

SECTION 2  
LUBRICATION

1. GENERAL

The oil and grease specified in the supplement furnished with this bulletin should be used to lubricate the printer and associated units.

Unless otherwise specified, one or two drops of oil at each of the places indicated will be sufficient. Use oil for lubrication at all of the places listed below, except where the use of grease or oil-grease-oil is specified.

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

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

2. TYPING UNIT

a. TYPE BAR CARRIAGE ASSEMBLY

- (1) Type bars - at segment slot.
- (2) Code bars - at posts.
- (3) Code bar bell cranks - on wearing surfaces.
- (4) Pull bar bail guide rollers and guide surface (oil-grease-oil).
- (5) Plunger surface and rollers, surface of pull bar bail guide post (oil-grease-oil).
- (6) Operating roller (oil-grease-oil).
- (7) Carriage support rollers - three.
- (8) Ribbon reverse bail.
- (9) Ribbon feed shaft bearing - 3 oil holes.
- (10) Ribbon feed pawl.
- (11) Ribbon feed pawl operating lever pivot screw and wearing surface.
- (12) Ribbon feed ratchet - teeth.
- (13) Ribbon lockout bar - at type bar segment slot.
- (14) Ribbon feed shaft bearings - upper and lower.

- (15) Ribbon feed mechanism gears.
- (16) Ribbon spool shafts bushings - remove spools.
- (17) Ribbon reverse shafts - upper and lower bearings, arms, pawls, and levers.
- (18) Margin bell pawl.
- (19) Ribbon shift lever and roller.
- (20) Oscillator lever shoulder screw and carriage casting slot.
- (21) Spacing rack.
- (22) Ribbon reverse detent.
- (23) Ribbon feed shaft detent - grease.

(24) (Two-Color Ribbon) Ribbon oscillator lever latch - at bearing and latching surface.

3. TYPING UNIT LESS THE TYPE BAR CARRIAGE ASSEMBLY

a. PLATEN UNIT

- (1) Shaft bearings (one in each shaft hub).
- (2) Line feed detent lever mounting shoulder screw.
- (3) Line feed detent roller.
- (4) Single-double line feed lever between flat spring and detenting cam and where single-double line feed lever fits into groove in platen shaft hub.
- (5) Line feed pawl and operating lever shoulder screws.
- (6) Shift detent roller - (grease).
- (7) Platen unit pivot bearings.
- (8) Upper ends of line feed and shift vertical links.
- (9) Paper knife supporting arms and paper guide bearings.
- (10) Paper straightener lever bearings.

(11) Paper straightener rod supporting lever bearings.

(12) Pressure roller release shaft and crank bearings.

(13) Pressure roller release cams, crank and shoulder screws.

(14) Pressure roller shafts - bearing surface.

(15) Pressure roller sleeves (one drop each).

(16) Letters and figures stop screws - grease ends.

(17) Platen friction disc assembly - saturate felt washer with oil (separate discs).

(18) Paper spindle bearings.

(19) Line feed check lever shaft bearings.

(20) Line feed detent ratchet - (apply grease sparingly).

#### b. MAIN SHAFT

(1) Hold right end of printer up about 6" and remove oil plug. -Fill shaft until oil runs out of the left end.

(2) Main clutch sliding member (oil freely).

(3) Main clutch throwout lever pivots - (oil-grease-oil).

(4) Main shaft friction washers - saturate with oil (separate discs).

(a) Selector unit assembly - 2 friction washers.

(b) Spacing clutch friction washer.

(5) Locking lever cam felt washers on selector cam assembly.

(6) Selector cam sleeve - each cam peak.

(7) Main shaft right ball bearing - (oil-grease-oil).

(8) Main shaft left ball bearing.

(9) Thrust bearing - end balls.

(10) Spacing clutch spring coils - (permitting oil to flow between prongs of driven member of spacing clutch and worm gear sleeve.)

(11) Spring (coils) which compresses friction washers of selector cam assembly - (oil will flow between prongs of nut on main shaft and friction disc which engages with this nut).

(12) Cam unit and spacing clutch, oil holes.

(13) Main clutch camming surface.

(14) Main shaft cam surfaces - (grease).

(15) Spacing escapement ratchet teeth - (grease).

#### c. SELECTOR UNIT.

##### NOTE

Be careful not to get oil between the pole faces of the selector magnets and the magnet armature.

(1) Armature bearings - two.

(2) Trip latch plunger, trip latch and bell crank lever and stop lever of range finder assembly.

(3) Swords and selector levers - drop oil between separating plates of swords and levers.

(4) "T" levers - (all points of contact).

(5) Armature locking lever.

(6) Locking wedge - at point of engagement with locking lever.

##### NOTE

Selector cam sleeve is listed under Main shaft.

#### d. BAIL UNIT ASSEMBLY.

(1) Bail assembly shaft bearings - fill oil cup - (two oil cups - new style).

(2) Between spacing pawls.

(3) Function bail and printing bail operating arm bearings.

(4) Function lever bail roller - two bearings (oil-grease-oil).

(5) Roller surface to have film of grease.

(6) Function bail and printing bail operating arm and rollers (oil-grease-oil).

(7) Printing bail blades where plunger operating roller engages blades.

(8) Printing bail adjusting screw head - (grease).

e. VANE FRAME ASSEMBLY.

(1) Function levers in vane frame slot.

(2) Function levers in slots in break mechanism plate.

(3) Function levers push bars and latch bars - in function lever comb.

(4) Sixth vane extension - at point of engagement with LETTERS push bar.

(5) Vane pilot screws - bearings.

(6) Send-receive-break mechanism, intermediate lever mounting screw, and operating lever mounting screw - (Be careful not to get oil on friction spring washer of send-receive-break mechanism "T" lever).

(7) Vanes front edges - where bell crank slotted ends slide in engagement with vanes.

(8) Sixth vane detent roller.

(9) Locking function lever - (apply grease in notches).

f. SPACING SHAFT ASSEMBLY.

(1) Spacing shaft - upper bearing, oil; lower bearing, fill oil cup.

(2) Carriage return clutch members prongs.

(3) Spacing gear, lower - (grease).

(4) Spacing gear, upper.

g. CARRIAGE RETURN MECHANISM.

(1) Carriage return latch bar at point of engagement with latch - (grease).

(2) Carriage return clutch release fork and operating lever bearings.

(3) Carriage return push bar and latch bar operating lever shoulder screw.

(4) Carriage return locking bar bell crank link shoulder screw.

(5) Carriage return spring drum bearing.

(6) Carriage return spring release lever shoulder screw.

(7) Clutch release fork link shoulder screw.

(8) Locking bar bell crank upper cross bar casting shoulder screw.

(9) Locking bar and locking bar bell crank shoulder screw.

(10) Locking bar latch and left-hand side frame shoulder screw.

(11) Dashpot piston rod - one drop oil rubbed over surface of piston.

(12) Dashpot lever mounting shoulder screw, and roller mounting pilot screw. (Grease at point of contact with lefthand margin adjusting screw.)

(13) Type bar carriage assembly - upper and lower, track surface.

(14) Carriage return spring - through oil holes in drum.

(15) Spacing stop lever and shoulder screw.

(16) Carriage return operating lever stop screw - (grease).

h. BELL FUNCTION.

(1) Bell striker arm and arm operating lever - bearings.

(2) Bell push bar and latch bar shoulder screw.

(3) Bell latch bar at point of engagement with latch - (grease).

i. SHIFT-UNSHIFT MECHANISM.

(1) The figures and letters push bars shoulder screw.

(2) Bell crank lever and operating lever shoulder screw.

(3) Bell crank lever and operating lever joint.

(4) Shift vertical link, lower end and detent lever shoulder screw.

j. LINE FEED FUNCTION.

(1) Line feed push bar and bell crank lever shoulder screw.

(2) Bell crank lever mounting shaft.

(3) Vertical link and bell crank lever, lower end, shoulder screw.

(4) Margin bell shaft - 2 bearings.

4. MOTOR UNIT

a. Motor pinion - (grease).

b. Motor bearing oilers - two.

c. Motor speed lever - pilot screw.

5. BASE

a. SEND-RECEIVE-BREAK MECHANISM.

(1) Operating lever and safety pawl release lever shoulder screw.

(2) Contact operating lever - shoulder screw - (also drop oil between lever and rear surface of send-receive-break mechanism bracket).

(3) Reset lever shoulder screw - (also drop oil between reset lever and rear surface of bracket).

6. KEYBOARD

a. LUBRICATION ON BOTTOM SIDE OF KEYBOARD.

(1) Universal bar pilot screw - bearings.

(2) Trip-off pawl link - joint.

(3) Key levers on key lever shaft and in rear comb.

(4) Selector bars - in guide slots.

(5) Locking levers - at locking lever forks.

b. LUBRICATION ON TOP SIDE OF KEYBOARD.

(1) Key levers - in front comb.

(2) Space bar loop - on space bar loop shaft.

(3) Keyboard shaft - two oil cups.

(4) Keyboard clutch - sliding member.

(5) Cams - apply light film of grease to surfaces of all cams.

(6) Locking loop - pilot screw, bearings and roller.

(7) Contact lever pivoting shaft and guiding comb.

(8) Locking levers in locking lever comb.

(9) Clutch throwout lever - bearings.

(10) Trip-off and clutch lever pawls.

(11) Keyboard gear - (grease).

(12) Repeat space rod at bearing points and points of contact.

7. VARIABLE FEATURES

a. SPROCKET FEED.

Same as for friction feed except omit from 3. a. PLATEN UNIT items (9) through (15) inclusive, and add the following:

(1) Pressure roller shaft - bearing surfaces.

(2) Pressure rollers - bearings.

(3) Paper carrier belt rollers.

b. PLATEN INDEXING MECHANISM.

(1) All gears - oil-grease-oil.

(2) Idler gear stud.

(3) Clutch washer.

(4) Cam assembly stud.

(5) Cam assembly bushing.

(6) Contact lever pivot.

(7) Cam - grease.

(8) All springs.

c. MECHANICAL MOTOR STOP MECHANISM.

(1) Motor stop pawls shoulder screws and lever bearings.

(2) Release lever bearing, contact lever bearing, and where contact lever protrudes through break mechanism plate.

d. ELECTRICAL MOTOR STOP MECHANISM.

(1) Start magnet armature and locking lever.

(2) Stop magnet armature.

e. HORIZONTAL TABULATOR MECHANISM.

(1) Tabulator pawl shoulder screw.

(2) Tabulator stops - (grease).

(3) Tabulator bar bearing screws.

(4) Space pawl link - at slot.

(5) Tabulator latch - latching surface.

(6) Tabulator latch bar - at pivot and at link shoulder screw.

(7) Tabulator function lever - at pivot point and at point of engagement with lock bar.

f. SWITCH CUT-IN AND AUTOMATIC CUT-OUT OF HORIZONTAL TABULATOR.

(1) Spacing stop lever and shoulder screw.

(2) Blocking lever bearings and shoulder screw.

(3) Blocking surface of blocking lever extension - oil-grease.

g. REPERFORATOR MOTOR CONTROL MECHANISM.

(1) Contact pawl shoulder screw.

(2) Latch shoulder screw.

h. TWO-COLOR RIBBON MECHANISM

(1) Armature at its bearing - 2 places.

(2) Parallelogram bar link - 2 places.

(3) Parallelogram bar, when it connects to armature, and contacts latch on carriage.

(4) Upper rail link.

(5) Contact operating lever.

(6) Contact operating lever latch.

i. END - OF - LAST FORM INDICATING MECHANISM.

(1) Pivots of paper - out bail.

(2) Switch operating bracket arm.

(3) All shoulder screws.

(4) Reset lever camming surface - grease sparingly.

j. PAPER-OUT MECHANISM.

(1) Paper follower arm hub.