

**INSTRUCTIONS FOR INSTALLING THE 97451, 98137, 101481, 101389,  
106922 or 113751 SET OF PARTS TO PROVIDE END OF TAPE STOP  
MECHANISM AND TO HANDLE FULLY PERFORATED, CHADLESS OR SPLICED  
CHADLESS TAPE ON A MODEL 14 TRANSMITTER DISTRIBUTOR (5 UNIT) ALSO  
THE 113776 SET OF PARTS TO PROVIDE END OF TAPE STOP MECHANISM  
ON A MODEL 20 TRANSMITTER DISTRIBUTOR  
(6 UNIT)**

**1. GENERAL**

a. The 101481 or 113751 Set of parts when installed on a Model 14 Transmitter Distributor (equipped with the 101389 set of parts) provides for the closing of a contact when tape is inserted in the transmitter and which opens when the end of the tape passes through the transmitter. This is called the end of tape stop mechanism. The 113751 set of parts can be installed only on Model 14 Transmitter Distributors equipped with the 101389 set of parts, and the tight tape stop contacts; the 101481 set of parts is used on units not equipped with tape stop contacts.

b. The 101389 set of parts equips the Model 14 Transmitter Distributor to handle fully perforated, chadless, or spliced chadless tape. The old style 101389 set of parts was not arranged to handle spliced chadless tape.

\*c. The 97451, 98137 or 106922 set of parts provides the end of tape stop mechanism, mentioned in paragraph 1.a., and equips the Model 14 Transmitter Distributor to handle fully perforated or chadless tape only; spliced chadless tape cannot be handled. The 97451 set of parts is used on units not equipped with tape stop contacts. The 98137 and 106922 sets of parts are used on units equipped with tape stop contacts. The 106922 set of parts includes a power cord.

\*d. The 113776 set of parts provides the end of tape stop mechanism, (mentioned in paragraph 1.a.) for Model 20 Transmitter Distributors; arranged to handle only fully punched tape.

\*e. For theory of operation of the end of tape stop mechanism, refer to Model 14 and 20 Transmitter Distributor Description Bulletin.

\*f. The sets of parts consist of the parts listed in Table 1.

g. For parts not identified herein refer to Teletype Model 14 and 20 Transmitter Distributor Parts Bulletin.

**2. INSTALLATION (Figure 1)**

a. Remove the distributor cover, transmitter snap panel, transmitter cover and tape exit guide; also for the 97451, 98137 or 101389 set of parts remove the 125874 bracket and the upper spring contact assembly; also for the 97451, 98137, 101389 or 113776 remove the base plate.

b. For the 97451, 98137, 106922 or 101389 set of parts, remove and discard retaining lid assembly by removing the two 1159 screws which fasten the lid

\*Indicates change

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assembly to the top plate of the transmitter.

c. For the 113776 set of parts.

(1) Remove and retain the retaining lid assembly and 1159 screws.

(2) Remove the 125872 shaft and 125871 lid holder from the retaining lid assembly. Attach the 116805 retaining lid furnished to the 125871 lid holder by means of the 125872 shaft. Transfer the following parts from the old tape lid assembly to the new tape lid: 72973 lid plate, 1168 screws, 72139 screw plate, 72137 shims, 125873 latch, 112873 spring and 125278 shaft.

d. For the 97451, 98137, 106922, 101389, or 113776 set of parts.

(1) Replace the tape guide plate with the 97468, 111627, or 116804 tape guide plate which has a hole for the tape out contact pin.

NOTE: The 97468 tape guide plate is not supplied with the 98137 set of parts. The 77033 tape guide plate may be worked over to a 97468 tape guide plate using a 98155 drill jig, (see paragraph 4) otherwise order a 97468 tape guide plate or a 111627 tape guide plate and a 111628 tape retainer lid separately.

(2) Install the 101393, 111631, or tape retaining lid assembly (assembled in paragraph 2.c.(2) using the two screws removed in paragraph 2.b.

e. For the 97451, 98137, 101481, 106922, 113751 or 113776 set of parts.

(1) Remove and retain the top plate assembly and the four 1160 screws which fasten the top plate in place.

\*(2) Holding the top plate assembly so that the bottom side is facing upward, remove and discard the two 1162 screws that clamp the front feed roll bearing. Mount the 97448 contact pin guide on top of the front feed roll bearing with the bent-over portion toward the feed wheel, using the two 1177 screws, 110743 lock washers, and 125011 flat washers. The small hole in the guide should approximately line up with the round hole in the tape guide plate; check by using the 97447 contact pin.

f. For the 97451, 98137 or 101389 set of parts.

\*(1) Loosen the 125197 screws, thus releasing the 125855 spring anchors on all contact levers and unhook the 4708 feed lever spring from the spring anchor.

(2) Remove the two 1169 screws which mount the lever bearing and remove the contact lever assembly by carefully raising the contact end while lowering the sensing pins out of the guide slots in the lever guide.

(3) Remove the five contact tongues, keeping them in order so that they may be reassembled in their original relative positions.

NOTE: This operation is necessary to avoid injury to the insulation by heat in soldering.

(4) Then proceed as follows:

\*(a) Unsolder the five 81731 contact lever springs from the contact tongues and discard the spring and anchor assemblies, except where the use of 41382 springs is specified in which case the 41382 springs should be soldered to the spring anchors and the 81731 springs discarded. Apply heat sparingly to avoid annealing the spring. Apply solder sparingly so that no accumulation of it will interfere with the assembly of the spring anchors.

(b) Clamp edges of tongue, between the jaws of a vise, if one is available, with the soldering lug projecting horizontally, free of the vise.

\*(c) Hook the free loop of the 41382 spring or of the spring in the 101715 terminal spring assembly over the soldering lug of the tongue.

\*(d) Solder the spring to the contact tongue, taking care to align the spring to be vertical and at right angle to the soldering lug of the tongue and to have the curved portion of the anchor facing toward the contact end of the tongue. Apply heat sparingly to avoid annealing the spring. Apply solder sparingly so that no accumulation of it will interfere with the assembly of the pileup.

(e) Remount the five contact tongue assemblies.

\*(5) Reassemble the contact lever assembly to the transmitter, carefully passing the tape pins under the lever guide, making sure that each lever is properly positioned in its guide slot. Also, each spring anchor should be inserted carefully behind its wire terminal and the contact end of the lever properly in line with its contact screw. Rehook the 4708 feed lever spring to its spring anchor.

(6) Make certain that the contacts on the tongues line up properly with the contact screws.

g. For the 101389 set of parts

(1) Remove the 125155 screw that clamps the lever guide to the rear transmitter bracket. Mount the 101439 feed pawl lever stop to the lever guide with the projecting portion of the bracket at the top and toward the front, using the 125155 screws just removed with a 3649 flat washer and 2191 lock washer under the head of the screw.

(2) Replace the 77074 cam with the 101441 cam with the surface marked "X" facing downward.

h. For the 97451, 98137, 101481, 106922, 113751 or 113776 set of parts.

\*(1) Mount the 97467 or 135682 contact bracket assembly with the

springs extending horizontally toward the rear to the 77004 or 77022 bracket, using the two tapped holes at the front of the casting and clamping it (and the 97922 stop plate if present on unit) in place with the two 1161, 6746, 8539 or 80342 screws and 2191 lock washers. If necessary, loosen the two 1206 screws which secure the contact springs when mounting the contact bracket assembly; then align the contact springs and tighten the 1206 screws.

(2) Reinstall the top plate assembly after inserting the 97447 contact pin in its guide with the large end down, holding the pin in place until it rests on the insulator of the contact spring. Fasten in place by means of the 1160 screws retained in paragraph 2.e.(1).

i. For the 97451, 101481 or 113776 set of parts.

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

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

(3) Connect the two leads at the other end of the 97449 cable to terminals at the slip connector terminal to provide the type of service desired. Where the tape out contacts are used to stop the transmitter, connect the leads as follows:

(a) For the 97451 or 113776 set of parts see wiring diagram 1874WD furnished with the sets of parts.

(b) For the 101481 set of parts, transfer the black lead from slip connector terminal 8 to terminal 4; connect the white lead of the 97449 cable to slip connector terminal 8 and the red lead to terminal 4.

j. For the 98137 or 113751 set of parts.

(1) Unsolder the wire connected to the upper terminal of the toggle switch and connect this wire to the upper terminal of the 97467 contact bracket (assem). Connect the 96258R strap between the remaining terminal of the contact bracket and the upper terminal of the toggle switch. See Figure 2.

(2) For the 98137 set of parts, mount the 98069 tape guide wire and the two 7002 washers under the heads of the two 1160 screws used to secure the top plate. The horizontal portion of the tape guide wire should be below the level of the top plate.

k. For the 106922 set of parts.

(1) Place the unit on its left side and remove the 80460 cable clamp which holds the 104663 power cord.

(2) Connect the terminal of the wire from the small lug on the plug

(on 108254 cord assembly) to the terminal on the right side of the 76117 terminal block as shown in Figure 3. Connect the other terminal of the wire on the 108254 cord assembly to the terminal on the right side of the 76117 terminal block as shown in Figure 3.

(3) Remount the 80460 cable clamp to hold the 104663 power cord and the 108254 cord assembly, leaving some slack between the cable clamp and the terminal block. Tighten the screws.

(4) Connect one end of the 111688 connector wire (Orange) to the left terminal of the 76117 terminal block as shown in Figure 3. Lay this wire along-side of the other cable, so that it does not interfere with moving parts and connect other end to the top (swinger) contact spring terminal (on end-of-tape contact assembly) as shown in Figure 3 and solder in place. Connect one end of the 111689 connector wire (Red) to the terminal of the release magnet coil as shown in Figure 1. Thread the other end of the wire down through hole in top of base casting and route wire along-side of other cables, so that it does not interfere with moving parts and connect to the lower (stationary) contact spring terminal (on end-of-tape contact assembly) as shown in Figure 3 and solder in place.

1. Replace the upper spacing contact assembly, the left bracket, the base plate, the top plate assembly, the transmitter cover, the snap panel, the tape exit guide, and the distributor cover.

### 3. ADJUSTMENTS AND LUBRICATION

a. Refer to the Model 14 and 20 Transmitter Distributor Adjustment Bulletin with correction sheets and remake the following adjustments when applicable. Adjustments (5) through (12) apply only to Model 14 Transmitter Distributors.

- (1) Tape Space
- (2) Tape Guide
- (3) Detent Bracket
- (4) Tape Retaining Lid Plate
- (5) Lower Contact Screw
- (6) Upper Contact Screw
- (7) Feed Lever Adjusting Screw
- (8) Operating Lever Adjusting Screw
- (9) Feed Lever Upstop
- (10) Operating Cam
- (11) Contact Lever Spring Tension
- (12) Feed Lever Spring Tension
- (13) End of Tape Stop
  - a. Contact Pin Guide
  - b. Contact Spring
- (14) Tape Guide Wire

Adjust the position of the tight tape stop rod so that the bottom of the rod is even with the lower side of the 98069 tape guide wire. Adjust the

tape guide wire so that it is parallel to the tight tape stop rod and approximately 1/16" to the left of the rod.

4. INSTRUCTIONS FOR WORKING OVER THE 77033 TAPE GUIDE PLATE TO A 97468 TAPE GUIDE PLATE (Drill Jig 98155 Required)

Place the 98155 drill jig in the channel of the 77033 tape guide plate with the cutout portion of the drill jig over the narrow edge of the tape guide and the locating pin in the tape pin slot. Drill a hole in the tape guide with a No. 48 drill (.076") using the hole in the drill jig as a guide for the location of the hole. Scribe a line across the top surface of the narrow edge of the tape guide, using the edge of the cut-out portion of the drill jig as a guiding surface.

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TABLE 1 - COMPONENTS OF THE SETS OF PARTS

(5230S)

SETS OF PARTS

Parts marked (+) are old style; not used for spliced tape.

QUANTITY	PART NUMBER	DESCRIPTION	97451	98137	101389	101481	106922	113751	113776
2	1161	Screw 6-40 x 1/4 Fil.	X						
2	1177	Screw 4-40 x 11/32 Fil.	X	X		X	X	X	X
1	2191	Lock Washer			X				
2	2191	Lock Washer	X	X		X	X		
1	3649	Flat Washer			X				
2	6746	Screw 6-40 x 5/16 Hex.		X			X	X	
*2	7002	Flat Washer		X					
*5	41382	Spring		X					
2	80342	Screw 6-40 x 23/64 Hex.				X			
1	96258R	Wire Strap		X				X	
1	97447	Contact Pin	X	X		X	X	X	X
1	97448	Contact Pin Guide	X	X		X	X	X	X
1	97449	Cable	X			X			X
*1	97467	Contact Bracket Assembly	X	X		X	X	X	
1	+97468	Tape Guide Plate	X				X		
1	98069	Tape Guide Wire		X					
1	+101393	Tape Lid Assembly	X	X			X		
1	101439	Feed Pawl Lever Stop							
1	101441	Operating Cam			X				
5	101715	Terminal Spring Assembly	X		X				
1	108254	Cord Assembly					X		
2	110743	Lock Washer	X	X		X	X	X	X
1	111627	Tape Guide Plate			X				
1	111631	Tape Lid Assembly			X				
1	111688	Connector Wire W/Terminal					X		
1	111689	Connector Wire W/Terminal					X		
1	116804	Tape Guide Plate							X
1	116805	Tape Lid							X
2	125011	Flat Washer							X
1	135682	Contact Bracket Assembly	X	X		X	X	X	X
1	1874WD	Wiring Diagram	X						X

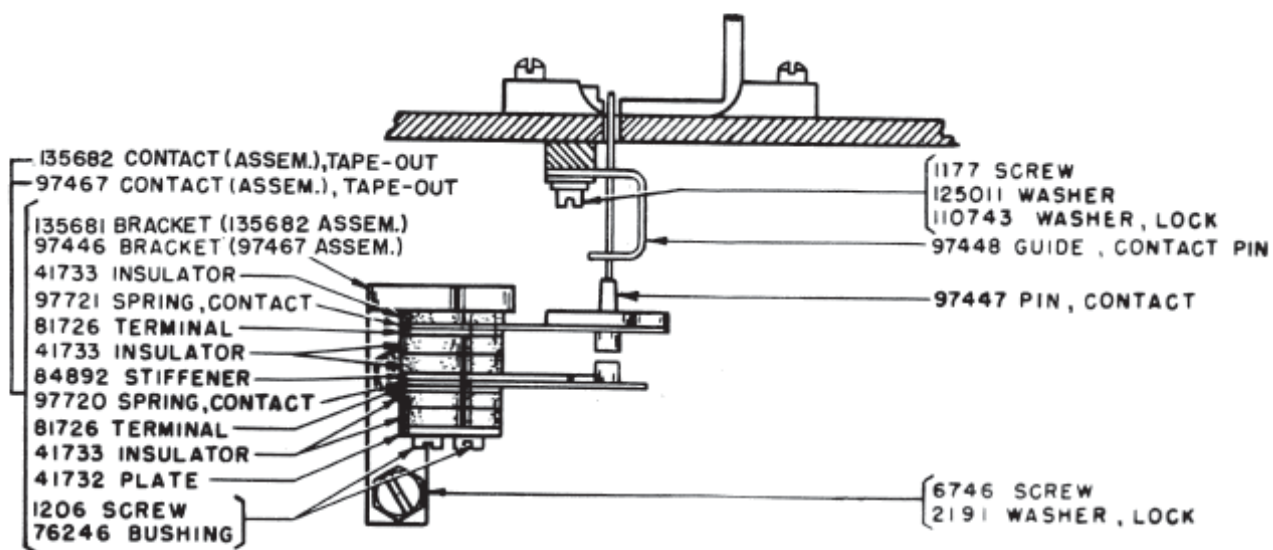


FIGURE 1

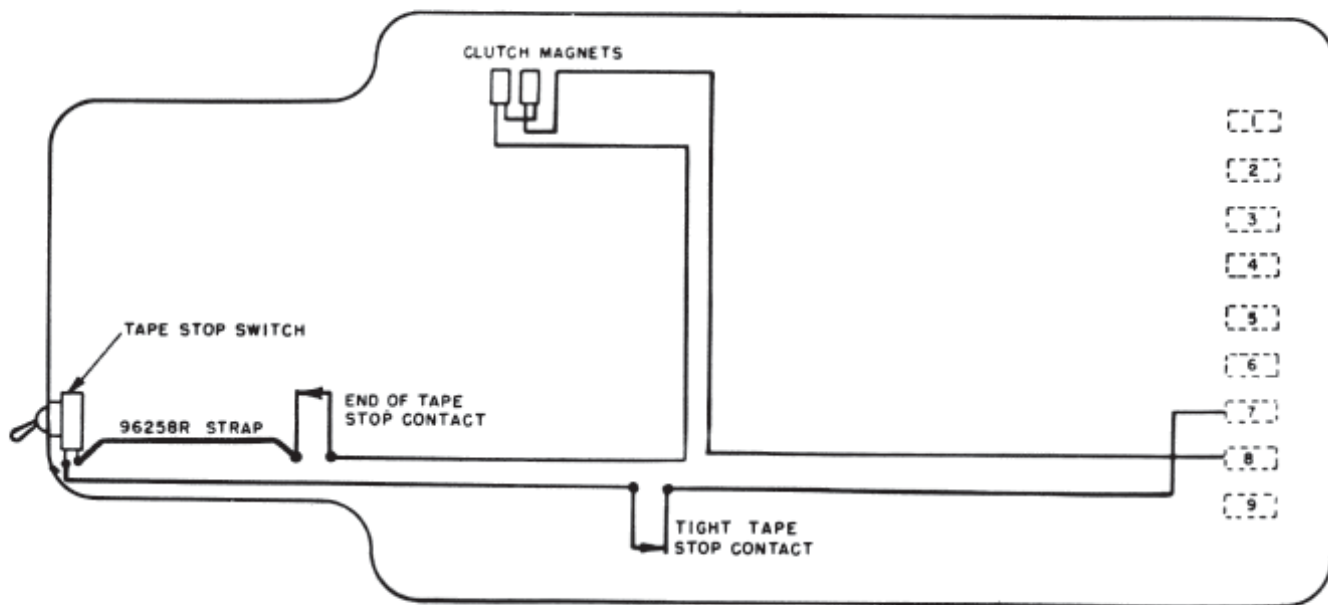


FIGURE 2



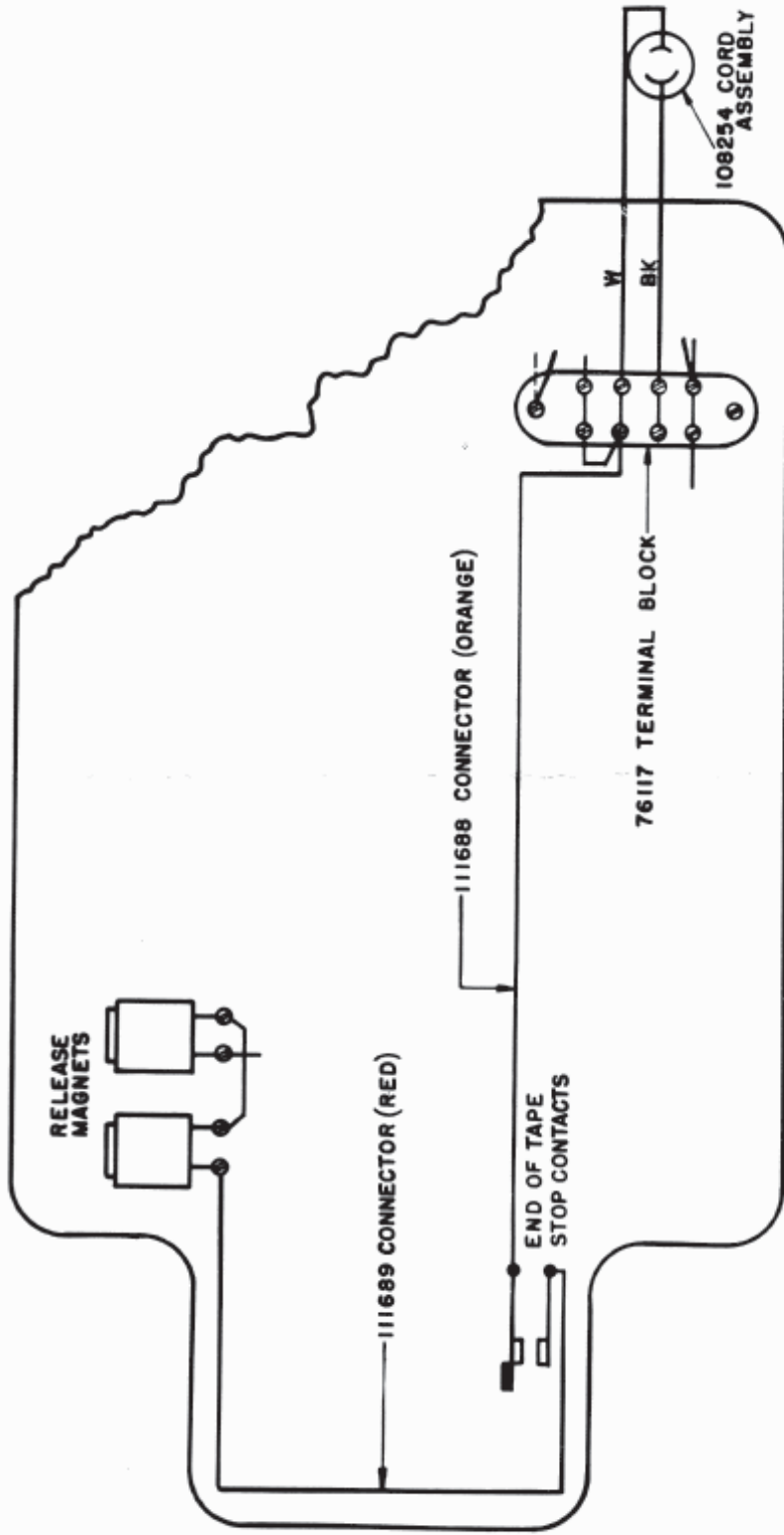


FIGURE 3