43 FRICTION AND SPROCKET FEED PRINTER

DISASSEMBLY/REASSEMBLY

1. GENERAL .............................................. 1
2. TOOLS REQUIRED ................................. 2
3. DISASSEMBLY/REASSEMBLY .................. 3
   PRINT HEAD WITH COVER ..................... 3
   SPACING MOTOR BELT ......................... 6
   SIGNAL BELL ....................................... 6
   SPACING MOTOR WITH CABLE AND ENCODER 8
   LINE FEED MOTOR ............................... 10
   PLATEN ............................................ 12
   LEAD SCREW ...................................... 14
   CARRIAGE WITH POST ASSEMBLY ............ 15
   LEAD SCREW NUT ................................ 15
   COLLAR WITH LINK .............................. 16
   PAPER TRAY ...................................... 16
   PAPER GUIDES .................................. 20

1. GENERAL
1.01 This section covers disassembly and reassembly procedures for the 43 Friction and Sprocket (Pin) Feed Printer.

1.02 This section is reissued to change the title and update some of the disassembly procedures.

1.03 The printer is not considered a field replaceable item. Any trouble can be corrected by adjustments or by replacement with maintenance spares.

1.04 Procedures are provided to remove individual assemblies and parts and are intended to directly access any assembly or part, insofar as possible, without total disassembly of the unit.

1.05 When removing a subassembly or part from the printer, follow the removal procedure and note the sequence of removal to enable proper reassembly. For reassembly, reverse the procedure except where different instructions are given. Perform any adjustments indicated using Section 574-501-700.

1.06 Disassembly of printer parts except the print head will require the removal of the set housing and rear frame. Refer to Teleprinter Disassembly/Reassembly, Section 574-500-720 for set housing and rear frame removal and replacement procedures.

1.07 Disassembly of the printer motors will require the removal of the logic card.

1.08 Disassembly of the printer lead screw, carriage with post assembly, lead screw nut(s), and collar with link will require the removal of the keyboard, if present.

1.09 After replacing printer parts, refer to the lubrication procedures in Section 574-501-710 and lubricate any parts requiring lubrication.

1.10 Some parts that are not listed in the parts sections are shown as necessary to the disassembly procedures such as screws and ring retainers, etc. These parts are common to other Teletype Corporation product lines and if needed may already be available in field repair kits or can be ordered.

1.11 When ordering replaceable components, unless otherwise specified, prefix each part number with the letters “TP” (ie, TP430047).

1.12 Reference in the procedures to left and right, up or down, and top or bottom, etc, refer to the printer in its normal operating position as viewed by the operator.

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2. **TOOLS REQUIRED**

2.01 The following tools may be required when performing the printer disassembly and reassembly procedures. Most of these items should normally be present in standard maintenance tool kits.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>75765</td>
<td>Hook, Pull Spring</td>
<td>108285</td>
<td>Pliers, Long-Nose</td>
</tr>
<tr>
<td>95368</td>
<td>Screwdriver, 1/8 Inch, 2 Inch Blade</td>
<td>110271</td>
<td>Wrench, Hex Key</td>
</tr>
<tr>
<td>100704</td>
<td>Screwdriver w/Clip, 10 Inch Blade</td>
<td>124682</td>
<td>Wrench, Hex Key</td>
</tr>
<tr>
<td>100982</td>
<td>Screwdriver w/Clip, 1/4 Inch 6 Inch Blade</td>
<td>125752</td>
<td>Wrench, 3/16 Inch Socket</td>
</tr>
<tr>
<td></td>
<td></td>
<td>129534</td>
<td>Wrench, Open End, 3/16 Inch and 1/4 Inch</td>
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<td></td>
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<tr>
<td></td>
<td></td>
<td>135676</td>
<td>Handle</td>
</tr>
<tr>
<td></td>
<td></td>
<td>135677</td>
<td>Bit, 1/4 Inch Socket</td>
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<tr>
<td></td>
<td></td>
<td>135678</td>
<td>Bit, 5/16 Inch Socket</td>
</tr>
<tr>
<td></td>
<td></td>
<td>142554</td>
<td>Hook, Pull Spring</td>
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<tr>
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<td></td>
<td>142555</td>
<td>Hook, Push Spring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>151392</td>
<td>Tweezers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>152835</td>
<td>Wrench, Open End, 5/16 Inch and 3/8 Inch</td>
</tr>
<tr>
<td></td>
<td></td>
<td>407326</td>
<td>Extractor, I.C.</td>
</tr>
</tbody>
</table>
3. DISASSEMBLY/REASSEMBLY

PRINT HEAD WITH COVER

3.01 To remove the print head with cover:

Caution: When handling loose print heads, care must be taken to prevent print head cable connector pins from being bent.

Note: Print head removal and replacement is also shown in Teleprinter Disassembly/Reassembly, Section 574-500-720.

1. Grasp print head and pull forward. Lift front of print head to disengage locking channels.

2. Remove ribbon. (Refer to How To Operate Manual)

3. Move print head and carriage to the right of the print head cable plug.

4. Place projections of 407326 extractor under print head cable plug. Disconnect print head cable plug from logic card by squeezing arms of extractor together and pulling straight up to avoid damage to plug pins.

5. Unlock print head by pulling locking handle forward until it strikes the guide rod.

6. Move retaining clip on locking handle extension protruding from left side of carriage wall approximately 1/4 inch away from wall. (Pry with screwdriver.)

7. Move the locking handle to the right.

8. Move print head and carriage to the right of the print head cable plug.

9. Disengage print head from roll pin on end of link. Remove print head.

10. Remove print head cover by lifting up and away from grommets.

ISS 4, SECTION 574-501-720
3.02 To replace the print head cover:

*Caution:* When handling loose print heads, care must be taken to prevent print head cable connector pins from being bent.

1. Verify that print head cover is attached securely to rubber grommets. (Push down until secure.)

2. Move retaining clip on locking handle extension protruding from left side of carriage wall approximately 1/4 inch away from wall if not already moved. (Pry with screwdriver.)

3. Rotate locking handle forward until it strikes the guide rod then pull locking handle to the right until collar drive key on locking handle engages slot in right carriage side wall. Observe interaction of these parts for use when performing step 7.

*Note:* Collar and link may snap rearward.

4. Collar and link must be manually rotated and held toward front of carriage wall by grasping the link. Install print head rear notch onto roll pin at end of link.

5. Hold collar and link forward (by pressing down on the print head) while inserting nose projection in carriage wall opening.

6. Pivot front of print head down to carriage locking channel.

(Left View)
7 Slowly push print head rearward and further into the carriage locking channel until the rear of the ribbon guide is even with center of roller shafts. Apply continuous leftward pressure to locking handle at its pivot shaft, while slowly pulling print head forward until collar drive key on handle engages (snaps) into slot in collar.

Note: Parts referred to were visible in step 3.

8 Position and hold print head and carriage assembly to right side of printer and use a 5/16 inch socket wrench to push clip against carriage wall.

Move the handle all the way to the rear, locking the print head in close proximity to the platen by the additional force necessary to detent the handle. If handle does not move to rear, the drive key did not properly engage the collar slot (step 7).

Note: Check to make sure there is some clearance between print head and platen before detenting handle. Check PRINT HEAD TO PLATEN adjustment.

10 Check that no connector pins are bent and carefully connect the print head cable plug to the logic card. Make sure cable does not touch left side frame when the carriage moves fully left.

11 Install ribbon. (Refer to How To Operate Manual.)
SECTION 574-501-720

SPACING MOTOR BELT

3.03 To remove the spacing motor belt:

1) Push top of spring tension arm rearward to remove belt tension.
2) Remove belt.

SIGNAL BELL

3.04 To remove the signal bell:

(a) Early Design Arrangement

1) Remove plug from logic card.
2) Remove 184055 screw and 181461 gong.
3) Remove 184055 and 198670 screws and 121242 clamp and remove bracket.
4) Remove 143097 retaining ring.
5) Slide plunger with pin to the right. Remove plunger and spring and remove coil.
(b) Late Design Arrangement

1. Remove plug from logic card.

2. Remove 184055 screw. Remove bell assembly from printer.

3. Remove 184055 screw and 181461 gong.

4. Push coil assembly to the left to remove.

5. Remove 430410 spring from plunger.

6. Remove plunger from coil assembly.
SECTION 574-501-720

SPACING MOTOR WITH CABLE AND ENCODER

3.05 To remove the spacing motor:

1. Remove the logic card (if present). Refer to Section 574-500-720.

(Right Side View)

6. Remove tension arm post and 88857 spring washer.

7. Remove spring from spring post.

8. Remove motor and encoder.

9. Remove cover.

10. Remove 151685 screw, 130683 lockwasher, 104807 flat washer, and 151880 nut.

11. Remove cable assembly by lifting upward.

12. Remove encoder disc assembly. (Insert screwdriver under housing bridge and under bottom hub of encoder. Hold encoder disc with thumb and gently pry screwdriver outward, removing disc. Retain the fastener which is part of the disc assembly.)

13. Remove three 172632 screws and three 130683 lockwashers.

14. Remove housing.

15. Pull pulley with clip off end of shaft.

Note: In reassembly, make sure disc does not rub on encoder assembly.

Warning: Do not pull on metal disc edges as this will deform encoder disc causing it to rub against the encoder.
(b) 430441 Motor with cable and encoder.

10. Remove 151685 screw, 130683 lockwasher, 104807 flat washer, and 151880 nut.

11. Remove cable assembly by lifting upward.

12. Remove encoder disc assembly. (Insert screwdriver under housing bridge and under bottom hub of encoder. Hold encoder disc with thumb and gently pry screwdriver outward, removing disc. Retain the fastener which is part of the disc assembly.)

13. Remove three 184067 screws.

14. Remove housing.

15. Pull pulley with clip off end of shaft.

Note: In reassembly, make sure disc does not rub on encoder assembly.
LINE FEED MOTOR

3.06 To remove the line feed motor:

(a) Without Tension Arm

1. Remove the logic card (if present). Refer to Section 574-500-720.
2. Loosen four 198670 screws and remove the line feed belt.
3. Remove four 198670 screws.
4. Remove motor.

Note: In reassembly, perform LINE FEED BELT TENSION adjustment.

(b) With Tension Arm

1. Remove the logic card (if present). Refer to Section 574-500-720.
2. Remove tension arm spring from retaining post.
3. Remove line feed belt.
4. Remove motor.
5. Remove three 198670 screws and stop bracket.
6. Remove tension arm post, 7002 flat washer and 2191 lockwasher.
7. Remove 119652 retaining ring and slide tension arm and roller assembly from pivot shaft.

Note: In reassembly, perform STOP BRACKET adjustment.
(c) With floating motor

1. Remove the logic card (if present). Refer to Section 574-500-720.

2. Remove 184057 screw and 430404 bushing.

3. Remove belt.

4. Remove three 119651 ring retainers.

5. Remove motor.

(Left Rear View)
3.07 To remove the platen:

(a) Motor without tension arm or floating motor.

1. Remove line feed belt.

2. Loosen two 144550 setscrews.

3. Remove platen pulley and clip.

(b) Motor with tension arm.

1. Remove tension arm spring from retaining post.

2. Remove the line feed belt.

3. Loosen two 144550 setscrews and remove platen pulley and clip.

Note: In reassembly, position the setscrews away from the slot in the platen clip.
(c) Early Design Platen

4. Remove two 163765 retaining rings (one each side) from platen bearings.

5. Remove platen spacer.

5. Remove paper release.

6. Slide two platen bearings (one each side) outward.

7. Lift left and right paper guides to up position. (Top View)

8. Lift out platen.

9. Loosen four 183355 setscrews (two each side).

10. Slide two sprockets (one each side) outward.

11. Remove two sprocket clips (one each side).

**Note:** In reassembly, position the setscrews away from the slot in the sprocket clip. Perform the LEFT and RIGHT SPROCKET adjustments and PRINTED LINE POSITION and PLATEN ENDPLAY adjustments.
(d) Late Design Platen (Sprocket and Friction Feed)

4 Remove two 163765 retaining rings (one each side) from platen bearings.
5 Remove platen spacer.
6 Slide two platen bearings (one each side) outward.
7 Lift left and right paper guides to up position.
8 Lift out platen.

Perform the PLATEN ENDPLAY adjustments.

LEAD SCREW

3.08 To remove the lead screw:

1 Remove keyboard, if present. (Refer to Section 574-500-720.)
2 Remove spacing belt.
3 Remove lead screw pulley and clip by pulling to the right.
4 Push in right bearing housing to clear right frame. Rotate 90 degrees and spring will force bearing and housing away from side frame. Remove housing with bearing, inner bearing or shim, and spring.
5 Unscrew lead screw from carriage nut and remove through hole in right side frame. Retain left inner bearing, if used, which will be free when lead screw is removed.
CARRIAGE WITH POST ASSEMBLY

3.09 To remove the carriage with post assembly:

1. Remove keyboard, if present.
   (Refer to Section 574-500-720.)

2. Remove print head and lead screw (perform 3.01 and 3.08).

3. Move carriage to left margin.
   Remove carriage cable from logic card.

4. Remove screw and washer from each guide rod.

   Note: The upper guide rod must be nickel plated. The lower guide rod may be nickel plated or black oxide.

5. Spread clamp with cover and disengage from logic card (if present). Spread left side frame outward to disengage left end of lower guide rod, then pull toward the front to remove lower guide rod, two felt washers and clamp with cover.

6. Spread clamp with cover and disengage from logic card (if present). Spread left side frame outward to disengage left end of lower guide rod, then pull toward the front to remove lower guide rod, two felt washers and clamp with cover.

7. Spread left side frame and remove upper guide rod and carriage.

G) Remove print head and lead screw (perform 3.01 and 3.08).

H) Spread left side frame and remove upper guide rod and carriage.

LEAD SCREW NUT

3.10 To remove the lead screw nut:

1. Remove keyboard, if present.
   (Refer to Section 574-500-720.)

2. Remove print head and lead screw (perform 3.01 and 3.08).

3. Tilt lead screw nut handle outward to clear retaining notch in carriage. Rotate counterclockwise (CCW) until tabs on nut align with opening in carriage. Spring will force nut away from carriage.

4. Remove springs and nuts.

Note: The 430351 and 430352 lead screw nuts are keyed and must be engaged when properly installed.
COLLAR WITH LINK

3.11 To remove the collar with link:
   1. Remove keyboard, if present. (Refer to Section 574-500-720.)
   2. Remove print head and carriage (perform 3.01 and 3.09).
   3. Remove compression ring.
   4. Push locking handle to the left and rotate locking handle and collar fully counterclockwise (forward). Pull the handle to the right while slowly rotating handle and collar clockwise (rearward) until key on handle aligns with slot in carriage. Locking handle will pop out.
   5. Remove collar with link.

PAPER TRAY

3.12 To remove the paper tray:
   (a) Sprocket Feed, Early Arrangement

   Note 1: Parts on left and right sides are similar.
   1. Remove two 119653 retaining rings from paper tray shaft.
   2. Remove 119652 retaining ring from paper tray shaft.
   3. Unhook and retain two 4708 paper tray springs (one each side).
   4. Pull paper tray shaft out to right.
   5. Lift left and right paper guides to up position, loosen mounting screws friction tight, and position paper guide bracket toward the frame by using a screwdriver on the pry points.

   Note 2: In reassembly, LEFT AND RIGHT PAPER GUIDE adjustments must be made. (Early Arrangement)
(b) Sprocket Feed (Intermediate Design) and Friction Feed (Early Design)

1. Disconnect cable plugs.

2. Snap the spring clips out of place and move aside, releasing the rear frame. (Pry with screwdriver.)

3. Gently pull the rear frame to the rear while lifting to disengage the hook-shaped details at the top front of the rear plate. The hook-shaped details fit into the notches on the rear plate and hold the rear frame in place. Remove the rear frame assembly.

4. Remove 119653 retaining ring from paper tray shaft.

5. Remove two 119564 retaining rings from paper tray shaft.

6. Loosen the upper guide screw (only enough to perform step 8).

7. Unhook and retain two 82463 or 4708 paper tray springs (one each side).

8. Spread the side frames to remove paper tray and shaft.
(c) Sprocket Feed, Late Design

1. Remove 119653 retaining ring from paper tray shaft.

2. Latch the paper out sensing lever.

3. Unhook and retain two 82463 or 4708 paper tray springs (one each side).

4. Pull paper tray shaft to the left and remove.

5. Remove paper tray.
(d) Friction Feed

1. Remove 119653 retaining ring from paper tray shaft and roller bail lever shaft.

2. Remove 82727 roller bail spring from post.

3. Unhook and retain two 4708 paper tray springs (one each side).

4. Pull paper tray shaft to the left and remove.

5. Remove roller bail assembly.

6. Remove paper tray.
To remove the paper guide:

(a) Sprocket Feed, Early Design

*Note 1:* Left and right guides are removed in a similar manner.

1. Remove two 119649 retaining rings (one each side).
2. Remove two paper strippers (one each side).
3. Remove left and right paper guides from posts on brackets.
4. Remove guide.
5. Remove two 101386 springs (one each side).

*Note 2:* During reassembly, the tail on the paper guide must go behind the stop on the bracket.

With paper guides up, loosen mounting screws friction tight; position paper guide bracket toward the frame by using a screwdriver in the pry points.

*Note 3:* In reassembly, LEFT PAPER GUIDE adjustment must be made.

(b) Friction Feed and Late Design Sprocket Feed

*Note 1:* Left and right guides are removed in a similar manner.

1. Remove two 119649 retaining rings (one each side).
2. Remove two paper strippers (one each side).
3. Remove left and right paper guides from posts on brackets.
4. Remove 184056 screw (right side).
5. Remove right paper guide bracket and guide.

*Note 2:* During reassembly, the tail on the paper guide must go behind the stop on the bracket.

With paper guides up, remove two paper strippers (one each side).

*Note 3:* In reassembly, RIGHT PAPER GUIDE adjustment must be made.