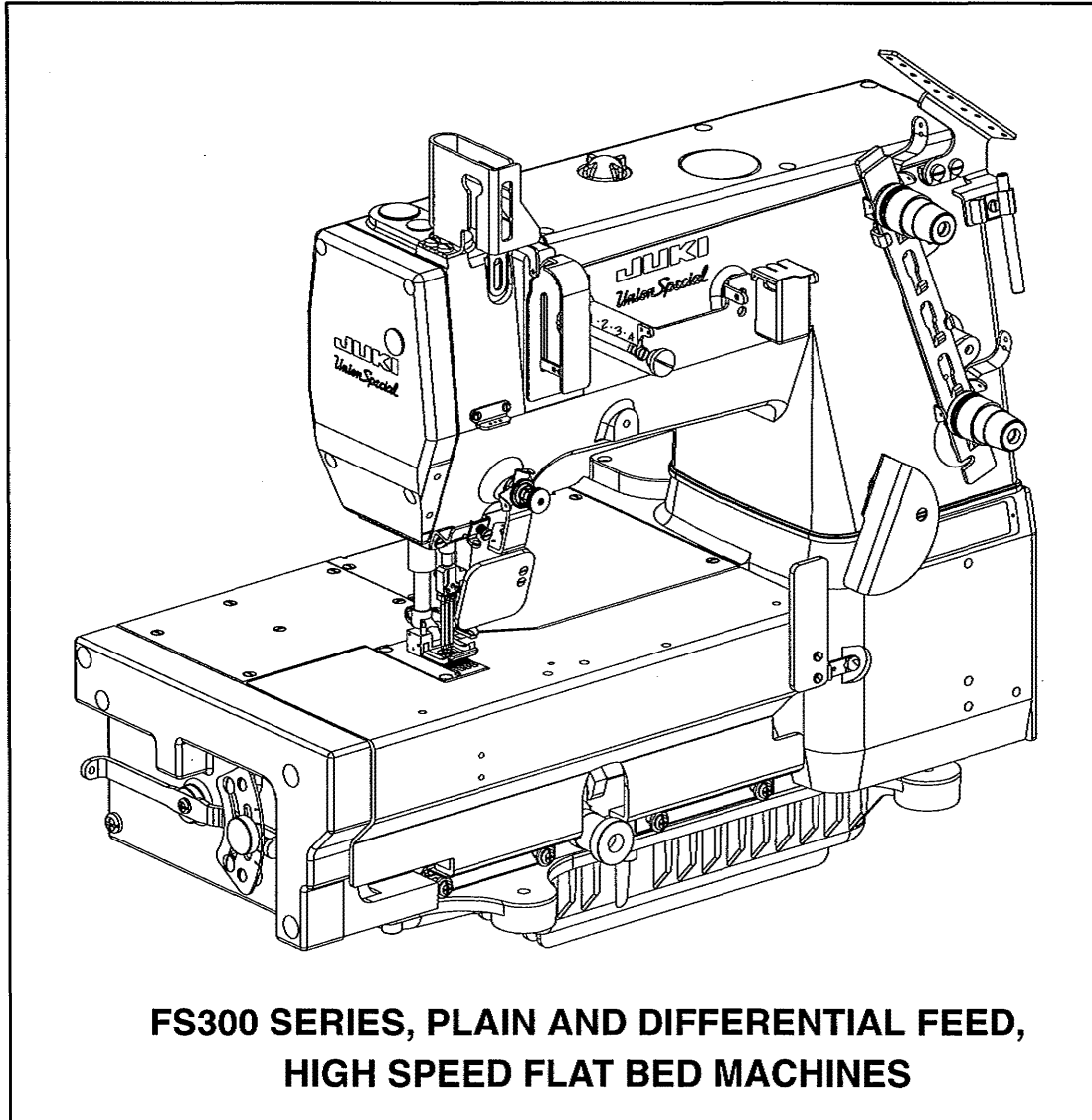




Union Special

INDUSTRIAL SEWING EQUIPMENT

OPERATOR / ILLUSTRATED PARTS MANUAL



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

**MANUAL NO. PT9605
FOR STYLES**

FS311S01	FS311S13
FS311S02	FS311S14
FS311S11	FS311S21
FS311S12	

Manual No. PT9605 Illustrated Parts List for FS300 Series Machines

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By

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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.



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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

FS311S01-1M	SEAMER. One needle, plain feed, medium capacity. Needle thread ratio index furnished. - Typical Application - For seaming side and inseams on work and dress pants. Seam Specifications 401SSa-1. Recommended needle 128 GBS sizes 075/029 - 090/036. Stitch range 7-10 S.P.I.. Maximum recommended speed 6500 R.P.M..
FS311S01-1MCC2	SEAMER. Same as style FS311S01-1M, except with Power "Air Klipp" Chain Cutter.
FS311S02-1M	SEAMER. Same as style FS311S01-1M, except foot with left yielding section. - Typical Application - For side-seaming trousers when crossing front pockets.
FS311S02-1MCC2	SEAMER. Same as style FS311S02-1M, except with Power "Air Klipp" Chain Cutter.
FS311S11-1M	"FEEDING FOOT" SEAMER. Same as style FS311S01-1M, except with "Feeding Foot". - Typical Application - For seaming trousers, coats etc..
FS311S11-1MCC2	"FEEDING FOOT" SEAMER. Same as style FS311S11-1M, except with Power "Air Klipp" Chain Cutter.
FS311S12-1M	"FEEDING FOOT" SEAMER. Same as style FS311S11-1M, except foot with left yielding section. - Typical Application - For side-seaming trousers when crossing front pockets.
FS311S12-1MCC2	"FEEDING FOOT" SEAMER. Same as style FS311S12-1M, except with Power "Air Klipp" Chain Cutter.
FS311S13-1M	"FEEDING FOOT" SEAMER. Same as style FS311S11-1M, except with NARROW "FEEDING FOOT". - Typical Application - For seaming trousers, coats, panels for baseball caps and similar operations. Recommended needle 128 GBS sizes 070/027 - 080/032.
FS311S13-1MCC2	"FEEDING FOOT" SEAMER. Same as style FS311S13-1M, except with Power "Air Klipp" Chain Cutter.
FS311S14-1M	"LOW INERTIA FOOT" SEAMER. Same as style FS311S01-1M, except "Low Inertia" presser foot. - Typical Application - For seaming side and inseam trousers.
FS311S14-1MCC2	"LOW INERTIA FOOT" SEAMER. Same as style FS311S14-1M, except with Power "Air Klipp" Chain Cutter.
FS312S21-1M	DIFFERENTIAL FEED "LOW INERTIA FOOT" SEAMER. Same as style FS311S14-1M, except tandem differential feed.
FS312S21-1MCC2	DIFFERENTIAL FEED "LOW INERTIA FOOT" SEAMER. Same as style FS312S21-1M, except with Power "Air Klipp" Chain Cutter.



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.

<u>TYPE</u>	<u>DESCRIPTION</u>
128 GBS	Short, double groove, struck groove, ball eye, spotted, ball point, chromium plated- Sizes available 070/027, 075/029, 080/032, 090/036.

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 GBS, size 075/029".



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).

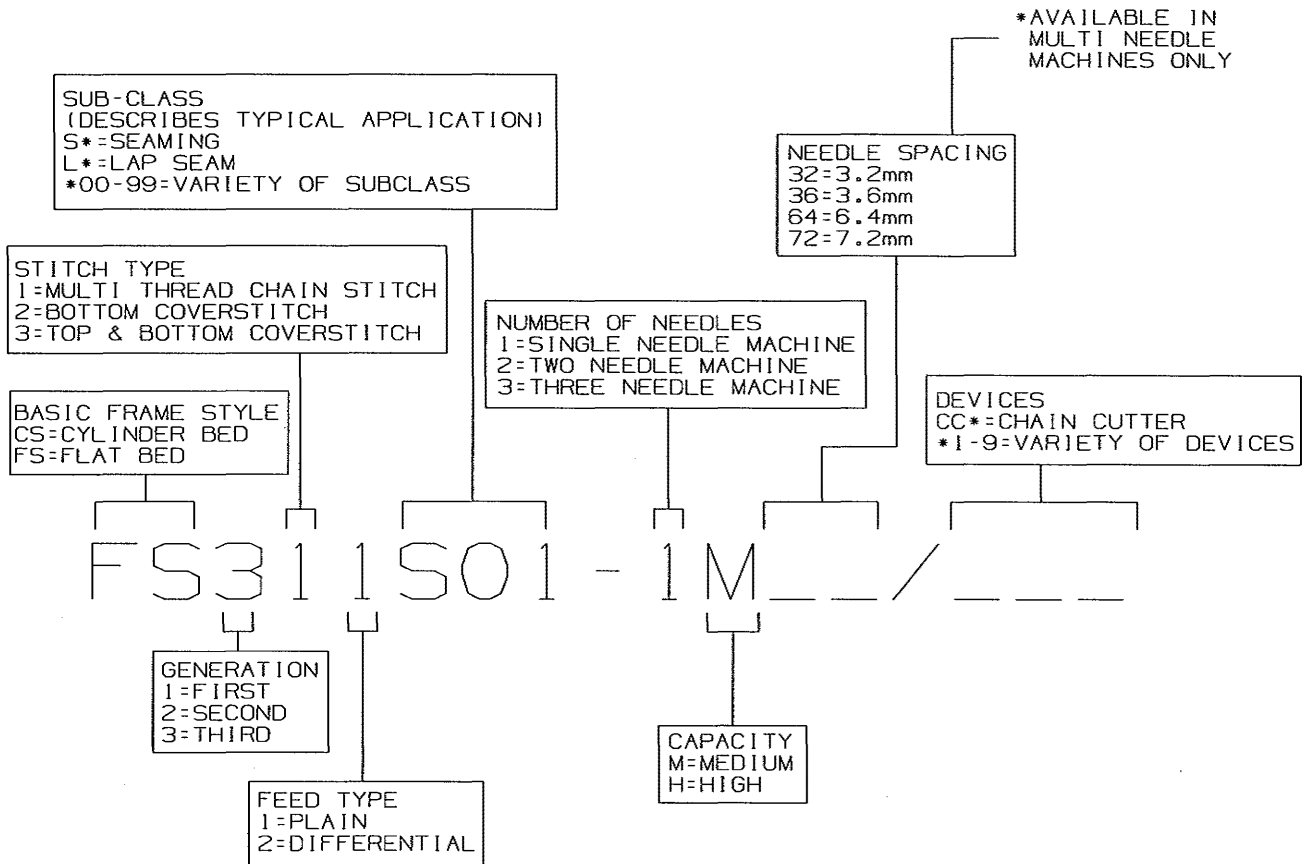
Each machine is only allowed to be used as foreseen. The foreseen use of the particular machine is described in paragraph "STYLES OF MACHINES" of this instruction manual. Another use, going beyond the description, is not as foreseen.

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:

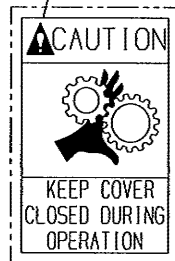
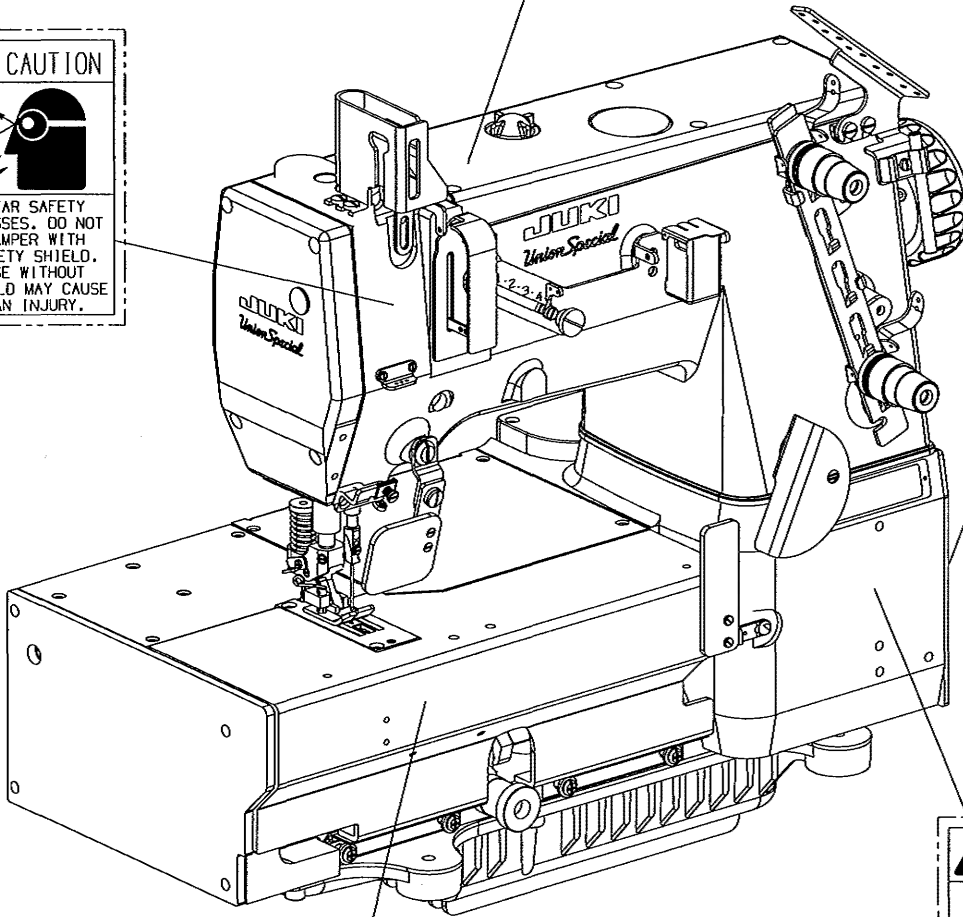
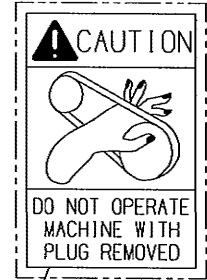
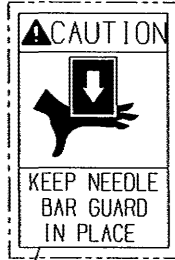


8. When doing the following the machine has to be disconnected from the power supply by turning off the main switch or by pulling out the main plug:
 - 8.1 When threading needle(s), looper, spreader etc.
 - 8.2 When replacing any parts such as needle(s), presser foot, throat plate, looper, spreader, 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



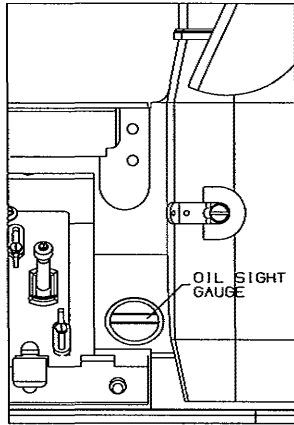
CAUTION AREAS:



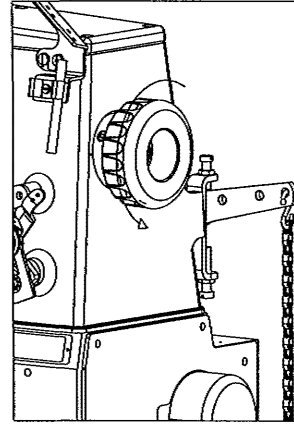
OPERATOR'S DAILY CHECK LIST:

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

- Oil flow
 - Oil level
 - 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)

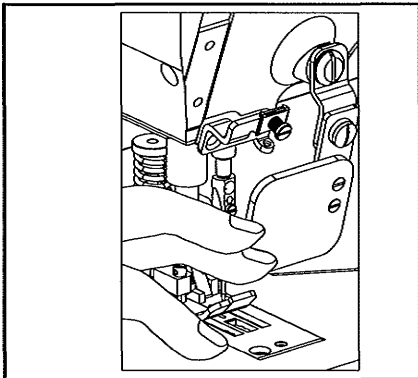


1. The oil level in the sight gauge should be between the two red lines when the machine is at rest. If not, fill with Union Special Specification 175 oil, (Union Special Part No. 28604R).

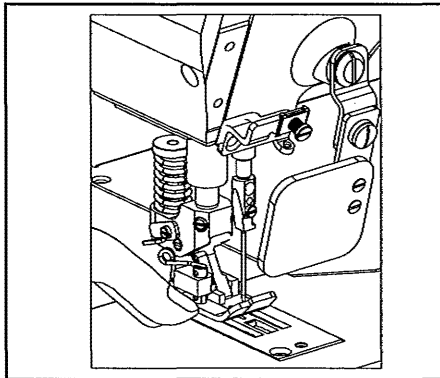


2. The correct rotating direction of the handwheel is counterclockwise, as viewed from the handwheel's side. NEVER run the machine in reverse direction.

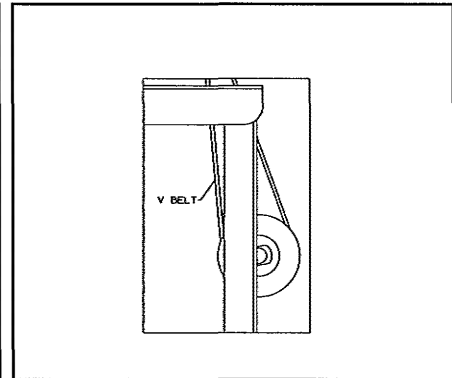
OPERATING CAUTIONS:



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.

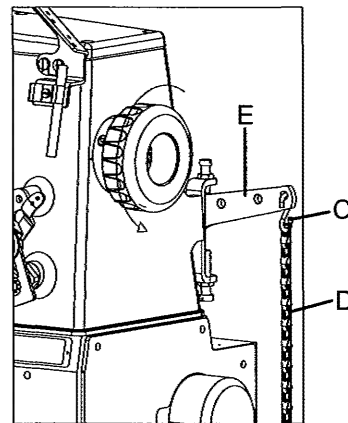
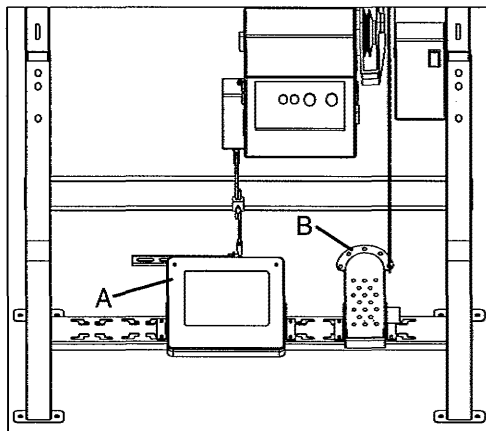


OPERATING CAUTIONS (CONT.):



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.
-

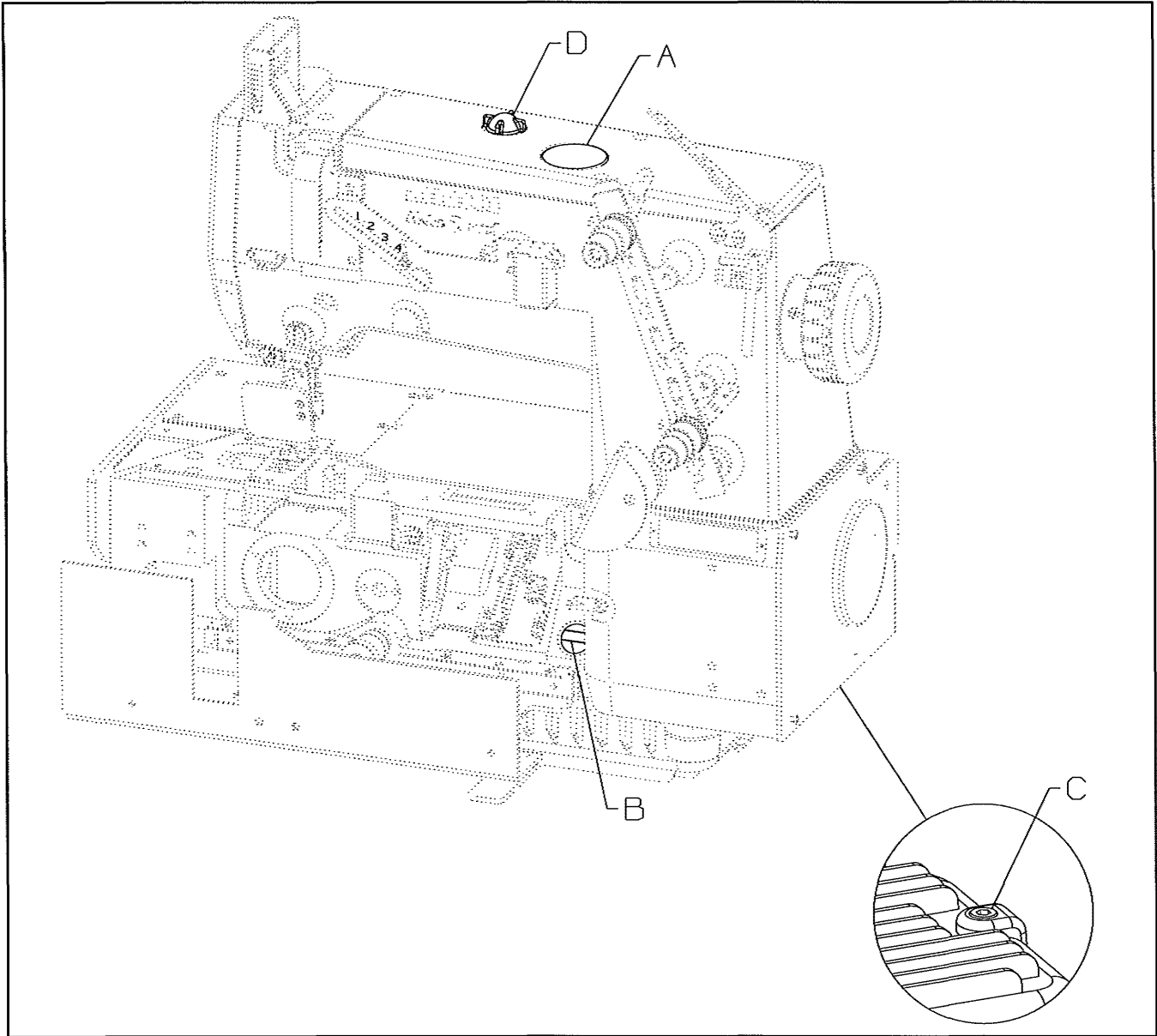
OPERATING THE PEDALS:



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.

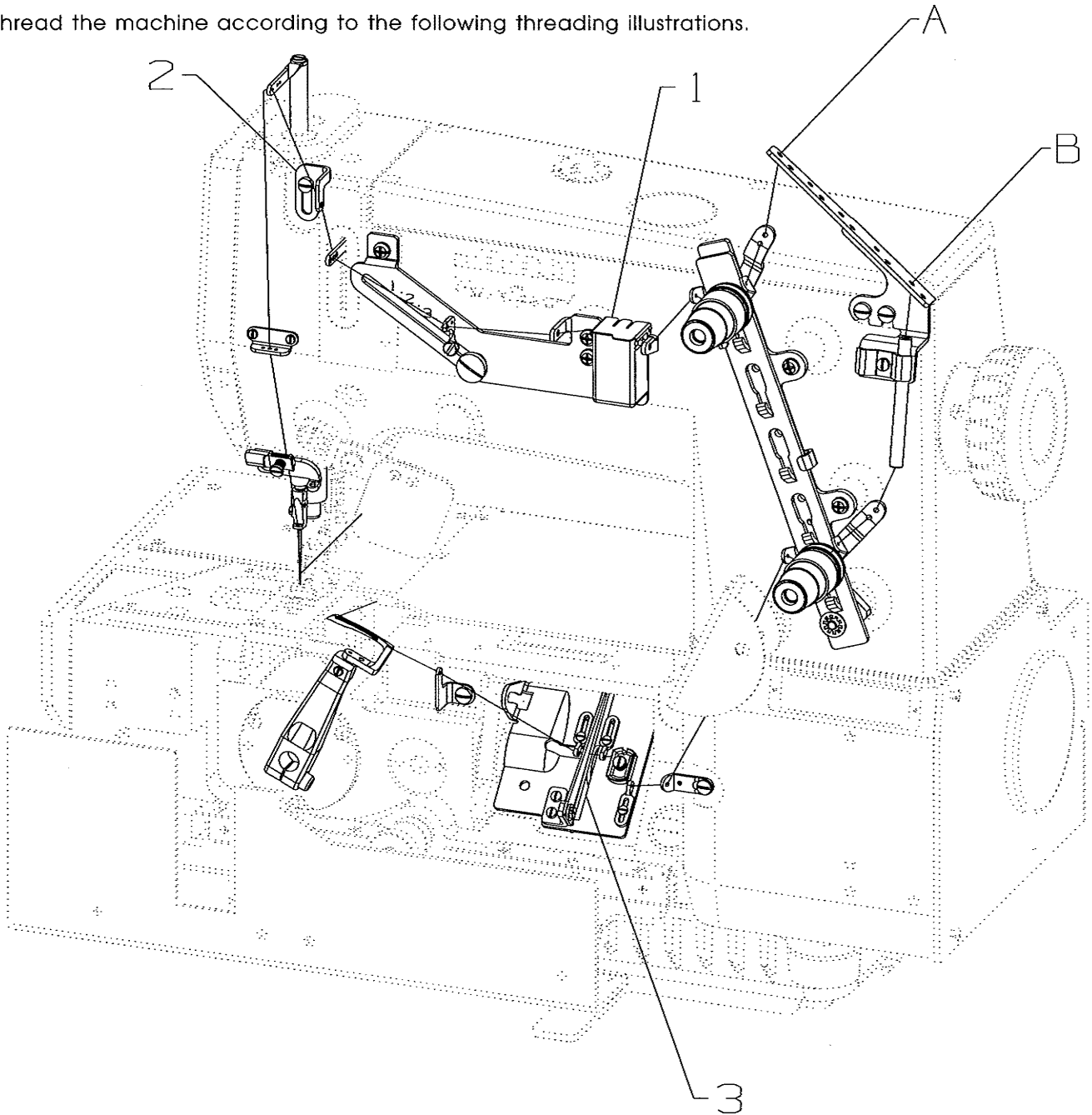
3. To drain oil reservoir, remove oil drain cap (C) on the underside of the machine.
4. To ensure oil flow through machine, check oil flow window (D).

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.

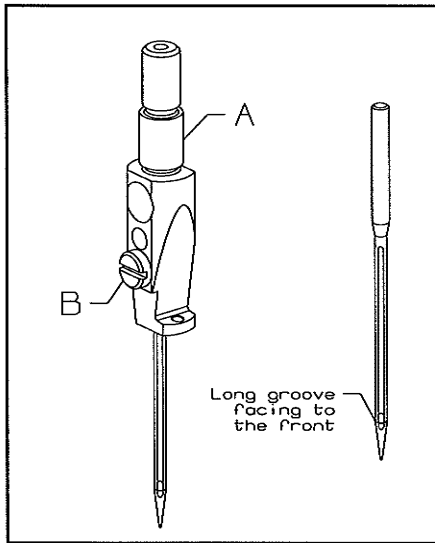


A Left Needle Thread
B Looper Thread

1 Thread Lubricator Area
2 Needle Bar Area
3 Thread Take-Up Area



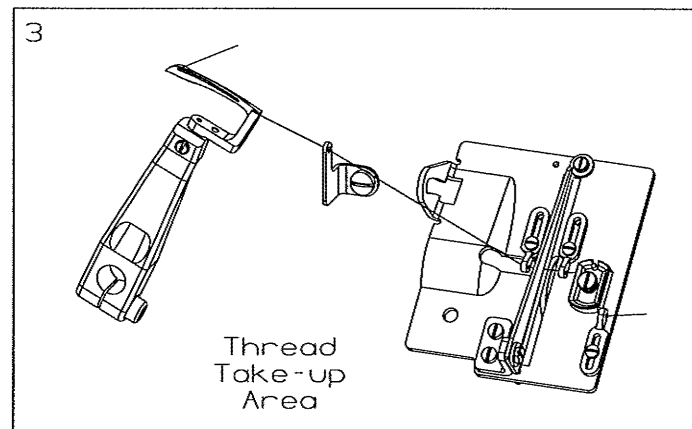
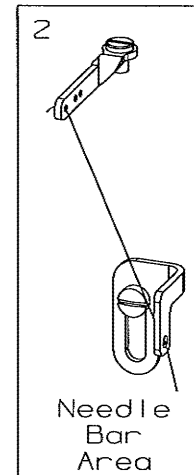
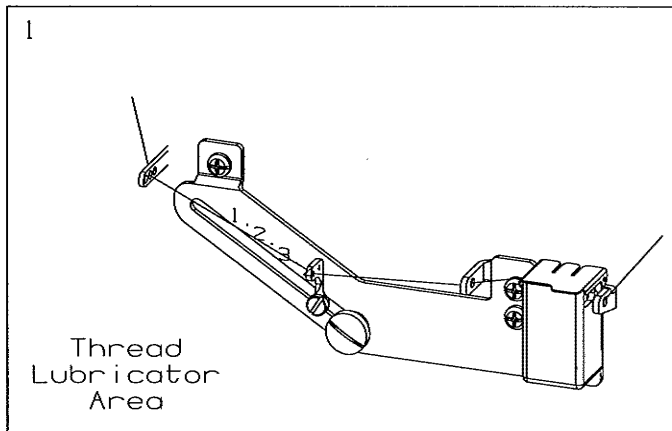
THREADING THE MACHINE (CONT.):



The standard needle is 128 GBS, needle range sizes "070/027 - 090/036."

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).



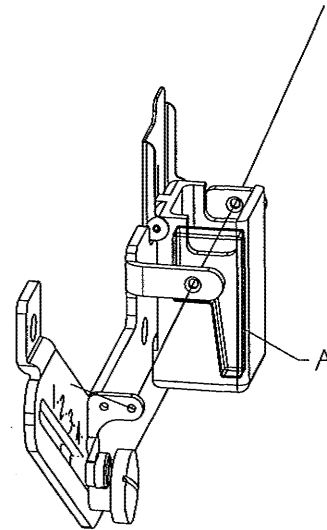
THREADING THE MACHINE (CONT.):

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).



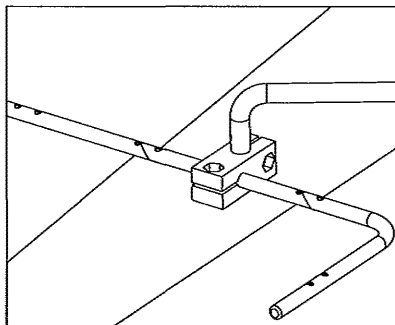
THREADING MEDTHODS



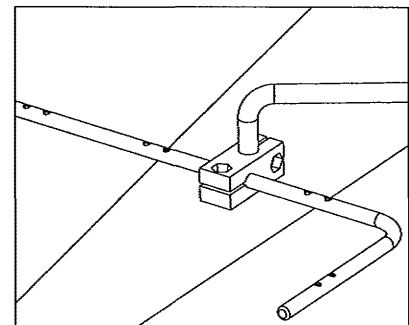
CAUTION!

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

Twisted Thread

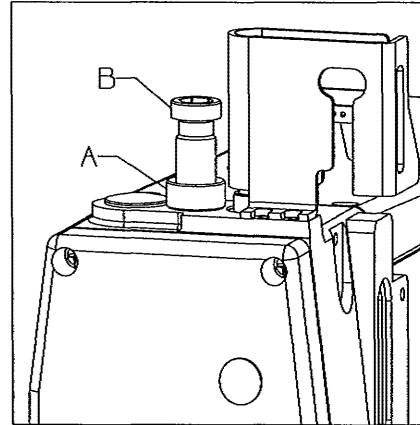


Non-Twist Thread



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:



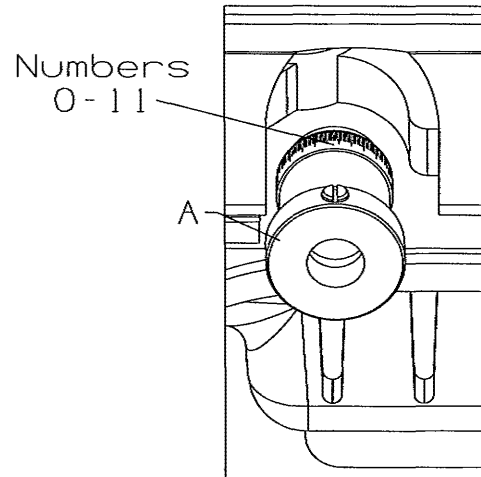
Turn off main power switch before setting the stitch length! When using clutch motors without actuation lock wait until the motor has completely stopped.

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

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

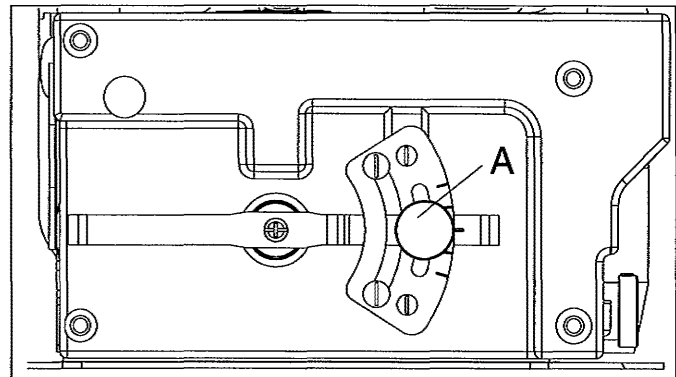
Counterclockwise to decrease stitches per inch/increase the length of one stitch.

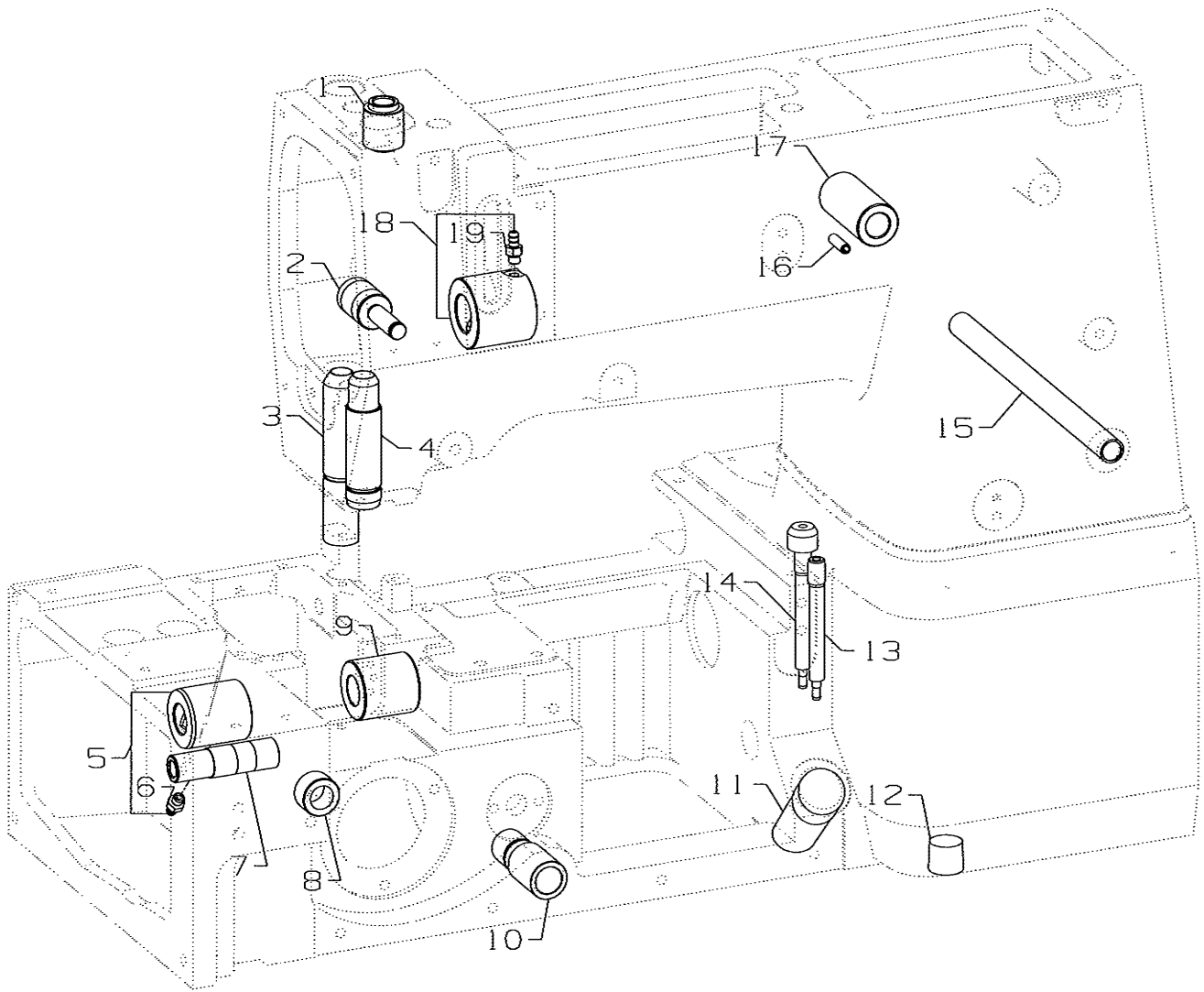
2. Numbers 0-11 on stitch regulating screw are for operator's reference only.



DIFFERENTIAL FEED MECHANISM:

1. Loosen screw (A) and move lever (B) up for gathering (+) and down (-) for stretch.
2. Retighten screw (A).
3. When the main stitch travel is set at .078" (2mm) the differential ratio for maximum gather is 1:1.5, maximum stretch is 1:0.6, depending on material.

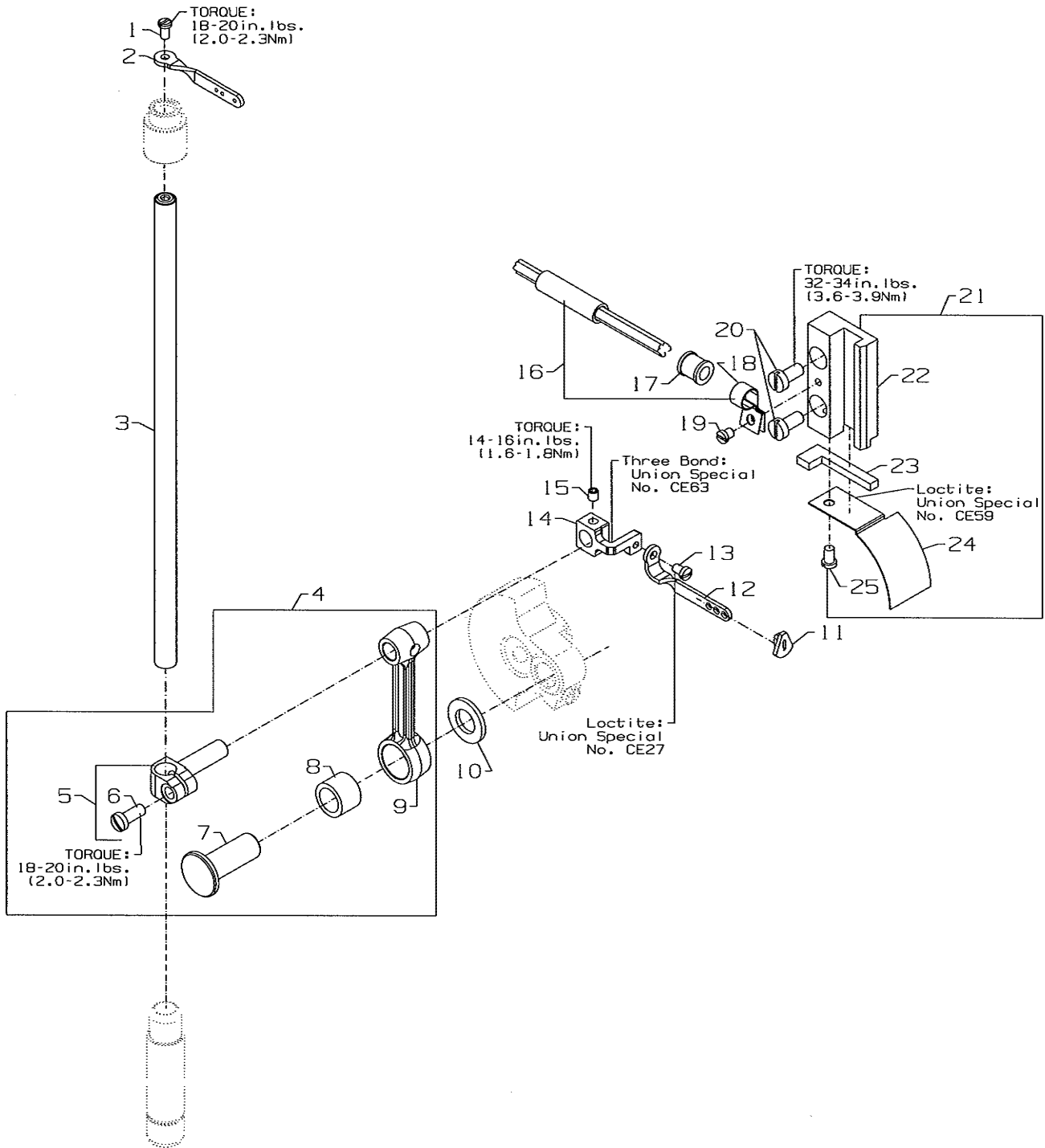




BUSHINGS

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

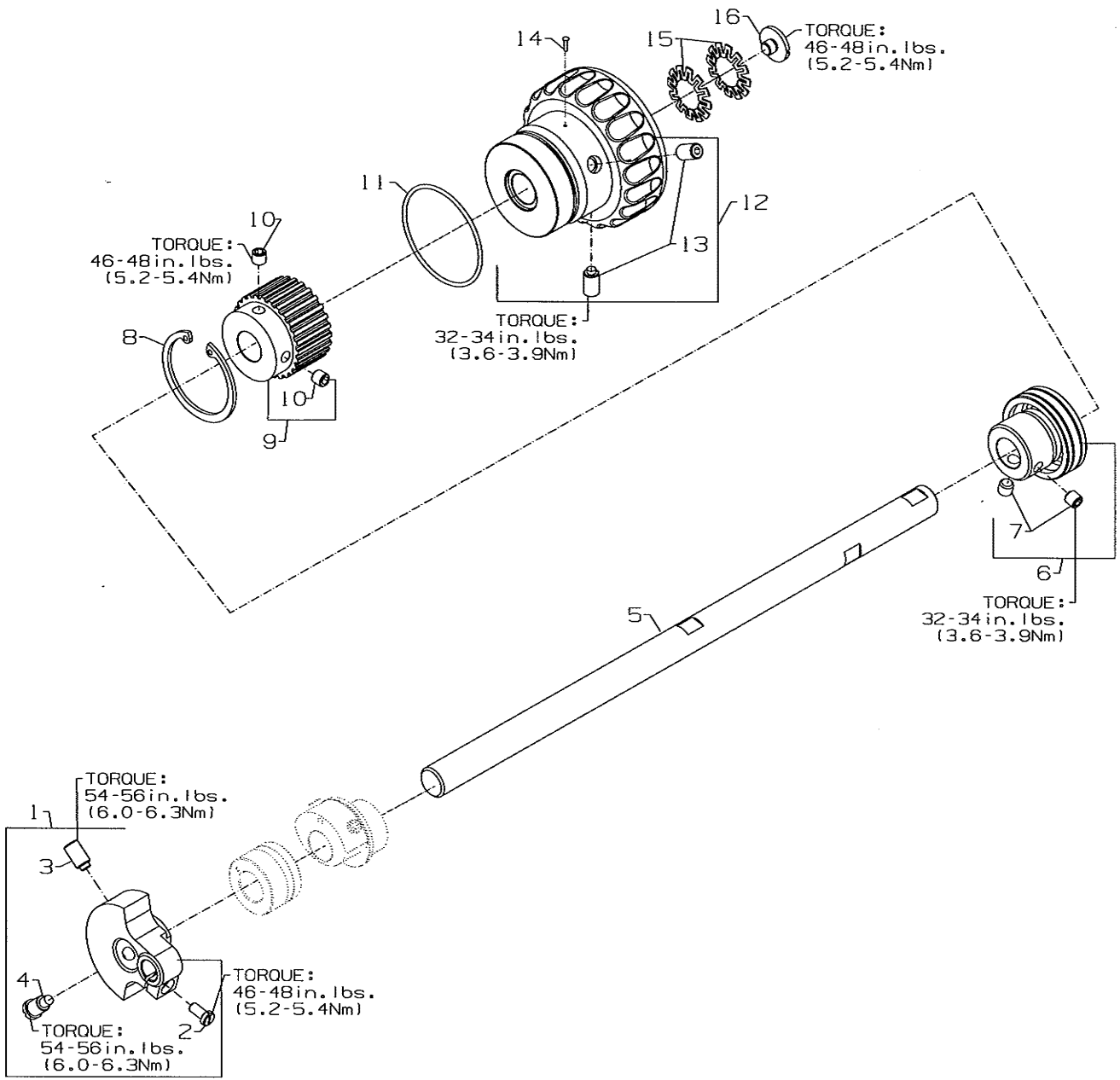




NEEDLE BAR

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

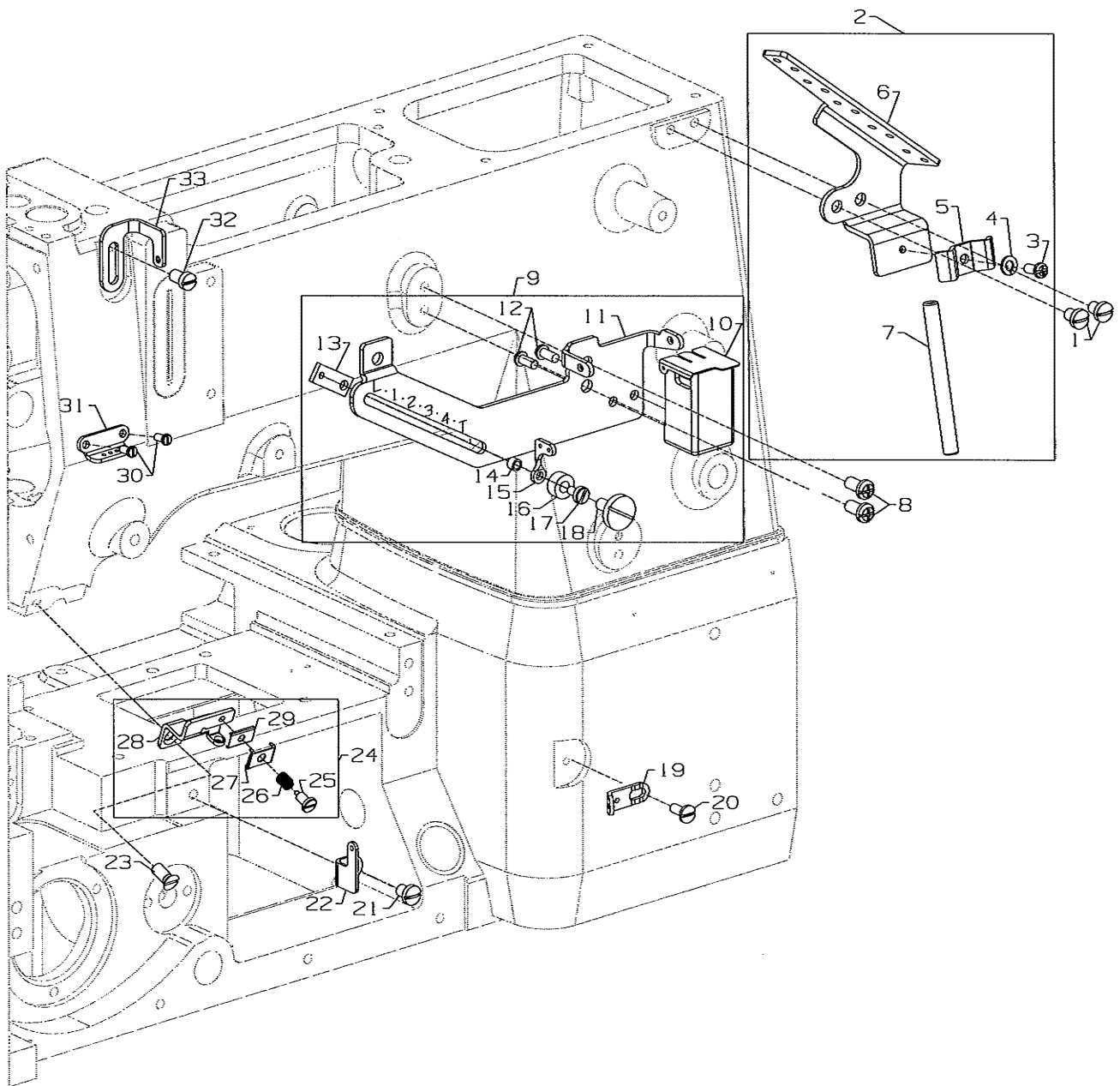




UPPER MAIN SHAFT

Ref. No.	Part No.	Description	Amt. Req.
1.	50391	Counter Weight	1
2.	SS7111120TP	Screw, for counter weight	1
3.	SS8681412TP	Screw, for counter weight	1
4.	SS7681410TP	Screw, for counter weight	1
5.	50322AF	Upper Main Shaft	1
6.	50335BD	Bearing Adapter Assembly	1
7.	SS8660612TP	Screw, for bearing adapter	2
8.	661-262	Retaining Ring	1
9.	50342BE	Sprocket, for upper main shaft	1
10.	SS8661012TP	Set Screw, for sprocket	2
11.	660-1087	"O" Ring.....	1
12.	50321F	Handwheel	1
13.	SS8681412TP	Set Screw, for handwheel	2
14.	660-1043	Tack Pin, for handwheel	1
15.	661-261	Load Ring, for lower main shaft	2
16.	SS7660520SP	Screw, for handwheel preload	1

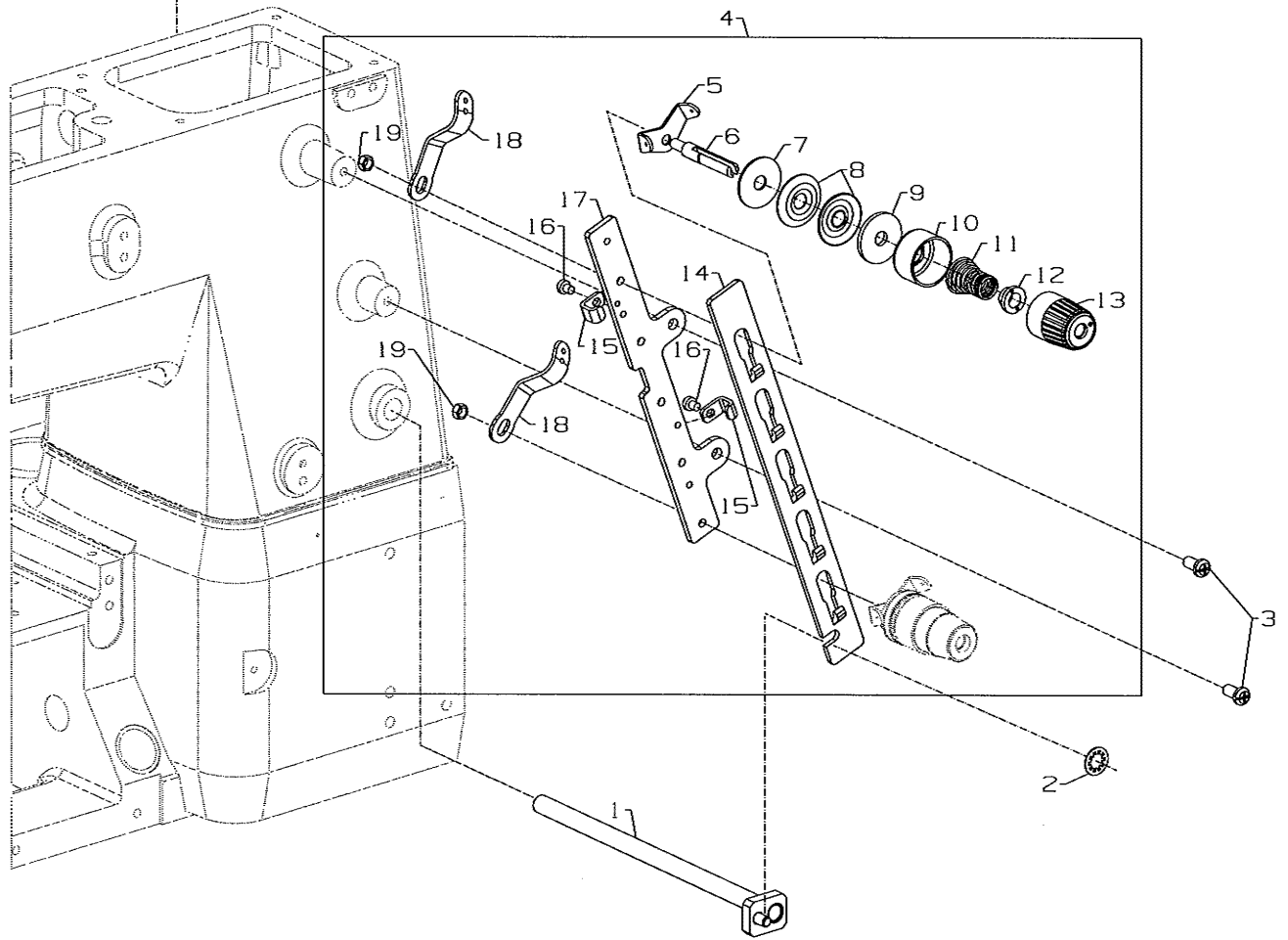
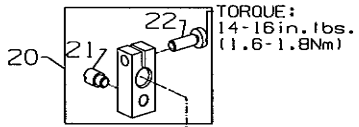




THREAD GUIDE

Ref. No.	Part No.	Description	Amt. Req.
1.	SS7120640SP	Screw, for lead-in eyelet	2
2.	50692H	Thread Eyelet Assembly	1
3.	SS7090910TP	Screw	1
4.	WS0410002KP	Split Washer	1
5.	50366A	Thread Eyelet Tube Bracket	1
6.	50392S	Lead-In Tension Eyelet	1
7.	50366	Thread Eyelet Tube	1
8.	SS4120915SP	Screw, for spreader thread guide	2
9.	29476TG	Thread Ratio Control Assembly	1
10.	50393HH	Silicone Thread Lubricator	1
11.	50683A	Thread Control Bracket	1
12.	SS4090815SP	Screw, for silicone tank	2
13.	56358B	Guide Block	1
14.	56358C	Guide	1
15.	158B	Thread Eyelet	1
16.	56358D	Washer	1
17.	98A	Screw	1
18.	22837	Screw	1
19.	12124202	Looper Frame Eyelet	1
20.	SS70906105SP	Screw	1
21.	SS7120640SP	Screw	1
22.	50392AE	Looper Frame Eyelet	1
23.	SS1121010SP	Screw, for thread guide	1
24.	50357AR	Nipper Plate Assembly	1
25.	SD0380551SL	Screw	1
26.	50357AS	Nipper Spring	1
27.	50357Y	Nipper Spring Plate	1
28.	50366G	Thread Guide	1
29.	50357V	Nipper Plate	1
30.	605A	Screw, for needle thread guide	2
31.	C50044E	Needle Thread Guide	1
32.	SS7120710SP	Screw, for strike-off	1
33.	50663	Needle Thread Strike-Off Eyelet	1

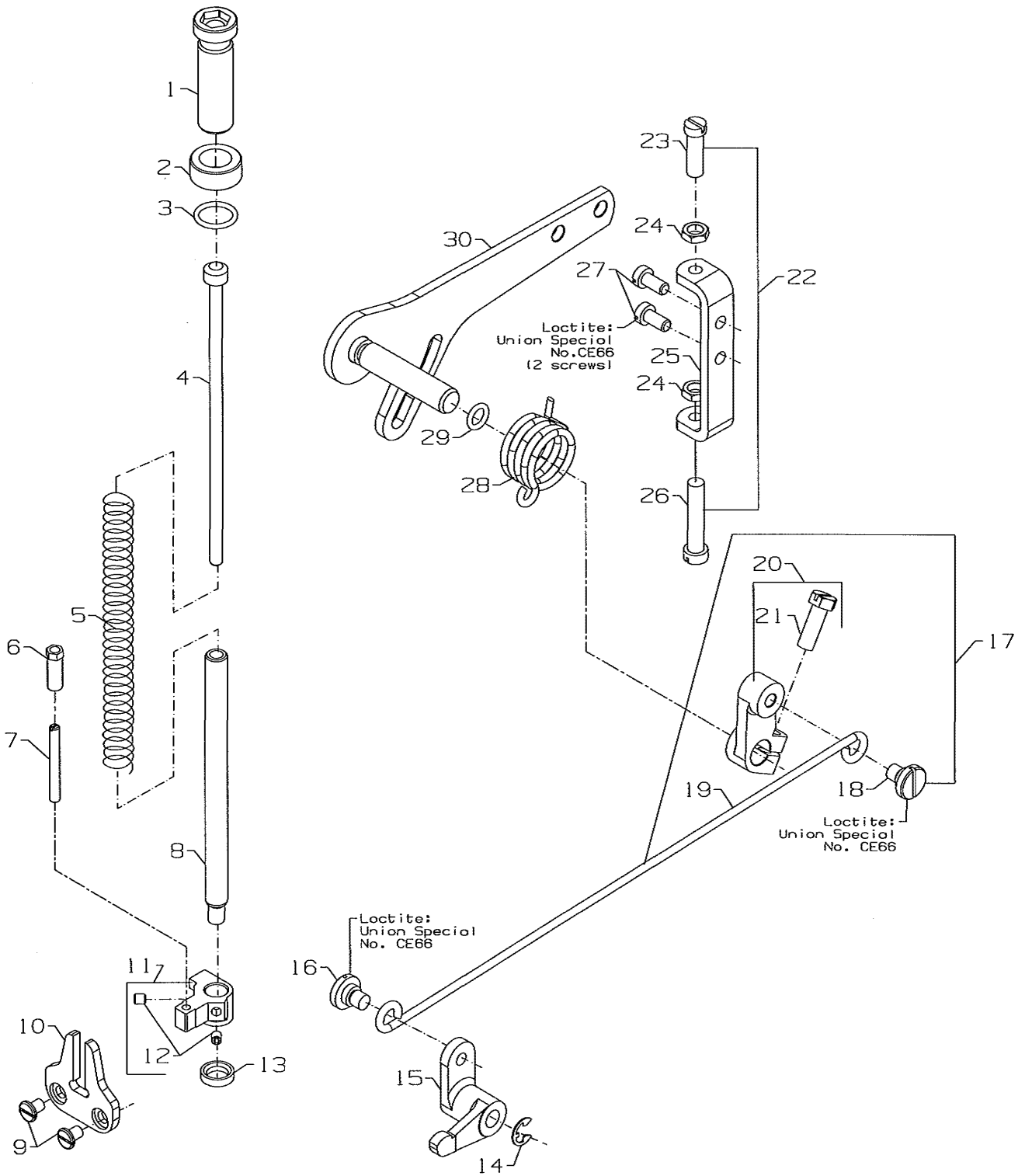




TENSION RELEASE & THREAD TENSION

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.	50692B	Two Thread Tension Assembly	1
5.	57892K	Thread Tension Eyelet	2
6.	56392G	Tension Post	2
7.	B3120352000	Tension Disc Felt	2
-	666-330	Disc Felt	4
8.	B3126012000	Tension Disc	4
9.	B3120704000	Tension Disc Felt	2
10.	56392H	Spring Shield	2
11.	11550209	Spring, needle (green)	3
-	B3103804000	Spring, spreader (blue)	1
-	B3121804000	Spring, looper (plain)	1
12.	B3112704000	Ferrule, tension spring	2
13.	50692G	Knob, needle (green)	3
-	56392R	Knob, looper (plain)	1
14.	50392W	Tension Disc Separator	1
15.	50392AV	Guide, for tension disc separator	2
16.	SS7090520SP	Screw, for guide	2
17.	50392X	Tension Bracket	1
18.	57865	Lead-In Thread Guide	2
19.	NS6110420SP	Nut	2
20.	50392BC	Tension Release Lever Shaft Connection	1
21.	22875N	Stop Screw	1
22.	SS7121410TP	Binder Screw	1

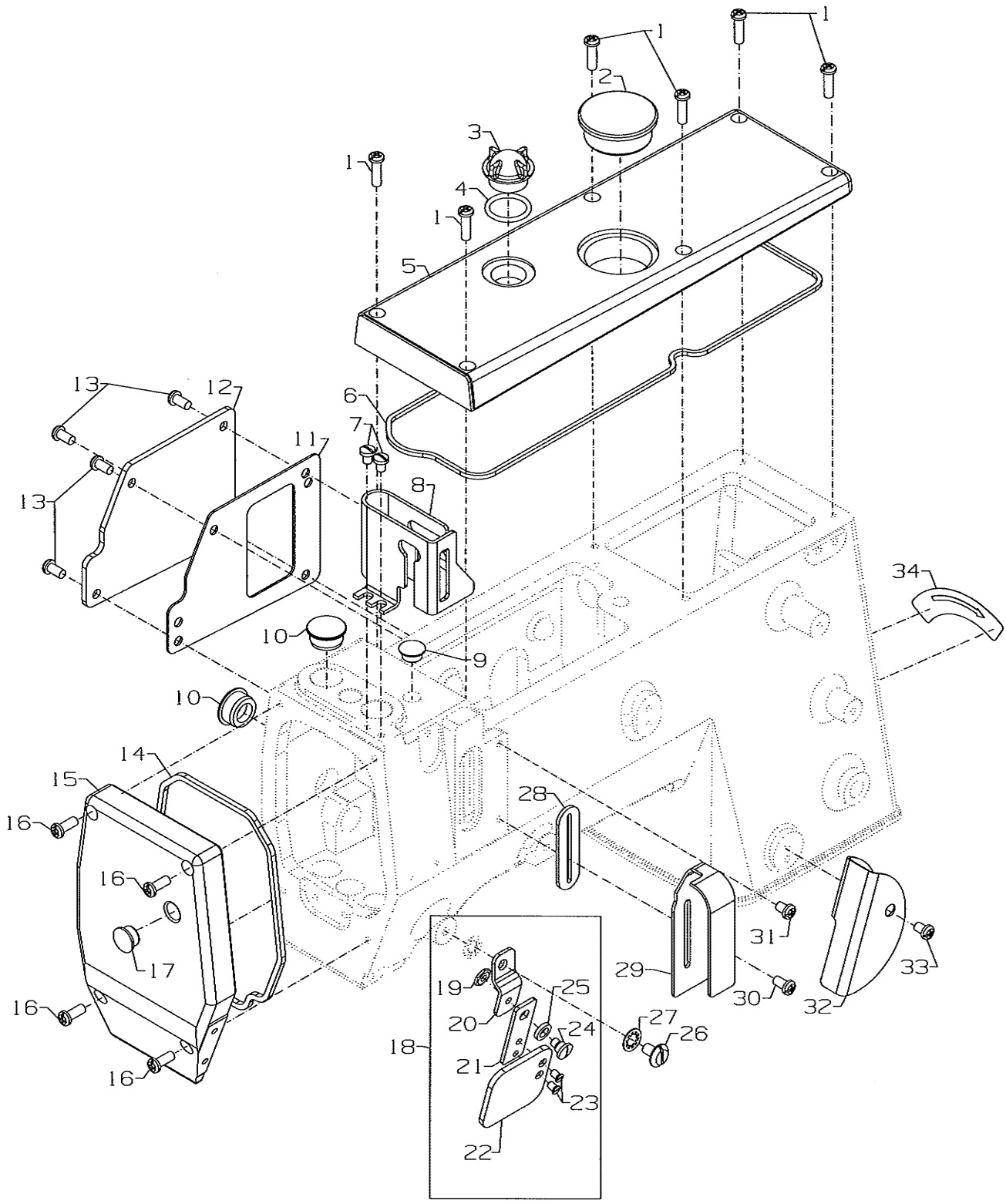




PRESSER FOOT LIFT

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.	50357AA	Spring, for presser bar, for S01, S02 machine styles	1
-	50357AP	Spring, for presser bar, for differential feed machines	1
6.	C50056J	Lock Nut	1
7.	50643B	Screw	1
8.	50335AF	Presser Bar, for S01, S02 machine styles	1
-	50643A	Pressr Bar	1
9.	SS6110610TP	Screw, for guide plate	2
10.	50335AG	Guide Plate, for presser bar	1
11.	50335AH	Presser Bar Guide	1
12.	SS8110422TP	Set Screw	2
13.	660-739	Oil Seal	1
14.	RE0500000K0	E Ring, for pin	1
15.	50381F	Lever, for lifter, front	1
16.	SD0790303SP	Screw, for wire connector	1
-	CE49	Loctite Adhesive, (not shown), for screw	-
17.	29476TK	Rear Lifter Lever Assembly	1
18.	SD0790303SP	Screw, for lifter lever assembly	1
19.	50355AR	Wire Connector	1
20.	50381G	Lifter Lever, rear	1
21.	SS9151740CP	Hex Screw	1
22.	29476TT	Stop Assembly	1
23.	SS6151920SP	Screw, for adjusting stopper	1
24.	NS6150310SP	Hex Nut	2
25.	50332V	Stopper, for lifter lever	1
26.	SS6153040SP	Screw, for adjusting stopper	1
27.	SS4121215SP	Screw, for stopper	2
-	CE49	Loctite Adhesive, (not shown), for screw	-
28.	50381	Spring, for lifter lever	1
29.	RO068190100	"O" Ring	1
30.	50381B	Lifter Lever Assembly	1

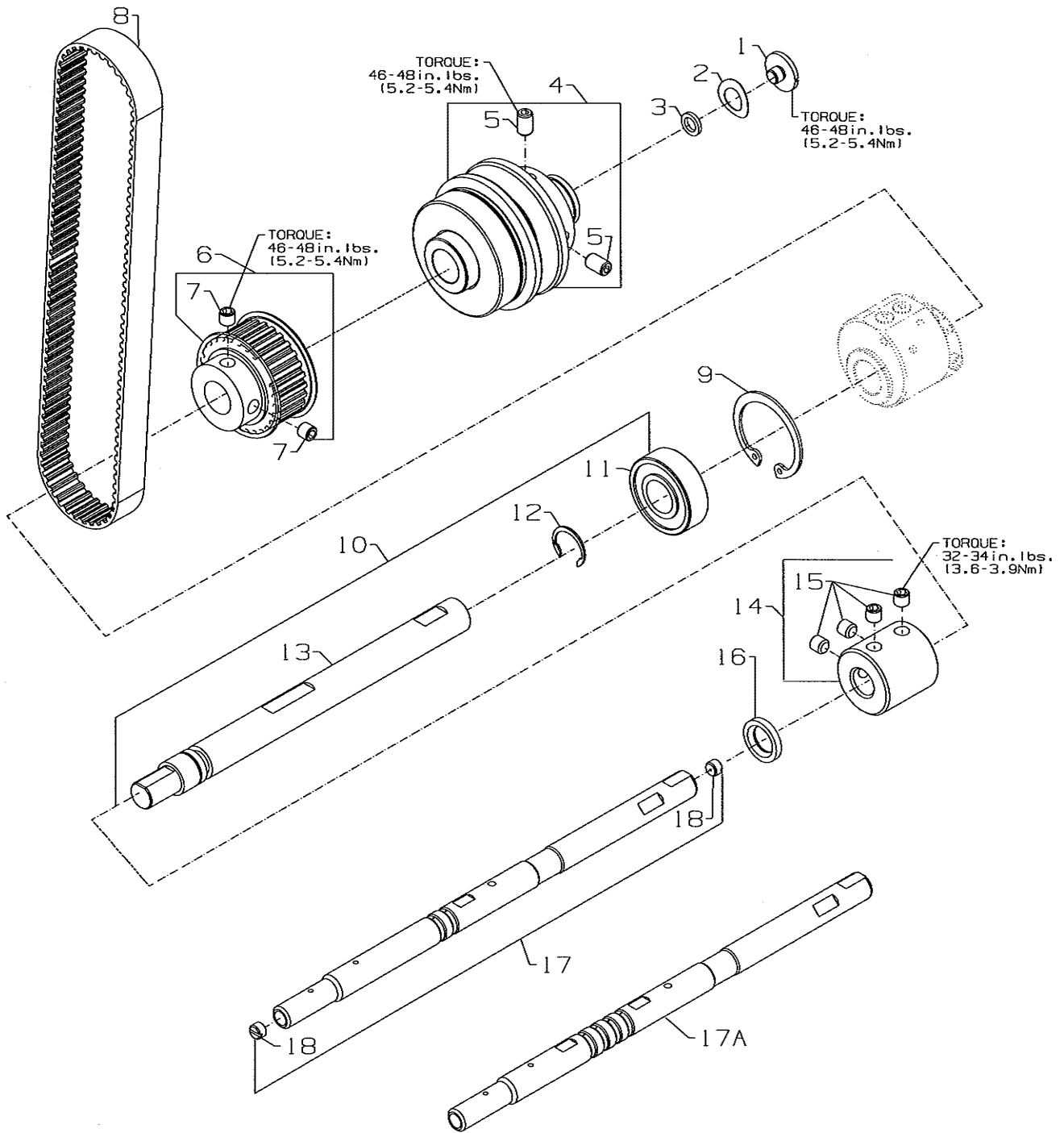




COVERS, UPPER ARM

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.	50384L	Gasket, for puller drive cover	1
12.	50382GB	Puller Drive Cover	1
13.	SS4120915SP	Screw, for puller drive cover	4
14.	50382FY	Quad Ring, for head cover	1
15.	50382FX	Head Cover	1
16.	SS4121215SP	Screw, for head cover	4
17.	TA1100604RO	Plug, for head cover	1
18.	99682XCB	Protection Shield Assembly	1
19.	NS6620320SP	Nut	1
20.	50383AE	Bracket Holder	1
21.	50383AD	Bracket	1
22.	99682XC	Protection Shield	1
23.	SS1110640SL	Counter Sunk Head Screw	2
24.	SD0640323TP	Shoulder Screw	1
25.	WZ0641510KP	Spring Washer	1
26.	22517B	Screw	1
27.	652C16	Washer	1
28.	50393EW	Rubber Gasket, for needle lever	1
29.	50696	Cover, for thread take-up	1
30.	SS4120915SP	Screw, for thread take-up cover	1
31.	SS4120615SP	Screw, for thread cover	1
32.	50382GM	Thread Cover	1
33.	SS4120615SP	Screw, for thread take-up cover	1
34.	LA452	Label, direction of rotation	1

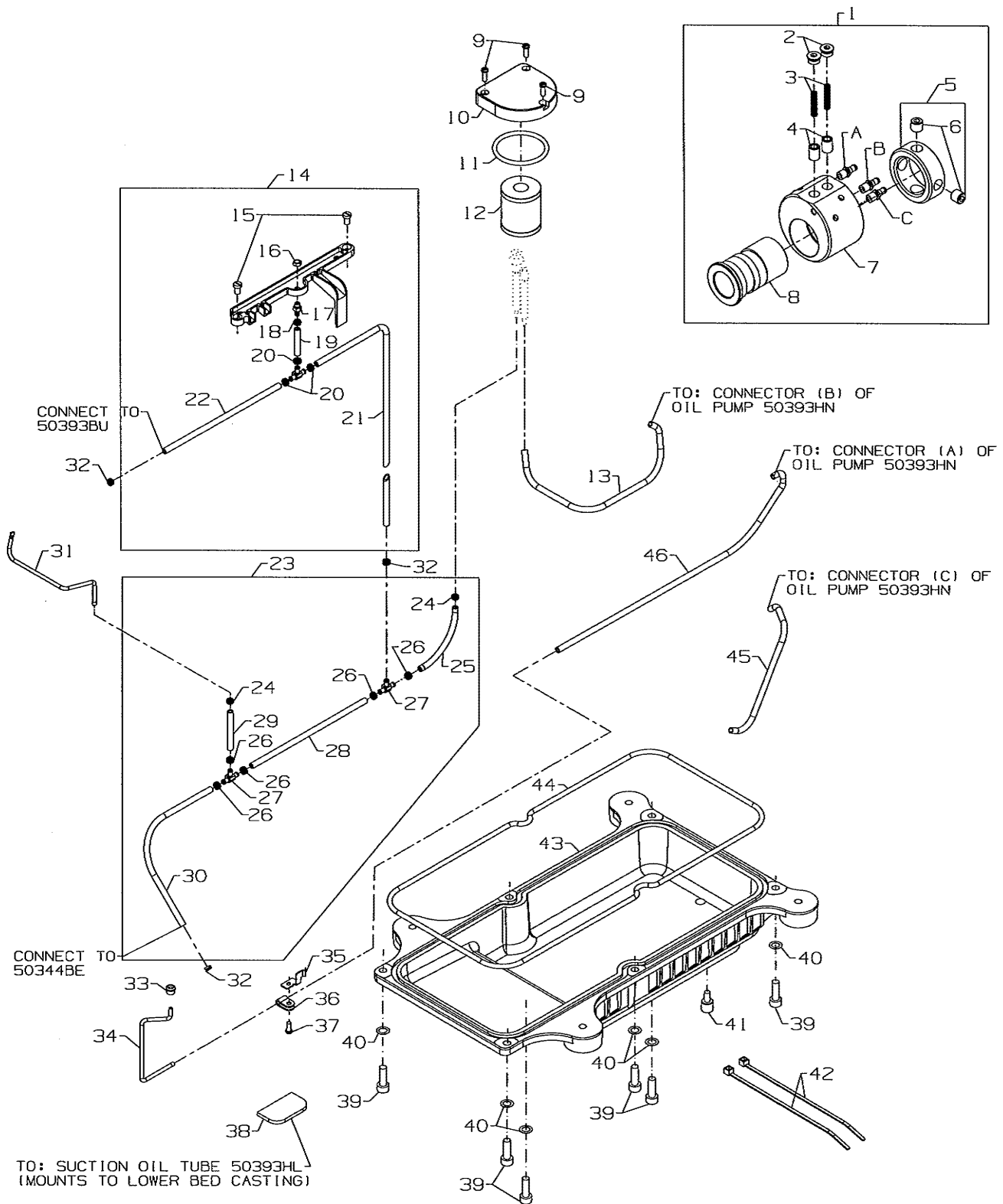




LOWER MAIN SHAFT

Ref. No.	Part No.	Description	Amt. Req.
1.	SS7660520SP	Shoulder Screw, for lower main shaft, right	1
2.	660-1062	Spring Washer	1
3.	50374	Spacer, for pulley assembly	1
4.	50321G	Pulley Assembly	1
5.	SS8661012TP	Set Screw	2
6.	50342AX	Sprocket, for lower main shaft	1
7.	SS8660612TP	Screw	2
8.	50342BS	Timing Belt	1
9.	50335AK	Retaining Ring, for ball bearing	1
10.	29476UH	Mainshaft Assembly, lower, right	1
11.	50322AL	Ball Bearing, for lower main shaft	1
12.	50335BB	Retaining Ring	1
13.	50322AG	Lower Main Shaft, right	1
14.	50333A	Coupling, for lower main shafts	1
15.	SS8660612TP	Screw	4
16.	660-934	Oil Seal	1
17.	50622D	Lower Main Shaft, left for plain feed.....	1
17A.	50622E	Lower Main Shaft, left for differential feed	1
18.	SS8660410SP	Screw	2

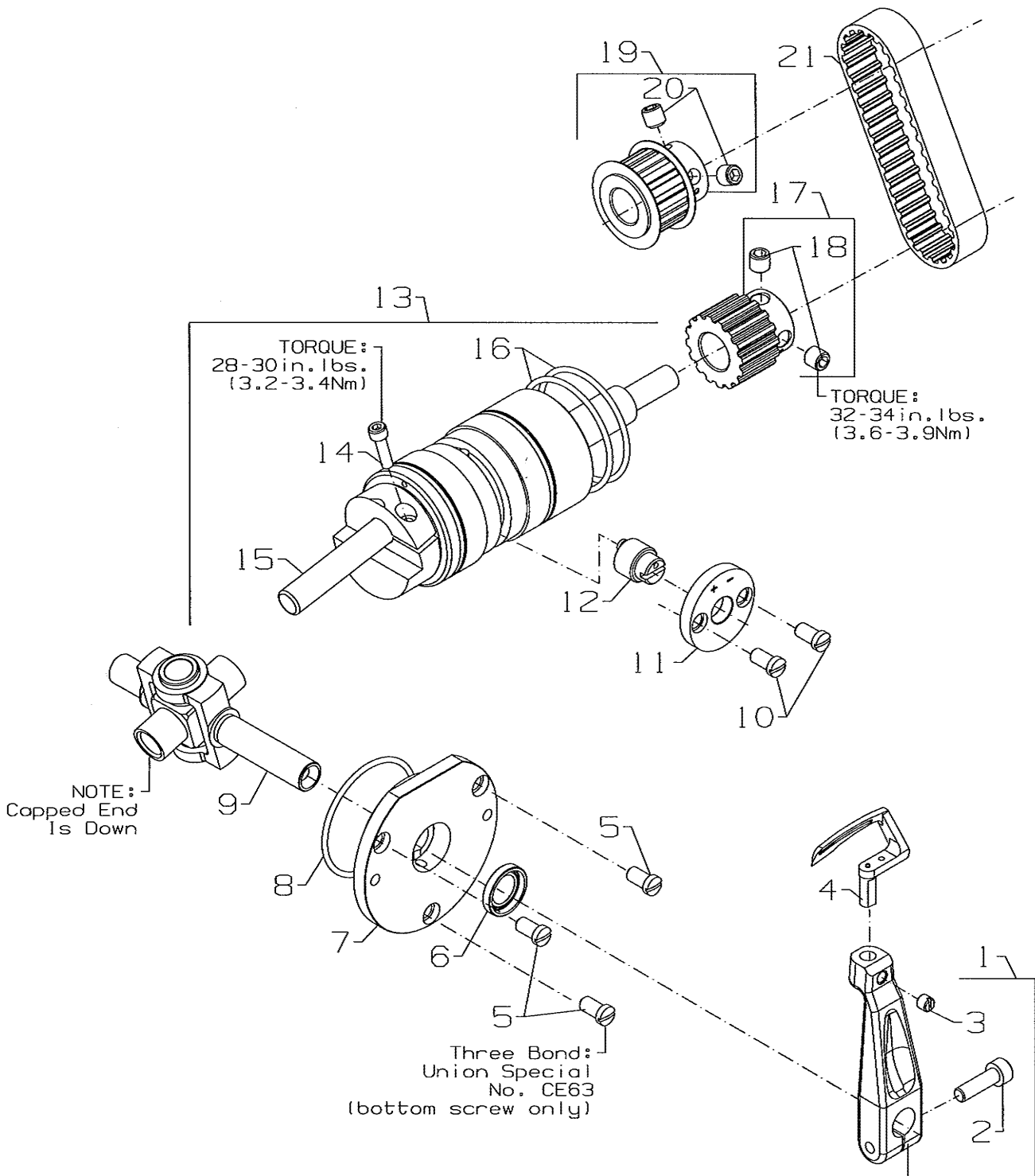




LUBRICATION, OIL TUBING & OIL PUMP

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.	29476US	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	3
21.	50393-447	Oil Tube	1
22.	50393-140	Oil Tube	1
23.	29476UT	Oil Supply Assembly, lower	1
24.	50393KH	Tube Retaining, spring	2
25.	50393-70	Oil Tube	1
26.	50393KM	Tube Retaining, spring	5
27.	13765607	"T" Connector	2
28.	50393-140	Oil Tube	1
29.	50393-40	Oil Tube	1
30.	50393-170	Oil Tube	1
31.	50393KF	Oil Tube	1
32.	50393KM	Tube Retaining, spring	3
33.	50393HR	Plug, for feed chamber	1
34.	50393HL	Oil Tube, for suction	1
35.	50393FS	Oil Tube Holder	1
36.	998-358F	Plastic Clip	1
37.	SS4090815SP	Screw, for oil tube holder	1
38.	50393HK	Felt	1
39.	SS6151812TP	Screw, for oil pan	6
40.	WS0631510KP	Spring Washer	6
41.	22571E	Screw, for oil drain plug	1
42.	RM2871B	Cable Tie	2
43.	50393EB	Oil Pan	1
44.	50384A	"O" Ring	1
45.	50393FT	Oil Tube, for suction	1
46.	50393HJ	Oil Tube, for suction	1

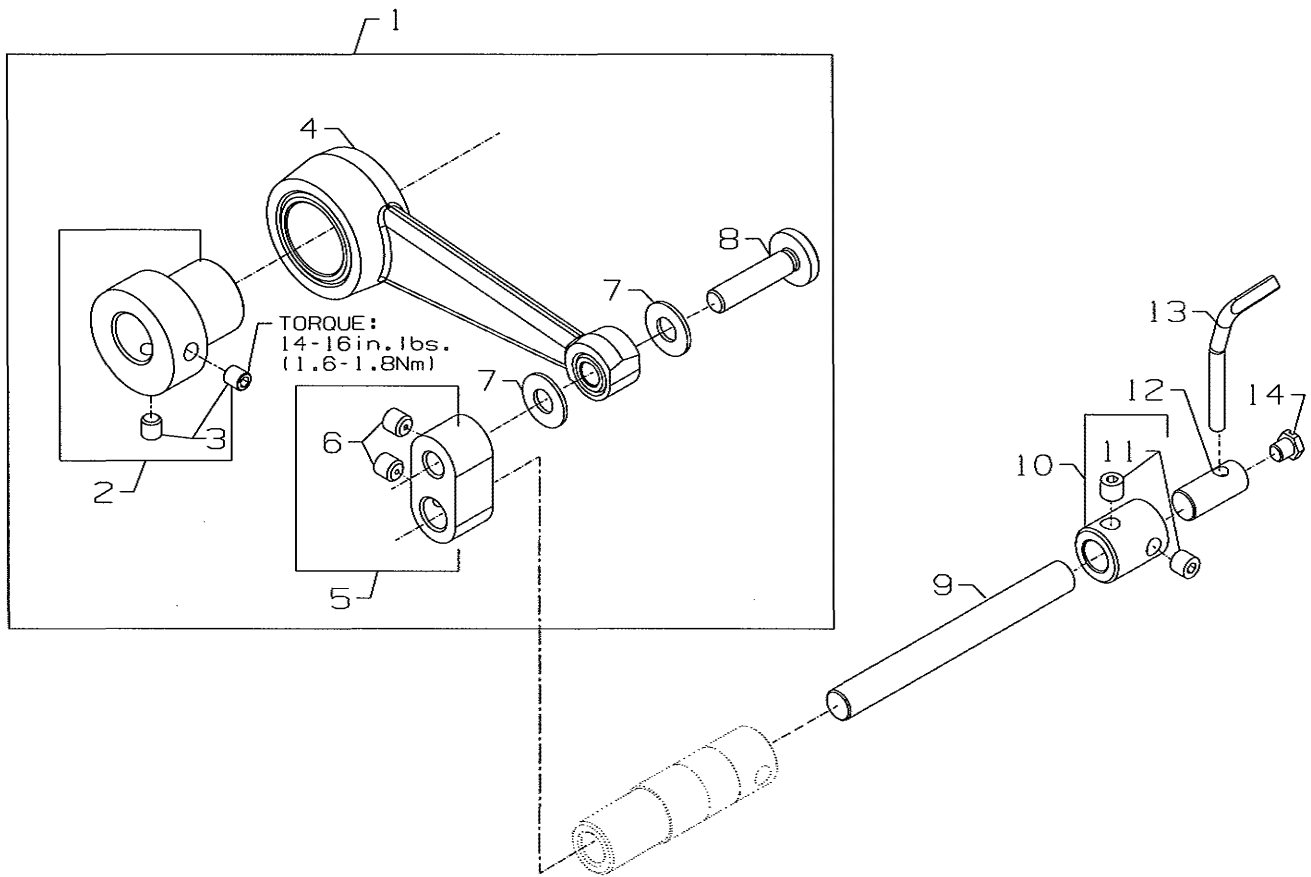




LOOPER DRIVE

Ref. No.	Part No.	Description	Amt. Req.
1.	50313	Looper Holder	1
2.	22652B10	Screw, for looper holder	1
3.	22565	Screw, for looper holder	1
4.	50309F	Looper	1
5.	SS7120910SP	Screw, for bearing housing	3
-	CE63	Three Bond Adhesive, (not shown), for screw	-
6.	660-893	Oil Seal, looper	1
7.	50344AM	Bearing Housing Assembly, for looper drive	1
8.	660-455	"O" Ring, for bearing housing assembly	1
9.	50313J	Looper Rocker Assembly	1
10.	SS7120910SP	Screw, for retaining plate	2
11.	50314F	Eccentric Retaining Plate	1
12.	50314E	Looper Avoid Adjusting Eccentric	1
13.	50642	Looper Drive Assembly	1
14.	22653J8	Screw	1
15.	667J33	Crank Pin	1
16.	660-979	"O" Ring	2
17.	50342BJ	Sprocket, for looper driven	1
18.	SS8660612TP	Screw	2
19.	50342BK	Sprocket, for looper drive	1
20.	SS8660612TP	Screw	2
21.	50342BP	Looper Drive Belt	1

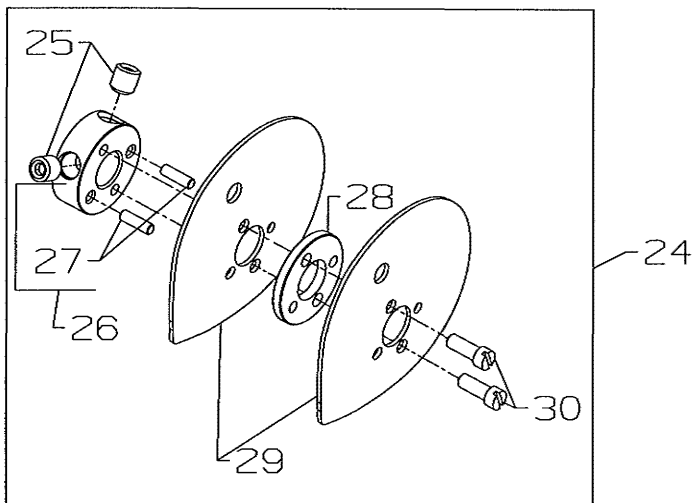
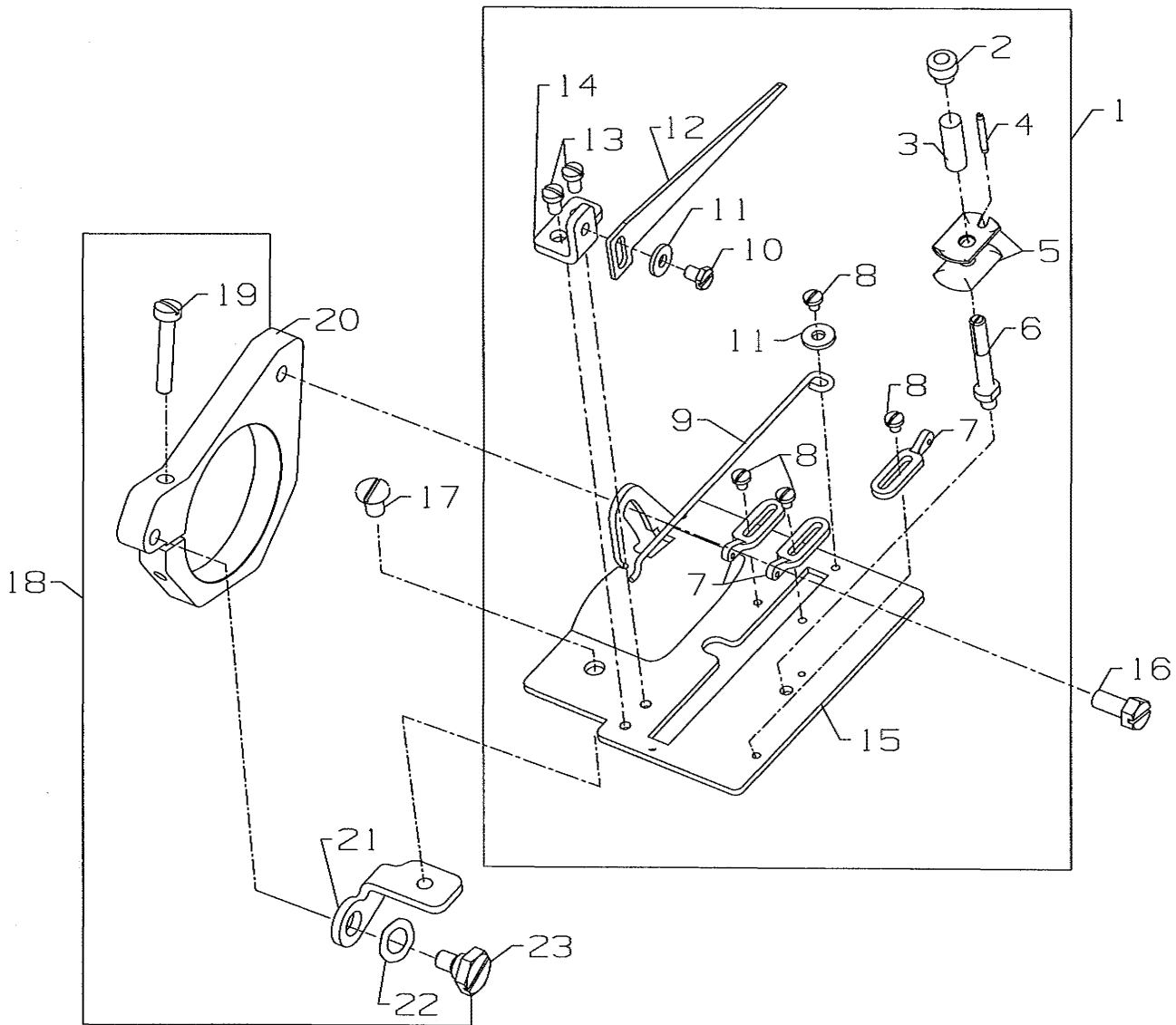




NEEDLE GUARD

Ref. No.	Part No.	Description	Amt. Req.
1.	29476UJ	Rear Needle Guard Drive Assembly	1
2.	50373DA	Needle Guard Eccentric	1
3.	SS8110422TP	Screw, for needle guard eccentric	2
4.	50368W	Connecting Rod Assembly, for needle guard	1
5.	50368T	Pivot Link	1
6.	SS8110422TP	Screw	2
7.	50368E	Washer	2
8.	50368A	Pivot Pin	1
9.	50368V	Shaft, for needle guard	1
10.	50354L	Coupling, for needle guard	1
11.	SS8110422TP	Screw	2
12.	50325AF	Holder, for needle guard	1
13.	50325AE	Needle Guard, rear	1
14.	SS9090420TP	Screw, for rear needle guard	1

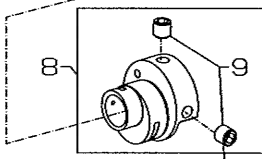
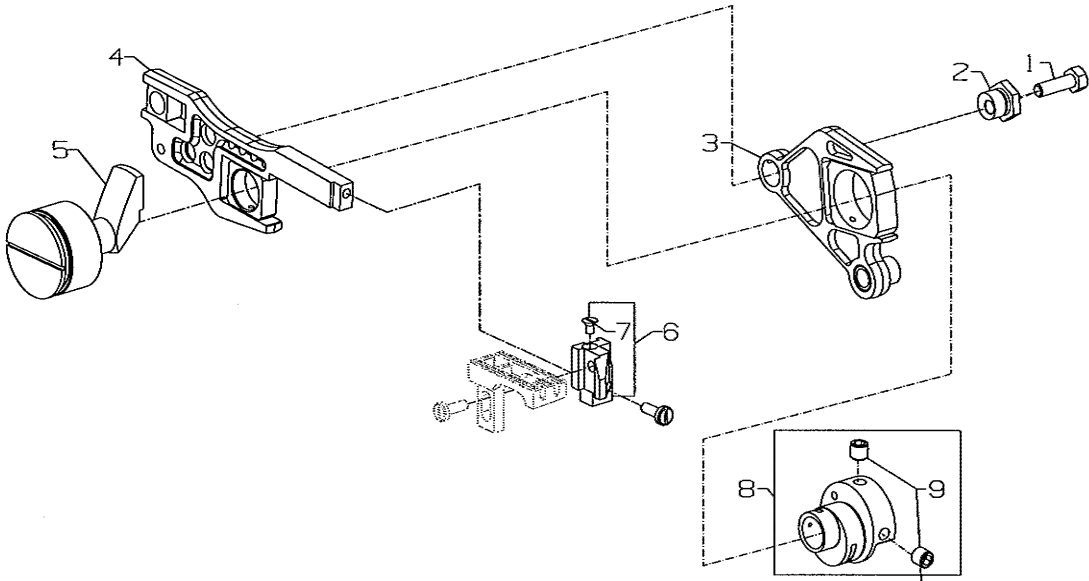




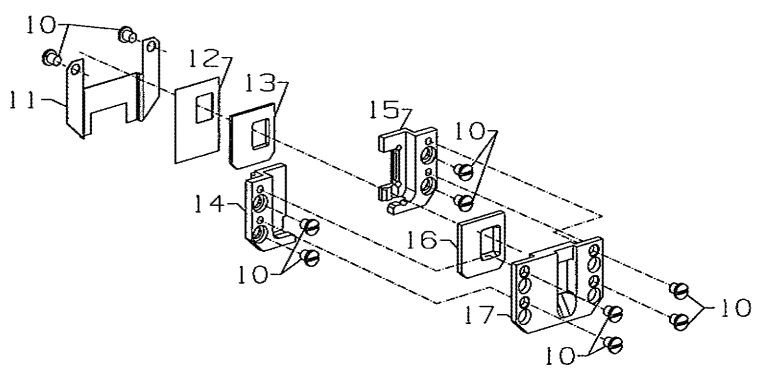
LOOPER THREAD TAKE-UP

Ref. No.	Part No.	Description	Amt. Req.
1.	50657	Cast-Off Plate Assembly	1
2.	51959D	Knurled Nut	1
3.	51959K	Tension Spring	1
4.	51959L	Roll Pin	1
5.	51959B	Tension Disc	2
6.	51492	Tension Post	1
7.	52958D	Take-up Eyelet	3
8.	SS7060310SP	Screw	4
9.	50304H	Strike-Off Wire	1
10.	SS9080410SP	Screw	1
11.	41358	Washer	2
12.	50304L	Retaining Finger	1
13.	SS7080520SP	Screw	2
14.	50383E	Mounting Bracket	1
15.	50357W	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.	50623	Take-up Assembly	1
25.	22894C	Set Screw	2
26.	50323B	Take-up Hub	1
27.	22-348	Pin	2
28.	50377R	Spacer	1
29.	50323H	Disc, for take-up	2
30.	77B	Screw, for take-up disc	2





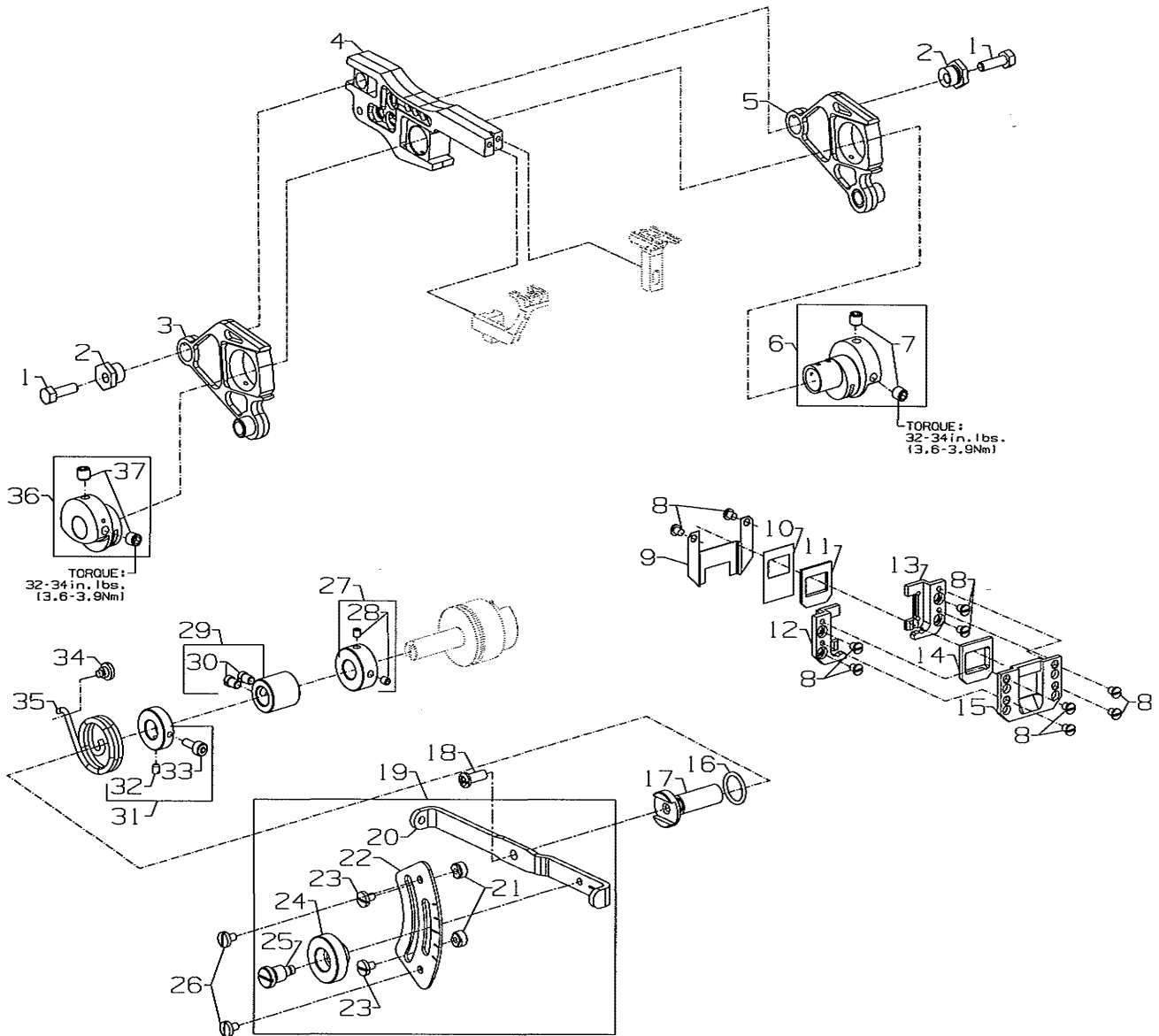
TORQUE:
32-34 in. lbs.
(3.6-3.9 Nm)



FEED DRIVE MECHANISM
FOR PLAIN FEED

Ref. No.	Part No.	Description	Amt. Req.
1.	18-1432	Screw.....	1
2.	50334BD	Hex Eccentric Stud	1
3.	50334AX	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.	50640-18	Feed Eccentric, main	1
9.	SS8660612TP	Screw	2
10.	SS7090530SP	Screw	10
11.	50334Y	Oil Shield	1
12.	50334W	Oil Scraper	1
13.	50634C	Feed Bar Seal	1
14.	50637A	Guide Plate, left, rear	1
15.	50335BA	Guide Plate, right, rear	1
16.	50634D	Feed Bar Seal	1
17.	50637	Guide Plate, front	1

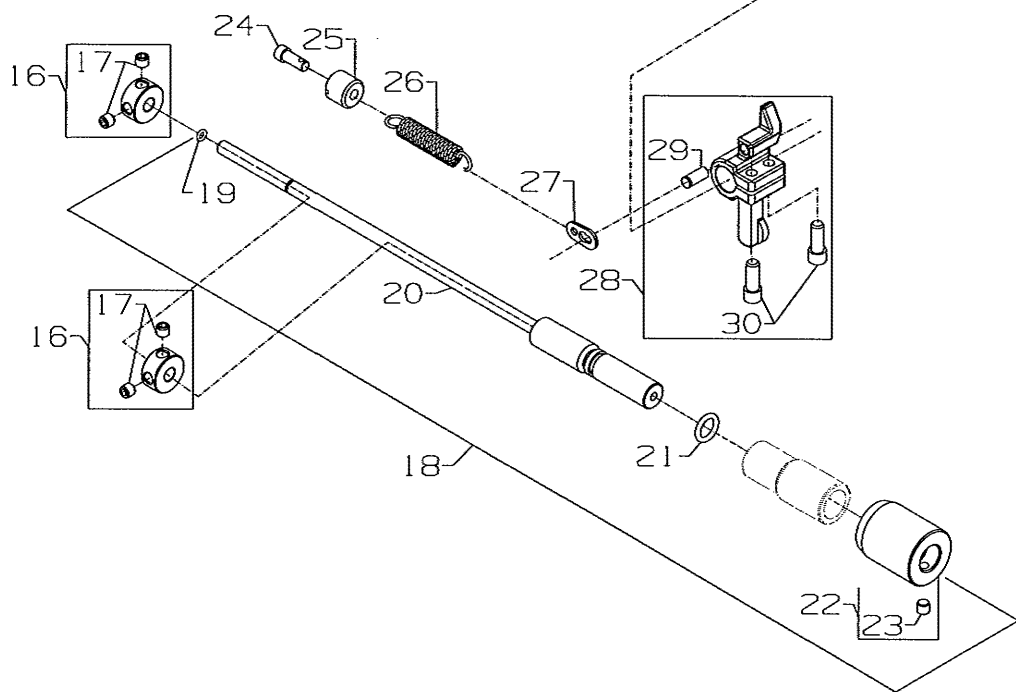
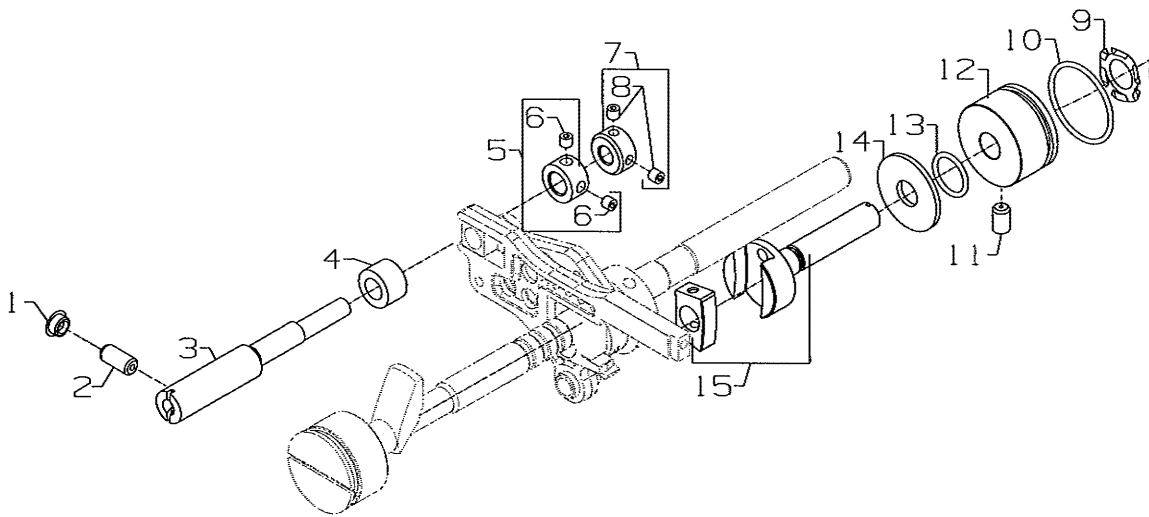




FEED DRIVE MECHANISM
FOR DIFFERENTIAL FEED

Ref. No.	Part No.	Description	Amt. Req.
1.	18-1432	Screw.....	2
2.	50334BD	Hex Eccentric Stud	2
3.	50334AW	Drive Fork Assembly	1
4.	50334BE	Feed Bar Assembly	1
5.	50334AX	Drive Fork Assembly, right	1
6.	50340D	Feed Eccentric, main	1
7.	SS8660612TP	Screw	2
8.	SS7090530SP	Screw	10
9.	50334Y	Oil Shield	1
10.	50334V	Oil Scraper	1
11.	50334BH	Feed Bar Seal	1
12.	50335AM	Guide Plate, left, rear	1
13.	50335BA	Guide Plate, right, rear	1
14.	50334J	Feed Bar Seal	1
15.	50335AN	Guide Plate, front	1
16.	RO681190100	"O" Ring	1
17.	50337J	Stem, for differential feed lever	1
18.	SS4121215SP	Screw, for stem	1
19.	29476UM	Differential Feed Lever Assembly	1
20.	50337H	Differential Feed Lever	1
21.	50337U	Stop	2
22.	50337K	Plate, for differential feed lever	1
23.	SS7090610SP	Screw	2
24.	B1647704000A	Knob, for differential feed lever	1
25.	50387	Screw	1
26.	SS7090610SP	Screw	2
27.	50337S	Collar	1
28.	SS8110422TP	Screw	2
29.	50337L	Coupling, for differential feed lever	1
30.	SS6110650TP	Screw	2
31.	50337R	Collar, for differential feed lever	1
32.	SS8090710SP	Screw	1
33.	SS6091022TP	Screw	1
34.	SP0550271TP	Screw, for spring	1
35.	50337M	Spring, for differential feed lever	1
36.	50340E	Feed Eccentric, differential	1
37.	SS8660612TP	Screw	2

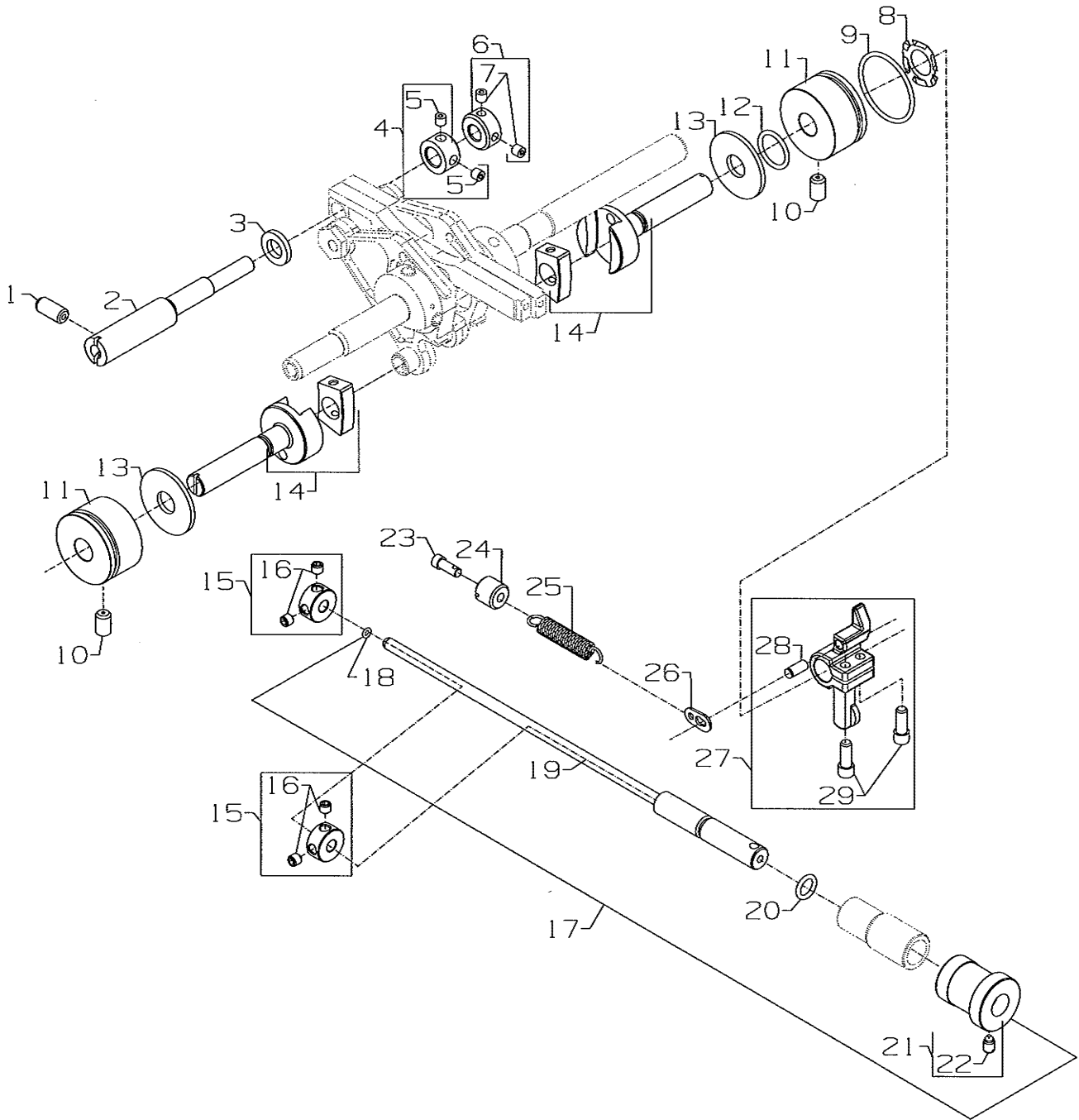




FEED DRIVE MECHANISM
FOR PLAIN FEED

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	2
17.	22894P	Screw	4
18.	29476UF	Stitch Length Adjusting Rod Assembly	1
19.	660-980	"O" Ring, stitch control shaft	1
20.	50322AR	Shaft, for stitch control	1
21.	660-206	"O" Ring, for stitch control shaft	1
22.	50336Y	Stitch Knob, indicator	1
23.	SS8110422TP	Screw	1
24.	50335	Spring Retainer	1
25.	22714C	Screw, for spring retainer	1
26.	50355	Spring	1
27.	50335A	Spring Holder	1
28.	50336S	Stitch Control Lever	1
29.	661-35	Pin	1
30.	22596H	Screw	2

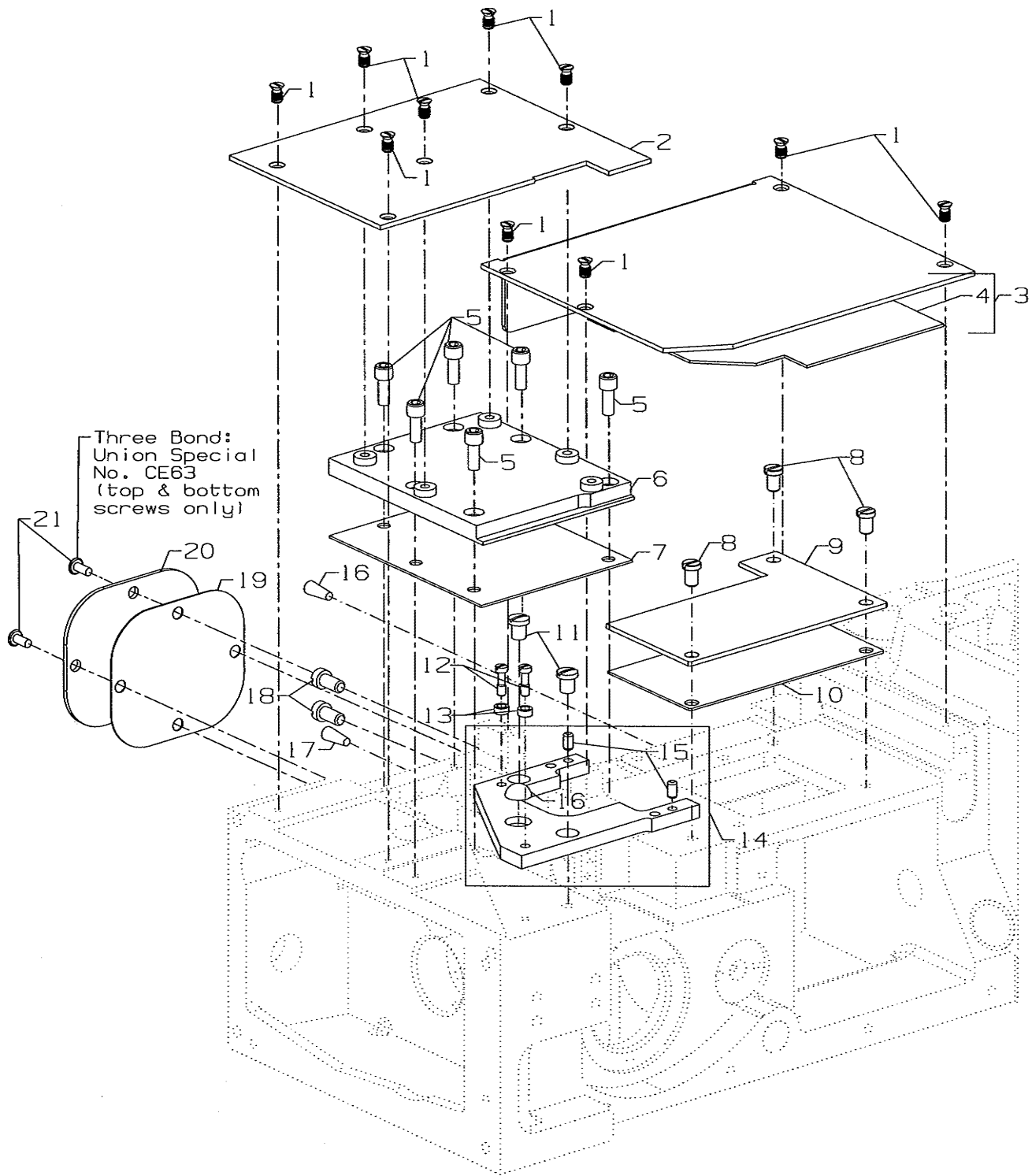




FEED DRIVE MECHANISM
FOR DIFFERENTIAL FEED

Ref. No.	Part No.	Description	Amt. Req.
1.	22591A	Screw, for eccentric shaft	1
2.	50334BC	Eccentric Shaft	1
3.	50674	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	2
16.	22894P	Screw	4
17.	29476UF	Stitch Length Adjusting Rod Assembly	1
18.	660-980	"O" Ring, stitch control shaft	1
19.	50322AR	Shaft, for stitch control	1
20.	660-206	"O" Ring, for stitch control shaft	1
21.	50336Y	Stitch Knob, indicator	1
22.	SS8110422TP	Screw	1
23.	50335	Spring Retainer	1
24.	22714C	Screw, for spring retainer	1
25.	50355	Spring	1
26.	50335A	Spring Holder	1
27.	50336S	Stitch Control Lever	1
28.	661-35	Pin	1
29.	22596H	Screw	2

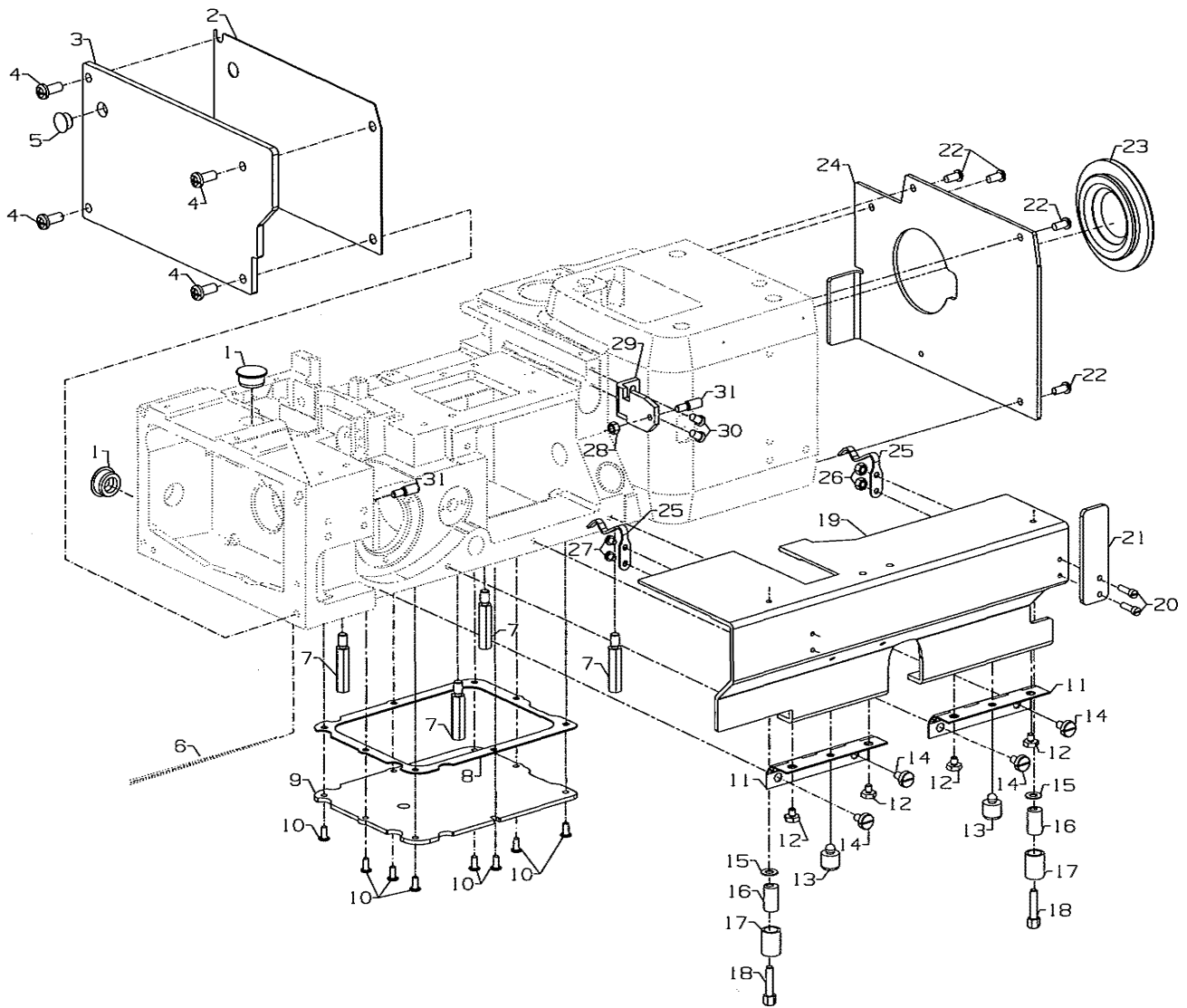




COVERS, LOWER BED

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.	22839C	Screw, for cover	3
9.	50382JR	Cover, for dry chamber	1
10.	50384K	Gasket, for dry chamber cover	1
11.	SS7150740SP	Screw	2
12.	22587N	Screw	2
13.	35036AE	Ferrule, Locating	2
14.	50380D	Throat Plate Support, complete	1
15.	51280K	Pin	1
16.	660-939	Rubber Bumper, for Throat Plate Support	1
17.	C067D	Cork	2
18.	22517	Screw, for bed	2
19.	50382CR	Gasket	1
20.	50382CL	Cover, rear, for feed chamber,	1
21.	SS4120615SP	Screw, for cover	2
-	CE63	Three Bond Adhesive, (not shown), for screw	-



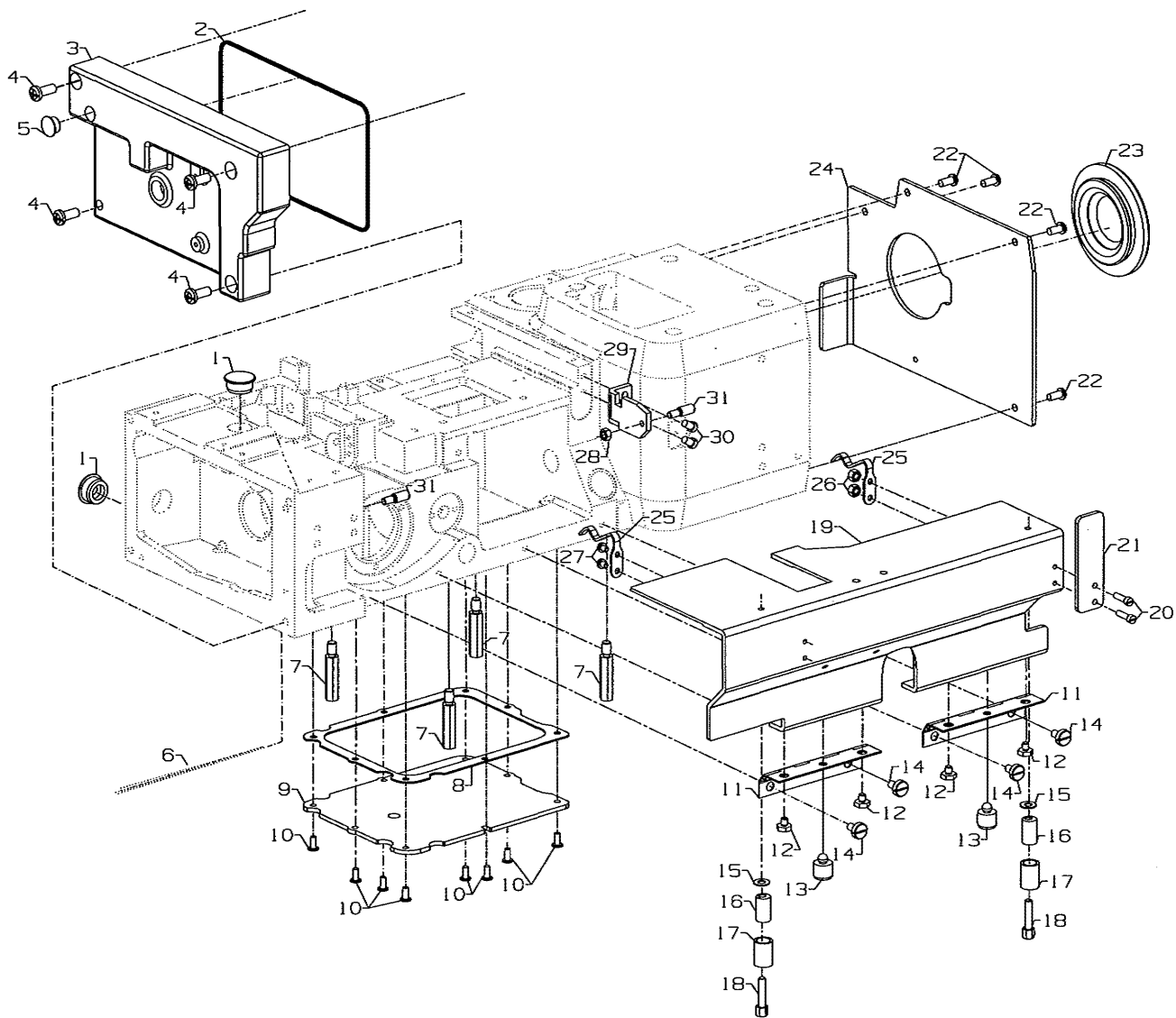


COVERS, LOWER BED

FOR PLAIN FEED

Ref. No.	Part No.	Description	Amt. Req.
1.	50393HB	Plug, for bed	2
2.	50684A	Quad Ring, for left end cover	1
3.	50682B	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.	50363CH	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.	35569J	Nut	1
29.	50332B	Support Block	1
30.	SS7120710SP	Screw	2
31.	22799AH	Spring Latch Stud	2

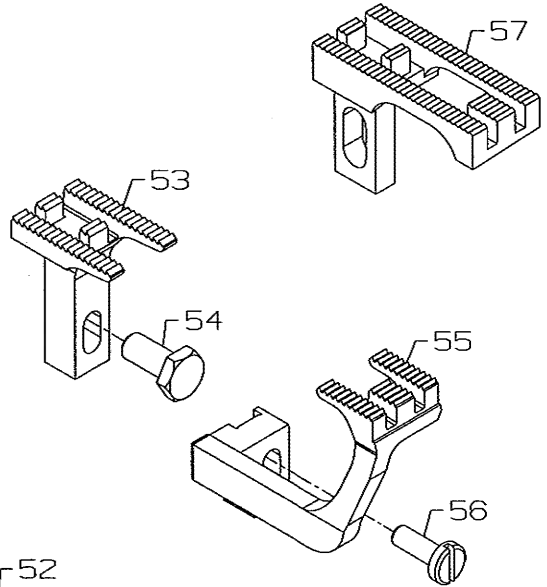
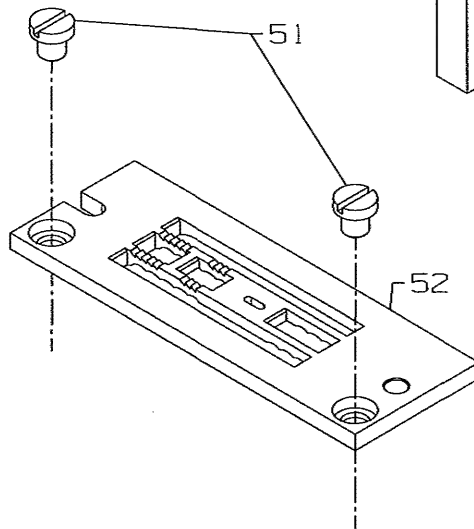
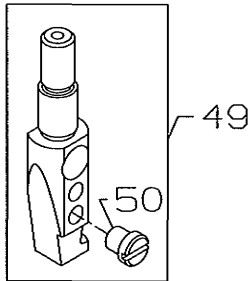
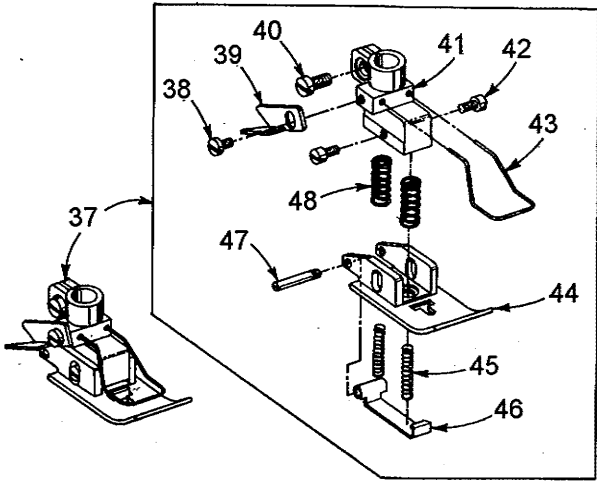
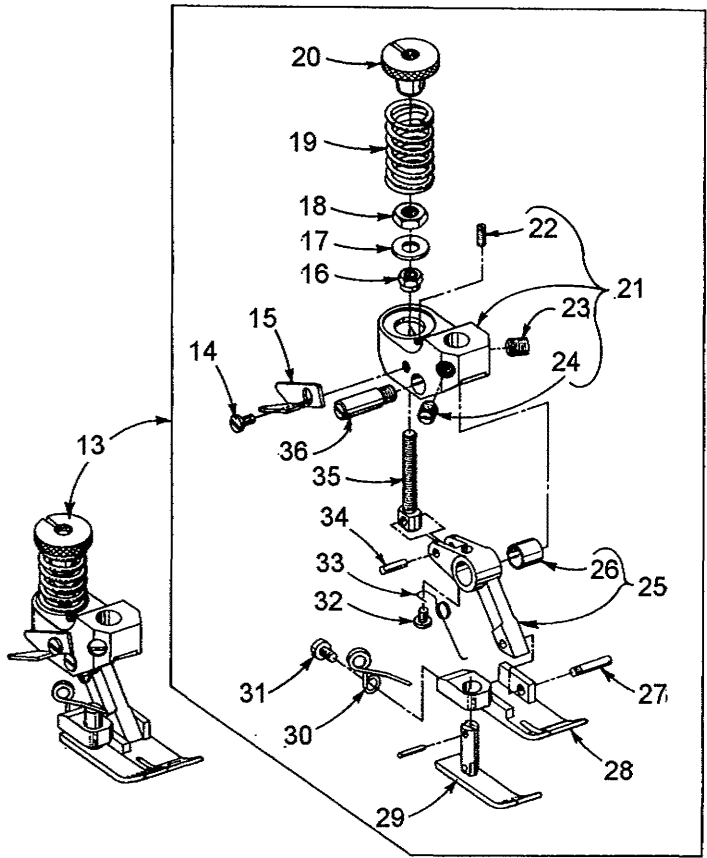
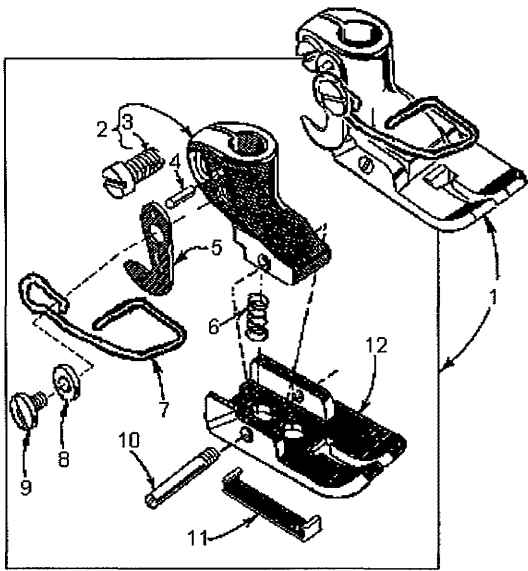




COVERS, LOWER BED
FOR DIFFERENTIAL FEED

Ref. No.	Part No.	Description	Amt. Req.
1.	50393HB	Plug, for bed	2
2.	50382CM	Quad Ring, for left end cover	1
3.	50382CH	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.	50363CH	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.	35569J	Nut	1
29.	50332B	Support Block	1
30.	SS7120710SP	Screw	2
31.	22799AH	Spring Latch Stud	2



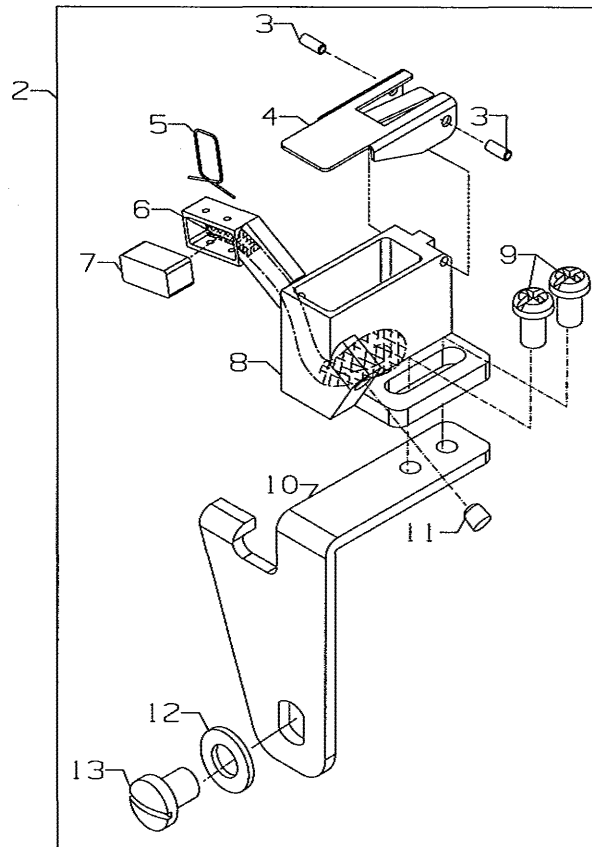
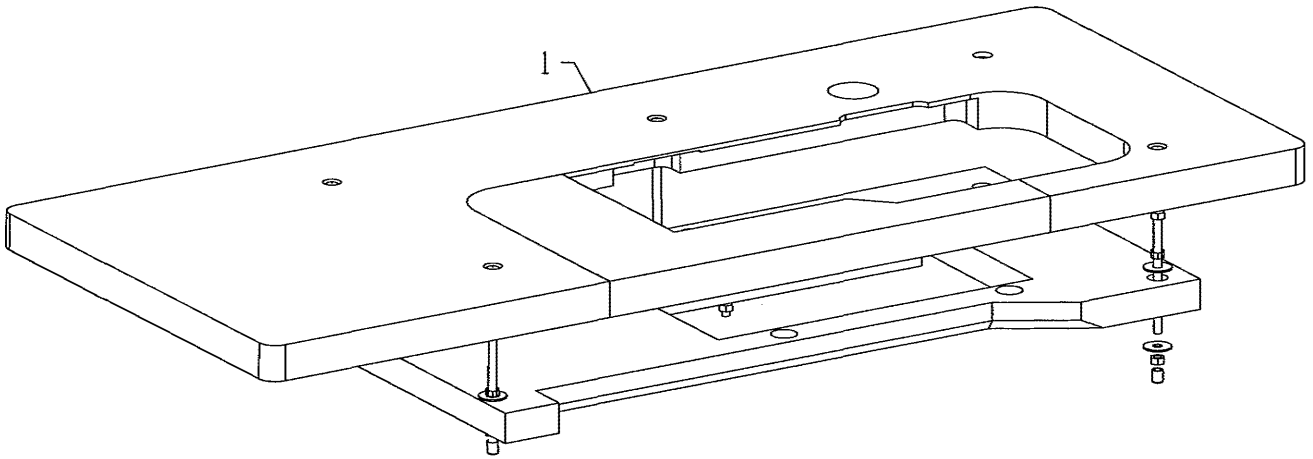


SEWING PARTS

Ref. No.	Part No.	Description	Amt. Req.
1.	G51320	Presser Foot Assembly, for sewing comb., (see chart)	1
2.	G51330C	Presser Foot Shank	1
3.	91	Screw	1
4.	1741A	Pin	1
5.	1741B	Knife	1
6.	51390	Spring	1
7.	G21695P	Finger Guard	1
8.	41358	Washer	1
9.	22768	Screw	1
10.	1025104	Pin	1
11.	G51330B	Chaining Section	1
12.	G51330A	Presser Foot Bottom	1
13.	56320H	Presser Foot Assembly, for sewing comb., (see chart)	1
14.	604	Screw	1
15.	52930AC	Chain Cutting Knife	1
16.	51430F	Nut	1
17.	56330AU	Washer	1
18.	41071G	Lock Nut	1
19.	56330AD	Spring	1
20.	56330AH	Nut	1
21.	56330AK	Presser Foot Yoke	1
22.	22785	Set Screw	1
23.	22560B	Screw	1
24.	88	Screw	1
25.	56330AN	Presser Foot Link	1
26.	56330AP	Bushing	1
27.	22799G	Screw	1
28.	56330AL	Presser Foot Bottom	1
29.	56330AM	Yielding Section	1
30.	56330AR	Spring, for yielding section	1
31.	604	Screw	1
32.	73A	Screw	1
33.	56330AX	Spring, tilting	1
34.	56330AJ	Pin	1
35.	56330AG	Screw	1
36.	56330AF	Screw	1
37.	C50020	Presser Foot Assembly, for sewing comb., (see chart)	1
38.	604	Screw	1
39.	52930AC	Knife, chain cutter	1
40.	22562	Screw	1
41.	C50030	Shank, presser foot	1
42.	22784M	Screw	1
43.	C50031C	Guard, finger	1
44.	C50030A	Presser Foot Bottom	1
45.	C50030D	Spring	2
46.	C50030AB	Yielding Section	1
47.	C50030C	Spring	2
48.	22799B	Screw, hinge	1
49.	50618	Needle Head	1
50.	SS6080360SP	Screw	1
51.	22570	Screw, for throat plate	2
52.	-----	Throat Plate, for sewing comb., (see chart)	1
53.	-----	Main Feed Dog, for differential feed, (see chart)	1
54.	18-677	Screw, for main feed dog	1
55.	-----	Differential Feed Dog, for sewing comb., (see chart)	1
56.	SS7091110TP	Screw, for differential feed dog	1
57.	-----	Main Feed Dog, for plain feed, (see chart)	1

SEWING COMB.	MODEL	NEEDLE HEAD	PRESSER FOOT ASSEMBLY	THROAT PLATE	FEED DOG MAIN	FEED DOG DIFFERENTIAL
FS01-1	FS311S01-1M	50618	G51320	50624A	C50005G	
FS02-2	FS311S02-1M		56320R			
FS11-1	FS311S11-1M		56320F	50624	C50005F	
FS12-1	FS311S12-1M		56320H			
FS13-1	FS311S13-1M		56320E	50624B	56305C	
FS14-1	FS311S14-1M		C50020	50624	C50005F	
FS21-1	FS312S21-1M		C50020		50605	

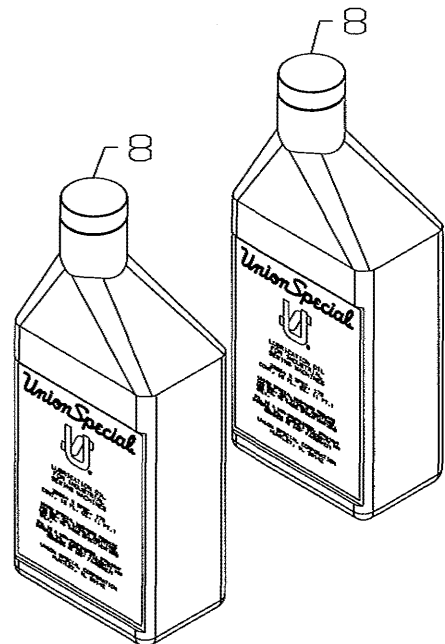
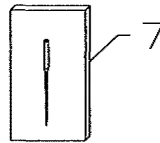
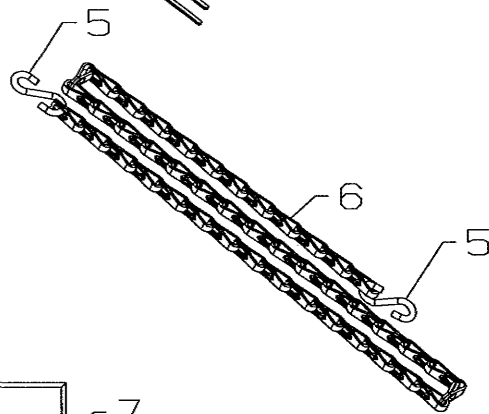
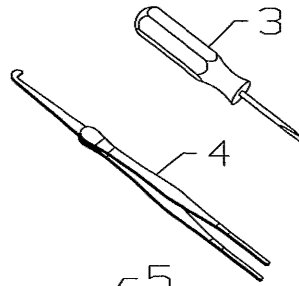
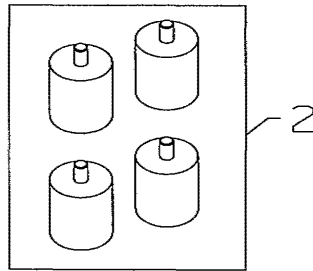
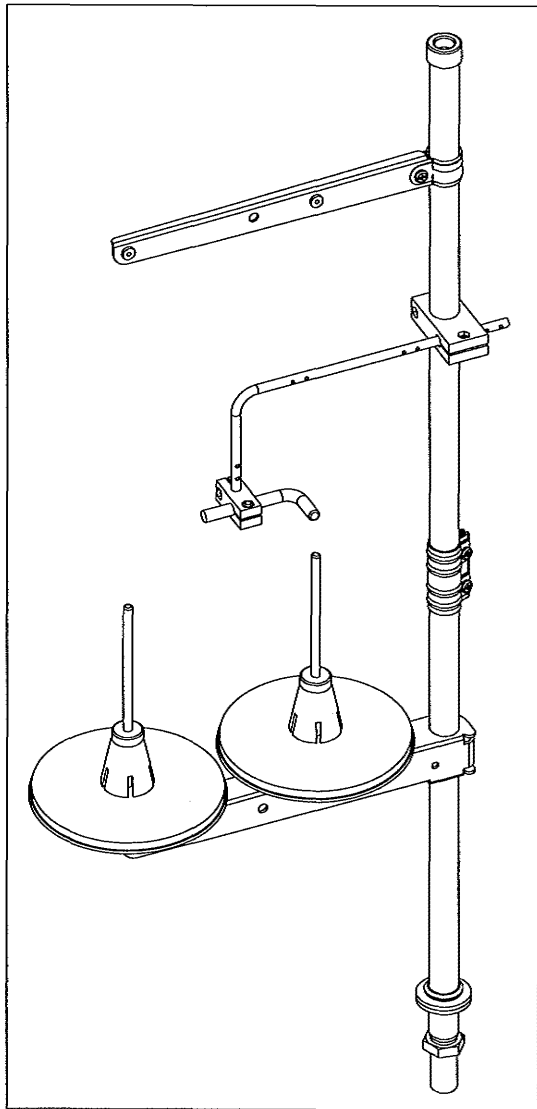




TABLING AND NEEDLE DIPPER ASSEMBLY
(EXTRA SEND CHARGE)

Ref. No.	Part No.	Description	Amt. Req.
1.	21371AAE48	Table Board, for differential feed machines	1
-	21317AAH48	Table Board, for plain feed machines	1
2.	29476RZ	Needle Dipper Assembly	1
3.	PS0160042KH	Roll Pin	2
4.	50393JD	Needle Dipper Cover	1
5.	50393GS	Wire, for needle dipper	1
6.	CQ202000000	Oil Wick, for needle dipper	1
7.	50393GK	Felt, for needle dipper	1
8.	50393JC	Needle Dipper	1
9.	SS4090615SP	Screw, for needle dipper	2
10.	50393GP	Silicone Oil Tank Holder	1
11.	50393GG	Plug	1
12.	WP0531000SD	Washer	1
13.	SS4120615SP	Screw, for needle dipper holder	1





ACCESSORIES

Ref. No.	Part No.	Description	Amt. Req.
1.	21101W2	Thread Stand	1
2.	35095B	Isolator	4
3.	G21201	Screw Driver, for needle head	1
4.	660-240	Thread Tweezer	1
5.	660-264	S-Hook	2
6.	421D34	Chain	1
7.	128GBS075/029	Needles, (package of 10)	1
8.	28604R	Oil, (1 pint)	2



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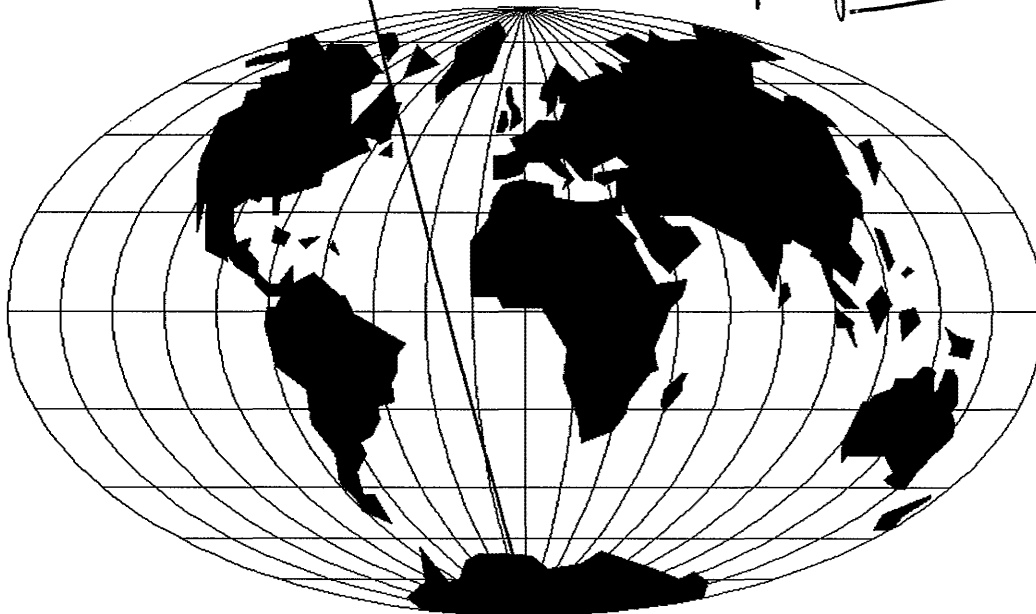


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