35 TAPE READER (PARALLEL OUTPUT)

ADJUSTMENTS

CONTENTS

CONTENTS

1. GENERAL

1.01 This section is concerned with the adjustment of 8-level tape reader units. Refer to related 574-236- series sections for descriptive information, principle of operation, lubrication, disassembly, and reassembly.

1.02 The adjustment information for the tape reader is divided into "basic unit" adjustments (common to all units) and "variable features" adjustments (adjustments which may vary from unit to unit).

1.03 Adjustment requirements for the tape reader are arranged in the sequence that should be followed if a complete readjustment is undertaken.

1.04 Inspection and minor repair of the unit may be accomplished with the plates removed, however, when more extensive maintenance or a complete readjustment is undertaken, the tape reader should be disconnected from any AC or DC potential and removed from its base.

> Note: For instructions on the disassembly and reassembly of the tape reader, see related disassembly and reassembly section.

1.05 References made to left or right, up or down, front or rear, etc consider the tape reader to be viewed from a position such that the tape guide plate is to the viewer's right and on top of the tape reader.

1.06 Tools and spring scales required to perform the adjustments are listed also in the appropriate section. They are not supplied as a part of the equipment.

1.07 From time to time the requirements of and procedures for the various adjustments may change. For this reason, the text of the adjustment in the latest issue should be read through before proceeding to make the adjustment.

1.08 The adjusting illustrations, in addition to indicating the adjusting tolerances, positions of parts, and spring tensions, also show the way in which the scale should be positioned when measuring spring tensions.

1.09 The spring tensions given in this section are indications, not exact values. They should be checked with proper spring scales in the positions indicated. Springs which do not meet the requirement and for which no adjusting procedure is given should be replaced by a new spring.

1.10 After an adjustment has been completed, be sure to tighten any nuts or screws that may have been loosened.

1.11 If a part that is mounted with shims is removed, the number of shims at each of its mounting screws should be noted so that the same shim pile-up will be replaced when the part is remounted.

1.12 If parts or assemblies are removed to facilitate readjustment and subsequently replaced, recheck any adjustment that may have been affected by the removal of these parts or assemblies.

1.13 When the requirement calls for the clutch to be disengaged, the clutch shoe lever must be fully latched between its trip lever and the latch lever so that the clutch shoes release their tension on the clutch drum. When engaged, the clutch shoe lever is unlatched and the clutch shoes are wedged firmly against the clutch drum.

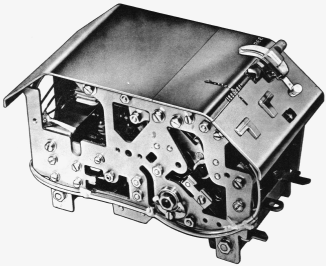


Figure 1 - Tape Reader

Note 1: When rotating the main shaft by hand, the clutch does not fully disengage upon reaching its stop position. In order to relieve the drag on the clutch and permit the main shaft to rotate freely, apply pressure on a lug of the clutch disc with a screw driver to cause it to engage its latch lever and thus disengage the internal expansion clutch shoes from the clutch drum.

Note 2: The stop position refers to that position where the shoe lever contacts the trip lever with the main ball latched.

1.14 When adjusting contact gaps and spring tensions of contact assemblies with more than one contact pile-up such as code reading contact assemblies, start adjusting with the contact pile-up farthest from the hasdie of the bending tool. Work towards the contact pile-up nearest the bending tool handle. In this manner completed adjustments will not be disturbed.

1.15 All 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. Avoid sharp kinks or bends in the contact springs.

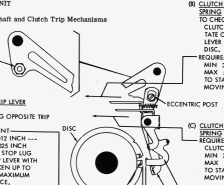
1.16 Should the rotor of the synchronous motor become blocked for several seconds by an overload, the thermal cut-out switch will de-energize the motor until the manual reset button is depressed. However, allow at least 5 minutes for the motor to cool before attempting to reset the switch and start the motor.

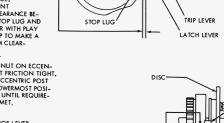
CAUTION: IMPROPERLY ADJUSTED EQUIPMENT MAY BE SERIOUSLY DAMAGED IN A MATTER OF SECONDS IF OPERATED UNDER POWER. CHECK ALL ADJUSTMENTS BEFORE PUTTING THE TAPE READER INTO OPERATION.

1.17 The line drawings show adjusting tolerances, position of parts, and spring tensions for the tape reader. Where several adjustments are shown on the same page, the sequence to be followed in checking the requirements and making the adjustments is indicated by the letters (A), (B), (C), etc.

2. BASIC UNIT

2.01 Main Shaft and Clutch Trip Mechanisms



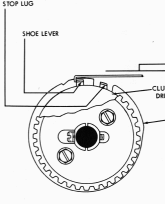


NOTE

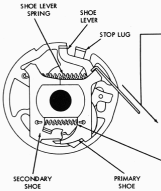
1. POSITIVELY ENGAGE CLUTCH BY PULLING SHOE LEVER WITH A FORCE OF 32 OZ. RELEASE SLOWLY.
2. ADJUST TOWARDS MINIMUM REQUIREMENT ON TWO-STOP CLUTCHES.
3. AFTER MAKING ABOVE ADJUSTMENT, DISENGAGE CLUTCH. ROTATE DRUM IN NORMAL DIRECTION AND CHECK TO SEE IF IT DRAGS ON SHOE. IF IT DOES, REFINE ADJUSTMENT.

2. 02 Main Shaft and Clutch Trip Mechanism (continued)

NOTE
CLUTCH SHOE LEVER SPRING AND CLUTCH SHOE SPRING ADJUSTMENTS ARE PERFORMED AT FACTORY. THEY SHOULD NOT BE DISTURBED UNLESS ASSOCIATED MECHANISMS HAVE BEEN REMOVED FOR SERVICING OR THERE IS REASON TO BELIEVE THAT THE REQUIREMENTS ARE NOT MET.

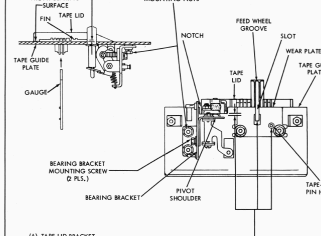


(A) CLUTCH SHOE LEVER SPRING REQUIREMENT
CLUTCH ENGAGED,
MIN 15 OZ ---- MAX 20 OZ
TO MOVE SHOE LEVER INTO CONTACT WITH STOP LUG.



(B) CLUTCH SHOE SPRING
TO CHECK
REMOVE CLUTCH DRUM.
REQUIREMENT
MIN 3 OZ ---- MAX 5 OZ
TO START PRIMARY SHOE MOVING.

2.03 Cover and Top Plate Area



(A) TAPE LID BRACKET
TO CHECK
REMOVE TOP AND TAPE GUIDE PLATES, LUBRICATE THEM ACCORDING TO THE RELATED LUBRICATION SECTION.
REQUIREMENT
WITH TAPE LID PRESSED AGAINST NOTCH IN TAPE GUIDE PLATE, FEED WHEEL GROOVE LINED UP WITH SLOT IN TAPE GUIDE PLATE, AND TAPE-OUT PIN HOLES LINED UP,
MIN SOME --- MAX 0.010 INCH
CLEARANCE BETWEEN TAPE LID AND PIVOT SHOULDER.
TO ADJUST
LOOSEN TAPE LID BRACKET MOUNTING NUTS. WHILE PRESSING TAPE LID AGAINST NOTCH IN TAPE GUIDE PLATE, LINE UP FEED WHEEL GROOVE WITH SLOT IN TAPE GUIDE PLATE USING TIP OF TP170283 GAUGE. VISUALLY LINE UP TAPE-OUT PIN HOLE IN TAPE GUIDE PLATE WITH HOLE IN TAPE LID , POSITION TAPE LID BRACKET.

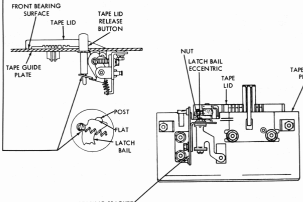
(B) BEARING BRACKET
REQUIREMENT
WITH FRONT BEARING SURFACE OF TAPE LID TOUCHING TAPE GUIDE PLATE,
MIN 0.010 INCH --- MAX 0.018 INCH
CLEARANCE BETWEEN TAPE LID AND TAPE GUIDE PLATE MEASURED AT TAPE LID FIN THAT IS IN LINE WITH REAR TAPE GUIDE.
TO ADJUST
LOOSEN BEARING BRACKET MOUNTING SCREWS FRICTION TIGHT. WHILE PRESSING TAPE LID AGAINST TAPE GUIDE PLATE, POSITION BEARING BRACKET. RECHECK 2.03(A).

2.04 Cover and Top Plate Area (continued)

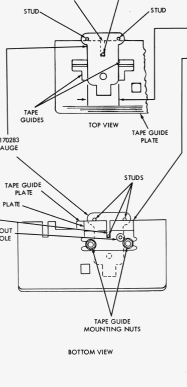
NOTE

WHEN BOTH TOP AND TAPE GUIDE PLATES ARE ASSEMBLED ON UNIT, THE FRONT BEARING SURFACE OF THE TAPE LID MAY TOUCH TOP PLATE. IF IT DOES, THERE MAY BE CLEARANCE BETWEEN TAPE LID AND TAPE GUIDE PLATE.

LATCH BAIL
REQUIREMENT
WITH TAPE LID LATCHED AGAINST TAPE GUIDE PLATE, SOME END PLAY IN TAPE LID RELEASE BUTTON.
TO ADJUST
LOOSEN NUT ON LATCH BAIL ECCENTRIC FRICTION TIGHT. RAISE TAPE LID AND ROTATE HIGH PART OF LATCH BAIL ECCENTRIC TOWARDS BEARING BRACKET. CLOSE TAPE LID AND CONTINUE ROTATING HIGH PART OF LATCH BAIL ECCENTRIC TOWARDS BEARING BRACKET UNTIL LATCH BAIL JUST FALLS UNDER THE FLAT ON THE POST. RECHECK OPERATION OF LATCH BAIL BY DEPRESSING TAPE LID RELEASE BUTTON WITH TAPE LID HELD DOWN.



2.05 Cover and Top Plate Area (continued)



TAPE GUIDE

(1) REQUIREMENT
MIN SOME --- MAX 0.003 INCH CLEARANCE BETWEEN GAUGE AND TAPE GUIDES.

(2) REQUIREMENT
EDGE OF WEAR PLATE FLUSH WITH EDGE OF TAPE GUIDE PLATE.

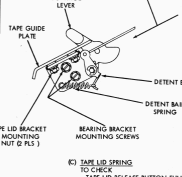
(3) REQUIREMENT
NO BIDING OF TAPE UP THE SIDES OF TAPE GUIDES.

TO ADJUST
LOOSEN TAPE GUIDE MOUNTING NUTS FRICTION TIGHT. POSITION WEAR PLATE UNTIL IT OVERHANGS TAPE GUIDE PLATE. UNLATCH TAPE LID AND PLACE TP170283 GAUGE BETWEEN TAPE GUIDES WITH CENTER STUD OF GAUGE IN FEED HOLE SLOT OF TAPE GUIDE PLATE AND WEAR PLATE. PUSH GAUGE HORIZONTALLY UNTIL REMAINING TWO STUDS OF GAUGE BUTT UP AGAINST TAPE GUIDE PLATE FINGERLY POSITIONING EDGE OF WEAR PLATE FLUSH WITH EDGE OF TAPE GUIDE PLATE. TIGHTEN ONE TAPE GUIDE MOUNTING NUT. POSITION SECOND TAPE GUIDE TO MEET REQUIREMENT (1). TIGHTEN SECOND TAPE GUIDE MOUNTING NUT. LOOSEN FIRST TAPE GUIDE MOUNTING NUT FRICTION TIGHT AND POSITION TAPE GUIDE TO MEET REQUIREMENT (1). TIGHTEN FIRST TAPE GUIDE MOUNTING NUT.

NOTE
TAPE GUIDES MAY TOUCH GAUGE, BUT MUST NOT BIND AGAINST GAUGE WHEN IT IS REMOVED.

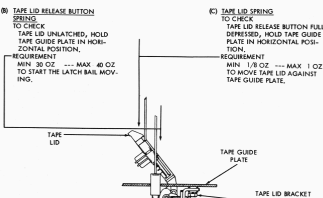
2.06 Cover and Top Plate Area (continued)

(A) CONTROL LEVER DETENT SPRING
TO CHECK
CONTROL LEVER IN RUN POSITION.
REQUIREMENT
MIN 14 OZ --- MAX 22 OZ
TO START DETENT BAIL MOVING.



(B) TAPE LID RELEASE BUTTON SPRING
TO CHECK
TAPE LID UNLATCHED, HOLD TAPE GUIDE PLATE IN HORIZONTAL POSITION.
REQUIREMENT
MIN 30 OZ --- MAX 40 OZ
TO START THE LATCH BAIL MOVING.

(C) TAPE LID SPRING
TO CHECK
TAPE LID RELEASE BUTTON FULLY DEPRESSED, HOLD TAPE GUIDE PLATE IN HORIZONTAL POSITION.
REQUIREMENT
MIN 1/8 OZ --- MAX 1 OZ
TO MOVE TAPE LID AGAINST TAPE GUIDE PLATE.



2.07 Cover and Top Plate Area (continued)

NOTE

TO PREVENT DAMAGE TO THE TAPE-OUT PIN (2.10), POSITION STOP ARM (2.12) TO ITS LOWERMOST POSITION AND HOLD CONTROL LEVER BAIL EXTENSION (2.14) FROM FEED WHEEL RATCHET (2.18).

(A) FEED WHEEL POST
REQUIREMENT
FEED WHEEL POST IS NOT TO INTERFERE WITH TOP OR TAPE GUIDE PLATE MOUNTING BRACKETS.
TO ADJUST
LOOSEN MOUNTING NUT AND ROTATE POST TO MEET REQUIREMENT.

(B) TAPE GUIDE PLATE

(1) REQUIREMENT
TAPE GUIDE PLATE TO REST FIRMLY AGAINST A MINIMUM OF THREE OF THE FOUR PROJECTIONS ON FRONT AND REAR PLATES.
TO ADJUST
ROTATE MAINSHAFT TO ITS STOP POSITION AND TRIP CLUTCH TO PUT SENSING FINGERS (2.20) IN THEIR UPPERMOST POSITION. UNLATCH TAPE LID AND PLACE CONTROL LEVER IN RUN POSITION. LOOSEN MOUNTING SCREWS AND MOUNTING BRACKET NUTS FRICTION TIGHT. POSITION TAPE GUIDE PLATE ON UNIT MAKING CERTAIN THAT TAPE GUIDE PLATE IS FIRMLY POSITIONED TO MEET REQUIREMENT. POSITION TAPE-OUT PIN (2.10) INTO HOLE IN TAPE GUIDE PLATE. TIGHTEN MOUNTING SCREWS.

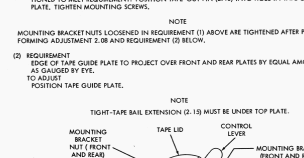
NOTE

MOUNTING BRACKET NUTS LOOSENED IN REQUIREMENT (1) ABOVE ARE TIGHTENED AFTER PERFORMING ADJUSTMENT 2.08 AND REQUIREMENT (2) BELOW.

(2) REQUIREMENT
EDGE OF TAPE GUIDE PLATE TO PROJECT OVER FRONT AND REAR PLATES BY EQUAL AMOUNTS AS GAUGED BY EYE.
TO ADJUST
POSITION TAPE GUIDE PLATE.

NOTE

TIGHT-TAPE BAIL EXTENSION (2.15) MUST BE UNDER TOP PLATE.



2.08 Cover and Top Plate Area (continued)

(A) TOP PLATE
TO CHECK
REMOVE COVER PLATE (SEE RELATED DISASSEMBLY AND REASSEMBLY SECTION).

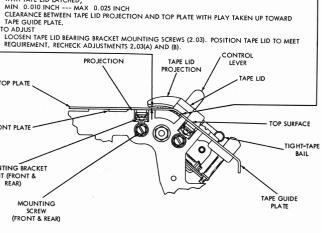
(1) REQUIREMENT
WITH TAPE LID UNLATCHED,
MIN FLUSH ---- MAX 0.003 INCH
BELOW TOP SURFACE OF TAPE GUIDE PLATE ALONG WIDTH OF TAPE LID WHEN TOP PLATE IS RESTING ON A MINIMUM OF FIVE OF THE SIX PROJECTIONS ON FRONT AND REAR PLATES,
TO ADJUST
LOOSEN MOUNTING SCREWS AND MOUNTING BRACKET NUTS FRICTION TIGHT. POSITION TOP PLATE TO MEET REQUIREMENT (1). TIGHTEN MOUNTING SCREWS. TIGHTEN TAPE GUIDE PLATE MOUNTING BRACKET NUTS LEFT FRICTION TIGHT IN ADJUSTMENT 2.07.

NOTE

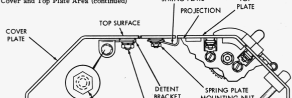
MOUNTING BRACKET NUTS LOOSENED IN REQUIREMENT (1) ABOVE ARE TIGHTENED AFTER PERFORMING REQUIREMENT (2) BELOW.

(2) REQUIREMENT
WITH TAPE LID UNLATCHED, FEED WHEEL SLOT TO ALIGN WITH SLOT IN TAPE GUIDE PLATE SO THAT FEED WHEEL (2.16) ROTATES FREELY WITH CONTROL LEVER IN FREE POSITION,
TO ADJUST
POSITION TOP PLATE TOWARD FRONT OR REAR PLATE. TIGHTEN MOUNTING BRACKET NUTS LEFT FRICTION TIGHT IN REQUIREMENT (1) ABOVE.

(B) TAPE LID
REQUIREMENT
WITH TAPE LID LATCHED,
MIN 0.010 INCH ---- MAX 0.025 INCH
CLEARANCE BETWEEN TAPE LID PROJECTION AND TOP PLATE WITH PLAY TAKEN UP TOWARD TAPE GUIDE PLATE.
TO ADJUST
LOOSEN TAPE LID BEARING BRACKET MOUNTING SCREWS (2.03). POSITION TAPE LID TO MEET REQUIREMENT. RECHECK ADJUSTMENTS 2.03(A) AND (B).



2.09 Cover and Top Plate Area (continued)



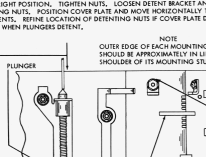
(A) COVER PLATE

(1) REQUIREMENT
RIGHT EDGE OF COVER PLATE TO BE HELD FLUSH AGAINST LEFT EDGE OF TOP PLATE BY COVER PLATE DETENTING NUTS.

(2) REQUIREMENT
COVER PLATE TO REST FIRMLY AGAINST A MINIMUM OF THREE OF THE FOUR PROJECTIONS ON FRONT AND REAR PLATES.

(3) REQUIREMENT
TOP SURFACE OF COVER AND TOP PLATES TO ALIGN.
TO ADJUST
LOOSEN DETENTING NUTS ON FRONT AND REAR PLATES FRICTION TIGHT AND MOVE THEM TO THEIR EXTREME LOWER RIGHT POSITION. TIGHTEN NUTS. LOOSEN DETENT BRACKET AND SPRING PLATE MOUNTING NUTS. POSITION COVER PLATE AND MOVE HORIZONTALLY TO MEET ABOVE REQUIREMENTS. REFINE LOCATION OF DETENTING NUTS IF COVER PLATE DOES NOT SEAT AS REQUIRED WHEN PLUNGERS DETENT.

(B) COVER PLATE DETENT SPRING REQUIREMENT
MIN 28 OZ ---
MAX 48 OZ
TO START PLUNGER MOVING.



NOTE
1. OUTER EDGE OF EACH MOUNTING BRACKET TO BE APPROXIMATELY IN LINE WITH SHOULDER OF ITS MOUNTING STUD AND PARALLEL TO EDGE OF PLATE.
2. COVER, TOP, AND TAPE GUIDE PLATES TO BE APPROXIMATELY FLUSH AND IN LINE WITH EACH OTHER.

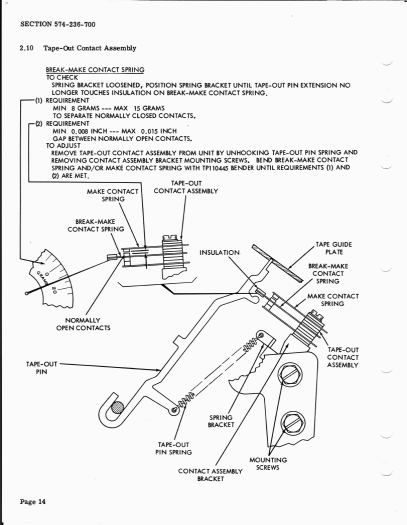
2.10 Tape-Out Contact Assembly

BREAK-MAKE CONTACT SPRING
TO CHECK
SPRING BRACKET LOOSENED, POSITION SPRING BRACKET UNTIL TAPE-OUT PIN EXTENSION NO LONGER TOUCHES INSULATION ON BREAK-MAKE CONTACT SPRING.

(1) REQUIREMENT
MIN 8 GRAMS --- MAX 15 GRAMS
TO SEPARATE NORMALLY CLOSED CONTACTS.

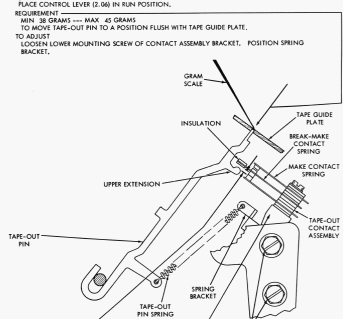
(2) REQUIREMENT
MIN 0.008 INCH --- MAX 0.015 INCH
GAP BETWEEN NORMALLY OPEN CONTACTS.

TO ADJUST
REMOVE TAPE-OUT CONTACT ASSEMBLY FROM UNIT BY UNHOOKING TAPE-OUT PIN SPRING AND REMOVING CONTACT ASSEMBLY BRACKET MOUNTING SCREWS. BEND BREAK-MAKE CONTACT SPRING AND/OR MAKE CONTACT SPRING WITH TP11040 BENDER UNTIL REQUIREMENTS (1) AND (2) ARE MET.



2.11 Tape-Out Contact Assembly (continued)

(A) TAPE-OUT PIN SPRING
TO CHECK
PLACE CONTROL LEVER (2.06) IN RUN POSITION.
REQUIREMENT
MIN 38 GRAMS --- MAX 45 GRAMS
TO MOVE TAPE-OUT PIN TO A POSITION FLUSH WITH TAPE GUIDE PLATE.
TO ADJUST
LOOSEN LOWER MOUNTING SCREW OF CONTACT ASSEMBLY BRACKET. POSITION SPRING BRACKET.

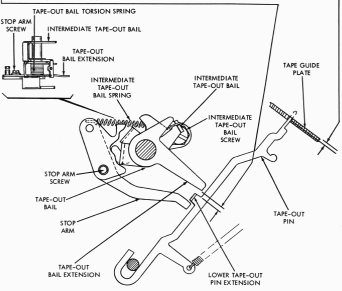


(B) ASSEMBLY BRACKET
TO CHECK
INSERT TAPE UNDER TAPE LID (2.07) TO HOLD TAPE-OUT PIN DOWN.
REQUIREMENT
MIN 0.006 INCH --- MAX 0.020 INCH
CLEARANCE BETWEEN TAPE-OUT PIN UPPER EXTENSION AND UNDERSIDE OF INSULATION ON BREAK-MAKE CONTACT SPRING.
TO ADJUST
LOOSEN CONTACT ASSEMBLY BRACKET MOUNTING SCREWS AND ADJUST BRACKET UNTIL REQUIREMENT IS MET.

2.12 **Tape-Out Pin Mechanism**

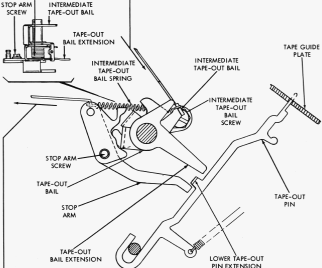
(A) STOP ARM
TO CHECK
PLACE CONTROL LEVER (2.06) IN STOP POSITION.
REQUIREMENT
TAPE-OUT PIN TO BE
MIN FLUSH ~~~ MAX 0.010 INCH
BELOW SURFACE OF TAPE GUIDE PLATE.
TO ADJUST
LOOSEN STOP ARM SCREW, POSITION STOP ARM, RECHECK REQUIREMENT.

(B) TAPE-OUT BAIL
TO CHECK
PLACE CONTROL LEVER (2.06) IN RUN POSITION.
REQUIREMENT
MIN 0.055 INCH
CLEARANCE BETWEEN LOWER TAPE-OUT PIN EXTENSION AND TAPE-OUT BAIL EXTENSION.
TO ADJUST
LOOSEN INTERMEDIATE TAPE-OUT BAIL SCREW, POSITION TAPE-OUT BAIL, RECHECK REQUIREMENT 2.12(A).



2.13 Tape-Out Pin Mechanism (continued)

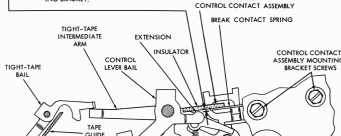
(A) TAPE-OUT TORSION SPRING
TO CHECK
CONTROL LEVER (2.06) IN STOP POSITION, UNHOOK ONE END OF INTERMEDIATE TAPE-OUT BAIL SPRING.
REQUIREMENT
MIN 3 OZS. --- MAX 5-1/2 OZS.
TO START INTERMEDIATE TAPE-OUT BAIL MOVING.



(B) INTERMEDIATE TAPE-OUT BAIL SPRING
TO CHECK
CONTROL LEVER (2.06) IN RUN POSITION, UNHOOK INTERMEDIATE TAPE-OUT BAIL SPRING AT POST END.
REQUIREMENT
MIN 3 OZS. --- MAX 5 OZS.
TO PULL SPRING TO INSTALLED LENGTH.

2.14 Tight-Tape Mechanism

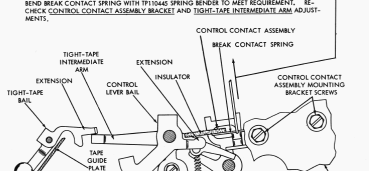
(A) CONTROL CONTACT ASSEMBLY BRACKET
TO CHECK
PLACE CONTROL LEVER (2.06) IN RUN POSITION.
REQUIREMENT
MIN 0.006 INCH --- MAX 0.015 INCH
CLEARANCE BETWEEN EXTENSION ON CONTROL LEVER BAIL AND INSULATOR ON BREAK CONTACT SPRING.
TO ADJUST
LOOSEN CONTROL CONTACT ASSEMBLY MOUNTING BRACKET SCREWS AND POSITION MOUNTING BRACKET.



(B) BREAK CONTACT SPRING
REQUIREMENT
INSULATOR ON BREAK CONTACT SPRING TO BE FULLY ENGAGED BY CONTROL LEVER BAIL EXTENSION AND TIGHT-TAPE INTERMEDIATE ARM EXTENSION.
TO ADJUST
LOOSEN CONTACT ASSEMBLY PILE-UP MOUNTING SCREWS AND POSITION BREAK CONTACT SPRING.

2.15 Tight-Tape Mechanism (continued)

(A) CONTROL CONTACT SPRING
TO CHECK
PLACE CONTROL LEVER (2.06) IN RUN POSITION.
REQUIREMENT
MIN 3 OZS, --- MAX 4 OZS,
TO SEPARATE CONTACTS.
TO ADJUST
BEND BREAK CONTACT SPRING WITH TP110445 SPRING BENDER TO MEET REQUIREMENT. RE-CHECK CONTROL CONTACT ASSEMBLY BRACKET AND TIGHT-TAPE INTERMEDIATE ARM ADJUSTMENTS.

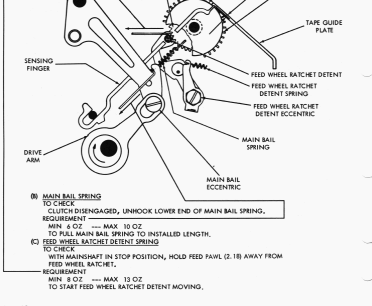


(B) INTERMEDIATE ARM
TO CHECK
PLACE CONTROL LEVER (2.06) IN RUN POSITION.
REQUIREMENT
CONTACTS OF CONTROL CONTACT ASSEMBLY TO OPEN WHEN TIGHT-TAPE BAIL RAISED,
MIN 0.040 INCH --- MAX 0.075 INCH
AWAY FROM TAPE GUIDE PLATE.
TO ADJUST
LOOSEN TIGHT-TAPE INTERMEDIATE ARM SCREW AND POSITION TIGHT-TAPE INTERMEDIATE ARM USING PIVY POINT.

(C) INTERMEDIATE ARM SPRING
TO CHECK
PLACE CONTROL LEVER (2.06) IN RUN POSITION.
REQUIREMENT =S
MIN 20 GRAMS --- MAX 40 GRAMS
TO START YIELD ARM MOVING.

2.16 **Main Bail Mechanism**

(A) TRANSFER LEVER GUIDE POST
TO CHECK
PLACE MAINSHAFT IN STOP POSITION AND DISENGAGE CLUTCH.
REQUIREMENT —
TIP OF HIGHEST SENSING FINGER TO BE
MIN FLUSH — MAX 0.005 INCH
BELOW TOP SURFACE OF TAPE GUIDE PLATE.
TO ADJUST
LOOSEN NUTS SECURING TRANSFER LEVER GUIDE POST (2.19) AND ROTATE GUIDE POST TO MEET REQUIREMENT. TIGHTEN NUTS. ROTATE MAINSHAFT WHILE CHECKING PROPER OPERATION OF MOVING PARTS.

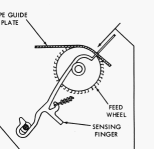


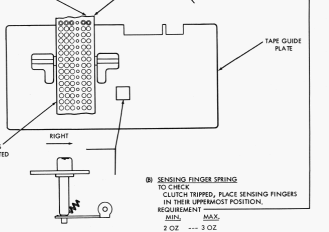
(B) MAIN BAIL SPRING
TO CHECK
CLUTCH DISENGAGED, UNHOOK LOWER END OF MAIN BAIL SPRING.
REQUIREMENT
MIN 6 OZ — MAX 10 OZ
TO PULL MAIN BAIL SPRING TO INSTALLED LENGTH.

(C) FEED WHEEL RATCHET DETENT SPRING
TO CHECK
WITH MAINSHAFT IN STOP POSITION, HOLD FEED PAWL (2.18) AWAY FROM FEED WHEEL RATCHET.
REQUIREMENT
MIN 9 OZ — MAX 13 OZ
TO START FEED WHEEL RATCHET DETENT MOVING.

2.17 Tape Sensing Mechanism

(A) FEED WHEEL DETENT
TO CHECK
SENSING FINGERS DOWN, TAPE LID (2.06(B)) UNLATCHED, HIGH PART OF FEED WHEEL RATCHET DETENT ECCENTRIC (2. 16) TOWARD RIGHT, PLACE A NEW PIECE OF LETTERS PERFORATED TAPE ON FEED WHEEL. TAKE UP PLAY IN THE TAPE LIGHTLY TOWARD RIGHT.
REQUIREMENT
TIP OF EACH SENSING FINGER TO BE CENTRALLY LOCATED IN ITS CODE HOLE.
TO ADJUST
LOOSEN FEED WHEEL RATCHET DETENT ECCENTRIC (2. 16) FRICTION TIGHT AND HOLD FEED PAWL (2. 18) AWAY FROM FEED WHEEL RATCHET (2. 18). ROTATE FEED WHEEL RATCHET DETENT ECCENTRIC.



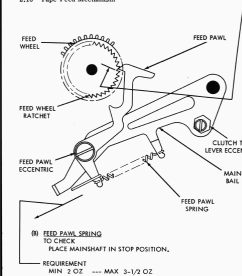


(B) SENSING FINGER SPRING
TO CHECK
CLUTCH TRIPPED, PLACE SENSING FINGERS IN THEIR UPPERMOST POSITION.
REQUIREMENT

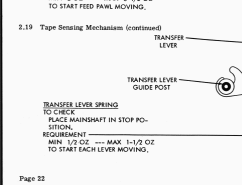
MIN.	MAX.
2 OZ	--- 3 OZ

TO MOVE SENSING FINGERS FLUSH WITH TAPE GUIDE PLATE.

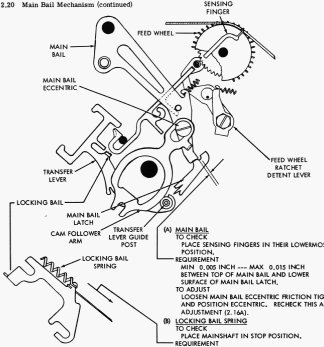
2.18 Tape Feed Mechanism



2.19 Tape Sensing Mechanism (continued)

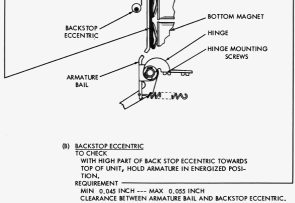


2.20 Main Bail Mechanism (continued)



2.21 Clutch Magnet Assembly

(A) ARMATURE BAIL HINGE
TO CHECK
ARMATURE IN ENERGIZED POSITION.
REQUIREMENT
ARMATURE TO CONTACT CORE FACE OF TOP MAGNET WITH MIN SOME --- MAX 0.004 INCH CLEARANCE BETWEEN ARMATURE AND CORE FACE OF BOTTOM MAGNET AT POINT OF LEAST CLEARANCE.
TO ADJUST
REMOVE CLUTCH MAGNET MOUNTING BRACKET SCREWS AND LIFT CLUTCH MAGNET ASSEMBLY FROM UNIT. LOOSEN HINGE MOUNTING SCREWS AND POSITION HINGE.



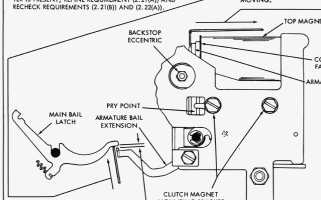
(B) BACKSTOP ECCENTRIC
TO CHECK
WITH HIGH PART OF BACK STOP ECCENTRIC TOWARDS TOP OF UNIT, HOLD ARMATURE IN ENERGIZED POSITION.
REQUIREMENT
MIN 0.048 INCH --- MAX 0.053 INCH CLEARANCE BETWEEN ARMATURE BAIL AND BACKSTOP ECCENTRIC.
TO ADJUST
LOOSEN BACKSTOP ECCENTRIC AND POSITION.

2.22 Clutch Magnet Assembly (continued)

(A) ASSEMBLY
TO CHECK
WITH CLUTCH MAGNET ASSEMBLY REPLACED INTO UNIT IN ITS LOWEST POSITION AND CLUTCH MAGNET BRACKET MOUNTING SCREWS FRICTION TIGHT, DISENGAGE CLUTCH.
REQUIREMENT
MIN .0.007 INCH --- MAX .0.015 INCH CLEARANCE BETWEEN END OF ARMATURE BAIL EXTENSION AND MAIN BAIL LATCH.
TO ADJUST
POSITION CLUTCH MAGNET ASSEMBLY AT PRY POINT. RECHECK REQUIREMENT.

NOTE
IF AC POWER IS USED, MAKE A CHECK OF ARMATURE CHATTER. IT MUST BE A MINIMUM. IF EXCESSIVE CHATTER IS PRESENT, REFINE REQUIREMENT (2.21(A)) AND RECHECK REQUIREMENTS (2.21(B)) AND (2.22(A)).

(C) MAIN BAIL LATCH SPRING
TO CHECK
RELEASE MAIN BAIL LATCH.
REQUIREMENT
MIN 3/4 OZ --- MAX 2 OZ TO START MAIN BAIL LATCH MOVING.



(B) ARMATURE BAIL SPRING
TO CHECK
ARMATURE IN DE-ENERGIZED POSITION, HOLD MAIN BAIL LATCH AWAY FROM ARMATURE BAIL EXTENSION.
REQUIREMENT
MIN 1 OZ --- MAX 2 OZ
TO START ARMATURE MOVING.

2.23 Code Reading Contacts

Initial Adjustments

NOTE

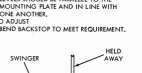
INITIAL ADJUSTMENTS SHOULD BE MADE WITH THE CODE READING CONTACT ASSEMBLY REMOVED FROM THE TRANSMITTER UNIT.

(A) NORMALLY CLOSED CONTACTS – BACKSTOP REQUIREMENT

THE LOWER CONTACT LEAVES FOR ALL LEVELS SHOULD BE PARALLEL TO THE MOUNTING PLATE AND IN LINE WITH ONE ANOTHER.

TO ADJUST

BEND BACKSTOP TO MEET REQUIREMENT.



(B) NORMALLY CLOSED CONTACTS – SPRING TENSION REQUIREMENT

(1) WITH SWINGER HELD AWAY

MIN 2 OZ ---- MAX 6 OZ

TO MOVE LOWER CONTACT LEAF AWAY FROM BACKSTOP.

TO ADJUST

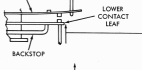
BEND LOWER LEAF. IF IT IS NECESSARY TO BEND BACKSTOP TO OBTAIN REQUIRED TENSION, REPOSITION BACKSTOP TO MEET NORMALLY CLOSED CONTACTS – BACKSTOP REQUIREMENT.

(2) MIN 30 GRAMS ---- MAX 40 GRAMS

TO OPEN NORMALLY CLOSED CONTACTS.

TO ADJUST

BEND SWINGER.



(C) NORMALLY OPEN CONTACTS – BACKSTOP REQUIREMENT

MIN 0.010 INCH ---- MAX 0.015 INCH GAP BETWEEN NORMALLY OPEN CONTACTS.

TO ADJUST

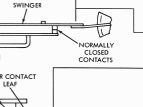
BEND ASSOCIATED BACKSTOP TO MEET REQUIREMENT.

(D) NORMALLY OPEN CONTACTS – SPRING TENSION REQUIREMENT

MIN 30 GRAMS ---- MAX 40 GRAMS TO MOVE NORMALLY OPEN CONTACTS AWAY FROM BACKSTOP.

TO ADJUST

BEND UPPER CONTACT LEAF. IF IT IS NECESSARY TO BEND BACKSTOP TO OBTAIN REQUIRED TENSION, REPOSITION BACKSTOP TO MEET REQUIREMENT (2. 23C(1).



2.24 Code Reading Contacts (continued)

Secondary Adjustments

NOTE

THE SECONDARY ADJUSTMENTS SHOULD BE MADE WITH THE CODE READING CONTACT ASSEMBLY INSTALLED IN THE TRANSMITTER, WITH THE CONTACT ASSEMBLY BRACKET APPROXIMATELY CENTERED IN ITS ADJUSTMENT RANGE.

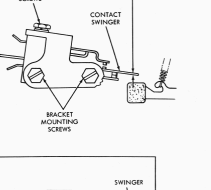
(A) CONTACT ASSEMBLY

REQUIREMENT

THE SWINGER OF EACH CONTACT PILE-UP SHOULD BE ALIGNED WITH ITS ASSOCIATED SENSING ARM, AS GAGED BY EYE.

TO ADJUST

LOOSEN THE SCREWS WHICH MOUNT THE CONTACT ASSEMBLY TO THE CONTACT BRACKET, AND POSITION THE ASSEMBLY TO MEET REQUIREMENT.



(B) CONTACT BRACKET

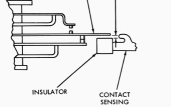
REQUIREMENT

WITH THE BLANK COMBINATION SELECTED AND THE UP-STOP POST OUT OF THE WAY

MIN. 0.015 INCH --- MAX. 0.025 INCH GAP BETWEEN CONTACT ASSEMBLY SWINGERS AND INSULATOR ON CONTACT SENSING ARM.

TO ADJUST

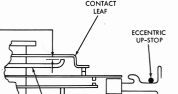
LOOSEN THE CONTACT BRACKET MOUNTING SCREWS (2.24A)) AND POSITION THE BRACKET TO MEET REQUIREMENTS.

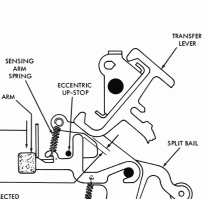


2.25 Code Reading Contacts (continued)

Secondary Adjustments (continued)

(A) ECCENTRIC UP-STOP REQUIREMENT
WITH LETTERS COMBINATION SELECTED, CLUTCH ENGAGED, AND MAIN SHAFT ROTATED UNTIL THE SENSING ARMS ARE IN THEIR UPPERMOST POSITION, THERE SHOULD BE
.SOME --- TO --- 0.008 INCH
CLEARANCE BETWEEN THE UPPER CONTACT LEAF AND ITS BACKSTOP.
TO ADJUST
LOOSEN THE NUT THAT SECURES THE ECCENTRIC UP-STOP TO THE FRONT PLATE AND TURN THE ECCENTRIC UNTIL THE REQUIREMENT IS SATISFIED. THE HIGH PART OF THE ECCENTRIC SHOULD BE TOWARD LEFT.





(B) SENSING ARM SPRING REQUIREMENT
WITH CLUTCH DISENGAGED
MIN 2-1/2 OZ
MAX 3-1/2 OZ
TO START SENSING ARM MOVING.

(C) SPLIT BAIL ECCENTRIC REQUIREMENT
WITH THE BLANK COMBINATION SELECTED AND CLUTCH TRIPPED, CLEARANCE BETWEEN THE TRANSFER LEVERS AND ASSOCIATED SENSING ARMS,
MIN 0.030 INCH
MAX 0.030 INCH
TO ADJUST
ROTATE THE SPLIT BAIL ECCENTRIC WITH ITS LOCK NUT LOOSENED.

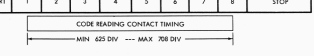
2.26 Code Reading Contacts (continued)

Final Adjustments (Strobing)

CONTACT BRACKET

NOTE

A DXD OPERATING AT 600 OPM WITH AN 11 UNIT CODE SCALE SHALL BE USED FOR STROBING.



REQUIREMENTS
(1) MARKING PULSE (TRACE) LENGTH
MIN 625 --- MAX 708 SCALE DIVISIONS

(2) MARKING PULSE BREAKS TO BE CONFINED TO FIRST AND LAST 15 SCALE DIVISIONS OF TRACE.

(3) SPACING PULSE (TRACE) LENGTH FULL SCALE TRACE WITHOUT BREAKS.

TO ADJUST
LOOSEN THE CONTACT BRACKET MOUNTING SCREWS AND POSITION BRACKET TO MEET REQUIREMENTS.

NOTE

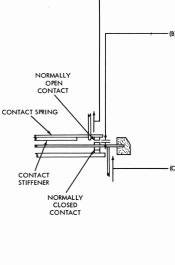
IF REQUIREMENTS CANNOT BE MET, RE-CHECK INITIAL AND SECONDARY AD-JUSTMENTS AND REFINE IF NECESSARY.

2.27 Auxiliary No. 1 Contact Assembly

Initial Adjustments

NOTE

THE INITIAL ADJUSTMENTS SHOULD BE MADE WITH THE AUXILIARY CONTACTS REMOVED FROM THE TRANSMITTER UNIT.



2.28 Auxiliary No. 1 Contact Assembly (continued)

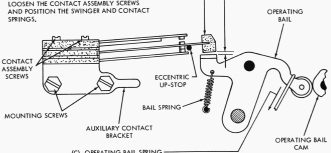
Secondary Adjustments

NOTE

THE SECONDARY ADJUSTMENTS SHOULD BE MADE WITH THE AUXILIARY CONTACTS INSTALLED.

(A) CONTACT BRACKET REQUIREMENT
WITH CLUTCH DISENGAGED AND LATCHED, CLEARANCE BETWEEN THE INSULATOR ON THE SWINGER AND THE BAIL
MIN 0.025 INCH --- MAX 0.035 INCH
TO ADJUST
POSITION THE CONTACT BRACKET WITH ITS MOUNTING SCREWS LOOSENED.

(B) CONTACT ASSEMBLY REQUIREMENT
THE SWINGER INSULATOR SHOULD BE CENTRALLY LOCATED WITH RESPECT TO ITS OPERATING BAIL.
TO ADJUST
LOOSEN THE CONTACT ASSEMBLY SCREWS AND POSITION THE SWINGER AND CONTACT SPRINGS.



(C) OPERATING BAIL SPRING REQUIREMENT
CLUTCH DISENGAGED
MIN 3 OZ
MAX 7 OZ
TO MOVE FOLLOWER ROLLER AWAY FROM LOW PART OF ITS CAM.

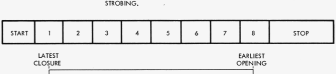
2.29 Auxiliary No. 1 Contact Assembly (continued)

Final Adjustment (Stroking)

CONTACT BRACKET

NOTE

A DXD OPERATING AT 600 CPM WITH AN 11 UNIT CODE SCALE SHALL BE USED FOR STROBING.



REQUIREMENT

(1) AUXILIARY NO. 1 CONTACT TRACE SHALL BEGIN A MINIMUM OF 10 DIVISIONS AFTER LATEST CODE READING CONTACT HAS CLOSED, HAVE A MINIMUM PULSE LENGTH OF 590 DIVISIONS, AND END A MINIMUM OF 14 DIVISIONS BEFORE EARLIEST CODE READING CONTACT HAS OPENED.

(2) TRACE MAY HAVE A MAXIMUM OF TWO 2-DIVISION BREAKS WITHIN 8 DIVISIONS OF THE START OR END OF TRACE.

TO ADJUST

LOOSEN THE CONTACT MOUNTING BRACKET SCREWS AND POSITION BRACKET TO MEET REQUIREMENTS.

NOTE

IF REQUIREMENTS CANNOT BE MET, RE-CHECK INITIAL AND SECONDARY ADJUSTMENTS.

3. VARIABLE FEATURES

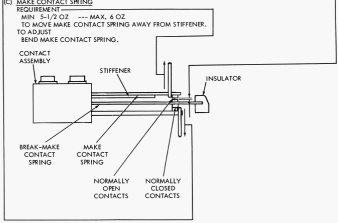
3.01 Auxiliary No. 2 Contact Assembly

Initial Adjustments

(A) BREAK-MAKE CONTACT SPRING
REQUIREMENT
MIN .4 OZ --- MAX .5 OZ
TO OPEN NORMALLY CLOSED CONTACTS.
TO ADJUST
BEND BREAK-MAKE CONTACT SPRING.

(B) MAKE CONTACT STIFFENER
REQUIREMENT
MIN .0.010 INCH --- MAX .0.020 INCH
GAP BETWEEN NORMALLY OPEN CONTACTS.
TO ADJUST
BEND STIFFENER.

(C) MAKE CONTACT SPRING
REQUIREMENT
MIN .5-1/2 OZ --- MAX. 6 OZ
TO MOVE MAKE CONTACT SPRING AWAY FROM STIFFENER.
TO ADJUST
BEND MAKE CONTACT SPRING.

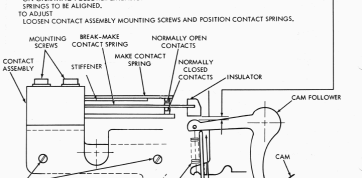


3.02 Auxiliary No. 2 Contact Assembly (continued)

Secondary Adjustments

(A) CONTACT BRACKET
TO CHECK
DISENGAGE AND LATCH CLUTCH.
REQUIREMENT
MIN 0.015 INCH --- MAX 0.020 INCH
CLEARANCE BETWEEN INSULATOR ON BREAK-MAKE CONTACT SPRING AND OPERATING SURFACE ON CAM FOLLOWER.
TO ADJUST
LOOSEN CONTACT MOUNTING BRACKET SCREWS AND POSITION CONTACT ASSEMBLY USING PRY POINT.

(B) CONTACT ASSEMBLY
TO CHECK
CLUTCH TRIPPED, ROTATE MAINSHAFT UNTIL INSULATOR ON BREAK-MAKE CONTACT SPRING IS IN CONTACT WITH CAM FOLLOWER.
REQUIREMENT
INSULATOR ON BREAK-MAKE CONTACT SPRING TO BE CENTRALLY LOCATED ON OPERATING FOLLOWER EXTENSION AND CONTACTS OF CONTACT SPRINGS TO BE ALIGNED.
TO ADJUST
LOOSEN CONTACT ASSEMBLY MOUNTING SCREWS AND POSITION CONTACT SPRINGS.



(C) CAM FOLLOWER SPRING
TO CHECK
DISENGAGE CLUTCH.
REQUIREMENT
MIN 2-1/2 OZ --- MAX 3-1/2 OZ
TO MOVE CAM FOLLOWER AWAY FROM CAM.

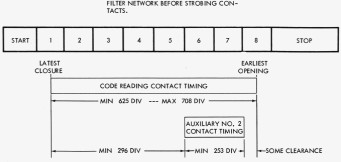
3.03 Auxiliary No. 2 Contact Assembly (continued)

Final Adjustments (Strobing)

CONTACT BRACKET

NOTE

A DXD OPERATING AT 600 OPM WITH AN 11 UNIT CODE SCALE SHALL BE USED FOR STROBING. DISCONNECT ONE END OF THE FILTER NETWORK BEFORE STROBING CONTACTS.



REQUIREMENT

(1) AUXILIARY NO. 2 CONTACT TRACE SHALL BEGIN A MINIMUM OF 296 DIVISIONS AFTER LATEST CODE READING CONTACT HAS CLOSED, HAVE A MINIMUM PULSE LENGTH OF 253 DIVISIONS AND A MAXIMUM OF 273 DIVISIONS, AND END A MINIMUM OF 21 DIVISIONS BEFORE EARLIEST CODE READING CONTACTS HAVE OPENED.

(2) TRACE MAY HAVE A 2-DIVISION BREAK WITHIN THE FIRST AND LAST 8 SCALE DIVISIONS OF THE TRACE.

TO ADJUST

LOOSEN THE CONTACT MOUNTING BRACKET SCREWS AND POSITION BRACKET TO MEET REQUIREMENTS.

NOTE

IF THE REQUIREMENT CANNOT BE MET, RECHECK INITIAL AND SECONDARY ADJUSTMENTS.