# 32 AND 33 TYPING UNIT

## LUBRICATION

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## 3. VARIATIONS TO BASIC UNITS

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### 1. GENERAL

1.01 This section is issued to provide instructions for lubricating the 32 and 33 typing unit and to present the lubricating instructions as a separate section.

1.02 The general lubrication areas are illustrated by photographs. The specific points to receive lubricant are indicated on line drawings with appropriate textual instructions. Line drawings and textual instructions follow each photograph and are keyed to the photograph by paragraph numbers.
1.03 Thoroughly lubricate the typing unit, but avoid over lubrication that might permit the lubricant to drip or be thrown onto adjacent parts. Saturate all felt washers and oilers with oil, and apply oil to each end of all bearings. Use KS7470 Oil where oil is required and KS7471 Grease where grease is required.

1.04 Lubricate the typing unit before placing it into service or prior to storage. After a short period of service, relubricate it to make sure no areas have been missed. Thereafter, lubricate the typing unit at regular intervals as indicated below:

<table>
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<th>Operating Speed (Words per Minute)</th>
<th>Lubrication Interval</th>
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<tr>
<td>60 or 66</td>
<td>1000 hr* or 1 yr**</td>
</tr>
<tr>
<td>100</td>
<td>500 hr* or 6 mo**</td>
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*Station Set operating hours.
**Whichever comes first.

1.05 The textual instructions that accompany the line drawings consist of abbreviated directions, specific lubrication points, and parts affected. The meanings of the abbreviated directions (symbols) follow:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Meaning</th>
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<tr>
<td>D</td>
<td>Keep dry - no lubricant permitted</td>
</tr>
<tr>
<td>G</td>
<td>Apply thin coat of KS7471 Grease</td>
</tr>
<tr>
<td>GOL</td>
<td>Brush on well a mixture of 50% KS7471 Grease and 50% KS7470 Oil</td>
</tr>
<tr>
<td>OL</td>
<td>Oil liberally (3 or more drops)</td>
</tr>
<tr>
<td>OS</td>
<td>Oil sparingly (1 or 2 drops only)</td>
</tr>
<tr>
<td>OSAT</td>
<td>Saturate with oil (felt washers and oilers)</td>
</tr>
<tr>
<td>OSD</td>
<td>Oil sparingly or leave dry**</td>
</tr>
<tr>
<td>OSL</td>
<td>Oil sparingly or liberally</td>
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**Applies to all areas not contacted by other parts.

1.06 References to "left," "right," "front," or "rear," etc consider the typing unit to be viewed from a position where the carriage area faces up and the selector area is located to the viewer's left.

CAUTION: DO NOT USE ALCOHOL, MINERAL SPIRITS, OR OTHER SOLVENTS TO CLEAN PLASTIC PARTS OR PARTS WITH PROTECTIVE-DECORATIVE FINISHES. NORMALLY, A SOFT, DRY CLOTH SHOULD BE USED TO REMOVE DUST, OIL, GREASE, OR OTHERWISE CLEAN PARTS OR SUBASSEMBLIES. IF NECESSARY, A SOFT CLOTH DAMPENED WITH SOAP OR MILD DETERGENT MAY BE USED. AFTERWARDS, RINSE EACH CLEANED PART OR SUBASSEMBLY WITH SOFT, DAMP CLOTH AND BUFF WITH A SOFT, DRY CLOTH.

2. BASIC UNITS

2.01 DISTRIBUTOR AREA

(LEFT REAR VIEW)
2.02 Trip Lever

(LEFT FRONT VIEW)

2.03 Disc and Brushes

(TOP VIEW)

2.04 Latchlever

(RIGHT SIDE VIEW)
2.05 Stop Bail

OS Camming Surface
OSL Latching Surface
OSL Hooks (Each End)
OL* Contact Surface
OSL Pivots (2)
OSL Hooks (Each End)

Distributor Clutch
Stop Ball
Stop Ball Spring
Adjusting Tab
Stop Ball
Follower Lever Spring

*GOL when assembly is overhauled.

2.06 Main Shaft Area

(RIGHT SIDE VIEW)

(LEFT REAR VIEW)
2.07 Codebar Clutch

G Teeth
(Do not grease teeth of motor belt sprocket)

Distributor Gear

OL* Camming Surfaces
Eccentric Cams

OSD Interior Mechanism
All Clutches

OS Bearings (Both Ends)
Main Shaft
Gear

(TOP VIEW)

2.08 Function Clutch

OS Shaft (Each End)
Roller

OL* Camming Surfaces
Eccentric Cams

OSL Sliding Surface
Carriage Drive Arm

OSAT Felt Washer
Function Drive Arm

(LEFT FRONT VIEW)

2.09 Trip Shaft

OSL Hooks (Each End)
Springs (4)

OL* Pivot Bearings
Shaft (6 Points)

OSL Latching Surface
Trip Lever (2)

(LEFT SIDE VIEW)

*GOL when assembly is overhauled.
2.10 Selector Area

2.11 Selector Clutch

(TOP VIEW)

2.12 Latchlever and Trip Lever

(LEFT SIDE VIEW)
2.13 Selector Levers

- G: (After Oiling) Tip - Start Lever
- OS: Contact Surface - Locklever
- OS: Contact Surface
- OSL: Engaging Surface - Selector Levers (6)
- OL*: Camming Surface - Selector Levers (6)
- OSL: Sliding Contact - Selector Levers (6)
- OSL: Pivots (8) - Start Lever
- OSL: Hooks (Each End) - Levers
- OSL: Hooks (Each End) - Start Lever Spring Springs (6)

(LEFT SIDE VIEW)

2.14 Push Levers and Stripper Bail

- OL*: Camming Surface - Cam Follower
- OSL: Latching Surface - Push Levers (6)
- OSL: Contact Surface - Stripper Bail
- OSL: Hooks (Each End) - Bail Spring
- OSL: Hooks (Each End) - Push Lever Springs (6)
- OSL: Pivots (6) - Push Levers
- OSL: Contact Surfaces - Blocking Levers (6)

(LEFT SIDE VIEW)

2.15 Armature

- D: Hooks - Armature Spring
- D: Engaging Surfaces - Armature
- OSD: Engaging Surfaces - Side Plates
- G: Engaging Surface - Armature

(LEFT SIDE VIEW)

*GOL when assembly is overhauled.
2.16 Blocking Levers

(LEFT FRONT VIEW)

2.17 Function Area

(TOP VIEW)

(Platen and carriage removed for illustration purposes. Removal for lubrication is not required.)

2.18 Automatic Codebar

(FRONT VIEW)

*GOL when assembly is overhauled.
2.19 Codebars

OSL  Hooks (Each End)  Springs (7)
OL*  Pivots (7)  Shaft
D  Area Between Codebars

*GOL when assembly is overhauled.

2.20 Reset Ball

OSL  Hooks (Each End)  Spring
        Contact Surfaces  Codebar Engaging Tines
OSAT  Felt Washers (2)  Reset Ball Shaft

2.21 Rocker and Pawls

OSL  Hooks (Each End)  Pawl Springs
OSL  Pivot  Rocker Arm
OSL  Pivots (11)  Shaft
OSL  Latching Surfaces  Pawls
OSL  Engaging Surfaces  Pawls
OSL  Engaging Surfaces  Function Levers
OS  Bearings and Pivots  Function Shaft (Each End - 4)
2.22 Function Levers

(RIGHT SIDE VIEW)

OSL Hooks (Each End) Springs
OSD Engaging Surfaces Function Levers
OSAT Felt Washer Stripper Drive Lever
OSL Pivot Stripper Drive Lever
OSAT Felt Washers (2) (Each End of Shaft) Front Function Shaft

2.23 Spacing Area

(LEFT FRONT VIEW)

2.24 Space Bellcrank

(RIGHT SIDE VIEW)

OSL Pivot Bellcrank
OSL Pivot Spacing Lever
OSL Hooks (Each End) Spring
OSL Pivot Bellcrank
2.25 Carriage Return and Spacing Levers

![Diagram of Carriage Return and Spacing Levers]

- OSL: Pivot
- Carriage Return Lever
- Spacing Lever
- Spacing Mechanism
- Latch
- Latch Spring
- Hooks (Each End)
- Latch Spring

(LEFT FRONT VIEW)

2.26 Spacing Mechanism - 1

![Diagram of Spacing Mechanism - 1]

- OSL: Pivot
- Eccentric
- Hooks (Each End)
- Spring
- Spacing Lever
- Suppression Lever
- Springs (3)
- Engaging Surface
- Feed Pawl
- Latching Surface
- Feed and Check Pawls
- Hooks (Each End)

(TOP VIEW)
2.27 Drive Mechanism

(LEFT FRONT VIEW)

OSAT  Felt Washers (2)
OSL  Bearings (2)
Carriage Drive Bail
Front Bearings

OSL  Pivot
OSAT  Felt Washers (2)
OSL  Roller (Each End)
Drive Arm
Drive Arm Bail
Drive Roller
Feed Pawl
Spacing Gear

OSL  Pivot
OSL  Teeth

2.28 Spacing Mechanism - 2

(LEFT FRONT VIEW)

OSD  Pivot
OSL  Belt and Pulley
 Belt Pulley
D  Belt and Pulley
OS  Spacing Belt
OSL  Shaft (Remove Bracket and Retaining Ring)
Sprocket
OSL  Engaging Surface
Engaging Surfaces
OSL  Engaging Surface
OSL  Engaging Surface
OSL  Engaging Surface
Contact Surface
OSL  Pivot
Pivot
Suppression Arm
Spring
Suppression Arm
Latch Arm
Spring Pulley
Spring Pulley
Latch
Suppression Latch
Latch
Latch
2.29 Carriage Area

(LEFT FRONT VIEW)

Note: Remove ribbon mechanism before lubricating. For instructions, see the appropriate typing unit section.

2.30 Dashpot

(FRONT VIEW)

Sliding Surfaces  Dashpot and Cylinder
(Apply with oil dampened cloth. Too much lubricant will cause malfunction.)
2.31 Print Hammer

- D Surface Print Hammer
- OSL Ends (2) Torsion Spring
- OSAT Felt Washers (2) Spring Shaft
- OSL Hooks (Each End) Spring
- OSL Bearings (3) Drive Ball

(RIGHT SIDE VIEW)

2.32 Reset Arm

- OSL Latching Surface Trip Lever
- OSL Sliding Contacts Reset Arm
- OS Camming Surface Print Hammer Ball

(RIGHT SIDE VIEW)

2.33 Slide Guide Plates - 1

- OSL Contact Surface Plate
- OSL Contact Surfaces Plate and Drive Arm
- OSL Pivot Drive Arm
- OSL Pivot Drive Arm
- OSL Contact Surface Drive Arm
- OSL Pivot Link

(RIGHT SIDE VIEW)
2.34 Slide Guide Plates - 2

- OSL: Sliding Contacts
- OSL: Engaging Surfaces
- OSL: Hooks (Each End)
- OSL: Contact Points
- OSL: Teeth

Stop Plate
Stop Slides (4)
Springs (2)
Slide Guides (2)
Pinion Racks (2)

(TOP VIEW)

2.35 Ribbon Guide Spring

- D: Surfaces in Contact With Ribbon
- OSL: Seat (Each End)
- OSL: Sliding Contacts

Ribbon Guide
Springs (2)
Lifter Arm

(RIGHT SIDE VIEW)

2.36 Typewheel Mechanism

- D: Printing Surface
- OSL: Hooks (Each End)
- OSAT: Felt Wick
- OL: Upper Bearing
- OSL: Engaging Surfaces (2)
- OL: Lower Bearing
- OSL: Pivot
- OSL: Contact Surface
- OSL: Hooks (Each End)
- OSL: Pivot
- OL: Bearings

Typewheel
Return Spring
Typewheel Shaft
Positioning Cage
Rotary Drive Lever
Positioning Cage
Pulse Link
Power Ball
Springs (2)
Drive Arm
Power Ball
Rollers (Front and Rear - 2 Each)
2.37 Slides

OL  Bearing  Rear Roller (Top)
OSL Engaging Surface  Suppression Latch Fork
OSL Seats (Each End)  Slide Guide Springs
OL  Bearing  Rear Roller (Bottom)
OSL  Codebar Contacts  Slides

(LEFT SIDE VIEW)

2.38 Ribbon Mechanism

OSL  Pivot Points (2)  Mounting Shaft
D  Slots and Rollers  Ribbon Path
OSAT  Felt Wick  Feed Pawl
OSL  Hooks (Each End)  Springs (3)
OSL  Seat (Each End)  Torsion Springs (2)
OSL  Teeth  Ratchets (2)
OSL  Pivot  Feed Pawl

(TOP VIEW)
2.39 Motor Area

2.40 Intermediate Gears

(REAR VIEW)

D

Motor Belt

D

Teeth

Sprockets (2)

(RIGHT SIDE VIEW)

2.41 Motor

(BEARINGS (EACH END) MOTOR SHAFT)

OS

Intermediate Gear

Teeth

Motor Pinion

Pack Grease in Space

Intermediate Gear

Between Two Oiltite

Intermediate Gear Must Be

Bearings. Intermediate Gear Must Be

Removed.

Motor Pinion

Teeth

Motor

Interior Areas

Motor

CAUTION: MOTOR START RELAY AND CAPACITOR MUST BE KEPT FREE OF LUBRICANTS.
FRICITION FEED MECHANISMS

2.42 Paper Feed Area

Note: Reinstall ribbon mechanism. For instructions, see the appropriate typing unit section.

(REAR VIEW)

2.43 Platen

D All Surfaces Contacting Paper

D All Surfaces Contacting Ribbon

CAUTION: DO NOT CLEAN PLATEN WITH SOLVENTS.

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2.44 Line Feed Mechanism

![Diagram of Line Feed Mechanism]

D Teeth Platen Sprocket
OSL Hooks (Each End) Spring
OSL Pivots (4) Line Feed Linkage
OSL Hooks (Each End) Drive Link Spring
OSL Engaging Surface Upstop Bracket
OSL Engaging Surface Block Lever
OSL Hooks (Each End) Blocking Lever Spring

(LEFT SIDE VIEW)

SPROCKET FEED MECHANISMS

2.45 Paper Feed Area

Note: Reinstall ribbon mechanism. For instructions, see the appropriate typing unit section.

(RIGHT REAR VIEW)
2.46 Platen Mechanism

- OS Bearing
- D Belts
- OS Bearing
- OS Bearing
- OSAT Felt Washers (Within)
- OS Pivot
- OS Hooks (Each End)
- OS Bearing
- OSL Bearings (Both Ends)
- D All Surfaces Contacting Ribbon
- All Surfaces Contacting Paper
- OS Bearing
- OS Hooks (Each End)
- OS Pivot
- OS Bearing
- OS Bearing
- D Bearing
- (TOP VIEW)
- Idler
- Drive
- Pulley
- Button
- Shaft
- Paper Guide
- Spring
- Paper Guide
- Paper Guide
- Paper Guide
- Spring
- Paper Guide
- Pawl
- Left and Right Plate
- Knob

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2.47 Platen Drive Area

(RIGHT REAR VIEW)

(LEFT REAR VIEW)

(Form-out mechanism removed for illustration purposes. Removal for lubrication is not required.)

2.48 Cam, Pulley, and Gear Combination

Cam Surface
Gear Surface
Bearing

Cam Gear
Cam Gear
Gear and Pulley

Surface
Bearing

Pulley
Gear and Pulley
Cam Gear

(TOP VIEW)
2.49 Form-Out Mechanism

(TOP VIEW)

2.50 Line Feed Clutch

(TOP VIEW)
3. VARIATIONS TO BASIC UNITS

3.01 Answer-Back Area

3.02 Trip Magnet

- OS: Pivots (2)
- D: Contact Surface
- OSL: Hooks (Each End)
- G: Latching Surface
- OSL: Hooks (Each End)
- OSL: Hooks (Each End)
- Armature
- Armature Armature
- Armature Spring
- Armature Extension
- Control Lever Spring
- Blocking Follower Spring
CAUTION: DO NOT CLEAN CONTACT BLOCK WITH SOLVENTS.