

ADJUSTMENTS OF THE BREAK-LOCK MECHANISM
ON TELETYPE MODEL 14 TRANSMITTER DISTRIBUTOR

To be used in conjunction with Bulletin No. 141 - DESCRIPTION AND ADJUSTMENTS - TRANSMITTER DISTRIBUTOR.

For transmitter distributors equipped with break-lock mechanism, which provides means for stopping transmission in response to a break signal which may be transmitted from receiving stations, or when steady signal line current has decreased to some predetermined value; add the following adjustments directly following Section (b) of BRAIDED BRUSH ADJUSTMENT - HIGH BRUSH ARM (Figure 29):

MOUNTING PLATE ADJUSTMENT (Figure 1)

With the distributor brush arm in the stop position, the end of the shunt contact lever should rest on its cam $1/32$ " (plus or minus $1/64$ ") from the edge of its notch in the cam. To adjust, unhook the contact pawl spring from its spring post and position the mounting plate by means of its elongated holes. Rehook the spring.

MAGNET BRACKET ADJUSTMENT (Figure 1)

- (1) With the armature held against the core of the magnet, both faces of the core should be flush against the armature.
- (2) With the armature lever held against the high part of its cam by its spring, there should be $.002$ " to $.003$ " clearance between the magnet core faces and the armature.

To adjust for the first requirement, bend the magnet bracket at a point near the mounting plate. To adjust for the second requirement, position the magnet bracket by means of its enlarged mounting holes.

MAGNET CORE ADJUSTMENT

With the armature in its attracted position, the magnet core should be approximately equidistant from the ends and sides of the armature. To adjust, position the magnet core by means of the enlarged holes in the magnet bracket. Recheck the MAGNET BRACKET ADJUSTMENT. See Figure 1.

SHUNT CONTACT ADJUSTMENT (Figure 2)

Remove the shunt contact bracket from the mounting plate. Hook an 8 oz. scale to the insulator on the long contact spring and pull at right angles to the insulator. It should require 1 to 2 ozs. to separate the contact points. To adjust, bend the long contact spring. Replace the bracket.

SHUNT CONTACT BRACKET ADJUSTMENT (Figure 1)

- (1) With the shunt contact lever on the high part of its cam, there should be some clearance not over .003", between the post on the shunt contact lever and the insulator on the long shunt contact spring.
- (2) Rotate the motor shaft by hand until the shunt contact lever just falls into the indent in its cam. With the contact pawl kept in the unlatched position, the shunt contact lever post should exert pressure on the insulator of the long contact spring and provide a contact gap of .010" to .020". To adjust for both requirements, position the shunt contact bracket by means of the enlarged mounting holes.

PUSH ROD LOCK ADJUSTMENT (Figure 3)

- (1) With the stop pin of the push rod resting against its lock (in the unlocked position) the end of the push rod should rest in the bearing in the mounting plate and should not extend more than 1/32" beyond it.
- (2) With the push rod in the disabled position, the contact lever should be disengaged from its cam. To adjust for both requirements, position the push rod lock by means of its elongated mounting holes.

BREAK CONTACT ADJUSTMENT

- (1) With the contact pawl in the unlatched position and the push rod in its disabled position, initially tension the long BREAK contact spring against its short contact spring. Under this condition, there should be some clearance not over .003" between the insulator on the long BREAK contact spring and the stud on the contact pawl. See Figure 1. To adjust, bend the short BREAK contact spring.
- (2) With the contact pawl in the unlatched position, hold the insulator on the long MAKE contact spring away from the insulator on the long BREAK contact spring. Under this condition hook an 8 oz. scale to the insulator on the long BREAK contact spring and pull at right angles to the spring. It should require 1 to 2 ozs. to separate the contacts and both contacts should break approximately simultaneously. See Figure 4. To adjust, bend the long BREAK contact spring. Recheck requirement (1).

MAKE CONTACT ADJUSTMENT

- (1) With the contact pawl in the unlatched position, the insulator on the long MAKE contact spring should just make contact with the insulator on the long BREAK contact spring. See Figure 1. To adjust, bend the long MAKE contact spring.

- (2) With the contact pawl in the unlatched position, initially tension the short MAKE contact spring against its stiffener. Under this condition the MAKE contact gap should be from .010" to .015". To adjust, bend the stiffener.

NOTE: It will be necessary to remove the 111456 cam while checking the following requirement:

- (3) With the contact pawl in the latched position, and the armature held against the magnet core, hook an 8 oz. scale to each prong of the bifurcated short MAKE contact spring, at a point next to its contact, and pull at right angles to the spring. It should require a pull of 1 to 2 ozs. to break contact on each prong of the bifurcated spring. To adjust, bend the short MAKE contact spring. Recheck requirement (2). Replace the cam.

CONTACT PAWL SPRING TENSION

Unhook the contact pawl spring from the contact pawl, and its spring post and attach the loop of one end to some convenient object. With an 8 oz. scale hooked to the free loop it should require a pull of 3-1/2 to 4 ozs. to extend the spring to a length of 1-1/32", when pulling horizontally. See Figure 1. Replace the spring.

SHUNT CONTACT LEVER SPRING TENSION

With the shunt contact lever on the high part of its cam, hook an 8 oz. scale to the lever (just under the point of engagement of the shunt contact lever with the cam) and pull in a direction parallel to the side of the base casting. See Figure 1. It should require 6 to 8 ozs. to start the shunt contact lever moving away from the cam.

ARMATURE LEVER SPRING TENSION

Unhook the armature lever spring from the armature lever and hook a 2 lb. scale through the free loop. It should require a pull of 11 to 13 ozs. to extend the spring to a length of 1-1/2", when pulling horizontally. See Figure 1. Rehook the spring.

ARMATURE LEVER SPRING ADJUSTMENT

- (1) The armature lever spring tension is set at the factory for use on .060 ampere, signal line circuits, with the break-lock mechanism operating so as to stop transmission if the signal line current is reduced to .020 ampere or less.
- (2) The spring setting and operation of the break-lock mechanism must be checked by operating the transmitter distributor with its signal circuit in series with a local test (or comparable) circuit consisting of a source of 115 volts D. C., a milliammeter, a variable resistor of approximately 6000 ohms and a jack, all in series. Adjust the resistor so that .020 ampere flows through the test circuit. Start the transmitter distributor in operation. If the

transmitter distributor is equipped with an end-of-tape stop feature, it will be necessary to short-circuit the associated contact or to run tape through the transmitter. The break-lock mechanism should operate and stop transmission within two revolutions of the distributor after each restarting with the push rod. When properly adjusted, the break-lock mechanism should stop transmission when the signal line current is .020 ampere or less, but should not stop transmission at any time when the steady current is .025 to .030 ampere. To adjust, loosen the two nuts which lock the armature lever spring stud and position the stud. See Figure 1.

If it is desired to use the break-lock mechanism on .020 ampere line circuits, the armature lever spring tension should be adjusted to such a value as to cause the mechanism to operate and stop transmission if the signal line current is reduced to some value below .020 amperes. A procedure similar to that outlined in Requirement 2 above should be followed.

LUBRICATION

1. Armature lever pivot points - oil
2. Contact lever pivot points - oil
3. Contact pawl at intersection with armature lever and with its guide and mounting plate bracket - oil
4. Cam - grease
5. Push rod at bearing points - oil
6. Springs - oil both loops

In lubricating the mechanism, care should be taken to see that oil does not lodge between the core faces and the armature or between contact points.

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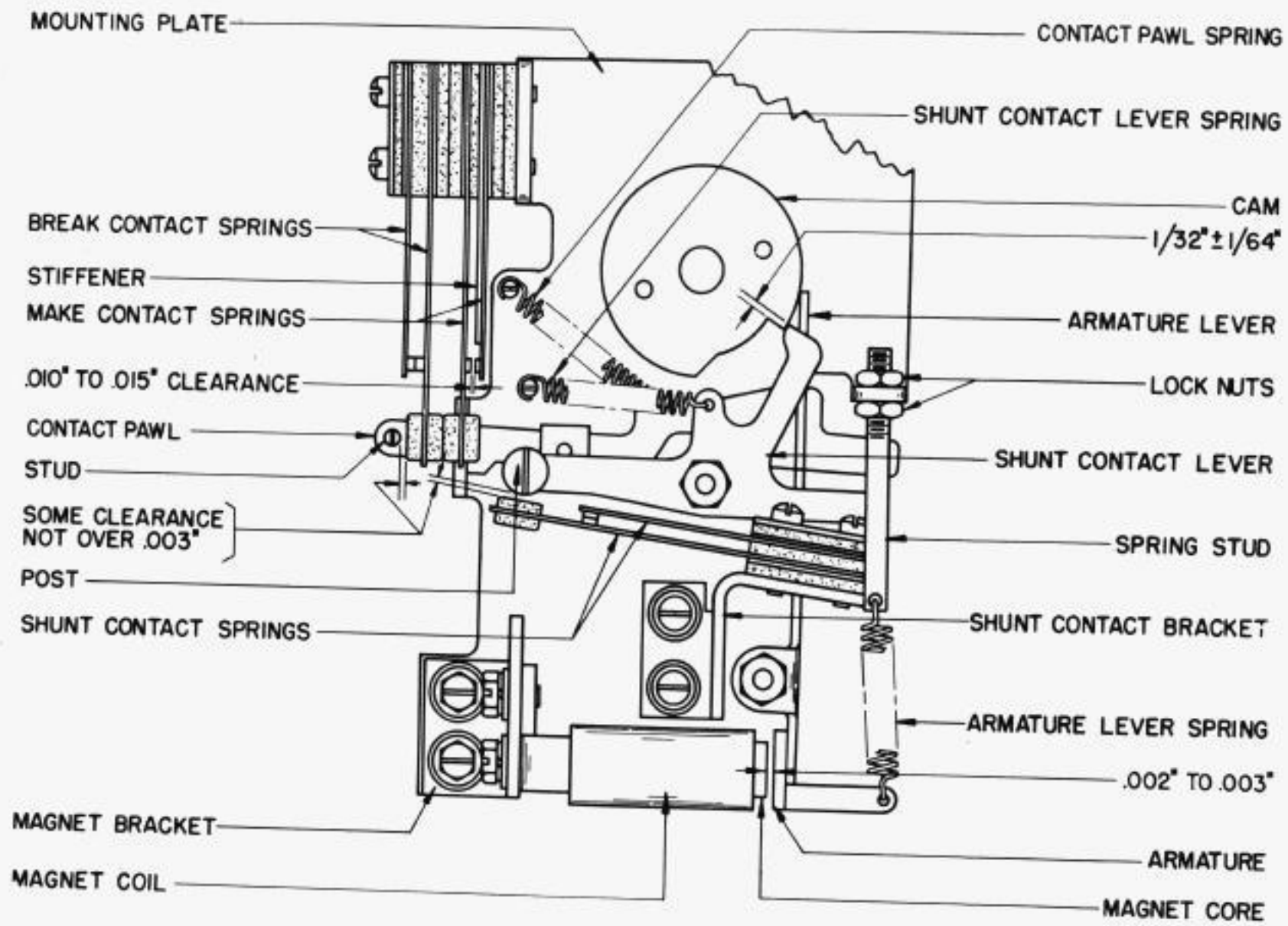


FIGURE 1

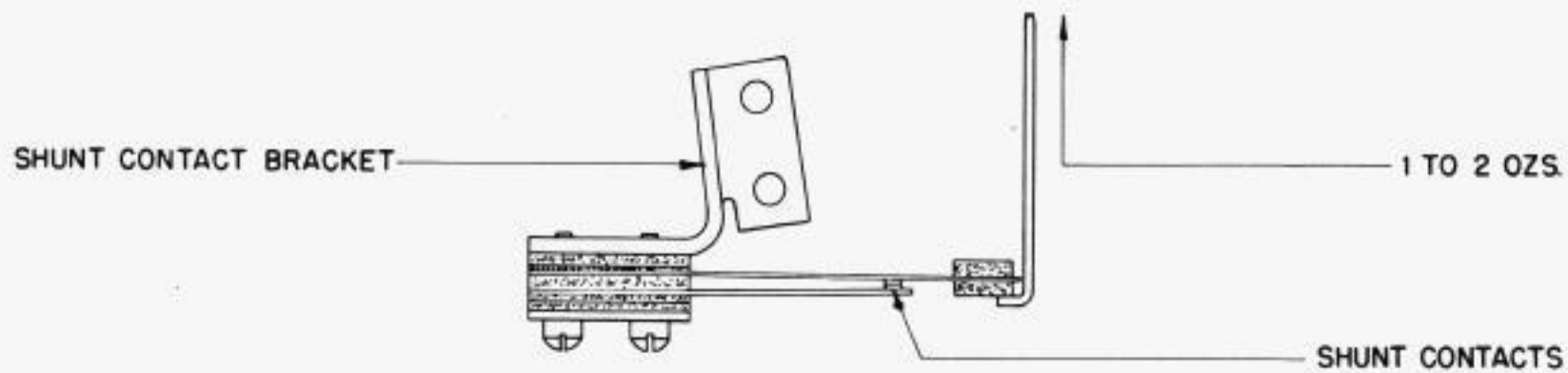


FIGURE 2

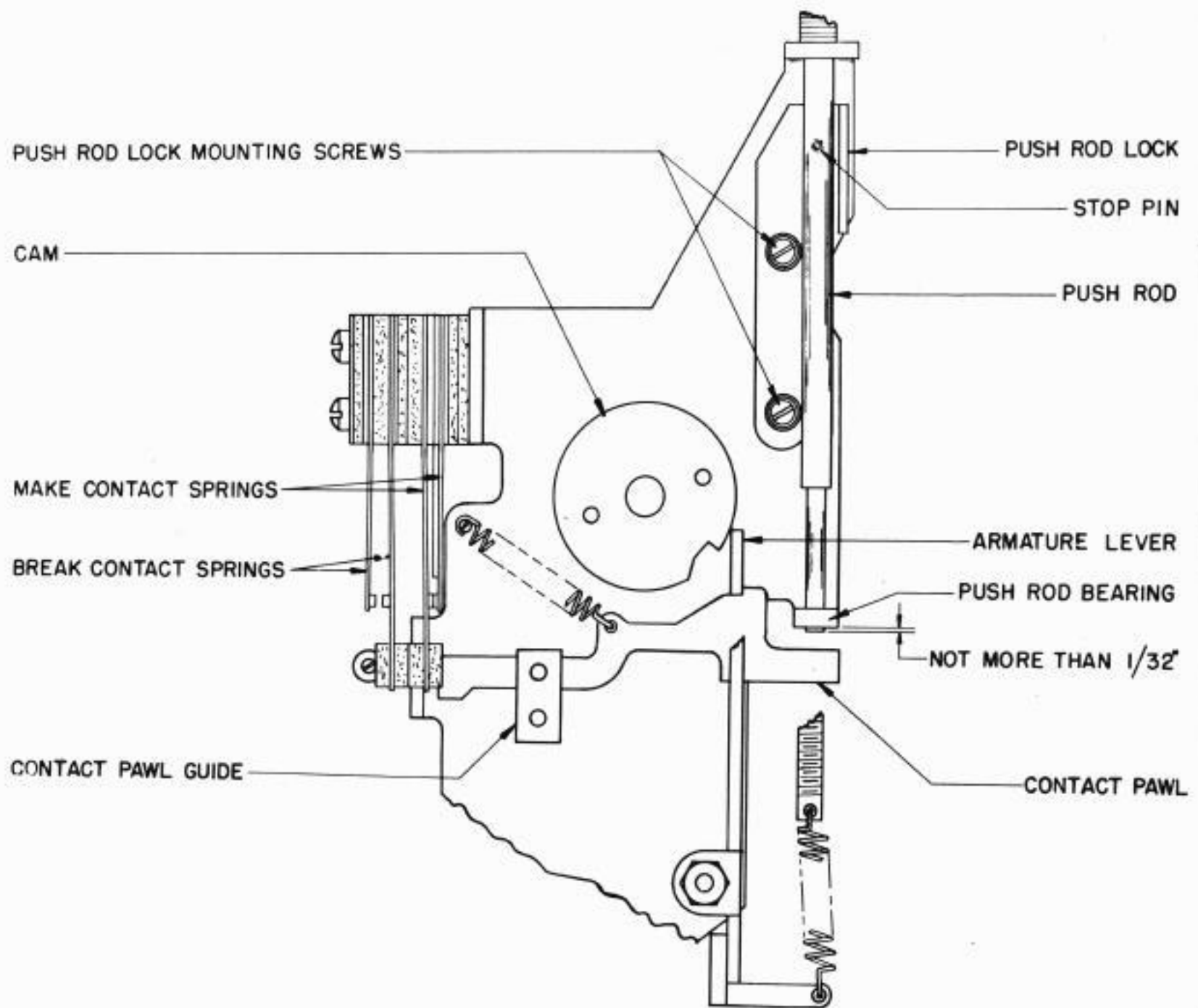


FIGURE 3

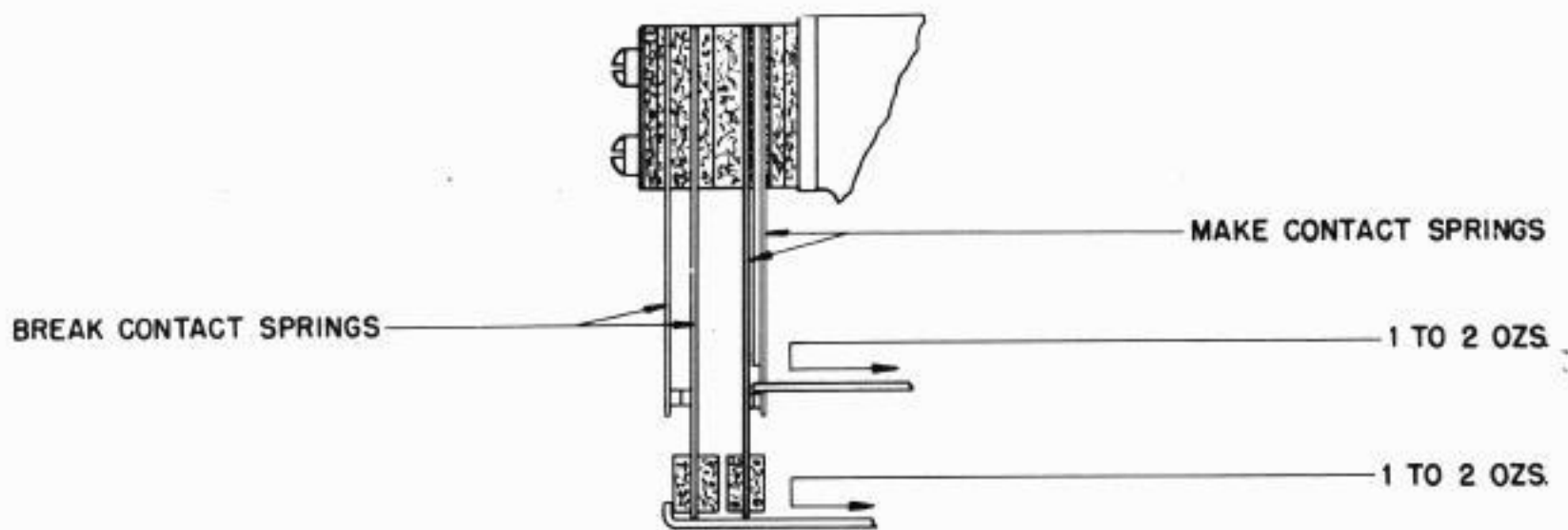


FIGURE 4