MECHANICAL INSTRUCTIONS

FOR

REMINGTON [PORTABLE] TYPEWRITERS

AN, QR, and ER MODELS

Remington Rand
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REMINGTON PORTABLE TYPEWRITERS

MODELS AN-QR-ER

FOREWORD

Currently there are three Portables being manufactured. The machine serial number indicates each different machine. The serial number is located on the inside of the Left Side Frame, directly under the Top Cover.

If the serial number is prefixed by the letters "AN", the machine will have a 10" Carriage and without Tabulation.

Machines with serial numbers prefixed with the letters "QR" are called "Quiet-riters" and are equipped with a 10" Carriage and Tabulation.

Machines with Serial Numbers prefixed with the letters "ER" are called "Office-riters" and are equipped with an 11" Carriage and Tabulation.

This Book will aid in ordering new parts but is intended as a Mechanical Instruction Book only, to be used by Service Techanicians. NOTE: Carrying Cases are not standard equipment for "Office-riters" and must be ordered special.

This Instruction Book is intended primarily for mechanics, but it can be studied to very good advantage by salesmen. This book is not an operator's Instruction Book and should not be given or sold to customers as an Operators Instruction Book.

The Illustrations contained in this book should be studied in connection with the reading material and will be of great assistance in learning the functions and adjustments of the various mechanical units. Circled numbers of Illustrations correspond to numbers in Parenthesis that are used in the written text. For those in the Foreign Field who do not read English, a careful study of the drawings will give helpful fundamental information.

Study one unit thoroughly before going on to another.

To obtain the best results, learn the adjustments pertaining to a unit from the book and then make them on the machine.

Parts pertaining to the 11" Carriage are not shown on the Illustration Plates, but are listed under their respective Parts List.

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REMINGTON PORTABLE TYPEWRITER

MODELS AN-ER-QR

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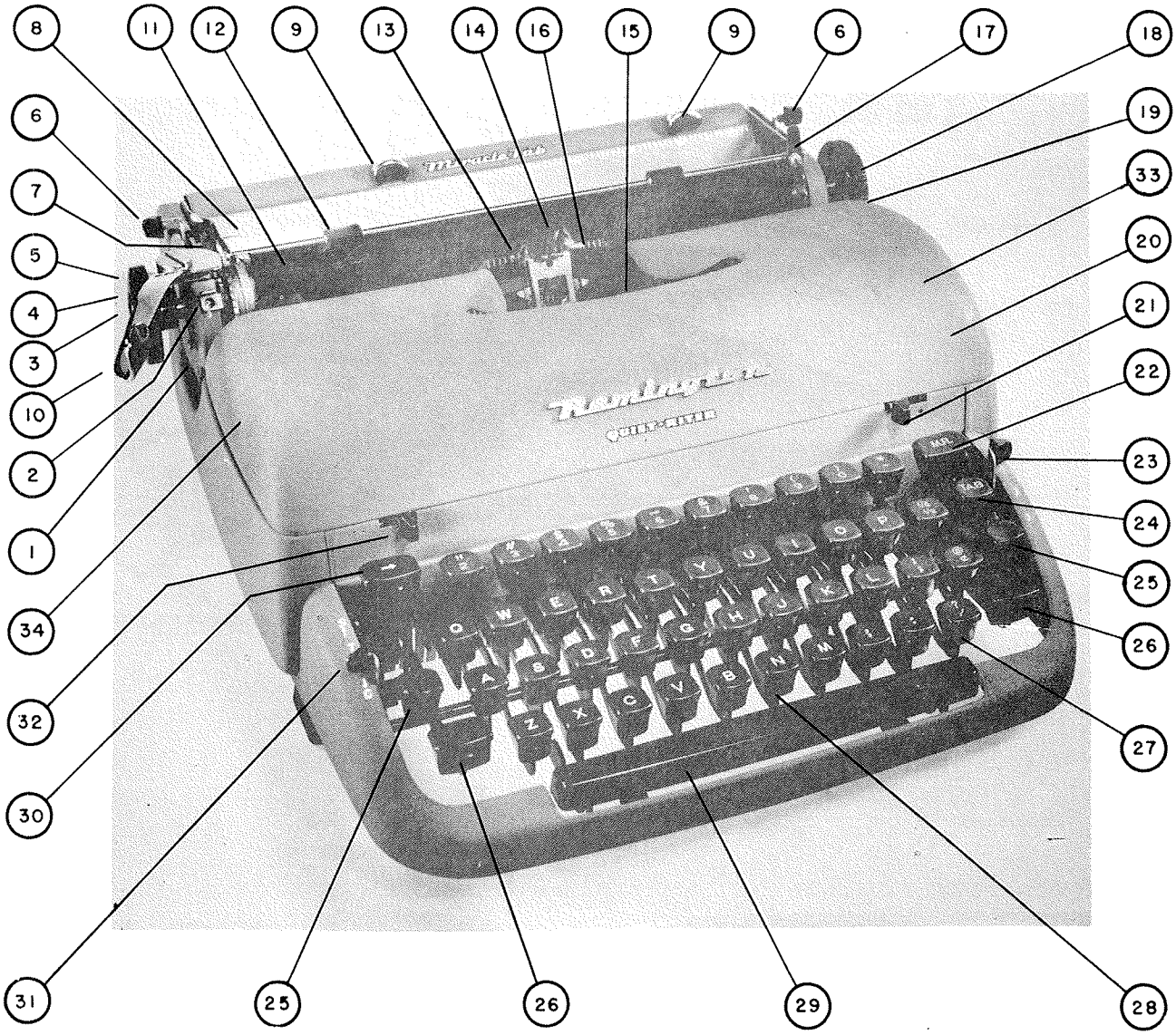


these features contribute to better typing on our new remington office-riter

1 11-inch carriage with full 10-3/10-inch writing line.

2 Single, double and triple line space selector.

3 Variable line spacer.

4 Ratchet detent or release lever.

5 Cylinder knobs (right and left).

6 Carriage release (right and left).

7 Adjustable paper side guide.

8 Paper table with paper scale.

9 Visible margins, set directly from front of machine.

10 Long convenient line space and carriage return lever.

11 Large size cylinder provides greater paper gripping facility and better printwork.

12 Three-position paper bail smoothes out the paper, quieting your typing and insuring good registration.

13 Patented simplified ribbon changer.

14 Permanent finger for handling cards and

15 Featherlight locked segment shift for faster, positive shifting to capital letters and upper case characters.

16 Synchronized scales for margin setting, centering paper and locating writing line.

17 Paper bail lever (right and left).

18 Paper release lever.

19 Carriage centering lever.

20 Single stroke automatic ribbon reverse (reverses instantly).

21 Positive two-color ribbon and stencil control mechanism.

22 Margin release permits typing beyond right or left margin stops.

23 Personal touch regulator permits adjustments of key action to personal preference.

24 Tabulator key.

25 Shift lock (right and left).

26 Shift key (right and left).

27 Exclusive scientifically designed finger-speed keys developed especially for your finger comfort.

28 Standard 4-row, 42 key, 84 character keyboard with standard operating controls.

29 Standard space bar.

31 Exclusive Miracle Tab. Sets and clears tabulator stops right from the keyboard with one lever operation.

32 Auxiliary manual ribbon reverse.

33 Full 12 yard ribbon.

34 Hinged top cover for easy access to ribbon spools and routine type cleaning.

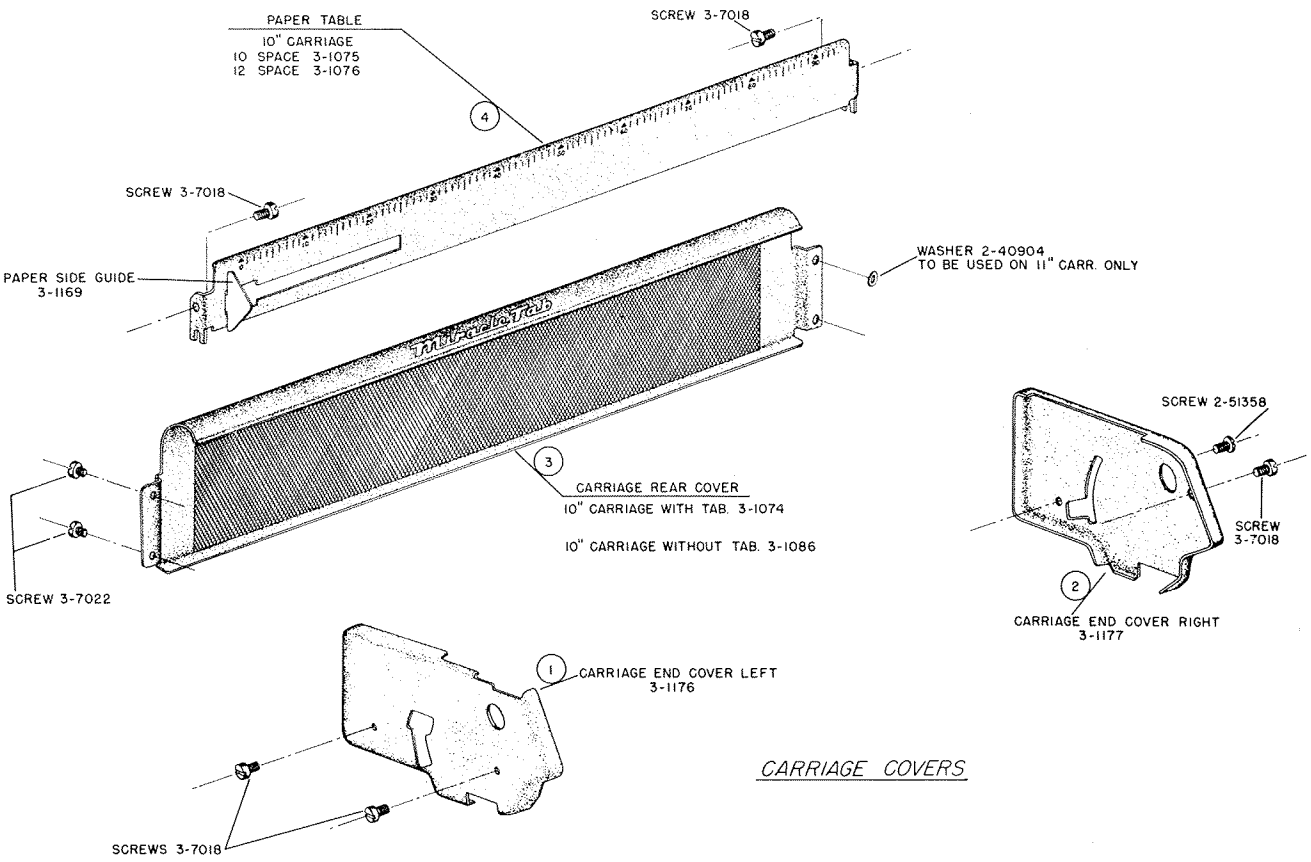
GENERAL CARE—Reasonable care will insure years of satisfactory performance from your typewriter. A typewriter's principal enemy is dust. Keep typewriter covered when not in use. Clean the typefaces occasionally with a brush to remove accumulated lint and ink.

Do not clean your typewriter's surface with alcohol as it is injurious to the finish.

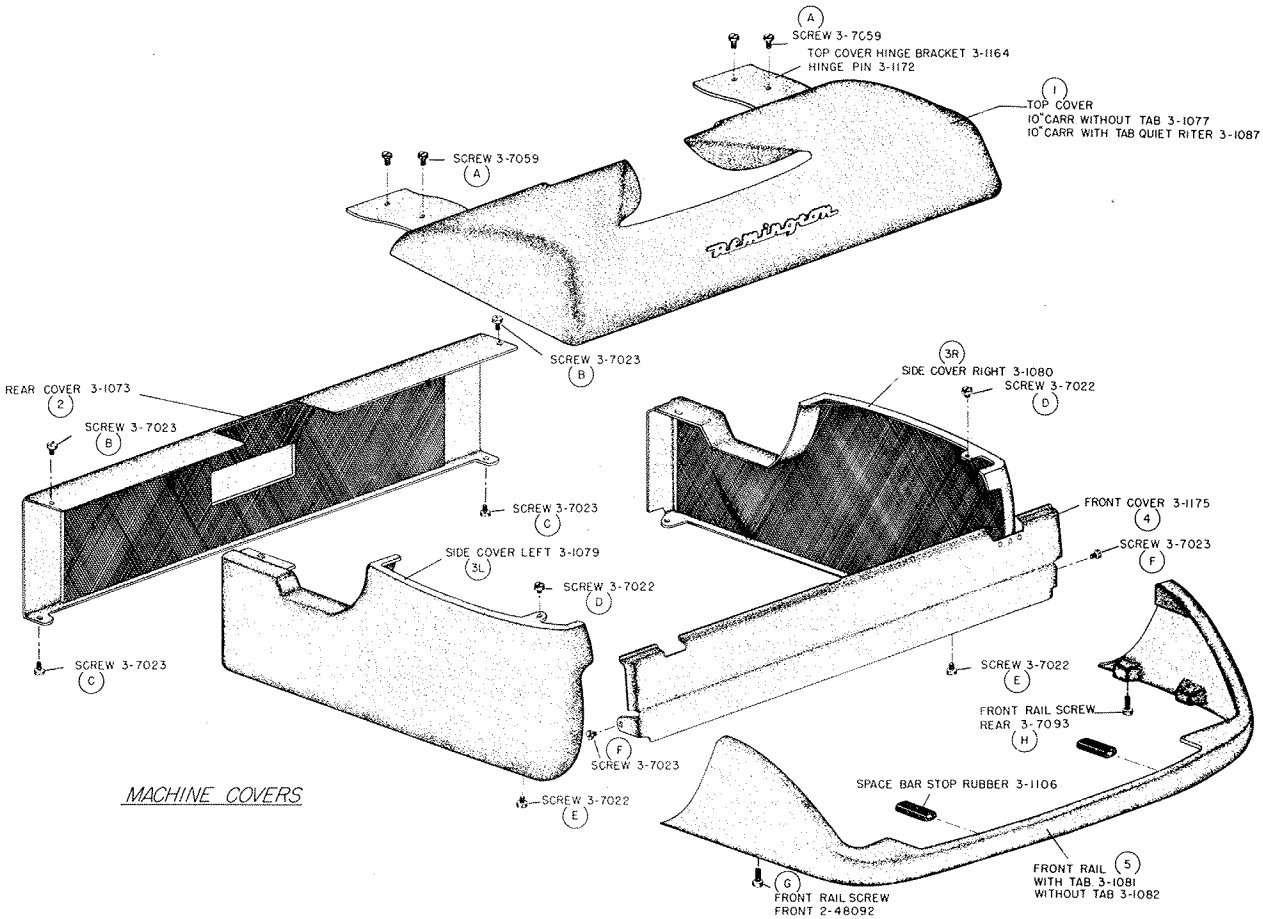
Once in a while you may put a drop of oil on each of the two rails on which the carriage moves and then rub it off again. Never attempt to oil the typebars or any other part of the mechanism as this may have a tendency to gum and clog the working parts.

Your Office-riter was carefully inspected at the factory. If it ever does need adjustment or repair, take it to the nearest Remington Rand Typewriter Service Station or to an authorized Remington Rand dealer where trained servicemen will give it expert attention.

Take good care of your Remington Office-riter and it will repay you with many



CARRIAGE COVERS



MACHINE COVERS

MACHINE COVER (PANELS)

The Machine Covers (refer to Machine Cover Illustration) are removed as follows:

Top Cover 3-1087 (1): The Top Cover (1) together with Hinge Brackets 3-1164, is removed simply by removing the Hinge Bracket Mounting Screws 3-7059 (A).

Rear Cover 3-1073 (2): The Rear Cover (2) is mounted with four screws, one on top of each end, and one on the bottom of each end, of the Rear Cover (2). NOTE: If the Upper Screws interfere with the Carriage, subsitute Screw 3-7059. To remove the Rear Cover (2), simply remove the Mounting Screws Upper and Lower 3-7023 (B & C) from each end of the Rear Cover.

Side Covers Left 3-1079 (3-L) and Right 3-1080 (3-R): In order to remove the Side Covers, Left (3-L) or Right (3-R) it is necessary to first remove the Rear Cover (2). Remove the Upper Mounting Screw 3-7022 (D) and Lower Mounting Screw 3-7022 (E) from each Side Cover.

Front Cover 3-1175 (4): To remove the Front Cover (4) it is first necessary to remove the Rear Cover (2) and the Side Covers Left (3-L) and Right (3-R). Remove the Plastic Finger Pads of the Manual Ribbon Reverse Lever and Ribbon Control Lever. Remove the Front Cover Mounting Screws 3-7023 (F) and remove the Front Cover (4).

Front Rail 3-1081 (5): To remove the Front Rail, simply remove its four Mounting Screws located on the under side of the Front Rail (5). Note that the Front Rail Mounting Screw Front 2-48092 (G) and Front Rail Mounting Screw Rear 3-7093 (H) are of different length as the Rear Mounting Screw (H) is also used for Mounting the Front Foot Pad Assembly and must be longer.

CARRIAGE COVERS (PANELS)

Remove the Carriage Covers as follows: (Refer to Carriage Cover Illustration)

CARRIAGE END COVER, LEFT 3-1176 (1): Remove the Left Platen Knob by holding the Platen rigidly and turning the Left Platen Knob towards the rear. Remove the Carriage End Cover Screws 3-7018 and remove the Left Carriage End Cover (1).

CARRIAGE END COVER RIGHT 3-1177 (2): Remove the Right Platen Knob by loosening its Set Screw. Remove the Right End Cover Mounting Screw Front 3-7018 and Rear 2-51358, remove the Right Carriage End Cover (2).

CARRIAGE REAR COVER 3-1074 (3): (Remove Carriage End Covers Right (1) and Left (2).) Remove the Carriage Rear Cover Mounting Screws 3-7022 and remove the Carriage Rear Cover (3).

PAPER TABLE 3-1075 (4): Remove one Mounting Screw 3-7018 from each end of the Paper Table (4) and lift the Paper Table (4) from the Carriage Ends.

NOTE: The purpose of the Washer 2-40904 between the Carriage Rear Cover (3) and Carriage Ends is to permit Clearance for the operation of the Margin Stop. It will not be found on all Machines.

CARRIAGE COVER (PANELS) (CONT'D)

The rear Screw 2-51358 of the Carriage End Cover Right (2) has a flat head to prevent the operator from catching it when operating the Feed Roll Release Lever.

PARTS LIST FOR MACHINE COVERS AND CARRIAGE COVERS

3-1073	1 Req.	Rear Cover
3-1074	1 Req.	Carriage Rear Cover, 10" Carriage With Tab.
3-1075	1 Req.	Paper Table, 10 Space, 10" Carriage
3-1076	1 Req.	Paper Table, 12 Space, 10" Carriage
3-1077	1 Req.	Top Cover, 10" Carr., without Tab. (without Hinge Bracket)
3-1079	1 Req.	Side Cover, Left
3-1080	1 Req.	Side Cover, Right
3-1081	1 Req.	Front Rail, with Tabulation
3-1082	1 Req.	Front Rail, without Tabulation
3-1083	1 Req.	Carriage Rear Cover, 11" Carr., with Tabulation
3-1084	1 Req.	Paper Table, 10 Space, 11" Carriage
3-1085	1 Req.	Paper Table, 12 Space, 11" Carriage
3-1086	1 Req.	Carriage Rear Cover, 10" Carriage, without Tabulation
3-1087	1 Req.	Top Cover, 10" Carriage, with Tabulation
3-1088	1 Req.	Top Cover, 11" Carriage, with Tabulation
3-1106	2 Req.	Space Bar Stop (Rubber)
3-1164	2 Req.	Top Cover Hinge
3-1172	2 Req.	Top Cover Hinge Pin
3-1175	1 Req.	Front Cover
3-1176	1 Req.	Carriage End Cover, Left
3-1177	1 Req.	Carriage End Cover, Right
3-7018	2 Req.	Screw (Carriage End Cover, Left) 3-56 thread
3-7018	2 Req.	Screw (Paper Table Mounting) 3-56 thread
3-7018	1 Req.	Screw (Carriage End Cover, Right, Front) 3-56 thread
3-7022	4 Req.	Screw (Side Cover, Upper and Lower, Front) 5-40 thread
3-7022	4 Req.	Screw (Carriage Rear Cover Mounting) 5-40 thread
3-7023	2 Req.	Screw (Front Cover) 5-40 thread
3-7023	4 Req.	Screw (Rear Cover) 5-40 thread
3-7059	4 Req.	Screw (Top Cover Hinge Mounting) 5-40 thread
3-7093	2 Req.	Screw (Front Rail, Rear Mounting) 8-36 thread
2-40904	Var	Washer (Carriage Rear Cover)
2-48092	2 Req.	Screw (Front Rail, Front Mounting) 8-36 thread
2-51358	1 Req.	Screw (Carriage End Cover, Right, Rear Mounting) 3-56 thread

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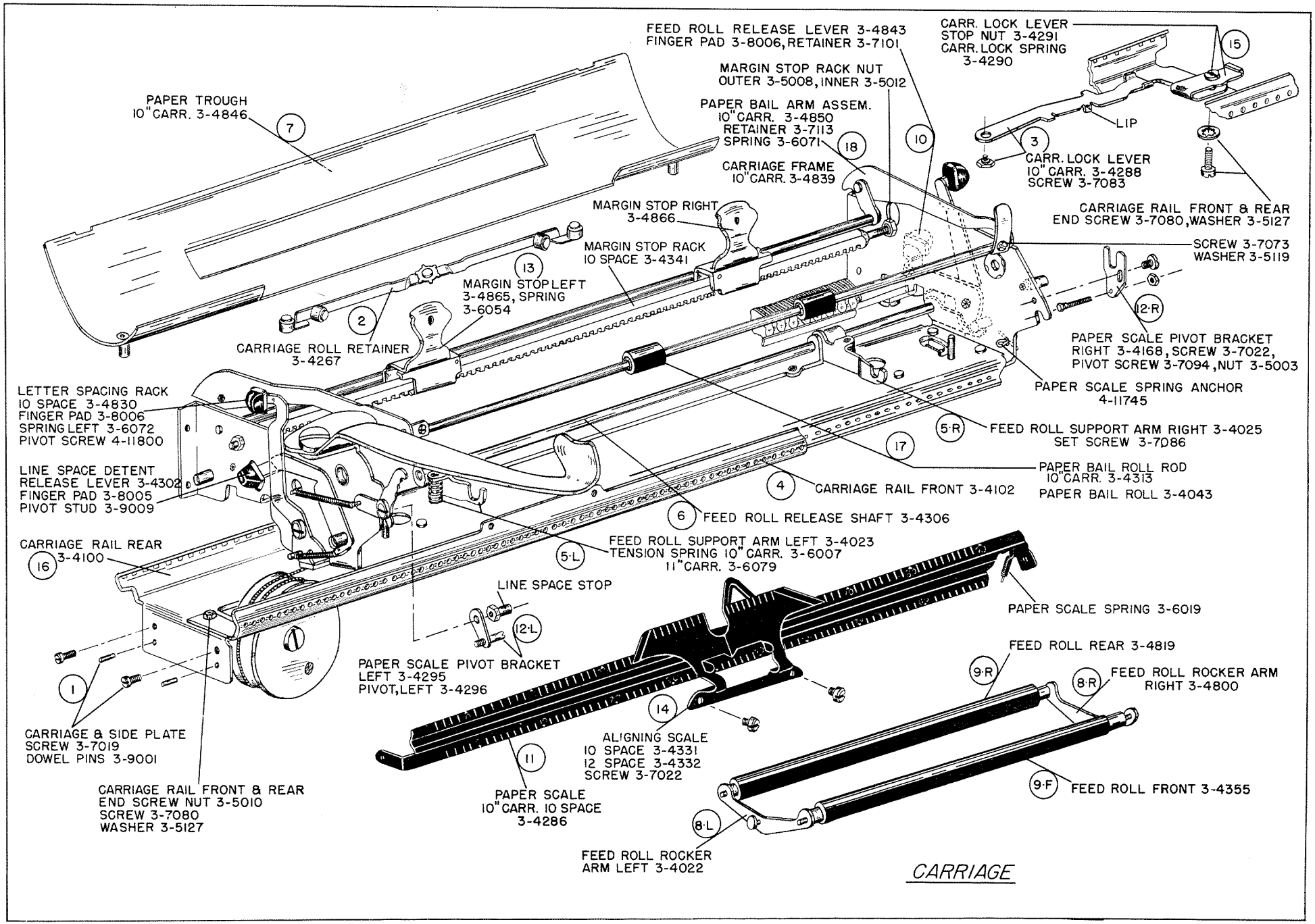
FEED ROLL RELEASE LEVER 3-4843
FINGER PAD 3-8006, RETAINER 3-7101
CARR. LOCK LEVER STOP NUT 3-4291
CARR. LOCK SPRING 3-4290
MARGIN STOP RACK NUT OUTER 3-5008, INNER 3-5012
PAPER TROUGH 10" CARR. 3-4846
PAPER BAIL ARM ASSEM. 10" CARR. 3-4850
RETAINER 3-7113
SPRING 3-6071
CARRIAGE FRAME 10" CARR. 3-4839
LIP
CARR. LOCK LEVER 10" CARR. 3-4288
SCREW 3-7083
CARRIAGE RAIL FRONT & REAR END SCREW 3-7080, WASHER 3-5127
MARGIN STOP RIGHT 3-4866
MARGIN STOP RACK 10 SPACE 3-4341
SCREW 3-7073
WASHER 3-5119
MARGIN STOP LEFT 3-4865, SPRING 3-6054
CARRIAGE ROLL RETAINER 3-4267
PAPER SCALE PIVOT BRACKET RIGHT 3-4168, SCREW 3-7022, PIVOT SCREW 3-7094, NUT 3-5003
PAPER SCALE SPRING ANCHOR 4-11745
LETTER SPACING RACK 10 SPACE 3-4830
FINGER PAD 3-8006
SPRING LEFT 3-6072
PIVOT SCREW 4-11800
FEED ROLL SUPPORT ARM RIGHT 3-4025
SET SCREW 3-7086
LINE SPACE DETENT RELEASE LEVER 3-4302
FINGER PAD 3-8005
PIVOT STUD 3-9009
PAPER BAIL ROLL ROD 10" CARR. 3-4313
PAPER BAIL ROLL 3-4043
CARRIAGE RAIL FRONT 3-4102
FEED ROLL RELEASE SHAFT 3-4306
CARRIAGE RAIL REAR 3-4100
FEED ROLL SUPPORT ARM LEFT 3-4023
TENSION SPRING 10" CARR. 3-6007
11" CARR. 3-6079
LINE SPACE STOP
PAPER SCALE SPRING 3-6019
FEED ROLL REAR 3-4819
FEED ROLL ROCKER ARM RIGHT 3-4800
PAPER SCALE PIVOT BRACKET LEFT 3-4295
PIVOT, LEFT 3-4296
CARRIAGE & SIDE PLATE SCREW 3-7019
DOWEL PINS 3-9001
ALIGNING SCALE 10 SPACE 3-4331
12 SPACE 3-4332
SCREW 3-7022
FEED ROLL FRONT 3-4355
CARRIAGE RAIL FRONT & REAR END SCREW NUT 3-5010
SCREW 3-7080
WASHER 3-5127
PAPER SCALE 10" CARR. 10 SPACE 3-4286
FEED ROLL ROCKER ARM LEFT 3-4022

CARRIAGE

PAPER FEED

Before adjusting Paper Feed, make certain the Platen and Line Space Mechanisms are properly adjusted. (See Platen and Line Space Mechanism).

The Paper Trough 3-4846 (7) is mounted over a Stud on each end of the Carriage Frame and makes use of the Paper Table for a rear limit or rest. There are no Springs on the Mounting Studs as on the "All New" Portable. The Paper Trough must be force on its Mounting Studs. Check with the Feed Rolls released.

The Feed Roll Support Arm Tension Springs (used at 5-L and 5-R) are not the same for the 10" and the 11" Carriages. The 11" Carriage Feed Roll Support Arm Tension Spring 3-6079 is heavier than the 10" Carriage Feed Roll Support Arm Tension Spring 3-6007.

The Feed Roll Support Arms, Left (5-L) and Right (5-R) are used for three purposes, namely: To mount the Feed Roll Rocker Arms, Left 3-4022 (8-L) and Right 3-4800 (8-R), to locate and hold the Feed Roll Release Shaft 3-4306 (6), and apply tension to the Feed Rolls, Front 3-4355 (9-F) and rear 3-4819 (9-R). NOTE: The Front Feed Roll (9-F) now has a longer Shaft. This prevents the Front Feed Roll (9-F) from dropping out of the Feed Roll Rocker Arms, Left (8-L) and Right (8-R) when the Feed Rolls are in a released position.

The Feed Roll Support Arms, Left (5-L) and Right (5-R) must be positioned so that the Feed Roll Release Shaft (6) has a minimum of side play but free to pivot. The Detent Arm at the right end of the Feed Roll Release Shaft (6) must clear the Pivot Stud and Retaining Rings "Keeper" of the Carriage Release Lever Right.

The Feed Roll Tension should be uniform at each end and the center. This Tension is controlled by the Feed Roll Support Arms, Left (5-L) and Right (5-R) through their Set Screws 3-7086. To adjust the tension proceed as follows: Hold the Arm that is at the Right End of the Feed Roll Release Shaft (6), against the Roller of the Feed Roll Release Lever 3-4843 (10). Loosen the Set Screw and turn the Feed Roll Support Arm, right (5-R) and left (5-L) for proper tension of the Feed Rolls. MAKE CERTAIN THE SET SCREWS ARE TIGHT TO HOLD PROPER FEED ROLL TENSION. NOTE: Make certain the adjustment of the preceding paragraph is still correct after the Feed Roll Tension has been adjusted.

Check to see that the Feed Rolls clear at least five sheets of paper when the Feed Roll Release Lever (10) is in a "released" (Lever forward - Roller of Lever rearward) position.

PAPER BAIL

The Paper Bail Rolls 3-4043 (17) must be free to spin on the Bail Roll Rod 3-4313 (17) but should have friction when moved from side to side. This friction is controlled by the Paper Bail Roll Friction Sleeve 3-6005 inside the bearing hole of the Bail Roll. Both Rolls (17) should contact the Platen with approximately the same pressure and this is adjusted by twisting slightly on the Bail Arms. Uneven pressure or sticking Bail Rolls can cause faulty paper feed.

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PAPER BAIL (CONT'D)

To remove a Bail Roll, remove Mounting Screw 3-7073 and Washer 3-5119 from the end of Bail Roll Rod (17) and slide the Bail Rolls from the Bail Roll Rod.

To remove the Bail Assembly Complete: Remove the Retainer (Keeper) 3-7113 from the right end of the Paper Bail Pivot Shaft of the Paper Bail Arm 3-4850 (18). Remove the Paper Bail Spring 3-6071 (18) located at the rear of the Right Bail Arm (18). Move the Bail Pivot Shaft to the left, far enough to permit the right end of the Shaft to leave the right Carriage End. After the right end of the Shaft is free of the Right Carriage End, move the Shaft and complete Bail Assembly to the right and out of the Carriage.

PAPER SCALE

The Paper Scale 3-4286 (11) should be located so that the top of the Paper Scale (11) is two Vertical Lines below the writing line. The height of the Paper Scale is adjusted by positioning the Paper Scale Pivot Brackets, Left 3-4295 (12-L) and Right 3-4168 (12-R) through their Mounting Screws.

The Paper Scale (11) is positioned to the right or left, through the Right Paper Scale Pivot Screw 3-7094 and held in place with its Lock Nut 3-5003 (located at 12-R).

To test for the correct location of the Paper Scale (11) type a line of "i's" across the paper. Turn Platen backward two spaces. The bottom of the printed "i's" should now be even with the Top of the Front Scale (11) without any space showing between the Front Scale and the Bottom of Printed "i's". Position the Paper Scale Pivot Brackets, Left (12-L) and Right (12-L) and Right (12-R) through their Mounting Screws.

Now position the Left Margin Stop 3-4865 (13) at zero. Move the Carriage to the left Margin Stop Position and print a letter "i". Turn the Platen, backwards two spaces. The Vertical Line of the printed "i" should now align with the "Zero" line of the Front Scale (11). If not, position the Front Scale to the right or left, through the Right Paper Scale Pivot Screw and Lock Nut, located at (12-R).

ALIGNING SCALE

There are two types of Aligning Scales 3-4331 (14) used on this Machine. A one piece Aligning Scale and a Two Piece Aligning Scale. The One Piece Aligning Scale (14) is adjusted entirely by forming while the Two Piece Scale is adjusted through the Aligning Scale Screws. The Two Piece Aligning Scale is listed in the "Parts List as Old Style".

The Aligning Scale (14) is correctly located laterally when the Vertical Lines of the Aligning Scale (14), align with the Vertical Line of Letter (i). With line of printed "i's" (platen must not be turned after the line of "i's" is printed, until the Aligning Scale (14) is adjusted).

The Aligning Scale (14) must be level and there should be a thin clearance between the top of the Aligning Scale and the bottom of the line of printed "i's". The Aligning Scale (14) should clear the Platen just enough to permit clearance of two sheets of paper, without drag.

CARRIAGE LOCK

The Carriage Lock (3) is a device for centering the Carriage so that the Carrying Case can be closed without damage to the Carriage. The Carriage Lock Spring 3-4290 (15) must be formed for proper hold on the Carriage Lock (3). This Spring (15) must not limit against the Carriage or it will cause the Carriage to bind and letters to "pile". The lip of the Carriage Lock (3) can be filed as illustrated by the dotted lines of the Illustration for a safer Carriage Lock.

NOTE: Carriage Lock as described in above paragraph will not be installed on ER Models. (Office-riter)

PARTS LIST OF THE CARRIAGE

3-4022	1 Req.	Feed Roll Rocker Arm Left
3-4023	1 Req.	Feed Roll Support Arm Left
3-4025	1 Req.	Feed Roll Support Arm, Right
3-4043	2 Req.	Paper Bail Roll
3-4096	1 Req.	Tabulator Stop Rack Complete, 10 Space, 10" Carr.
3-4097	1 Req.	Tabulator Stop Rack Complete, 12 Space, 10" Carr.
3-4100	1 Req.	Carriage Rail, Rear
3-4102	1 Req.	Carriage Rail, Front
3-4168	1 Req.	Paper Scale Pivot Bracket, Right
3-4169	1 Req.	Line Space Stop
3-4267	2 Req.	Carriage Roll Retainer
3-4286	1 Req.	Paper Scale 10 Space
3-4287	1 Req.	Paper Scale 12 Space
3-4288	1 Req.	Carriage Lock Lever 10" Carriage
3-4289	1 Req.	Carriage Lock Lever 11" Carriage
3-4290	1 Req.	Spring (Carriage Lock)
3-4291	1 Req.	Nut (Carriage Lock Lever Stop)
3-4295	1 Req.	Paper Scale Pivot Bracket, Left
3-4296	1 Req.	Screw (Paper Scale Pivot, Left)
3-4302	1 Req.	Line Space Detent Release Lever.
3-4306	1 Req.	Feed Roll Release Shaft 10" Carriage
3-4307	1 Req.	Feed Roll Release Shaft 11" Carriage
3-4313	1 Req.	Paper Bail Roll Rod 10" Carriage
3-4314	1 Req.	Paper Bail Roll Rod 11" Carriage
3-4317	1 Req.	Paper Scale, 10 Space, 11" Carriage
3-4318	1 Req.	Paper Scale, 12 Space, 11" Carriage
3-4331	1 Req.	Aligning Scale, 10 Space
3-4332	1 Req.	Aligning Scale, 12 Space
3-4341	1 Req.	Margin Stop Rack, 10 Space, 10" Carriage
3-4342	1 Req.	Margin Stop Rack, 10 Space, 11" Carriage
3-4343	1 Req.	Margin Stop Rack, 12 Space, 10" Carriage
3-4344	1 Req.	Margin Stop Rack, 12 Space, 11" Carriage
3-4355	1 Req.	Feed Roll, Front
3-4800	1 Req.	Feed Roll Rocker Arm, Right

PARTS LIST OF THE CARRIAGE (CONT'D)

3-4819	1 Req.	Feed Roll Rear
3-4830	1 Req.	Letter Spacing Rack 10 Space, 10" Carriage
3-4831	1 Req.	Letter Spacing Rack 12 Space, 10" Carriage
3-4832	1 Req.	Letter Spacing Rack 10 Space, 11" Carriage
3-4833	1 Req.	Letter Spacing Rack 12 Space, 11" Carriage
3-4839	1 Req.	Carriage Frame 10" Carriage
3-4840	1 Req.	Carriage Frame 11" Carriage
3-4843	1 Req.	Feed Roll Release Lever
3-4846	1 Req.	Paper Trough 10" Carriage
3-4847	1 Req.	Paper Trough 11" Carriage
3-4850	1 Req.	Paper Bail Arm, 10" Carriage
3-4851	1 Req.	Paper Bail Arm, 11" Carriage
3-4863	1 Req.	Tabulator Stop Rack Complete, 10 Space 11" Carriage
3-4864	1 Req.	Tabulator Stop Rack Complete, 12 Space 11" Carriage
3-4865	1 Req.	Margin Stop Left, 10 and 12 Space
3-4866	1 Req.	Margin Stop Right, 10 and 12 Space
3-5003	1 Req.	Nut (Paper Scale Pivot, Right)
3-5008	2 Req.	Nut (Margin Stop Rack, Outer)
3-5010	1 Req.	Nut (Carriage Rail Front and Rear, End Screw)
3-5012	2 Req.	Nut (Margin Stop Rack, Inner)
3-5127	4 Req.	Lock Washer (Carriage Rail, Front & Rear, End & Center Screw)
3-6005	2 Req.	Friction Sleeve. (Bail Roll)
3-6007	2 Req.	Spring (Feed Roll Support Arm Tension)
3-6019	1 Req.	Spring (Paper Scale)
3-6054	2 Req.	Spring (Margin Stop)
3-6071	1 Req.	Spring (Paper Bail)
3-6072	1 Req.	Spring (Carriage Release Lever, Left)
3-6079	2 Req.	Spring (Feed Roll Support Arm Tension)
3-7019	4 Req.	Screw (Carriage & Side Plate)
3-7022	1 Req.	Screw (Paper Scale Pivot Bracket)
3-7022	2 Req.	Screw (Aligning Scale - Old Style)
3-7022	2 Req.	Screw (Aligning Scale - Bracket)
3-7079	2 Req.	Screw (Carriage Rail, Front & Rear, Center)
3-7080	2 Req.	Screw (Carriage Rail, Front & Rear, End)
3-7083	1 Req.	Screw (Carriage Lock Lever)
3-7086	2 Req.	Screw (Feed Roll Support Arm)
3-7094	1 Req.	Screw (Paper Scale Pivot, Right)
3-7101	1 Req.	Retaining Ring-Keeper (Carriage Release Lever, Right)
3-7101	1 Req.	Retaining Ring-Keeper (Feed Roll Release Lever)
3-7113	1 Req.	Retaining Ring-Keeper (Paper Bail Control Lever Shaft)
3-8005	1 Req.	Finger Pad (Line Space Detent Release Lever)
3-8006	2 Req.	Finger Pad (Carriage Release Lever)
3-8006	1 Req.	Finger Pad (Feed Roll Release Lever)
3-9001	4 Req.	Dowel (Carriage & Side Frame)
3-9009	4 Req.	Stud (Carriage End Cover)
2-55465	4 Req.	Lock Washer (Paper Bail Roll Rod Screw)
4-11745	1 Req.	Cotter Key (Paper Scale Spring Anchor)
4-11800	1 Req.	Screw (Carriage Release Lever, Left)

NOTE: See Platen and Line Space Parts List and Tabulator Mechanism Parts List for other Carriage Parts.

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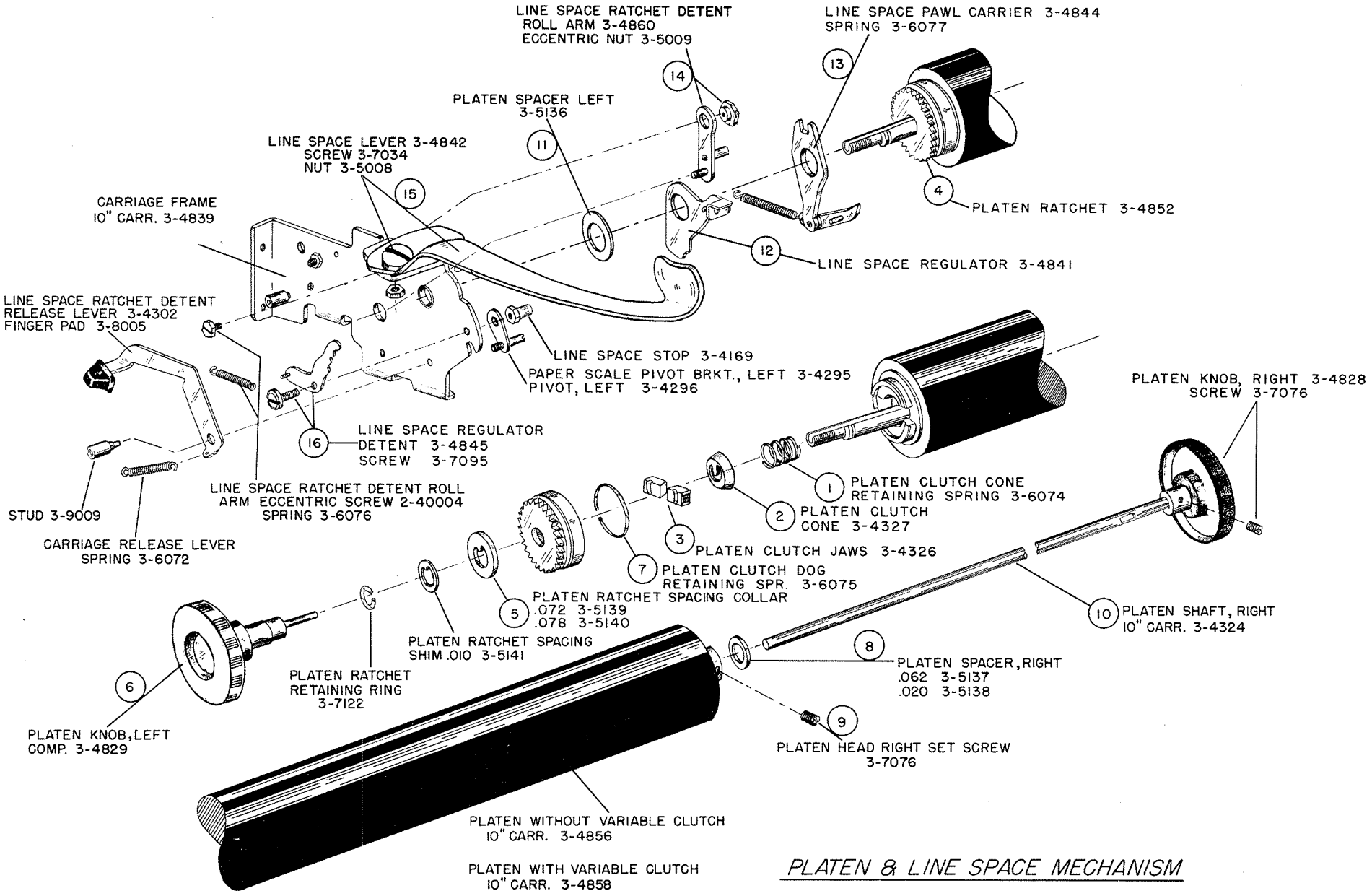

PLATEN & LINE SPACE MECHANISM

The Variable Mechanism is not adjustable and depends upon the freeness of, and the correct assembly of its parts.

Study the Illustration and notice how this Mechanism operates. There is a Platen Clutch Cone Retaining Spring 3-6074 (1) that is pushing to the left against the Platen Clutch Cone 3-4327 (2). This Cone (2) is now under pressure against the Platen Clutch Jaws 3-4326 (3) holding the serrations (teeth) of these jaws into mesh with serrations on the inside of the Platen Ratchet 3-4852 (4). To the left of the Platen Ratchet you see Platen Ratchet Spacing Collars (5) and a Platen Ratchet Retaining Ring 3-7122. NOTE: The Platen Ratchet Spacing Collars will come in three thickness .072 regular 3-5139, .078 oversize 3-5140 (this will have a prick punch mark at the tongue of the washer,) and a Platen Ratchet Spacing Collar Shim 3-5141, .010. Some machines will only have the one Collar (5) while others will have the Collar and the Shim. Early machines had just plain Washers or bronze space Washers at this Point.

When the Plunger or "button" on the Left Platen Knob 3-4829 (6) is pushed in, the Variable Clutch Mechanism is released and the Platen can be turned without the Platen Ratchet (4) turning. All that actually happens is: The Platen Clutch Cone (2) compresses the Platen Clutch Cone Retaining Spring (1) releasing the pressure from the Platen Clutch Jaws (3). These Jaws (3) are now pulled out of mesh from the serrations (teeth) of the inside hub of the Platen Ratchet (4) by means of the Clutch Dog Retaining Spring 3-6075 (7) and the Platen is free to turn inside the Platen Ratchet (4).

PLATEN

The Platen for the 10 inch Carriage is the same as the one used on the 11 inch Carriage except for length. 10 inch Platens are not interchangeable with the "All New" Portable due to the changes in the Variable Head.

The Platen should be free to spin but without play, when the Feed Rolls and Platen Detent are in a released Position. End Play of the Platen is removed by assembling Platen Spacer Right (8) between the Right Platen End, and the Right Carriage End. These Spacers (8) come in different sizes .062" Thick 3-5137 and .020" Thin 3-5138.

The Platen Head Right, Set Screw 3-7076 (9) at the right end of the Platen must set on the flat of the Platen Shaft, right 3-4324 (10).

To remove the Platen proceed as follows: Remove the Left Platen Knob (6) by holding the Platen securely and turning the Knob towards the rear of the machine. Check to see if there are any spacers (8) at the right end of the Platen next to the frame, if so, be careful not to loose them. Loosen the right Platen Head Set Screw (9) and pull the Platen Shaft, (10) towards the right and out of the Carriage. Raise the Paper Bail up out of the way. Remove the Platen to the right and up.

LINE SPACE MECHANISM

After the Platen has been properly adjusted we are ready to adjust the Line Space Mechanism. Notice the assembly of the Line Space Mechanism Parts at the left end of the Platen. There is a Platen Spacer Left 3-5136 (11) (.032" thick) between the Left Carriage End and the Line Space Regulator 3-4841 (12). The Line Space Pawl Carrier Assembly 3-4844 (13) is to the right of the Regulator (12) and next to the Platen Ratchet (4).

You will also notice that these machines are equipped with the one, two and three space line spacing. The "All New" Portable had only one and two space line spacing. The Standard Platen Ratchet (4) has 28 teeth.

It is extremely important that the play of the Line Space Lever (15) on its Pivot Screw 3-7034 be held to a very minimum and the Line Space Lever (15) be free.

To test for proper line space adjustment, hold the Line Space Lever 3-4842 (15) to the extreme right. At this point the Platen should be locked and the roller of the Line Space Ratchet Detent Roll Arm 3-4860 (14) should be seated centrally between two teeth of the Platen Ratchet (4). Release the Line Space Lever (15) and check to see that the Platen does not "creep" or roll forward or rearward. Adjust through the Line Space Detent Roll Arm Adjusting Eccentric Nut 3-5099 (4).

SPECIAL LINE SPACE MECHANISM

In the event one, one and a half, and two space Line Spacing is required, it is only necessary to change the following Parts: Carriage End Cover, Left, Line Space Regulator (12), Line Space Regulator Detent (16), Platen Ratchet (4), and Line Space Ratchet Detent Roll Arm (14). For the special part numbers of those parts, see the parts list. Adjust as for Standard Line Space Mechanism.

PARTS LIST FOR PLATEN AND LINE SPACE MECHANISM

3-4169	1 Req.	Line Space Stop
3-4295	1 Req.	Paper Scale Pivot Bracket, Left
3-4296	1 Req.	Paper Scale Pivot, Left
3-4302	1 Req.	Line Space Detent Release Lever
3-4324	1 Req.	Platen Shaft, Right, 10" Carriage
3-4325	1 Req.	Platen Shaft, Right, 11" Carriage
3-4326	2 Req.	Platen Clutch Jaws
3-4327	1 Req.	Platen Clutch, Cone
3-4828	1 Req.	Platen Knob, Right
3-4829	1 Req.	Platen Knob, Left, Complete (with Variable Plunger)
3-4839	1 Req.	Carriage Frame, 10" Carriage
3-4840	1 Req.	Carriage Frame, 11" Carriage
3-4841	1 Req.	Line Space Regulator
3-4842	1 Req.	Line Space Lever
3-4844	1 Req.	Line Space Pawl Carrier

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3-4845	1 Req.	Line Space Regulator Detent
3-4852	1 Req.	Line Space Ratchet, Standard 28 Tooth
3-4856	1 Req.	Platen, 10" Carriage (without Variable Mechanism)
3-4857	1 Req.	Platen, 11" Carriage (without Variable Mechanism)
3-4858	1 Req.	Platen, Complete, 10" Carriage (with Variable Mechanism)
3-4859	1 Req.	Platen, Complete, 11" Carriage (with Variable Mechanism)
3-4860	1 Req.	Line Space Ratchet Detent Roll Arm.
3-5008	1 Req.	Nut (Line Space Lever Screw)
3-5009	1 Req.	Eccentric Nut (Line Space Ratchet Detent)
3-5136	1 Req.	Platen Spacer, Left (.032")
3-5137	As Req.	Platen Space, Right, Thick, (.062")
3-5138	As Req.	Platen Space, Right, Thin, (.020")
3-5139	As Req.	Platen Ratchet Spacing Collar (.072")
3-5140	As Req.	Platen Ratchet Spacing Collar, Oversize (.078")
3-5141	As Req.	Platen Ratchet Spacing Collar Shim (.010")
3-6072	1 Req.	Spring (Carriage Release Lever, Left)
3-6074	1 Req.	Spring (Platen Clutch Cone Retaining)
3-6075	1 Req.	Spring (Platen Clutch Dog Retaining)
3-6076	1 Req.	Spring (Line Space Ratchet Detent Roll Arm)
3-6077	1 Req.	Spring (Line Space Pawl)
3-7034	1 Req.	Screw (Line Space Lever)
3-7076	1 Req.	Screw (Platen Knob, Right)
3-7076	1 Req.	Screw (Platen Head, Right)
3-7095	1 Req.	Screw (Line Space Regulator Detent)
3-7122	1 Req.	Retaining Ring (Platen Ratchet)
3-8005	1 Req.	Finger Pad (Line Space Ratchet Detent Roll Arm Release Lever
3-9009	4 Req.	Stud (Carriage End Cover)
2-40004	1 Req.	Screw (Line Space Ratchet Detent Roll Arm Eccentric)

SPECIAL PARTS FOR ONE, ONE AND A HALF, AND TWO SPACE LINE SPACING

3-1181	1 Req.	Carriage End Cover, Left
3-4869	1 Req.	Line Space Regulator
3-4871	1 Req.	Line Space Regulator Detent
3-4882	1 Req.	Platen Ratchet, 56 Tooth
3-4883	1 Req.	Line Space Ratchet Detent Roll Arm

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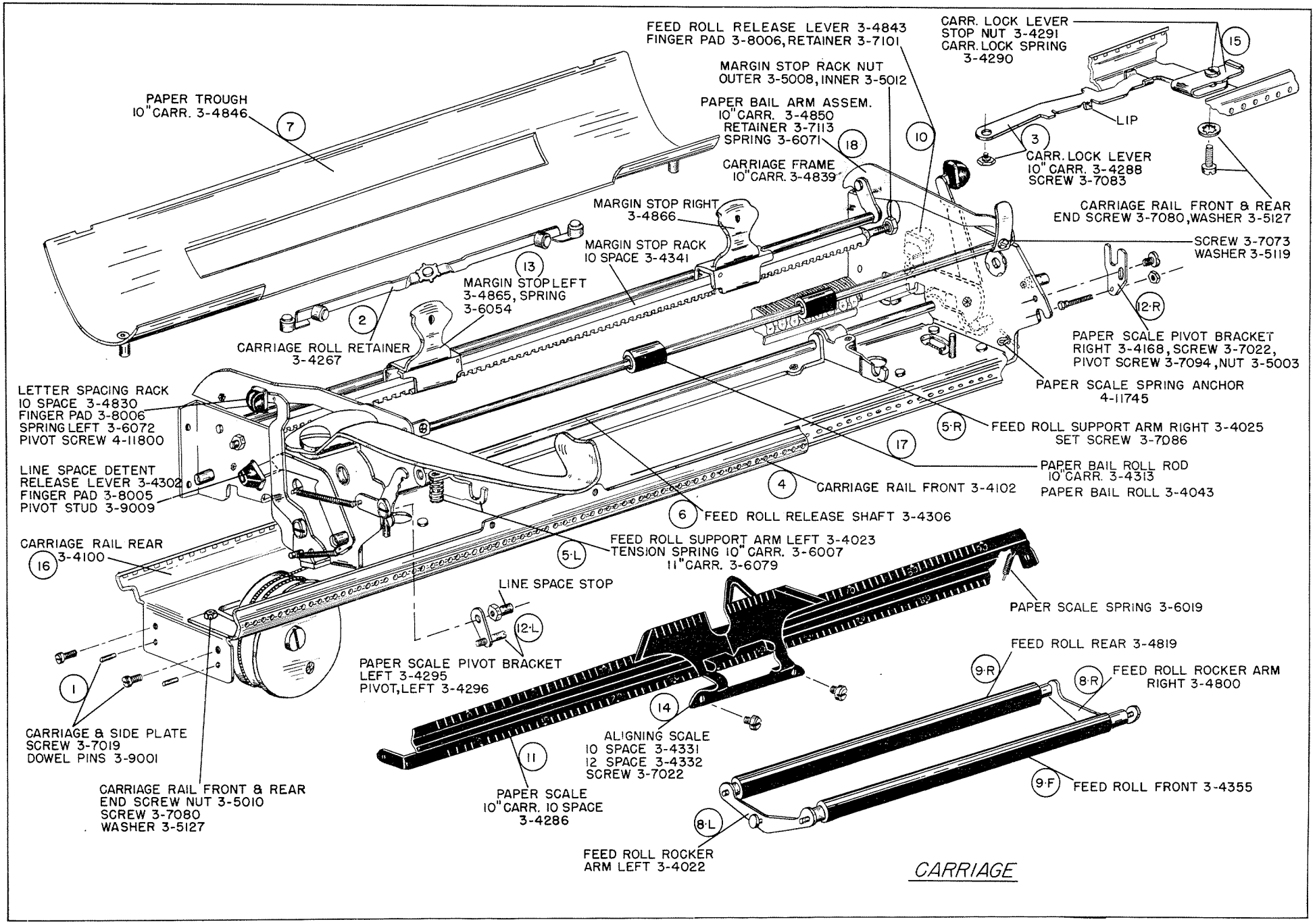
FEED ROLL RELEASE LEVER 3-4843
FINGER PAD 3-8006, RETAINER 3-7101
CARR. LOCK LEVER
STOP NUT 3-4291
CARR. LOCK SPRING
3-4290
MARGIN STOP RACK NUT
OUTER 3-5008, INNER 3-5012
PAPER TROUGH
10" CARR. 3-4846
PAPER BAIL ARM ASSEM.
10" CARR. 3-4850
RETAINER 3-7113
SPRING 3-6071
LIP
CARR. LOCK LEVER
10" CARR. 3-4288
SCREW 3-7083
CARRIAGE FRAME
10" CARR. 3-4839
MARGIN STOP RIGHT
3-4866
CARRIAGE RAIL FRONT & REAR
END SCREW 3-7080, WASHER 3-5127
SCREW 3-7073
WASHER 3-5119
MARGIN STOP RACK
10 SPACE 3-4341
MARGIN STOP LEFT
3-4865, SPRING
3-6054
CARRIAGE ROLL RETAINER
3-4267
PAPER SCALE PIVOT BRACKET
RIGHT 3-4168, SCREW 3-7022,
PIVOT SCREW 3-7094, NUT 3-5003
PAPER SCALE SPRING ANCHOR
4-11745
LETTER SPACING RACK
10 SPACE 3-4830
FINGER PAD 3-8006
SPRING LEFT 3-6072
PIVOT SCREW 4-11800
FEED ROLL SUPPORT ARM RIGHT 3-4025
SET SCREW 3-7086
PAPER BAIL ROLL ROD
10" CARR. 3-4313
PAPER BAIL ROLL 3-4043
LINE SPACE DETENT
RELEASE LEVER 3-4302
FINGER PAD 3-8005
PIVOT STUD 3-9009
CARRIAGE RAIL FRONT 3-4102
FEED ROLL RELEASE SHAFT 3-4306
CARRIAGE RAIL REAR
3-4100
FEED ROLL SUPPORT ARM LEFT 3-4023
TENSION SPRING 10" CARR. 3-6007
11" CARR. 3-6079
LINE SPACE STOP
PAPER SCALE SPRING 3-6019
FEED ROLL REAR 3-4819
FEED ROLL ROCKER ARM
RIGHT 3-4800
PAPER SCALE PIVOT BRACKET
LEFT 3-4295
PIVOT, LEFT 3-4296
ALIGNING SCALE
10 SPACE 3-4331
12 SPACE 3-4332
SCREW 3-7022
CARRIAGE & SIDE PLATE
SCREW 3-7019
DOWEL PINS 3-9001
CARRIAGE RAIL FRONT & REAR
END SCREW NUT 3-5010
SCREW 3-7080
WASHER 3-5127
PAPER SCALE
10" CARR. 10 SPACE
3-4286
FEED ROLL FRONT 3-4355
FEED ROLL ROCKER
ARM LEFT 3-4022
CARRIAGE

CARRIAGE REMOVAL

To remove the Carriage and Bed Rails as a Unit from the machine, proceed as follows: Unhook the Space Bar Pull Wire 3-2083 from the Space Bar Escapement Arm (Refer to Space Bar Mechanism).

Remove the Retaining Ring 3-7103 that holds the Tab Letter Spacing Rack Release Lever 3-1101 to the Tab Key Lever 3-2040 and slip the Tab Letter Spacing Rack Release Lever (Link) from the Stud of the Key Lever. (See Tabulator Mechanism).

Remove the Top Cover 3-1087, Rear Cover 3-1073, Side Covers, left 3-1079 and right 3-1080, and the Carriage End Covers, left 3-1176 and right 3-1177. NOTE: Some of these Covers are removed to prevent them from being marred or damaged due to handling. (See Machine Covers).

You will notice that the Carriage Bed Rail is mounted to the Side Plates at each end by two Carriage and Side Plate Screws 3-7019 (1), and two Dowel Pins 3-9001. Drive the Dowel Pins (1) out and remove the two Screws (1) at each end of the Bed Rail. Now the Carriage and Bed Rails as a unit, may be removed from the Machine.

REPLACING OF CARRIAGE COMPLETE WITH BED RAILS ASSEMBLED

Replace Carriage to the machine by guiding the Back Space Key Lever (refer to Back Space Mechanism) into position with the Back Space Dog and Bell Crank, and align the Tab Letter Spacing Rack Release Lever (Link) to the Tab Key Lever. Set the Lower Carriage Rail Ends inside machine Side Frames and line up the Dowel Pin holes. Replace the four lower Carriage Rail Mounting Screws (1) and set only friction tight. Drive the Dowel Pins (1) into the Dowel Pin holes then tighten the Carriage and Side Plate Screws (1).

Hook up the Space Bar Pull Wire 3-2083 and the Tab Letter Spacing Rack Release Lever 3-1101.

REMOVE THE CARRIAGE FROM THE BED RAILS

To remove the Carriage from the Bed Rails, if the Carriage is mounted to the Machine, proceed as follows: Back off the Mounting Screw and Lock Nut of the Margin Release Bracket (see Margin Release Mechanism and let the Margin Release Bracket lay to the rear.

Unhook the Draw Cord and fasten it to one of the Right Carriage and Side Plate Screw (1) (loosen the Screw slightly first). Remove the Carriage to the left using care so that the Carriage Roll Retainers 3-4267 (2) are not damaged.

If the Carriage and Bed Rails have been removed from the Machine, fasten the Draw Cord to the Right Carriage and Side Plate Screw (1) (insert the Screw into the Bed Rail where the Bed Rail mounts to the Side Frame). Remove the Carriage using care so as to prevent bending the Carriage Roll Retainer (2).

When the Carriage is replaced in the Bed Rails, check to see that the Carriage Roll Retainer (2) are centered. Lock the Carriage in a centered position by the Carriage Lock Lever 3-4288 (3) at the right end of the Carriage. (Used for Centering the Carriage when placing the Machine in the Carrying Case).

At this location of the Carriage, the small wheels of the Carriage Roll Retainers (2) should be located at the center hole of the Bed Rails. Do not "force" these trucks to position but move the Carriage to the right or left, far enough to permit the Carriage Roll Retainer (2) to be moved without force. Damaged Carriage Roll Retainers (2) will cause binding or sluggish carriage.

The Carriage should run between the Bed Rails on the Carriage Roll Retainers (2) with a minimum of play but free the full length of Carriage Travel. This is adjusted by positioning the Carriage Rail, Front 3-4102 (4) to the Carriage Rail Rear 3-4100 (16) through its Mounting Screws. The Carriage Roll Retainer (2) must be centered in the Bed Rails before the Carriage can be properly "fitted" to the Bed Rails.

The Carriage Roll Retainers (2) are shorter than those formerly used on the "All New Portable". These shorter Carriage Roll Retainers (2) can be used on the "All New Portable" and they should be used in pairs although it is not absolutely necessary. The old style longer Carriage Roll Retainers (2) could be used on the present 10 inch Carriage but it is absolutely necessary that the shorter Carriage Roll Retainers (2) that are now used on all the present machines, be used on machines with 11" Carriages. This shorter Carriage Roll Retainer (2) is necessary due to the fact that the same Bed Rail is used for both the 10" and 11" Carriage, the 11" Carriage must travel further.

NOTE: If the old style longer Carriage Roll Retainers (2) were to be used on the 11" Carriage, the Rolls would run off the end of the Bed Rails when the Carriage is at the extreme right or left position.

The standard typewriter has 42 typing Keys but the Segment 3-3185 and the Type Bar Link Bell Crank Bracket 3-2185 each have 44 slots. The first slot and last slot of each of these Parts therefore, will be empty unless the machine is special.

Since the extra slots are for extra Type Bars, do not consider it a mistake in manufacturing should you find some machines with 42 slots in the Segment instead of 44. Always check the Segment to see if there are any empty slots before removing Type Bars as the Type Bars will bind if the first Bar of a 42 Key Machine is started in the first slot of a 44 slot Segment instead of the 2nd slot.

The Type Bars are not numbered and if they are removed, make certain you replace them in their correct location in the machine.

The Type Bar Links 3-1100 are the same size from the first Type Bar through the last Type Bar. Even though the links are the same, it is advisable to keep the Links in order when they are removed. The Type Bars are "freed up" on the assembly line and Links are sometimes formed for this condition. Therefore, the Links must be replaced on the same Type Bar from which they were removed. NOTE: Type Bar Links 1 to 22 are hooked to the Type Bar and Bell Crank from the left and those from 23 to the last Bar are hooked from the right side of the Type Bar and Bell Crank. (The links change direction of hook up at the Y and H Type Bars).

The Bell Cranks to which the Type Bar Links are attached, are each numbered. Even though there is an empty slot in the Segment and Bell Crank Bracket, the first Bell Crank (which is in the 2nd slot) is No. 1 and is linked to the "Q" Type Bar of the standard machine.

NOTE: The Key Lever Links 3-2330 through 3-2369 are not interchangeable and they must be kept in order if they are removed from the machine.

The Links from No. 1 to No. 23 are attached from the left side of the Key Lever to the right side of the Bell Crank. Again, as in the Type Bar Links, the Key Levers change their "hook up" at the Y and H Key Levers. Therefore, from No. 23 Bell Crank to the last one, the Links are "hooked" from the Right Side of the Key Lever to the Left Side of the Bell Crank.

TO REMOVE THE TYPE BARS

Remove the Retainer 3-7121 from one end of the Fulcrum Wire 3-6102 and pull the Fulcrum Wire out far enough to remove one Type Bar at a time. Unhook the Type Bar Link from the Bell Crank and while keeping the Links and Type Bars in order, proceed to remove all Type Bars and Type Bar Links in this manner. Re-assemble in reverse order, keeping in mind the factors previously mentioned in regards to links and Segment Slots.

To remove the Type Bar Cushion and Basket, remove its Mounting Screws 3-7047. NOTE: When replacing Type Bars, do not force the Bars to the right or left, either to align them in the Type Guide or free the Bars that are a little sluggish until all bars are in the machine or you may break out segment slots.

The Key Lever upstop is located behind and a part of, the front Key Lever Comb and is adjustable up and down. If the Key Levers are permitted to restore too high, the Type Bar Links rest off center and the Key Levers will have a "locking" or "catching" action before raising the Type Bars from the Basket.

If the Upstop for the Key Levers is too low, the Type Bars would not settle in the basket, in any event, the Type Bars would "bounce" more at the Basket position resulting in less control of the Type Bar.

PARTS LIST OF KEY LEVERS THROUGH TYPE BARS

KEY LEVERS

3-2173	10 Req.	Key Lever First Row (First Bank)
3-2174	11 Req.	Key Lever Second Row (Second Bank)
3-2175	11 Req.	Key Lever Third Row (Third Bank)
3-2176	10 Req.	Key Lever Fourth Row (Fourth Bank)
3-2177	1 Req.	#0 Key Lever - 44 Key Machine
3-6058	10 Req.	Key Lever Spring, Fourth Bank only
3-6105	1 Req.	Key Lever Fulcrum Wire
3-7121	2 Req.	Key Lever Fulcrum Wire Keeper (Spring)
2-51940	32 Req.	Key Lever Spring, First, Second, and Third Bank
2-52015	44 Req. or 46 Req.	Key Lever Key Cap

TYPE BARS AND SEGMENT

3-1100	42 Req. or 44 Req.	Type Bar Link
3-3008	1 Req.	Type Bar Cushion Wire
3-3092	1 Req.	Type Bar Assem., Specify Pitch, location & Char.
3-3104	1 Req.	Type Bar Guide
3-3156	1 Req.	Type Bar Cushion Bracket, Right
3-3157	1 Req.	Type Bar Cushion Bracket, Left
3-3158	1 Req.	Type Bar Cushion
3-3163	1 Req.	Type
3-3185	1 Req.	Segment, 42 & 44 Key - Without Universal Bar
3-3207	1 Req.	Type Bar, Right (For Repairman) without Type
3-3208	1 Req.	Type Bar, Left (For Repairman) without Type
3-6102	1 Req.	Type Bar Fulcrum Wire
3-6106	1 Req.	Type Bar Cushion Wire
3-7047	3 Req.	Type Bar Guide Screw
3-7047	4 Req.	Type Bar Cushion and Cushion Bracket Screw
3-7121	2 Req.	Type Bar Fulcrum Wire Keeper (Spring)

KEY LEVER LINKS

3-2329	2 Req.	#0 and #43 Key Lever Link
3-2330	1 Req.	#42 Key Lever Link
3-2331	1 Req.	#1 Key Lever Link
3-2332	1 Req.	#2 Key Lever Link
3-2333	1 Req.	#41 Key Lever Link

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KEY LEVER LINKS (CONT'D)

3-2334	1 Req.	#40 Key Lever Link
3-2335	1 Req.	#3 Key Lever Link
3-2336	1 Req.	#4 Key Lever Link
3-2337	1 Req.	#39 Key Lever Link
3-2338	1 Req.	#38 Key Lever Link
3-2339	1 Req.	#5 Key Lever Link
3-2340	1 Req.	#6 Key Lever Link
3-2341	1 Req.	#37 Key Lever Link
3-2342	1 Req.	#36 Key Lever Link
3-2343	1 Req.	#7 Key Lever Link
3-2344	1 Req.	#8 Key Lever Link
3-2345	1 Req.	#35 Key Lever Link
3-2346	1 Req.	#34 Key Lever Link
3-2347	1 Req.	#9 Key Lever Link
3-2348	1 Req.	#10 Key Lever Link
3-2349	1 Req.	#32 Key Lever Link
3-2350	1 Req.	#33 Key Lever Link
3-2351	2 Req.	#11 and #12 Key Lever Link
3-2352	2 Req.	#30 and #31 Key Lever Link
3-2353	1 Req.	#14 Key Lever Link
3-2354	1 Req.	#13 Key Lever Link
3-2355	1 Req.	#29 Key Lever Link
3-2356	1 Req.	#16 Key Lever Link
3-2357	1 Req.	#15 Key Lever Link
3-2358	1 Req.	#18 Key Lever Link
3-2359	1 Req.	#27 Key Lever Link
3-2360	1 Req.	#17 Key Lever Link
3-2361	1 Req.	#22 Key Lever Link
3-2362	1 Req.	#25 Key Lever Link
3-2363	1 Req.	#19 Key Lever Link
3-2364	1 Req.	#21 Key Lever Link
3-2365	1 Req.	#23 Key Lever Link
3-2366	1 Req.	#26 Key Lever Link
3-2367	1 Req.	#28 Key Lever Link
3-2368	1 Req.	#20 Key Lever Link
3-2369	1 Req.	#24 Key Lever Link

TYPE BAR BELL CRANKS

3-2185	1 Req.	Type Bar Bell Crank Bracket
3-2188	1 Req.	#1 Type Bar Bell Crank
3-2189	1 Req.	#2 Type Bar Bell Crank
3-2190	1 Req.	#3 Type Bar Bell Crank
3-2191	1 Req.	#4 Type Bar Bell Crank
3-2192	1 Req.	#5 Type Bar Bell Crank
3-2193	1 Req.	#6 Type Bar Bell Crank
3-2194	1 Req.	#7 Type Bar Bell Crank
3-2195	1 Req.	#8 Type Bar Bell Crank
3-2196	1 Req.	#9 Type Bar Bell Crank
3-2197	1 Req.	#10 Type Bar Bell Crank
3-2198	1 Req.	#11 Type Bar Bell Crank
3-2199	1 Req.	#12 Type Bar Bell Crank
3-2200	1 Req.	#13 Type Bar Bell Crank

TYPE BAR BELL CRANKS

3-2201	1 Req.	#14 Type Bar Bell Crank
3-2202	1 Req.	#15 Type Bar Bell Crank
3-2203	1 Req.	#16 Type Bar Bell Crank
3-2204	1 Req.	#26 Type Bar Bell Crank
3-2205	1 Req.	#18 Type Bar Bell Crank
3-2206	1 Req.	#19 Type Bar Bell Crank
3-2207	1 Req.	#20 Type Bar Bell Crank
3-2208	1 Req.	#21 Type Bar Bell Crank
3-2209	1 Req.	#22 Type Bar Bell Crank
3-2210	1 Req.	#24 Type Bar Bell Crank
3-2211	1 Req.	#25 Type Bar Bell Crank
3-2212	1 Req.	#27 Type Bar Bell Crank
3-2213	1 Req.	#28 Type Bar Bell Crank
3-2214	1 Req.	#29 Type Bar Bell Crank
3-2215	1 Req.	#30 Type Bar Bell Crank
3-2216	1 Req.	#31 Type Bar Bell Crank
3-2217	1 Req.	#32 Type Bar Bell Crank
3-2218	1 Req.	#33 Type Bar Bell Crank
3-2219	1 Req.	#34 Type Bar Bell Crank
3-2220	1 Req.	#35 Type Bar Bell Crank
3-2221	1 Req.	#36 Type Bar Bell Crank
3-2222	1 Req.	#37 Type Bar Bell Crank
3-2223	1 Req.	#38 Type Bar Bell Crank
3-2224	1 Req.	#39 Type Bar Bell Crank
3-2225	1 Req.	#40 Type Bar Bell Crank
3-2226	1 Req.	#41 Type Bar Bell Crank
3-2227	1 Req.	#42 Type Bar Bell Crank
3-2305	1 Req.	#23 Type Bar Bell Crank
3-2306	2 Req.	#0 and #43 Type Bar Bell Crank
3-2307	1 Req.	#17 Type Bar Bell Crank
3-6103	1 Req.	Type Bar Bell Crank Fulcrum Wire
3-7067	4 Req.	Type Bar Bell Crank Bracket Screw
3-7121	2 Req.	Type Bar Bell Crank Fulcrum Wire Keeper (Spring)

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"Cylinder and Anvil" is a term used in regards to the location of the "Cylinder" (platen) in relation to the "Anvil" or abuttment ring of the Segment.

Cylinder and Anvil adjustments must be maintained in order that the machine will produce good clear cut typewritten work.

To check Cylinder and Anvil position on this machine, insert one sheet of paper into writing position and hold a Type Bar against segment anvil with light pressure. (Be sure when doing this, to keep your finger even with the anvil or below, never above). While holding type bar in this position, rotate platen and there should be a slight smudge on the paper also while making this test, use strip of paper between type and paper on platen, and there should be a very slight drag when the paper is pulled out.

Make this same test at the Anvil of the Segment with the strip of Paper. Drag should be even on the Paper Strip at both platen and anvil.

Too much cylinder or platen would cause print work to smudge and also cause embossing to show up on back of typewritten work. Too much anvil will cause light print work, a noisy machine and poor carbon copies.

To adjust for correct cylinder and anvil position, turn machine on its back and loosen one Screw of the Segment Roller Guide Bracket (5) slightly. Then loosen Screw 3-7047 holding Segment Roller Guide Bracket Eccentric 2-42324. This Eccentric is usually set at its half way adjustment position. If more Cylinder or Platen is desired, turn large part of Eccentric toward rear of machine. If more Anvil and less Cylinder is desired, turn large part of Eccentric toward front of machine. (See Shift Mechanism for location of parts.) Tighten Screws.

After completing this adjustment, be sure to check Segment Shift for freedom, Motion, and Ribbon Covering adjustments. (See Shift Mechanism and Ribbon Cover).

If the Carriage is not located within range of the Segment Roller Guide Bracket Eccentric when adjusting for Cylinder and Anvil position as described, drive out the four Dowel Pins 3-9001 located just below the Lower Carriage Rail Mounting Screws 3-7019. Loosen the four Carriage Rail Mounting Screws and relocate Carriage to front or rear to desired position and tighten Screws. In this case, the old dowel pin holes cannot be used so use Drill No. 42 for new holes to accommodate Dowel Pins 3-9001. See Carriage Illustration for the location of parts referred to in this Paragraph.

SEGMENT REMOVAL

To remove the Segment 3-3185 proceed as follows:

Remove the Top Cover. Remove Type Bars, Type Bar Links and Type Bar Basket as previously explained (See Type Bars and Links).

SEGMENT REMOVAL (CONT'D)

Remove the mounting Screws (3-7047) of the Type Guide 3-3104 and Type Bar Universal Bar Support Screw 3-7019 located in counter sunk hole of Type Guide. (NOTE: This Screw 3-7019 is of different length than the Type Guide Mounting Screw 3-7047 and should be replaced in the counter sunk hole of the Type Guide when reassembling). Remove the Type Guide from the Segment.

Remove one Segment Shift Pivot Screw 3-7041 (do not disturb the other Segment Shift Pivot Screw) and remove the Segment to the front.

REASSEMBLE IN REVERSE ORDER

SHIFT MECHANISM

The Shift Mechanism must be free and must operate without excessive hard action. NOTE: Cylinder and Anvil must be established before adjusting the Shift Mechanism. (See "Cylinder and Anvil" adjustment)

The Segment is adjusted for freedom through the Segment Oscillator Pivot Screws 3-7026 (2) and the Segment Shift Pivot Screws 3-7041 (3). The Segment Rollers 3-3171 (4) must not be cramped in the Roller Guide Bracket 3-2414 (5).

The Shift Key Lever Shaft Assembly 3-2090 (6) must be free and the Shift Key Levers centered in the slots of the Key Lever Comb. To check for freedom, remove the Shift Link Keeper 2-50006 and slip the Shift Link (7) from the arm at the left end of the Shift Key Lever Shaft (6). Move the Shift Key Levers up and down slowly and check for freedom. Form Shift Key Levers near the Shaft (6) to center the Shift Key Levers in the Key Lever Comb.

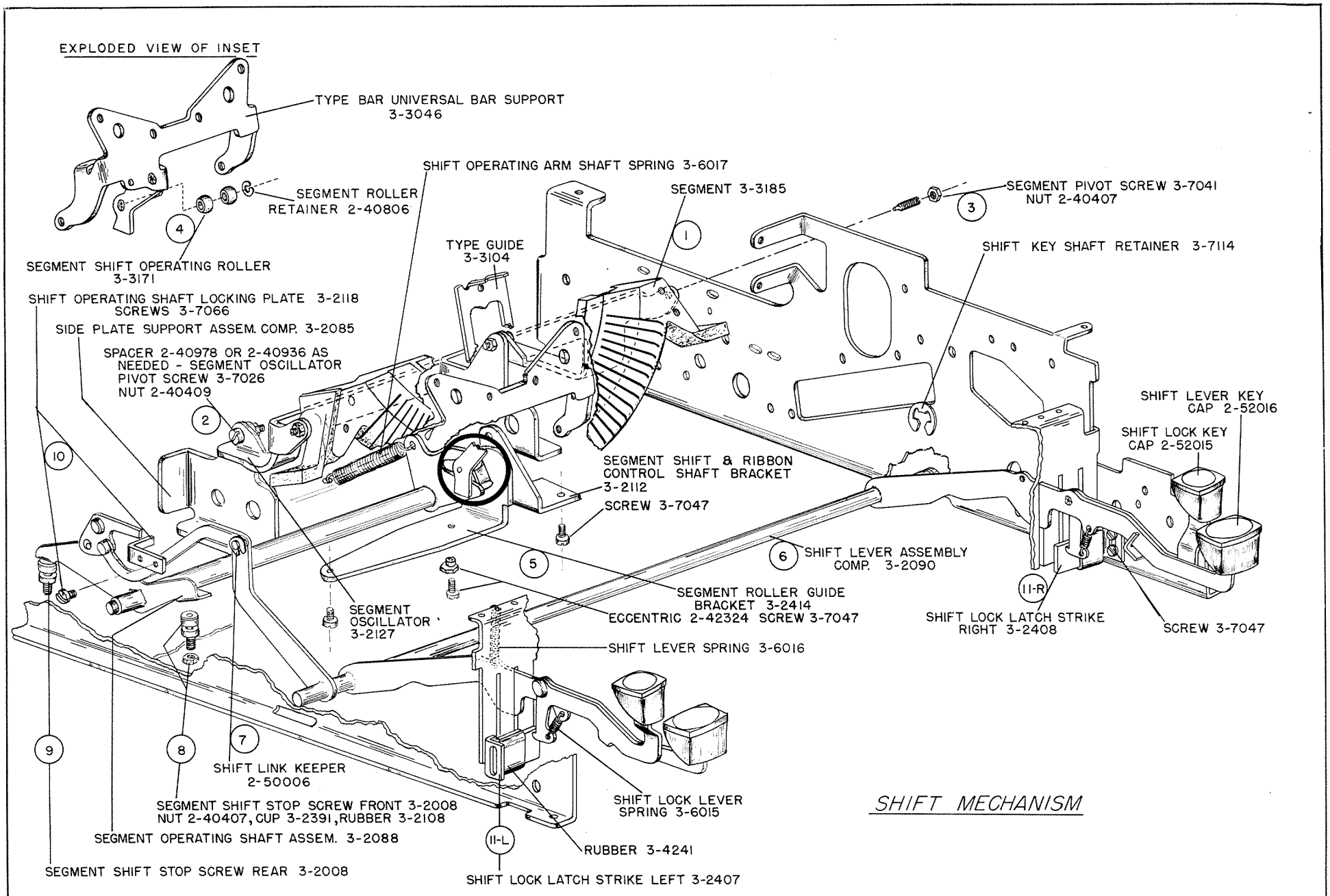
"On Feet" condition could be adjusted by checking either "Capital or "Small Letters". We use "Capitals" as they are much easier to detect for "on feet" condition.

NOTE: "On feet" adjustment is correct when the letters print with the same density at both the top and bottom (majority of letters must show this condition).

To adjust for "On feet", hold the Shift Keys down so that the Shift Operating Shaft Arm, 3-2088 is limiting on the Front Segment Shift Stop Screw 3-2008 (8). WHILE HOLDING the Shift Keys in this position, print all capital letters lightly. (It is easier to observe the letters for "On feet" if they are printed very lightly).

If the letters appear light on the top or bottom, adjust the Front Segment Shift Stop Screw (8) (loosen its lock nut first) until the letters appear "On Feet". Lock the Lock Nut of the Stop Screw. NOTE: Tip the machine on its back to make this adjustment.

After the capital letters have been adjusted for "On feet", adjust the Rear Segment Shift Stop Screw (9) for "motion". Motion is correct when the bottom or "feet" of the Capital "H" and small "h" are in line. Strike off hHhH for this test. When the small "h" is in line with the Capital "H" the small letters will also be "on feet" as all letters will be striking the center line of the Platen. Tip machine on rear for this adjustment. Lock the Lock Nut of the Stop Screw (9) after making adjustment.



SHIFT MECHANISM

SHIFT MECHANISM (CONT'D)

Position the Shift Operating Arm Shaft Plate (10) so that the Segment (1) has a minimum of up and down play when at normal or rest position, yet the Shift Key Levers will not have a "biting" action when they are depressed. Make certain the Screws 3-7066 are tight after adjusting the Plate (10). Segment (1) will be locked at rest position to prevent rebound after shifting and can not be depressed unless the shift key levers are depressed slightly.

Adjust the Shift Lock Latch Strikes (Shift Lock Plates) left 3-2407 (11-L) and right 3-2408 (11-R) so the "Motion" is correct when either Shift Key is locked down. The Shift Keys should lock evenly, and also release without excessive hard action. This is adjusted by positioning the Shift Lock Latch Strikes (11-L) and 11-R) through their mounting Screws 3-7047.

If it is desired to use "small letters" for "on feet" adjustment, proceed as follows:

Adjust the Rear Segment Shift Stop Screw (9) so that the majority of small letters are "on feet" (always check long letters especially, as ½, p, g, j, y, h, l, and f.).

Adjust the Shift Operating Shaft Locking Plate (10) to remove the up and down play of the Segment (1) when the Segment (1) is at rest. Check to see that the Shift Key Levers do not have a "biting" action when depressed. Segment must be locked in rest position, making it necessary to operate the Shift Key Levers in order to depress the Segment.

Adjust the Front Segment Shift Stop Screw (8) for "motion".

Adjust the Shift Lock Latch Strikes (Shift Locks) (11-L) and (11-R) so the Shift Keys lock evenly, have "motion" with each lock, and releases without excessive hard action.

SHIFT MECHANISM PARTS LIST

3-2008	Segment Shift Stop Screw
3-2085	Side Plate Support Assembly Complete
3-2088	Segment Operating Shaft Assembly
3-2090	Shift Lever Assembly Complete
3-2108	Segment Shift Stop Screw Rubber
3-2112	Segment Shift and Ribbon Control Shaft Bracket
3-2118	Shift Operating Shaft Locking Plate
3-2127	Segment Oscillator
3-2391	Segment Shift Stop Screw Cup
3-2407	Shift Lock Latch Strike Left
3-2408	Shift Lock Latch Strike, Right
3-2414	Segment Roller Guide Bracket
3-3046	Type Bar Universal Bar Support Assem.
3-3104	Type Bar Guide
3-3171	Segment Shift Operating Roller
3-3185	Segment
3-4241	Back Space and Margin Release Lever Downstop (Rubber)
3-6015	Shift Lock Lever Spring
3-6017	Shift Operating Arm Shaft Spring

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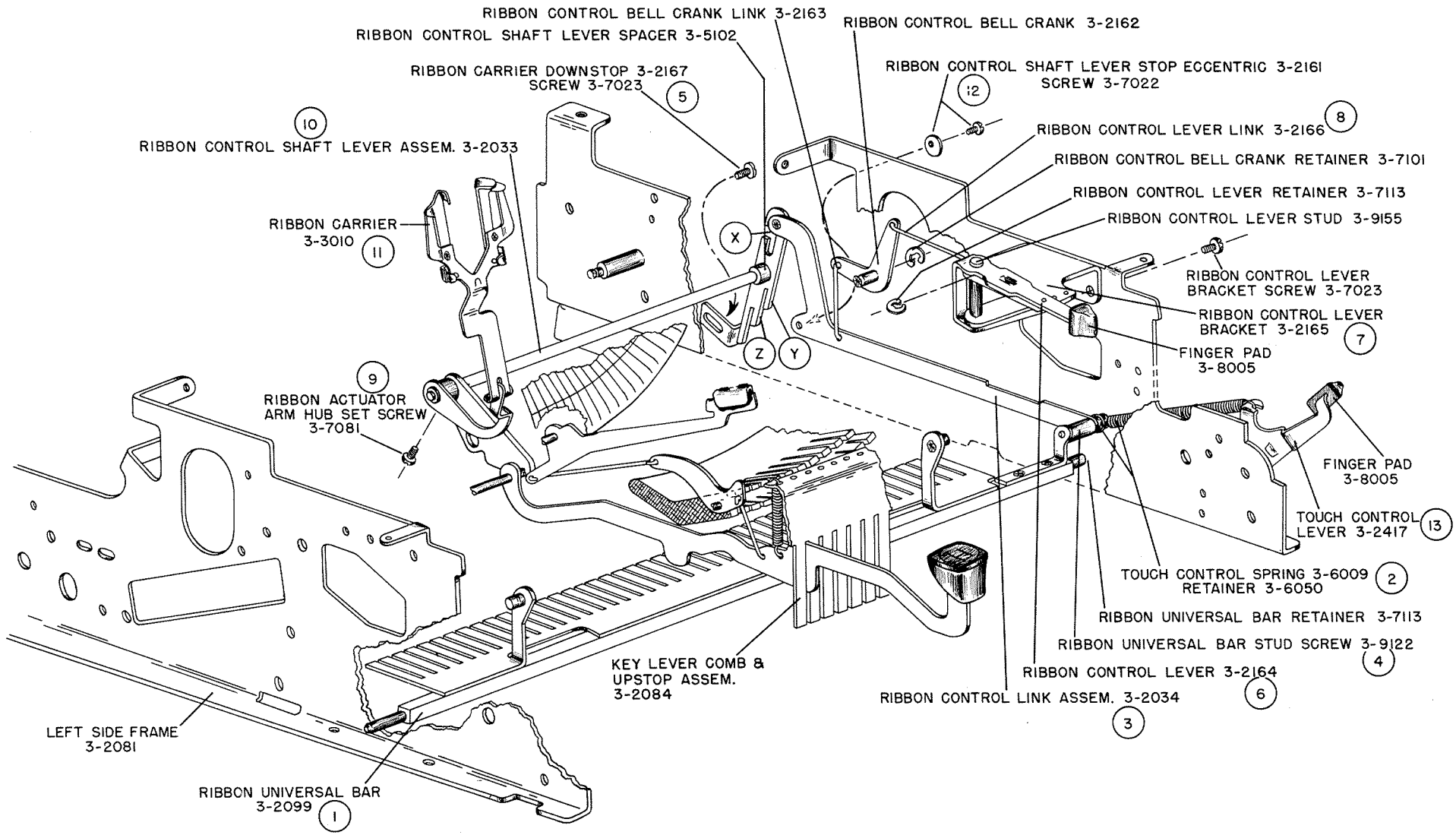
3-6070	Shift Lever Spring
3-7026	Segment Oscillator Pivot Screw
3-7041	Segment Pivot Screw
3-7047	Screw (Segment Roller Guide Bracket)
3-7047	Screw (Segment Shift and Ribbon Control Shaft Bracket)
3-7047	Screw (Shift Lock Latch Strike)
3-7066	Screw (Shift Operating Shaft Locking Plate)
3-7114	Shift Key Shaft Retainer (Keeper)
2-40407	Nut (Segment Pivot Screw)
2-40407	Nut (Segment Shift Stop Screw)
2-40409	Nut (Segment Oscillator Pivot Screw)
2-40806	Segment Roller Retainer
2-40936	Spacer Washer (Segment Oscillator Pivot Screw)
2-40978	Spacer Washer (Segment Oscillator Pivot Screw)
2-42324	Eccentric (Segment Roller Guide Bracket)
2-50006	Shift Link Keeper
2-52015	Shift Lock Lever Key Cap
2-52016	Shift Key Lever Key Cap



RIBBON COVER MECHANISM

Before attempting the adjustments for "Ribbon Cover" it is very important that the adjustments for "Cylinder and Anvil" and the Shift Mechanism adjustments for "On Feet and Motion" are correct. You must know where the letters will strike the paper before you can adjust the Ribbon Mechanism.

The high part of Ribbon Control Shaft Lever Stop Eccentric (12) should be set to the front when starting the Ribbon Cover adjustments to make certain that it is not limiting the Ribbon Control Shaft Lever (10).

The Ribbon Universal Bar 3-2099 (1) must be free and parallel to the Key Levers from end to end.

The Stud Screw 3-9122 (4) at the right end of the Ribbon Universal Bar (1) must not limit on the Frame at either the front or rear of the hole in which it operates. The Screw Stud (4) can be formed to front or rear to eliminate this condition.

TO TEST: Remove the Touch Control Spring Retainer Ring 3-6050 (2) from the Stud Screw (4). Slip the Ribbon Control Link 3-2034 (3) from the Stud Screw (4). Now hold the Stud Screw (4) to the front of the hole in which it operates, at the same time depress a few key levers from each end of the keyboard and a few from the center. While holding the Stud Screw (4) and Key Levers in this position, check to see how far the Type Bars, are held from the Basket. If the Stud Screw (4) is correctly positioned, the Type Bars will be raised approximately 1/2 inch from the Basket.

Next check the "lead" of Keys. The "lead" is the distance the Key Levers must travel before moving the Ribbon Universal Bar and the Key Levers should have approximately 1/16th to 1/8th of an inch "lead" (at the Key Tops). This is adjusted by positioning the Ribbon Carrier Downstop 3-2167 (5). The lead will vary on different machines.

There are three holes in the Ribbon Control Lever Bracket 3-2165 (7) that are used to hold the Ribbon Control Lever (6) when writing on the upper half of the Ribbon, the lower half of the Ribbon, or at a neutral position for writing Stencils. The left hole is for writing on the upper half of the Ribbon (black), the right hole is for the lower half of the Ribbon (red), and the center hole is for writing Stencils or writing without raising the Ribbon (Stencil position).

Position the Ribbon Control Lever (6) in Stencil position (center hole of the Ribbon Control Lever Bracket) (7). Depress (hold down) a Key Lever and check to see that the Stud on the rear end of the Ribbon Control Link (3) enters the "stencil slot" or cut out of the Ribbon Control Shaft, at Point "X" of the Illustration. If not, hold the Ribbon Control Lever (6) rigidly and form the end of the Ribbon Control Lever at the extension or arm to which the Ribbon Control Lever Link (8) is attached.

Print the underscore and notice the position of the Ribbon in relation to the printed underscore. The top of the Ribbon should rest approximately 1/32nd of an inch below the printed underscore.

Adjust the height of the Ribbon at rest as follows: Loosen the Ribbon Actuator Arm Hub Set Screw 3-7081 (9) and position the Ribbon Actuator at the lower end

of the Ribbon Carrier Assembly 3-3010 (11) to the Shaft of the Ribbon Control Shaft Lever Assembly 3-2033 (10).

Make certain that the Ribbon Control Shaft Lever Assembly (10) has a minimum of play and that the Ribbon Carrier Assembly is perfectly free after making the preceding adjustment.

Position the Ribbon Control Lever (6) in the left hole of the Ribbon Control Lever Bracket (7) (black position). Depress a Key Lever and while the Key Lever is held down, check the clearance between the Ribbon Control Shaft Lever Stop Eccentric 3-2161 (12) and the Ribbon Control Shaft Lever at the right end of the Ribbon Control Shaft (10).

Adjust Ribbon Control Shaft Lever Stop Eccentric (12) to come up to but not limit on Ribbon Control Shaft Lever (10) at point "Y" (see Illustration) when a Key Lever is held down and the Ribbon Control Lever (6) is in the "black" writing position.

When the Ribbon Control Lever (6) is located for "red", check the clearance between the Eccentric (12) and the Ribbon Control Shaft Lever (10) at point "Z" of the Illustration. The purpose of the Eccentric (12) is to prevent over throw of the Ribbon and if it limits the Ribbon Control Shaft Lever (10) too soon it will effect the Key Touch of the machine. As the Eccentric (12) can only be located for "Black", it may be necessary to form the Ribbon Control Shaft Lever (10) at point "Z" of the Illustration, to prevent overthrow of the Ribbon in "red".

Sometimes it is necessary to form the individual lips of the Ribbon Universal Bar (1) to get individual letters to cover properly. This adjustment is used only as a last resort. Generally the trouble can be traced to some other adjustment previously made but not held close enough.

Make a test of all letters, both capitals and small letters, and see if there is any mixing of colors. Make this test on "red" as well as "black". Use both light and heavy keytouch when making this test.

PERSONAL TOUCH REGULATOR

The Touch Regulator Lever 3-2417 (13) that is mounted on the Right Side Frame can be set for three positions, light, medium, and heavy. These positions are indicated on the Front Rail Assembled 3-1082 (Frame Front) by the numbers one, two, and three. The number one position is "light". When the Touch Regulator Lever (13) is moved from one to two, it stretches the Touch Regulator Spring 3-6009 making it necessary to apply more pressure to depress a Key Lever. The Spring is stretched even further when the Lever (13) is moved to the number three position. However even though the Key Touch is heavier the Type Bars will restore to rest position faster which results in less type Bar colliding for fast erratic typists.

3-2033	Ribbon Control Shaft Lever Assembly
3-2034	Ribbon Control Link Assembly
3-2081	Left Side Frame
3-2084	Key Lever Comb and Upstop Assembled
3-2099	Ribbon Universal Bar
3-2161	Ribbon Control Shaft Lever Stop Eccentric
3-2162	Ribbon Control Bell Crank
3-2163	Ribbon Control Bell Crank Link
3-2164	Ribbon Control Lever
3-2165	Ribbon Control Lever Bracket
3-2166	Ribbon Control Lever Link
3-2167	Ribbon Carrier Down Stop
3-2417	Touch Regulator Lever
3-3010	Ribbon Carrier
3-5102	Ribbon Control Shaft Lever Spacer
3-6009	Touch Regulator Spring
3-6050	Touch Regulator Spring Retainer
3-7022	Screw (Ribbon Control Shaft Lever Stop Eccentric)
3-7023	Screw (Ribbon Carrier Down Stop)
3-7023	Screw (Ribbon Control Lever Bracket)
3-7081	Screw (Ribbon Actuator Hub of Ribbon Carrier Assembly)
3-7101	Ribbon Control Bell Crank Retainer (Keeper)
3-7113	Ribbon Control Lever Retainer (Keeper)
3-7113	Ribbon Universal Bar Retainer (Keeper)
3-8005	Finger Pad (Ribbon Control Lever)
3-8005	Finger Pad (Touch Regulator Lever)
3-9122	Ribbon Universal Bar Stud Screw
3-9155	Ribbon Control Lever Stud

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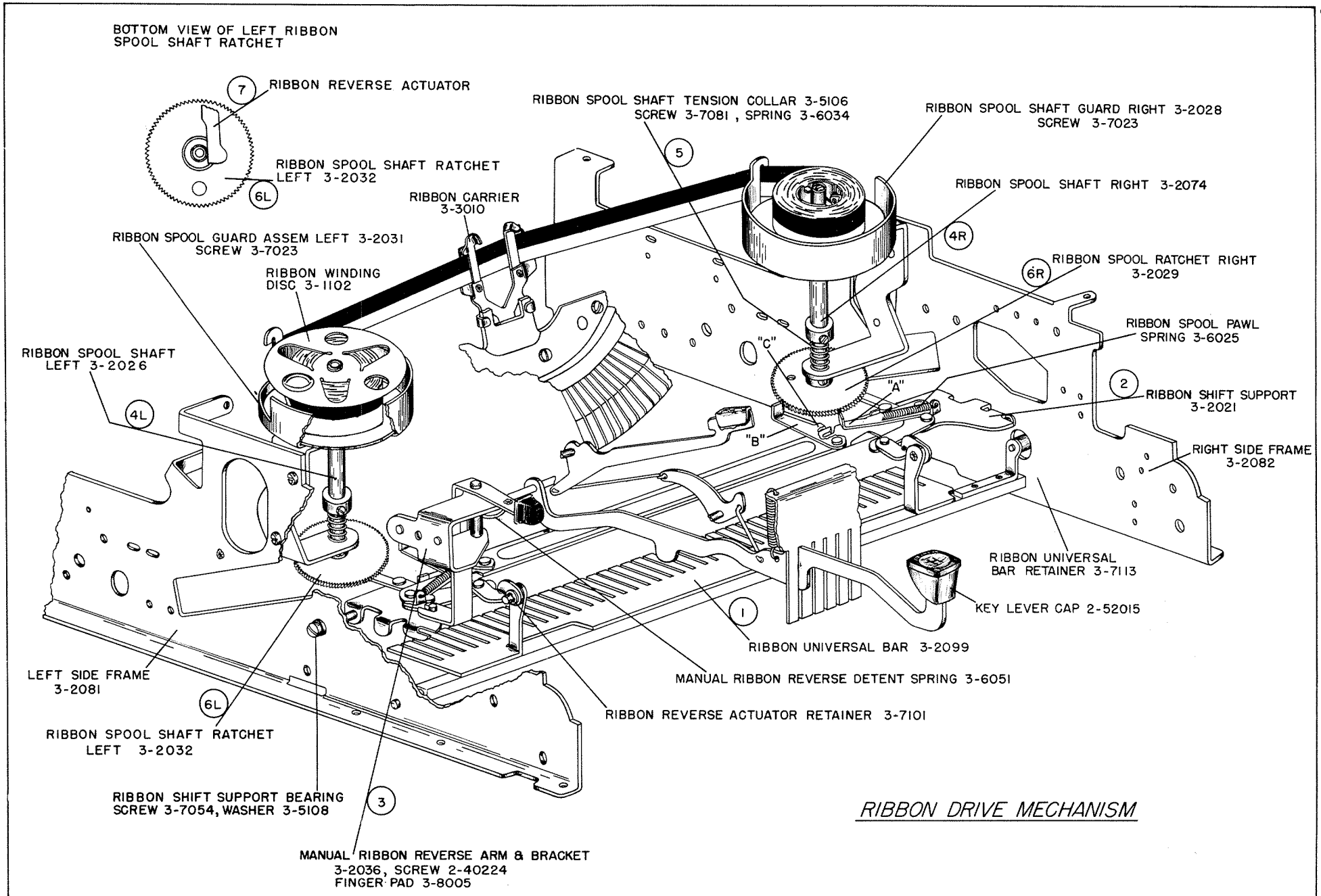

RIBBON DRIVE MECHANISM

RIBBON DRIVE MECHANISM

In order to maintain a positive Ribbon Feed and Ribbon Reverse, it is extremely important that the Ribbon Universal Bar (1) be free on its Pivots as well as at the connection for the Feed Pawl Links.

The Ribbon Shift Support 3-2021 (2) must be free. To adjust proceed as follows:

Remove Manual Ribbon Reverse Bracket Screw 2-40224 and remove Manual Ribbon Reverse Bracket 3-2036 (3). Have machine resting on left side and check Ribbon Shift Support (2) for freedom by raising it and allowing it to drop of its own weight. If the Ribbon Shift Support (2) does not drop of its own weight, locate bind and free up as follows: The Ribbon Shift Support 3-2021 (2) is supported in machine at four points. One Stud in each Side Frame supports the front right and left ends, and two screws 3-7054, one in each side frame, supports the rear right and left ends of the Ribbon Shift Support (2). Therefore, if this part binds, the bind can readily be located by removing the Right Support Screw 3-7054 to determine whether the Ribbon Shift Support (2) will spring up or down as this Screw is removed. If so, form the Ribbon Shift Support (2) until the hole lines up perfectly with hole in Right Side Frame. Replace Screw 3-7054 and Washer 3-5108. Repeat this operation on left side and make test to see if Ribbon Shift Support (2) will drop of its own weight. Replace Manual Ribbon Reverse Bracket (3) and its Screw 2-40224.

The Ribbon Spool Shaft Left 3-2074 (4L) and right 3-2026 (4R) should have approximately .009 to .012 up and down movement or "play". This is adjusted by positioning the Ribbon Spool Ratchet, right 3-2029 (6R) and left 3-2032 (6L). This "play" should be held to a minimum or the Ribbon will have a tendency to "climb" and fold over.

The Ribbon Spool Shaft tension is supplied by the Tension Spring 3-6034 (5) and Collar 3-5106 (5) of the Spool Shafts left (4L) and right (4R). The Collar is set against the Spring to supply just enough tension to hold the Spool Shaft upward, when a full Ribbon and the Winding Disc 3-1102 are on the Spool Shaft. Excessive tension will cause faulty feed. The purpose of the tension is to prevent the Ribbon from unwinding from the Spool faster than the Feed Mechanism can rewind the Ribbon to the opposite Spool. The Ribbon feeds only when a Key Lever is operated.

NOTE: A few machines were manufactured with a Felt Washer under the discs of the Spool Shafts; but without the Tension Spring and Collar (5). It is recommended that the Spring and Collar (5) be assembled to the Spool Shafts if Ribbon feed trouble develops.

When Key Lever is depressed, the Ribbon Spool Ratchet Feed Pawls (A) (as shown in Sketch) are merely moved to an operative position and as the Key Lever is allowed to restore, the spring tension on Ribbon Universal Bar 3-2099 (1) causes Feed Pawl, either Right or Left, to turn Ribbon Spool Ratchets. Retaining Pawls (B) (as shown on Sketch) prevent the Ribbon Spool Shaft Ratchets from turning backward as Feed Pawls are positioned for their next operation. When the Ribbon is being wound on Left Spool, the Retaining Pawl and Driving Pawl are both engaged with the Ribbon Spool Ratchet (Left) 3-2032(6L), at the same time, it will be noted that both the Retaining Pawl and Driving Pawl for the Right Ribbon Spool Ratchet (6R) both clear Ratchet. Set Manual Ribbon Reverse Lever

to left. The Retaining Pawl and Driving Pawl should be engaged with the Ribbon Spool Ratchet Right (6R). While both Retaining Pawl and Driving Pawl on left, should clear Ribbon Spool Ratchet Left (6L).

When the Retaining Pawl is seated in the bottom of the teeth of either Right or Left Ribbon Spool Ratchet, Lip "C" on Retaining Pawls should clear Ribbon Shift Support Bracket 3-2021 .010 to .015. This adjustment is obtained by forming Shift Support Bracket in slot provided for this, where Lip "C" limits.

The Ribbon Reverse Actuators (7) (reverse Cams) are assembled to the Ribbon Shift Support (2) and operate each time a Key Lever is depressed. The Ribbon Reverse Actuator (7) Contacts the Plunger (which drops when the Spool is empty) and through "detent action" shifts the Ribbon Shift Support (2) to feed the opposite Ribbon Spool Shaft. This is commonly known as a one stroke reverse action.

Position (by forming) the Ribbon Reverse Actuator so that it nearly touches the Plunger of the left Spool Shaft when the Ribbon Shift Support (2) is at its extreme right position. Position the Ribbon Shift Support to the extreme left and form the Ribbon Reverse Actuator to nearly touch the Right Spool Shaft Plunger when in dropped position.

NOTE: Make certain the Ribbon Reverse actuators do not interfere with the dropping of the Spool Shaft Plungers, also the Actuators must not contact the end of the Spool Shaft when operating. (See Illustration at upper left corner for position of Ribbon Reverse Actuator (7) in relation to the Spool Shaft Plunger).

Replace Ribbon and Ribbon Winding Discs 3-1102 and check Ribbon for reversing at both Spools.

This machine uses a standard length Ribbon. The Ribbon is mounted on the right Ribbon Spool and unwinds from the rear and onto the rear of the Left Spool. Ribbon Spool Shafts, Left (4L) and Right (4R) are not interchangeable. When the Ribbon Reverse Trip Lever is facing you and narrow slot for ribbon is on the left side, it is a Left Spool Shaft (4L). If the narrow slot for ribbon is on the right side of the reverse trip lever, it is the Right Spool Shaft (4R).

In changing the Ribbon, be sure that the Ribbon Core does not interfere with the Ribbon Spool Trip Lever as this would prevent the Ribbon Drive Mechanism from reversing properly.

When replacing Ribbon Spool Winding Discs 3-1102, it will be noted that there is a small lip on the inside core of Ribbon Spool Shaft Hub. This lip prevents operator from placing Discs where prongs on same would interfere with reversing levers.

You will notice that the Ribbon Carrier has yield arms. These arms are pulled to the center so that the Ribbon can be easily inserted into the Ribbon Carrier. When a Key Lever is struck, the yield arms close to safely hold the Ribbon in the Carrier.

3-1102	2 Req.	Ribbon Winding Disc.
3-2021	1 Req.	Ribbon Shift Support
3-2026	1 Req.	Ribbon Spool Shaft, Right
3-2028	1 Req.	Ribbon Spool Guard, Right
3-2029	1 Req.	Ribbon Spool Ratchet, Right
3-2031	1 Req.	Ribbon Spool Guard, Left
3-2032	1 Req.	Ribbon Spool Ratchet, Left
3-2036	1 Req.	Manual Ribbon Reverse Arm and Bracket
3-2074	1 Req.	Ribbon Spool Shaft, Left
3-2081	1 Req.	Side Plate, Left
3-2082	1 Req.	Side Plate, Right
3-2099	1 Req.	Ribbon Universal Bar
3-3010	1 Req.	Ribbon Carrier
3-5106	2 Req.	Ribbon Spool Shaft Tension Spring Collar
3-5108	2 Req.	Ribbon Shift Support Bearing Screw Washer
3-6025	2 Req.	Ribbon Spool Pawl Spring
3-6034	2 Req.	Ribbon Spool Shaft Tension Spring
3-6047	2 Req.	Ribbon Carrier Detent Spring
3-6051	1 Req.	Manual Ribbon Reverse Arm Detent Spring
3-7023	4 Req.	Ribbon Spool Shaft Support Bracket Screw
3-7054	2 Req.	Ribbon Shift Support Bearing Screw
3-7081	2 Req.	Ribbon Spool Ratchet Hub Set Screw
3-7081	2 Req.	Ribbon Spool Shaft Tension Spring Collar Set Screw
3-7101	2 Req.	Ribbon Reverse Actuator Link Retaining Ring
3-7113	1 Req.	Ribbon Universal Bar Retaining Ring
3-8005	1 Req.	Manual Ribbon Reverse Arm Finger Pad
2-40224	1 Req.	Manual Ribbon Reverse Arm and Bracket Screw

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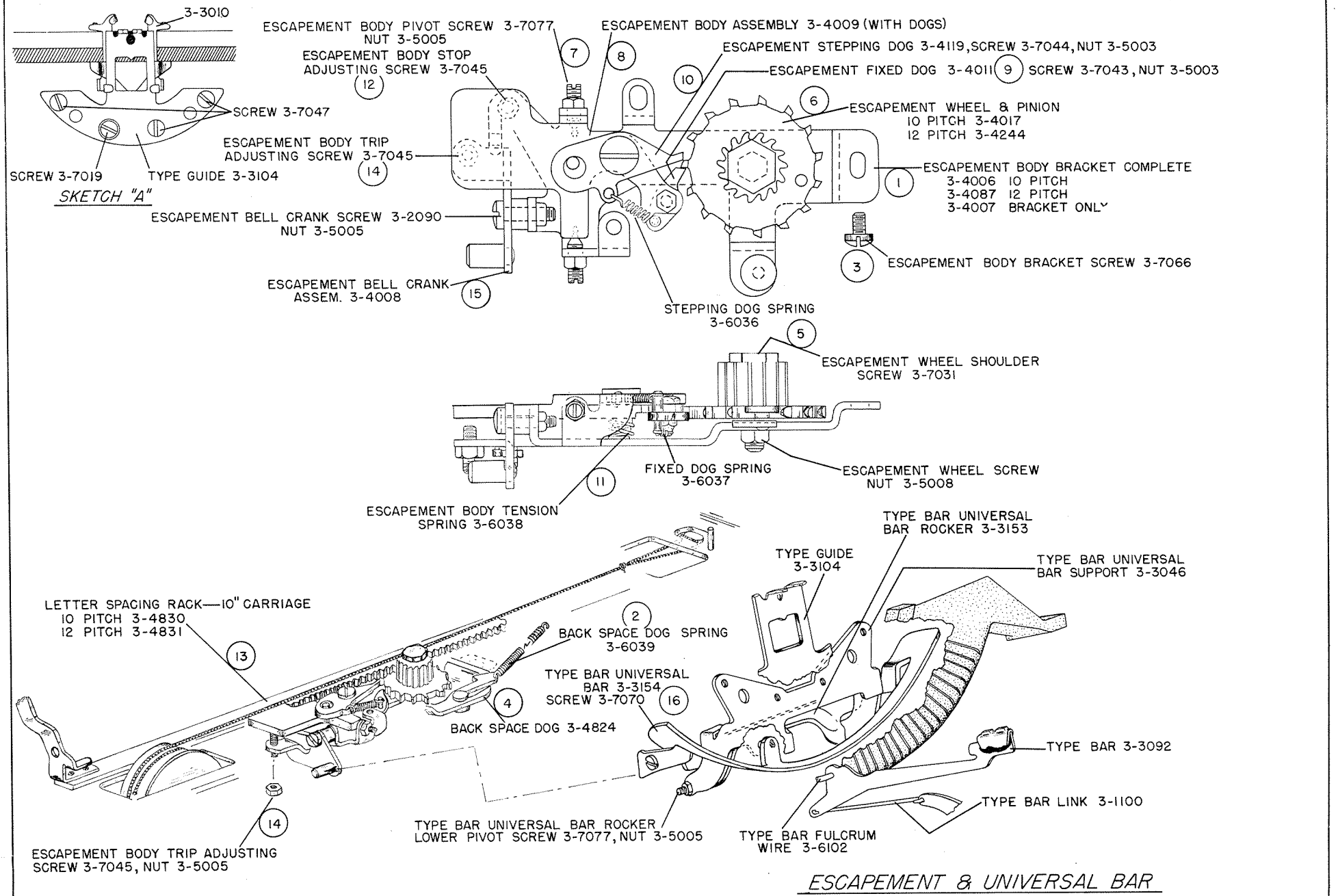


ESCAPEMENT & UNIVERSAL BAR

Remove Escapement Body Bracket Complete 3-4006 (1) as follows: Remove Back Space Dog Spring 3-6039 (2). Take out three Escapement Body Bracket Screws 3-7066 (3). Slide Escapement Complete (1) to right and at the same time disengage Back Space Dog 3-4824 (4) from its Stud on Escapement Body Bracket (1).

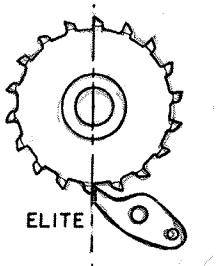
Dismantle Escapement Body Bracket Complete (1) as follows: Remove Nut 3-5008 from the Escapement Wheeel Shoulder Screw 3-7031 (5) holding Escapement Wheel 3-4017 (6) to Bracket (1). Remove Screw (5) and Wheel (6) and see that shoulder on Screw (5) is lubricated with light typewriter oil. The shoulder on this Screw is of the correct length to accommodate the Wheel and no adjustments will be necessary except to see that the Wheel is free to revolve on the Screw and that the Nut on Screw (5) is tight. Replace Escapement Wheel (6), Screw (5) and Nut.

Loosen Nut 3-5005 and remove one Pivot Screw 3-7077 (7) holding Escapement Body Assembled 3-4009 (8) and remove Escapement Body (8). Check both Escapement Dogs (9) and (10) for minimum amount of side play. The shoulders on the Mounting Screws 3-7044 for Stepping Dog (10), and 3-7043 for Fixed Dog (9) are short enough that they can be adjusted to remove all side play of the Escapement Dogs and yet the Escapement Dogs must be free on their Pivot Screws. The adjustment is held securely by Lock Nuts 3-5003. The spring tension for the Escapement Body Assembled (8) is supplied by Spring 3-6038 (11) which is placed over the Nut 3-5003 of the Pivot Screw holding the Stepping Dog (10).

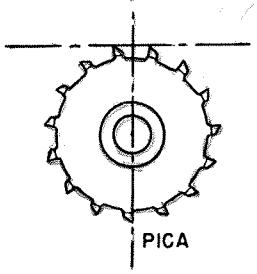
Replace the Escapement Body Complete (8) having this Spring (11) in position and adjust Escapement Body Pivot Screw (7) until all end play is removed, yet the Escapement Body (8) must be free. Hold this adjustment with Pivot Screw Nut.

The six o'clock position for the Escapement is adjusted by positioning the Escapement Body Assembly (8) through its Pivot Screws (7). To test for "6 o'clock" always hold the Escapement Wheel (6) under pressure against the Fixed Dog (9).

On the Elite Escapement, the face of the Escapement Wheel Tooth held against the Fixed Dog and the face of the Escapement Wheel Tooth directly opposite, should line up as the hands of a clock when at 6 o'clock. Elite or 12 Space Escapement Wheels have 18 teeth. See Sketch.



On the Pica Escapement this does not hold true, but if a straight edge were laid across the two teeth of the Escapement Wheel opposite the Tooth that is held against the fixed dog, the straight edge would be perpendicular to a line drawn from the face of the tooth that is being held against the Fixed Dog. Pica or 10 Space Escapement Wheels have 15 teeth. See Sketch.



Adjust Escapement Body Stop Adjusting Screw 3-7045 (12) in rear left corner of Escapement Bracket (1) that limits the Escapement Body (8) at rest. When this Screw (12) is properly adjusted, the lower edge of Fixed Dog (9) will be flush or not more than .010 below bottom edge of Escapement Wheel (6).

Replace Escapement Body Bracket Assembly Complete (1) into machine. Check to see that Back Space Dog (4) is correctly positioned on its Stud of Escapement Body Bracket (1). Replace three Escapement Body Bracket Screws (3). Hook up Back Space Dog Spring (2).

The right end of Escapement Body Bracket (1) can be swung to the front or rear of the machine to regain original setting of Escapement Wheel Pinion (6) for depth of mesh with Letter Spacing Rack 3-4830 (13). It will be noted also that both Right and Left Carriage Release Levers have lips beneath the Carriage Movable Rail. These lips can be used for more accurate adjustment of Letter Spacing Rack (13) mesh to the Pinion.

Also check Letter Spacing Rack (13) to see that it is level from one end to the other and check for mesh up of Rack (13) with Pinion (6) at both ends and center.

ESCAPEMENT TRIP

The Escapement has approximately an 80-20 drop. By this we mean, that as the Type Bar travels to the Platen and the first trip of the Escapement takes place, 80% of a full space drop (Carriage Travel) is accomplished. As the Type Bar restores from the Platen, 20% of the drop takes place. This drop is a fixed adjustment and is dependent upon condition of the Escapement Dogs.

Raise end Type Bars to Platen 3-4056 slowly and observe when Escapement (Trip) occurs. The Escapement (trip) should take place as the face of the Type touches the ribbon. To adjust for this condition, loosen Nut 3-5005 on Escapement Body Trip Adjusting Screw 3-7045 (14) located at rear left side of Escapement Bell Crank 3-4008 (15). To make trip take place earlier, turn in on the Screw. Reverse this condition to make trip take place later. Hold this adjustment by locking adjusting screw with its Nut.

After Escapement adjustments have been made as previously outlined, be sure that Escapement Bell Crank (15) has a little lost motion in it. This is necessary otherwise the Escapement Rocker Body (8) would not limit on its Escapement Body Stop Adjusting Screw (12) which had been previously adjusted for positioning the Escapement Dog (9) in correct relation to the Escapement Wheel Teeth (6).

UNIVERSAL BAR

Insofar as adjustments of the Type Bar Universal Bar (16) are concerned there is very little that should be done or can be done after the factory adjustments have been made. The Type Bar Universal Bar Support is gauged and dowel pinned to the back of the Segment and the Type Bar Universal Bar Rocker 3-3153 is checked and squared up on gauges before being assembled between the Type Bar Universal Bar Support 3-3046 and Type Bar Universal Bar (16).

If Type Bars from left side of Segment trip earlier than the ones from the right side or vice versa, it indicates that the Type Bar Universal Bar Rocker 3-3153 may be twisted. It will be noted that there are three Screws 3-7019 holding the Type Guide to the Segment. Screw 3-7070 sets in a hole in the Type Guide 3-3104. This Screw does not hold the Type Guide to the Segment but it does hold the Type Bar Universal Bar Support 3-3046 to the back side of the Segment. Therefore, in order to remove the Type Guide only, remove the other three screws. If the lower center (Right) Type Guide Screw is removed, be sure that the same one is replaced as a longer Screw at this point will cause a bind in Ribbon Carrier 3-3010. See Sketch "A".

ESCAPEMENT AND UNIVERSAL BAR PARTS LIST

3-3046	1 Req.	Type Bar Universal Bar Support Assembly
3-3152	1 Req.	Line Lock Slide
3-3153	1 Req.	Type Bar Universal Bar Rocker
3-3154	1 Req.	Type Bar Universal Bar
3-4006	1 Req.	Escapement Body Bracket Assem., Complete, 10 Space
3-4007	1 Req.	Escapement Body Bracket
3-4008	1 Req.	Escapement Body Bell Crank
3-4009	1 Req.	Escapement Body Assem., Complete (with Dogs)
3-4010	1 Req.	Escapement Body (without Dogs)
3-4011	1 Req.	Escapement Fixed Dog
3-4017	1 Req.	Escapement Wheel, 10 Space
3-4087	1 Req.	Escapement Body Bracket, Assem., Complete, 12 Space
3-4119	1 Req.	Escapement Stepping Dog
3-4244	1 Req.	Escapement Wheel, 12 Space
3-4830	1 Req.	Letter Spacing Rack Assembled, 10" Carr., 10 Space
3-4831	1 Req.	Letter Spacing Rack Assembled, 10" Carr., 12 Space
3-4832	1 Req.	Letter Spacing Rack Assembled, 11" Carr., 10 Space
3-4833	1 Req.	Letter Spacing Rack Assembled, 11" Carr., 12 Space
3-5003	1 Req.	Nut (Escapement Stepping Dog Screw)
3-5003	1 Req.	Nut (Escapement Fixed Dog Fulcrum Screw)
3-5005	2 Req.	Nut (Segment Oscillator Pivot Screw)
3-5005	1 Req.	Nut (Escapement Body Stop Screw)
3-5005	2 Req.	Nut (Escapement Body Pivot Screw)
3-5005	1 Req.	Nut (Escapement Body Operating Screw)
3-5005	1 Req.	Nut (Space Key Escapement Body Operating Screw)
3-5005	2 Req.	Nut (Type Bar Universal Bar Rocker Pivot Screw)
3-5005	2 Req.	Nut (Type Bar Universal Bar Screw)
3-5005	1 Req.	Nut (Escapement Bell Crank Screw)
3-5008	1 Req.	Nut (Escapement Wheel Screw)
3-6035	1 Req.	Spring (Line Lock Slide)
3-6036	1 Req.	Spring (Escapement Stepping Dog)
3-6037	1 Req.	Spring (Escapement Fixed Dog)
3-6038	1 Req.	Spring (Escapement Body)
3-6053	1 Req.	Spring (Type Bar Universal Bar Rocker)
3-7013	2 Req.	Screw (Line Lock Slide, Mounting)
3-7019	1 Req.	Screw (Segment and Type Bar Universal Bar Support Brkt.)
3-7031	1 Req.	Screw (Escapement Wheel Bearing)
3-7043	1 Req.	Screw (Escapement Fixed Dog Fulcrum)

ESCAPEMENT AND UNIVERSAL BAR PARTS LIST (CONT'D)

3-7044	1 Req.	Screw (Escapement Stepping Dog)
3-7045	1 Req.	Screw (Escapement Body Stop)
3-7045	1 Req.	Screw (Escapement Body Operating)
3-7045	1 Req.	Screw (Space Key Escapement Body Operating)
3-7047	3 Req.	Screw (Type Bar Guide)
3-7066	3 Req.	Screw (Escapement Body Bracket)
3-7070	2 Req.	Screw (Type Bar Universal Bar and Rocker)
3-7077	2 Req.	Screw (Escapement Body Pivot)
3-7077	2 Req.	Screw (Type Bar Universal Bar Rocker Pivot)

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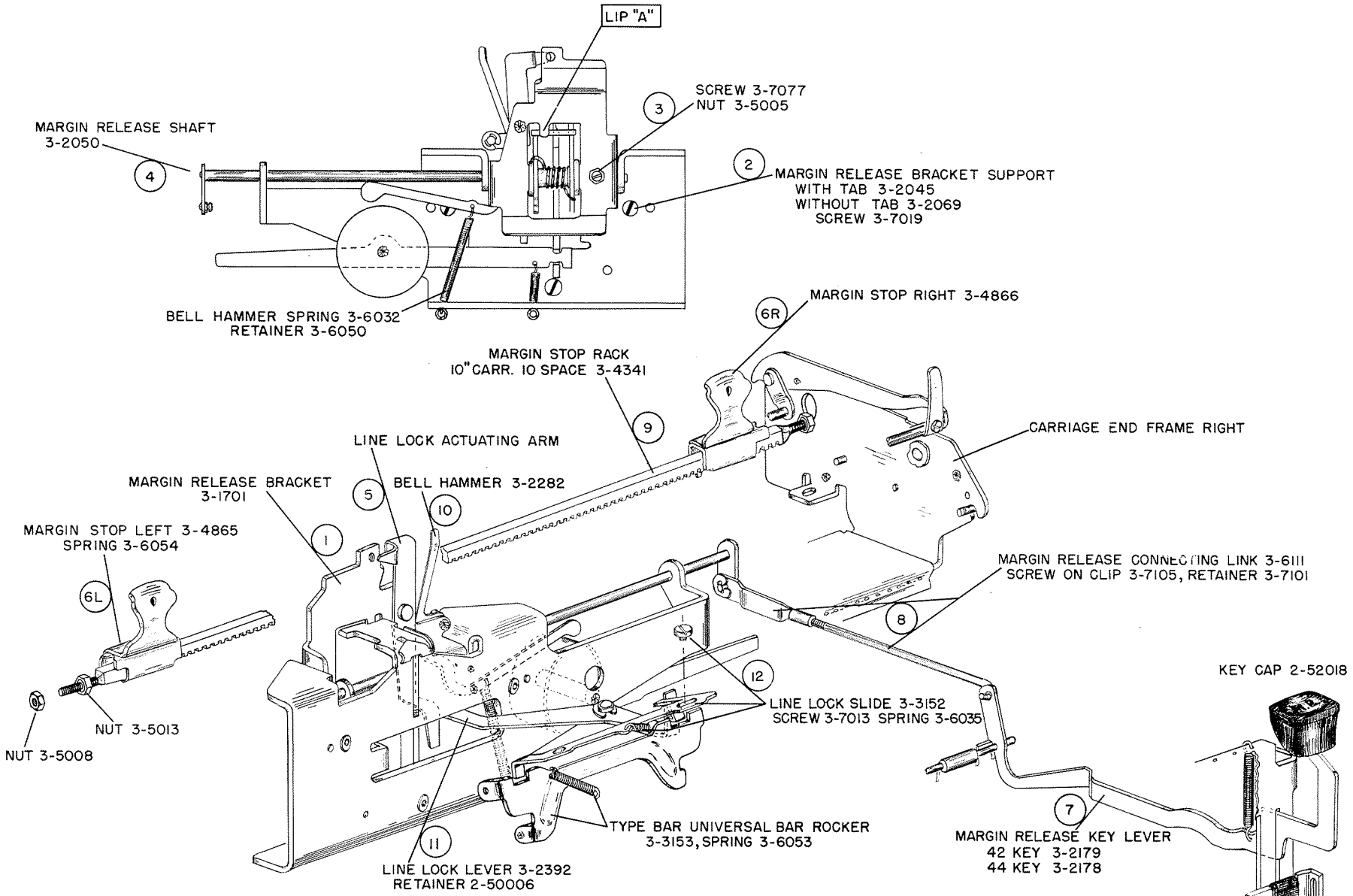

MARGIN RELEASE MECHANISM

Before adjusting the Margin Release, Line Lock and Bell Mechanisms it is important that the Mesh between the Letter Spacing Rack and the Escapement Wheel Pinion and the 6 o'clock position of the Escapement is correct.

The Margin Release Bracket 3-1701 (1) is fastened to the Margin Release Shaft 3-2050 (4) with Set Screw 3-7077 (3) and locked into place with its Lock Nut 3-5005.

Lip "A" should limit against the Margin Release Bracket Support 3-2045 (2), it may be necessary to form lip "A" so that the Margin Release Bracket (1) has a positive hold on the Margin Stops (6L) and (6R). NOTE: If the Margin Release Bracket (1) rests too far forward, then the Margin Stops will not "cam by" the Margin Release Bracket (1) if the Margin Stops have been by-passed. For example, if we space into the right margin, depress the Margin Release Key Lever (7) and space a couple of times, we have definitely "by-passed" the right Margin Stop (6R). When returning the Carriage to Left Margin position it would be necessary for the Right Margin Stop (6R) to "cam by" the Margin Release Bracket (1). This is controlled by forming lip "A".

When the Margin Release Key Lever (7) is depressed (held down), the Margin Release Bracket (1) should travel rearward at the top, far enough to safely "clear" the Margin Stops (6L) and (6R). This is adjusted by positioning the Clip 3-7105 (8) at the rear end of the Margin Release Connecting Link 3-6111 (8). NOTE: Make certain the Margin Release Bracket (1) restores fully to its limit at lip "A" after adjusting Clip (8).

Position the Margin Stop Rack 3-4341 (9) through the Adjusting Nuts 3-5008 and 3-5013 at each end the Rack (9) for .010 to .015 clearance between the Left Margin Stop (6L) and Margin Release Bracket (1).

Improper clearance at left Margin will cause irregular left margin. Clearance at left margin must be held to a minimum due to the fact that the Fixed Dog never leaves the Escapement Wheel but merely ratchets over the teeth when the Carriage is returned to zero.

CAUTION: It is possible to "Cramp" the Carriage ends and bind the Platen Shaft when moving the Margin Stop Rack (9) if the Adjusting Nuts are not adjusted carefully.

To properly position the Margin Stop Rack (9), move the Adjusting Nuts on the right end of the Rack (9) completely away from the Carriage End Frame. Position the Margin Stop Rack (9) as required by adjusting the Nuts on the Left End of the Margin Stop Rack (9). Lock the Nuts to the Left Carriage End Frame. Now turn the Nut on the inside of the Right Carriage End Frame with your Fingers until it touches, turn an additional 1/8 turn and while holding the inside Nut on right end of Margin Rack (9), tighten securely the outside Nut at the Right Carriage End Frame.

The large hole just above the right end of Margin Stop Rack (9) is provided for easy removal of the Margin Stop Rack. If it is found necessary to remove the Margin Stop Rack (9), take off Nut on extreme left end and loosen Nut on extreme right end. Then slide right end of Margin Stop Rack (9) upward, then to right through large hole until left end clears left Carriage Frame. Slide Margin Stop Rack Complete with Margin Stops out to left.

Form the upper portion of Bell Hammer 3-2282 (10) if necessary for proper Contact with the Margin Stops. The Bell Hammer should not limit on the Bell but must set close to the Bell when at rest. If Hammer (10) rests against the Bell, a "dead" sounding Bell will result and if the Hammer (10) is formed too far from the Bell, then the Hammer will contact the Rear Cover as the Bell Hammer is operated by the right Margin Stop (6R).

The Line Lock Slide 3-3152 (12) is moved into position to limit the Universal Bar for Line Lock, through the action of the Line Lock Actuating Arm (5) and Line Lock Lever Assembly 3-2392 (11), by the Right Margin Stop (6R).

To adjust the Line Lock, form the lower end of the Line Lock Actuating Arm (5). This Line Lock Actuating Arm (5) should be formed so that Alphabet or Numeral Key Lever will not operate to print or space at right margin. The Line Lock Actuating Arm (5) should limit against the Margin Release Bracket (1) in such a manner as to stop the Carriage so the Escapement is inactive when the alphabet and numeral Keys are locked at right Margin.

It is necessary to stop the Carriage so the Escapement is "inactive" (does not space) in the event the Space Bar is operated at right Margin before the Margin Release has been operated. There is no "line lock" for the Space Bar Mechanism other than this adjustment.

NOTE: The Carriage must be stopped just before the Escapement Wheel takes up the Yield of the Fixed Dog. The Escapement Wheel will then be in such a position that neither dog will be holding against a tooth and the Escapement Rocker can be actuated by the Space Bar at right margin without the Carriage moving a space when the Margin Release is operated.

Care must be taken when making this adjustment to see that the front end of the Line Lock Lever (11) does not disturb the normal rest position of the Line Lock Slide 3-3152 (12) which is held to the right by Spring 3-6035. When the large extension of the Right Margin Stop (6R) contacts the top of Line Lock Actuating Arm (5), it causes lower end of this Arm to be driven to the right, therefore, the front end of the Line Lock Lever (11) through its pivot arrangement would be driven to the left taking with it the Line Lock Slide (12) which blocks the operation of the Type Bar Universal Bar. Make certain that all parts of the mechanism are free.

PARTS LIST FOR MARGIN RELEASE, LINELOCK AND BELL

3-1701	1 Req.	Margin Release Bracket
3-1702	1 Req.	Margin Release Bracket Support, Complete with Tab.
3-1703	1 Req.	Margin Release Bracket Support, Complete without Tab.
3-2045	1 Req.	Margin Release Bracket Support, with Tab.
3-2050	1 Req.	Margin Release Shaft
3-2069	1 Req.	Margin Release Bracket Support, without Tab.
3-2178	1 Req.	Margin Release Key Lever, 44 Key Machine
3-2179	1 Req.	Margin Release Key Lever, 42 Key Machine
3-2282	1 Req.	Bell Hammer, 10 and 12 Space
3-2392	1 Req.	Line Lock Lever
3-3152	1 Req.	Line Lock Slide
3-3153	1 Req.	Type Bar Universal Bar Rocker.
3-4241	1 Req.	Margin Release Lever Rubber
3-4341	1 Req.	Margin Stop Rack 10" Carriage - 10 Space
3-4342	1 Req.	Margin Stop Rack 11" Carriage - 10 Space
3-4343	1 Req.	Margin Stop Rack 10" Carriage - 12 Space
3-4344	1 Req.	Margin Stop Rack 11" Carriage - 12 Space
3-4865	1 Req.	Margin Stop Left, 10 and 12 Space
3-4866	1 Req.	Margin Stop Right, 10 and 12 Space
3-5005	1 Req.	Nut (Margin Release Bracket Set Screw)
3-5008	2 Req.	Nut (Margin Stop Rack, Outer)
3-5013	2 Req.	Nut (Margin Stop Rack, Inner)
3-6032	1 Req.	Spring (Bell Hammer)
3-6035	1 Req.	Spring (Line Lock Slide)
3-6050	1 Req.	Spring Retainer (Bell Hammer Spring)
3-6053	1 Req.	Spring (Type Bar Universal Bar Rocker)
3-6054	2 Req.	Spring (Margin Stop)
3-6111	1 Req.	Margin Release Connecting Wire
3-7013	2 Req.	Screw (Line Lock Slide Mounting)
3-7019	3 Req.	Screw (Margin Release Bracket Support)
3-7077	1 Req.	Screw (Margin Release Bracket)
3-7101	1 Req.	Retaining Ring - Keeper (Margin Release Connecting Wire)
3-7105	1 Req.	Clip (Margin Release Connecting Wire)
3-7113	1 Req.	Retaining Ring - Keeper (Bell Hammer)
2-50006	1 Req.	Retaining Ring - Keeper (Line Lock Lever)
2-51940	1 Req.	Spring (Margin Release Key Lever)
2-52018	1 Req.	Key Cap (Margin Release Lever)

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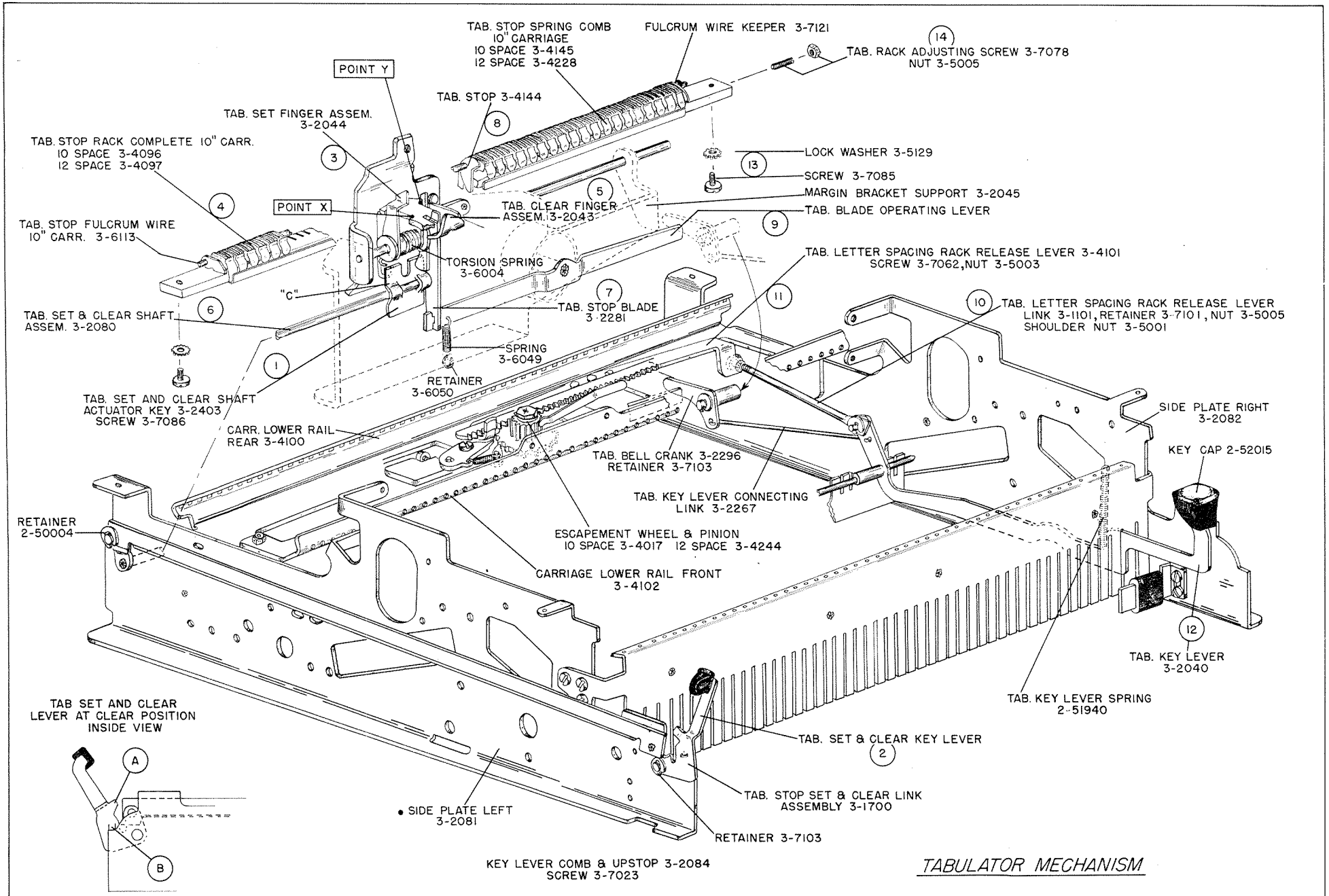

TABULATOR MECHANISM

The Tabulator Mechanism should be adjusted after the Letter Spacing Rack is properly meshed to the Escapement Wheel Pinion and the Escapement has been adjusted for 6 o'clock position. NOTE: This adjustment does not change unless the position of the Escapement Rocker pivots has been moved.

With Tabulator Stops 3-4144 set at 10, 20, 30, 40, 50, 60, 70 and 80, move the Carriage to right and left with Carriages Release Levers and note clearance between top of Tabulator Stop Blade 3-2281 (7) and bottom of Tabulator Stops 3-4144 (8). This clearance should be approximately 1/32" and is obtained by forming right end of Tabulator Blade Operating Lever (9).

If the Tabulator Blade Operating Lever (9) is formed upwards, the Tab Stop Blade (7) will be held higher in rest position and if the Tabulator Blade Operating Lever (9) is formed downward, the Tab Stop Blade (7) will drop lower in rest position.

Adjust Nuts 3-5001 and 3-5005 (10) at rear end of Tabulator Letter Spacing Rack Release Link 3-1101 (10) NOTE: Link (10) must be level and straight at point where it enters Tabulator Letter Spacing Rack Release Lever 3-4101 (11) so the Tabulator Letter Spacing Rack Release Lever (11) will have a slight amount of play when in normal position, otherwise, it will effect the depth of mesh between the Letter Spacing Rack and the Escapement Wheel Pinion.

When the Tabulator Key 3-2040 (12) is depressed and if the adjusting Nuts (10) at rear end of Tabulator Letter Spacing Rack Release Link (10) are adjusted too far to front of machine, the Letter Spacing Rack would limit, causing the Carriage to move sluggish during tabulation, especially when tabulating near the end of the writing line. The teeth of Letter Spacing Rack must clear Pinion when tabulating.

When Tabulator Key (12) is depressed and allowed to restore slowly, the Tabulator Stop Blade (7) must not release Tabulator Stop (8) until the Letter Spacing Rack is fully engaged with Escapement Wheel Pinion. The height of Tabulator Blade (7) and adjustments of Nuts at rear end of Tabulator Letter Spacing Rack Release Link (10) control this condition, as previously described.

Set Tabulator Stops (8) from ten to twenty inclusive; also from forty to fifty and seventy to eighty. When the Tabulator Blade (7) comes up between two Stops (8), the left side of Tabulator Stop Blade (7) should just barely clear the right side of the Tabulator Stop at its left. In other words, we want as much drop as possible without interferring with Tabulator Stop (8). Test machine for same condition at both ends and center of Rack (4).

The Tabulator Stop Rack (4) can be adjusted to the right or left for drop by loosening its two mounting screws 3-7085 (13) and adjusting Set Screw 3-7078 (14) at right end of Rack (4).

There is a flat Spring attached to the Tabulator Letter Spacing Rack Release Lever (11). When the Tabulator Key Lever (12) is depressed, this Spring holds the Escapement Wheel Pinion in position so the Letter Spacing Rack teeth will mesh properly with the Escapement Wheel Pinion Teeth as the Tabulator Key Lever

(12) is released as the Letter Spacing Rack is restored to normal. This is necessary for positive Tabulation. The Spring must clear the teeth of the Pinion Wheel when the Tabulator Key Lever (12) is at rest position.

Adjust the Tabulator Set and Clear Shaft Actuator Key 3-2403 (1), through its Set Screw 3-7086, to where the Tabulator Set and Clear Key Lever (2) is centered between the letters "S" and "C" of the Frame Front, ("S" means Set position and "C" means Clear position for the Key Lever) (2). The Tabulator Set and Clear Shaft 3-2080 (6), should have a minimum of play but free.

The Tabulator Set and Clear Shaft (6) should have a minimum of forward or rearward lost motion. To test, move the Tabulator Set and Clear Shaft Actuator (1) forward and rearward. Insert a Screw Driver Blade in the slot of the Actuator at the position marked "C" and twist the Screw Driver Blade so as to form one lip rearward and one lip forward.

Hold the Tabulator Set and Clear Key Lever (2) to the rear and check to see that the Tabulator Set Finger 3-2044 (3) limits at Point "X" as the Rear extension (Point "A") of the Tabulator Set and Clear Key Lever (2) limits on the Left Side Plate. Form the rear extension of the Tab Set and Clear Key Lever at ("A") for this adjustment.

Hold the Tabulator Set and Clear Key Lever (2) forward and check to see that the Clear Finger 3-2043 (5) is limiting at point "Y" at the same time the forward extension (Point "B") of the Tabulator Set and Clear Key Lever, limits on the Left Side Frame. Form the forward extension of the Tabulator Set and Clear Key Lever at (B) for the adjustment.

Position the Tabulator Stop Rack (4) to the front or rear on its Mounting Screws so that the Tabulator Clear Key Finger (5) does not ride the Tabulator Rack (4) hard, when the Tabulator Set and Clear Key Lever (2) is held forward and the Stops are in a "cleared" position. Always recheck "drop" as previously explained if the Tabulator Rack (4) is moved.

If the Tabulator Rack is properly positioned for "drop" as previously explained, check to see that the Tabulator Set Finger (3) sets only one Stop (8) at a time and is setting the correct Stop. Form the Tabulator Set Finger (3) to set the correct Stop (8) and strike stop squarely.

Test as follows: Position carriage at twenty and set a Stop (8) by the Set Lever (2). Now move the Carriage back to zero and tabulate to the Stop. The Carriage should stop at twenty, if not form the Tabulator Set Finger (3) to set the correct Stop.

Make certain that all screws of the Tabulator Mechanism are tight.

3-1101	1 Req.	Tabulator Letter Spacing Rack Release Link
3-1700	1 Req.	Tabulator Stop Set and Clear Link
3-1702	1 Req.	Margin Release Support Bracket, Complete (with Tab)
3-1703	1 Req.	Margin Release Support Bracket, Complete (without Tab)
3-2040	1 Req.	Tabualtor Key Lever
3-2043	1 Req.	Tabulator Clear Finger
3-2044	1 Req.	Tabulator Set Finger
3-2045	1 Req.	Margin Release Support Bracket
3-2080	1 Req.	Tabulator Stop Set and Clear Shaft
3-2081	1 Req.	Side Plate, Left
3-2082	1 Req.	Side Plate, Right
3-2084	1 Req.	Key Lever Comb and Upstop
3-2267	1 Req.	Tabulator Key Lever Connecting Wire
3-2281	1 Req.	Tab Stop Blade
3-2296	1 Req.	Tabulator Bell Crank
3-2403	1 Req.	Tabulator Set and Clear Shaft Actuator Key
3-4017	1 Req.	Escapement Wheel, 10 Space
3-4096	1 Req.	Tab. Stop Rack, Complete (with Stops), 10 Space, 10" Carr.
3-4097	1 Req.	Tab. Stop Rack, Complete (with Stops), 12 Space, 10" Carr.
3-4100	1 Req.	Carriage Rail Rear
3-4101	1 Req.	Tab. Letter Spacing Rack Release Lever
3-4102	1 Req.	Carriage Rail, Front
3-4144	84 Req.	Tabulator Stop, 10 Space, 10" Carr.
3-4144	100 Req.	Tabulator Stop, 12 Space, 10" Carr.
3-4144	98 Req.	Tabulator Stop, 10 Space, 11" Carr.
3-4144	118 Req.	Tabulator Stop, 12 Space, 11" Carr.
3-4145	1 Req.	Tab. Stop Spring Comb., 10" Carr., 10 Space
3-4146	1 Req.	Tab. Stop Spring Comb., Support, 10" Carr.
3-4228	1 Req.	Tab. Stop Spring Comb., 10" Carr., 12 Space
3-4244	1 Req.	Escapement Wheel, 12 Space
3-4310	1 Req.	Tabulator Stop Spring Comb., Assem. 11" Carr.
3-4345	1 Req.	Tabulator Stop Spring Comb., Left, 10 Space, 11" Carr.
3-4346	1 Req.	Tabulator Stop Spring Comb., Right, 10 Space, 11" Carr.
3-4347	1 Req.	Tabulator Stop Spring Comb., Left, 12 Space, 11" Carr.
3-4348	1 Req.	Tabulator Stop Spring Comb., Right, 12 Space, 11" Carr.
3-4863	1 Req.	Tabulator Stop Rack, 10 Space, 11" Carr. Complete
3-4864	1 Req.	Tabulator Stop Rack, 12 Space, 11" Carr. Complete
3-5001	1 Req.	Nut (Tabulator Letter Spacing Rack Release Link)
3-5003	1 Req.	Nut (Tabulator Letter Spacing Rack Release Lever Screw)
3-5005	1 Req.	Nut (Tabulator Letter Spacing Rack Release Link)
3-5005	1 Req.	Nut (Tabulator Stop Rack Adjusting Screw)
3-5129	2 Req.	Washer (Tabulator Stop Rack Mounting Screw)
3-6004	1 Req.	Spring (Tabulator Stop Set and Clear Fingers)
3-6049	1 Req.	Spring (Tabulator Operating Lever)
3-6050	1 Req.	Retainer (Tabulator Operating Lever Spring)
3-6113	1 Req.	Tabulator Stop Fulcrum Wire, 10" Carriage
3-6115	1 Req.	Tabulator Stop Fulcrum Wire, 11" Carriage
3-7023	4 Req.	Screw (Key Lever Comb and Upstop)
3-7062	1 Req.	Screw (Tabulator Letter Spacing Rack Release Lever)
3-7078	1 Req.	Screw (Tabulator Stop Rack, Adjusting)
3-7085	2 Req.	Screw (Tabulator Stop Rack, Mounting)

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PARTS LIST FOR THE TABULATOR MECHANISM (CONT'D)

3-7086	1 Req.	Screw, Allen Head (Tab. Stop Set and Clear Actuating Key)
3-7101	1 Req.	Retainer-Keeper (Tab. Letter Spacing Rack Release Link)
3-7103	1 Req.	Retainer-Keeper (Tab. Stop Set and Clear Lever)
3-7103	1 Req.	Retainer-Keeper (Tab. Bell Crank)
3-7121	2 Req.	Retainer-Spring (Tab. Stop Fulcrum Wire)
3-8005	1 Req.	Finger Pad (Tab Stop Set and Clear Lever)
2-50004	1 Req.	Retainer-Keeper (Tab. Set and Clear Lever, Rear of Link)
2-51940	1 Req.	Spring (Tabulator Key Lever)
2-52015	1 Req.	Key Cap (Tabulator Key Lever)

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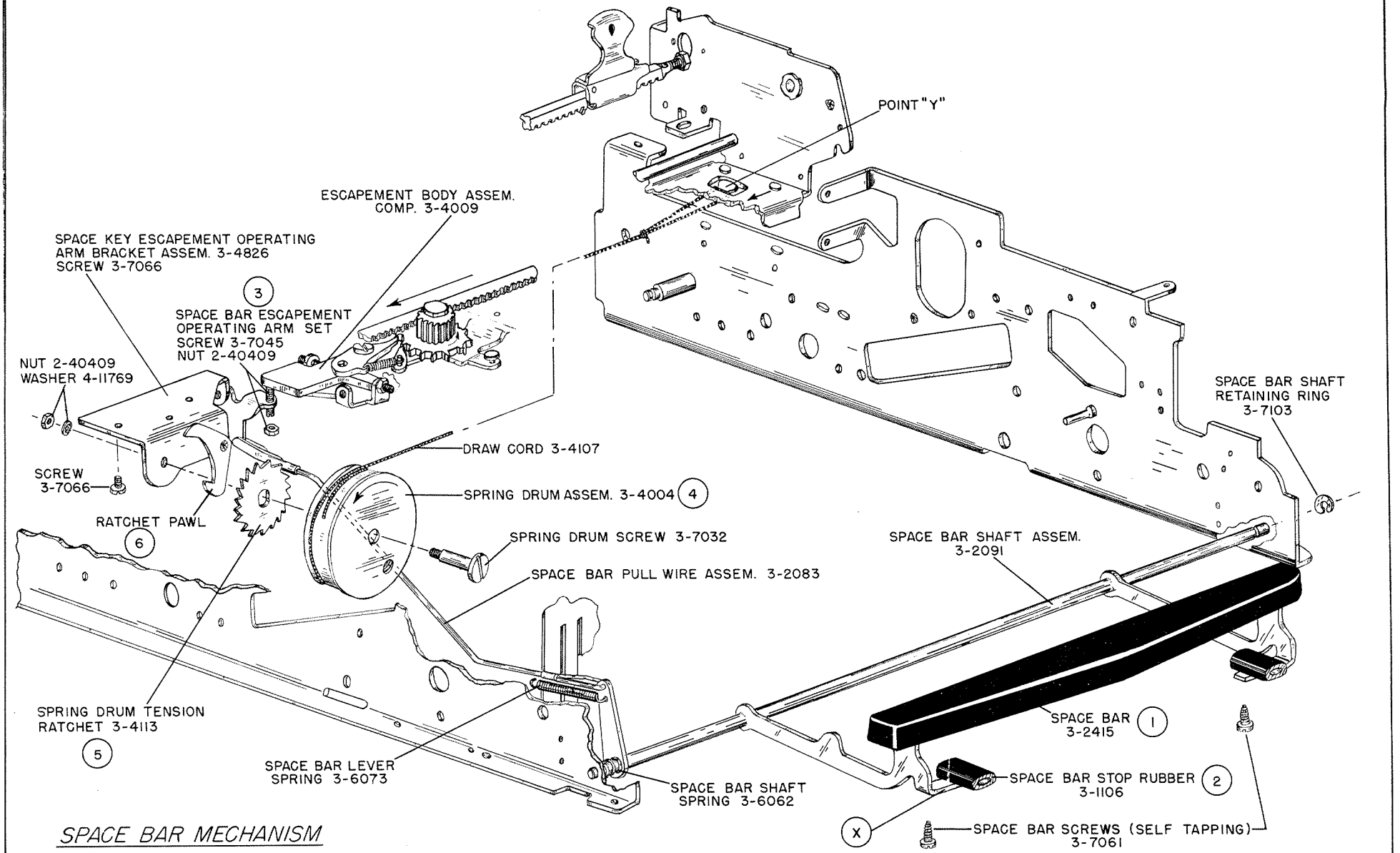

SPACE BAR MECHANISM

SPACE BAR MECHANISM

The Space Bar 3-2415 (1) when fully depressed, should not travel downward far enough to permit the top of the Space Bar (1) to go below the Frame front. Form the Space Bar Stops (2) to limit the downward travel of the Space Bar (1).

When the Space Bar (1) is at rest, the top of the Space Bar (1) will be approximately 7/16" below the tops of the Key Tops of the bottom row of Key Levers. This is adjusted by forming the Space Key Levers at point "X" of the Illustration. NOTE: Always adjust the downward travel of the Space Bar (1) before adjusting the upward travel as the adjustment for the downward travel of the Space Bar effects the adjustment for the upward travel or rest position of the Space Bar.

Check to see that the Escapement is properly adjusted (See Escapement Mechanism)

The "trip" or Escapement of the Space Key Mechanism should take place approximatel 1/16" to 1/8" before the Space Bar (1) limits on the Space Bar Stop (2). This is adjusted by turning the Space Bar Escapement Operating Arm Set Screw 3-7045 (3) in or out. When this Screw (3) is properly adjusted, Lock Nut 2-40409 to hold the adjustment.

Check to see that the "x" or "." Key Levers do not contact the Space Key Levers when the Key Levers are operated. Form the Space Key Levers as required for clearance of these Levers.

CARRIAGE SPRING DRUM

The same Carriage Spring Drum 3-4004 (4) is used for both the 10 and 11 inch Carriages.

Tension can be applied to the Spring Drum (4) by turning the Spring Drum Tension Ratchet 3-4113 (5) to the left (from the front of the machine). The Spring Drum tension should not be excessive but it must be sufficient to space into the right margin for proper linelocking near end of writing line (around 80-85 on the Margin Scale).

To release excessive tension of the Spring Drum (4), work the Ratchet Pawl (6) back and forth.

The Draw Cord 3-4107 is fastened to the Carriage as at point "Y". It is recommended that the Spring Drum, Complete with Draw Cord attached, be purchased in preference to replacing a broken Spring inside the Spring Drum (4).

The Spring Drum Screw 3-7032 is now long enough to install a lock washer 4-11769. This Washer will keep the Nut 2-40409 from working off the Screw. The Screw can be used on the "All New" Portable also.

SPACE BAR AND SPRING DRUM PARTS LIST

3-1106	Space Bar Stop Rubber (2 required)
3-2083	Space Bar Pull Wire, Assem.
3-2091	Space Bar Shaft, Assem.
3-2415	Space Bar
3-4004	Spring Drum, Assem.
3-4009	Escapement Body Assembly Complete
3-4107	Draw Cord
3-4113	Spring Drum Tension Ratchet
3-4826	Space Key Escapement Operating Arm Bracket, Assem.
3-6062	Space Bar Shaft Spring
3-6073	Space Bar Lever Spring
3-7032	Spring Drum Screw
3-7045	Space Bar Escapement Operating Arm Set Screw
3-7061	Space Bar Screw (Self Tapping) (2 required)
3-7066	Space Key Escapement Operating Arm Bracket Screw
3-7103	Space Bar Shaft Retainer Ring (Keeper)
4-11769	Spring Drum Screw Washer
2-40409	Spring Drum Screw Nut
2-40409	Space Bar Escapement Operating Arm Set Screw Nut

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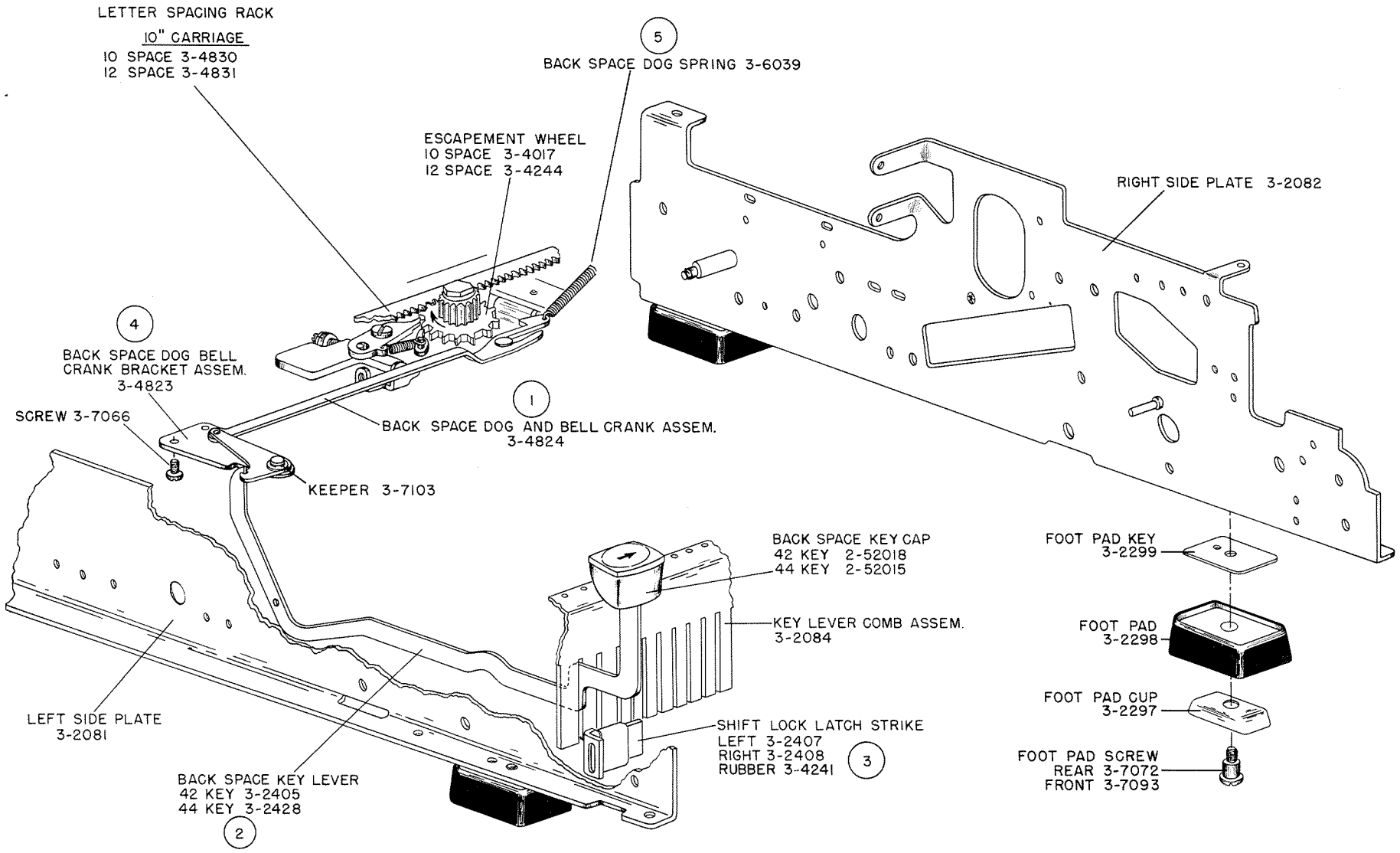


BACK SPACE MECHANISM

Before adjusting the Back Space Mechanism it should be known that the Back Space Dog and Bell Crank Assembly 3-4824 (1) is the same on both 10 space (Pica) and 12 space (Elite) machines. If the machine has a standard keyboard (42 typing keys) it will use the 42 Key Back Space Key Lever 3-2405 (2) but if there are 44 typing keys, then the Back Space Key Lever will be special (3-2428 44 Key Back Space).

The Rubber 3-4241 of the Shift Lock Latch Strike, left 3-2407 (3) is used as a down stop for the Back Space Key Lever (2). The Escapement should be properly adjusted before adjusting the Back Space Mechanism (Refer to Escapement Mechanism).

To adjust the Back Space Mechanism, position the Back Space Dog Bell Crank Bracket 3-4823 (4) through its Mounting Screws 3-7066, as required for proper throw of the Back Space Dog and Bell Crank Assembly (1). There is very little clearance for the Back Space Dog and Bell Crank Assembly (1) and it may be necessary to form the Back Space Dog Bell Crank Bracket (4) downward. Always check the Back Space Mechanism for "freedom" after positioning the Back Space Dog Bell Crank Bracket (4). The rear end of the Back Space Key Lever (2) may also be formed (as a last resort) to get more throw for the Back Space Dog and Bell Crank (1). All pivot points should be lubricated with a light oil. The linkage of the Back Space Mechanism must be free and the Carriage should travel approximately one and a half spaces when the Back Space Key Lever is depressed.

The Back Space Dog Spring 3-6039 (5) must be "hooked up" and in good condition as it is a return Spring for the Back Space Key Lever (2) as well as the Back Space Dog and Bell Crank (1).

All Escapement adjustments must be correct to insure a more positive back space operation. It is not advisable to form the Back Space Dog (1), where it guides on the Stud of the Escapement, as this part is very hard and might break.

The Component parts of the "Feet" are shown at the right front of the Illustration. Please note that the Screws for the front Feet are different than those used for the back Feet.

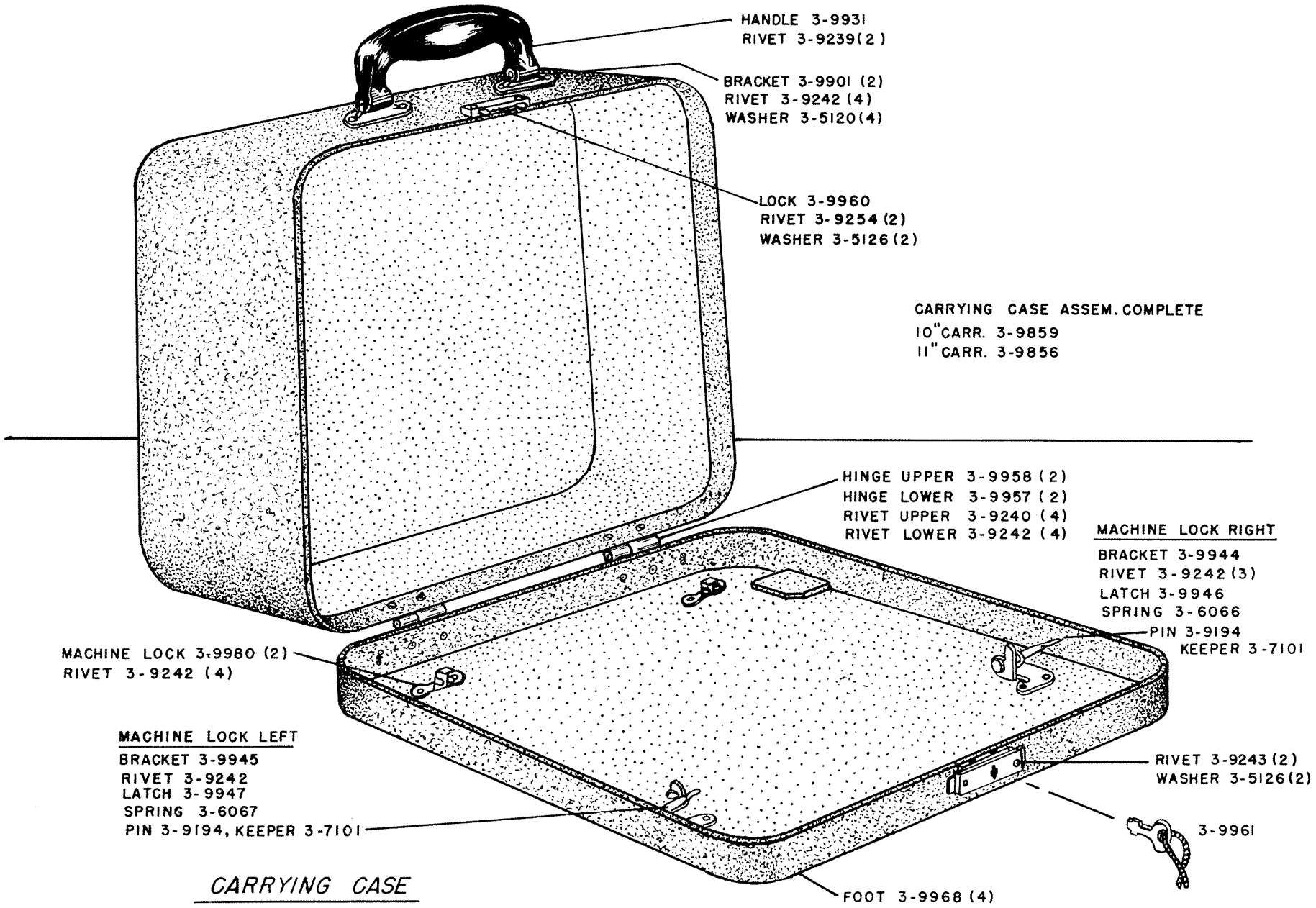
BACK SPACE AND FOOT PAD PARTS

3-2081	Left Side Frame
3-2082	Right Side Frame
3-2084	Key Lever Comb and Upstop Assembly
3-2297	Foot Pad Cup (4 required)
3-2298	Foot Pad (4 required)
3-2299	Foot Pad Key (4 required)
3-2405	Back Space Key Lever (42 Key)
3-2407	Shift Lock Latch Strike, Left, (Back Space Key Lever Downstop)
3-2408	Shift Lock Latch Strike, Right

BACK SPACE AND FOOT PAD PARTS (CONT'D)

3-2428	Back Space Key Lever (44 Key)
3-4017	Escapement Wheel and Pinion (10 Space)
3-4241	Back Space Key Lever Down Stop (Rubber)
3-4244	Escapement Wheel and Pinion (12 Space)
3-4823	Back Space Dog Bell Crank Bracket, Assem.
3-4824	Back Space Dog and Bell Crank, Assem.
3-4830	Letter Spacing Rack - 10 inch Carriage (10 Space)
3-4831	Letter Spacing Rack - 10 inch Carriage (12 Space)
3-4832	Letter Spacing Rack - 11 inch Carriage (10 Space)
3-4833	Letter Spacing Rack - 11 inch Carriage (12 Space)
3-6039	Back Space Dog Spring
3-7066	Back Space Dog Bell Crank Bracket Screw (2 required)
3-7072	Foot Pad Screw Rear (2 required)
3-7093	Foot Pad Screw, Front (2 required)
3-7103	Back Space Dog and Bell Crank Retainer Ring (keeper)
2-52015	Back Space Key Cap (44 Key)
2-52018	Back Space Key Cap (42 Key)

NOTE: If Side Plate Threads for the Foot Pad Screw, Rear become stripped, use Foot Pad Screw (alternate) 3-7082 with Lock Nut 3-5011.



CARRYING CASE

PARTS LIST FOR CARRYING CASE

3-9856	1 Req.	Carrying Case, 11" Carriage
3-9859	1 Req.	Carrying Case, 10" Carriage

THE COMPONENT PARTS FOR THE ABOVE LISTED PARTS ARE AS FOLLOWS:

3-5120	4 Req.	Washer (Carrying Case Handle Bracket Rivet)
3-5126	4 Req.	Washer (Carrying Case Lock Rivet)
3-6066	1 Req.	Spring (Carrying Case Machine Front Lock, Right)
3-6067	1 Req.	Spring (Carrying Case Machine Front Lock, Left)
3-7101	2 Req.	Keeper (Carrying Case Machine Front Lock, Latch Pin)
3-9194	2 Req.	Pin (Carrying Case Machine Front Lock, Latch Fulcrum)
3-9239	2 Req.	Rivet (Carrying Case Handle)
3-9240	4 Req.	Rivet (Carrying Case Hinge, Upper)
3-9242	4 Req.	Rivet (Carrying Case Hinge, Lower)
3-9242	4 Req.	Rivet (Carrying Case Handle Bracket)
3-9242	6 Req.	Rivet (Carrying Case Machine Front Lock)
3-9242	4 Req.	Rivet (Carrying Case Machine Rear Lock)
3-9243	2 Req.	Rivet (Carrying Case Lock, Lower)
3-9254	2 Req.	Rivet (Carrying Case Lock, Upper)
3-9857	1 Req.	Carrying Case Base 11" Carriage
3-9858	1 Req.	Carrying Case Cover 11" Carriage
3-9860	1 Req.	Carrying Case Base 10" Carriage
3-9861	1 Req.	Carrying Case Cover 10" Carriage
3-9901	2 Req.	Carrying Case Handle Bracket
3-9931	1 Req.	Carrying Case Handle
3-9944	1 Req.	Machine Front Lock Bracket, Right
3-9945	1 Req.	Machine Front Lock Bracket, Left
3-9946	1 Req.	Machine Front Lock Latch, Right
3-9947	1 Req.	Machine Front Lock Latch, Left
3-9957	2 Req.	Carrying Case Hinge, Lower
3-9958	2 Req.	Carrying Case Hinge, Upper
3-9960	1 Req.	Carrying Case Lock
3-9961	1 Req.	Carrying Case Lock Key
3-9968	4 Req.	Carrying Case Foot
3-9980	2 Req.	Carrying Case Machine Lock, Rear

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REMINGTON PORTABLE TYPEWRITER

MODELS-AN-QR-ER

REMINGTON PORTABLE TYPEWRITER INSPECTION

		ADJ.	O.K.
1.	Check Keyboard against order. Remarks:	1.	
2.	Check Paper Table for clearance of Margin Stops-Correct Spacing. Remarks:	2.	
3.	Check Carriage for proper fit in Rails, free, proper tension, Screws and Nuts tight. Remarks:	3.	
4.	Check right and left Margin Stops for set in Rack, Margin Release Lever, Line Lock, Bell Ringer and Margin Stop Bracket Screws tight. Check for even Left Margin. Remarks:	4.	
5.	Check Back Spacer. Remarks:	5.	
6.	Check Platen for end-play and free. Remarks:	6.	
7.	Check Platen for creep or backlash when using Line Space Lever. Line Space Lever to clear Top Cover. Remarks:	7.	
8.	Check Variable for release, one, two and three line spacing and Line Space Indicator. Remarks:	8.	
9.	Check Paper Bail for Rolls on paper, Rolls for free and even pressure. Remarks:	9.	
10.	Check all Scales for proper setting. Remarks:	10.	
11.	Check Ribbon Drive and reversing (Both Spools). Remarks:	11.	
12.	Check Segment for motion, sticky Type Bars and alignment Remarks:	12.	
13.	Check Escapement trip, Universal Bar and Rocker for tight Screws. Remarks:	13.	
14.	Check Tabulator for set, clear and drop. Remarks:	14.	
15.	Check Shift for free and Locks for proper setting. Remarks:	15.	
16.	Check Space Bar for trip and see that Space Bar Screws are tight, Space Key free. Remarks:	16.	
17.	Check Ribbon Cover and Vibrator sticking. Remarks:	17.	
18.	Check Machine finish, Key Tops and Carrying Case for appearance. Remarks:	18.	
19.	Write sample of: Motion and all characters, Upper and Lower Case on back of this report. Black and Red writing Sample.	19.	
20.	Machine No. Office # Inspector	Mechanical Time Minutes	

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LUBRICATION CHART

Below are Numbers of Grease and Oils available and also information as to Points used on the Machine.

SVC 523-L, SEMI FLUID-WATER PROOF (LUBRI-PLATE)

36 Key Lever Links - Both Ends of Links.
36 40 Type Bar Links - Front End of Links only.
32 Key Lever Comb - Rear Side.
29 Shift Link - At Pivot Points of Linkage.
29 Segment Shift Operating Rolls - On their Shaft.
29 Segment Roller Guide Bracket - In Slot where Rolls operate.
16 20 Line Space Lever - At Pivot and Stud.
16 Ratchet Detent Roll Arm.
40 50 Feed Rack - Teeth of Rack.
10 Carriage Release Lever - Where Lever Limits on Carriage.
40 Escapement Wheel - Hole for Escapement Wheel Screws.
40 Escapement Bell Crank - Stud where Type Bar Universal Bar strikes.
40 Escapement Rocker - At Point where Trip Screw strikes.
40 Stepping Dog - In Hole where Stepping Dog Limits.

SVC 30-L, NYE. PORPOISE OIL

40 Fixed Dog - Pivot Screw.
40 Stepping Dog - Pivot Screw.
40 Escapement Rocker - Pivot Screw Holes.
40 Escapement Bell Crank - Pivot Screw.
16 Variable Clutch Jaws.
16 Platen Clutch Shaft - For smoother operation of Plunger in Shaft.

SVC 465-L GULF SEMI-FLUID "C" OIL

29 Shift Operating Shaft - Pivot at each end of Shaft.

SVC 50-L GARGOYLE DTE HVY MED OIL

40 This Type Oil is used for all other Pivot Points of movable parts and the Rear Connection of the Type Bar Links.

32 NOTICE: Do not use Oil or Grease in Slots of Type Bar Bell Crank Bracket.