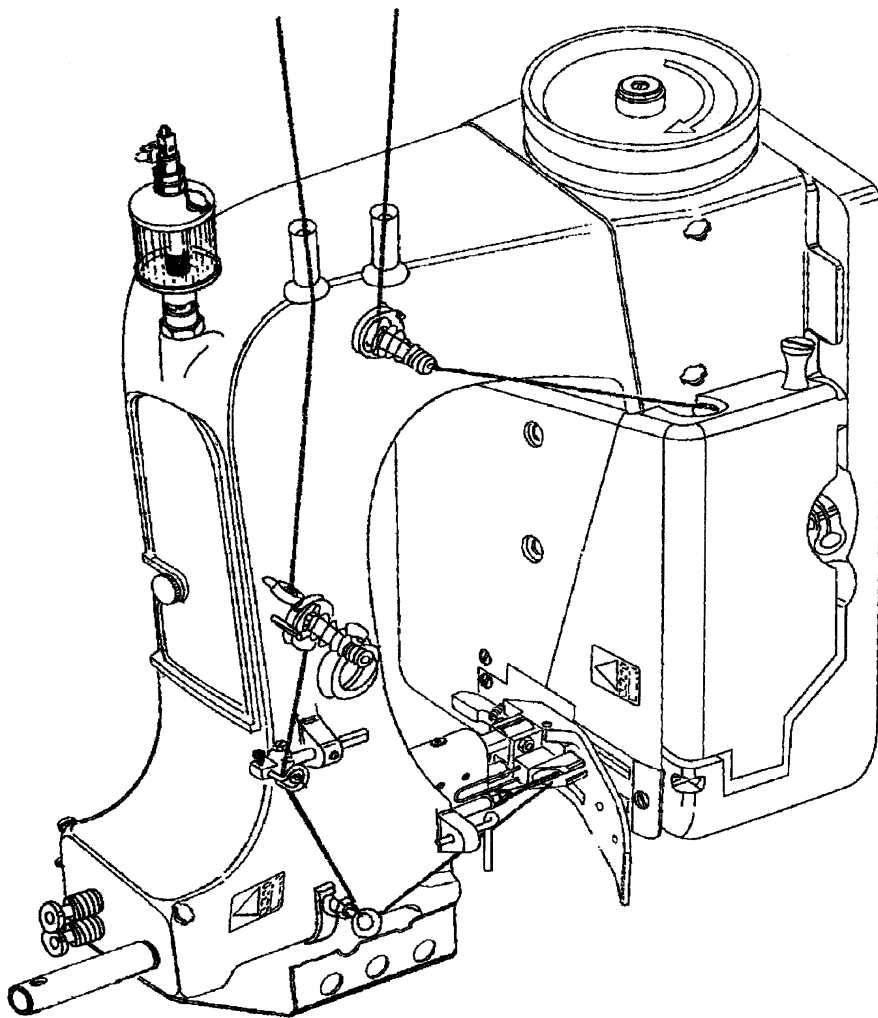


KEESTAR

Special Sewing Machine and Bag Closing Machine

INSTRUCTIONS, ENGINEER'S AND PARTS MANUAL



BAG CLOSING MACHINE HEAD

GK35- 2C, 6A, 6B, 6C, 6RL, 6RLM

INSTRUCTIONS FOR GK35 Bag Closing Machine Head
Second Edition
by
KEESTAR INDUSTRIES CO., LTD
Printed in P.R.China

PREFACE

This manual has been prepared to guide you while operating GK35 series machine head and arranged to simplify ordering wear and spare parts.

This manual explains in detail the proper settings for operation of the machines. Illustrations are used to show the adjustments and reference letters are used to point out specific items discussed.

Careful attention to the instructions and cautions for operating and adjusting these machines will enable you to maintain the superior performance and reliability designed and built into every KEESTAR bag closing machine.

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

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 cautions.

On the following pages will be found illustrations and terminology used in describing the instructions and the parts for your machine.

In addition to the instructions and to the mandatory rules and regulations for accident prevention and environmental protection in the country and place of use of the machine / unit, the generally recognized technical rules for safe and proper working must also be observed.

The instructions are to be supplemented by the respective national rules and regulations for accident prevention and environmental protection.

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TYPES OF MACHINES

High performance machine head with manual / automatic start and stop and automatically operated thread chain and tape cutters. For closing filled bags and sacks made of jute, cotton, paper, plastic or woven polypropylene tapes as well as bituminized or foil laminated materials.

Equipped with guides for application of filler cord sealing the needle punctures.

Foot switch controlled starting and stopping of the machine head. For cutting, the thread chain has to be guided to the thread chain cutter of the machine. / The bag being fed into the machine starts the sewing operation by a feeler controlled, contactless, electronic proximity switch. When the bag is closed, the machine stops automatically. Thread chain, respectively thread chain with binding tape, are cut automatically.

One Needle, High Throw, Manual Lubrication, Lateral Loper Travel, Plain Feed, Weight: 30 kg.

GK35-2C Machine Head for closing filled bags and sacks of all kinds with a two thread double locked stitch. With mechanically driven thread chain cutter. Presser foot with spring loaded chaining section.

Seam specification: 1.01.01/401* (401 SSa-1**)

Stitch range: 2 1/2 to 4 S.P.I. (6.5 to 11 mm)

Standard setting: 3 S.P.I. (8 mm)

Capacity under presser foot: 7/16" (11 mm), adjustable up to 5/8" (16 mm)

Sewing capacity on paper bags: up to 32 plies of paper

Working dia. of handwheel: 4 1/4" (108 mm)

Maximum speed: up to 1800 stitches/min., depending on stitch length and speed of conveyor as well as on operation and material.

GK35-6A Same as type GK35-2C except with pneumatic thread chain pusher.

Operating pressure 0.4 MPa/cm³.

GK35-6B Same as type GK35-6A except with pneumatic guillotine type thread chain cutter.

GK35-6C Same as type GK35-6B except with pneumatic guillotine type thread chain and crepe tape cutter.

Width of crepe tape: 55mm

GK35-6RL Machine head with proximity switch activated automatic start/stop sewing controls and thread chain cutter, controlling voltage 220V.

GK35-6RLM Same as type GK35-6RL except with controlling voltage 24V.

TYPES OF BAG CLOSURES



GK35- 2C 6A 6B 6RL 6RLM



GK35- 2C 6A 6B



GK35- 6C

SAFETY RULES

General operating instructions

1. Before putting the machine 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 of your country.
3. The machine is only allowed to be used as foreseen. The foreseen use of the particular machine is described in paragraph TYPE 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. When doing the following machine has to be disconnected from the power supply by turning off the main switch or by pulling out the main plug.
 - 7.1 When threading needle(s), looper, spreader etc.
 - 7.2 When replacing any parts such as needle(s), presser foot, throat plate, looper, spreader, feed dog, needle guard, folder, fabric guide etc.
 - 7.3 When leaving the workplace and when the work place is unattended.
 - 7.4 When doing maintenance work.
 - 7.5 When using clutch motors without actuation lock, wait until motor is stopped totally.
8. Maintenance, repair and conversion work (see item 7) must be done only by trained technicians or special skilled personnel under consideration of the instructions.

Only genuine spare parts approved by KEESTAR have to be used for repairs.

9. Any work on the electrical equipment must be done by an electrician or under direction and supervision of special skilled personnel.
10. Work on parts and equipment under electrical power is not permitted.
11. 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 (e.g. pneumatic equipment with air tank), the pressure has to be removed by bleeding. Exceptions are only allowed for adjusting work and function checks done by special skilled personnel.

NOISE EMISSION

Equivalent continuous A-weighted sound pressure level (L_{pAd}) at workstation: 81 dB(A) at 1400 RPM and 50 % duty cycle.

OILING DIAGRAM

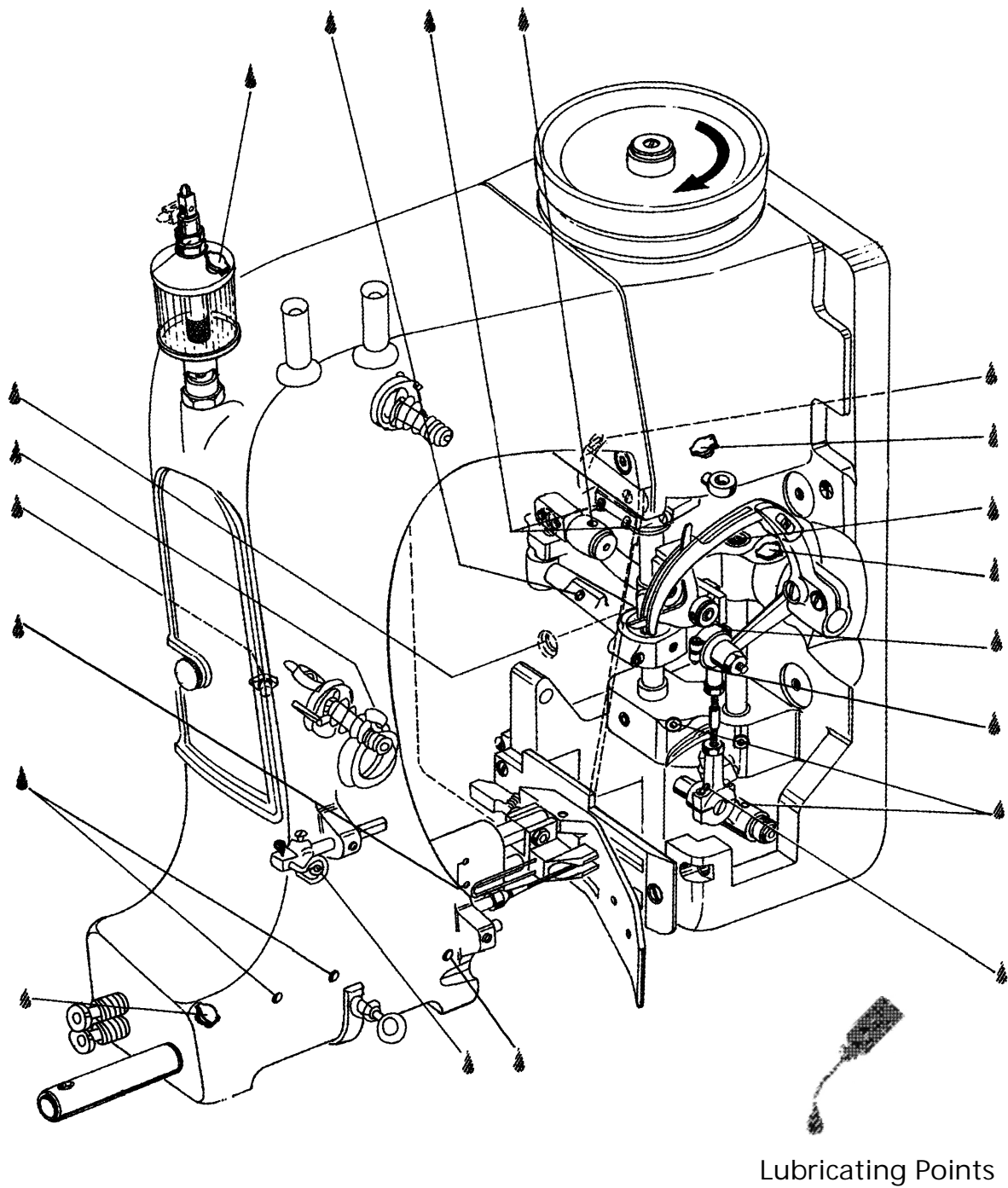


Fig. 1

LUBRICATION AND OPERATION

The machines of GK35 series have to be cleaned and lubricated twice a day before the morning and afternoon start on the lubricating points indicated on the oiling diagram (Fig. 1). The sight feed oiler has to be kept filled and should be adjusted so that it feeds two to three drops of oil per minute. The oiler has to be refilled latest,

when 2/3 of the oil is used up.

For lubrication we recommend "10# sewing machine white oil" or equivalent.

Before operating a new machine for the first time, the needle bar guard and the sight feed oiler, which come with the accessories of the machine, have to be screwed in. The sight feed oiler has to be adjusted. All lubricating points, indicated on the oiling diagram (Fig. 1), have to be oiled.

For adjusting fill the sight feed oiler half-way with oil and turn the metering pin a little bit out and then turn it in, until there will flow approx. two drops of oil per minute. This can be checked on the sight glass. Secure the setting of the metering pin with lock nut. Fill the oiler.

Repeat the oiling of a new machine after 10 minutes of operation!

When the machine is out of operation, the oil flow can be stopped by tilting the lever on the sight feed oiler.

IMPORTANT! The oil flow has to be switched on again before operating the machine.

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 largest diameter of blade, measured in hundredths of a millimeter respectively in thousandths of an inch, midway between shank and eye. Collectively, type and size number represent the complete symbol, which is given on the label of all needles packaged and sold by KEESTAR.

The standard needle for machines covered in this manual is 9848G250/100.

For closing bags made of plastic or woven polypropylene tapes it is recommended to use needle type 9856T with teflon coating.

Below are the descriptions and available sizes:

<u>Type No.</u>	<u>Description and sizes</u>
9848G	Round shank, square point, double groove, spotted, chromium plated. Sizes available: 150/060, 170/067, 200/080, 250/100, 300/120, 400/156.
9856T	Round shank, round point, double groove, spotted, teflon-coated. Sizes available: 200/080, 250/100.

Selection of proper needle size is determined by size of thread used. Thread should pass freely through needle eye in order to produce a good stitch formation. To have needle orders promptly and accurately filled, an empty package, a sample needle or type and size number should be forwarded. Use description on label. A complete order would read: "100 needles, Type 9848G, Size 250/100".

THREADING

Thread machine as illustrated in Fig. 2.

When threading the looper, be sure the thread goes through the front eyelets, over the take up and through the

back eyelet before threading the looper.

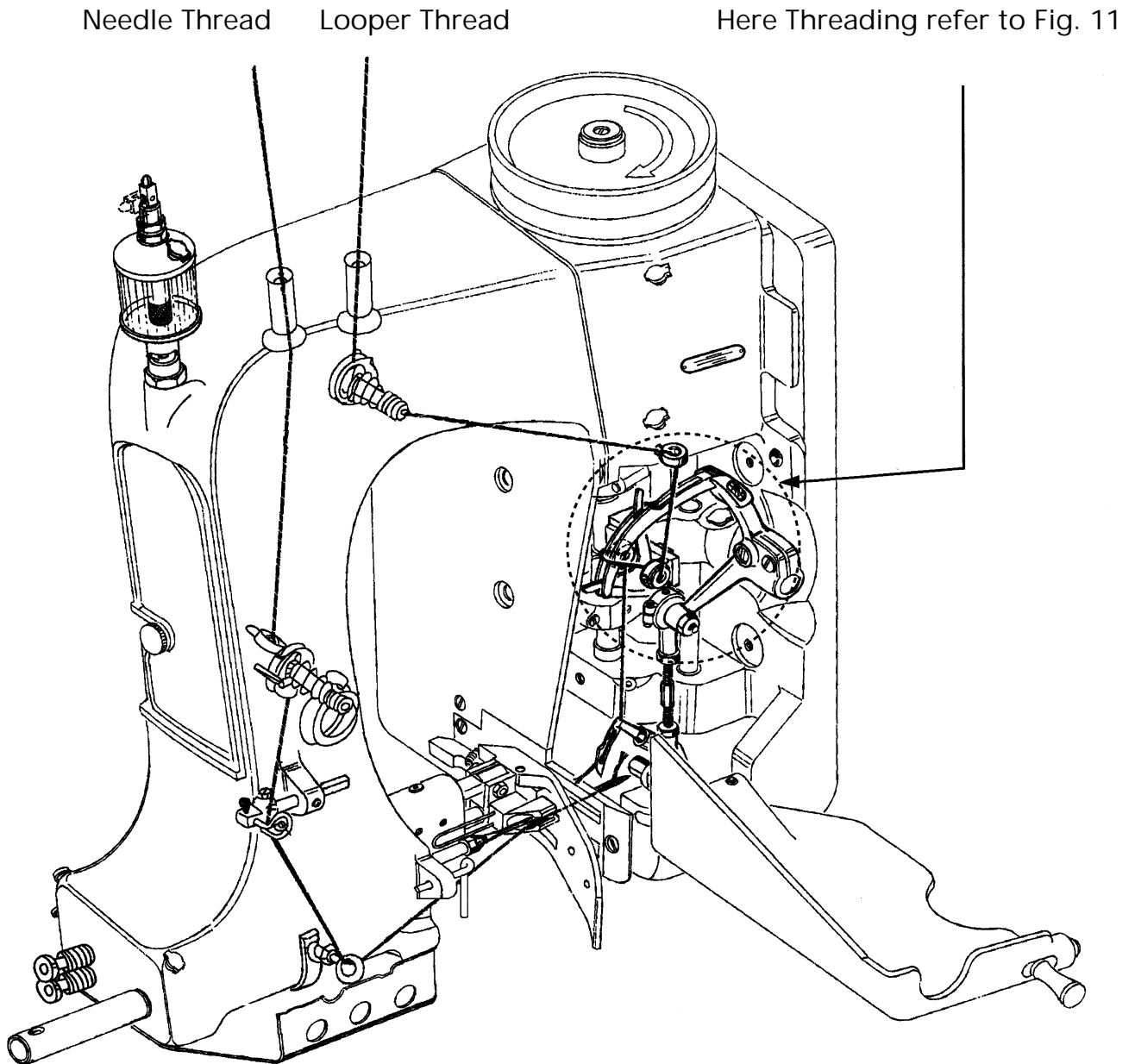


Fig. 2

ADJUSTING INSTRUCTIONS

NOTE: Instructions stating direction or location, such as right, left, front or rear of machine, are given relative to mechanic's position in front of the machine, when the machine is placed on an adjusting table, with the pulley to the right and the needle bar in vertical position. The pulley rotates clockwise, in operating direction; when viewed from the right end of the machine.

INSERTING THE NEEDLE

Before adjusting the machine, insert a new needle with the shank as far as possible into the needle bar. The long needle groove must point to the front (toward the operator). Tighten the needle clamp nut A (Fig. 3) securely. Use the single ended open jaw wrench 8×10 from the accessories of the machine.

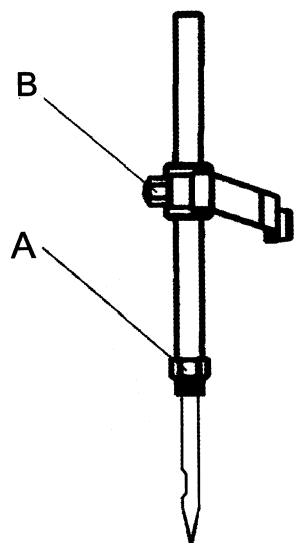


Fig. 3

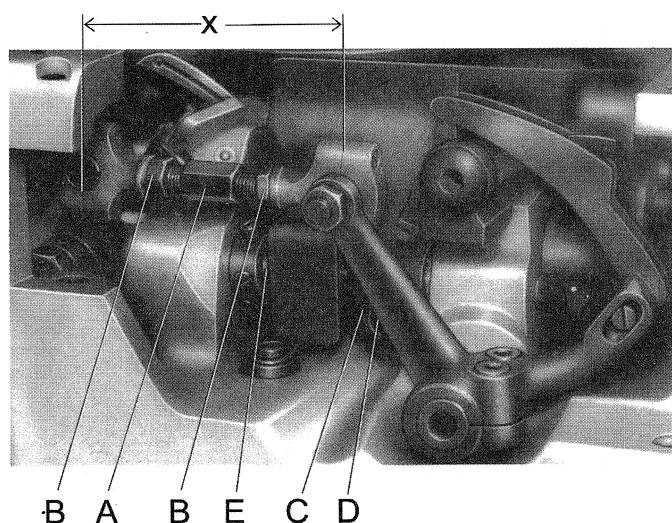


Fig. 4

SETTING THE LOOPER

Remove the presser foot, throat plate and feed dog and also the needle guard for convenient access to the machine. Loosen the screw (G, Fig. 5) in the feed bar (F) and push the feed bar needle guard (E) to the rear to avoid its contacting the needle (B).

Set the looper connecting rod (A, Fig. 4) so the distance (X) between the center lines of the two ball joints is 69.8 mm (2 3/4"). For adjustment loosen the two nuts (B) and turn connecting rod (A) forward or backward as required to obtain specified dimension, retighten nuts (B).

NOTE: The left nut has a left hand thread.

Set the looper (A, Fig. 5) so the distance from the center line of the needle (B) to the looper (A) is 8 mm (5/16") when the looper is at its farthest position to the right. For adjustment loosen screws (C) in the looper drive lever (D), reposition as required to obtain specified dimension and retighten screws (C) assuring that all end play is taken out of the looper drive lever rocker shaft. Check to insure a clearance of approx. 1 mm (.040") between the

point of the looper and the bed end cover when the looper is at its extreme left position. Should the looper strike the bed end cover, recheck the distance between center lines of ball joints and the looper gauge distance as described above.

Rotate the machine pulley in operating direction so that the looper (A, Fig. 5) moves from right to left. The looper point should pass as close as possible to the back of the needle without contacting 0.08 to 0.13 mm (.003 to .005") (see Fig. 6) clearance. For adjustment loosen screws (D, Fig. 4) in the looper eccentric fork (C) and turn looper rocker shaft (E) on the looper rocker forward or backward as required. Retighten screw (D).

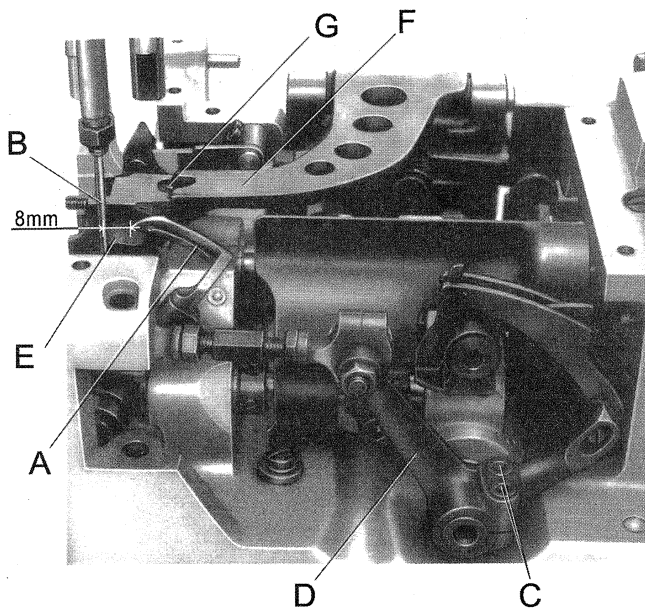


Fig. 5

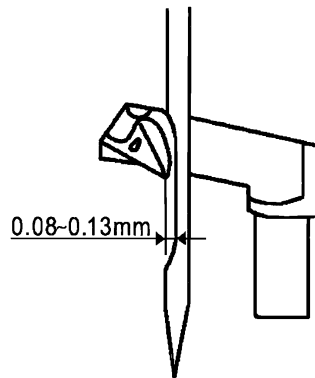


Fig. 6

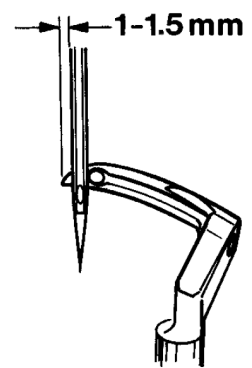


Fig. 7

SETTING HEIGHT OF NEEDLE BAR

Remove the face cover on machine arm and throat plate. Rotate machine pulley in operating direction until the looper point, moving to the left, projects 1 to 1.5 mm (.040" to .060") left of the needle (see Fig. 7). Lower edge of looper and upper edge of needle eye must be flush in this position. If adjustment is necessary, loosen clamp screw (B, Fig. 3) in the needle bar connection and move the needle bar up or down, as required. Retighten screw (B) and remount face cover.

SETTING THE FEED DOG

At highest point of feed dog travel, the feed dog (A, Fig. 8) should be set so, that the rear teeth project their full depth above the throat plate surface. For setting remove the feed dog and adjust the supporting screw (B) on the top of the feed bar to the required height. Remount the feed dog and also the needle guard. For closing thin material such as textile and plastic bags, the teeth should project 1.8mm above the throat plate (D) surface, for thick material such as sack, the teeth should project 2.2mm above the throat plate surface.

After loosening screws (D, Fig. 9) rear in the feed rocker (C), the feed bar with feed dog can be moved laterally to center the feed dog in the throat plate slots, if required. Retighten screws (D).

CHANGING STITCH LENGTH

On type GK35-2C stud (A, Fig. 9) for changing the stitch length is accessible from the outside. On type GK35-6A, B and C the housing for the tape cutter have to be removed for changing the stitch length.

The length of the stitch can be adjusted by raising or lowering the stud (A, Fig. 9) in the segment slot of the feed rocker (C). Lowering stud (A) will lengthen the stitch. After loosening nut (B), stud (A) can be moved accordingly.

When the desired stitch length is obtained, retighten nut (B).

Remount housing for cutter type GK35-6A, B and C.

NOTE: Any change in stitch length will necessitate a corresponding change in the needle guard setting!

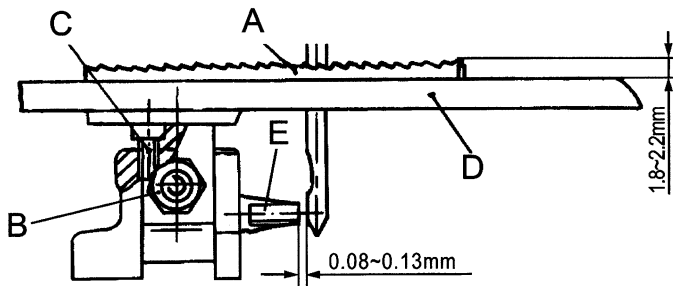


Fig. 8

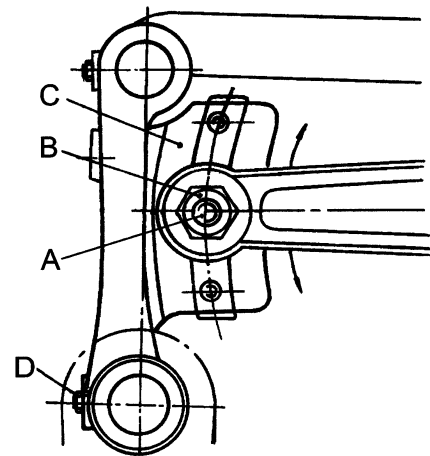


Fig. 9

SETTING THE NEEDLE GUARD

The needle guard (E, Fig. 8) has to be set so, that it just contacts the needle at its most forward point of travel, without deflecting it. Project 0.08 to 0.13mm between needle and needle guard.

Rotate machine pulley in operating direction until the needle guard against the needle. Loosen screw (G, Fig. 5) in the feed bar (F) and adjust the needle guard (E) accordingly. Retighten screw (G).

MOUNTING AND SETTING THE PRESSER FOOT

Remove the needle and rotate the pulley until the feed dog is below the throat plate. Depress the presser foot lifter lever and insert the presser foot in the two presser bars (L and R, Fig. 10). The right presser bar (R) should only engage with its pivot in the groove of the presser foot shank.

Loosen the two lock nuts (A, Fig. 10) and align with the two set screws (B), the needle slot in the presser foot with the needle slot in the throat plate. Secure this setting with the two lock nuts (A).

Note: The two set screws (A) should just contact the pivot of the right presser bar (R) but not be tightened. Now tighten the two set screws left in the presser foot shank on the left presser bar. Insert the needle.

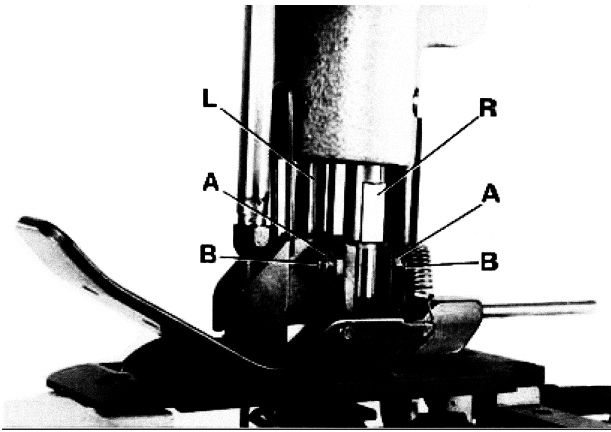


Fig. 10

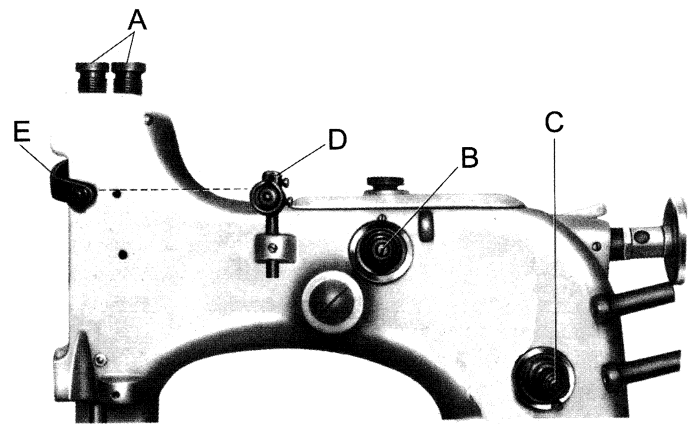


Fig. 11

PRESSER FOOT PRESSURE

Lowering the collars (A, Fig. 11) increases the pressure, raising the collars decreases the pressure.

THREAD TENSION

The tension (B, Fig. 12) on the needle thread should be fairly strong to produce uniform stitches. The tension (C) on the looper thread should be barely sufficient to steady it. Lowering the tension increases the tension, raising the tension decreases the tension.

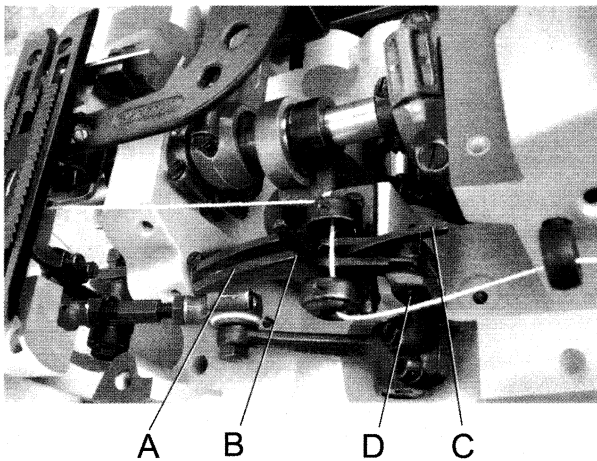


Fig. 12

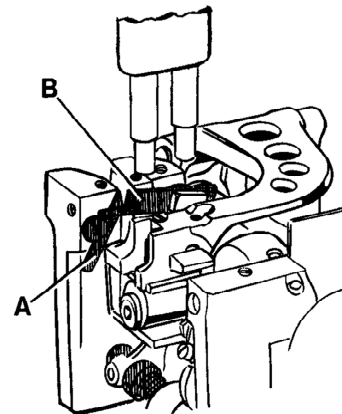


Fig. 13

LOOPER THREAD TAKE-UP

The height of the looper thread take-up (A, Fig. 12) is set so, that the cast-off hook (C) forces the looper thread over the corner (B) of the looper thread take-up (A) at the time the point of the descending needle is flush with

the lower edge at looper or projects up to 1 mm (.040") below the lower edge of looper.

Draw the looper thread into the machine, rotate pulley in operating direction and note the position of the

needle point to lower edge of looper at the time the cast-off (C) forces the looper thread over the corner (B).

For setting the looper thread take-up loosen screw (D, Fig. 12).

When needle point is positioned above the lower edge of looper, the looper thread take-up (A) has to be raised accordingly. When the needle point is positioned more than 1 mm (.040") below the lower edge of looper, the looper thread take-up (A) has to be lowered accordingly. Retighten screw (D).

SETTING NEEDLE THREAD EYELET

The eyelet (D, Fig. 11) should be positioned so, that the needle thread runs nearly horizontal, parallel to cloth plate, between eyelet (D) on needle bar connection and eyelet (D) on machine arm, when the needle is in its upmost position. Eyelet (E) is secured by screw.

SETTING THE THREAD CHAIN CUTTING KNIVES ON TYPE GK35-2C AND GK35-6A

Set the stationary knife (A, Fig. 13) so, that its tip is flush with the supporting surface for the throat plate on the bed casting.

Fasten the movable knife in the knife lever so that its tip moves freely .012" to .020". (0.3 to 0.5 mm) below the underside of the throat plate and its cutting edge overlaps the cutting edge of the stationary knife by .040 in (0.5 mm) when in cutting position.

The lateral pressure of the stationary and movable knife is activated by the spring (A, Fig. 14). Loosen the screw (B) in the collar (C) increases or decreases the pressure. Retighten screw (B).

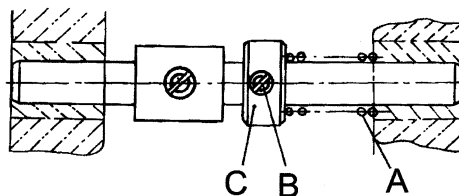


Fig. 14

SETTING THE CUTTER ON TYPE GK35-6B AND 6C

Before setting, cut off the air supply and make sure the air system stops working. Loosen screws A, B, H and nuts C, D. (Fig. 15)

Manually move the upper knife until it occludes the lower blade, then set a clearance of 0.1-0.2mm between the upper blade and lower knife and tighten the screw A and B.

Note: Put a sheet of craft paper between the upper and lower knife to easily make the clearance. (Fig. 16)

After the above step is finished, put in the screw H and make it slightly contact with screw E, then tighten nut D. (Fig. 15)

Test the thread or creep tape cutting. If the front part of the knives cut but the back part do not cut, there should be a gap between the upper and lower knife at the back part. In this case, loosen the nut D, and loosen screw H by 1/8 turn, do the testing again. If the same problem still happens, loosen screw H by another 1/8 turn and do

the testing again. Repeat the adjusting and testing until the problem is settled. If the back part of the knives cut but the front part do not cut, first step should be operated again. If the lower knife turns away without cutting, the pressure of the spring should be increased. Loosen the nut F, and increase the pressure of the spring by turning the screw G clockwise. (Fig. 15)

The overlapping depth of the upper knife and bottom blade is 2mm. To achieve this, adjusting should be made by changing the length of air cylinder rod. (Fig. 16)

Make sure the air speed controller is equipped on the electromagnetic valve on the pedestal.

Set air pressure to 0.4Mpa (4kg/cm²). Air pressure not to exceed 0.5Mpa (5kg/cm²).

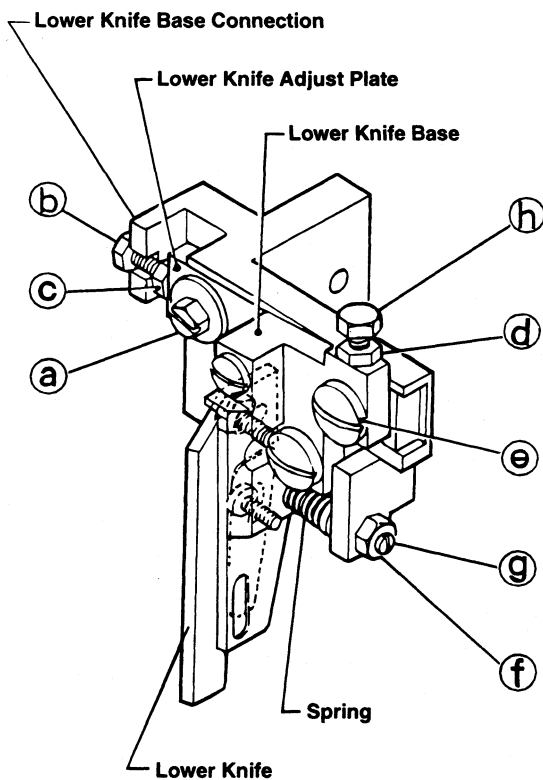


Fig. 15

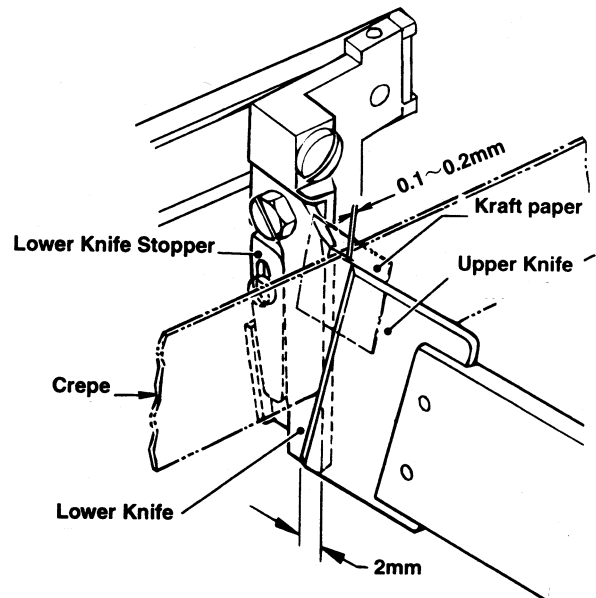


Fig. 16

SETTING THE THREAD CHAIN CUTTER ON TYPE GK35-6RL AND GK35-6RLM

Model GK35-6RL and GK35-6RLM thread chain cutter is driven by air cylinder. When the thread chain cutter is in its home position below the throat plate, the knife tip of the chain cutter S (Fig. 19) should be positioned 0.5 mm below the throat plate top surface. To obtain this, adjust the knife lever stop screw T with lock nut in the bottom of the bed casting accordingly. Retighten nut. In cutting position, above the throat plate top surface, the cutting edges of the chain cutters should overlap by 0.3mm.

Press clamp A (Fig.18) on the position rod of the air cylinder against the hexagon head stop screw B in or out as required, setting of stop screw B with lock nut C.

Note: The position of the air cylinder should not strike against the cylinder inside when actuated. The stroke of position must be limited by clamp A (Fig.20) striking against hexagon head stop screw B. Operating pressure of air cylinder is 0.3-0.5Mpa.

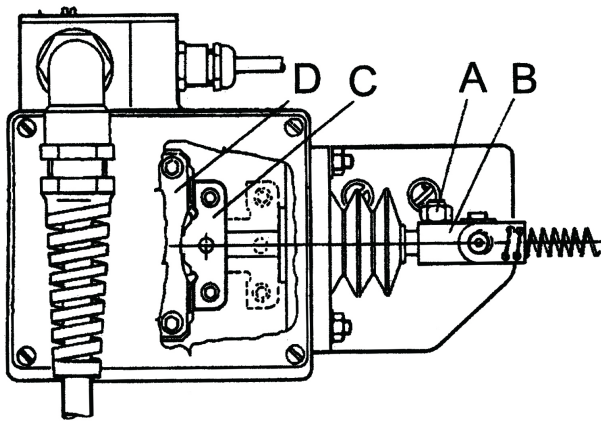


Fig. 17

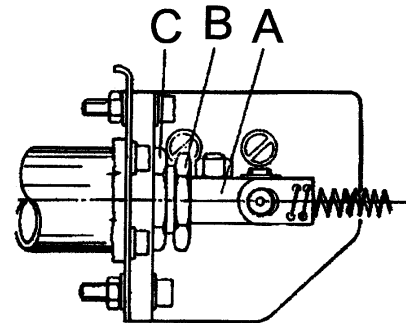


Fig. 18

SETTING THE FEELER ON TYPE GK35-6RL AND GK35-6RLM

A. Mounting the Proximity Switch

Remove cloth plate and left end cover, mount the electronic proximity switch A(Fig.17) to the dimension of 28mm as shown in (Fig.20). When retighten two plastic nut B, don't damage the proximity switch.

B. Setting the Feeler

The feeler D (Fig. 20) is adjusted initially with the two fastening screws for the feeler supports bracket. The feeler should not have any lateral play, but should turn readily. For this, loosen lock nut G (Fig.19), turn fastening screw F in or out as required, until the feeler turn readily. Retighten lock nut G.

The feeler D should be in the center of the throat plate and the slot of the presser foot. For this, loosen lock screw H(Fig.16) and center the feeler D in the throat plate and presser foot slot by moving the centring shaft E (Fig.19) laterally. Retighten screw H.

C. Setting the height of the feeler

The dimension X (Fig.20) between upper throat plate surface and the feeler should not be less than 7mm (set as high as possible). The distance between upper edge Y of feeler and lower edge of the feeler slot cut-out in the presser foot should be approx. 1mm to prevent impacting. For adjustment, loosen nut K and turn off screw L, so that the head of the screw does not contact the magnet in the feeler support bracket. Loosen nut N and turn the feeler stop screw M in or out as required, to adjust the correct feeler height X. Secure the set feeler height with lock nut.

D. Setting the Switching Pressure

The switching pressure on the feeler D is determined by the distance between screw L and the magnet in the feeler support bracket. The closer the head of the screw L to the magnet, the height the switching pressure on the feeler. For adjustment, turn screw L slowly towards to magnet in the feeler support bracket, until its head just contacts the magnet, then turn it back 1/2 turn, so that the feeler moves freely. Secure the position of screw with lock nut K.

E. Setting the Switching point (Fig.20)

The electrical point of the proximity switch A is determined by screw Q. When the feeler is in home position, the distance between screw head and the face of the proximity switch is approx. 6 mm(just for reference, should

connect the machine electrically to set). With the feeler in home position set the proper switch in point as follows: Loosen nut P, turn screw Q away from switch, until the switch, until the switches on. Then turn screw Q slowly towards the switch, until the switch switchers off,. Now turn screw a further 1/2 turn towards the switch. Secure this position of screw Q with lock nut P.

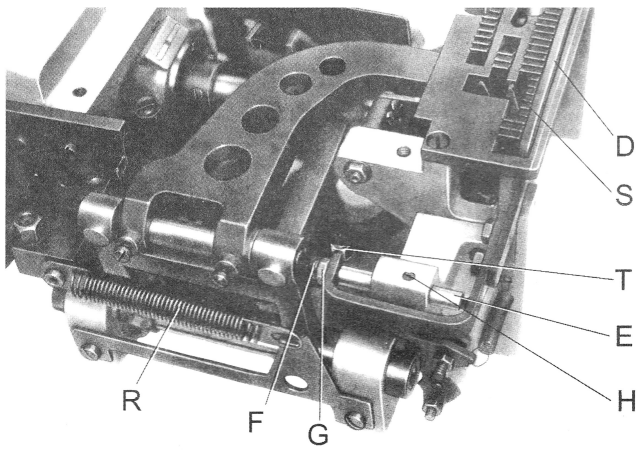


Fig. 19

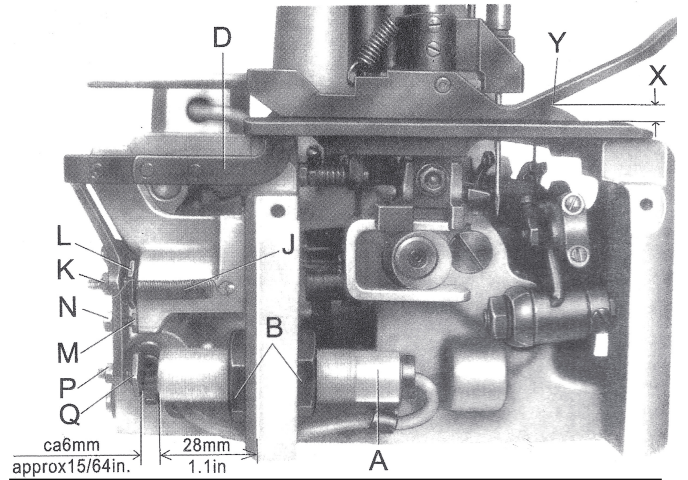


Fig. 20

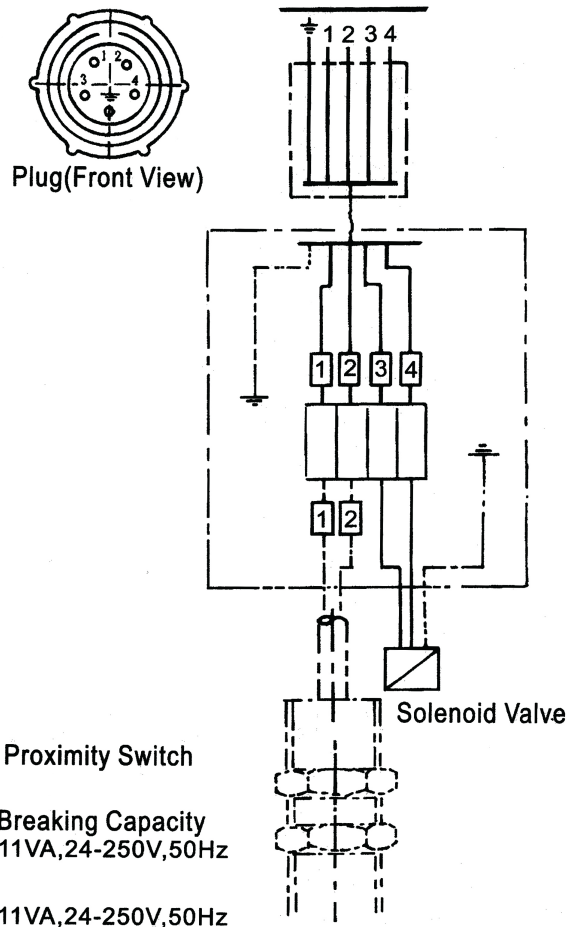
SETTING THE TIME DELAY RELAY ON TYPE GK35-6RL AND GK35-6RLM

Setting the time delay relay in the switch box of the sewing station under following conditions.

A. The sewing machine does not fully stop, the cutter is actuated.

B. After the bag on the feeder is closed, it will continue to sew out a length of thread chain. When the thread chain hasn't been tightened, the cutter is actuated.

Note: When setting the relay, there is line - voltage on the open switch box.



TROUBLE SHOOTING

Problem	Cause	Solution
Needle (Looper) thread breaks	<ol style="list-style-type: none"> 1. Damaged looper 2. Too much thread tension 3. Too little thread tension 4. Thread snarled or hung up along path between thread stand and needle / looper 5. Incorrect threading, thread not between tension discs 6. Incorrect needle setting 7. Bent or damaged needle 8. Double sewing 9. Decreased stitch length because of worn feed dog teeth 	Replace Decrease Increase Correct Thread correctly Set correctly Replace Move up thread controller Replace feed dog
No chain formed	<ol style="list-style-type: none"> 1. Incorrect threading 2. Too much looper thread tension 3. Too little needle thread tension 4. Thread controller too low 5. Needle and looper not timed each other 6. Not enough presser foot pressure 7. Thread is cut by feed dog teeth 8. Feed dog is set too high, feedback chain 	Thread correctly Decrease Increase Move it up Adjust timing Increase Filing the teeth Adjust height of feed dog
Skipping stitches	<ol style="list-style-type: none"> 1. Wrong setting of needle 2. Bent or damaged needle 3. Thread controller too low 4. Worn looper point 5. Needle too high 6. Thread sticking to needle due to heat 7. Needle guard pushing needle 8. Looper thread too loose to form a good triangle (reverse skip) 9. Needle and looper wide apart (scoop skip) 	Set correctly Replace Move it up Replace looper Lower needle bar Dampen needle thread with oil Adjust needle guard Increase looper thread tension Adjust distance needle to looper
Needle or looper breaks	<ol style="list-style-type: none"> 1. Bent needle 2. Looper point hitting needle 3. Needle guard pushing needle or they are wide apart 	Replace Adjust timing of needle and looper Adjust needle guard
Stitch length not uniform, curved seam	<ol style="list-style-type: none"> 1. Not enough presser foot pressure 2. Worn feed dog teeth 3. Bent needle 	Increase Replace feed dog Replace
Thread bites into crepe tape	<ol style="list-style-type: none"> 1. Too much needle thread tension 	Decrease
Crepe tape creases	<ol style="list-style-type: none"> 1. Feed dog, rear, is higher than feed dog front a little 	Adjust height

Note: Plastic contents existent in bag material is melt by the heated needle and may stick to needle. Etc., causing skipping stitches. When closing woven cloth bags, kraft paper bags inclusive of polyethylene coated layer, polyethylene and PVC bags, etc., dampen needle thread with oil to prevent sticking of plastic contents. Apply silicone oil processed thread for packing rice and other food products.

ORDERING WEAR AND SPARE PARTS

ILLUSTRATIONS

This manual has been arranged to simplify ordering wear and spare parts. Exploded views of various sections of the mechanism are shown so that the parts may be seen in their actual position in the sewing machine. On the page opposite the illustration will be found a listing of the parts with their part numbers, descriptions 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 that part in the illustration.

Reference numbers should never be used in ordering parts.

Always use the part number listed in the second column.

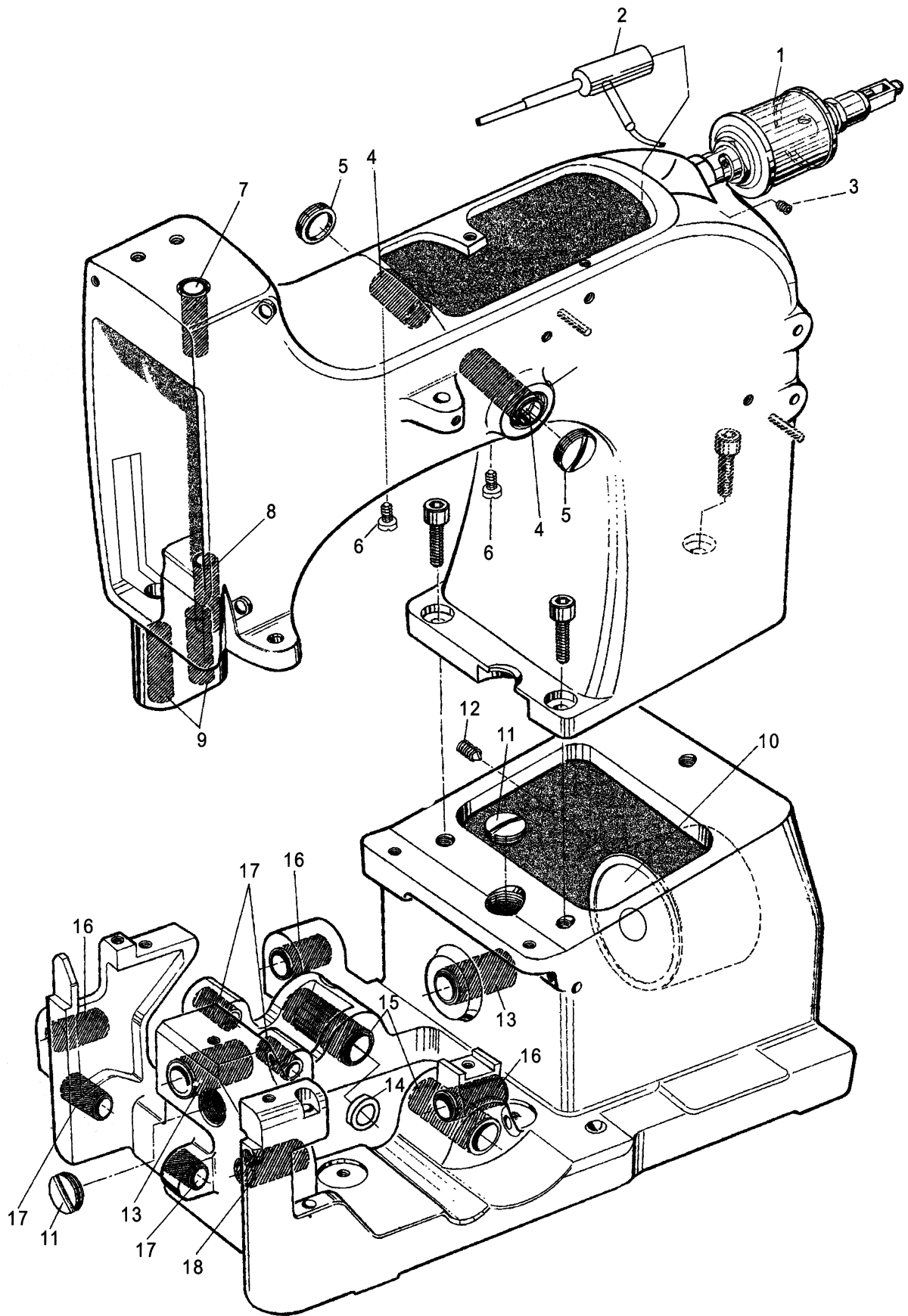
Component parts of sub-assemblies which can be furnished for repairs are indicated by indenting their description under the description of the main subassembly.

At the back of the catalog will be found a numerical index of all parts shown in this catalog. This will facilitate locating the illustration and description when only the part number is known.

IMPORTANT! On all orders, please include part number, part name and type of machine for which part is ordered.

PARTS MANUAL
FOR
BAG CLOSING MACHINE HEAD
GK35- 2C, 6A, 6B, 6C, 6RL, 6RLM

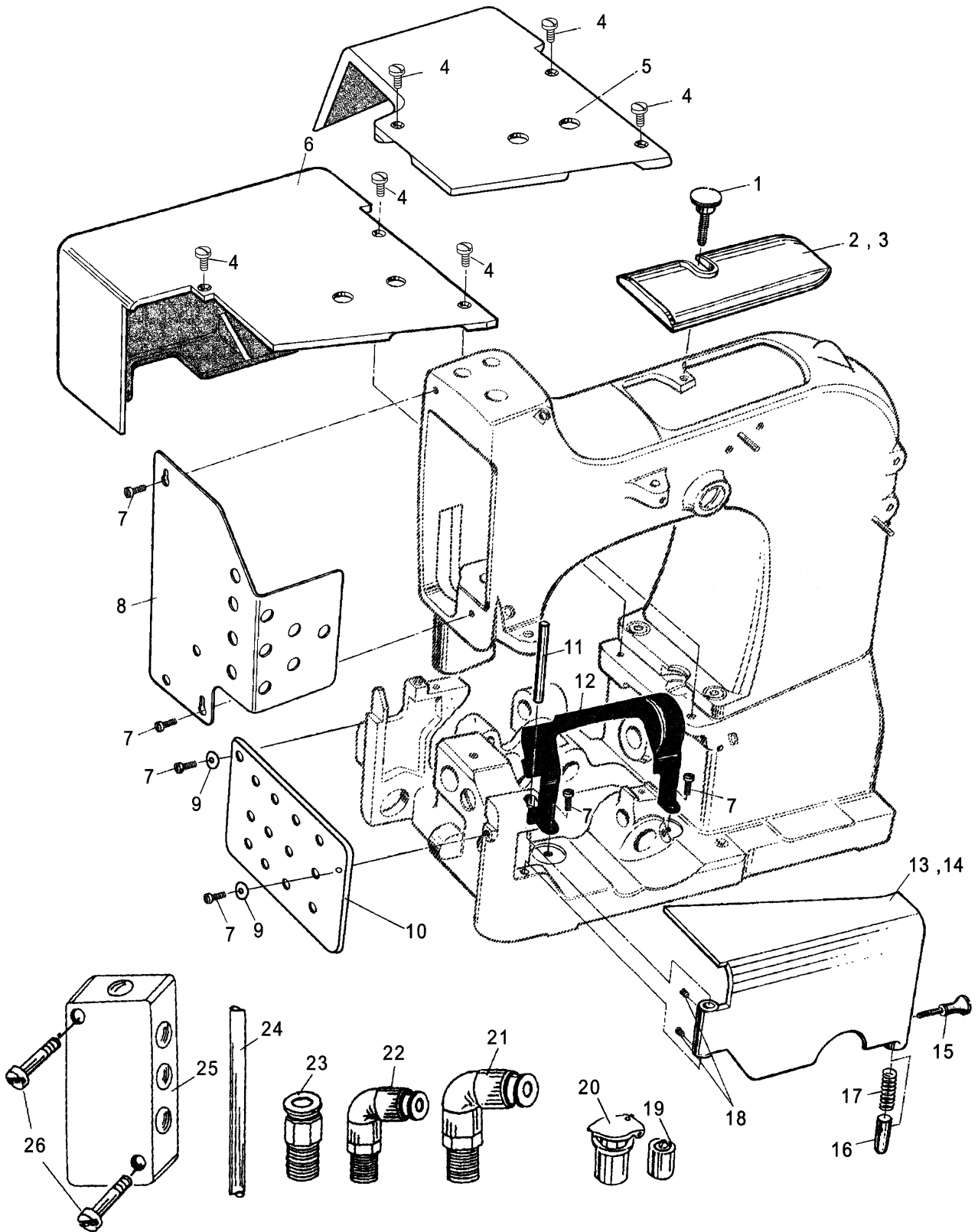
01 BUSHINGS AND OILING PARTS



01 BUSHINGS AND OILING PARTS

Ref. No.	Part No.	Description	Qty		Remarks
			-2C	-6A 6B -6C	
1	1001	Sight Feed Oiler	1	1	
2	3501001	Oil Cup Base	1	1	
3	PD508	Set Screw	2	2	
4	3501002	Bushing for Needle Lever Shaft	2	2	
5	3501003	Plug Screw	2	2	
6	YT512	Screw	2	2	
7	3501004	Needle Bar Bushing, upper	1	1	
8	3501005	Needle Bar Bushing, lower	1	1	
9	3501006	Presser Bar Bushing	2	2	
10	3501009	Crank Shaft Bearing Housing	1	1	
11	3501010	Plug Screw	2	2	
12	ZD825	Screw	1	1	
13	3501011	Crank Shaft Bushing	2	2	
14	3501012	Washer	1	1	
15	3501013	Looper Drive Lever Shaft Bushing	2	2	
16	3501014	Feed Rocker Shaft Bushing	3	3	
17	3501015	Knife Lever Shaft Bushing	2	2	
18	3501016	Looper Shaft Bushing, front	1	1	

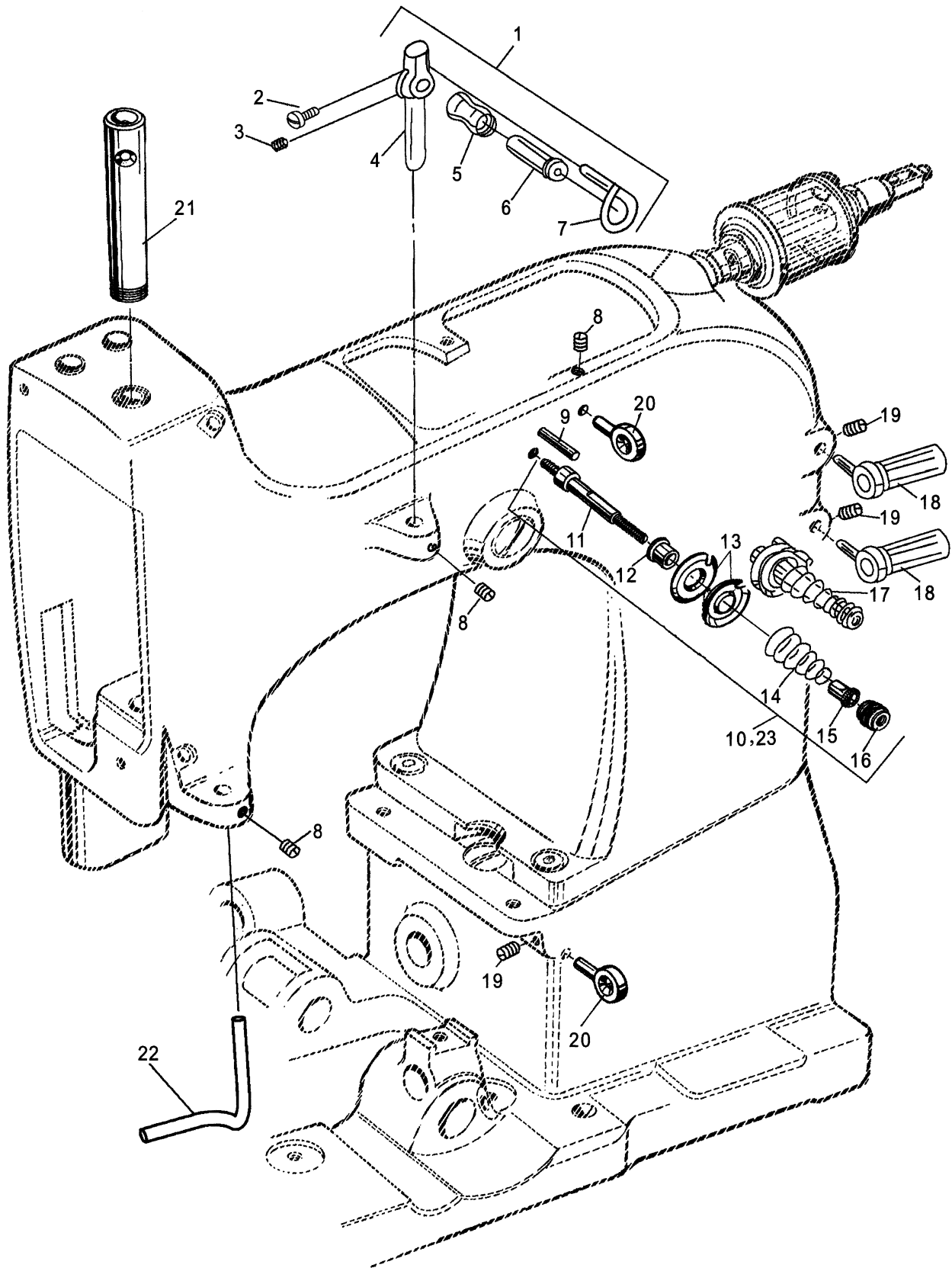
02 CLOTH PLATES AND MISCELLANEOUS COVERS



02 CLOTH PLATES AND MISCELLANEOUS COVERS

Ref. No.	Part No.	Description	Qty		Remarks
			-2C	-6ABC	
1	3502017	Screw	1		1
2	3502018	Arm Cover	1		-
3	3502018R	Arm Cover	-		1
4	YT515	Screw	3		3
5	3502019	Cloth plate	1		-
6	3502020R	Cloth plate	-		1
7	YT508D	Screw	6		6
8	3502021	Face Cover	1		1
9	802	Washer	2		2
10	3502022	End Cover	1		1
11	3502024	Hinge Pin	1		1
12	3502025	Guard	1		1
13	3502026	Hinge Cover	1		-
14	3502026R	Hinge Cover	-		1
15	3502027	Locking Bolt Knob	1		1
16	3502028	Locking Bolt	1		1
17	3502029	Spring	1		1
18	PD505	Set Screw	2		2
19	1001-1	Pinball Oil Cup	6		6
20	1001-3	Spring Cover Oil Cup	4		4
21	1001-4R	Oil Pipe Bend	-		1
22	1001-5R	Oil Pipe Bend	-		4
23	1001-6R	Oil Pipe Joint	-		4
24	1001-8R	Oil Pipe	-		4
25	3510195R	Oil Distributor	-		1
26	YT420	Screw	-		2

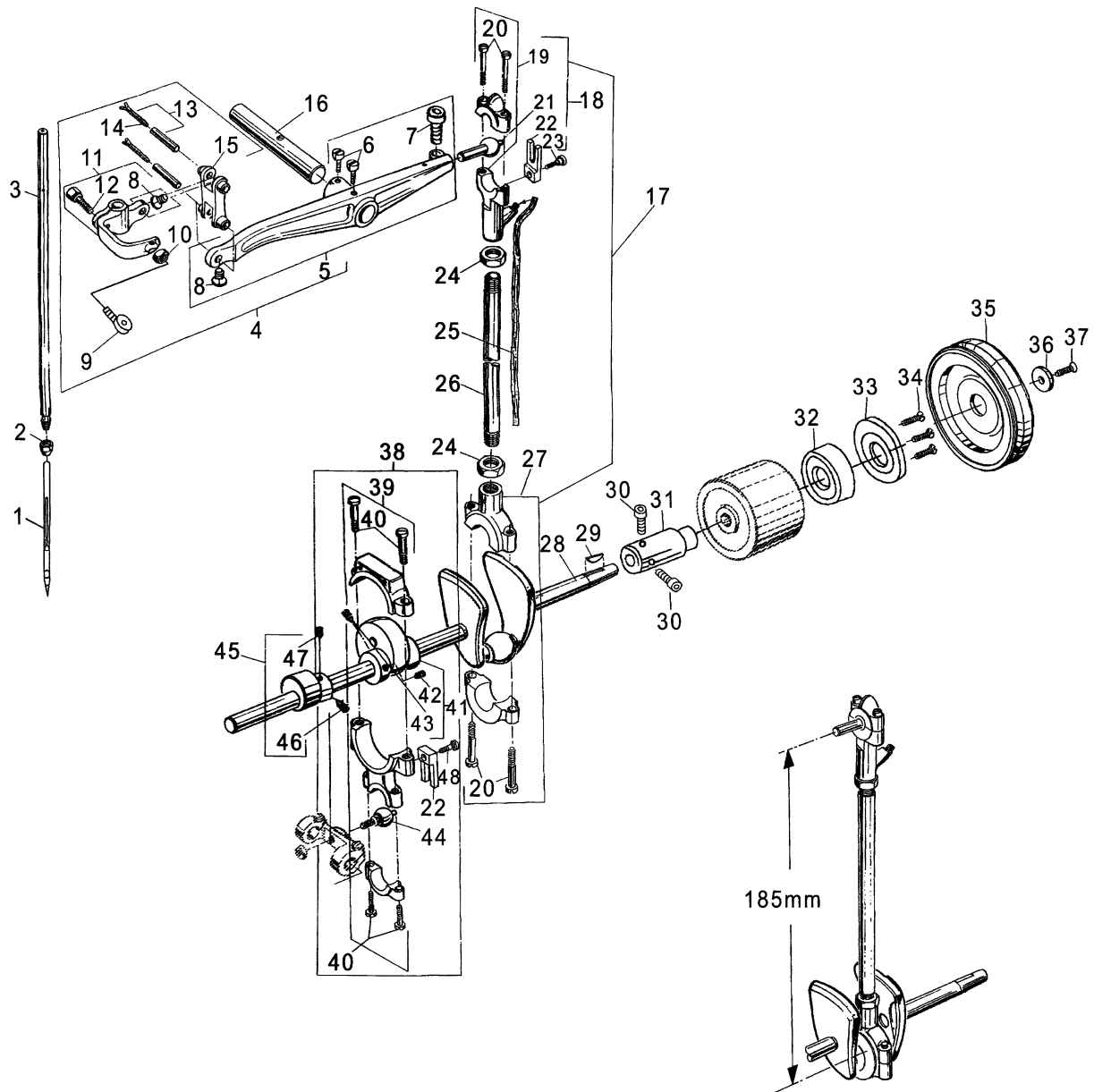
03 THREAD TENSIONS, THREAD GUIDES AND NEEDLE BAR GUARD



03 THREAD TENSIONS, THREAD GUIDES AND NEEDLE BAR GUARD

Ref. No.	Part No.	Description	Qty		Remarks
			-2C -6ABC	-RL	
1	350301	Needle Thread Guide	1	1	(2-7)
2	YT306	Screw	1	1	
3	PD404	Set Screw	1	1	
4	3503030	Needle Thread Guide Bar	1	1	
5	3503031	Thread Take-up Roller	1	1	
6	3503032	Oil Cup	1	1	
7	3503033	Thread Guide Finger	1	1	
8	PD506	Set Screw	3	3	
9	3503034	Pin	2	2	
10	350302	Thread Tension Ass'y	1	1	(11-16)
11	3503035	Tension Post	2	2	
12	3503036	Tension Post Ferrule	2	2	
13	3503037	Tension Disc	4	4	
14	3503038	Spring	1	1	
15	3503039	Tension Spring Ferrule	2	2	
16	3503040	Tension Nut	2	2	
17	3503041	Spring	1	1	
18	350303	Thread Guide Ass'y	2	2	
19	PD508	Set Screw	3	3	
20	3503043	Thread Guide	2	2	
21	3503044	Needle Bar Guide	1	1	
22	3511200	Needle Thread Guide	1	1	
23	350302X	Thread Tension Ass'y	1	1	(11-13,15-17)

04 NEEDLE BAR, NEEDLE LEVER, CRANK SHAFT, PULLEY, LOOPER DRIVE AND LOOPER
 AVOID ECCENTRIC



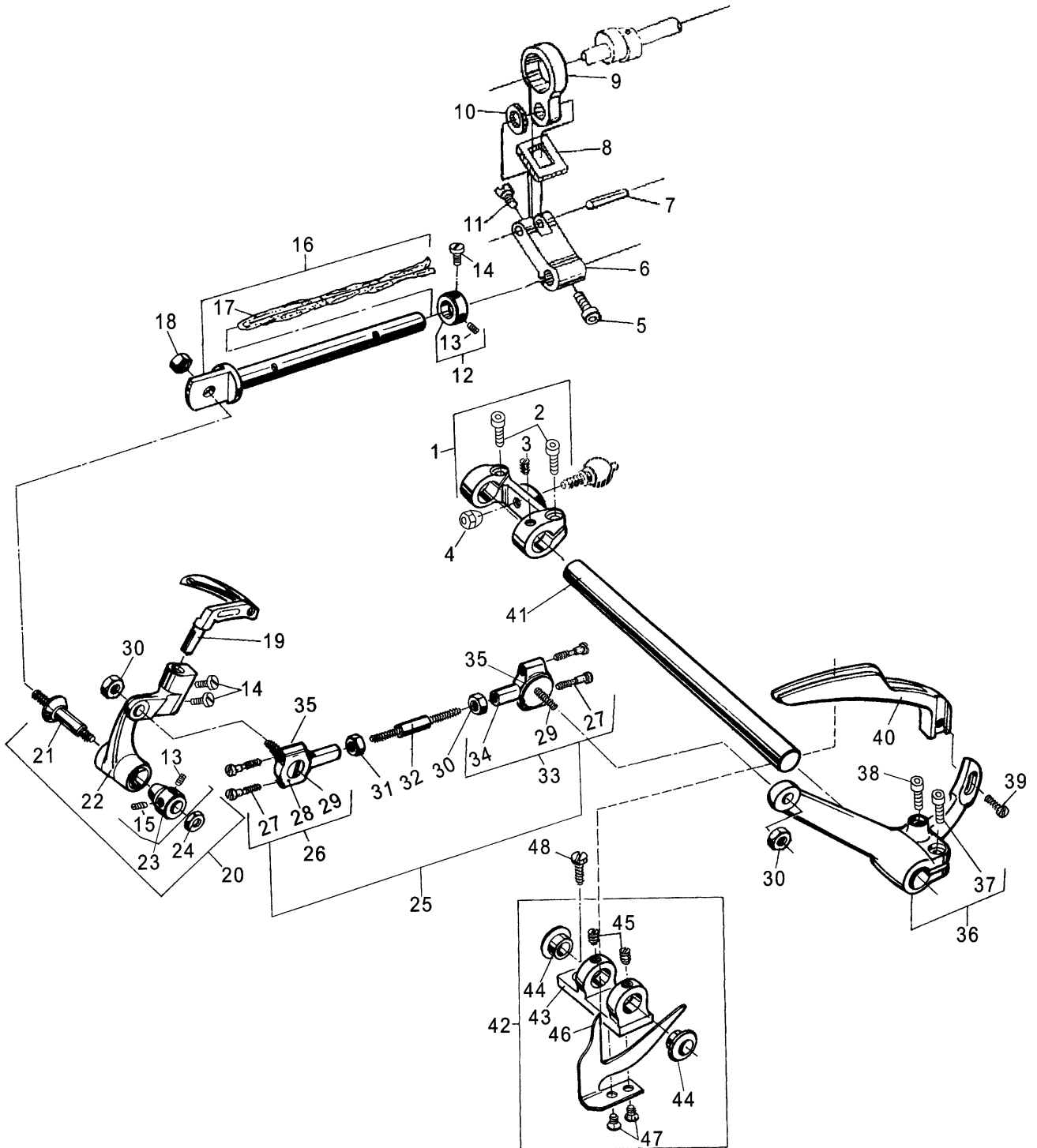
04 NEEDLE BAR, NEEDLE LEVER, CRANK SHAFT, PULLEY, LOOPER DRIVE AND LOOPER AVOID ECCENTRIC

Ref. No.	Part No.	Description	Qty		Remarks
			-2C	-6ABC	
1	3504045	Needle	1	1	
2	3504046	Needle Clamp Nut	1	1	
3	3504047	Needle Bar	1	1	
4	350404	Needle Lever Ass'y	1	1	(5-15)
5	3504048	Needle Lever	1	1	(6-8)
6	YT512	Screw	2	2	
7	NL616	Screw	1	1	
8	YT406	Screw	2	2	
9	3504049	Thread Guide	1	1	
10	701	Nut	1	1	
11	3504050	Needle Bar Connection	1	1	(8,12)
12	3510192	Coupling Bolt	1	1	
13	3504051	Needle Bar Link Pin	2	2	
14	1004	Oil Wick	2	2	
15	3504052	Connection Link	1	1	
16	3504053	Needle Lever Shaft	1	1	
17	350405	Needle Lever Ass'y	1	1	(18-27)
18	350406	Needle Lever Ball Link Ass'y	1	1	(19-23)
19	3504054	Shell	1	1	(20)
20	3504055	Screw	4	4	
21	3504056	Ball Stud	1	1	
22	3504057	Guide Fork	2	2	
23	YT412	Screw	1	1	
24	708	Nut	2	2	
25	1004-1	Oil Wick	1	1	
26	3504058	Needle Lever Connection Rod	1	1	
27	3504059	Shell	1	1	(20)
28	3504060	Crank Shaft	1	1	
29	3504061	Woodruff Key	1	1	
30	NL512	Screw	2	2	
31	3504062	Bearing Bushing	1	1	
32	1005	Bearing	1	1	
33	3504063	Bearing Cap	1	1	
34	YT408	Screw	3	3	(2, 4-5)
35	3504064	Pulley	1	1	
36	3504065	Washer	1	1	
37	NL514	Screw	1	1	
38	350407	Looper Drive Eccentric Ass'y	1	1	(22,39-44,48)
39	3504066	Looper Connection Bar	1	1	(40)
40	3504067	Screw	4	4	

04 NEEDLE BAR, NEEDLE LEVER, CRANK SHAFT, PULLEY, LOOPER DRIVE AND LOOPER AVOID ECCENTRIC
(CONTINUED)

Ref. No.	Part No.	Description	Qty		Remarks
			-2C -6ABC	-RL	
41	3504068	Looper Eccentric	1	1	(42-43)
42	PD608	Set Screw	1	1	
43	ZD610	Screw	1	1	
44	3504070	Ball Stud	1	1	
45	3504071	Looper Avoid Eccentric	1	1	(46-47)
46	PD605	Set Screw	1	1	
47	ZD607	Screw	1	1	
48	3510193	Guide Plate Bolt	1	1	

05 LOOPER AVOID ECCENTRIC FORK, LOOPER, LOOPER DRIVE LEVER AND ROCKER,
 LOOPER THREAD CAST-OFF



05 LOOPER AVOID ECCENTRIC FORK, LOOPER, LOOPER DRIVE LEVER AND ROCKER, LOOPER THREAD CAST-OFF

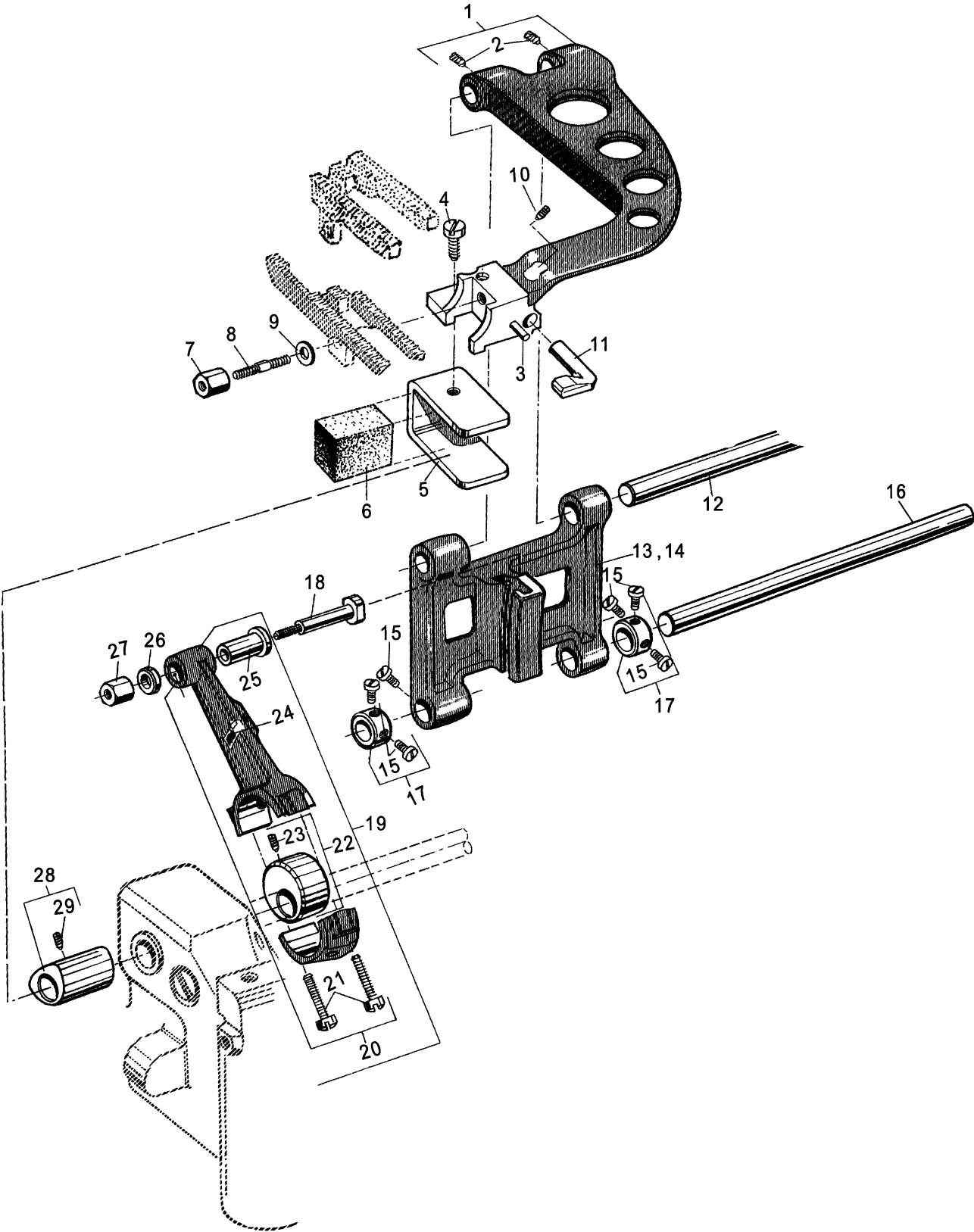
Ref. No.	Part No.	Description	Qty		Remarks
			-2C	-6ABC	
1	3505072	Rocker for Looper Drive Shaft	1	1	(2,3)
2	NL514	Screw	2	2	
3	ZD506	Screw	1	1	
4	3505073	Nut	1	1	
5	NL616	Screw	1	1	
6	3505074	Rocker for Looper Avoid Eccentric	1	1	
7	3505075	Connecting Rod Pin	1	1	
8	3505076	Felt	1	1	
9	3505077	Connecting Bar	1	1	
10	3505078	Felt Washer	1	1	
11	YT306	Screw	1	1	
12	3505079	Collar	1	1	(13)
13	PD505	Set Screw	2	2	
14	YT506	Screw	3	3	
15	PD506	Set Screw	1	1	
16	3505080	Looper Rocker Shaft	1	1	(17)
17	1004-1	Oil Wick	1	1	
18	707	Nut	1	1	
19	3505081	Looper for Two-thread	1	1	
20	350508	Looper Rocker Ass'y	1	1	(13,15,21-24)
21	3505082	Cone Stud for Looper Rocker	1	1	
22	3505083	Looper Rocker	1	1	
23	3505084	Cone	1	1	
24	704	Nut	1	1	
25	350509	Ball Joint Ass'y	1	1	(26-35)
26	350510	Ball Joint Ass'y, left	1	1	(27-29)
27	3505085	Screw	4	4	
28	3505086	Shell	1	1	
29	3505087	Ball Stud	2	2	
30	702	Nut	3	3	
31	703	Nut (left)	1	1	
32	3505088	Connecting Rod	1	1	
33	350511	Ball Joint Ass'y, right	1	1	(27,29,34)
34	3505089	Shell	1	1	
35	3505090	Felt Washer	2	2	
36	3505092	Looper Drive Lever	1	1	(37-38)
37	NL512	Screw	1	1	
38	NL516	Screw	1	1	
39	YT410	Screw	1	1	
40	3505093	Looper Thread Take-up	1	1	

05 LOOPER AVOID ECCENTRIC FORK, LOOPER, LOOPER DRIVE LEVER AND ROCKER, LOOPER THREAD CAST-OFF

(CONTINUED)

Ref. No.	Part No.	Description	Qty		Remarks
			-2C -6ABC	-RL	
41	3505094	Looper Drive Lever Rocker Shaft	1	1	
42	350512	Looper Thread Cast-Off Ass'y	1	1	(43-47)
43	3505095	Bracket	1	1	
44	3505096	Thread Eyelet	2	2	
45	PD404	Set Screw	2	2	
46	3505097	Cast-off Hook	1	1	
47	YT406	Screw	2	2	
48	YT508D	Screw	1	1	

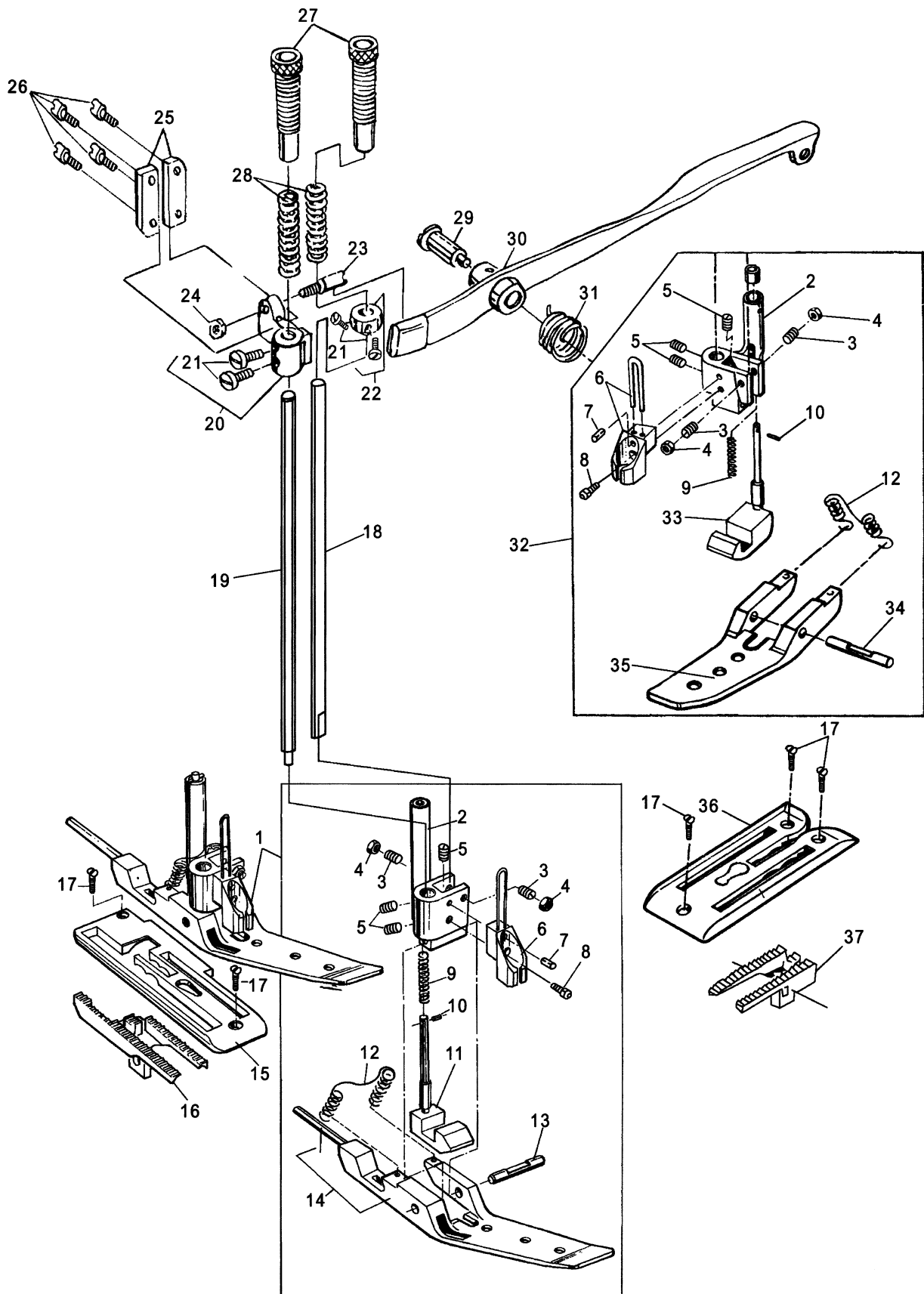
06 FEED MECHANISM



06 FEED MECHANISM

Ref. No.	Part No.	Description	Qty		Remarks
			-2C	-6ABC	
1	3506098	Feed Bar	1	1	(2)
2	PD506	Set Screw	2	2	
3	1006-2	Pin	1	1	
4	YT408	Screw	1	1	
5	3506099	Feed Lift Eccentric Fork	1	1	
6	3506100	Oil Felt	1	1	
7	709	Nut	1	1	
8	3506101	Stud Bolt	1	1	
9	902	Washer	1	1	
10	PD608	Set Screw	1	1	
11	3506102	Needle Guard	1	1	
12	3506103	Feed Rocker Shaft	1	1	
13	3506104	Feed Rocker	1	1	
14	3506104R	Feed Rocker	-	1	
15	YT506	Screw	6	6	
16	3506105	Feed Rock Shaft	1	1	
17	3505079	Collar	2	2	(15)
18	3506107	Stitch Regulating Stud	1	1	
19	350612	Feed Drive Eccentric Ass'y	1	1	(20-25)
20	3506108	Connection	1	1	(21)
21	3504055	Screw	2	2	
22	3506110	Eccentric	1	1	(23)
23	ZD608X	Screw	1	1	
24	3510196	Oil Felt	1	1	
25	3506111	Flange Bushing	1	1	
26	3506112	Washer	1	1	
27	706	Nut	1	1	
28	3506113	Feed Lift Eccentric	1	1	(29)
29	ZD607X	Screw	1	1	

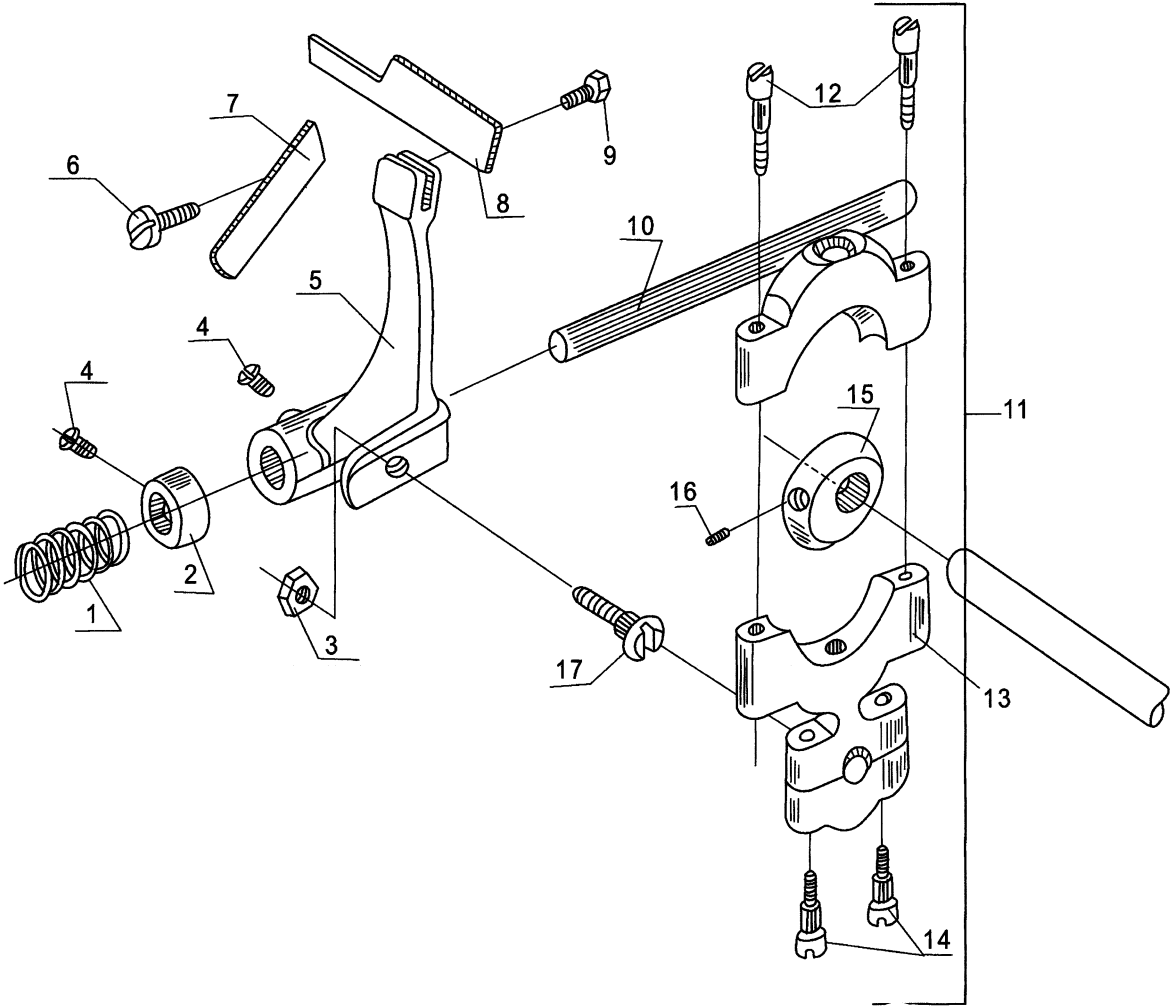
07 PRESSER BAR, PRESSER BAR SPRINGS, PRESSER FOOT LIFTER PARTS, PRESSER FEET, THROAT PLATES AND FEED DOGS



07 PRESSER BAR, PRESSER BAR SPRINGS, PRESSER FOOT LIFTER PARTS, PRESSER FEET, THROAT PLATES AND
FEED DOGS

Ref. No.	Part No.	Description	Qty		Remarks
			-2C	-6ABC	
1	350713R	Presser Foot Ass'y	-	1	(2-14)
2	3507114	Presser Foot Shank	1	1	
3	PD508	Set Screw	2	2	
4	701	Nut	2	2	
5	PD506	Set Screw	3	3	
6	3507115	Finger Guard	1	1	
7	1006	Clamping Sleeve	1	1	
8	NL408	Screw	1	1	
9	3507116	Spring	1	1	
10	1007	Clamping Sleeve	1	1	
11	3507117R	Chaining Section	-	1	
12	3507118	Spring	1	1	
13	3507119R	Pin	-	1	
14	3507120R	Presser Foot Bottom	-	1	
15	3507122R	Throat Plate	-	1	
16	3507123R	Feed Dog	-	1	
17	CT512	Screw	3	2	
18	3507124	Presser Bar, right	1	1	
19	3507125	Presser Bar, left	1	1	
20	3507126	Presser Foot Guide	1	1	(21)
21	YT506	Screw	4	4	
22	3505079	Collar	1	1	(21)
23	3507128	Lifting Screw	1	1	
24	702	Nut	1	1	
25	3507129	Guide Plate	2	2	
26	YT508D	Screw	4	4	
27	3507130	Spring Regulating Bushing	2	2	
28	3507131	Spring	2	2	
29	3507132	Stud for Lifter Lever	1	1	
30	3507133	Presser Foot Lifter Lever	1	1	
31	3507134	Spring	1	1	
32	350714	Presser Foot Ass'y	1	-	(2-10,12,33-35)
33	3507136	Chaining Section	1	-	
34	3507140	Pin	1	-	
35	3507141	Presser Foot Bottom	1	-	
36	3507142	Throat Plate	1	-	-6BC not fit
37	3507143	Feed Dog	1	-	

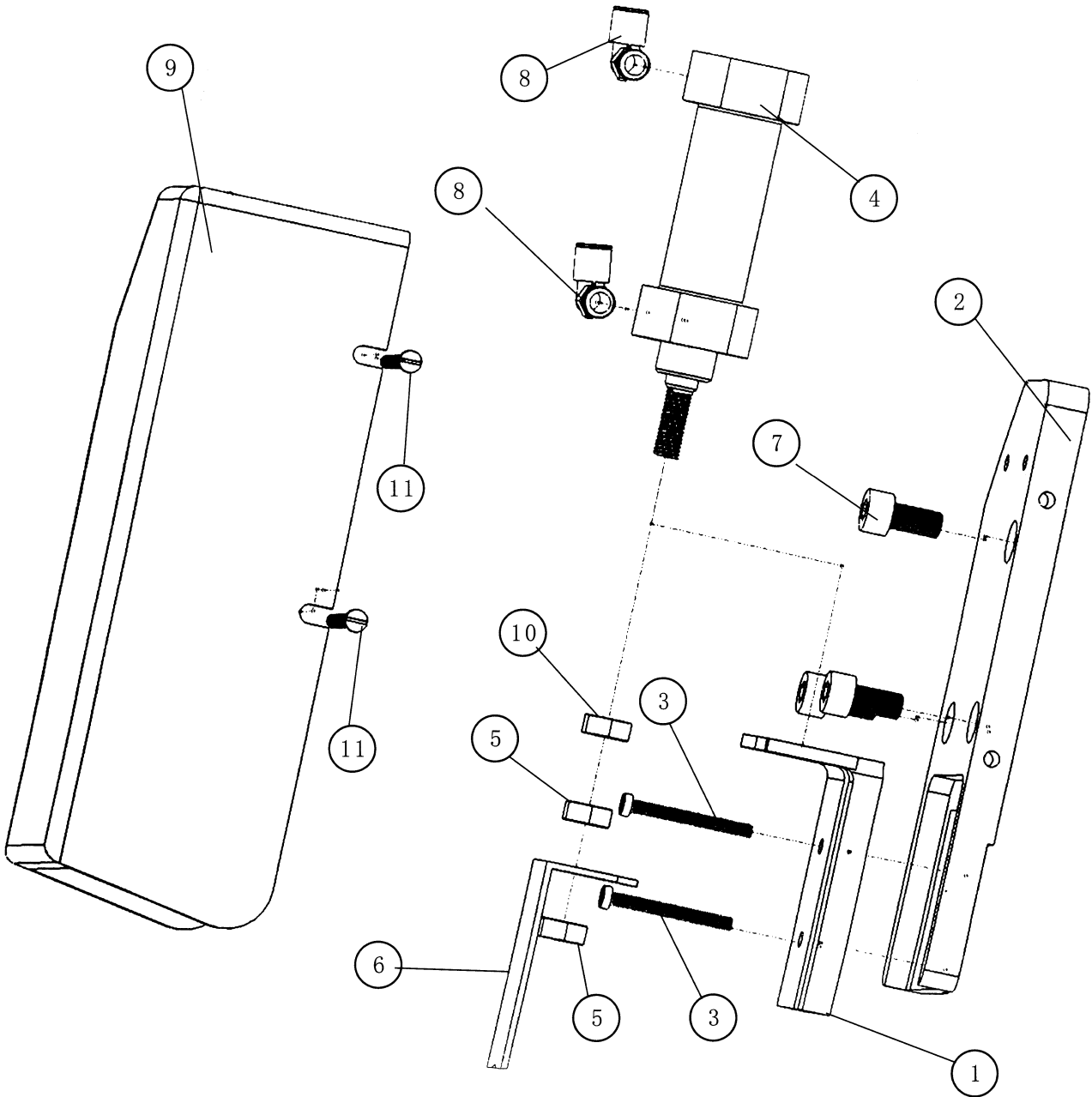
08 THREAD CHAIN CUTTING KNIVES FOR TYPE GK35-2C AND 6A



08 THREAD CHAIN CUTTING KNIVES FOR TYPE GK35-2C AND 6A

Ref. No.	Part No.	Description	Qty		Remarks
			-2C	-6A	
1	3509172	Spring	1	1	
2	3509173	Collar	1	1	
3	702	Nut	1	1	
4	YT506	Screw	2	2	
5	3509174	Holder for Cutter	1	1	
6	YT508D	Screw	1	1	
7	3509175	Stationary Knife	1	1	
8	3509176	Movable Knife	1	1	
9	LJ405	Screw	1	1	
10	3509177	Shaft	1	1	
11	350917	Connecting Bar Ass'y for Cutter	1	1	(12~17)
12	3509178	Screw	2	2	
13	3509179	Connecting bar for Cutter	1	1	
14	3505085	Screw	2	2	
15	3509181	Eccentric for Cutter	1	1	
16	ZD506	Screw	1	1	
17	3509182	Bearing	1	1	

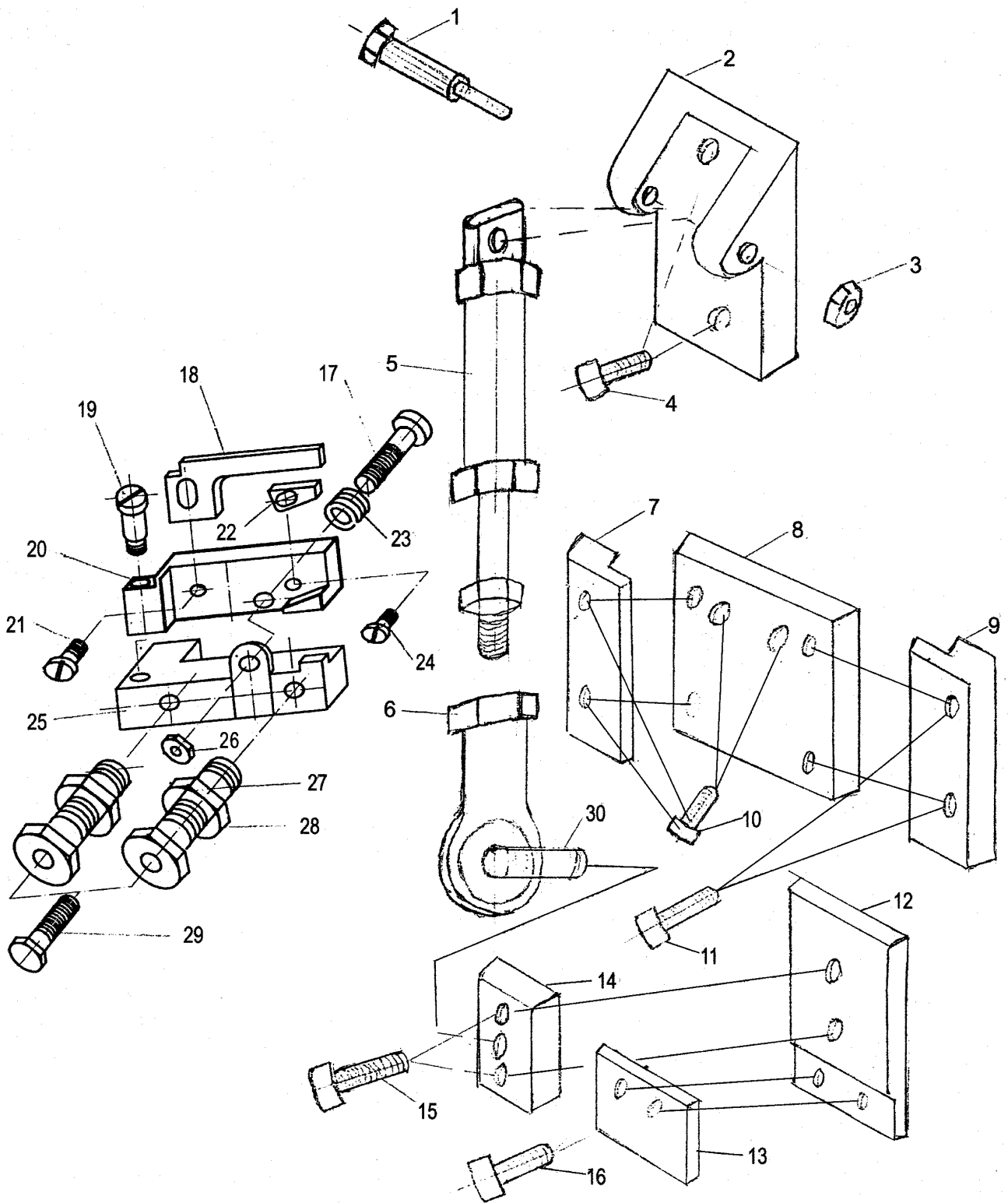
09 AIR CYINDER AND PUSH PLATE FOR TYPE GK35-6A



09 AIR CYINDER FOR TYPE GK35-6A

Ref. No.	Part No.	Description	Qty	Remarks
1	352022T	Air Cylinder Base	1	
2	352005	Holder for Air Cylinder	1	
3	M5X20	Screw	2	
4		Air Cylinder	1	
5		Nut	2	
6	352023T	Thread Chain Push Plate	1	
7	M8X16	Screw	3	
8	D07034	Tube Fitting, Elbow	2	
9	352001	Air Cylinder Cover for GK35-6A	1	
10		Nut	1	
11	YT512	Screw	2	

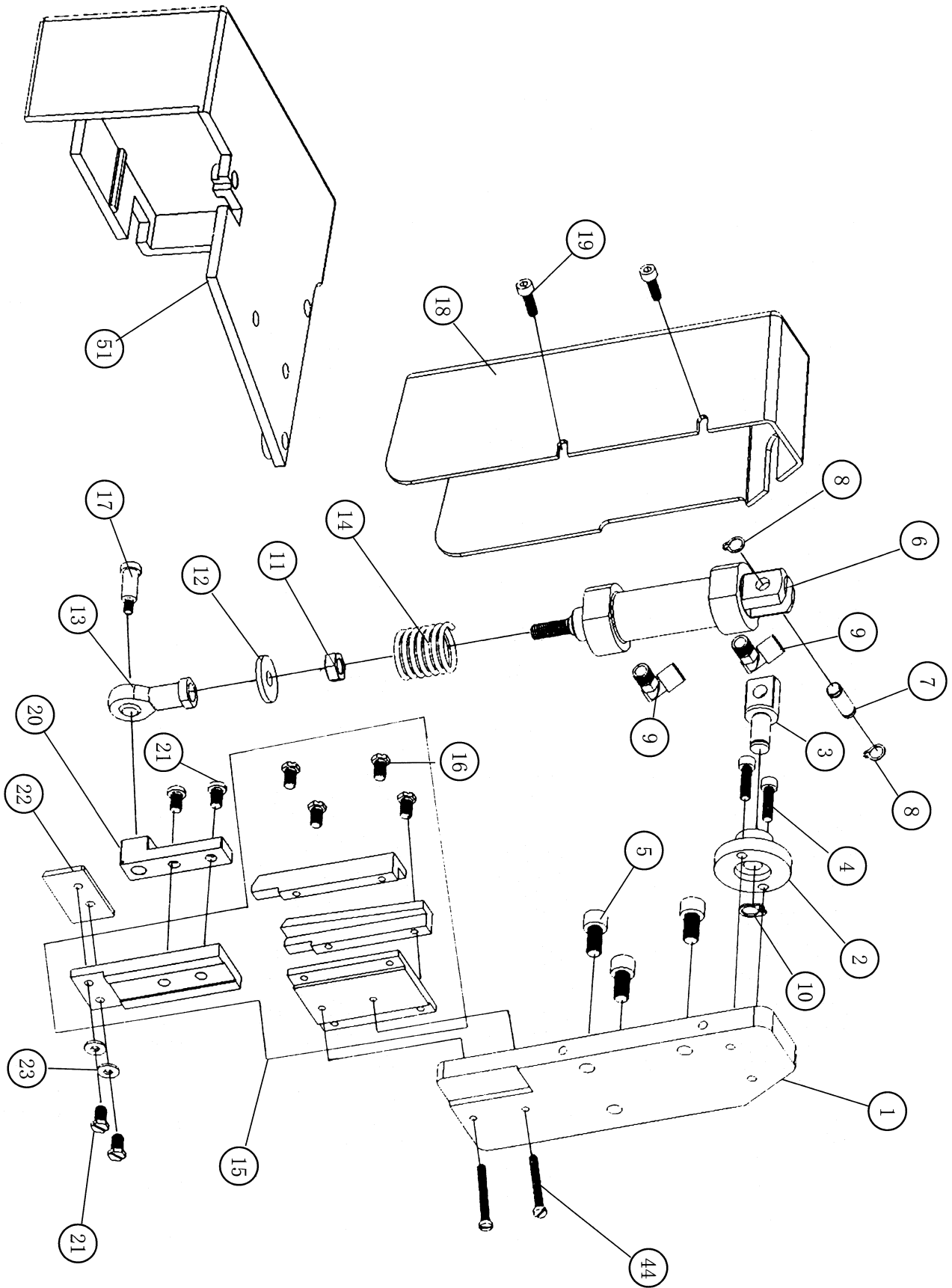
10 AIR CYINDER AND CUTTER FOR TYPE GK35-6B



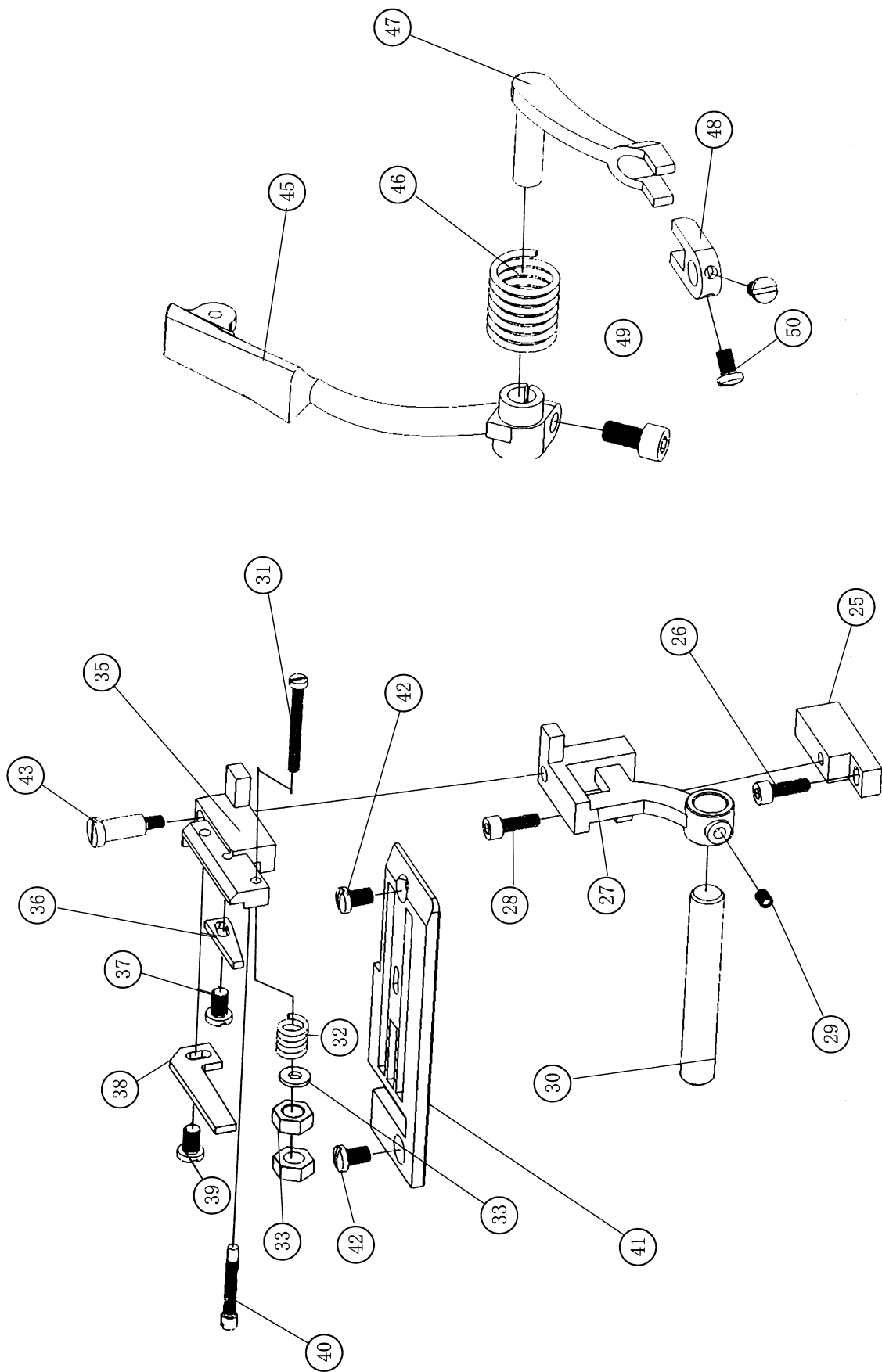
10 AIR CYLINDER AND CUTTER FOR TYPE GK35-6B

Ref. No.	Part No.	Description	Qty -6B	Remarks
1	356B609	Air Cylinder Screw	1	
2	356B610	Air Cylinder Base	1	
3	T6170M6	Nut	1	
4	T70 M6×12	Screw	2	
5	356B2020	Air Cylinder	1	
6	356BM8	Rod End	1	
7	356B611	Upper Knife Drive Guide Plate, left	1	
8	356B612	Upper Knife Base Connection	1	
9	356B613	Upper Knife Drive Guide Plate, right	1	
10	T70 M6×10	Screw	2	
11	T70 M5×22	Screw	4	
12	356B614	Upper Knife Base	1	
13	356B604	Upper Knife	1	
14	356B615	Air Cylinder Lower Holder	1	
15	T70 M6×10	Screw	2	
16	T70 M5×8	Screw	2	
17	T65 M5×25	Screw	1	
18	356B603	Lower Knife	1	
19	356B606	Screw	1	
20	356B602	Lower Knife Base	1	
21	T70 M5×8	Screw	1	
22	356B608	Lower Knife Stopper	1	
23	356B607	Spring	1	
24	T65 M4×7	Screw	1	
25	356B601	Lower Knife Base Connection	1	
26	T6172M5	Nut	1	
27	356B605	Hollow screw	2	
28	T6172M10	Nut	2	
29	M6×45	Screw	2	
30	356B616	Screw	1	

11 AIR CYLINDER AND CUTTER FOR TYPE GK35-6C (PART I)



12 AIR CYLINDER AND CUTTER FOR TYPE GK35-6C (PART II)



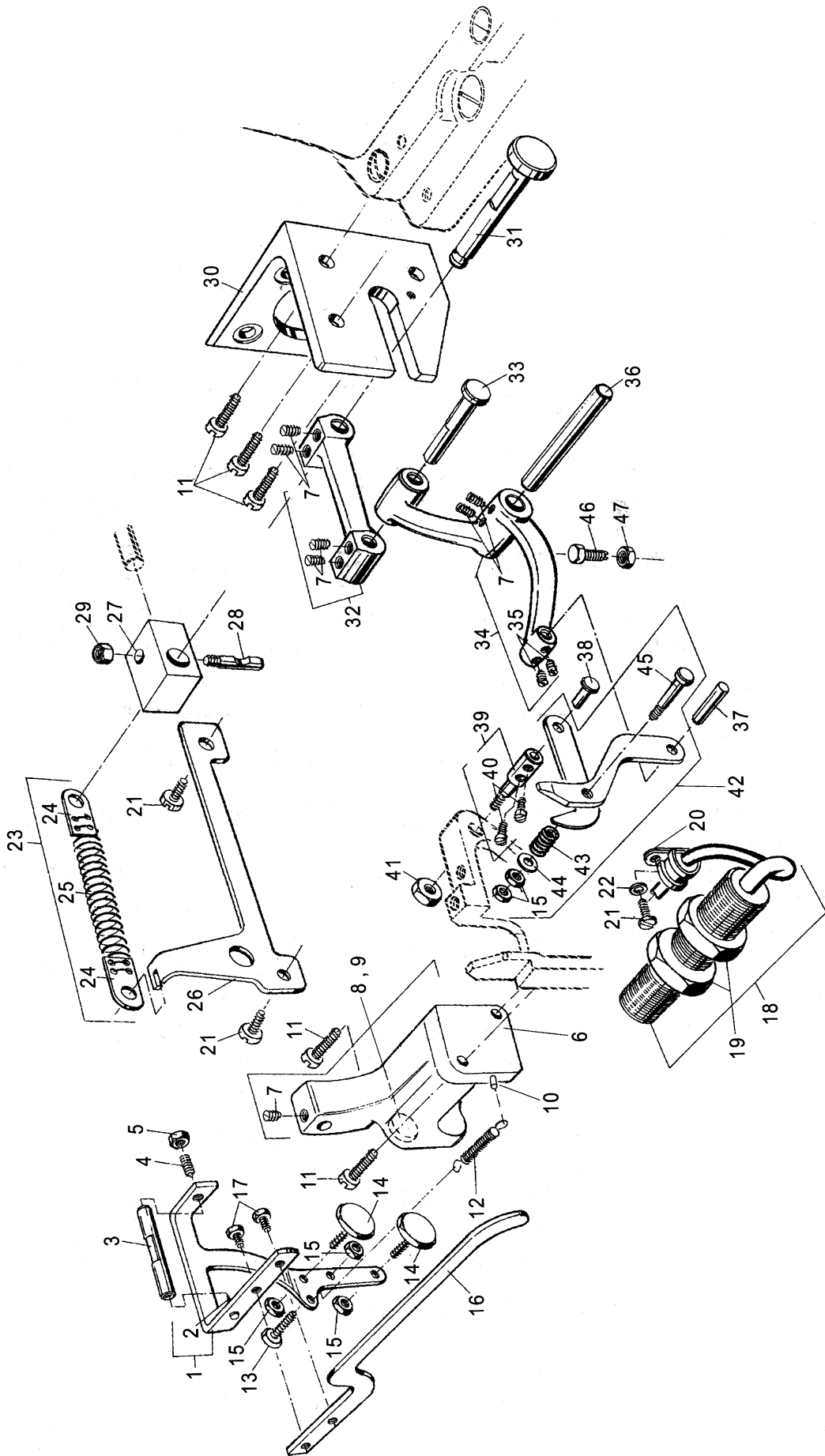
11-12 AIR CYLINDER AND CUTTER FOR TYPE GK35-6C

Ref. No.	Part No.	Description	Qty -6C	Remarks
1	352005	Air Cylinder Base	1	
2	352002	Air Cylinder Upper Holder	1	
3	352003	Air Cylinder Upper Joint Rod	1	
4	NL520	Screw	2	
5	NL816	Screw	3	
6	J01002	Air Cylinder	1	
7	106201	Pin	1	
8	1RS-8	Stop Ring	2	
9	DO7034	Tube Fitting, Elbow	2	
10	IRS-8	Stop Ring	1	
11	1N8C	Nut	1	
12	352009	Washer	1	
13	352018	Rod End	1	
14	305221	Spring	1	
15	106032C	Oscillating Plate Ass'y	1	
16	11/64S40061	Screw	4	
17	352006	Screw	1	
18	352001	Air Cylinder Cover	1	
19	YT512	Screw	2	
20	352004	Air Cylinder Lower Holder	1	
21	15/64S28004	Screw	1	
22	106053	Upper Knife	1	
23	11/64W15103	Washer	2	
24	11/64S40049	Screw	2	
25	352014	Lower Knife Base Block	1	
26	NL516	Screw	1	
27	352013	Lower Knife Base	1	
28	NL516	Screw	1	
29	PD505	Set Screw	1	
30	352015	Lower Knife Base Joint Rod	1	
31	YT450	Screw	1	
32	106171	Spring	1	
33	802	Washer	1	
34	711	Nut	2	
35	352012	Lower Knife Base Connection	1	
36	106093	Stopper for Lower Knife	1	
37	YT406	Screw	1	
38	106083	Lower Knife	1	
39	YT406	Screw	1	
40	352017	Set Screw	1	

11-12 AIR CYLINDER AND CUTTER FOR TYPE GK35-6C (CONTINUED)

Ref. No.	Part No.	Description	Qty	Remarks
41	3507122A	Throat Plate	1	
42	CT512	Screw	2	
43	352011	Screw	1	
44	YT410	Screw	2	
45	352008	Outer Presser Bar	1	
46	3507134	Spring	1	
47	352007	Inner Presser Bar	1	
48	352010	Inner Presser Bar Holder	1	
49	NL8×16	Screw	1	
50	YT508D	Screw	2	
51	3502020R	Air Cylinder Cover	-	

13 FEELER, PROXIMITY SWITCH AND CUTTER FOR TYPE GK35-6RL AND 6RLM



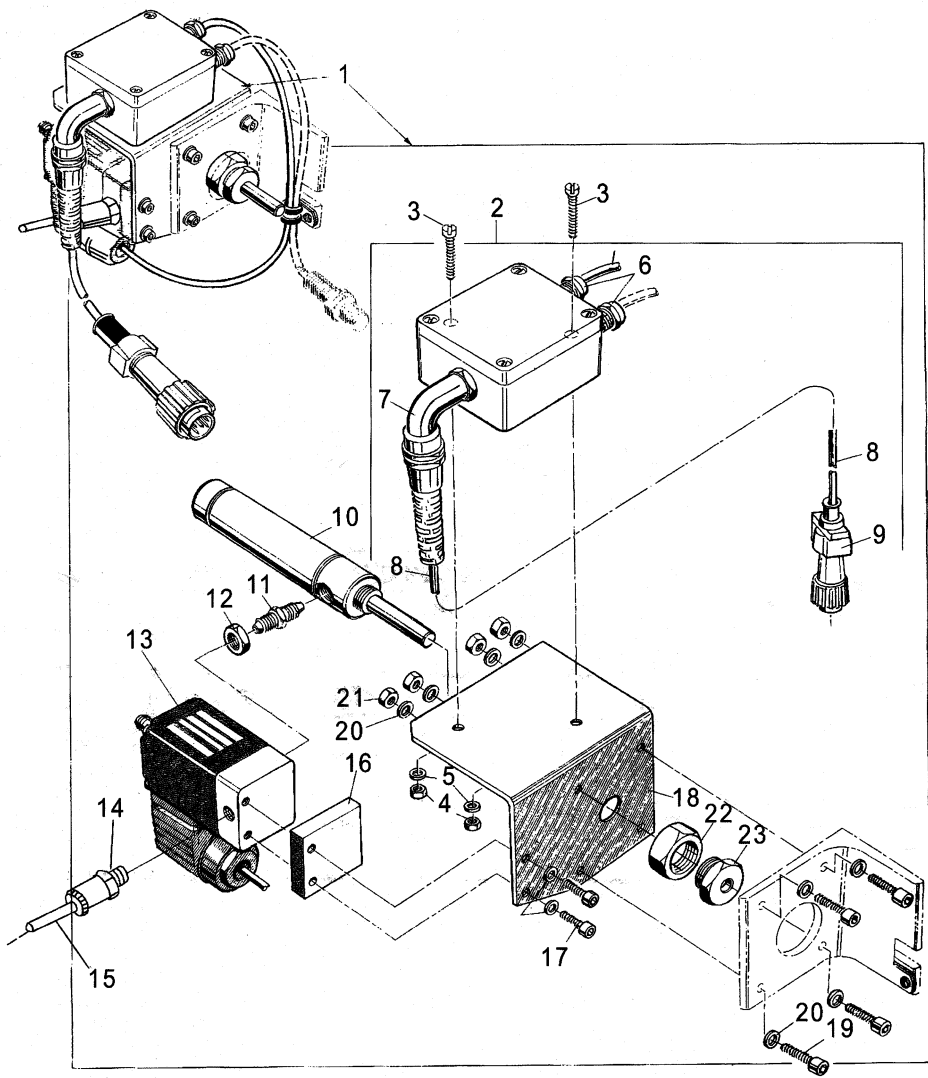
13 FEELER, PROXIMITY SWITCH AND CUTTER FOR TYPE GK35-6RL AND 6RLM

Ref. No.	Part No.	Description	Qty		Remarks
			-6RL	-6RLM	
1	3508144	Holder for Feeler	1	1	
2	3508145	Centre Pin	1	1	
3	3508146	Centre Shaft	1	1	
4	3508147	Centre Screw	1	1	
5	701	Nut	1	1	
6	3508148	Support for Feeler	1	1	
7	PD506	Set Screw	7	7	
8	3508149	Magnet	1	1	
9	3508149A	Magnet Bushing	1	1	
10	3508150	Grooved Pin	1	1	
11	YT515	Screw	5	5	
12	3508151	Spring	1	1	
13	LJ415	Screw	1	1	
14	3508152	Screw	2	2	
15	710	Nut	6	6	
16	3508153	Feeler	1	1	
17	YT506	Screw	2	2	
18	2208	Proximity Switch	1	1	(19)
19	2208A	Plastic Nut	2	2	
20	3508154	Cable Clamp	1	1	
21	YT508D	Screw	3	3	
22	802	Washer	1	1	
23	350815	Pull Back Spring Ass' y	1	1	(24-25)
24	3508155	Spring Eyelet	2	2	
25	3508156	Spring	1	1	
26	3508157	Spring Holder	1	1	
27	3508158	Clamp	1	1	
28	3508159	Locking Stud	1	1	
29	706	Nut	1	1	
30	3508160	Bracket	1	1	
31	3508161	Stud	1	1	
32	3508162	Connecting Level	1	1	
33	3508163	Stud	1	1	
34	3508164	Lever	1	1	
35	PD404	Set Screw	2	2	
36	3508165	Shaft	1	1	
37	3508166	Parallel Pin	1	1	
38	3508167	Stud	1	1	
39	3508168	Stud for Knife	1	1	(40)
40	YT406	Screw	2	2	
41	702	Nut	1	1	
42	350816	Chain Cutter Ass'y	1	1	(15,43-45)

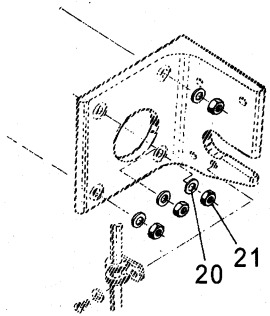
13 FEELER, PROXIMITY SWITCH AND CUTTER FOR TYPE GK35-6RL AND 6RLM CONTINUED)

Ref. No.	Part No.	Description	Qty		Remarks
			-6RL	-6RLM	
43	3508169	Spring	1	1	
44	801	Washer	1	1	
45	3508170	Stud	1	1	
46	LJ512	Screw	1	1	
47	705	Nut	1	1	

14 AIR CYLINDER AND CUTTER FOR TYPE GK35-6RL AND 6RLM



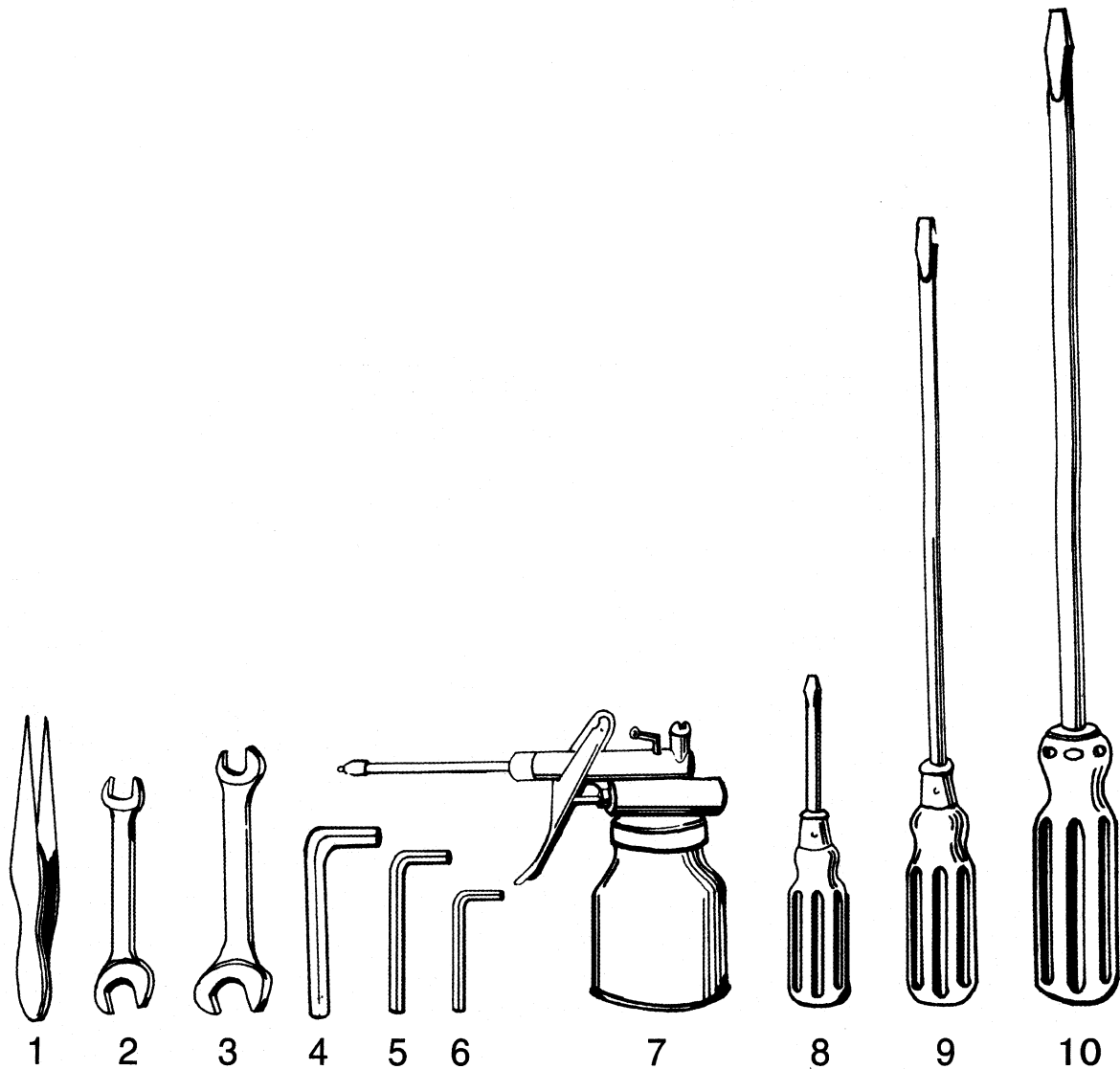
Receptacle in Switch-box (Top View)



14 AIR CYLINDER AND CUTTER FOR TYPE GK35-6RL AND 6RLM

Ref. No.	Part No.	Description	Qty		Remarks
			-6RL	-6RLM	
1	351018	Air Cylinder Driver Ass'y	1	1	(2-23)
2	351019	Terminal Box	1	1	
3	CT410	Screw	2	2	
4	710	Nut	2	2	
5	801	Washer	2	2	
6	2201	Cable Screw-fitting PG7	2	2	
7	2202	Cable Screw-fitting PG9	1	1	
8	2204	Supply Cable	1	1	
9	2205	Plug Housing	1	1	
10	2101	Air Cylinder	1	1	
11	3510184	Connector	1	1	
12	3510185	Nut	1	1	
13	2102	Solenoid Valve	1	1	
14	1001-7R	Connector	1	1	
15	1001-9R	Tube	1	1	
16	3510187	Spacer Plate	1	1	
17	YT412	Screw	2	2	
18	3510188	Bracket	1	1	
19	NL514	Screw	4	4	
20	802	Washer	8	8	
21	701	Nut	4	4	
22	3510189	Lock Nut	1	1	
23	3510190	Stop Screw	1	1	

12 ACCESSORIES AND TOOLS



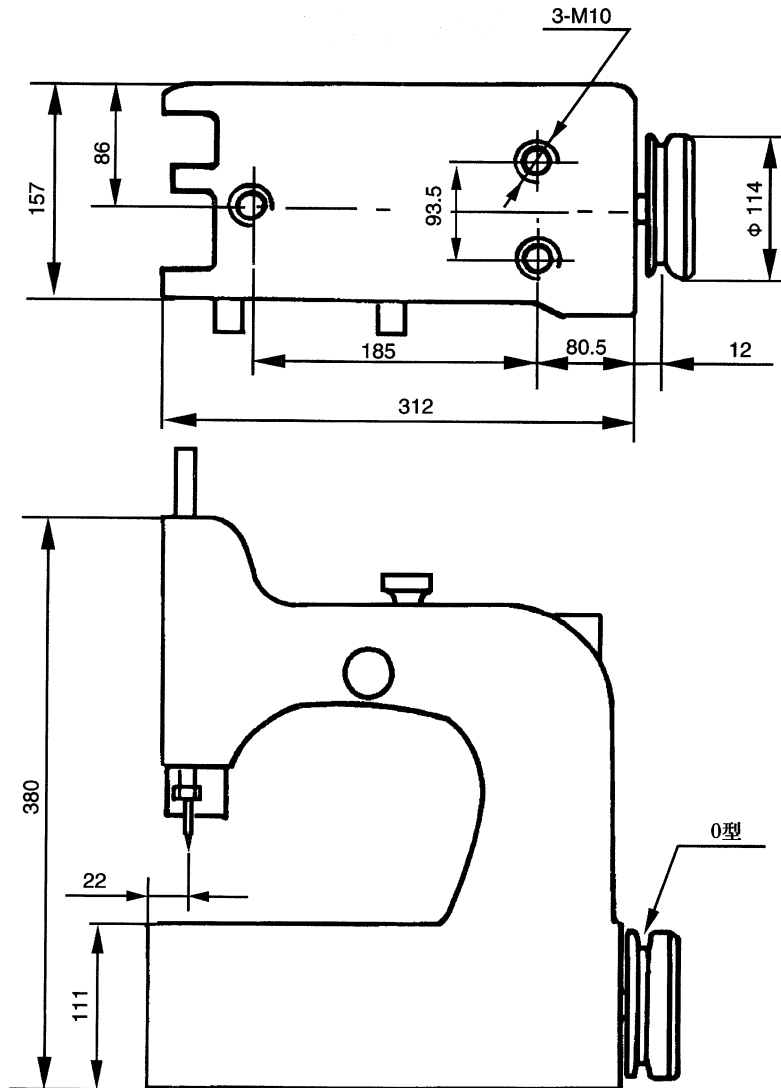
13 ACCESSORIES AND TOOLS

Ref. No.	Description	Specification	Qty
1	Tweezers		1
2	Double Jawed Wrench	6×7	1
3	Double Jawed Wrench	8×10	1
4	Hexagon Socket Head Wrench	5mm	1
5	Hexagon Socket Head Wrench	4mm	1
6	Hexagon Socket Head Wrench	2.5mm	1
7	Oil Can		1
8	Screwdriver	75mm	1
9	Screwdriver	225mm	1
10	Screwdriver	250mm	1

SCREW, NUT AND WASHER

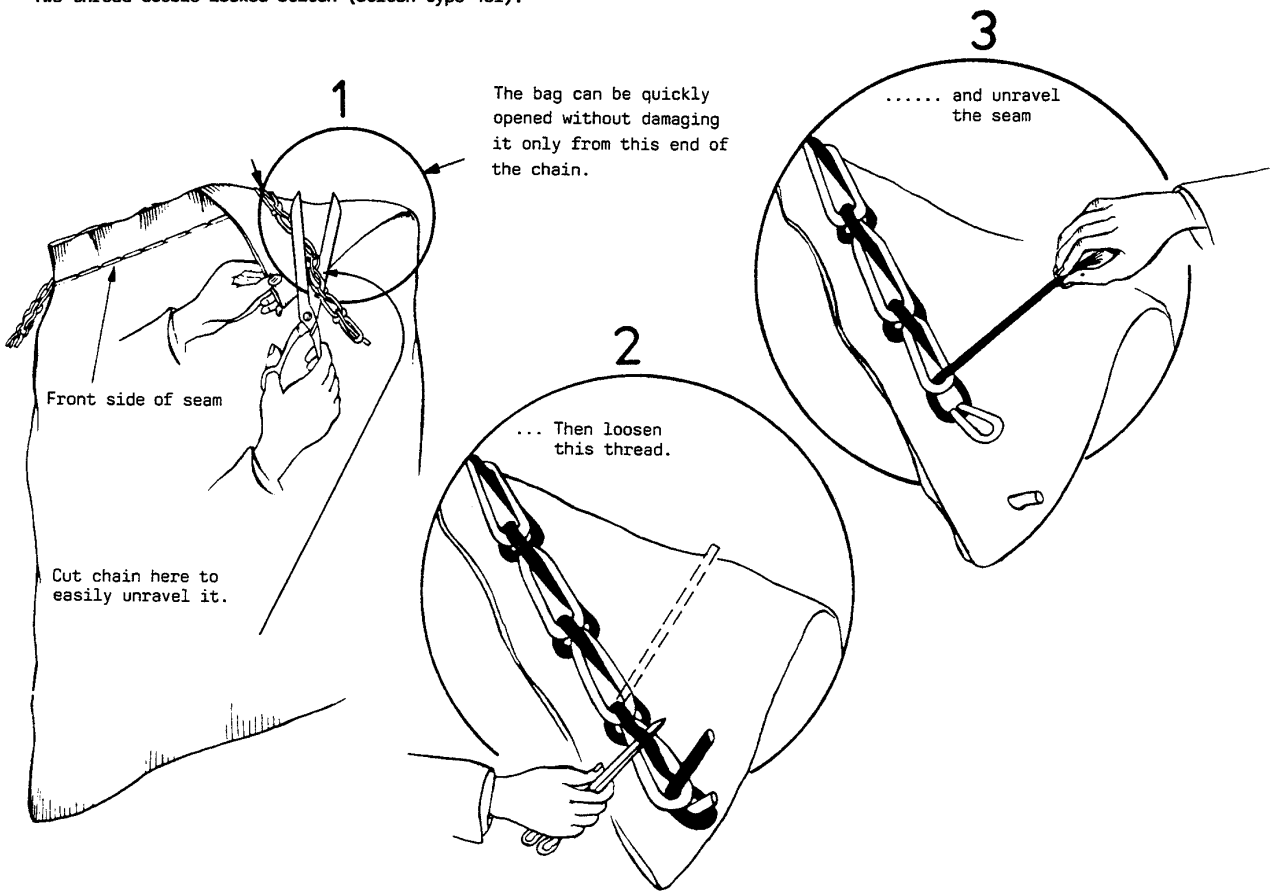


INSTALLATION DRAWING

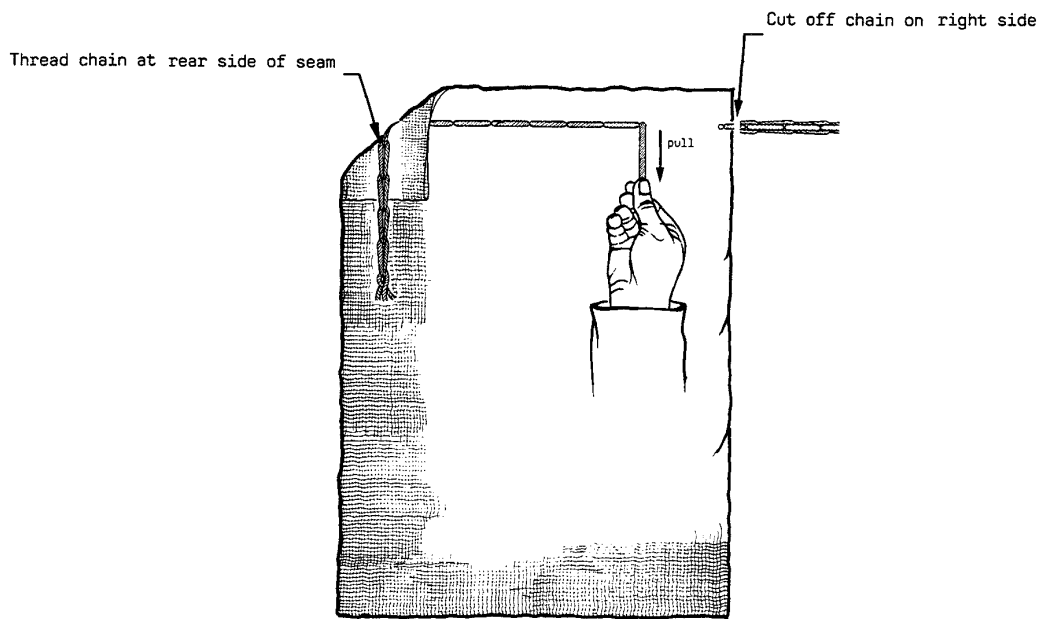


HOW TO UNRAVEL A BAG CLOSING SEAM?

Two-thread double locked stitch (stitch type 401):



Single thread chainstitch (stitch type 101):



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