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**BELL SYSTEM PRACTICES**  
**Teletypewriter and Data Stations**

**ADDENDUM P34.415**  
**Issue 1**

## **28F, 28G, 28G-1, AND 28LA**

### **TRANSMITTER-DISTRIBUTOR UNITS**

### **DISASSEMBLY AND REASSEMBLY ROUTINES**

#### **1. GENERAL**

1.001 This addendum supplements Section P34.415, Issue 1.

1.002 This addendum is issued to include the disassembly and reassembly instructions for the 28LA transmitter-distributor unit and to change the title of the section accordingly.

The following change applies to Part 1 of the section:

(a) 1.01—revised

1.01 This section contains the specific disassembly instructions for the 28F, 28G, 28G-1, and 28LA transmitter-distributor units.

#### **2. DISASSEMBLY AND REASSEMBLY**

The following changes apply to Part 2 of the section:

(a) 2.04.1—added paragraph

(b) 2.05, 2.06, and 2.10—revised

(c) 2.10.1—added paragraph

(d) 2.11, 2.13(1), and 2.17—revised

##### **2.04.1 To Remove the Transmitter-Distributor Unit from Its Base**

(1) Disconnect the cable connectors if the unit is so equipped.

(2) Remove the two left mounting screws and the one right mounting screw.

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- (3) Lift the unit upwards to disengage the driving gear.
- (4) Remove the transmitter-distributor unit from its base.

## 2.05 Oil Reservoir

- (1) Remove the transmitter-distributor unit from its base as specified in 2.04.1.
- (2) Remove the four screws that secure the crossbar to the front and rear plates.
- (3) Unhook the springs attached to the underside of the crossbar.
- (4) Lift the oil reservoir upwards and remove from the transmitter-distributor unit.

## 2.06 Distributor Block Assembly

- (1) **On units with a cable connector on the rear plate,** remove the nuts that secure the connector to the plate, remove the three screws that secure the assembly, and lift out the assembly.
- (2) **On units with cable terminations at the connector** on the bottom of the casting, remove the three screws that secure the assembly, and lift out the assembly far enough to permit servicing.

**Reassembly Note:** Check, and if necessary remake, the distributor block assembly adjustments as specified in the section containing the requirements and adjustments for the 28F, 28G, 28G-1, and 28LA transmitter-distributor units.

## 2.10 Feed Wheel (On Units Equipped with One Feed Wheel)

- (1) To remove the feed wheel, back off the nut that secures the cantilever post sufficiently to raise the post and slide the feed wheel off.

### 2.10.1 Feed Wheels (On Units Equipped with Two Feed Wheels)

- (1) **Lower Feed Wheel:** To remove the lower feed wheel, proceed as specified in 2.10(1).
- (2) **Upper Feed Wheel:** To remove the upper feed wheel, proceed as follows:
  - (a) **Side-plate-mounted Feed Wheel:** Remove the upper, front side plate. Remove the drive screw, slide out the feed-wheel shaft, and remove the feed wheel.
  - (b) **Top-plate-mounted Feed Wheel:** Remove the top plate together with the feed wheel, bearings, and the run-out solenoid. Remove the front feed-wheel bearing and drive screw, and slide out the feed-wheel shaft. Remove the feed wheel, being careful not to

break or damage the electrical connections to the solenoid.

**Reassembly Note:** After reinstalling the upper feed wheel, check, and if necessary remake, the upper feed-wheel adjustments as specified in the section containing the requirements and adjustments for the 28F, 28G, 28G-1, and 28LA transmitter-distributor units.

### 2.11 Storing Switch Assembly

- (1) If the unit is equipped with a cable connector, remove the two screws that secure the connector to the bracket beneath the casting.
- (2) Remove the four mounting screws that secure the storing switch assembly to the main casting.
- (3) Withdraw the storing switch assembly as far as possible to permit servicing.

**Caution: Observe care in handling so as not to damage the slide projections.**

**Reassembly Note:** When reinstalling the storing switch assembly, replace the left front screw first and position the assembly about this pivot to align the slides. Check, and if necessary remake, the storing switch assembly adjustments as specified in the section containing the requirements and adjustments for the 28F, 28G, 28G-1, and 28LA transmitter-distributor units.

### 2.13 Sensing Pins

- (1) Remove tape-guide plate, spring bracket, sensing-finger guide, and storing switch assembly.

### 2.17 Clutch-trip Assembly

- (1) Remove the mounting screws and nuts.
- (2) **On units where the wiring is not long enough**, remove the electrical connector mounting screws, and remove the assembly with the connector, switches, and associated cabling.
- (3) **On units where the wiring is long enough** to permit most servicing, the electrical connections need not be disturbed; however, if necessary, unsolder the leads at the magnet coils.

## 3. REFERENCE TO BELL SYSTEM PRACTICES

The following change applies to Part 3 of the section:

- (a) 3.01—revised P34.001 subject heading

P34.001—Alphabetical Index of 28-type Equipment, Bell System Practices, and Associated 28 ASR Station Drawings.

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**SECTION P34.415**  
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# **28F, 28G-TYPE, 28LA, AND 28LB TRANSMITTER-DISTRIBUTOR UNITS DISASSEMBLY AND REASSEMBLY ROUTINES**

## **1. GENERAL**

1.01 This section contains the specific disassembly instructions for the 28F, 28G-type, 28LA, and 28LB transmitter-distributor units and, where necessary, contains the detailed reassembly information. The material herein, together with that in the section covering general disassembly and reassembly instructions for teletypewriter apparatus, provides the complete disassembly and reassembly information for maintenance of the units.

1.02 This section is reissued to include disassembly instructions for the tape-out and tape-lid switch assembly and to bring the other information generally up to date.

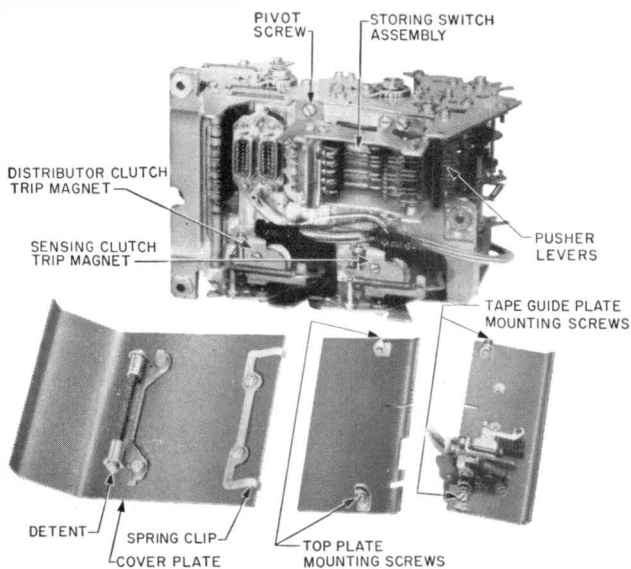
1.03 The covers may be removed for inspection and minor repair of the unit. A complete disassembly, however, will necessitate the removal of the unit from its subbase to disconnect the power and facilitate further disassembly.

## **2. DISASSEMBLY**

2.01 **Front (Snap) Panel:** To remove the front panel, pull outward on the lower right and lower left rear corners of the front panel and slide the panel toward the front.

### **REASSEMBLY NOTE**

- (1) To replace the front panel, mate the slide on the frame and push toward the rear.
- 2.02 **Cover Plate:** To remove the cover plate, lift the left end upward and slide the plate toward the left to disengage the spring clip. (See Fig. 1.)



**Fig. 1—Sensing and Transmitting Mechanism—Bottom View**

**REASSEMBLY NOTE**

(1) Place cover plate on unit by lowering right edge to anchor spring clip under top plate; then press left end downward to engage detents.

2.03 **Top Plate:** To remove the top plate, loosen the front and rear mounting screws and lift the plate upward.  
**(See Fig. 1.)**

**REASSEMBLY NOTE**

(1) To replace the top plate, guide the mounting screws into the notches of the front and rear plates. Align the sensing pins and feed wheel with their respective slots. If the plates do not align, refer to the adjusting procedures found in the section covering requirements and adjustments of the 28F, 28G-type, 28LA, and 28LB transmitter-distributor units.

2.04 **Tape-guide Plate:** To remove the tape-guide plate, loosen the front and rear mounting screws and slide the plate upward. (See Fig. 1.)

#### REASSEMBLY NOTE

(1) To replace the tape-guide plate, guide the mounting screws into the respective notches of the front and rear plates while guiding the tape-out pin into its notch and locating the sensing pins against the left edge of the tape-guide plate.

#### 2.05 To Remove the Transmitter-Distributor Unit From Its Base

- (1) Disconnect the cable connectors, if the unit is so equipped.
- (2) Remove the two left mounting screws and the one right mounting screw.
- (3) Lift the unit upward to disengage the driving gear.
- (4) Remove the transmitter-distributor unit from its base.

2.06 **Tape-out and Tape-lid Switch Assembly:** To remove the tape-out and tape-lid switch assembly on units so equipped, proceed as follows:

- (1) With the cover and top plate removed, take out the guide post at the top on which the switch assembly pivots. This is accomplished by removing the spring and partially removing the screw that secures the post to the rear plate.
- (2) Remove the nut with washer from the front end of the post. The post can now be removed far enough to release the switch assembly.
- (3) Remove the adjusting screw from the lower end of the switch bracket. Withdraw the switch assembly, using care not to distort the switch members.

#### REASSEMBLY NOTE

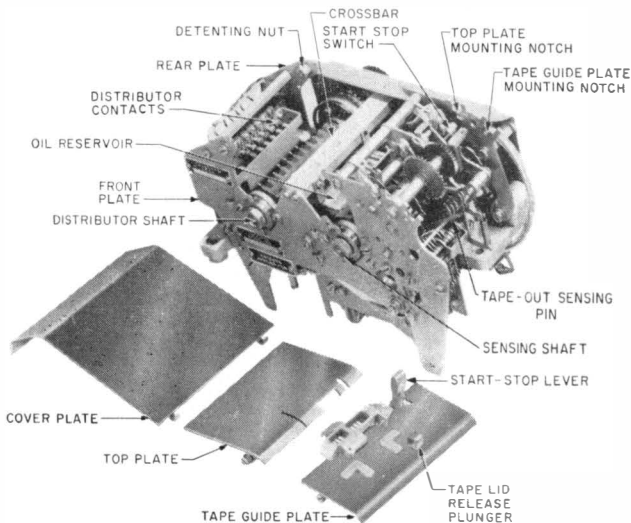
(1) When reassembling the tape-out and tape-lid switch assembly, use care so as not to disturb the adjustments.

#### 2.07 Oil Reservoir

- (1) Remove the transmitter-distributor unit from its base.
- (2) Remove the four screws that secure the crossbar to the front and rear plates.
- (3) Unhook the springs attached to the underside of the crossbar.

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- (4) Lift the oil reservoir upward and remove from the transmitter-distributor unit. (See Fig. 2.)



**Fig. 2—Sensing and Transmitting Mechanism—Top View**

### 2.08 Distributor-block Assembly

- (1) On units with a cable connector on the rear plate, remove the nuts that secure the connector to the plate, remove the three screws that secure the assembly, and lift out the assembly.
- (2) On units with cable terminations at the connector on the bottom of the casting, remove the three screws that secure the assembly, and lift out the assembly far enough to permit servicing.

#### REASSEMBLY NOTE

- (1) Check, and if necessary remake, the distributor-block assembly adjustments as specified in the section containing the requirements and adjustments for the 28F, 28G-type, 28LA, and 28LB transmitter-distributor units.



2.09 **Idler-gear Assembly:** To remove the idler gear, remove the locknut that secures the shaft to the rear plate. Remove this assembly before removing the sensing- and distributor-shaft assemblies.

2.10 **Distributor-shaft Assembly:** To remove the distributor shaft, remove the three mounting screws that secure each bearing clamp to the front and rear plates. (See Fig. 2.)

### REASSEMBLY NOTE

(1) Observe the alignment requirement given in the section containing the requirements and adjustments for the 28F, 28G-type, 28LA, and 28LB transmitter-distributor units.

2.11 **Sensing-shaft Assembly:** To remove the sensing shaft, remove the three mounting screws that secure each bearing clamp to the front and rear plates. (See Fig. 2.)

### REASSEMBLY NOTE

(1) Observe the alignment and adjusting procedures given in the section containing the requirements and adjustments for the 28F, 28G-type, and 28LA, and 28LB transmitter-distributor units.

2.12 **Feed Wheel (On Units Equipped With One Feed Wheel):** To remove the feed wheel, back off the nut that secures the cantilever post sufficiently to raise the post and slide the feed wheel off.

2.13 **Feed Wheels (On Units Equipped With Two Feed Wheels)**

(1) **Lower Feed Wheel:** To remove the lower feed wheel, proceed as specified in the previous paragraph.

(2) **Upper Feed Wheel:** To remove the upper wheel, proceed as follows:

(a) **Side-plate-mounted Feed Wheel:** Remove the upper, front side plate. Remove the drive screw, slide out the feed-wheel shaft, and remove the feed wheel.

(b) **Top-plate-mounted Feed Wheel:** Remove the top plate together with the feed wheel, bearings, and the run-out solenoid. Remove the front feed-wheel bearing and drive screw, and slide out the feed-wheel shaft. Remove the feed wheel, being careful not to break or damage the electrical connections to the solenoid.

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## REASSEMBLY NOTE

(1) After reinstalling the upper feed wheel, check, and if necessary remake, the upper feed-wheel adjustments as specified in the section containing the requirements and adjustments for the 28F, 28G-type, 28LA, and 28LB transmitter-distributor units.

### 2.14 Storing-switch Assembly:

- (1) If the unit is equipped with a cable connector, remove the two screws that secure the connector to the bracket beneath the casting.
- (2) Remove the four mounting screws that secure the storing-switch assembly to the main casting.
- (3) Withdraw the storing-switch assembly as far as possible to permit servicing.

**Caution: Observe care in handling so as not to damage the slide projections.**

## REASSEMBLY NOTE

- (1) When reinstalling the storing-switch assembly, replace the left front screw first and position the assembly about this pivot to align the slides.
- (2) Check, and if necessary remake, the storing-switch assembly adjustments as specified in the section containing the requirements and adjustments for the 28F, 28G-type, 28LA, and 28LB transmitter-distributor units.

### 2.15 Pusher and Latchlevers

- (1) To aid disassembly, first remove storing-switch assembly.
- (2) To remove the pusher levers and latchlevers, remove both sets of springs and slide the auxiliary and sensing pusher levers down. Slide and rotate the latchlevers to lift out.

### 2.16 Sensing Pins

- (1) Remove tape-guide plate, spring bracket, sensing-finger guide, and storing-switch assembly.
- (2) To remove the sensing pins, remove all springs at lower end. Rotate the bellcranks downward and remove each sensing-pin assembly.

**Note:** The sensing-bail-eccentric shaft may be positioned to the rear to facilitate disassembly.

## 2.17 **Switch-actuating Mechanism (Start-Stop and/or Tight-tape Switch)**

- (1) **Switch-slidearm Assembly:** To remove the switch-slidearm assembly, remove the intermediate plate by removing the three mounting screws and spacers. Rotate the intermediate plate and remove the bail and slidearm mounting nut.
- (2) **Tape-out-switch Plate:** To remove the tape-out-switch plate, remove the mounting screws that secure the tape-out-switch bracket to the front plate.

2.18 **Center-plate Assembly:** To remove the center-plate assembly, remove the screw with lockwasher from the spring post and the screw with lockwasher and flat washer from the shaft that secures the plate assembly to the front plate. Pull away by lifting the center plate hooked over the pivot shaft. Then remove assembly.

2.19 **Sensing Assembly:** To remove the sensing mechanism, remove the stripper-bail pivot shaft by loosening the nut, set collars, and the two retaining rings. Slide the shaft out and remove the latch stripper-bail, pusher-bail, and feed-lever assemblies. Remove the sensing bail.

## 2.20 **Clutch-trip Assembly**

- (1) Remove the mounting screws and nuts.
- (2) **On units where the wiring is not long enough** to permit servicing, remove the electrical connector mounting screws and remove the assembly with the connector, switches, and associated cabling.
- (3) **On units where the wiring is long enough** to permit most servicing, the electrical connections need not be disturbed; however, if necessary, unsolder the leads at the magnet coils.

2.21 **Frame Assembly:** To remove the frame assembly, remove all screws and nuts that secure the eccentric shaft to the side frame and casting. Remove all screws mounting the front and rear plates to the casting and disassemble completely.

## 3. ASSOCIATED BELL SYSTEM PRACTICES

3.01 Other Bell System Practices that may be required in connection with this section are listed in Section P34.001, Alphabetical Index of 28-type Equipment, Bell System Practices, and Associated 28 ASR Station Drawings.

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