CATALOG NO.

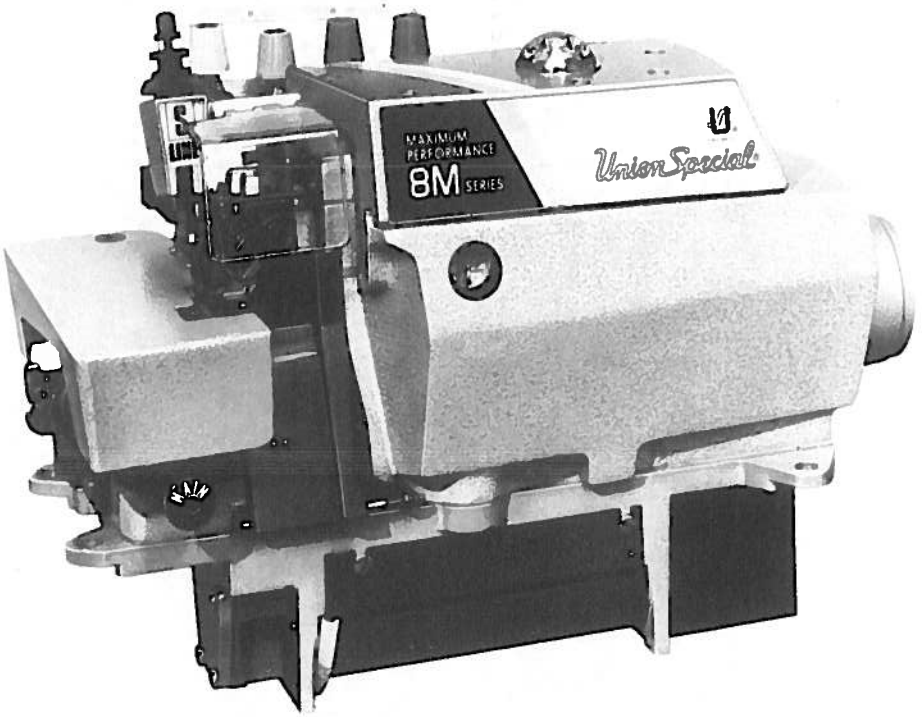
103WA

First Edition

SERIES

8M

Adjusting instructions and illustrated parts list



Maximum Performance 8M Series
-High speed differential feed overseamers with thumbscrew adjusted feed

Finest Quality

Union Special®
Industrial Sewing Equipment

CATALOG NO. 103 WA

ADJUSTING INSTRUCTIONS

AND

ILLUSTRATED PARTS LIST

FOR

MAXIMUM PERFORMANCE - 8M SERIES

STYLES

39500 WA	39500 CWE	39500 SWP
39500 WC-1.98	39500 CWF	39500 CSWA
39500 WE	39500 CWK-1.98	39500 CSWC-1.98
39500 WF	39500 CWP	39500 CSWF
39500 WK-1.98	39500 SWA	39500 CSWK-1.98
39500 WP	39500 SWC-1.98	39500 CSWP
39500 WW	39500 SWE	39500 SWAL
39500 CWA	39500 SWF	39500 SWFL
39500 CWC-1.98	39500 SWK-1.98	39500 SWPL

First Edition

By

Union Special Corporation

Printed in U.S.A.

October, 1983

FORWARD

This technical manual has been prepared to guide you in the maintenance of your new UNION SPECIAL machine. Careful attention to the instructions for operating and adjusting these machines will enable you to maintain the superior performance and reliability designed and built into every UNION SPECIAL machine.

The Adjusting Instruction portion of this manual explains in detail the proper setting for each of the components related to forming the stitch and completing the functions of the machine. Figures are used to illustrate the adjustments using reference letters to point out specific items discussed.

Adjustments are presented in sequence so that a logical progression is accomplished. Some adjustments performed out of sequence may have an adverse effect on the function of other related parts.

Implementation of preventative maintenance procedures can bring about significant improvements in operator productivity by avoiding costly equipment breakdowns. Whenever it becomes necessary to make repairs or replace parts on your machine, be sure to insist on genuine UNION SPECIAL Repair Parts. These parts are designed specifically for your machine and manufactured with utmost precision to assure long lasting service.

To simplify indentification of repair parts, the mechanisms are illustrated by exploded views. These illustrations will usually be shown in conjuction with a KEY VIEW which presents the mechanisms of the machine assembled. The specific parts illustrated on this page will appear shaded in the KEY VIEW.

SAFETY RULES

CAUTION!

THIS SAFETY SYMBOL INDICATES YOUR PERSONAL SAFETY IS INVOLVED.

TO PREVENT PERSONAL INJURY:

- All power sources to the machine MUST be TURNED OFF before threading, oiling, adjusting or replacing parts.
- Wear safety glasses.
- All sheilds and guards MUST be in position before operating machine.
- DO NOT tamper with safety shields, guards, etc., while machine is in operation.

IDENTIFICATION OF MACHINES

Each UNION SPECIAL machine carries a Style number, which on this Class machine is stamped in the Style plate located on the right rear of the machine. Serial number is stamped in the extension of bed casting at the right rear base of machine.

STYLES OF MACHINES

High speed, maximum performance, one or two curved blade needles, two loopers, three or four thread machines. Trimming mechanism with spring pressed lower knife, independently adjustable thumbscrews for main and differential feeds, needle cooler, improved internal lubricating system with self-contained oil filter and oil cooler. Maximum recommended speed 8000 R.P.M., depending on stitch length and type of operation.

39500 WA Light to medium duty, single needle, low capacity machine for seaming light to medium weight knitted or woven fabrics where long straight seams are a primary requisite. Type 154 GAS needle; seam specification 504 SSa-1; standard seam widths: 3/32 inch (2.4mm), 1/8 inch (3.2mm), 5/32 inch (4.0mm); stitch range 8-16 per inch.

39500 WC-1.98 Heavy duty, two needle, high capacity machine for seaming all types of heavy weight loosely knitted fabrics with a reinforcing tape up to 21/64 inch (8.3mm) wide. Type 8454 GS needle; seam specification 514 SSa-1; standard seam width; 1/4 inch (6.4mm); stitch range 12-25 per inch.
NOTE: Second needle is 5/64 inch (1.98mm) to the RIGHT of single needle machine location.

39500 WE Same as Style 39500 WA except - fitted with narrow sewing parts for better control when sewing curves or irregular shapes.

39500 WF Same as Style 39500 WA except - heavy duty, high capacity machine for seaming medium to heavy weight knitted or woven fabrics where long straight seams are a primary requisite. Stitch range 8-16 per inch.

39500 WK-1.98 Same as Style 39500 WC-1.98 except - for seaming all types of light weight knitted fabrics with reinforcing tape up to 13/64 inch (5.2mm) wide. Stitch range 8-16 per inch.
NOTE: Second needle is 5/64 inch (1.98mm) to the RIGHT of single needle machine location.

39500 WP Same as Style 39500 WF except - equipped with main and differential feeds having 12 T.P.I.

39500 WW Heavy duty, two needle, high capacity machine for seaming medium to heavy weight knitted or woven fabrics requiring a simulated safety stitch. Type 154 GAS needle; seam specification 512 SSa-2; standard seam width 17/64 inch (6.7mm); stitch range 8-16 per inch.
NOTE: Second needle is 7/64 inch (2.78mm) to the LEFT of single needle machine location.

39500 CWA Same as Style 39500 WA except - fitted with Power "Air-Klipp"® chain cutter.

39500 CWC-1.98 Same as Style 39500 WC-1.98 except - fitted with Power "Air Klipp" chain cutter.

39500 CWE Same as Style 39500 WE except - fitted with Power "Air-Klipp" chain cutter.

39500 CWF Same as Style 39500 WF except - fitted with Power "Air-Klipp" chain cutter.

39500 CWK-1.98 Same as Style 39500 WK-1.98 except - fitted with Power "Air-Klipp" chain cutter.

39500 CWP Same as Style 39500 WP except - fitted with Power "Air-Klipp" chain cutter.

39500 SWA Same as Style 39500 WA except - designed to use SHORT, STIFF NEEDLE (Type 162 SAS) which reduces needle cutting.

39500 SWC-1.98 Same as Style 39500 WC-1.98 except - designed to use SHORT, STIFF NEEDLE (Type 162 SDS) which reduces needle cutting.

39500 SWE Same as Style 39500 WE except - designed to use SHORT, STIFF NEEDLE (Type 162 SAS) which reduces needle cutting.

39500 SWF Same as Style 39500 WF except - designed to use SHORT, STIFF NEEDLE (Type 162 SAS) which reduces needle cutting.

39500 SWK-1.98 Same as Style 39500 WK-1.98 except - designed to use SHORT, STIFF NEEDLE (Type 162 SDS) which reduces needle cutting.

39500 SWP Same as Style 39500 WP except - designed to use SHORT, STIFF NEEDLE (Type 162 SAS) which reduces needle cutting.

39500 CSWA Same as Style 39500 SWA except - fitted with Power "Air-Klipp" chain cutter.

39500 CSWC-1.98 Same as Style 39500 SWC-1.98 except - fitted with Power "Air-Klipp" chain cutter.

39500 CSWF Same as Style 39500 SWF except - fitted with Power "Air-Klipp" chain cutter.

39500 CSWK-1.98 Same as Style 39500 SWK-1.98 except - fitted with Power "Air-Klipp" chain cutter.

39500 CSWP Same as Style 39500 SWP except - fitted with Power "Air-Klipp" chain cutter.

39500 SWAL Same as Style 39500 SWA except - equipped with Latch Tacker. Standard seam width 1/8 inch (3.2mm).

39500 SWFL Same as Style 39500 SWF except - equipped with Latch Tacker. Standard seam width 1/8 inch (3.2mm).

39500 SWPL Same as Style 39500 SWP except - equipped with Latch Tacker. Standard seam width 1/8 inch (3.2mm).

SPEED RECOMMENDATION

39500 8M machines have been tested in their complete stitch range at their maximum rated speeds. Varied sewing applications may necessitate operating at a lower speed. When operating from 50-100% machine running cycle and longer than recommended stitch length, it may be necessary to reduce machine's speed by 10-15%. Machine must be run at 7000 R.P.M. for the first four weeks of operation. Thereafter the machine may be operated at recommended speed (8000 R.P.M.).

LUBRICATION

Use a straight mineral oil with a Saybolt viscosity of 90 to 125 seconds at 100 degrees F. This is equivalent to UNION SPECIAL Specification No. 175. Remove oil filler cap (A, Fig. 1), add oil until indicator is level with top line of sight gauge (B). Replace oil filler cap and run machine 30 - 40 seconds at half speed to fill the system. Check sight gauge and add oil as required until the indicator registers halfway between the two lines of sight gauge (B). Approximately 14 to 16 ounces (354.9 to 414.0ml) is required to fill the system.

To maintain maximum recommended speed and servicability of this equipment when operating continuously, the oil must be changed at least every six months. In no case should oil remain in the machine for more than one year. Oil drain plug is located at rear of machine near bottom edge of base. ALWAYS change oil filter whenever oil is changed. It is recommended to change oil filter after the first three months of operation - or immediately, when oil is not visible in the oil filler cap while machine is running. At this time evaluate the contaminated condition to determine if the oil filter should be changed more or less often.

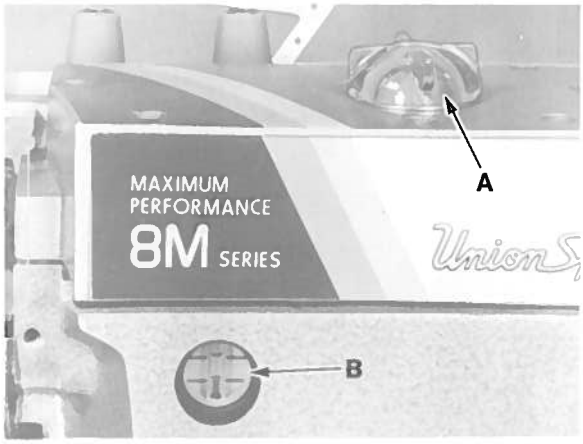


Fig. 1

NOTE: An oil by-pass valve is incorporated in the lubricating system so if oil filter should become clogged (oil not visible in filler cap while machine is running) machine will automatically revert to the splash system, but it is not advisable to operate for an extended length of time.

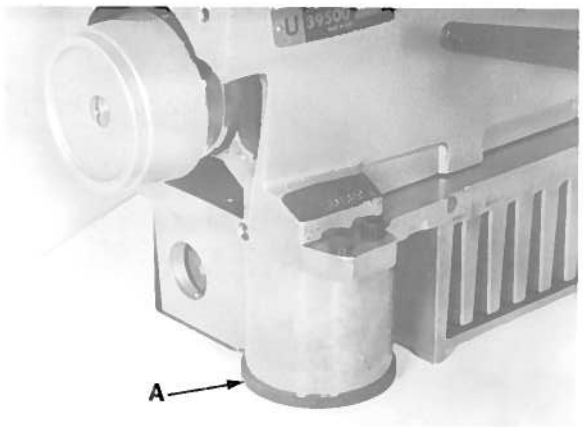


Fig. 2

To replace filter, unscrew oil filter cover assembly (A, Fig. 2), which should only be hand tightened and remove filter from shaft of cover assembly. Due to tight tolerances, it may be necessary to screw the old filter off and the new filter on the shaft of the cover assembly. Replace cover assembly (hand tight) and recheck oil level.

NEEDLES

Each needle has both a type and size number. The type number denotes the kind of shank, point, length, groove, finish and other details. The size number, stamped on the needle shank, denotes the largest diameter of blade, measured midway between shank and eye. Collectively, type and size number represents the complete symbol, which is given on the label of all needles packaged and sold by Union Special.

To have orders promptly and accurately filled, forward the empty package, a sample needle, or the type and size number should be given. See description on packages. A complete order would read as follows: "1000 Needles, Type 154 GAS, Size 110/044". The type numbers of the needles recommended for each style of machine covered by this catalog are given in the machine style description. Other needles are available, but the ones indicated are those recommended to produce the most satisfactory results. The type number of the recommended needle, together with their description, and the sizes available are listed below:

NEEDLE TYPE	DESCRIPTION	SIZES AVAILABLE
154 GAS	Round shank, round point, curved blade, standard length, single groove, struck groove, spotted, chromium plated.	055/022, 065/025, 070/027, 075/029, 080/032, 090/036, 100/040, 110/044, 125/049, 140/054, 150/060.
162 SAS	Round shank, round point, curved blade, Class "D", single groove, struck groove, spotted, chromium plated.	055/022, 065/025, 070/027, 075/029, 080/032, 090/036, 100/040, 110/044.
162 SDS	Slabbed shank, round point, .056 inch (1.43mm) slab, curved blade, Class "D", single groove, struck groove, spotted, chromium plated.	055/022, 065/025, 070/027, 075/029, 080/032.
8454 GS	Slabbed shank, round point, .056 inch (1.43mm) slab, curved blade, standard length, single groove, struck groove, chromium plated.	055/022, 070/027, 080/032, 090/036, 100/040.

NEEDLE REPLACEMENT

With needle in up position rotate presser foot release bushing counterclockwise and swing presser foot to the left. Turn handwheel until needle(s) is at lowest position. Loosen needle clamp stud nut (A, Fig. 3) with socket wrench No. 21388 A.

Rotate handwheel until needle arm is in its highest position. Remove old needle(s) and insert new needle(s). Tighten nut (A), swing presser foot to the right and lock foot into sewing position with presser foot release bushing.

THREAD MACHINE AS INDICATED IN FIGURE 4 - 4A, AS APPLICABLE.

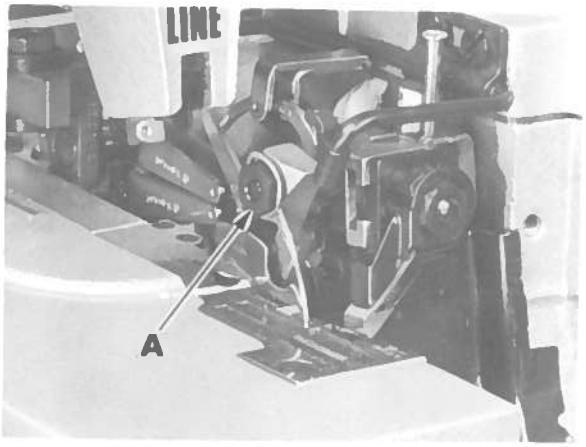
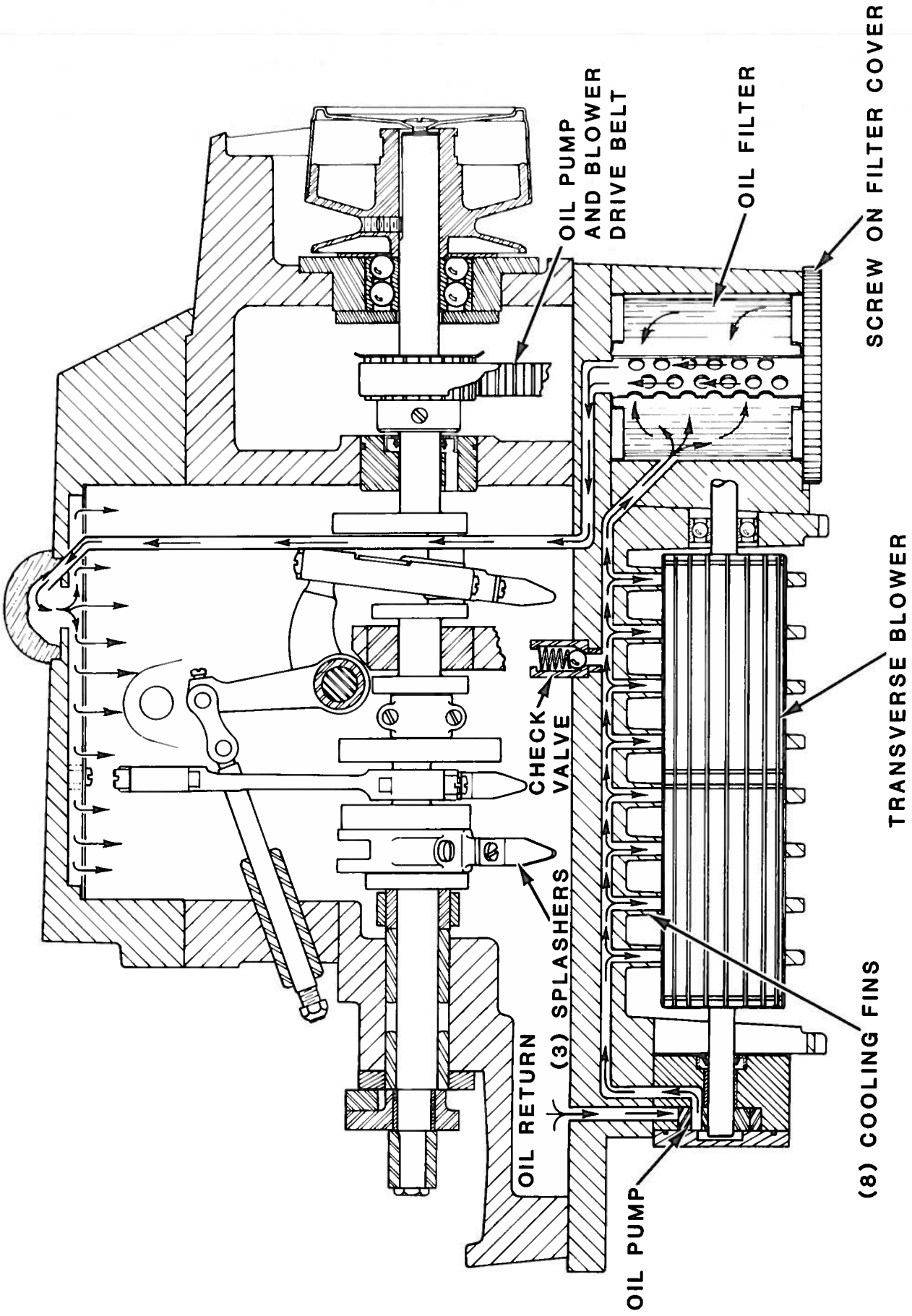


Fig. 3

8M LUBRICATION AND COOLING FEATURES



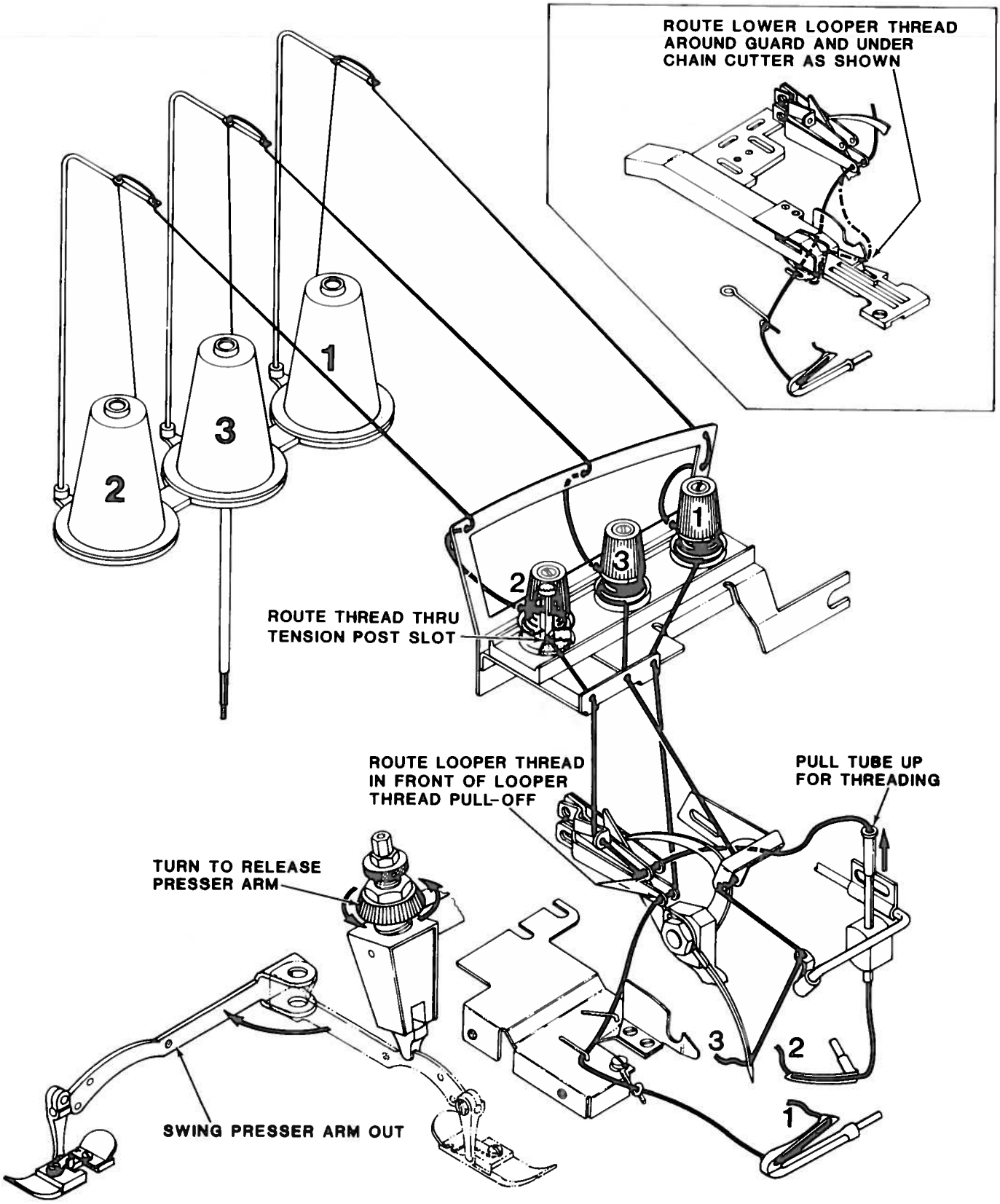


Fig. 4

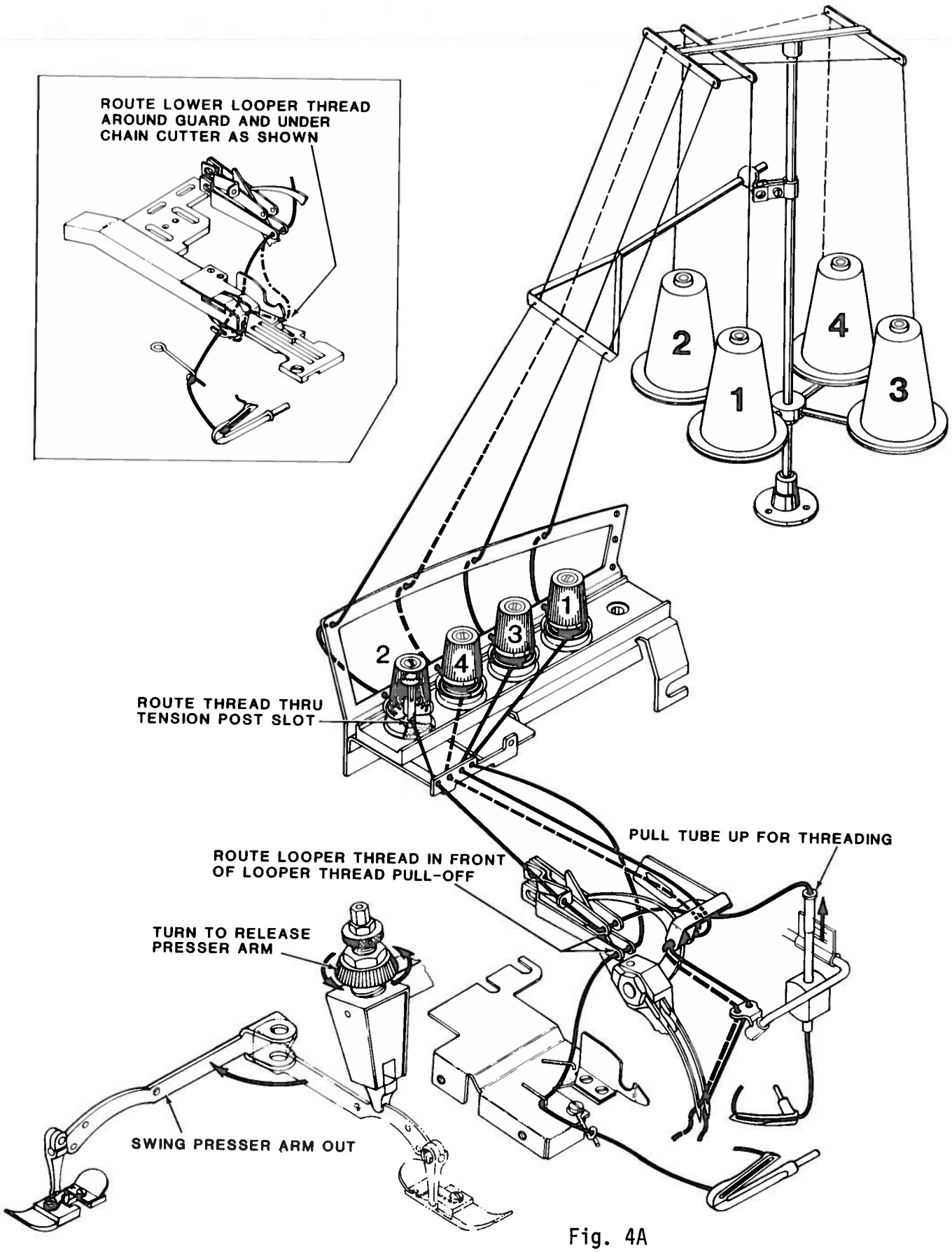


Fig. 4A

NEEDLE ALIGNMENT

Needle(s) must center in needle slot(s) of throat plate, left to right, as shown in Fig. 5, except on Styles 39500 SWAL, SWFL, SWPL (See LATCH TACKER INSTRUCTIONS).

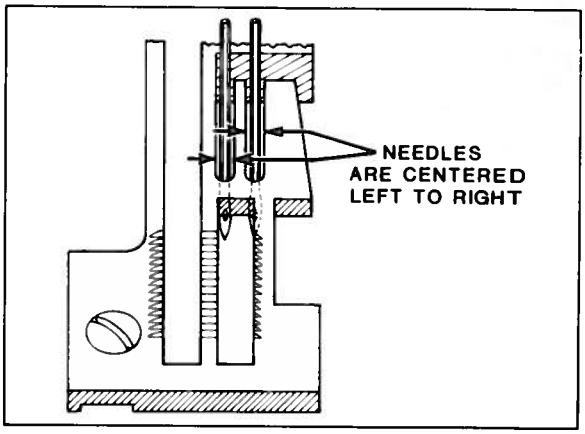


Fig. 5

If adjustment is required, remove fabric guard and looper thread pull-off. Loosen needle driving arm clamp screw (A, Fig. 6) and reposition arm to the right or left as necessary. Temporarily tighten clamp screw, (A), then proceed to check needle(s) height.

NEEDLE HEIGHT

With needle driving arm at highest position, the tip of needle(s) should be "X" dimension from top of throat plate as shown in Fig. 6. See chart below.

Machine Styles	"X" Dimension
39500 WA, WE, WF, WP, WW, CWA, CWE, CWF, CWP, SWC, SWK, CSWC, CSWK	1/2 inch (12.7mm)
39500 WC, WK, CWC, CWK	31/64 inch (12.3mm)
39500 SWA, SWE, SWF, SWP, CSWA, CSWF, CSWP, SWAL, SWFL, SWPL	33/64 inch (13.1mm)

If adjustment is required, loosen clamp screw (A, Fig. 6) and reposition arm (B) forward or rearward as required to obtain "X" dimension being careful not to disturb "NEEDLE ALIGNMENT". Tighten clamp screw (A), replace looper thread pull-off and fabric guard.

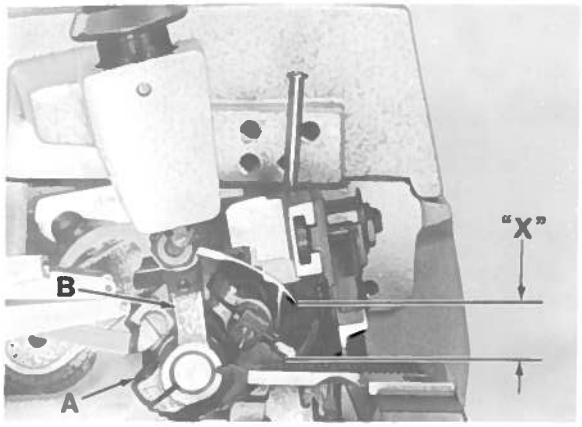


Fig. 6

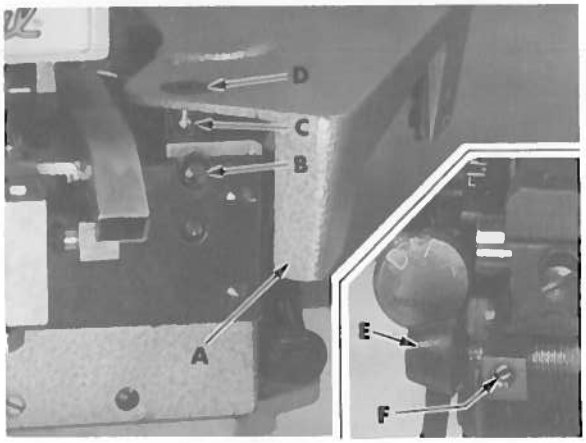


Fig. 7

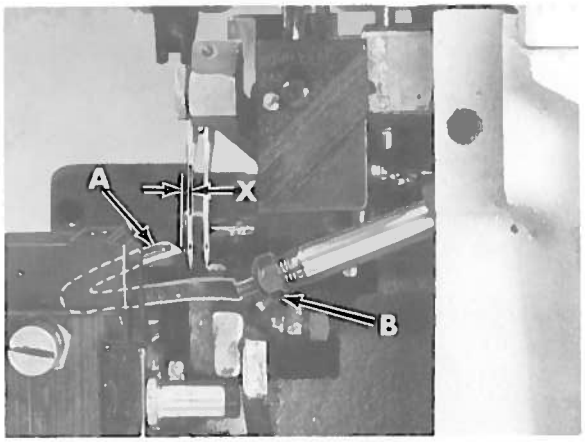


Fig. 8

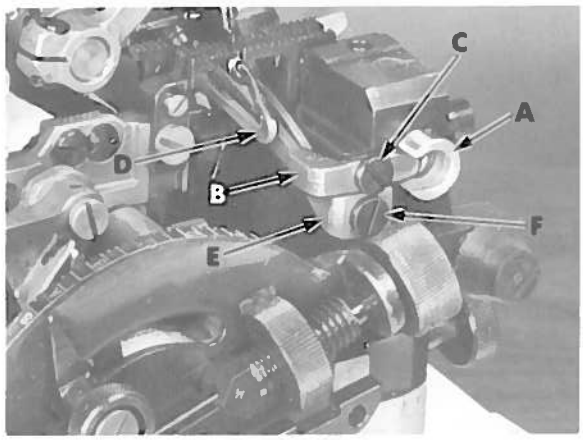


Fig. 9

CLOTH PLATE

Remove cloth plate (A, Fig. 7) by loosening screw (B) and lifting upward with stud (C) and screw (D) assembled to cloth plate.

Before replacing cloth plate, hold stud (C) and tighten screw (D) only enough to remove end play, yet allowing cloth plate to swing open when assembled. Assemble cloth plate to machine by inserting stud (C) with flat and "V" notch to the rear into hole of machine bed. Tighten screw (B) to press "V" notch of stud (C) against screw (D).

Cloth plate bumper (E) should be positioned to provide .003 to .005 inch (.076 to .127mm) clearance between cloth plate and throat plate when cloth plate is closed. Screw (F) secures bumper in place.

LOWER LOOPER

PRIOR TO CHECKING ADJUSTMENTS: REMOVE NEEDLE GUARDS.

With looper at extreme left end of travel, the distance from its point to centerline of needle; or left needle ("X", Fig. 8) should be 1/8 inch (3.2mm) on all Styles except WC, WK, WW, CWC, CWK, SWC, SWK, CSWC and CSWK. This dimension should be 1/16 inch (1.6mm) on Style WW and 7/64 inch (2.8mm) on Styles WC, WK, CWC, CWK, SWC, SWK, CSWC and CSWK. Looper gauge No. 21225-1/16, 21225-7/64 or 21225-1/8 could be used advantageously in checking this setting.

If adjustment is required, turn handwheel to position looper (A, Fig. 8) at extreme right and loosen clamp nut (B). Turn handwheel to position looper at extreme left end of travel and adjust same in or out of looper shaft to obtain specified dimension.

Turn handwheel to bring looper point into scarf of needle (or left needle) and position point to TOUCH but NOT DEFLECT needle(s); then bring looper to extreme right and tighten clamp nut (B).

REAR NEEDLE GUARD

Remove spring from inside of lower knife holder (A, Fig. 9), then reassemble knife holder into throat plate support block. Replace rear needle guard (B) using screw (C) with front edge of guard centered in slot of knife holder as shown. Temporarily tighten screw (C) to hold guard in position, yet allowing guard to be adjusted. Rotate handwheel in operating direction until lower looper (D) travels from extreme left into scarf of needle(s). Set guarding SURFACE of needle guard (B) as low as possible to prevent it from interfering with needle thread as loop is being formed to rear of needle(s), then tighten screw (C) securely. Guard must NOT interfere with lower knife holder movement or come in contact with lower looper at any point of travel.

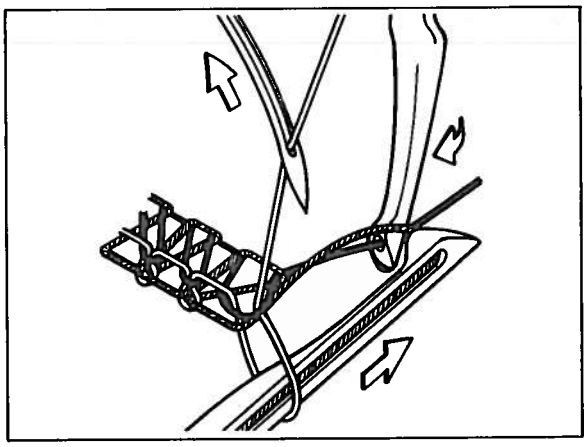


Fig. 10

FRONT NEEDLE GUARD

Replace front needle guard (E, Fig. 9) using screw (F). Temporarily tighten screw (F) to hold guard in position, yet allowing guard to be adjusted. Rotate handwheel in operating direction until needle(s) is at lowest position. Set guarding SURFACE of needle guard (E) to needle(s) with minimum clearance - approximately .004 inch (.10mm) and tighten screw (F) securely. Check to ensure needle(s) is NOT being pinched between front and rear needle guards.

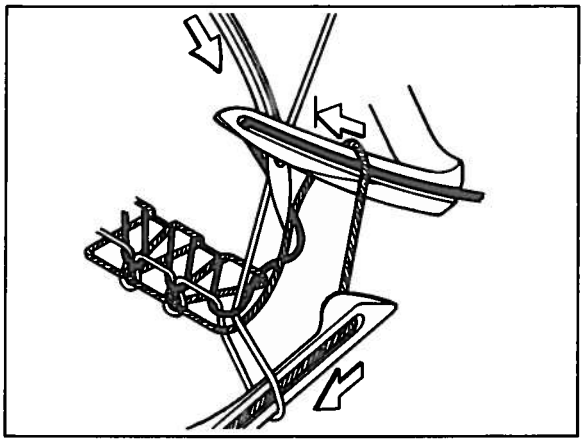


Fig. 11

UPPER LOOPER

Rotate handwheel in operating direction and closely observe the path of the upper looper as it moves from extreme right position and approaches lower looper (Fig. 10). Point of upper looper must pass the notched area behind the head of lower looper with minimum clearance and should pass under the lower looper thread.

Continue rotating handwheel until upper looper reaches the extreme left position at the needle(s) (Fig. 11). At this point the upper looper should be in position so the descending needle(s) will pass to the right of the upper looper thread which extends from the eye of the looper back to the previously formed stitch.

THE UPPER LOOPER SHOULD NOT RUB AGAINST THE LOWER LOOPER OR NEEDLE(S) AT ANY POINT OF TRAVEL.

Figures 12 and 13 and the chart following relate approximate dimensions for adjusting upper looper at its extreme right and left positions of travel.

UPPER LOOPER (Continued)

MACHINE STYLE	SHANK EXTENDED ABOVE HOLDER "B" Fig. 12	HEIGHT ABOVE THROAT PLATE "E" Fig. 13	POINT TO LEFT OF NEEDLE CENTERLINE "F" Fig. 13
39500 WA, WE, CWA, CWE, SWA, SWE, CSWA, SWAL	1/32 to 1/16" (.8 to 1.6mm)	31/64" (12.3mm)	5/32" (4.0mm)
39500 WC, WK, CWC, CWK, SWC, SWK, CSWC, CSWK	1/16 to 3/32" (1.6 to 2.4mm)	35/64" (13.9mm)	5/32" (4.0mm) left needle
39500 WW	1/16 to 3/32" (1.6 to 2.4mm)	35/64" (13.9mm)	9/64" (3.6mm) right needle
39500 WF, WP, CWF, CWP, SWF, SWP, CSWF, CSWP, SWFL, SWPL	1/16 to 3/32" (1.6 to 2.4mm)	35/64" (13.9mm)	9/64" (3.6mm)

To adjust upper looper, follow instructions in sequence as listed:

1. Position upper looper at the left end of travel, loosen clamp screw (A, Fig. 12) set upper looper shank to dimension "B" above holder, then temporarily tighten screw (A).

2. With upper looper positioned at the right end of travel, loosen screw (C) and rotate holder (D) as required to set shank slightly back of vertical as shown in Fig. 12, then temporarily tighten screw (C).

3. Rotate handwheel in operating direction bringing the upper looper into the LOWER looper. The POINT of upper looper should be set to enter the notched area behind the head of the lower looper. See Fig. 10.

4. Continue to rotate handwheel in operating direction until looper is at extreme left end of travel. Rotate upper looper holder as required to position POINT of upper looper to dimension "E", Fig. 13, from top of throat plate. Recheck Step 3.

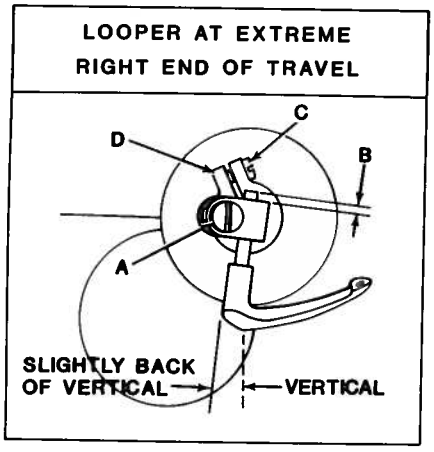


Fig. 12

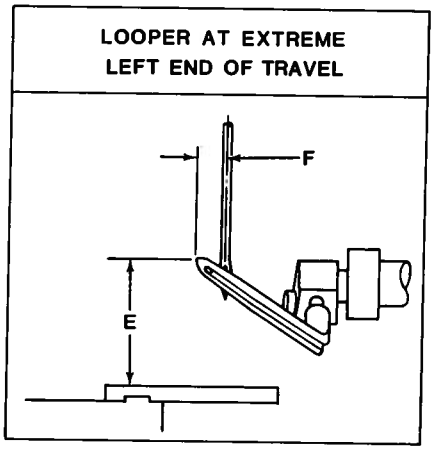


Fig. 13

UPPER LOOPER (Continued)

5. With upper looper still positioned at left end of travel, it may be necessary to move looper holder in or out of its shaft to set POINT of looper dimension "F", Fig. 13 which is to the left of centerline of needle (or left needle). Tighten screw (C, Fig. 12), then screw (A) securely.

6. If the needle(s) is being deflected by the upper looper, clearance to the needle(s) can be increased by reducing the length of looper shank above holder (dimension "B"), See Step 1. It will then be necessary to slightly reduce the angle of the shank back of vertical, See Step 2. Set looper to lower looper, See Step 3. Reversing this procedure will position the looper closer to the needle(s).

MAIN AND DIFFERENTIAL FEEDS

ASSEMBLE MAIN, DIFFERENTIAL, CHAINING FEEDS AND THROAT PLATE TO MACHINE, AS APPLICABLE.

Rotate handwheel in operating direction until teeth of rising feeds are above the top surface of throat plate. The feeds should be level with throat plate at this time. With feeds at highest position of travel, their teeth should extend approximately 3/64 inch (1.2mm) above throat plate as shown in Fig. 14.

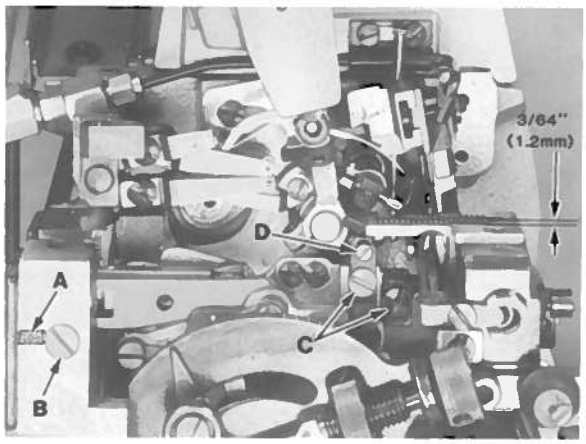


Fig. 14

If adjustment is required, loosen lock screw (A) and rotate tilt adjusting pin (B) as required to level feeds, then tighten lock screw (A). Loosen feed attaching screws (C) and adjust feeds up or down to obtain proper height above throat plate as shown in Fig. 14, then tighten screws (C).

On all Styles, except WK, WW, CWK, SWK, CSWK: with feeds at highest position, loosen screw (D) and set height of chaining feed even with the stitch tongue of throat plate, then tighten screw (D).

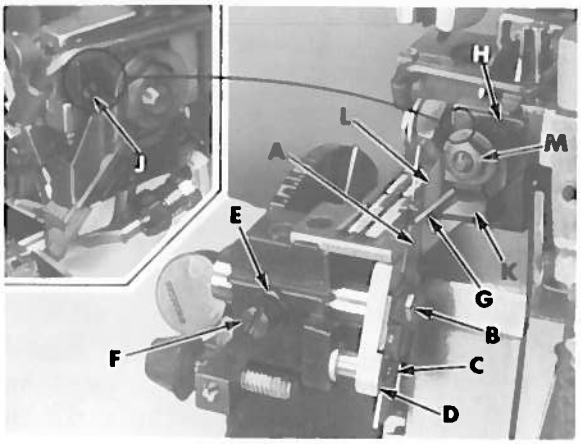


Fig. 15

LOWER KNIFE

INSERT SPRING BACK INTO LOWER KNIFE HOLDER AND ASSEMBLE HOLDER TO THROAT PLATE SUPPORT.

Cutting edge of knife (A, Fig. 15) must be even and parallel with top surface of throat plate. Examine sewn sample for specified seam width and appearance. If adjustment is required, loosen screw (B) and adjust knife (A) up or down until its cutting edge is flush with top of throat plate, then tighten screw (B).

If cutting edge of knife is tilted, loosen screw (C) and rotate holder (D) front to rear as required, then tighten screw (C). Holder MUST move freely, left to right, and NOT bind with needle guard centered in slot of knife holder. Adjust knife (A), left to right, by loosening locknut (E), screw (F) and set knife to specified seam width by measuring from center of needle to cutting edge of knife. Hold knife in this position and tighten screw (F).

Adjust UPPER KNIFE: then sew-off on a piece of selected material to further check adjustment, by measuring the distance from needle penetration to edge of material. Readjust if necessary, to obtain specified seam width or appearance.

NOTE: See SHEAR ANGLE ADJUSTMENT.

UPPER KNIFE

REMOVE NEEDLE(S) AND RE-ASSEMBLE UPPER KNIFE HOLDER INTO SLOT OF UPPER KNIFE DRIVING ARM. ALSO, RE-ASSEMBLE UPPER KNIFE IN HOLDER AND HOLD KNIFE FIRMLY IN POSITION.

At lowest position the front tip of upper knife cutting edge must extend 1/64 - 1/32 inch (.4 - .8mm) below cutting edge of lower knife. If adjustment is required, rotate handwheel to position upper knife driving arm at lowest position; with upper knife (G, Fig. 15) at lowest position of travel and while holding upper knife firmly against lower knife, adjust knife holder (H) left to right, to position front tip of upper knife cutting edge 1/64 - 1/32 inch (.4 - .8mm) below cutting edge of lower knife, then tighten screw (J).

Assemble knife clamp (K) and chain guard (L) in position using nut (M). Set chain guard (L) against top surface of upper knife and slightly back of its cutting edge, then tighten nut (M). Loosen screw (F) to enable spring pressed lower knife to move freely left to right. If desired, the lower knife can be locked in position by tightening screw (F) against knife holder.

NOTE: Locking nut (E) must be tightened to hold screw (F) in positon; screw (F) also serves as a latch pin for cloth plate.

SHEAR ANGLE ADJUSTMENT

BE SURE LOWER AND UPPER KNIVES ARE ADJUSTED PROPERLY BEFORE SETTING SHEAR ANGLE.

With upper knife at lowest position, the proper shear angle between cutting edge of upper and lower knives is 1 degree as shown in Fig. 16. Approximately equivalent to a .003 inch (.076mm) feeler gauge at this point. Best results are obtained if both knives are properly sharpened prior to adjusting.

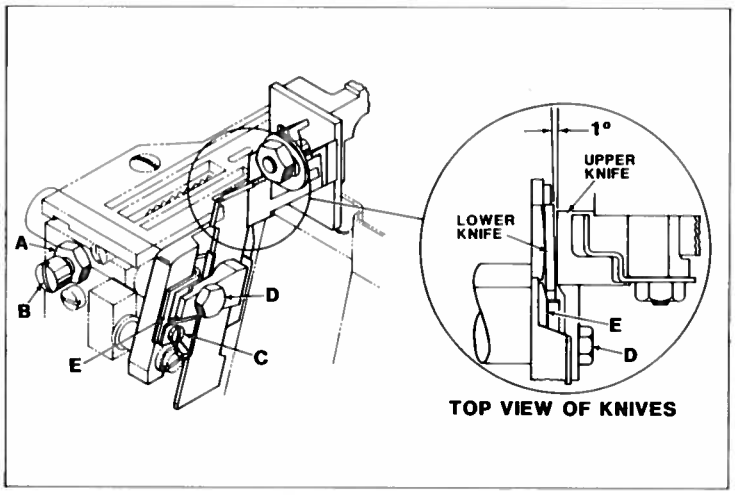


Fig. 16

If adjustment is required, remove throat plate, loosen locknut (A) and lock lower knife holder out of position away from upper knife with screw (B). Loosen screw (C), clamp screw (D) and adjust (wedge) guide plate (E) forward or rearward as required to angle top front edge of lower knife to attain proper shear angle. Hold guide plate (E) in position while tightening screw (C) and clamping screw (D). Loosen screw (B) allowing lower knife holder to float left to right, tighten locknut (A) and replace throat plate.

To check for proper alignment, turn handwheel until knives are in an open position. Place a single strand of thread in the rear of the opening and bring the knives together. Thread should cut clean. Repeat this operation by placing a strand of thread at the front edge of knife opening. If either of the two threads are not cut cleanly, recheck adjustments described in preceding paragraph.

PRESSER FOOT ALIGNMENT

LOCK THE PRESSER FOOT IN SEWING POSITION AND ROTATE HANDWHEEL UNTIL NEEDLE(S) IS AT LOWEST POSITION.

Right edge of presser foot must align with left edge of needle slot in throat plate as shown (Ref. Point A, Fig. 17). Presser foot must lie flat on throat plate. The adjustable stitch tongue on presser foot must center over stitch tongue of throat plate as shown in Fig. 17. If adjustment is required, lock presser foot in sewing position by release bushing (A, Fig. 18), loosen collar screws (B) and clamp screw (C), then adjust lifter lever shaft (D) left or right until the right edge of presser foot aligns with the left edge of needle slot in throat plate as shown (Ref. Point A, Fig. 17). Tighten collar screws (B, Fig. 18) and while holding lifter lever arm (E) so its stop screw (F) is against intermediate lever (G), tighten clamp screw (C). Completely unlock release bushing (A, Fig. 18).

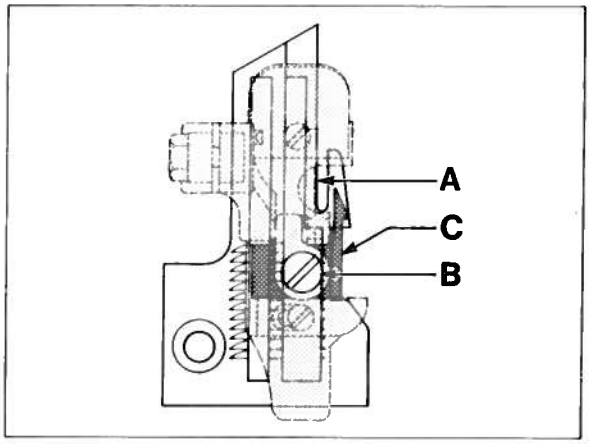


Fig. 17

Plunger should clear presser arm without binding. Loosen screw (B, Fig. 17) and adjust stitch tongue (C) left to right, to center over stitch tongue of throat plate as shown in Fig. 17, then tighten screw (B). A pivot type presser foot shank allows precise adjustment of presser foot, forward - rearward and flatness on throat plate for optimum feeding.

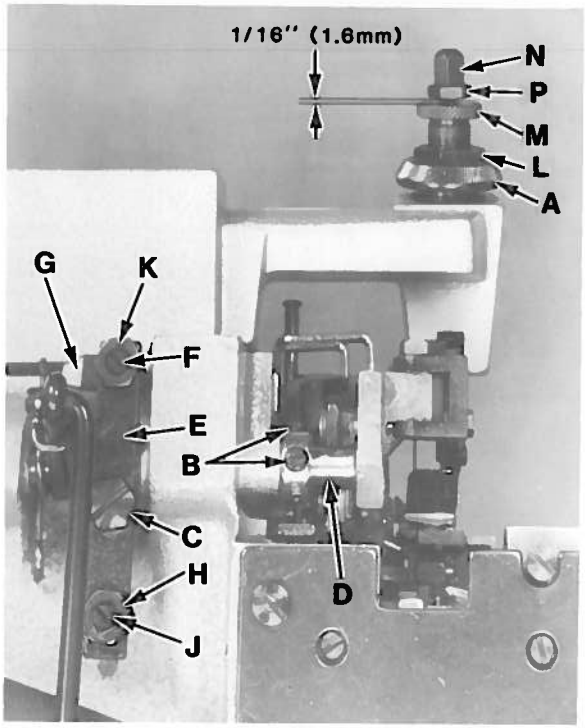


Fig. 18

PRESSER FOOT LIFTER

Lift presser foot to highest position and rotate handwheel in operating direction. Upper looper must not contact presser foot at any point of travel. If adjustment is required, loosen locknut (H, Fig. 18) and adjust stop screw (J) so presser foot will not interfere with upper looper, then tighten locknut (H). Loosen locknut (K) and set stop screw (F) on upper end of lifter lever arm so there is approximately 1/16 inch (1.6mm) free motion in lifter lever before presser foot starts to rise, then tighten locknut (K).

PRESSER FOOT PRESSURE

Sufficient pressure must be maintained to feed work uniformly. Excessive spring pressure will cause feeds and presser foot to wear prematurely when chaining. If adjustment is required, rotate handwheel in operating direction until both main and differential feeds are positioned below throat plate. Loosen locknut (L, Fig. 18) and turn adjusting screw (M) clockwise for more pressure or counterclockwise for less pressure, then tighten locknut (L).

NOTE: Adjusting screw (M) will effect the function of pressure release bushing (A). Plunger must clear presser arm when pressure release bushing is unlocked. When release bushing is locked in position, presser foot must be held firmly against throat plate. If these conditions do not exist the following adjustment must be made.

Lock presser foot in position with pressure release bushing (A); loosen capnut (N) and adjust nut (P) up or down so its under surface is 1/16 inch (1.6mm) above screw (M) as shown in Fig. 18. Hold nut (P) in position and tighten capnut (N).

SETTING STITCH LENGTH

The actual stitch length produced is usually measured as the number of stitches sewn per inch of seam. This is determined by the distance feeds travel with their teeth protruding above the throat plate.

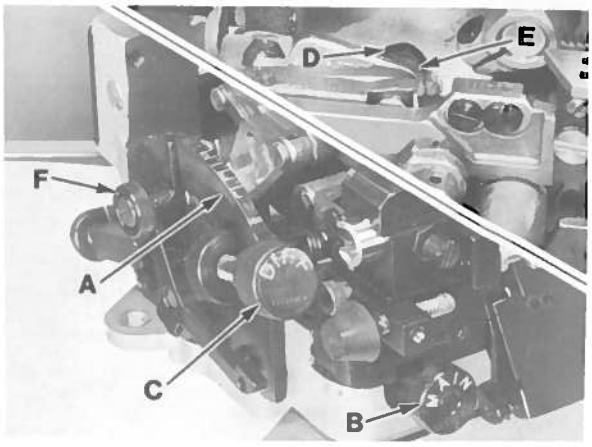


Fig. 19

The resulting stitch length is determined to a great extent by travel of the main feed. The differential feed travel can be adjusted independent of the main feed and is used to gather or stretch the fabric prior to being stitched.

On the graduated scale of indicator plate (A, Fig. 19) the forward marking "L" indicates longest stitch length and the rear marking "S" indicates shortest stitch length.

To adjust stitch length turn both main and differential thumbscrews (B and C) clockwise to increase feed travel or counterclockwise to decrease feed travel. After desired stitch length is obtained check the clearance between the main and differential feeds, also check clearance between the throat plate and both feeds.

If an adjustment is necessary, set the feeds to have the same travel, then turn the handwheel in operating direction until the differential feed is positioned all the way to the rear. Loosen nut (D) and rotate eccentric ferrule (E) until maximum clearance is obtained. Hold ferrule in position and torque nut to 16-17 in. lbs. (18-20 cm/kg). If clearance cannot be obtained, See SETTING DIFFERENTIAL FEED MECHANISM.

If desired, thumbscrews can be locked in position by tightening nut (F) for the differential feed or by tightening pressure plug screw for the main feed, located in the bed directly above the main feed stitch regulating screw to the rear of throat plate and lower knife support bracket. This will prevent accidental changing of stitch length during machine operation.

NEEDLE THREAD CONTROL

Needle thread is controlled by needle thread eyelet (A, Fig. 20) and needle thread cam pull-off (B). Needle thread eyelet is set so the securing screw is centered in the screw slot, front to back. Raise or lower the eyelet to have needle thread barely touch needle thread cam pull-off when needle carrier is in its lowest position.

Moving the eyelet up and back increases the needle thread in the stitch, moving the eyelet down and forward acts the reverse. To adjust needle thread control, loosen screw (C) and position thread eyelet (A) as required. Hold eyelet in position and tighten screw (C).

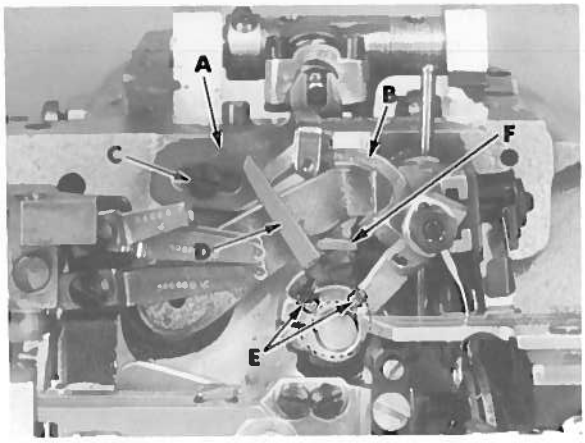


Fig. 20

LOOPER THREAD PULL-OFF

Clearance between looper thread pull-off (D, Fig. 20) and needle thread cam pull-off (B) should be only enough to ensure proper take-up of looper thread as shown in Fig. 20. Loosen screws (E) and rotate looper thread pull-off lever (F) front to back on needle driving shaft until proper clearance is obtained. Before tightening screws (E) be sure to take up all end play in needle drive shaft.

LOOPER THREAD CONTROL

When a normal amount of looper thread is drawn, upper and lower looper threads will be a little slack when needle(s) is at highest position. Position guide so the looper thread is held in a straight line to the lower looper, with the lower looper at its extreme left end of travel. The auxiliary upper looper thread guide should be centered in its adjusting slot and set slightly above a horizontal position.

Loosen screw (A, Fig. 21). Center lower looper thread eyelet (B) in its adjusting slot and set eyelet in a horizontal position. Hold eyelet (B) in position and tighten screw (A). Loosen screw (C). Center upper looper thread eyelet (D) in its adjusting slot and set eyelet so it rests on the top surface of lower looper thread eyelet and back of lower looper thread eyelet eye.

Center auxiliary upper looper thread guide (E) in its adjusting slot and set guide so it is slightly above a horizontal position. Hold lower looper thread eyelet (D) and auxiliary upper looper thread guide (E) in position and tighten screw (C).

To set frame lower thread eyelet (F) loosen screw (G) and move lower looper to its extreme left end of travel and position the eyelet so the looper thread is held in a straight line to the lower looper. Tighten screw (G).

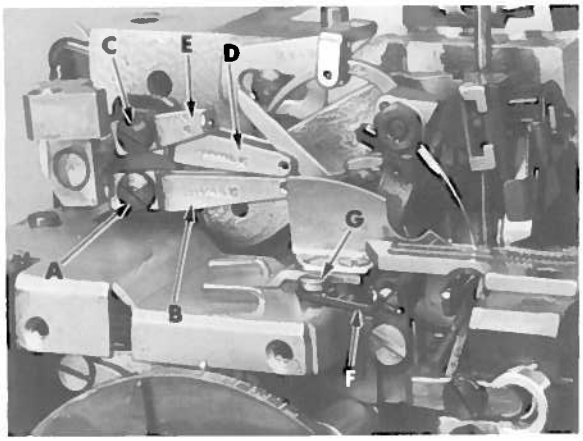


Fig. 21

NOTE: Moving eyelets (B and D) to the rear increases the amount of looper thread in the system and moving them forward reduces the amount of thread in the system.

SETTING KNIFE CROSS OVER

The knife cross over is set at the factory, however adjustment will be necessary after replacing or sharpening knives. With sewing motor switch in "OFF" position and air line connected to air motor for "AIR-KLIPP" chain cutter (See SETTING PRESSURE VALVES) depress treadle until air motor begins to operate, in and out. With fore-finger, carefully press against the moving drive link (A, Fig. 22) until air motor stops.

With treadle still depressed, check the knife cross over. The cross over of the lower knife to the upper knife is positioned correctly, when the lower knife is 2/3 from the front of the upper knife as shown in Fig. 22. If adjustment is required, loosen screws (B), reposition air motor (C) slightly to the left if lower knife is positioned to far left or slightly to the right if lower knife is positioned too far right. Retighten screws (B) and recheck cross over. There should always be 1/64 inch (.4mm) clearance between front edge of air tube and rear edge of throat plate.

CAUTION! Check to ensure that lower knife does not strike against inside of "AIR-KLIPP" chain cutter tube. A slight clearance must be provided at point (D).

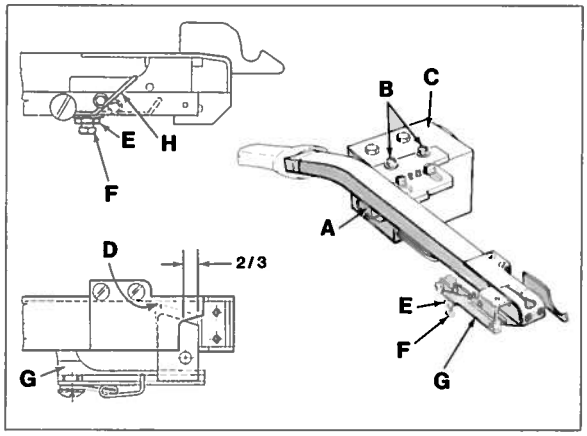


Fig. 22

SETTING KNIFE CUTTING

If adjustment is required, loosen nut (E) and turn lower knife adjusting screw (F) clock-wise (a small amount at a time) while manually operating knife lever (G), continuously check-ing with a piece of thread to see if knives are cutting. As soon as the knives fail to cut the thread, the shear angle is zero, turn screw (F) counterclockwise approximately 1/4 turn and lock with nut (E).

SETTING KNIFE PRESSURE

Torsion spring (H) initially should be horizontal in its free state and then lifted over the knife. More pressure can be obtained by bending spring (H) slightly to the left (away from lower knife); less pressure - by bending spring slightly to the right (towards lower knife).

SETTING PRESSURE VALVES

Regulate valve on pneumatic control device for air motor of the "AIR-KLIPP" chain cutter to approximately 20-22 psi (1.5 bar) when air motor is operating. Regulate valve on pneumatic control device for the suction air to obtain maximum suction, yet so that the FABRIC TO BE SEWN will not be cut by the "AIR-KLIPP" chain cutter knives.

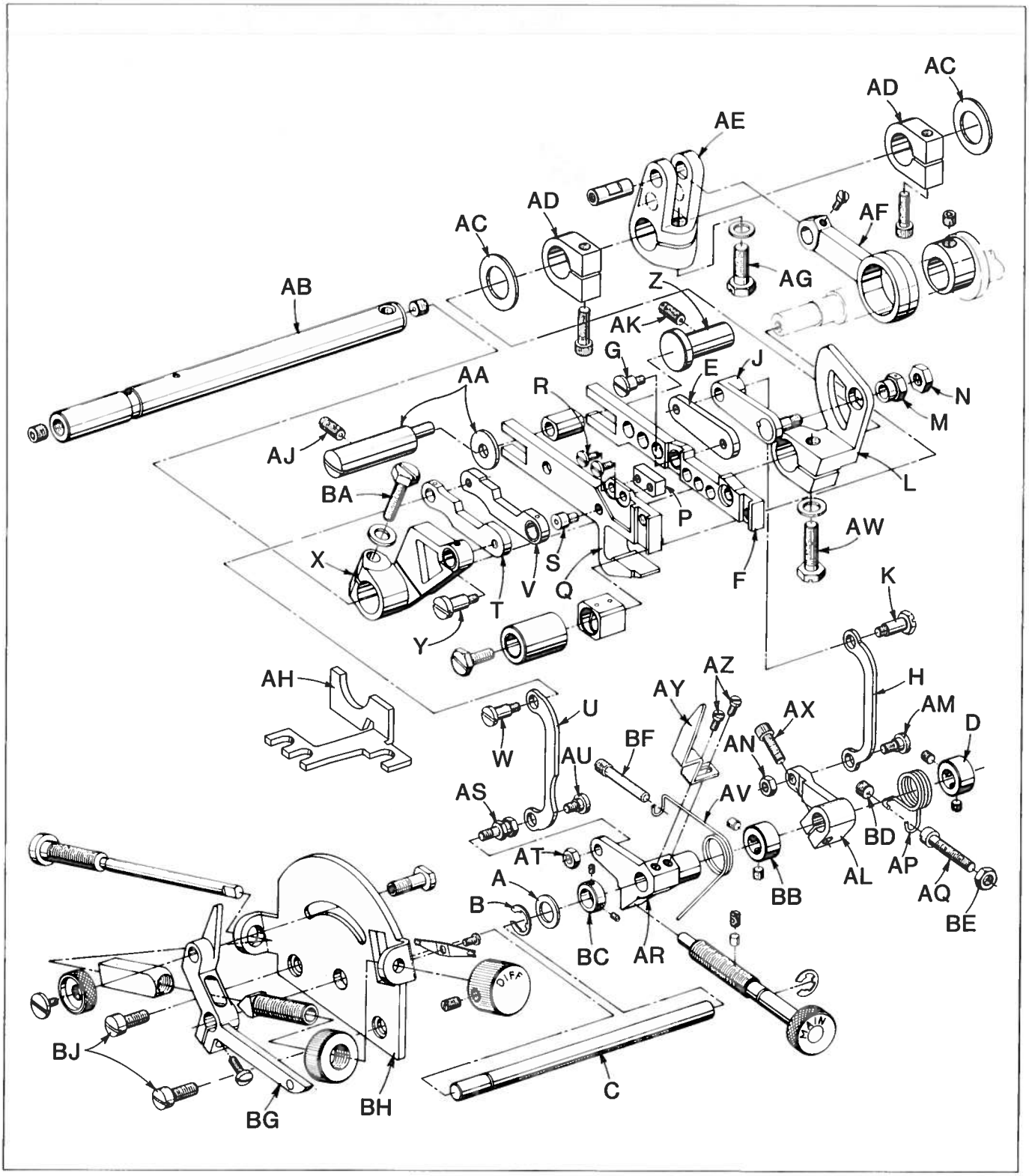


Fig. 23

ADJUSTING INSTRUCTIONS FOR FEED DRIVE MECHANISM

1. Position washer (A, Fig. 23), retaining ring (B) on differential feed control shaft (C) and insert shaft through bed casting, assembling parts as illustrated. With washer (A) against retaining ring (B) and flush against recess in bed casting, take up all end play by thrusting collar (D) against right side of inner casting wall. Shaft (C) should turn freely by hand with no left to right shake. Leave the other components assembled to shaft loose.

NOTE: Torque all screws to 19-21 in. lbs. (22-24 cm/kg) unless otherwise specified.

2. Assemble differential feed drive link (E) to differential feed bar (F) with shoulder screw (G), differential feed control link (H) and differential feed drive segment (J) to link (E) with differential feed drive link stud (K); then secure differential feed drive (L) to the opposite end of drive segment (J) with eccentric ferrule (M) and nut (N). Torque nut to 16-17 in. lbs. (18-20 cm/kg).

3. Assemble guide block (P) to main feed bar (Q) with screws (R) and thread shoulder screw (S) into main feed bar. Assemble main feed drive segment (T) and main feed control link (U) to main feed drive link (V) with main feed link stud (W). Assemble main feed drive (X) to the opposite end of segment (T) with main feed drive link stud (Y).

NOTE: Do not remove differential feed bar guide pin (Z) unless absolutely necessary (set at factory), however, this pin is used in conjuction with tilt adjusting pin and washer (AA) to align and thrust rear of feed bars.

4. With large oil hole facing upward and to the right, insert feed drive rocker shaft (AB) into casting. With main feed drive link (V) assembled to shoulder screw (S) in main feed bar (Q) and main feed bar guide block (P) positioned on differential feed bar (F), slide shaft (AB) through main feed drive (X), differential feed drive (L), inner casting wall and assemble (1) thrust washer (AC), (1) collar (AD), feed drive lever (AE), another collar (AD) and thrust washer (AC). Check to ensure large oil hole in right end of shaft is facing up and position shaft so its left end is recessed approximately 1/64 inch (.4mm) from outer edge of casting. Position collars (AD) and washers (AC) against inner walls of casting to remove any left to right movement of shaft (AB). Position lever (AE) on shaft (AB) to have approximately 1/32 inch (.8mm) between the edge of feed drive lever connecting rod (AF) and cheek of crankshaft as shown in Fig. 24. Tighten screw (AG) to 55 in. lbs. (63 cm/kg), rotate handwheel in operating direction to recheck clearance and assure there are no binds.

IMPORTANT: Link pin which connects lever (AE) to connecting rod (AF) must be in the upper hole of lever (AE) for all Styles except WC, CWC, SWC and CSWC. This pin should be in the lower hole of lever (AE) for Styles WC, CWC, SWC and CSWC.

5. Thrust front of feed bars into place with feed bar thrust guide (AH, Fig. 23) which is slotted for its mounting screws. Thrust rear of feed bars with tilt adjusting pin and washer (AA) which is secured in position by screw (AJ).

NOTE: If RE-ALIGNMENT is necessary, it may require repositioning feed bar guide pin (Z) which is secured in position by screw (AK). Thrust rear of feed bars as previously described.

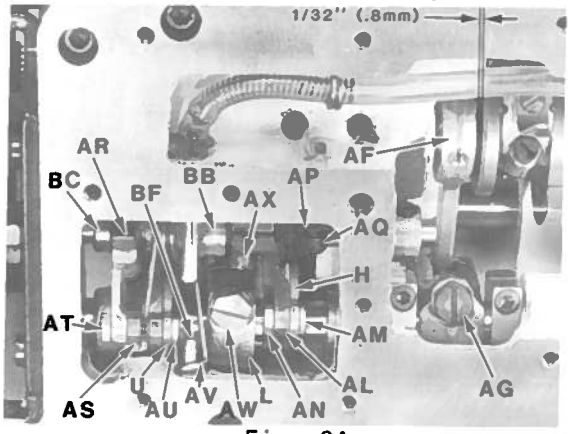


Fig. 24

ADJUSTING INSTRUCTIONS FOR FEED DRIVE MECHANISM (Continued)

6. Connect differential feed control lever (AL, Figs. 23 and 24) to differential feed control link (H) with screw (AM) and nut (AN).

NOTE: Spring (AP) and screw (AQ) should not be connected at this time.

7. Connect main feed control lever (AR) to main feed control link stud (AS) with nut (AT). Connect main feed control link (U) to main feed control link stud (AS) with screw (AU).

NOTE: Spring (AV) should not be connected at this time.

SETTING DIFFERENTIAL FEED MECHANISM

1. Rotate handwheel until rocker shaft (AB) is in its most rearward position. Center punch mark on flat of differential feed drive eccentric ferrule (M, Fig. 23) should be in "UP" position. If not, loosen nut (N) and rotate ferrule as required. Torque nut (N) to 16-17 in. lbs. (18-20 cm/kg). Snug screw (AW) in differential feed drive (L) and screw (AX) in differential feed control lever (AL). Manually rotate feed control shaft (C) through its range. At this time, there should be no front to rear movement of the differential feed bar. If movement occurs, move differential feed bar forward or rearward. Again rotate feed control shaft through its range. Check for no feed bar movement. Repeat this procedure until no feed bar movement is obtained.

NOTE: Screws (AW and AX) may have to be loosened to move the feed bar.

2. Manually rotate feed control shaft until links (E and J) are flush with top of feed bar. At this time, rotate handwheel back and forth and observe if there is any left or right movement of links. If movement is present, reposition differential feed drive and differential feed control lever left or right on shaft until no left or right movement or bind in the links is present.

3. Recheck for no movement of feed bar as described in Step 1. Readjust if necessary.

4. Tighten screw (AX). Tighten screw (AW) in differential feed drive (L) to 55 in. lbs. (63 cm/kg).

SETTING MAIN FEED MECHANISM

NOTE: Main feed stitch indicator (AY, Fig. 23) should be attached to main feed control lever (AR) with the two screws (AZ).

1. Rotate handwheel until rocker shaft (AB) is in its most forward position. Push main feed drive (X), main feed drive segment (T) and main feed drive link (V) against main feed bar (Q) and snug screw (BA) in main feed drive (X). Manually move main feed mechanism through its entire adjustment range by using main feed stitch indicator (AY) as lever for movement of main feed bar. If movement occurs, move main feed bar forward or rearward. Again move main feed mechanism through its entire adjustment range, using main feed stitch indicator as lever for movement. Check for no feed bar movement. Repeat this procedure until no feed bar movement is obtained.

NOTE: Screw (BA) may have to be loosened to move feed bar.

2. Manually move main feed stitch indicator (AY) to its forward position. At this time, rotate handwheel back and forth and observe if there is any left or right movement of links (T and V). If movement is present, reposition main feed drive left or right on shaft, until there is no left or right movement; or bind in the links.

3. Recheck for no movement of feed bar as described in Step 1. Readjust if necessary.

4. Tighten screw (BA) in main feed drive (X) to 55 in. lbs. (63 cm/kg).

5. Thrust collars (BB and BC, Figs. 23 or 24) against main feed control lever (AR) and tighten collar screws. Rotate handwheel, check for binds in feed links and recheck for no movement of feed bars as described in Step 1. Readjust if necessary.

6. A bind could occur in the main feed control lever (AR), differential feed control lever (AL) and differential feed indicator lever (BG) if the indicator plate (BH) is not properly aligned. Oversize holes are provided in plate (BH) for its mounting screws (BJ) to allow repositioning to eliminate bind.

CONNECTING SPRINGS TO FEED MECHANISM

1. Remove screw (AM) and nut (AN) from differential feed control lever and position spring (AP) in place on differential feed control lever. Secure other end of spring with screw (AQ) as shown in Fig. 24.

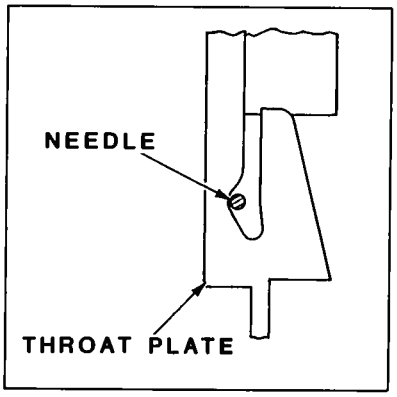
NOTE: Plug screw (BD, Fig. 23) located in rear of casting can be removed to gain access to screw (AQ) with a screwdriver. Thread screw (AQ) through spring (AP), then lock nut (BE) and into inner wall of casting. Tighten lock nut against casting wall and replace plug screw in outer casting.

2. Reconnect differential feed control link (H) to lever (AL) with screw (AM) and nut (AN).

3. Remove screw (AU) from main feed control link stud (AS) and position spring (AV) on screw (BF) as shown in Fig. 24. Reconnect main feed control link (U) to stud (AS) with screw (AU).

LATCH TACKER INSTRUCTIONS

(Styles 39500 SWAL, SWFL, SWPL)



1. Needle should center in the radius of the left side of throat plate needle slot (See Sketch).

2. Lift presser foot and pull entire thread chain off stitch tongue; swing chain sideways and around under presser foot, down into chain clamp (A, Fig. 25) (tension discs), cutting off excess chain at knife (B).

3. With edge trimming knife in "UP" position, place next garment piece as near as possible to the needle.

4. Release presser foot and sew. Thread chain should now lie in the seam. Adjustment can be made by loosening nut (A, Fig. 26) and repositioning bracket (B) to the left or right as required to assure that thread chain lies in the seam when sewn. Tighten nut (A).

5. Adjust clamp tension with nut (C, Fig. 26) according to the kind of thread and material being used.

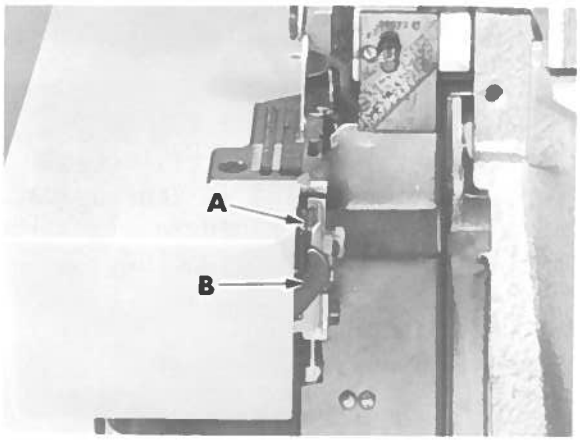


Fig. 25

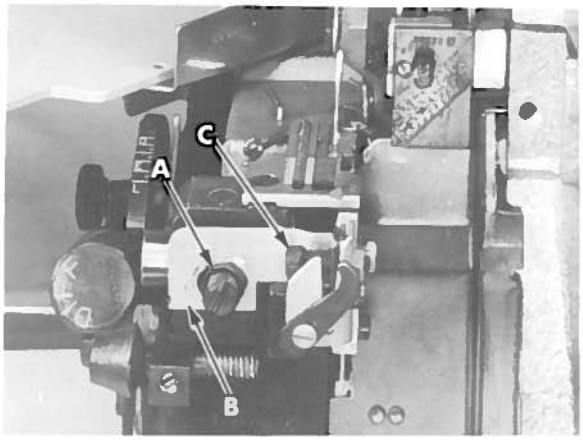
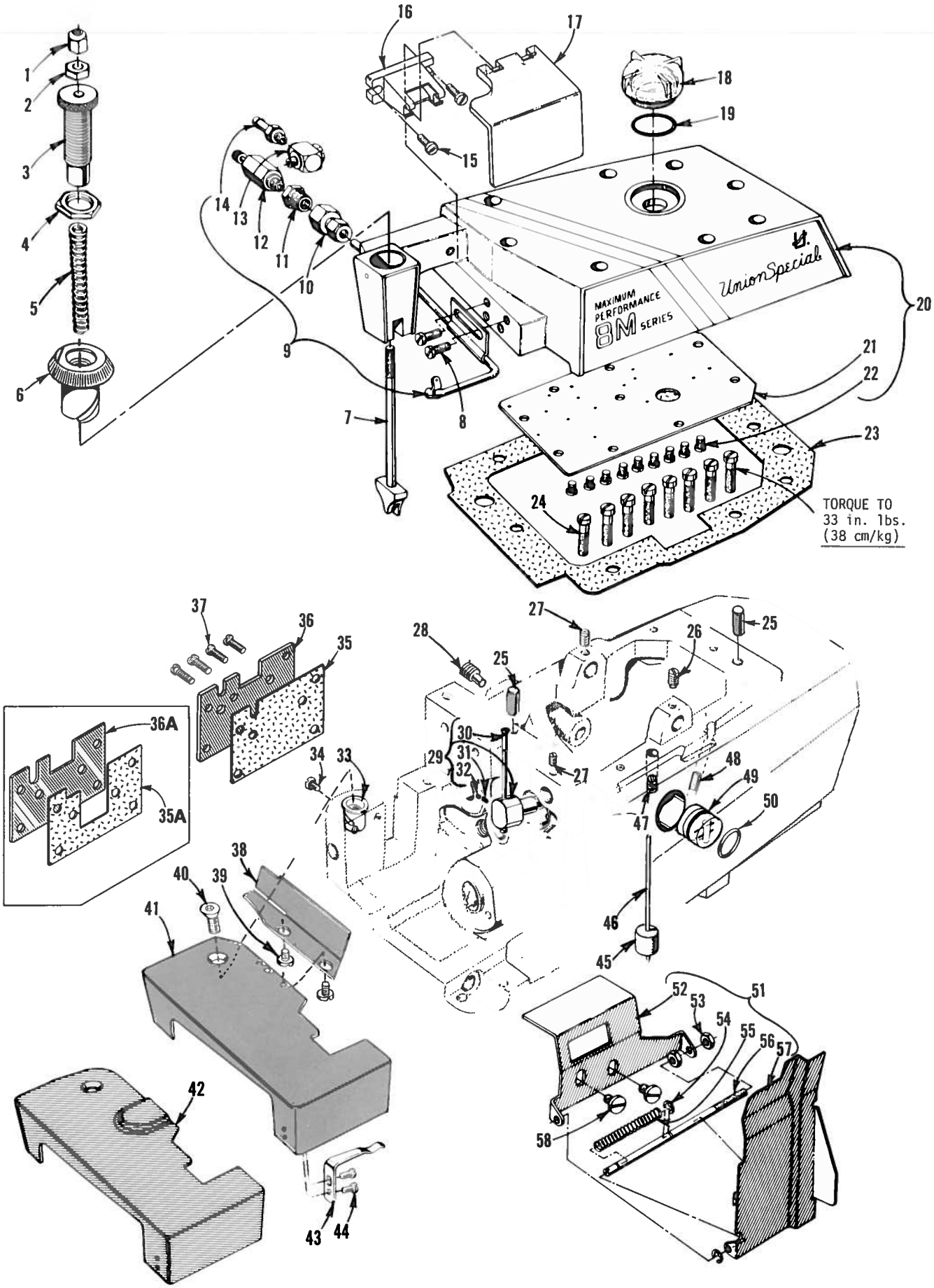


Fig. 26

EXPLODED VIEWS

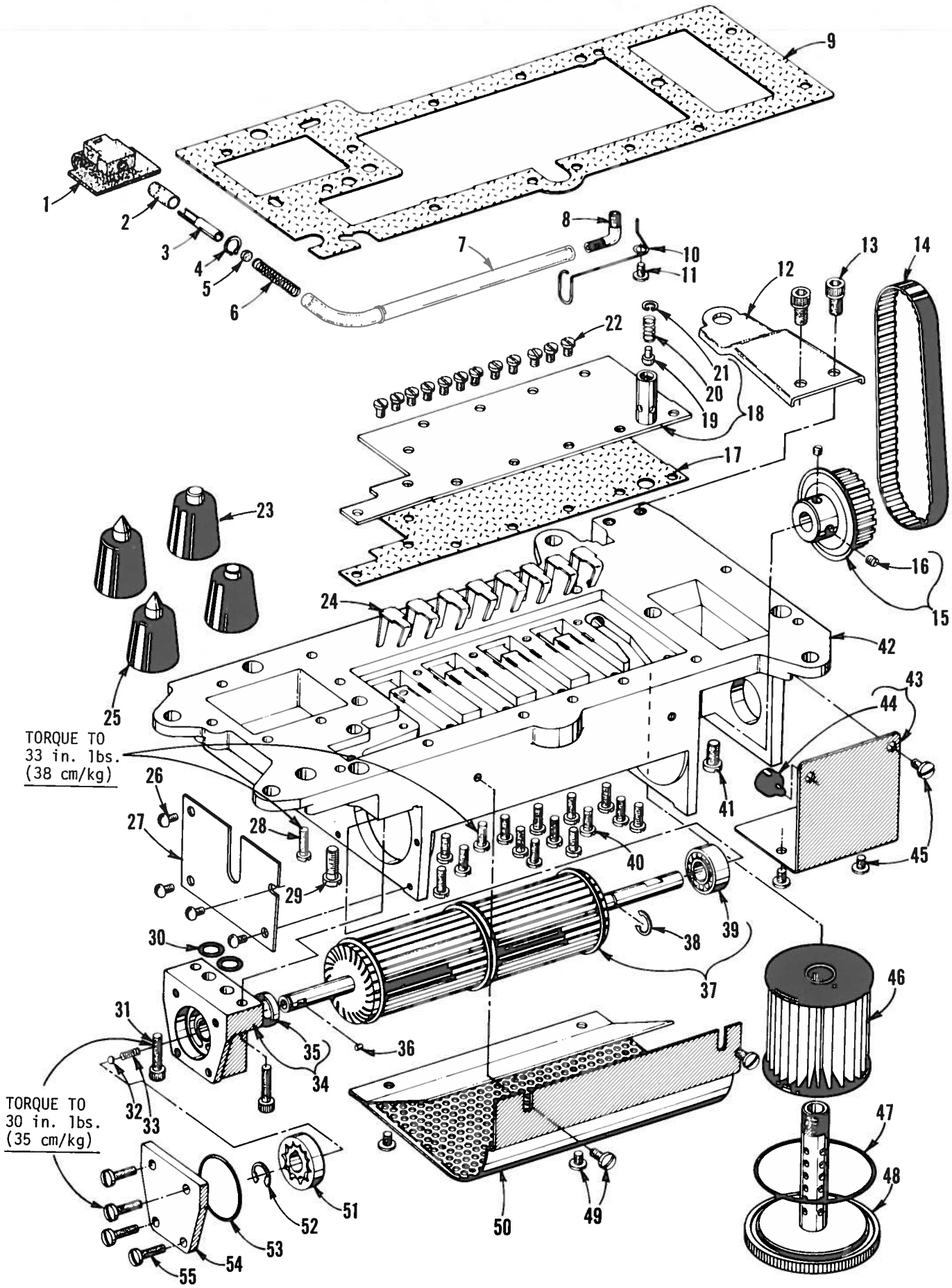
AND

DESCRIPTION OF PARTS



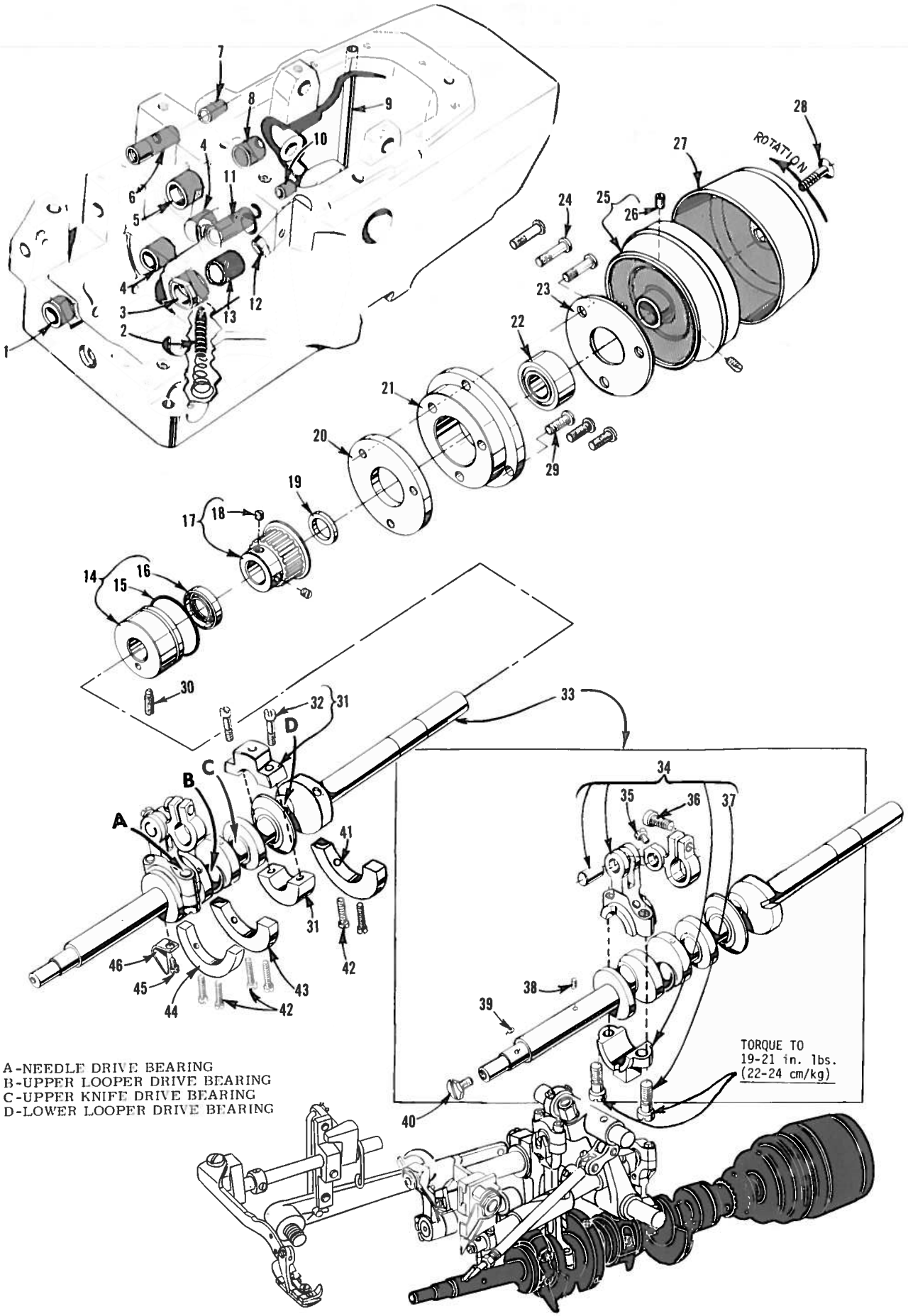
MAIN FRAME, PRESSER FOOT RELEASE PARTS, MISCELLANEOUS COVERS AND PLATES

Ref. No.	Part No.	Description	Amt. Req.
1	39557 B	Nut, cap, presser spring plunger	1
2	39557 E	Nut, locking	1
3	39557 C	Screw, adjusting	1
4	39557 F	Nut, lock, adjusting screw	1
5	39557 H	Spring, presser	1
6	39556 A	Bushing, presser foot release	1
7	39557 A	Plunger, presser spring	1
8	22569 B	Screw, needle cooler and thread eyelet	2
9	21237 CR	Cooler, needle, all Styles except WC, WK, WW, CWC, CWK, SWC, SWK, CSWC, CSWK	1
-	21237 DH	Cooler, needle, for Styles WC, WK, CWC, CWK, SWC, SWK, CSWC, CSWK	1
-	21237 DJ	Cooler, needle, for Style WW	1
10	660-372	Connector	1
11	671 C-13	Bushing, reducer	1
12	671-17	Valve, control	1
13	671 F-62	Elbow, adjustable	1
14	671 F-4	Fitting, barb	1
15	22585 R	Screw	2
16	21695 AT	Bracket, mounting	1
17	21695 AU	Shield, sewing	1
18	39594 Y	Cap, oil fill	1
19	660-705	"O" Ring	1
20	39582 ED	Cover, top, all Styles except WW	1
-	39582 ET	Cover, top, for Style WW	1
21	39582 DS	Plate, oil drip	1
22	22564 D	Screw	9
23	39582 BZ	Gasket, top cover	1
24	22541	Screw, top cover	8
25	667 D-8	Pin, dowel	2
26	22565 S	Screw, spot, upper looper drive lever shaft	1
27	22565	Screw, set, upper thread tube assembly and upper looper drive lever shaft	2
28	22571 E	Screw, oil drain plug	1
29	29477 GW	Thread Tube Assembly, upper looper	1
30	39568 G	Tube, thread	1
31	39568 J	Spring, tension	1
32	22743	Screw, set	1
33	39501 K	Stud, cloth plate, all Styles except WC, WK, SWC, SWK	1
-	G39501 K	Stud, cloth plate, for Styles WC, WK, SWC, SWK	1
34	22569	Screw, locking, cloth plate stud	1
35	39582 BD	Gasket, rear cover, all Styles w/o Power "AIR-KLIPP" chain cutter	1
35A	39582 BT	Gasket, for all Styles w/Power "AIR-KLIPP" chain cutter	1
36	39582 BU	Cover, rear, all Styles w/o Power "AIR-KLIPP" chain cutter	1
36A	39582 BY	Cover, for all Styles w/Power "AIR-KLIPP" chain cutter	1
37	22569 J	Screw	4
38	39578 F	Guard, fabric, all Styles w/o Power "AIR-KLIPP" chain cutter except WC, WK, SWC, SWK	1
-	39578 K	Guard, fabric, for Styles WC, WK, SWC, SWK	1
39	138	Screw, all Styles w/o Power "AIR-KLIPP" chain cutter	2
40	22657 D-12	Screw, cloth plate	1
41	39501 DL	Cloth Plate, for Styles WA, WE, WF, WP, SWA, SWE, SWF, SWK, SWP	1
-	GA39501 DL	Cloth Plate, for Styles WC, WK, SWC	1
-	39501 DLB	Cloth Plate, for Style WW	1
-	39501 DLA	Cloth Plate, for Styles SWAL, SWFL, SWPL	1
42	G39501 DL	Cloth Plate, for Styles CWA, CWE, CWF, CWK, CWP, CSWA, CSWF, CSWP	1
-	GB39501 DL	Cloth Plate, for Styles CWC, CSWC, CSWK	1
43	39532 A	Spring, latch	1
44	90	Screw	2
45	39593 C	Float, oil gauge	1
46	39593 D	Indicator, oil gauge	1
47	22569 K	Screw, oil gauge	1
48	22894 AE	Screw, set, lower looper bar driving lever shaft	2
49	39593 H	Gauge, oil	1
50	660-243	Ring, oil seal	1
51	39578 AN	Guard Assembly, chip, all Styles except WC, WK, CWC, CWK, SWC, SWK, CSWC, CSWK	1
-	39578 AV	Guard Assembly, chip, for Styles WC, WK, CWC, CWK, SWC, SWK, CSWC, CSWK	1
52	39578 AL	Base	1
53	43443 Q	Nut	2
54	660-210	Ring, retaining	2
55	39158 U	Spring	1
56	39878 C	Pin, hinge	1
57	39578 AM	Cover, for No. 39578 AN chip guard assembly	1
-	39578 AU	Cover, for No. 39578 AV chip guard assembly	1
58	22569 D	Screw	2



BOTTOM COVER, LUBRICATING AND OIL COOLING PARTS

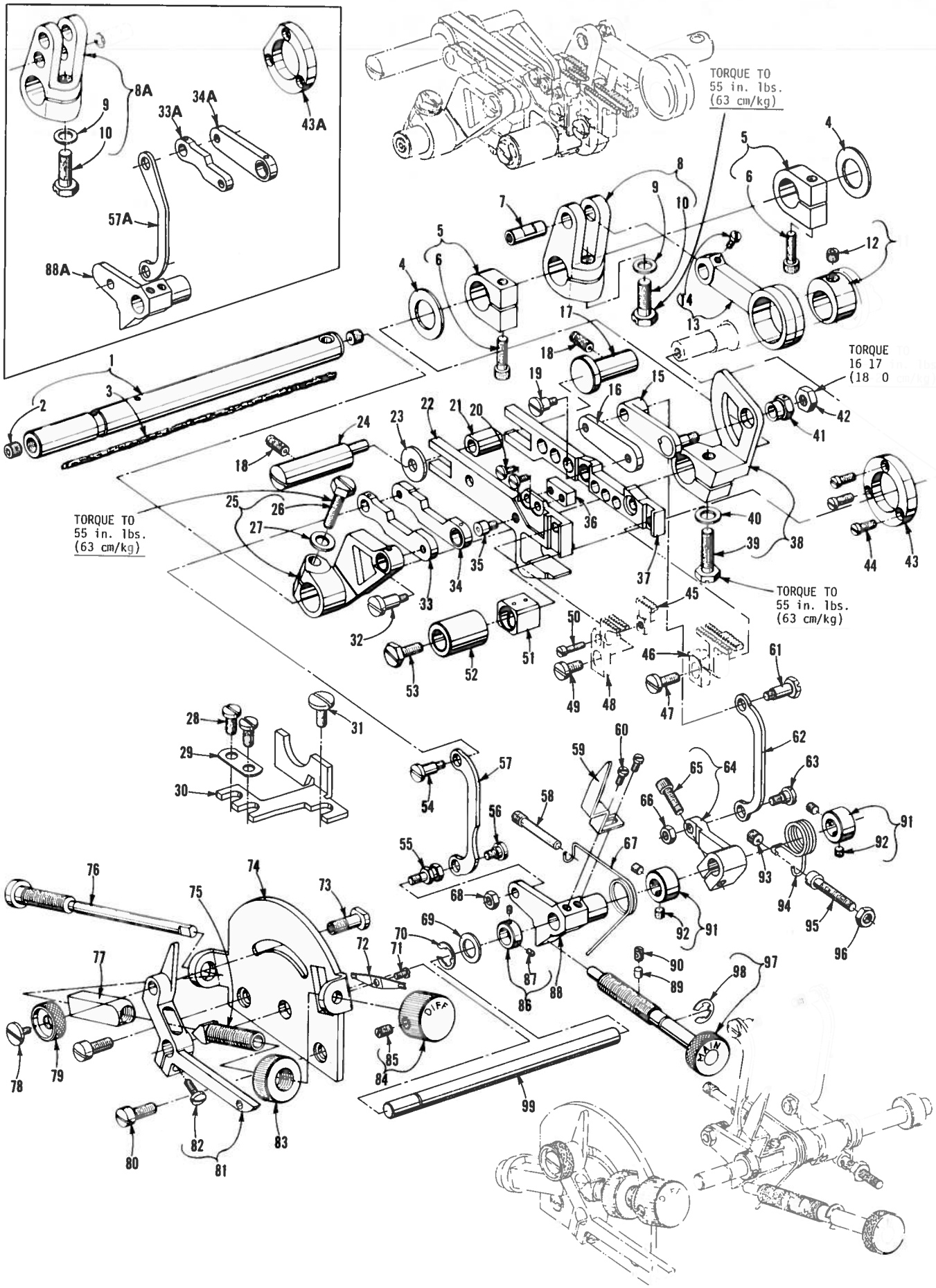
Ref. No.	Part No.	Description	Amt. Req.
1	666-300	Pad, felt	1
2	39593 K	Tube, oil; tygothane	1
3	666-271	Tube, oil; brass	1
4	660-506	Ring, retaining	1
5	56393 G	Filter, porex	1
6	56393 V	Spring, tube stiffening	1
7	666-280	Tube, oil; tygothane	1
8	39593 J	Tube, oil pump connecting	1
9	39582 DU	Gasket, bottom cover	1
10	39593 L	Spring, tube supporting	1
11	22569 D	Screw, tube supporting spring	1
12	39582 F	Extension, bottom cover	1
13	22652 D-6	Screw	2
14	660-828	Belt, oil cooler drive	1
15	39542 A	Pulley, blower and oil pump	1
16	22650 CB-4	Screw, set	2
17	39582 DY	Gasket, internal bottom cover	1
18	39582 DZ	Cover, bottom (internal)	1
19	39536 CZ	Plunger	1
20	39536 DA	Spring	1
21	660-700	Ring, retaining	1
22	22569 T	Screw, internal bottom cover	12
23	39595	Isolator	2
24	39594 X	Deflector, oil flow	8
25	51295 B	Isolator	2
26	22635 C-12	Screw	4
27	39582 EN	Cover, fan end	1
28	22541	Screw, bottom cover	1
29	22806 A	Screw, bottom cover	1
30	660-716	"O" Ring, oil pump	2
31	22652 B-12	Screw	2
32	79-33	Ball	1
33	21237 DN	Spring	1
34	21237 CW	Housing, oil pump	1
35	660-726	Seal, oil lip	1
36	39541 D	Key, oil pump shaft	1
37	21237 DM	Blower, transverse	1
38	660-550	Ring, retaining	1
39	660-841	Bearing	1
40	22541 B	Screw, bottom cover	15
41	22586 T	Screw, bottom cover	1
42	39582 EP	Cover, bottom	1
43	21375 BR	Cover, pulley	1
44	660-731	Bumper	1
45	RM2813-1	Screw	3
46	666-295	Filter, oil	1
47	660-717	"O" Ring	1
48	39582 DT	Cover, oil filter	1
49	RM2813-1	Screw	4
50	21237 CT	Cover, fan	1
51	C50093 U	Gear, oil pump	1
52	660-550	Ring, retaining	1
53	660-695	"O" Ring, oil pump	1
54	39582 DP	Cover, oil pump housing, end	1
55	RM2813-4	Screw	4



A-NEEDLE DRIVE BEARING
B-UPPER LOOPER DRIVE BEARING
C-UPPER KNIFE DRIVE BEARING
D-LOWER LOOPER DRIVE BEARING

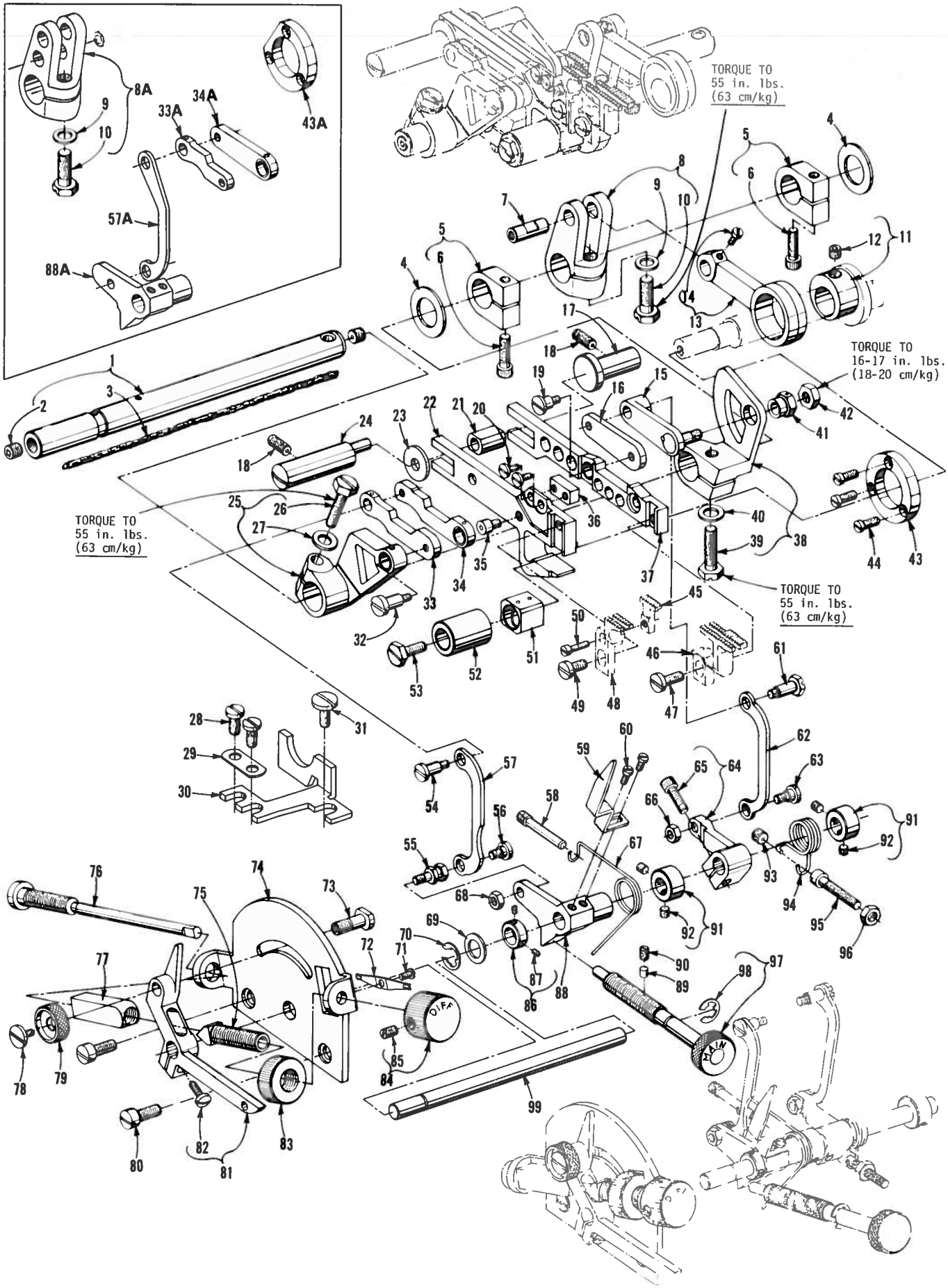
CRANKSHAFT MECHANISM AND BUSHINGS

Ref. No.	Part No.	Description	Amt. Req.
1	39536 FA	Bushing, differential feed rocker shaft (left)	1
2	666-94	Wick and Spring, oil	1
3	39590 U	Bushing, crankshaft (left)	1
4	39536 ET	Bushing, differential feed rocker shaft (intermediate and right)	2
5	39573 K	Bushing, upper knife driving arm (left)	1
6	39555 P	Bushing, foot lifter shaft (left)	1
7	39555 R	Bushing, foot lifter shaft (right)	1
8	39573 AA	Bushing, upper knife driving arm (right)	1
9	39594 W	Tube, oil	1
10	39552 P	Bushing, needle driving arm crank (right)	1
11	39552 U	Bushing, needle driving arm crank (left)	1
12	39544 X	Bushing, lower looper bar	1
13	39590 T	Bushing, crankshaft (intermediate)	1
14	39590 Y	Bearing, crankshaft (intermediate)	1
15	660-443	"O" Ring	1
16	660-764	Seal, oil	1
17	39542	Pulley, crankshaft (blower and oil pump drive)	1
18	22650 CB-4	Screw, set	2
19	39590 J	Washer, thrust	1
20	39590 AA	Plate, retaining, crankshaft ball bearing	1
21	39590 Z	Housing, bearing	1
22	660-835	Bearing, ball	1
23	39590 H	Plate, retaining, crankshaft ball bearing	1
24	22569 X	Screw	3
25	39521 H	Pulley	1
26	22650 CD-4	Screw	2
27	39521 D	Cap, pulley	1
28	22769 B	Screw	1
29	22569 Y	Screw	3
30	22565 F	Screw	1
31	39590 D	Bearing, split	1
32	97 A	Screw	2
33	29477 MT	Crankshaft and Needle Driving Arm Crank Assembly, all Styles except WA, WE, CWA, CWE, SWA, SWE, CSWA, SWAL	1
-	29477 MU	Crankshaft and Needle Driving Arm Crank Assembly, for Styles WA, WE, CWA, CWE, SWA, SWE, CSWA, SWAL	1
34	29477 MC	Needle Driving Arm Crank and Connecting Rod Assembly	1
35	22768 C	Screw, connecting rod pin	1
36	22596 H	Screw, driving arm crank	1
37	22587 M	Screw, connecting rod	2
38	51-228 Blk.	Plug, vent	1
39	30-106 Blk.	Plug, wood	1
40	22781 A	Screw	1
41	39591 B	Counterweight, crankshaft (right)	1
42	22747 B	Screw	6
43	39591 A	Counterweight, crankshaft (intermediate)	1
44	39591 K	Counterweight, crankshaft (left)	1
45	87 C	Screw	1
46	39594 N	Splasher, oil	1



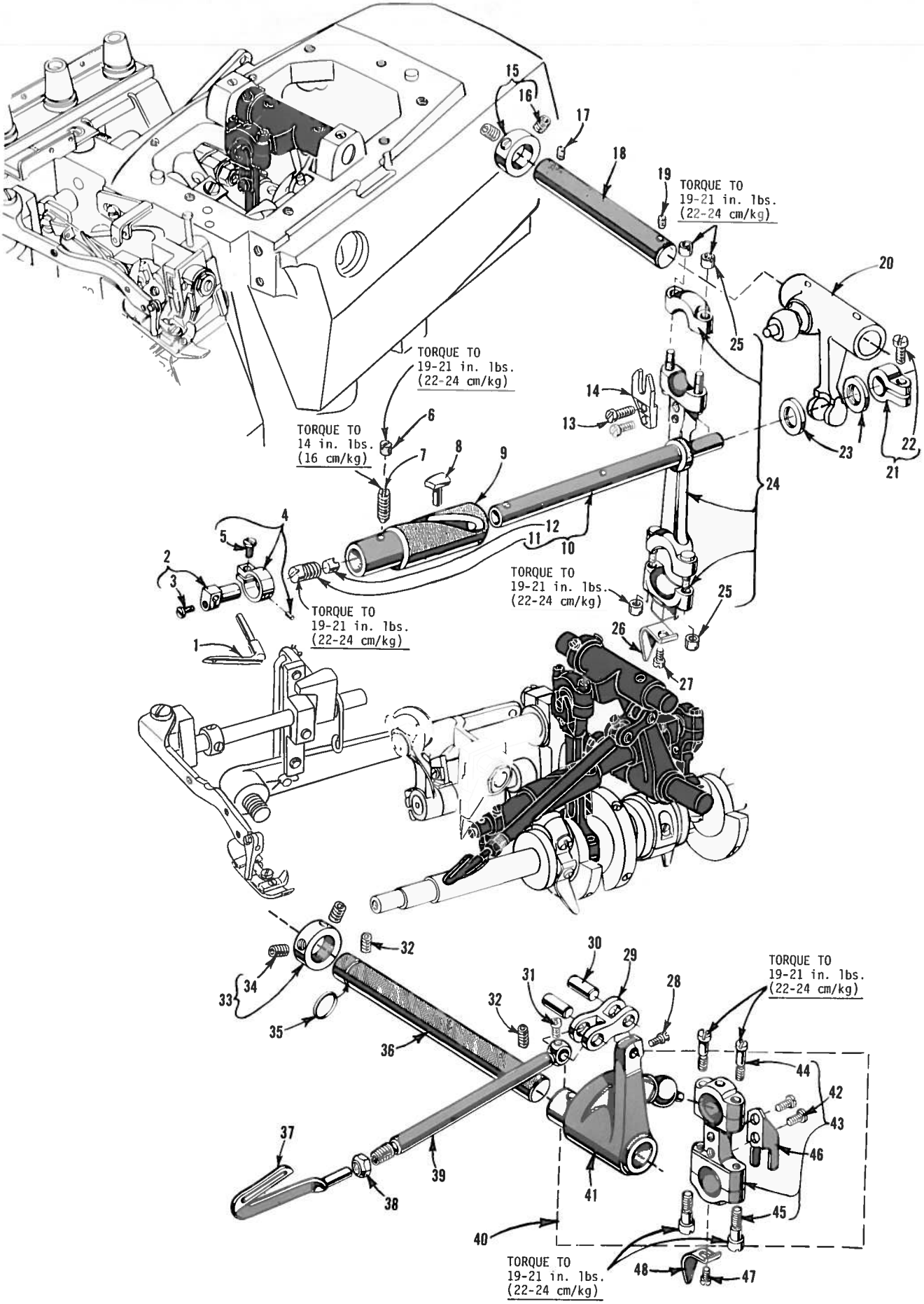
FEED DRIVE MECHANISM

Ref. No.	Part No.	Description	Amt. Req.
1	39536 EC	Shaft, feed drive rocker	1
2	22651 CD-2	Screw, set	2
3	CL21	Pipe Cleaner, 5 19/32 inch (127.0mm) long	1
4	39573 A	Washer, thrust	2
5	39551 M	Collar	2
6	22572 B	Screw	1
7	51236 A	Pin, link	1
8	39536 EE	Lever, feed drive, all Styles except WC, CWC, SWC, CSWC	1
8A	39536 FJ	Lever, feed drive, for Styles WC, CWC, SWC, CSWC	1
9	40-139	Washer	1
10	22852 A	Screw	1
11	39540 P	Eccentric, differential feed, all Styles except WC, CWC, SWC, CSWC	1
-	39540 V	Eccentric, differential feed, for Styles WC, CWC, SWC, CSWC	1
12	22894 AA	Screw, spot	1
13	39536 AU	Connecting Rod, differential feed drive	1
14	77	Screw	1
15	39536 DU	Segment, differential feed drive	1
16	39536 DT	Link, differential feed drive	1
17	39535 N	Pin, guide, differential feed bar	1
18	22597 A	Screw, for guide and feed adjusting pins	2
19	39536 DS	Screw, shoulder, differential feed bar	1
20	98 A	Screw, for main feed bar guide block	2
21	39535 V	Block, guide, feed bars	1
22	39534 SA	Feed Bar, main	1
23	39536 DG	Washer, thrust	1
24	39535 L	Pin, feed leveling	1
25	39536 EN	Drive, main feed, all Styles except WC, CWC, SWC, CSWC	1
-	39536 FE	Drive, main feed, for Styles WC, CWC, SWC, CSWC	1
26	627 A	Screw	1
27	80557	Washer	1
28	22569 C	Screw	2
29	39534 Z	Washer, plate	1
30	39535 Y	Guide, main feed bar thrust	1
31	22569 U	Screw	1
32	39536 ER	Stud, main feed drive link, all Styles except WC, CWC, SWC, CSWC	1
-	39536 FF	Stud, main feed drive link, for Styles WC, CWC, SWC, CSWC	1
33	39536 EJ	Segment, main feed drive, all Styles except WC, CWC, SWC, CSWC	1
33A	39536 FG	Segment, main feed drive, for Styles WC, CWC, SWC, CSWC	1
34	39536 EA	Link, main feed drive, all Styles except WC, CWC, SWC, CSWC	1
34A	39536 FH	Link, main feed drive, for Styles WC, CWC, SWC, CSWC	1
35	22802 B	Screw, shoulder	1
36	39535 K	Block, guide, main feed bar	1
37	39534 AB	Feed Bar, differential, all Styles except WC, CWC, SWC, CSWC	1
-	39534 AE	Feed Bar, differential, for Styles WC, CWC, SWC, CSWC	1
38	39536 DY	Drive, differential feed	1
39	627 A	Screw	1
40	80557	Washer	1
41	39536 DZ	Ferrule, differential feed drive eccentric	1
42	39536 E	Nut	1
43	39534 H	Washer, thrust, differential feed bar, all Styles except WC, CWC, SWC, CSWC	1
43A	39534 AD	Washer, thrust, differential feed bar, for Styles WC, CWC, SWC, CSWC	1
44	22569 G	Screw	3
45		Feed Dog, chaining (See page 45)	1
46		Feed Dog, differential (See page 45)	1
47 thru 99		See following page	



FEED DRIVE MECHANISM (CON'T)

Ref. No.	Part No.	Description	Amt. Req.
1 thru 46		See preceding page	
47	22528	Screw, differential feed dog	1
48		Feed Dog, main (See page 45)	1
49	94	Screw, main feed dog	1
50	22747	Screw, chaining feed dog	1
51	39538 A	Block, feed lift	1
52	39536 ES	Spacer	1
53	22781 A	Screw	1
54	39536 EB	Stud, main feed link	1
55	39536 EM	Stud, main feed control link	1
56	22760 G	Screw	1
57	39536 ED	Link, main feed control, all Styles except WC, CWC, SWC, CSWC	1
57A	39536 FD	Link, main feed control, for Styles WC, CWC, SWC, CSWC	1
58	39536 CJ	Screw Pin, main feed return spring	1
59	39536 BV	Indicator, stitch, main feed	1
60	77	Screw	2
61	39536 DX	Stud, differential feed link	1
62	39536 EW	Link, differential feed control	1
63	22760 E	Screw	1
64	39536 EY	Lever, differential control	1
65	22652 A-6	Screw	1
66	41071 G	Nut	1
67	39536 EH	Spring, all Styles except WC, CWC, SWC, CSWC	1
-	39536 FC	Spring, for Styles WC, CWC, SWC, CSWC	1
68	41071 G	Nut	1
69	40-144	Washer	1
70	660-466	Ring, retaining	1
71	28	Screw	1
72	39536 CC	Spring, ratchet	1
73	39536 BR	Screw, lock, differential lever	1
74	39536 BP	Plate, stitch indicator	1
75	39536 BG	Screw, stop; differential feed control regulating	1
76	39536 BF	Screw, differential feed stitch regulating	1
77	39536 BH	Nut, differential feed control regulating	1
78	22784 F	Screw	1
79	39536 BS	Nut, thumb, differential lever	1
80	22517	Screw	2
81	39536 EZ	Lever, differential stitch control	1
82	93	Screw	1
83	39536 BJ	Nut, stop; differential feed control regulating	1
84	39536 BK	Knob, differential feed stitch regulating	1
85	531	Screw	1
86	39536 CL	Collar	1
87	1096	Screw	2
88	39536 EG	Lever, main feed control, all Styles except WC, CWC, SWC, CSWC	1
88A	39536 FB	Lever, main feed control, for Styles WC, CWC, SWC, CSWC	1
89	39536 CA	Plug, pressure	1
90	22580 A	Screw, pressure plug w/nylok insert	1
91	61248 G	Collar	2
92	89	Screw	2
93	1025 L	Screw, plug	1
94	39536 CF	Spring, differential feed return	1
95	294	Screw	1
96	7947	Nut	1
97	39536 EX	Screw, main feed stitch regulating	1
98	660-466	Ring, retaining	1
99	39536 AP	Shaft, feed control	1

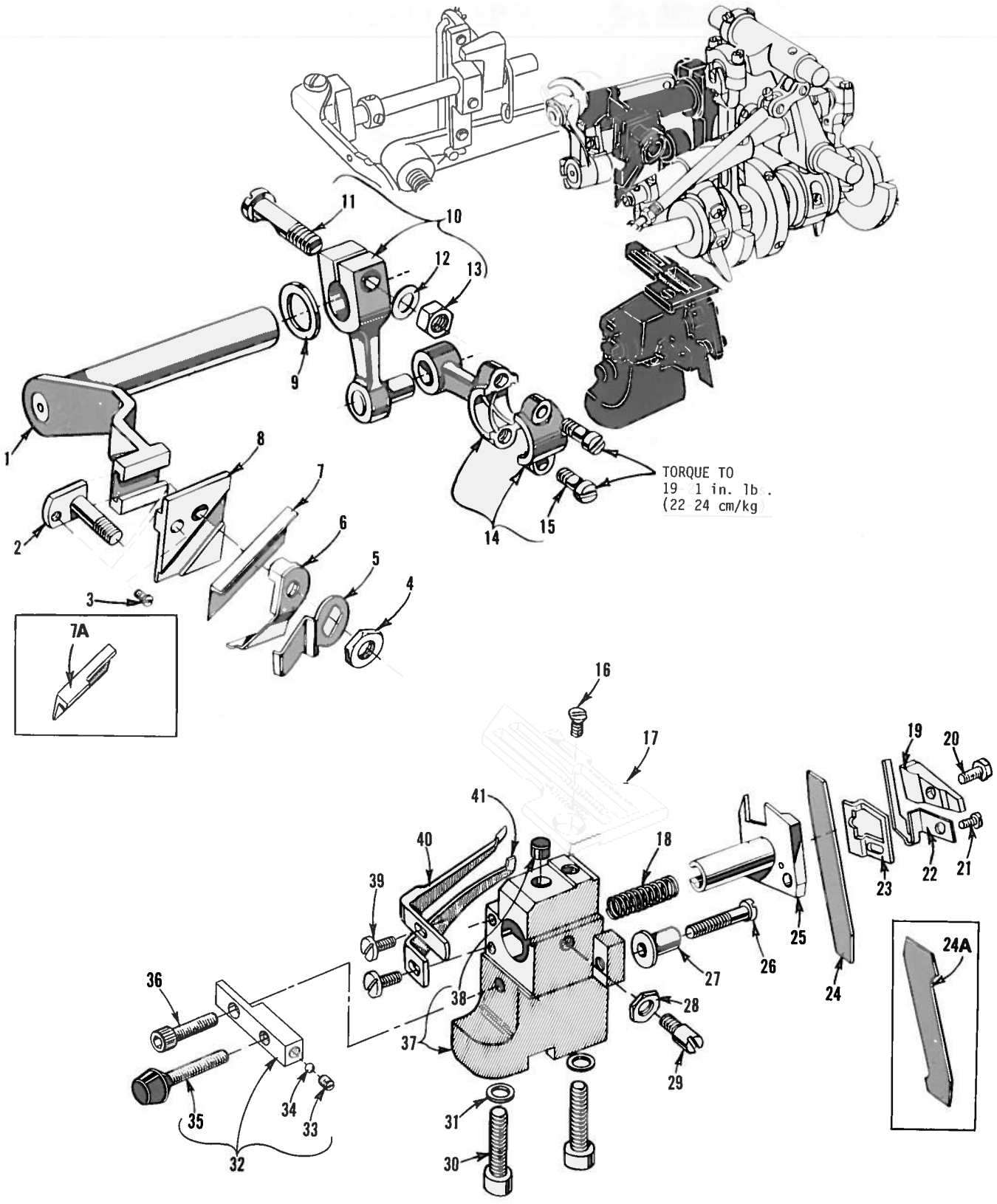


UPPER AND LOWER LOOPER DRIVING PARTS

Ref. No.	Part No.	Decription	Amt. Req.
1	39508 A	Looper, upper, marked "CC", all Styles except WC, WK, CWC, CWK, SWC, SWK, CSWC, CSWK	1
-	G39508 AV	Looper, upper, marked "GC", for Styles WC, WK, CWC, CWK, SWC, SWK, CSWC, CSWK	1
+ -	39508 C	Looper, upper, marked "CJ"	1
2	39843 H	Holder, upper looper	1
3	22768 B	Screw	1
4	39743	Clamp, upper looper	1
5	22768 B	Screw	1
6	1025 L	Screw, locking	1
7	22565 H	Screw, spot, bushing and cam guide	1
* 8	39543 T	Follower, cam	1
* 9	39543 S	Bushing and Cam Guide	1
*10	39543 Z	Shaft, upper looper drive	1
11	22503 F	Screw, cam follower locking clamp	1
12	39543 E	Clamp, cam follower locking	1
13	97	Screw	2
14	39544 J	Fork, ball joint guide	1
15	482 C	Collar, upper looper shaft	1
16	22894 C	Screw, set	2
17	22565	Screw, set	1
18	39543 X	Shaft, upper looper drive lever	1
19	22565 S	Screw, spot	1
20	39543 W	Lever, upper looper drive	1
21	39543 AJ	Collar, clamp	1
22	22875 L	Screw	1
23	39543 P	Washer, thrust	2
24	39543 AC	Connecting Rod	1
25	39543 AF	Nut, barrel	4
26	39594 N	Splasher, oil	1
27	87 C	Screw	1
28	77	Screw	1
29	39544 B	Link, lower looper bar connecting	1
30	39544 D	Pin, connecting link	2
31	77	Screw	1
32	22894 AE	Screw, set	2
33	482 C	Collar, lower looper driving shaft	1
34	22894 C	Screw, set	2
35	660-206	"O" Ring	1
36	39544 V	Shaft, lower looper driving	1
37	39508 B	Looper, lower	1
38	39151	Nut	1
39	39544	Bar, lower looper	1
40	29126 DF	Looper Bar Driving Lever and Connecting Rod Assembly, lower	1
41	39544 U	Lever, lower looper bar driving	1
42	97	Screw	2
43	39544 N	Connecting Rod	1
44	22729 D	Screw	2
45	22729 E	Screw	2
46	39544 S	Fork, guide	1
47	87 C	Screw	1
48	39594 N	Splasher, oil	1

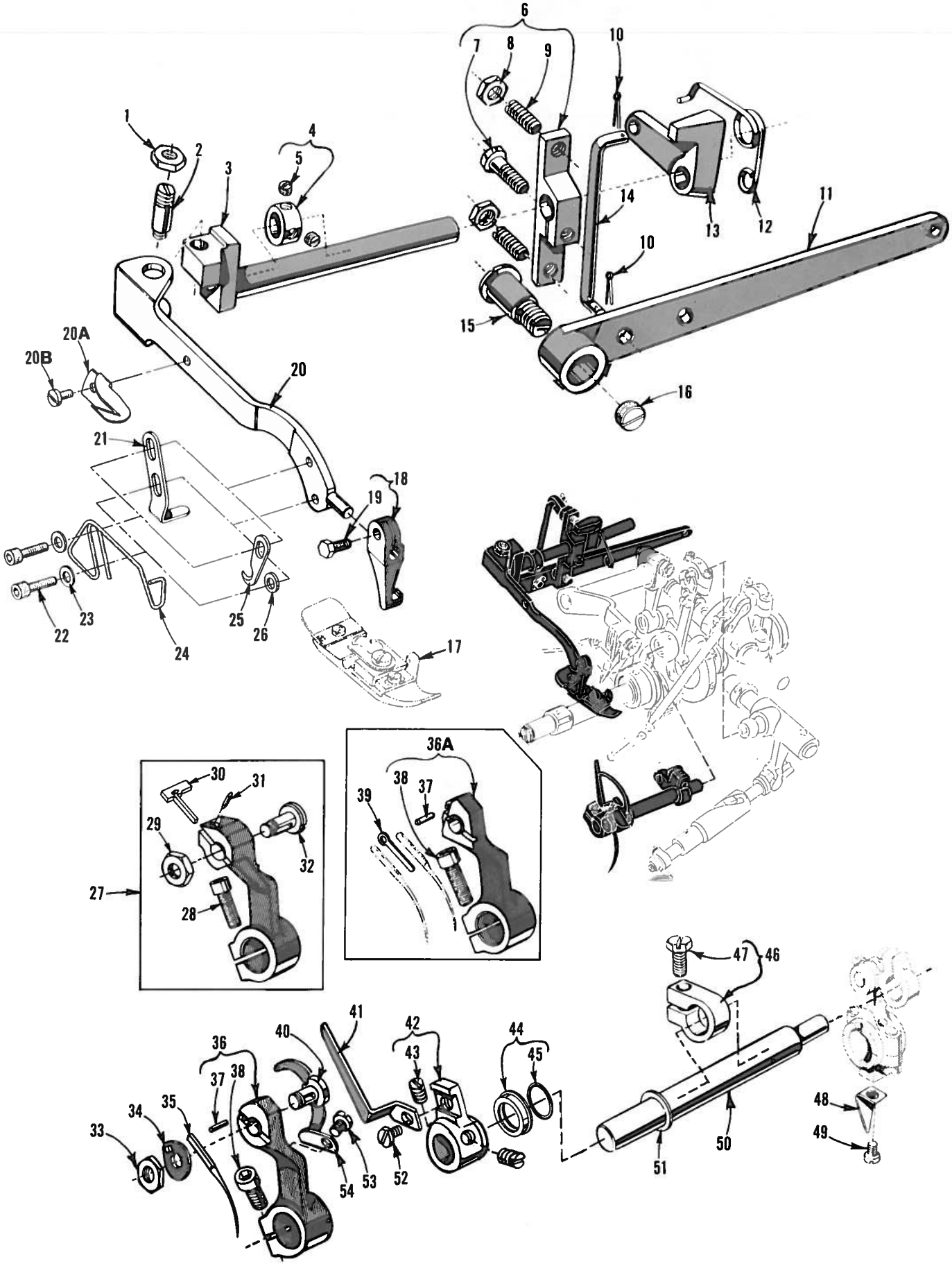
+ Shipped with Style 39500 WW machine for converting stitch type 512 SSa-2 to stitch type 514 SSa-2.

* Assembly No. 29126 EP is recommended for replacement instead of individual parts.



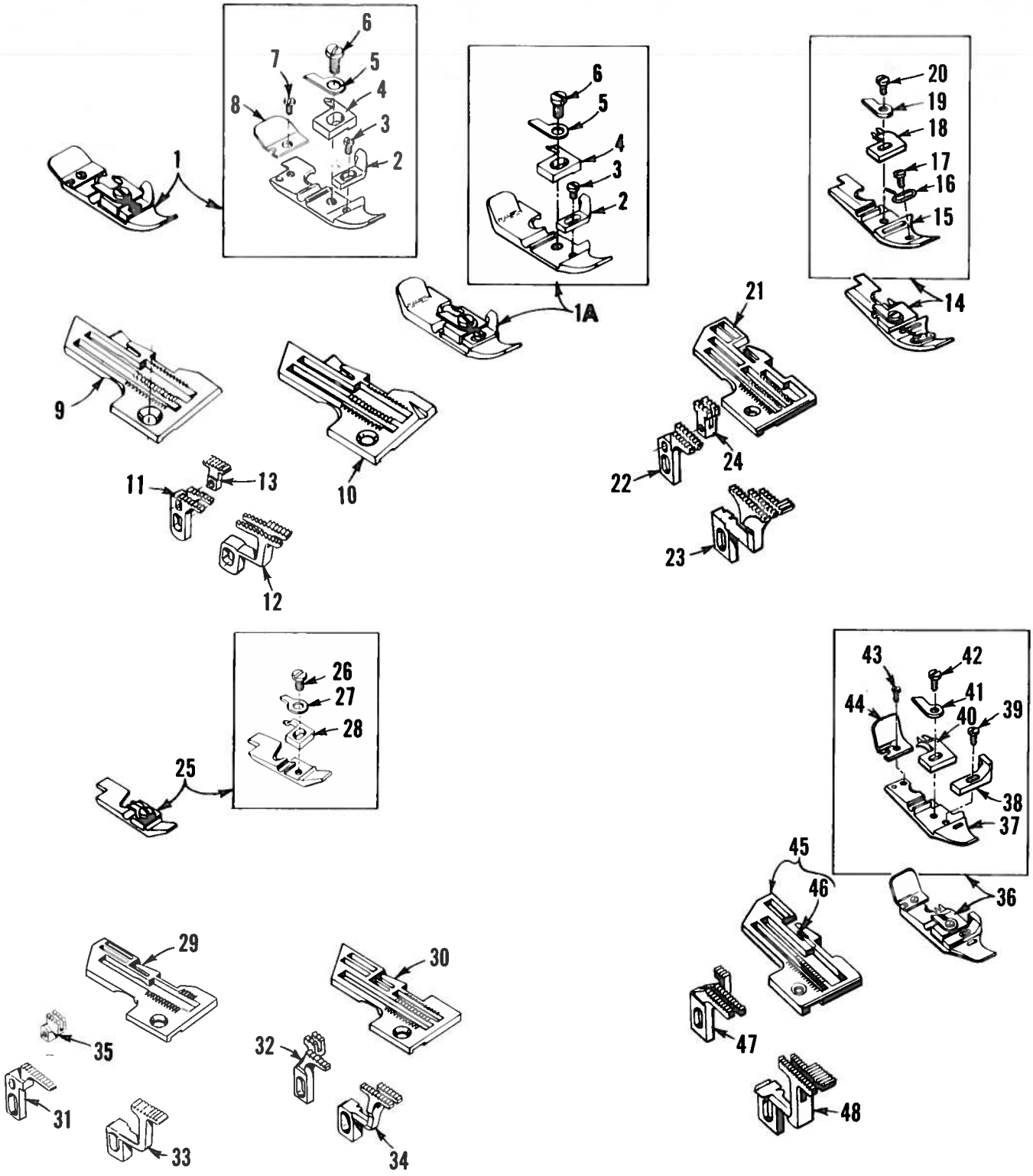
UPPER AND LOWER KNIFE MECHANISM

Ref. No.	Part No.	Decription	Amt. Req.
1	39573 H	Arm, upper knife driving	1
2	39571 D	Stud, upper knife clamp	1
3	22738	Screw, clamp stud	1
4	14077	Nut, clamp stud	1
5	39571 B	Guard, upper knife chain	1
6	39571 F	Clamp, upper knife	1
7	39570 C	Knife, upper, all Styles except WC, WW, CWC, SWC, CSWC	1
7A	39570 CJ	Knife, upper, for Styles WC, WW, CWC, SWC, CSWC	1
8	39572	Block, upper knife holder	1
9	39573 A	Washer, upper knife driving arm	1
10	39573 E	Lever, upper knife driving	1
11	55235 D	Stud, locking	1
12	6042 A	Washer	1
13	55235 E	Nut	1
14	39573 J	Connecting Rod, upper knife driving	1
15	22587 J	Screw	2
16	22524	Screw, throat plate	1
17		Throat Plate (See page 45)	1
18	39550 E	Spring, lower knife holder	1
19	39550 AD	Clamp, lower knife	1
20	22588 J	Screw, lower knife clamp	1
21	605 A	Screw, lower knife clamp spring	1
22	39550 AE	Spring, lower knife clamp	1
23	39550 AC	Plate, lower knife guide	1
24	39549 C	Knife, lower, all Styles except WC, WW, CWC, SWC, CSWC	1
24A	39549 CJ	Knife, lower, for Styles WC, WW, CWC, SWC, CSWC	1
25	39550 AF	Holder, lower knife, all Styles except WC, CWC, SWC, CSWC	1
-	39550 AFA	Holder, lower knife, for Styles WC, CWC, SWC, CSWC	1
26	22729 B	Screw, locating stud	1
27	39550 C	Stud, locating	1
28	14077	Nut, locking	1
29	22892 B	Screw, locking, lower knife holder	1
30	22653 B-12	Screw	2
31	39580 F	Washer	2
32	39580 K	Bracket, rubber bumper mounting	1
33	78	Screw, set	1
34	660-459	Ball, nylon	1
35	660-824	Bumper, cloth plate	1
36	22652 D-12	Screw	1
37	39580 AH	Bracket, throat plate and lower knife support	1
38	39880 N	Bumper, rubber	1
39	22585 A	Screw, needle guard	2
40	GA39525 N	Guard, needle (rear), all Styles except WW	1
-	39525 P	Guard, needle (rear), for Style WW	1
41	39525 R	Guard, needle (front), all Styles except WC, WK, WW, CWC, CWK, SWC, SWK, CSWC, CSWK	1
-	G39525 AW	Guard, needle (front), for Styles WC, WK, CWC, CWK, SWC, SWK, CSWC, CSWK	1
-	39525 N	Guard, needle (front), for Style WW	1

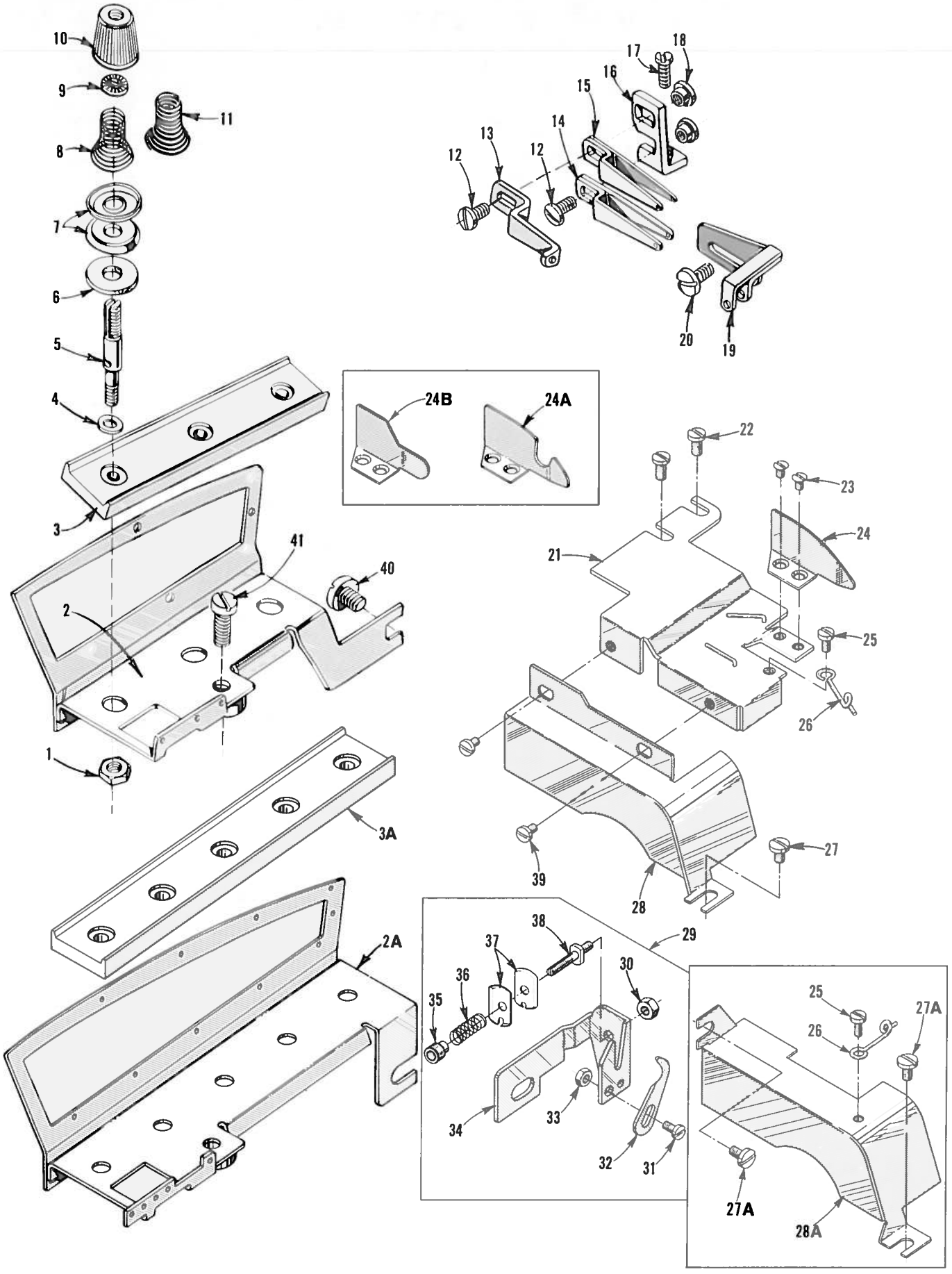


PRESSER FOOT LIFTER AND NEEDLE DRIVE PARTS

Ref. No.	Part No.	Description	Amt. Req.
1	258 A	Nut	1
2	22791 H	Pin, screw	1
3	39555 S	Shaft, foot lifter lever	1
4	12865	Collar, thrust	1
5	88	Screw, set	2
6	39555 C	Arm, lifter lever	1
7	627	Screw	1
8	12538	Nut, lock	2
9	22597 E	Screw, set	2
10	660-142	Pin, cotter	2
11	39855	Lever, foot lifter	1
12	39555 B	Spring, foot lifter lever	1
13	39555 D	Lever, foot lifter (intermediate)	1
14	39555 F	Link, connecting	1
15	22566 B	Screw, foot lifter lever	1
16	22571 D	Screw, plug	1
17		Presser Foot (See page 45)	1
18	39530 AH	Shank, presser foot; marked "AD", all Styles except WE, CWE, SWE	1
-	39530 AJ	Shank, presser foot; marked "AE", for Styles WE, CWE, SWE	1
19	22781	Screw	1
20	39556 T	Arm, presser	1
20A	39556 K	Knife, chain cutting; marked "J", for Style WW	1
20B	22704	Screw, for No. 39556 K knife	1
21	39556 H	Plate, presser foot hold down, all Styles except WC, WK, CWC, CWK, SWC, SWK, CSWC, CSWK	1
22	99360	Screw	2
23	95956	Washer	2
24	21695 AW	Guard, finger	1
25	39656 A	Knife, chain cutting; marked "AC" for Styles WC, WK, CWC, CWK, SWC, SWK, CSWC, CSWK	1
26	41358	Washer, for Styles WC, WK, CWC, CWK, SWC, SWK, CSWC, CSWK	1
27	39552 AC	Arm, needle driving; marked "N", for Style WW	1
28	22596 E	Screw	1
29	14077 A	Nut	1
30	39551 G	Spacer, needle	1
31	61351 K-625	Pin, stop	1
32	39551 J	Stud, needle clamp	1
33	14077 A	Nut, needle clamp stud; all Styles except WW	1
34	39551 H	Washer, needle clamp; all Styles except WW	1
35	154 GAS	Needle, for Styles WA, WE, WF, WP, CWA, CWE, CWF, CWP	1
-	154 GAS	Needle, for Style WW	2
-	162 SAS	Needle, for Styles SWA, SWE, SWF, SWP, CSWA, CSWF, CSWP, SWAL, SWFL, SWPL	1
-	162 SDS	Needle, for Styles SWC, SWK, CSWC, CSWK	2
-	8454 GS	Needle, for Styles WC, WK, CWC, CWK	2
36	39552 Z	Arm, needle driving; marked "K", for Styles WA, WE, WF, WP, CWA, CWE, CWF, CWP	1
-	39552 AJ	Arm, needle driving; marked "S", for Styles SWA, SWE, SWF, SWP, CSWA, CSWF, CSWP, SWAL, SWFL, SWPL	1
36A	39552 AH	Arm, needle driving; marked "R", for Styles WC, WK, CWC, CWK	1
-	39552 AK	Arm, needle driving; marked "T", for Styles SWC, SWK, CSWC, CSWK	1
37	39552 AD	Pin, stop	1
38	22596 E	Screw	1
39	39551 L	Spacer, needle, for Styles WC, WK, CWC, CWK, SWC, SWK, CSWC, CSWK	1
40	39551 J	Stud, needle clamp, for all Styles except WW	1
41	39568 AH	Pull-off, looper thread	1
42	39568 AC	Lever, looper thread pull-off	1
43	88 B	Screw	2
44	39552 AG	Seal, oil	1
45	660-207	"O" Ring	1
46	39543 Y	Collar, thrust	1
47	22782 A	Screw	1
48	39594 N	Splasher, oil	1
49	87 C	Screw	1
50	39552 R	Shaft, needle driving	1
51	C50043 H-029	Washer, thrust collar	1
52	22513 D	Screw, looper thread pull-off	1
53	87 C	Screw, needle thread cam pull-off	1
54	39563 AC	Cam Pull-Off, needle thread	1



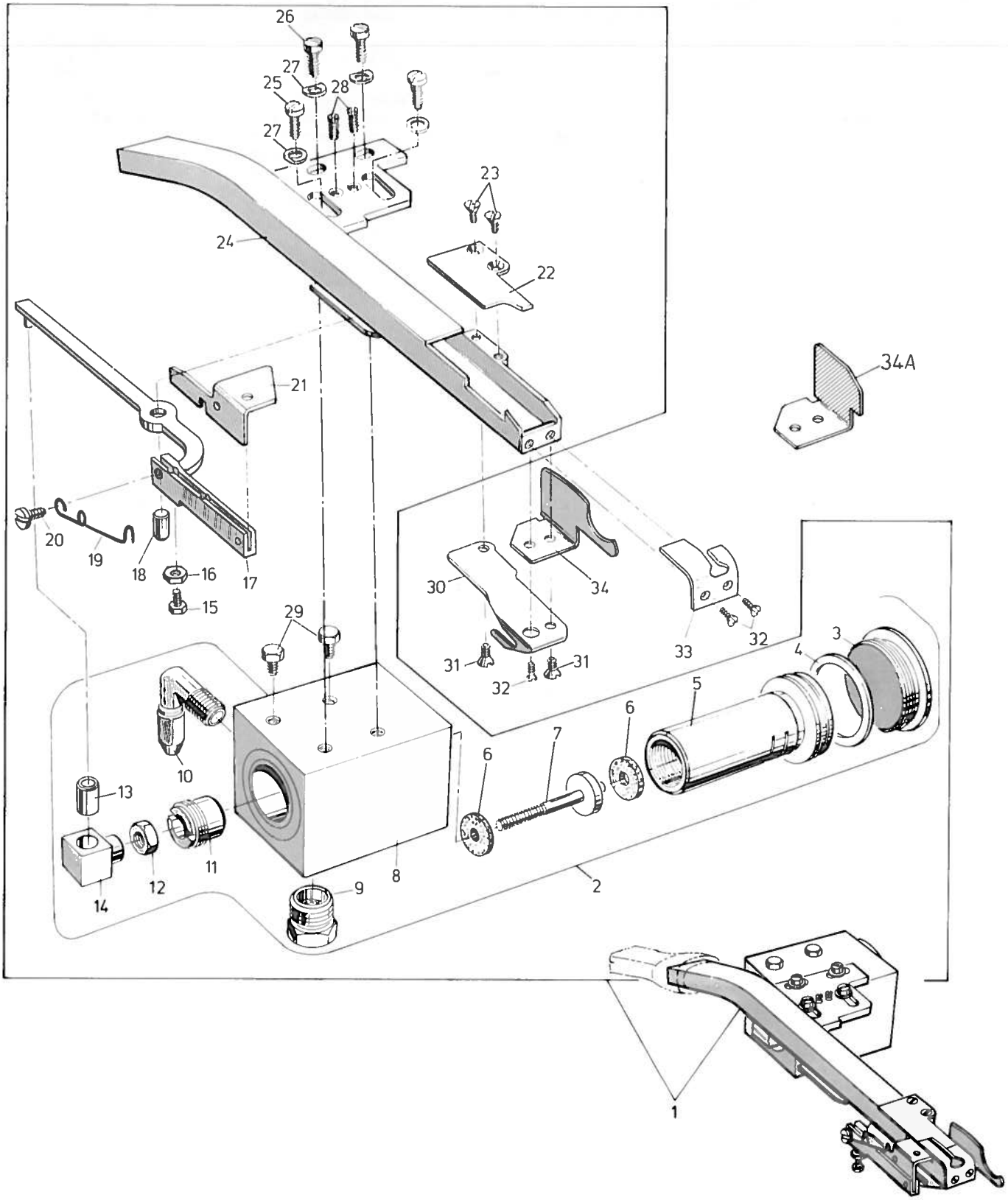
Ref. No.	Part No.	Decription	Amt. Req.
1	39520 B	Presser Foot, all Styles except WC, WE, WK, WW, CWC, CWE, CWK, SWC, SWE, SWK, CSWC, CSWK, SWAL, SWFL, SWPL	1
1A	39520 BS	Presser Foot, for Styles SWAL, SWFL, SWPL	1
2	39530 P	Guard, chip	1
3	22738 B	Screw, for chip guard	1
4	39597 A	Tongue, stitch, marked "DS"	1
5	39530	Spring, hinge	1
6	22768 B	Screw, for stitch tongue and hinge spring	1
7	22738 B	Screw, for chain shield; for No. 39520 B presser foot only	1
8	39530 C	Shield, chain; for No. 39520 B presser foot only	1
9	39524 C-3/32	Throat Plate, 3/32 gauge, for Styles WA, WF, WP, CWA, CWF, CWP, SWA, SWF, SWP, CSWA, CSWF, CSWP	1
-	39524 C-1/8	Throat Plate, 1/8 gauge, for Styles WA, WF, WP, CWA, CWF, CWP, SWA, SWF, SWP, CSWA, CSWF, CSWP	1
-	39524 C-5/32	Throat Plate, 5/32 gauge, for Styles WA, WF, WP, CWA, CWF, CWP, SWA, SWF, SWP, CSWA, CSWF, CSWP	1
10	39524 BE-1/8	Throat Plate, for Styles SWAL, SWFL, SWPL	1
11	39505 BP	Feed Dog, main, marked "FW", 16 t.p.i., for Styles WA, WF, CWA, CWF, SWA, SWF, CSWA, CSWF, SWAL, SWFL	1
-	39505 AY	Feed Dog, main, marked "PH", 12 t.p.i., for Styles WP, CWP, SWP, CSWP, SWPL	1
12	39526 AP	Feed Dog, differential, marked "AP", 16 t.p.i., for Styles WA, WF, CWA, CWF, SWA, SWF, CSWA, CSWF, SWAL, SWFL	1
-	39526 AE	Feed Dog, differential, marked "AE", 12 t.p.i., for Styles WP, CWP, SWP, CSWP, SWPL	1
13	39505 BR	Feed Dog, chaining, marked "SH", 16 t.p.i., for Styles WA, WF, WP, CWA, CWF, CWP, SWA, SWF, SWP, CSWA, CSWF, CSWP, SWAL, SWFL, SWPL	1
14	G39520 SB	Presser Foot, for Styles WC, CWC, SWC, CSWC	1
15	G39530 SB	Bottom, presser foot	1
16	G39530 BB	Guide, tape	1
17	22798 A	Screw	1
18	G39597 AW	Tongue, stitch, marked "WY"	1
19	39530	Spring, hinge	1
20	22768 B	Screw, for hinge spring and stitch tongue	1
21	G39524 SB	Throat Plate, marked "HQ", for Styles WC, CWC, SWC, CSWC	1
22	G39505 SB	Feed Dog, main, marked "JX", 12 t.p.i., for Styles WC, CWC, SWC, CSWC	1
23	G39526 SB	Feed Dog, differential, marked "JW", 12 t.p.i., for Styles WC, CWC, SWC, CSWC	1
24	G39505 JB	Feed Dog, chaining, marked "JY", 12 t.p.i., for Styles WC, CWC, SWC, CSWC	1
25	39520 BP	Presser Foot, for Styles WE, CWE, SWE	1
-	39520 W	Presser Foot, for Style WW	1
26	22768 B	Screw	1
27	39530 G	Spring, hinge, for No. 39520 BP presser foot	1
-	39530	Spring, hinge, for No. 39520 W presser foot	1
28	39597 BP	Tongue, stitch, marked "FA", for No. 39520 BP presser foot	1
-	39597 W	Tongue, stitch, marked "EF", for No. 39520 W presser foot	1
29	39524 BP-3/32	Throat Plate, 3/32 gauge, for Styles WE, CWE, SWE	1
-	39524 BP-1/8	Throat Plate, 1/8 gauge, for Styles WE, CWE, SWE	1
-	39524 BP-5/32	Throat Plate, 5/32 gauge, for Styles WE, CWE, SWE	1
30	39524 W	Throat Plate, for Style WW	1
31	39505 BA	Feed Dog, main, marked "PC", 16 t.p.i., for Styles WE, CWE, SWE	1
32	39505 WA	Feed Dog, main, marked "WA", 12 t.p.i., for Style WW	1
33	39526 BP	Feed Dog, differential, marked "BP", 16 t.p.i., for Styles WE, CWE, SWE	1
34	39526 W	Feed Dog, differential, marked "AT", 12 t.p.i., for Style WW	1
35	39505 BB	Feed Dog, chaining, marked "PD", 16 t.p.i., for Styles WE, CWE, SWE	1
36	G39520 AY	Presser Foot, for Styles WK, CWK, SWK, CSWK	1
37	G39530 BA	Bottom, presser foot	1
38	39530 P	Guard, presser foot	1
39	22738 B	Screw	1
40	G39597 AW	Tongue, stitch, marked "WY"	1
41	39530	Spring, hinge	1
42	22768 B	Screw, for hinge spring and stitch tongue	1
43	39530 C	Shield, chain	1
44	22738 B	Screw	1
45	G39524 AW	Throat Plate, for Styles WK, CWK, SWK, CSWK	1
46	G39530 AW	Tongue, stitch	1
47	G39505 AV	Feed Dog, main, marked "GM", 22 t.p.i., for Styles WK, CWK, SWK, CSWK	1
48	G39526 AV	Feed Dog, differential, marked "GN", 22 t.p.i., for Styles WK, CWK, SWK, CSWK	1



THREAD TENSIONS, EYELETS AND LATCH TACKER

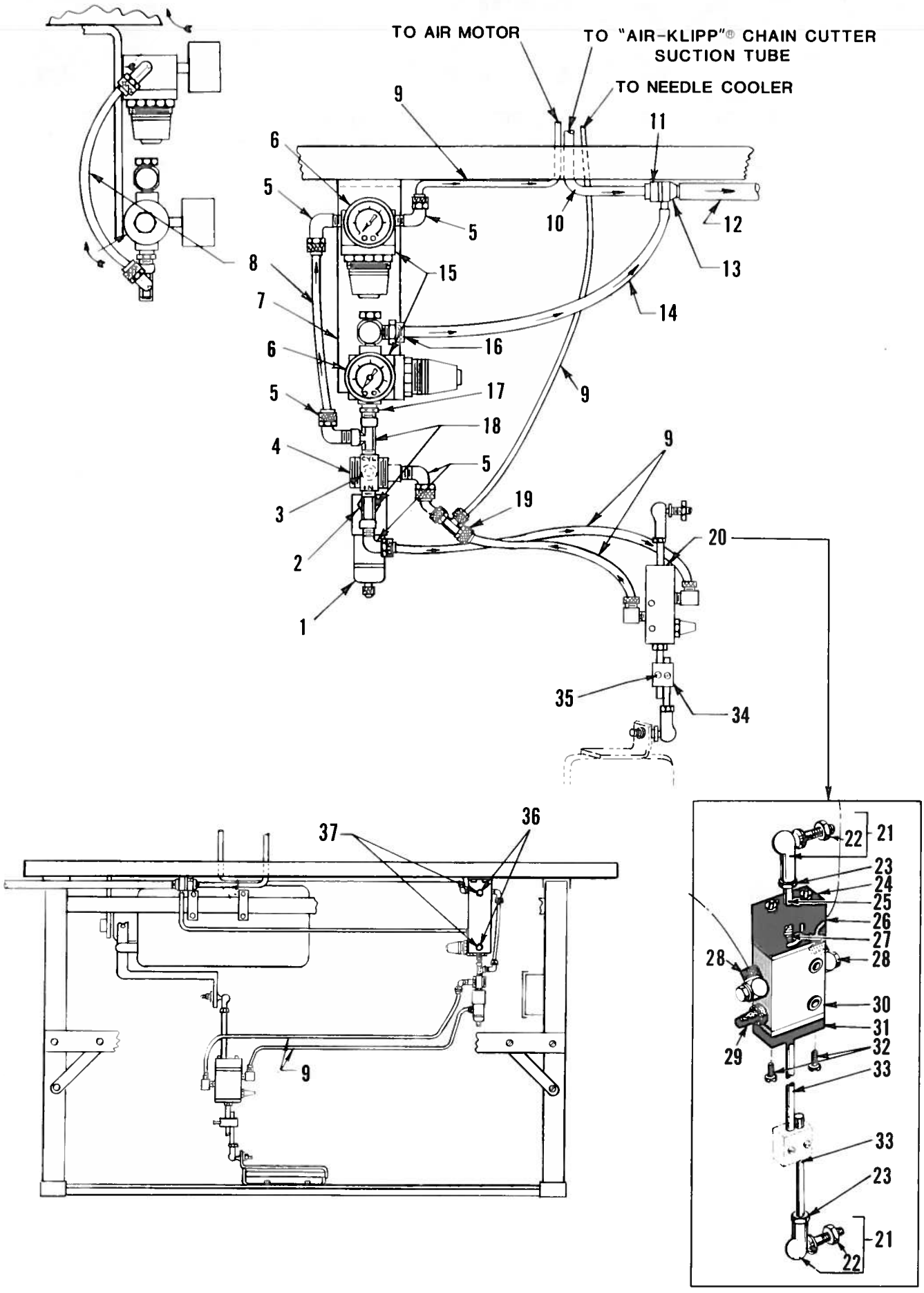
Ref. No.	Part No.	Decription	Amt. Req.
1	39592 AH	Nut, tension post	3 or 4
2	39592 AG-3	Bracket, tension post mounting, all Styles except WC, WK, WW, CWC, CWK, SWC, SWK, CSWC, CSWK	1
2A	39592 AG-5	Bracket, tension post mounting, for Styles WC, WK, WW, CWC, CWK, SWC, SWK, CSWC, CSWK	1
3	39592 AM	Bar, tension post, all Styles except WC, WK, WW, CWC, CWK, SWC, SWK, CSWC, CSWK	1
3A	39592 AN	Bar, tension post, for Styles WC, WK, WW, CWC, CWK, SWC, SWK, CSWC, CSWK	1
4	8372 A	Washer, tension post	3 or 4
5	39592 AL	Post, tension	3 or 4
6	39592 AF	Felt, tension disc	3 or 4
7	39592 AD	Disc, thread tension	6 or 8
8	39592 AR-5	Spring, needle thread tension, for Styles WA, WE, CWA, CWE, SWA, SWE, CSWA, SWAL	1
-	39592 AR-8	Spring, needle thread tension, for Styles WF, WP, CWF, CWP, SWF, SWP, CSWF, CSWP, SWFL, SWPL	1
-	39592 AR-8	Spring, needle thread tension, for Styles WC, WK, WW, CWC, CWK, SWC, SWK, CSWC, CSWK	2
9	39592 AK	Ferrule, tension spring	3 or 4
10	39592 Z	Nut, needle thread tension; left (yellow), for Styles WC, WK, WW, CWC, CWK, SWC, SWK, CSWC, CSWK	1
-	39592 AA	Nut, needle thread tension (green)	1
-	39592 AB	Nut, upper looper thread tension (blue)	1
-	39592 AC	Nut, lower looper thread tension (red)	1
11	39592 AR-4	Spring, looper thread tension, for Styles WC, WK, CWC, CWK, SWC, SWK, CSWC, CSWK	2
-	39592 AR-5	Spring, looper thread tension, all Styles except WC, WK, CWC, CWK, SWC, SWK, CSWC, CSWK	2
12	376 A	Screw	2
13	39568 E	Eyelet, auxiliary looper thread	1
14	39568 B	Eyelet, lower looper thread	1
15	39568 L	Eyelet, upper looper thread	1
16	39568 D	Bracket, looper thread eyelet mounting	1
17	22569 B	Screw	1
18	43139 A	Nut	2
19	39563 H	Eyelet, needle thread pull-off	1
20	22569 D	Screw	1
21	39582 EU	Shield, oil (upper), all Styles w/o Power "AIR-KLIPP" chain cutter	1
22	22569 C	Screw, all Styles w/o Power "AIR-KLIPP" chain cutter	2
23	87 B	Screw, all Styles w/o Power "AIR-KLIPP" chain cutter	2
24	39578 M	Guard, fabric, for Styles WA, WF, WP, SWA, SWF, SWP, SWAL, SWFL, SWPL	1
24A	G39578 M	Guard, fabric, for Styles WC, WK, SWC, SWK	1
24B	39578 AF	Guard, fabric, for Styles WE, SWE	1
-	39578 S	Guard, fabric, for Style WW	1
25	J87 J	Screw	1
26	52 A	Eyelet, lower looper thread	1
27	22569 D	Screw, for No. 39582 EV oil shield	1
27A	22569 D	Screw, for No. 39582 EZ side cover	2
28	39582 EV	Shield, oil (end), all Styles w/o Power "AIR-KLIPP" chain cutter	1
28A	39582 EZ	Cover, side, for Styles w/Power "AIR-KLIPP" chain cutter	1
*29	A9457 G	Latch Tacker (complete), for Styles SWAL, SWFL, SWPL	1
30	41071 G	Nut	1
31	87 U	Screw	1
32	39656 A	Knife, marked "AC"	1
33	43443 Q	Nut	1
34	A9457 GA	Bracket	1
35	51959 D	Nut	1
36	35178 D	Spring	1
37	51959 B	Disc	2
38	G1346 D	Post, tension	1
39	22513	Screw, for No. 39582 EV oil shield	2
40	22847 B	Screw	1
41	22806 A	Screw	1

* No. A9457 G - Latch Tacker (complete), includes (1) each Nos. DA2196, A9457 GC, 14077, 22528; which are not illustrated or required for this installation.



POWER "AIR-KLIPP"® CHAIN CUTTER

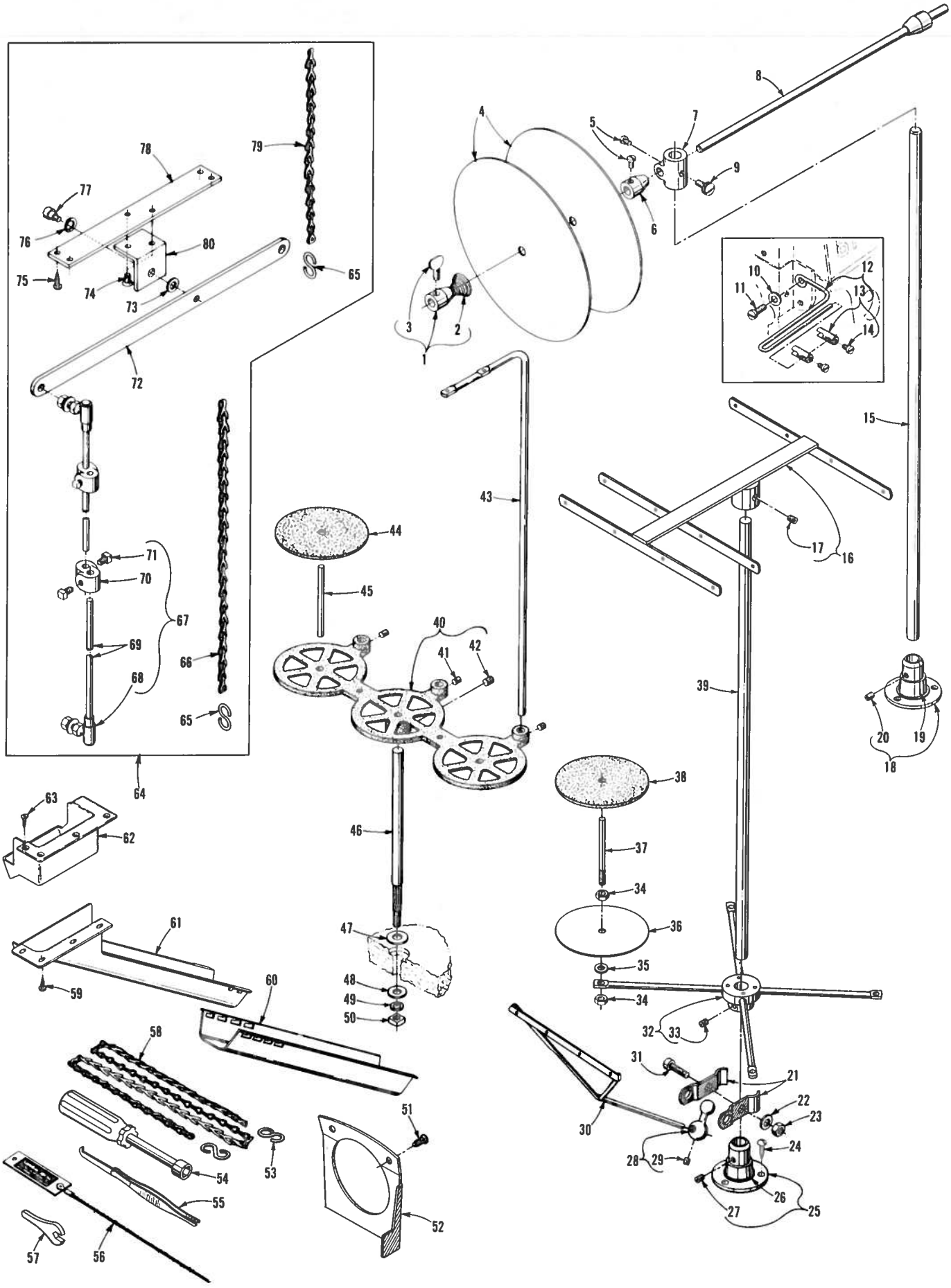
Ref. No.	Part No.	Decription	Amt. Req.
1	V29941 B	Power "AIR-KLIPP" Chain Cutter Assembly	1
2	671 H-1	Air-Motor Assembly	1
3	671 H-1D	Screw, plug	1
4	671 H-1F	Bumper, rubber	1
5	671 H-1A	Vibrator	1
6	671 H-1H	Washer, shock	2
7	39536 DC	Stud	1
8	671 H-1B	Housing	1
9	660-763	Muffler	1
10	999-141	Elbow, union	1
11	671 H-1E	Screw, plug	1
12	41071 G	Nut	1
13	671 H-1G	Bushing	1
14	39573 AC	Link, drive	1
15	22588 K	Screw, lower knife adjusting	1
16	60078 Z	Nut	1
17	39573 AB	Lever, knife driving	1
18	39536 DB	Pin	1
19	99697 DA	Spring, torsion	1
20	22825	Screw	1
21	99669 K	Knife, lower	1
22	99670 L	Knife, upper	1
23	22716	Screw	2
24	99676 N	Tube Assembly	1
25	22541 B	Screw	2
26	80175	Screw	2
27	39278 C	Washer	4
28	12935 A	Screw, aligning	2
29	22588	Screw	2
30	99664 C	Guide, looper thread	1
31	22716	Screw	2
32	22716 A	Screw	3
33	99677 HA	Inlet Part, marked "GS", has a .028 inch (.7mm) slot and .169 inch (4.3mm) opening. For threads 60/3 up to 40/4	1
-	99677 HB	Inlet Part, marked "GF", has a .020 inch (.5mm) slot and .138 inch (3.5mm) opening. For thin threads up to size 70/3	1
-	99677 HD	Inlet Part, marked "GV", has a .039 inch (1.0mm) slot and .205 inch (5.2mm) opening. For heavy threads such as 30/6	1
-	99677 HE	Inlet Part, marked "GW", has a .059 inch (1.5mm) slot and .236 inch (6.0mm) opening. For two needle machines with sewing threads heavier than 50/3	1
34	99665	Guard, fabric, for Styles CWA, CWC, CWE, CWF, CWP, CSWA, CSWC, CSWF, CSWK, CSWP	1
34A	99665 B	Guard, fabric, for Style CWK	1



VENTURI TUBE, PNEUMATIC CONTROL DEVICE, TREADLE ROD VALVE
(Styles equipped w/Power "AIR-KLIPP"® chain cutter)

Ref. No.	Part No.	Decription	Amt. Req.
1	671 D-5	Filter, air line	1
2	RM3320-1	Nipple, reducing	1
3	660-403	Muffler	1
4	RM4098-1	Valve, pilot	1
5	660-401	Elbow, 90°	5
6	671 D-15	Gauge, pressure	2
7	99683 CC	Bracket, mounting	1
8	660-392	Tube, air, 1/4 inch O.D. x 6 1/2 inches (165.1mm) long -	1
9	RM2997 D	Tube, air, 1/4 inch O.D. (specify length)	as Req.
10	671 B-12	Tube, suction	1
11	998-332	Holder, venturi	1
12	671 B-11	Tube, discharge	1
13	671 D-2	Venturi	1
14	99675-1500	Tube, venturi supply	1
15	671 D-9	Regulator, pressure	2
16	999-217	Connector	1
17	RM3287-2	Nipple, hex	1
18	RM2850 D	Tee, pipe	2
*19	RM3384-1	Tee, union	1
20	99683 HC-155	Valve Assembly, treadle rod	1
21	999-146	Link	2
22	95250	Nut	1
23	95250	Nut	3
24	95073	Screw	2
25	99683 J	Stud	1
26	99683 K	Guide	1
27	110-4	Spring	1
28	999-127	Elbow, 90°	2
29	999-140	Muffler	1
30	999-139	Valve, cam, 3/2 way	1
31	99683 E	Connection	1
32	95151	Screw	2
33	99563 A-155	Rod	2
34	671-2	Block, mounting	1
35	91 D	Screw	2
36	671 C-16	Stud, mounting	2
37	11635 B	Nut	2
	RM2871 B	Tie, cable (Not Shown)	4
	660-870	Mount, cable tie (Not Shown)	4
	671 F-1	Fitting, barb, air filter inlet (Not Shown)	1
	671 F-6	Bushing, reducing, air filter inlet (Not Shown)	1

* Item not shipped with machine or "AIR-KLIPP" kit. Extra send and charge item.



THREAD STANDS, ACCESSORIES AND TOOLS

Ref. No.	Part No.	Decription	Amt. Req.
*1	21177 A	Collar, tape reel spring, for Styles WC, WK	1
2	1349 A-5	Spring	1
3	22647 K-24	Thumbscrew	1
*4	21178 A	Disc, tape holder, for Styles WC, WK	2
*5	93 A	Screw, for Styles WC, WK	2
*6	753	Cone, axle, for Styles WC, WK	1
*7	21217 A	Support, adjustable, for Styles WC, WK	1
*8	752	Axle, support, for Styles WC, WK	1
*9	188 D	Thumbscrew, for Styles WC, WK	1
*10	8372 A	Washer, for Styles WC, WK	1
*11	22569 D	Screw, for Styles WC, WK	1
*12	23306 AX	Guide, elastic (top cover), for Styles WC, WK	1
13	23306 AV	Guide, elastic stop	2
14	25 B	Screw	1
*15	21104 B-20	Rod, tape reel, for Styles WC, WK	1
16	21114 AQ-4	Support, eyelet, for two needle machines	1
17	22651 CD-4	Screw	1
*18	21114 A	Base, tape reel, for Styles WC, WK	1
19	660-738	Cap	1
20	22651 CD-4	Screw	1
21	21114 U	Split Socket, ball, for two needle machines	2
22	652-16	Washer, for two needle machines	1
23	21104 H	Nut, for two needle machines	1
24	SC330	Screw, for two needle machines	3
25	21114 A	Base, thread stand, for two needle machines	1
26	660-738	Cap	1
27	22651 CD-4	Screw	1
28	21114 T	Ball, lead eyelet socket, for two needle machines	1
29	22651 CD-4	Screw	1
30	21114 S-4	Eyelet, lead, for two needle machines	1
31	22810	Screw, for two needle machines	1
32	21114 D-4	Support, spool, for two needle machines	1
33	22651 CD-5	Screw	2
34	258 A	Nut, for two needle machines	8
35	652-16	Washer, for two needle machines	4
36	21114	Disc, for two needle machines	4
37	21114 W	Pin, spool, for two needle machines	4
38	21104 V	Pad, thread cone, for two needle machines	4
39	21104 B-20	Rod, thread stand, for two needle machines	1
40	21130 W-3	Support, cone, for single needle machines	1
41	22650 CB-4	Screw	3
42	22650 CE-6	Screw	1
43	21113 F	Eyelet, thread stand, for single needle machines	3
44	21104 V	Pad, thread cone, for single needle machines	3
45	69 S	Pin, spool, for single needle machines	3
46	21104 AA	Rod, thread stand, for single needle machines	1
47	652 J-24	Washer, for single needle machines	1
48	652 J-16	Washer, for single needle machines	1
49	WA9 A	Washer, lock, for single needle machines	1
50	651 A-16	Nut, for single needle machines	1
51	80	Screw	2
52	21375 BB	Guard, belt	1
53	660-264	Hook, "S", all Styles except SWAL, SWFL, SWPL	2
54	21388 AU	Wrench, socket, for 3/8 inch (9.5mm) nut	1
55	660-240	Tweezers, thread	1
56	39899 A	Wire, threading	1
57	116	Wrench, open end, for 9/32 inch (7.1mm) nut	1
58	421 D-34	Chain, presser foot lifter, 32 3/64 inch (812.8mm) long; all Styles except SWAL, SWFL, SWPL	1
59	SC333 A	Screw, all Styles w/o Power "AIR-KLIPP" chain cutter	4
60	39578 AS	Extension, chip chute, all Styles w/o Power "AIR-KLIPP" chain cutter	1
61	39578 AK	Chute, chip, all Styles w/o Power "AIR-KLIPP" chain cutter	1
62	39578 AP	Insert, chip chute (tableboard), all Styles w/o Power "AIR-KLIPP" chain cutter	1
63	SC288	Screw, all Styles w/o Power "AIR-KLIPP" chain cutter	4
64	29480 SA	Kit, foot lifter, for Styles SWAL, SWFL, SWPL	1
65	660-264	Hook, "S"	4
66	421 D-28	Chain	1
67	38294 V	Rod Assembly, pitman	1
68	21371 MZ	Joint, connecting	2
69	1453 J	Rod, pitman	2
70	28562 A	Connection, pitman rod	2
71	22508	Screw	4
72	21662 W	Lever, foot lifter	1
73	43137 E	Washer	1
74	22807	Screw	2
75	SC333 A	Screw	4
76	39536 AD	Washer, spring	1
77	22557 A	Screw	1
78	1460 AC	Plate, adapter	1
79	421 D-18	Chain	1
80	21664 C	Bracket	1

* Extra send and charge items.

NUMERCIAL INDEX OF PARTS

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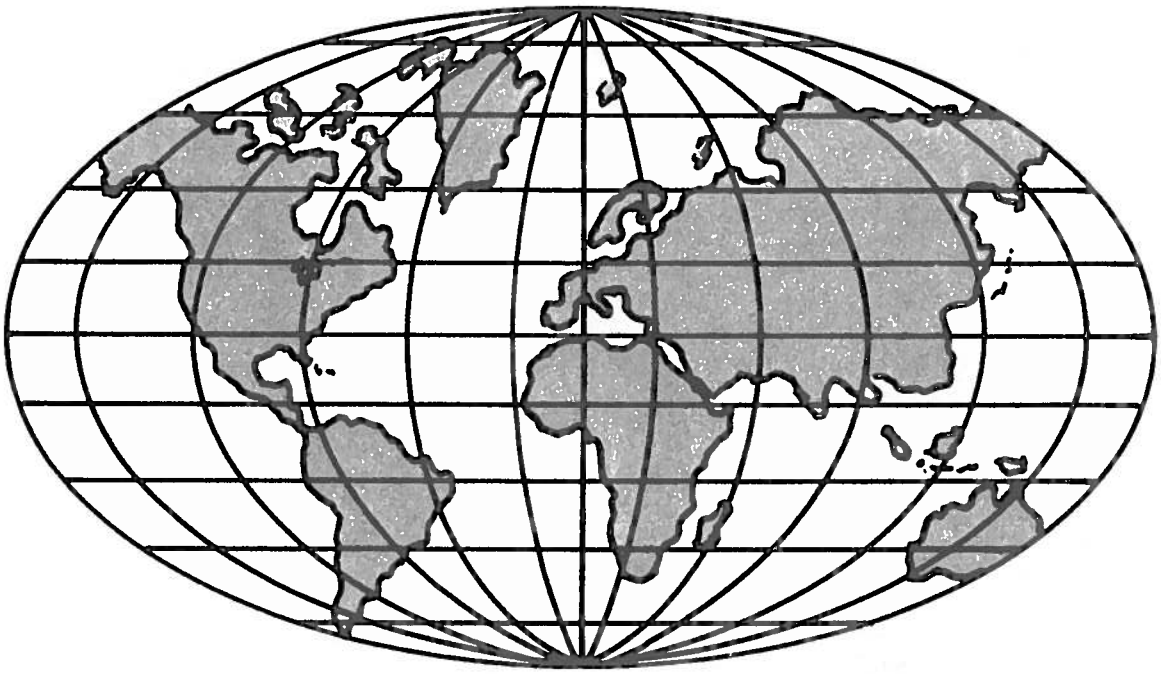

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Printed in U.S.A.