchet. Gauge by eye.

(a) To adjust, loosen the two 1168M clamping screws and reposition front feed roll bearing. (The top plate must be removed or an offset screw-driver used when making this adjustment)

3.03 Tape Stop Contact Pin shall extend so that its top end is .005" (Gauge by eye) below the lower surface of a straight edge placed across the top edges of the tape guide plate when the tape retaining lid is raised and no tape is in the transmitter.

(a) To adjust, bend the upper contact spring.

3.04 Lower Contact Spring shall require minimum 20 grams, maximum 25 grams just to open the contact when the tape retaining lid is closed and a fresh piece of tape is in the transmitter. (Apply the end of the 68B gram gauge to the lower contact spring adjacent to the contact point and use a test lamp, buzzer, or ohmmeter to determine the point at which the contacts break.)

(a) Adjust by bending the lower contact spring.

3.05 Contact Gap shall be minimum .010", maximum .015" when the tape is removed and the pin is located as in 3.03.

(a) To adjust, remove the tape and bend the stiffener, then reinsert the tape and recheck as in 3.04.

#### 4. LUBRICATION

4.01 Apply a drop of oil between the tape-out pin and guide bracket.