## SELECTOR MECHANISM

### 28 TELETYPETRITER

**REQUIREMENTS AND PROCEDURES**

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### SELECTOR MECHANISM

**28 TELE-TYPETRITER**

**REQUIREMENTS**

**PROCEDURES**
1. GENERAL

1.01 This section covers the requirements and adjusting procedures for the selector mechanism used in the 28 teletypewriter. The general teletypewriter requirements are given in Section P30.012.

Caution: The electric power should be disconnected before the apparatus is removed from its protective housing. Where operation of the apparatus, after its removal from the housing, is required, power should be applied with appropriate precautionary measures taken to prevent accidents.

1.02 This section is reissued to:
(a) Incorporate the addendum. (2.11)
(b) Provide revised drawings of the selector magnet (2.02 and 2.03), and the selector mechanism. (2.04)
(c) Add a drawing of the range-finder mechanism with the front-nut knob. (2.08)
(d) Add a drawing of a selector-clutch mechanism without the adjustable guide. (2.10)

1.03 Changes are indicated by marginal arrows.

2. REQUIREMENTS AND ADJUSTING PROCEDURES

2.01 The following figures show the adjusting tolerances, positions of moving parts, and spring tensions. Where a figure shows interrelated parts, the sequence that should be followed in checking the requirements and making the adjustments shown on that figure is indicated by the letters (A), (B), (C), etc. Common requirements and adjustments of clutches are shown in Section P34.612.
TO FACILITATE MAKING THE FOLLOWING ADJUSTMENTS, REMOVE THE RANGE FINDER
AND SELECTOR MAGNET ASSEMBLY. TO INSURE BETTER OPERATION, PULL A PIECE
OF PAPER BETWEEN THE ARMATURE AND THE POLE PIECES TO REMOVE ANY OIL OR FOREIGN
MATTER THAT MAY BE PRESENT. MAKE CERTAIN THAT NO LINT OR PIECES OF PAPER
REMAIN BETWEEN THE POLE PIECES AND ARMATURE. BEFORE REMOUNTING THE RANGE FINDER,
CHECK AND ADJUST THE RANGE FINDER KNOB PHASING.

NOTE

SELECTOR ARMATURE
NOTE
THIS REQUIREMENT NEED NOT
BE MET NOR CHECKED IF THE
SELECTOR MAGNET BRACKET
AND RECEIVING MARGIN
REQUIREMENTS ARE MET.

(1) REQUIREMENT (ARMATURE
CLAMP STRIP)
CLEARANCE BETWEEN ARMATURE
CLAMP STRIP AND CASTING.
MIN. 0.025 INCH
MAX. 0.045 INCH

(2) REQUIREMENT (ARMATURE ALIGNMENT)
OUTER EDGE OF ARMATURE SHOULD BE
FLUSH WITHIN 0.015 INCH WITH OUTER
EDGE OF POLE PIECES:

(3) REQUIREMENT (ARMATURE BACKSTOP ALIGNMENT)
CLEARANCE BETWEEN SIDES OF BACKSTOP
AND SIDES OF ARMATURE EXTENSION.
MIN. 0.010 INCH

TO ADJUST
1. POSITION ARMATURE SPRING ADJUSTING NUT TO HOLD
   ARMATURE FIRMLY AGAINST PIVOT EDGE OF CASTING.
2. POSITION ARMATURE AND BACKSTOP WITH
   MOUNTING SCREWS LOOSENED.
2.03 Selector Magnet

SELECTOR MAGNET BRACKET
(1) REQUIREMENT

SPACING LOCK LEVER ON EACH HIGH PART OF CAM, ARMATURE IN CONTACT WITH POLE PIECE, CLEARANCE BETWEEN END OF ARMATURE EXTENSION AND SHOULDER ON SPACING LOCK LEVER.

MIN. 0.020 INCH

MAX. 0.035 INCH

TO ADJUST

LOSEN TWO MAGNET BRACKET MOUNTING SCREWS AND ADJUSTING LINK CLAMP SCREW. POSITION MAGNET BRACKET BY MEANS OF ADJUSTING LINK AND TIGHTEN LINK CLAMP SCREW ONLY.

(2) REQUIREMENT

SPACING LOCK LEVER ON EACH HIGH PART OF CAM, ARMATURE IN CONTACT WITH POLE PIECE, SOME CLEARANCE BETWEEN UPPER SURFACE OF ARMATURE EXTENSION AND LOWER SURFACE OF SPACING LOCK LEVER WHEN LOCK LEVER IS HELD DOWNWARD.

MAX. 0.003 INCH

TO ADJUST

POSITION UPPER END OF MAGNET BRACKET. TIGHTEN TWO MAGNET BRACKET MOUNTING SCREWS. RECHECK REQUIREMENT (1).
2.04 Selector Mechanism

Selector Armature Spring Requirement
Marking Lock Lever, Spacing Lock Lever, and Start Lever on high part of their
cams. Scale applied as nearly vertical as possible under end of armature extension.
Approx. 3 ozs.
To pull armature to marking position. It may be necessary to readjust
this spring tension when making distortion tolerance tests of the unit.
To adjust
position adjusting nut.

Adjusting Nut
Armature Spring
Armature
Marking Lock Lever
Start Lever
Cam
Spacing Lock Lever
Marking Lock Lever Spring
Marking Lock Lever

Selector Mechanism
28 Teletypewriter
Requirement
Letters combination selected, main
shaft rotated until selector clutch
is disengaged. Push scale applied
to lower extension of lock lever.
Min. 1-1/2 ozs.
Max. 3 ozs.
To start lever moving.
2.05 Selector Cam Clutch

(A) SELECTOR PUSH LEVER SPRING TENSION

REQUIREMENT
PUSH LEVER IN SPACING POSITION
MIN. 3/4 OZ.
MAX. 1 1/2 OZS.
TO MOVE PUSH LEVER FROM THE SELECTOR LEVER (HORIZONTAL PRESSURE)
CHECK ALL FIVE PUSH LEVER SPRINGS.

(B) SELECTOR LEVER SPRING TENSION

REQUIREMENT
TYING UNIT UPSIDE DOWN
RESET BAIL ON PEAK OF ITS CAM
MIN. 1 1/4 OZS.
MAX. 2 1/2 OZS.
TO START EACH LEVER MOVING
CHECK ALL FIVE SELECTOR LEVER SPRINGS. IF NECESSARY,
UNHOOOK START LEVER SPRING TO CHECK NO. 4 SELECTOR LEVER SPRING.

(C) SELECTOR CLUTCH DRUM

REQUIREMENT
CLUTCH DISENGAGED IN STOP POSITION, CLUTCH DRUM AGAINST SHOULDER ON MAIN SHAFT.
CAM-CLUTCH ASSEMBLY SHOULD HAVE
MIN. SOME END PLAY
MAX. 0.010 INCH
TO ADJUST
UTILIZE CLEARANCE IN CLUTCH DRUM MOUNTING HOLE WITH MOUNTING SCREW LOOSENED.
**Selector-Clutch Mechanism**

**PUSH LEVER RESET BAIL**
- **SPRING TENSION REQUIREMENT**
  - **PUSH LEVER RESET BAIL ON LOW PART OF CAM 32 OZ. SCALE APPLIED TO RESET BAIL**
  - **MIN. 4 OZS.**
  - **MAX. 8 OZS.**
  - **TO MOVE BAIL FROM CAM.**

**SELECTOR CLUTCH LATCH LEVER SPRING REQUIREMENT**
- **LATCH RESTING ON LOW PART OF ITS CAM DISK.**
  - **MIN. 2 OZS.**
  - **MAX. 3 1/2 OZS.**
  - **TO START THE LATCH MOVING.**

**SPACING LOCK LEVER SPRING REQUIREMENT**
- **SELECTOR ARMATURE RELEASED, SPACING LOCK LEVER ON ANY LOW PART OF ITS CAM SPRING SCALE APPLIED TO LOWER END OF SPACING LOCK LEVER.**
  - **MIN. 3 OZS.**
  - **MAX. 6 OZS.**
  - **TO MOVE SPACING LOCK LEVER FROM ITS PIVOT SHAFT.**
(A) RANGE FINDER KNOB PHASING

**REQUIREMENT**

With Range Finder Knob turned to either end of rack, zero mark on scale should be in line with scribed line on Range Finder Plate ± 3 points.

**TO PHASE**

Remove plate and position knob with mounting nut loosened.

---

(a) SELECTOR CLUTCH STOP ARM

**REQUIREMENT**

Range scale set at 60. Selector clutch disengaged, armature in marking position. Clutch stop arm should engage clutch shoe lever by approximately full thickness of shoe lever.

**TO ADJUST**

Position stop arm on stop arm bail with clamp screw loosened.
2.08 Range-finder Mechanism (Front-nut Knob)

(A) RANGE FINDER KNOB PHASING
REQUIREMENT
WITH RANGE FINDER KNOB TURNED TO EITHER END OF RACK, ZERO MARK ON SCALE SHOULD BE WITHIN 3 POINTS OF SCRIEBED LINE ON RANGE FINDER PLATE.
TO ADJUST
REMOVE MOUNTING NUT, DISENGAGE KNOB FROM RACK AND POSITION KNOB. RE-ENGAGE KNOB WITH RACK AND REPLACE MOUNTING NUT.

(B) SELECTOR CLUTCH STOP ARM
REQUIREMENT
RANGE SCALE SET AT 60. SELECTOR CLUTCH DISENGAGED. ARMATURE IN MARKING POSITION. CLUTCH STOP ARM SHOULD ENGAGE CLUTCH SHOE LEVER BY APPROXIMATELY FULL THICKNESS OF SHOE LEVER.
TO ADJUST
POSITION STOP ARM ON STOP ARM BAIL WITH CLAMP SCREW LOOSENED.
2.09 Selector-clutch Mechanism (with adjustable guide)

NOTE: BAIL LEVER GUIDE ADJUSTMENT APPLIES ONLY TO UNITS EQUIPPED WITH ADJUSTABLE GUIDES.

START LEVER SPRING
REQUIREMENT
LATCH LEVER SPRING UNHOOKED. STOP ARM BAIL IN INDENT OF ITS CAM RANGE SCALE SET AT 60.
MIN. 2-1/2 OZS.
MAX. 4-1/2 OZS.
TO START THE STOP ARM MOVING.

NOTE: BAIL LEVER GUIDE REQUIREMENT
SOME CLEARANCE BETWEEN EACH SIDE OF GUIDE FORK AND EXTENSION OF START LEVER THROUGHOUT ITS TRAVEL.
TO ADJUST
POSITION BAIL LEVER GUIDE WITH MOUNTING NUT LOOSENED.

SELECTOR MAGNET
MOUNTING NUT
RANGE FINDER PLATE
STOP ARM BAIL
START LEVER (EXTENSION)
START LEVER
START LEVER SPRING
CLUTCH STOP ARM
LATCH LEVER SPRING
2.10 **Selector-clutch Mechanism (without adjustable guide)**

START LEVER SPRING UNHOOKED. STOP ARM BAIL IN INDENT OF ITS CAM. RANGE SCALE SET AT 60.
MIN. 2-1/2 OZS.
MAX. 4-1/2 OZS.
TO START STOP ARM MOVING.

2.11 **Selector Cam Lubricator**

SELECTOR CAM LUBRICATOR

REQUIREMENT

THE LUBRICATOR TUBE SHOULD CLEAR THE HIGH PART OF THE LOCK LEVER CAM BY AT LEAST 0.020 INCH.
THE HIGH PART OF THE SELECTOR LEVER CAMS SHOULD TOUCH THE LUBRICATOR WICK, BUT SHOULD NOT RAISE IT MORE THAN 1/32 INCH.

TO ADJUST

POSITION THE LUBRICATOR BRACKET WITH ITS MOUNTING SCREWS LOOSENED.

NOTE: THERE SHOULD BE SOME CLEARANCE BETWEEN THE MARKING LOCK LEVER SPRING (SEE 2.04) AND THE LUBRICATOR RESERVOIR.