CATALOG NO.

WH398M

First Edition

STYLES

398-21

398-22

398-23

398-24

398-25

398-26

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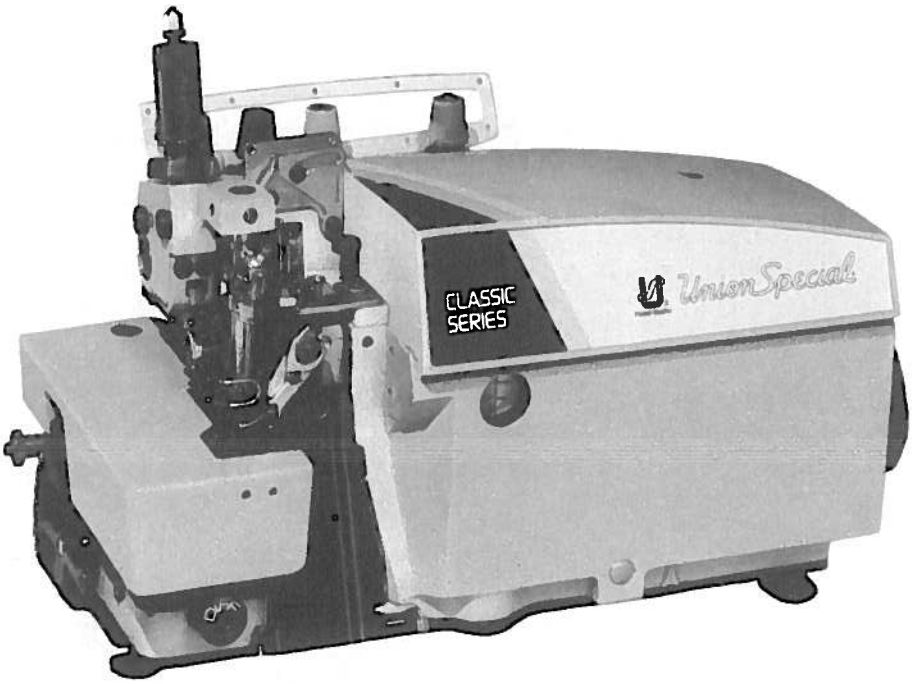
398-29

Adjusting instructions and illustrated parts list



398 Classic Series - Safety stitch machines with Pushbutton stitch length change

Finest Quality

Union Special®
Industrial Sewing Equipment

CATALOG NO. WH398M

ADJUSTING INSTRUCTIONS AND

ILLUSTRATED PARTS LIST FOR

398 CLASSIC SERIES - SAFETY STITCH MACHINES

WITH

PUSHBUTTON STITCH LENGTH CHANGE

STYLES

398-21	398-24	398-27
398-22	398-25	398-28
398-23	398-26	398-29

First Edition

Printed in U.S.A.

July, 1982

CLASS DESCRIPTION

Small frame, high speed, high capacity, differential feed, vertical needle, Safety Stitch machines. The needle drive mechanism moves two straight needles in a vertical plane. Two independent rows of stitching are produced - "Double-Lock" stitch at the left needle and two or three thread overseaming stitch at the right needle. Machines include fabric trimming mechanism, adjustable looper avoid motion, fully enclosed automatic lubrication.

TECHNICAL DATA

STITCH AND SEAM TYPE	Specification 516-SSa-2 Spreader furnished for conversion to Specification 515-SSa-2
FEED SYSTEM	Main and differential feed mechanisms. Push button stitch length adjustment with independent thumbscrew control for differential feed
MAXIMUM SPEED (Depending on operation)	5500 R.P.M.
LUBRICATION	Enclosed automatic splash system with oil return pump
NEEDLE GAUGE (Seam width)	See machine styles

NEEDLE GAUGE EXPLANATION. Example: On Style 398-27 the 12 3/16 is gauge of machine. The 12 indicates the distance between needles graduated in 1/64 increments, thus 12 is 12/64 or 3/16 inch between needles. The fraction 3/16 represents the width of overedge seam. The total seam width is the sum of the two figures, i.e., 3/16 + 3/16 or total seam width of 3/8 inch.

MACHINE STYLES

398-21 (8-1/8 Ga.) For seaming light to medium weight fabrics. Short, narrow presser foot with matiching feeds and throat plate allow stitching on short radius curves. Typical application - setting sleeves and side seaming work shirts, robes and pajamas.

398-22 (8-3/16 Ga.)
398-23 (12-3/16 Ga.) General purpose machine for seaming light to heavy weight fabric. Design of sewing parts allows machine to be used on a variety of garments ranging from shirts and blouses to women's sportwear and jackets.

398-24 (8-3/16 Ga.) Same as Style 398-22 except fitted with narrow tractor type presser foot and related sewing parts for crossing heavy seams.

398-25 Same as Style 398-24 except 12-3/16 gauge.

398-26 (5-1/8 Ga.)
398-27 (12-3/16 Ga.) For seaming medium to heavy weight fabrics. Typical application - assembling and seaming operations on jeans, work clothing, jackets and women's sportwear.

MACHINE STYLES (Continued)

398-28 Same as Style 398-27 except fitted with tractor type presser foot and related sewing parts for crossing heavy seams.

398-29 Same as Style 398-21 except 12-3/16 gauge.

NOTE: All machine styles listed can be furnished with "AIR-KLIPP®" vacuum type chain cutter.

IDENTIFICATION OF MACHINES

Each UNION SPECIAL machine carries a style number, which on this class machine is stamped in the style plate located to the right rear of machine.

The serial number is stamped on extension of casting at right rear base of machine.

LUBRICATION

Oil capacity of Class 398 is eight ounces. Use a straight mineral oil with a Saybolt viscosity of 90 to 125 seconds at 100 degrees F. This is equivalent to Union Special Corporation Specification No. 175.

Machine is filled with oil at spring cap under top cover or at oil filler screw between tension disc support and top cover. Before operating, check oil level at sight gauge on front of machine. When proper oil level is reached, red bulb on oil level indicator will register between red gauge lines.

To drain oil remove magnetic plug on back of machine near bottom edge of base. Clean magnetic plug of any metallic material that may have accumulated in crankcase. Oil must be changed periodically to minimize wear.

THREADING

Be sure machine is threaded properly according to threading diagram Fig. 1, for five thread machines or Fig. 1A, for four thread machines.

THREADING DIAGRAMS

Before threading machine; unlock presser foot release bushing,swing presser arm and cloth plate out of position; pull upper looper thread tube up for five threads. Turn handwheel in operating direction until needles are at highest position. Thread tweezers No. 660-272 and threading wire No. 39899 A are furnished with machine to aid in threading.

Thread machine in sequence as shown in Fig. 1; (1) lower overedge looper thread, (2) 401 looper thread, (3) upper overedge looper thread, (4) rear needle thread and (5) front needle thread. Push upper looper thread tube down.

Thread machine in sequence as shown in Fig. 1A; (1) overedge looper thread, (2) 401 looper thread, (3) rear needle thread and (4) front needle thread.

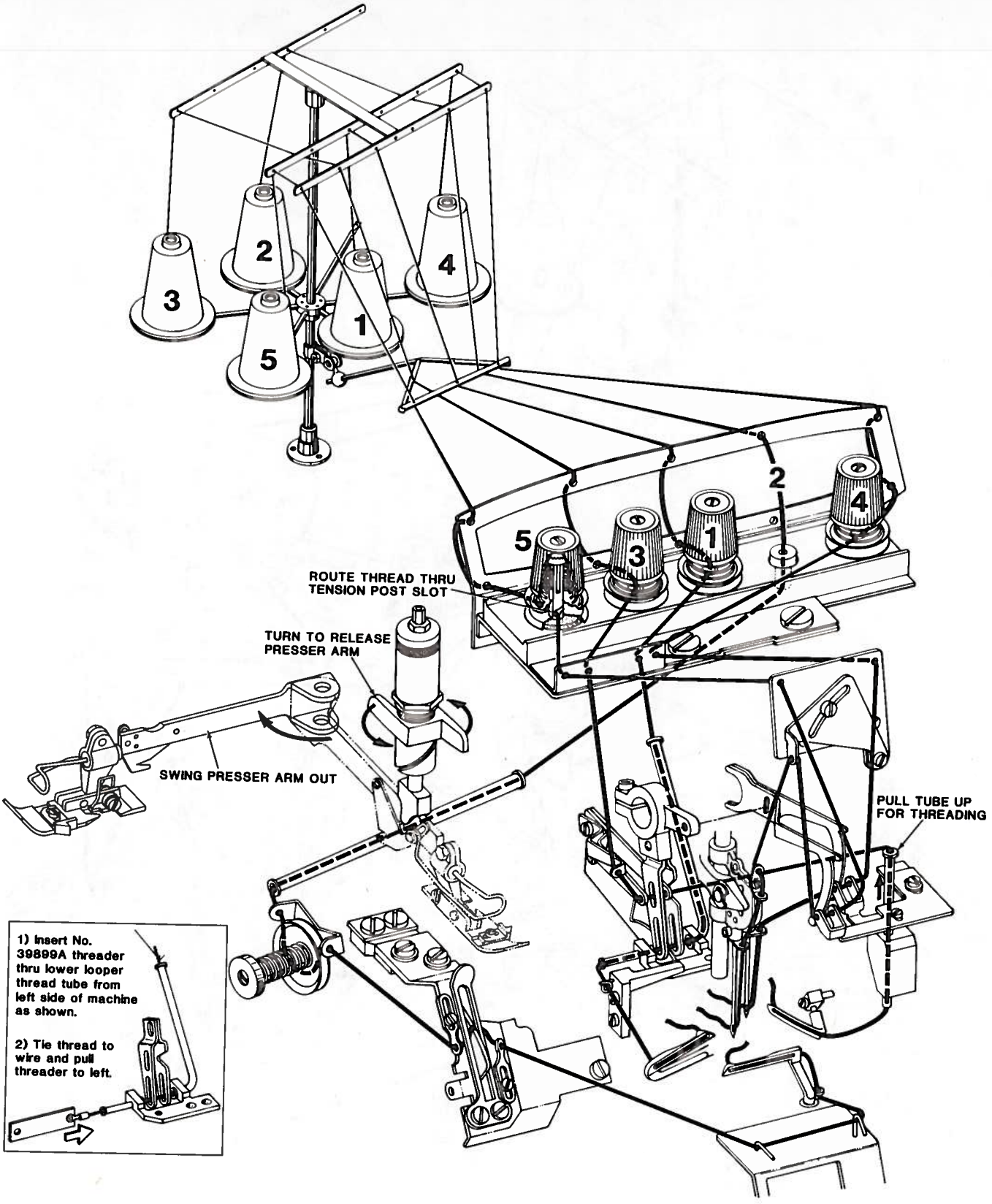


Fig. 1

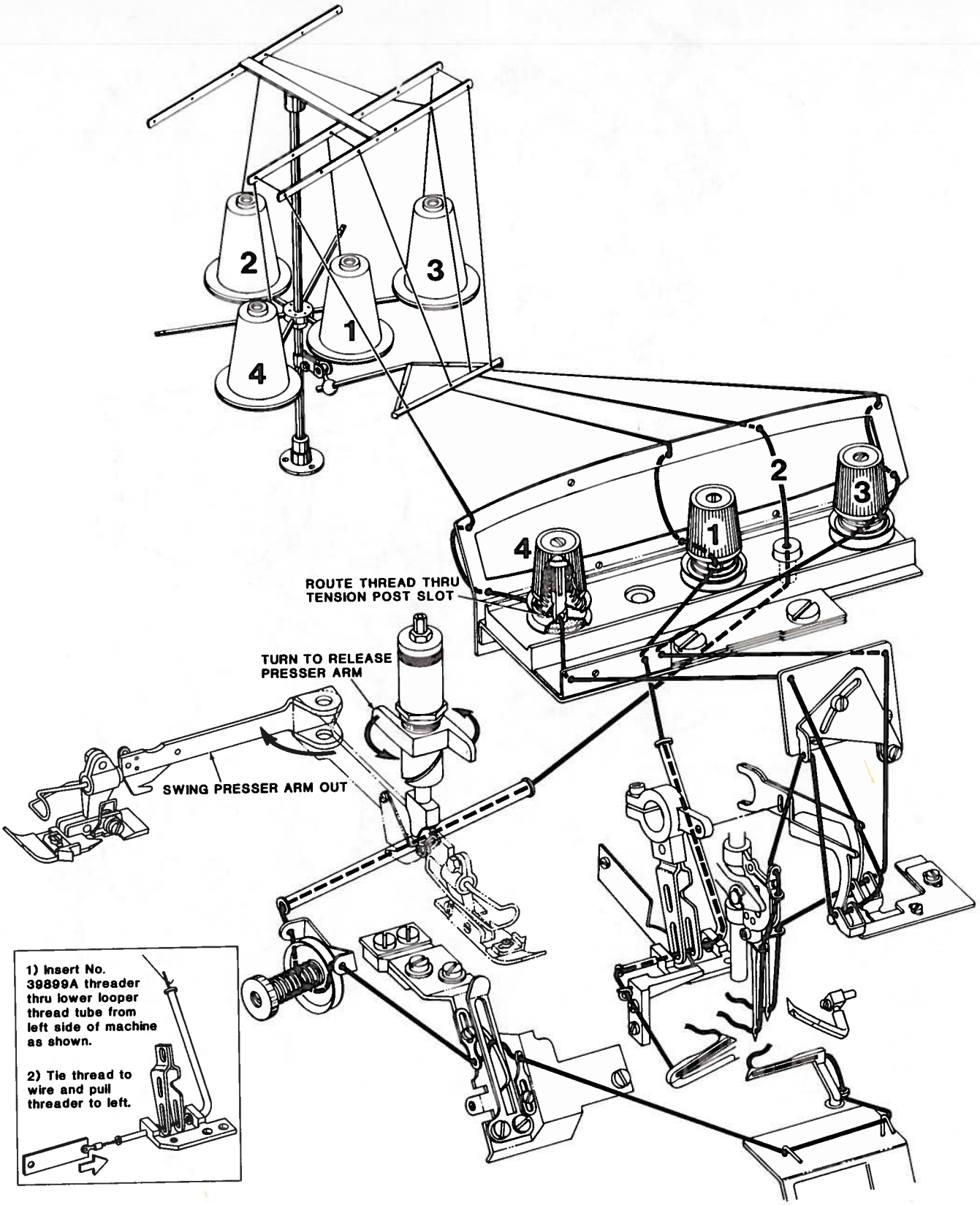


Fig. 1A

NOTE: Instructions stating direction or location, such as right, left, front or rear of machine; are given relative to operator's position at the machine. The handwheel rotates clockwise, in operating direction; when viewed from the right end of machine.

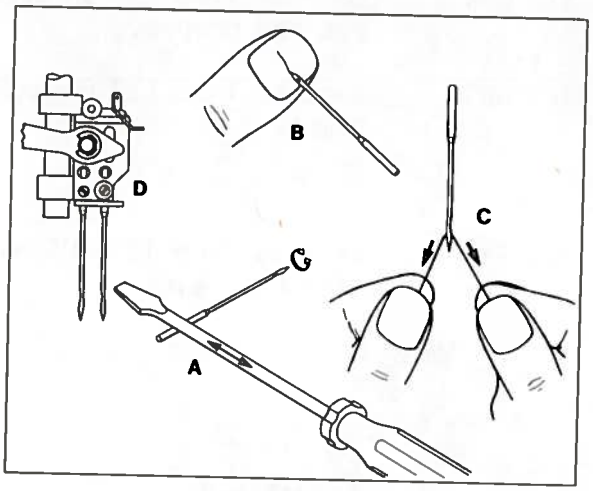


Fig. 2

EXAMINE NEEDLES TO ASSURE PROPER TYPE AND SIZE ARE BEING USED (EXAMPLE: 120 GS-090/036). THE FOLLOWING CHECKS RELATED TO NEEDLES ARE IMPORTANT FOR SUCCESSFUL OPERATION. IMMEDIATELY REPLACE AND DISCARD DEFECTIVE NEEDLES.

- Roll the needle over a flat surface to check straightness. If the needle is bent it will wobble; as shown (A, Fig. 2).
- Use the thumbnail test to check for bluntness and hooks on the tip of the needle; as shown (B, Fig. 2).
- Check for any sharpness around the eye and grooves of the needle. Don't forget the bottom of the eye! Seesaw the thread through for a quick check. If the eye is sharp it will cut the thread; as shown (C, Fig. 2).
- Make sure the needles are all the way up in needle holder and positioned correctly with the spot or scarf to the rear; as shown (D, Fig. 2).

Machines shipped from the factory are sewn off using needles listed:

Machine Style	Type and Size
398-21, 398-22, 398-23, 398-24, 398-25, 398-26, 398-29	120 GS-090/036
398-27, 398-28	120 GAS-125/049

NOTE: Before making adjustments involving the needles, loopers or needle guards, always use new needles of correct type and size.

SEE FOLLOWING CHART FOR DESCRIPTIONS AND SIZES OF NEEDLES AVAILABLE FOR CLASS 398 MACHINES.

Needle Type	Description	Size Available
120 GS	Round shank, round point, set point, extra short, double groove, struck groove, ball eye, spotted, rounded scarf, with 3/64 inch (1.2mm) radius at scarf, chromium plated.	075/029, 080/032, 090/036, 100/040, 110/044, 125/049, 140/054.
120 GAS	Same as Type 120 GS except it has a modified point	110/044, 125/049, 140-/054.

Needle Type	Description	Sizes Available
120 GFS	Same as Type 120 GS except it has a reduced eye and groove,	110/044, 125/049.
120 GHS	Same as Type 120 GS except it has a thin ball point.	075/029, 080/032, 090/036, 100/040, 110/044, 125/049, 140/054.
120 GKS	Same as Type 120 GHS except it has an over-size ball eye.	075/029, 080/032, 090/036, 100/040, 110/044.

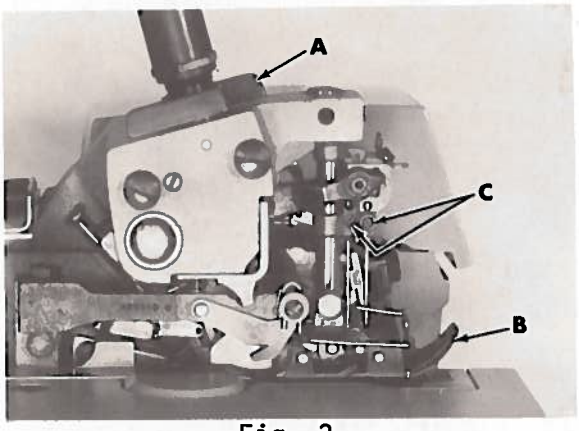


Fig. 3

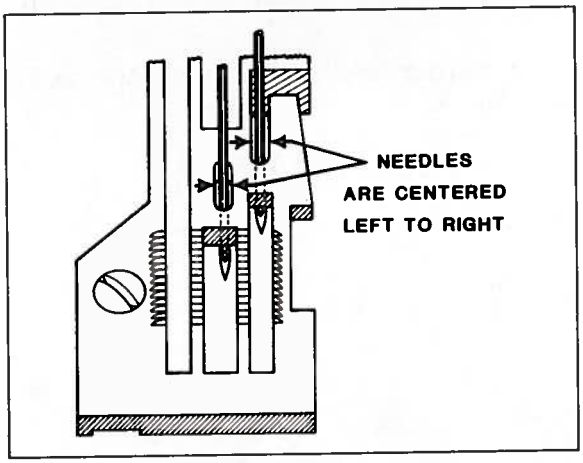


Fig. 4

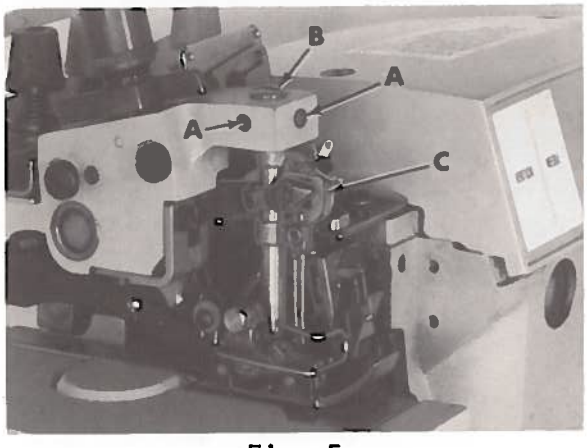


Fig. 5

To have needle orders promptly and accurately filled, an empty package, a sample needle, or type and size number should be forwarded.Use description on label. A complete order would read: "1000 Needles, Type 120 GS,Size 090/036".

NEEDLE REPLACEMENT

To replace needles, turn handwheel in operating direction until needles reach highest position. Rotate presser foot release lever (A, Fig. 3) counterclockwise and swing presser foot (B) to the left. Loosen screws (C) and remove needles. Insert new needles against stop in holder with scarf of needle positioned to the rear; tighten screws (C). Swing presser foot (B) into position and lock presser foot release lever (A).

NEEDLE ALIGNMENT

Needle must center in needle slots of throat plate (left to right) as shown in Fig.4.

If adjustment is required, loosen screws (A, Fig. 5) and needle lever binder screw (A, Fig. 6). Align needles to center in throat plate needle slots by turning eccentric needle head guide bar (B, Fig. 5). Position needle lever to left or right on its cross shaft to correspond with the repositioning of eccentric guide bar. Manually move needle head (C) up and down several times to ensure that the needle lever aligns with the needle head.Tighten screws (A). Temporarily tighten screw (A, Fig. 6) and proceed to needle height adjustment.

NEEDLE HEIGHT

Rotate handwheel in operating direction until needles are at highest position. Specified height is 17/32 inch (13.5mm) from point (tip) of needles to top of throat plate as shown in Fig. 7.

If adjustment is required, loosen binder screw (A, Fig. 6) and position needle lever (B) up or down as required to attain specified dimension. Tighten screw (A, Fig. 6). Rotate handwheel in operating direction and check for binds in needle head assembly. Should a bind exist, refer to NEEDLE ALIGNMENT.

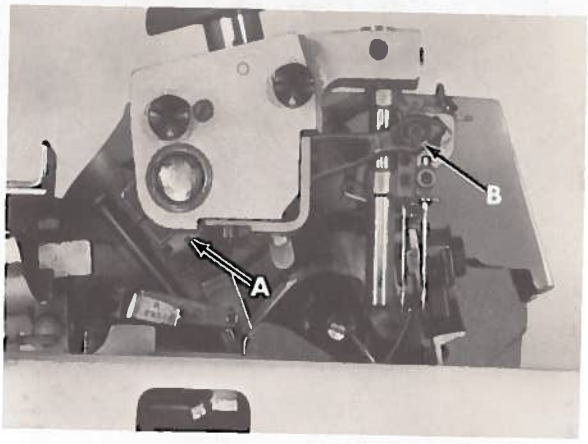


Fig. 6

Needle height gauge No. 21227 DD can be used by placing it on top of throat plate and rotate handwheel to bring needle head down so its bottom rests on proper step of gauge AT BOTTOM OF DOWNSTROKE. You will note two levels on gauge; upper step is for these machines requiring 17/32 inch (13.5mm) needle height, while the lower step is used for other machine styles requiring a 7/16 inch (11.1mm) setting.

PRIOR TO MAKING THE FOLLOWING ADJUSTMENTS, REMOVE CLOTH PLATE, FABRIC GUARD, CHIP GUARD, UPPER KNIFE, LOWER KNIFE,MAIN AND DIFFERENTIAL FEEDS.

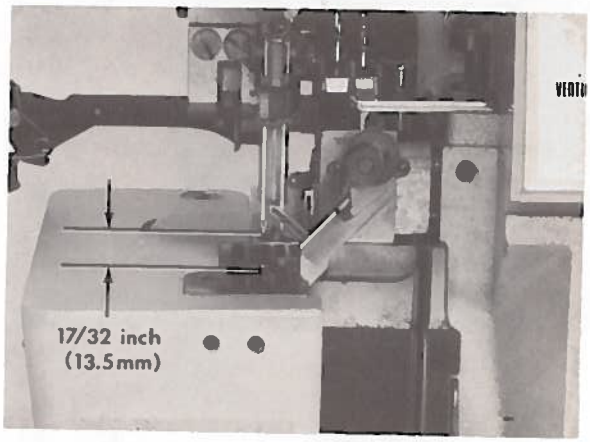


Fig. 7

CLOTH PLATE

To remove cloth plate (A, Fig. 8) loosen screw (B) and lift upward with stud (C) and screw (D) assembled.

Before replacing, tighten screw (D) while holding stud (C)until all end play is removed. Cloth plate must be allowed to swing open, so do not over tighten screw (D). Assemble cloth plate to machine by inserting stud (C) with flat and "V" notch to rear, into hole in bed casting. Tighten screw (B) to press "V" notch of stud (C) against screw (D). This locks screw (D) and stud (C) in position and allows cloth plate to swing open.

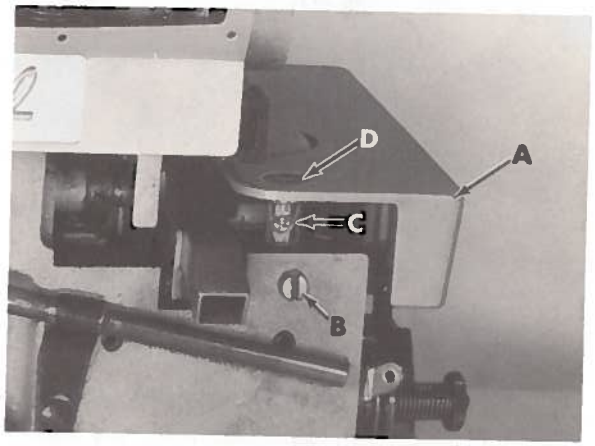


Fig. 8

LOWER OVEREDGE LOOPER

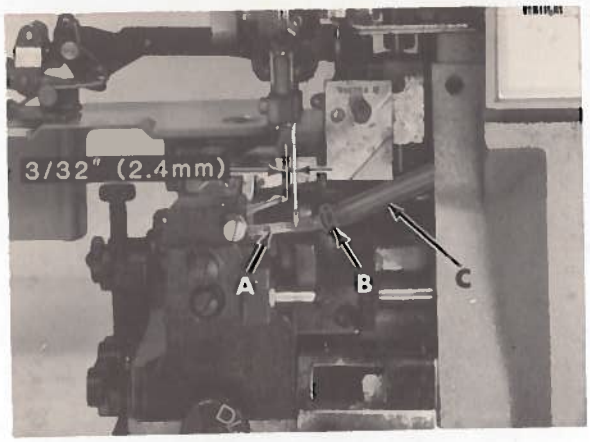


Fig. 9

PRIOR TO CHECKING LOOPER ADJUSTMENT, REMOVE FRONT AND REAR NEEDLE GUARDS.

LOOPER GAUGE - With looper (A, Fig. 9) at extreme left position, distance from looper point to centerline of rear needle should be 3/32 inch (2.4mm) as shown in Fig. 9.

PRIOR TO ADJUSTING LOOPER, POSITION UPPER LOOPER/SPREADER UP AND AWAY FROM LOWER LOOPER.

Rotate handwheel to position looper at extreme right end of travel and loosen clamp nut (B, Fig. 9). Rotate handwheel to position looper at extreme left end of travel and set looper gauge by adjusting looper in or out of looper shaft (C). Rotate handwheel and position looper into scarf of rear needle and set looper point to touch but NOT deflect needle. Tighten clamp nut (B) securely and recheck looper gauge.

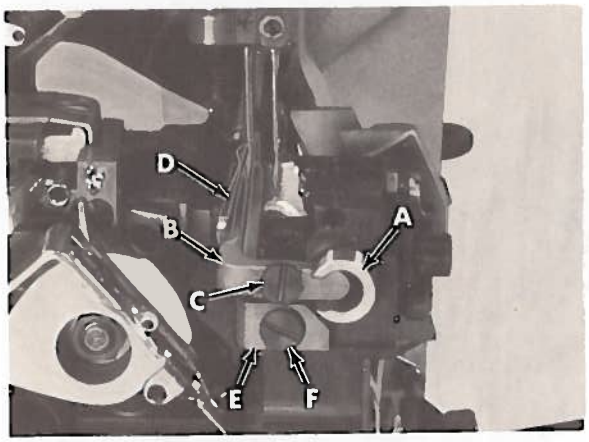


Fig. 10

REAR OVEREDGE NEEDLE GUARD

Remove spring from inside of lower knife holder (A, Fig. 10) and assemble lower 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 (A) as shown. Tighten screw (C) temporarily to hold guard in position yet allows it to be moved. Rotate handwheel in operating direction so the lower overedge looper (D) moves from the extreme left position into the scarf of rear needle. Move guard (B) forward until the front guarding surface contacts the needle but does NOT deflect it. Set guard as low as possible so that it will not interfere with needle thread as loop is formed to rear of needle. Tighten screw (C) securely. Guard should not interfere with lower knife holder movement or contact lower overedge looper at any point.

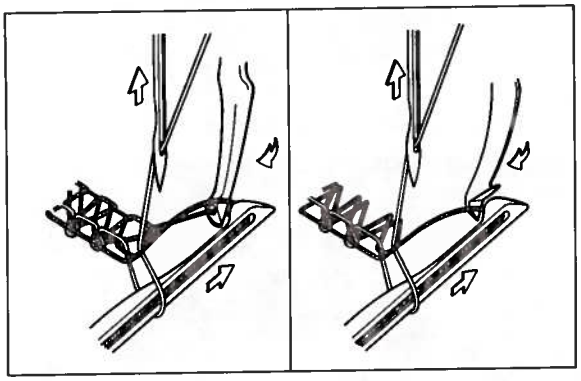


Fig. 11

FRONT OVEREDGE NEEDLE GUARD

Assemble front overedge needle guard (E, Fig. 10) to throat plate support using screw (F). Rotate handwheel in operating direction to position needle at bottom of stroke. Set guard to needle with minimum clearance - approximately .004 inch (.10mm). Tighten screw (F) securely. DO NOT PINCH NEEDLE BETWEEN FRONT AND REAR GUARDS.

OVEREDGE UPPER LOOPER AND/OR SPREADER

NOTE: When using needle sizes 075/029 through 100/040 fit machine with upper looper No. 39808 A. Looper No. 39808 C is recommended for use with needle sizes 110/044 through 140/054.

PROPER ADJUSTMENTS TO THE UPPER LOOPER OR SPREADER ARE ESSENTIAL FOR SUCCESSFUL OPERATION. THE PATH TRAVELED BY THE UPPER LOOPER OR SPREADER EFFECTS THE MAXIMUM SEAM THICKNESS SEWN.

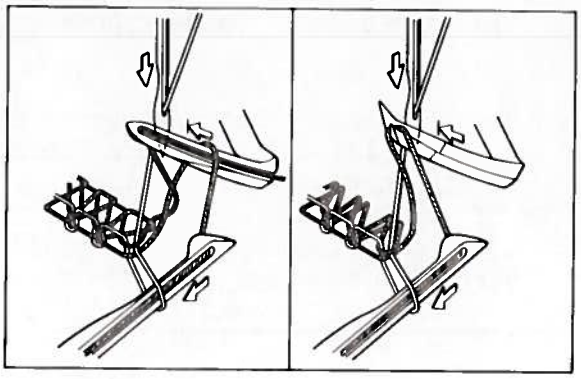


Fig. 12

Rotate handwheel in operating direction and closely observe the path of the upper looper/spreader as it moves from extreme right position and approaches lower looper (Fig. 11). Point of looper or thread pick up on spreader must pass the notch in head of lower looper with mininum clearance. Upper looper should pass under the lower looper thread and spreader must pick up lower looper thread with lower point.

Continue rotating handwheel until upper looper/spreader reaches the extreme left position at the needle (Fig. 12). At this point the upper looper should be in position so the descending rear needle will pass to the right of the upper looper thread which extends from the eye of the looper to the previously formed stitch. On machines using a spreader, the spreader should now be in position so the descending needle will pass to the right of the lower looper thread extending from the notch of the spreader to the previously formed stitch. THE UPPER LOOPER/SPREADER SHOULD NOT RUB AGAINST THE LOWER LOOPER OR NEEDLE AT ANY POINT OF TRAVEL.

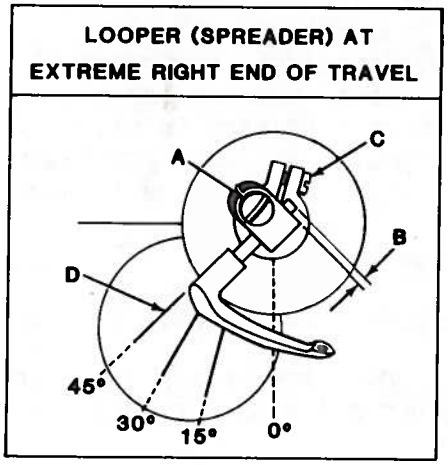


Fig. 13

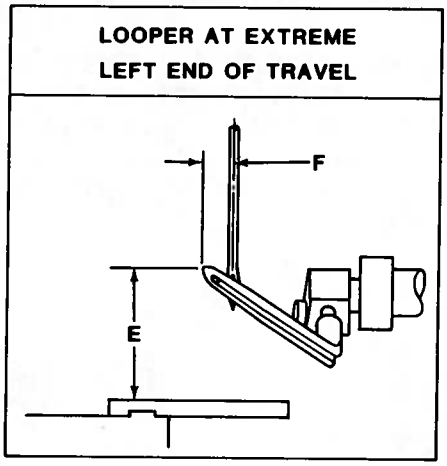


Fig. 14

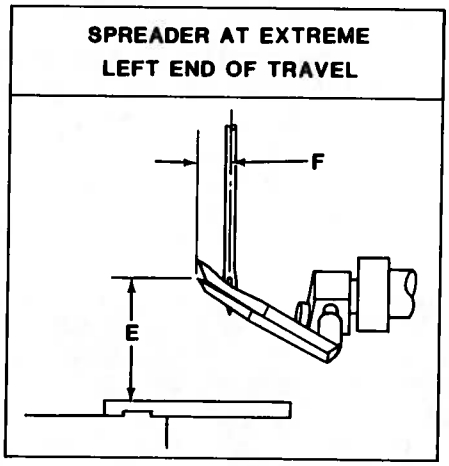


Fig. 15

Figures 13, 14, 15 and the chart following relate approximate dimensions for adjusting upper looper/spreader at their extreme right and left positions of travel.

	SHANK EXTENDED ABOVE HOLDER	DEGREE BACK OF VERTICAL	HEIGHT ABOVE THROAT PLATE		POINT TO LEFT OF REAR NEEDLE CENTERLINE	
	"B" Fig. 13	"D" Fig. 13	"E" Fig. 14	"E" Fig. 15	"F" Fig. 14	"F" Fig. 15
W/LOOPER	1/32" (.8mm)	45	21/32" (16.7mm)		5/32" (4mm)	
W/SPREADER	1/32" (.8mm)	15		21/32" (16.7mm)		5/32" (4mm)

To adjust upper looper/spreader, follow instructions in sequence as follows:

1. Position upper looper/spreader at the right end of travel, loosen clamp screw (A, Fig. 13) and set looper/spreader shank to dimension "B" above holder. Tighten screw (A) lightly.

2. With upper looper/spreader still positioned at the right end of travel, loosen screw (C) and rotate holder to align shank of looper/spreader to the specified line in casting denoting 15, 30 or 45 degrees back of vertical (location "D"). Tighten screw (C) lightly.

3. Rotate handwheel in operating direction bringing the upper looper/spreader into the LOWER looper. The POINT of upper looper or THREAD PICK-UP of upper spreader should be set to enter the notched area behind the head of the lower looper - See Fig. 11.

4. Continue to rotate handwheel in operating direction until upper looper/spreader is at extreme LEFT end of travel. Rotate upper looper/spreader holder as required to position POINT of upper looper to dimension "E", Fig. 14 or LOWER POINT of upper spreader to dimension "E", Fig. 15 from top of throat plate.

5. With upper looper/spreader still positioned at left end of travel, it may be necessary to move looper/spreader holder in or out of its shaft to set POINT of looper dimension "F", Fig. 14 or LOWER POINT of spreader dimension "F", Fig. 15 which is to the left of centerline of rear needle. Rotate handwheel to position upper looper/spreader to the right end of travel before tightening screw (C, Fig. 13) securely. Tighten screw (A).

6. If the needle(s) are being deflected by the upper looper/spreader, clearance to the needle can be increased by reducing the length of looper/spreader 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/spreader to lower looper, See Step 3. Reversing this procedure will position the looper/spreader closer to the needle.

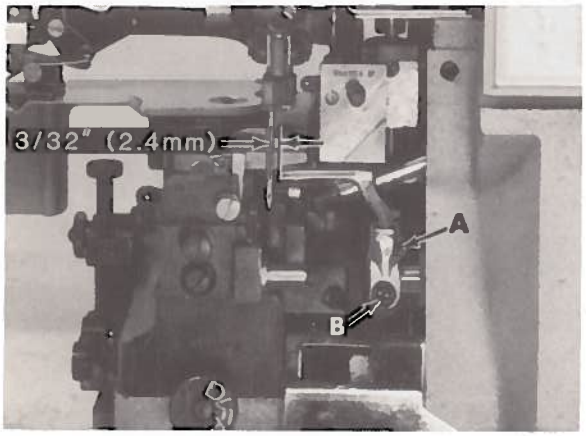


Fig. 16

401 STITCH LOOPER ADJUSTMENTS

PRIOR TO CHECKING LOOPER REMOVE FRONT NEEDLE GUARD AND REAR NEEDLE GUARD OUT OF POSITION.

Loosen screw (A, Fig. 16) and push looper down so that its shank rests on shaft. Rock looper blade to front and rear while tightening clamp screw (A). This will ensure the clamp screw is securing looper on flat surface of looper shank.

With looper to extreme right, loosen binder screw (B, Fig. 16). Position looper holder right or left so the point of looper is 3/32 inch (2.4mm) from centerline of front needle as shown in Fig. 16. Turn handwheel in operating direction until point of looper enters scarf on back side of needle. Move looper blade forward until it touches but does NOT deflect needle. Tighten binder screw (B).

LOOPER AVOID ADJUSTMENT

To form stitch type 401, the looper moving to the left passes to rear of needle and enters the thread loop formed as needle rises (A, Fig. 17). Traveling to the right, looper passes to front of descending needle which enters a triangle formed by the looper thread, blade of looper and needle loop around looper blade (B).

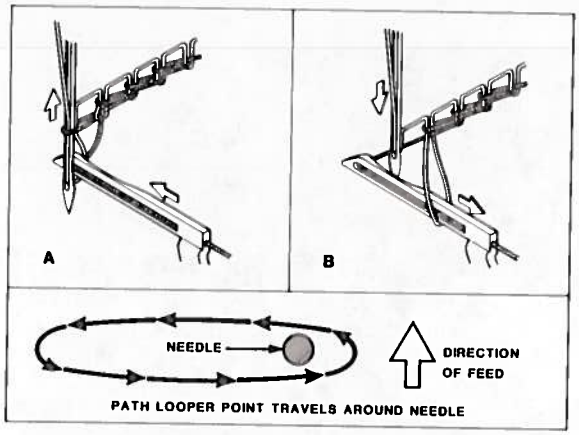


Fig. 17

This front to rear movement of looper is termed "AVOID MOTION". Avoid motion of the looper occurs in unison with its right and left travel. As a result, the looper point travels in an elliptical path as shown in Fig. 17.

Minimum clearance between needle and looper at functions shown in Fig. 17 must be maintained. The descending needle (B) may contact the looper blade lightly. Too much clearance or needle deflection at A or B can cause skipped stitches, broken needles, etc.. The looper avoid motion on these machines can be adjusted to obtain proper conditions for various size needles used.

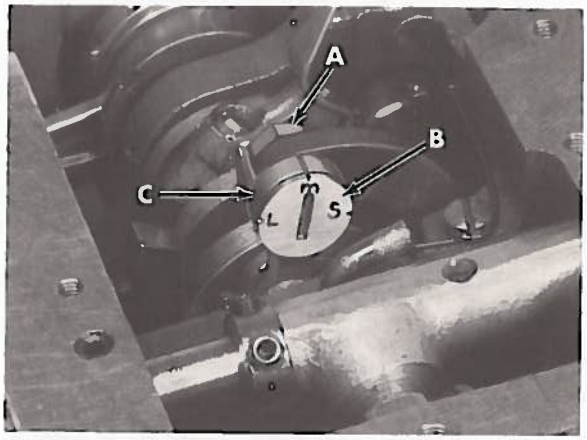


Fig. 18

Should conditions described previously indicate adjustments are required; drain the oil and remove bottom cover from machine.The "S", "M" or "L" marked on eccentric stud are aligned to the timing mark on looper avoid link according to the range of needle size used. SEE CHART:

ECCENTRIC SETTING	NEEDLE RANGE BY SIZE
S - SMALL	075/029, 080/032, 090/036
M - MEDIUM	080/032, 090/036, 100/040
L - LARGE	110/044, 125/049, 140/054

Loosen nut (A, Fig. 18). Rotate handwheel until needles are at lowest position. Align proper mark S, M or L on stud (B) to timing mark on link (C). Torque nut (A) to 25 in. lbs. (29 cm/kg). Re-check 401 looper setting, then replace bottom cover and torque cover mounting screws to 19-21 in. lbs. (22-24 cm/kg). Fill machine with oil to proper level.

NOTE: If needed, stud (B) can be positioned to timing mark at any point between S, M or L to obtain proper amount of looper avoid. Check clearance between 401 looper and needle following any adjustment to the looper avoid setting.

401 STITCH REAR NEEDLE GUARD

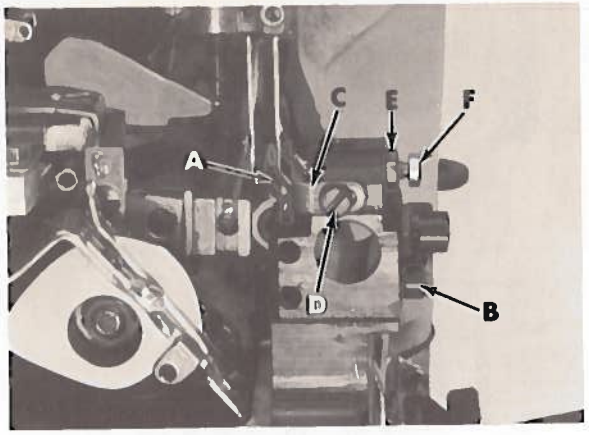


Fig. 19

Rear needle guard (A, Fig. 19) should prevent the looper point from striking the needle as the looper moves from the right and enters the scarf of front needle.

Rotate handwheel in operating direction so that the point of looper moving from extreme right position enters the scarf of front needle. Loosen screw (B) and move guard forward to touch but NOT deflect needle. Turn handwheel so needle is at lowest position. Raise or lower guard so top of needle eye is slightly above guarding surface of rear needle guard - REAR GUARD MUST NOT INTERFERE WITH FORMATION OF THREAD LOOP FORMED AS NEEDLE RISES. Re-check guard to needle position described earlier and tighten screw (B).

401 STITCH FRONT NEEDLE GUARD

With needles at lowest position, front needle guard (C, Fig. 19) is set with minimum clearance to needle, .004 inch (.10mm). DO NOT PINCH NEEDLE BETWEEN FRONT AND REAR NEEDLE GUARDS. 401 LOOPER MUST NOT RUB GUARD.

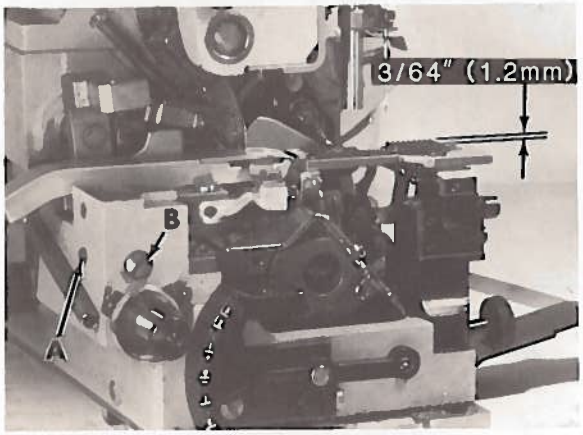


Fig. 20

If adjustment is required, loosen screw (D) and locknut (E). With needle at lowest position set guard (C) so it's relatively close to the needle but NOT touching it. Tighten screw (D). Turn screw (F) in against guard. Continue turning screw (F) to force guard slightly to the rear maintaining .004 inch (.10mm) clearance to needle. Tighten locknut (E).

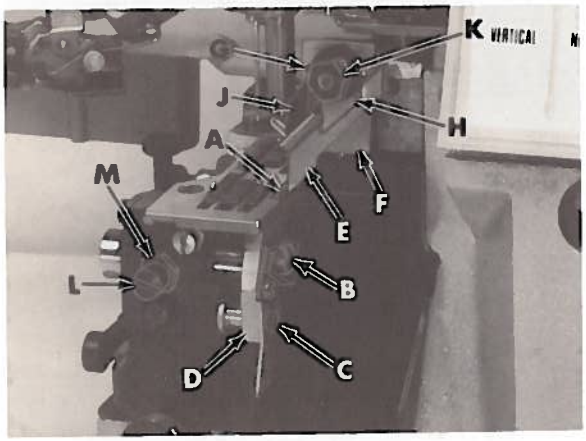


Fig. 21

MAIN AND DIFFERENTIAL FEEDS

ASSEMBLE MAIN, DIFFERENTIAL FEEDS AND THROAT PLATE TO MACHINE.

Rotate handwheel in operating direction and stop when teeth of rising feeds first appear above top surface of throat plate. The feeds should be level with the throat plate at this time. With feeds at highest point of travel, teeth should extend approximately 3/64 inch (1.2mm) above throat plate as shown in Fig. 20.

To level feeds, loosen lock screw (A, Fig. 20) and rotate tilt adjusting pin (B) to position rear of feeds up or down. Tighten lock screw (A) securely.

Feed height is set by loosening attaching screws and moving feeds to height required. Retighten screws.

LOWER KNIFE

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

Upper edge of knife (A, Fig. 21) is set even with top surface of throat plate. Positioning of the lower knife cutting edge left to right to obtain proper seam width is determined by the width of the stitch tongue of the throat plate.

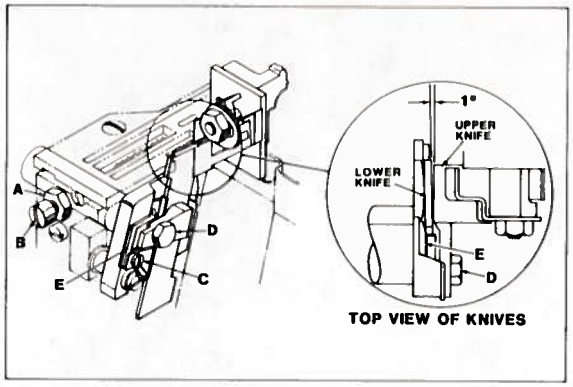


Fig. 22

If adjustment is required, loosen screw (B) and move knife up or down so its cutting edge is even with top of throat plate. Tighten screw (B). If cutting edge of knife is tilted, loosen screw (C) and rotate holder (D) front to rear as required. Tighten screw (C). Holder should move freely left to right and not bind with overedge rear needle guard centered in slot of knife holder shaft.

NOTE: See shear angle adjustment.

UPPER KNIFE

REMOVE NEEDLES AND RE-ASSEMBLE UPPER KNIFE HOLDER INTO ITS SLOT ON UPPER KNIFE DRIVING ARM. ALSO REPLACE UPPER KNIFE IN ITS HOLDER AND HOLD FIRMLY IN POSITION.

At lowest position the front tip of cutting edge of upper knife should extend 1/32 inch (.8mm) below cutting edge of lower knife.

With upper knife (E, Fig. 21) at lowest point of travel; position front tip of its cutting edge 1/32 inch (.8mm) below cutting edge of lower knife by moving knife holder (F) left to right. Upper knife must be held firmly against lower knife during this adjustment. Tighten upper knife holder screw (G) to lock upper knife in position. Assemble knife clamp (H) and chip guard (J) in position using nut (K). Set chip guard (J) against top surface of upper knife and slightly back of its cutting edge. Tighten nut (K).

Loosen screw (L) to enable spring pressed lower knife to move freely left to right. If desired, lower knife can be locked in position by tightening screw (L) against knife holder shaft.

NOTE: Locking nut (M) must be tightened to hold screw (L) in position; screw (L) also serves as a latch pin for cloth plate. Proceed to shear angle adjustment.

SHEAR ANGLE ADJUSTMENT

NOTE: Be sure lower and upper knives are adjusted properly before setting shear angle.

The proper shear angle between cutting edge of upper and lower knives is 1 degree as shown in Fig. 22. This results in a cutting action similar to that of a pair of scissors. Best results are obtained if both knives are sharpened correctly prior to adjusting.

If adjustment is required, loosen locknut (A, Fig. 22) and lock lower knife holder out of position away from upper knife with screw (B).

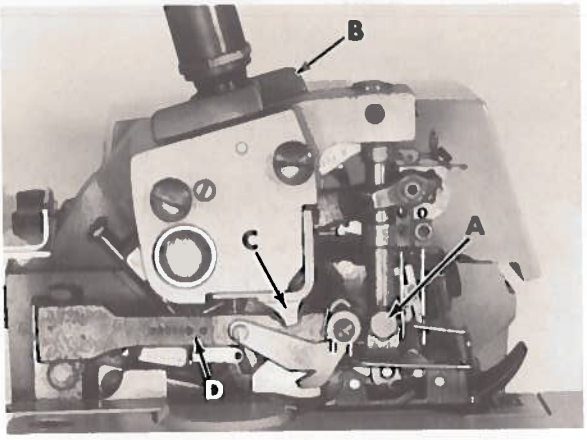


Fig. 23

Loosen screw (C) and clamp screw (D). Adjust guide plate (E) inward to angle top front edge of lower knife slightly to the right.Hold guide plate (E) in position and tighten screw (C) and clamping screw (D). Loosen screw (B) to allow lower knife holder to float left to right. Tighten locknut (A).

PRESSER FOOT ALIGNMENT

To align presser foot bottom, loosen clamp screw (A, Fig. 23) and unlock presser foot release lever (B), but do not raise plunger (C) from presser arm (D). Adjust presser foot front to rear so front of its needle slots align with needle slots in throat plate.

To adjust presser foot so it will lie flat on throat plate; lift presser foot and tilt its right edge up or down as required. Tighten clamp screw (A), lock presser foot release lever and check alignment.

To align presser foot needle slots to throat plate needle slots left to right, loosen collar screws (A, Fig. 24) and clamp screw (B). Adjust lifter lever shaft (C) left or right as required and tighten collar screws (A). Hold lifter lever (D) up and tighten clamp screw (B).

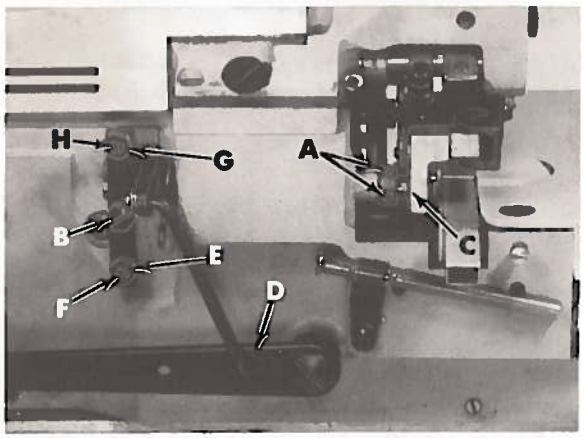


Fig. 24

Completely unlock presser foot release lever (B, Fig. 23). Plunger (C) should clear presser arm (D) without binding.

On machines equipped with a tractor type presser foot; the front edge of its 401 stitch needle slot must be 1/16 inch (1.6mm) forward of front edge of the 401 stitch needle slot in throat plate.

Lift tractor presser foot to its hightest position and tilt front of presser foot toe downward. The rear of presser foot front section must not contact needle.

PRESSER FOOT LIFT

Lift presser foot to highest position and rotate handwheel in operating direction. Upper looper/spreader must move from extreme right to extreme left without contacting presser foot.

If adjustment is required, loosen locknut (E, Fig. 24) and adjust stop screw (F) so presser foot will not interfere with upper looper/spreader, then tighten locknut (E).

Loosen locknut (G) and set stop screw (H) 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 (G).

PRESSER FOOT PRESSURE

Sufficient pressure should be maintained to feed work uniformly. Excessive spring pressure will cause feeds and presser foot to wear prematurely when chaining.

Rotate handwheel in operating direction until both main and differential feeds are positioned below throat plate. Loosen locknut (A, Fig. 25) and turn pressure regulator (B) clockwise for more pressure of counterclockwise for less pressure, then tighten locknut (A).

NOTE: Adjusting pressure regulator (B) will effect the function of pressure release lever (C). Plunger (C, Fig. 23) should clear presser arm when pressure release lever (C, Fig. 25) is unlocked in position. When release lever (C) is locked in position, presser foot should 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 lever (C); loosen capnut (D) and adjust nut (E) up or down so its under surface is 1/16 inch (1.6mm) above pressure regulator (B) as shown in Fig. 25. Hold nut (E) in position and tighten capnut (D).

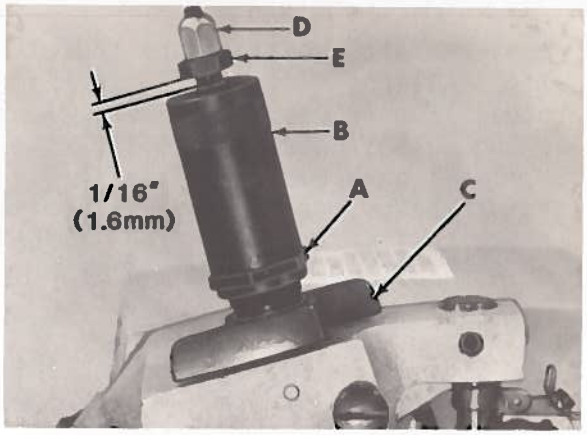


Fig. 25

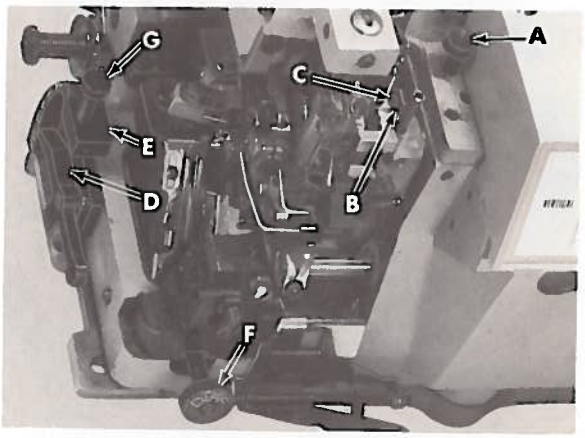


Fig. 26

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.

Class 398 machines are fitted with a feed system having two separate feed dogs - MAIN (rear) and DIFFERENTIAL (front). The resulting stitch length is determined to a great extent by travel of the main feed. Differential feed travel can be adjusted independently of the main feed and is used to gather or stretch the fabric prior to being stitched.

To adjust stitch length, depress and hold plunger (A, Fig. 26) down, then turn handwheel in operating direction until plunger drops into notch of stitch regulator eccentric. While holding plunger down, continually forcing handwheel to turn in operating direction will increase stitch length or continually forcing handwheel to turn in the reverse direction will decrease stitch length. Numbers stamped in handwheel are for reference use only.

If desired, plunger may be locked to prevent accidental changing of stitch length by loosening locknut (B) and by turning locking screw (C) inward to rest firmly against plunger. Tighten locknut (B).

DIFFERENTIAL FEED TRAVEL

When differential feed indicator pointer (D, Fig. 26) is set to "0" on the graduated scale of indicator plate (E) the main and differential feeds will have the same travel. Turning thumbscrew (F) clockwise will position the pointer to the "+" portion of the scale indicating differential feed travel is greater than main feed travel. Fabric is gathered at this setting. Turning thumbscrew (F) counterclockwise will position the pointer to the "-" portion of the scale indicating differential feed travel is less than main feed travel. The fabric is stretched at this setting. Thumbscrew adjustments to the differential feed can be made while machine is in operation.

Stop screw (G) is used to limit differential feed travel and prevent the differential feed from striking the forward edge of throat plate slot.

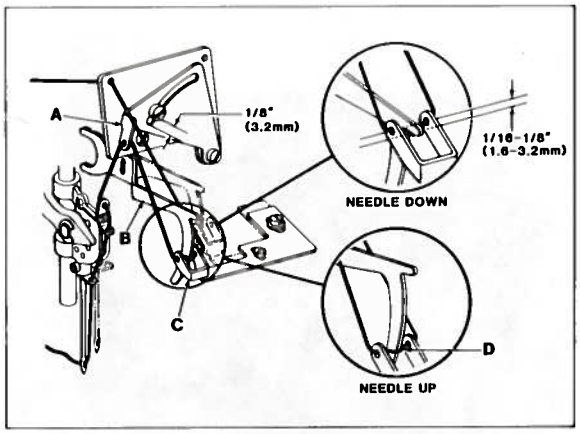


Fig. 27

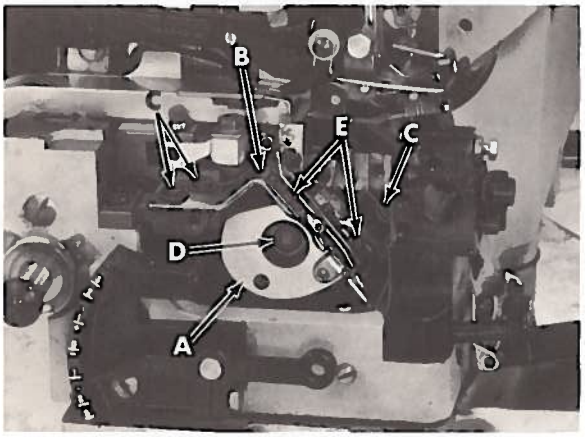


Fig. 28

401 STITCH NEEDLE THREAD CONTROL

Set adjustable thread guide (A, Fig. 27) near its highest position until approximately 1/8 inch (3.2mm) adjustment remains in slot as shown in Fig. 27. As the eyelet is lowered more needle thread remains in the stitch. Having additional needle thread in the stitch may be desirable when sewing thick material.

With needles at lowest position loosen clamp screw and position strike off tip of thread pull-off (B) 1/16 inch (1.6mm) to 1/8 inch (3.2mm) below eyelet (C) as shown in Fig. 27.

With needles at highest position set eyelet (C) so lower cam surface of thread pull-off (B) just contacts the thread at Ref. point (D).

401 STITCH LOWER LOOPER THREAD CONTROL

Thread take-up cam (A, Fig. 28) should be centered in the slot of cast-off support plate (B). Loosen the three mounting screws (C) and position support plate (B) so cam does not rub it while rotating handwheel several revolutions, then tighten screws (C).

To check thread take-up action of cam (A) rotate handwheel in operating direction so that needles are at highest position. The leading flat edge of cam should now appear just above the cast-off support plate and begin to take up the slack thread. Loosen clamp nut (D) and position cam, then torque nut (D) to 24-25 in/lbs. (28-29 cm/kg.).

Adjustable thread eyelets (E), effect the amount of looper thread used in the stitch. When set at lowest position, the maximum amount of looper thread is drawn. Set eyelets initially down 1/8 inch (3.2mm) from highest position.

OVEREDGE NEEDLE THREAD CONTROL

With needles at lowest position, loosen screw securing needle thread cam pull-off (A, Fig. 29) and set the lower extended surface of its strike-off tip 1/32 inch (.8mm) below the centerline of overedge needle thread eyelet holes (B) on FIVE thread machines or 1/8 to 3/16 inch (3.2 to 4.8mm) on FOUR thread machines - Ref. point (C).

With needles at highest position, set eyelet (B) so the lower cam surface of pull-off (A) barely contacts thread at Ref. point (D).

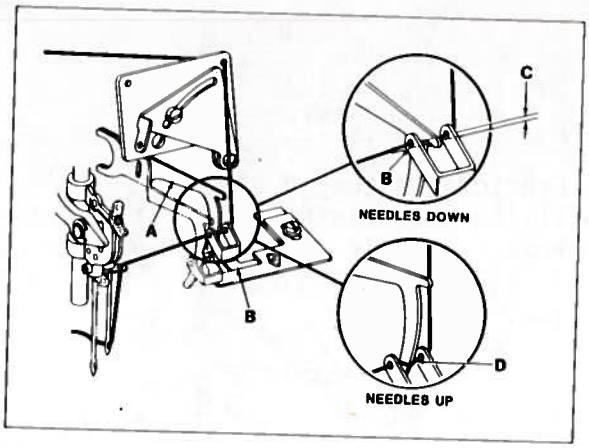


Fig. 29

OVEREDGE LOWER LOOPER THREAD CONTROL

With needles at highest position, loosen screw (A, Fig. 30) and center lower slots of the looper thread take-up (B) front to back to thread tube (C), then tighten screw (A). Threading wire No. 39899 A should pass freely through thread tube (C) and the lower slots of looper thread take-up - Ref. point (D).

To set the lower looper cast-off blade (E), loosen screw (F) and position blade up or down until its curved section - Ref. point (G) contacts the lower looper thread as soon as the needles start descending. Position blade front to back, so when the needles reach their lowest position the lower looper thread barely contacts the vertical surface - Ref. point (H) on the cast-off blade, then tighten screw (F).

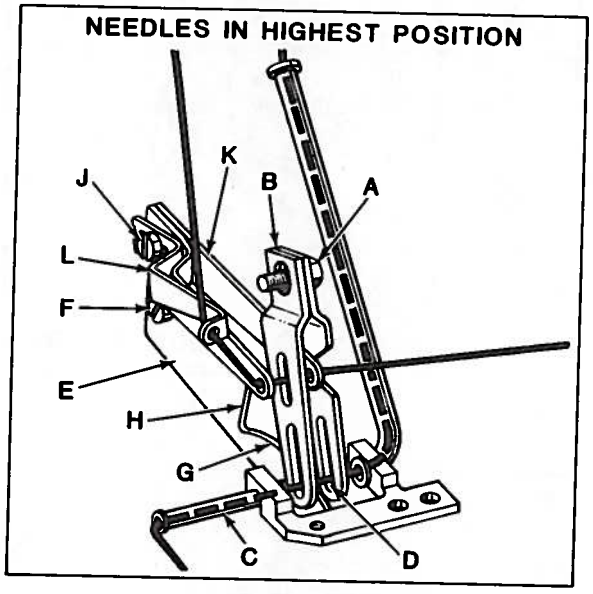


Fig. 30

OVEREDGE UPPER LOOPER THREAD CONTROL

With needles in highest position, loosen screw (J, Fig. 30) and set upper looper take-up eyelet (K) in a horizontal position with its mounting slot centered (front to back); also set auxiliary thread guide (L) slightly above a horizontal position. At this time, the upper looper thread should be taut through the eyelet holes and should barely contact the rear portion of the slot in left side of looper thread take-up (B). Reposition eyelet (K) if necessary, (slightly upward or downward) to center thread in the slot of take-up (B), then tighten screw (J).

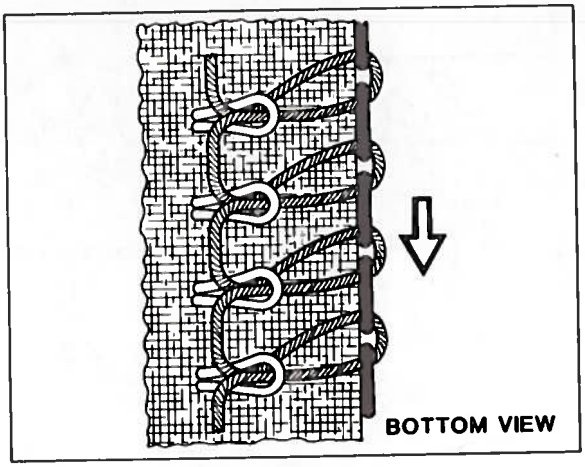


Fig. 31

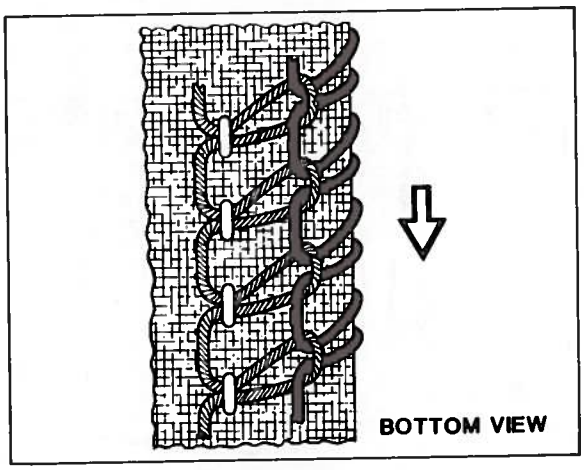


Fig. 32

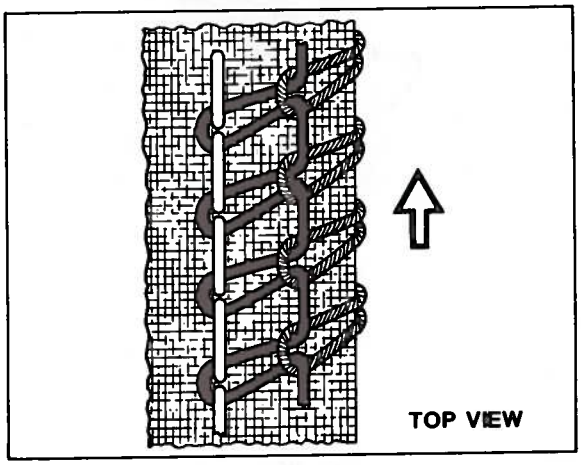


Fig. 33

POSITIONING THE PURL

If the needle thread loop is NOT being set properly, excessive seam grinning would result as shown in Fig. 31. Thread control adjustments which should be checked to correct this condition include:

- Lower looper thread tension too tight.
- Needle thread strike-off tip too low.
- Lower looper cast-off blade too far towards the rear.
- Needle thread tension too loose.

If the purl is NOT being formed on the edge of the fabric, an imbalance between the looper threads is indicated and improper coverage of the seamed edge would occur as shown in Fig. 32. If the purl is being pulled under the edge, check the following thread control adjustments:

- Lower looper thread too tight.
- Lower looper cast-off blade too far towards the rear.
- Upper looper thread eyelet too far towards the front.
- Upper looper thread tension too loose.

If the purl is being PULLED over the edge as shown in Fig. 33, check the following thread control adjustments:

- Upper looper thread tension too tight.
- Upper looper thread eyelet too far to the rear.
- Lower looper cast-off blade too far forward.
- Lower looper thread tension too loose.

THREAD TENSIONS

Thread tension is adjusted and regulated at the tension assemblies. Tension on the threads should be only enough to secure proper stitch formation. Using a postal scale, the measurements are taken with the needles at the top of their stroke. The following tensions are starting points only and may have to be changed due to type and size of thread or material being sewn.

- 401 needle thread tension is 2 to 2 1/2 oz (57 to 71 gr), to be measured straight out of lower eyelet located on left side of needle head.

- Overedge needle thread tension is 1 1/2 to 2 oz (43 to 57 gr), to be measured straight out of lower eyelet located on right side of needle head.

- Overedge lower looper thread tension is 1 to 1 1/2 oz (28 to 43 gr), to be measured straight out of thread tube located to rear of throat plate.

- Overedge upper looper thread tension is 1 to 1 1/2 oz (28 to 43 gr), to be measured straight out the bottom of thread tube located to right of upper knife driving arm.

- 401 lower looper thread tension is 1 to 1 1/2 oz (28 to 43 gr), to be measured straight out of eye at point of looper.

INTERNAL FEED ADJUSTMENTS

The basic drive motion for horizontal travel of the main and differential feeds is derived from stitch regulator assembly (A, Fig. 34). This motion is transmitted to the individual feed bars by means of the main feed segment (B) and differential feed segment (C). Both segments are affixed to a common shaft which is driven in a rocking motion by an adjustable eccentric within the stitch regulator assembly. As a result, any stitch length change will effect the travel of both the main and differential feeds.

The location of the feed drive links (D and E) within each segment will effect the feed travel individually. The longest feed travel is obtained with the link located at the highest position within the segment. This position of the link is fixed for the main feed and adjusted by a thumbscrew for the differential feed.

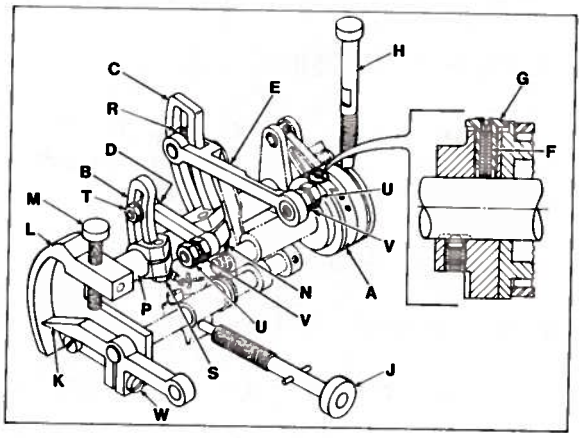


Fig. 34

The adjustable eccentric within stitch regulator assembly (A) is set at the factory to produce a maximum stitch length of 7 S.P.I. for the main feed and 5 S.P.I. for the differential feed.

Longer feed travel for both feeds can be obtained by loosening inner lock screw (F) and turning limit screw (G) counterclockwise. Tighten screw (F). Rotate handwheel in operating direction and check feed travel in throat plate slots making sure the feeds do not contact the front or rear ends of the slots.

If necessary, repeat procedure until desired or maximum stitch length is produced, then torque limit screw (G) to 20 in. lbs. (23 cm/kg). An access screw, located at the left front of casting below the upper looper thread tube is provided for this adjustment.

Both main and differential feeds can be centered front to back in the throat plate by following instructions listed in sequence for adjusting feed drive segments (B and C).

DIFFERENTIAL FEED DRIVE SEGMENT

- Set push button stitch regulator (A, Fig. 34) to maximum stitch length by depressing and holding plunger (H) down in notch of stitch regulator eccentric and turning handwheel in operating direction.

- Turn differential thumbscrew (J) counterclockwise until differential feed indicator pointer (K) is positioned at the bottom of graduated scale on indicator plate (L).

- Turn stop screw (M) counterclockwise as required to allow full up and down movement of pointer (K).

- Drain oil and remove bottom cover.

- Rotate handwheel in operating direction until the differential feed dog is positioned all the way to the rear.

- Loosen clamp screw (N) and position differential feed drive segment (C) forward. Temporarily tighten screw (N) to hold segment in position, yet allowing segment to be repositioned on feed drive rock shaft (P) for adjustment.

- Manually operate pointer (K) up and down so sliding block (R) travels to the top and bottom of segment slot. At this time, while operating pointer, observe differential feed movement. Then gradually tap the top - front section of segment (C) to the rear as required until differential feed shows no movement when pointer is operated and sliding block travels the full length of segment slot. Recheck setting, then torque clamp screw (N) to 38 - 40 in. lbs. (44 - 46 cm/kg).

- Replace bottom cover and torque its mounting screws to 19 - 21 in. lbs. (22 - 24 cm/kg), then fill machine with oil to proper level.

MAIN FEED DRIVE SEGMENT:

- Set push button stitch regulator (A) to maximum stitch length by depressing and holding plunger (H) down in notch of stitch regulator eccentric and turning handwheel in operating direction.

- Drain oil and remove bottom cover.

- Rotate handwheel in operating direction until needle head is at highest position.

- Loosen clamp screw (S) and clamping nut (T).

- Position main feed drive segment (B) on feed drive rock shaft (P) so when main feed drive link (D) travels the full length of the segment slot, the middle row of main feed dog teeth are centered in the slot of throat plate and feed shows no movement. Recheck setting, then torque clamp screw (S) to 38 - 40 in. lbs. (44 - 46 cm/kg).

- Set main feed drive link (D) at the top of the segment slot and torque clamping nut (T) to 19 - 21 in. lbs. (22 - 24 cm/kg).

- Replace bottom cover and torque its mounting screws to 19 - 21 in. lbs. (22 - 24 cm/kg), then fill machine with oil to proper level.

- If necessary, further adjustment can be made to the main and differential feeds by loosening locknuts (U), then rotating eccentric ferrules (V) as required to position feeds front to back. Hold ferrules in position and tighten locknuts.

DIFFERENTIAL FEED INDICATOR POINTER:

- Rotate differential feed thumbscrew (J, Fig. 34) as required until travel of main and differential feeds are equal. At this time, the differential feed indicator pointer (K) should be set to "0" on the graduated scale of indicator plate (L). If an adjustment is required, loosen clamp screw (W), set pointer to "0" and tighten clamp screw (W).

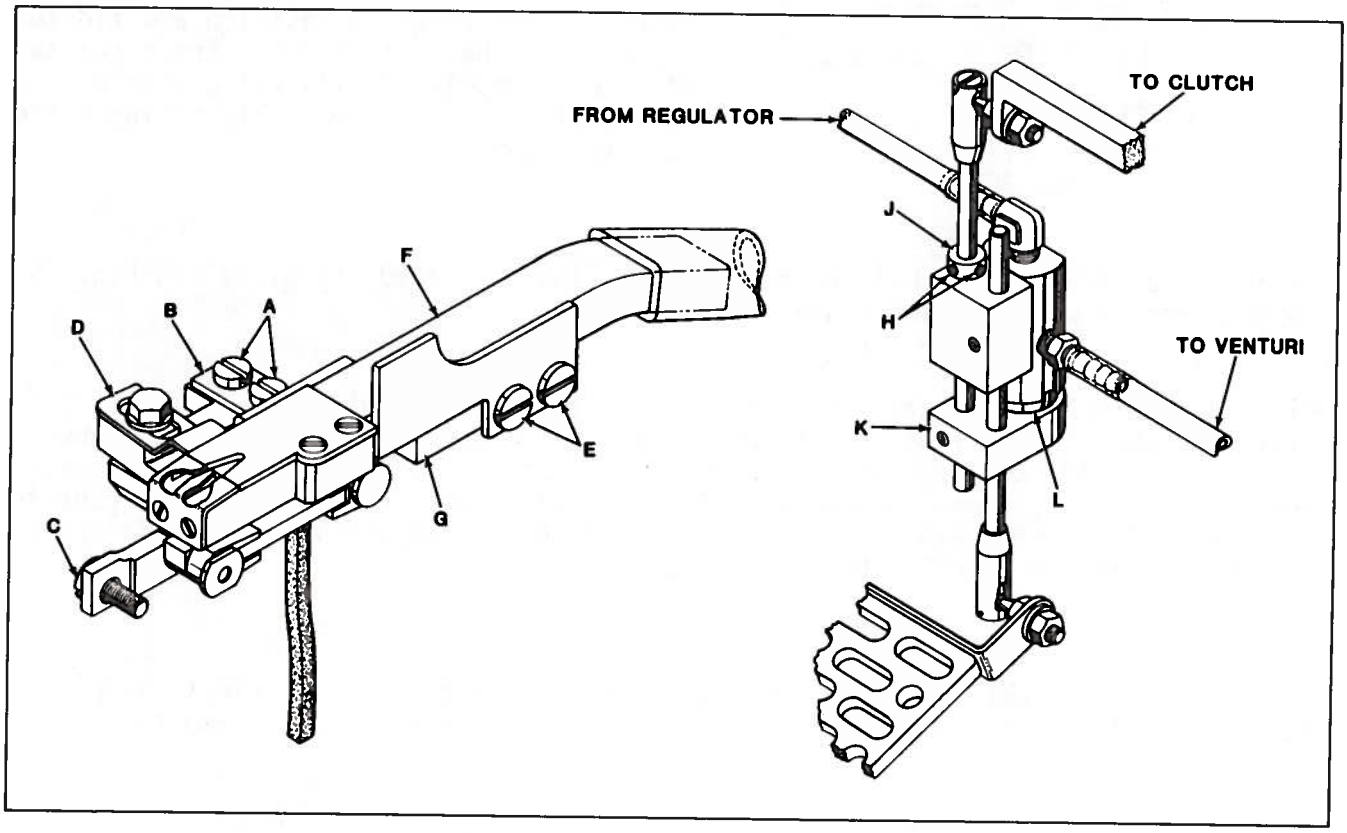


Fig. 35

"AIR-KLIPP" CHAIN CUTTER

1. If adjustment to the "AIR-KLIPP" chain cutter is necessary; remove cloth plate, cast-off support plate, throat plate, 401 looper take-up, take-up spacer, rear throat plate support and rear throat plate support bracket.

2. Remove "AIR-KLIPP" chain cutter assembly from the machine by removing screws (A, Fig. 35), washer plate (B) and screw (C).

With "AIR-KLIPP" chain cutter assembly out of machine; position movable knife (D) to its extreme right. Loosen screws (E) and press air tube (F) and base (G) together applying only enough pressure on movable knife to ensure proper cutting maintaining a slight shear angle, then tighten screws (E).

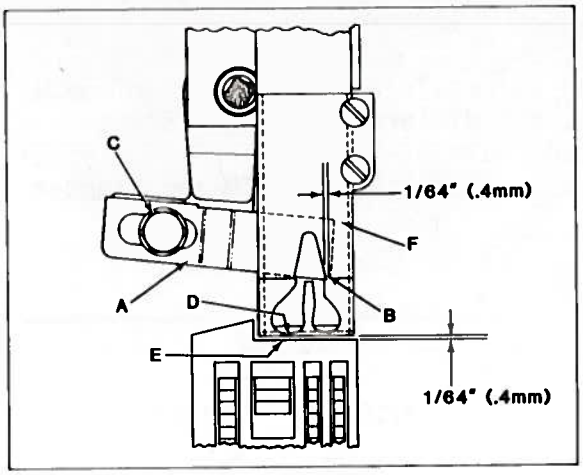


Fig. 36

When the movable knife (A, Fig. 36) travels from extreme left to the right; its cutting edge must be even with the cutting edge of stationary knife - Ref. point B.

To adjust movable knife (A), loosen screw (C) and position knife front to back as required. Hold knife in position and tighten screw (C). Check, if movable knife (A) is adjusted properly it will cut a single strand of thread when manually moving knife left to right.

3. Re-assemble "AIR-KLIPP" chain cutter assembly,the main feed and plate (B, Fig. 35) to the machine with screws (A and C).

With "AIR-KLIPP" chain cutter assembly in position, temporarily replace throat plate and check for a 1/64 inch (.4mm) clearance between front edge of air tube (D, Fig. 36) and rear edge of throat plate (E), as shown. If a clearance adjustment is necessary, loosen screws (E, Fig. 35) and adjust the air tube (F) front to back on "AIR-KLIPP" chain cutter base as required. Re-adjust movable knife pressure as outlined in STEP 2, then tighten screws (E).

Before tightening mounting screws be sure the right side of "AIR-KLIPP" chain cutter base is set flush against the main feed bar. Tighten screws (A and C).

NOTE: Main stitch length determines movable knife travel and must be set before making the following adjustment.

With main stitch length set and movable knife (A, Fig. 36) positioned to its extreme right; loosen screw (C) and adjust movable knife left to right as required to extend no less than 1/64 inch. (.4mm) beyond the cutting edge of stationary knife as shown in Fig. 36. Clearance must be maintained between the moving knife and the inner wall of air tube - Ref. Point F. Hold knife in position and tighten screw (C).

4. To adjust the air valve system, loosen screws (H, Fig. 35) and set collar (J) to permit acuator block (K) to just contact button of air valve - Ref. point L, when button is fully extended, then tighten screws (H). When treadle is pressed to start sewing, the air valve must open before the clutch is engaged.

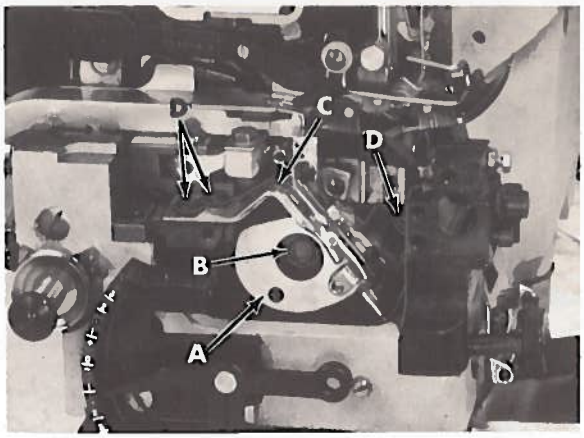


Fig. 37

5. Replace parts removed in STEP 1 in a reverse manner. Turn handwheel in operating direction until the needles are at highest position.

   To set 401 looper thread cam take-up (A, Fig. 37), loosen nut (B) and position cam take-up so its longest flat is parallel with cast-off plate (C). Torque nut (B) to 24 - 25 in/lbs. (28-29 cm/kg).

   To center cam take-up (A) in slot of cast-off plate (C) loosen screws (D) and adjust cast-off plate left to right as required, then tighten screws. Rotate handwheel in operating direction several times to check for binding.

CRANKSHAFT REMOVAL

PRIOR TO CRANKSHAFT REMOVAL: DRAIN OIL AND REMOVE THROAT PLATE AND BOTH TOP AND BOTTOM COVERS.

1. Remove nut (A, Fig. 38), washer (B), 401 looper thread take-up (C) and take-up spacer (D). Loosen screws E, F, G and H securing stitch regulator assembly (J) to crankshaft.

NOTE: Tension spring (K) may drop out of stitch regulator assembly (J) during crankshaft removal.

NOTE: To re-assemble stitch regulator assembly (J), SEE STEP NO. 12.

2. Remove four screws (L) and counterweights (M).

IMPORTANT: Mark counterweights and crankshaft cheeks for correct positioning of counterweights during re-assembly.

3. Remove oil tube (N) and all connecting rod bearing caps at points P, R, S and T on crankshaft.

IMPORTANT: During re-assembly, be sure trademarks stamped on both the connecting rods and bearing caps are positioned on the same side and face towards the left end of machine.

4. Remove inner crankshaft bearing stud (U), to allow inner crankshaft bearing (V) to slide out with crankshaft.

5. Loosen clamp nut (A, Fig. 39). Slide upper knife driving arm (B) to the left until driving lever (C) drops off arm (B) allowing bearing cap (D) to be positioned for removal. Remove two screws (E) and bearing cap (D) - Ref. point (W, Fig. 38) on crankshaft.

6. Remove screw (X) and take off pulley cap (Y).

7. Loosen two screws (Z) and slide belt pulley (AA) off crankshaft.

8. Remove three screws (AB), bearing plate (AC), spacer collars AD and AE.

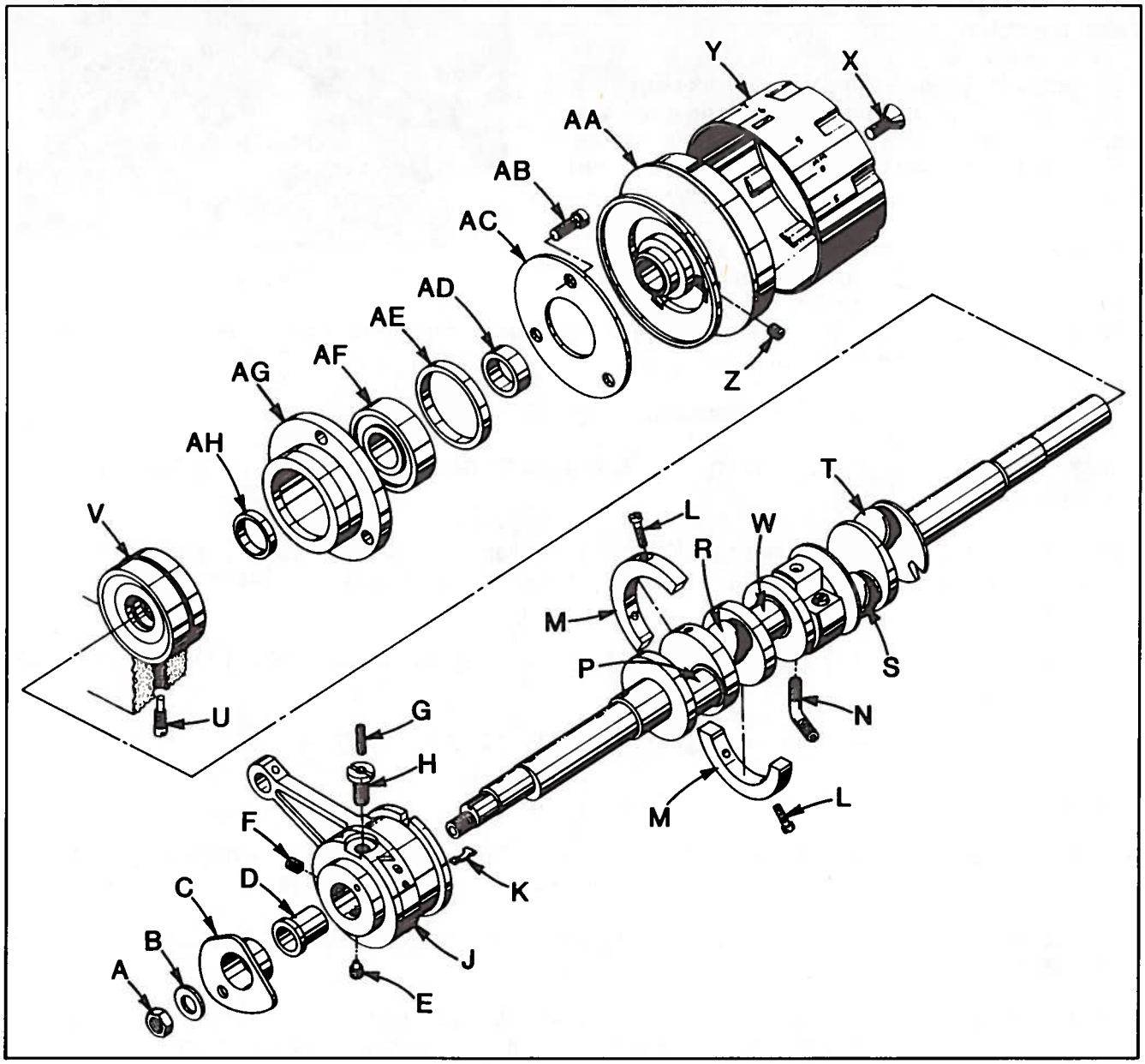


Fig. 38

9. Remove needle driving lever connecting rod and withdraw crankshaft from machine. With crankshaft out of machine, check ball bearing (AF) for wear. To remove bearing (AF) use an arbor press. Only after bearing (AF) is pressed off crankshaft can flange (AG), thrust washer (AH) and bearing (V) be removed from crankshaft.

NOTE: When pressing a new bearing onto crankshaft, be sure it seats against thrust washer (AH).

PRIOR TO RE-ASSEMBLING CRANKSHAFT, THOROUGHLY CLEAN MACHINE.

10. To re-assemble crankshaft, follow steps outlined for removal in a reverse manner. During re-assembly, check exploded views for proper positions of parts on crankshaft. Rotate pulley cap (Y) periodically during re-assembly to be sure no binding occurs.

11. In order to re-assemble stitch regulator assembly (J) correctly on crankshaft, tool No. 21270 DP is required. Slide tool (A, Fig. 40) through stitch regulator assembly and rotate tool until its slot slips into tension spring (B) positioned in stitch regulator mechanism. Thread tool onto crankshaft and slide crankshaft through stitch regulator,then unscrew and remove tool. With stitch regulator assembly positioned on crankshaft, turn handwheel in operating direction until first screw hole of stitch regulator assembly (J) aligns with timing groove on crankshaft for spot screw (E, Fig. 38), then insert and tighten spot screw (E); continue to rotate handwheel until hole for screw (F) is visible, then insert and tighten set screw (F). To secure inner lock screw (G) and limiting screw (H) - SEE INTERNAL FEED ADJUSTMENT.

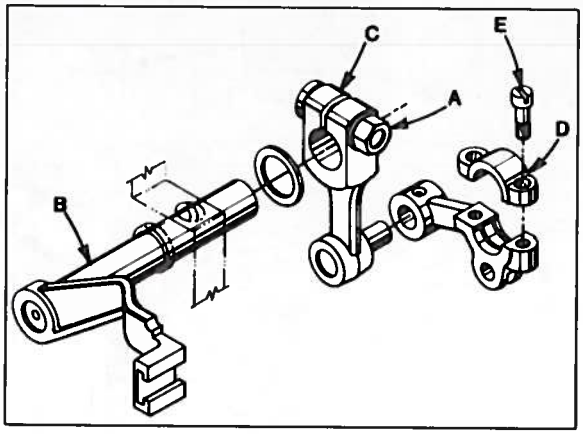


Fig. 39

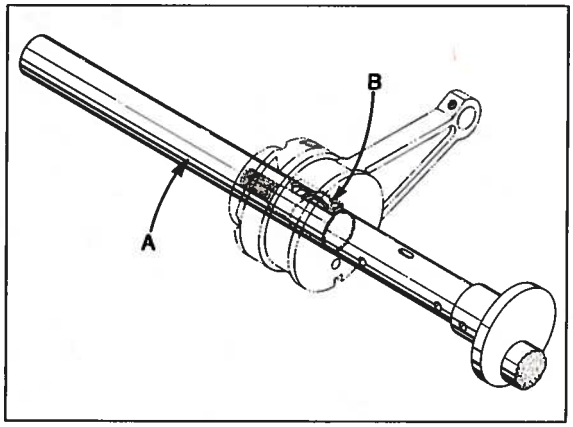
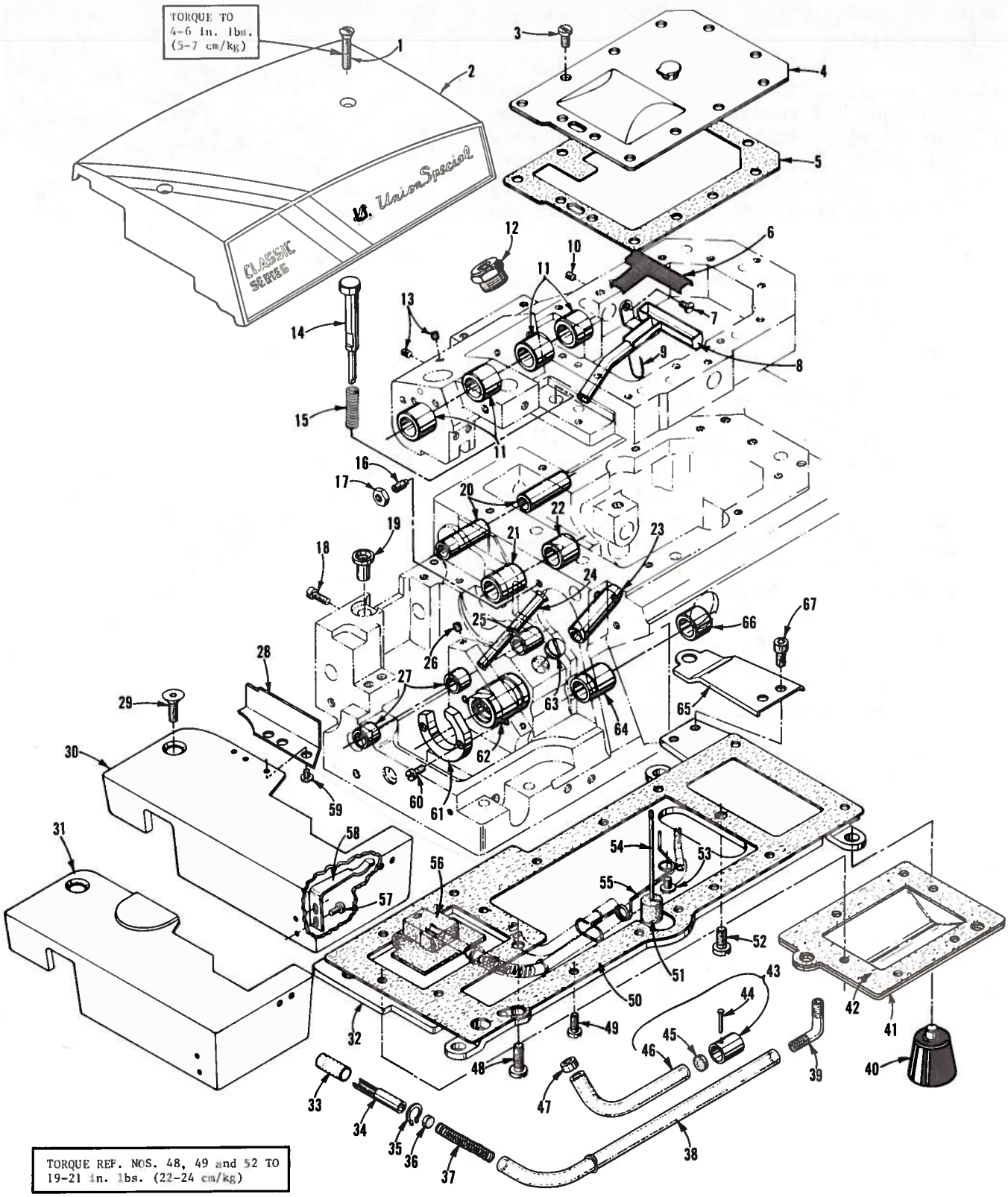
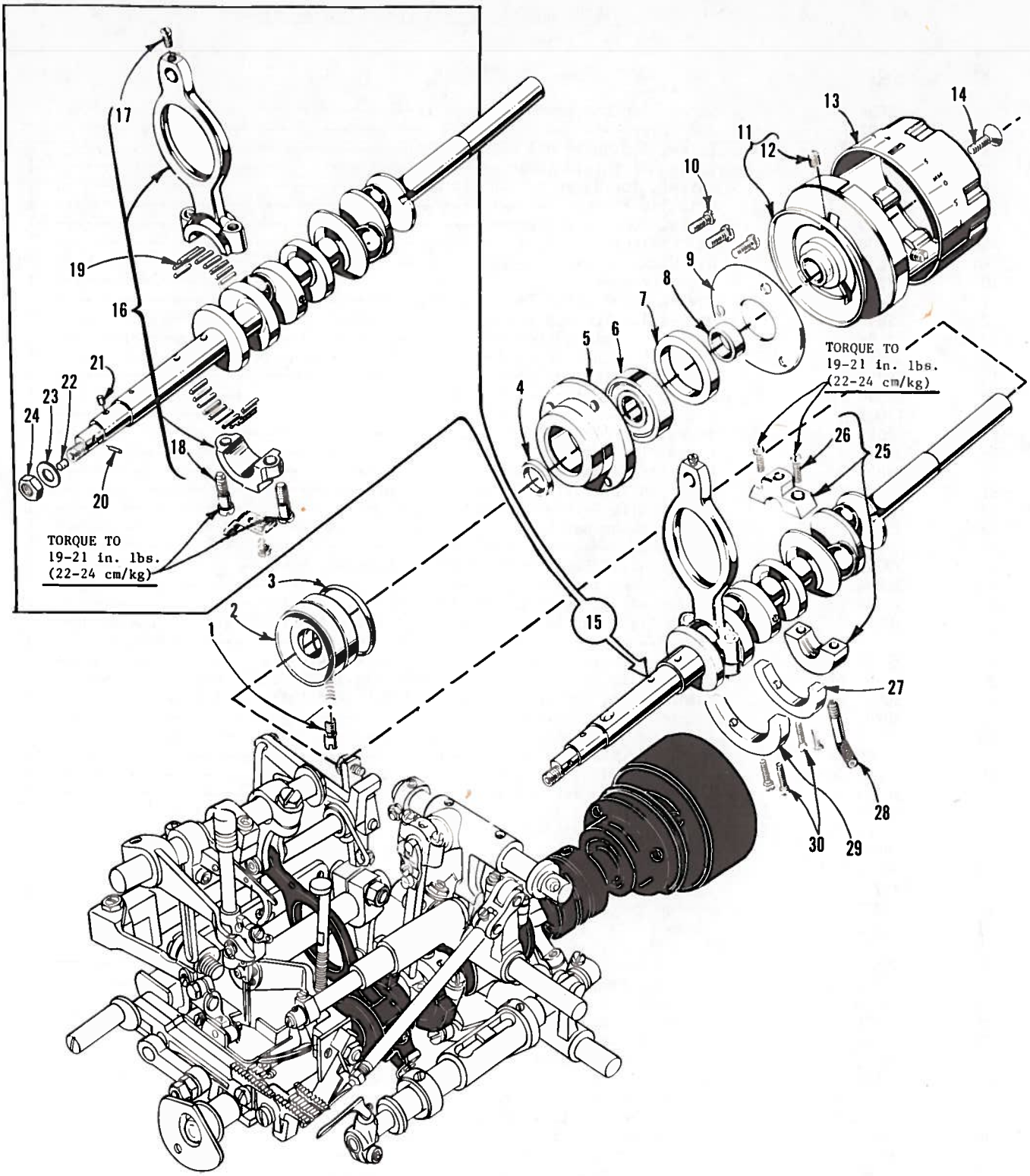


Fig. 40



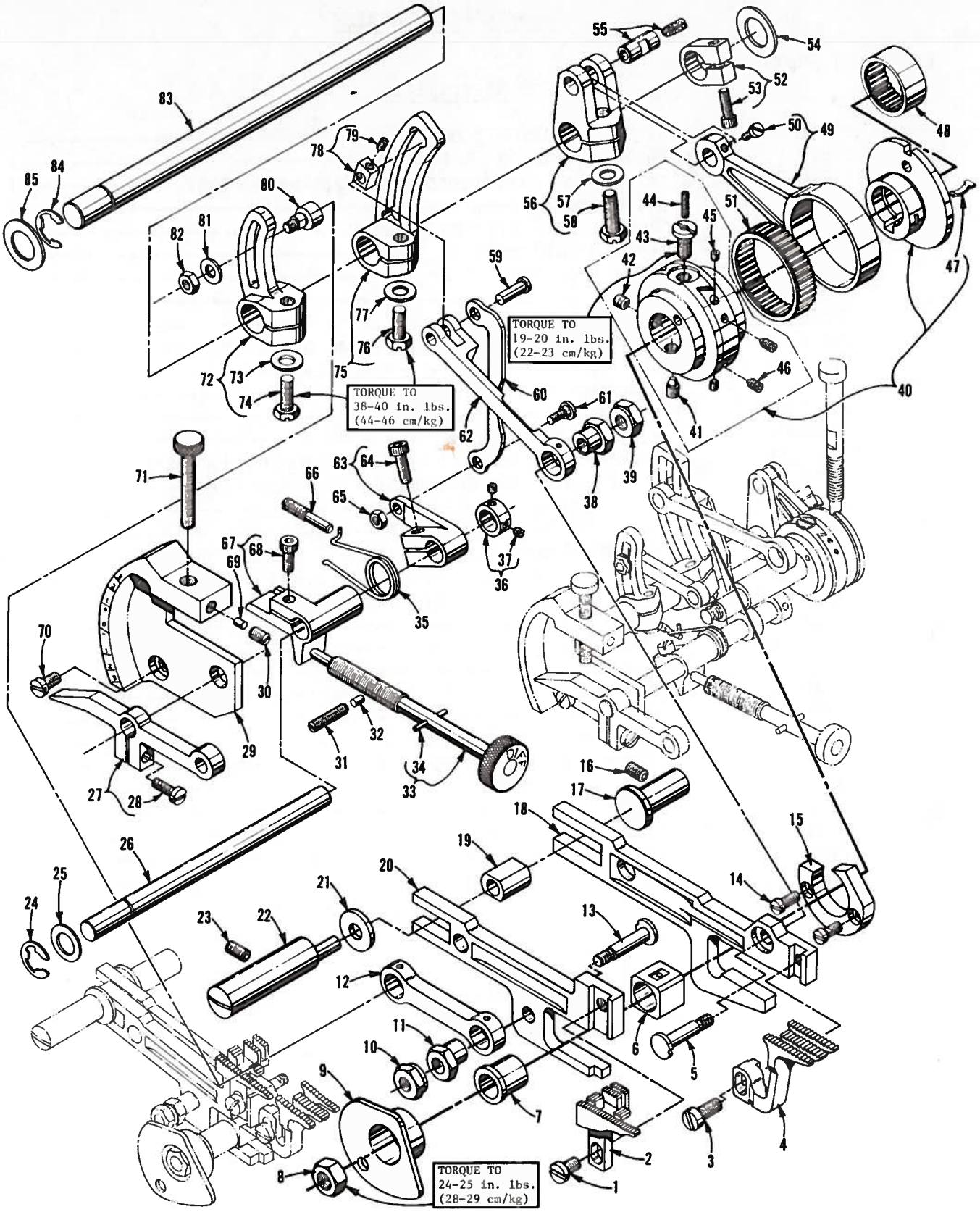
MAIN FRAME, MISCELLANEOUS COVERS, PLATES AND BUSHINGS

Ref. No.	Part No.	Description	Amt. Req.
1	22894 AG	Screw, for top cover	2
2	39882 R	Top Cover	1
3	22541 B	Screw, for upper oil shield cover	12
4	39882 P	Upper Oil Shield Cover	1
5	39882 F	Gasket, for upper oil shield cover	1
6	39894 E	Metallic Filter	1
7	22569 D	Screw, for oil collector	1
8	39894 D	Oil Collector	1
9	CL21	Oil Wick	As Req.
10	22565	Plug Screw	1
11	39852 M	Needle Lever Drive Shaft Bushing	4
12	39893 C	Oil Filler Screw Assembly	1
13	88	Screw, for oil system	2
14	39849 C	Stitch Length Regulator	1
15	39849 E	Stitch Length Regulator Return Spring	1
16	22894 AK	Screw, for stitch length regulator	1
17	15037 A	Nut	1
18	22569	Screw, for cloth plate stud	1
19	39501 K	Cloth Plate Stud	1
20	39855 D	Foot Lifter Shaft Bushing	2
21	39573 K	Upper Knife Driving Arm Bushing, left	1
22	39573 AA	Upper Knife Driving Arm Bushing, right	1
23	39544 X	Lower Looper Bar Bushing	1
24	643-409 Blk.	Oil Tube	1
25	39536 BY	Differential Feed Rocker Shaft Bushing	1
26	22894 Y	Plug Screw, for bed	1
27	39836 Y	Differential Feed Rock Shaft Bushing	2
28	39578 F	Cloth Plate Fabric Guard, for machines without "AIR-KLIPP" chain cutter	1
29	22657 D-12	Screw, for cloth plate	1
30	39501 DX	Cloth Plate, for machines without "AIR-KLIPP" chain cutter	1
31	39501 DY	Cloth Plate, for machines with "AIR-KLIPP" chain cutter	1
32	39782 A	Bottom Cover	1
33	39593 K	Oil Tube, tygothane	1
34	666-271	Oil Tube, brass	1
35	660-506	Retaining Ring, for oil tube	1
36	56393 G	Porex Filter, for oil tube	1
37	56393 V	Spring, for oil tube	1
38	666-280	Oil Tube, tygothane	1
39	39593 J	Oil Pump Tube	1
40	39595	Isolator	4
41	39782	Bottom Cover Plate	1
42	39782 B	Bottom Cover Plate Gasket	1
43	39893 G	Porex Filter Sleeve	1
44	PI-18	Pin	1
45	39893 F	Oil Filter	1
46	660-645	Oil Pump Tube	1
47	39893 D	Oil Tube Spacer	1
48	22806 A	Screw, for bottom cover	1
49	22541 B	Screw, for bottom cover	17
50	39882 S	Bottom Cover Gasket	1
51	39593 C	Oil Gauge Float	1
52	22586 T	Screw, for bottom cover	1
53	22569 D	Screw, for oil tube spring	1
54	39593 D	Oil Gauge Indicator	1
55	39893 E	Spring, for oil tube	1
56	666-268	Felt Pad	1
57	90	Screw, for cloth plate latch spring	2
58	39832	Cloth Plate Latch Spring	1
59	138	Screw, for cloth plate fabric guard	2
60	22569 G	Screw, for feed bar thrust washer	2
61	39834 D	Differential Feed Bar Thrust Washer	1
62	39890 F	Crankshaft Bearing, inner left	1
63	22539 K	Plug Screw	1
64	39844 E	401 Looper Drive Shaft Bushing, left	1
65	39582 F	Base Plate Extension	1
66	39644 C	401 Looper Drive Shaft Bushing, right	1
67	22653 D-4	Screw, for base plate extension	2



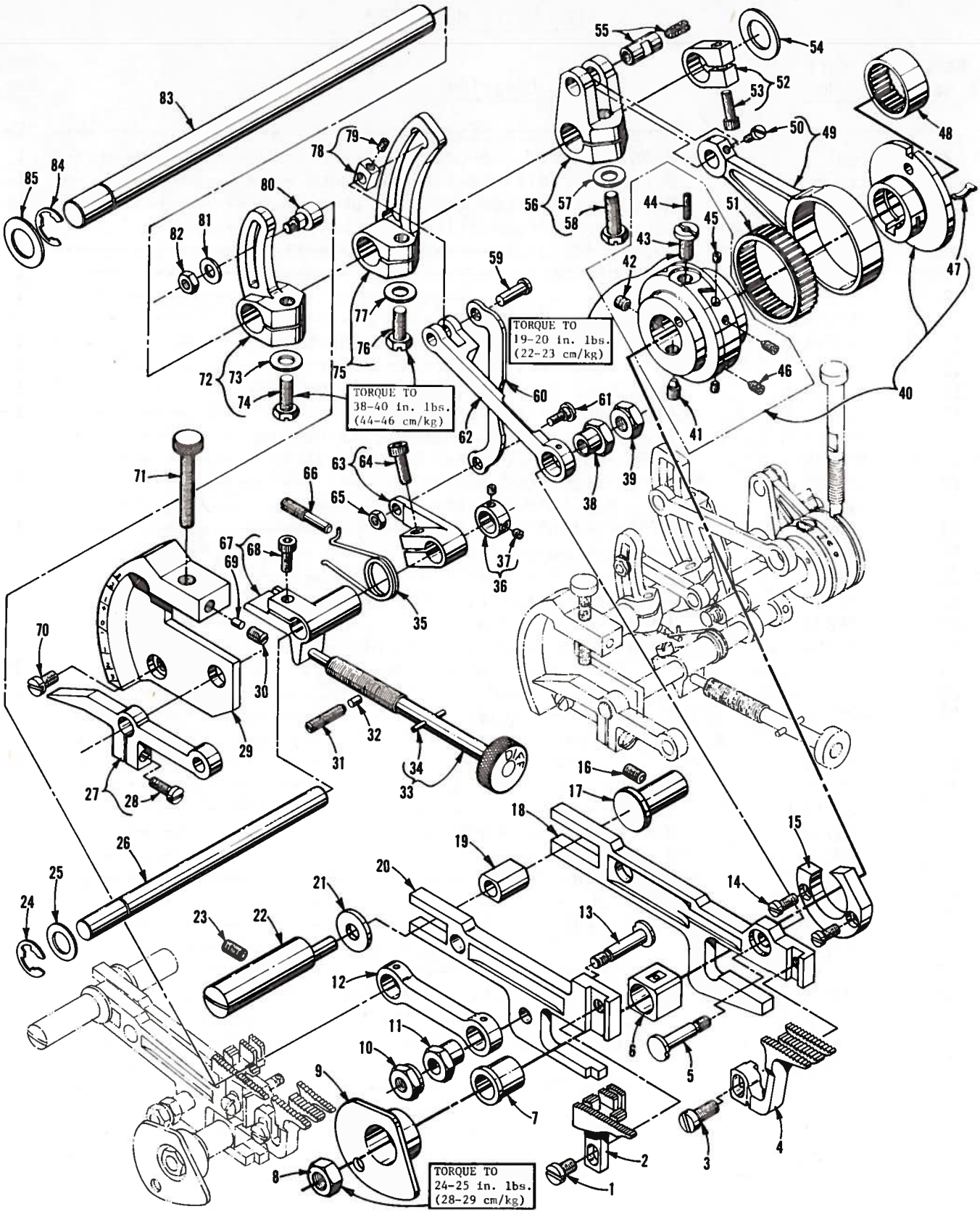
CRANKSHAFT MECHANISM

Ref. No.	Part No.	Description	Amt. Req.
1	39690 A	Stud, for crankshaft bearing	1
2	39890 C	Crankshaft Bearing, inner right	1
3	660-443	"O" Ring, for crankshaft bearing, inner right	1
4	39590 J	Thrust Washer	1
5	39590 G	Crankshaft Ball Bearing Housing	1
6	660-268	Crankshaft Ball Bearing	1
7	39590 R	Ball Bearing Stop Collar	1
8	39590 S	Spacer Collar	1
9	39590 H	Crankshaft Ball Bearing Retaining Plate	1
10	22569 B	Screw, for ball bearing retaining plate and housing	3
11	39521 GA	Pulley	1
12	95	Screw, for pulley	2
13	39821 A	Pulley Cap	1
14	22769 B	Screw, for pulley cap	1
15	29477 MK	Crankshaft and Needle Driving Connecting Rod Assembly	1
16	39852 A	Needle Driving Connecting Rod Assembly	1
17	77	Screw	1
18	22587 M	Screw	2
19	39516-625	Needle Bearing, .0625 inch (1.588 mm) diameter	28
-	39516-626	Needle Bearing, .0626 inch (1.590 mm) diameter	28
-	39516-627	Needle Bearing, .0627 inch (1.593 mm) diameter	28
20	30-106 Blk.	Wood Plug, birch	1
21	51-569 Blk.	Vent Plug	1
22	C067 E	Cork Plug	1
23	40-46	Washer	1
24	258	Nut	1
25	39890 E	Split Bearing and Oil Pump	1
26	97 A	Screw, for split bearing and oil pump	2
27	39691	Crankshaft Counterweight, right	1
28	39593 J	Oil Pump Tube	1
29	39591 K	Crankshaft Counterweight, left	1
30	22747 B	Screw, for crankshaft counterweight	4



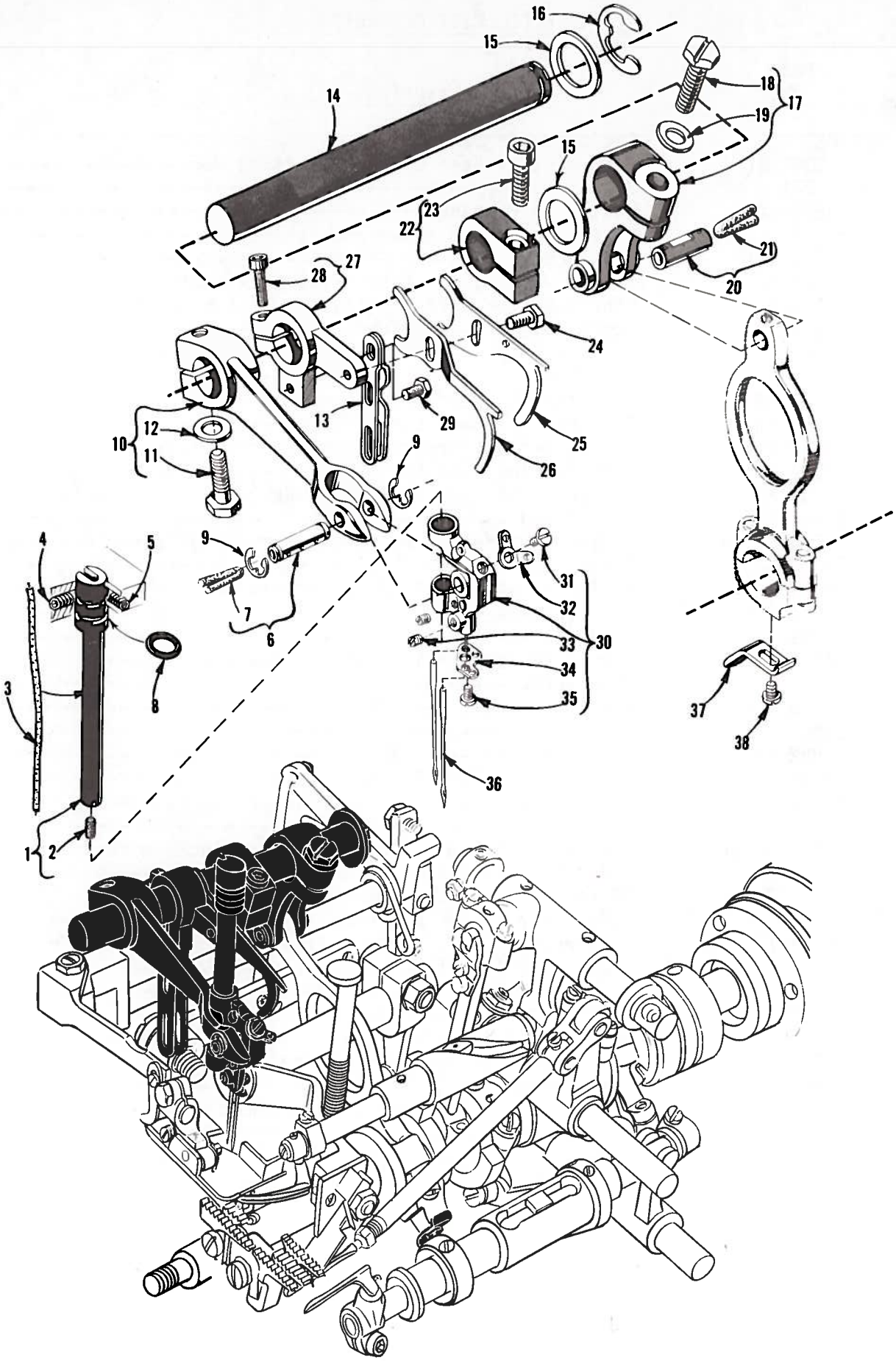
FEED DRIVE MECHANISM

Ref. No.	Part No.	Description	Amt. Req.
1	93 A	Screw, for main feed dog	1
2		Main Feed Dog (See page 49)	1
3	93	Screw, for differential feed dog	1
4		Differential Feed Dog (See page 49)	1
5	39536 BE	Stud, for differential feed bar	1
6	39838	Feed Lift Block	1
7	39823	Take-up Spacer	1
8	258	Nut	1
9	39868 R	401 Looper Thread Take-up	1
10	39536 E	Nut, for main feed bar driving stud	1
11	39536 BU	Main Feed Driving Eccentric Ferrule	1
12	39836 W	Main Feed Bar Driving Connection	1
13	39536 BE	Stud, for main feed bar	1
14	22569 G	Screw, for feed bar thrust washer	2
15	39834 D	Differential Feed Bar Thrust Washer	1
16	22894 J	Screw, for feed bar guide	1
17	39535 N	Feed Bar Guide, right	1
18	39834 E	Differential Feed Bar	1
19	39535 J	Feed Bar Guide Block	1
20	39834 F	Main Feed Bar	1
21	39536 BX	Main Feed Bar Thrust Washer	1
22	39835 F	Feed Leveling Pin	1
23	22894 J	Screw, for feed leveling pin	1
24	660-466	"E" Ring, for feed control shaft	1
25	40-144	Washer, for feed control shaft	1
26	39836 AC	Feed Control Shaft	1
27	39836 R	Stitch Indicator Pointer	1
28	93	Screw	1
29	39836 AB	Stitch Indicator Plate	1
30	22565 C	Set Screw	1
31	92201	Pressure Plug Screw	1
32	39536 CA	Pressure Plug	1
33	39836 N	Stitch Regulating Screw	1
34	660-219 E	Pin	1
35	39836 AD	Main Feed Return Spring	1
36	61248 G	Collar, for feed control shaft	1
37	89	Screw	2
38	39536 BU	Differential Feed Drive Stud Ferrule	1
39	39536 E	Nut, for differential feed bar stud	1
40	39849 A	Stitch Regulator Assembly	1
41	22894 D	Spot Screw	1
42	22894 C	Set Screw	1
43	22585 T	Stop Screw	1
44	22894 AJ	Locking Screw	1
45	22571 H	Socket Set Screw	2
46	22651 EM-4	Set Screw	2
47	39849 D	Tension Spring	1
48	660-642	Needle Bearing	1
49 thru 85		See following page	



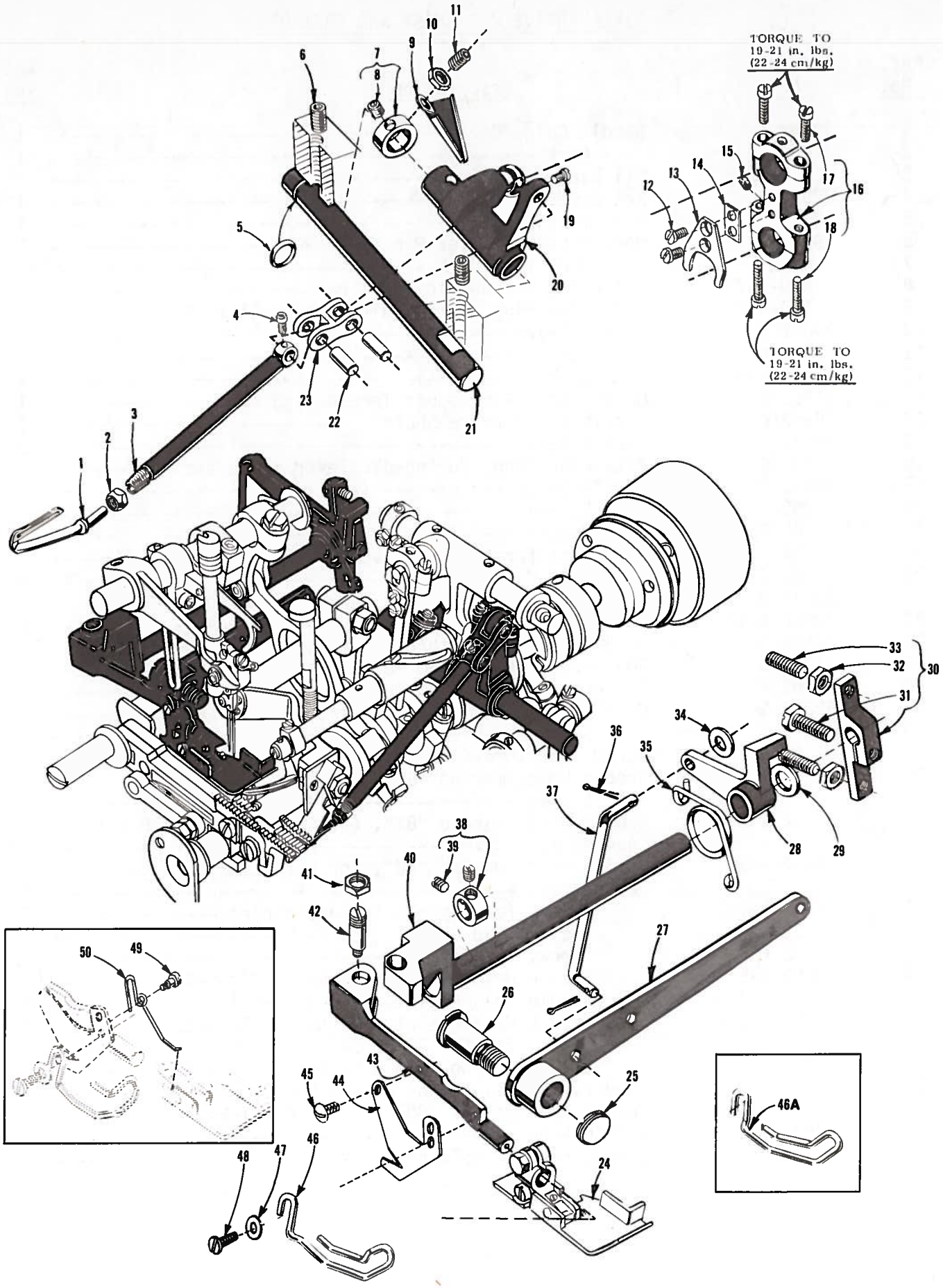
FEED DRIVE MECHANISM

Ref. No.	Part No.	Description	Amt. Req.
1 thru 48		See preceding page	
49	39836 U	Differential Feed Drive Connecting Rod	1
50	77	Screw	1
51	660-647	Unit Cage Bearing	1
52	35751 G	Collar, for feed drive rock shaft	1
53	22572 B	Screw	1
54	62244 A	Thrust Washer, for feed drive rock shaft	1
55	51236 A	Link Pin, for differential feed drive lever	1
56	39836 X	Differential Feed Drive Lever	1
57	40-139	Washer	1
58	22852 A	Screw	1
59	39536 BB	Differential Feed Drive Link Pin	1
60	39536 BA	Differential Feed Control Link	1
61	22760 E	Screw, for differential feed control link	1
62	39536 AX	Differential Feed Drive Link	1
63	39536 AT	Differential Feed Control Lever	1
64	22652 A-6	Screw	1
65	41071 G	Nut, for differential feed control link screw	1
66	39536 CJ	Screw, for main feed return spring	1
67	39836 M	Differential Conrol Lever Actuator	1
68	22652 A-8	Screw	1
69	89-64	Plug	1
70	22517	Screw, for stitch indicator plate	1
71	22789 C	Stop Screw	1
72	39836 V	Main Feed Drive Segment	1
73	80557	Washer	1
74	22852 A	Screw	1
75	39836 AE	Differential Feed Drive Segment	1
76	22852 A	Screw	1
77	80557	Washer	1
78	39536 AY-247	Differential Feed Segment Sliding Block, marked "K", .247 inch (6.274 mm) wide	1
-	39536 AY-248	Differential Feed Segment Sliding Block, marked "L", .248 inch (6.299 mm) wide	1
-	39536 AY-249	Differential Feed Segment Sliding Block, marked "M", .249 inch (6.325 mm) wide	1
79	22733	Set Screw	1
80	39836 Z	Main Feed Drive Connecting Rod Stud	1
81	8372 A	Washer, for main feed drive connecting rod stud	1
82	12934 A	Nut, for main feed drive connecting rod stud	1
83	39836 K	Feed Drive Rock Shaft	1
84	660-467	"E" Ring, for feed drive rock shaft	1
85	62244 A	Thrust Washer, for feed drive rock shaft	1



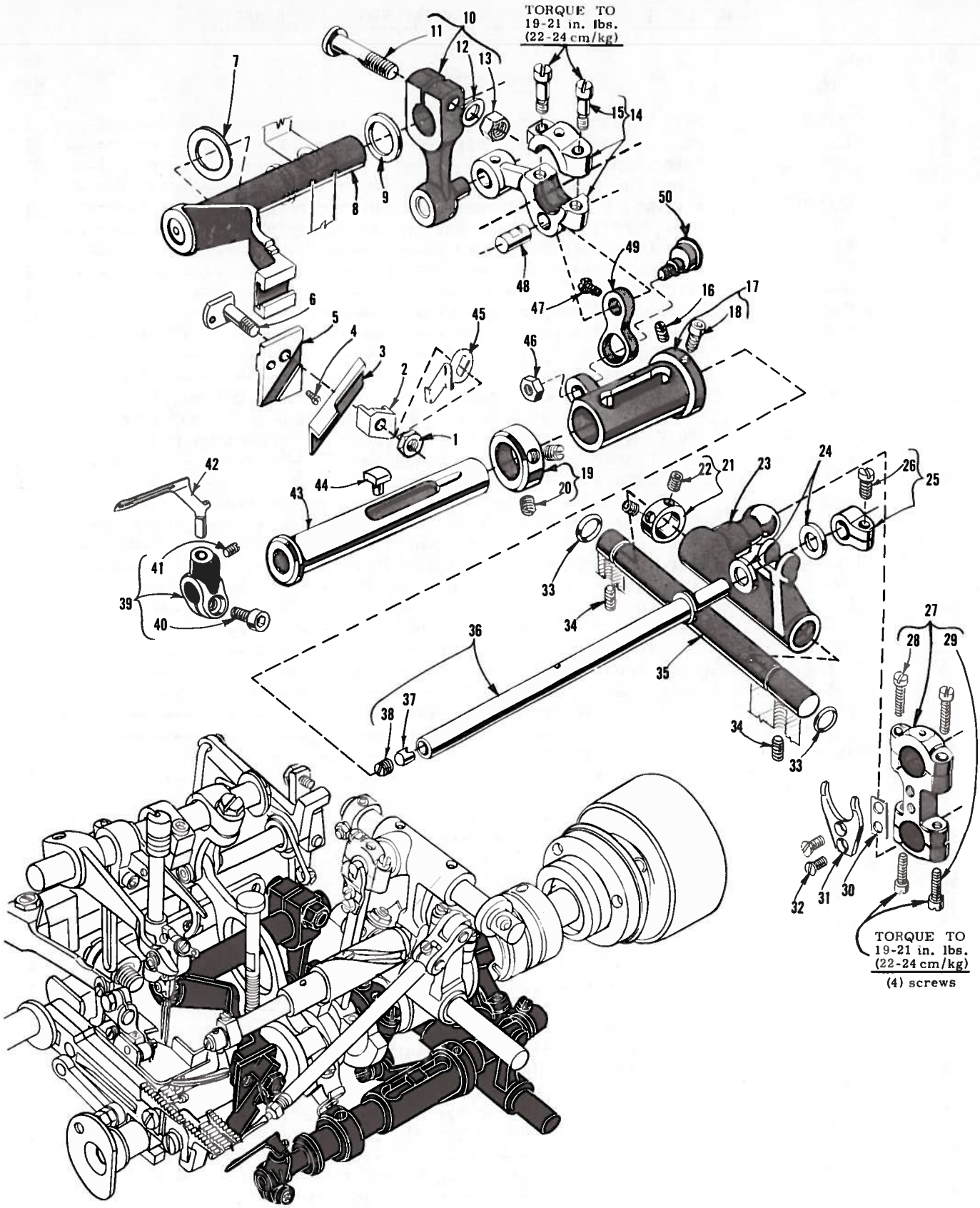
NEEDLE DRIVE MECHANISM AND TAKE-UPS

Ref. No.	Part No.	Description	Amt. Req.
1	39852 R	Needle Guide Bar	1
2	C067 E	Cork	1
3	CL21	Oil Wick	1
4	22894 C	Set Screw	1
5	22894 L	Spot Screw	1
6	39852 C	Needle Lever Roller Pin	1
7	WO-3	Wool Yarn	As Req.
8	660-667	"O" Ring, for needle guide bar	1
9	660-416	Retaining Ring, for needle lever roller pin	2
10	39852 Q	Needle Lever	1
11	22852 C	Screw	1
12	40-139	Washer	1
13	39863 T	Upper and Lower Looper Thread Take-Up	1
14	39852 E	Needle Lever Drive Shaft	1
15	39573 A	Thrust Washer	2
16	660-442	Retaining Ring, for needle lever drive shaft	1
17	39852 D	Needle Drive Lever	1
18	22852 C	Screw	1
19	40-139	Washer	1
20	51236 A	Link Pin, for needle drive lever	1
21	WO-3	Wool Yarn	As Req.
22	39843 D	Needle Lever Drive Shaft Thrust Clamp Collar	1
23	22652 B-10	Screw	1
24	22588 A	Screw, for needle thread cam pull-off	1
25	39863 D	503 Needle Thread Cam Pull-off	1
26	39863 J	401 Needle Thread Cam Pull-off	1
27	39863 S	Upper and Looper Looper Thread Take-up Lever	1
28	22572 B	Screw	1
29	22588 A	Screw, for thread take-up	1
30	39852 S-5	Needle Head, marked "BS", for No. 5 1/8 gauge, all Styles	1
-	39852 S-8	Needle Head, marked "BT", for Nos. 8 1/8 and 8 3/16 gauge, all Styles	1
-	39852 S-12	Needle Head, marked "BU", for No. 12-3/16 gauge, all Styles	1
31	22784 L	Screw, for top needle head eyelet	1
32	39852 N	Needle Head Eyelet, top	1
33	28 C	Screw, for needle	2
34	39852 K-5	Needle Head Eyelet, for No. 39852 S-5	1
-	39852 K-8	Needle Head Eyelet, for No. 39852 S-8	1
-	39852 K-12	Needle Head Eyelet, for No. 39852 S-12	1
35	22738 B	Screw, for No. 39852 S-5 or No. 39852 S-8	1
-	605	Screw, for No. 39852 S-12	1
36	120 GS	Needle, for all Styles except 398-27, 398-28	2
-	120 GAS	Needle, for Styles 398-27, 398-28	2
37	39594 N	Oil Splasher	1
38	87 U	Screw, for oil splasher	1



LOWER LOOPER DRIVING MECHANISM AND FOOT LIFTER PARTS

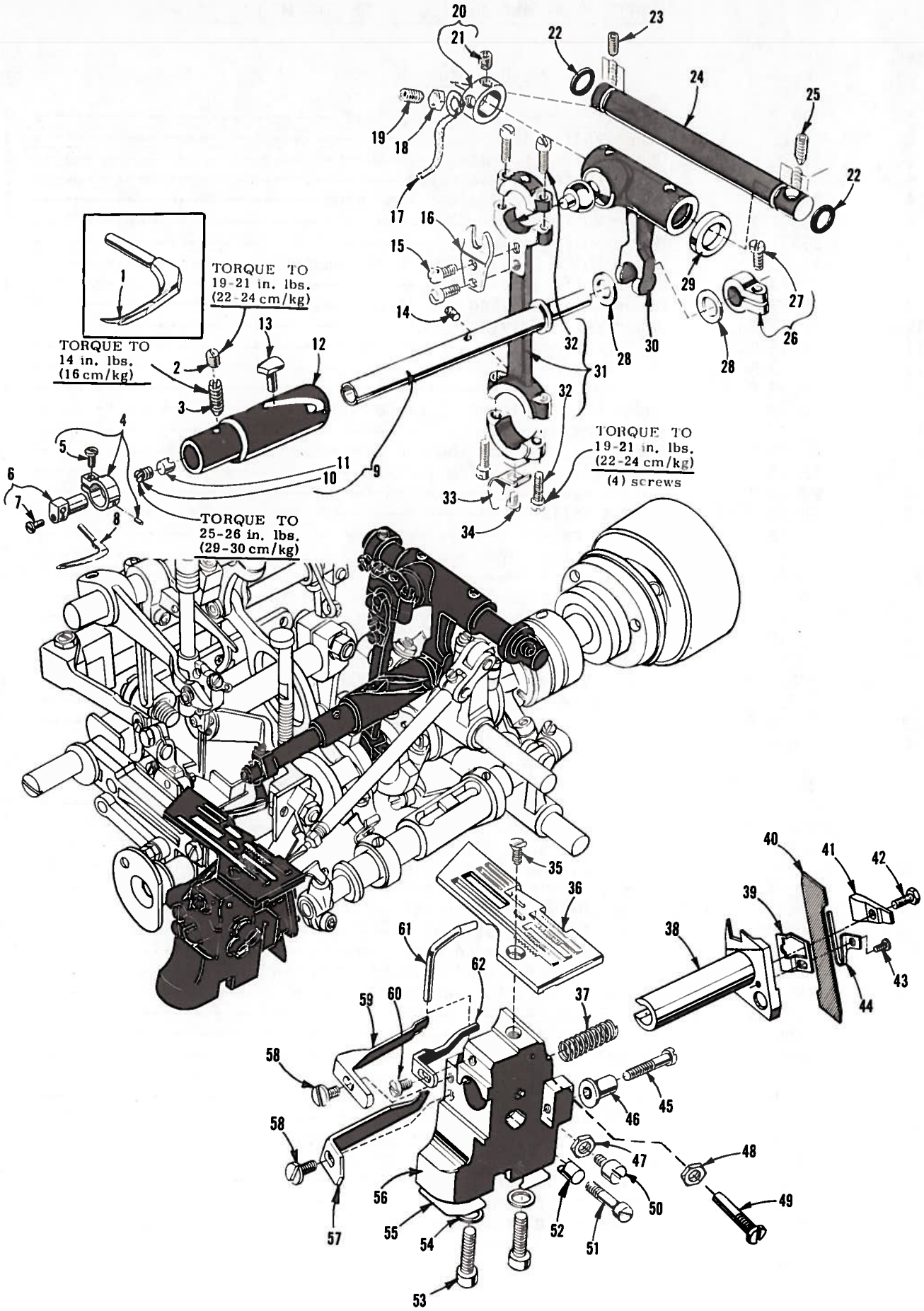
Ref. No.	Part No.	Description	Amt. Req.
1	39808 D	Lower Looper, marked "ACZ"	1
2	39151	Nut, for lower looper bar	1
3	52344	Lower Looper Bar	1
4	77	Screw, for connecting link pin	1
5	660-206	"O" Ring, for lower looper bar driving lever shaft	1
6	22894 AE	Screw, for lower looper bar driving lever shaft	2
7	482 C	Lower Looper Shaft Collar	1
8	22894 C	Screw	2
9	39894 C	Oil Pump Oiler	1
10	12982	Nut, for oil pump oiler screw	1
11	22894 J	Screw, for oil pump oiler	1
12	538	Screw, for ball joint guide fork	2
13	39644 X	Ball Joint Guide Fork	1
14	39644 R-2	Shim, for ball joint guide fork, .002 inch (.051 mm) thick-- As	Req.
-	39644 R-5	Shim, for ball joint guide fork, .005 inch (.127 mm) thick-- As	Req.
15	666-255	Felt Plug, for lower looper drive lever connecting rod	1
16	39644 F	Lower Looper Drive Lever Connecting Rod	1
17	22729 D	Screw	2
18	22729 E	Screw	2
19	77	Screw, for connecting link pin	1
20	39844	Lower Looper Bar Driving Lever	1
21	39844 B	Lower Looper Bar Driving Lever Shaft	1
22	39544 D	Lower Looper Bar Connecting Link Pin	2
23	39544 B	Lower Looper Bar Connecting Link	1
24		Presser Foot (See pages 49, 50, 51)	1
25	22571 D	Plug Screw, for foot lifter hole	1
26	22566 B	Screw, for foot lifter lever	1
27	39855	Foot Lifter Lever	1
28	39855 B	Foot Lifter Intermediate Lever	1
29	41332 J	Washer	1
30	39555 C	Foot Lifter Lever Arm	1
31	627	Screw	1
32	12538	Locknut	2
33	22597 E	Screw	2
34	8372 A	Washer, for connecting link	1
35	39855 A	Foot Lifter Lever Spring	1
36	660-142	Cotter Pin, for connecting link	2
37	39857 H	Foot Lifter Lever Connecting Link	1
38	12865	Thrust Collar, for foot lifter lever shaft	1
39	88	Screw	2
40	39855 C	Foot Lifter Lever Shaft	1
41	258 A	Nut, for presser arm screw	1
42	22791 H	Screw, for presser arm	1
43	39656 B	Presser Arm, on Styles 398-21, 398-29	1
-	39856 D	Presser Arm, on all Styles except 398-21, 398-29	1
44	39856 C	Chain Cutting Knife	1
45	22547 A	Screw, for chain cutting knife	1
46	21695 AN	Finger Guard, on all Styles except 398-24, 398-25	1
46A	21695 AL	Finger Guard, on Styles 398-24, 398-25	1
47	53678 N	Washer	1
48	22797 A	Screw, for chain cutting knife and finger guard	1
49	39830 AJ	Shoulder Screw, for presser foot bottom spring	1
50	39830 AL	Spring, for presser foot bottom, on all Styles except 398-24, 398-25, 398-28	1



UPPER KNIFE AND 401 LOOPER DRIVING MECHANISM

Ref. No.	Part No.	Description	Amt. Req.
1	9937	Nut, for upper knife clamp stud	1
2	39871	Upper Knife Clamp	1
3	39870	Upper Knife, serrated	1
* -	39870 A	Upper Knife, non-serrated	1
4	22738	Screw, for upper knife clamp stud	1
5	39572 A	Upper Knife Holder Block	1
6	39571 C	Upper Knife Clamp Stud	1
7	39873 B	Upper Knife Driving Arm Thrust Washer	1
8	39873 C	Upper Knife Driving Arm	1
9	39573 A	Upper Knife Driving Arm Thrust Washer	1
10	39573 E	Upper Knife Driving Lever	1
11	55235 D	Locking Stud	1
12	6042 A	Washer	1
13	55235 E	Nut	1
14	39673	Upper Knife Driving Lever Connecting Rod	1
15	22587 E	Screw	2
16	22565 C	Set Screw, for bushing and cam guide	1
17	39644 V	Bushing and Cam Guide	1
18	22729 M	Screw	1
19	39644 P	Thrust Collar	1
20	98	Screw	2
21	482 C	Looper Drive Lever Shaft Collar	1
22	22894 C	Screw	2
23	39644	Looper Drive Lever	1
24	39543 P	Looper Bar Thrust Washer	2
25	39543 M	Clamp Collar	1
26	22562 A	Screw	1
27	39644 U	Looper Drive Lever Auxiliary Connecting Rod	1
28	22729 E	Screw	2
29	22729 D	Screw	2
30	39644 R-2	Shim, for ball joint guide fork, .002 inch (.051 mm) thick	As Req.
-	39644 R-5	Shim, for ball joint guide fork, .005 inch (.127 mm) thick	As Req.
31	39644 X	Ball Joint Guide Fork	1
32	538	Screw, for ball joint guide fork	2
33	660-206	"O" Ring, for looper drive lever shaft	2
34	22894 AE	Screw, for looper drive lever shaft	2
35	39644 N	Looper Drive Lever Shaft	1
36	39644 A	Looper Bar (401 stitch)	1
37	39543 E	Cam Follower Locking Clamp	1
38	22503 F	Screw, for cam follower locking clamp	1
39	39844 A	Looper Holder, for 401 stitch looper	1
40	22652 A-6	Screw	1
41	22894 AF	Screw	1
42	39808	Looper, marked "CY", for 401 stitch	1
43	39644 W	Looper Bar Sleeve	1
44	39644 L	Cam Follower	1
45	39571 B	Upper Knife Chain Guard	1
46	39536 E	Nut, for looper avoid eccentric stud	1
47	22781	Screw, for looper avoid link pin	1
48	41336 C	Looper Avoid Link Pin	1
49	39844 C	Looper Avoid Link	1
50	39844 D	Looper Avoid Eccentric Stud	1

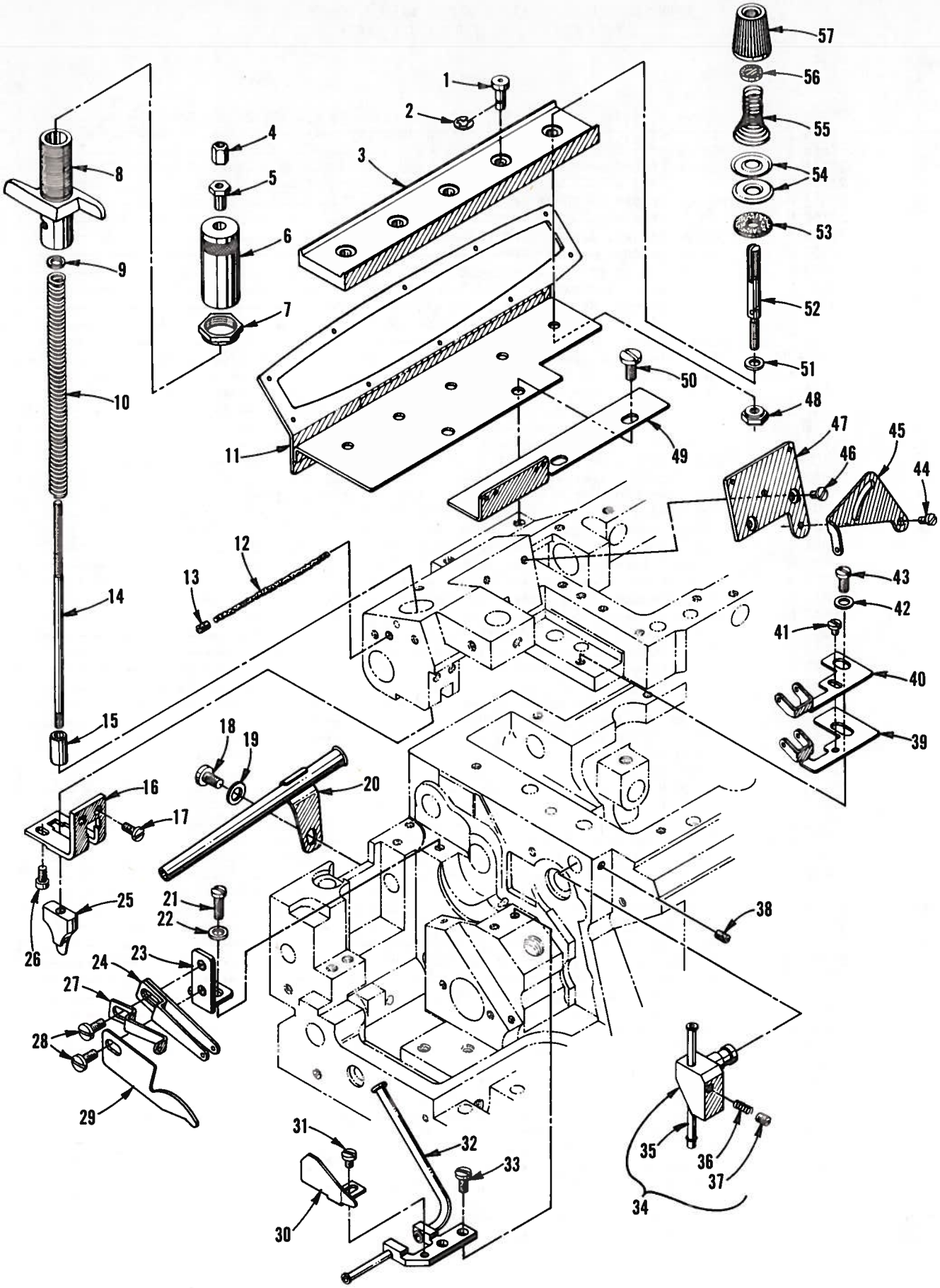
* Extra send and charge.



UPPER LOOPER OR SPREADER DRIVE, NEEDLE GUARDS, THROAT PLATES AND LOWER KNIFE PARTS

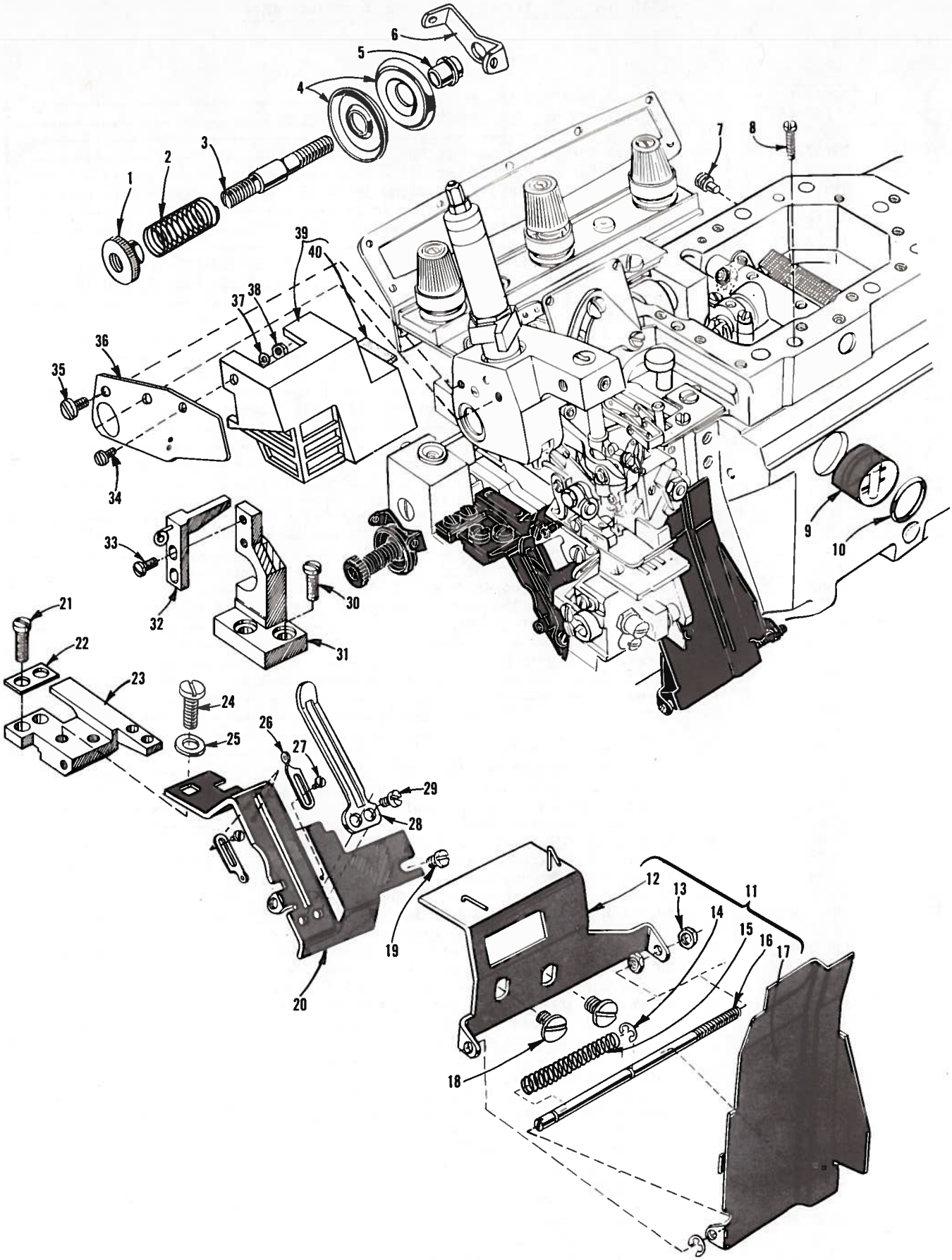
Ref. No.	Part No.	Description	Amt. Req.
1	39860	Upper Spreader, marked "H", for conversion to 515 SSa-2 Seam Spec.	1
2	1025 L	Lock Screw, for bushing and cam guide screw	1
3	22565 R	Screw, for bushing and cam guide	1
4	39743	Upper Looper or Spreader Holder Clamp	1
5	22768 B	Screw	1
6	39843 H	Upper Looper or Spreader Holder	1
7	22768 B	Screw	1
* 8	39808 A	Upper Looper, marked "DA"	1
# -	39808 C	Upper Looper, marked "ADA"	1
9	39743 A	Upper Looper or Spreader Drive Shaft	1
10	22503 F	Screw, for cam follower locking clamp	1
11	39543 E	Cam Follower Locking Clamp	1
12	39543 S	Upper Looper or Spreader Drive Shaft Bushing and Cam Guide	1
13	39543 T	Cam Follower	1
14	666-255	Felt Plug, for upper looper or spreader drive lever connecting rod	1
15	97	Screw, for guide fork	2
16	39544 J	Guide Fork	1
17	WO-3	Wool Yarn, for head	As Req.
18	12982	Nut	1
19	22894 J	Screw	1
20	482 C	Upper Looper or Spreader Drive Lever Shaft Collar	1
21	22894 C	Screw	2
22	660-206	"O" Ring, for upper looper or spreader drive lever shaft	2
23	22894 C	Set Screw, for upper looper or spreader drive lever shaft	1
24	39843 C	Upper Looper or Spreader Drive Lever Shaft	1
25	22894 L	Spot Screw, for upper looper or spreader drive lever shaft	1
26	39543 M	Clamp Collar	1
27	22562 A	Screw	1
28	39843 E	Thrust Washer, for upper looper or spreader drive shaft	2
29	39843 B	Upper Looper or Spreader Drive Lever Thrust Washer	1
30	39543 W	Upper Looper or Spreader Drive Lever	1
31	39843 J	Upper Looper or Spreader Drive Lever Connecting Rod	1
32	22729 D	Screw	4
33	39594 N	Oil Splasher	1
34	87 U	Screw, for oil splasher	1
35	22524	Screw, for throat plate	1
36		Throat Plate (See page 49)	1
37	39550 E	Knife Holder Spring	1
38	39850 C	Lower Knife Holder	1
39	39550 AC	Guide Plate	1
40	39849	Lower Knife	1
41	39550 AD	Lower Knife Clamp	1
42	22588 A	Screw, for lower knife clamp	1
43	604	Screw, for guide plate	1
44	39850 B	Spring	1
45	22729 B	Screw, for lower knife holder locating stud	1
46	39550 C	Lower Knife Holder Locating Stud	1
47	14077	Nut, for locking screw	1
48	41071 G	Nut, locking	1
49	39883	Screw, for stabilizing 401 stitch front needle guard	1
50	22892 B	Locking Screw, for lower knife holder	1
51	88 F	Screw, for needle guard locking clamp	1
52	39543 E	Needle Guard Locking Clamp	1
53	22653 B-12	Screw, for support bracket	2
54	39580 F	Washer, for support bracket screw	2
55	39880 J	Shim, for throat plate support bracket	1 Pair or More
56	39880 E	Throat Plate and Lower Knife Support Bracket	1
57	39825 D	Needle Guard, front, for 503 or 504 stitch needle	1
58	22585 A	Screw, for 503 or 504 stitch needle guard	2
59	39825 B	Needle Guard, rear, for 503 or 504 stitch needle	1
60	90	Screw, for 401 stitch front needle guard	1
61	39825 C	Needle Guard, rear, for 401 stitch needle	1
62	39625 D	Needle Guard, front, for 401 stitch needle	1

* Upper Looper 39808 C is recommended for use with needle size 110/044 and larger.
# Upper Looper 39808 A is recommended for use with needle size 100/040 and smaller.



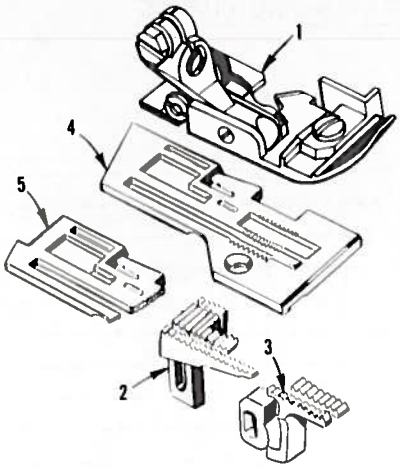
THREAD TENSIONS, EYELETS AND PRESSER SPRING PARTS

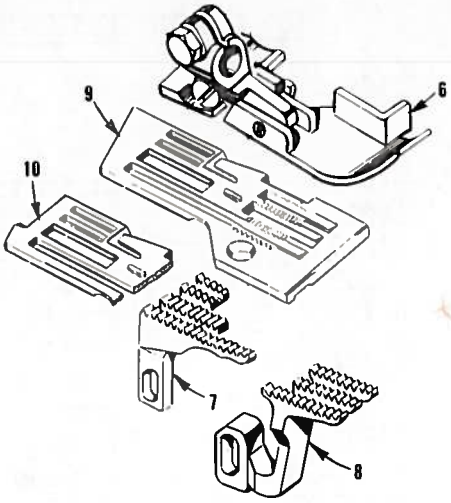
Ref. No.	Part No.	Description	Amt. Req.
1	39892 C	Tension Post Bar Eyelet	1
2	660-469	Retaining Ring, for tension post bar eyelet	1
3	39592 AN	Tension Post Bar	1
4	39557 B	Presser Spring Plunger Cap Nut	1
5	39857 L	Presser Spring Plunger Locknut	1
6	39857 N	Presser Spring Plunger Adjusting Screw	1
7	51257 H	Locknut, for plunger adjusting screw	1
8	39856 B	Presser Foot Release Lever	1
9	39857 E	Washer	1
10	39857 C	Presser Spring, heavy on Styles 398-26, 398-27, 398-28	1
-	39857 P	Presser Spring, light, on all Styles except 398-26, 398-27, 398-28	1
11	39892 A-5	Tension Post Mounting Bracket	1
12	CL21	Oil Wick	1
13	95	Screw, for oil system	1
14	39857 J	Presser Spring Plunger Stud	1
15	39857 M	Spacer	1
16	39857 R	Presser Foot Plunger Head Guide Bracket	1
17	22585 A	Screw, for presser foot plunger head guide bracket	2
18	22569 D	Screw, for thread tube	1
19	53634 C	Washer, for thread tube screw	1
20	39868 N	Thread Tube, for 401 looper thread	1
21	22569 B	Screw, for eyelet and fabric guard mounting bracket	1
22	8372 A	Washer, for mounting bracket screw	1
23	39868 D	Upper Looper Thread Eyelet and Fabric Guard Mounting Bracket	1
24	39568 L	Upper Looper Take-up Eyelet	1
25	39857 A	Presser Spring Plunger Head	1
26	22729 P	Screw, for presser foot plunger head guide bracket	1
27	39568 E	Auxiliary Upper Looper Thread Eyelet	1
28	376 A	Screw, for upper looper take-up eyelet and cast-off blade	2
29	39868 X	Lower Looper Cast-off Blade	1
30	39778 D	Fabric Guard	1
31	357	Screw, for fabric guard	1
32	39868 AA	Thread Tube, for 503 or 504 stitch looper thread	1
33	22569 D	Screw	2
34	29477 MA	Upper Looper Thread Tube Assembly	1
35	39568 P	Thread Tube	1
36	39568 J	Thread Tube Tension Spring	1
37	22743	Screw, for thread tube tension spring	1
38	22565	Screw, for upper looper thread tube assembly	1
39	39863 P	Overedge Needle Thread Pull-off Eyelet	1
40	39863 K	401 Stitch Needle Thread Pull-off Eyelet	1
41	22704	Screw, for 401 stitch needle thread pull-off eyelet	1
42	8372 A	Washer, for overedge needle thread pull-off eyelet screw	1
43	22569 C	Screw, for overedge needle thread pull-off eyelet	1
44	HS24 C	Screw, for adjustable needle thread eyelet	2
45	39863 N	Adjustable Needle Thread Eyelet	1
46	22564 J	Screw, for needle thread frame eyelet	2
47	39863 M	Needle Thread Frame Eyelet	1
48	39592 AH	Nut, for thread tension post	4
49	39892 B	Thread Guide, front	1
50	22548	Screw, for thread guide and mounting bracket	2
51	8372 A	Washer, for thread tension post	4
52	39592 AL	Thread Tension Post	4
53	39592 AF	Tension Disc Felt	4
54	39592 AD	Thread Tension Disc	8
55	39592 AR-2	Tension Spring, for 503 stitch needle	1
-	39592 AR-4	Tension Spring, for 504 stitch needle, on Styles 398-26, 398-27, 398-28	1
-	39592 AR-4	Tension Spring, for 504 stitch looper	2
-	39592 AR-5	Tension Spring, for 401 stitch needle	1
-	39592 AR-5	Tension Spring, for 504 stitch needle, on all Styles except 398-26, 398-27, 398-28	1
56	39592 AK	Tension Spring Ferrule	4
57	39592 AA	Overedge Needle Tension Nut, green	1
-	39592 Z	Lower Looper Tension Nut, yellow	1
-	39592 Y	Upper Looper Tension Nut, black	1
-	39592 AC	401 Stitch Needle Tension Nut, red	1

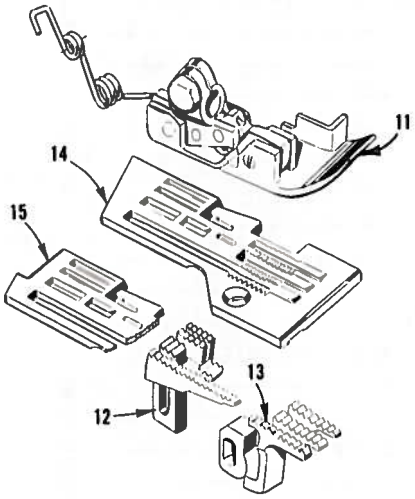


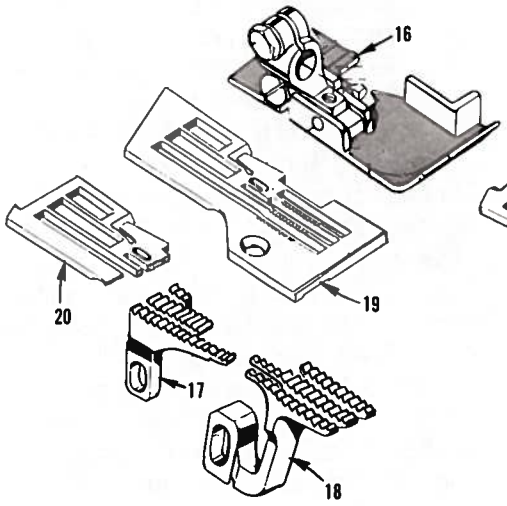
401 LOOPER TENSION PARTS, MISCELLANEOUS PLATES AND GUARDS

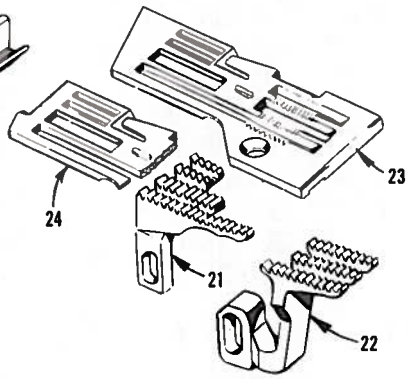
Ref. No.	Part No.	Description	Amt. Req.
1	51292 C	401 Stitch Looper Tension Nut	1
2	51292 F-2	Tension Spring, for 401 looper	1
3	51292 G	Thread Tension Post	1
4	109	Thread Tension Disc	2
5	51292 A	Ferrule	1
6	51292 D	Tension Thread Eyelet	1
7	22571 E	Magnetic Oil Drain Plug	1
8	22569 K	Screw, for oil sight gauge	1
9	39893	Oil Sight Gauge	1
10	660-243	Oil Gauge Seal Ring	1
11	39878 M	Chip Guard Assembly	1
12	39878 N	Chip Guard Base	1
13	43443 Q	Nut, for hinge pin	2
14	660-210	Retaining Ring	2
15	39158 U	Spring	1
16	39878 P	Hinge Pin	1
17	39878 K	Chip Guard Cover	1
18	22569 D	Screw, for chip guard	2
19	22585	Screw, for cast-off support plate	1
20	39868 AB	Cast-off Support Plate	1
21	22541 B	Screw, for main feed bar guide	2
22	39835 G	Washer Plate, for main feed bar guide screw	1
23	39835 E	Main Feed Bar Guide, left, for machines without "AIR-KLIPP" chain cutter	1
24	22541 B	Screw, for cast-off support plate	2
25	8372 A	Washer, for cast-off support plate screw	2
26	52958 D	Looper Thread Take-up Eyelet	2
27	73 A	Screw, for looper thread take-up eyelet	2
28	39868 J	Cast-off Wire	1
29	77 A	Screw, for cast-off wire	2
30	22541 B	Screw, for throat plate support rear bracket	2
31	39880 M	Throat Plate Support Rear Bracket	1
32	39880 L	Throat Plate Support, rear	1
33	22564 J	Screw, for throat plate support, rear	2
34	376 A	Screw, for finger protector	1
35	25 S	Screw, for finger protector plate	2
36	21695 AB	Finger Protector Plate	1
37	39843 G	Washer	1
38	12934 A	Nut, for finger protector screw	1
39	21695 AA	Finger Protector	1
40	21695 AM	Felt Pad	1

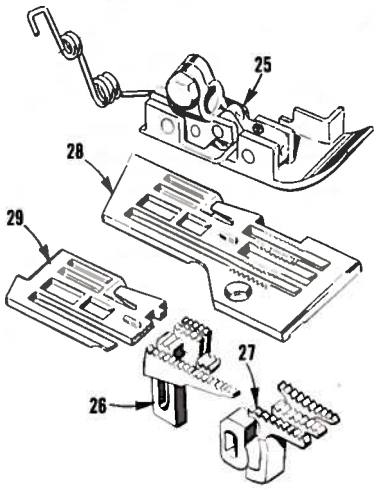


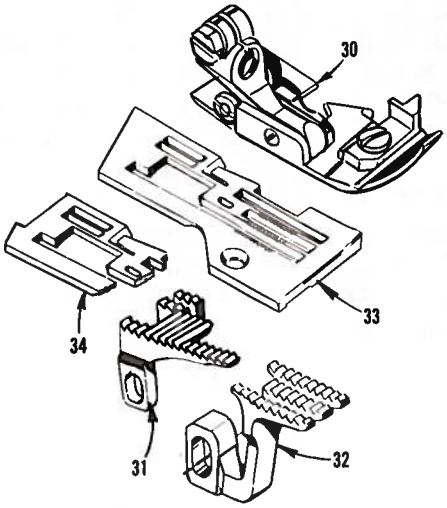






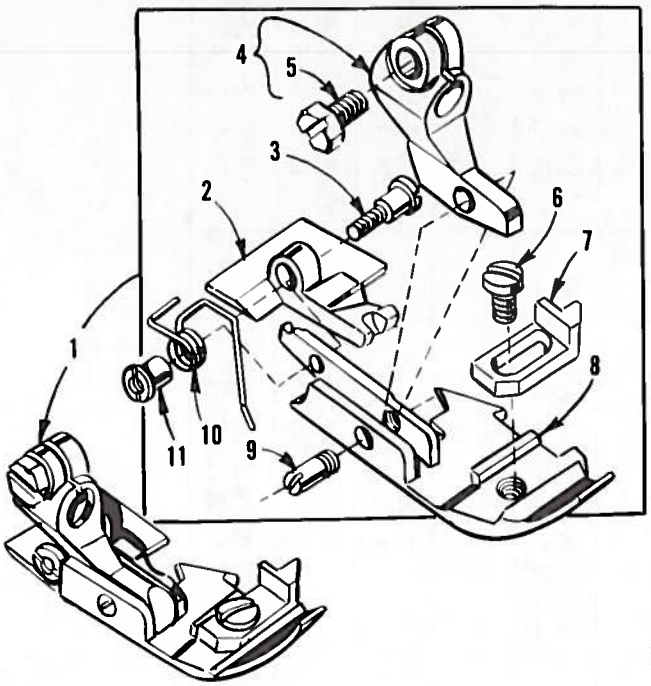


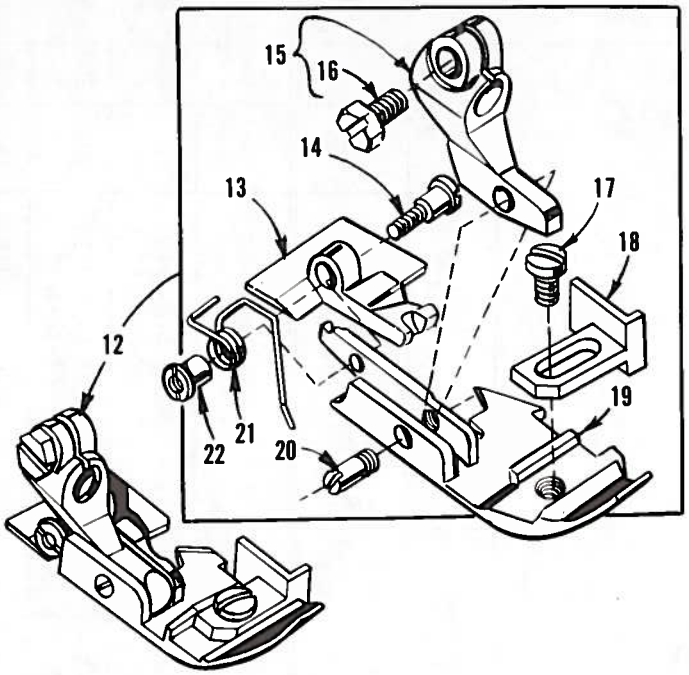


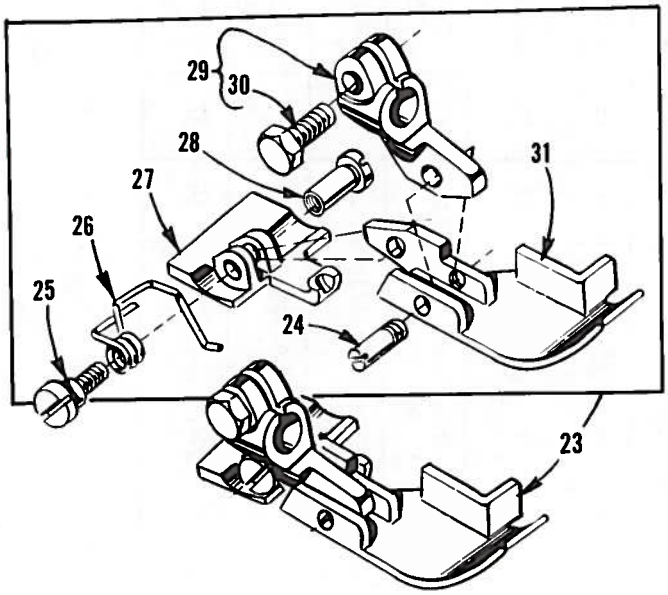


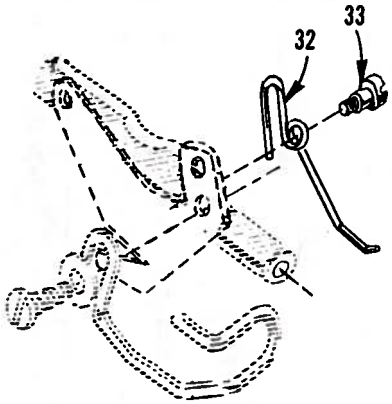
PRESSER FEET, FEED DOGS AND THROAT PLATES

MACHINE STYLE	PRESSER FOOT		MAIN FEED DOG			DIFFERENTIAL FEED DOG			THROAT PLATE W/O "AIR-KLIPP"		THROAT PLATE W/ "AIR-KLIPP"	
	REF. NO.	PART NO.	REF. NO.	PART NO. AND *ID MARK	TPI	REF. NO.	PART NO. AND *ID MARK	TPI	REF. NO.	PART NO. AND *ID MARK	REF. NO.	PART NO. AND *ID MARK
398-21	1	39820 K-8-1/8	2	39805 K-8-1/8 * "RB"	22	3	39826 F * "RC"	22	4	39828 T-8-1/8 * "EN"	5	39828 U-8-1/8 * "ET"
398-22	6	39820 A-8-3/16	7	39805 A-8-3/16 * "QE"	16	8	39826 B * "QG"	16	9	39828 A-8-3/16 * "DP-8-3/16"	10	39828 B-8-3/16 * "DQ-8-3/16
398-23	6	39820 F-12-3/16	7	39805 A-8-3/16 * "QE"	16	8	39826 B * "QG"	16	9	39828 L-12-3/16 * "DT-12-3/16"	10	39828 M-12-3/16 * "DU-12-3/16"
398-24	11	39820 E-8-3/16	12	39805 E-8-3/16 * "QF	16	13	39826 B * "QG"	16	14	39828 E-8-3/16 * "DR-8-3/16"	15	39828 F-8-3/16 * "DS-8-3/16"
398-25	11	39820 G-12-3/16	12	39805 E-8-3/16 * "QF"	16	13	39826 B * "QG"	16	14	39828 N-12-3/16 * "DV-12-3/16"	15	39828 P-12-3/16 * "DW-12-3/16"
398-26	16	39820 A-5-1/8	17	39805 G-5-1/8 * "QC"	16	18	39626 D * "BR"	16	19	39828 G-5-1/8 * "EC-5-1/8"	20	39828 H-5-1/8 * "EB-5-1/8"
398-27	16	39820 A-12-3/16	21	39805 A-12-3/16 * "FU"	12	22	39826 A * "FT"	12	23	39828 A-12-3/16 * "DX-12-3/16"	24	39828 B-12-3/16 * "DY-12-3/16"
398-28	25	39820 E-12-3/16	26	39805 E-8-3/16 * "QF"	16	27	39826 A * "FT"	12	28	39828 E-12-3/16 * "EE-12-3/16"	29	39828 F-12-3/16 * "ED-12-3/16"
398-29	30	39620 G-12-3/16	31	39605 G-12-3/16 * "DY-12-3/16"	16	32	39626 G * "BU"	16	33	39828 J-12-3/16 * "DL-12-3/16"	34	39828 K-12-3/16 * "DM-12-3/16"



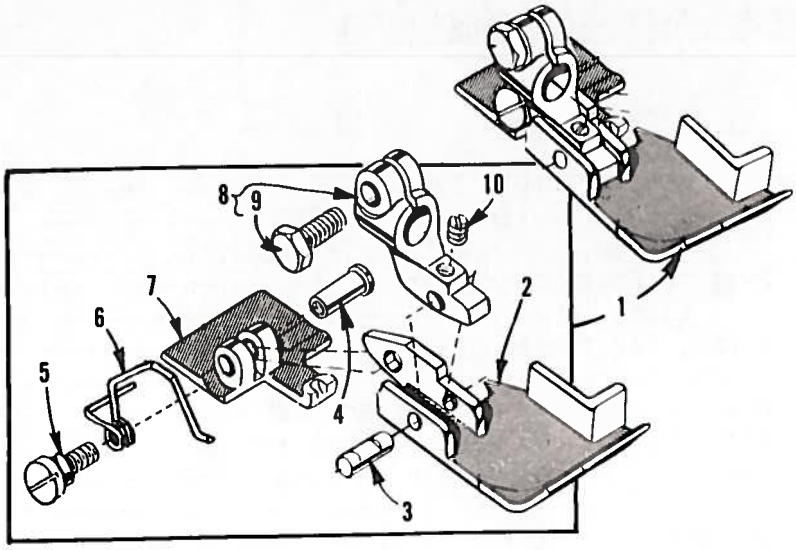


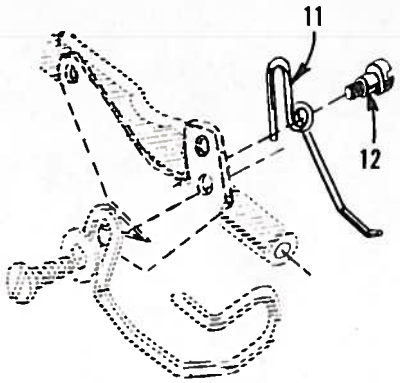


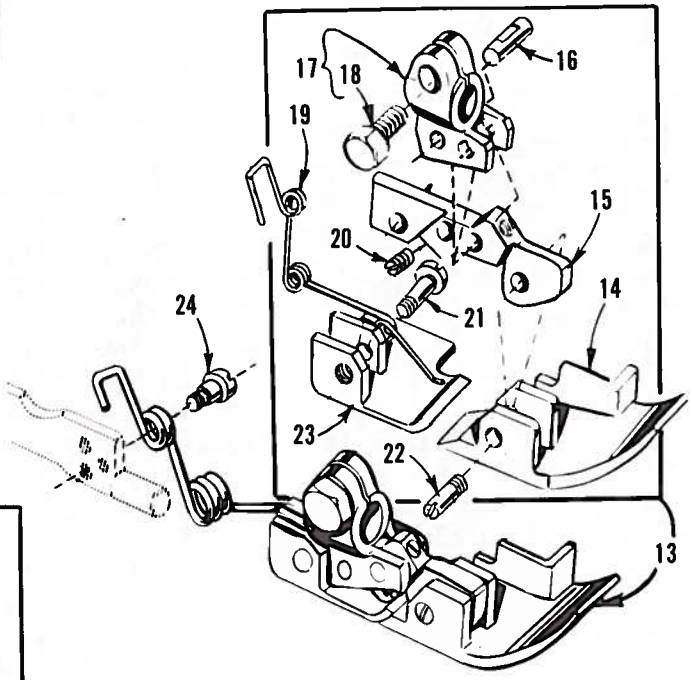


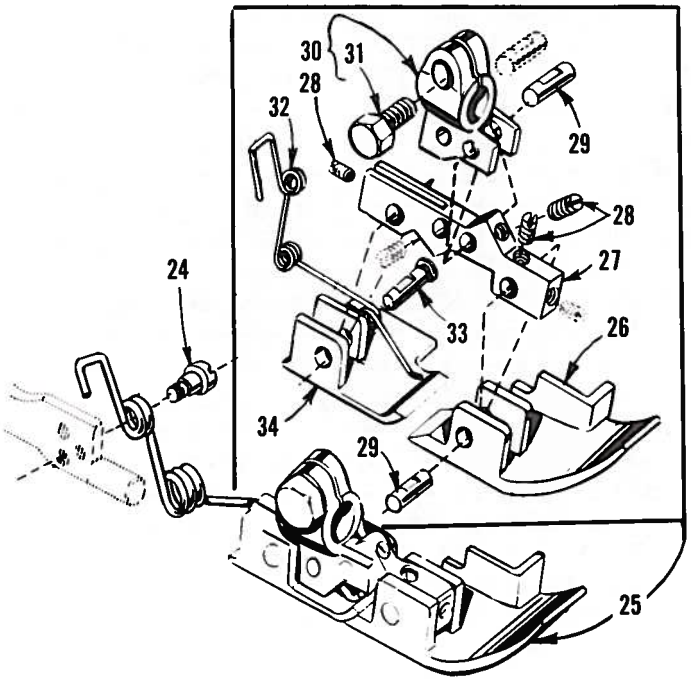
PRESSER FEET - COMPONENT PARTS

Ref. No.	Part No.	Description	Amt. Req.
1	39620 G-12-3/16	Presser Foot, for Style 398-29	1
2	39630 V	Needle Hole Section, marked "AU"	1
3	39630 M	Hinge Screw, for needle hole section	1
4	39630 X	Presser Foot Shank, marked "F"	1
5	22781	Clamp Screw	1
6	22768 B	Screw, for finger guard	1
7	39678 Z	Finger Guard, marked "C"	1
8	39630 T-12-3/16	Presser Foot Bottom, marked "BK"	1
9	22799 Y	Hinge Screw, for presser foot bottom	1
10	39630 AB	Spring, for needle hole section	1
11	39630 L	Locknut Screw	1
12	39820 K-8-1/8	Presser Foot, for Style 398-21	1
13	39830 AV	Needle Hole Section, marked "BK"	1
14	39630 M	Hinge Screw, for needle hole section	1
15	39830 AX	Presser Foot Shank, marked "X"	1
16	22588 B	Clamp Screw	1
17	22768 B	Screw, for finger guard	1
18	39878 R	Finger Guard, marked "D"	1
19	39830 AW	Presser Foot Bottom, marked "CS"	1
20	22799 AF	Hinge Screw, for presser foot bottom	1
21	39830 AU	Spring, for needle hole section	1
22	39630 L	Locknut Screw	1
23	39820 A-8-3/16	Presser Foot, for Style 398-22	1
-	39820 F-12-3/16	Presser Foot, for Style 398-23	1
24	22799 AF	Hinge Screw, for presser foot bottom	1
25	39830 F	Hinge Screw, for needle hole section	1
26	39830 AB	Spring, for needle hole section	1
27	39830 Y	Needle Hole Section, marked "BG", for presser foot No. 39820 A-8-3/16	1
-	39830 AE	Needle Hole Section, marked "BH", for presser foot No. 39820 F-12-3/16	1
28	39830 J	Locknut Screw	1
29	39830 T	Presser Foot Shank, marked "R", for presser foot No. 39820 A-8-3/16	1
-	39830 AC	Presser Foot Shank, marked "T", for presser foot No. 39820 F-12-3/16	1
30	22588 A	Clamp Screw	1
31	39830 W	Presser Foot Bottom, marked "CF", for presser foot No. 39820 A-8-3/16	1
-	39830 AD	Presser Foot Bottom, marked "CG", for presser foot No. 39820 F-12-3/16	1
32	39830 AL	Presser Foot Hold Down Spring, for presser foot Nos. 39620 G-12-3/16, 39820 K-8-1/8, 39820 A-8-3/16, 39820 F-12-3/16, 39820 A-5-1/8, 39820 A-12-3/16	1
33	39830 AJ	Shoulder Screw, for presser foot hold down spring	1



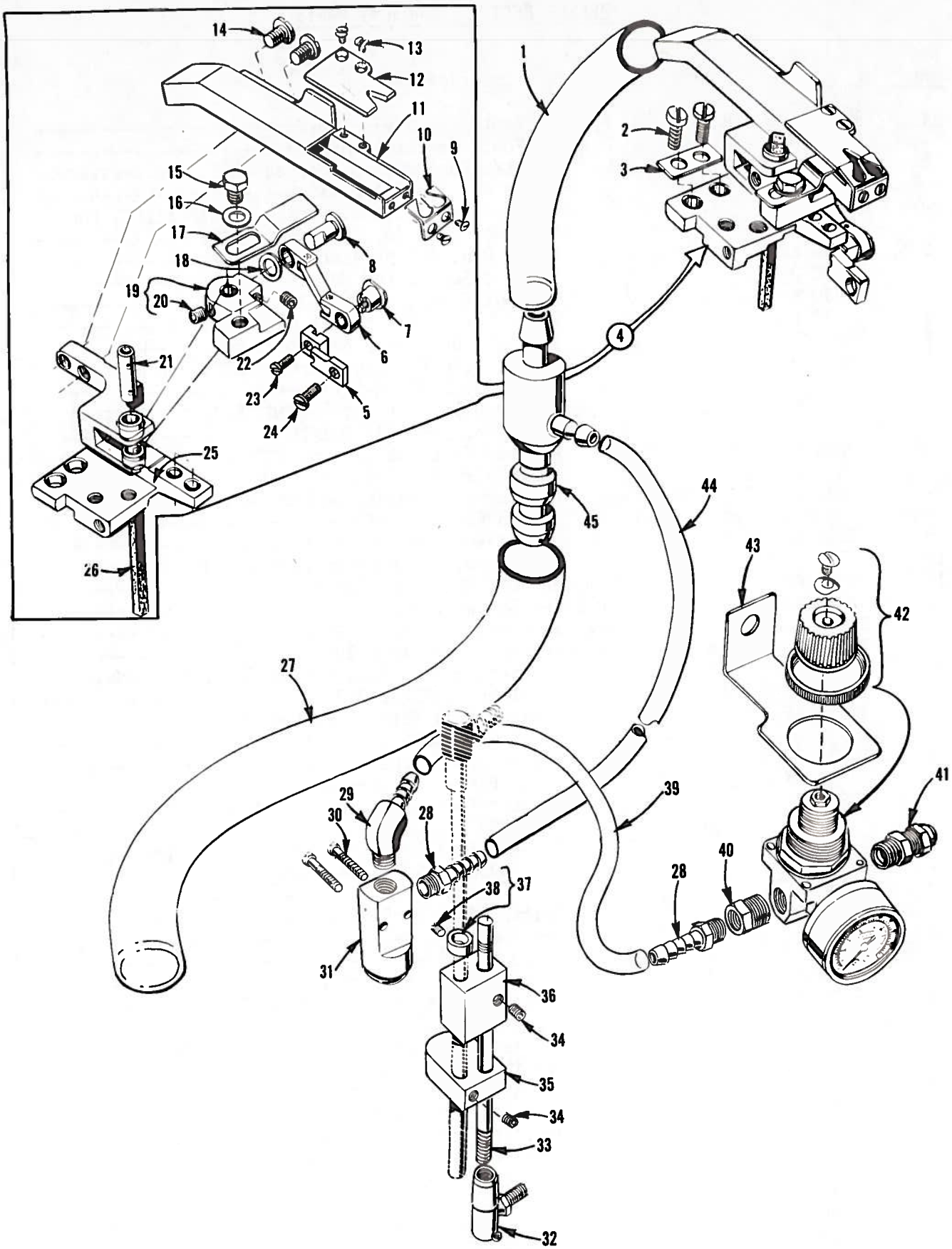






PRESSER FEET - COMPONENT PARTS

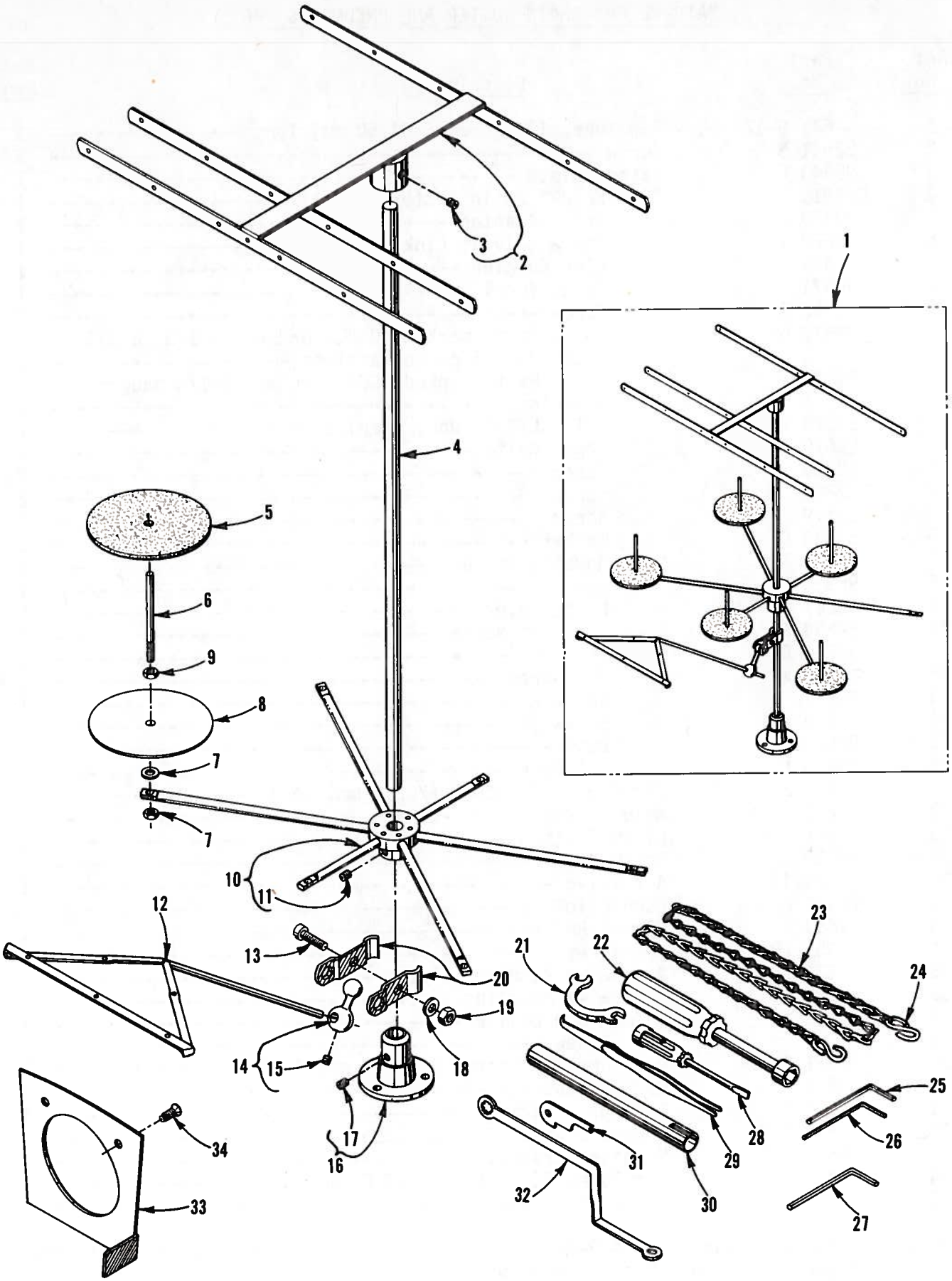
Ref. No.	Part No.	Description	Amt. Req.
1	39820 A-5-1/8	Presser Foot, for Style 398-26	1
-	39820 A-12-3/16	Presser Foot, for Style 398-27	1
2	39830 K	Presser Foot Bottom, marked "CC", for presser foot No. 39820 A-5-1/8	1
-	39830 C	Presser Foot Bottom, marked "BZ-12-3/16", for presser foot No. 39820 A-12-3/16	1
3	39830 E	Hinge Pin, for presser foot bottom	1
4	39830 J	Locknut Screw, for No. 39830 H	1
-	39830 B	Locknut Screw, for No. 39830 A	1
5	39830 F	Hinge Screw, for needle hole section	1
6	39830 S	Spring, for needle hole section	1
7	39830 H	Needle Hole Section, marked "BD", for presser foot No. 39820 A-5-1/8	1
-	39830 A	Needle Hole Section, marked "BC", for presser foot No. 39820 A-12-3/16	1
8	39830 G	Presser Foot Shank, marked "N", for presser foot No. 39820 A-5-1/8	1
-	39830	Presser Foot Shank, marked "M", for presser foot No. 39820 A-12-3/16	1
9	22588 A	Clamp Screw	1
10	22733	Set Screw, for presser foot bottom hinge pin	1
11	39830 AL	Presser Foot Hold Down Spring	1
12	39830 AJ	Shoulder Screw, for presser foot hold down spring	1
13	39820 E-8-3/16	Presser Foot, for Style 398-24	1
-	39820 G-12-3/16	Presser Foot, for Style 398-25	1
14	39830 V	Presser Foot Bottom, marked "CE", for presser foot No. 39820 E-8-3/16	1
-	39830 AF	Presser Foot Bottom, marked "CH", for presser foot No. 39820 G-12-3/16	1
15	39830 Z	Presser Foot Yoke	1
16	39830 AT	Hinge Pin	1
17	39830 U	Presser Foot Shank, marked "S", for presser foot No. 39820 E-8-3/16	1
-	39830 M	Presser Foot Shank, marked "P", for presser foot No. 39820 G-12-3/16	1
18	22588 A	Clamp Screw	1
19	39830 AH	Tractor Foot Spring	1
20	22733	Set Screw	1
21	39830 AA	Hinge Screw	1
22	22799 AF	Hinge Screw, for presser foot bottom	1
23	39830 X	Needle Hole Section, marked "BF", for presser foot No. 39820 E-8-3/16	1
-	39830 AG	Needle Hole Section, marked "BJ", for presser foot No. 39820 G-12-3/16	1
24	39830 AJ	Shoulder Screw, for tractor foot spring	1
25	39820 E-12-3/16	Presser Foot, for Style 398-28	1
26	39830 P	Presser Foot Bottom, marked "CD"	1
27	39830 R	Presser Foot Yoke	1
28	22733	Set Screw	3
29	39830 AT	Hinge Pin	2
30	39830 M	Presser Foot Shank, marked "P"	1
31	22588 A	Clamp Screw	1
32	39830 AH	Tractor Foot Spring	1
33	39830 AK	Hinge Pin	1
34	39830 N	Needle Hole Section, marked "BE"	1



"AIR-KLIPP" CHAIN CUTTER AND PNEUMATIC PARTS

Ref. No.	Part No.	Description	Amt. Req.
1	671 B-12	Air Tube, 12 inches (304.80 mm) long	1
2	22541 B	Screw	2
3	39843 F	Washer Plate	1
4	G29911 Y	"AIR-KLIPP" Chain Cutter Assembly	1
5	99678 C	Drive Adaptor	1
6	99672 T	Knife Driving Link	1
7	99673	Link Bushing	1
8	99671	Stud, for link	1
9	22716 A	Screw	2
10	99677 B	Inlet Part, marked "GC", for Nos. 8-1/8, 8-3/16 and 12-3/16 gauge machines	1
-	99677 F	Inlet Part, marked "GG", for No. 5-1/8 gauge machines	1
11	99676 L	"AIR-KLIPP" Tube, complete	1
12	99670 C	Upper Knife	1
13	22716	Screw	2
14	22829	Screw	2
15	22519	Screw	1
16	53634 C	Washer	1
17	99669 A	Movable Knife	1
18	95910	Washer	1
19	99667 B	Knife Lever	1
20	22894 W	Set Screw	1
21	99674 B	Stud	1
22	22894 W	Set Screw	1
23	22797	Screw	1
24	376 A	Screw	1
25	99663 H	Base	1
26	15430 L	Oil Wick	1
27	671 B-11	Air Tube, 30 inches (762.0 mm) long	1
28	671 F-1	Male Fitting	2
29	671 F-2	Elbow Fitting	1
30	22729 B	Screw	2
31	671-1	Air Valve	1
32	21371 MZ	Connection	1
33	1453 A	Pitman Rod	1
34	22651 CB-4	Set Screw	2
35	671-3	Air Valve Actuator Block	1
36	671-2	Air Valve Mounting Block	1
37	61242	Pitman Rod Collar	1
38	88	Screw	2
39	671 B-1	Air Tube, 36 inches (914.40 mm) long	1
40	671 F-6	Reducer Bushing	1
41	671 F-8	Straight Fitting	1
42	671 D-7	Pressure Regulator and Gauge	1
43	39583 A	Mounting Bracket	1
44	671 B-3	Air Tube, 45 inches (1143.0 mm) long	1
45	671 D-2	Air Jet	1

NOTE: 29480 PU Vacuum Type "AIR-KLIPP" Chain Cutter Kit, complete, is available. Includes Reference Nos. 1 through 45.



THREAD STAND AND ACCESSORIES

Ref. No.	Part No.	Description	Amt. Req.
* 1		Thread Stand, complete for 6 cones	1
2	21114 H-6	Eyelet Support, for 6 threads	1
3	22651 CD-4	Screw	1
4	21104 B-24	Thread Stand Rod	1
5	21104 V	Pad, for thread cone	5
6	21114 W	Spool Pin	5
7	258 A	Nut	10
8	21114	Spool Seat Disc	5
9	652-16	Washer	5
10	21114 D-6	Spool Seat Support, for 6 threads	1
11	22651 CD-5	Screw	2
12	21114 AL-5	Lead Eyelet, for 5 threads	1
13	22810	Clamp Screw	1
14	21114 T	Lead Eyelet Socket Ball	1
15	22651 CD-4	Screw	2
16	21114 A	Thread Stand Base	1
17	22651 CD-4	Screw	1
18	652-16	Washer	1
19	21104 H	Nut	1
20	21114 U	Lead Eyelet Ball Split Socket	2
21	21388 W	Wrench, curved double end, 9/32 inch (7.14 mm) opening	1
22	21388 AU	Socket Wrench, for 3/8 inch (9.52 mm) hexagonal nut holding feed eccentric	1
23	421 D-34	Foot Lifter Treadle Chain, 34 inches (863.60 mm) long-	1
24	660-264	"S" Hook, for treadle chain	2
25	WR65	Wrench, 1/16 inch (1.59 mm) hexagonal	1
26	WR80	Wrench, .050 inch (1.27 mm) hexagonal	1
27	WR69	Wrench, 9/64 inch (3.58 mm) hexagonal	1
28	21207 B	Screwdriver, 1/8 inch (3.18 mm) diameter	1
29	660-272	Thread Tweezers	1
30	21227 DP	Stitch Regulator Assembly Tool	1
+31	21225-3/32	Looper Gauge, 3/32 inch (2.38 mm)	1
32	21388 BC	Wrench	1
33	21375 BA	Belt Guard	1
34	80	Screw, for belt guard	2
-	660-458	Dust Cover (not shown)	1
-	39899 A	Threading Wire (not shown)	1
-	SC-330	Wood Screw, #12 x 1 inch (25.4 mm) long (not shown) --	3
-	28604 R	Container of Oil, 16 ounces, Spec. 175 (nct shown) ---	1
-	652-24	Washer, for use in tableboard (not shown)	8
+ -	39803	Edge Guide, cloth plate mounted (not shown)	1
+ -	29481 M	Edge Guide (not shown)	1
+ -	21227 DD	Needle Height Gauge (not shown)	1
+ -	21394 N	Knife Grinder (not shown)	1
+ -	39598 G	Swinging Frame - required with No. 21394 N (not shown)	1

* Number for complete thread stand not available, order component parts.
+ Available as extra send and charge item.

NUMERICAL INDEX OF PARTS

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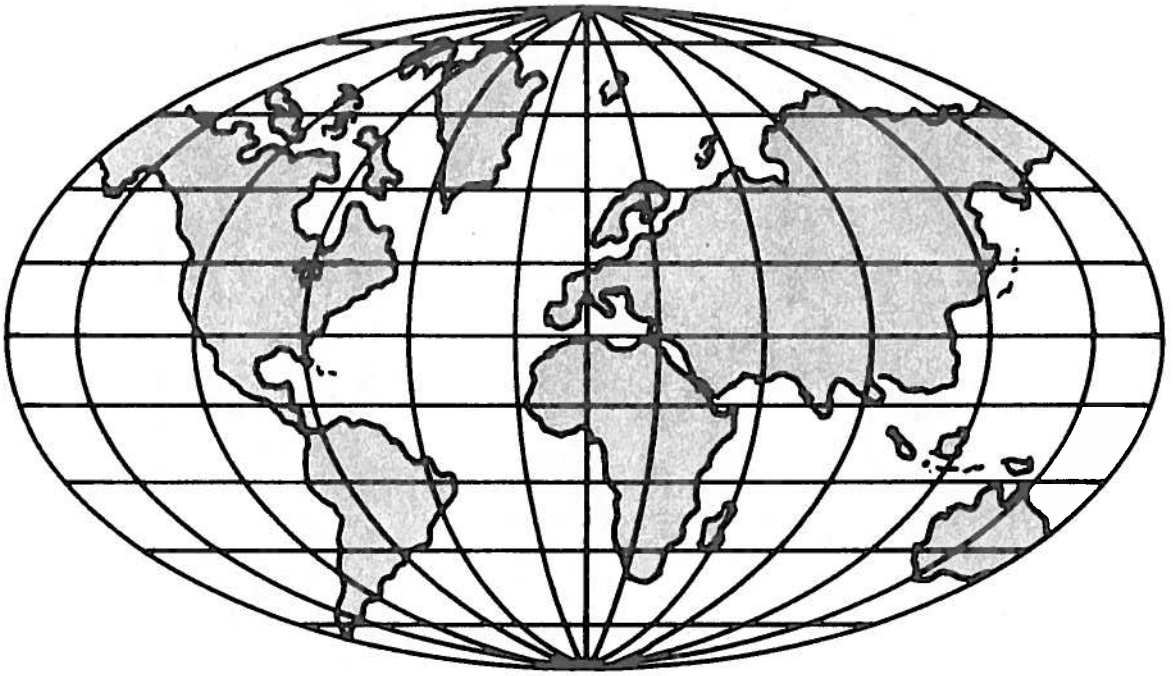

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