

**BELL SYSTEM PRACTICES**  
**Teletypewriter and Manual**  
**Telegraph Station and P.B.X.**  
**Installation and Maintenance**

**SECTION P35.603**  
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## **REPERFORATOR—14 AND 20 TYPE**

### **LUBRICATION**

#### **1. GENERAL**

- 1.01 This section covers the lubrication of 14 and 20 type reperforators.
- 1.02 This section is reissued to add to and revise the procedures.
- 1.03 The oils and grease referred to herein are those specified in general Section P30.011 covering Lubrication of Teletypewriter Apparatus.

#### **2. APPLICATION**

- 2.01 Oil should be applied by means of a KS-8239 oil can, or by one having a slender spout not less than 3" long.
  - (a) In lubricating small parts apply only a single drop of oil so that the oil remains on the part and does not flow off. Too much oil will give unsatisfactory results.
- 2.02 Grease should be applied with a KS-7461 or KS-8319 grease gun, toothpick, screwdriver blade or R-2119 brush.
- 2.03 After lubricating, wipe off excess oil or grease which may have found its way onto surfaces not requiring lubrication, being careful to avoid wiping old oil, grease or dirt into spaces between bearing surfaces.
- 2.04 New felt washers, before being used, should be thoroughly saturated with oil.
- 2.05 Lubrication intervals shall be as specified in other instructions.
- 2.06 Parts marked with (+) in 3.01 and with (#) in 3.02 shall be lubricated first with oil, second with grease and finally again with oil.

### 3. PARTS TO BE LUBRICATED

3.01 The following parts shall be lubricated with oil.

- (a) Both loops of all helical springs that exert a nominal tension of less than 2 1/2 lbs.

#### Selector Unit and Main Shaft

- (b) Stop lever: two bearings.  
 (c) Trip latch: pivot.  
 (d) Trip-latch bell crank: pivot.  
 (e) Trip-latch plunger.  
 (f) Selector cams: one drop on peak of each cam.  
 (g) Locking-cam felt oiler: saturate.  
 (h) Locking-lever and selector-lever pivots.  
 (i) Selector-sword bearings: drop oil through slots in separator plates.  
 (j) Selector-sword points.  
 (k) Selector "T" levers: all points of contact.  
 (l) Locking wedge.  
 (m) Armature bearings: sparingly.

**Caution: Take care not to get oil on armature opposite magnet-core ends. Clean armature and magnet cores by drawing between them a piece of KS-7187 paper or the equivalent. In same manner clean stopping surfaces of armature front and back stops.**

- (n) Armature detent: at bearing.  
 (o) Armature-detent pin where it comes in contact with the armature lever.

Note: (n) and (o) are found only on 20-type reperforators.

- (p) Main shaft: front bearing.  
 (+)(q) Main shaft: rear bearing.  
 (r) Main shaft: remove orientation-plate mounting screw and swing plate to expose end of main shaft. Hold front of reperforator up several inches and fill shaft through hole in center of retaining disc.  
 (s) Selector-clutch felt friction washers. Hold driving discs apart with a screwdriver and saturate the felt washers with oil. Do this at two diametrically opposite places on the washers.

**Caution: Care should be taken to press the screwdriver into the felt washer sufficiently so that it does not burr the driving discs when twisted to separate the discs.**

- (+)(t) Clutch throw-out lever: two bearings.  
 (u) Main-clutch camming surface.  
 (+)(v) Cam roller.

- (w) Main-shaft felt washer. Also oil projections of steel disc which are inside of coiled spring.
- (x) Cam bushing: oil hole.

#### **Punch-Arm Shaft**

- (y) Bearing blocks; two oil holes.
- (z) Adjusting screw.

#### **Punching Mechanism**

- (aa) Punch block: oil hole.
- (ab) Feed-roll bearing.
- (ac) Detent roller and eccentric.
- (ad) Lock bail: two bearings.
- (ae) Punch hammer: two bearings.
- (af) Transfer levers: all points of contact.
- (ag) Punch levers: all points of contact.
- (ah) Lock-bail roller.
- (ai) Feed pawl.
- (aj) Tape reel: oil hole.
- (ak) Tape-retainer hinge.
- (al) Space out lever guide screws.

3.02 The following parts shall be lubricated with grease.

- (a) Loops of all helical springs that exert a nominal tension of 2-1/2 lbs. or more.
- (#)(b) Cam roller.
- (#)(c) Clutch-throw-out lever: two bearings.
- (d) Gears at rear of unit: apply sparingly.
- (#)(e) Main-shaft rear bearing.
- (f) Motor bearings. Depress ball oiler with nozzle of grease gun and lubricate bearing with one stroke of the plunger, after which run motor a few minutes to work out excess grease. After motor has come to rest wipe off excess grease.

**Caution: Lubrication intervals, specified in local instructions, should be closely adhered to as too much grease causes starting switch troubles on synchronous motors, commutator troubles and false grounding on d-c motors and a-c series motors.**

Note: Replacement bearings should be packed with grease before installation and then be lubricated as above.

3.03 The following parts, lubricated with grease in accordance with 3.02 shall again be lubricated with oil.

- (a) Cam roller.
- (b) Clutch-throw-out lever: two bearings.
- (c) Main shaft: rear bearing.