

35 MULTIPLE WIRE DISTRIBUTOR

ADJUSTMENTS

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1. GENERAL

1.01 This section provides adjustments and requirements for the 35 multiple wire distributor. The section has been revised to include recent engineering changes and additions and to rearrange the text. Since this is a general revision, marginal arrows ordinarily used to indicate changes and additions are omitted.

1.02 The adjustments are arranged in the sequence that should be followed if complete readjustment of the unit is undertaken. Tools required to make these adjustments are not supplied as part of the equipment, but are listed in Section 570-005-800. If a part mounted on shims is removed, the number of shims in each pile-up should be noted so that identical pile-ups can be made when the part is remounted. After an adjustment has been made, all nuts and screws that were loosened should be tightened.

1.03 The spring tensions are indications, not exact values. Therefore, measure them with proper scales in the positions shown in the drawings. Discard springs that do not meet the requirements and replace them with new ones.

1.04 In its disengaged position the clutch is latched between the clutch trip lever, which bears against the shoe lever and the clutch latchlever, which is seated in the notch in the clutch disc (see Figure 1). In this position, the clutch shoes are not in contact with the clutch drum and the shaft may be rotated freely. When

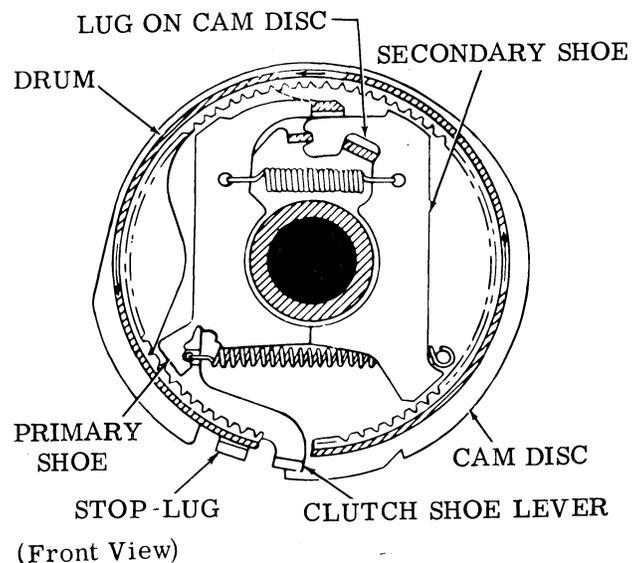


Figure 1 - Clutch Mechanism (Disengaged)

the shaft is turned by hand, the clutch does not fully disengage upon reaching its stop position. If a requirement calls for disengagement, rotate the clutch to its stop position, apply pressure with a screwdriver to the stop-lug (Figure 1) and turn the stop in the normal direction of shaft rotation until the latchlever falls into its notch. When the clutch is engaged, the shoe lever is unlatched and the shoes are wedged against the drum. This forces the clutch to turn with the shaft.

1.05 All electrical contact points should meet squarely. Contacts with the same diameter should not be out of alignment more than 25 percent of the contact diameter. Check contacts for pitting and corrosion and clean or burish them before making specified adjustment or tolerance measurement. Avoid sharp kinks or bends in the contact springs.

Note: Keep all electrical contacts free of oil and grease.

GOLD-PLATED SIGNAL CONTACTS

1.06 All units now being manufactured have signal contacts made of gold-plated tungsten. Older units may have unplated tungsten contacts. If in doubt as to the type of contacts, remove signal generator cover and inspect contacts for gold plating.

(a) Servicing: For standard applications including those with data sets, observe standard maintenance intervals. For special low current applications, see below.

(b) Cleaning

- (1) Use twill jean cloth (KS2423) to clean gold-plated contacts.
- (2) Open contacts. Drop strip of twill jean between them.
- (3) Close contacts. Draw twill jean part way through. Open contacts and withdraw twill jean.

(4) This procedure prevents small fibers at edges of twill jean strip from becoming lodged between contacts.

(5) Clean unplated tungsten contacts in accordance with standard procedures.

(c) Special Low Voltage Applications

Note: Following does not apply to standard applications.

(1) The recommended cleaning interval for gold-plated contacts in special low level applications (less than 250 microwatts) having an average weekly use of 60 hours should not exceed 90 days. This interval may be reduced, dependent on the circuit configuration, usage, and environment. Contacts should be cleaned as described in 1.06 (b).

Note 1: Applying operating voltage of standard distortion test set directly to contacts may damage gold plating and impair low voltage operation. When electrically adjusting or testing contacts (Par. 2.07), use an intermediate device, keyed by the contacts, to interrupt current to stroboscopic lamp of test set. This intermediate device must be capable of being keyed by a 3- to 20-volt change at maximum of 20 milliamperes.

Note 2: Normally for low voltage applications, contacts should be used in circuits operating between 3 and 20 volts dc at a current level not to exceed 60 milliamperes. Between 20 and 70 volts dc, the current should be adjusted so that it does not exceed a 120 milliwatt power level. The contacts are not normally intended for use on voltages above 70 volts dc. Exceeding these levels for an appreciable length of time may result in damage to the gold plating and make them unfit for low voltage applications.

2. MULTIPLE WIRE DISTRIBUTOR

2.01 Clutch Trip Magnet Assembly

CLUTCH TRIP ARMATURE AIR GAP

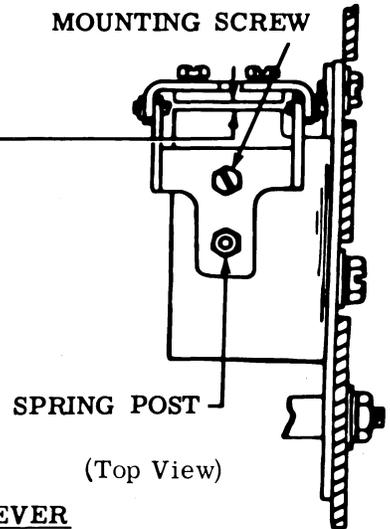
Requirement

Air gap between armature and magnet assembly bracket
 Min 0.004 inch---Max 0.008 inch
 when armature is held flush against magnet core.

To Adjust

Remove armature extension spring. Loosen spring post and hinge mounting screw and position hinge.

Note: To eliminate chatter and ac hum in ac operation, reverse the armature (side stamped C facing away from magnet core) by removing the mounting screws and armature bail.



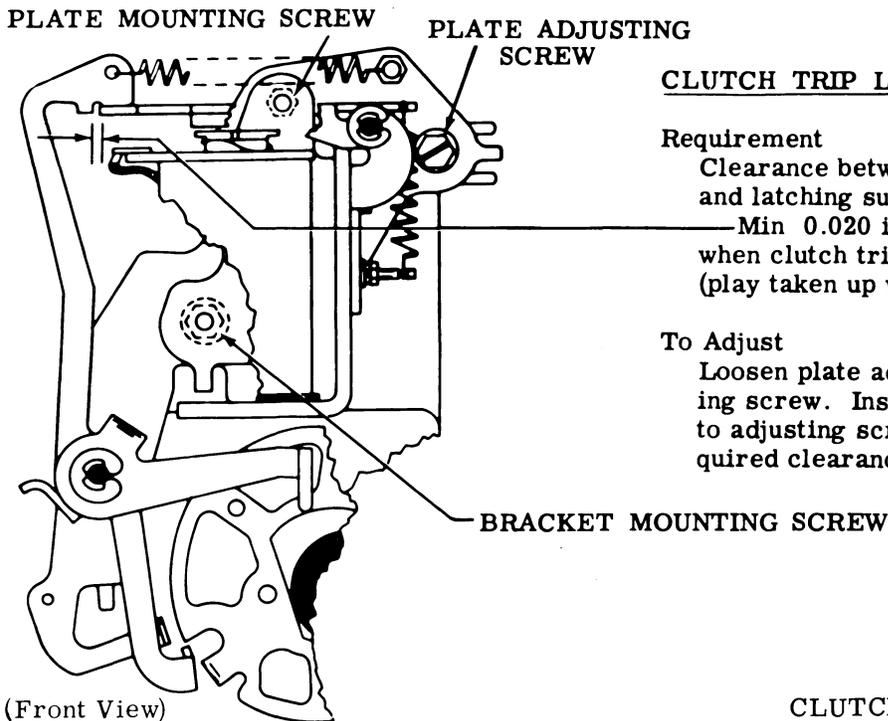
CLUTCH TRIP LEVER

Requirement

Clearance between armature extension lever and latching surfaces of clutch trip lever
 ---Min 0.020 inch---Max 0.030 inch
 when clutch trip lever is on high part of cam (play taken up with spring).

To Adjust

Loosen plate adjusting screw and plate mounting screw. Insert screwdriver in slot adjacent to adjusting screw and position plate for required clearance.



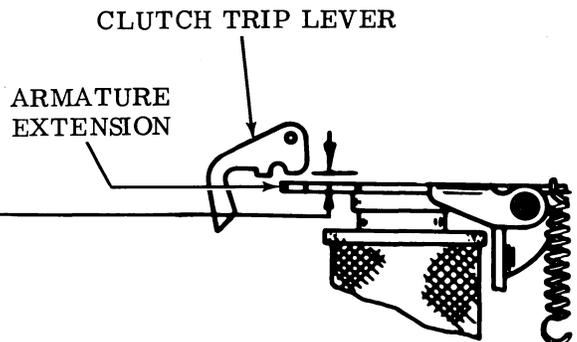
ARMATURE EXTENSION

Requirement

Clearance between armature extension lever and clutch trip lever
 Min 0.030 inch---Max 0.040 inch
 when clutch trip lever is on high part of cam and armature is flush against core (play taken up with spring).

To Adjust

Loosen bracket mounting screw and plate adjusting screw and insert screwdriver into slot below bracket mounting screw, and adjust bracket.



2.02 Cam Sleeve Assembly

CLUTCH STOP ARM

Requirement

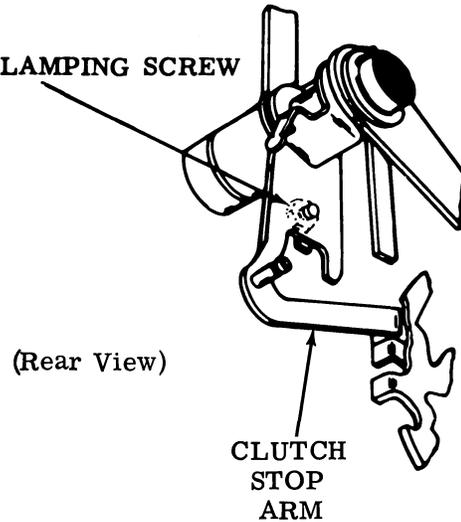
With clutch trip lever in latched position, clutch stop arm should fully engage clutch shoe lever.

To Adjust

With clutch in stop position, loosen clutch trip clamping screw and adjust clutch stop arm to obtain full bite with clutch shoe lever.

Note: When armature is in attracted position, clutch stop arm should clear shoe lever and stop-lug by at least some clearance.

CLUTCH TRIP CLAMPING SCREW



CLUTCH SHOE LEVER

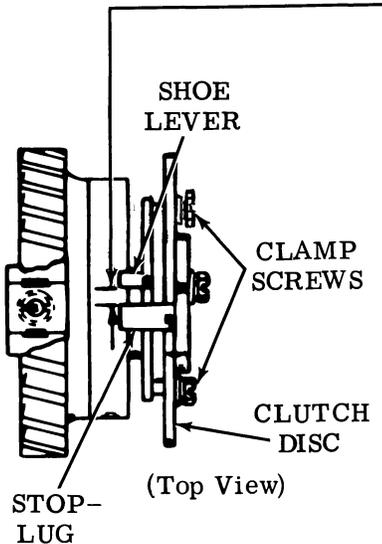
Requirement

Clearance between clutch shoe lever and stop-lug should be
Min 0.055 inch---Max 0.085 inch
greater when clutch is engaged than when disengaged.

To Adjust

Loosen two clamp screws friction tight in clutch disc. Rotate clutch disc to obtain proper clearance.

Note: After above adjustment is made, disengage clutch and rotate drum in normal rotation to make certain it does not drag on shoes. If drum drags, refine adjustment.



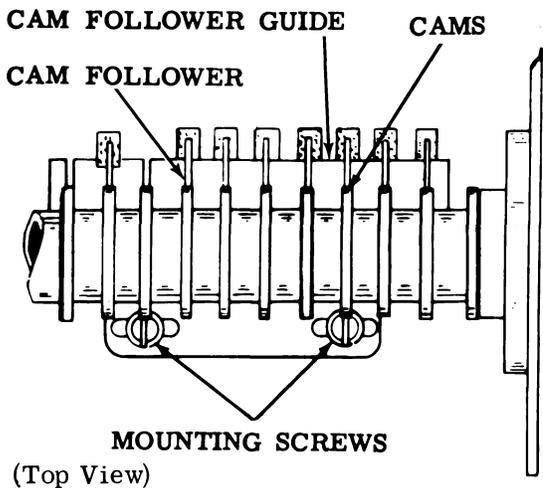
CAM FOLLOWER GUIDE

Requirement

Cam follower guide oriented so center cam follower is fully on cam when follower is moved sideways in guide slot. The others must have at least 75 percent bite when moved in either direction, and be free in their guide slots.

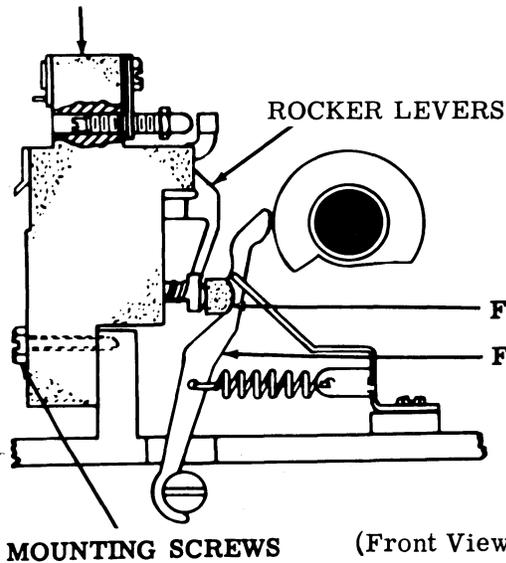
To Adjust

Position cam follower guide with its mount-in screws loosened. After tightening, check for freeness of cam followers.



2.03 Distributor Block Assembly

DISTRIBUTOR BLOCK ASSEMBLY



DISTRIBUTOR BLOCK ASSEMBLY

Requirement

Distributor block assembly positioned on casting so that rocker levers are fully engaged with the bakelite on the follower levers.

To Adjust

Loosen distributor block assembly mounting screws and position block left or right to obtain requirement.

DISTRIBUTOR CONTACT GAP

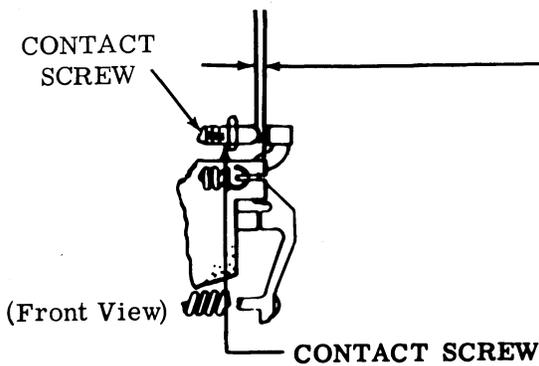
Requirement

Contact gap should be
 — Min 0.020 inch---Max 0.030 inch
 with cam follower lever on high part of cam.

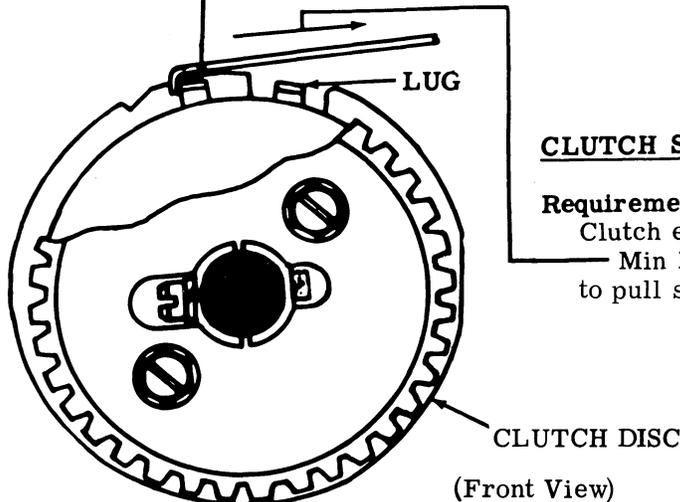
To Adjust

Turn contact screw at socket end until desired gap is obtained. Check all contact gaps.

Note: Position follower on high of cam by tripping clutch manually and rotating distributor shaft.



CLUTCH SHOE LEVER

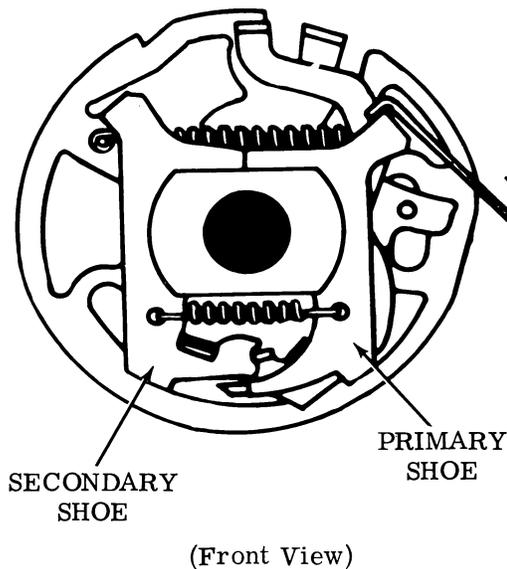


CLUTCH SHOE LEVER SPRING

Requirement

Clutch engaged. Clutch disc held to prevent its turning
 — Min 15 oz---Max 20 oz
 to pull shoe lever in contact with stop-lug on clutch disc.

2.04 Cam Sleeve Assembly (continued)



CLUTCH SHOE SPRING

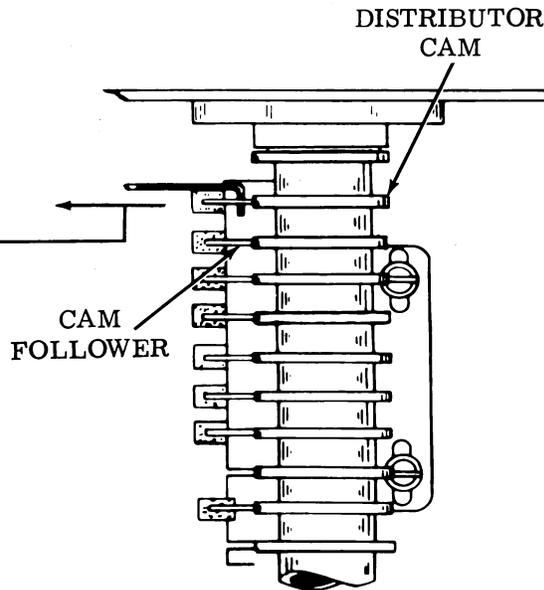
Note: As it requires removal of clutch from shaft, this spring tension should not be checked unless there is good reason to suspect that it will not meet its requirement.

Requirement
Clutch drum removed.
— Min 3 oz--- Max 5 oz
to start primary shoe moving away from secondary shoe.

DISTRIBUTOR CAM FOLLOWER SPRING

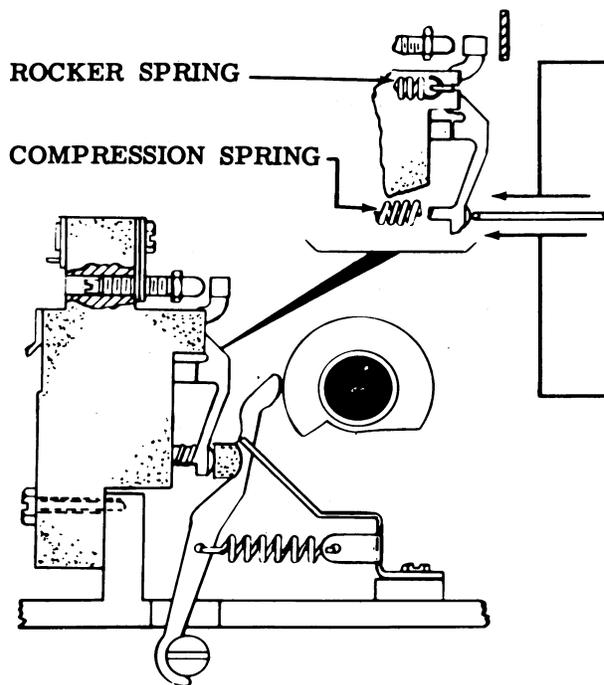
Requirement
Min 1/2 oz---Max 1-1/2 oz
to start cam follower lever moving when lever is on high of cam.

Note: As it requires removal of distributor block from the unit, the spring tension should not be checked unless there is good reason to suspect that it will not meet its requirement. Also, when distributor block is replaced recheck adjustments DISTRIBUTOR BLOCK ASSEMBLY (2.03) and DISTRIBUTOR CONTACT GAP (2.03).



(Top View)

2.05 Distributor Block Assembly (continued)



ROCKER SPRING

COMPRESSION SPRING

(Front View)

DISTRIBUTOR ROCKER SPRING

Requirement

With compression springs removed and contacts initially adjusted so contact surface is approximately 1/32 inch below outer surface of contact block

Min 3 oz---Max 4 oz
to separate contacts.

DISTRIBUTOR ROCKER COMPRESSION SPRING

Requirement

With compression springs installed
Min 6-1/2 oz---Max 9-1/2 oz
to just separate contacts.

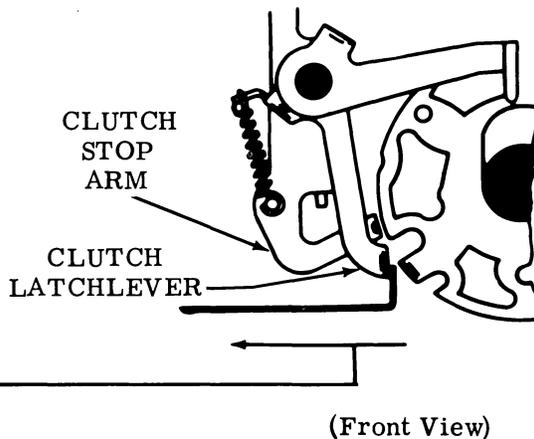
2.06 Clutch Trip Magnet Assembly (continued)

CLUTCH LATCHLEVER SPRING

Requirement

Clutch latchlever on low of clutch disc
(but not latched)

Min 2-1/2 oz---Max 4-1/2 oz
to start latchlever moving.

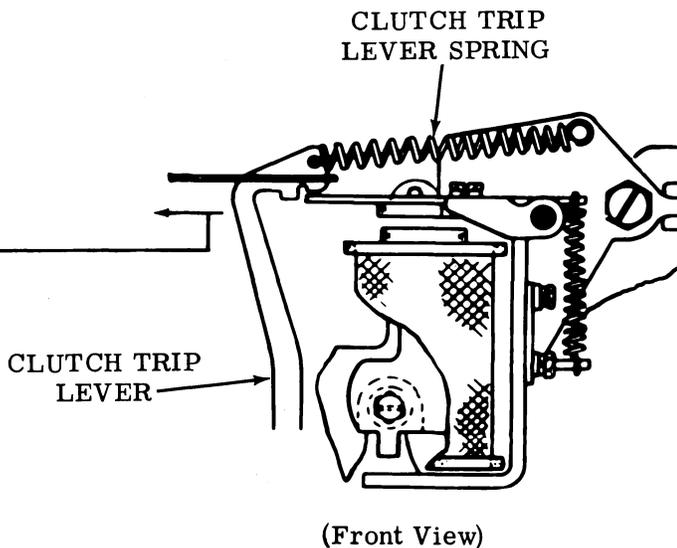


CLUTCH TRIP LEVER SPRING

Requirement

Clutch tripped and armature held against
magnet core.

Min 2 oz---Max 3-1/2 oz
to start trip lever moving.

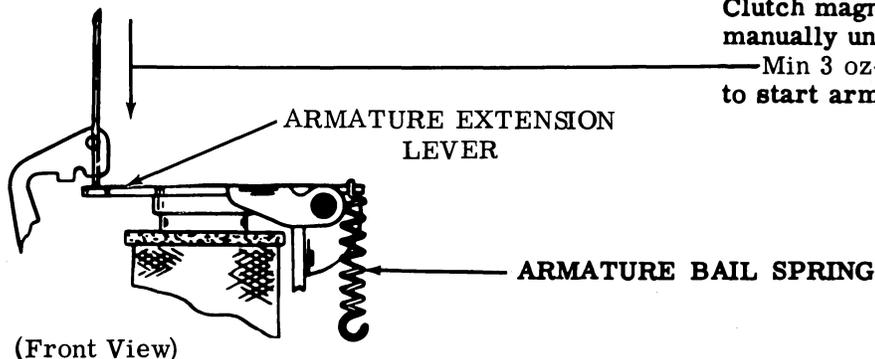


CLUTCH MAGNET ARMATURE BAIL SPRING

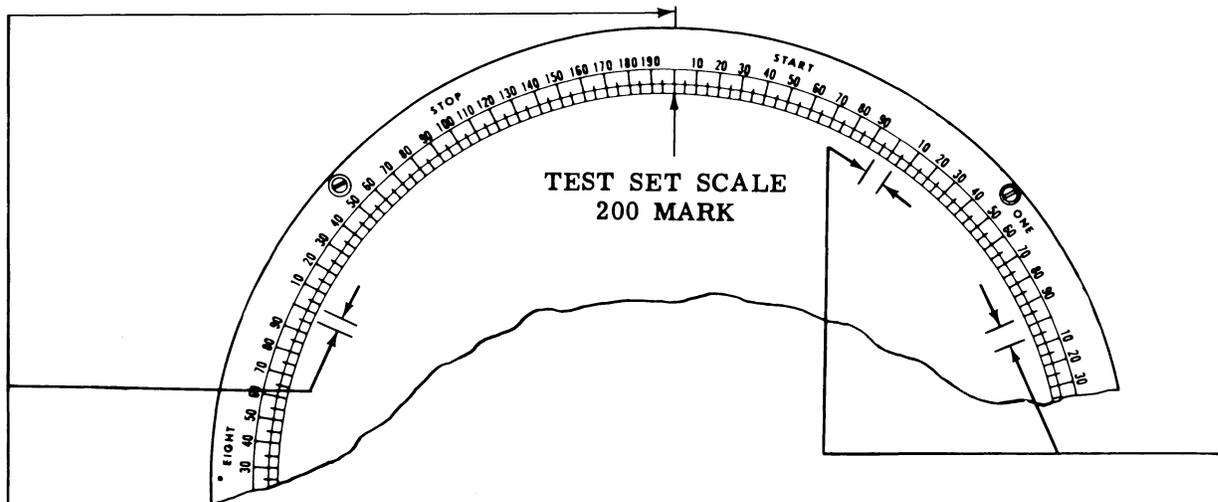
Requirement

Clutch magnet tripped and shaft rotated
manually until trip follower is on high of cam.

Min 3 oz---Max 4-1/2 oz
to start armature extension lever moving.



2.07 Signal Pulse (Final Adjustment with DXD or Strobe)



CAUTION: APPLYING OPERATING VOLTAGE OF DISTORTION TEST SET DIRECTLY TO GOLD-PLATED CONTACTS MAY MAKE THEM UNSUITABLE FOR SPECIAL LOW VOLTAGE APPLICATIONS. SEE 1.06 FOR SERVICING INSTRUCTIONS.

Procedure

Connect strobe of test set across each contact of distributor in turn to view pulse image generated by that contact of distributor. Trip clutch trip magnet and hold down by removing armature spring. Align end of stop pulse image generated by distributor with 200 mark on test scale by rotating scale. Test set and distributor must be operating at same speed (60, 75, or 100 wpm).

Note: Use 8-level, 11-unit code transmission and 11-unit code test scale.

(1) Requirement

There should be no breaks in the transmitted signal pulses.

(2) Requirement

The stop pulse should start within ± 5 divisions of the 0 mark of its segment and end at the 200 mark.

(3) Requirement

Each marking pulse for contacts #1 through #8 should be 100 test scale divisions in length, ± 5 divisions at each end.

(4) Requirement

Auxiliary Contact - Contact should start at 55 (± 20 divisions) in start segment and stop on 8 (± 5 divisions) in stop segment.

(5) Requirement

Auxiliary Contact (Self-Contained Units) - Contact should start at 47 (± 20 divisions) in start segment and stop on 32 (± 20 divisions) in stop segment.

To Adjust

Refine DISTRIBUTOR CONTACT GAP (2.03), DISTRIBUTOR ROCKER SPRING (2.05), and DISTRIBUTOR ROCKER COMPRESSION SPRING (2.05) adjustments.