

CHANGES IN BULLETIN 127 (ISSUE 2)  
ADJUSTMENTS - TYPE BAR TAPE PRINTER  
(MODEL 14)

Page 1

Main Shaft Clutch Throwout Lever Adjustment (Figure 1)

Change this adjustment to read ".010" to ".020" instead of ".010" to ".015".

Main Shaft Clutch Spring Tension (Figure 2)

Change this requirement to read as follows:

With the teeth of the driven clutch member resting against the teeth of the driving clutch member, but not engaged, hook a 32 oz. scale over the throwout cam on the driven clutch member and pull down as nearly vertical as possible. It should require 24 to 30 ozs. to separate the clutch teeth.

Pages 1 and 3

Speed Adjusting Wheel Friction Spring Pressure

Change this requirement to read 16 to 20 ozs. instead of 8 to 16 ozs.

Page 6

Synchronous Motor Adjustments

Add the following:

"ON SYNCHRONOUS MOTORS HAVING A SINGLE STARTING CONTACT, THE STARTING SWITCH SHOULD MEET THE FOLLOWING REQUIREMENTS:"

Add the following to the second sentence under "Starting Switch Adjustment:"

"- - - or may run backward, damaging the printer."

Page 7

Add the following to paragraph (c):

Note the number and thickness of the shims at each end of the switch bracket so that later they may be reassembled properly. Remove the end shields.

Change paragraph (e) to read as follows:

"- - - push collar, hook an 8 oz. scale over the contact spring just below the backstop and pull at right angles to the spring. It should require 1/2 to 1 oz. to start the contact spring moving away from the backstop." Adjust by bending the contact spring to meet this requirement. Care should be taken to avoid bending this spring excessively.

Replace the centrifugal weight springs.

Change the first sentence in paragraph (g) to read as follows:

Remount the starting switch on the switch end shield, making certain that the shim pile-up is equal on both sides of the switch bracket.

Add the following paragraph to paragraph (g):

See that there is a fibre washer between the rotor and the pinion end shield. Replace the switch end shield screws and employ the same procedure as used in tightening the switch mounting screws.

Page 8

Add the following sentence just before the last sentence in paragraph (j):

If shims are removed refer to paragraph (i).

Omit paragraph (l) and substitute the following:

- (1) Apply the push end of a 12 lb. scale against the fan end of the shaft and push parallel with the shaft. It should require at least 7 lbs. pressure to start the shaft moving. (Applies to A.C., D.C., and synchronous motors.)

Replace the motor pinion and the fan (or handwheel, if the motor is equipped with a handwheel).

Omit the entire information under "Removing and Replacing Starting Switch or Centrifugal Mechanism (Figure 9)," and substitute the following:

IF IT IS NECESSARY, FOR ANY REASON, TO REMOVE THE STARTING SWITCH OR CENTRIFUGAL MECHANISM, PROCEED AS FOLLOWS:

Removing the Starting Switch or Centrifugal Mechanism (Figure 9):

- (a) Remove the motor unit from the base, and remove the motor pinion and motor fan (or handwheel, if the motor is equipped with a handwheel).

- (b) Take out the switch end shield mounting screws.
- (c) Pull out the switch end shield slightly and remove the switch mounting screws, taking the same precautions as noted in paragraph (c) of the starting switch adjustment.
- (d) Unsolder the stator leads connected to the starting switch.
- (e) Remove the ball bearing. A bearing puller should be used, and care should be taken so as not to dent the brass covering that encloses one face of the bearing, or to burr the shaft. Never use a hammer, chisel, or any tool of that nature, directly against the face of the inner or outer ring.

NOTE: When handling the bearing, it is of the utmost importance that no dirt be allowed to enter the bearing. Dirt, grit, dust, or foreign matter of any kind acts as an abrasive which, when ground between the revolving balls, will wear out the races. Before replacing, it is well to wash the bearing in kerosene or gasoline and then spin the bearing to remove the dirt. When laying a bearing down, lay it on a clean piece of paper - never on a dirty bench or table top. New bearings should not be unwrapped until ready to be used.

- (f) The starting switch may now be removed. To remove the centrifugal mechanism, remove the two mounting screws.

Assembling the Starting Switch or Centrifugal Mechanism (Figure 9)

- (a) Assemble the centrifugal mechanism to the rotor by means of the two centrifugal mechanism mounting screws, making certain that the insulator has been mounted properly between the mechanism and the rotor.
- (b) Place the fibre push collar washer on the switch end of the rotor shaft in front of the centrifugal mechanism push collar.
- (c) Insert the rotor partly in the stator with the switch end partly out of the frame.
- (d) Place the starting switch on the shaft against the push collar washer with the contact spring toward the rotor. With the contact points of the starting switch in the upward position, solder the two wires that are tied together to the upper terminal of the starting switch.
- (e) Before replacing the bearing, wipe the shaft clean and examine for burrs or corrosion. If necessary, use emery cloth, dressing down the shaft just enough to remove inequalities of the surface and any burr on the shoulder of the shaft, to insure proper seating of the bearing. Now wipe the shaft clean and apply a trace of machine oil to the part of the shaft that seals the bearing.

Replace the ball bearing on the switch end of the rotor shaft with the shielded side of the bearing facing the rotor. The bearing has what is known as a "light tap" fit; that is, the bearing fits on the shaft so that a series of light taps will drive it in place. The best tool to use is a piece of pipe or tubing, preferably of brass, which is just large enough to slip over the shaft and to bear only on the inner ring. Never apply pressure of any kind to the outer ring, the balls, or the retainer, as this is likely to injure the bearing. It is absolutely essential that the bearing be started straight and that the blow be light. See that the bearing is solidly up against the shaft shoulder. Pack the bearing with approved lubricant.

- (f) Place a felt washer and a retaining washer in the order given in the switch end shield.
- (g) Slide the switch end shield over the switch end of the rotor shaft, inserting the ball bearing in the machined recess of the switch end shield.
- (h) Adjust the starting switch following the instructions given under "Starting Switch Adjustments."

To remove or replace the ball bearing on the pinion end of the rotor, proceed as follows:

- (a) Remove the motor unit from the base and remove the motor pinion and motor fan (or handwheel, if the motor is equipped with a handwheel).
- (b) Take out the pinion end shield mounting screws and remove the end shield.
- (c) Proceed as in paragraph (e), of "Removing the Starting Switch or Centrifugal Mechanism."

To replace the bearing on the pinion end of the rotor, proceed as follows:

- (a) Proceed as in paragraph (c), "Assembling the Starting Switch or Centrifugal Mechanism."
- (b) Assemble in the pinion end shield the following in the order given: felt washer, cup washer, thrust spring, and thrust spring washer.
- (c) Replace the end shield mounting screws, tightening alternately each screw a small amount until they are tight.

ON SYNCHRONOUS MOTORS HAVING A THREE BRUSH STARTING SWITCH, THE SWITCH SHOULD MEET THE FOLLOWING REQUIREMENTS:

NOTE: These requirements should not be checked unless there is reason to believe the starting switch is out of adjustment.

- (a) Remove the motor unit from the base and remove the motor fan and pinion.
- (b) Remove the switch end shield screws and the switch commutator mounting screws. Remove the switch end shield.
- (c) Pull out the rotor until the brush holder spring is accessible and remove the spring.
- (d) The tension of the spring for 60 cycle motors should measure 3 to 3-3/4 ozs. when extended to a length of 5 inches, using an 8 oz. scale. The tension of the spring for 50 cycle motors should measure 1-1/2 to 2-1/2 ozs. when extended to a length of 5 inches, using an 8 oz. scale.
- (e) The brush holders should be mounted by means of the center set of mounting holes and should be free.
- (f) The brush holder stop pins should be safely within the holes of the fibre disc when all the play in the brush holders has been taken up to make the engagement of the pins with the disc a minimum.
- (g) Replace the brush holder spring, making certain that the spring eyes are fully engaged with each other.
- (h) Replace the switch commutator screws and tighten the two screws alternately a little at a time until both screws are tight.
- (i) Replace the switch end shield screws, using the same precaution in tightening as above.
- (j) Apply the push end of a 12 lb. scale against the fan end of the shaft and push parallel with the shaft. It should require at least 7 lbs. pressure to start the shaft moving. (Applies to A.C., D.C., and synchronous motors.)
- (k) Replace the motor fan and pinion. Replace the motor unit on the base and check the motor plate adjustment.

Pages 11 and 12

Selector Armature Bracket Adjustment

Omit the last two sentences in the second paragraph and add the following:

Place a .040" wire gauge against the spacing stop post and rotate the armature slowly toward the marking position. The blade of the sword should strike the .040" gauge before the armature leaves the spacing arm of the sword. Under these conditions, the armature will move the sword to not more than .040" of the stop post. Remove the .040" gauge and repeat the above procedure. The armature should leave the spacing arm of the sword before the blade of the sword strikes the spacing stop post. Under these conditions, there should be some clearance between the sword and the stop post.

Add the following to the third sentence of the third paragraph:

"- - in the same manner as described in the foregoing.

Page 18

Pull Bar Guide Adjustment

Change the requirement in the second paragraph to read .004" to .080" instead of "at least .004" "

Page 19

Main Bail Adjusting Screw Adjustment (Figure 1)

Change this adjustment to read as follows:

Rotate the main shaft until the main bail has reached its stop position (main bail roller on the high part of its cam). With the code bars in the marking position, there should be .010" to .050" clearance between the pull bars and the code bars when the play in the main bail and pull bars is taken up to make this clearance a minimum. Check this clearance with the code bars in the spacing position.

To adjust, position the main bail adjusting screw by means of its lock nut.

Page 23

Shift Rocker Adjustment

Change the third sentence to read as follows:

The carriage locking toe should overtravel the carriage locking pawl, not more than .020".

Page 24

Ribbon Spool Cups Adjustment (Figure 35)

Change this adjustment to read as follows:

The centers of both ribbon spool cup rollers should be within 4-11/16" to 4-13/16" from the typing unit base plate.

To adjust, loosen the ribbon spool cup lock nuts and rotate the cups; tighten the lock nuts.

Page 43

Add the following adjustment after "Clutch Spring Compression (Figure 62):"

Lock Loop Roller Adjustment

NOTE: This adjustment applies only to those keyboards equipped with lock loops having an elongated hole for the roller pivot screw.

Rotate the keyboard shaft until the clutch teeth are disengaged. Press the lock loop roller against its cam to fully disengage the clutch teeth and position the locking levers directly below the lock loop blade to make the clearance a minimum. Under these conditions, there should be .008" to .015" clearance between the lock loop blade and the locking lever having the least clearance.

To adjust, position the roller pivot screw by means of its elongated mounting hole. (See Figure 65 for location of parts.)

Page 44

Trip-off Pawl Eccentric Adjustment

Omit the last part of the last sentence and add the following note:

NOTE: When making this adjustment, the high part of the eccentric should be positioned toward the rear of the keyboard.

Clutch Throwout Lever Spring Tension

Change this requirement to read as follows:

With the clutch teeth engaged and the clutch throwout lever resting against the low part of the driven clutch member, hold the intermediate pawl against its eccentric; at the same time hook an 8 oz. scale over the throwout lever, just above the spring hole and pull in line with the spring. It should require 1-1/2 to 2-1/2 ozs. to start the throwout lever moving.

Page 51

Lubrication Specification

Add the following after the second paragraph:

Oil both loops of all helical springs that exert a nominal tension of less than 2-1/2 pounds.

Apply grease to both loops of all helical springs that exert a nominal tension of 2-1/2 pounds or more.

Page 53

Add the following under "Keyboard:"

18. Repeat space rod - at bearing points and points of contact.