28 TRANSMITTER-DISTRIBUTOR BASE

ANSWER-BACK MECHANISM

ADJUSTMENTS

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GENERAL

1.01 This section has been revised to include recent engineering changes and additions, and to rearrange the text, so as to bring the

section generally up-to-date. Since this is an extensive revision, marginal arrows ordinarily used to indicate changes have been omitted.

- 1.02 This section contains the specific requirements and adjustments for the 28 transmitter-distributor base answer-back mechanism.
- 1.03 Maintenance procedures which apply only to mechanisms of a particular design, are so indicated in the titles of the paragraphs which contain these particular adjustment requirements.
- 1.04 The adjustments of each unit are arranged in a sequence that should be followed if a complete readjustment of the unit were undertaken. The tools and spring scales required to perform these adjustments are listed in the applicable section. After an adjustment is completed, be sure to tighten any nuts or screws that are loosened. The adjusting illustrations indicate tolerances, positions of moving parts, spring tensions and the angles at which scales should be applied when measuring spring tensions.
- 1.05 References made to left or right, up or down, front or rear, etc apply to the unit in its normal operating position as viewed from the front.
- 1.06 When a requirement calls for a clutch to be disengaged, the clutch shoe lever must be fully latched between its trip lever and latch-lever so that the clutch shoes release their tension on the clutch drum.

Note: When the distributor shaft is rotated by hand, the clutch does not fully disengage upon reaching its stop position. In order to relieve drag and permit the main shaft to rotate freely, apply pressure on the lug of the clutch disk with a screwdriver to cause it to engage its latchlever and fully disengage the clutch.

1.07 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 specified adjust-

ment or tolerance measurement. Avoid sharp kinks or bends in the contact springs.

CAUTION: KEEP ALL ELECTRICAL CONTACTS FREE OF OIL AND GREASE.

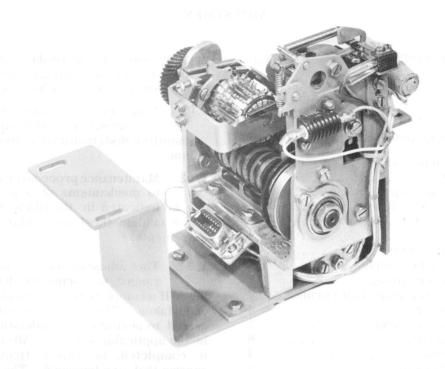


Figure 1 - 28 Transmitter-Distributor Base Answer-Back Mechanism (Front View)

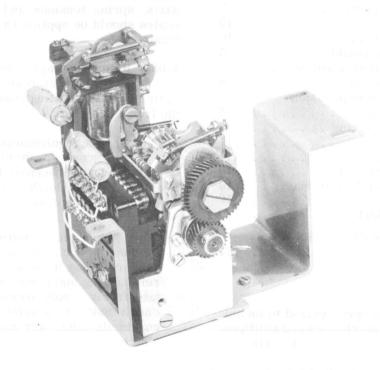


Figure 2 - 28 Transmitter-Distributor Base Answer-Back Mechanism (Rear View)

2. BASIC UNIT

2.01 Clutch Triplever and Armature Mechanism

CLUTCH TRIP ARMATURE AIR GAP

REQUIREMENT

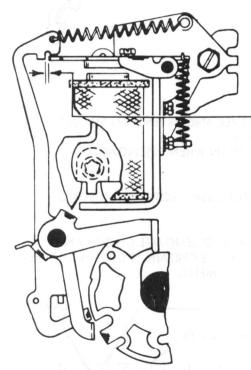
AIR GAP BETWEEN ARMATURE AND MAGNET ASSEMBLY BRACKET:
MIN. 0.004 INCH --- MAX. 0.008 INCH
WHEN ARMATURE IS HELD FLUSH AGAINST MAGNET CORE.

TO ADJUST

REMOVE ARMATURE EXTENSION SPRING, LOOSEN SPRING POST AND HINGE MOUNTING SCREW AND POSITION HINGE. TO CHECK:

APPLY AC POWER. IF EXCESS CHATTER IS PRESENT, REFINE THE ADJUSTMENT BY INCREASING OR DECREASING THE AIR GAP UNTIL THE CHATTER IS ELIMINATED

NOTE: THIS IS A REVERSIBLE ARMATURE. FOR USE WITH DC CURRENT, THE HEAVY CHROME PLATED SIDE STAMPED C MUST BE FACING THE MAGNET CORE. FOR USE WITH AC CURRENT THE ARMATURE MUST BE REVERSED SO THAT THE SIDE STAMPED C IS AWAY FROM THE MAGNET CORE.



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.

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

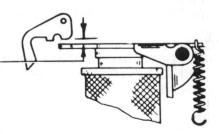
REQUIREMENT

CLEARANCE BETWEEN ARMATURE EXTENSION LEVER AND CLUTCH TRIP LEVER

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 BRACKET ADJUSTING SCREW AND INSERT SCREWDRIVER INTO SLOT BELOW ADJUSTING SCREW, AND ADJUST BRACKET.



2.02 Clutch Stop Arm, Clutch Lever, and Cam Follower Guide

CLUTCH STOP ARM

CLUTCH TRIP CLAMPING SCREW.

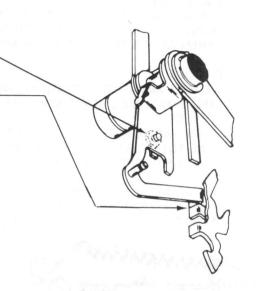
REQUIREMENT

WITH CLUTCH TRIP LEVER IN LATCHED POSITION, CLUTCH LEVER SHOULD FULLY ENGAGE CLUTCH SHOE LEVER.

TO ADJUST

WITH CLUTCH IN STOP POSITION, LOOSEN CLUTCH TRIP CLAMPING SCREW AND ADJUST CLUTCH STOP LEVER TO OBTAIN FULL BITE WITH CLUTCH SHOE LEVER.

NOTE: WHEN ARMATURE IS IN ATTRACTED POSITION, CLUTCH STOP ARM SHOULD CLEAR STOP LEVER AND STOP LUG BY AT LEAST SOME CLEARANCE.



CLUTCH SHOE LEVER

REQUIREMENT

CLEARANCE BETWEEN CLUTCH SHOE LEVER AND EXTENSION SHOULD BE MIN. 0.055 INCH --- MAX. 0.085 INCH GREATER WHEN CLUTCH IS ENGAGED THAN WHEN DISENGAGED.

TO ADJUST

LOOSEN TWO CLAMP SCREWS IN CLUTCH DISK. ROTATE ADJUSTING DISK 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.

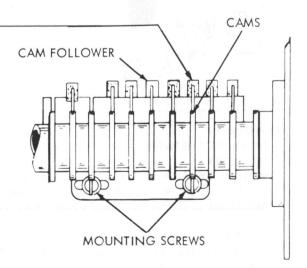
CAM FOLLOWER GUIDE-

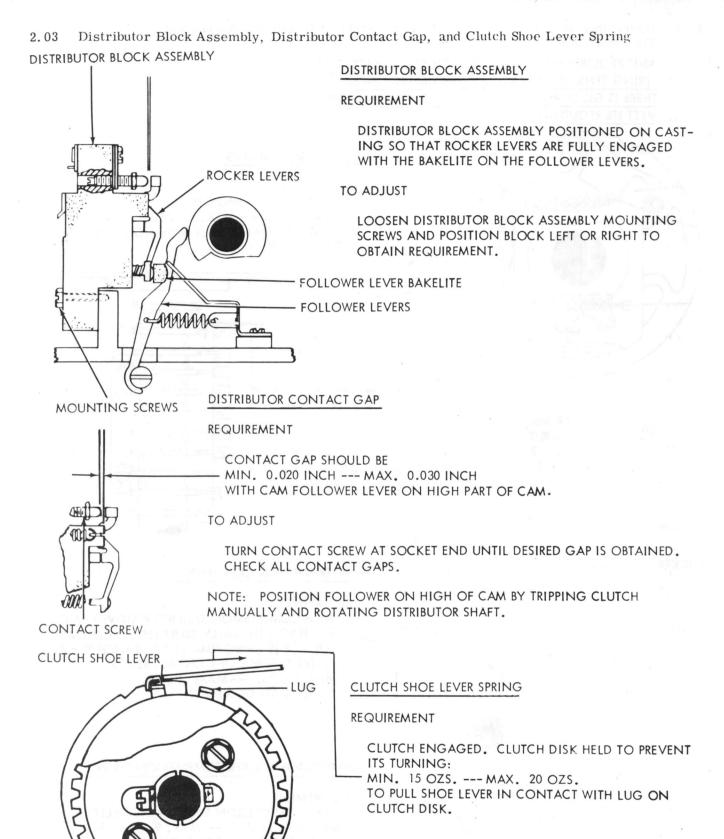
REQUIREMENT

CAM FOLLOWER GUIDE ORIEN!TED SO CENTER CAM FOLLOWER IS FULLY ON CAM WHEN FOLLOWER IS MOVED SIDEWAYS IN GUIDE SLOT. OTHER MUST HAVE AT LEAST 75% BITE WHEN MOVED IN EITHER DIRECTION, AND BE FREE IN THEIR GUIDE SLOTS.

TO ADJUST

POSITION CAM FOLLOWER GUIDE WITH ITS MOUNT-ING SCREWS LOOSENED. AFTER TIGHTENING CHECK FOR FREENESS.





CLUTCH DISK

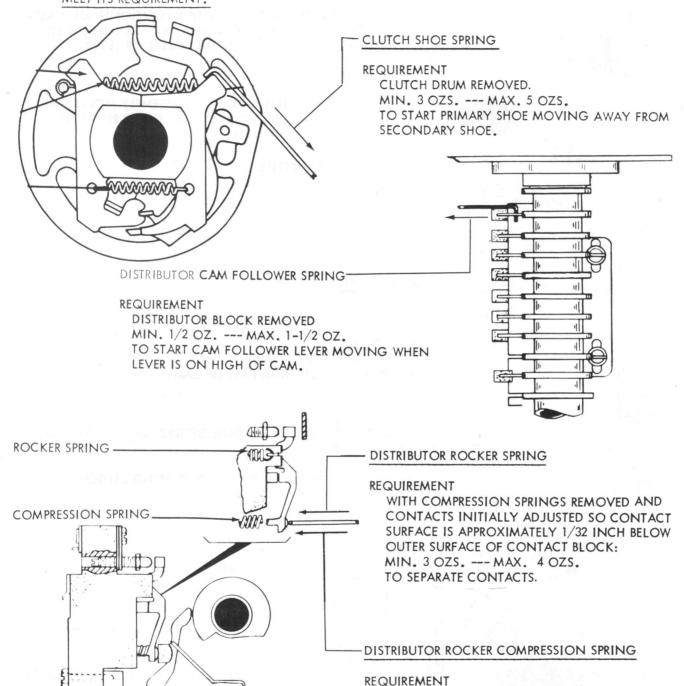
2.04 Clutch Shoe and Distributor Cam Follower Springs, Distributor Rocker and Compression Springs

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.

4MMMM6



WITH COMPRESSION SPRINGS INSTALLED

MIN. 6-1/2 OZS. --- MAX. 9-1/2 OZS.

TO JUST SEPARATE CONTACTS.

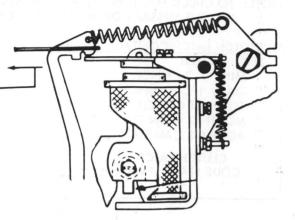
2.05 Clutch Trip Lever, Magnet Armature Bail, and Latch Lever Springs

CLUTCH TRIP LEVER SPRING

REQUIREMENT

CLUTCH TRIPPED AND ARMATURE HELD AGAINST MAGNET CORE.

MIN. 2 OZS. --- MAX. 3-1/2 OZS.-TO START TRIP LEVER MOVING.



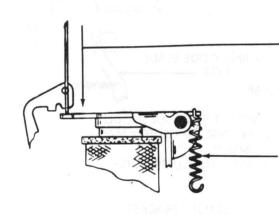
CLUTCH MAGNET ARMATURE BAIL SPRING

REQUIREMENT

CLUTCH MAGNET TRIPPED AND SHAFT ROTATED MANUALLY UNTIL TRIP FOLLOWER IS ON HIGH OF CAM.

MIN. 2 OZS. -- MAX. 4-1/2 OZS.

TO START ARMATURE EXTENSION LEVER MOVING.



- ARMATURE BAIL SPRING

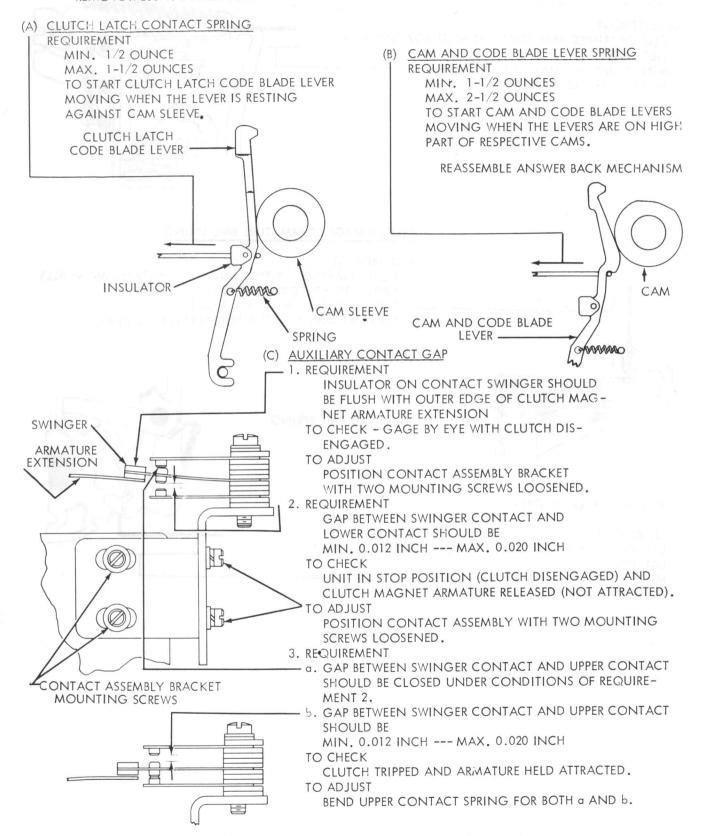
CLUTCH LATCH LEVER SPRING

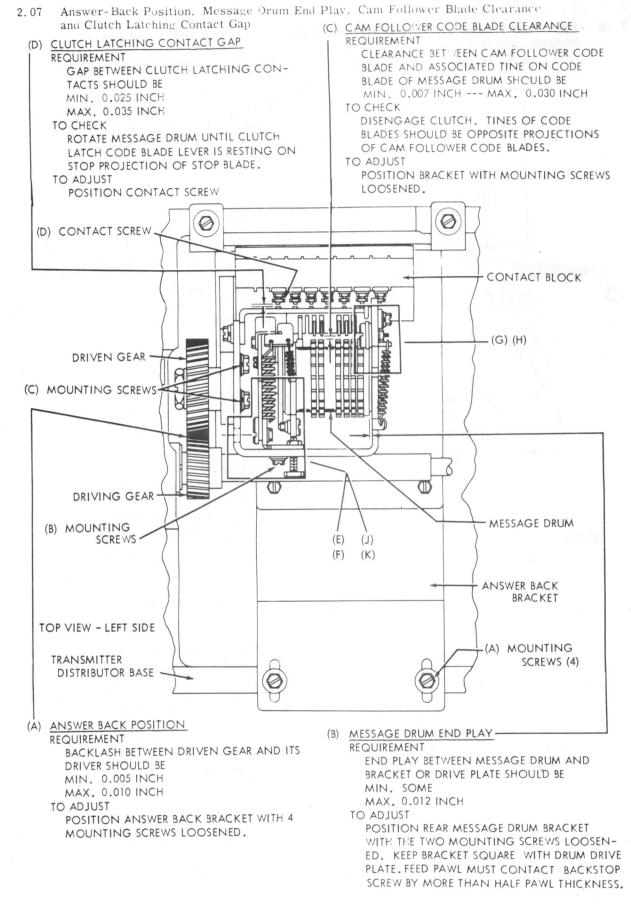
REQUIREMENT

CLUTCH LATCH LEVER ON LOW OF CLUTCH DISK (BUT NOT LATCHED)

MIN. 2-1/2 OZS. --- MAX. 4-1/2 OZS. -TO START LATCH LEVER MOVING. 2.06 Clutch Latch Contact, Cam and Code Blade Springs, and Auxiliary Contact Gap

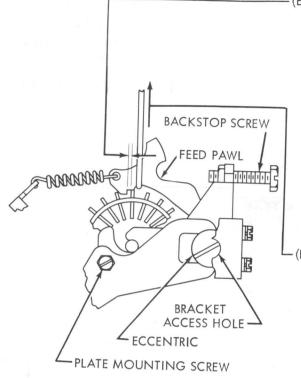
NOTE: TO CHECK TENSIONS (A) AND (B), REMOVE ENTIRE ANSWER BACK MECHANISM FROM ITS BRACKET, REMOVE MESSAGE DRUM AND TAKE OFF THE CONTACT BLOCK.





Feed Pawl Clearance (Preliminary and Final), Feed Pawl and Detent Lever 2.08 Springs, and Detent Roller Position

NOTE: REMOVE SHOULDER SCREW AND TAKE OFF ANSWER-BACK DRIVEN GEAR



DETENT LEVER ASSEMBLY

MUNICIPALITY

DETENT PROJECTIONS

ECCENTRIC SCREW

(E) FEED PAWL CLEARANCE (PRELIMINARY)

REQUIREMENT

CLEARANCE BETWEEN LATCHING SURFACE OF FEED PAWL AND FEED PROJECTION OF CODE BLADE ON MESSAGE DRUM SHOULD BE MIN. 0.010 INCH

MAX. 0.015 INCH

TO CHECK

DISENGAGE CLUTCH

TO ADJUST

LOOSEN PLATE MOUNTING SCREW AND ECCEN-TRIC RETAINING NUT TO FRICTION TIGHT. POSITION ECCENTRIC WITH SCREW DRIVER THROUGH HOLE PROVIDED IN BRACKET. DO NOT TIGHTEN NUT OR SCREW, OR REPLACE DRIVEN GEAR UNTIL REFIN-ING ADJUSTMENT (I) IS MADE.

(F) FEED PAWL SPRING

REQUIREMENT

MIN. 1 1/2 OUNCES MAX. 2 1/2 OUNCES TO START FEED PAWL MOVING WHEN THE CLUTCH

IS DISENGAGED AND FEED PAWL IN STOP POSITION.

(G) DETENT ROLLER POSITION

1. REQUIREMENT

roller on detent lever should be firmly SEATED BETWEEN TWO DETENT PROJECTIONS OF CODE BLADES IN MESSAGE DRUM.

TO CHECK - DISENGAGE CLUTCH

2. REQUIREMENT

CODE BLADE PROJECTIONS (TINES) ON MES-SAGE DRUM SHOULD BE CENTRALLY LOCATED WITH RESPECT TO CAM FOLLOWER CODE BLADE (GAGE BY EYE).

TO CHECK

TRIP CLUTCH, ROTATE MAIN SHAFT TO INDEX MESSAGE DRUM FOR NEXT CHARACTER.

POSITION DETENT ROLLER ASSEMBLY BY MEANS OF ECCENTRIC SCREW LOOSENED TO FRICTION TIGHTNESS.

(H) DETENT LEVER SPRING

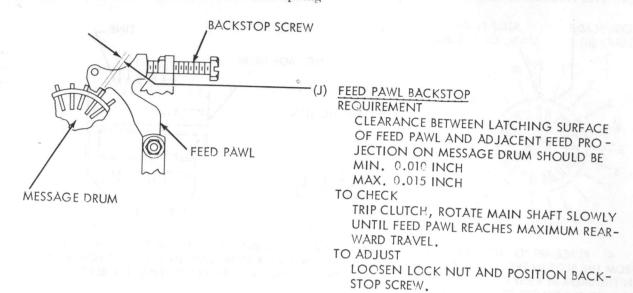
REQUIREMENT

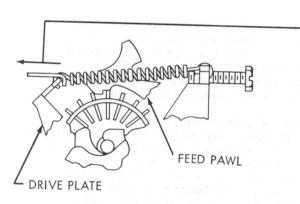
MIN. 4 OUNCES MAX. 5 OUNCES TO MAKE DETENT LEVER MOVE WHEN ITS ROLLER IS RESTING BETWEEN TWO DETENT PROJECTIONS ON MESSAGE DRUM AND THE CLUTCH DISENGAGED.

(I) FEED PAWL CLEARANCE (FINAL)

RECHECK PRELIMINARY FEED PAWL CLEARANCE ADJUSTMENT (E) AND REFINE IF REQUIRED. TIGHTEN NUT AND SCREW AND REPLACE THE DRIVEN GEAR AND SHOULDER SCREW.

2.09 Feed Pawl Backstop and Drive Plate Spring





REQUIREMENT

MIN. 13 OZS.

MAX. 16 OZS.

TO MOVE FEED PAWL FROM STOP POSITION

(CLUTCH DISENGAGED).

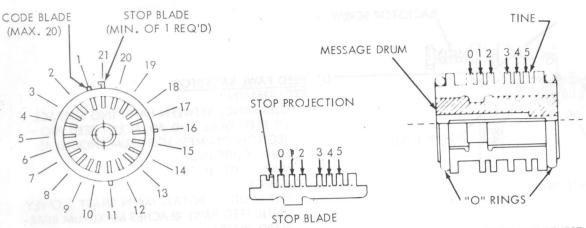
3. CODING THE ANSWER-BACK FEATURE OF THE TELETYPE TRANSMITTER DISTRIBUTOR BASE.

1. THE MESSAGE DRUM HAS A CAPACITY OF 21 CHARACTERS. THE FIRST CHARACTER TRANSMITTED MUST BE A "LETTERS" COMBINATION; THE REMAINING 20 MAY BE ANY CHARACTER DESIRED. CHARACTERS ARE DETERMINED BY DETACHABLE CODE BLADES SET IN THE MESSAGE DRUM. SINCE PROJECTIONS ON THE CODE BLADES ARE USED TO ROTATE THE DRUM, ALL OF ITS 21 SLOTS MUST BE OCCUPIED BY A BLADE.

2. THE LAST CHARACTER TRANSMITTED IS DETERMINED BY A SPECIAL STOP CODE BLADE. THREE STOP BLADES ARE INCLUDED, SO THAT, EQUALLY SPACED ABOUT THE CODE DRUM IT WOULD RESULT IN 3 UNIFORM MESSAGES OF SIX CHARACTERS EACH, PRECEDED BY A "LETTERS" COMBINATION.

3. CODE A BLADE BY BREAKING OFF THE UNWANTED TINES AT THE SCORED LINE AT THE BASE OF THE TINE. THE FIGURES ON PAGE 12 INDICATES WHICH TINES ARE TO BE REMOVED FOR A PARTICULAR CHARACTER. TO PREVENT DISTORTION OF A CODE BLADE, EACH BLADE SHOULD BE HELD SECURELY NEAR THE SCORE MARK OF THE TINE TO BE REMOVED.

CODING THE ANSWER-BACK AS EMBLY Continued



- 4. PLACE AN "O" RING IN THE GROOVE ON THE RIM OF THE MESSAGE DRUM WHICH IS FURTHEST FROM THE SLOT IN THE CENTER PORTION OF THE DRUM. INSTALL A STOP BLADE IN ANY SLOT POSITION IN THE DRUM BY FIRST INSERTING THE BLADE UNDER THE "O" RING AND THEN ROTATING THE BLADE TOWARD THE CENTER OF THE DRUM UNTIL IT IS FULLY SEATED.
- 5. CODE THE DRUM IN A COUNTER-CLOCKWISE DIRECTION BEGINNING WITH THE NO.1 BLADE ADJACENT TO THE STOP BLADE. INSTALL EACH CODED BLADE IN THE PROPER SLOT POSITION INSERTING THE BLADE UNDER THE "O" RING AS IN PARAGRAPH 4.
- LEAVE TIŅE
- REMOVE TINE

	TYPICAL	C O D·E				
LETTERS	FIG. ARRGT.	1	2	3	4	5
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- 6. AFTER FILLING THE DRUM, ENCIRCLE THE BLADES BY PLACING ANOTHER "O" RING IN THE GROOVE ON THE OPPOSITE RIM OF THE DRUM.
- 7. PLACE A THIN COAT OF GREASE ON THE SHAFT AND STUD OF THE DRIVE PLATE. INSERT THE SHAFT PORTION OF THE DRIVE PLATE INTO THE MESSAGE DRUM (NOTE THAT DUE TO A DIFFERENCE IN HOLE DIAMETERS IN THE MESSAGE DRUM, THE SHAFT CAN BE INSERTED ONLY ONE WAY). HOOK THE SPRING BETWEEN THE DRIVE PLATE AND THE FEED PAWL. OIL BOTH ENDS OF THE SPRING.
- 8. TO INSERT THE MESSAGE DRUM ASSEMBLY INTO THE DISTRIBUTOR ASSEMBLY, TRIP THE CLUTCH AND ROTATE THE DISTRIBUTOR MAIN SHAFT UNTIL THE DRIVE LEVER ASSEMBLY IS ON THE HIGH PART OF THE CAM, THEN INSERT THE MESSAGE DRUM ASSEMBLY BETWEEN THE MOUNTING BRACKETS. NOTE THAT THE DRIVE PLATE HAS A STUD WELDED ON TO IT; THIS STUD MUST GO UNDER THE DRIVE LEVER ASSEMBLY. THEN ROTATE THE MAIN SHAFT TO LATCH THE CLUTCH. NEXT HOOK THE DRIVE PLATE SPRING BETWEEN THE DRIVE PLATE AND THE SPRING POST PROJECTION ON THE BRACKET. THE DETENT LEVER SPRING SHOULD BE HOOKED ON TO THE SPRING POST PROJECTION OF THE BRACKET, AND THE DETENT LEVER. LUBRICATE THE MECHANISM ACCORDING TO THE LUBRICATION FIGURES.

NOTE:

- STOP BLADE HAS SAME PROVISIONS FOR INDIVIDUAL CODING AS STANDARD CODE BLADE.
- 2. WHEN CODING THE BLADES REMOVE THE "O" POSITION TINE ON ALL STOP AND CODE BLADES.

STANDARD CODE BLADE

SCORED LINE