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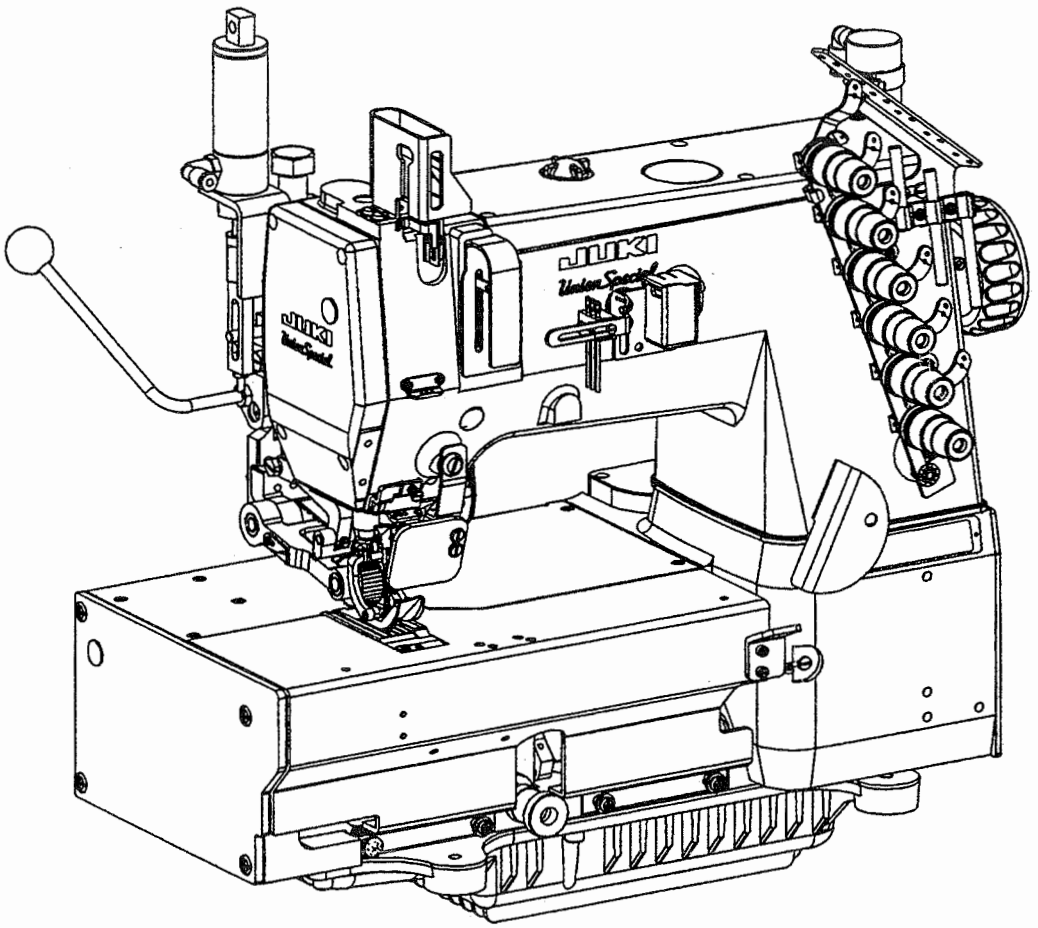
OPERATOR / ILLUSTRATED PARTS MANUAL



FS300 SERIES, PLAIN AND DIFFERENTIAL FEED, HIGH SPEED FLAT BED MACHINES

MANUAL NO. PT9914
FOR STYLES
FS315L63
FS316L61
FS316L62
FS316L63

REV 1-26-00

Manual No. PT9914 Illustrated Parts List for FS300 Series Machines

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PREFACE

This parts manual has been prepared to assist you in locating individual parts or assemblies on FS300 Series machines. It can be used in conjunction with Union Special Engineer's Manual EN9424.

It is the desire of Union Special that each machine run at its optimum performance. Parts listed in this manual are designed specifically for your machine and are manufactured with utmost precision to assure long lasting service.

This manual has been comprised on the basis of available information. Changes in design and/or improvements may incorporate a slight modification of configuration in illustrations or part numbers.

On the following pages are illustrations and terminology used in describing the parts used on FS300 Series machines.

CONTENTS

PREFACE 2
IDENTIFICATION OF MACHINES 4
CLASS DESCRIPTION 4
STYLE OF MACHINES 4
STYLE OF MACHINES CONT. 5
ILLUSTRATIONS 5
IDENTIFYING PARTS 5
NEEDLES 5
SAFETY RULES 6
FS300 SERIES BUILDING BLOCK STYLE DESIGNATION SYSTEM 7
CAUTION AREAS: 8
OPERATOR'S DAILY CHECK LIST: 9
OPERATING CAUTIONS: 9
OPERATING CAUTIONS (CONT.): 10
OPERATING THE PEDALS: 10
LUBRICATION: 11
THREADING THE MACHINE: 12
THREADING THE MACHINE (CONT.): 13
THREADING METHODS 14
ADJUSTING THE STITCH LENGTH: 15
PRESSER FOOT PRESSURE AND LIFTER: 15
FEED, NEEDLE LOOPER TIMING: 16
NEEDLE ALIGNMENT: 16
LOOPER SETTING: 17
NEEDLE BAR SETTING: 17

REAR NEEDLE GUARD: 18
FEED DOG CENTERING AND HEIGHT ABOVE THROAT PLATE: 18
PRESSER FOOT: 18
LOOPER THREAD TAKE-UP CAM SETTING: 19
THREAD CONTROL: 19
PULLER ADJUSTMENTS: 20
PULLER ADJUSTMENTS CONT.: 21
BUSHINGS 23
NEEDLE BAR 25
UPPER MAIN SHAFT 27
THREAD GUIDE 29
TENSION RELEASE & THREAD TENSION 31
PRESSER FOOT LIFT 33
COVERS, UPPER ARM 35
LOWER MAIN SHAFT 37
LUBRICATION, OIL TUBING & OIL PUMP 39
LOOPER DRIVE 41
NEEDLE GUARD 43
LOOPER THREAD TAKE-UP 45
FEED DRIVE MECHANISM FOR PLAIN FEED 47
FEED DRIVE MECHANISM FOR DIFFERENTIAL FEED 49
FEED DRIVE MECHANISM FOR PLAIN FEED 51
FEED DRIVE MECHANISM FOR DIFFERENTIAL FEED 53
COVERS, LOWER BED 55
COVERS, LOWER BED 57
SEWING PARTS 59
FOLDERS 61
PULLER DRIVE ASSEMBLY 63
PULLER ASSEMBLY 65
PULLER ASSEMBLY 67
MISCELLANEOUS PARTS PA1 (USE WITH CC2 CHAIN CUTTER) 69
MISCELLANEOUS PARTS PA1A (USE WITHOUT CC2 CHAIN CUTTER) 71
TUBING PA1 WITH CHAIN CUTTER 72
TUBING PA1A WITHOUT CHAIN CUTTER 73
TABLING (EXTRA SEND CHARGE) 75
PRESSER FOOT LIFTER 77
ACCESSORIES 79
NUMERICAL INDEX OF PARTS 80
NUMERICAL INDEX OF PARTS 81

IDENTIFICATION OF MACHINES

Each UNION SPECIAL machine is identified by a style number, which is stamped into the style plate affixed to the middle of the machine under the tension assembly. The serial number is stamped into the serial number plate affixed to the right rear base of the machine.

CLASS DESCRIPTION

Precision high speed, single needle, plain or differential feed flat bed machines. Totally enclosed feed and looper drive mechanism, automatic forced feed lubrication system with easily replaceable filter. Main feed has thumbscrew adjustment and differential feed has lever adjustment and independently driven rear needle guard.

STYLE OF MACHINES

FS316L61-3H36CC2PA1	DOUBLE LAP SEAM. Three needle, plain feed, high capacity, flat sewing parts, close-coupled toothed roller puller, pneumatic power "AIR-KLIPP" Chain cutter, pneu matic assisted presser foot and roller lift, and double lap seam folder with 1/8" (3.2mm) capacity. For attaching the risers to jeans, seat seaming operations on jeans, bibs to overalls and piecing sleeves on denim jackets. Seam Specifications 401LSc-3. Recommended needle 128 GAS sizes 140/054 - Stitch range 7-10 S.P.I.. Maximum recommended speed 6000 R.P.M.
FS316L61-3H36PA1	DOUBLE LAP SEAM. Three needle, plain feed, high capacity, flat sewing parts, close-coupled toothed roller puller, pneumatic assisted presser foot and roller lift, and double lap seam folder with 1/8" (3.2mm) capacity. For attaching the risers to jeans, seat seaming operations on jeans, bibs to overalls and piecing sleeves on denim jackets. Seam Specifications 401LSc-3. Recommended needle 128 GAS sizes 140/ 054 - Stitch range 7-10 S.P.I.. Maximum recommended speed 6000 R.P.M..
FS316L62-3H36CC2PA1	DOUBLE LAP SEAM. Three needle, plain feed, high capacity, .040" stepped chaining sewing parts, close-coupled toothed roller puller, pneumatic power "AIR-KLIPP" Chain cutter, pneumatic assisted presser foot and roller lift, and double lap seam folder with 1/8" (3.2mm) capacity. For attaching the risers to jeans, seat seaming operations on jeans, bibs to overalls and piecing sleeves on denim jackets. Seam Specifications 401LSc-3. Recommended needle 128 GAS sizes 140/054 - Stitch range 7-10 S.P.I.. Maximum recommended speed 6000 R.P.M..
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FS316L63-3H32CC2PA1	DOUBLE LAP SEAM. Three needle, plain feed, high capacity, .070" stepped chaining sewing parts, close-coupled toothed roller puller, pneumatic power "AIR-KLIPP" Chain cutter, pneumatic assisted presser foot and roller lift, and double lap seam folder with 1/8" (3.2mm) capacity. For attaching the risers to jeans, seat seaming operations on jeans, bibs to overalls and piecing sleeves on denim jackets. Seam Specifications 401LSc-3. Recommended needle 128 GAS sizes 140/054 - Stitch range 7-10 S.P.I.. Maximum recommended speed 6000 R.P.M..
FS316L63-3H32PA1	DOUBLE LAP SEAM. Three needle, plain feed, high capacity, .070" stepped chaining sewing parts, close-coupled toothed roller puller, pneumatic assisted presser foot and roller lift, and double lap seam folder with 1/8" (3.2mm) capacity. For attaching the risers to jeans, seat seaming operations on jeans, bibs to overalls and piecing sleeves on denim jackets. Seam Specifications 401LSc-3. Recommended needle 128 GAS sizes 140/054 - Stitch range 7-10 S.P.I.. Maximum recommended speed 6000 R.P.M..

FS315L63-3H32CC2PA1	Same as FS316L63-3H32CC2PA1 except differential feed.
FS315L63-3H32PA1	Same as FS316L63-3H32PA1 except differential feed.

ILLUSTRATIONS

This manual has been arranged to simplify ordering repair parts. Exploded views of various sections of the mechanism are shown so that the parts may be seen in their actual position in the machine. On the page opposite the illustration will be found a listing of the parts with their part numbers, description and the number of pieces required in the particular view being shown.

Numbers in the first column are reference numbers only, and merely indicate the position of the part in the illustration. The reference number should never be used in ordering parts. Always use the part number listed in the second column.

Component parts of sub-assemblies which can be furnished for repairs are indicated by indenting their descriptions under the description of the main sub-assembly. As an example refer to the following text.

5.	50366B	Needle Thread Strike-Off Assembly	1
6.	50358V	Needle Thread Strike-Off	1
7.	50370F	Thread Strike-Off Component	1
8.	SS7060310SP	Screw, for plate strike-off	1

When a part is common to all machines covered in this manual, no specific usage will be mentioned in the description. However, when the parts for the various machines are not the same, the specific usage will be mentioned in the description and, if necessary, the difference will be shown in the illustration.

*Ref. No. showing no Part No. is for location only. Part is not for sale separately.

A numerical index of all the parts shown in this manual is located at the back. This will facilitate locating the illustration and description when only a part number is known.

IDENTIFYING PARTS

Where construction permits, each part is stamped with its part number. On some of the smaller parts and on those where construction does not permit, an identification letter is stamped in to distinguish the part from similar ones.

PLEASE NOTE: Part numbers represent the same part, regardless of which manual they appear. On all orders please include part number, name and style of machine for which the part was ordered.

For optimum performance use only genuine Union Special replacement parts.

NEEDLES

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

TYPE	DESCRIPTION
128 GAS	Short, double groove, struck groove, ball eye, spotted, round point, chromium plated - Sizes available 080/032, 090/036, 100/040, 110/044, 125/049, 150/060.

When changing the needle, make sure it is fully inserted in the needle holder before the screw is tightened.

When ordering needles, please use the complete type and size numbers as printed on the package to ensure prompt and accurate processing of your order. A complete order should read as follows: "100 needles, type 128 GAS, size 150/060".

SAFETY RULES

1. Before putting the machines described in this manual into service, carefully read the instructions. The starting of each machine is only permitted after taking notice of the instructions and by qualified operators.

   IMPORTANT! Before putting the machine into service, also read the safety rules and instructions from the motor supplier.

2. Observe the national safety rules valid for your country.

3. The sewing machines described in this instruction manual are prohibited from being put into service until it has been ascertained that the sewing units which these sewing machines will be built into, have conformed with the EC Council Directives (89/392/EEC, Annex II B).

   Each machine is only allowed to be used as foreseen. The foreseen use of the particular machine is described in paragraph "STYLES OF MACHINES" of this instruction manual. Another use, going beyond the description, is not as foreseen.

4. All safety devices must be in position when the machine is ready for work or in operation. Operation of the machine without the appertaining safety devices is prohibited.

5. Wear safety glasses.

6. In case of machine conversions and changes all valid safety rules must be considered. Conversions and changes are made at your own risk.

7. The warning hints in the instructions are marked with one of these two symbols:

8. When doing the following the machine has to be disconnected from the power supply by turning off the main switch or by pulling out the main plug:

   8.1 When threading needle(s), looper, spreader etc.

   8.2 When replacing any parts such as needle(s), presser foot, throat plate, looper, spreader, feed dog, needle guard, folder, fabric guide etc.

   8.3 When leaving the workplace and when the workplace is unattended.

   8.4 When doing maintenance work.

   8.5 When using clutch motors without actuation lock, wait until the motor is stopped totally.

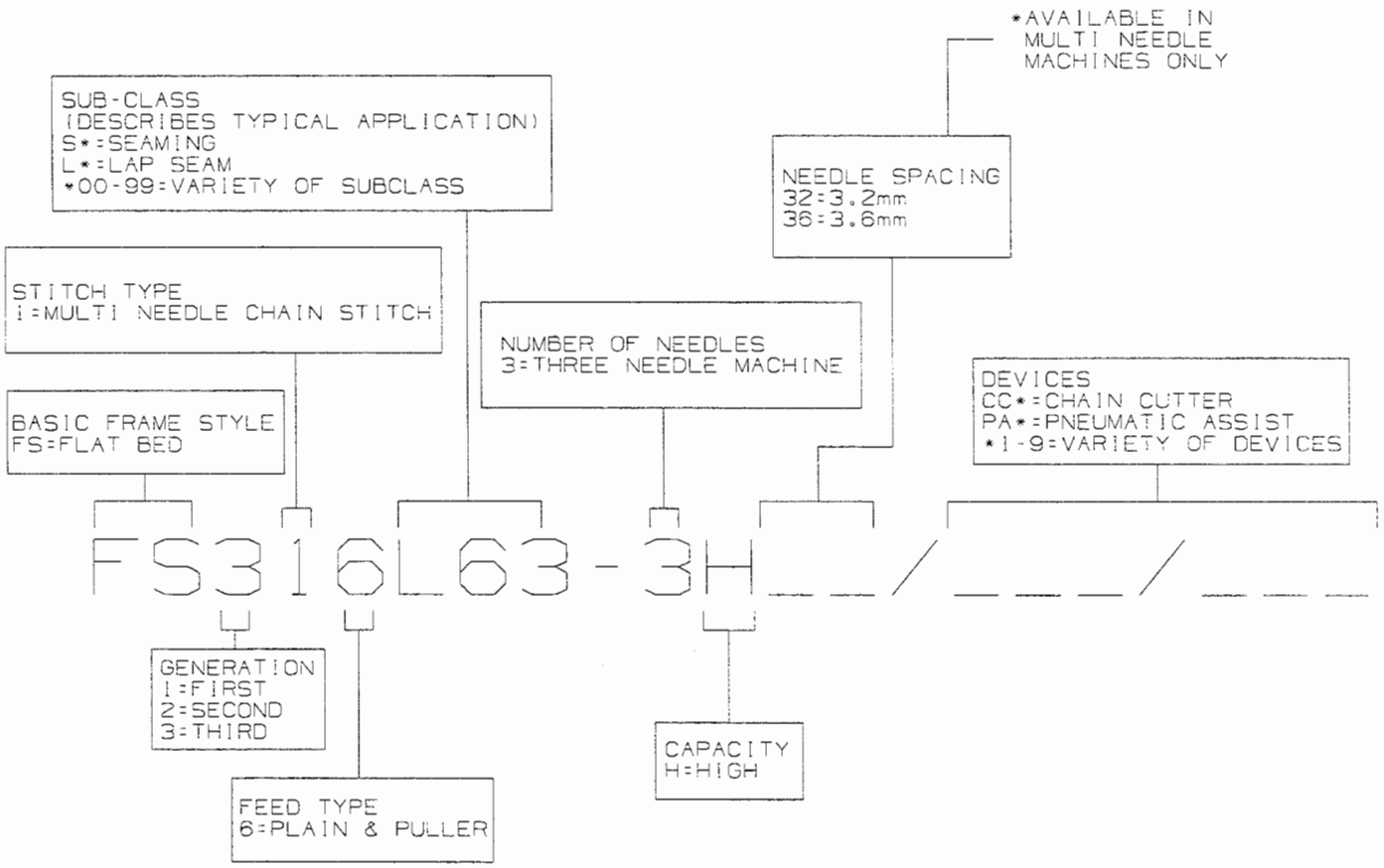
9. Maintenance, repair and conversion work (see item 8) must be done only by trained technicians or special skilled personnel under consideration of the instructions.

10. Any work on the electrical equipment must be done by an electrician or under direction and supervision of special skilled personnel.

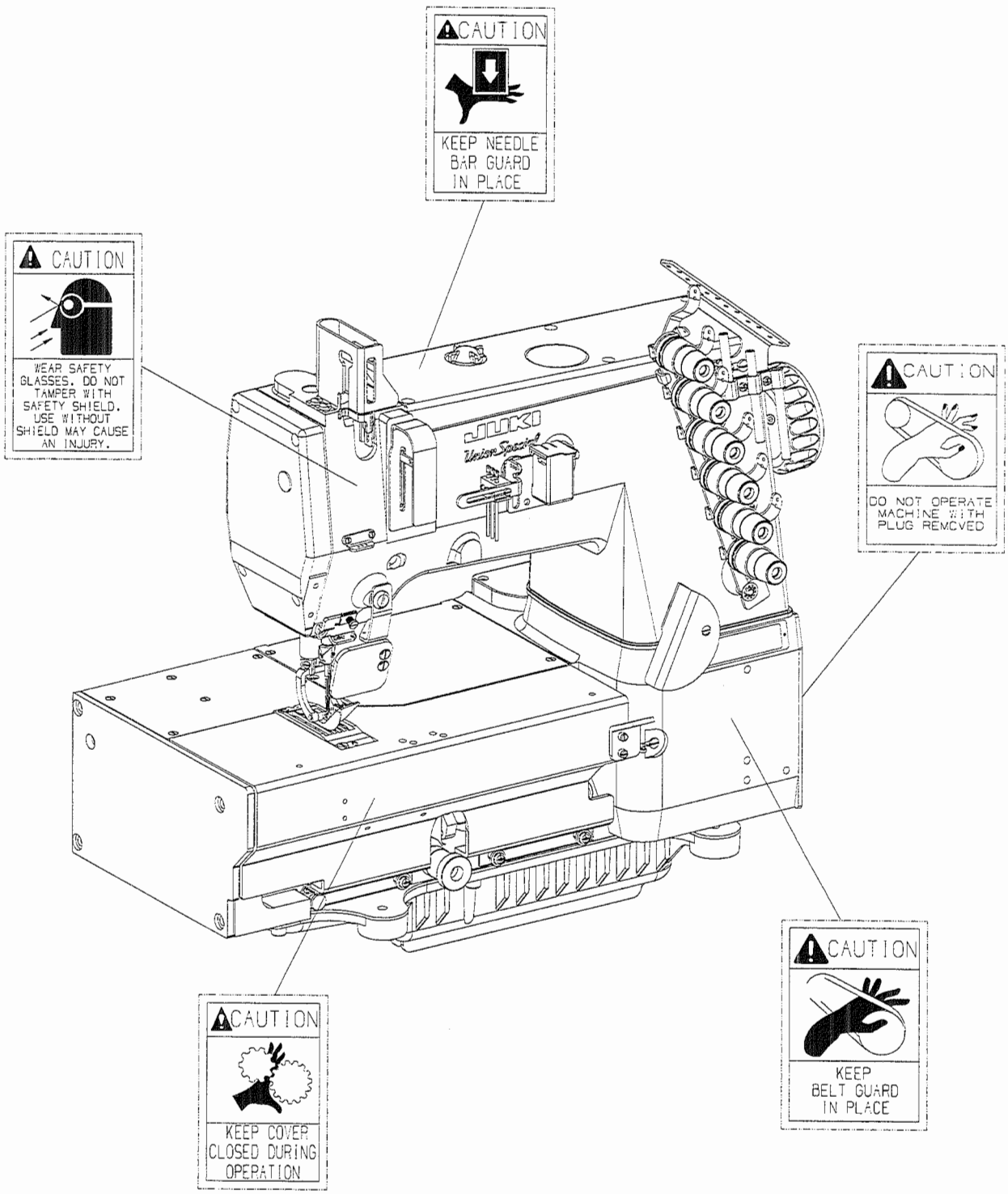
11. Work on parts and equipment under electrical power is not permitted. Permissible exceptions are described in the applicable sections of standard sheet DIN VDE 0105.

12. Before doing maintenance and repair work on the pneumatic equipment, the machine has to be disconnected from the compressed air supply. In case of existing residual air pressure, after disconnecting from compressed air supply (i.e. pneumatic equipment with air tank), the pressure has to be removed by bleeding.

FS300 SERIES BUILDING BLOCK STYLE DESIGNATION SYSTEM



CAUTION AREAS:

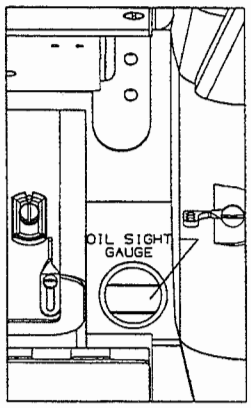


OPERATOR'S DAILY CHECK LIST:

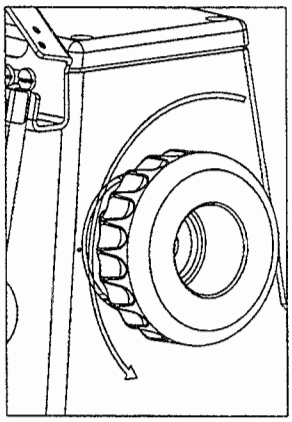
The following should be checked daily and cleaned as required when it applies to your Union Special machine:

- Lint area (clean with compressed air or brush)
- Needle bar bushings
- Under feed dogs & throat plates
- In knives
- In thread control eyelets
- Cooling airways
- In the machine
- In the motor
- In the cooling package

(package is an extra send charge)

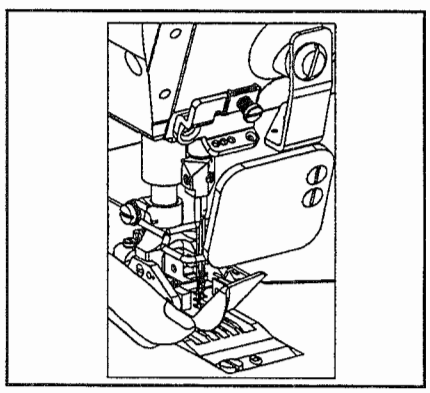


1. The oil level in the sight gauge should be between the two red lines when the machine is at rest. If not, fill with Union Special Specification 175 oil, (Union Special Part No. 28604R).

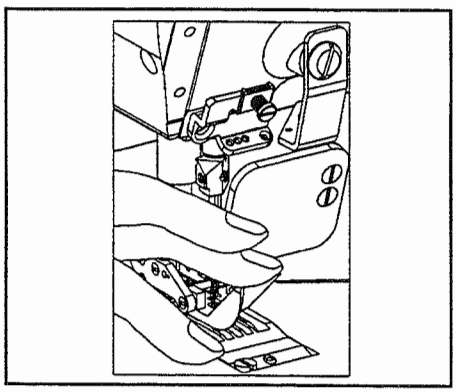


2. The correct rotating direction of the handwheel is counterclockwise, as viewed from the handwheel's side. NEVER run the machine in reverse direction.

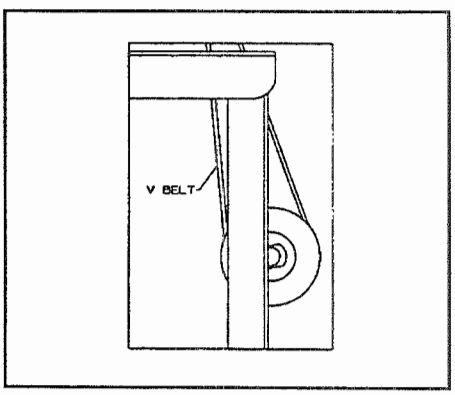
OPERATING CAUTIONS:



1. Do not put your hand under the needles when turning on the power switch or at any time.



2. Do not put your hand into the sewing area while the machine is running.



3. Turn off the power switch and make sure the clutch motor is at rest before removing the V belt.

OPERATING CAUTIONS (CONT.):

4. During operation, do not allow head, hands or any instrument, tool etc. near handwheel, V belt and motor.

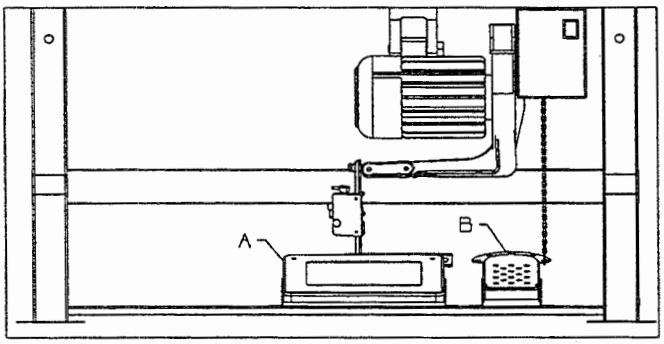
5. Do not operate your machine without the proper belt guard, sewing guards or any other protectors that have been provided. Doing so is very dangerous.

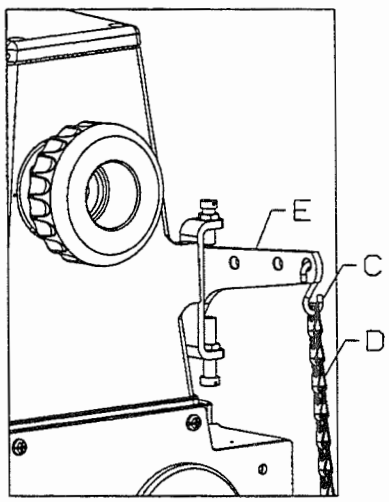
6. Before inspecting, adjusting, cleaning, threading the head or replacing needles, turn OFF the power switch. Make sure the flywheel on the motor has stopped, it will be kept running by inertia after turning OFF the power switch. DO NOT depress the foot pedal while the machine is running or it will cause the machine to rotate abruptly.

7. Turn OFF the power switch when you leave your machine or in case of a power failure.

8. Do not wipe the machine surface with lacquer thinner.

OPERATING THE PEDALS:



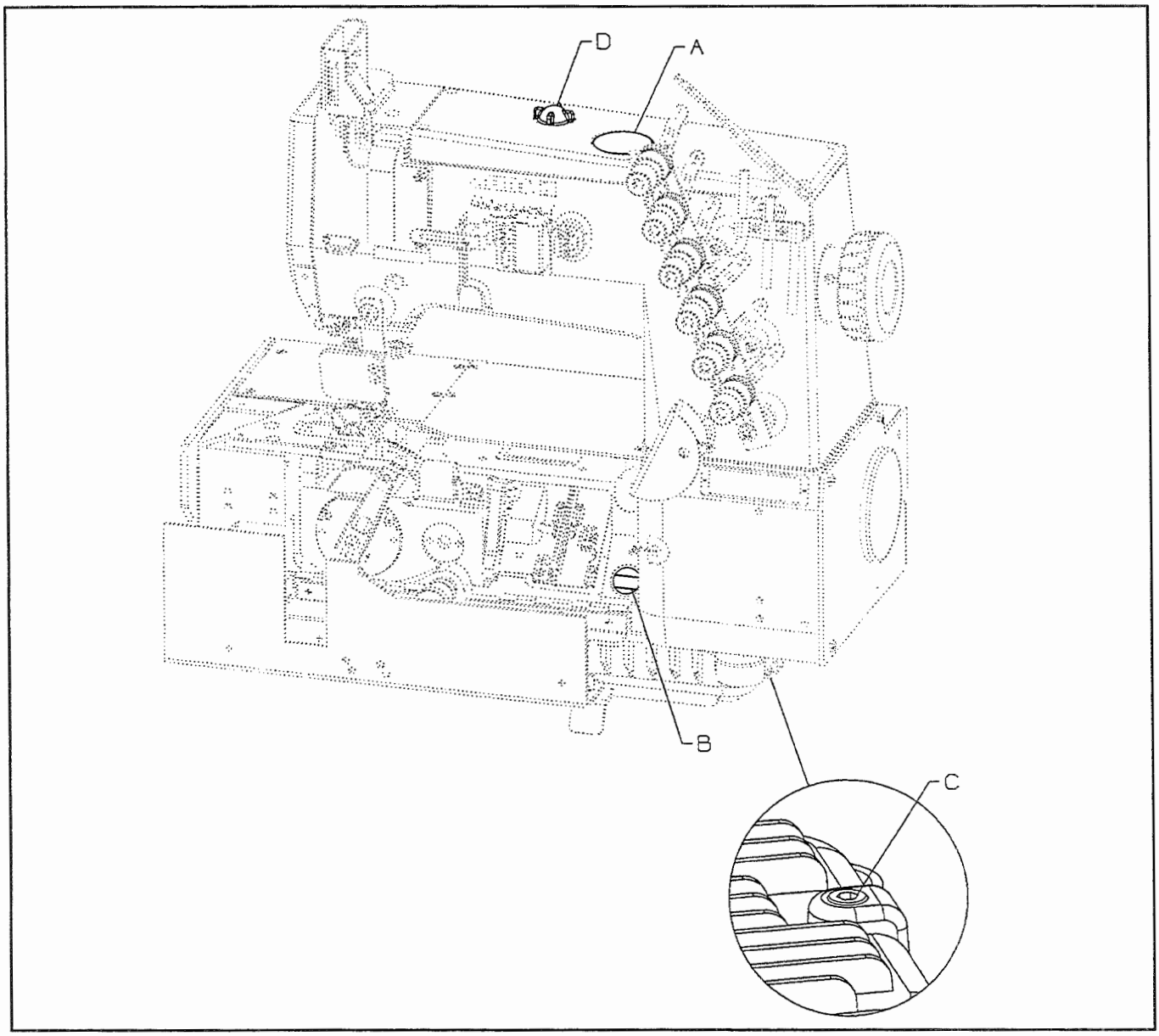


1. Locate the center of drive treadle (A) to be in line with the needles.

2. Locate presser lifter pedal (B) for operator comfort.

3. Use S-shaped hook (C) to connect presser lifter pedal chain (D) to presser lifting lever (E).

LUBRICATION:



The oil should be between the two red lines in sight gauge (B) when the machine is at rest.

1. If oil is required remove oil cap (A).
2. Fill between lines (B) with Union Special Specification 175 oil (Union Special Part No. 28604R).

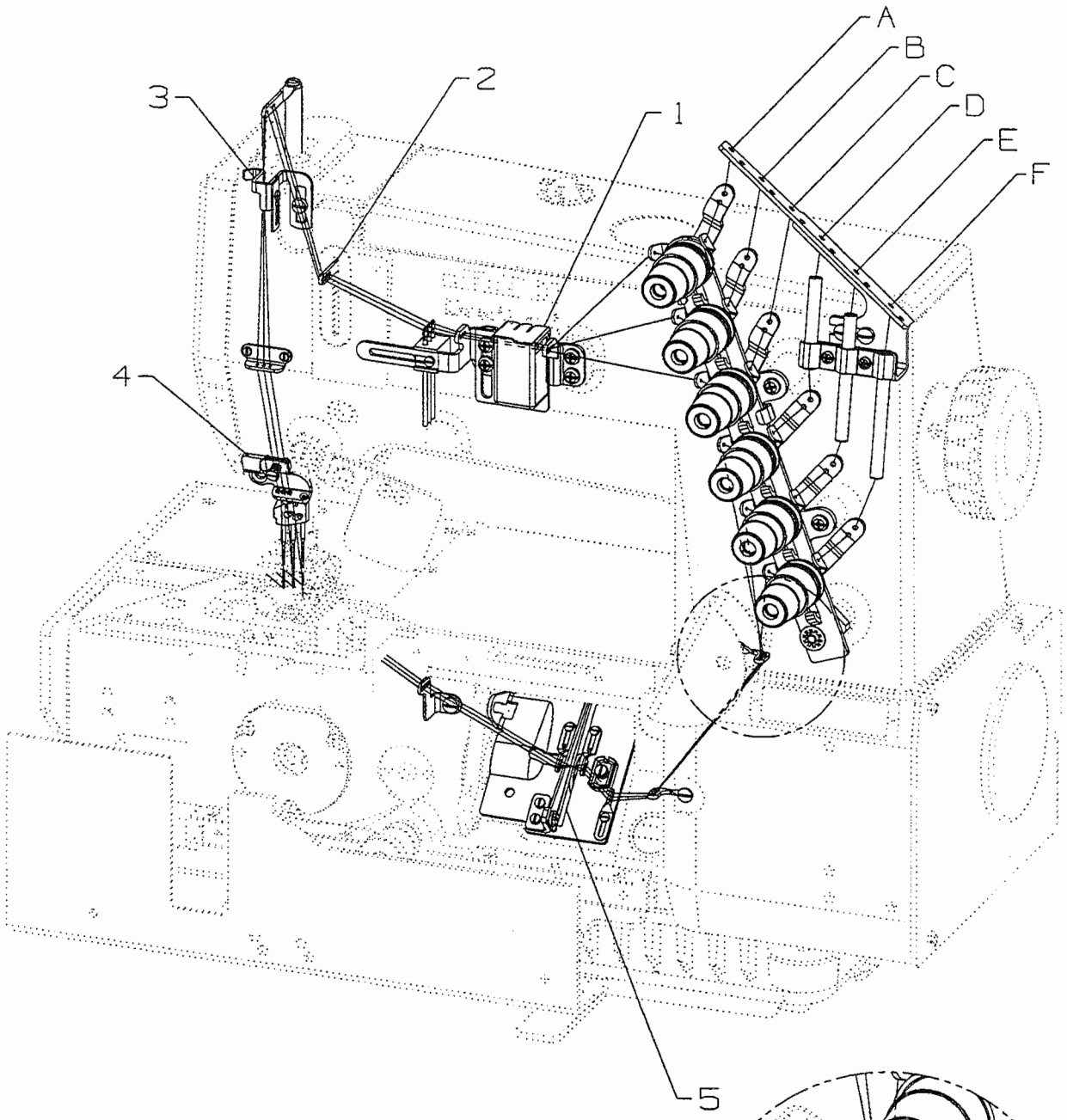
CAUTION! Do not exceed the upper red marker line. Excessive oil in the machine will result in oil leakage and possible overheating.

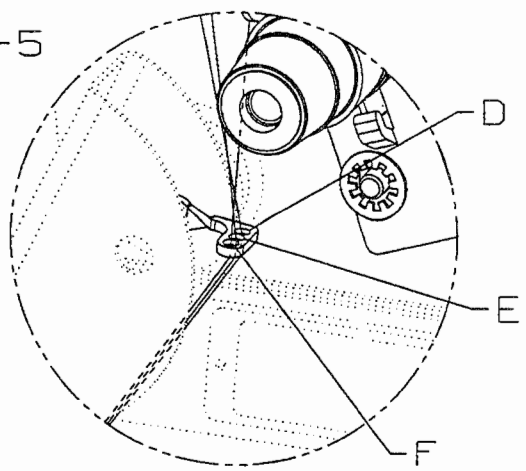
3. To drain oil reservoir, remove oil drain cap (C) on the underside of the machine.
4. To ensure oil flow through machine, check oil flow window (D).

THREADING THE MACHINE:

Turn off main power switch before threading! When using clutch motors without actuation lock wait until the motor has completely stopped.

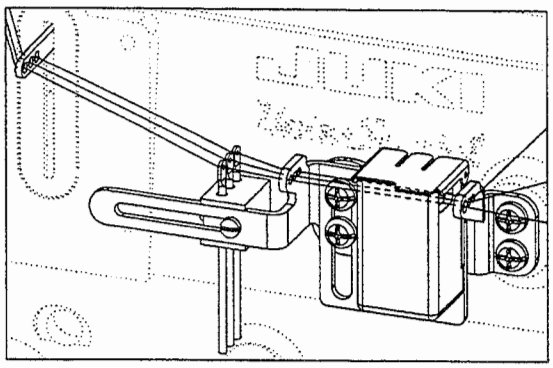
Thread the machine according to the following threading illustrations.

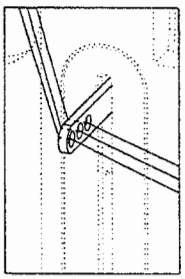


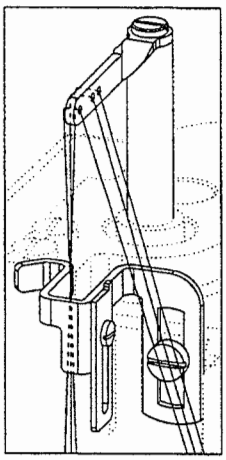


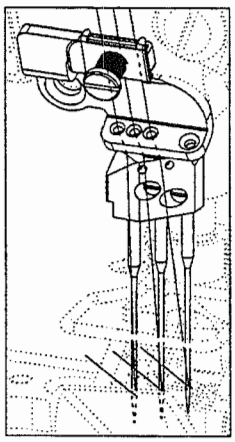
A. Left Needle Thread
B. Middle Needle Thread
C. Right Needle Thread
D. Left Looper
E. Middle Looper
F. Right Looper

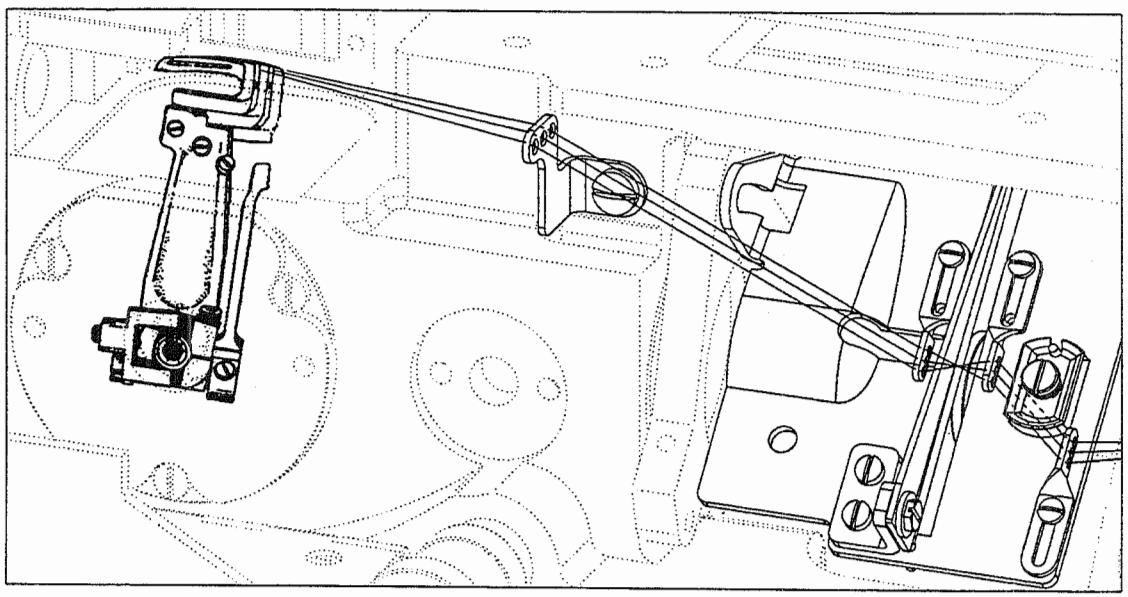
1. Thread Lubricator Area
2. Needle Thread Eyelet Area
3. Needle Bar Area
4. Thread Nipper Area
5. Thread Take–Up Area



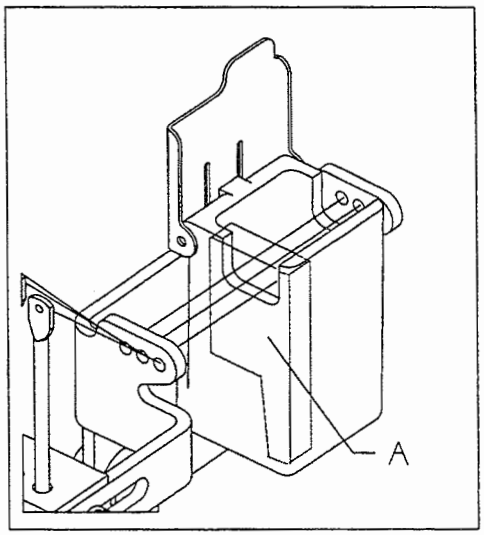








threading the machine (cont.):

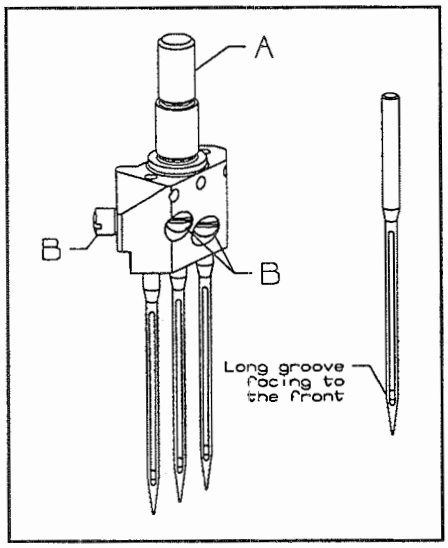


When the needle thread lubricator is used:

1. Saturate felt (A).
2. Pass thread over felt.

When the needle thread lubricator is not used:

1. Remove felt (A).



The standard needle is 128 GAS, needle range sizes "090/036 - 150/060."
Insert needle according to the following procedure:

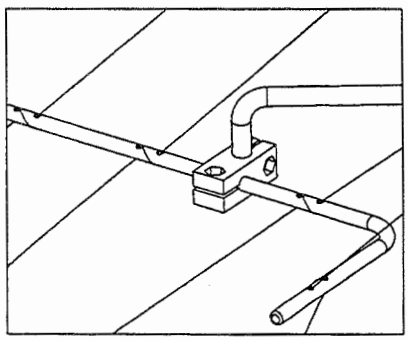
1. Bring needle head (A) to the highest position.
2. Loosen screw (B), insert needle into holes. The needle scarf should face rearwards as viewed from the operator's side.
3. Retighten screw (B).

THREADING METHODS

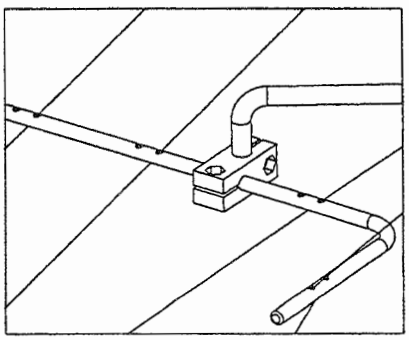
CAUTION!

When using an untwisted thread such as wooly nylon or weak thread, do not wind it around the intermediate thread guide.

Twisted Thread



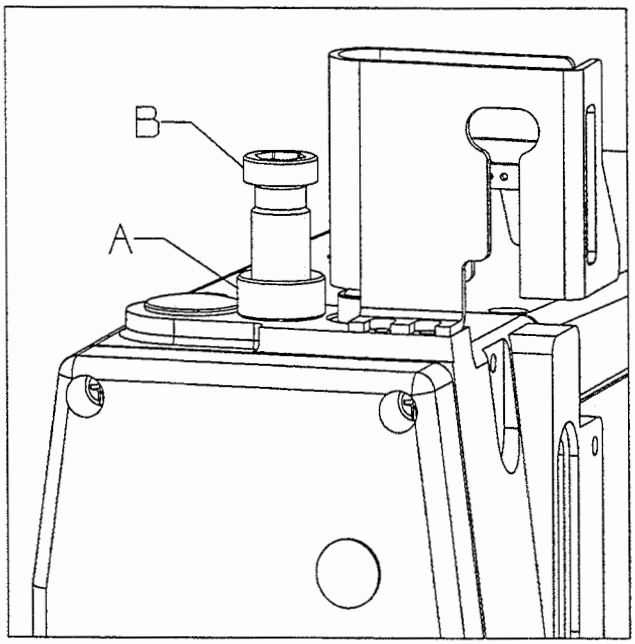
Non–Twist Thread



PRESSER FOOT PRESSURE AND LIFTER:

1. Adjust presser foot pressure by loosening nut (A) and turning presser foot adjust screw (B) clockwise to increase the pressure, counterclockwise to decrease the pressure.

2. Retighten nut (A).



ADJUSTING THE STITCH LENGTH:

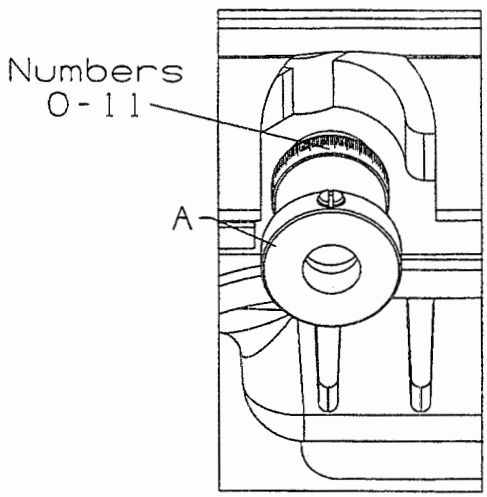
Turn off main power switch before setting the stitch length! When using clutch motors without actuation lock wait until the motor has completely stopped.

1. To change stitch length turn stitch regulating screw (A).

   Clockwise to increase the stitches per inch/shorten the length of one stitch.

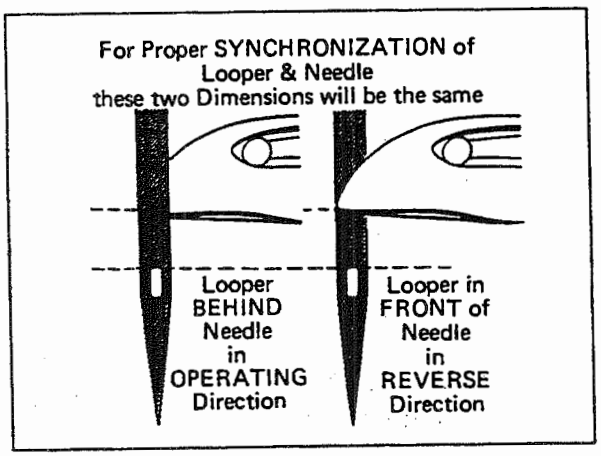
   Counterclockwise to decrease stitches per inch/increase the length of one stitch.

2. Numbers 0-11 on stitch regulating screw are for operator's reference only.



FEED, NEEDLE LOOPER TIMING:

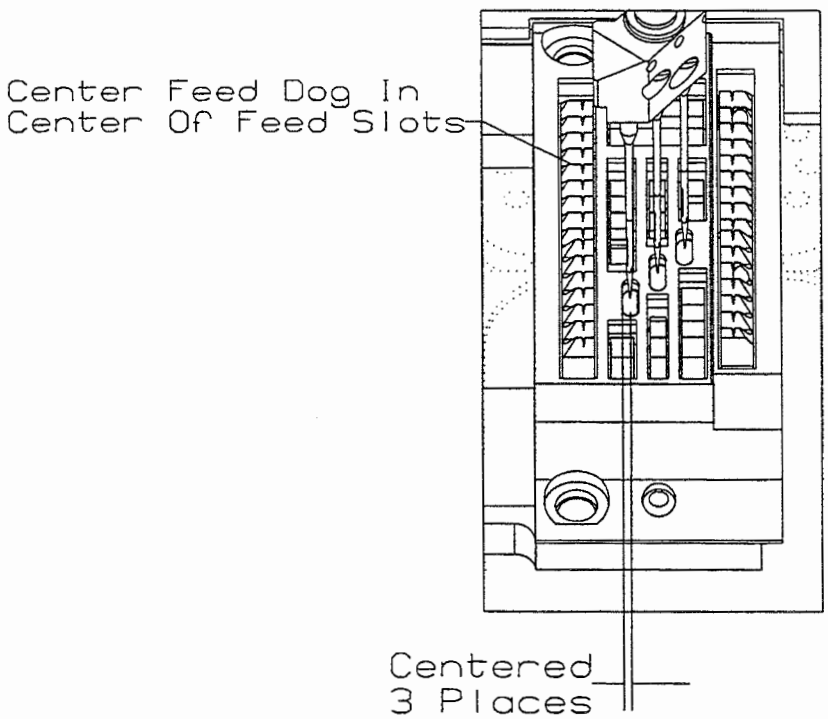
Set the first screw in operating direction of the feed drive eccentrics to be straight up, then, holding this position, set the needle bar at B.D.C.. Set the looper timing to the needles to be synchronized. Adjust the looper timing with the looper avoid drive sprocket.



NEEDLE ALIGNMENT:

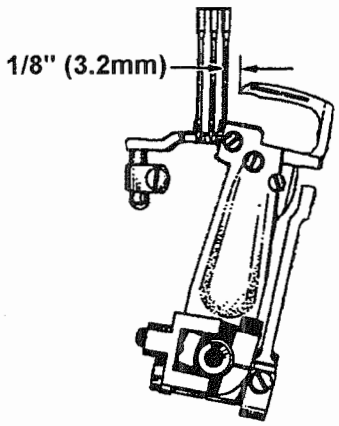
Torque needle head to 14 to 16 in-lbs (1.6 to 1.8Nm).

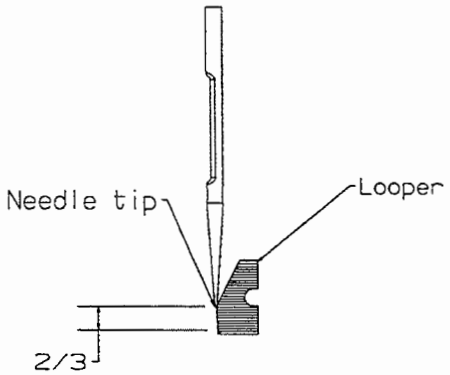
Install the feed dog, needles and throat plate. Use the adjustable ferrules to align the needles in the throat plate and align the feed dog so it is centered side to side. tighten the throat plate support and ferrules in place.

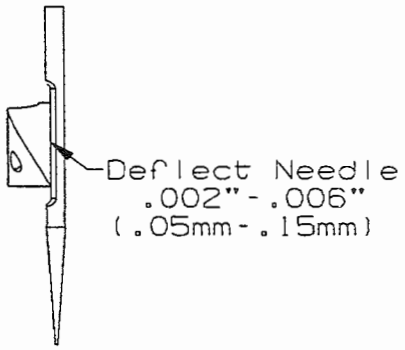


LOOPER SETTING:

Use the right needle and looper to set the looper gauge. Set the looper gauge to 1/8" (3.2mm)when loopers at extreem right. Set the loopers front to back to deflect the needles forward .002" to .006" (.05mm to .10mm). set the looper avoid so the needle touches the back of the looper 2/3 down back as needles decend.



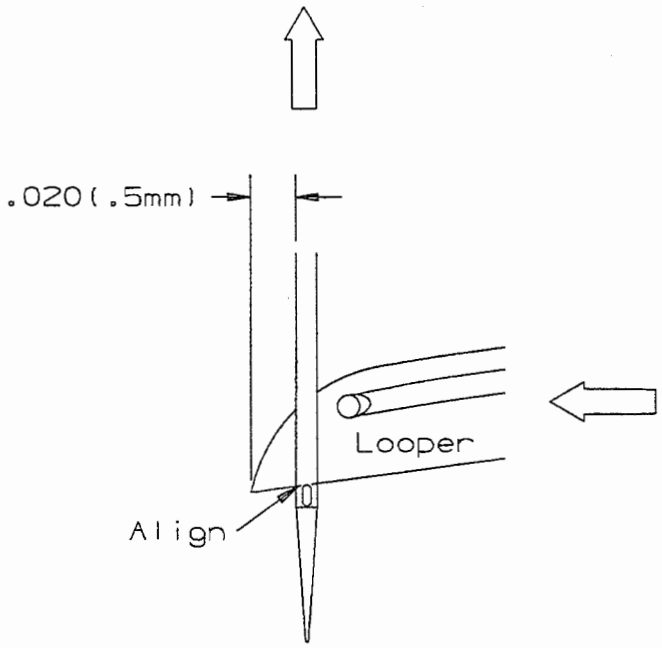




NEEDLE BAR SETTING:

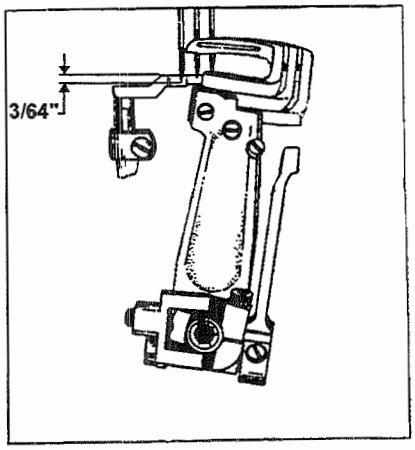
Set the needle height so when the top of the needle eye is even with the bottom of the looper (on it's travel to the left) the looper tip is .020" (.5mm) past the needle. Use the left needle. Recheck looper setting. Torque needle bar clamp screw to the following specifications:

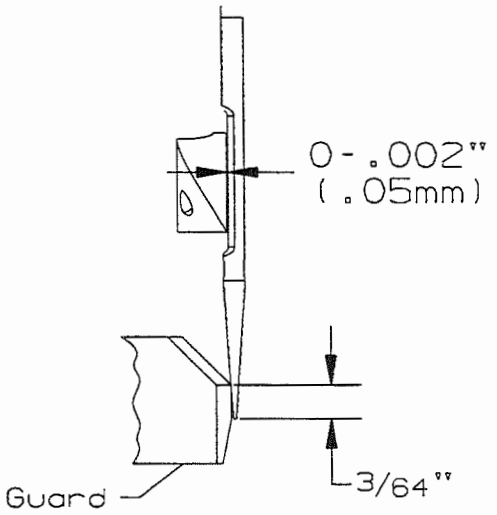
Torque needle bar@
18 to 20 in.-lbs. (2.0 to 2.3Nm)



REAR NEEDLE GUARD:

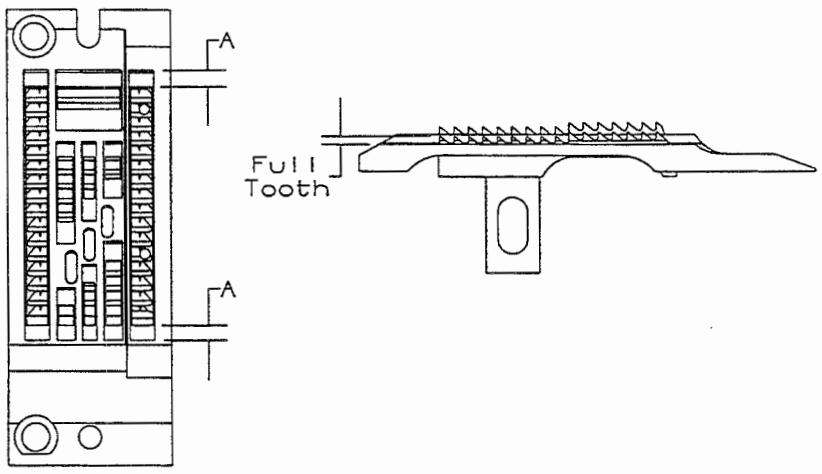
Set the timing of the rear needle guard so the guard reaches it's furthest travel forward as the loopers enter the scarfs on the travel to the left.
Bring the looper tips to the center of the needles in the scarf. The tip of the needles should be 3/64" +/-1/64" (1.2mm +/-.4mm) below the top guarding surface. The guard should just touch the needles up to .002 (.05mm) deflection. The loopers when traveling to the left should just touch the needles to .002" (.05mm) clearance when entering the scarf area.





FEED DOG CENTERING AND HEIGHT ABOVE THROAT PLATE:

Set the machine to its longest stitch length. Center feed dog, front to back, so as to obtain equal clearance on the front side and back side of feed dog in the throat plate slots. Set the feed dogs to come out of the throat plate level. Set feed dog height to be full tooth at the rear when the feed dog is at the top of its stroke.

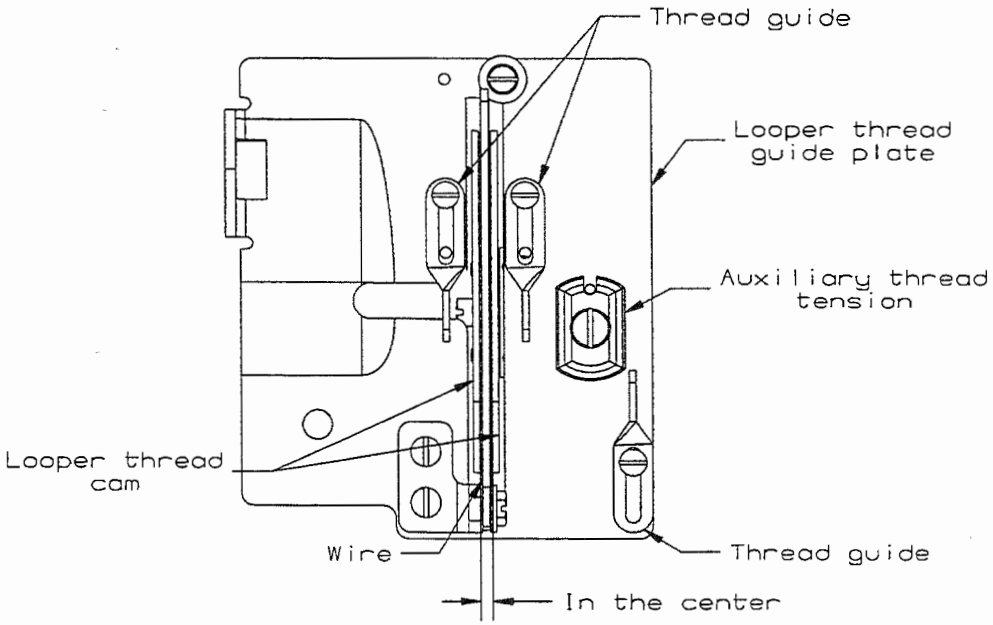


PRESSER FOOT:

Center the needles in the presser foot needle slots. The presser foot lifter lever stop should be set to when the foot is lifted it does not interfere with the needle head when the needle bar is down.

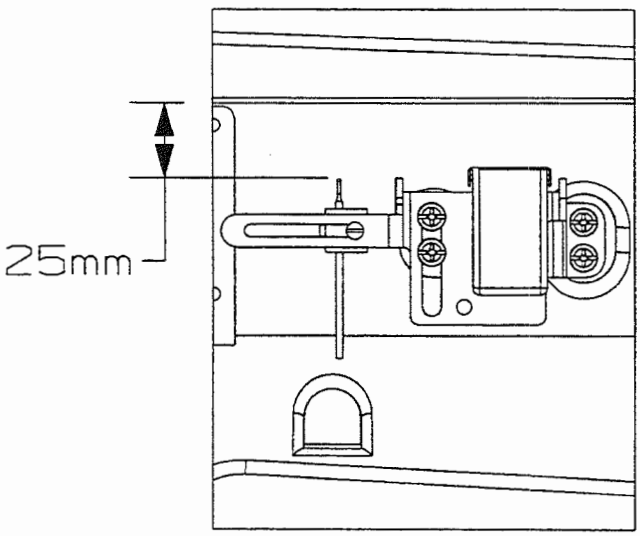
LOOPER THREAD TAKE-UP CAM SETTING:

The looper thread cam should be set so that the looper threads cast off the high lobe of the cam as the point of the needles are just even with the under side of the looper. Set the cast-off plate eyelets so that when the looper reaches its left end of travel, all of the looper thread is used and no thread is drawn from the cone. Move down for less. Set the retaining finger so that the finger is even with the bottom edge of its holder and the tip on the right side is touching the cast-off plate.



THREAD CONTROL:

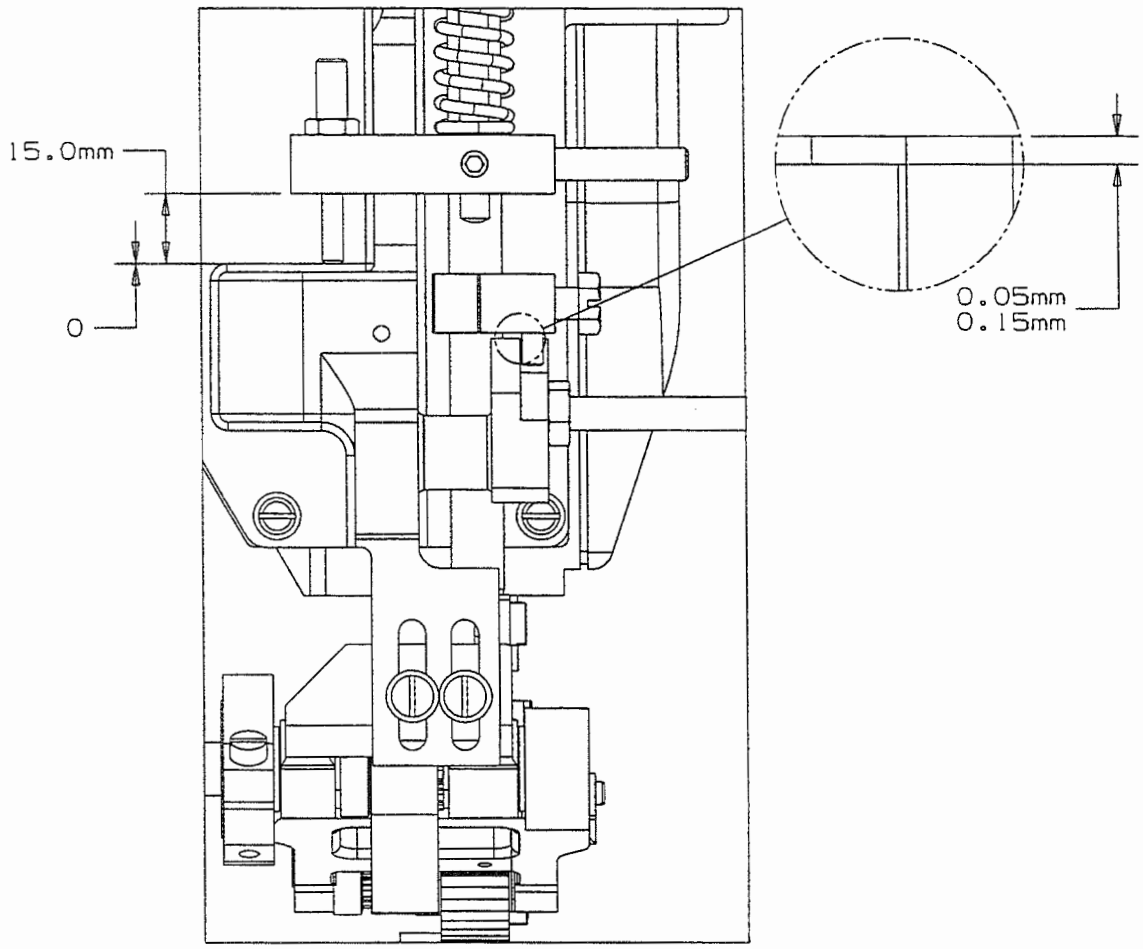
Set the individual needle thread eyelets so they are 25mm below the top casting and to the extreme right when using the mount adapter.



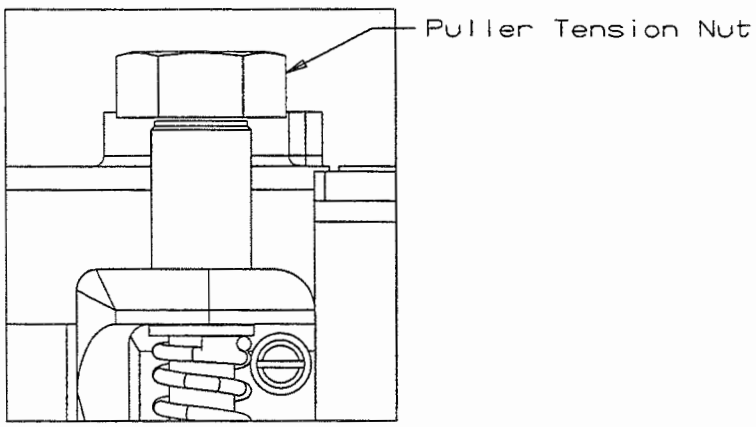
PULLER ADJUSTMENTS:

With the roller resting on the top of the throat plate, the stop collar should be set about 15mm above the ledge of the puller casting where the stop screw rests. Set the stop screw to rest on the casting and lock in place. Set the lifter lever block to have 0.05mm to 0.15mm clearance above the lifter lever in the neutral position.

Note: When changing sprockets, if the total number of teeth on both sprockets is differentthan what was on the puller, check and readjust these settings.

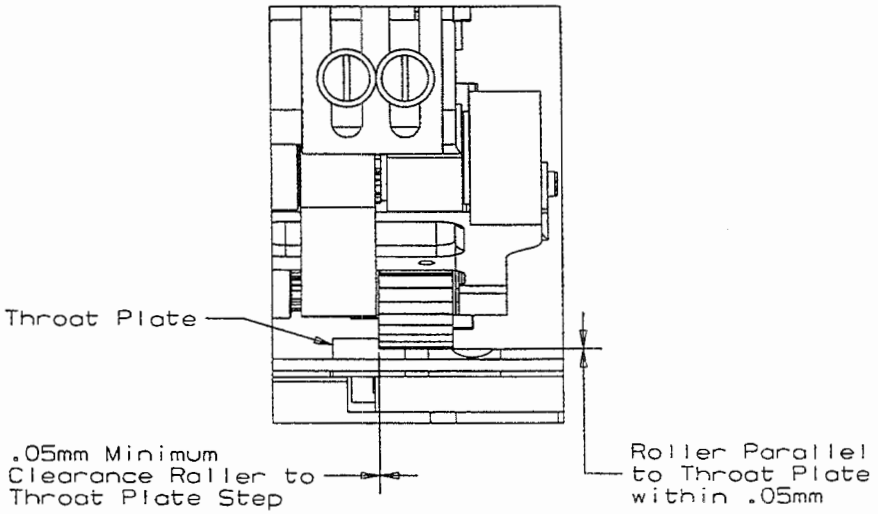


Use the puller tension nut to add or remove pressure frm the roller.

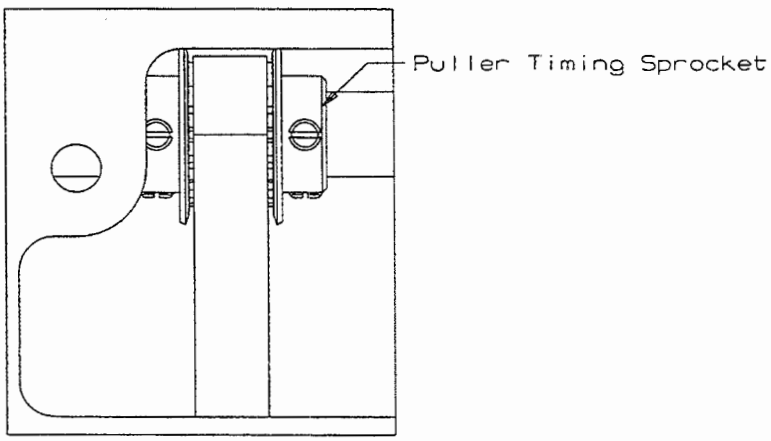


PULLER ADJUSTMENTS CONT.:

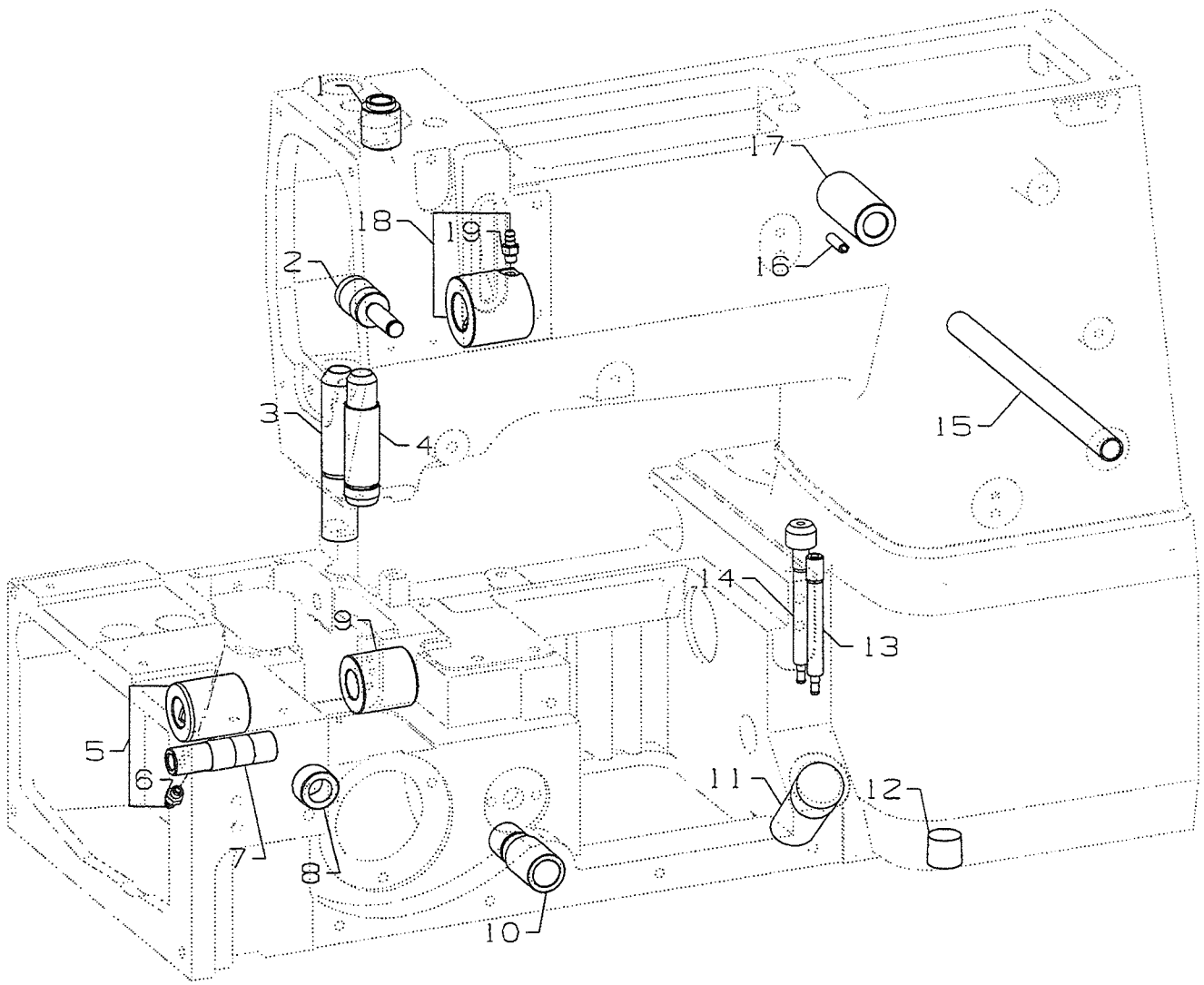
When assembeling the puller to the machine, make sure that a minimum of .05 clearence is maintained between the roller and the throat plate step. Also the roller must sit flat on the throat plate.



Time the puller so the roller feeds at the same time the feed dog is feeding. When setting, both should be feeding at the same S.P.I.. Adjust the timing by using the sprocket on the upper main shaft in the arm.



PULLER SPROCKET COMBINATIONS		
PULLER DRIVE SPROCKET	PULLER SPROCKET	S.P.I. ±1/2 STITCH
14	15	8
14	14	7 1/2
15	14	7
15	13	6 1/2
13	15	8 1/2
13	16	9
16	13	6
12	16	9 1/2
11	16	10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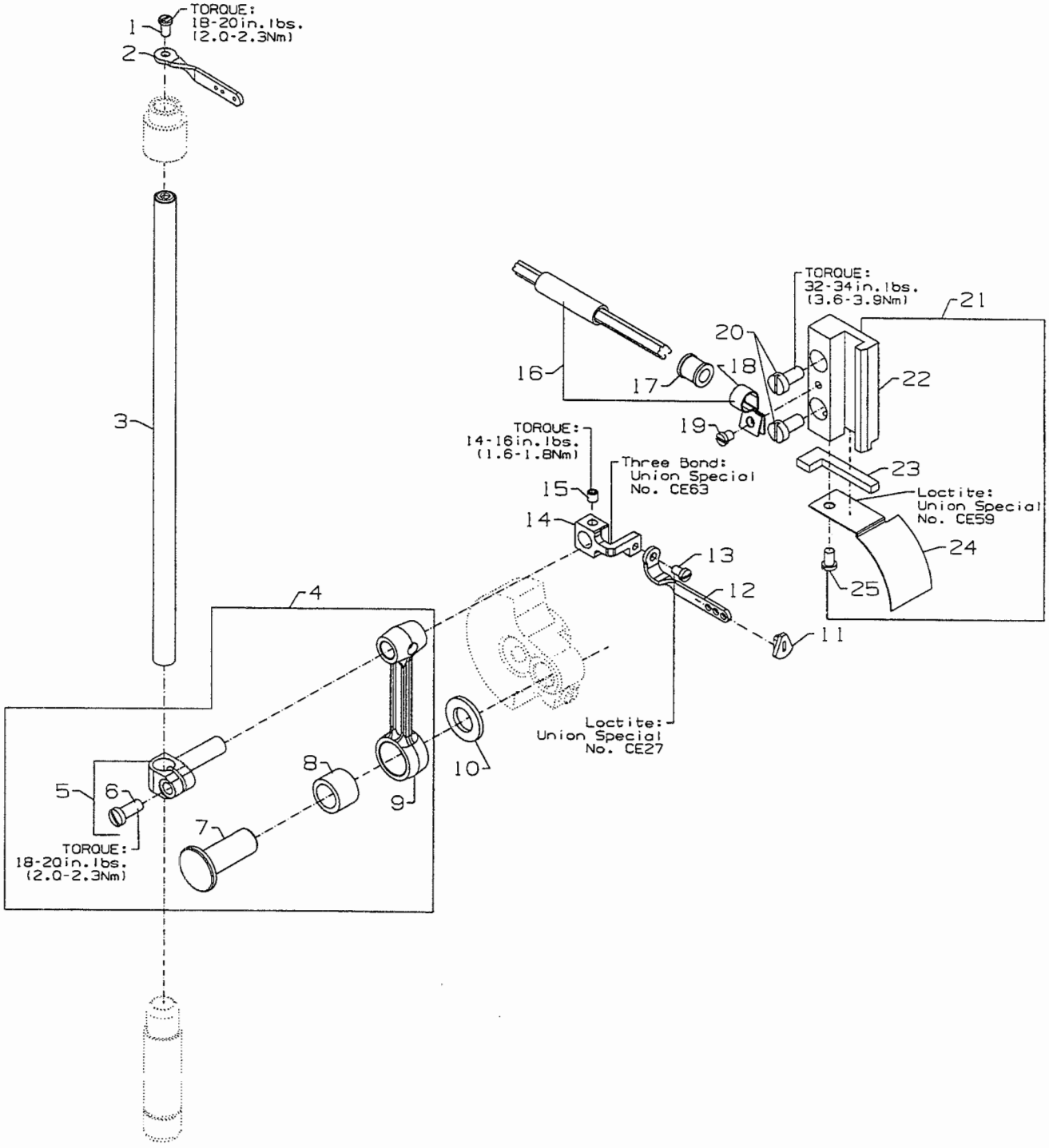
BUSHINGS

Ref. No.	Part No.	Description	Amt. Req.
1.	50654	Bushing, for needle bar, upper	1
2.	50332U	Pin, for front lifter lever	1
3.	50330CZ	Bushing, for presser bar	1
4.	50654A	Bushing, for needle bar, lower	1
5.	50344BE	Bushing, for lower mainshaft, left	1
6.	SQ1110401MZ	Fitting	1
7.	50344BC	Bushing, for needle lever	1
8.	50344E	Bushing	1
9.	50344BF	Bushing, for lower mainshaft, right	1
10.	35036BS	Stitch Regulator Bushing	1
11.	50393GE	Oil Sight Gauge	1
12.	22571L	Screw, for drain plug	1
13.	50393FU	Fitting, oil tube	1
14.	50393EY	Fitting, filter	1
15.	50392AB	Bushing, for tension release	1
16.	PS0400142KH	Pin	1
17.	50381E	Bushing, for lifter lever, back	1
18.	50344BU	Bushing, front	1
19.	SQ1110401MZ	Fitting	1


TORQUE:
18-20in.lbs.
(2.0-2.3Nm)
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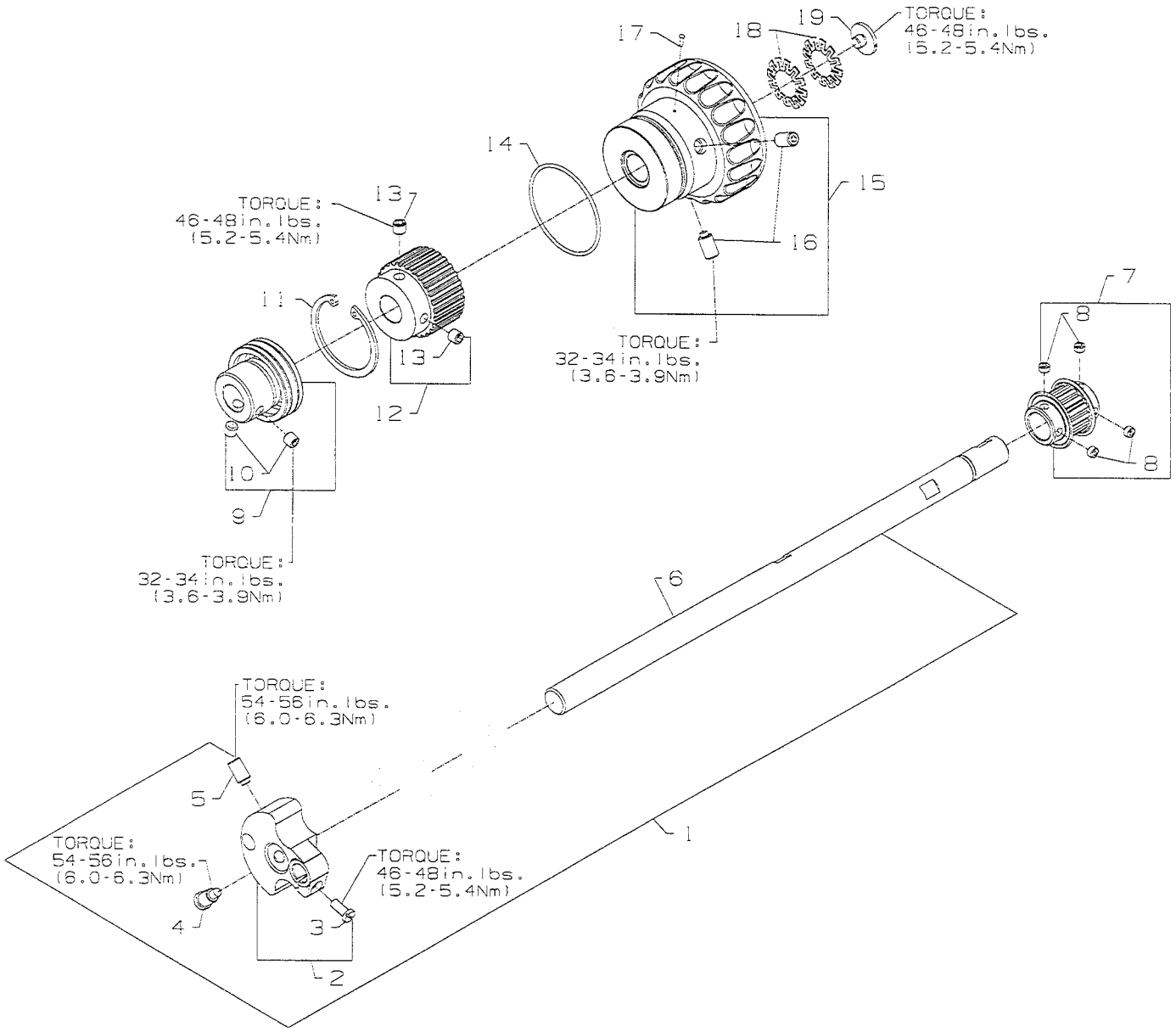
TORQUE:
32-34in.lbs.
(3.6-3.9Nm)
TORQUE:
14-16in.lbs.
(1.6-1.8Nm)
Three Bond:
Union Special
No. CE63
Loctite:
Union Special
No. CE59
Loctite:
Union Special
No. CE27
TORQUE:
18-20in.lbs.
(2.0-2.3Nm)

NEEDLE BAR

Ref. No.	Part No.	Description	Amt. Req.
1.	SS4080620TP	Screw	1
2.	50323P	Needle Bar Eyelet	1
3.	50317B	Needle Bar	1
4.	50345W	Connecting Rod Assembly	1
5.	50355AM	Needle Bar Clamp	1
6.	SS7111120TP	Screw	1
7.	50352	Pivot Pin	1
8.	661-259B	Needle Bearing Cage	1
9.	50355AN	Connecting Rod	1
10.	50351A	Washer	1
11.	50393JP	Eyelet Seal	1
12.	50358X	Needle Thread Eyelet	1
13.	SS7080520SP	Screw	1
-	CE27	Loctite Adhesive, (not shown), for screw	-
14.	50354F	Slide Block	1
-	CE63	Three Bond Adhesive, (not shown), for slide block	-
15.	SS8110422TP	Screw	1
16.	29476TC	Oil Tube Assembly	1
17.	50393JZ	Oil Tube	1
18.	50393JW	Hose Clamp	1
19.	SS6090440SP	Screw, for oil tube assembly	1
20.	SS6121010SP	Screw	2
21.	29476VN	Slide Block Guide and Cover Assembly	1
22.	50338	Guide, for slide block	1
23.	666-328	Felt, for slide block	1
-	CE59	Loctite Adhesive, (not shown), for felt	-
24.	50338A	Cover, for guide	1
25.	SS6090620SP	Screw	1


TORQUE:
46-48in.lbs.
(5.2-5.4Nm)
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TORQUE:
32-34in.lbs.
(3.6-3.9Nm)
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TORQUE:
46-48in.lbs.
(5.2-5.4Nm)
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TORQUE:
32-34in.lbs.
(3.6-3.9Nm)
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TORQUE:
54-56in.lbs.
(6.0-6.3Nm)
5
1
TORQUE:
54-56in.lbs.
(6.0-6.3Nm)
TORQUE:
46-48in.lbs.
(5.2-5.4Nm)
4
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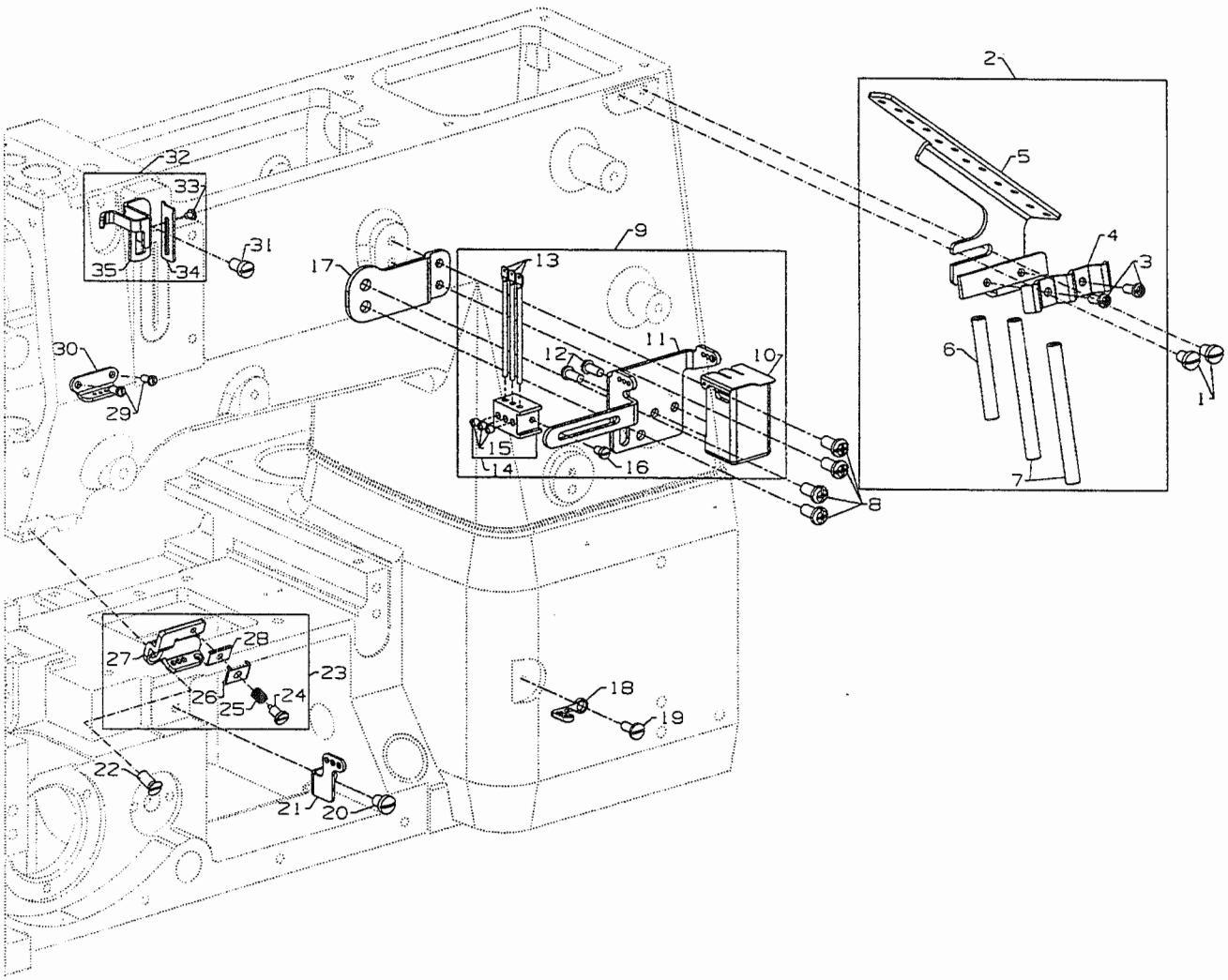
UPPER MAIN SHAFT

Ref. No.	Part No.	Description	Amt. Req.
1.	50322BC	Upper Main Shaft Assembly	1
2.	50691	Counter Weight	1
3.	SS7111120TP	Screw, for counter weight	1
4.	SS7681410TP	Screw, for counter weight	1
5.	SS8681412TP	Screw, for counter weight	1
6.	50322AF	Upper Main Shaft	1
7.	50642A	Sprocket, Main Drive	1
8.	22894T	Screw	4
9.	50335BD	Bearing Adapter Assembly	1
10.	SS8660612TP	Screw, for bearing adapter	2
11.	661-262	Retaining Ring	1
12.	50342BE	Sprocket, for upper main shaft	1
13.	SS8661012TP	Set Screw, for sprocket	2
14.	660-1087	"O" Ring	1
15.	50321F	Handwheel	1
16.	SS8681412TP	Set Screw, for handwheel	2
17.	660-1043	Tack Pin, for handwheel	1
18.	661-261	Load Ring, for lower main shaft	2
19.	SS7660520SP	Screw, for handwheel preload	1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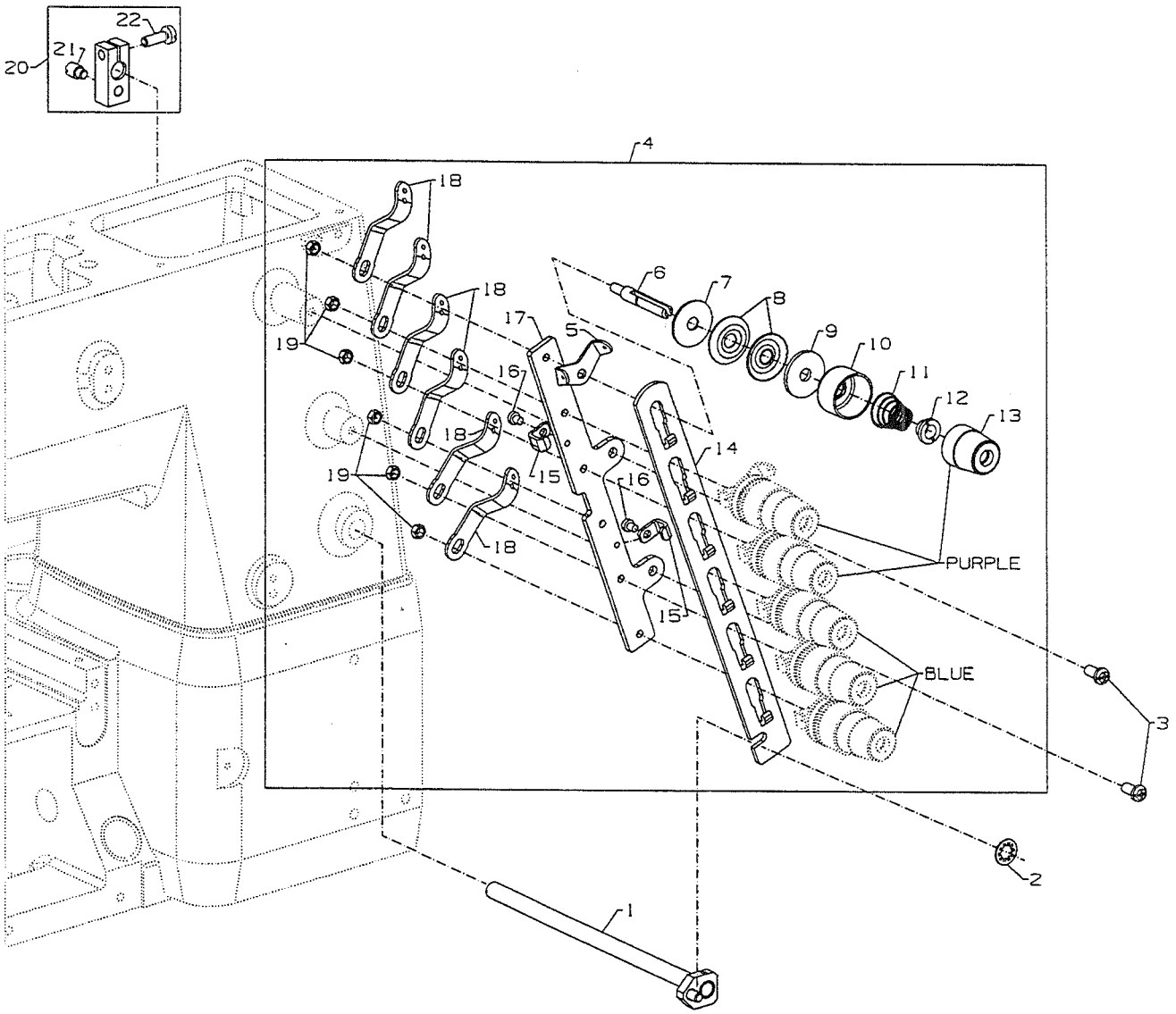
THREAD GUIDE

Ref. No.	Part No.	Description	Amt. Req.
1.	SS7120640SP	Screw, for lead-in eylet	2
2.	50666A	Thread Eyelet Assembly	1
3.	SS4090815SP	Screw	2
4.	50666	Tube Bracket	2
5.	50692E	Lead-In Tension Eyelet	1
6.	50666C	Thread Tube	1
7.	50366	Thread Eyelet Tube	2
8.	SS4120915SP	Screw, for spreader thread guide	2
9.	50663A	Thread Ratio Control Assembly	1
10.	50393HH	Silicone Thread Lubricator	1
11.	50392V	Needle Thread Guide	1
12.	SS4090815SP	Screw, for silicone tank	2
13.	36271A	Adjusting Needle Thread Eyelet	3
14.	50358W	Holder, For Needle Thread Eyelet	1
15.	SS8080410TP	Screw	3
16.	SS7080510TP	Screw	1
17.	50683	Mounting Bracket	1
18.	50658B	Looper Frame Eyelet	1
19.	SS7090610SP	Screw	1
20.	SS7120640SP	Screw	1
21.	50658A	Looper Frame Eyelet	1
22.	SS1121010SP	Screw, for thread guide	1
23.	50357AE	Nipper Plate Assembly	1
24.	SD0380551SL	Screw	1
25.	50357AS	Nipper Spring	1
26.	50357Y	Nipper Spring Plate	1
27.	50392BA	Thread Guide	1
28.	50357V	Nipper Plate	1
29.	605A	Screw, for needle thread guide	2
30.	C50044E	Needle Thread Guide	1
31.	SS7120710SP	Screw, for strike-off	1
32.	50366B	Needle Thread Strike-Off Assembly	1
33.	SS7060310SP	Screw	1
34.	50370F	Thread Strike-off Component	1
35.	50358V	Needle Thread Strike-off	1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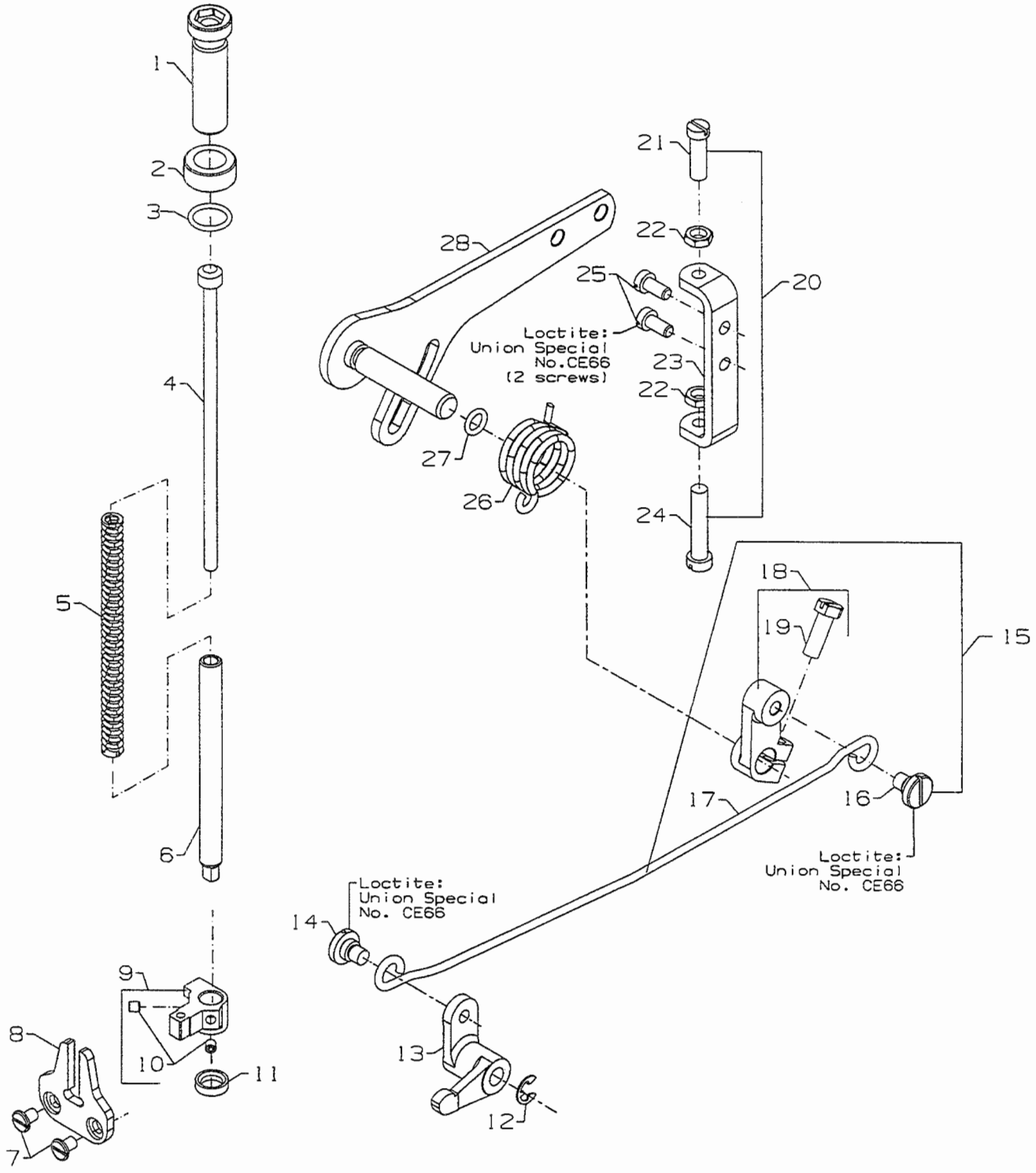
TENSION RELEASE & THREAD TENSION

Ref. No.	Part No.	Description	Amt. Req.
1.	50392Z	Tension Needle Lever Assembly	1
2.	660-283A	Retainer Washer	1
3.	SS4120915SP	Screw, for tension assembly	2
4.	50692D	Six Thread Tension Assembly	1
5.	57892K	Thread Tension Eyelet	6
6.	56392G	Tension Post	6
7.	B3120352000	Tension Disc Felt	6
8.	B3126012000	Tension Disc	12
9.	B3120704000	Tension Disc Felt	6
10.	56392H	Spring Shield	6
11.	11550100	Spring, needle (Purple)	3
-	B3103800400	Spring, looper (Blue)	3
12.	B3112704000	Ferrule, tension spring	6
13.	50692J	Knob, needle (Purple)	3
-	56392M	Knob, looper (Blue)	3
14.	50692	Tension Disc Separator	1
15.	50392AV	Guide, for tension disc separator	2
16.	SS7090520SP	Screw, for guide	2
17.	50692A	Tension Bracket	1
18.	57865	Lead-In Thread Guide	6
19.	NS6110420SP	Nut	6
20.	50392BC	Tension Release Lever Shaft Connection	1
21.	22875N	Stop Screw	1
22.	SS7121410TP	Binder Screw	1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Loctite:
Union Special
No.CE66
(2 screws)
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Union Special
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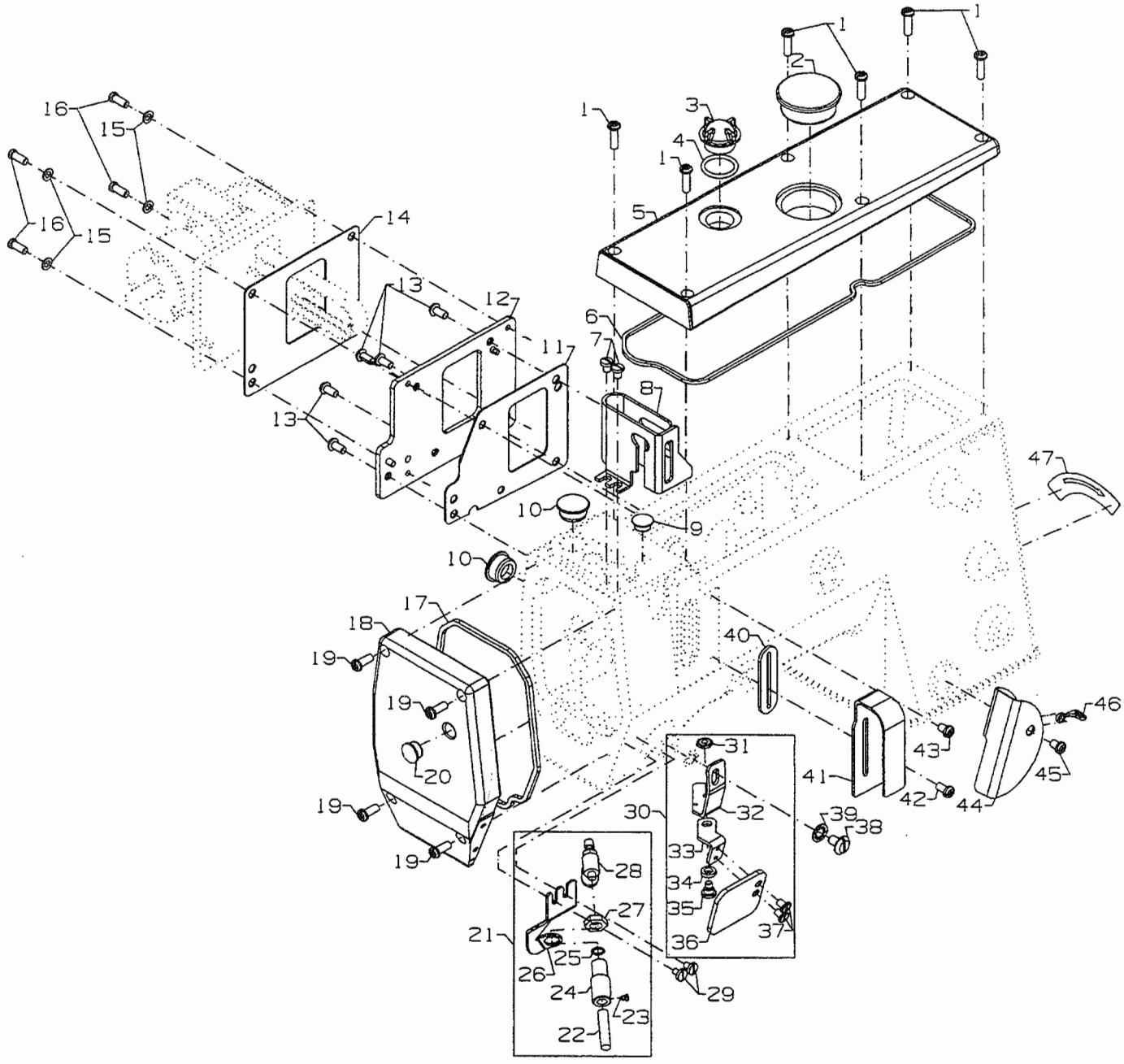
Loctite:
Union Special
No. CE66

PRESSER FOOT LIFT

Ref. No.	Part No.	Description	Amt. Req.
1.	11071602	Adjusting Screw, for spring	1
2.	11071701	Locking Nut	1
3.	660-1014	"O" Ring	1
4.	C50056B	Spring Rod	1
5.	50632A	Spring, for presser bar	1
6.	50643C	Presser Bar	1
7.	SS6110610TP	Screw, for guide plate	2
8.	50335AG	Guide Plate, for presser bar	1
9.	50335AH	Presser Bar Guide	1
10.	SS8110422TP	Set Screw	2
11.	660-739	Oil Seal	1
12.	RE0500000K0	E Ring, for pin	1
13.	50381F	Lever, for lifter, front	1
14.	SD0790303SP	Screw, for wire connector	1
-	CE49	Loctite Adhesive, (not shown), for screw	-
15.	29476YD	Rear Lifter Lever Assembly	1
16.	SD0790303SP	Screw, for lifter lever assembly	1
17.	50355AR	Wire Connector	1
18.	50381G	Lifter Lever, rear	1
19.	SS9151740CP	Hex Screw	1
20.	29476TT	Stop Assembly	1
21.	SS6151920SP	Screw, for adjusting stopper	1
22.	NS6150310SP	Hex Nut	2
23.	50332V	Stopper, for lifter lever	1
24.	SS6153040SP	Screw, for adjusting stopper	1
25.	SS4121215SP	Screw, for stopper	2
-	CE49	Loctite Adhesive, (not shown), for screw	-
26.	50381	Spring, for lifter lever	1
27.	RO068190100	"O" Ring	1
28.	50381B	Lifter Lever Assembly	1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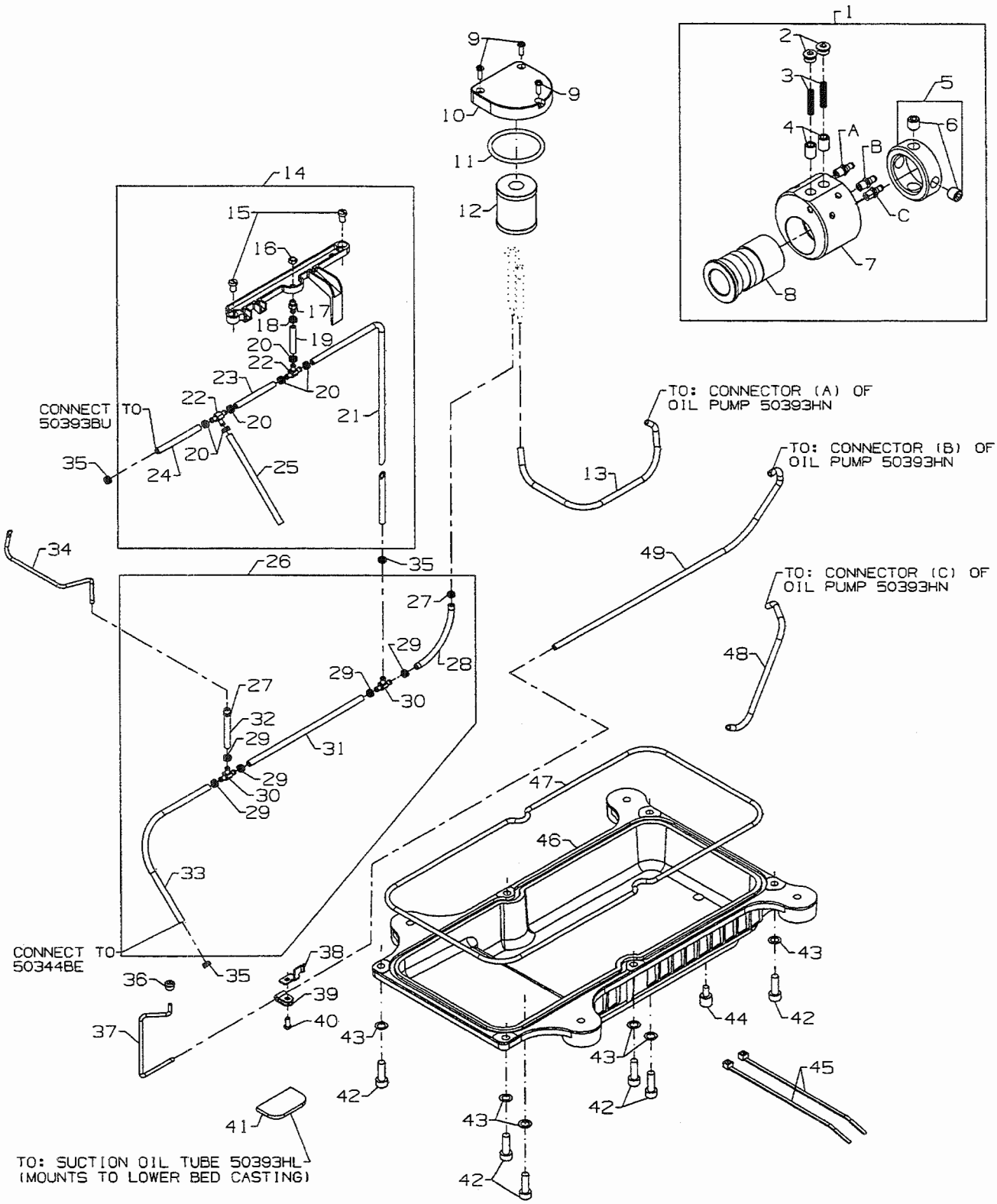
COVERS, UPPER ARM

Ref. No.	Part No.	Description	Amt. Req.
1.	SS4121615SP	Screw, for top cover	6
2.	50393EU	Plug, for top cover	1
3.	B3530555000	Oil Sight Gauge, top	1
4.	660-212	"O" Ring, for oil sight gauge	1
5.	50382FW	Top Cover	1
6.	50382FZ	Quad Ring, for top cover	1
7.	SS7120640SP	Screw, for needle bar guard	2
8.	50317C	Needle Bar Guard	1
9.	TA1050504RO	Plug, for bed	1
10.	50393HB	Plug, for bed	2
11.	50684C	Gasket, for puller drive Adapter	1
12.	50662A	Puller Drive Adapter	1
13.	SS6121050SP	Screw, for puller drive adapter	5
14.	50684B	Gasket, for Puller Drive Housing	1
15.	WP0480856SP	Washer	4
16.	22569B	Screw	4
17.	50382FY	Quad Ring, for head cover	1
18.	50382FX	Head Cover	1
19.	SS4121215SP	Screw, for head cover	4
20.	TA1100604RO	Plug, for head cover	1
*21.	21237EV	Needle Cooler Assembly	1
*22.	21237DR	Cooler Tube	1
*23.	22784N	Screw	1
*24.	21237ET	Cooler Housing	1
*25.	660-886	O-Ring	1
*26.	21237EU	Bracket	1
*27.	51170D	Nut	1
*28.	671-102A	Flow Control	1
*29.	SS7090610SP	Screw	2
30.	99682XCA	Protection Shield Assembly	1
31.	NS6620320SP	Nut	1
32.	99682XC1	Bracket Holder	1
33.	99682XC2	Bracket	1
34.	WZ0641510KP	Spring Washer	1
35.	SD0640323TP	Shoulder Screw	1
36.	99682XC	Protection Shield	1
37.	SS1110640SL	Counter Sunk Head Screw	2
38.	22517B	Screw	1
39.	652C16	Washer	1
40.	50393EW	Rubber Gasket, for needle lever	1
41.	50382GA	Cover, for thread take-up	1
42.	SS4120915SP	Screw, for thread take-up cover	1
43.	SS4120615SP	Screw, for thread cover	1
44.	50382GM	Thread Cover	1
45.	SS4120615SP	Screw, for thread take-up cover	1
46.	50658B	Eyelet	1
47.	LA452	Label, direction of rotation	1

* PA1 KIT ONLY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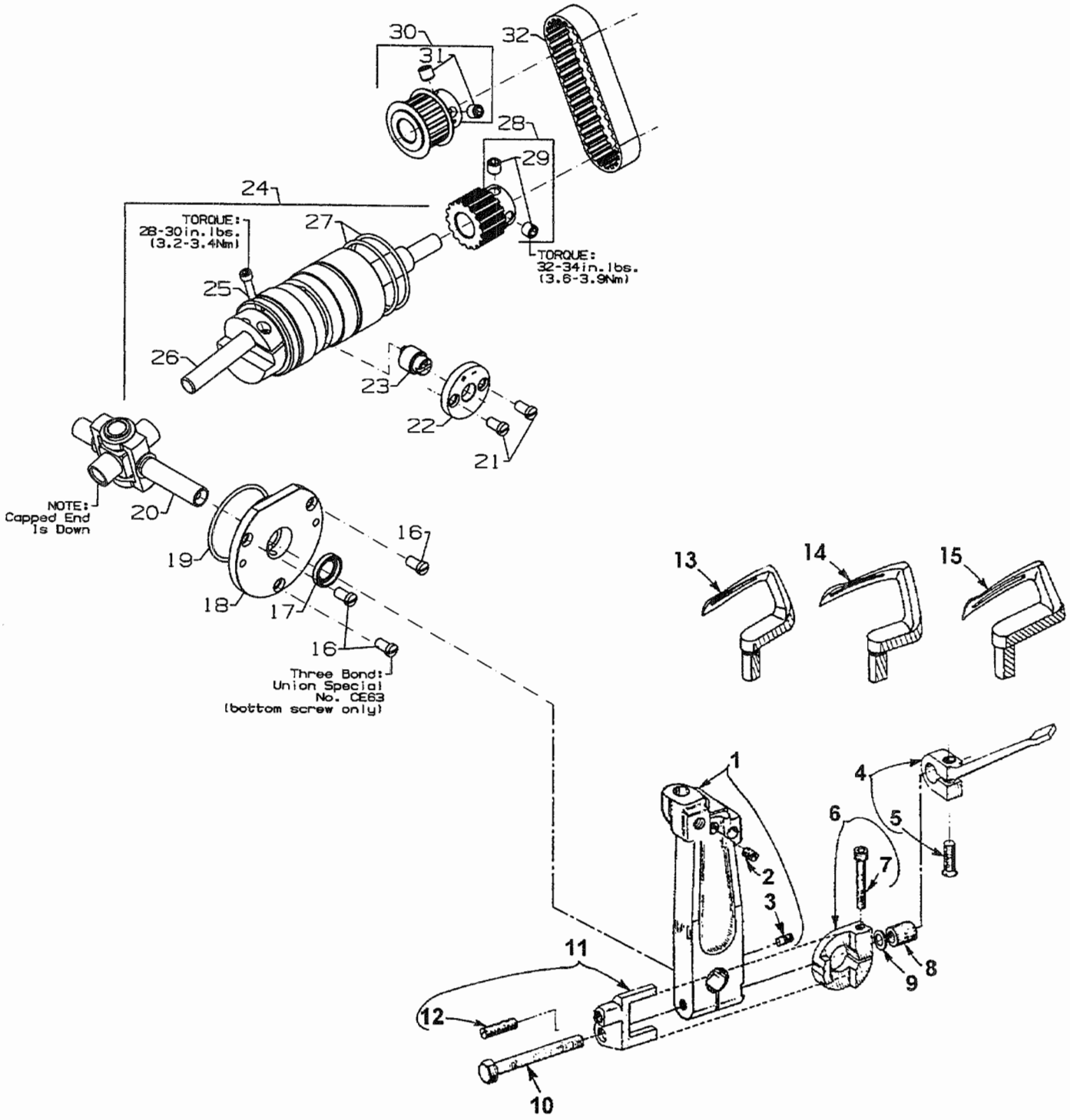
CONNECT TO 50393BU
CONNECT TO 50344BE
TO: CONNECTOR (A) OF OIL PUMP 50393HN
TO: CONNECTOR (B) OF OIL PUMP 50393HN
TO: CONNECTOR (C) OF OIL PUMP 50393HN
TO: SUCTION OIL TUBE 50393HL (MOUNTS TO LOWER BED CASTING)

Ref. No.	Part No.	Description	Amt. Req.
1.	50393HN	Oil Pump Assembly, 2-stage	1
2.	SS8660612TP	Screw	2
3.	50332S	Spring, for plunger	2
4.	34393D	Plunger	2
5.	50393EX	Collar, for oil pump	1
6.	SS8660612TP	Screw	2
7.	50393GB	Oil Pump Housing, 2 Stage	1
8.	50393GD	Oil Pump Housing, 2 Stage	1
9.	SS4091015SP	Screw, for oil filter cover	3
10.	50393FR	Cover, for oil filter	1
11.	50384	"O" Ring, for oil filter cover	1
12.	11843208	Oil Filter	1
13.	50393FV	Oil Tube, for supply (1)	1
14.	29476XV	Oil Supply Assembly, upper	1
15.	SS7120710SP	Screw, for front upper tube	2
16.	NS6110310SP	Nut	1
17.	SQ1110402MZ	Fitting	1
18.	50393KH	Tube Retaining, spring	1
19.	50393-27	Oil Tube	1
20.	50393KM	Tube Retaining, spring	7
21.	50393-407	Oil Tube	1
22.	13765607	"T" Connector	2
23.	50393-47	Oil Tube	1
24.	50393-51	Oil Tube	1
25.	50393-89	Oil Tube	1
26.	29476UT	Oil Supply Assembly, lower	1
27.	50393KH	Tube Retaining, spring	2
28.	50393-70	Oil Tube	1
29.	50393KM	Tube Retaining, spring	5
30.	13765607	"T" Connector	2
31.	50393-140	Oil Tube	1
32.	50393-40	Oil Tube	1
33.	50393-170	Oil Tube	1
34.	50393KF	Oil Tube	1
35.	50393KM	Tube Retaining, spring	3
36.	50393HR	Plug, for feed chamber	1
37.	50393HL	Oil Tube, for suction	1
38.	50393FS	Oil Tube Holder	1
39.	998-358F	Plastic Clip	1
40.	SS4090815SP	Screw, for oil tube holder	1
41.	50393HK	Felt	1
42.	SS6151812TP	Screw, for oil pan	6
43.	WS0631510KP	Spring Washer	6
44.	22571E	Screw, for oil drain plug	1
45.	RM2871B	Cable Tie	2
46.	50393EB	Oil Pan	1
47.	50384A	"O" Ring	1
48.	50393FT	Oil Tube, for suction	1
49.	50393HJ	Oil Tube, for suction	1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TORQUE:
28-30in.lbs.
(3.2-3.4Nm)
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TORQUE:
32-34in.lbs.
(3.6-3.9Nm)
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NOTE:
Capped End
Is Down
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Three Bond:
Union Special
No. CE63
(bottom screw only)
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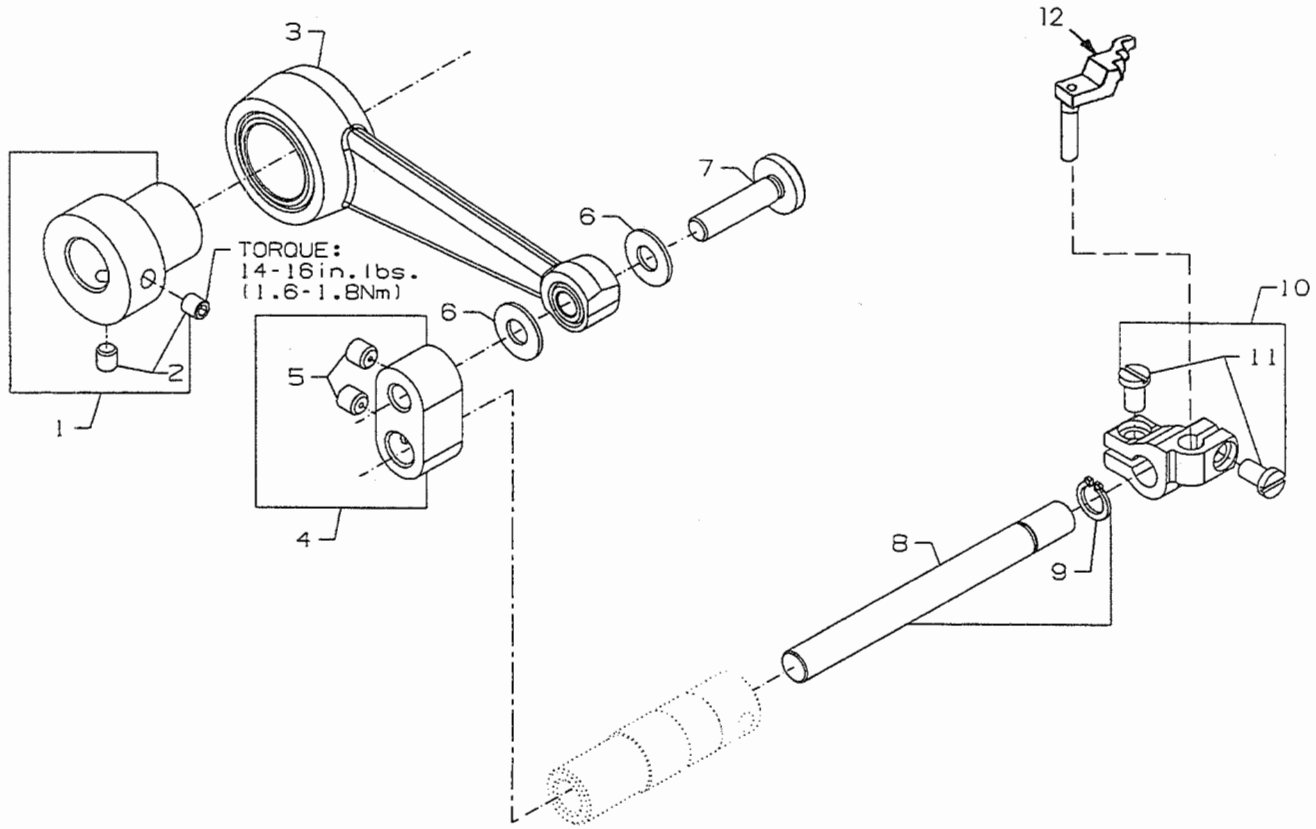
LOOPER DRIVE

Ref. No.	Part No.	Description	Amt. Req.
1.	50313C	Looper Holder	1
2.	22652B10	Screw, for looper holder	1
3.	22565	Screw, for looper holder	2/3
4.	C50041D	Looper Throwout Lever	1
5.	538A	Screw	1
6.	C50041H	Collar, Stop	1
7.	22652J10	Screw	1
8.	C50041E	Lock, Looper Holder	1
9.	53634C	Washer	1
10.	22881C	Screw	1
11.	C50041G	Stop	1
12.	C50041F	Spring, Plunger	1
13.	51909C	Looper, Middle (all gauges)	1
14.	51909D8	Looper, Rear (32 gauge)	1
-	51909D9	Looper, Rear (36 gauge)	1
15.	51908B8	Looper, Front (32 gauge)	1
-	51908B9	Looper, Front (36 gauge)	1
16.	SS7120910SP	Screw, for bearing housing	3
-	CE63	Three Bond Adhesive, (not shown), for screw	-
17.	660-893	Oil Seal, looper	1
18.	50344AM	Bearing Housing Assembly, for looper drive	1
19.	660-455	"O" Ring, for bearing housing assembly	1
20.	50313J	Looper Rocker Assembly	1
21.	SS7120910SP	Screw, for retaining plate	2
22.	50314F	Eccentric Retaining Plate	1
23.	50314E	Looper Avoid Adjusting Eccentric	1
24.	50642	Looper Drive Assembly	1
25.	22653J8	Screw	1
26.	667J33	Crank Pin	1
27.	660-979	"O" Ring	2
28.	50342BJ	Sprocket, for looper driven	1
29.	SS8660612TP	Screw	2
30.	50342BK	Sprocket, for looper drive	1
31.	SS8660612TP	Screw	2
32.	50342BP	Looper Drive Belt	1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TORQUE:
14-16in.lbs.
(1.6-1.8Nm)
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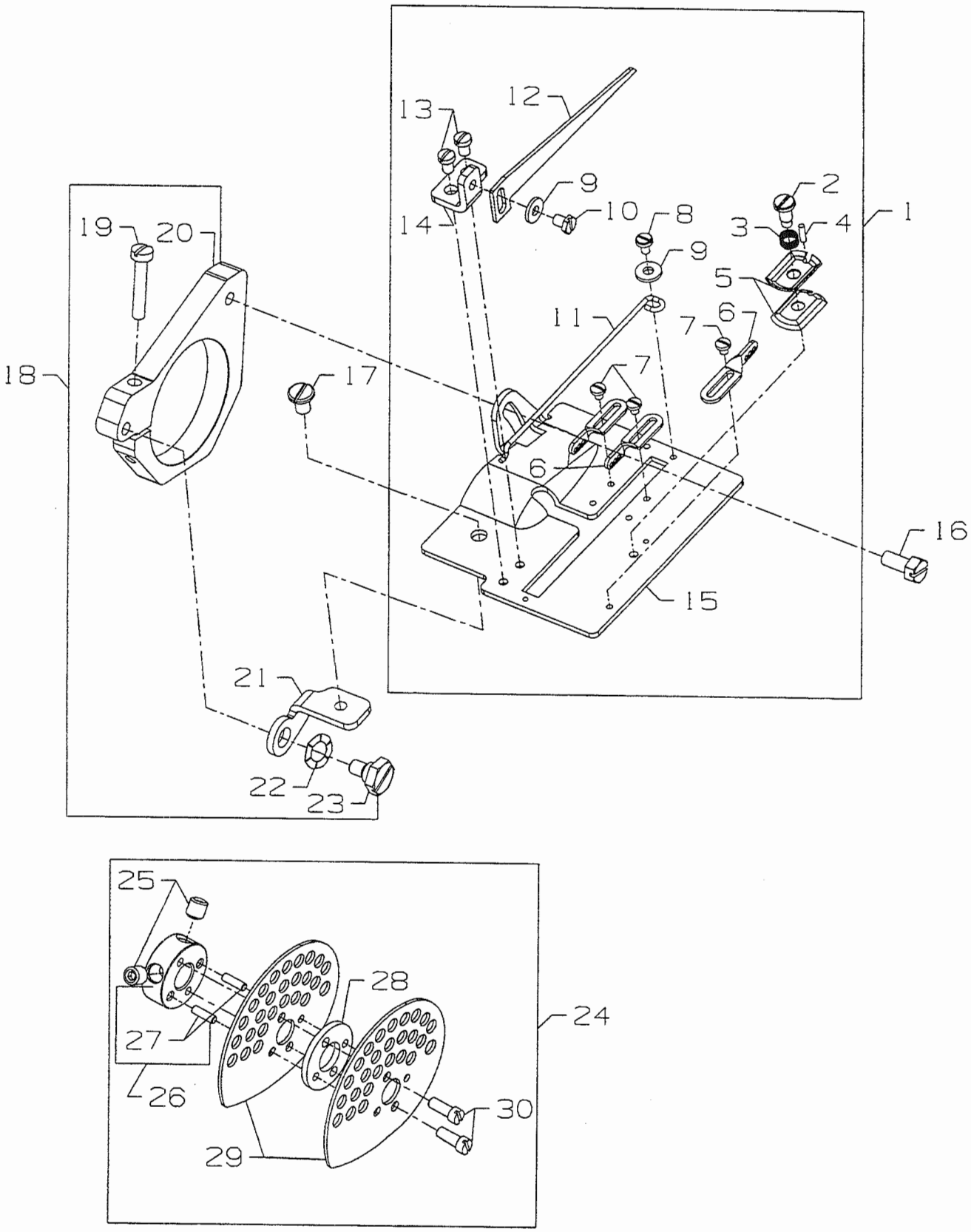
NEEDLE GUARD

Ref. No.	Part No.	Description	Amt. Req.
1.	50373DA	Needle Guard Eccentric	1
2.	SS8110422TP	Screw, for needle guard eccentric	1
3.	50368W	Connecting Rod Assembly, for needle guard	2
4.	50668	Pivot Link	1
5.	SS8110422TP	Screw	1
6.	50368E	Washer	2
7.	50368A	Pivot Pin	2
8.	50622C	Shaft, for needle guard	1
9.	RC0560711KP	Retaining Ring	1
10.	50625	Holder, for needle guard	1
11.	SS6090620SP	Screw	2
12.	C50025E	Needle Guard, Rear (32 Gauge/36 Gauge)	1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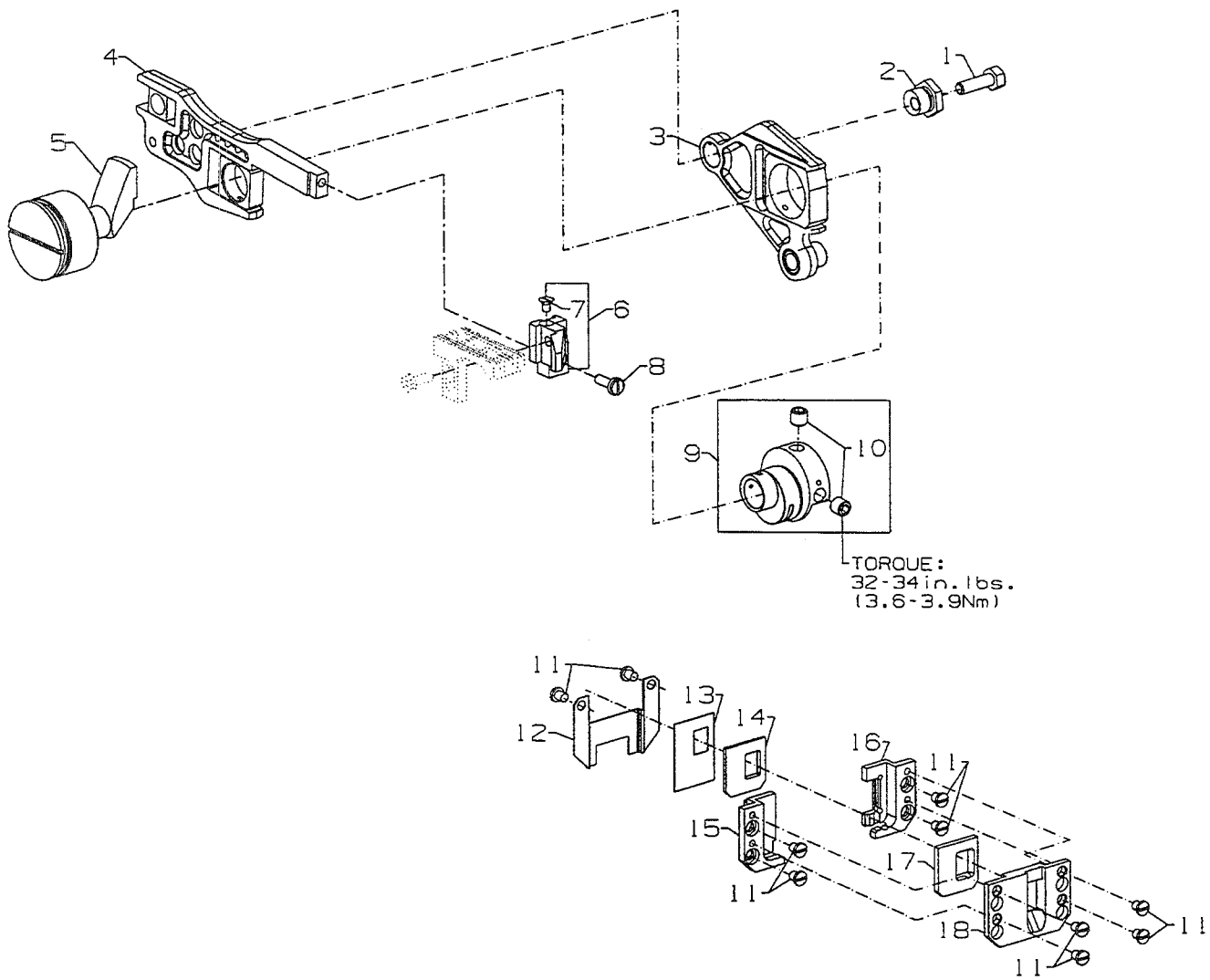
LOOPER THREAD TAKE-UP

Ref. No.	Part No.	Description	Amt. Req.
1.	50657A	Cast-Off Plate Assembly	1
2.	SD0380551SL	Screw	1
3.	50332AC	Tension Spring	1
4.	50347R	Pin	1
5.	51959B	Tension Disc	2
6.	50358H	Eyelet	3
7.	SS7060310SP	Screw	3
8.	SS6060440TP	Screw	1
9.	41358	Washer	2
10.	SS9080410SP	Screw	1
11.	50304H	Strike-Off Wire	1
12.	50604	Retaining Finger	1
13.	SS7080520SP	Screw	2
14.	50383E	Mounting Bracket	1
15.	50357AN	Cast-Off Plate	1
16.	SS9111010SP	Screw, for collar bracket	1
17.	SS6110610TP	Screw, for cast-off holder	1
18.	29476UK	Cast-Off Plate Holder Assembly	1
19.	SS7092110TP	Screw, for collar bracket	1
20.	50383F	Take-up Collar Bracket	1
21.	50304K	Cast-Off Plate Holder	1
22.	WZ0640200KP	Washer	1
23.	SD0630275SP	Shoulder Screw, for cast-off plate holder	1
24.	50623B	Take-up Assembly	1
25.	22894C	Set Screw	2
26.	50323B	Take-up Hub	1
27.	22-348	Pin	2
28.	C50077P	Spacer	1
29.	50323L	Disc, for take-up	2
30.	77B	Screw, for take-up disc	2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TORQUE:
32-34 in. lbs.
(3.6-3.9Nm)
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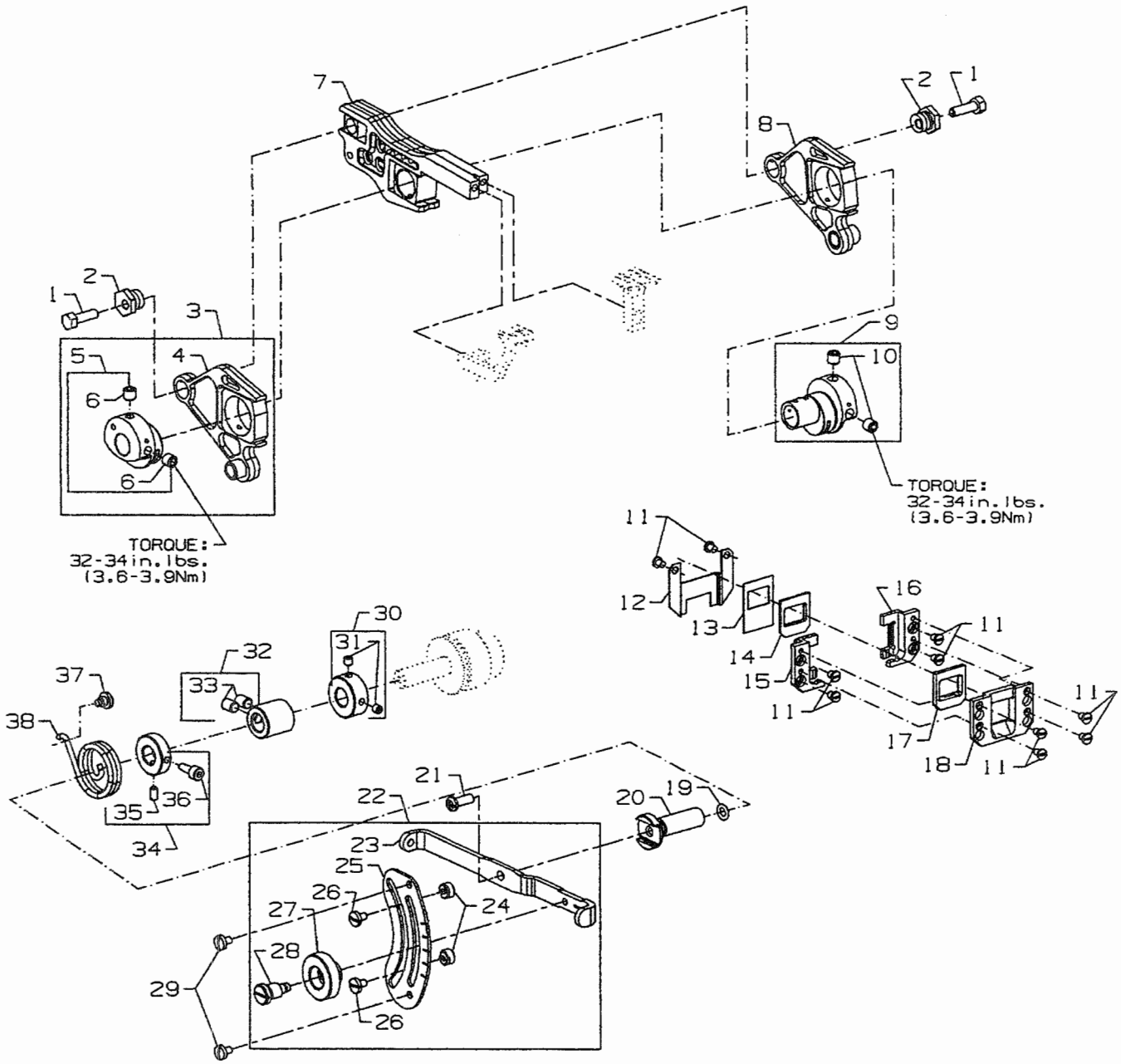
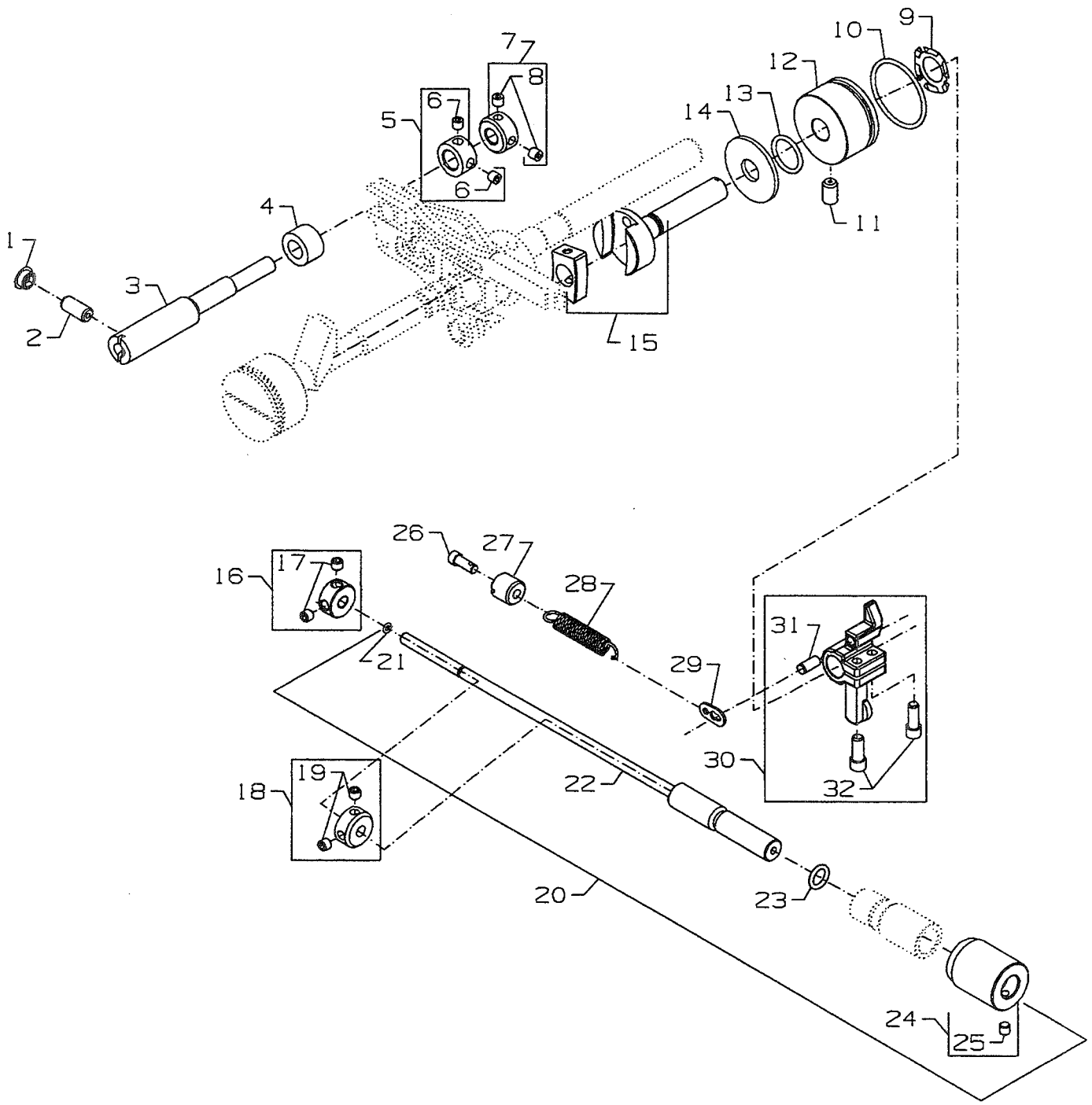
FEED DRIVE MECHANISM

Ref. No.	Part No.	Description	Amt. Req.
1.	18-1432	Screw	1
2.	50334BD	Hex Eccentric Stud	1
3.	29126FB	Drive Fork Assembly, right	1
4.	50634	Feed Bar Assembly	1
5.	50334A	Plain Feed Bar Guide	1
6.	50634E	Feed Dog Holder	1
7.	22637P24	Screw	1
8.	SS7091110TP	Screw	1
9.	50640-29	Feed Eccentric, main	1
10.	SS8660612TP	Screw	2
11.	SS7090530SP	Screw	10
12.	50334Y	Oil Shield	1
13.	50334W	Oil Scraper	1
14.	50634C	Feed Bar Seal	1
15.	50637A	Guide Plate, left, rear	1
16.	50335BA	Guide Plate, right, rear	1
17.	50634D	Feed Bar Seal	1
18.	50637	Guide Plate, front	1


TORQUE:
32-34 in. lbs.
(3.6-3.9Nm)
TORQUE:
32-34 in. lbs.
(3.6-3.9Nm)

FEED DRIVE MECHANISM FOR DIFFERENTIAL FEED

Ref. No.	Part No.	Description	Amt. Req.
1.	18-1432	Screw	2
2.	50334BD	Hex Eccentric Stud	2
3.	29476VV	Drive Fork Assembly	1
4.	50334AW	Drive Fork Assembly	1
5.	50340F	Feed Eccentric, differential	1
6.	SS8660612TP	Screw	2
7.	50334BE	Feed Bar Assembly	1
8.	50334AX	Drive Fork Assembly, right	1
9.	50640A29	Feed Eccentric, main	1
10.	SS8660612TP	Screw	2
11.	SS7090530SP	Screw	10
12.	50334Y	Oil Shield	1
13.	50334V	Oil Scraper	1
14.	50334BH	Feed Bar Seal	1
15.	50335AM	Guide Plate, left, rear	1
16.	50335BA	Guide Plate, right, rear	1
17.	50334BJ	Feed Bar Seal	1
18.	50335AN	Guide Plate, front	1
19.	660-220	"O" Ring	1
20.	50337J	Stem, for differential feed lever	1
21.	SS4121215SP	Screw, for stem	1
22.	29476YH	Differential Feed Lever Assembly	1
23.	50337H	Differential Feed Lever	1
24.	50337U	Stop	2
25.	50337BD	Plate, for differential feed lever	1
26.	SS7090610SP	Screw	2
27.	B1647704000A	Knob, for differential feed lever	1
28.	50387	Screw	1
29.	SS7090610SP	Screw	2
30.	50337S	Collar	1
31.	SS8110422TP	Screw	2
32.	50337L	Coupling, for differential feed lever	1
33.	SS6110650TP	Screw	2
34.	50337R	Collar, for differential feed lever	1
35.	SS8090710SP	Screw	1
36.	SS6091022TP	Screw	1
37.	SP0550271TP	Screw, for spring	1
38.	50337M	Spring, for differential feed lever	1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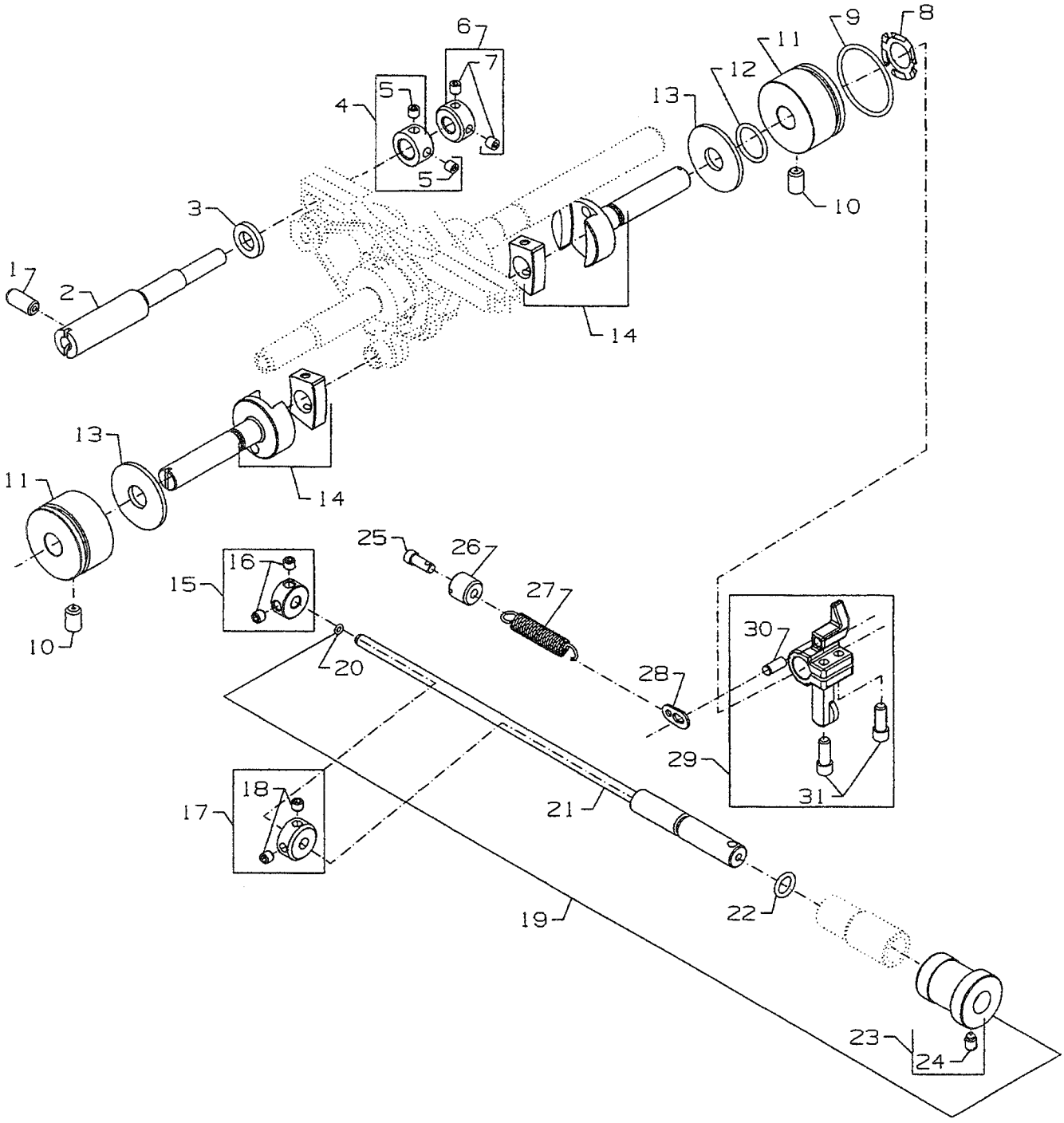
FEED DRIVE MECHANISM
FOR PLAIN FEED

Ref. No.	Part No.	Description	Amt. Req.
1.	TA075404RO	Plug, for eccentric shaft	1
2.	22591A	Screw, for eccentric shaft	1
3.	50334BC	Eccentric Shaft	1
4.	50674	Washer, for eccentric shaft	1
5.	50334BB	Collar, for eccentric shaft	1
6.	SS8110422TP	Screw, for collar	2
7.	50337T	Collar, for eccentric shaft	1
8.	SS8110422TP	Screw, for collar	2
9.	661-96	Spring Washer	1
10.	660-969	"O" Ring, for bushing	1
11.	SS8661012TP	Screw, for bushing	1
12.	35036F	Bushing, for stitch adjusting shaft	1
13.	660-220	"O" Ring, for stitch adjusting shaft	1
14.	35036AZ	Brake Pad	1
15.	50634G	Stitch Adjusting Shaft Assembly	1
16.	50335D	Collar	1
17.	22894P	Screw	2
18.	50333S	Collar	1
19.	22894P	Screw	2
20.	29476UF	Stitch Length Adjusting Rod Assembly	1
21.	660-980	"O" Ring, stitch control shaft	1
22.	50322AR	Shaft, for stitch control	1
23.	660-206	"O" Ring, for stitch control shaft	1
24.	50336Y	Stitch Knob, indicator	1
25.	SS8110422TP	Screw	1
26.	50335	Spring Retainer	1
27.	22714C	Screw, for spring retainer	1
28.	50355	Spring	1
29.	50335A	Spring Holder	1
30.	50336S	Stitch Control Lever	1
31.	661-35	Pin	1
32.	22596H	Screw	2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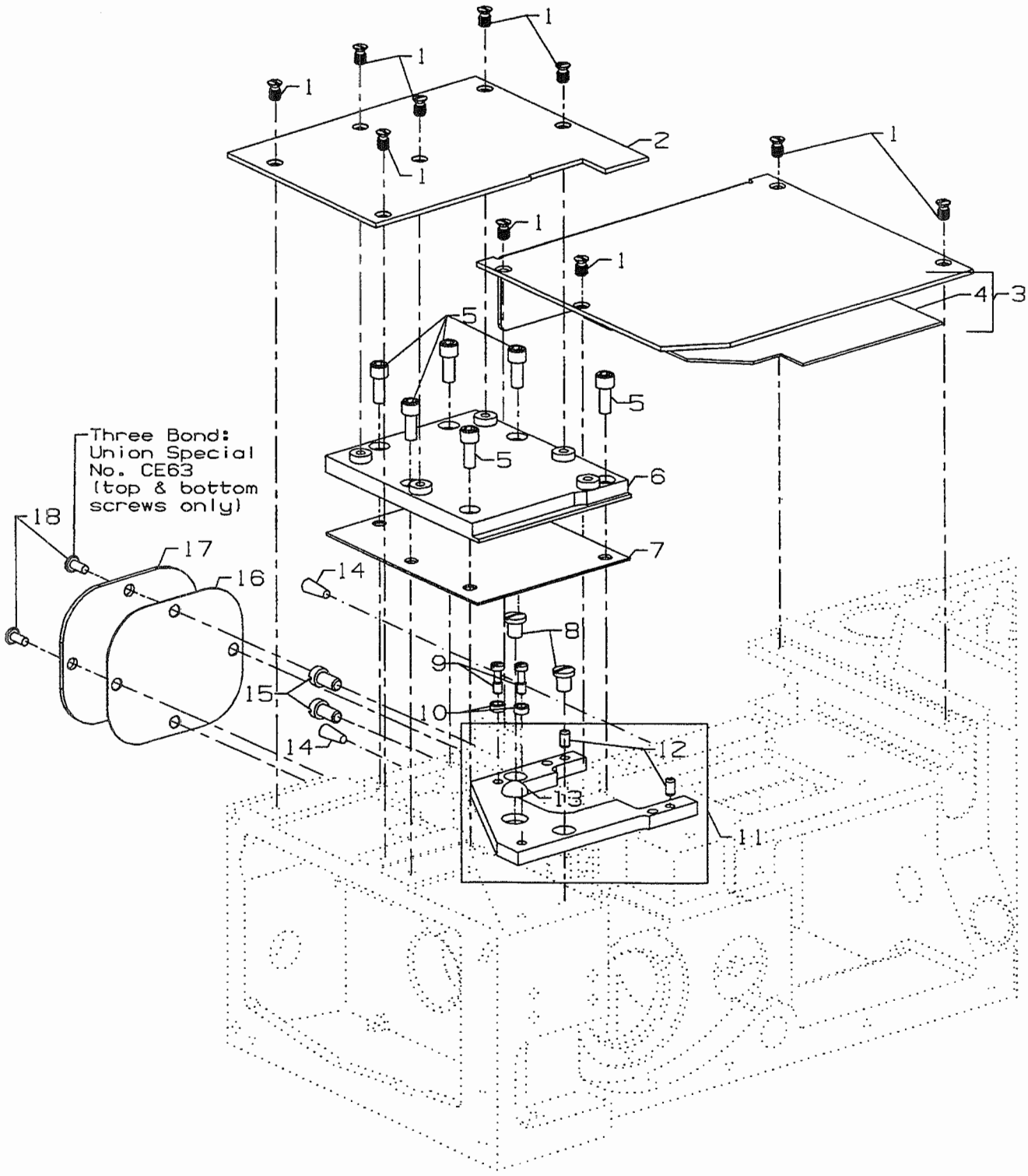
FEED DRIVE MECHANISM
FOR DIFFERENTIAL FEED

Ref. No.	Part No.	Description	Amt. Req.
1.	22591A	Screw, for eccentric shaft	1
2.	50334BC	Eccentric Shaft	1
3.	50368AD	Washer, for eccentric shaft	1
4.	50334BB	Collar, for eccentric shaft	1
5.	SS8110422TP	Screw, for collar	2
6.	50337T	Collar, for eccentric shaft	1
7.	SS8110422TP	Screw, for collar	2
8.	661-96	Spring Washer	1
9.	660-969	"O" Ring, for bushing	1
10.	SS8661012TP	Screw, for bushing	2
11.	35036F	Bushing, for stitch adjusting shaft	2
12.	660-220	"O" Ring, for stitch adjusting shaft	1
13.	35036AZ	Brake Pad	2
14.	50634G	Stitch Adjusting Shaft Assembly	2
15.	50335D	Collar	1
16.	22894P	Screw	2
17.	50333S	Collar	1
18.	22894P	Screw	2
19.	29476UF	Stitch Length Adjusting Rod Assembly	1
20.	660-980	"O" Ring, stitch control shaft	1
21.	50322AR	Shaft, for stitch control	1
22.	660-206	"O" Ring, for stitch control shaft	1
23.	50336Y	Stitch Knob, indicator	1
24.	SS8110422TP	Screw	1
25.	50335	Spring Retainer	1
26.	22714C	Screw, for spring retainer	1
27.	50355	Spring	1
28.	50335A	Spring Holder	1
29.	50336S	Stitch Control Lever	1
30.	661-35	Pin	1
31.	22596H	Screw	2


Three Bond:
Union Special
No. CE63
(top & bottom
screws only)
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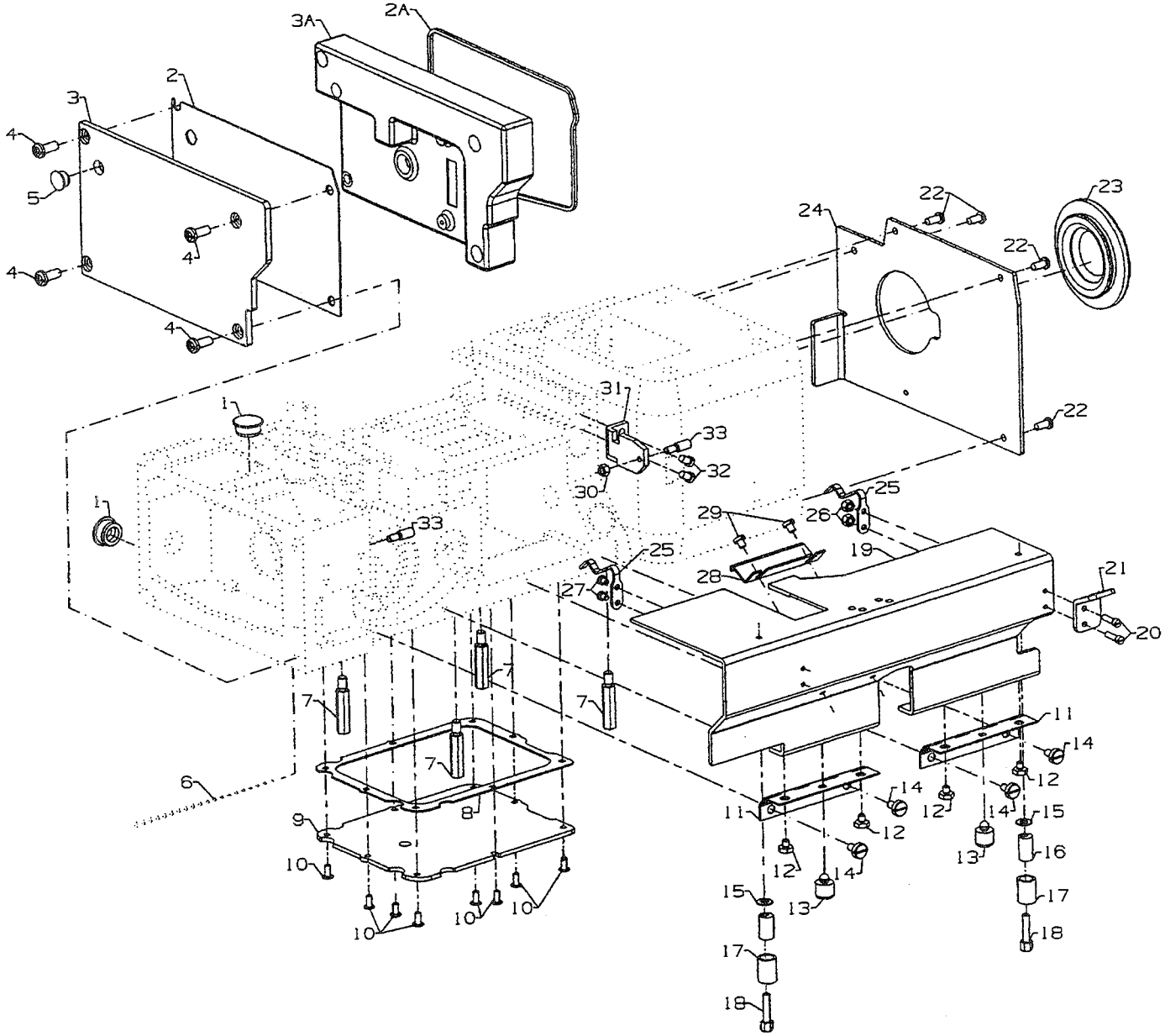
COVERS, LOWER BED

Ref. No.	Part No.	Description	Amt. Req.
1.	18-1448	Screw	11
2.	50601F	Cloth Plate, left	1
3.	50601E	Cloth Plate, right	1
4.	50303B	Acoustic Pad	1
5.	SS6121212TP	Screw, for cover	6
6.	50382CP	Cover, for feed chamber	1
7.	50382CS	Gasket	1
8.	SS7150740SP	Screw	2
9.	22587N	Screw	2
10.	35036AE	Ferrule, Locating	2
11.	50380D	Throat Plate Support, complete	1
12.	51280K	Pin	1
13.	660-939	Rubber Bumper, for Throat Plate Support	1
14.	C067D	Cork	2
15.	22517	Screw, for bed	2
16.	50382CR	Gasket	1
17.	50382CL	Cover, rear, for feed chamber,	1
18.	SS4120615SP	Screw, for cover	2
-	CE63	Three Bond Adhesive, (not shown), for screw	-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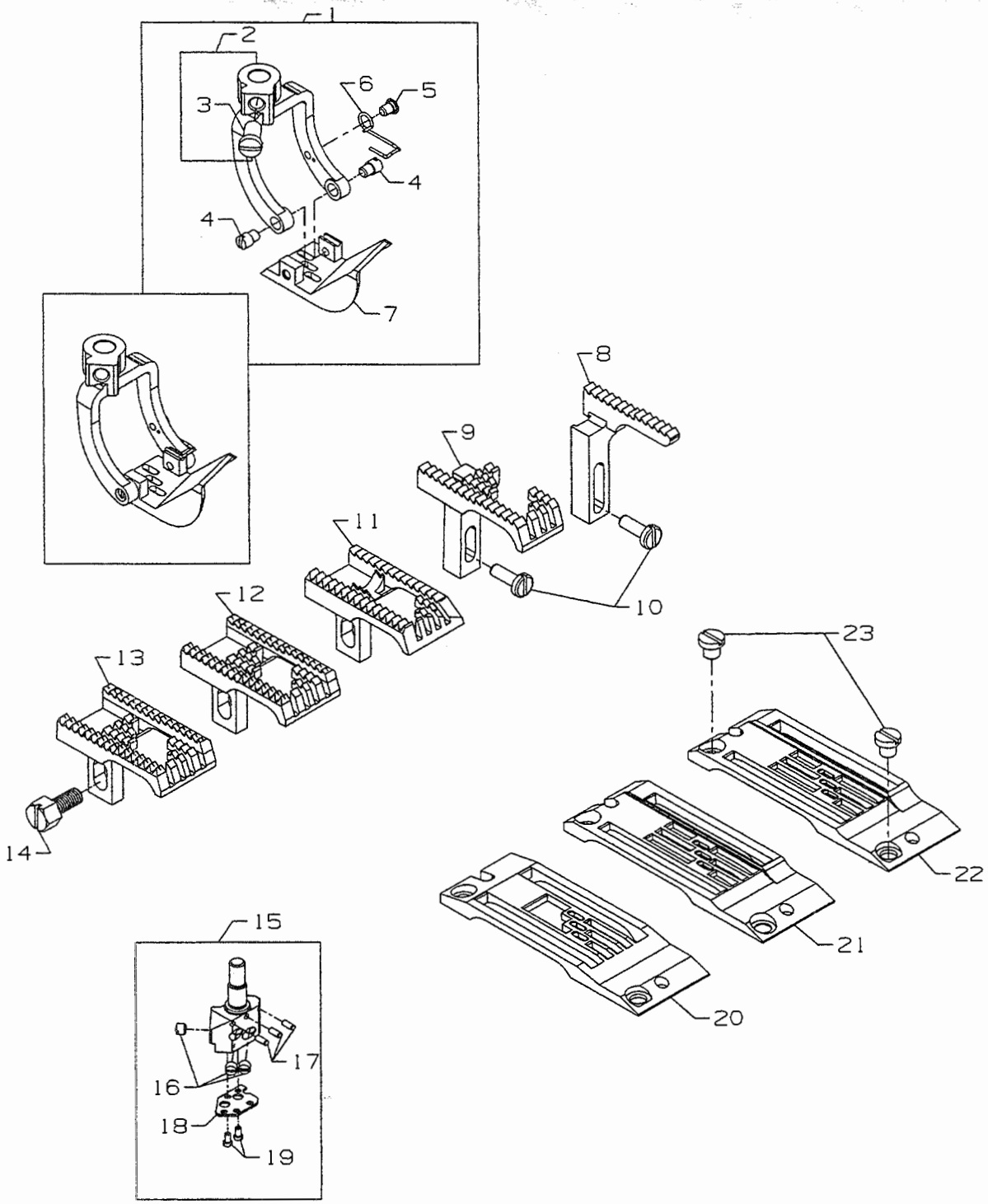
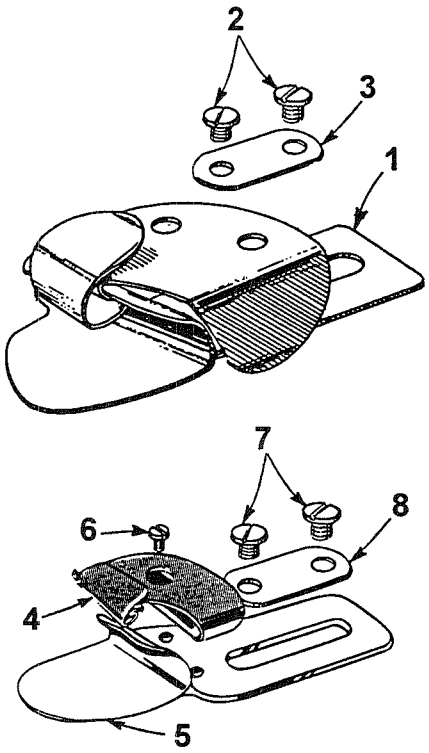
COVERS, LOWER BED

Ref. No.	Part No.	Description	Amt. Req.
1.	50393HB	Plug, for bed	2
2.	50684A	Gasket, for left end cover	1
2A.	50382CM	Quad Ring, for left end cover	1
3.	50682B	Left End Cover	1
3A.	50382KE	Left End Cover	1
4.	SS4151415SP	Screw	4
5.	50393HA	Plug	1
6.	WO3	Oil Wick, for needle guard	1
7.	22841U	Machine Support Stud	4
8.	50383G	Gasket, for chamber cover	1
9.	50382CG	Dry Chamber Cover	1
10.	SS7090850SP	Screw	8
11.	50378S	Hinge	2
12.	SS9110543CP	Screw	4
13.	660-1020	Rubber Bumper	2
14.	SS6120930TP	Screw	4
15.	20	Washer	2
16.	50382T	Stop, for front cover	2
17.	50393W	Rubber Bumper	2
18.	22519J	Screw	2
19.	50682D	Swing Down Cover	1
20.	22729D	Screw	2
21.	50667	Lever	1
22.	SS4121015SP	Screw	4
23.	50393HU	Plug, right end, non-synchronizer	1
24.	50382CJ	Cover, for drive belt	1
25.	50332A	Latch Spring	2
26.	39250J	Nut	2
27.	22513D	Screw	2
28.	50382FP	Latch, looper throw-out safety	1
29.	25CC	Screw	2
30.	35569J	Nut	1
31.	50332B	Support Block	1
32.	SS7120710SP	Screw	2
33.	22799AH	Spring Latch Stud	2



MODEL	NEEDLE HEAD	PRESSER FOOT ASSEMBLY	THROAT PLATE	MAIN FEED DOG	DIFFERENTIAL FEED DOG
FS315L63-3H32CC2PA1	50618B	50620A32	50624R32	50605D	50626D
FS315L63-3H36CC2PA1	50618C	50620A36	50624R36		
FS316L61-3H32CC2PA1	50618B	50620A32	50624A32	50605C36	-----
FS316L61-3H36CC2PA1	50618C	50620A36	50624A36		
FS316L62-3H32CC2PA1	50618B	50620B32	50624B32	50605B	-----
FS316L62-3H36CC2PA1	50618C	50620B36	50624B36		
FS316L63-3H32CC2PA1	50618B	50620-32	50624R32	50605R36	-----
FS316L63-3H32CC2PA1	50618C	50620-36	50624R36		

1.	- - - - - -	Presser Foot Assembly, (see Chart)	1
2.	50630C	Presser Foot Fork	1
3.	SS7120910TP	Screw	1
4.	22845A	Screw	2
5.	22599	Screw	1
6.	35830K	Spring	1
7.	35830R8	Presser Foot Bottom, for style FS316L61-3H32CC2PA1	1
-	35830R9	Presser Foot Bottom, for style FS316L61-3H36CC2PA1	1
-	50630B32	Presser Foot Bottom, for style FS316L62-3H32CC2PA1	1
-	50630B36	Presser Foot Bottom, for style FS316L62-3H36CC2PA1	1
-	50630A	Presser Foot Bottom, for style FS316L63-3H32CC2PA1	1
-	50630	Presser Foot Bottom, for style FS316L63-3H36CC2PA1	1
8.	50605D	Feed Dog,(see chart) FS315L63-3H32CC2PA1, FS315L63-3H36CC2PA1	1
9.	50626D	Feed Dog,(see chart) FS315L63-3H32CC2PA1, FS315L63-3H36CC2PA1	1
10.	SS7091110TP	Screw	2
11.	- - - - - -	Feed Dog,(see chart) FS316L61-3H32CC2PA1, FS316L61-3H36CC2PA1	1
12.	- - - - - -	Feed Dog,(see chart) FS316L62-3H32CC2PA1, FS316L62-3H36CC2PA1	1
13.	- - - - - -	Feed Dog,(see chart) FS316L63-3H32CC2PA1, FS316L63-3H36CC2PA1	1
14.	18-1481	Screw	1
15.	- - - - - -	Needle Head, (see chart)	1
16.	SS8080310TP	Screw	3
17.	660-1046	Pin	3
18.	50618D	Needle Head Eyelet	1
-	50618A	Needle Head Eyelet	1
19.	22655B7	Screw	2
20.	- - - - - -	Throat Plate, for style FS316L61-3H32CC2PA1, FS316L61-3H36CC2PA1	1
21.	- - - - - -	Throat Plate, for style FS316L62-3H32CC2PA1, FS316L62-3H36CC2PA1	1
22.	- - - - - -	Throat Plate, for style FS316L63-3H32CC2PA1, FS316L63-3H36CC2PA1	1
23.	22570	Screw	2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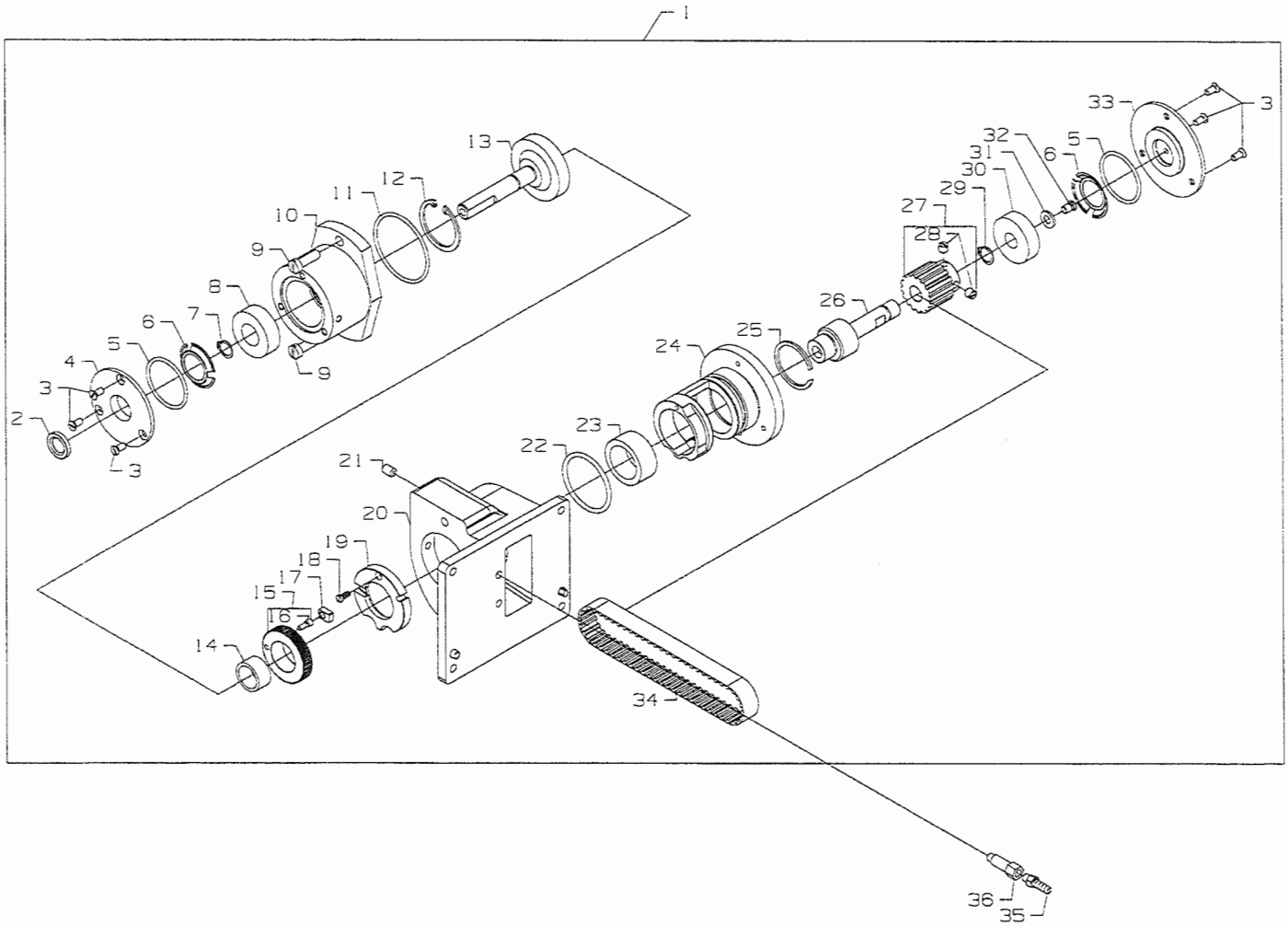
Ref. No.	Part No.	Description	Amt. Req.
1.	23420S8-1/8	Folder, for Styles, FL53-3H32	1
-	23420S9-1/8	Folder, for Styles, FL53-3H36	1
-	23420U16-3/32	Folder, for Styles, FL52-3H64	1
2.	25C	Screw	2
3.	57864B	Clamp Plate	1
4.	23421U16-3/32	Scroll, For Styles, FL52-3H32	1
-	23421U18-3/32	Scroll, For Styles, FL52-3H36, FL52-2H72	1
5.	23422BZ-3/32	Scroll, Lower, For Styles, FL52-3H32, FL52-3H36	1
-	23422U-3/32	Scroll, Lower, For Styles, FL52-2H72	1
6.	28	Screw	1
7.	25C	Screw	2
8.	57864B	Clamp Plate	1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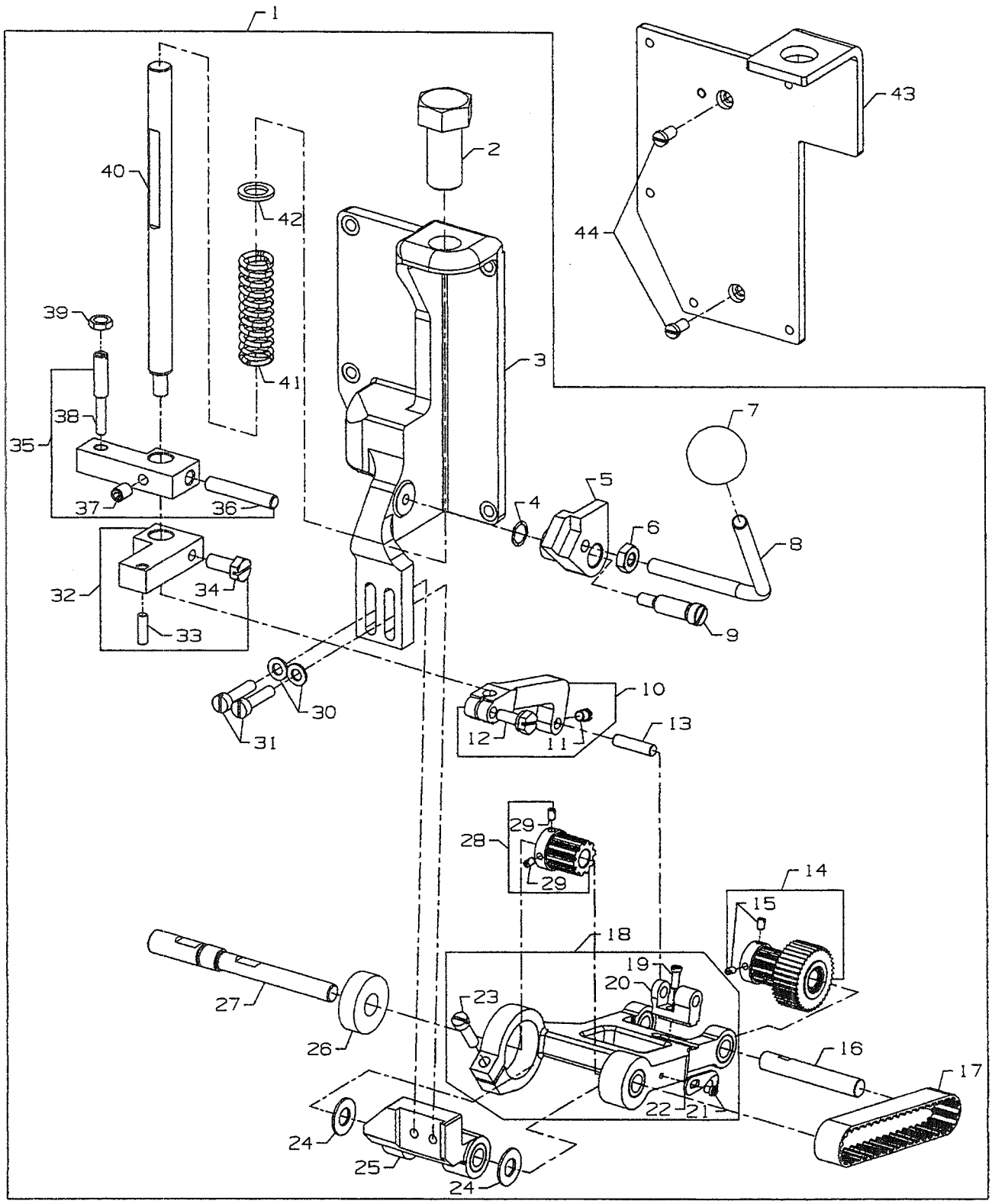
PULLER DRIVE ASSEMBLY

Ref. No.	Part No.	Description	Amt. Req.
1.	29476YG	Puller Drive Assembly	1
2.	660-893	Lip Seal	1
3.	22524	Screw	6
4.	C50082AP	Cover	1
5.	660-886A	"O" Ring	2
6.	660-914	Finger Spring	2
7.	660-918	Retaining Ring	1
8.	660-890	Bearing	1
9.	136	Screw	2
10.	50677A	Bearing Housing	1
11.	660-886B	"O" Ring	1
12.	660-891B	Snap Ring	1
13.	50677U	Internal Gear	1
14.	660-889	Bearing	1
15.	C50078M	Internal Gear	1
16.	C50078K	Pin	1
17.	C50078J	Slide Block	1
18.	22593	Screw	1
19.	C50078N	Guide Ring	1
20.	50677	Puller Drive Housing	1
21.	22894J	Screw	1
22.	660-886C	"O" Ring	1
23.	660-892C	Bearing	1
24.	C50078P	Eccentric Housing	1
25.	661-70A	Snap Ring	1
26.	C50022L	Eccentric Drive Shaft	1
27.	C50042AC16	Sprocket	1
28.	98	Screw	2
29.	660-891C	Snap Ring	1
30.	660-888	Bearing	1
31.	59451F	Washer	1
32.	22574D	Screw	1
33.	C50082AR	Cover	1
34.	C50042AF	Timing Belt	1
35.	671F19	Barb Fitting	1
36.	671F64	Extension Fitting	1


1
2
3
4
5
6
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11
12
13
14
15
16
17
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20
21
22
23
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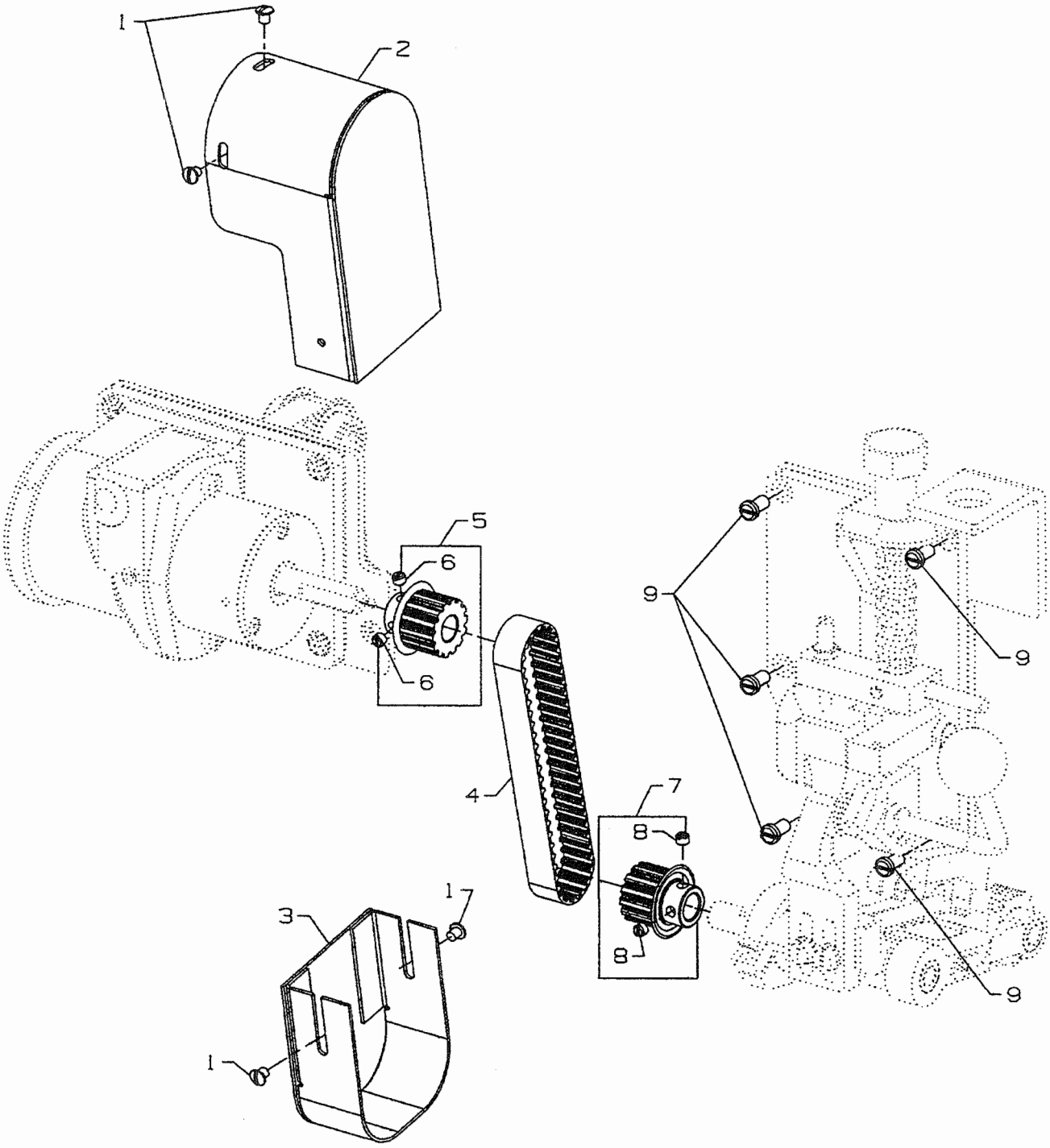
41
42
43
44

PULLER ASSEMBLY

Ref. No.	Part No.	Description	Amt. Req.
1.	29476YB	Puller Assembly	1
2.	C50077D	Screw, Adjusting	1
3.	50677N	Bracket, Main Puller	1
4.	WZ0850302K0	Washer	1
5.	50677G	Lever, Lifter	1
6.	RM3211-12	Nut	1
7.	50667A	Knob, Ball	1
8.	50677C	Lever, Lifter	1
9.	50695A	Stud Screw	1
10.	50677E	Lever, Roll Pressure	1
11.	SS9110430TP	Screw	1
12.	SS9121210TP	Screw	1
13.	B4107850M00	Pin	1
14.	50677L	Feed Roller	1
-	50677M	Feed Roller, Urethane	1
-	50677R	Feed Roller, Knurled	1
-	50677K	Feed Roller, Reversed Teeth	1
15.	SS8090540SP	Screw	2
16.	50677F	Shaft, Feed Roller	1
17.	C50042AD	Belt	1
18.	50677H	Yoke, Feed Roller	1
19.	SS6080810SP	Screw	1
20.	50635	Link, Connection	1
21.	604	Screw	1
22.	39656A	Knife	1
23.	SS6121610SP	Screw	1
24.	50677S	Washer	2
25.	50638	Block, Mounting	1
26.	660-887	Bearing	1
27.	50677T	Shaft, Feed Roller	1
28.	50642D	Sprocket, Feed Roller	1
29.	SS8090540SP	Screw	2
30.	WP0531000SD	Washer	2
31.	SS6122030SP	Screw	2
32.	50633A	Block, Adjustable	1
33.	11846805	Pin	1
34.	SS9151440CP	Screw	1
35.	50633	Collar, Puller Lifter	1
36.	50647	Pin	1
37.	SS8150822TP	Screw	1
38.	22726Z	Screw	1
39.	NS6150310SP	Nut	1
40.	50677B	Shaft, Puller Lifter	1
41.	28633L	Spring	1
42.	51242L	Washer	1
43.	50662B	Adaptor Plate	1
44.	SS7120910SP	Screw	2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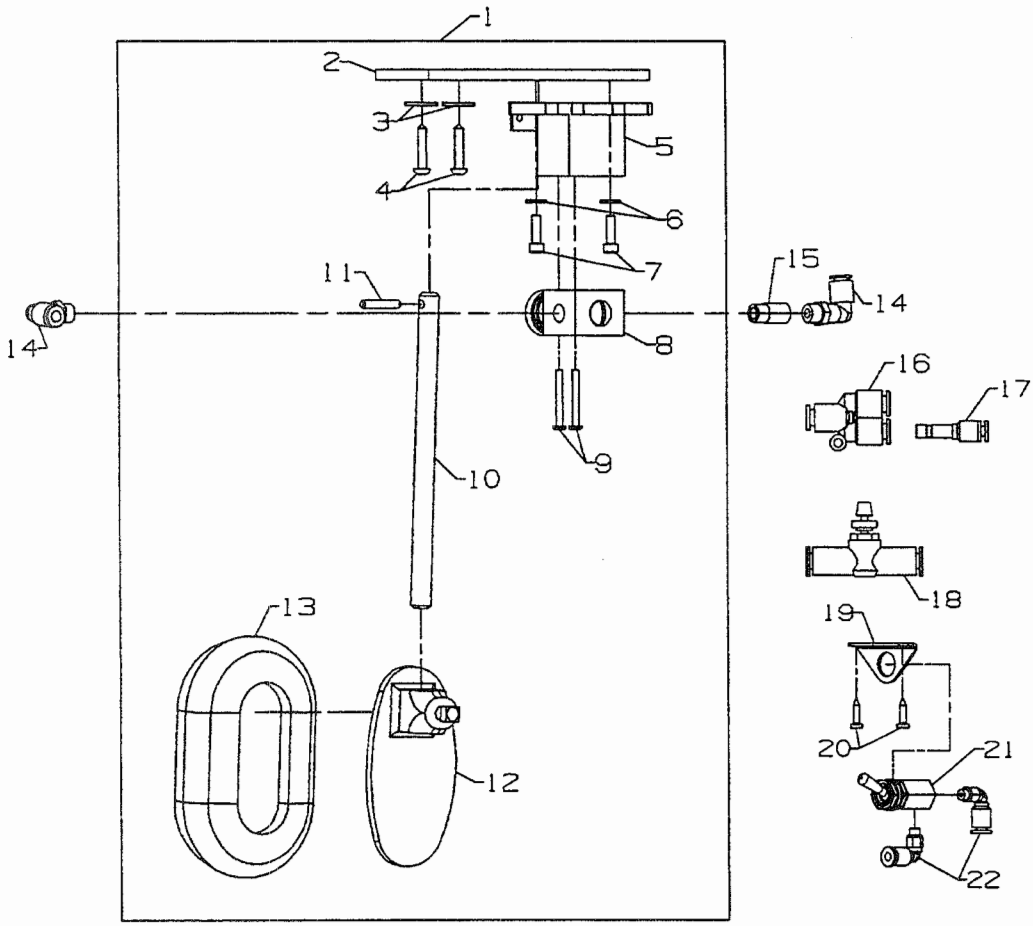
PULLER ASSEMBLY

Ref. No.	Part No.	Description	Amt. Req.
1.	22825	Screw	4
2.	50696C	Belt Guard, Upper	1
3.	50696D	Belt Guard, Lower	1
4.	50642B	Belt	1
*5.	C50042Z14	Sprocket, 14 Teeth	1
* -	C50042Z13	Sprocket, 13 Teeth	1
6.	88B	Screw	2
*7.	C50042Z15	Sprocket, 15 Teeth	1
* -	C50042Z16	Sprocket, 16 Teeth	1
8.	88B	Screw	2
9.	22569C	Screw	5

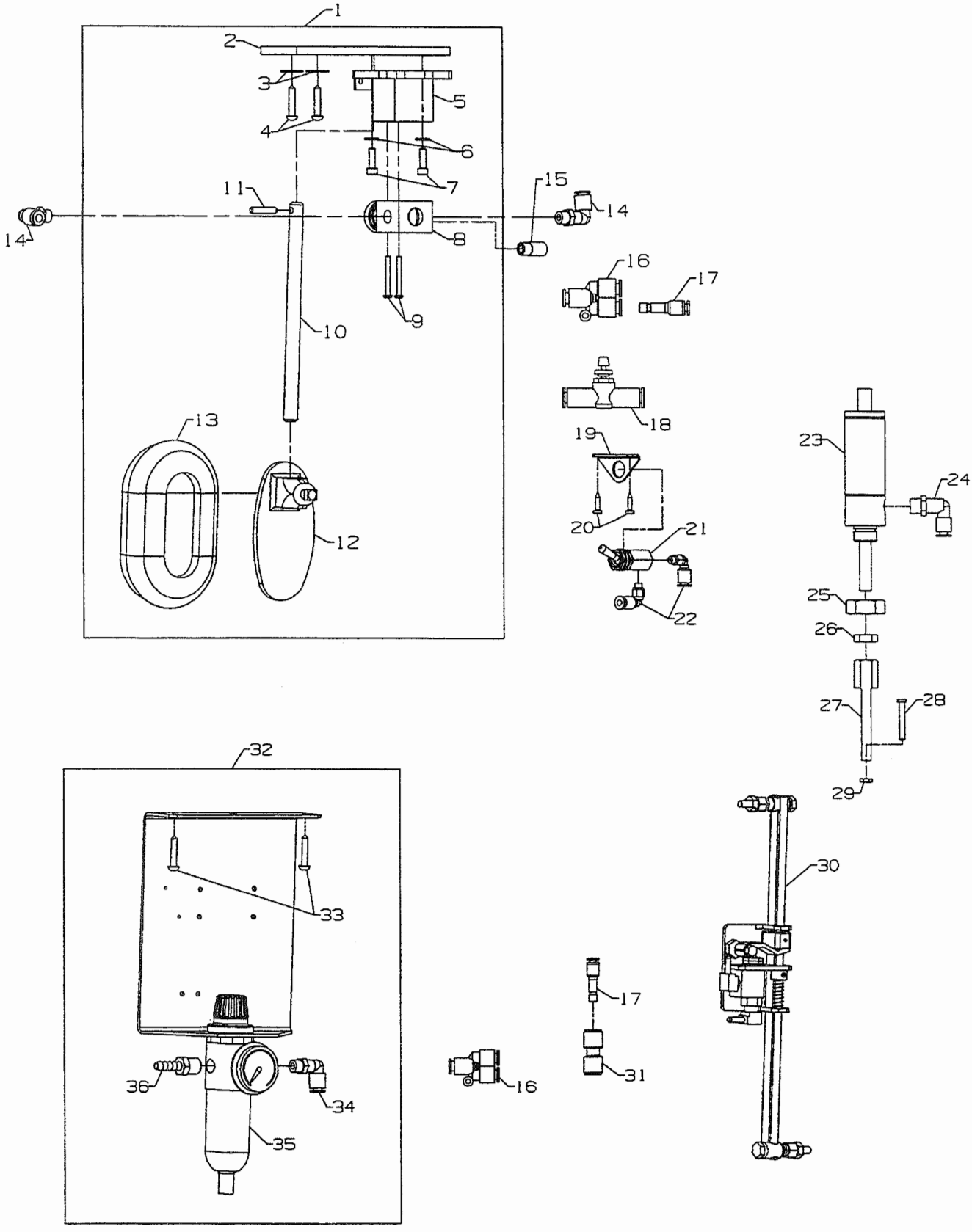
* See puller sprocket combinations chart (page 21).



USE IN CONJUNCTION
WITH CATALOG PT9623

MISCELLANEOUS PARTS PA1
(USE WITH CC2 CHAIN CUTTER)

Ref. No.	Part No.	Description	Amt. Req.
1.	29480AWN	Knee Press Fitting	1
2.	50364H	Mounting Plate	1
3.	96902	Washer	2
4.	90561K	Wood Screw	2
5.	AS7-2	Knee Press Base	1
6.	RM3293-5	Flat Washer	2
7.	22653B10	Screw	2
8.	671-85	3-Way Valve Assembly	1
9.	RM4377-4	Screw	2
10.	AS7-1	Knee Press Rod	1
11.	667C16	Dowel Pin	1
12.	AS7-3	Knee Press	1
13.	660-168	Knee Press Pad	1
14.	671F82H	Elbow Fitting	2
15.	660-403	Muffler	1
16.	671F86B	Hose "Y" Connector	2
17.	671F82H	5/32" To 1/4" T Reducer	2
18.	671-196	Flow Control	1
19.	999-160	Bracket	1
20.	90561E	Wood Screw	2
21.	671-66	Toggle Valve	1
22.	671F82F	Male Elbow	2
23.	660-397	Air Cylinder	1
24.	671F82C	Male Elbow	2
25.	99327	Nut	1
26.	21233FB	Nut	1
27.	99590Q	Cylinder Rod	1
28.	99372B	Screw	1
29.	41071G	Nut	1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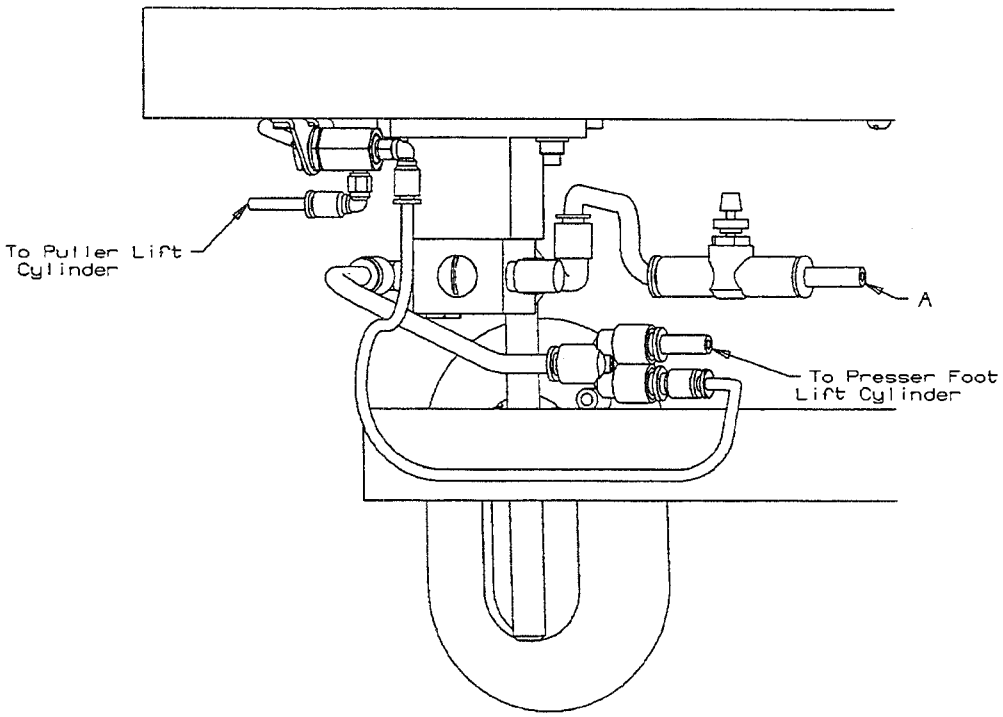
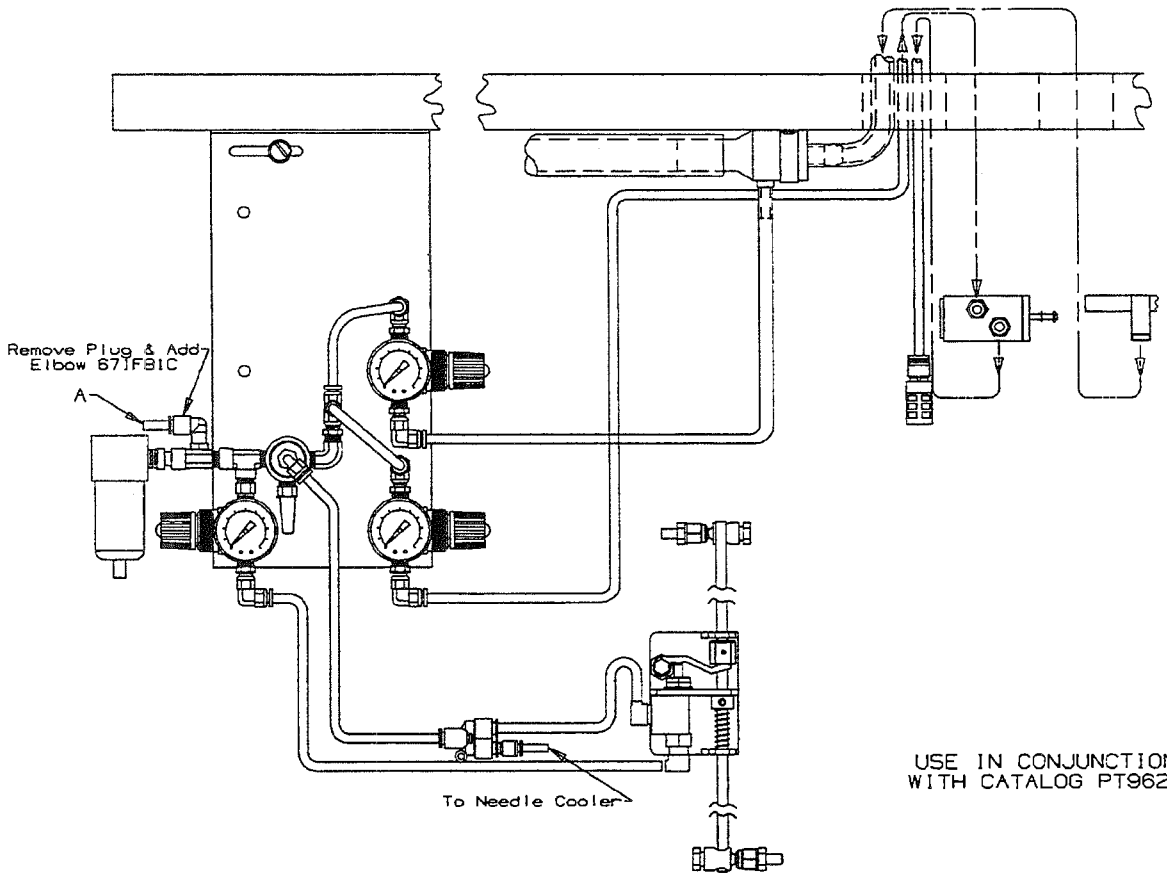
MISCELLANEOUS PARTS PA1A
(USE WITHOUT CC2 CHAIN CUTTER)

Ref. No.	Part No.	Description	Amt. Req.
1.	29480AWN	Knee Press Fitting	1
2.	50364H	Mounting Plate	1
3.	96902	Washer	2
4.	90561K	Wood Screw	2
5.	AS7-2	Knee Press Base	1
6.	RM3293-5	Flat Washer	2
7.	22653B10	Screw	2
8.	671-85	3-Way Valve Assembly	1
9.	RM4377-4	Screw	2
10.	AS7-1	Knee Press Rod	1
11.	667C16	Dowel Pin	1
12.	AS7-3	Knee Press	1
13.	660-168	Knee Press Pad	1
14.	671F82H	Elbow Fitting	2
15.	660-403	Muffler	1
16.	671F86B	Hose "Y" Connector	2
17.	671F82H	5/32" To 1/4" T Reducer	2
18.	671-196	Flow Control	1
19.	999-160	Bracket	1
20.	90561E	Wood Screw	2
21.	671-66	Toggle Valve	1
22.	671F82F	Male Elbow	2
23.	660-397	Air Cylinder	1
24.	671F82C	Male Elbow	2
25.	99327	Nut	1
26.	21233FB	Nut	1
27.	99590Q	Cylinder Rod	1
28.	99372B	Screw	1
29.	41071G	Nut	1
30.	29480ARN	Treadle Assembly	1
31.	671F86D	Fitting	1
32.	29480ASU	Filter Regulator Gauge Kit	1
33.	90561K	Wood Screw	2
34.	671F81A	Elbow Fitting	1
35.	671D42	Combination Filter Regulator	1
36.	671F88	Barb Fitting	1

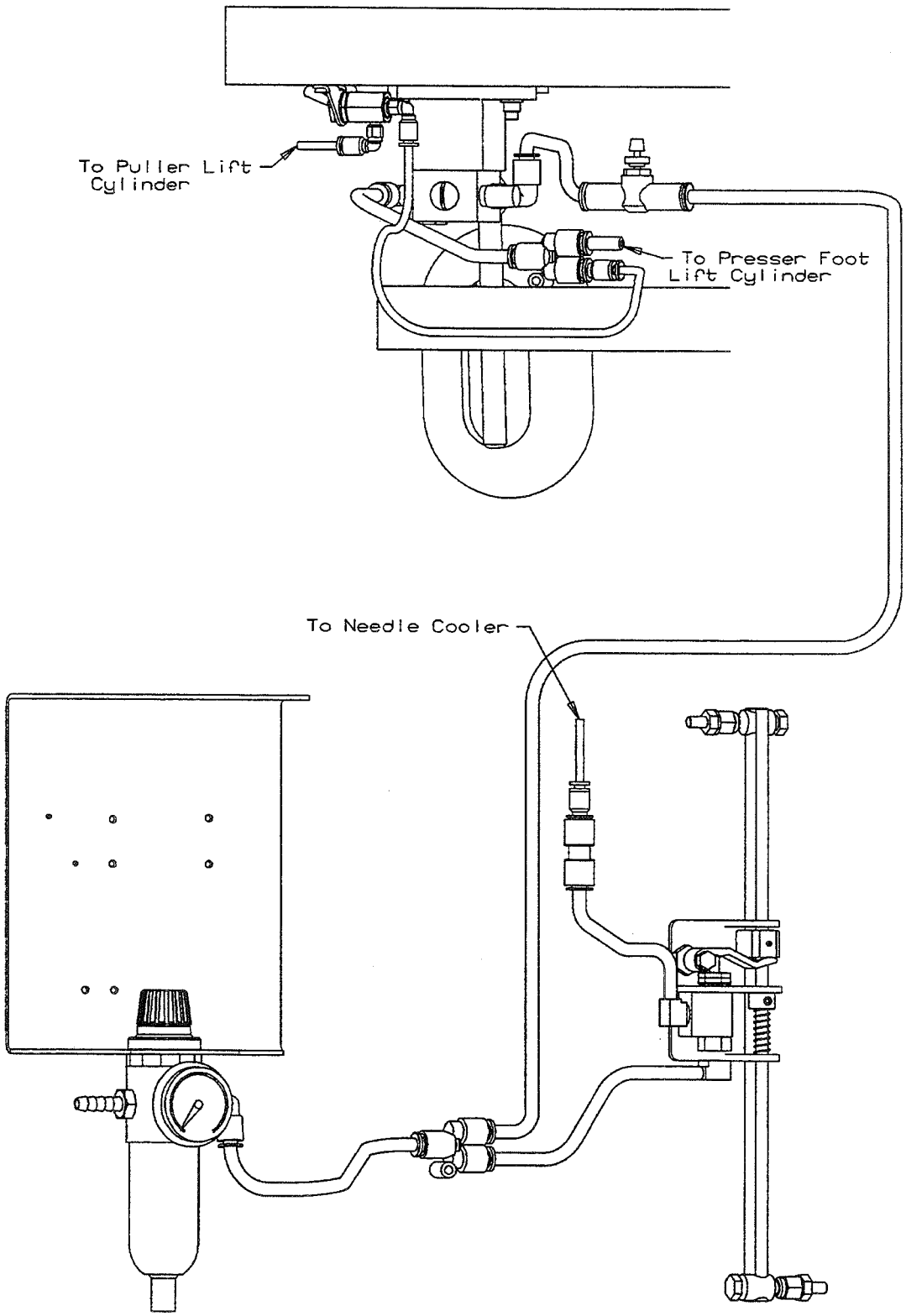
TUBING PA1
WITH CHAIN CUTTER

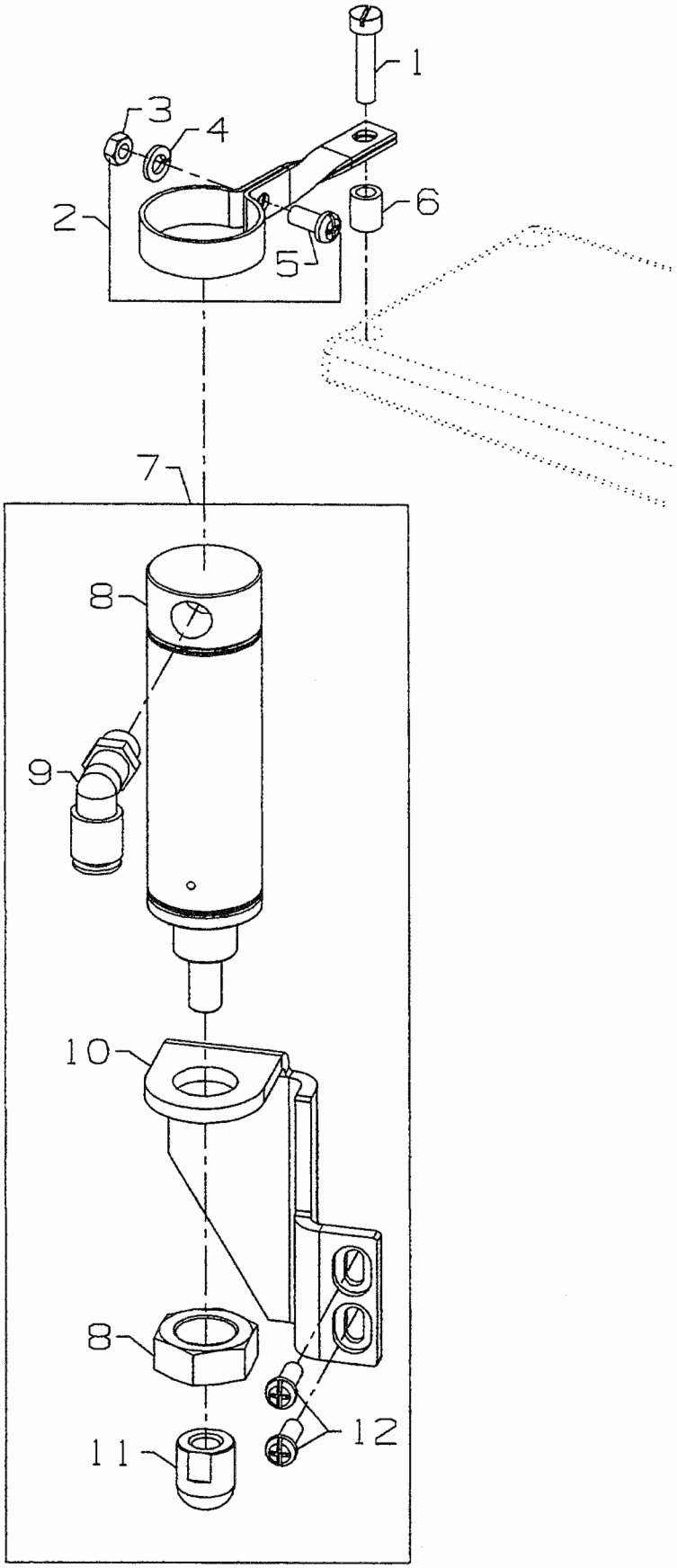




USE IN CONJUNCTION WITH CATALOG PT9623

TUBING PA1A
WITHOUT CHAIN CUTTER

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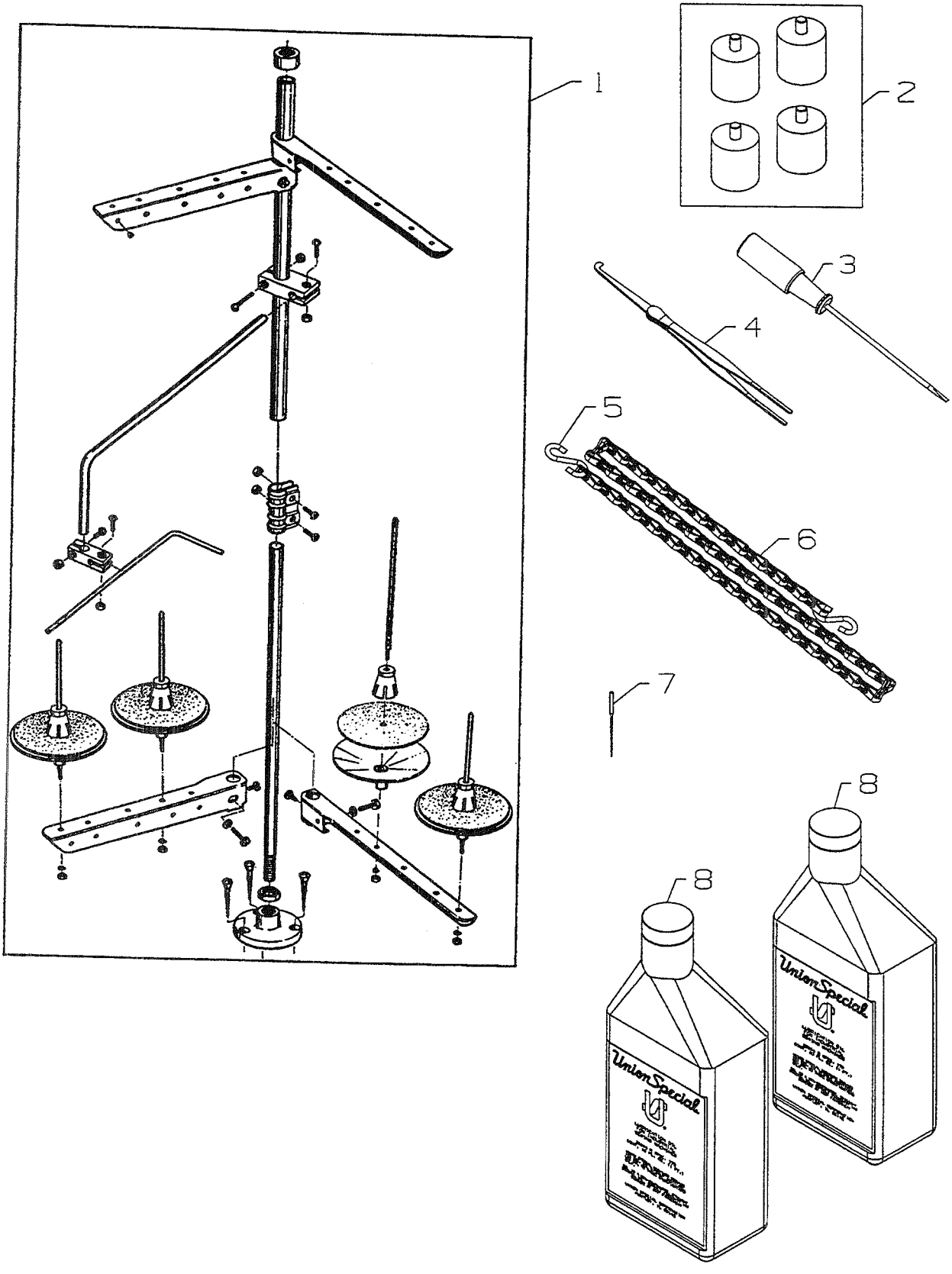
PRESSER FOOT LIFTER

Ref. No.	Part No.	Description	Amt. Req.
1.	SS6122030SP	Screw	1
2.	50383AR	Cylinder Support Bracket	1
3.	NS6120310SP	Nut	1
4.	WS0510002KP	Washer	1
5.	SS4121015SP	Screw	1
6.	50374K	Spacer	1
7.	29480AXJ	Presser Foot Lifter Assembly	1
8.	671A360	Air Cylinder	1
9.	671F81C	Fitting	1
10.	50383AF	Bracket	1
11.	660-1099	Air Cylinder Cap	1
12.	SS4121215SP	Screw	2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Union Special
Union Special

Ref. No.	Part No.	Description	Amt. Req.
1.	21101W4	Thread Stand (2 Needle)	1
-	21101W6	Thread Stand (3 Needle)	1
2.	35095B	Isolator	4
3.	21201A	Screw Driver, for needle head	1
4.	660-240	Thread Tweezer	1
5.	660-264	S-Hook	2
6.	421D34	Chain	1
7.	128GAS140/054	Needles	10
8.	28604R	Oil, (1 pint)	2

NUMERICAL INDEX OF PARTS

Part No.	Page No.
11071602	33
11071701	33
11550100	31
11843208	39
11846805	65
128GAS140/054	79
136	63
13765607	39
18-1432	47, 49
18-1448	55
18-1481	59
20	57
21101W4	79
21101W6	79
21201A	79
21233FB	69, 71
21237DR	35
21237ET	35
21237EU	35
21237EV	35
21317AAH48	75
22-348	45
22513D	57
22517	55
22517B	35
22519J	57
22524	63
22565	41
22569B	35
22569C	67
22570	59
22571E	39
22571L	23
22574D	63
22587N	55
22591A	51, 53
22593	63
22596H	51, 53
22599	59
22637P24	47
22652B10	41
22652J10	41
22653B10	69, 71
22653J8	41
22655B7	59
22714C	51, 53
22726Z	65
22729D	57
22784N	35
22799AH	57
22825	67
22841U	57
22845A	59
22875N	31
22881C	41
22894C	45
22894J	63
22894P	51, 53
22894T	27
23420S8-1/8	61
23420S9-1/8	61
23420U16-3/32	61
23421U16-3/32	61
23421U18-3/32	61
23422BZ-3/32	61
23422U-3/32	61
25C	61
25CC	57
28	61
28604R	79
28633L	65
29126FB	47
29476TC	25
29476TT	33
29476UF	51, 53
29476UH	37
29476UK	45
29476UT	39
29476VN	25
29476VV	49
29476XV	39
29476YB	65
29476YD	33
29476YG	63
29476YH	49
29480ARN	71
29480ASU	71
29480AWN	69, 71
29480AXJ	77
34393D	39
35036AE	55
35036AZ	51, 53
35036BS	23
35036F	51, 53
35095B	79
35569J	57
35830K	59
35830R8	59
35830R9	59
36271A	29
39250J	57
39656A	65
41071G	69, 71
41358	45
421D34	79
50303B	55
50304H	45
50304K	45
50313C	41
50313J	41
50314E	41
50314F	41
50317B	25
50317C	35
50321F	27
50321G	37
50322AF	27
50322AG	37
50322AL	37
50322AR	51, 53
50322BC	27
50323B	45
50323L	45
50323P	25
50330CZ	23
50332A	57
50332AC	45
50332B	57
50332S	39
50332U	23
50332V	33
50333A	37
50333S	51, 53
50334A	47
50334AW	49
50334AX	49
50334BB	51, 53
50334BC	51, 53
50334BD	47, 49
50334BE	49
50334BH	49
50334BJ	49
50334V	49
50334W	47
50334Y	47, 49
50335	51, 53
50335A	51, 53
50335AG	33
50335AH	33
50335AK	37
50335AM	49
50335AN	49
50335BA	47, 49
50335BB	37
50335BD	27
50335D	51, 53
50336S	51, 53
50336Y	51, 53
50337BD	49
50337H	49
50337J	49
50337L	49
50337M	49
50337R	49
50337S	49
50337T	51, 53
50337U	49
50338	25
50338A	25
50340F	49
50342AX	37
50342BE	27
50342BJ	41
50342BK	41
50342BP	41
50342BS	37
50344AM	41
50344BC	23
50344BE	23
50344BF	23
50344BU	23
50344E	23
50345W	25
50347R	45
50351A	25
50352	25
50354F	25
50355	51, 53
50355AM	25
50355AN	25
50355AR	33
50357AE	29
50357AN	45
50357AS	29
50357V	29
50357Y	29
50358H	45
50358V	29
50358W	29
50358X	25
50364H	69, 71
50366	29
50366B	29
50368A	43
50368AD	53
50368E	43
50368W	43
50370F	29
50373DA	43
50374	37
50374K	77
50378S	57
50380D	55
50381	33
50381B	33
50381E	23
50381F	33
50381G	33
50382CG	57
50382CJ	57
50382CL	55
50382CM	57
50382CP	55
50382CR	55
50382CS	55
50382FP	57
50382FW	35
50382FX	35
50382FY	35
50382FZ	35
50382GA	35
50382GM	35
50382KE	57
50382T	57
50383AF	77
50383AR	77
50383E	45
50383F	45
50383G	57
50384	39
50384A	39
50387	49
50392AB	23
50392AV	31
50392BA	29
50392BC	31
50392V	29
50392Z	31
50393-140	39
50393-170	39
50393-27	39
50393-40	39
50393-407	39
50393-47	39
50393-51	39
50393-70	39
50393-89	39
50393EB	39
50393EU	35
50393EW	35
50393EX	39
50393EY	23
50393FR	39
50393FS	39
50393FT	39
50393FU	23
50393FV	39
50393GB	39
50393GD	39
50393GE	23
50393HA	57
50393HB	35, 57
50393HH	29
50393HJ	39
50393HK	39
50393HL	39
50393HN	39
50393HR	39
50393HU	57
50393JP	25
50393JW	25
50393JZ	25
50393KF	39
50393KH	39
50393KM	39
50393W	57
50601E	55
50601F	55
50604	45
50605D	59
50618A	59
50618D	59
50622C	43
50622D	37
50622E	37
50623B	45
50625	43
50626D	59
50630	59
50630A	59
50630C	59
50630B32	59
50630B36	59
50632A	33
50633	65
50633A	65
50634	47
50634C	47
50634D	47
50634E	47

Part No.	Page No.
50634G	51, 53
50635	65
50637	47
50637A	47
50638	65
50640-29	47
50640A29	49
50642	41
50642A	27
50642B	67
50642D	65
50643C	33
50647	65
50654	23
50654A	23
50657A	45
50658A	29
50658B	29, 35
50662A	35
50662B	65
50663A	29
50666	29
50666A	29
50666C	29
50667	57
50667A	65
50668	43
50674	51
50677	63
50677A	63
50677B	65
50677C	65
50677E	65
50677F	65
50677G	65
50677H	65
50677K	65
50677L	65
50677M	65
50677N	65
50677R	65
50677S	65
50677T	65
50677U	63
50682B	57
50682D	57
50683	29
50684A	57
50684B	35
50684C	35
50691	27
50692	31
50692A	31
50692D	31
50692E	29
50692J	31
50695A	65
50696C	67
50696D	67
51170D	35
51242L	65
51280K	55
51908B8	41
51908B9	41
51909C	41
51909D8	41
51909D9	41
51959B	45
53634C	41
538A	41
56392G	31
56392H	31
56392M	31
57864B	61
57865	31
57892K	31
59451F	63
604	65
605A	29
652C16	35
660-1014	33
660-1020	57
660-1043	27
660-1046	59
660-1062	37
660-1087	27
660-1099	77
660-168	69, 71
660-206	51, 53
660-212	35
660-220	49
660-220	51, 53
660-240	79
660-264	79
660-283A	31
660-397	69, 71
660-403	69, 71
660-455	41
660-739	33
660-886	35
660-886A	63
660-886B	63
660-886C	63
660-887	65
660-888	63
660-889	63
660-890	63
660-891B	63
660-891C	63
660-892C	63
660-893	41, 63
660-914	63
660-918	63
660-934	37
660-939	55
660-969	51, 53
660-979	41
660-980	51, 53
661-259B	25
661-261	27
661-262	27
661-35	51, 53
661-70A	63
661-96	51, 53
666-328	25
667C16	69, 71
667J33	41
671-102A	35
671-196	69, 71
671-66	69, 71
671-85	69, 71
671A360	77
671D42	71
671F19	63
671F64	63
671F81A	71
671F81C	77
671F82C	69, 71
671F82F	69, 71
671F82H	69, 71
671F86B	69, 71
671F86D	71
671F88	71
77B	45
88B	67
90561E	69, 71
90561K	69, 71
96902	69, 71
98	63
99327	69, 71
99372B	69, 71
99590Q	69, 71
99682XC	35
99682XC1	35
99682XC2	35
99682XCA	35
998-358F	39
999-160	69, 71
AS7-1	69, 71
AS7-2	69, 71
AS7-3	69, 71
B1647704000A	49
B3103800400	31
B3112704000	31
B3120352000	31
B3120704000	31
B3126012000	31
B3530555000	35
B4107850M00	65
C067D	55
C50022L	63
C50025E	43
C50041D	41
C50041E	41
C50041F	41
C50041G	41
C50041H	41
C50042AC16	63
C50042AD	65
C50042AF	63
C50042Z13	67
C50042Z14	67
C50042Z15	67
C50042Z16	67
C50044E	29
C50056B	33
C50077D	65
C50077P	45
C50078J	63
C50078K	63
C50078M	63
C50078N	63
C50078P	63
C50082AP	63
C50082AR	63
CE27	25
CE49	33
CE59	25
CE63	25, 41, 55
LA452	35
NS6110310SP	39
NS6110420SP	31
NS6120310SP	77
NS6150310SP	33, 65
NS6620320SP	35
PS0400142KH	23
RC0560711KP	43
RE0500000K0	33
RM2871B	39
RM3211-12	65
RM3293-5	69, 71
RM4377-4	69, 71
RO068190100	33
SD0380551SL	29, 45
SD0630275SP	45
SD0640323TP	35
SD0790303SP	33
SP0550271TP	49
SQ1110401MZ	23
SQ1110402MZ	39
SS1110640SL	35
SS1121010SP	29
SS4080620TP	25
SS4090815SP	29, 39
SS4091015SP	39
SS4120615SP	35, 55
SS4120915SP	29
SS4120915SP	31, 35
SS4121015SP	57, 77
SS4121215SP	33, 35
SS4121215SP	49, 77
SS4121615SP	35
SS4151415SP	57
SS6060440TP	45
SS6080810SP	65
SS6090440SP	25
SS6090620SP	25, 43
SS6091022TP	49
SS6110610TP	33, 45
SS6110650TP	49
SS6120930TP	57
SS6121010SP	25
SS6121050SP	35
SS6121212TP	55
SS6121610SP	65
SS6122030SP	65, 77
SS6151812TP	39
SS6151920SP	33
SS6153040SP	33
SS7060310SP	29, 45
SS7080510TP	29
SS7080520SP	25, 45
SS7090520SP	31
SS7090530SP	47, 49
SS7090610SP	29
SS7090610SP	35, 49
SS7090850SP	57
SS7091110TP	47, 59
SS7092110TP	45
SS7111120TP	25, 27
SS7120640SP	29, 35
SS7120710SP	29
SS7120710SP	39, 57
SS7120910SP	41, 65
SS7120910TP	59
SS7121410TP	31
SS7150740SP	55
SS7660520SP	27, 37
SS7681410TP	27
SS8080310TP	59
SS8080410TP	29
SS8090540SP	65
SS8090710SP	49
SS8110422TP	25, 33
SS8110422TP	43, 49
SS8110422TP	51, 53
SS8150822TP	65
SS8660410SP	37
SS8660612TP	27, 37
SS8660612TP	39, 41
SS8660612TP	47, 49
SS8661012TP	27, 37
SS8661012TP	51, 53
SS8681412TP	27
SS9080410SP	45
SS9110430TP	65
SS9110543CP	57
SS9111010SP	45
SS9121210TP	65
SS9151440CP	65
SS9151740CP	33
TA075404RO	51
TA1050504RO	35
TA1100604RO	35
WO3	57
WP0480856SP	35
WP0531000SD	65
WS0510002KP	77
WS0631510KP	39
WZ0640200KP	45
WZ0641510KP	35
WZ0850302K0	65

NOTES