14 REPERFORATOR-TRANSMITTER

LUBRICATION

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1. GENERAL

1.01 This section covers the detailed lubrication procedures for the 14 reperforator-transmitter.

1.02 Reference should also be made to the section covering the general lubrication requirements.

1.03 Unless otherwise specified, one or two drops of oil at each place indicated in the following list will be sufficient. Use KS-7470 oil and KS-7471 grease for all lubrication except where KS-6232 oil is specifically called for in the list below.

1.04 A small stiff brush, such as the R-2119 brush may be used to apply grease in a thin film at points where grease is specified.

1.05 Oil-grease-oil, when specified, should be applied as three separate treatments in that order. The oil furnishes the desired lubrication but the duration of its retention is limited. The application of grease, followed by an application of oil, holds the initial oil on the surface where it is required and tends to give a grease with a higher oil content than normally used to replenish the supply of oil to the bearing.

1.06 New felt washers and wicks, before being used, should be thoroughly saturated with oil and, before assembling, the excess oil should be removed by squeezing the washers or wicks between two pieces of cloth.

1.07 Oil both loops of all helical springs which exert a nominal tension of less than 2-1/2 pounds.

1.08 Apply grease to both loops of all helical springs that exert a nominal tension of 2-1/2 pounds or more.

2. DETAILED LUBRICATION

2.01 Selector Mechanism:

(1) Armature lever: 2 pivot screws, oil sparingly — KS-6232 oil.

(2) Selector arm: 2 pivot screws, 2 sword contact points, locking tip, and point of contact with operating screw — KS-6232 oil.

(3) Selector-arm detent: bearing and point of contact with selector arm — KS-6232 oil.

(4) Range-finder trip-latch plunger: bearing and 2 points of contact — KS-6232 oil.

(5) Range-finder bell-crank: bearing — KS-6232 oil.

(6) Range-finder trip-latch: bearing and points of contact — KS-6232 oil.

(7) Range-finder stoplever: bearing and point of contact with stoparm — KS-6232 oil.

(8) Swords and selector levers: drop oil between separator plates — KS-6232 oil.

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(9) Selector T levers: all points of contact — KS-6232 oil.

(10) Selector-arm locking-lever: at pivot.

(11) Selector cam-sleeve: each cam peak.

(12) Code bars: at posts — KS-6232 oil.

(13) Tape feed-out lever: 4 bearings, point of contact with trip-latch plunger.

2.02 Main Shaft:

(1) Remove the range-scale rear mounting-screw, swing scale out of the way and fill shaft through hole in center of retaining disc. Replace range scale and rear mounting-screw.

(2) Locking-lever cam felt oilers: saturate.

(3) Selector-cam friction washers (2): saturate.

(4) Main-cam friction disc: saturate.

(5) Main-shaft ball bearings (2): grease lower, oil upper.

(6) Clutch throw-out lever: 2 bearings—oil, end of lever — grease.

(7) Clutch: oil freely.

(8) Compression springs (3): allow oil to flow into prongs of members under springs.

(9) Main-clutch bushing: 2 oil holes. Saturate wick with oil.

(10) Main-shaft gear: grease.

(11) Sub-shaft gear: grease.

(12) Motor pinion: grease.

(13) Main-bail cam: grease.

(14) Punch-arm cam: grease.

2.03 Main Bail:

(1) Main-bail roller: oil, grease, oil.

(2) Main-bail plunger: fill oil-cup and saturate oil wick.

(3) Main-bail lever: fill oil-cup on main-bail-lever shaft, also oil end of lever in main-bail plunger.

(4) Main bail: apply oil to edge of bail which contacts pullbars , and oil 2 main-bail guide rollers.

(5) Main-bail roller guides (2): grease.

(6) Main-bail adjusting screw: grease end of screw.

(7) Main-bail spring anchor: grease.

(8) Main-bail-lever spring post: saturate felt washers.

2.04 Pullbars, Typebars, and Codebars:

(1) Pullbars: one drop of oil on top of each bar except for pullbars having associated contacts, in which case apply oil at point adjacent to codebars.

(2) Typebar gears: pull each typebar down against platen and apply oil sparingly on top of gear at rear of segment slot.

(3) Codebar locking lever: grease lever at point of contact with main bail.

(4) Codebars: slots and posts. One drop to each codebar.

2.05 Ribbon Mechanism:

(1) Ribbon-feed ratchet and feed gears: oil teeth.

(2) Ribbon-feed-shaft detent plunger: oil.

(3) Ribbon-feed-shaft: 2 oil holes.

(4) Ribbon-feed-lever: oil hole.

(5) Ribbon-feed-lever roller: bearing.

(6) Ribbon-spool shaft (right): 2 bearings.

(7) Ribbon-spool shafts (left): 4 bearings, oil teeth on gears.

(8) Ribbon-reverse pawls and links: 4 bearings each side.

(9) Ribbon-reverse shafts: 2 bearings each.

(10) Ribbon-feed-shaft detent: grease.

2.06 Platen-Shift Mechanism:

(1) Platen shafts (2): film of oil.

(2) Shift lever: bearings (2), and point of contact with pullbar and platen frame.

(3) Shift latch: bearing and points of contact with pullbars and shift-bail.

(4) Shift-bail: bearing and at platen-frame extension.

(5) Shift-bail stop-screw: grease.

(6) Intermediate bail: oil bearing, grease point of contact with shift bail and plunger extension bracket.

2.07 Prepunch Mechanism:

(1) Prepunch arm: bearings (2).

(2) Feed roll: bearings (2) and feed notches.

(3) Feed pawl: bearing.

(4) Prepunch operating bail: bearings (2), or saturate felt washers if provided, grease eccentric and extension.

(5) Feed-roll detent wheel.

(6) Feed-roll detent: bearing and roller.

(7) Feed-hole punch: oil at point of contact with prepunch arm.

2.08 Reperforating Mechanism:

(1) Punch-arm-casting roller: oil, grease, oil.

(2) Punch-arm-casting bearing: fill oil-cup.

(3) Punch-arm extension: bearing, also at adjusting-screw extension.

(4) Codebar bell cranks: drop of oil between separator plates, point of contact at vertical links and codebar locking lever.

(5) Vertical links: at pivot and comb.

(6) Vertical-links bell cranks: at pivot, at point of contact with vertical link and selector-finger bell cranks.

(7) Selector-finger bell cranks: 2 points on each.

(8) Selector fingers: guide comb and point of contact with code punches.

(9) Punch-bail pilot screw: 2 bearings.

(10) Feed-roll bearings (2).

(11) Feed-roll detent wheel: grease.

(12) Feed-roll detent: bearing and roller.

(13) Code-punch retracting bail: bearings (2) and points of contact with code punches.

(14) Code-punch retaining levers: at pivot and point of contact with code punches.

(15) Code-punch stripper pins. Film of KS-6232 oil.

(16) Code-punch stripper-pin bell cranks: at bearings — KS-6232 oil.

(17) Tape-depressing bail: bearings (2) — KS-6232 oil.

2.09 Pivoted Transmitter and Transfer Mechanism:

(1) Transmitter lid: bearings (2).

(2) Sensing fingers: bearings and point of contact with guide plate.

(3) Transmitter yoke: bearings (2).

(4) Tape-feed lever: bearings (2).

(5) Tape-feed pin lever: bearing.

(6) Feed-pin oscillator: bearing and points of contact with feed-pin lever and guide.

(7) Feed-pin oscillator lever: bearing and guide comb.

(8) Selector levers: bearing and guide comb, 2 places.

(9) Contact lever: bearing.

(10) Transmitter stop contact operating plunger.

2.10 Transfer and Slide-Lever Mechanism:

(1) T levers: bearings and at points of contact with selector levers and transfer-slide levers.

(2) T-lever operating bail: bearings (2).

(3) Transfer slide levers: bearings, 2 each.

(4) Contact-operating levers: bearings, and grease at point of contact with transfer-slide levers.

2.11 Sensing Shaft:

(1) Sensing-shaft bearings: ball bearing at front, fill oil-cup at rear.

(2) Sensing shaft: remove thumbscrew from front end of shaft and fill shaft with oil.

(3) Sensing-shaft gear: grease.

(4) Clutch assembly: oil freely.

(5) Detent lever: bearing and roller.

(6) Oscillator lever: roller.

(7) T lever operating bail: roller.

(8) Clutch lever: bearings (2) — grease end.

(9) Apply thin film of grease on bearing surfaces of all cams. If felt wicks are provided saturate wicks with oil and use cloth to remove excess.

2.12 Distributor Shaft:

(1) Distributor-shaft bearings: ball bearing in front, fill oil-cup at rear.

(2) Distributor shaft: remove thumbscrew from front end of shaft and fill shaft with oil.

(3) Distributor-shaft gear: grease.

(4) Clutch assembly: oil freely.

(5) Detent lever: bearing and roller.

(6) Clutch contact-operating levers: at bearing and thin film of grease at point of contact with contact insulator.

(7) Clutch lever: bearings (2) — grease end.

(8) Distributing contact levers: bearings, thin film of grease at points of contact with cams and insulators.

(9) Apply thin film of grease on bearing surfaces of all cams. If felt wicks are provided, saturate wicks with oil and use cloth to remove excess.

2.13 Subshaft:

(1) Subshaft gears (2): grease.

(2) Subshaft bearings (2): fill oil-cups or if ball bearings are used apply oil to bearings.

(3) Universal contact-operating lever: at bearing, also apply thin film of grease to camming surface on main-bail plunger.

2.14 Contact Insulators: Apply thin film of grease to insulators of the following contacts at point of contact with the operating levers.

(1) Universal contact.

(2) Transmitter-stop contact.

(3) Tape-out contact.

(4) Distributing-shaft clutch-magnet contact.

(5) Clutch-magnet auxiliary contact.

(6) Switching contacts.

(7) Tape-feed-indicator contact arm — also oil bearing points.

Note: Remove all excessive oil and grease after completion of lubrication and check that all contacts are free from oil, dirt, or grease.

2.15 Lubricate the motor at yearly intervals — tag the motor to indicate the date of lubrication.

CAUTION: EXPERIENCE INDICATES THAT FAR MORE TROUBLE HAS BEEN CAUSED BY OVER-LUBRICATION OF MOTOR BEARINGS THAN BY UNDER-LUBRICATION; THEREFORE, CARE SHOULD BE TAKEN THAT THE BEARINGS ARE NOT OVER-LUBRICATED.

To lubricate a motor bearing, press the grease gun against the ball oiler and force grease into the end bell by pushing on the plunger of the gun. One or two strokes of the plunger should be applied.

2.16 After lubrication has been completed, clean the selector-magnet pole faces and associated armature with a strip of KS bond paper to remove any dirt or lubricant that may be present.

2.17 Connect power to the unit and after unit has run for at least 10 minutes, check the tensions of the main-shaft and selector-cam clutches.