

MODEL 14 PRINTER HOLDING MAGNET ADJUSTMENTS  
(To be used in conjunction with Bulletin 127)

When adjusting Model 14 printers equipped with holding magnet selectors, the following adjustments should be used instead of the pull type selector adjustments covered in Bulletin 127.

REMOVE THE RANGE FINDER ASSEMBLY

Armature Lever Pivot Screw Adjustment (Figure 1)

With the armature lever spring and the selector arm spring unhooked, the armature lever should be free on its pivots with barely perceptible end play.

To adjust, remove the selector magnet bracket, loosen the armature lever upper pivot screw lock nut and position the armature lever by means of its upper pivot screw. Tighten the lock nut and replace the selector magnet bracket.

Rehook the armature lever spring and the selector arm spring.

Selector Magnet Adjustment (Figure 2)

The centers of the curved surfaces of both selector magnet cores should touch the armature when the armature is held operated by hand.

To adjust, remove the selector magnet bracket, loosen the selector magnet mounting screws and position the magnet. Tighten the mounting screws and replace the selector magnet bracket.

NOTE: The clearance between the curved surfaces of the magnet cores and the armature may be observed by holding the magnet in front of a light background.

Selector Arm Pivot Screw Adjustment (Figures 3 and 4)

With the armature lever spring, the selector arm spring, and the selector arm stop detent spring unhooked, the selector arm should be free on its pivots with barely perceptible end play. There should also be a clearance of .008" to .016" between the selector arm and the armature lever.

The end play may be adjusted by means of the upper pivot screw. If the clearance between the selector arm and the armature lever does not meet the foregoing requirement, it will be necessary to remove the selector magnet bracket and the selector arm bracket and adjust both pivot screws of the selector arm.

Selector Arm Bracket Adjustment (Figure 1)

The position of the selector arm bracket should be such as to provide some clearance, not more than .040", between each sword and either stop post, under the following conditions:

Remove the locking lever spring and the selector arm spring. Rotate the main shaft until the No. 1 selector lever is resting on the peak of its cam. With the selector arm in its unoperated (spacing) position, move the spacing arm of the No. 1 sword against the selector arm extension. Then rotate the selector arm slowly toward the marking position until the selector arm just leaves the spacing arm of the No. 1 sword. There should be some clearance, not more than .040", between the No. 1 sword and the spacing stop post.

Unhook the armature lever spring at the spring arm, and with the selector arm in its operated (marking) position, move the marking arm of the No. 1 sword against the selector arm extension. Then rotate the selector arm slowly toward the spacing position until the selector arm just leaves the marking arm of the No. 1 sword. There should be some clearance, not more than .040", between the No. 1 sword and the marking stop post.

With each selector lever on the peak of its cam, each associated sword should be tried for the foregoing requirement of some clearance, not more than .040".

To adjust, loosen the selector arm bracket mounting screws just enough to make the bracket friction tight. Then, to equalize the clearance between the swords and the stop posts, loosen the centralizing eccentric screw lock nut and turn the eccentric screw clockwise to provide more clearance on the spacing side or counter-clockwise to provide more clearance on the marking side.

NOTE: Be sure that the selector arm stop detent does not interfere with the adjustment.

The centralizing eccentric screw should always be located so that its indicating line is adjacent to the marked scale that has been provided on the bracket to aid in gauging the amount the screw must be turned. Tighten the lock nut when the selector arm has been centralized.

To obtain the "some clearance, not more than .040", requirement between the swords and the stop posts, insert the 90783 adjusting wrench in one of the two holes provided and turn the wrench to move the bracket closer to or farther from the swords as required. Then tighten the selector arm bracket mounting screws.

Replace the locking lever spring, selector arm spring, and armature lever spring.

#### Locking Wedge Adjustment (Figure 5)

With the locking lever on a high part of its cam, the right end of the locking wedge should clear the locking lever by .006" to .010" when the end of wedge is held in line with the locking lever.

To adjust, loosen the locking wedge mounting screw and position the locking wedge in its guide; then tighten the mounting screw.

#### Locking Lever Spring Tension (Figure 5)

With the locking lever on the high part of its cam, hook an 8 ounce scale on the end of the locking lever, at the spring hole, and pull in line with the spring. It should require from 4 to 5-1/2 ounces to start the lever moving away from the cam.

#### Selector Arm Stop Detent Adjustment (Figure 3)

With the locking lever on the low part of its cam, there should be an equal amount of clearance between the sides of the locking wedge and the locking lever when the selector arm is in the marking or spacing position.

NOTE: When checking the marking position, be sure that the selector arm operating screw does not interfere with the movement of the selector arm.

To adjust, loosen the screw that mounts the selector arm stop detent eccentric post just enough to make the post friction tight. Position the stop detent by turning the post; then tighten the post mounting screw.

#### Selector Arm Stop Detent Spring Tension (Figure 3)

Unhook the stop detent spring from the locking lever guide and hook an 8 oz. scale in the spring eye. It should require 4 to 5 ozs. to pull the spring to its position length.

#### Selector Lever Spring Tension (Figure 5)

With the selector levers in their unoperated position, unhook the selector lever springs from their springs posts and hook a 32 oz. scale in the spring eye of each spring. It should require 20 to 24 ozs. to pull each spring to its position length. Rehook the springs.

### Selector Magnet Bracket Position Adjustment (Figure 6)

Rotate the selector cam sleeve until the locking lever just drops off the high part of its cam; then rotate the cam sleeve backward until the rotation is stopped by the locking lever. With the selector arm locked in its marking position, there should be a clearance of .060" to .065" between the armature lever and the face of a tooth on the armature lever cam.

To adjust, loosen the selector magnet bracket mounting screws and the selector magnet bracket adjusting arm mounting screws just enough to make the bracket and adjusting arm friction tight. Then position the selector magnet bracket by means of the adjusting arm using the 90783 adjusting wrench. To do this, insert the adjusting wrench in the hole above the end of the adjusting arm and rotate the wrench.

Tighten the bracket and adjusting arm mounting screws.

### Selector Magnet Bracket Adjustment (Figures 2-A and 2-B)

With the selector magnet energized, the clearance between the selector arm operating screw and the selector arm should be .004" to .006" greater when the armature lever is on a peak of its cam than when the armature lever is opposite an indent on the cam.

- (A) To adjust, energize the magnet and rotate the selector cam sleeve until the armature lever is resting on a peak of the armature cam. Holding the cam sleeve in this position, turn the main shaft to a point where it moves the armature lever the greatest distance.
- (B) NOTE: The coils should not be energized while making this part of the adjustment.

Loosen the selector magnet bracket mounting screws and, by means of its adjusting screw, rotate the selector magnet bracket so that the armature just touches the pole faces; then turn the adjusting screw an additional one-tenth of a turn counterclockwise. This will press the armature firmly against the magnet cores. (While making the one-tenth of a turn adjustment, be careful to avoid lost motion due to loose fitting screw threads.)

- (C) Measure the clearance between the selector arm operating screw and the selector arm and, if there is no clearance, back off the selector arm operating screw to provide at least .006". Then rotate the selector cam sleeve so that the armature lever is opposite an indent of its cam and again measure the clearance between the selector arm operating screw and the selector arm. If the difference in the two clearances exceeds .006", the selector magnet bracket adjusting screw should be turned clockwise. If the difference in the clearance is less than .004", turn the screw counterclockwise. Tighten the selector magnet bracket mounting screws.

### Armature Lever Spring Tension Adjustment (Figure 2-A)

Unhook the armature lever spring from its spring arm and rotate the main shaft until the armature lever is on a high part of its cam. With a 32 oz. scale hooked in the spring eye, it should require 13 to 15 ozs. to pull the spring to position length.

To obtain the proper tension, at "position length," loosen the spring arm mounting nut and position the arm; then tighten the mounting nut.

Rehook the armature lever spring.

### Selector Arm Operating Screw Adjustment (Figure 7)

With the selector magnet energized and the selector cam sleeve rotated so that the armature lever is opposite an indent of its cam, there should be a clearance of .003" to .006" between the selector arm operating screw and the selector arm.

To adjust, loosen the selector arm operating screw lock nut and position the screw; then tighten the lock nut.

#### Selector Arm Spring Tension (Figure 8)

Unhook the selector arm stop detent spring. With the armature lever on a high part of its cam, hook an 8 oz. scale over the end of the locking wedge and pull parallel to the selector arm spring. It should require 1-1/4 to 1-3/4 ozs. to start the selector arm moving.

Replace the detent spring.

#### Stop Lever Eccentric Screw Adjustment (Figure 9)

The stop lever, on the range finder assembly, should overtravel the latching face of the trip latch by .004" to .006".

To adjust, loosen the stop lever eccentric screw nut and position the screw; then tighten the nut, making certain that the tightening of the nut does not disturb the adjustment.

#### Trip Latch Spring Compression (Figure 9)

NOTE: When measuring this requirement, the range finder assembly should be held in a horizontal position.

Apply the push end of an 8 oz. scale, held in a vertical position, to the trip latch, as near to the stop lever as possible. It should require 1 to 1-1/2 ozs. when pushing upward to start the trip latch moving.

#### Stop Lever Spring Tension (Figure 10)

NOTE: Be sure that the stop lever eccentric has been adjusted before checking this requirement.

With the trip latch plunger held operated, hook an 8 oz. scale on the end of the stop lever of the range finder assembly and pull horizontally at right angles to the stop lever. It should require 3/4 to 1-1/4 ozs. to start the lever moving.

#### REPLACE THE RANGE FINDER ASSEMBLY

#### Trip-off Screw Adjustment (Figure 11)

There should be some clearance, not more than .002", between the stop lever and the trip latch when the armature is in the unoperated position and the selector cam sleeve is rotated until the stopping edge of the stop lever is directly below the latching surface of the trip latch.

The trip latch plunger should have at least .002" end play (see figure 9) when the armature is held in the attracted position and with the stop lever clear of the latching surface of the trip latch.

To adjust, loosen the trip-off screw lock nut and position the screw to meet the first requirement. The latter requirement serves as a check on the trip-off screw adjustment and also on the adjustment of the selector magnet bracket.

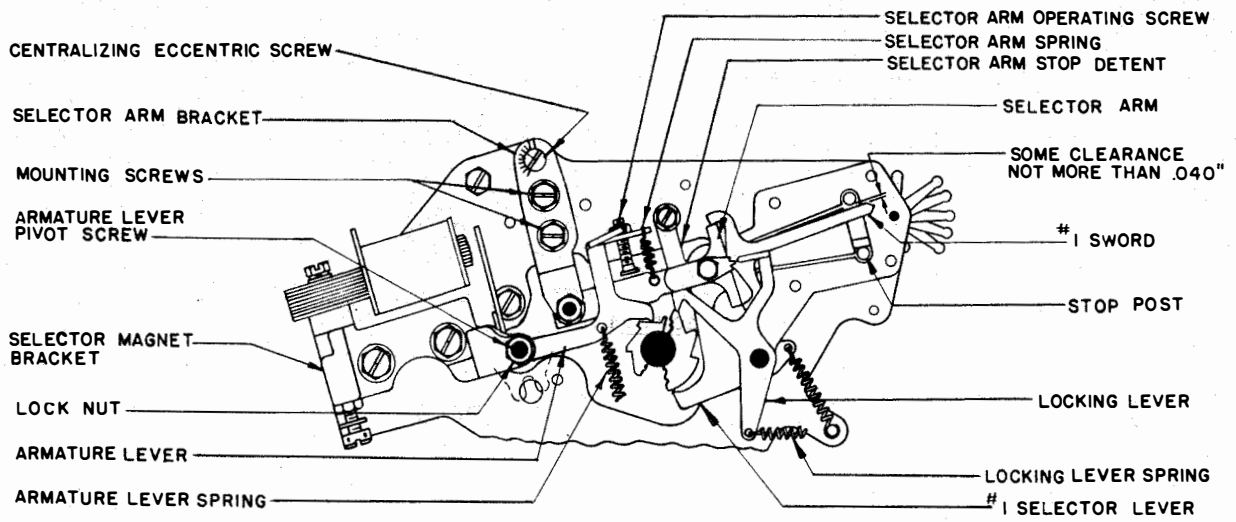


FIGURE 1

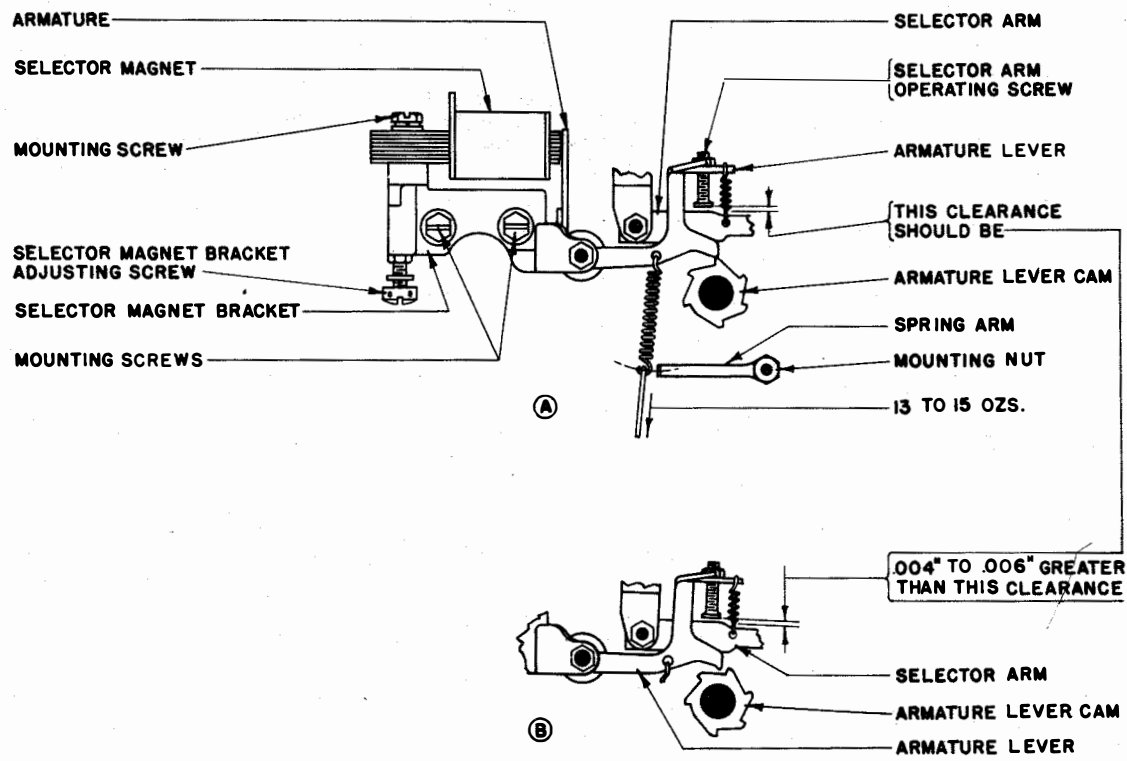


FIGURE 2

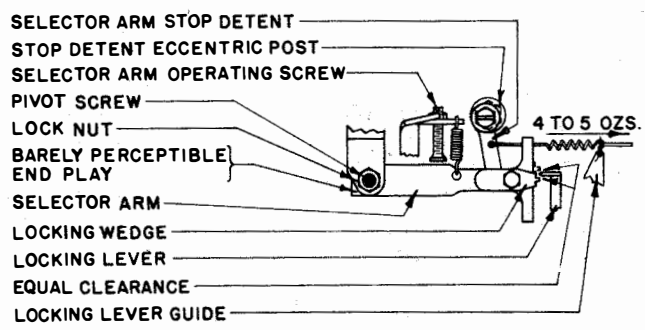


FIGURE 3

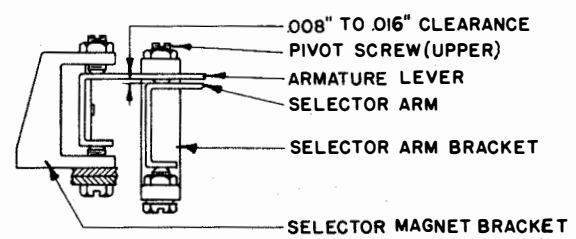


FIGURE 4

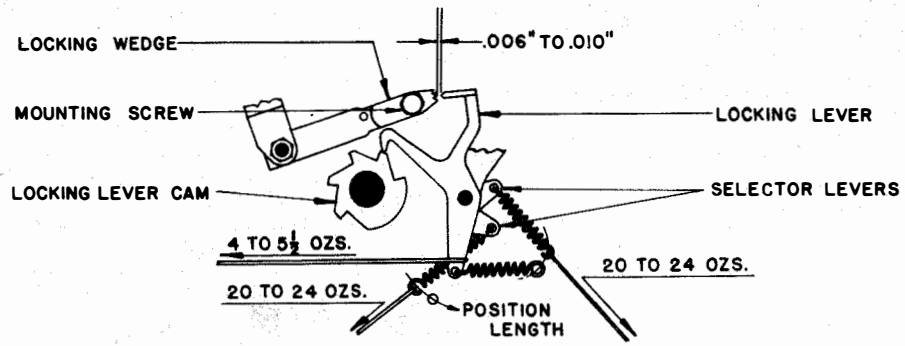


FIGURE 5

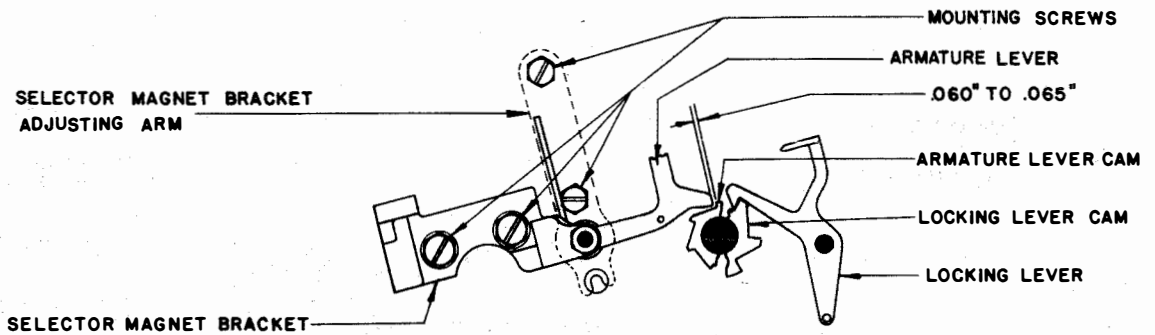


FIGURE 6

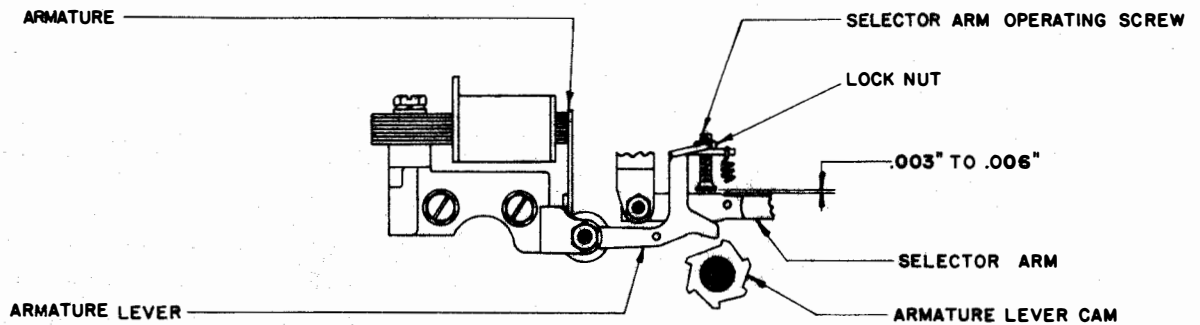


FIGURE 7

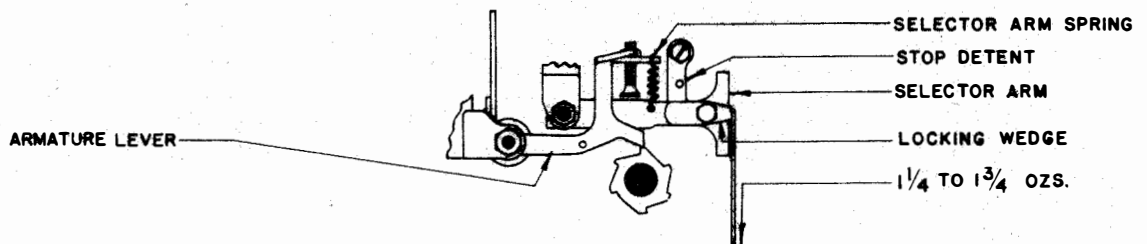


FIGURE 8

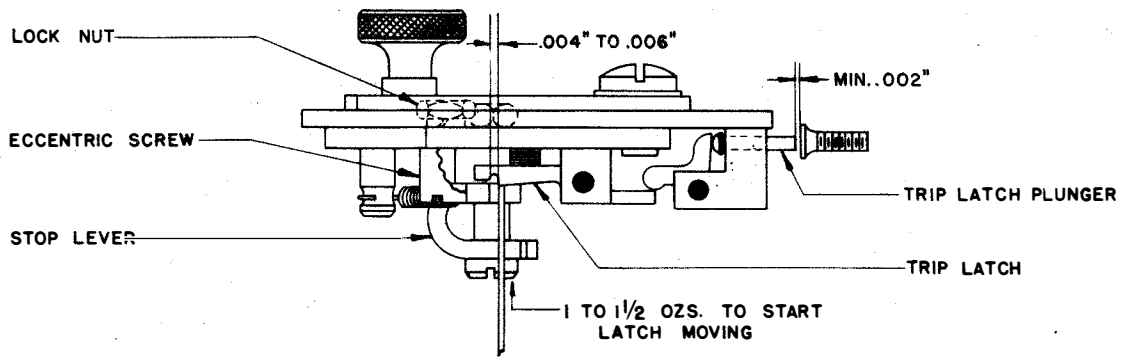


FIGURE 9

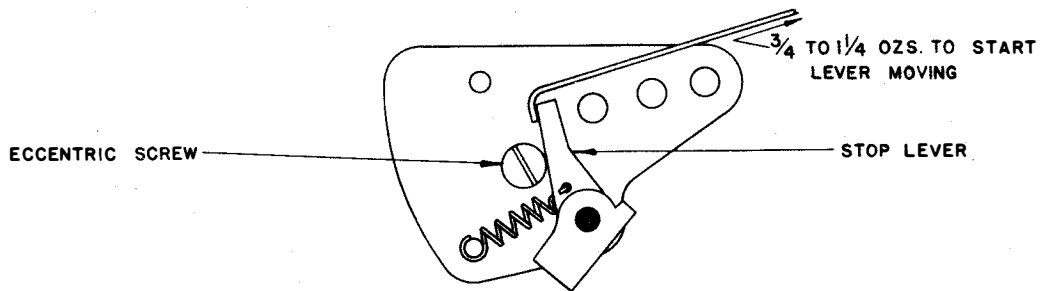


FIGURE 10

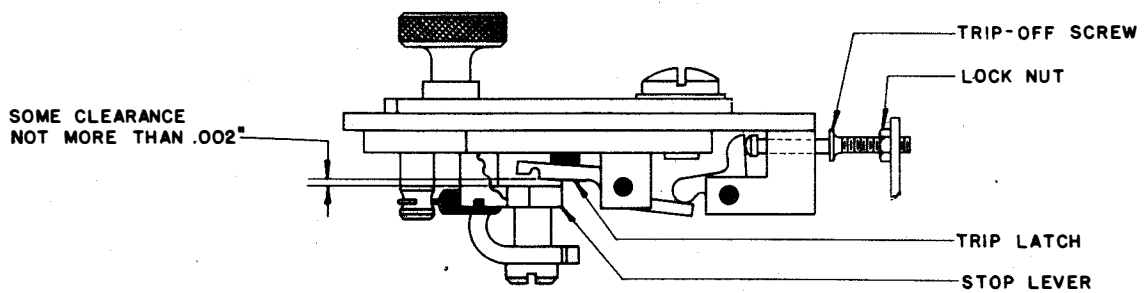


FIGURE 11

