28 AND 35 ANSWER-BACK UNIT

ADJUSTMENTS

CONTENTS

1. GENERAL

1.01 This section is reissued to add coverage of the 5- and 8-level answer-back unit. Since this revision is of a general nature, marginal arrows have been omitted.

1.02 The adjustments in this section are arranged in a sequence that should be followed if a complete readjustment is undertaken. A complete adjusting procedure should be read before attempting to make the adjustment. After an adjustment is made, be sure to tighten any nuts or screws that may have been loosened, unless otherwise instructed.

1.03 The adjustment illustrations indicate tolerances, positions of moving parts, spring tensions, and the angle at which scales should be applied. The tools required to make adjustments and check spring tensions are not supplied with the equipment, but are listed in the appropriate section under separate cover. Springs which do not meet the requirements, and for which there are no adjusting procedures, should be discarded and replaced by new springs.

1.04 Where adjustment instructions call for removal of components, assemblies, subassemblies, or parts, all adjustments which the removal of these parts might facilitate should be made before the parts are replaced, or as the equipment is reassembled. When a part mounted on shims is removed, the number and location of shims should be noted so that the identical pile-up can be made when the part is replaced.

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

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

1.06 References made to left or right, up or down, and front or rear apply to the answer-back unit as viewed from the side with

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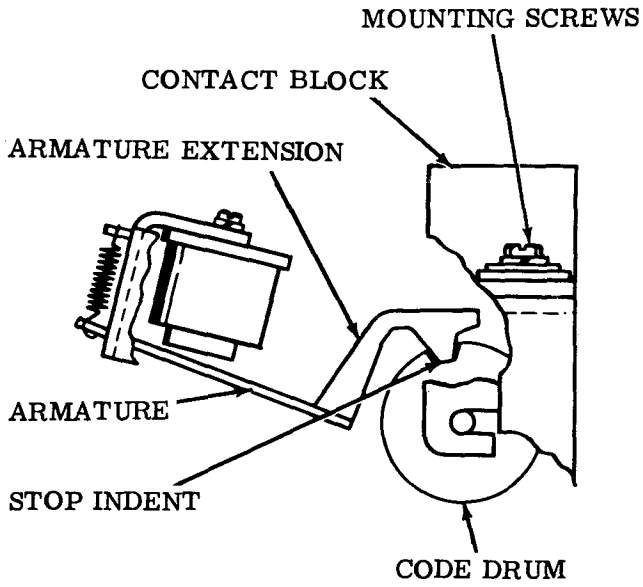
the answer-back mechanism to the left and the motor to the right.

1.07 Unless otherwise specified, where the stop position of the answer-back mechanism is referred to, the lugs of both the clutch release lever and shaft stop lever should be against the armature, with the armature extension resting in the stop indent of the code drum stop cam.

1.08 Instructions for coding the answer-back drum are not included in this section. Refer to the appropriate section covering installation of the answer-back unit for detailed coding instructions.

2. BASIC UNITS

2.01 Trip Mechanism



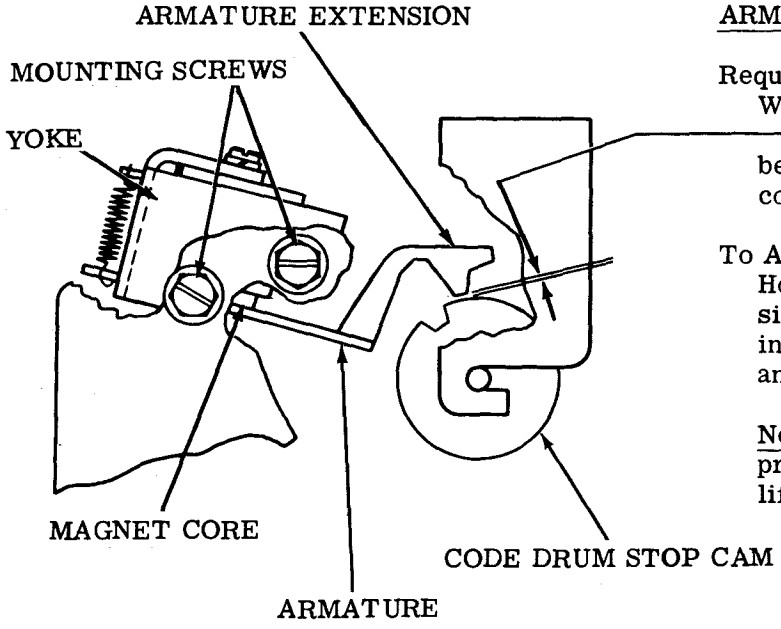
CONTACT BLOCK POSITION (PRELIMINARY)

Requirement

Answer back in stop position, armature extension must drop into stop indent in code drum stop cam.

To Adjust

Step code drum to last character. Rotate main shaft further until the motor hold cam allows armature to drop. Position the contact block until armature extension drops into indent with the contact block mounting screws loosened.



ARMATURE EXTENSION GAP

Requirement

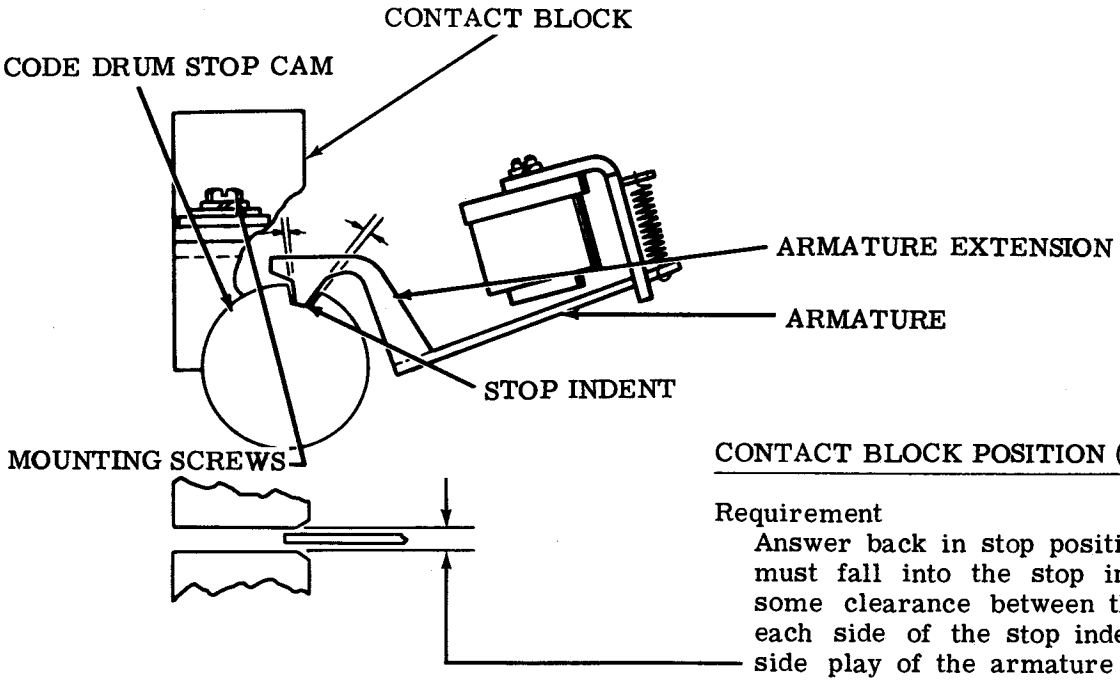
With armature held against magnet core Min some---Max 0.015 inch between armature extension and high part of code drum stop cam.

To Adjust

Hold armature against magnet core and position magnet yoke assembly with its mounting screws friction tight. Recheck clearance after tightening screws.

Note: When holding armature against core, press between pivot and core to prevent lifting armature.

2.02 Trip Mechanism (continued)



CONTACT BLOCK POSITION (FINAL)

Requirement

Answer back in stop position, the armature must fall into the stop indent freely with some clearance between the extension and each side of the stop indent. The side to side play of the armature must be limited by the width of the groove in the contact block rather than the edges of the yoke.

To Adjust

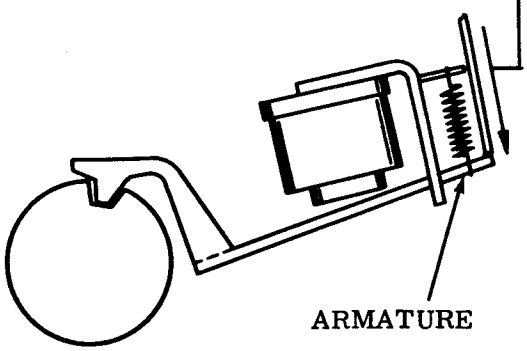
Position the contact block with its mounting screws loosened.

Note: Keep back of block approximately parallel and in line with back of frame.

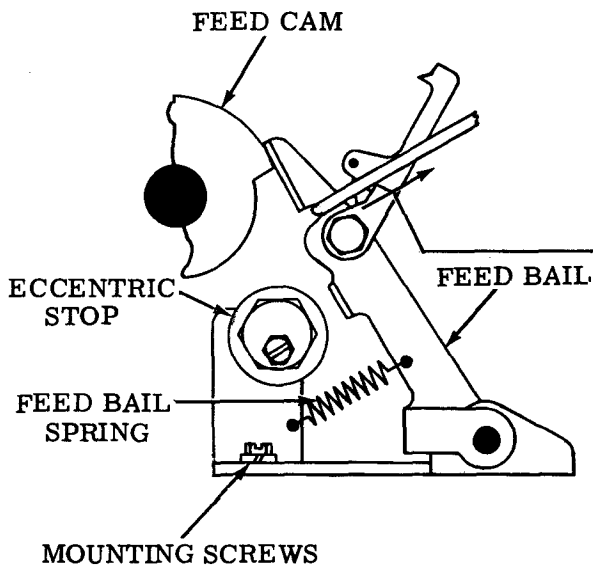
CLUTCH TRIP MAGNET ARMATURE SPRING

Requirement

Min 7 oz---Max 9 oz
to start heel end of armature moving.



2.03 Feed Mechanism

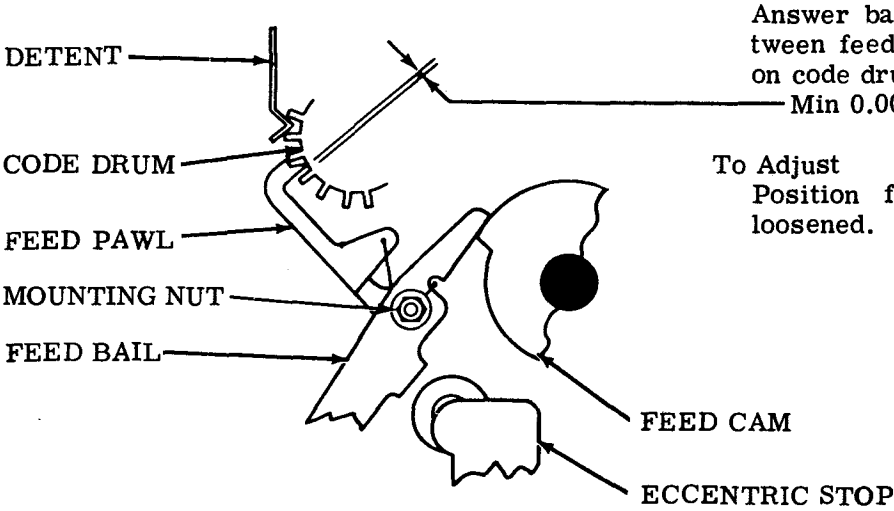


FEED BAIL SPRING

Requirement
With code drum removed and feed bail on high part of its cam to start bail moving.
Min 15 oz---Max 17 oz

To Adjust
With bracket mounting screws friction tight, position bracket to increase or decrease tension. Tighten screws.

Note: When new code drum is installed, refine spring tension toward 17 ozs.

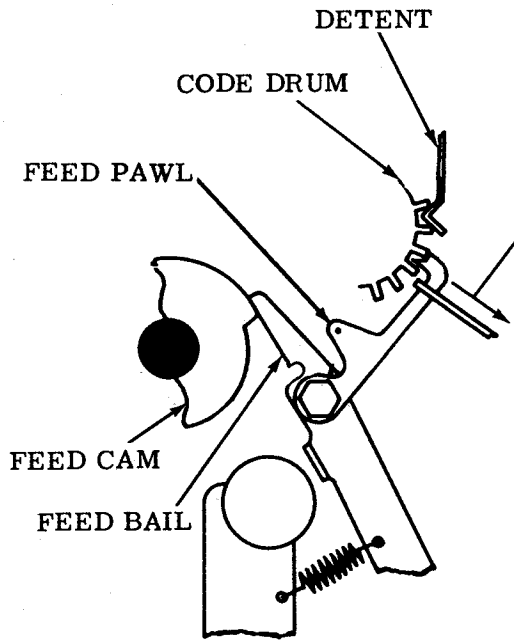


FEED PAWL

Requirement
Answer back in stop position, clearance between feed pawl engaging surface and tooth on code drum.
Min 0.005 inch---Max 0.015 inch

To Adjust
Position feed pawl with its mounting nut loosened. Tighten nut and recheck.

2.04 Feed Mechanism (continued)



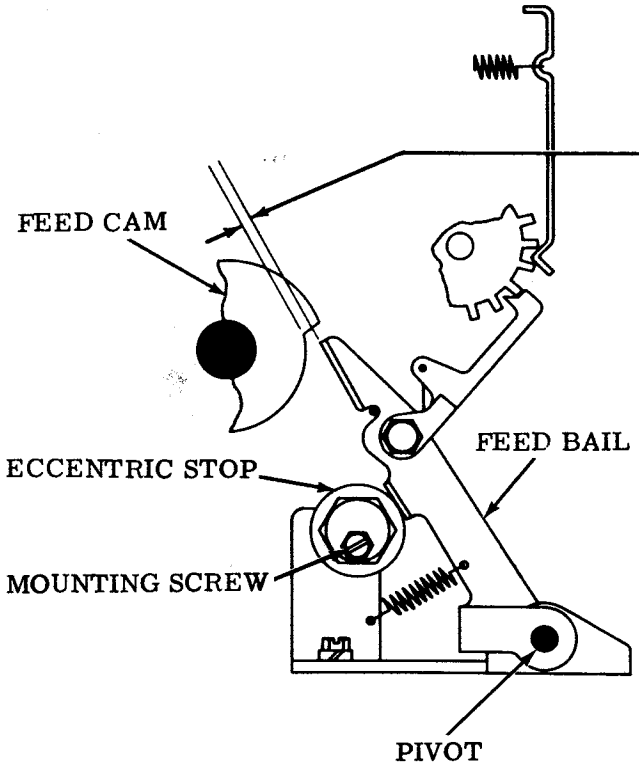
FEED PAWL SPRING

Requirement

With answer back in stop position and code drum in place

Min 1/2 oz---Max 1-1/2 oz

to start pawl moving.



ECCENTRIC STOP POSITION

Requirement

With feed bail in lowest position of its travel opposite low part of its cam resting on eccentric stop, clearance between feed cam and feed bail.

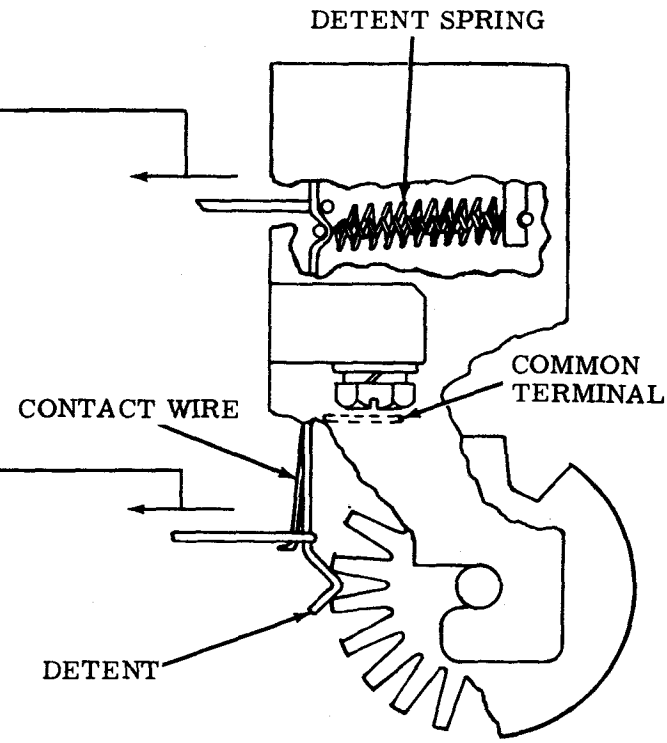
Min 0.055 inch---Max 0.075 inch

To Adjust

Rotate eccentric with its mounting screw loosened.

Note: Keep high part of eccentric away from pivot point of feed bail to insure that eccentric stop bears against flat surface of bail extension and not on its lower edge.

2.05 Feed Mechanism (continued)



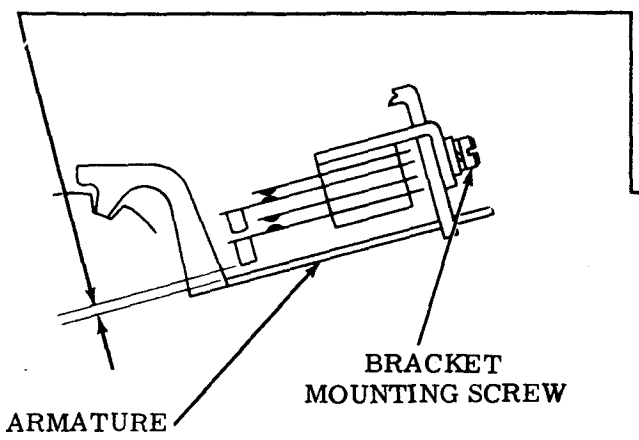
CODE DRUM CONTACT WIRE SPRING

Requirement
Min 1 oz.---Max 2 oz
to start contact wire moving away from common terminal.

CODE DRUM DETENT SPRING

Requirement
Min 9 oz---Max 11 oz
to start detent moving.

2.06 Relay Brackets and Contacts



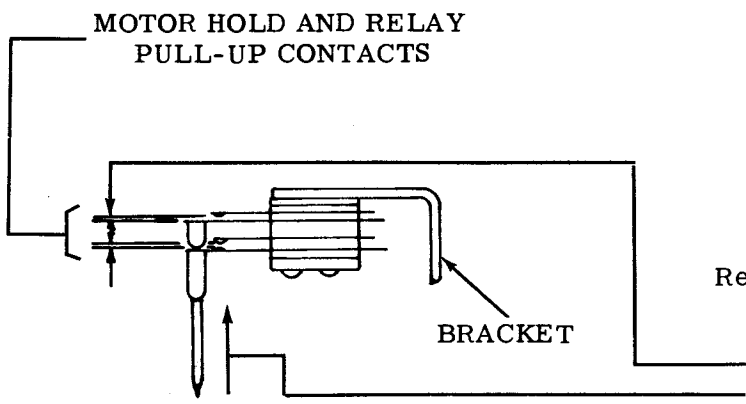
MOTOR HOLD AND RELAY PULL-UP CONTACT BRACKET

Requirement
Trip magnet armature released clearance between insulator on contact and armature
Min 0.015 inch---Max 0.030 inch

To Adjust
Position contact bracket with its mounting screw loosened.

Note: Keep bracket parallel with armature.

2.07 Relay Brackets and Contacts (continued)



MOTOR HOLD AND RELAY PULL-UP CONTACT

Note: The adjustments are made before installation into the unit and should be checked or remade only in case of malfunction attributed to maladjustment of the contacts. If it should become necessary to remake the adjustment, the following procedure should be followed. Remove contact assembly with bracket from magnet yoke.

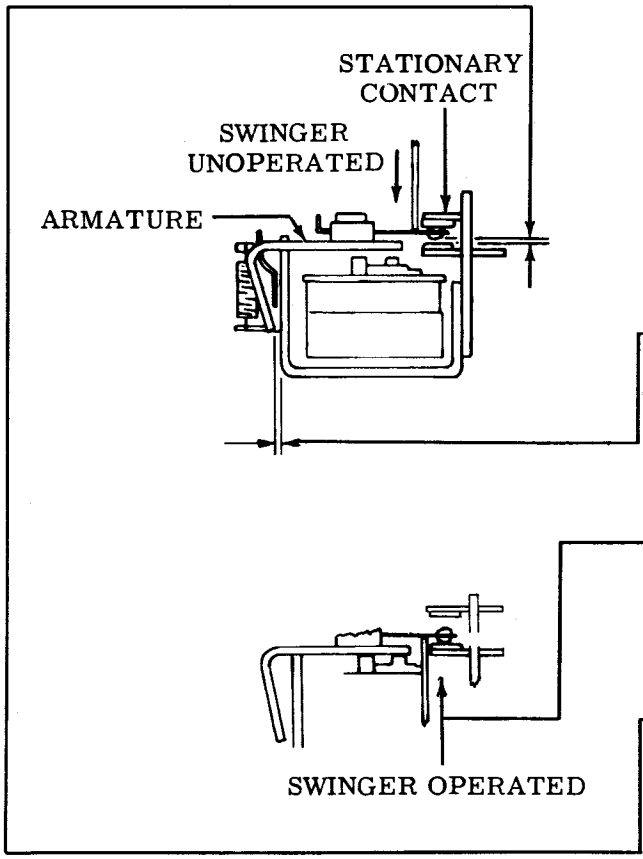
Requirements

(1) The gap between the contacts in the unoperated position should be
Min 0.020 inch---Max 0.030 inch

(2) Min 25 grams---Max 50 grams
to close both contacts.

To Adjust

Bend contacts to meet requirements.



NONREPEAT RELAY

Note: These adjustments are made before installation into the unit and should be checked or remade only in case of malfunction attributed to maladjustment. If it should become necessary to remake the adjustment, the following procedure should be followed:

(1) Requirement
With armature released, clearance between armature stops and frame
Min 0.015 inch---Max 0.025 inch

(2) Requirement
The "make" contact (double) should close a minimum of 0.003 inch before the "break" (single) contact opens.

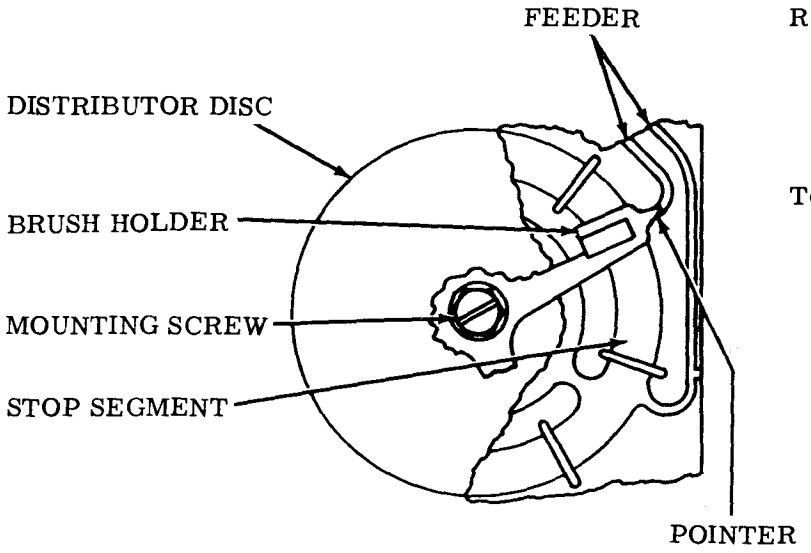
(3) Requirement
Minimum of 15 grams to move the swinger away from the stationary contacts when the armature is in either the operated or unoperated position.

(4) Requirement
The minimum contact gap should be 0.012 inch.

To Adjust

Bend armature stops, stationary contacts, and contact springs to meet requirements.

2.08 Distributor Brushes



DISTRIBUTOR BRUSH HOLDER

Requirement

With answer back in stop position, the pointer on the brush holder should point to the feeder of the stop segment.

To Adjust

Turn brush holder clockwise with its mounting screw loosened.

CAUTION: DO NOT TURN BRUSH HOLDER COUNTERCLOCKWISE. DAMAGE TO BRUSHES MAY RESULT.

BRUSH HOLDER SPRING

Requirement

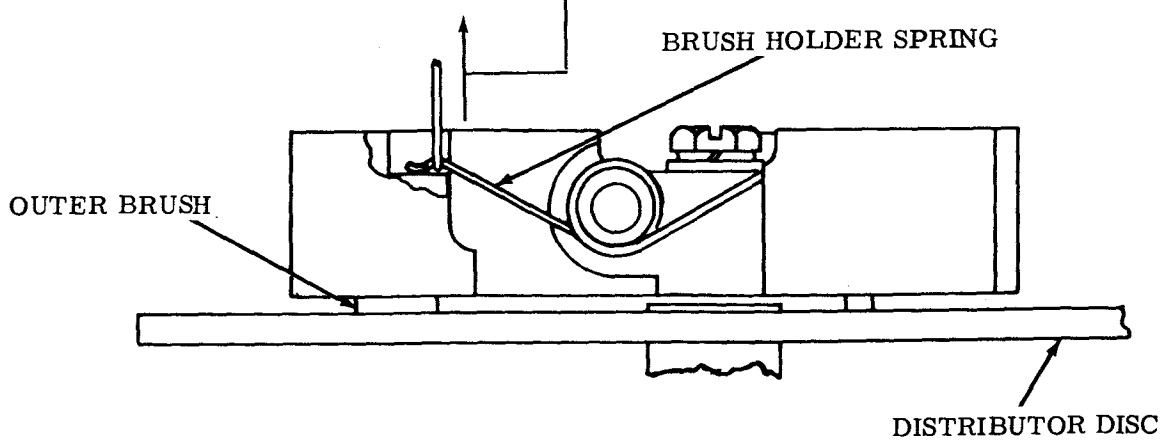
New brush

Min 10-1/2 oz---Max 13-1/2 oz

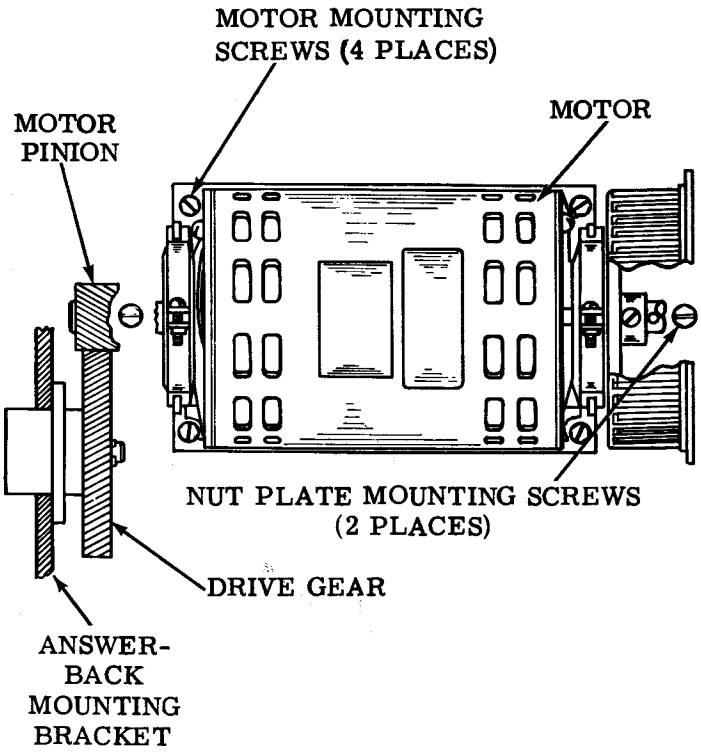
Brush worn to 1/4 in. length

Min 7-1/2 oz---Max 10-1/2 oz

to start outer brush spring moving.



2.09 Gear Backlash



GEAR BACKLASH - SELF-CONTAINED UNIT

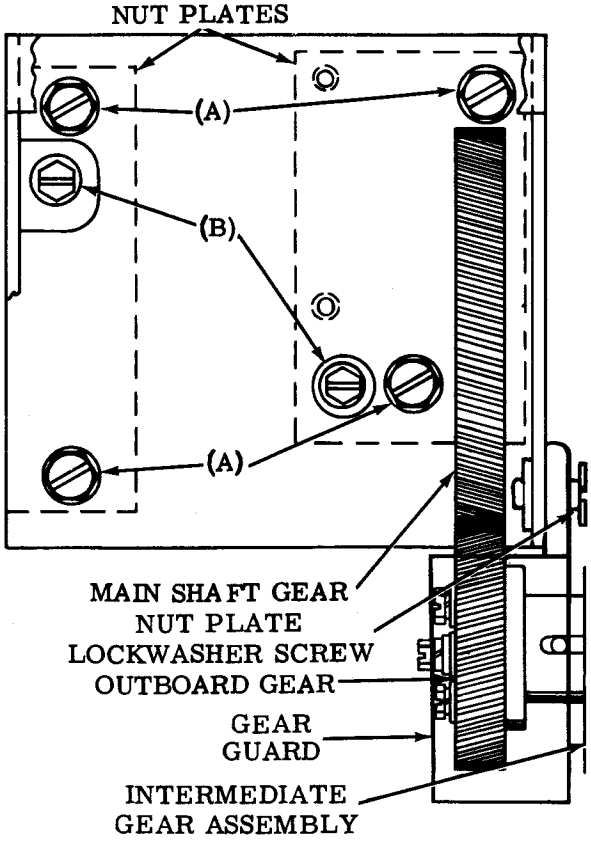
Requirements

(1) Backlash between motor pinion and drive gear should be
Min 0.004 inch---Max 0.008 inch

(2) Adjust for minimum noise.

To Adjust

With motor mounting and nut plate screws friction tight, position motor until requirements are met.



Note: The following adjustment is made after intermediate gear assembly to typing unit gear and motor pinion gear adjustments have been made.

GEAR BACKLASH - RO, KSR

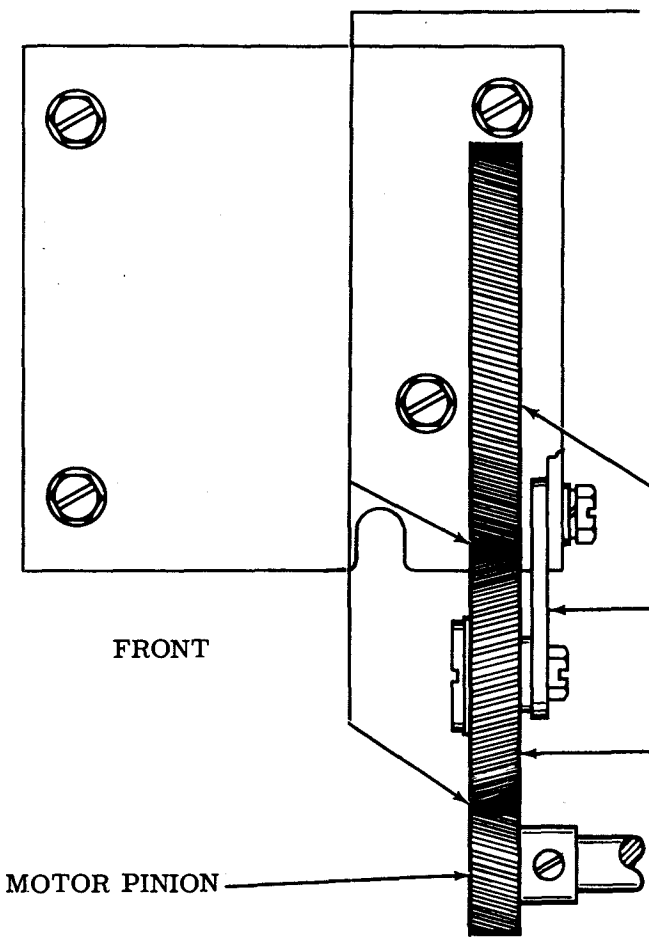
Requirement

Backlash, at point of minimum clearance between answer-back main shaft gear and outboard gear of intermediate gear assembly on base
Min 0.004 inch---Max 0.008 inch
gauge by feel.

To Adjust

With two nut plate screws (B) friction tight, loosen four answer-back mounting screws (A). Move answer back all the way toward front in mounting holes. Tighten four answer-back mounting screws to friction tight and loosen two nut plate screws. Position assembly. Tighten all screws.

2.10 Gear Backlash (continued)



GEAR BACKLASH - ASR (TRANSMITTER BASE)

Requirement

Backlash between idler gear and both the answer-back gear and the motor pinion
Min 0.004 inch---Max 0.008 inch
gauge by feel.

To Adjust

With answer-back assembly moved all the way toward front and mounting screws tight, loosen two screws which secure idler gear adjustable bracket to frame and position idler gear to provide the required backlash.