

Hammer Bank

Removal

1. Turn the printer off and unplug the ac power cord.
2. Remove the ribbon and unload paper.
3. Disconnect the two ribbon motor cables (1) on each side of the ribbon deck. (See Figure 6–1.)
4. Remove the ribbon deck assembly (2) by removing one screw on the right side of the ribbon deck, and two screws on the left side.
5. Remove the cam cover (3).
6. Remove the cam cover plate (4).
7. Remove the dust barrier block (5).
8. Disconnect the six hammer bank cables (6).
9. Remove the two velcro covers (7).
10. Remove the two screws (8) that attach the shuttle shroud to the bearing caps.
11. Remove the two anti-rotation block screws (9) using an allen wrench. Remove the anti-rotation shims (10). Do not discard the shims; you will use them later.
12. Loosen the jam nut (11) in the center of each bearing cap. Loosen the bearing set screw (12) in the center of each bearing cap. Loosen and remove the bearing cap screws (13 and 14), and remove the right and left bearing caps (15 and 16).

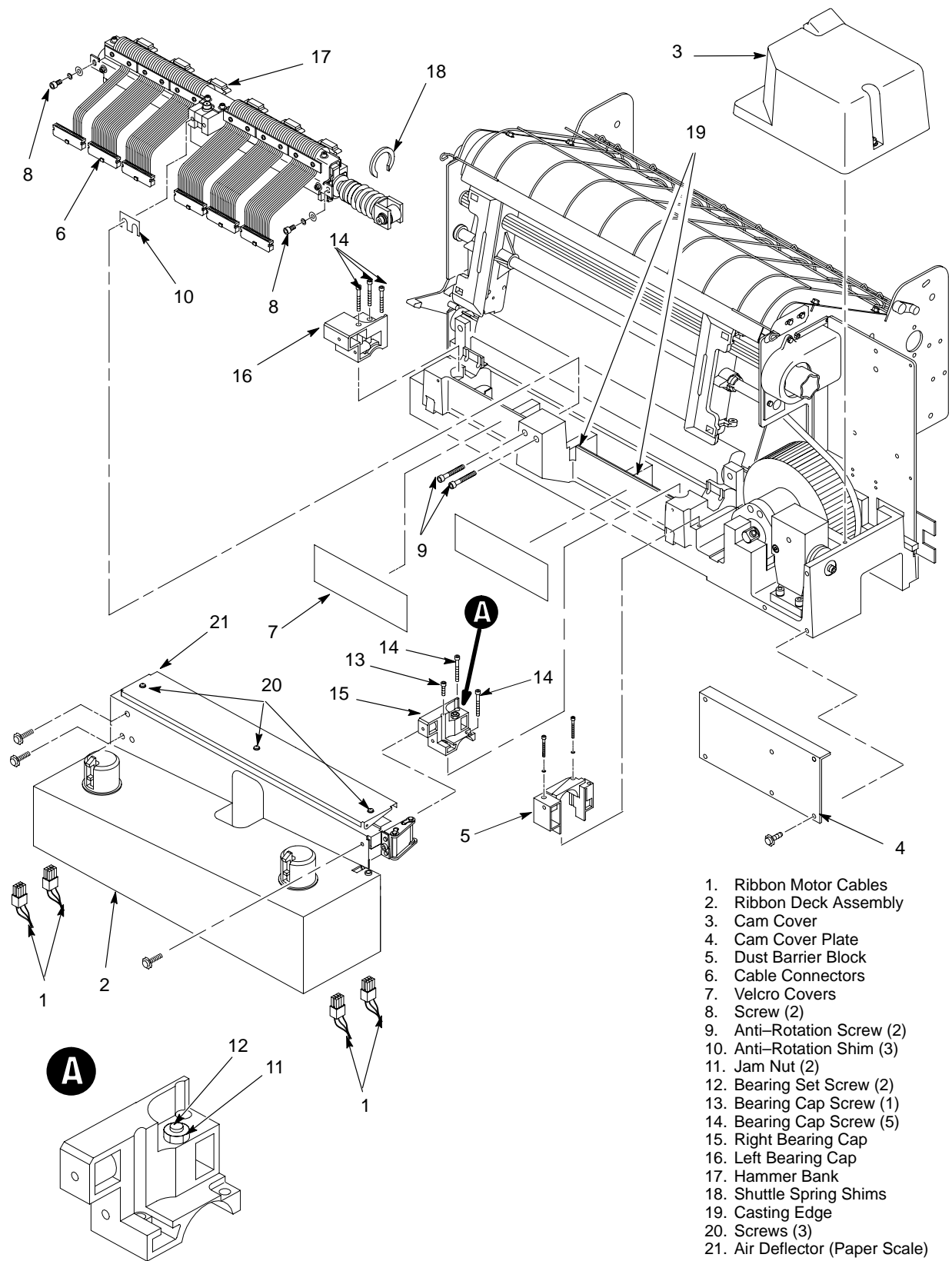
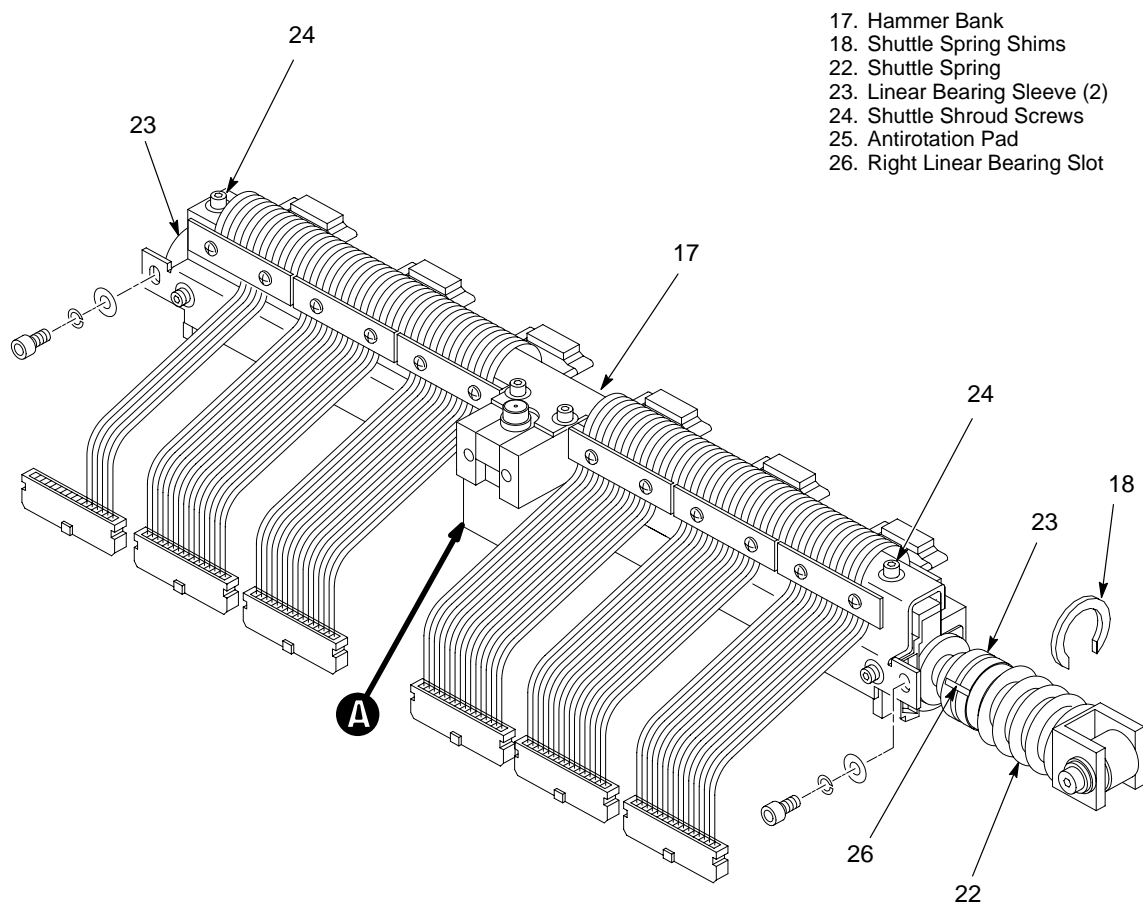
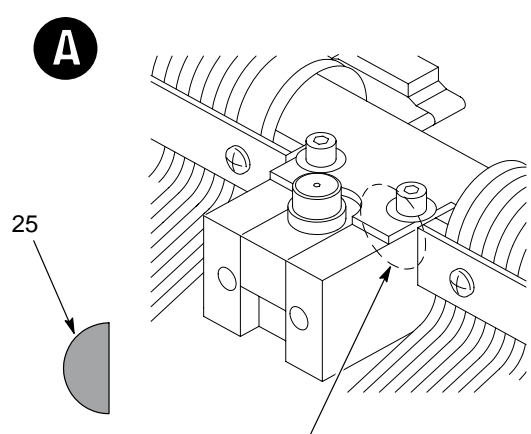


Figure 6-1. Hammer Bank Removal/Installation

13. Remove the hammer bank (17): (See Figure 6-2.)
 - a. Note the U-shaped shims (18) installed at the end of the shuttle spring (22). Do not lose these shims while removing the hammer bank.
 - b. Firmly gripping the right and left shuttle shroud screws (24) with your right and left thumbs, slowly lift the hammer bank while keeping the shuttle shroud, hammer bank cables, and antirotation pad in place.
 - c. Be careful that the left linear bearing sleeve (23) does not slip off the shaft or that the hammer bank cables catch on any exposed edges of the printer.



- 17. Hammer Bank
- 18. Shuttle Spring Shims
- 22. Shuttle Spring
- 23. Linear Bearing Sleeve (2)
- 24. Shuttle Shroud Screws
- 25. Antirotation Pad
- 26. Right Linear Bearing Slot



Correct Location
for Anti-Rotation Pad

Figure 6-2. Hammer Bank Removal

Installation

CAUTION

To prevent excessive noise, bearing failure, and poor print quality, carefully perform every step in this procedure. Do not skip or omit any steps.

1. Clean oil, dirt, and paper dust from the base casting in the hammer bank area, the bearing seats, and the anti-rotation block.

IMPORTANT

The antirotation pad (Figure 6-3, item 25) must be kept in place inside the shuttle shroud (Figure 6-3A) to ensure good print quality. Hold the hammer bank unit carefully to avoid dislodging the antirotation pad, as follows:

2. Remove the replacement hammer bank unit (17) from its box: (See Figure 6-3.)
 - a. When picking up the hammer bank unit, keep the shuttle shroud, hammer bank cables, and antirotation pad (25) in place by firmly gripping the right and left shuttle shroud screws (24) with your thumbs. Do not let the hammer bank cables catch on any exposed edges of the printer.
 - b. Note the U-shaped shims (18) installed at the end of the shuttle spring (22). These were installed at the factory to set the correct spring pre-load. Make sure that these shims stay in place while transferring the hammer bank into the casting.
 - c. Be careful not to let the left linear bearing (23) slip off the shaft.
3. Gripping the shuttle shroud screws (24) with your thumbs, install the hammer bank in the base casting with the shuttle spring shoulder washer against the machined surface of the casting, the linear bearing sleeves near the center of their mounting blocks (Figure 6-4A and B), and the cam follower bearing in contact with the cam (Figure 6-4C).

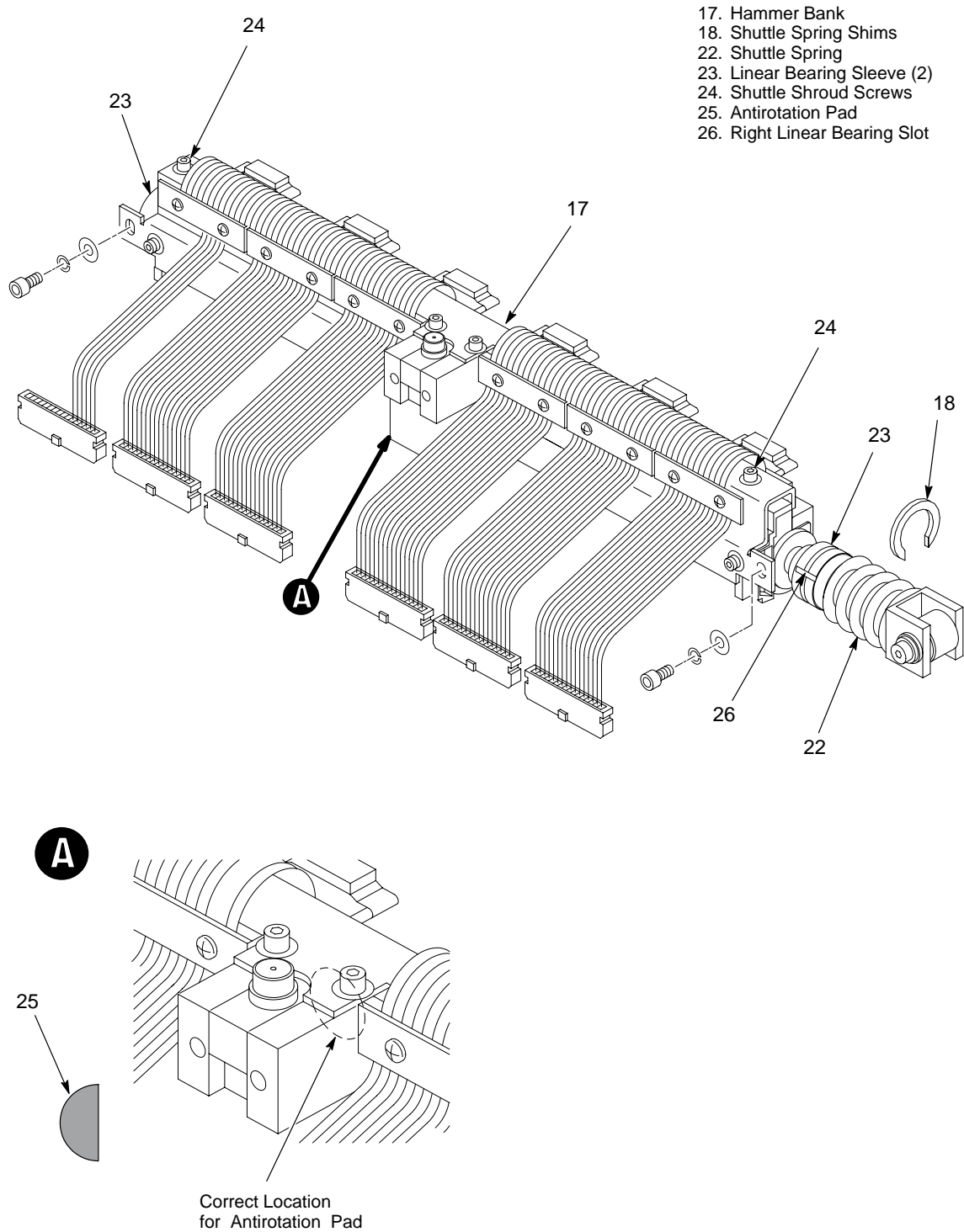


Figure 6-3. Replacement Hammer Bank

4. Rotate the bearing sleeves (23) so that the slots (Figure 6–3, item 26) are facing the front of the printer. Make sure that the front edge of the shuttle shroud (Figure 6–4, item 26) fits behind the machined edge of the casting, and that the foam air seal (27) makes a tight seal against the casting.
5. Line up the left edge of the *right* bearing sleeve (Figure 6–4A) so that it is directly adjacent to the recessed bearing cap screw hole and base casting indent, with the bearing sleeve slot facing forward (Figure 6–3, item 24). Verify that the slot faces forward by placing a 1/16–inch allen wrench (28) into the hole in the right bearing mounting block, pushing the allen wrench in so that the end fits into the bearing sleeve slot, and attempting to rotate the bearing sleeve by hand.
6. Install the *right* bearing cap (15) by tightening the short mounting screw (13) and two longer mounting screws (14) finger tight. Then tighten them snugly using an allen wrench, in the following order: first 13; second 14(2); third 14(3).
7. Line up the right edge of the *left* bearing sleeve (Figure 6–4B) so that is directly adjacent to the recessed bearing cap screw hole, with the bearing sleeve slot facing forward (Figure 6–3, item 24). Verify that the slot faces forward by placing a 1/16 inch allen wrench (28) into the right hole in the left bearing mounting block, pushing the allen wrench in so that the end fits into the bearing sleeve slot, and attempting to rotate the bearing sleeve by hand.
8. Install the *left* bearing cap (16) and tighten the three mounting screws (14) finger tight. Then tighten them snugly using an allen wrench, in the following order: first 14(1); second 14(2); third 14(3).
9. Install the two screws (8) that attach the shuttle shroud to the bearing caps.
10. Install the anti–rotation shims (10) that were removed with the old hammer bank (Removal, Step 11.). Install the anti–rotation block screws (9) using an allen wrench.

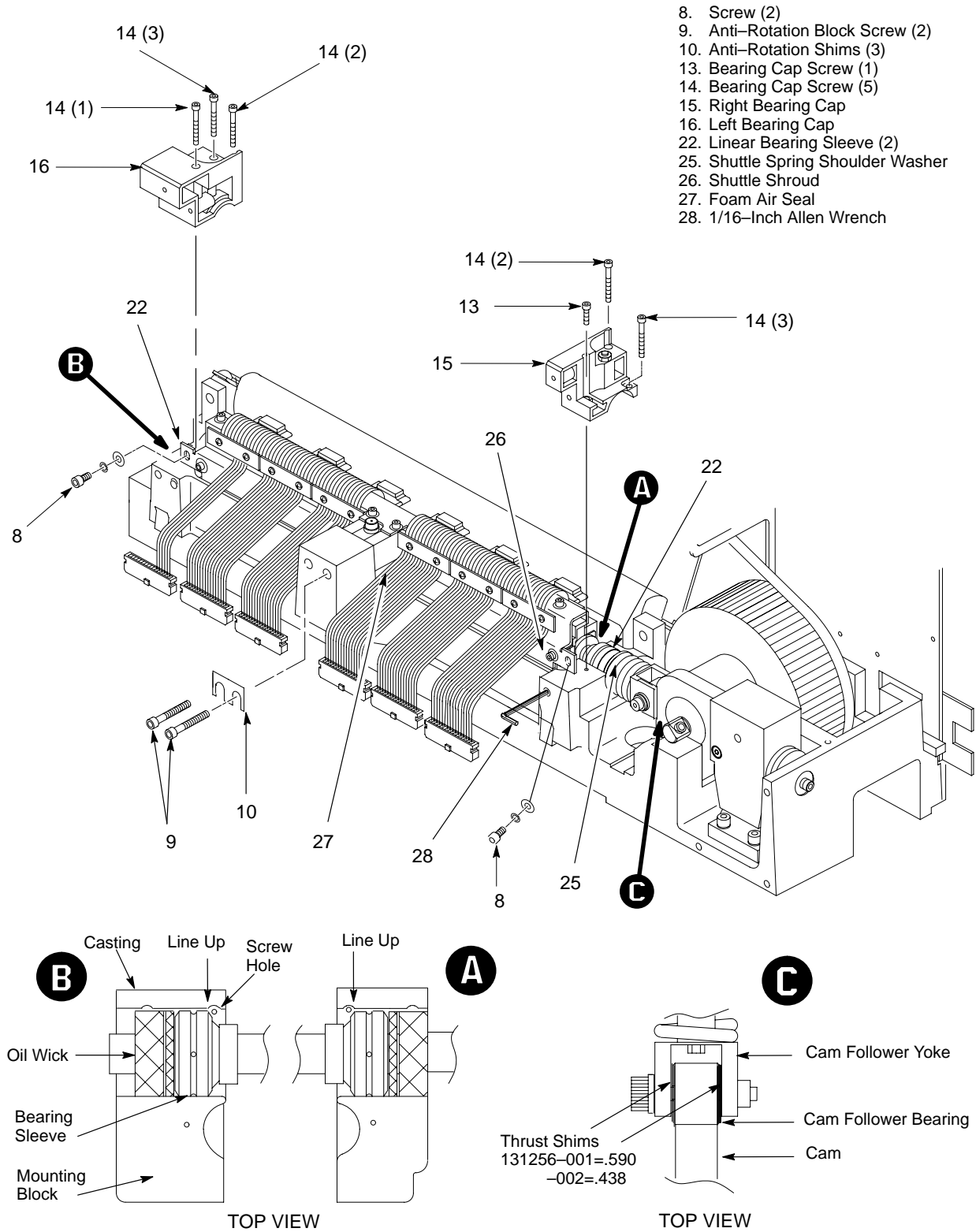


Figure 6-4. Installing Hammer Bank

11. Torque the right and left bearing set screws (Figure 6-5A, item 12) to 10 in-lb.
12. Wedge the shank of a large screwdriver between the yoke and the flywheel shank (29) such that the cam follower bearing and cam are not in contact. Remove the cam follower bearing screw (Figure 6-5B, item 30), holding a finger under the bearing to keep it in place. Remove the two washers from the screw. Reinstall the screw with the antirotation tool (Figure 6-5B, item 32). Do not use a wrench to tighten the screw; hand tighten only. The bracket is intended to be at an angle, as shown in Figure 6-5B.
13. Try to fit a .004 inch feeler gauge (Figure 6-5C, item 33) between the side of the cam and the alignment tool at the top and bottom of the tool. If the gauge fits in the top space (Figure 6-5C, left), add anti-rotation block shims (Figure 6-4, item 10). If there is clearance at the bottom (Figure 6-5C, right), remove shims. (Adding or removing one .005-inch shim will normally correct the alignment.)
14. Remove the antirotation tool, install the cam follower bearing screw with the original washers, and torque it to 20 in-lb. Remove the screwdriver from between the yoke and fly wheel shank.
15. Connect the six hammer bank cables and install the velcro covers. Install the dust barrier block (Figure 6-1, item 5). Install the ribbon deck (Figure 6-1, item 2). Remove the three screws (Figure 6-1, item 20) that secure the air deflector, then remove the deflector (Figure 6-1, item 21).
16. Connect the ribbon motor cables (Figure 6-1, item 1).
17. Install a standard (60 yard) ribbon. (This procedure is not possible with 100-yard ribbons.)
18. Load paper in the printer, then turn the printer on.

- 11. Jam Nut (2)
- 12. Bearing Set Screw (2)
- 28. 1/16-inch Allen Wrench
- 29. Screwdriver
- 30. Cam Follower Bearing Screw
- 31. Cam Follower Yoke
- 32. Tool, Antirotation (P/N 134534-001)
- 33. .004-inch Feeler Gauge

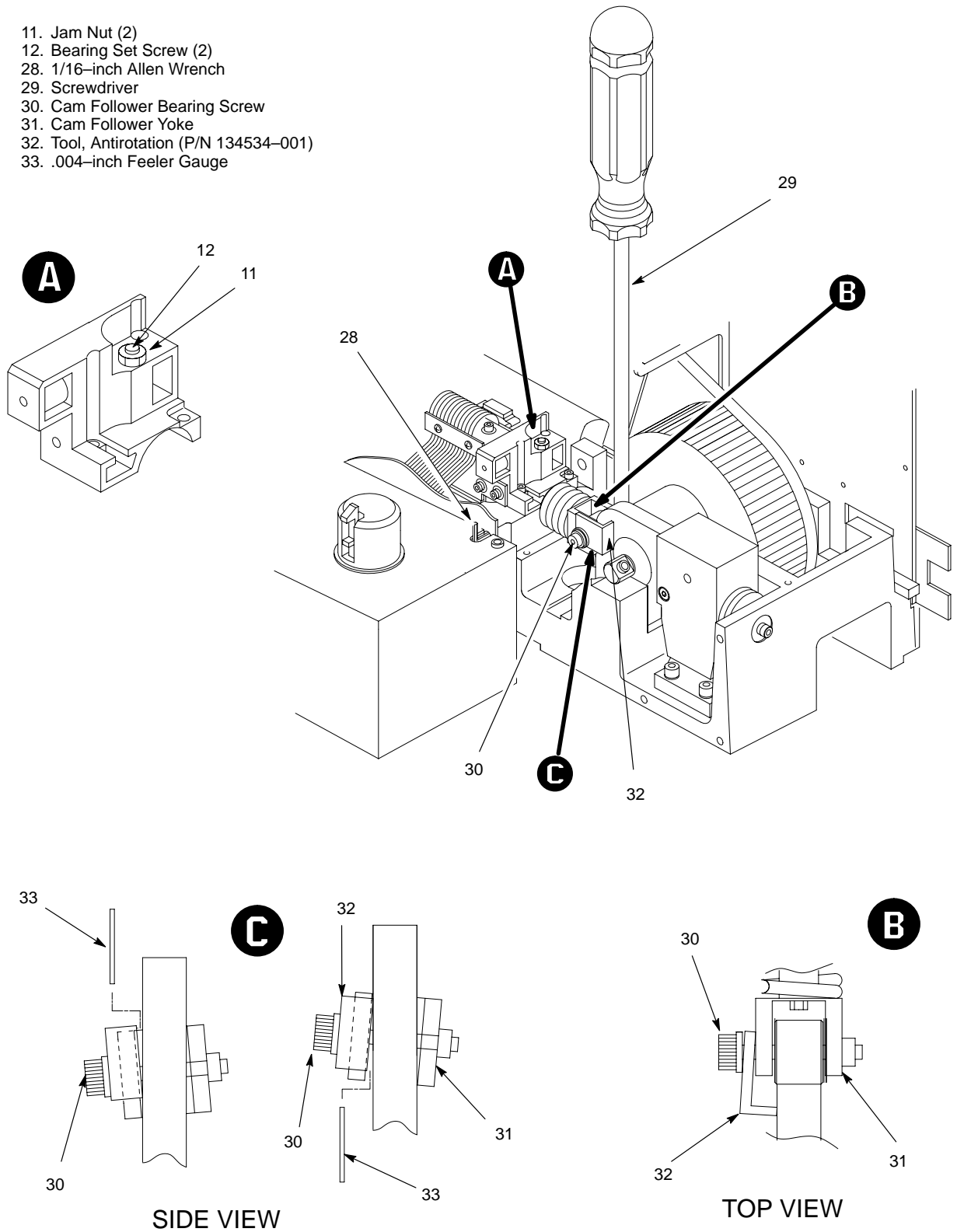


Figure 6-5. Yoke and Antirotation Shim Adjustment

19. Adjust the *right* bearing set screw using the shuttle/ribbon fast diagnostic test. Place a 1/16-inch allen wrench through the cutout in the ribbon deck and into the slot of the right bearing sleeve to keep the slot forward, then run the shuttle/ribbon fast diagnostic test. As the printer is shuttling, loosen the right bearing set screw two turns and retighten it with a torque driver, torquing it to 10 in-lb. If a binding noise comes from the bearing, repeat this process, loosening and tightening the right bearing set screw while holding the allen wrench in the slot in the bearing sleeve.
20. Tighten the *right* jam nut to hold the right bearing set screw in place, and remove the allen wrench from the right mounting block hole.
21. Adjust the *left* bearing set screw using the shuttle/ribbon fast diagnostic test. Place a 1/16-inch allen wrench through the cutout in the ribbon deck and into the slot of the right bearing sleeve to keep the slot forward, then run the shuttle/ribbon fast diagnostic test. As the printer is shuttling, loosen the left bearing set screw two turns and retighten it with a torque driver, torquing it to 10 in-lb. If a binding noise comes from the bearing, repeat this process, loosening and tightening the left bearing set screw while holding the allen wrench in the slot in the bearing sleeve.
22. Tighten the *left* jam nut to hold the left bearing set screw in place, and remove the allen wrench from the left mounting block hole.
23. Check the shuttle and counterweight preload. (See page 5-28.)
24. Check and adjust the platen gap. (See page 5-22.)
25. Install the air deflector (Figure 6-1, item 22), dust barrier block (Figure 6-1, item 5), cam cover plate (Figure 6-1, item 4), and cam cover (Figure 6-1, item 3).
26. Install the ribbon and load 132-column paper.
27. Check and adjust the magnetic pickup phasing. (See page 5-14.)
28. Run a diagnostic self test to print some 132-column lines.
29. Check alignment of the scale to the print at column positions 1 and 132.
30. If adjustment is necessary, loosen the three screws (Figure 6-1, item 20), position the air deflector so that column positions 1 and 132 line up with the first and last characters on the 132 character printout, and tighten the screws.
31. Close the printer cover and return the printer to normal operation.