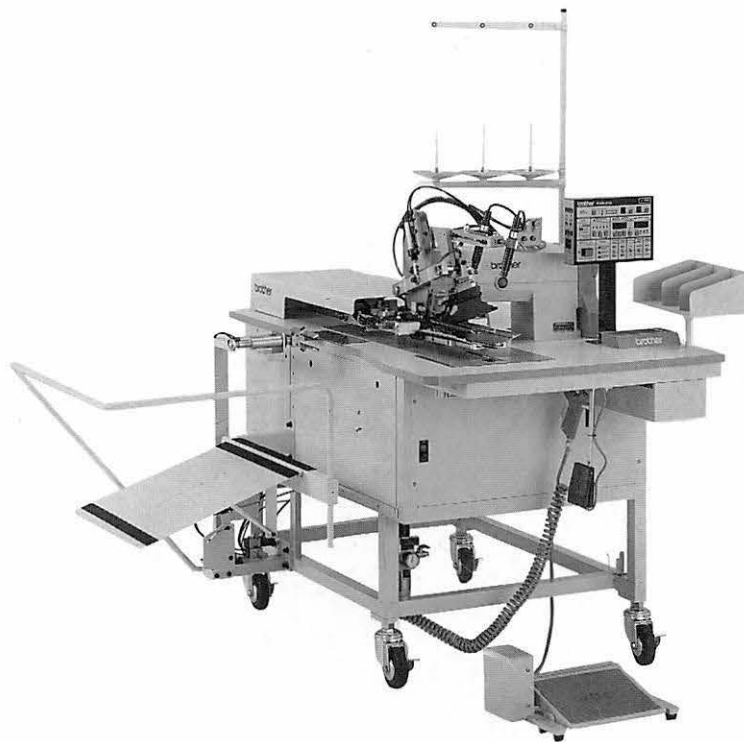


SERVICE MANUAL FOR

BAS-605 **BAS-610** SERIES

AUTOMATIC LOCK STITCH POCKET WELT SEWER
(FOR FLAP ATTACHMENT)



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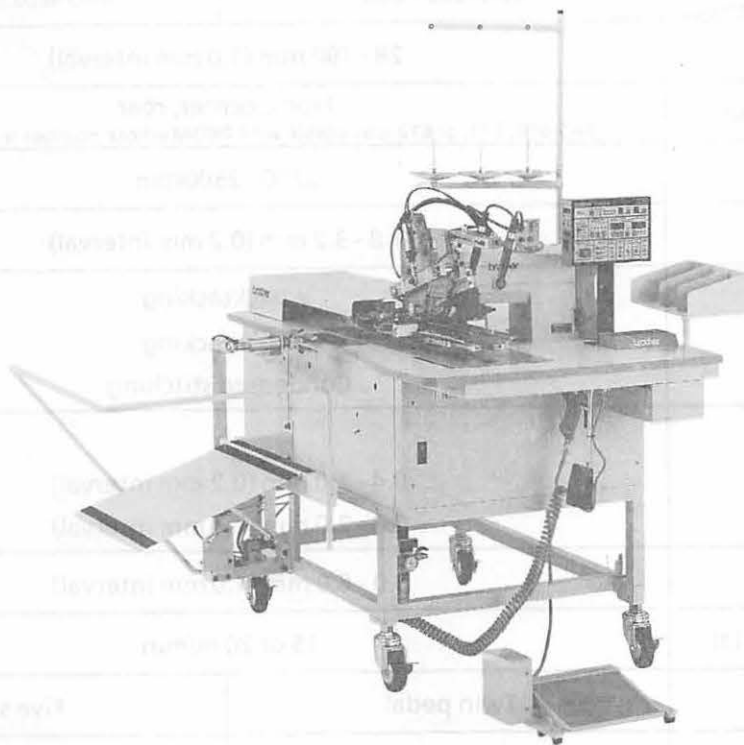
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SEWING MACHINE SPECIFICATIONS

1 Sewing machine specifications



Model	BAS-605	BAS-606
Machine head	Twin needle lock stitcher with thread trimmer	
Motor speed	2500spm (2200 spm with DIP switch setting.)	
Flap sewing	Not available	Available
Needle	Mt x 190 #16 (#16 - #18)	
Needle gauge	Standard 10 mm (8, 12, 14, 16, 18, 20 mm)	
Seam length (Pocket size)	Gauge size 14 mm or smaller 28 - 180 mm 16 mm or larger 36 - 180 mm	
	※ For flap sewing 60 - 180 mm	
Stitch length	Lockstitch pitch	standard 2.0 mm (1.8 - 3.2 mm)
	Condensed pitch	standard 1.0 mm (0.4 - 1.0 mm)
	Backtacking pitch	standard 2.0 mm (0.8 - 2.0 mm)
	(Stitch pitch can be changed with DIP switch setting.)	
Power supply	3-phase 200 V, 50/60 Hz, 500 W (Two wires of 3-phase supply used)	
Machine dimensions	W: 820 mm L: 1300 mm H: 1155 mm	



Model	BAS-610	BAS-611	BAS-612
Machine head	Twin needle lock stitcher with thread trimmer		Twin needle split needle bar lock stitcher with thread trimmer
Motor speed	2500spm (2200 spm with DIP switch setting.)		
Flap sewing	Not available	Available	
Slant welting	Not available		Available
Needle	Mt x 190 #16 (#16 - #18)		
Needle gauge	Standard 10 mm (8, 12, 14, 16, 18, 20 mm)		
Seam length (Pocket size)	Gauge size 14 mm or smaller 28 - 190 mm 16 mm or larger 36 - 190 mm		36 - 190mm
	※ For flap sewing 80 - 180 mm		
Stitch length	Lockstitch pitch	standard 2.0 mm (1.8 - 3.2 mm)	
	Condensed pitch	standard 1.0 mm (0.4 - 1.0 mm)	
	Backtacking pitch	standard 2.0 mm (0.8 - 2.0 mm)	
	(Stitch pitch can be changed with DIP switch setting.)		
Power supply	3-phase 200 V, 50/60 Hz, 500 W (Two wires of 3-phase supply used)		
Machine dimensions	W: 820 mm L: 1300 mm H: 1155 mm		

2 Specification comparative table

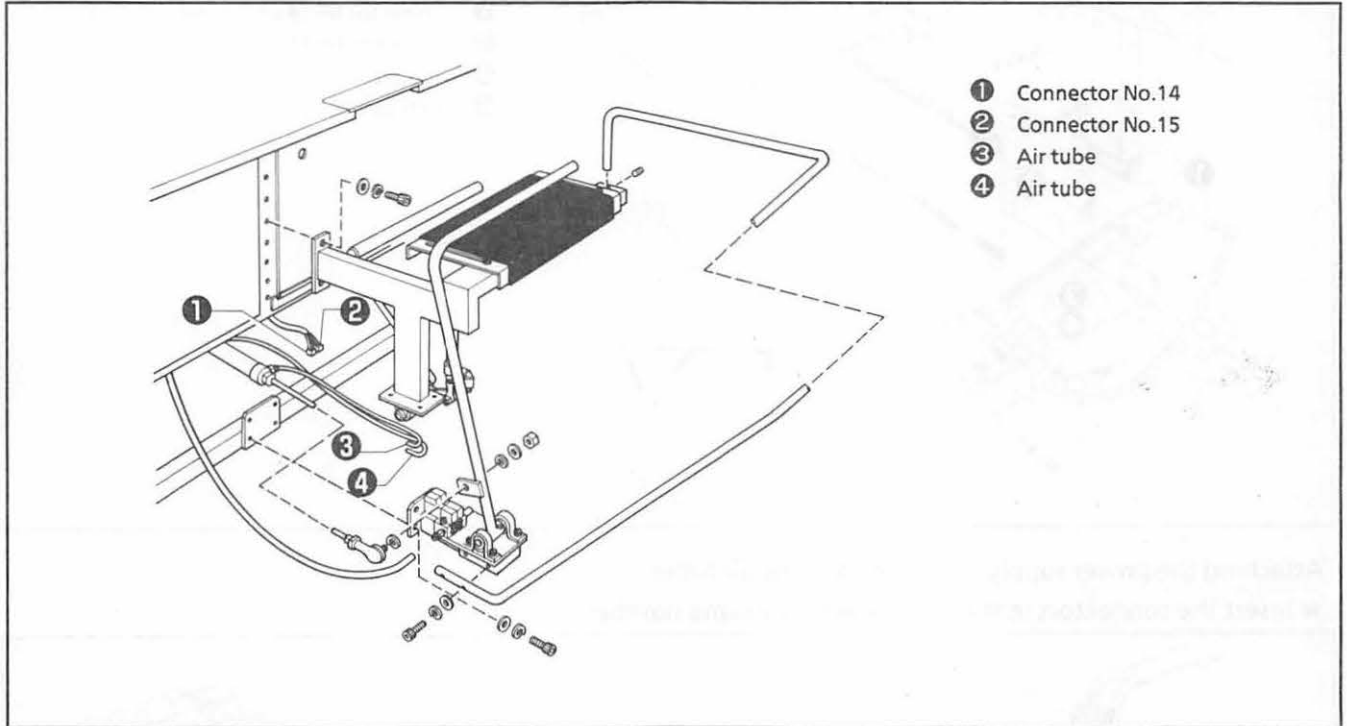
	BAS-605 · 606	BAS-610 · 611 · 612
Seam length	28 - 190 mm (1.0 mm interval)	
Sewing reference position	Front, center, rear (BAS-610, 611, or 612 is available with PROM whose number is 61-M1 or later.)	
Motor speed	2200 · 2500spm	
Lockstitch pitch	1.8 - 3.2 mm (0.2 mm interval)	
Backtacking	V backtacking N backtacking Condensed stitching	
Backtacking pitch Condensed V and N backtacking	0.4 - 1.0 mm (0.2 mm interval) 0.8 - 2.0 mm (0.4 mm interval)	
Backtacking length	3.0 - 6.0 mm (1.0 mm interval)	
Feed speed without material	15 or 20 m/min	
Standard foot switch	Twin pedal	Five steps
Foot switch operation	Timer	Manual, timer
Gauge	8 - 20 mm (2 mm interval)	
Needle thread breakage detector	Equipped	
Sewing resumption function	Available	
Stacker setting	DIP switch	Panel switch
Corner knife setting	DIP switch	Panel switch
Center knife correction function	Available	
Corner knife setting	Panel switch (button)	Panel switch
Corner knife correction function	Available	
Program number	1	5
Cycle program	Not available	Available
Bobbin thread counter	1	3
Production counter	Not available	Available
Carriage feed timer	Available (SELECT switch)	
Carriage feed operation order	Available (THREAD TRIMMER switch)	Available (Pedal)
Foot switch and timer setting	Available (SET switch)	
Flap sewing	Front and rear edge detector (BAS-610, 611, or 612 is available with PROM whose number is 61-M1 or later.)	

INSTALLATION

1 Installing the stacker

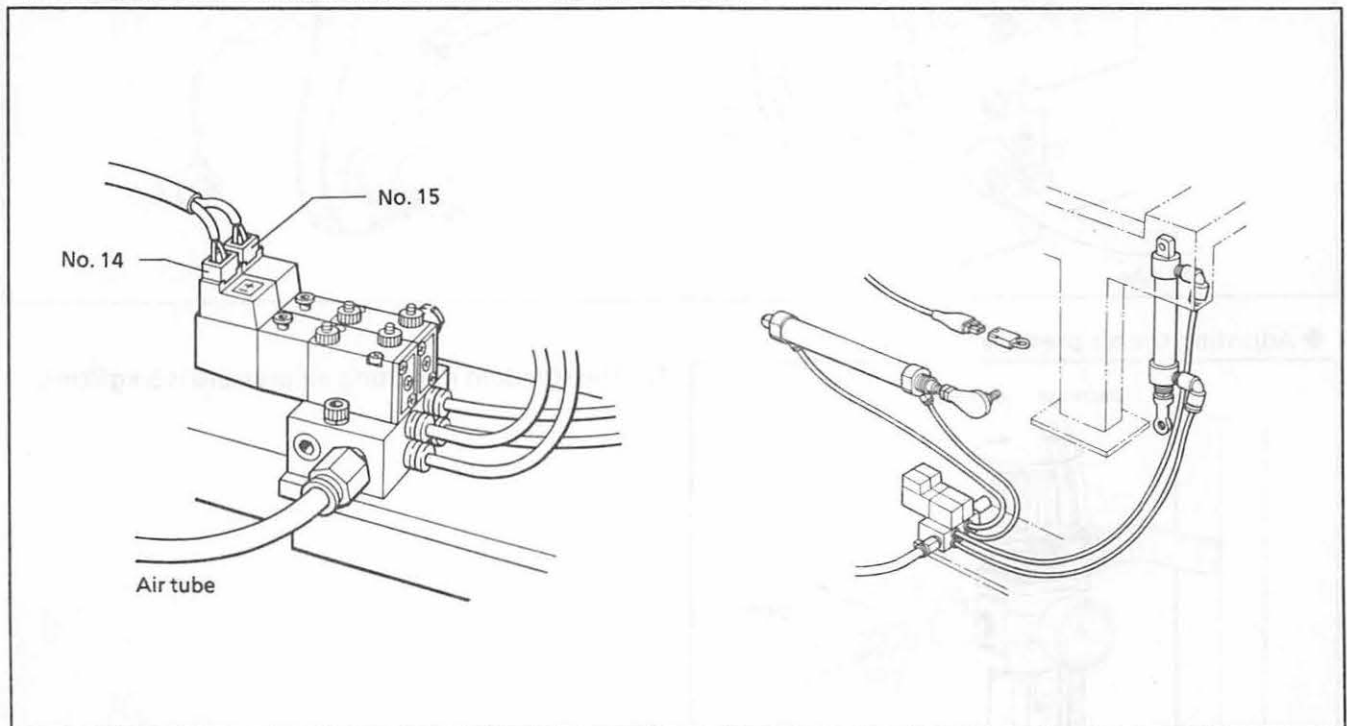
Installing the bar stacker

★ Refer to the figure below to install the stacker.



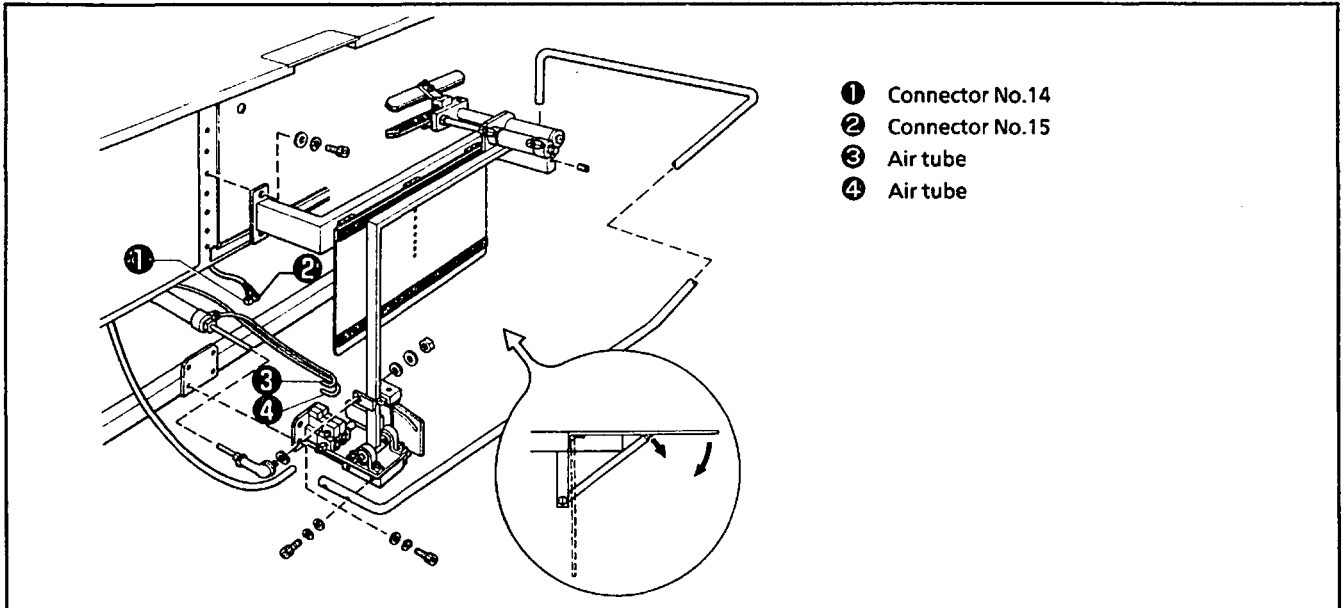
Attaching the power supply connector and the air tubes

★ Insert the connectors in the sockets with the same number.



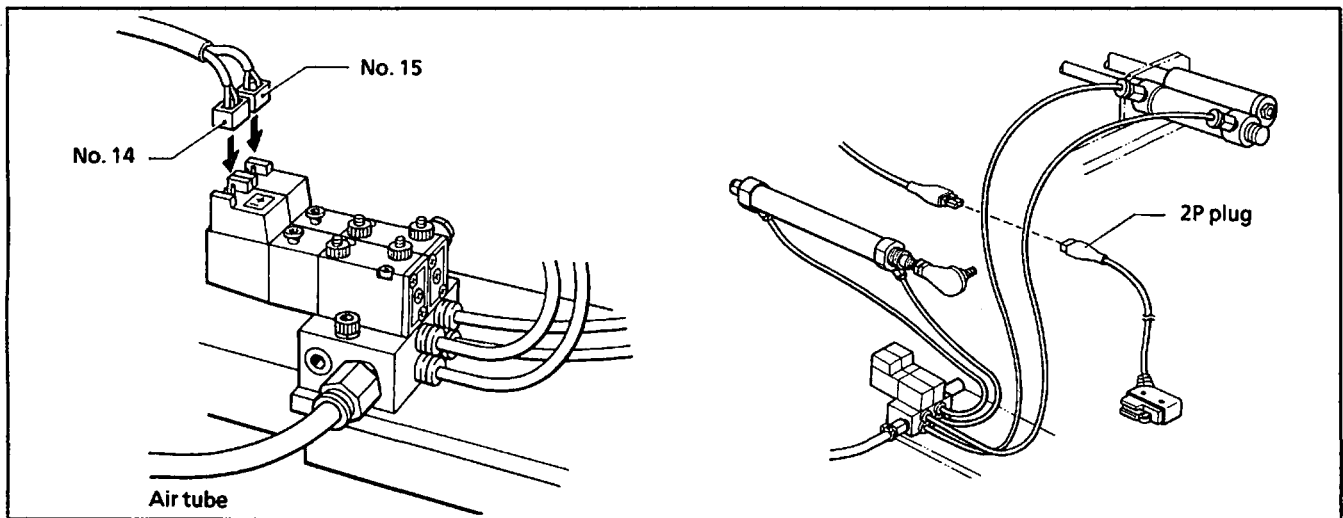
Installing the pickup stacker

★ Refer to the figure below to install the stacker.

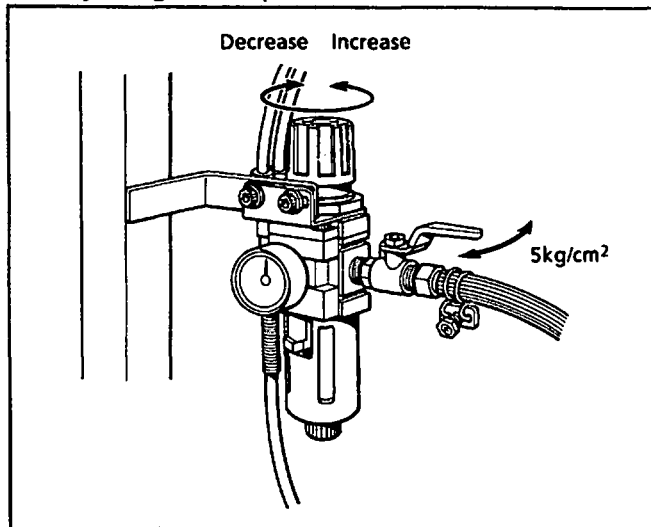


Attaching the power supply connector and the air tubes

★ Insert the connectors in the sockets with the same number.



◆ Adjusting the air pressure



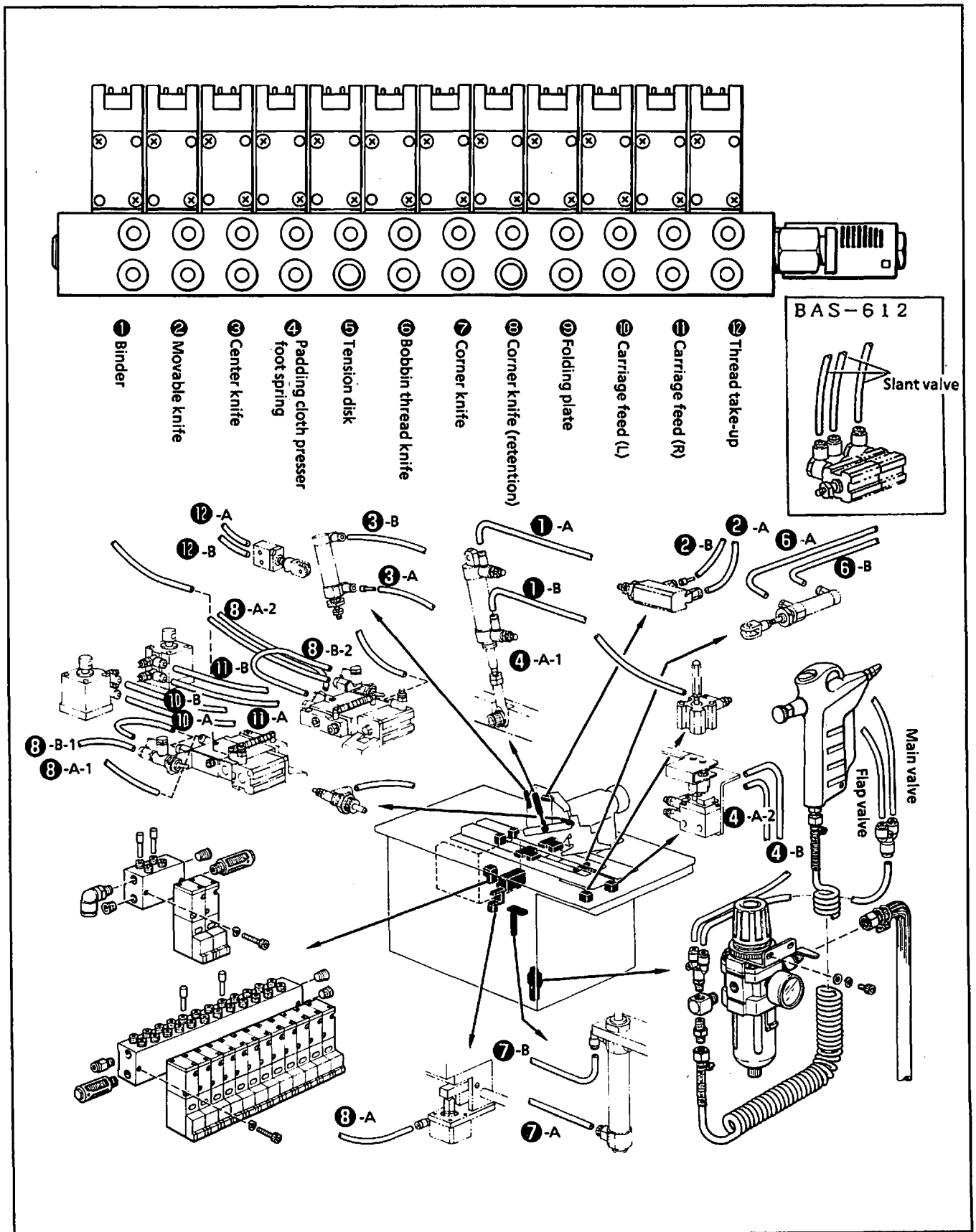
1. The standard operating air pressure is 5 kgf/cm².

2 Attaching the air tubes

★ Attach the air tubes as shown in the figure below.

<Main valve, flap valve, and slant valve>

Insert the air tubes into the corresponding valve unit.

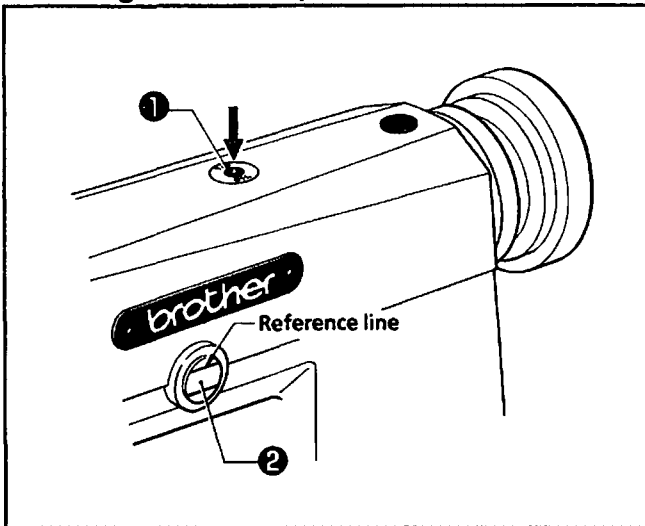


LUBRICATION

★ Be sure to use Brother-specified machine oil (High White #70).

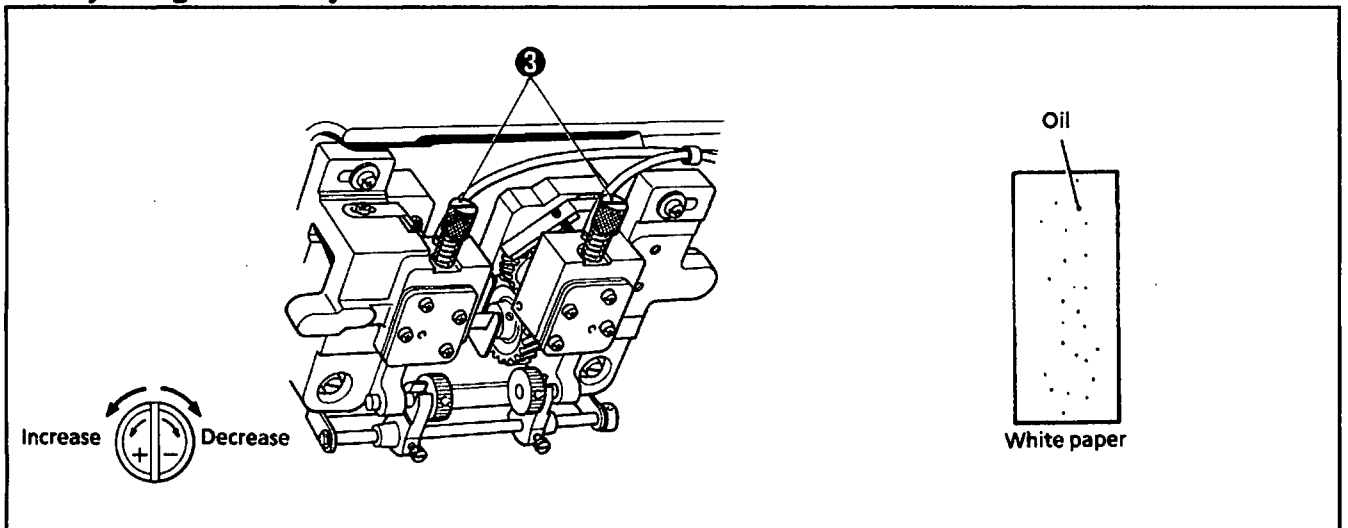
1 Lubrication

1. Filling the arm top oil tank

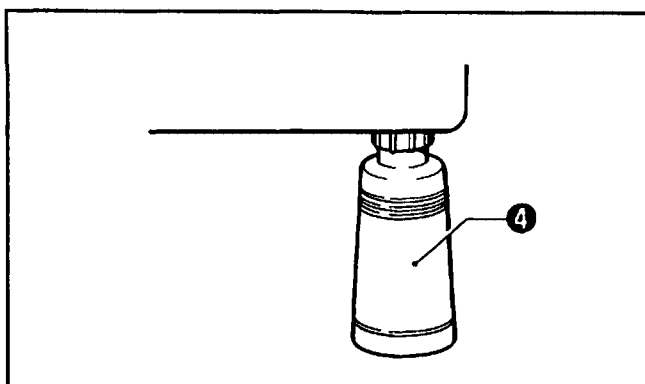


- ★ Pour the oil from the oil cap ① until the oil level reaches the upper line of the oil gauge window ②.
- ★ Replenish the oil when the oil level is under the lower line of the oil gauge window ②.

2. Adjusting the rotary hook lubrication



※ Be sure to adjust the oil amount of the rotary hook by turning the oil adjusting screw ③ after the rotary hook is replaced. (The proper oil absorption scattered from the rotary hook for ten seconds is as shown in the figure above.)

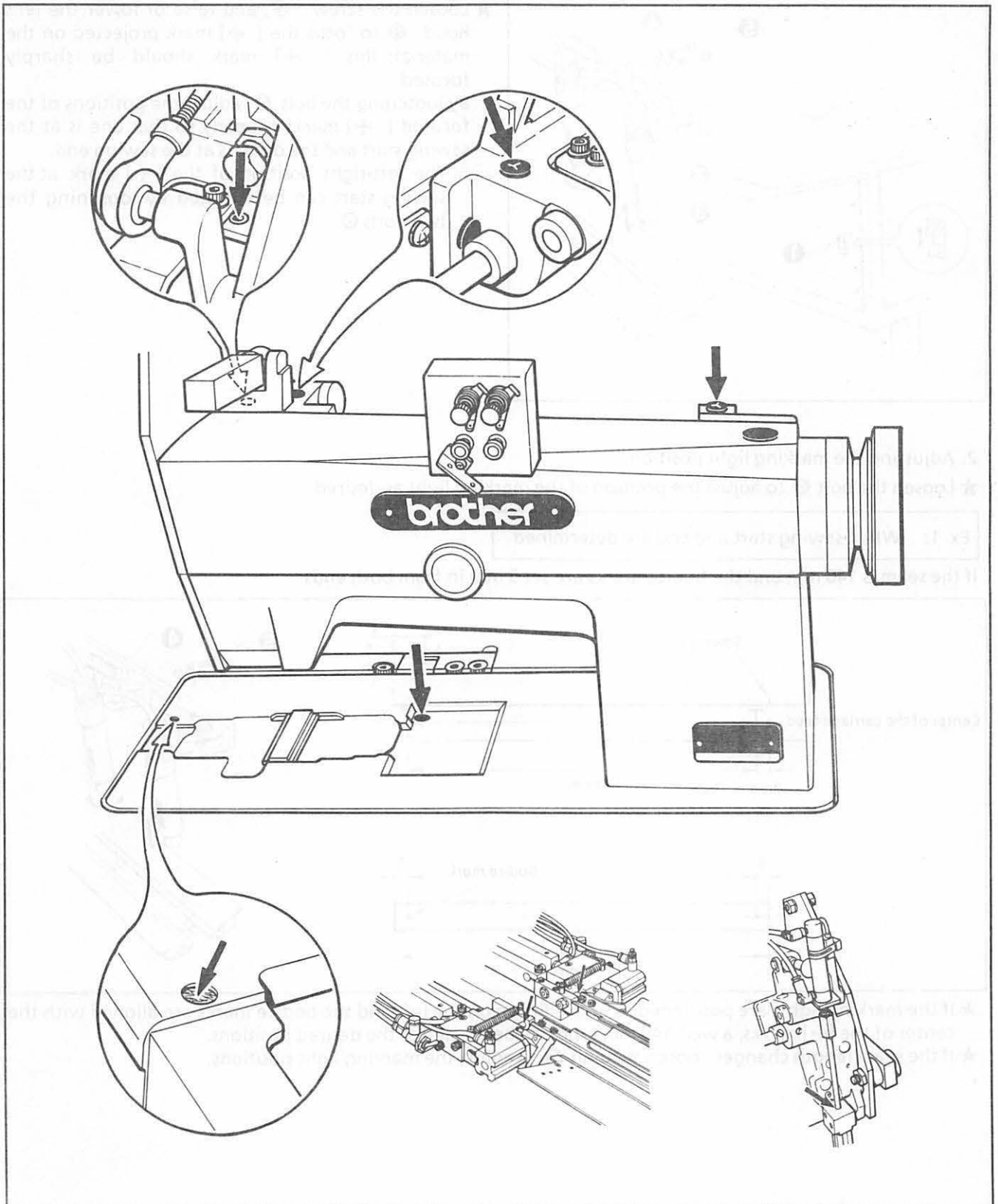


- ★ Remove the front cover.
Remove the oil collected in the poly oiler ④.

2 Oiling

The oiling places on the BAS-605 and 606 are the same as those on the BAS-610.

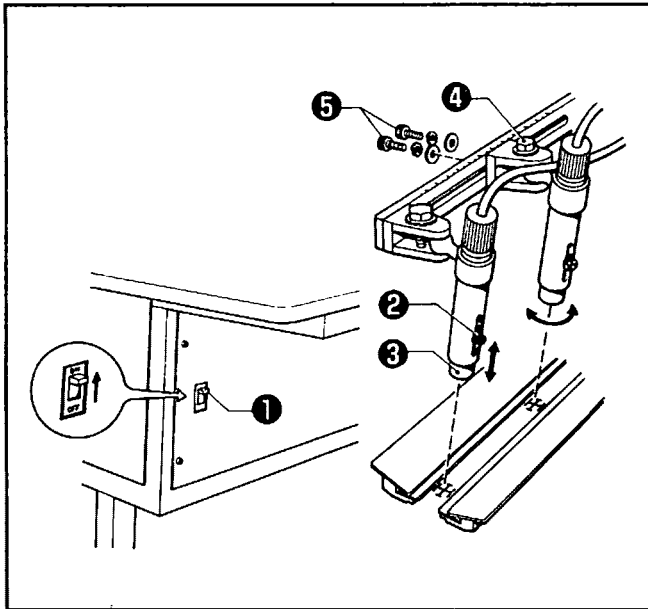
Apply a few drops of oil at each place indicated by the arrows when the sewing machine is operated for the first time or is not used for extended period.



OPERATION

1 Marking light

1. Adjusting the focus



★ The marking light will come on when the power switch ① is turned on.

★ Loosen the screw ②, and raise or lower the lens hood ③ to focus the [⊕] mark projected on the material; this [⊕] mark should be sharply focused.

By loosening the bolt ④, adjust the positions of the focused [⊕] marks properly so that one is at the sewing start and the other is at the sewing end.

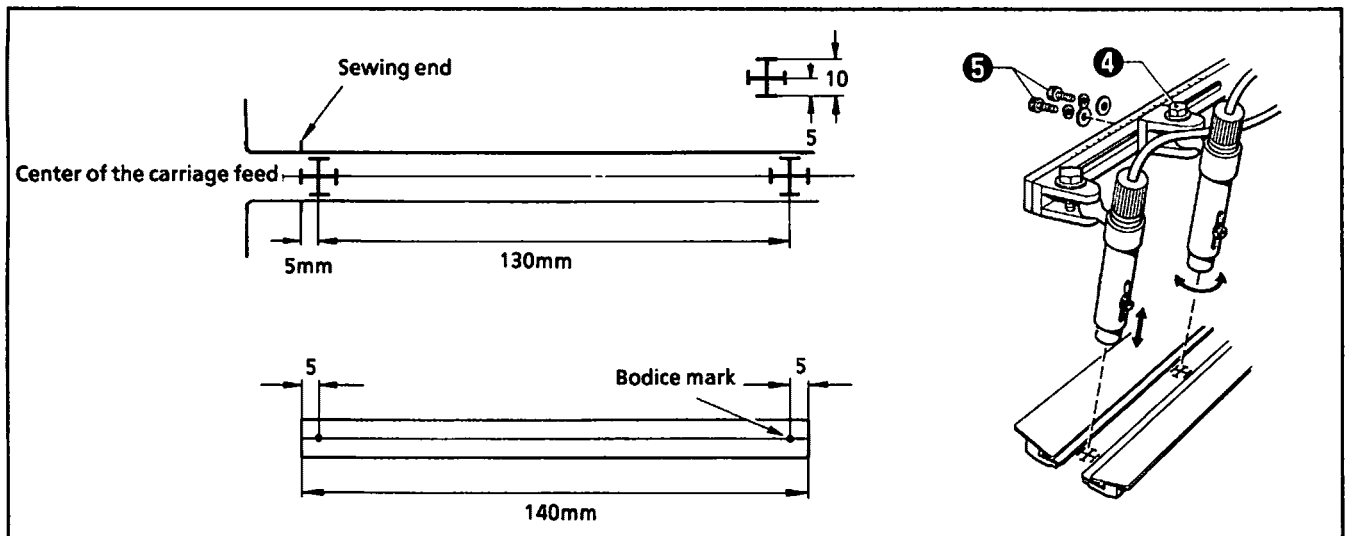
※ The left-right position of the [⊕] mark at the sewing start can be adjusted by loosening the two bolts ⑤.

2. Adjusting the marking light position

★ Loosen the bolt ④ to adjust the position of the marking light as desired.

Ex. 1: When sewing start and end are determined

If the seam is 140 mm and the bodice marks are set 5 mm in from both ends

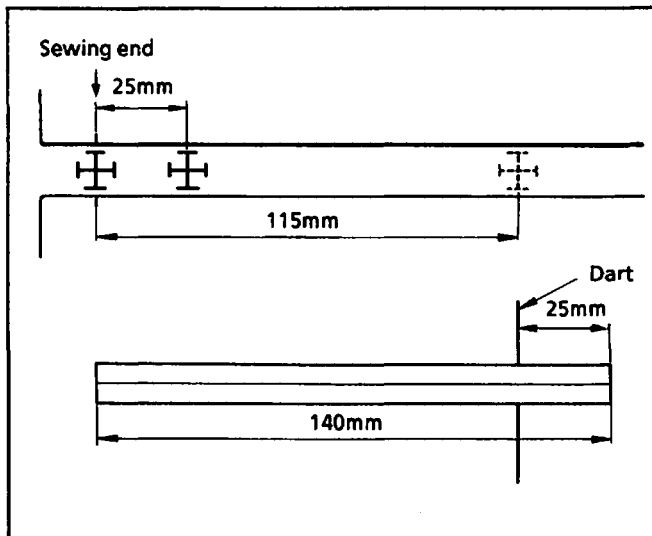


★ If the marking lights are positioned as in the figure on the left and the bodice marks are aligned with the center of the [⊕] marks, a welt 140 mm long will be formed at the desired positions.

★ If the seam length changes, loosen the bolt ④ to adjust the marking light positions.

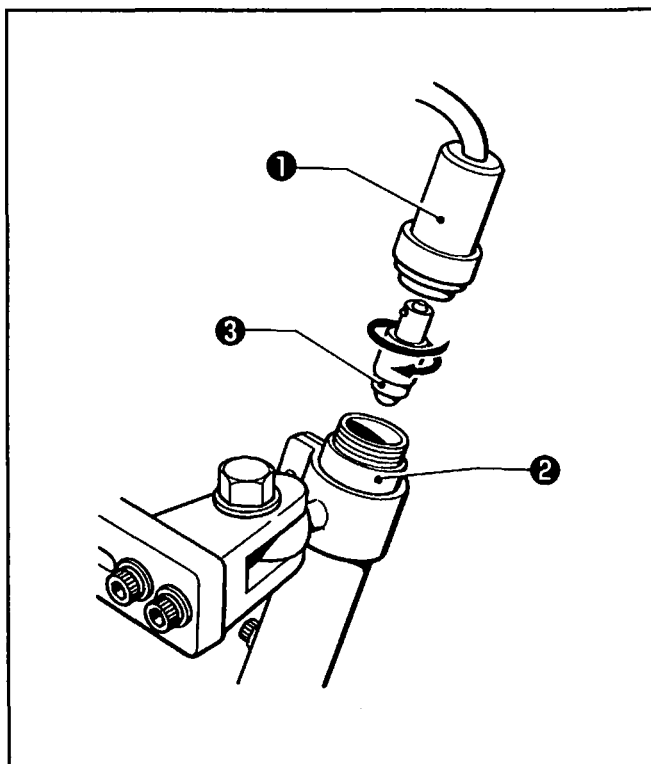
Ex. 2: When darts are used as the reference

If the seam length is 140 mm, and the ends are positioned 25 mm to the right and 115 mm to the left of the darts



★ If the marking lights are adjusted as shown in the figure on the left, and the bodice darts are centered on the right [⊕] mark and the sewing end position on the right side of the bodice is aligned with the center of the left [⊕] mark, a welt will be sewn as shown in the figure on the left.

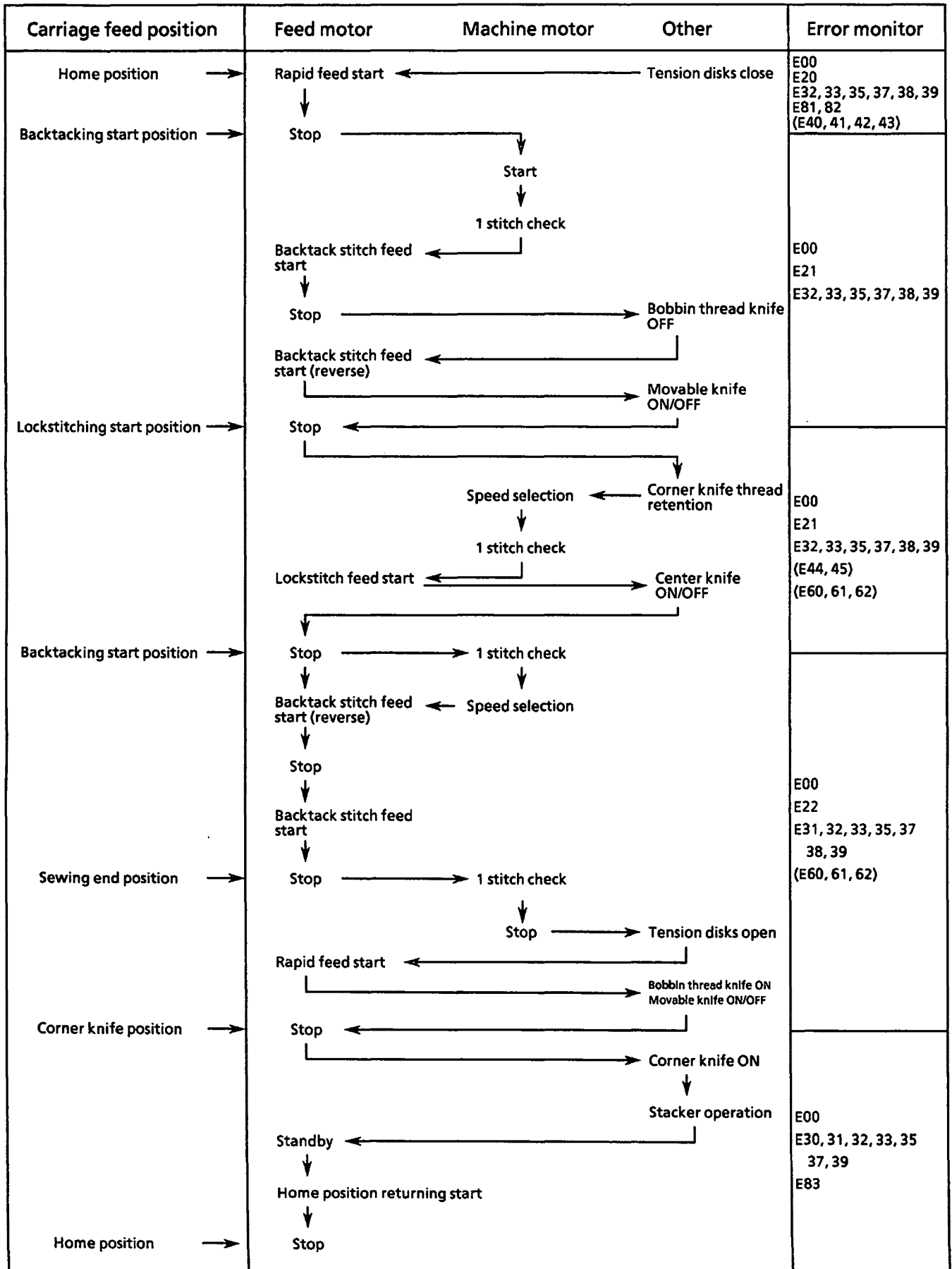
3. Replacing the marking light bulb



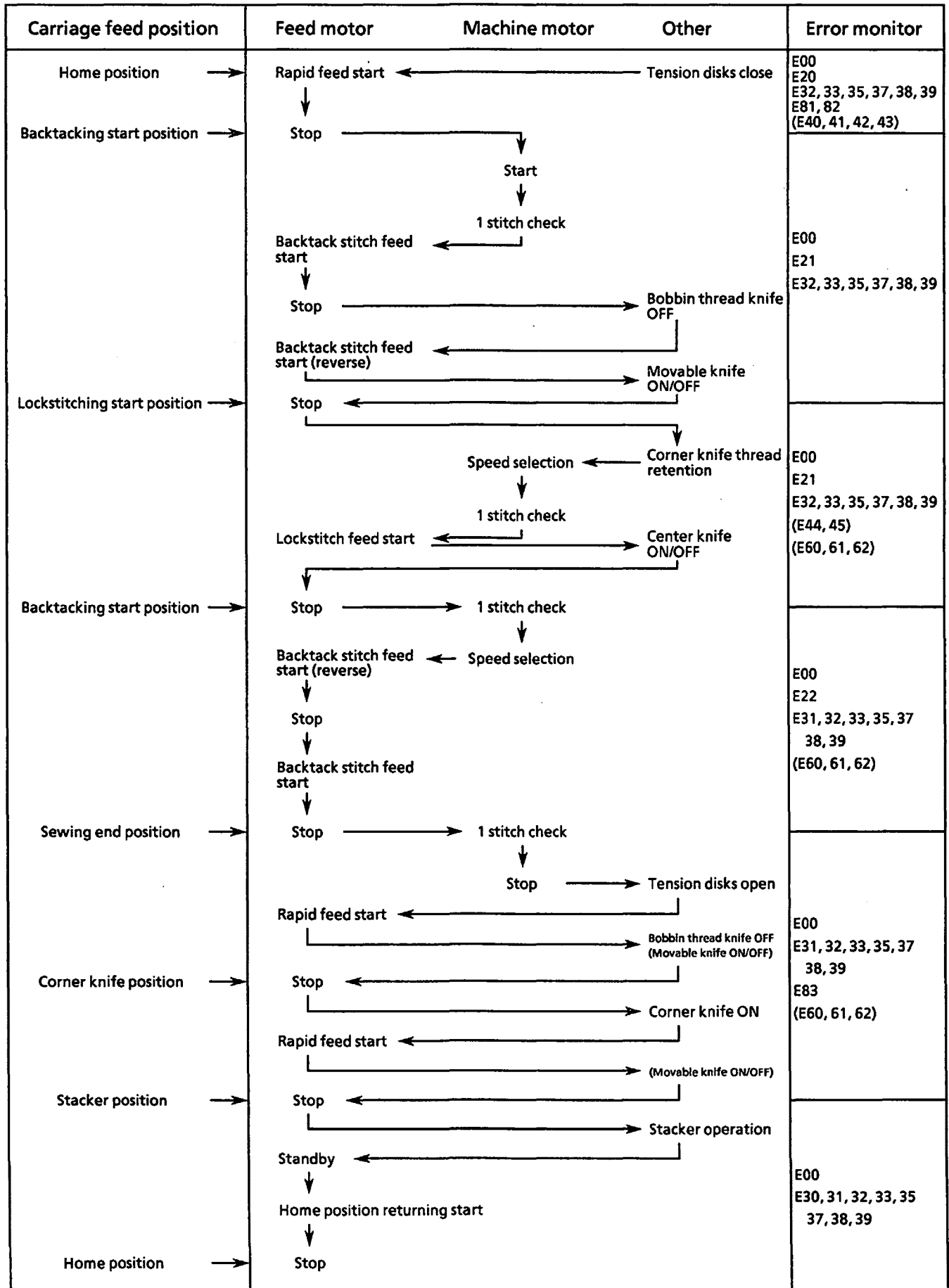
1. Turn the cap ① counterclockwise to remove it from the receptacle ②.
2. While pushing in the light bulb ③, turn it counterclockwise to remove it from the cap ①. Replace the bulb ③ with a new one.
3. Reassemble in the reverse order.

SEWING FLOWCHART BAS-605, 606

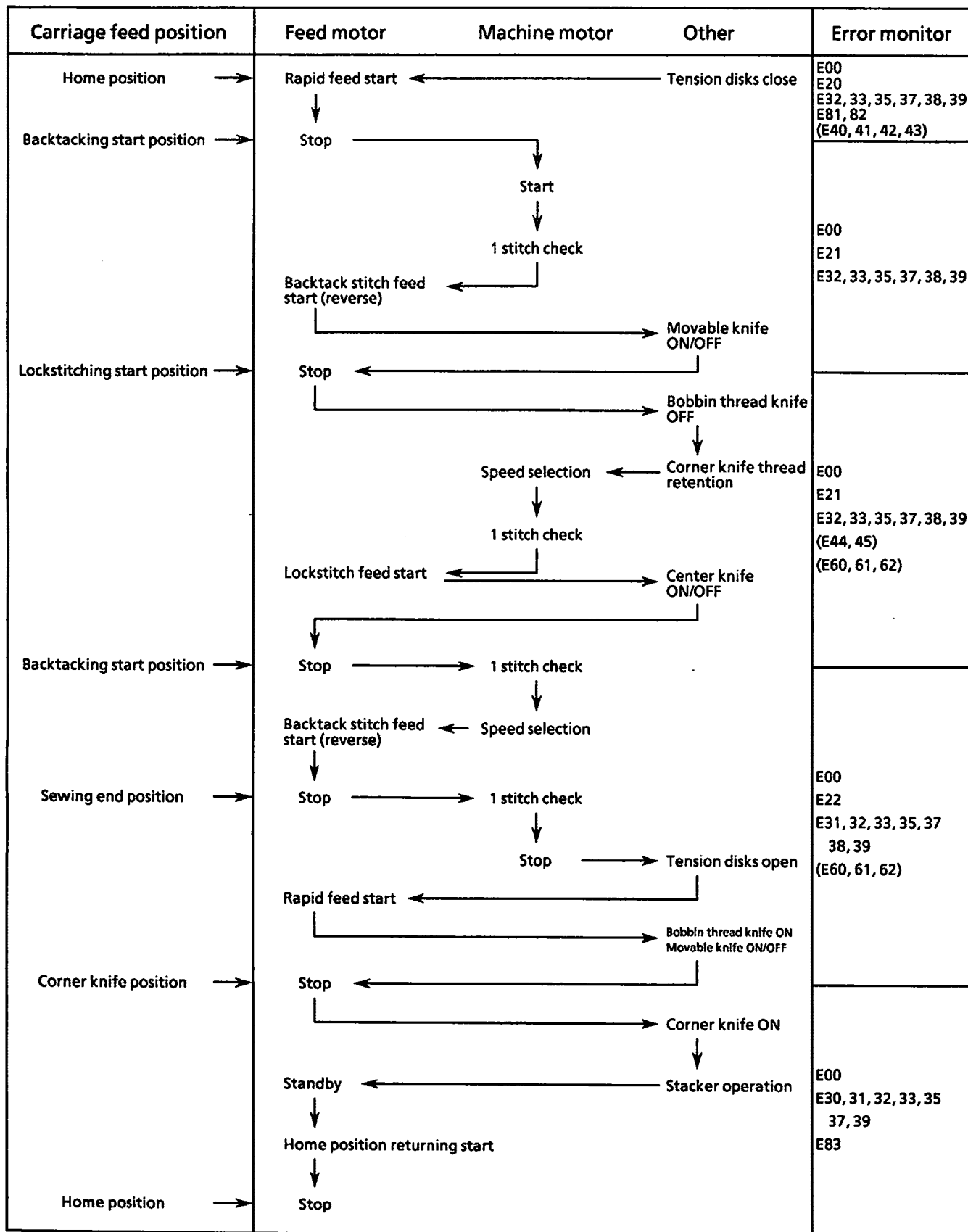
1 Backtacking (N) (Rear reference position)



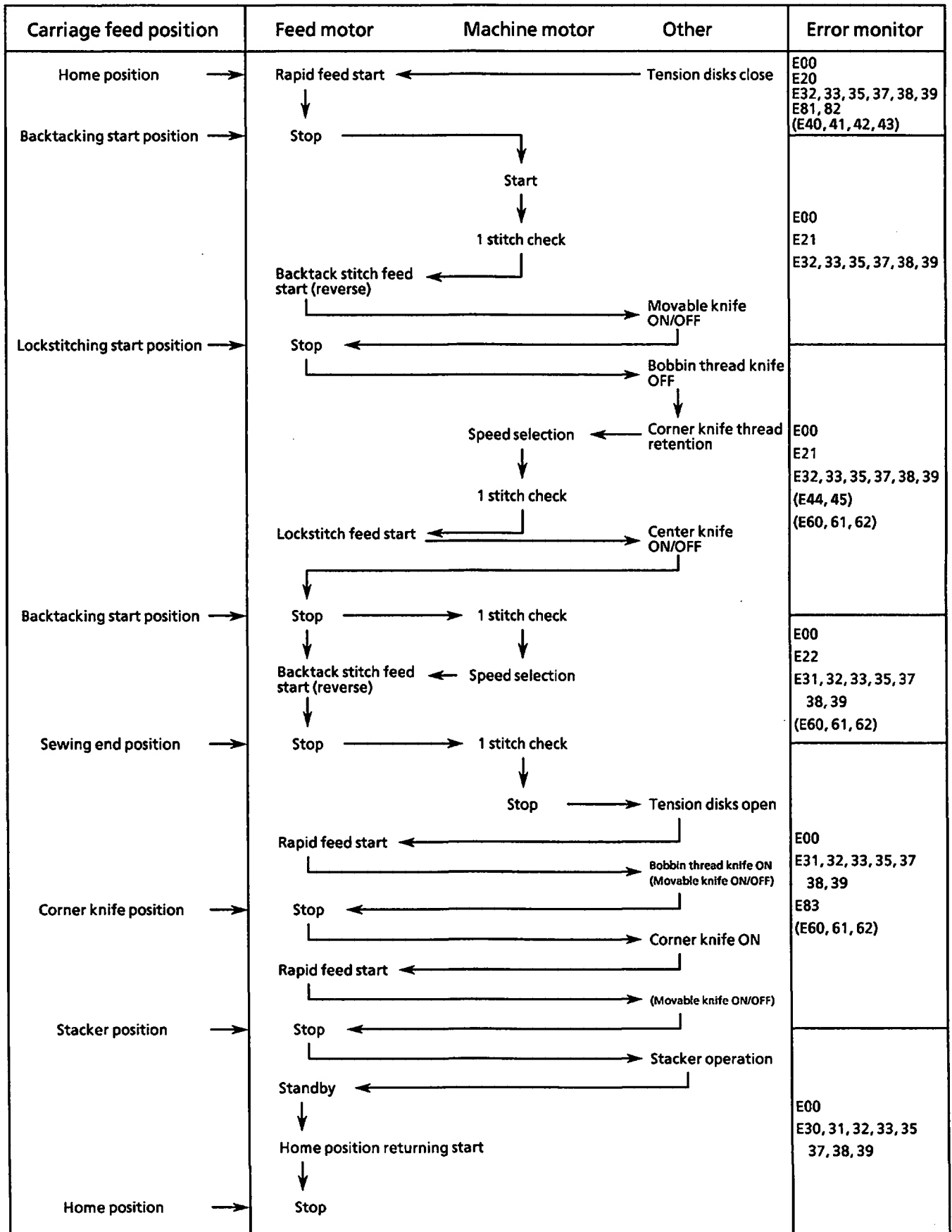
2 Backtacking (N) (Front or center reference position)



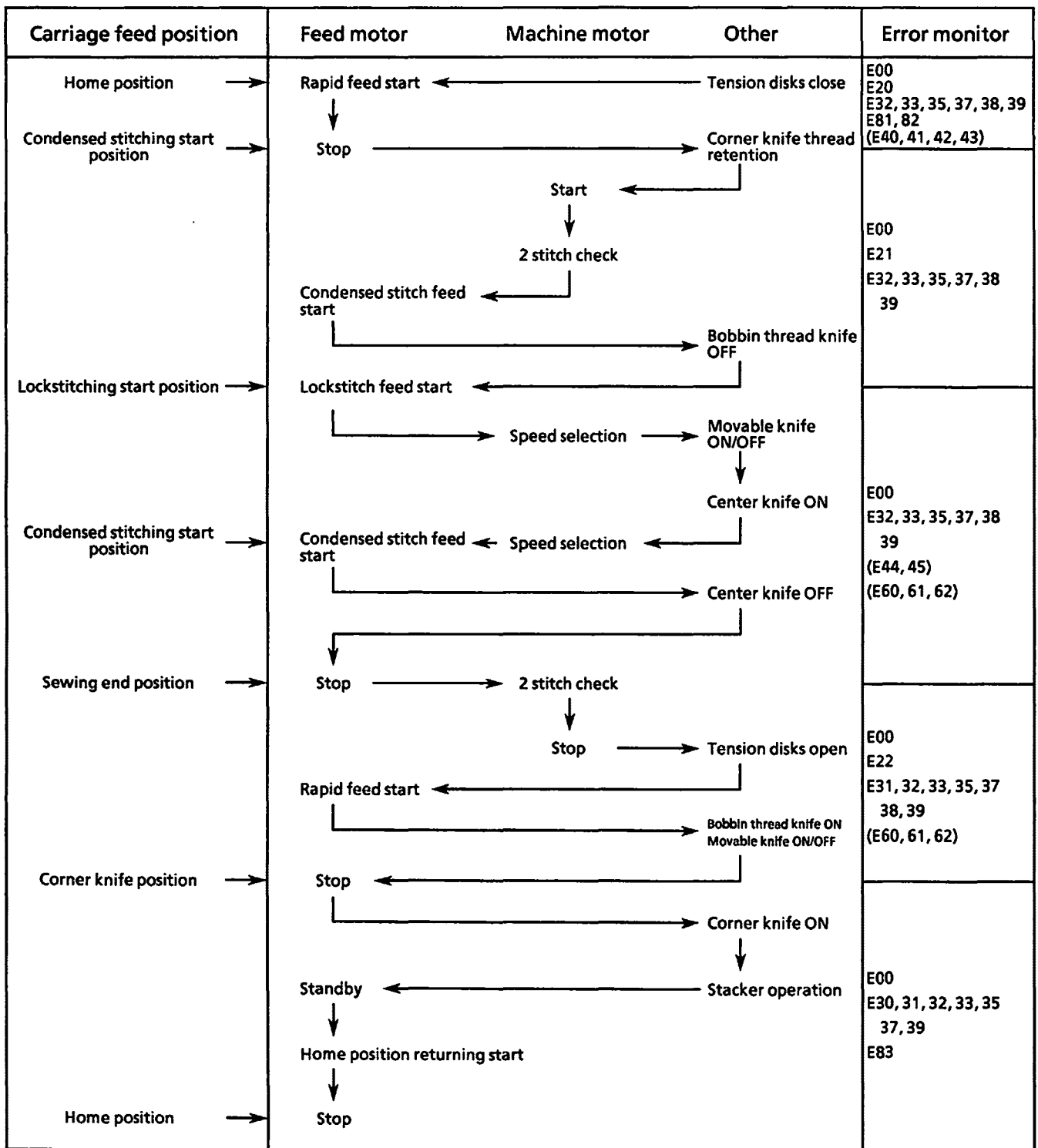
③ Backtacking (V) (Rear reference position)



4 Backtacking (V) (Front or center reference position)



5 Condensed stitching (Rear reference position)

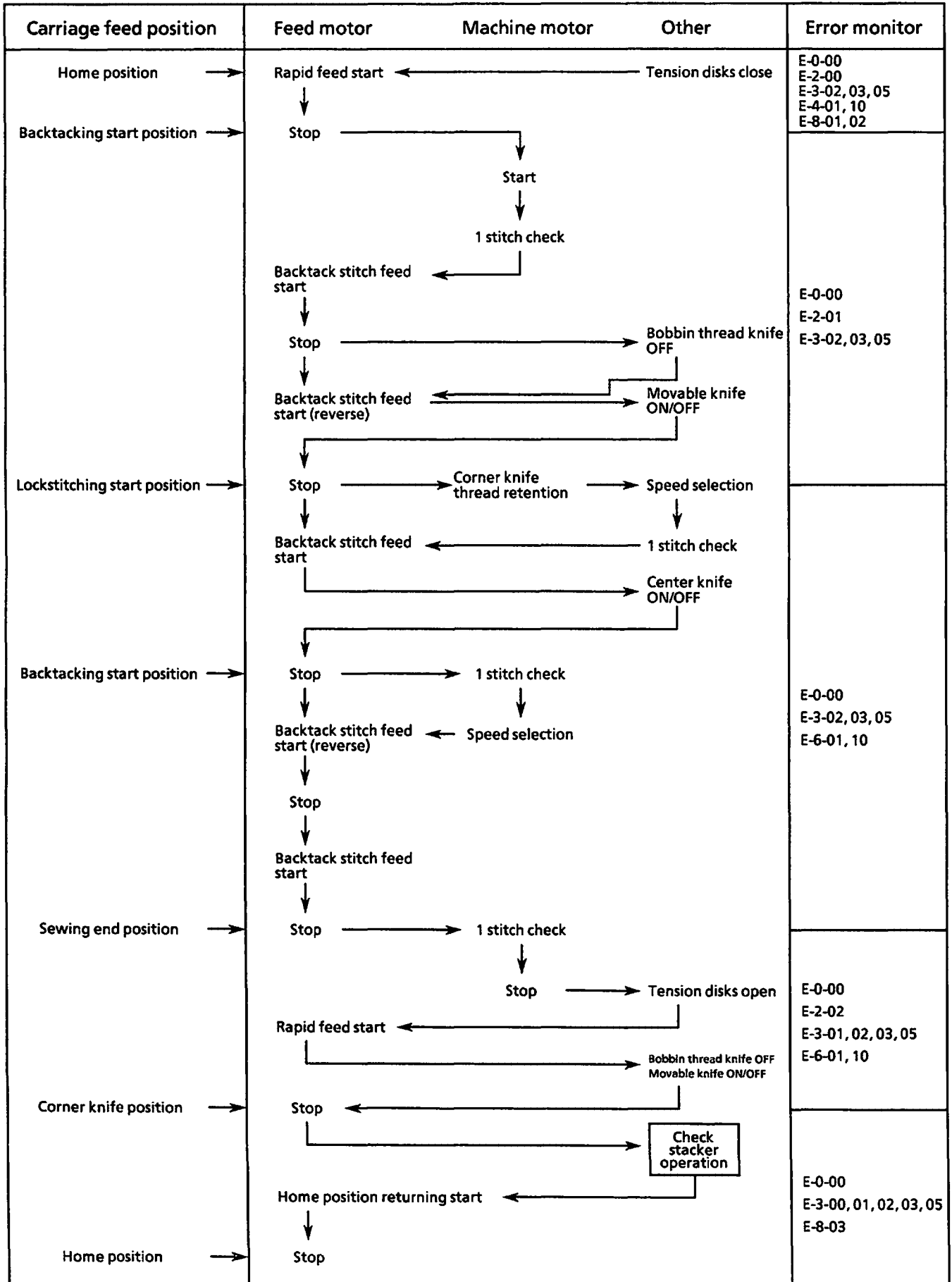


6 Condensed stitching (Front or center reference position)

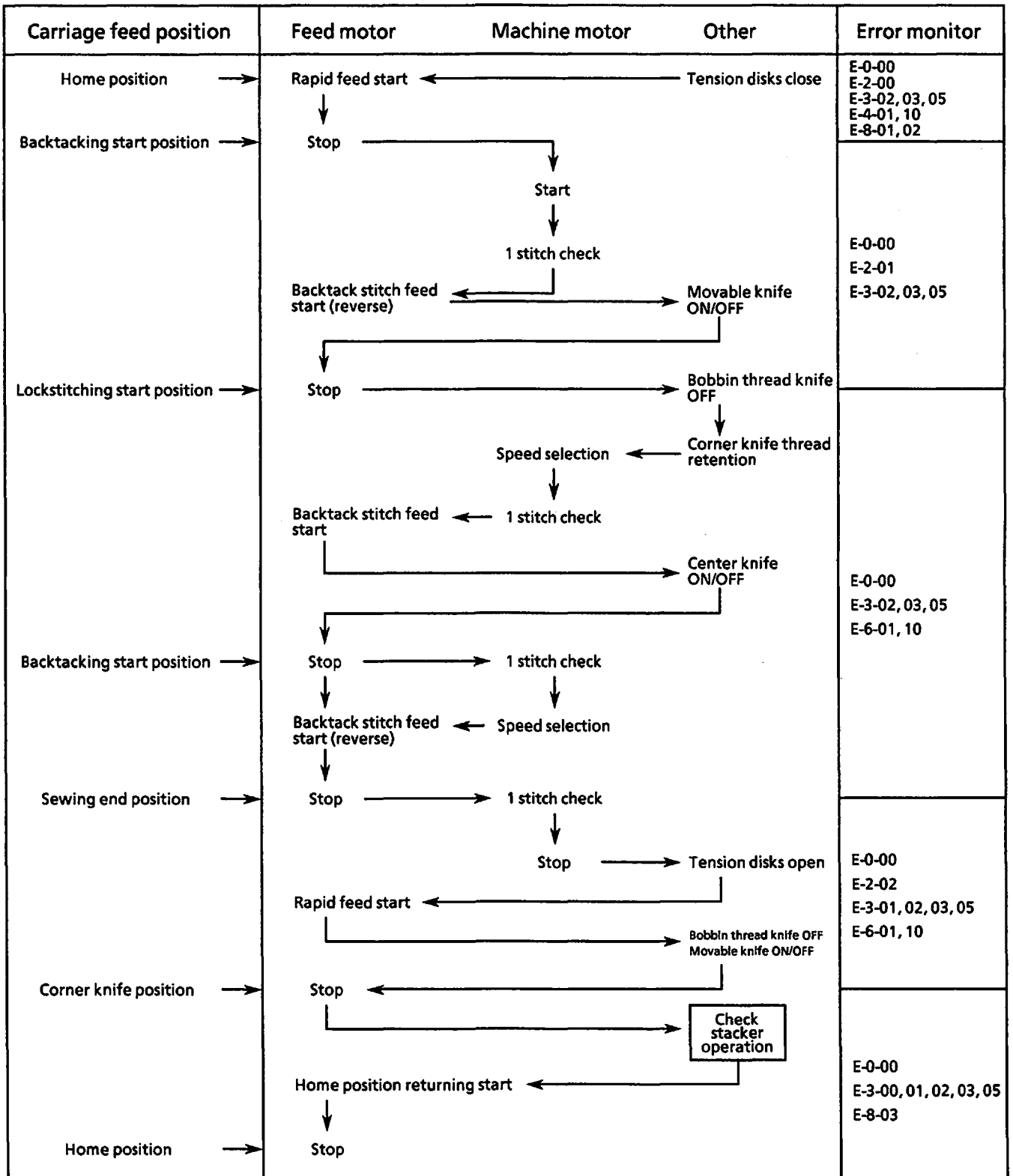
Carriage feed position	Feed motor	Machine motor	Other	Error monitor
Home position	Rapid feed start		Tension disks close	E00 E20 E32, 33, 35, 37, 38, 39 E81, 82 (E40, 41, 42, 43)
Condensed stitching start position	Stop	Start	Corner knife thread retention	E00 E21 E32, 33, 35, 37, 38, 39
		2 stitch check		
	Condensed stitch feed start		Bobbin thread knife OFF	
Lockstitching start position	Lockstitch feed start			
		Speed selection	Movable knife ON/OFF	
			Center knife ON	E00 E32, 33, 35, 37, 38, 39 (E44, 45) (E60, 61, 62)
Condensed stitching start position	Condensed stitch feed start	Speed selection	Center knife OFF	
Sewing end position	Stop	2 stitch check		
		Stop	Tension disks open	E00 E22 E31, 32, 33, 35, 37, 38, 39 E83 (E60, 61, 62)
	Rapid feed start		Bobbin thread knife ON (Movable knife ON/OFF)	
Corner knife position	Stop		Corner knife ON	
	Rapid feed start		(Movable knife ON/OFF)	
Stacker position	Stop		Stacker operation	
	Standby			E00 E30, 31, 32, 33, 35 37, 38, 39
	Home position returning start			
Home position	Stop			

SEWING FLOWCHART BAS-610, 611, 612

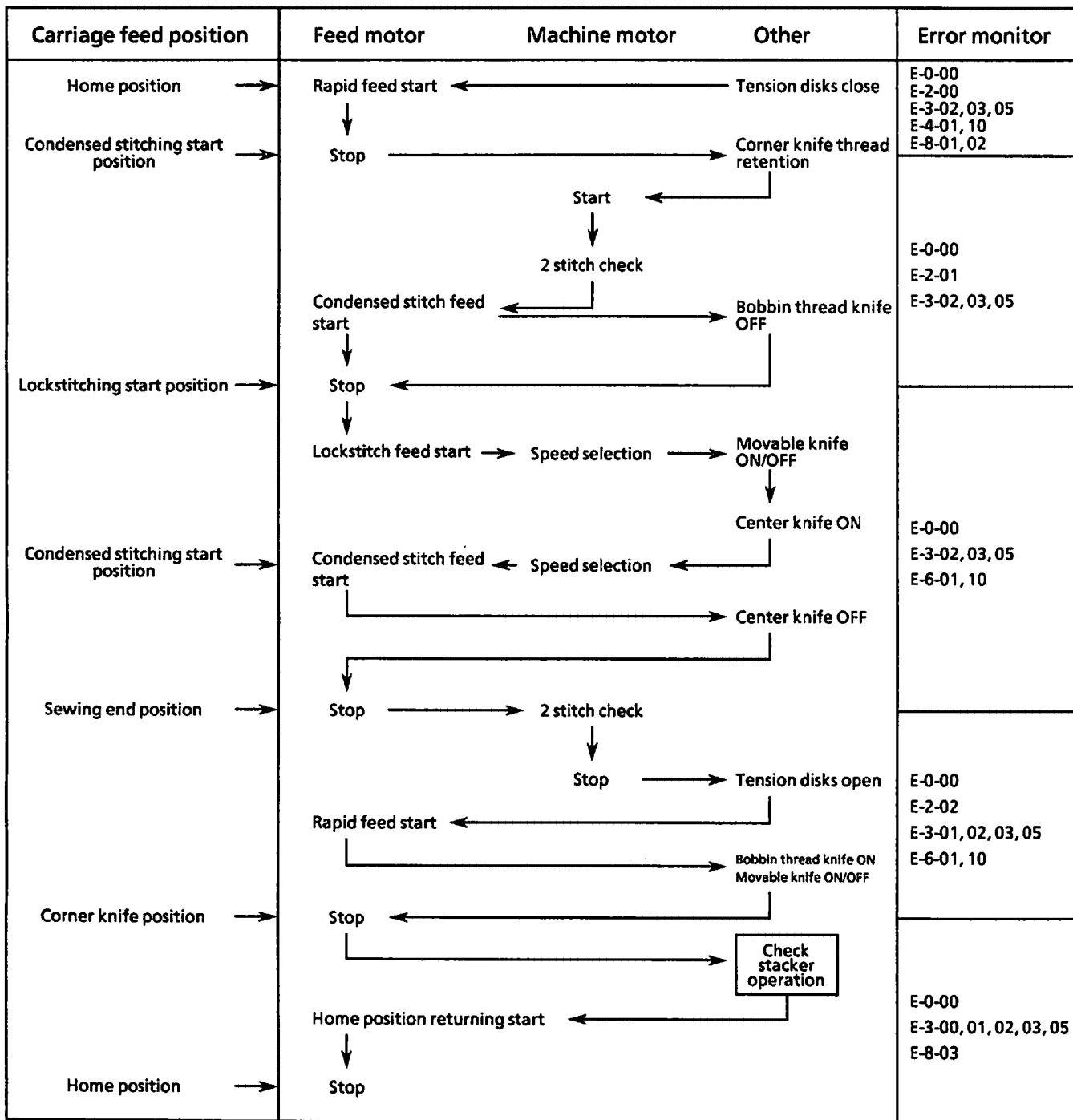
1 Backtacking (N)



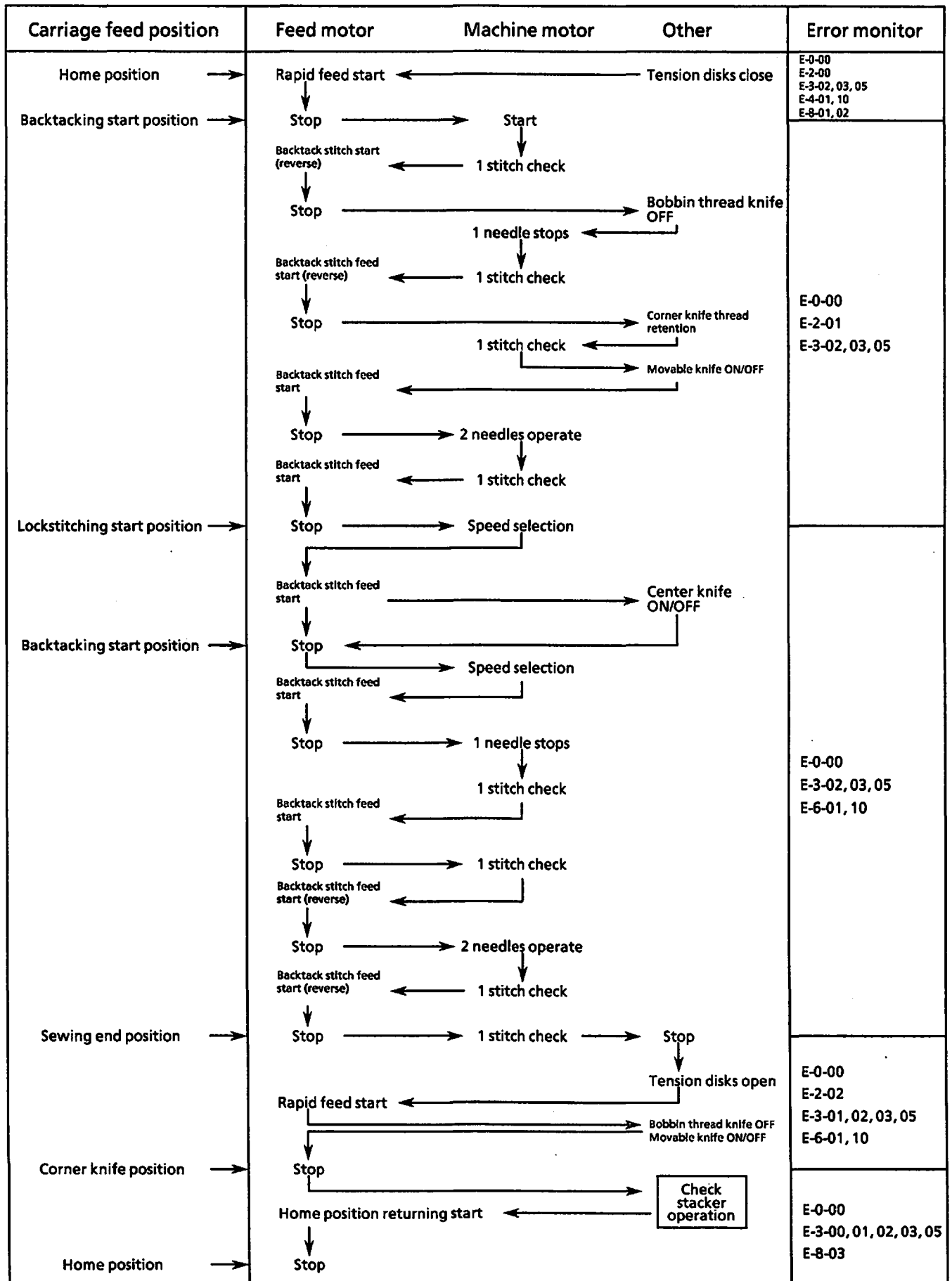
2 Backtacking (V)



3 Condensed stitching



4 Backtacking (slant) BAS-612

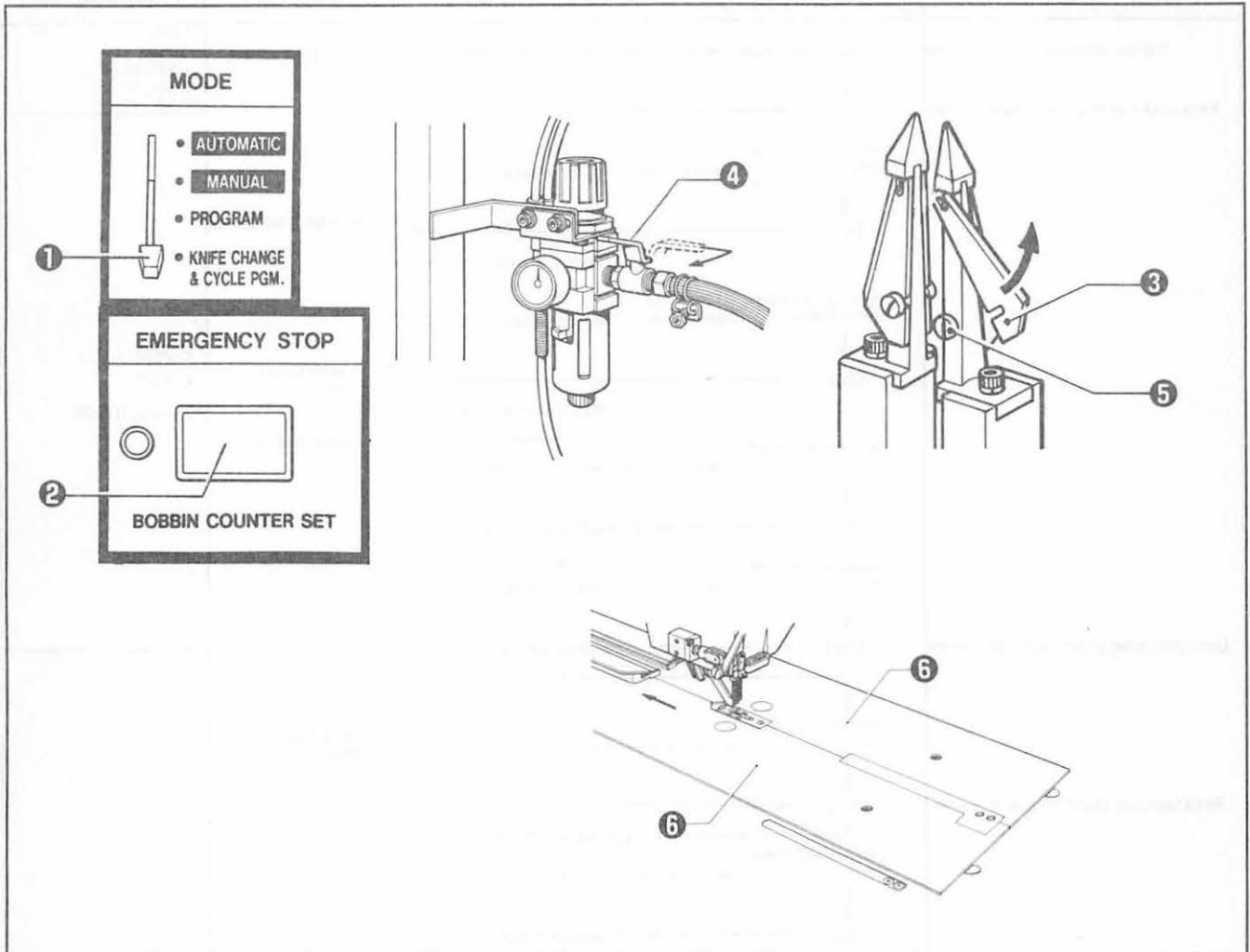


DISASSEMBLY

• Disassembly procedures are described based on model BAS-610, 611, and 612.

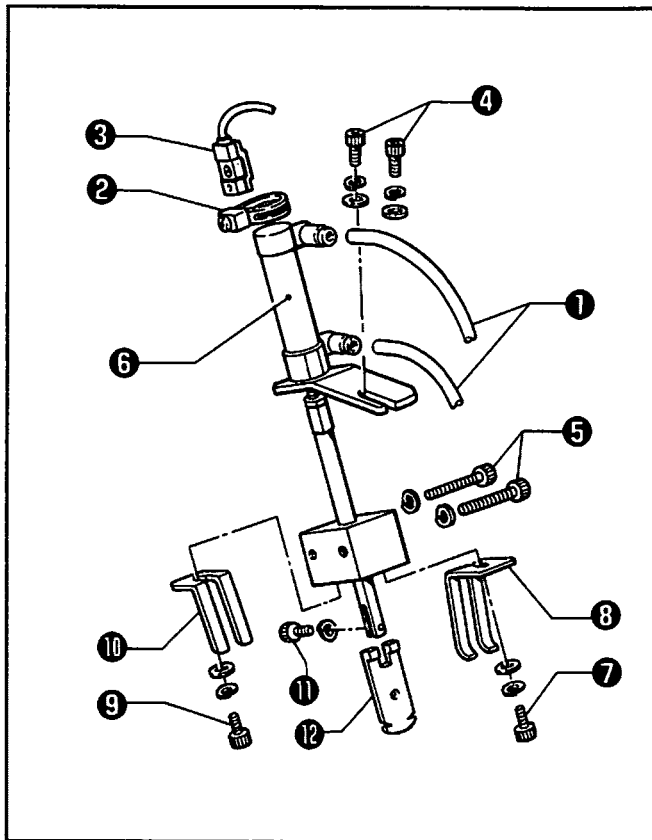
1 Preparations for disassembly

Removing the corner knife



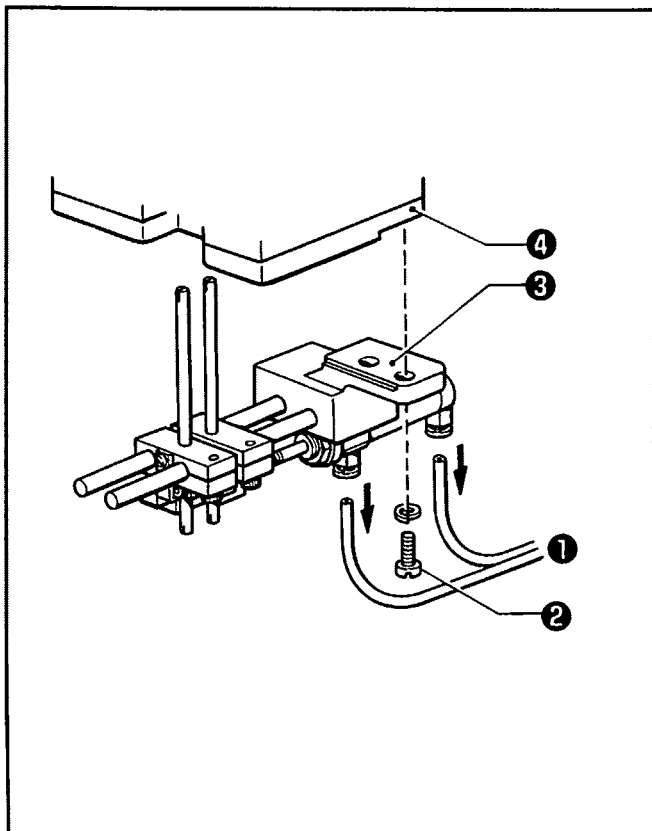
1. Set the MODE switch ① to KNIFE CHANGE & CYCLE PGM.
2. Press the emergency stop switch ②.
An alarm will sound once, and the carriage feeds will move to the knife replacement position.
The alarm will sound again when the carriage feeds stop.
3. Press the emergency stop switch ②.
The alarm will sound twice, the carriage feed and the flap presser will descend, and the corner knife ③ will rise above the table.
※ Keep your hands away from the knife.
"AIR OFF" will be displayed.
4. Turn the air cock ④ to stop the air supply. (Release the air.)
5. Loosen the screw ⑤, and remove the corner knife ③.
6. Remove the right and left slide plates ⑥.
7. You can tilt the machine head until it stops.

Movable knife assembly



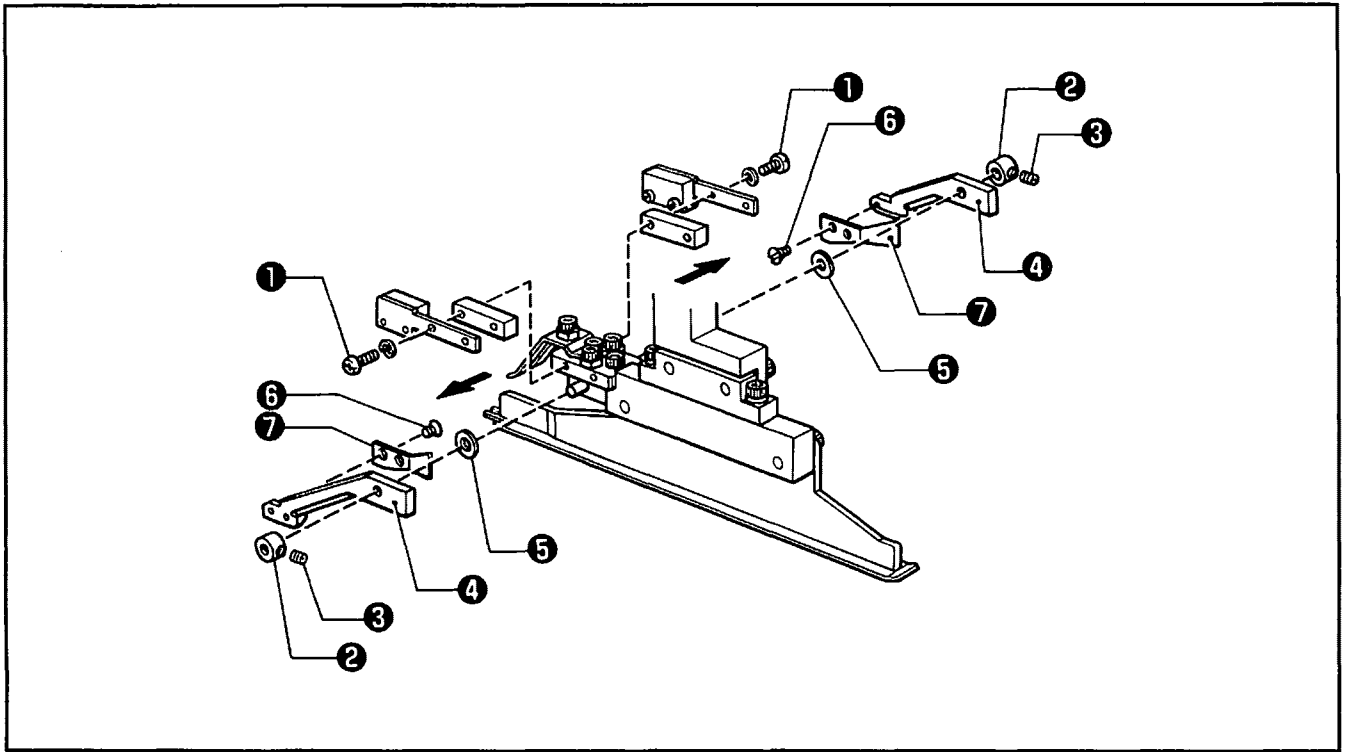
1. Remove the two air tubes ①.
※ Mark the tubes with tape to remember which goes where for reassembly.
2. Loosen the screw of the metal fitting ②, and remove the cylinder sensor ③ by lifting it upward.
3. Loosen the two bolts ④, and remove the bolts ⑤, the spring washers, the washers, and the movable knife assembly ⑥.
4. Remove the bolt ⑦, the washer, the spring washer, and the spring ⑧.
5. Remove the bolt ⑨, the spring washer, the washer, and the fixed knife ⑩.
6. Remove the bolt ⑪, the spring washer, and the movable knife ⑫.

Bobbin thread knife assembly



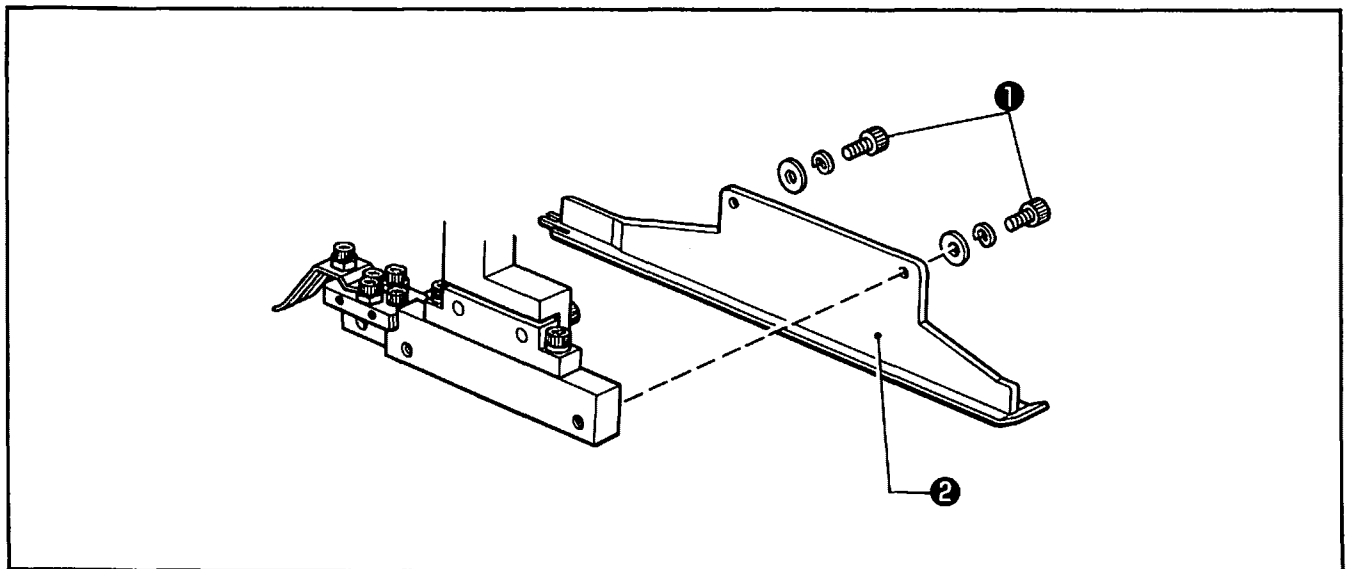
1. Tilt the machine head until it stops.
2. Remove the two air tubes ①.
※ Mark the tubes with tape to remember which goes where for reassembly.
3. Remove the two screws ②. Remove the spring washer and the knife base ③ from the rotary hook base ④.

2 Removing the cloth guide (left)



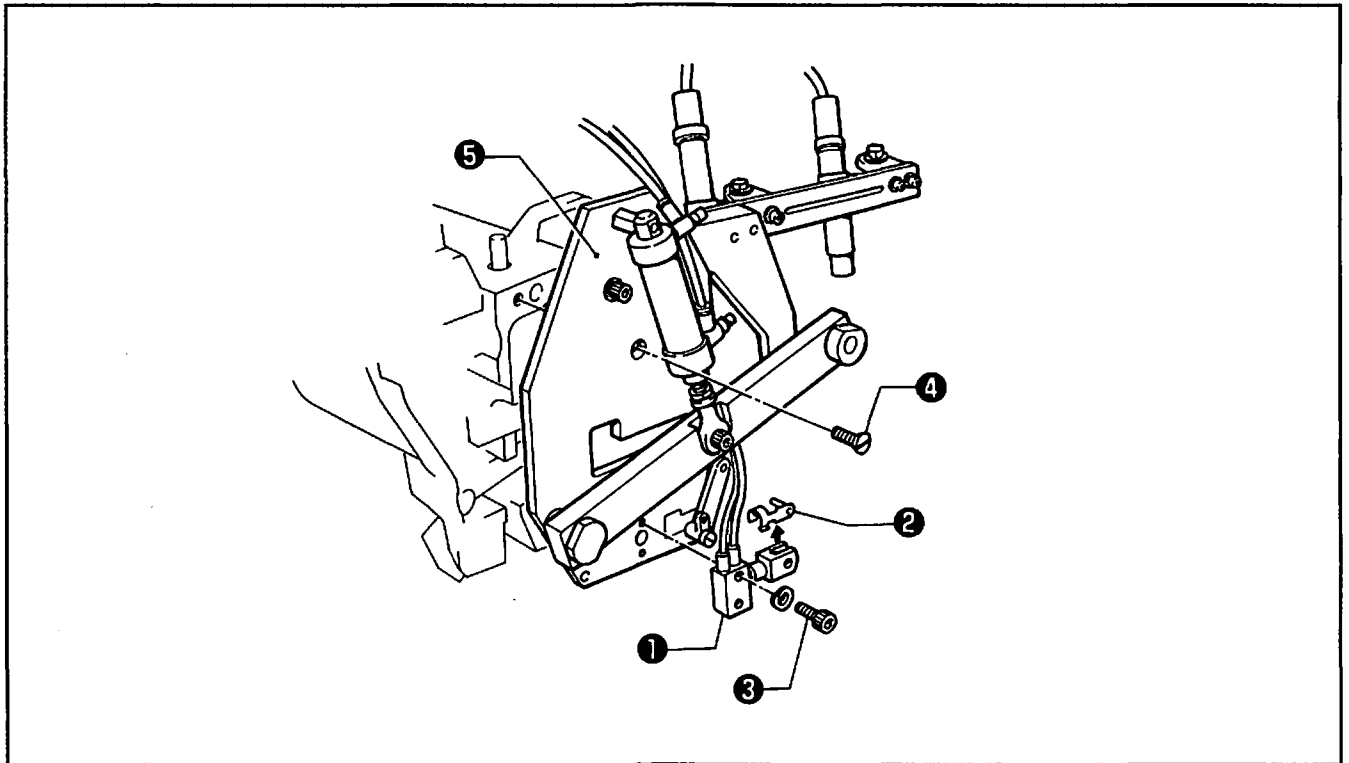
1. Remove the two screws ①, the flap sensors and the sensor bases.
2. Loosen the two screws ③ in the set collars ②. Remove the set collars ②, the cloth guide arms ④, and the spacers ⑤.
3. Remove the two screws ⑥ from the cloth guide arms ④, and the cloth guides ⑦.

3 Removing the binder



Remove the two bolts ①, the spring washers, the flat washers, and the binder assembly ②.

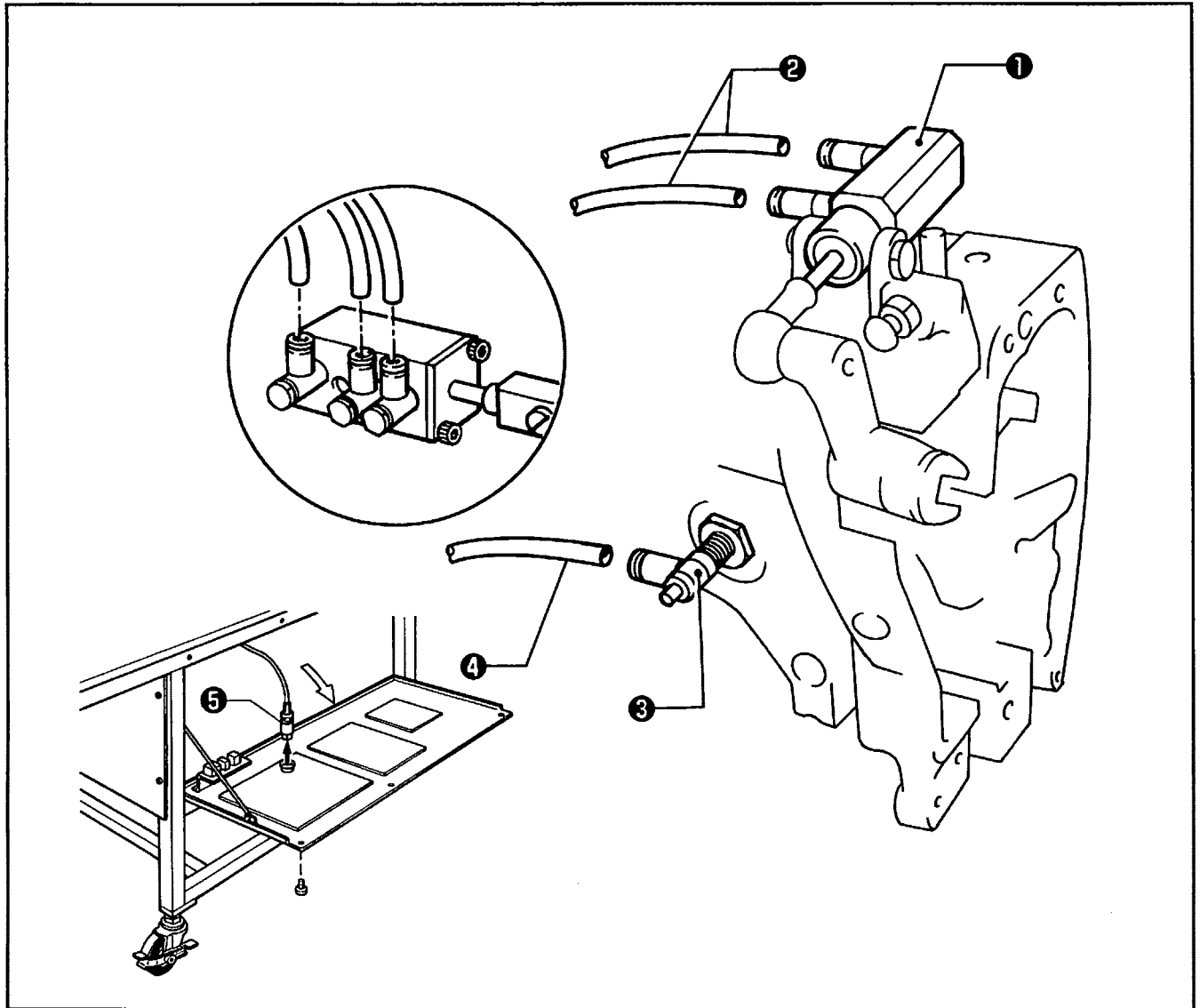
4 Removing the face plate



1. Remove the cap ② connecting the thread take-up arm and the cylinder ①.
2. Remove the two bolts ③, and the thread take-up cylinder ①.
3. Remove the three screws ④, and the face plate ⑤.

5 Removing the machine head

★ This should be done after removing the face plate and movable and bobbin thread knife assemblies from the head.

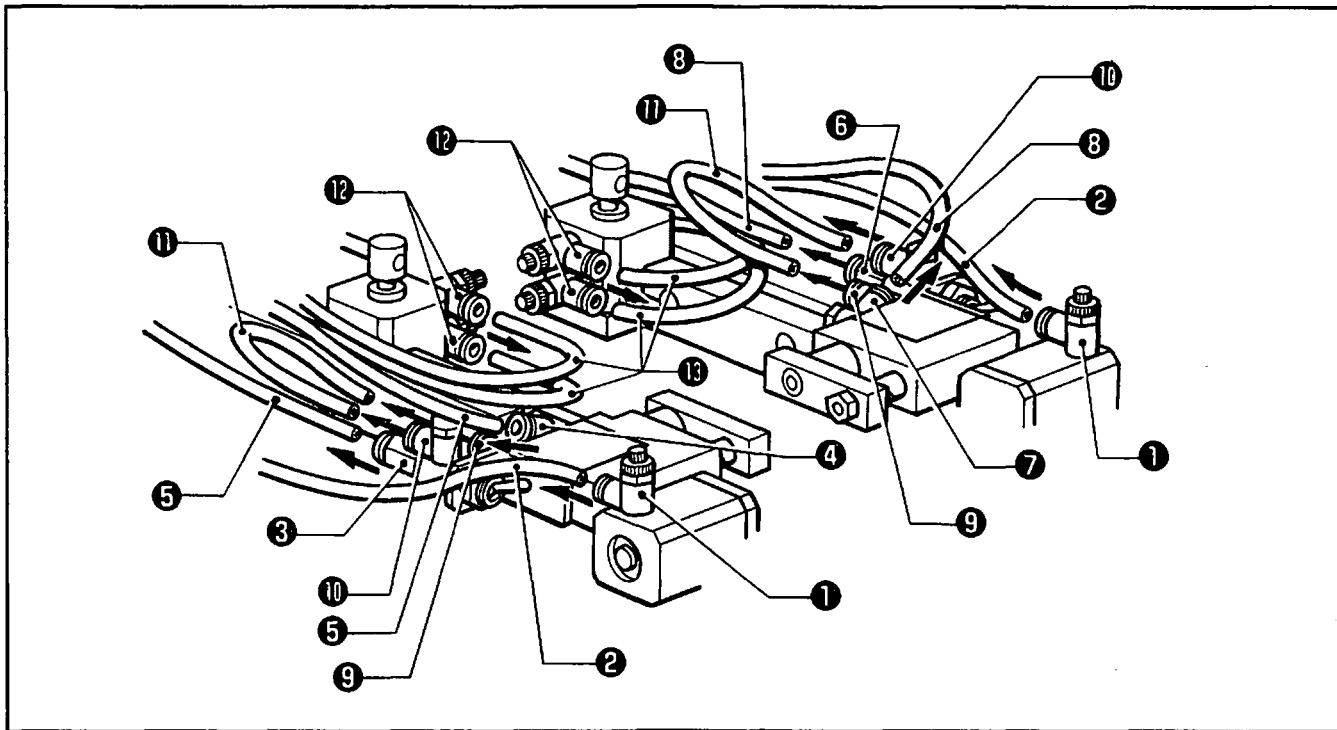


1. Remove the two air tubes ② from the cylinder ①.
2. Remove the air tube ④, from the cylinder ③.
3. Tilt the machine head until it stops, and remove the belt cover.
4. Remove the V-belt.
5. Remove the detector connector ⑤ from the circuit board.
6. Lower the head from the table.

6 Removing the carriage feed mechanism

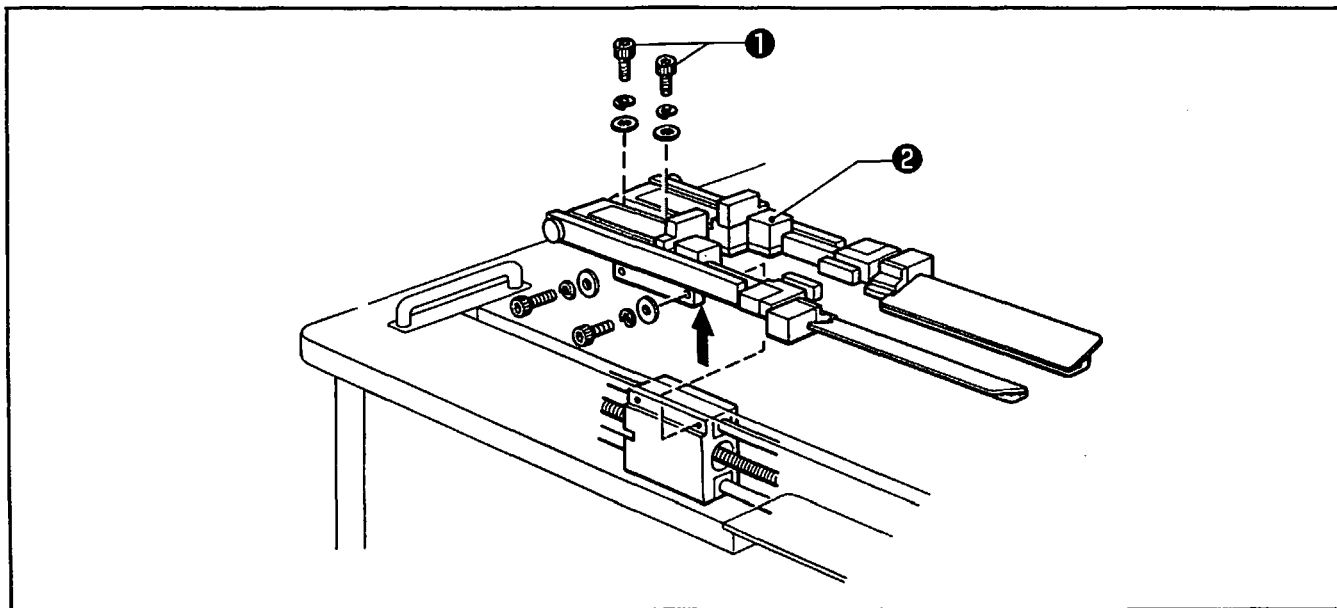
(1) Removing the air tubes

※ Mark the tubes with tape to assure correct reconnection.



1. Remove the air tubes ② from the speed control joints ① on the right and left carriage feeds.
2. Remove the two air tubes ⑤ from the joint ③ and the S-elbow ④ on the left carriage feed.
3. Remove the two air tubes ⑧ from the joint ⑥ and the S-elbow ⑦ on the right carriage feed. Remove the air tubes ⑪ from the joints ⑨ and the S-elbows ⑩ on the right and left carriage feeds.
4. Remove the four air tubes ⑬ from the speed control joints ⑫ on the right and left carriage feeds.

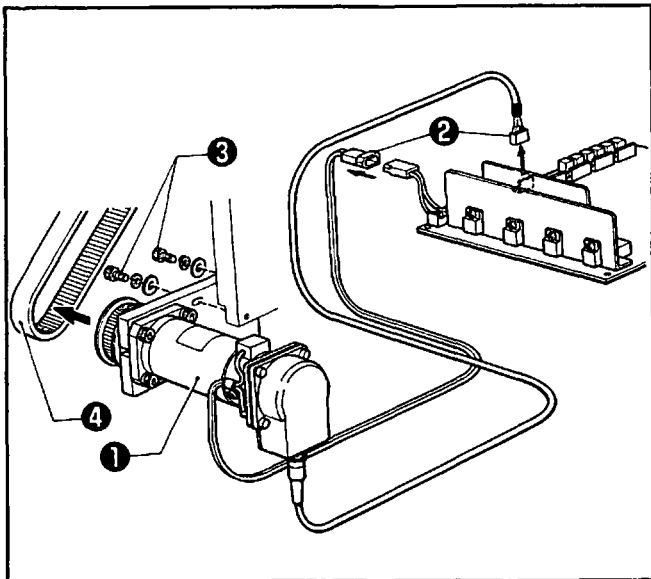
(2) Removing the carriage feed assembly



Remove the two bolts ①, and the carriage feed assembly ②.

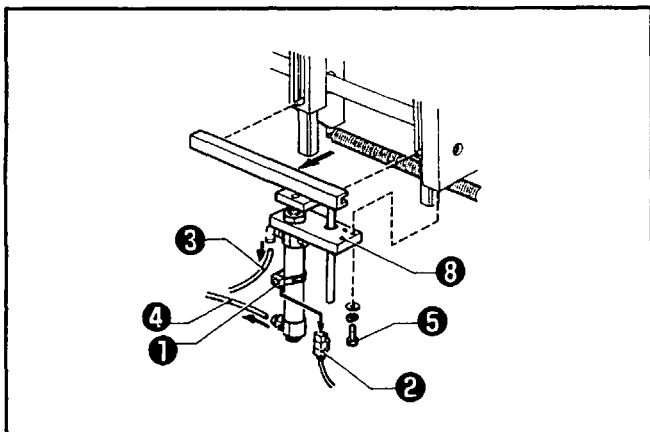
7 Removing the feed mechanism

(1) Removing the DC motor assembly



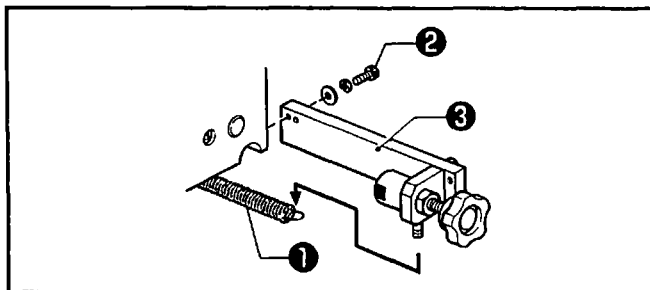
1. Remove the two connectors ② of the DC motor assembly ① from the circuit board.
2. Loosen the two bolts ③, and remove the timing belt ④.
3. Remove the two bolts ③, the flat and spring washers, and the DC motor assembly ①.

(2) Removing the corner knife cylinder assembly



1. Loosen the screw ①, and remove the cylinder sensor ② by sliding it downward.
2. Remove the air tubes ③ and ④.
3. Remove the two bolts ⑤, the washers, the spring washers, and the corner knife cylinder assembly ⑥.

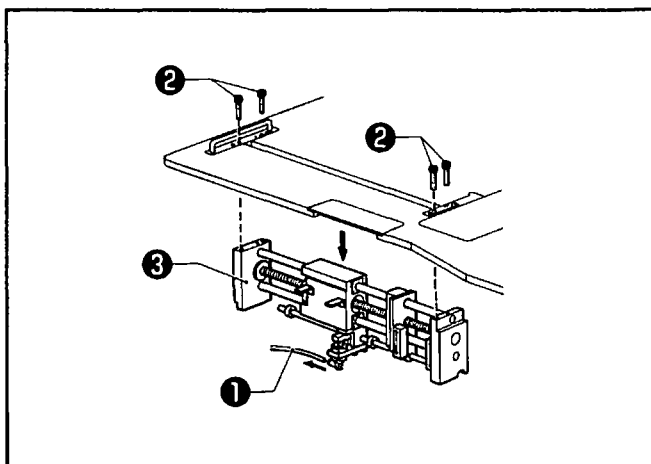
(3) Removing the corner knife adjusting base



1. Remove the spring ①.
2. Remove the two bolts ②, the flat and spring washers, and the corner knife adjusting base ③.

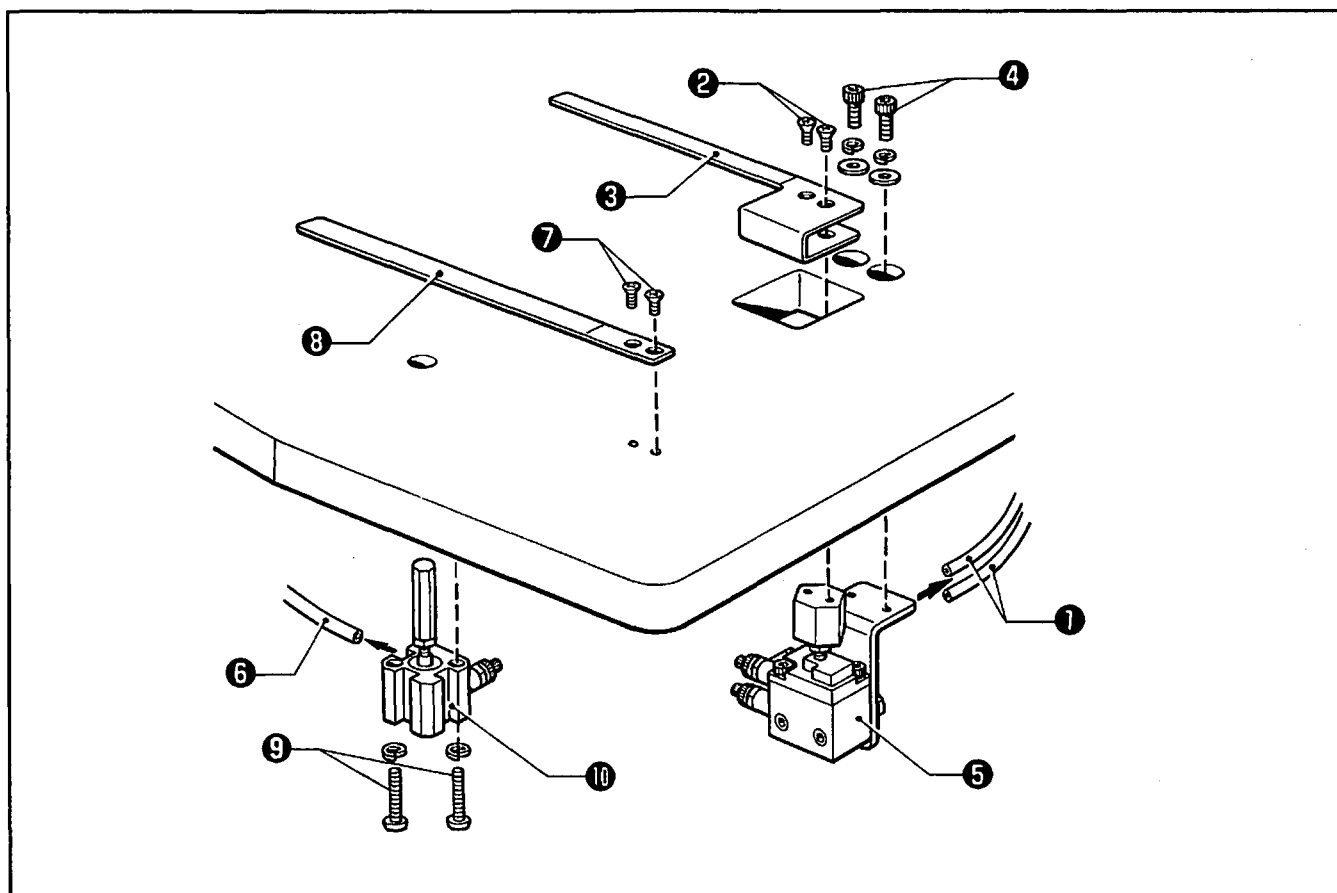
(4) Removing the feed mechanism assembly

※ Do not remove or disassemble the feed mechanism unless absolutely necessary.



1. Remove the air tube ①.
 2. Remove the four bolts ②, and the feed mechanism assembly ③.
- ※ Be careful not to drop the feed mechanism assembly ③.

⑧ Removing the padding cloth presser assembly



(1) Removing padding cloth presser foot spring (R)

1. Remove the two air tubes ①.
2. Loosen the two screws ②, and remove padding cloth presser foot spring (R) ③.
3. Remove the two bolts ④, and remove the cylinder assembly ⑤ from the table.

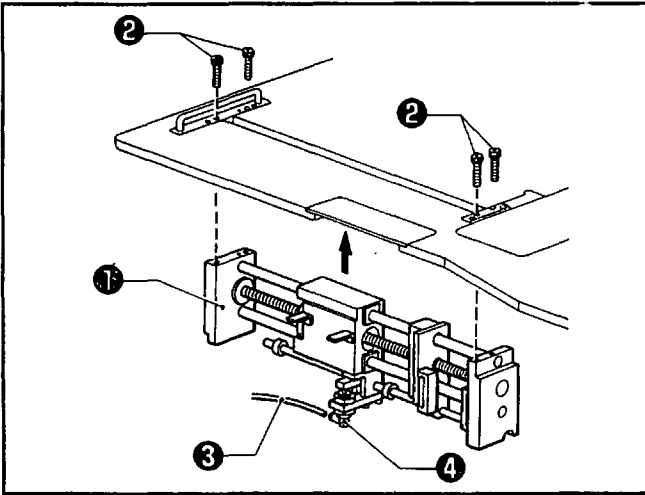
(2) Removing padding cloth presser foot spring (L)

1. Remove the air tube ⑥.
2. Remove the two screws ⑦, and remove padding cloth presser foot spring (L) ⑧ from the table.
3. Loosen the two screws ⑨, and remove the cylinder assembly ⑩ from the table.

ASSEMBLY

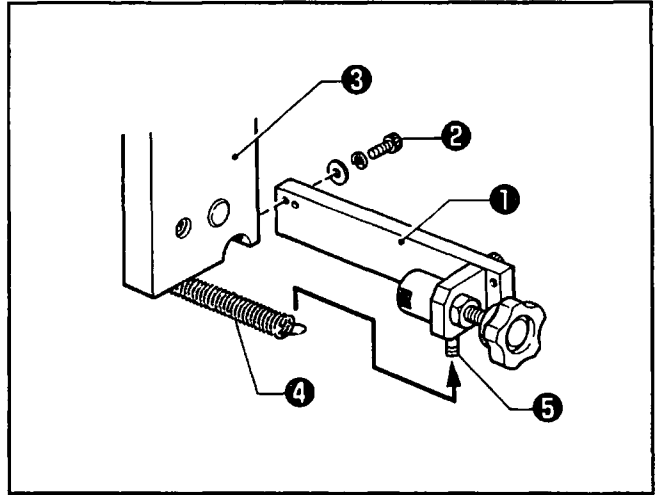
1 Attaching the feed mechanism assembly

(1) Attaching the feed mechanism assembly



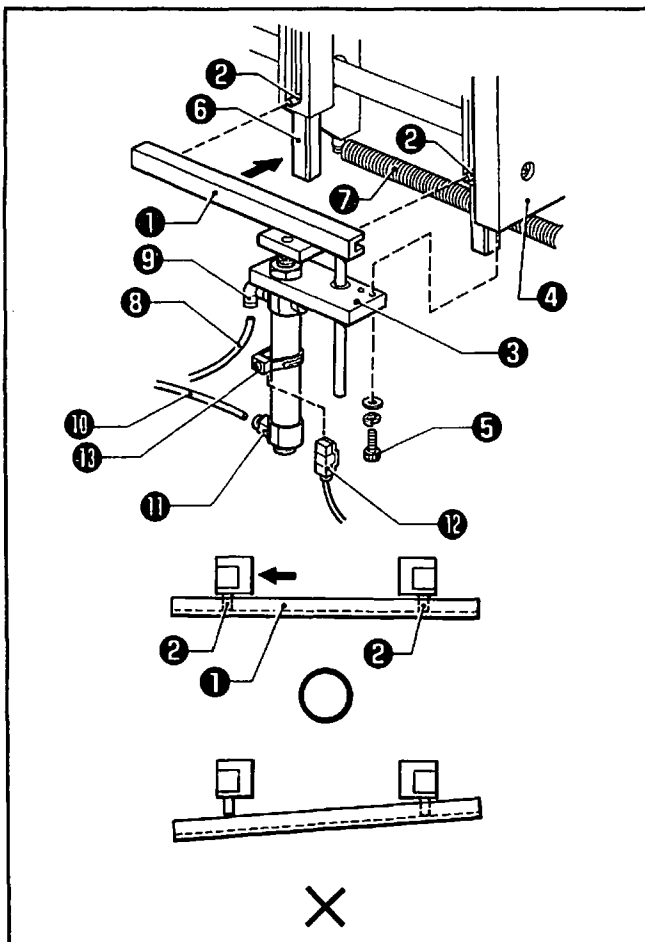
1. Attach the feed mechanism assembly ① to the frame with the four bolts ②.
2. Insert the air tube ③ into the S-elbow ④.
※ The carriage feed position needs to be adjusted later.

(2) Attaching the corner knife adjusting base



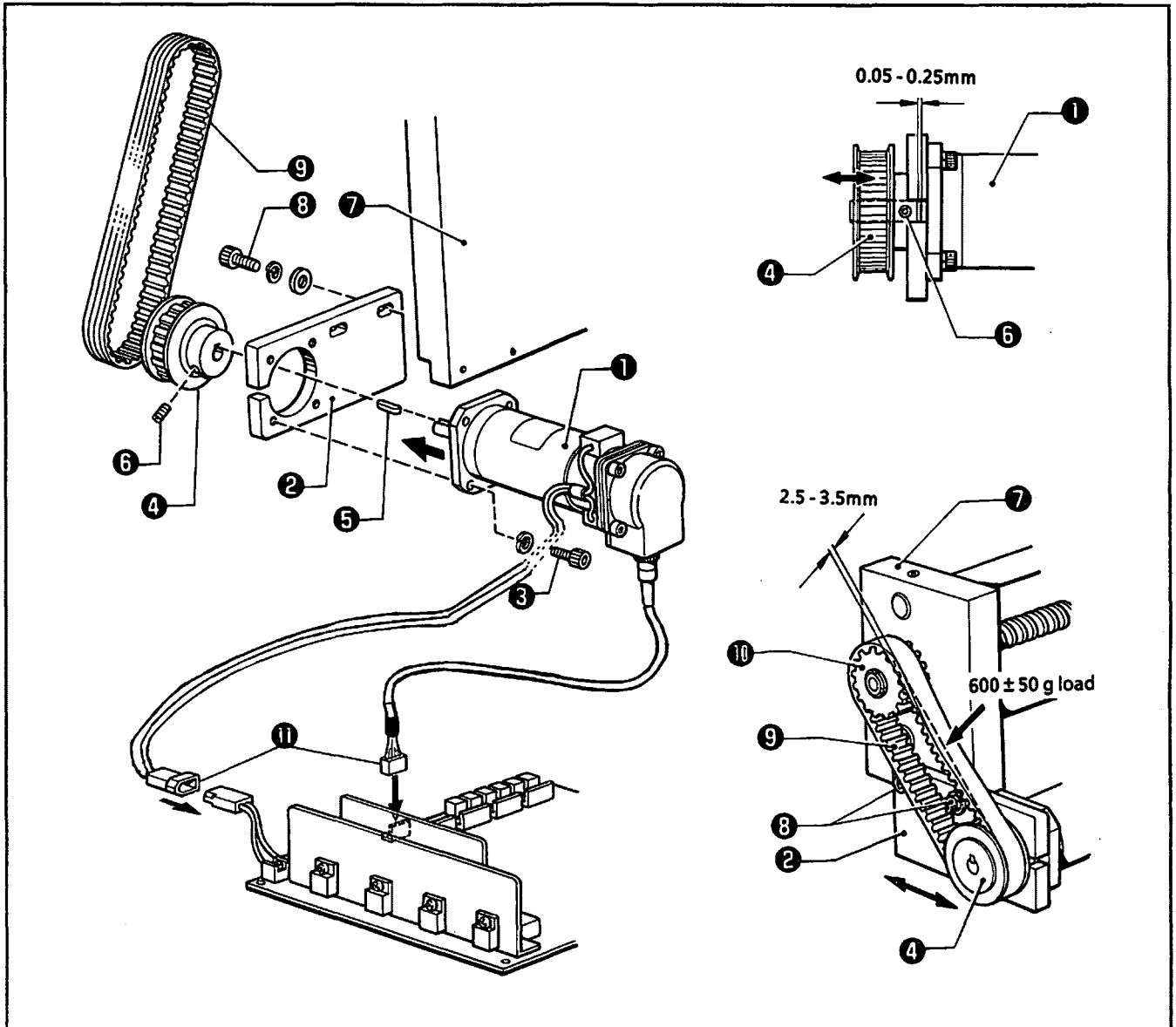
1. Attach the corner knife adjusting base ① to ball screw support (R) ③ with the two bolts ②, the flat and spring washers.
2. Mount the spring ④ on the spring hook ⑤.
※ The corner knife adjusting base position needs to be adjusted later.

(3) Attaching the corner knife cylinder assembly



1. Insert the pins ② into the channel in the corner knife lifting plate ①. Attach the corner knife cylinder assembly ③ to ball screw support (R) ④ with flat and spring washers and two bolts ⑤.
※ At this time, make sure the corner knife lifting plate ① is not pushed too far back towards the pin ②. If it is, the slider ⑥ may stick when it is pulled to the left by hand and released. Make sure that the slider ⑥ smoothly returns to its original position with the pressure of the spring ⑦.
Check that the pins ② do not come out of the channel in the corner knife lifting plate ① because they are not inserted properly.
2. Connect the air tube ③ to the joint ⑨, and connect the air tube ⑩ to the half union ⑩.
3. Insert the cylinder sensor ⑫ into the metal fitting, and temporarily tighten the screw ⑬.
※ The corner knife sensor needs to be adjusted later.

(4) Attaching the DC motor assembly

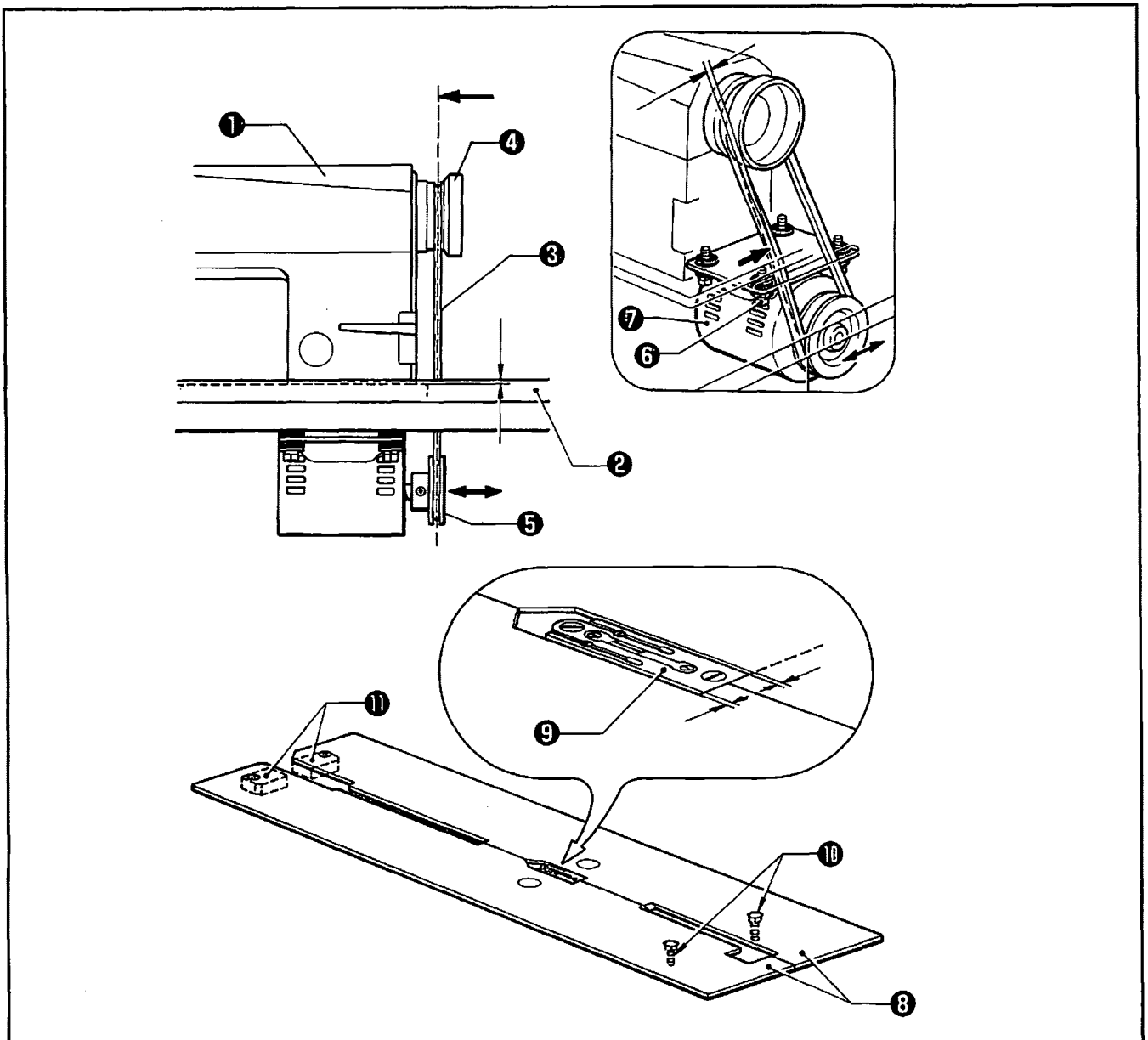


1. Attach the DC motor assembly ① to the motor bracket ② with the four washers and bolts ③.
2. Insert the key ⑤ into the key way on the DC motor shaft, and then slide pulley B ③ on. Set the clearance between pulley B ④ and the motor shaft bush to 0.05-0.25 mm, and tighten the two set screws ⑥.
3. Attach the DC motor assembly ① to support L ⑦ using each two washers, spring washers, and bolts ③, then temporarily tighten them.

[Adjusting the timing belt of the DC motor assembly]

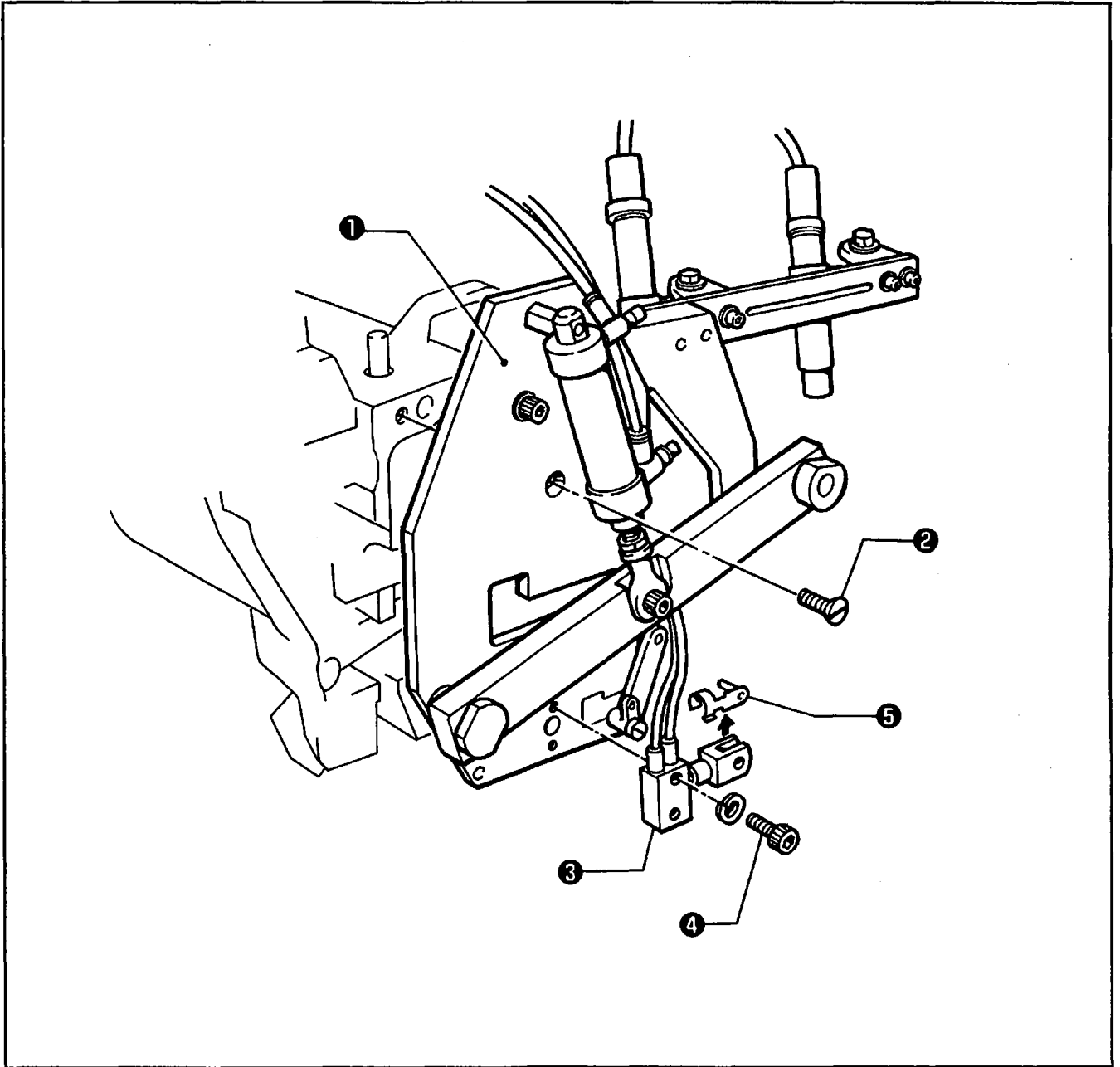
4. Mount the timing belt ⑨ on the timing pulley ⑩ and pulley B ④. Firmly tighten the bolts ③ so that there is 2.5-3.5 mm of give when a 600 ± 50 g load is applied to the center of the timing belt ⑨.
5. Insert the two connectors ⑪ of the DC motor assembly ①.

2 Attaching the machine head



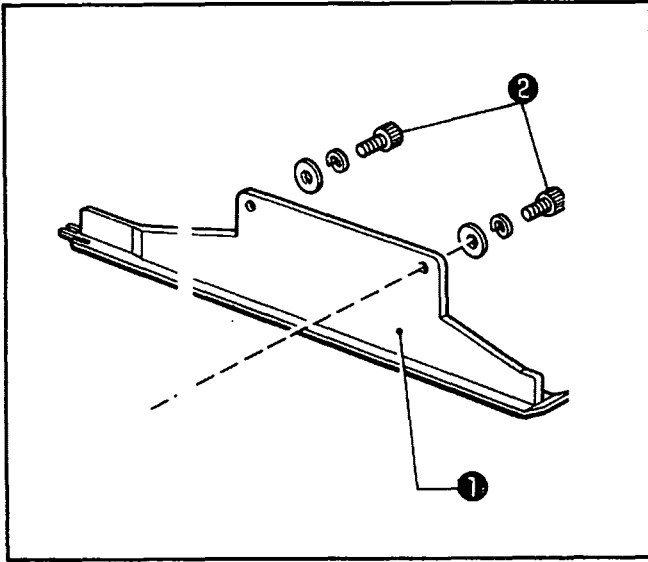
1. Set the head ① onto the table ②.
 ※ Make sure that the bed surface of the head ① and the top of the table ② are flush or that there is not more than a 0.3 mm step, and that the machine head does not wobble.
2. Loop the V-belt ③ over the machine pulley ④ and the motor pulley ⑤.
 The V-belt ③ tension should allow 15-20 mm of give when the belt ③ is pressed by hand. Also make sure that the centers of the machine pulley ④ and motor pulley ⑤ are aligned. If they are not, loosen the four bolts ⑥, and slide the motor ⑦ to adjust the alignment.
3. Attach the air tubes and the detector connector.
4. Position slide plates (R) and (L) ⑧ so that there is no clearance at the front of the needle plate ⑨, and so that the clearances on the right and left sides of the slide plates are equal. Adjust the positioning bolts ⑩ and fulcrum pin guides (R) and (L) ⑪ so that there is no play either front-back or left-right.

3 Attaching the face plate



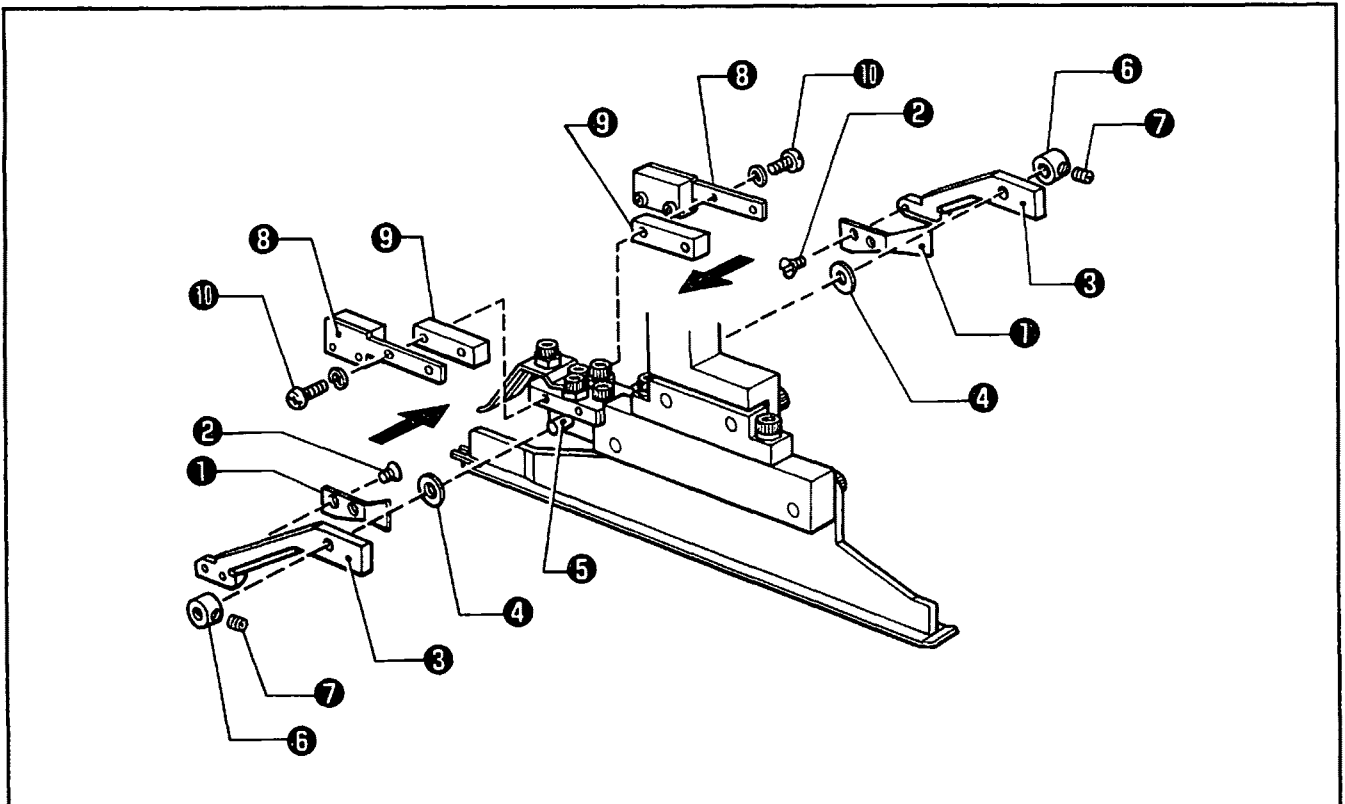
1. Attach the face plate ① to the machine head using the three screws ②.
2. Attach the thread take-up cylinder ③ to the face plate ① using the two bolts ④.
3. Attach the thread take-up arm and the cylinder using the cap ⑤.

4 Attaching the binder



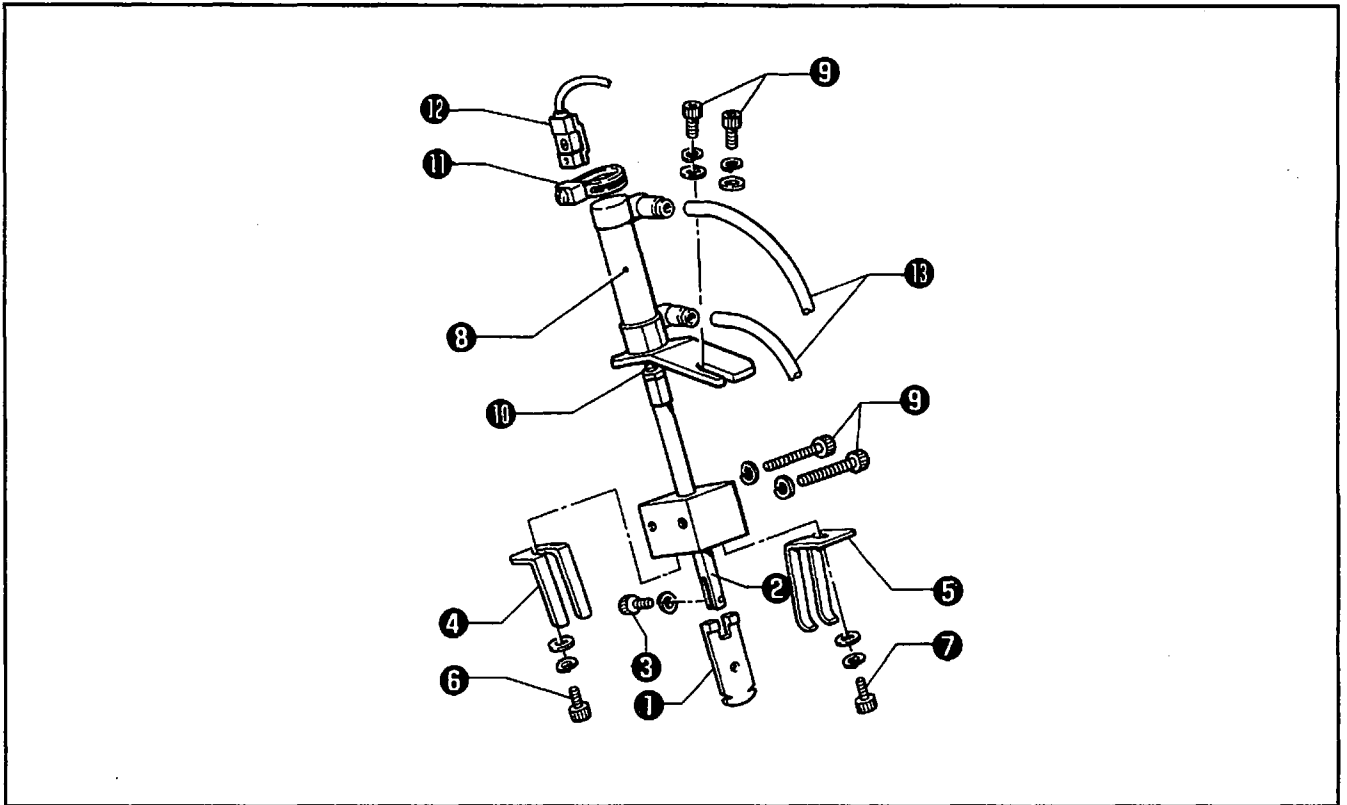
1. Attach the binder assembly ① to the ruler fitting plate using the two springs, flat washers, and bolts.
2. Make the binder and the needle plate parallel by adjusting the height between the binder and the slide plate.

5 Attaching the cloth guide



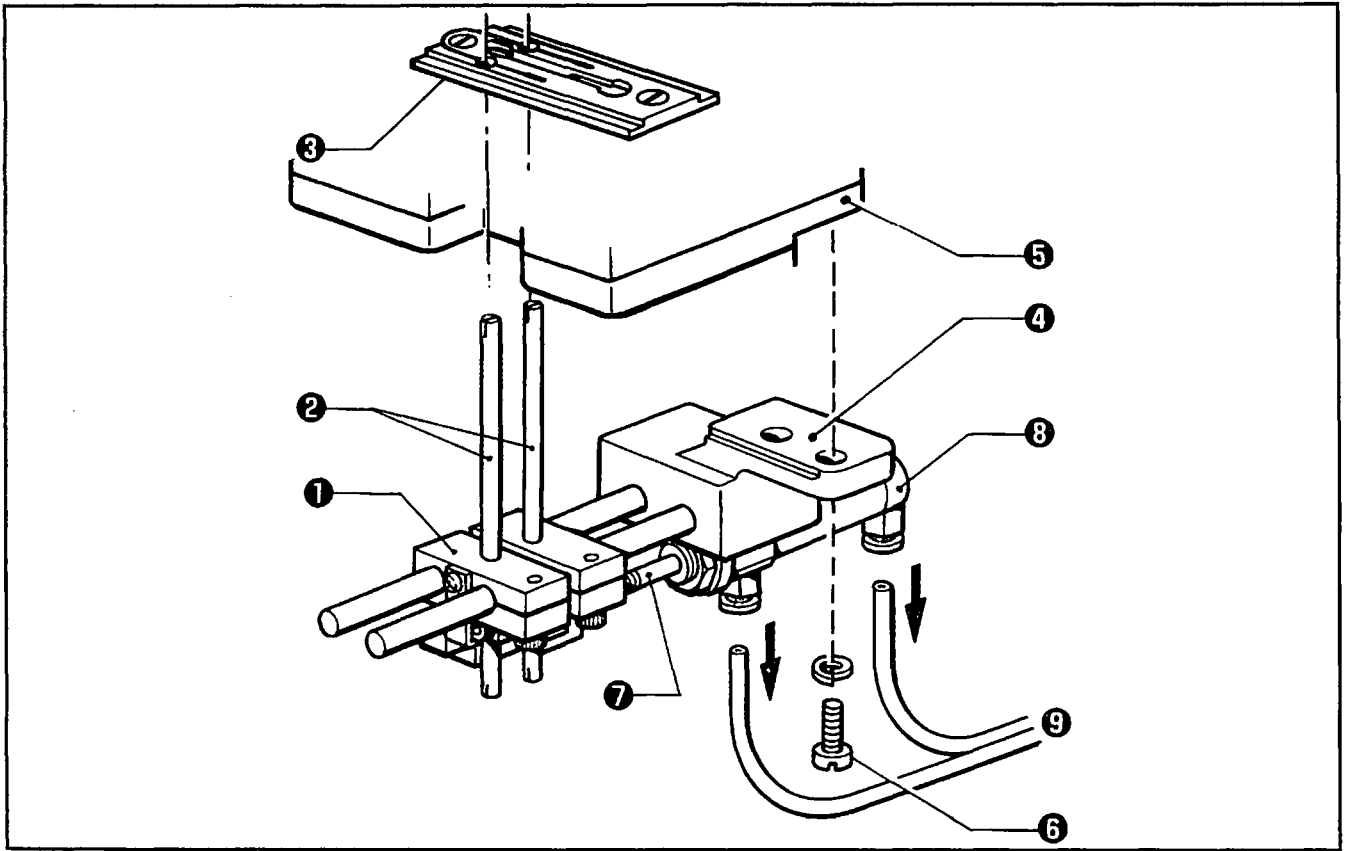
1. Attach the left and right cloth guides ① to the cloth guide arms ③ using two screws ② each.
 2. Put the spacers ④ on the fulcrum shaft ⑤. The number of the spacer ④ must match the gauge size.
 3. Place the cloth guide arms ③ and the set collars ⑥ onto the fulcrum shaft ⑤, and tighten the two screws ⑦ so that there is no play left-right in the cloth guide arm ③ and that the arm moves smoothly up and down (down by the spring pressure).
 4. Attach the flap spacers ⑧ and the sensor bases ⑨ using the screws ⑩.
- ★ Refer to page 46, " 8 Adjusting the cloth guide."

6 Attaching the movable knife assembly



1. Insert the movable knife ① into the slot of the knife bar ②, and align the hole of the movable knife ① with that of the knife bar ②. Tighten the washer and bolt ③.
2. Secure the fixed knife ④ and the thread retainer spring ⑤ temporarily using the washers, spring washers, and bolts ⑥ and ⑦.
3. Check that the knife bar ② moves both smoothly and easily, up and down. Adjust the fixed knife ④ and the thread retainer spring ⑤ so that the thread retainer spring ⑤ touches the movable knife ①.
※ If the angle of the thread retaining spring ⑤ is incorrect, the thread will not be properly held. Also, if the bolts ⑥ and ⑦ are tightened too much, the knife operation will become too stiff.
4. Attach the movable knife assembly ⑧ using the washers, spring washers, and four bolts ⑨. Be sure the cylinder rod ⑩ and the knife bar ② are straight and not twisted. Also, make sure the cylinder rod ⑩ moves easily and does not strike the head when moved up and down by hand.
※ The pressure should be adjusted to as little as will cut the thread.
If the thread is not cut properly, increase the pressure slightly.
5. Insert the cylinder sensor ⑫ into the metal fitting ⑪, then temporarily tighten the screw of the metal fitting ⑪ to adjust the sensor.
6. Connect the two air tubes ⑬ to the cylinder S-elbows.

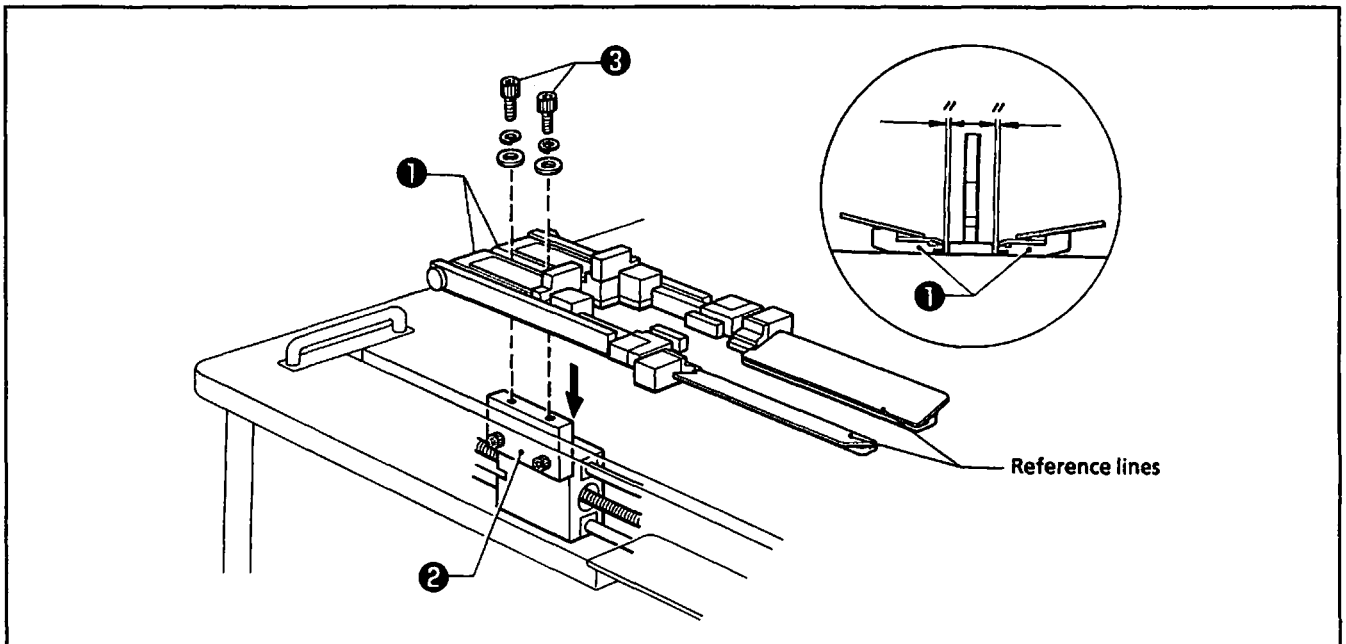
7 Attaching the bobbin thread knife assembly



1. Remove slide plates (R) and (L), then tilt the machine head until it stops.
2. Align the two bobbin thread knives ② of knife holder (L) ① with the holes of the needle plate ③, then insert the knives ②.
3. Attach the knife base ④ to rotary hook base (R) ⑤ using the two screws ⑥.
※ The position will not change when the knife base ④ is fitted against the step in rotary hook base (R) ⑤.
4. Move the cylinder rod ⑦ left or right by hand to make sure it moves smoothly and easily.
5. Connect the two air tubes ⑧ to the cylinder ③.
6. Return the machine head to its original position, and attach slide plates (R) and (L).
※ The bobbin thread knife position needs to be adjusted later.

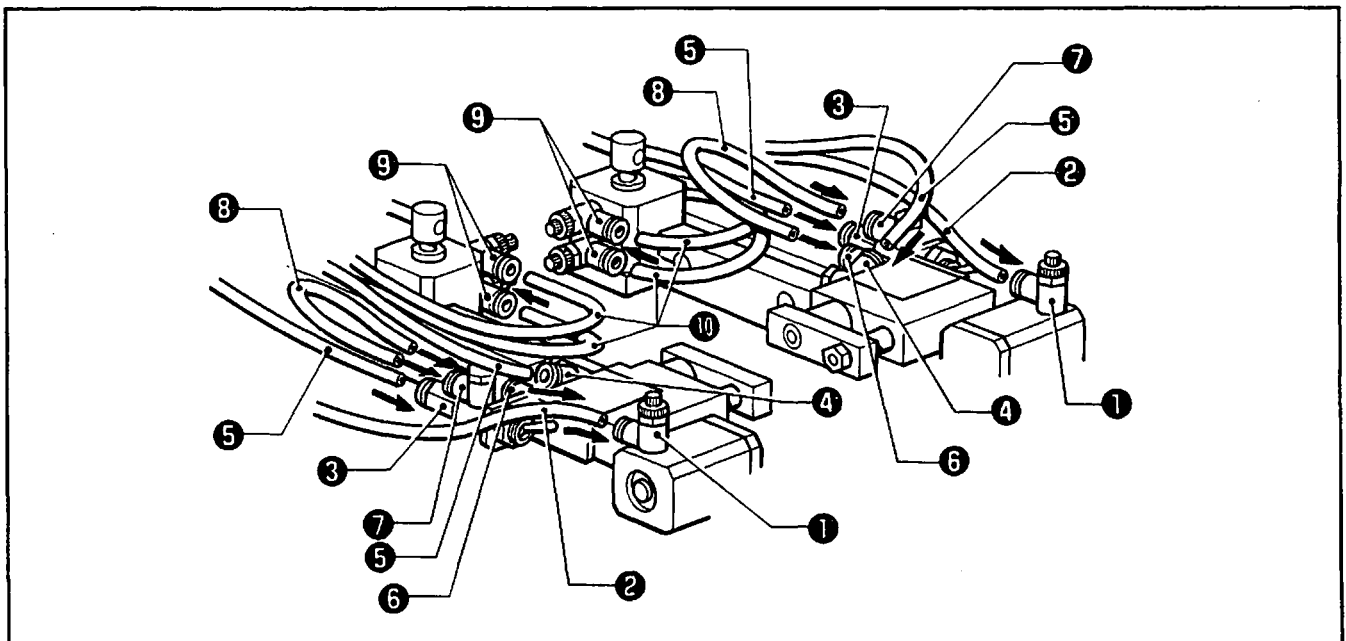
8 Attaching the carriage feed mechanism

(1) Carriage feed



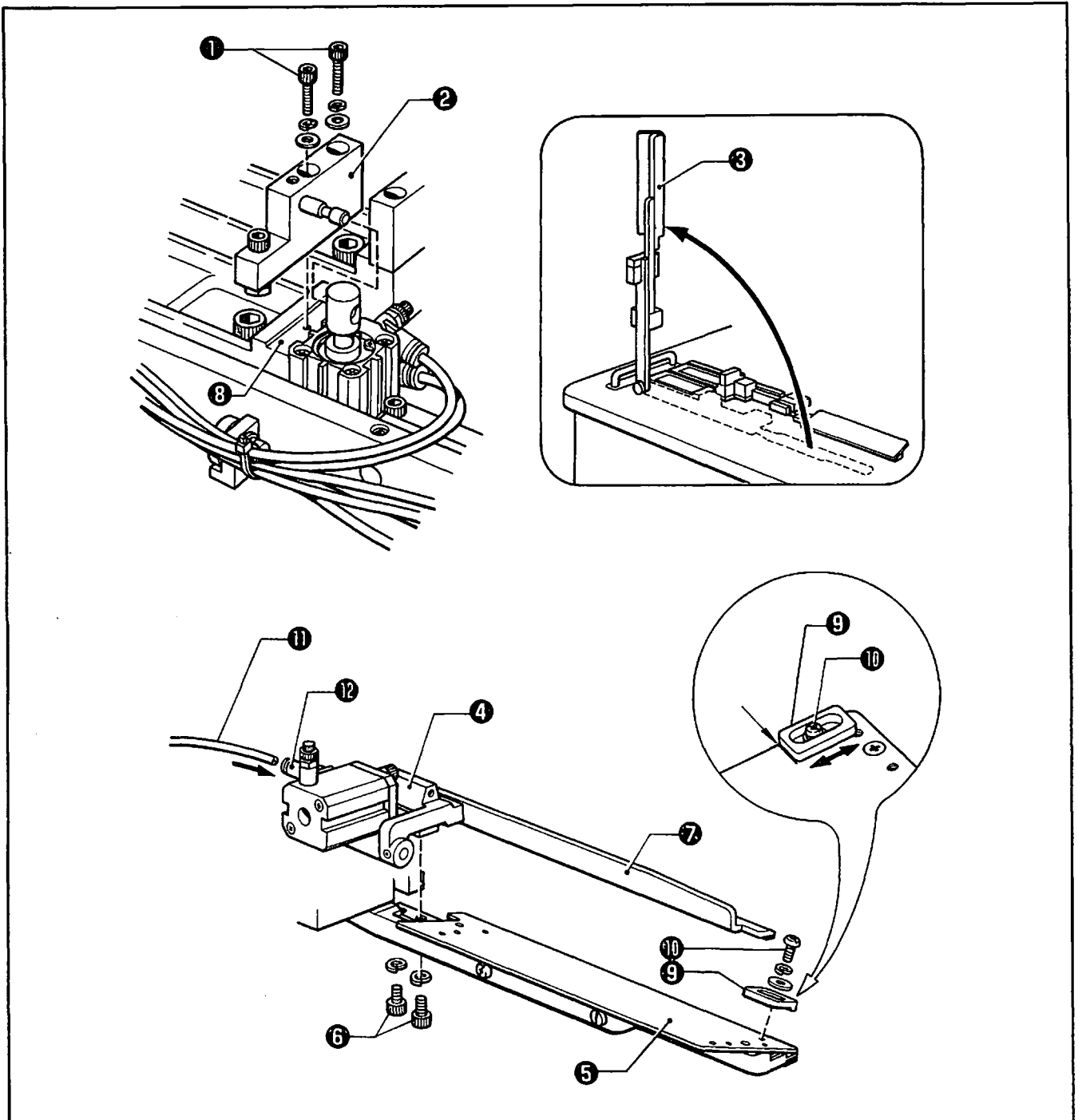
1. Attach the carriage feed assembly ① to the carriage feed fitting plate ② using the two flat and spring washers and bolts ③ each.
2. Make sure there is a uniform 1 mm clearance between both the left and right sides of the binder assembly and the carriage feed assembly. If the clearance is incorrect, loosen the bolts ③, and shift the carriage feed assembly ① right or left to adjust the clearance. This adjustment will be required only after the carriage feed assembly ① is removed, and it is not usually needed.
 ※ After attachment, make sure that the needle and the left and right carriage feed reference lines are aligned at the sewing end position.

(2) Air tubes



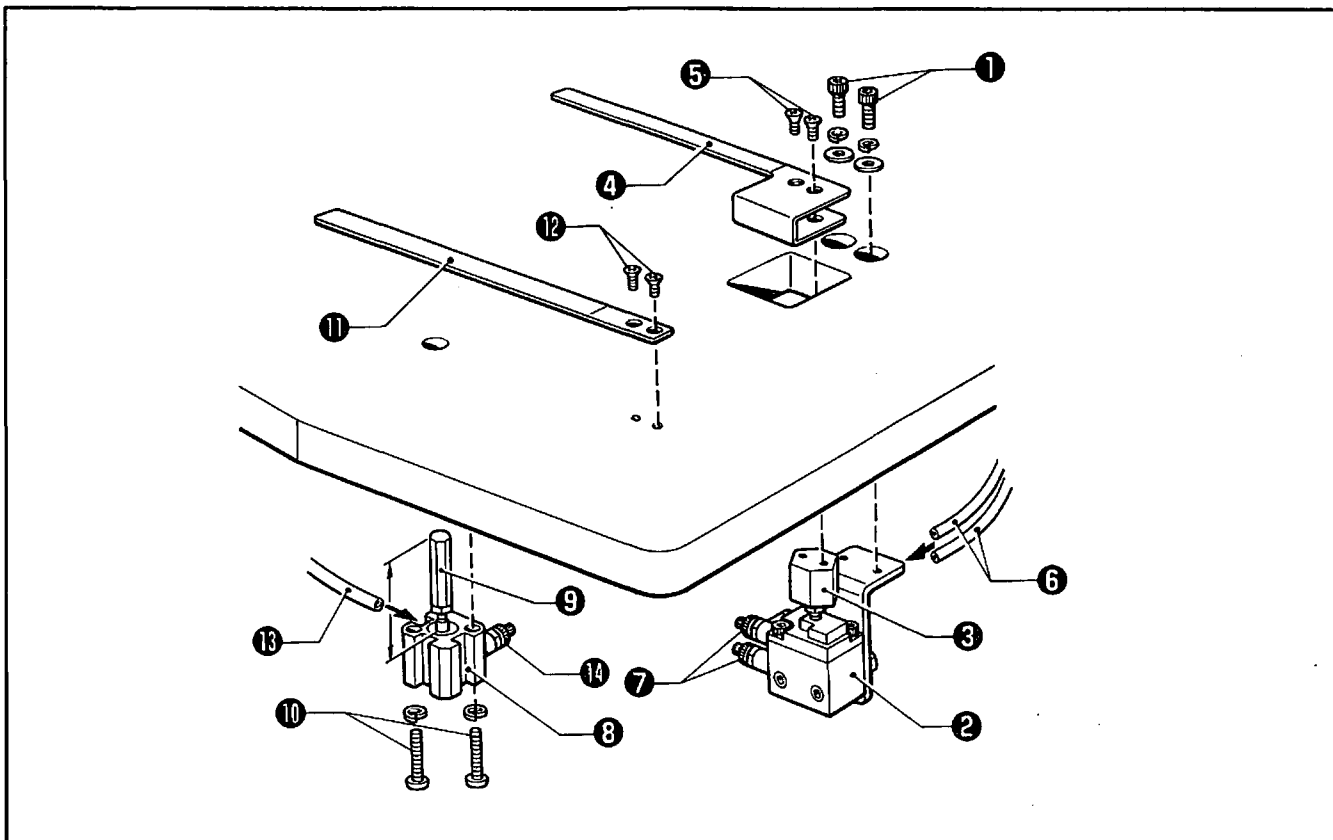
1. Connect the air tubes ② to the flap presser cylinders ① on both carriage feeds.
2. Connect the two air tubes ⑤ to the folding plate cylinders ③ and the S-elbows ④ on the left carriage feed.
 Connect the two air tubes ⑤ to the joint ③ and the S-elbow ④ on the right carriage feed.
3. Connect the air tubes ③ to the folding plate cylinder ⑥ and the S-elbow ⑦.
4. Connect the two air tubes ⑩ to the carriage feed lifting cylinders ⑨.

(3) Flap presser assembly (if not attached)



1. Remove the two bolts ❶ and the connecting shaft supporter ❷.
2. Lift up the carriage feed ❸.
3. Attach the flap presser assembly ❹ to the left carriage feed ❺ using the two spring washers and bolts ❸.
- ※ Make sure that when the flap presser assembly ❹ makes contact with the carriage feed ❺, there is a 1 mm clearance at the rear of flap presser (L) ❷.
4. Repeat the same steps for the right carriage feed.
5. Gently tilt the carriage feed.
6. Attach the connecting shaft supporter ❷ to the carriage feed movable base ❸ using the two bolts ❶.
7. Attach the flap stopper ❹ to the carriage feed ❺ using the washer and spring washer, and screw ❿.
- ※ Adjust the flap stopper ❹ according to the flap shape.
8. Connect the air tube ❾ to the cylinder assembly ❻.

9 Attaching the padding cloth presser foot spring



(1) Padding cloth presser foot spring (R)

1. Attach the cylinder assembly ② to the table using the two washers, spring washers, washer bases, and bolts ①.
2. Attach padding cloth presser foot spring (R) ④ to the spring fitting shaft ③ using the two screws ⑤.
3. Connect the two air tubes ⑥ to the cylinder speed control joints ⑦.

(2) Padding cloth presser foot spring (L)

1. Set the top end of the padding cloth pusher ⑨ to 55 mm above the top face of the end of the cylinder ⑧.
2. Attach the cylinder ⑧ to the table using the two spring washers and screws ⑩.
3. Attach padding cloth presser foot spring (L) ⑪ to the table using the two screws ⑫.
4. Connect the air tube ⑬ to the speed control joint ⑭.

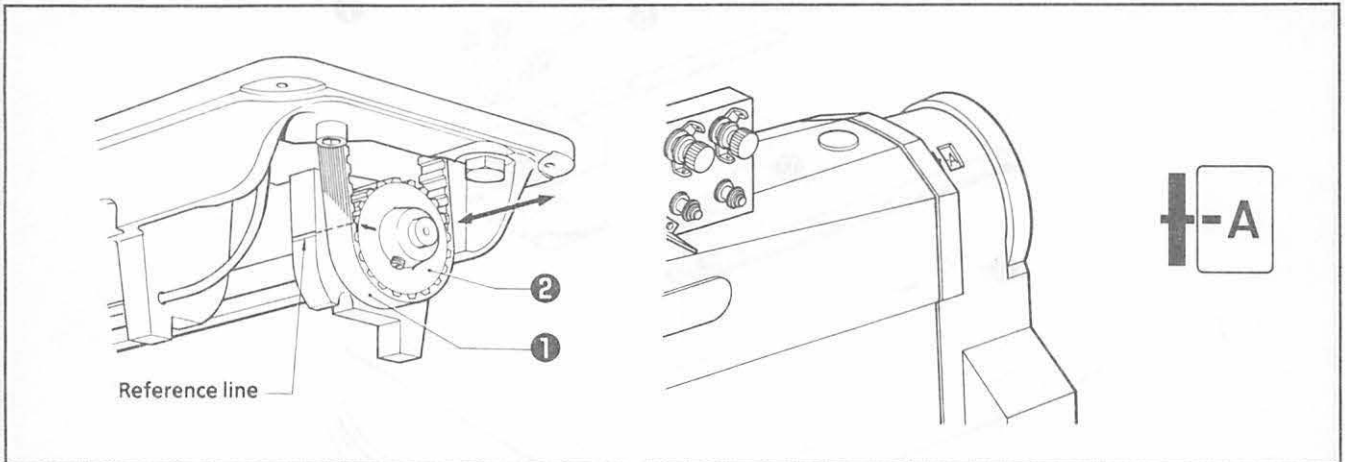
10 Other

1. Make sure that there is no excessive play in any parts, that parts do not rub, that all screws and bolts are tight, and that operation is normal.
2. Turn on the air and the power, and set the MODE switch to MANUAL.
3. Set a piece of material under the carriage feed, and operate the treadle. Press the start switch to move the carriage feed to the sewing end position.
Check that the needle is aligned with the left and right reference lines on the carriage feed. If it is not, adjust the clearance between the carriage feed and the binder to 1 mm, referring to page 36, " 8 (1) Carriage feed".
4. Attach the corner knives.
5. Check the sewing operation. Next, set the center knife switch to ON, and sew. Then set the corner knife switch to ON, and sew.
6. Sew and correct any improperly adjusted places. Refer to the sewing flow chart.

STANDARD ADJUSTMENT

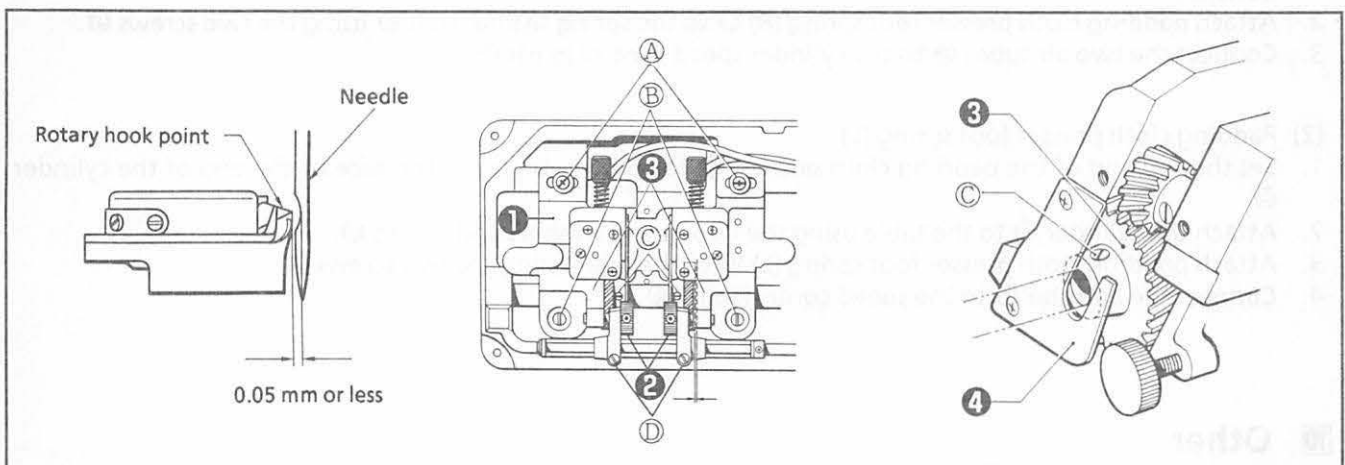
For tilting or removing the machine head, refer to page 25.

1 Adjusting the upper and lower shaft timing



1. Remove the needles.
2. Tilt the machine head until it stops, and remove the timing belt ①.
3. Align mark A on the pulley with the mark on the belt cover.
4. Without moving the upper shaft, align the arrow mark on the lower belt ② with the arm bed reference line, and remount the timing belt ①.
5. Return the machine head to its original position, and reattach the needles.

2 Adjusting the clearance between the needle and the rotary hook

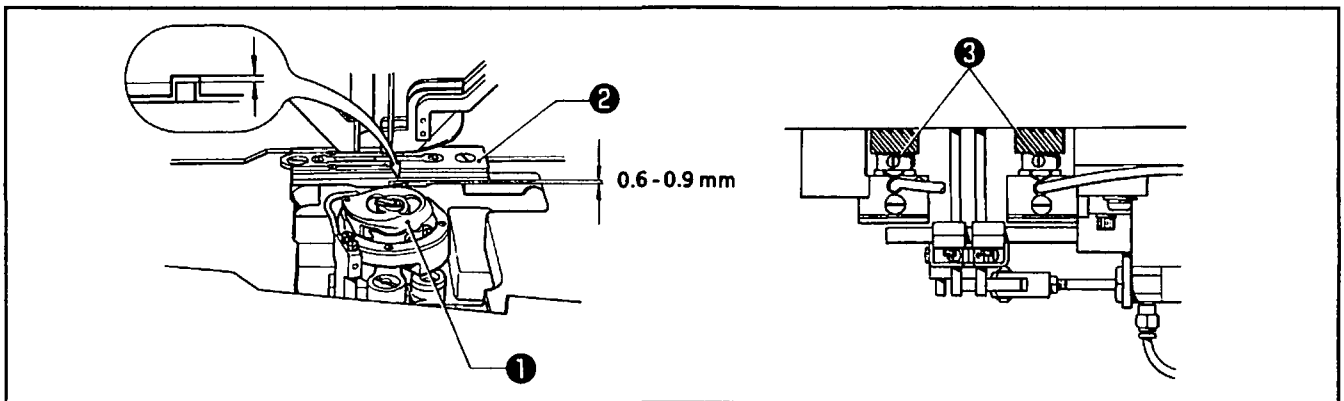


1. Loosen the screws A, B, C and D, and shift the rotary hook base ① to the left or right to adjust the clearance between the needle and the rotary hook point to 1 - 3 mm.
2. Tighten the screws D. Adjust the clearance between the needle and the rotary hook point to 0.05 mm by turning the adjust screw ②.
3. Securely tighten the screws A, B, and C.

NOTE: Tighten the screw C when the lower shaft gear ③ slightly contacts the guide plate ④.

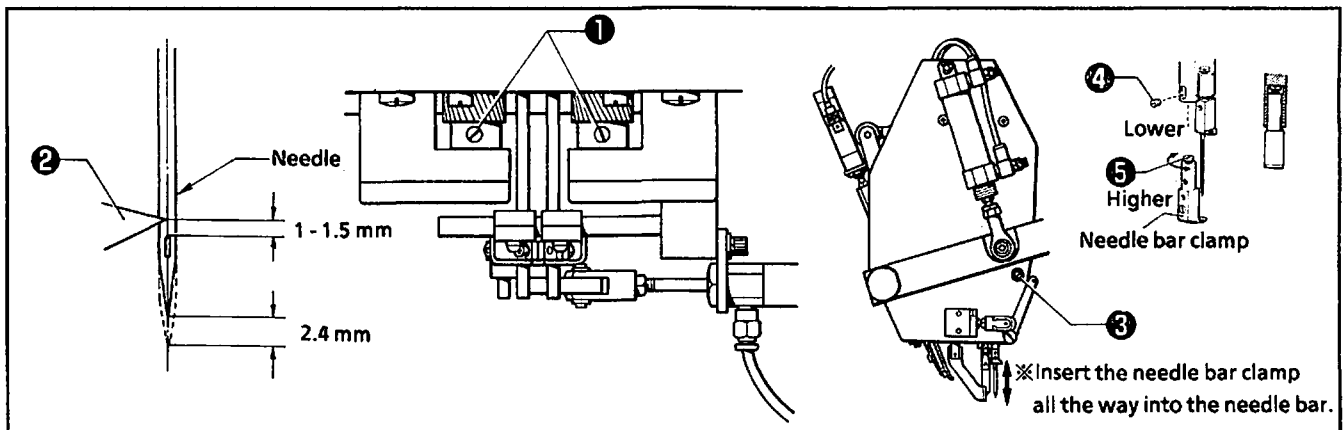
Be sure to tighten the screws C securing the lower shaft gears ③ so that their screw flats do not move.

③ Adjusting the clearance between the rotary hook and the needle plate



★ The clearance between the rotary hook ① and the needle plate ② should be 0.6 - 0.9 mm. Loosen the two screws ③, and adjust the clearance by moving the rotary hook ① up or down.

④ Adjusting the needle bar lift stroke and the needle bar height



(1) Needle bar lift stroke

★ The rotary hook point should be aligned with the needle center when the needle is 2.4 mm above its lowest position.

Loosen the two screws ①, and adjust the stroke by turning the rotary hook ②.

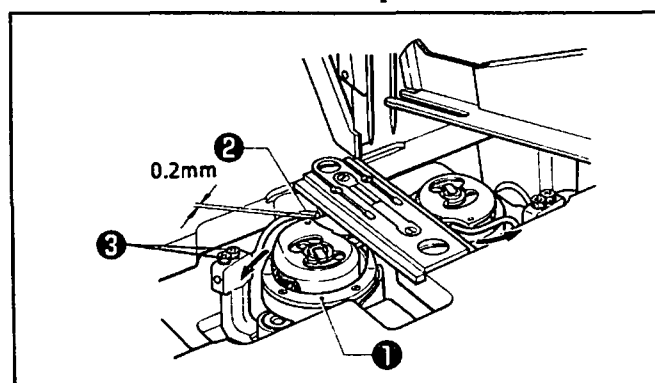
(2) Needle bar height

★ The clearance between the upper end of the needle hole and the rotary hook point should be 1 - 1.5 mm when the rotary hook point is aligned with the needle center.

Loosen the screw ③, and raise or lower the needle bar to adjust the height.

When the BAS-612 is used, remove the screw ④, and turn the screw ⑤ of the needle bar clamp to adjust the clearance between the upper end of the needle hole and the rotary hook point to 1 - 1.5 mm.

⑤ Adjusting the clearance between the rotary hook and the bobbin case opener



★ The clearance between the rotary hook ① and the bobbin case opener ② should be 0.2 mm when the bobbin case opener ② is shifted as far as possible in the direction of the arrow.

Loosen the bolts ③, and shift the bobbin case opener ② to the left or right to adjust the clearance.

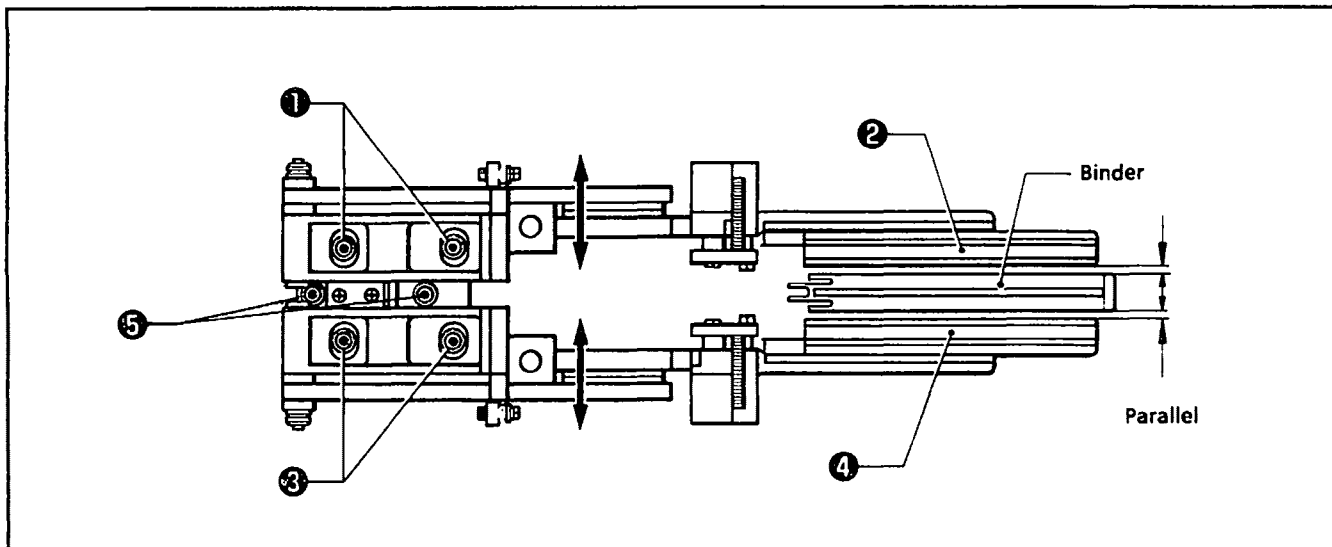
6 Adjusting the carriage feed mechanism

(1) Carriage feed

<Making the needle and the carriage feed parallel >

1. Return the carriage feed to its stop position.

When moving, the carriage feed should be parallel with the needles as shown in the figure below.



(Adjustment)

Loosen the bolts ① to shift carriage feed (R) ② left or right.

Loosen the bolts ③ to shift carriage feed (L) ④ left or right.

Loosen the bolts ⑤ to shift carriage feeds (R) ② and (L) ④ left or right together.

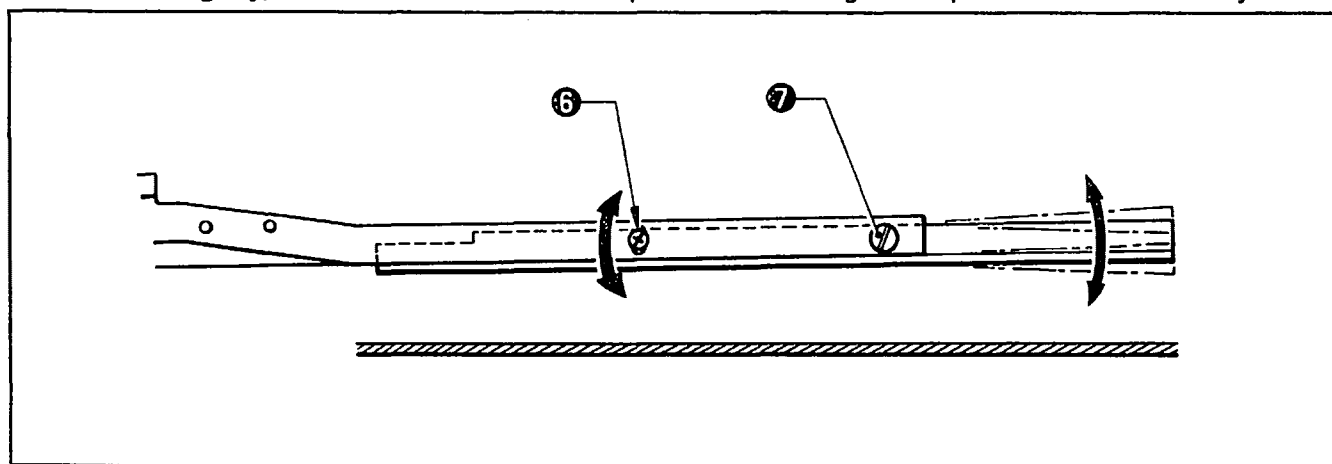
<Adjusting the carriage feed angle >

★ The carriage feed should contact the material evenly.

(Adjustment)

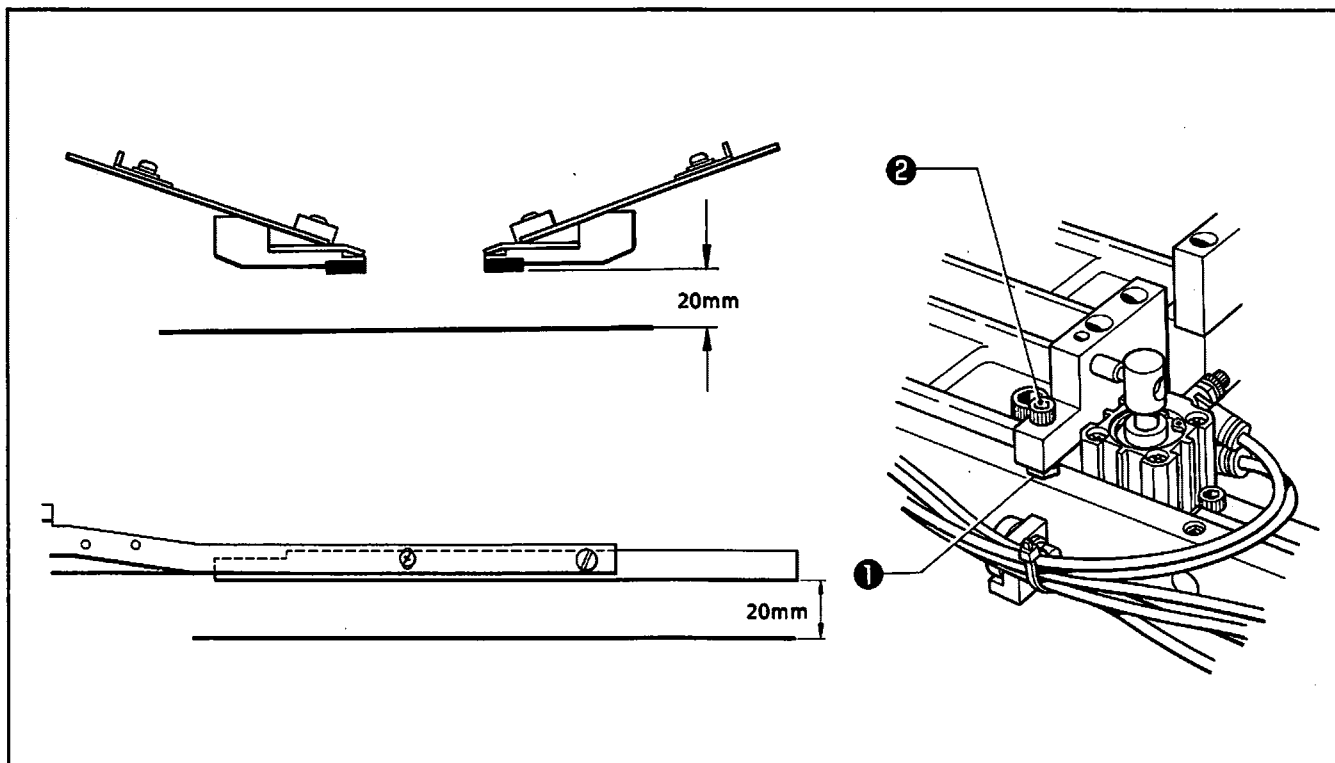
Loosen the screw ⑥ and the stud screw ⑦ to adjust the angles of the carriage feeds ② and ④.

Set a piece of material under the carriage feeds ② and ④, then clamp the material. At this time, by pulling the material slightly, check that the front and rear parts of the carriage feeds press the material evenly.



<Adjusting the carriage feed height>

★ The carriage feed front should be approximately 20 mm high when the carriage feed is at its home position.



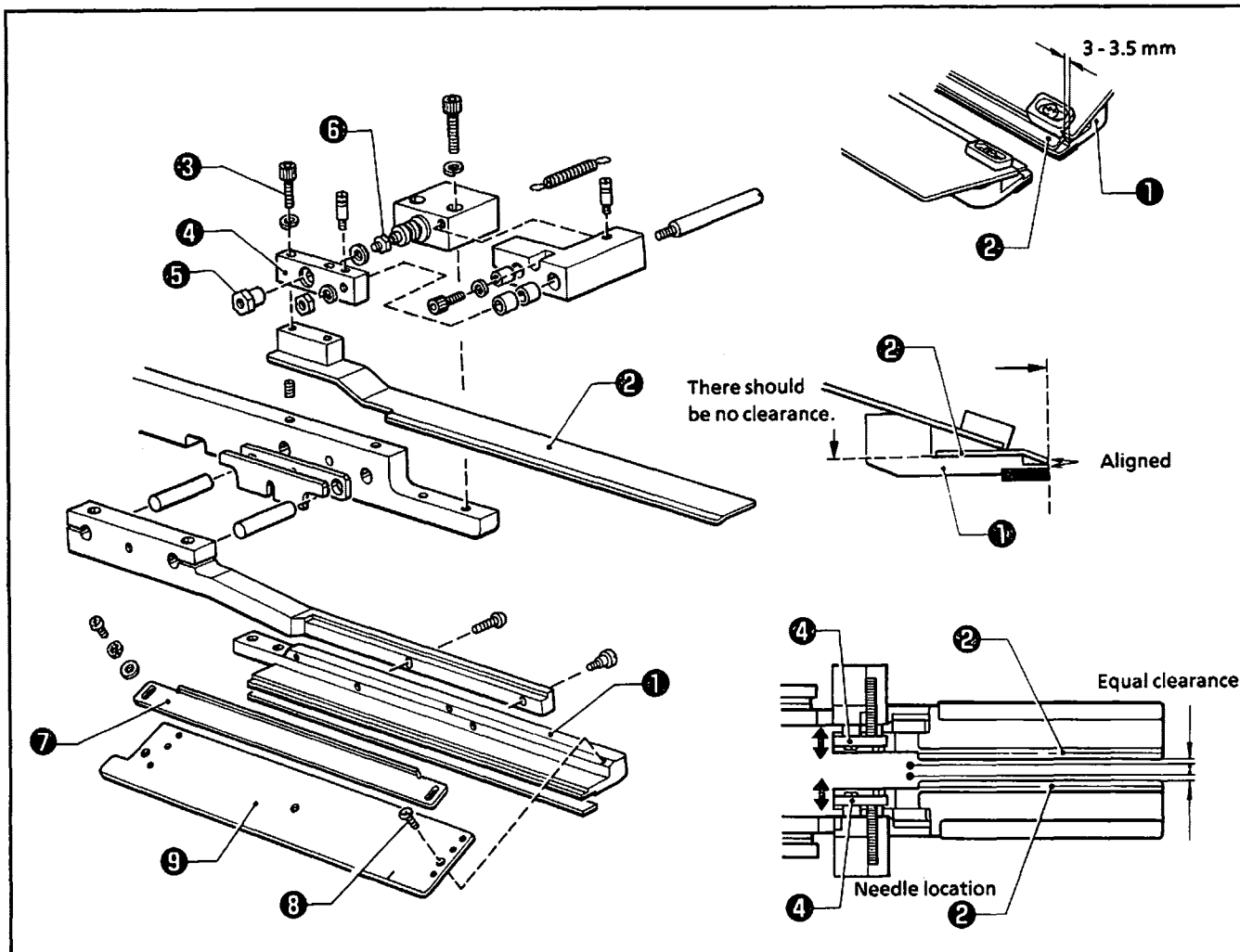
(Adjustment)

Loosen the nut ①, and adjust the height using the bolt ②.

Loosen the bolt ② to raise the carriage feed, or tighten the bolt ② to lower it.

※ At this time, set the power switch to OFF, and check that the flap presser does not strike the machine head by manually moving the carriage feed back and forth.

(2) Folding plate



1. Adjusting the position

The edge of the carriage feed ① should be aligned with the edge of the folding plate ②, and the folding plate ② should be within 3 - 3.5 mm in from the front edge of the carriage feed ①.

(Adjustment)

Loosen the two bolts ③, and shift the folding plate ② left or right so that its edge is aligned with that of the carriage feed ①. Slide the folding plate ② back and forth so that the distance to the edge of the carriage feed is 3 - 3.5 mm, then tighten the bolts ③.

2. Make sure that the folding plate ② is fitted on the carriage feed ① surface.

(Adjustment)

Bend the folding plate ② so that it lies flat on the carriage feed ① surface.

3. When the folding plate ② is protruding the furthest, there should be a clearance between it and the needle.

※ To check, manually pull the cylinder connecting plate ④ toward the needle, and move the carriage feed ① back and forth.

(Adjustment)

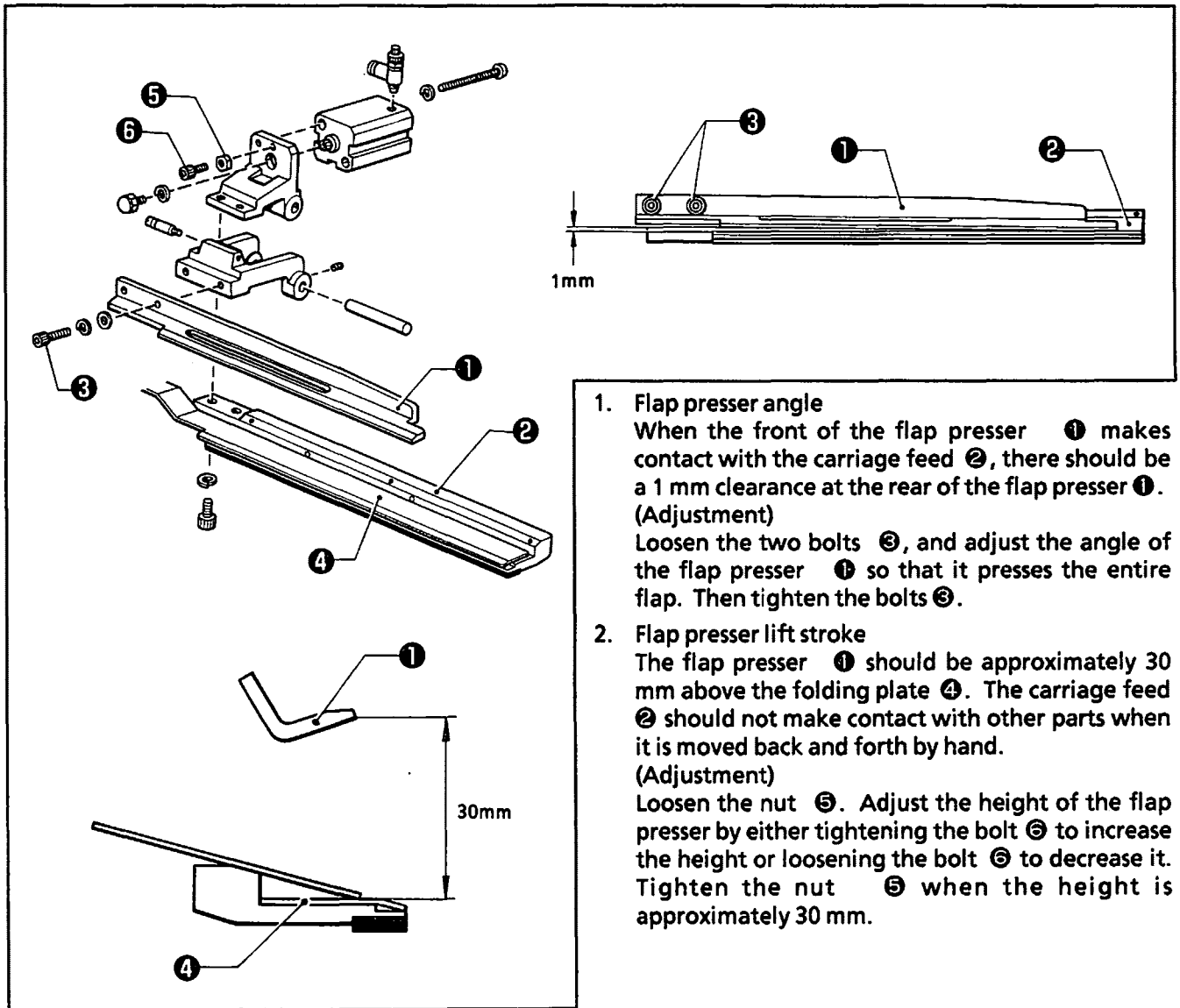
Release the air.

Pull the cylinder connecting plate ④ toward the folding plate ② by hand. Turn the pulley to lower the needle. Loosen the nuts ⑤ and ⑥, reduce the clearance between the needle and the folding plate ②. Tighten the nut ⑤ until the clearance between the needle and the folding plate ② is 1 mm. Then, secure the nut ⑤ using a wrench, tighten the nut ⑥.

※ While moving the cylinder connecting plate ④ toward the needle by hand, tighten the nut ⑤.

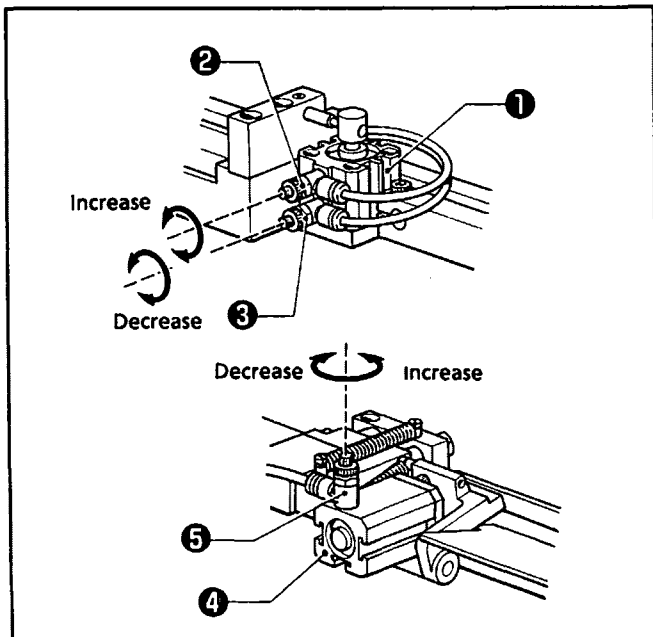
4. When the gauge is set for single welt larger than 16 mm, mount the folding plate supporter ⑦ to carriage feed U-SR ⑧ using the two screws ⑨.

(3) Flap presser



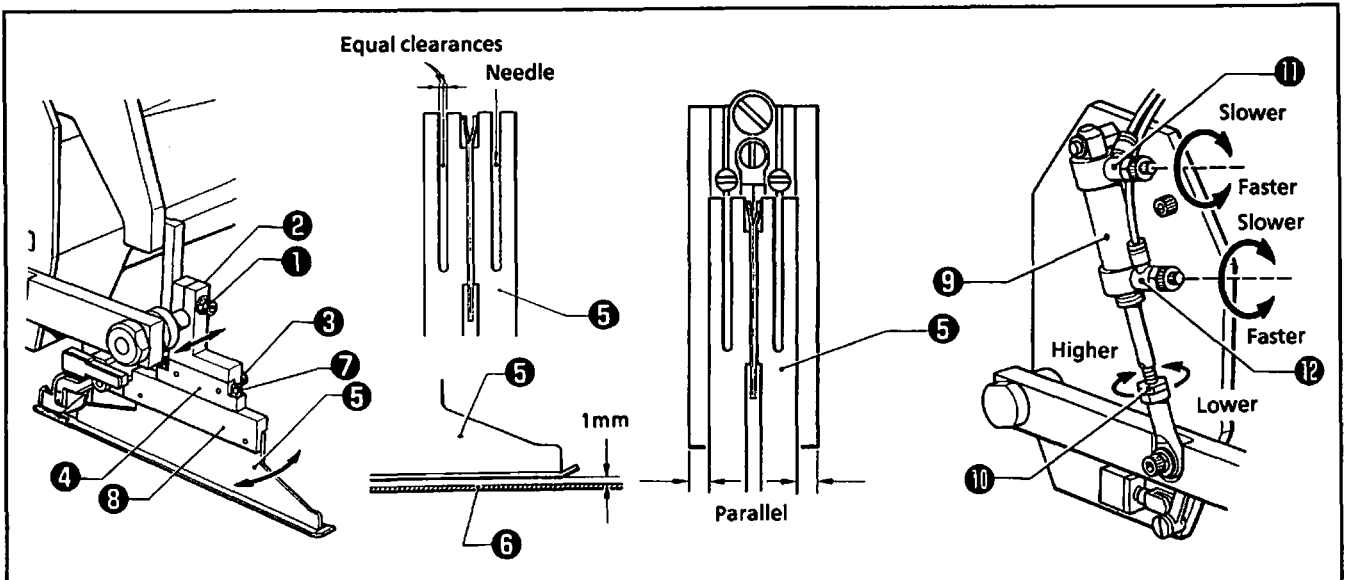
1. **Flap presser angle**
 When the front of the flap presser ① makes contact with the carriage feed ②, there should be a 1 mm clearance at the rear of the flap presser ①.
 (Adjustment)
 Loosen the two bolts ⑤, and adjust the angle of the flap presser ① so that it presses the entire flap. Then tighten the bolts ⑤.
2. **Flap presser lift stroke**
 The flap presser ① should be approximately 30 mm above the folding plate ④. The carriage feed ② should not make contact with other parts when it is moved back and forth by hand.
 (Adjustment)
 Loosen the nut ⑤. Adjust the height of the flap presser by either tightening the bolt ⑥ to increase the height or loosening the bolt ⑥ to decrease it. Tighten the nut ⑤ when the height is approximately 30 mm.

(4) Carriage feed and flap presser operating speed



1. **Carriage feed descent speed**
 Adjust the speed control joint ② of the cylinder assembly ① to the speed at which no shock in carriage feed operation occurs.
2. **Carriage feed lifting speed**
 Adjust the speed control joint ③ of the cylinder assembly ① to the speed at which no shock in carriage feed operation occurs. Tighten to decrease, or loosen to increase, the speed.
3. **Flap presser descent speed**
 Adjust the speed control joint ⑤ of the cylinder assembly ④ to the speed at which no shock in flap presser operation occurs. Tighten to decrease, or loosen to increase, the speed.

7 Adjusting the binder



1. Adjusting the position

When the binder is lowered, the needle should descend to approximately the center of the needle location in the binder, and there should be a clearance from the needle to the slot of the binder.

(Left - right adjustment)

Loosen the bolt ①, and shift fitting plate A ② left or right so that the needle descends to approximately the center of the needle location in the binder. Then tighten the bolt ①.

(Front-back adjustment)

Loosen the two bolts ③, and shift fitting plate B ④ back and forth so that the needle does not contact the edge of the binder and so that the clearance between the bottom of the binder ⑤ and the top of the slide plate ⑥ is 1 mm. Then tighten the two bolts ③.

2. Parallelism to the carriage feed

The binder ⑤ should be parallel to the inner surface of the carriage feed when the binder ⑤ is lowered and seen from the front.

(Adjustment)

Loosen the two bolts ⑦, and shift fitting plate C ⑧ left or right so that the binder is parallel to the needle plate. Then tighten the bolts ⑦.

※ Make sure that the needle descends to the center of the binder needle location.

3. Cloth slide plate height

When the binder ⑤ is lowered, the clearance between the bottom of the binder ⑤ and the top of the cloth slide plate ⑥ should be approximately 1 mm (standard), and these surfaces should be parallel.

※ The clearance should be enough so that two piles of the material will move easily under the binder ⑤.

(Adjustment)

Loosen the nut ⑩ of the cylinder ⑨, and turn the cylinder rod until the clearance is approximately 1 mm (standard). Then tighten the nut ⑩.

4. Vertical speed of the binder

The speed should be adjusted so that the binder travels as fast as possible without any shock on the ascending or descending stroke. It should descend before the folding plate starts to operate.

(Adjustment)

Ascent

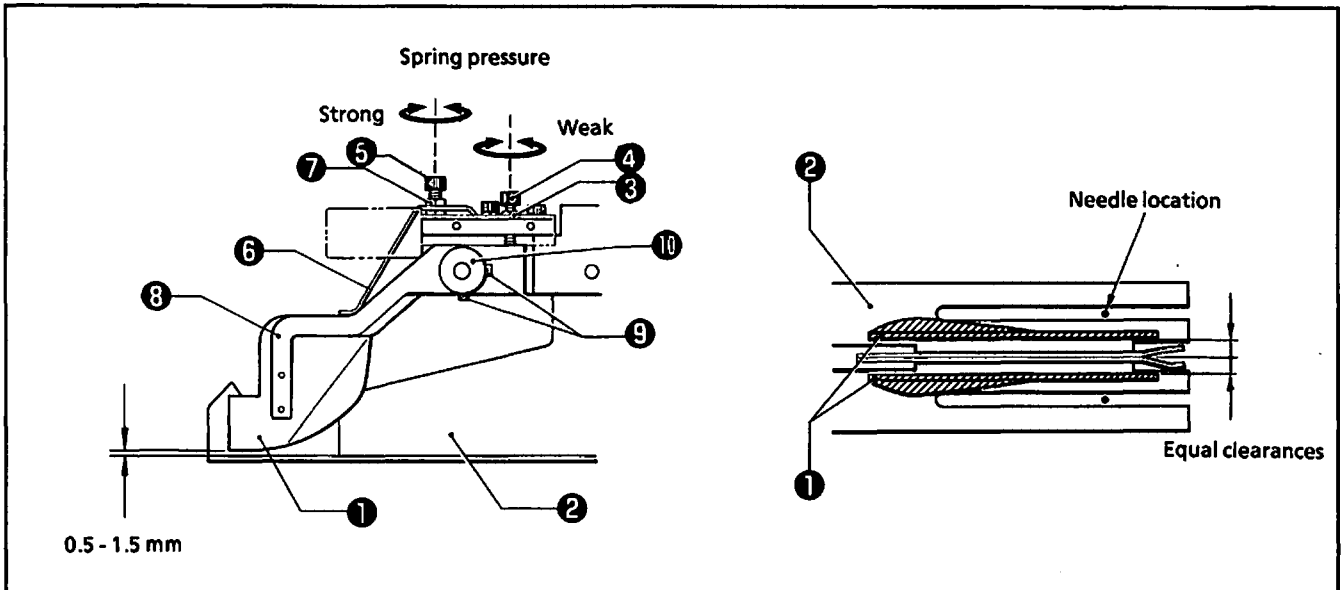
Loosen (turn counterclockwise) the speed control ⑪ on the top of the cylinder ⑨ to increase the speed; tighten (turn clockwise) to decrease the speed.

Descent

Loosen (turn counterclockwise) the speed control ⑫ on the bottom of the cylinder ⑨ to increase the speed; tighten (turn clockwise) to decrease the speed.

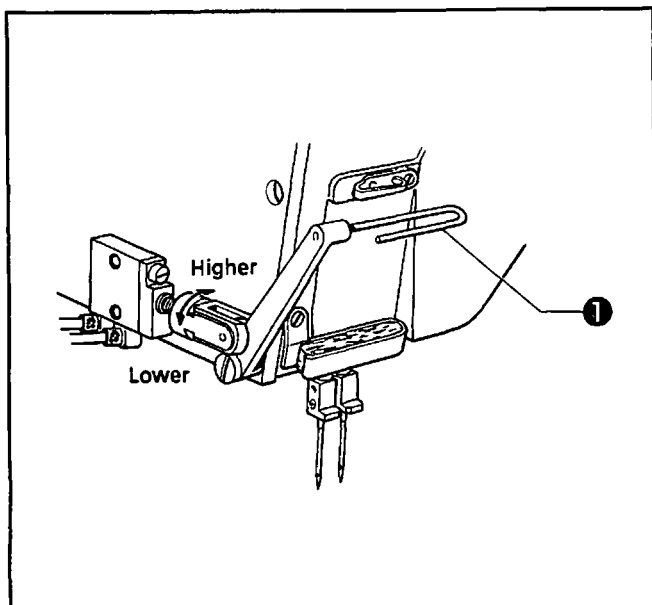
※ The folding plate timer can be adjusted to 250 msec. or 350 msec. using DIP switch 2-4.

8 Adjusting the cloth guide



1. **Left-right cloth guide position**
 The clearance between the cloth guide ① and the binder assembly ② should be equal on left and right sides. The cloth guide ① should not make contact with both the needle and the binder assembly ②.
 ※ The clearance will vary with the clearance between the binder and the needle.
2. **Cloth guide height**
 The clearance between the bottom of the cloth guide ① and the top of the binder assembly ② should be 0.5 - 1.5 mm (standard).
 ※ The clearance should be adjusted according to material thickness, and should allow the material to slide easily over the cloth guide ①.
 (Adjustment)
 Loosen the nut ③, and turn the bolt ④ (tighten to raise, loosen to lower) to adjust the clearance. Then, while holding the bolt ④ so that it will not turn, tighten the nut ③.
 The clearance between the bottom of the cloth guide ① and the top of the binder assembly ② should not exceed 1.5 mm. Turn the set screw ⑤ to adjust the clearance.
3. **Plate spring tension**
 Adjust the tension of the plate spring ⑥ in the cloth guide ① according to the material thickness.
 ※ The tension will vary with material thickness; if the tension is too weak, the welt may slip or needles may break. If it is too strong, the welt may be pulled.
 (Adjustment)
 Turn the nut ⑦ clockwise to increase the tension, or counterclockwise to decrease the tension.
4. **Cloth guide movement**
 There should be no play on the left and right sides of the cloth guide arm ⑧. The arm should rise more than 5 mm when lifted by hand, and should descend smoothly when controlled by the pressure of the plate spring ⑥.
 (Adjustment)
 Loosen the two screws ⑨, and move the set collar ⑩.
 Adjust the cloth guide arm ⑧ so that there is no play on the left and right sides, and so that it rises more than 5 mm when lifted by hand.
 Tighten the screws ⑨.
 ※ For sewing machines with a flap sensor, adjust the sensor fitting screw so that it does not hit the plate spring ⑥ and the cloth guide arm ⑧.

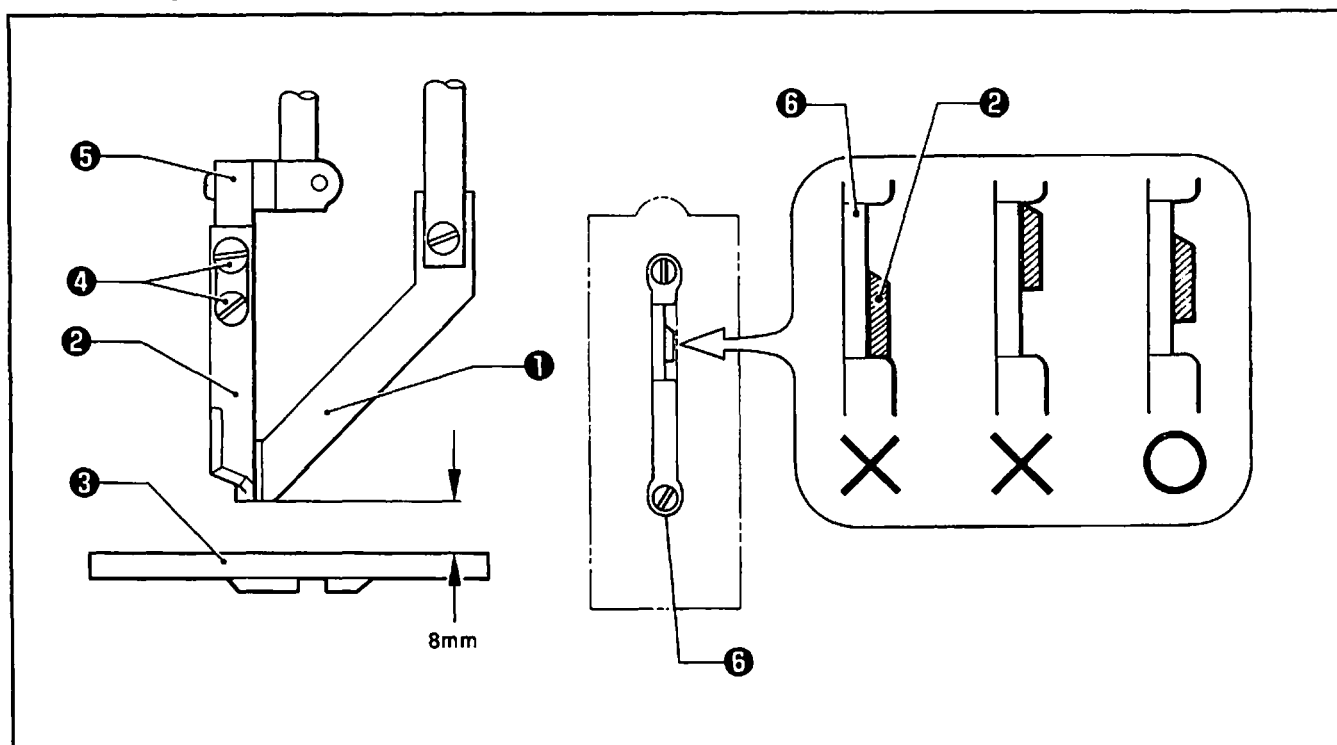
9 Adjusting the thread take-up (Required to assure thread remainder for sewing start.)



1. Make sure the thread take-up **1** does not hit the arm and that it does not disrupt the thread's passage.
(Adjustment)
Turn the cylinder rod to adjust the position of the thread take-up **1**.

10 Adjusting the center knife assembly

(1) Adjusting the center knife



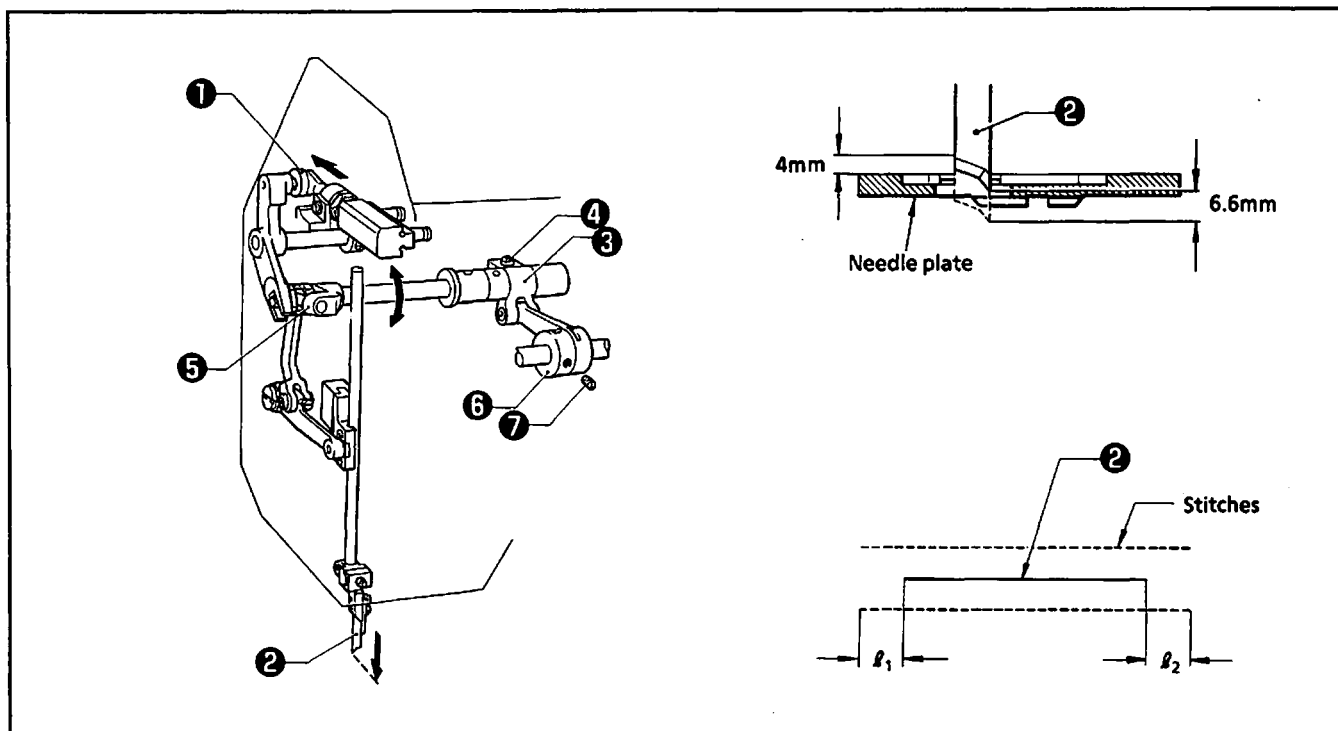
When the center knife guide **1** bottom is aligned with the tip of the center knife **2**, the clearance between the center knife **2** tip and the needle plate **3** top should be 8 mm (the same height as the center knife guide **1**).

(Adjustment)

Loosen the two stud screws **4**, and raise or lower the center knife **2** so that the clearance between the center knife **2** and the needle plate **3** top is 8 mm. Tighten the stud screws **4**.

※ Make sure that the center knife **2** does not make contact with the fixed knife **5**.

(2) Adjusting the center knife stroke



1. The center knife ② stroke should be approximately 6.6 mm.

(Check)

Set the power and the air supply to OFF. Push the cylinder ① by hand, and turn the pulley to move the center knife ② up and down.

At this time, make sure that the center knife ② stroke is approximately 6.6 mm. When the center knife ② is at its highest position, the clearance between the needle plate top and the corner of the center knife ② should be 4 mm.

(Adjustment)

- a. Set the power and the air supply to OFF. While pushing the cylinder ① by hand to operate the center knife, turn the pulley to move the center knife ② to its down position, then stop the pulley.
 - b. Loosen the screw ④ in the crank shaft arm ③. Change the angle of the upper knife rock shaft ⑤ so that the center knife ② is 4 mm above the needle plate top. Tighten the screw ④. At this time, make sure that there is a minimum of 1 mm clearance between the top of the knife holder and the bottom of the arm when the center knife ② does not operate.
 - c. Check that the stroke is 6.6 mm.
2. Make sure that the center knife ② reaches its lowest position shortly after the needle bar reaches its lowest position.

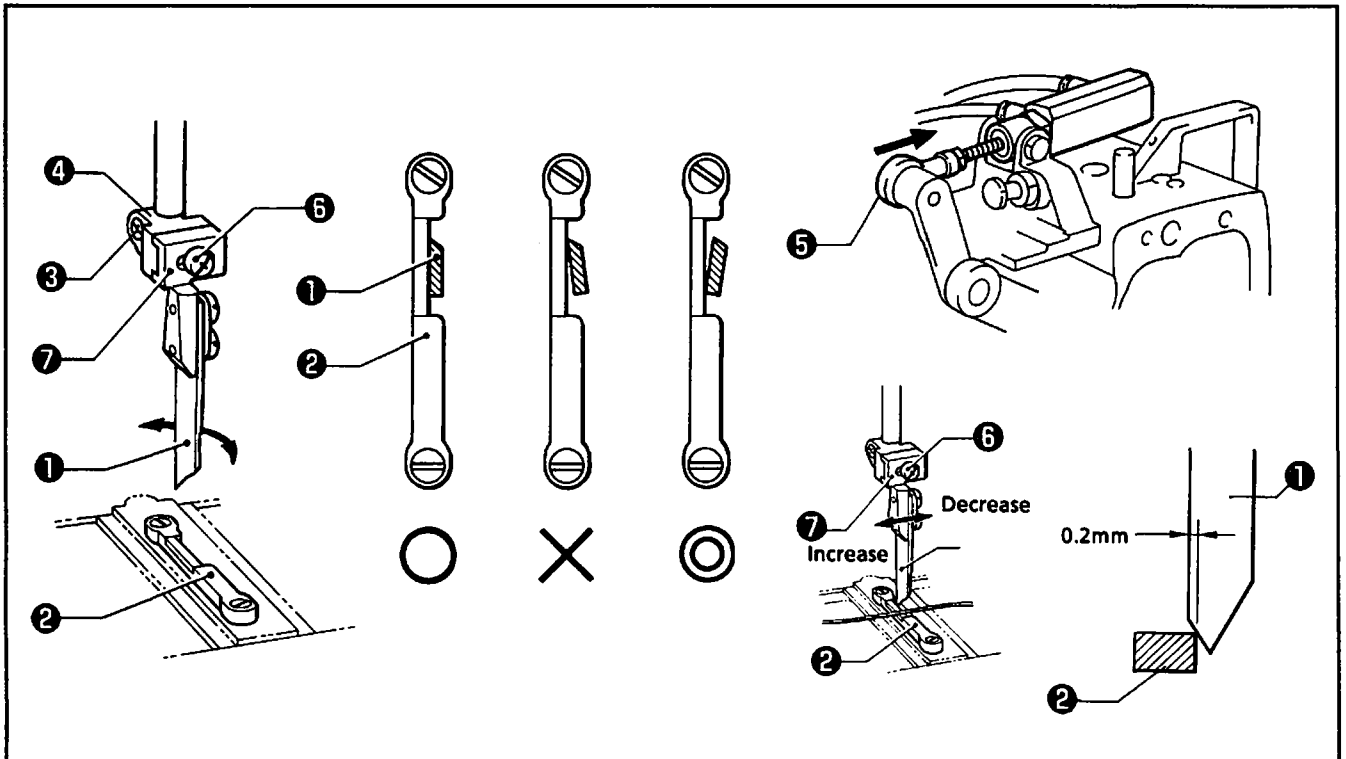
(Adjustment)

Make sure the set screw ⑦ in the eccentric wheel ⑥ is properly positioned on the screw flat in the upper shaft. If it is not, reset the set screw ⑦ in the eccentric wheel ⑥.

★ The clearance between the center knife ② and the needle should be 5.5 mm.

Center knife ② ON timing	Center knife correction 0	Correction (1 increment)	Correction 9
Small gauge (8, 10, 12, 14 mm)	$l_1 = l_2 =$	5.5 mm – approx. 0.3 mm	8.5 mm
Large gauge (16, 18, 20 mm)	$l_1 = l_2 =$	9.4 mm – approx. 0.3 mm plus	12.5 mm

(3) Adjusting the center knife pressure



1. Adjusting the center knife left-right angle

The proper position for the center knife ① and the cutting edge of the fixed knife ② should be as shown in the figure marked with ⊙.

(Adjustment)

Loosen the screw ③, and turn the center knife holder ④ left or right to adjust the parallelism of the fixed knife ② and the center knife ①. Then tighten the screw ③.

2. Adjusting the center knife pressure

Make sure that the center knife ① is as shown in the figure above when the fixed knife ② starts to cross with the center knife ①.

※ If the knife pressure is greater than required, the knife will wear quickly, and the knife will not cut properly.

(Check for correct knife pressure)

1. After turning off the power and the air supply, set a thread over the fixed knife ②.

2. Turn the pulley while pushing the link ball ⑤. When the center knife ① descends and crosses with the fixed knife ②, check that the thread is cut.

3. When the center knife ① crosses with the fixed knife ②, the pulley should not become difficult to turn, and should move smoothly.

(Adjustment)

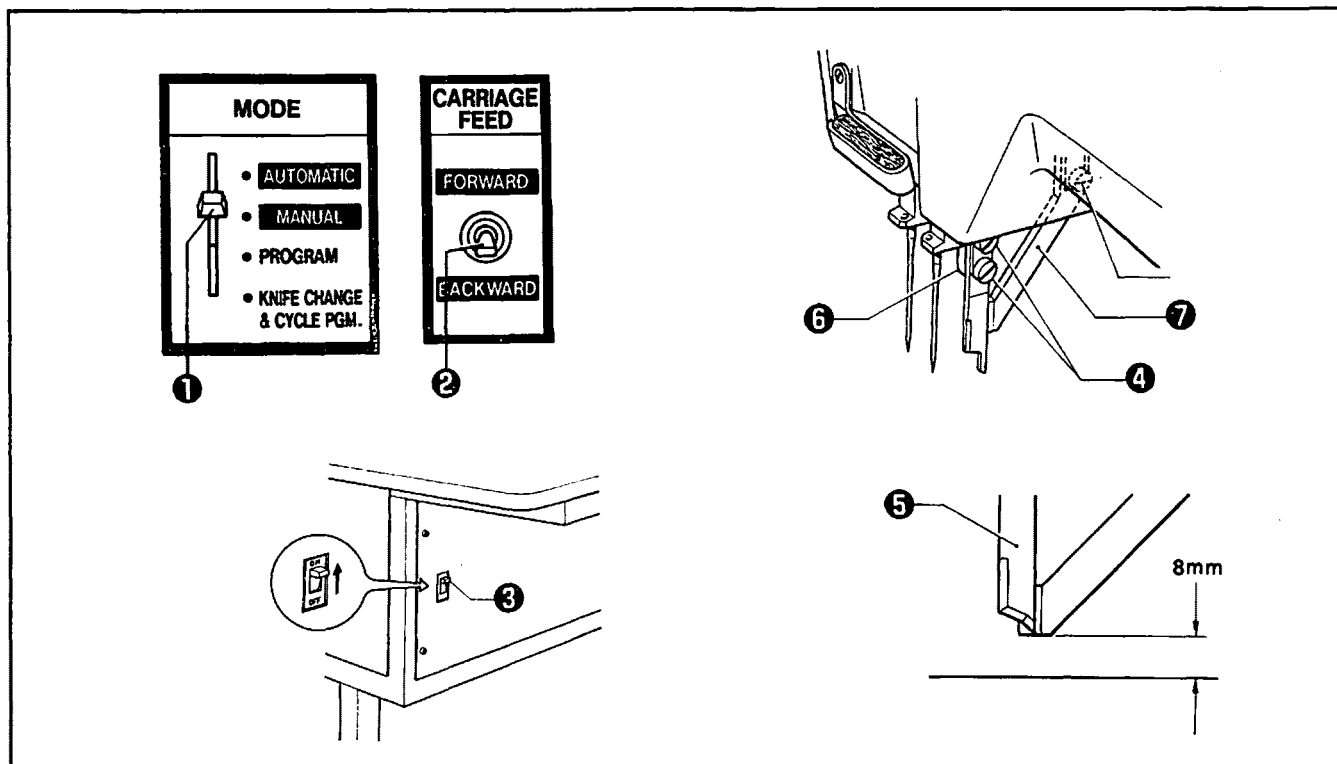
Loosen the screw ⑥, and shift the knife bracket ⑦ left or right.

(Attach the center knife ① to the fixed knife ② 0.2 mm in as shown in the figure above.)

When the center knife ① crosses with the fixed knife ②, adjust the center knife ① so that it moves smoothly and the pulley does not become difficult to turn.

Tighten the screw ⑥.

(4) Replacing the center knife



1. Set the **MODE** switch ① to **MANUAL**.
2. Set the **CARRIAGE FEED** switch ② to **FORWARD**. The carriage feed will advance.
3. Set the power switch ③ to **OFF**.
4. Remove the screws ④, and the center knife ⑤.
※ Attachment is the reverse of removal.

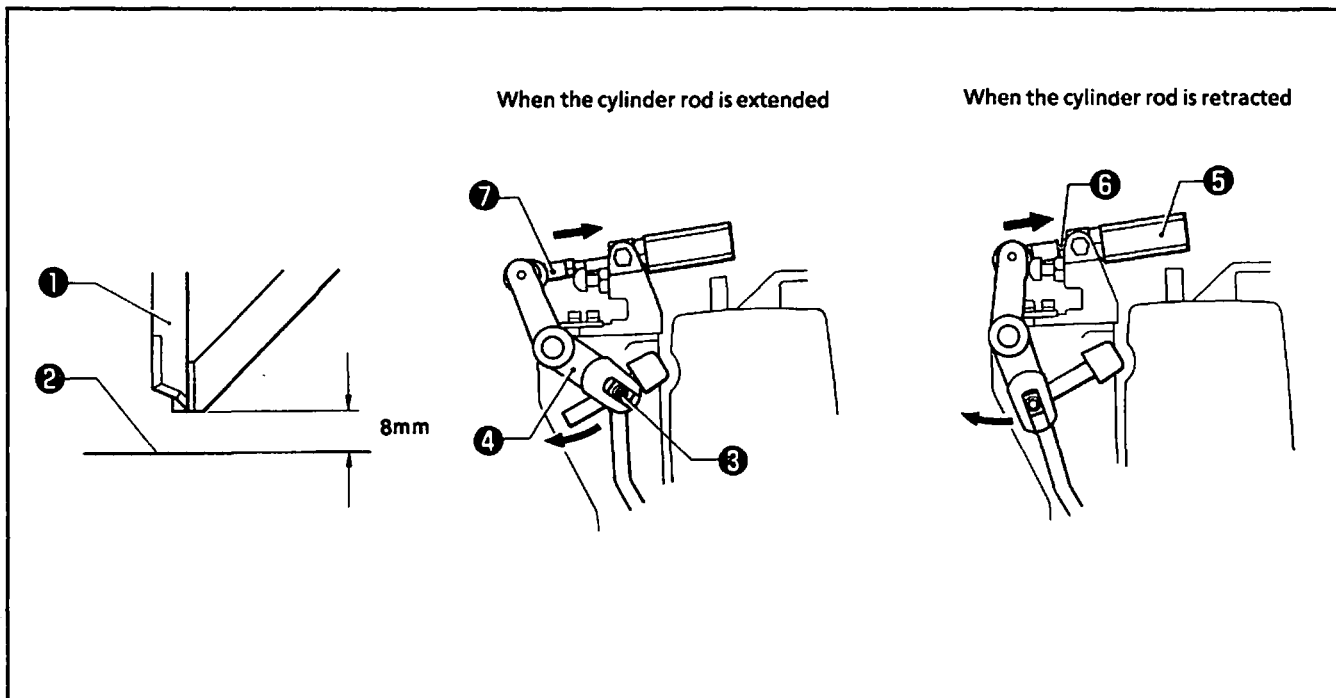
Cautions concerning attachment

1. Align the center knife ⑤ with the screw-hole in the center knife bracket ⑥, and secure it using the screws ④.
2. The tip of the center knife ⑤ should be 8 mm above the needle plate top.
(Align the center knife tip with the center knife guide ⑦ bottom.)
3. Set the power switch to **ON**, and make sure that the center knife ⑤ tip does not protrude from the center knife guide ⑦.

When BAS-605 or 606 is used

1. Set the **CARRIAGE FEED** switch ② to **FORWARD**. The carriage feed will advance.
2. Set the power switch ③ to **OFF**.
3. Remove the screws ④ and the center knife ⑤.
※ Attachment is the reverse of removal.

(5) Adjusting the center knife cylinder



When the center knife ① is raised 8 mm above the needle plate ②, the driving connector slide block ③ should be on the right of forked part of the selector lever ④ with a slight clearance.

As well, when the center knife ① is raised 4 mm above the needle plate ②, the driving connector slide block ③ should be on the left of the forked part of the selector lever ④ with a slight clearance.

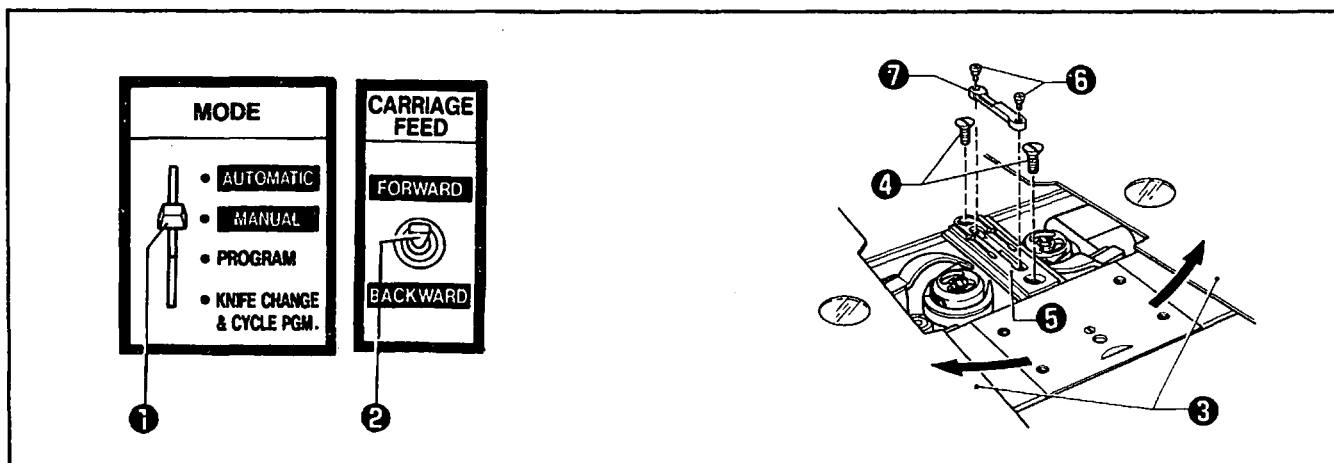
(Adjustment)

Turn off the power and the air supply, and retract the cylinder rod.

Loosen the nut ⑥ of the cylinder ⑤, and adjust the protrusion of the cylinder rod ⑦ by changing its length so that the driving connector slide block ③ is on the left of the forked part of the selector lever ④.

Tighten the nut ⑥.

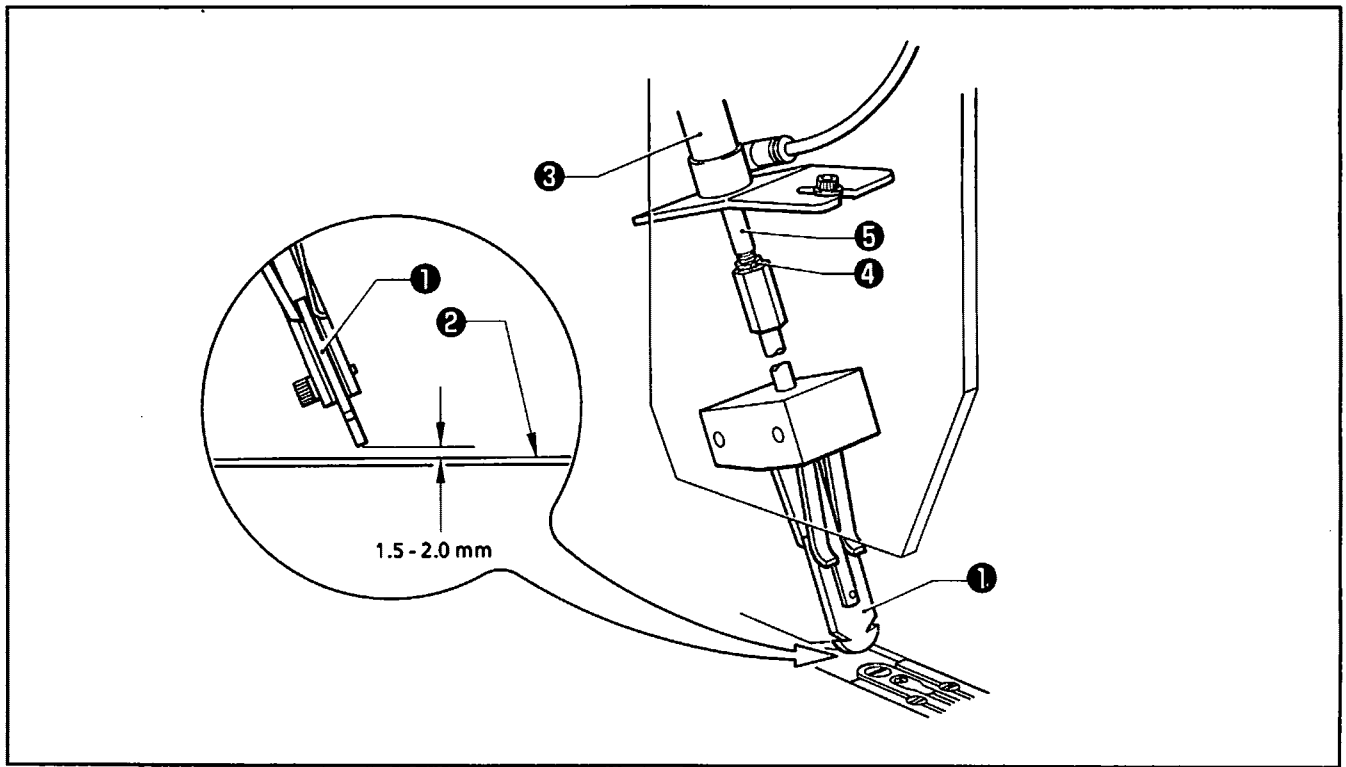
(6) Replacing the fixed knife



1. Set the MODE switch ① to MANUAL.
 2. Set the CARRIAGE FEED switch ② to FORWARD. The carriage feed will advance.
 3. Set the power switch to OFF.
 4. Remove cloth slide plates R and L ③
 5. Remove the screw ④, and the needle plate ⑤.
 6. Remove set screws ⑥, and the fixed knife ⑦.
- ※ Attachment is the reverse of removal.

11 Adjusting the movable knife assembly

(1) Adjusting the movable knife stroke



There should be a 1.5 - 2.0 mm clearance from the tip of the movable knife ① to the top of the cloth slide plate ② when the movable knife ① is at the bottom of its stroke.

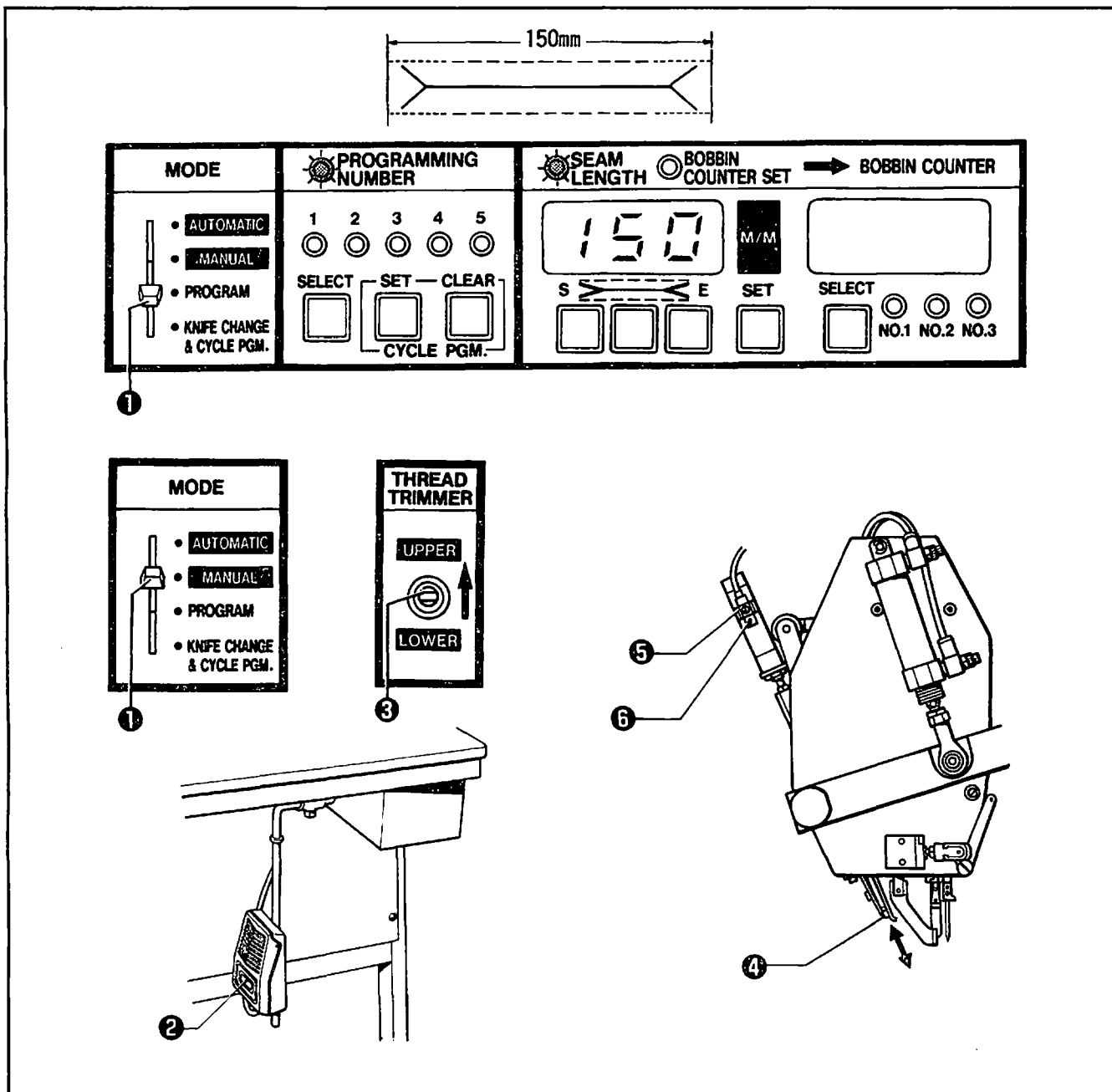
(Adjustment)

Loosen the nut ④ in the cylinder assembly ③, and extend or retract the cylinder rod ⑤ to adjust the clearance.

Extend the rod ⑤ to decrease the clearance.

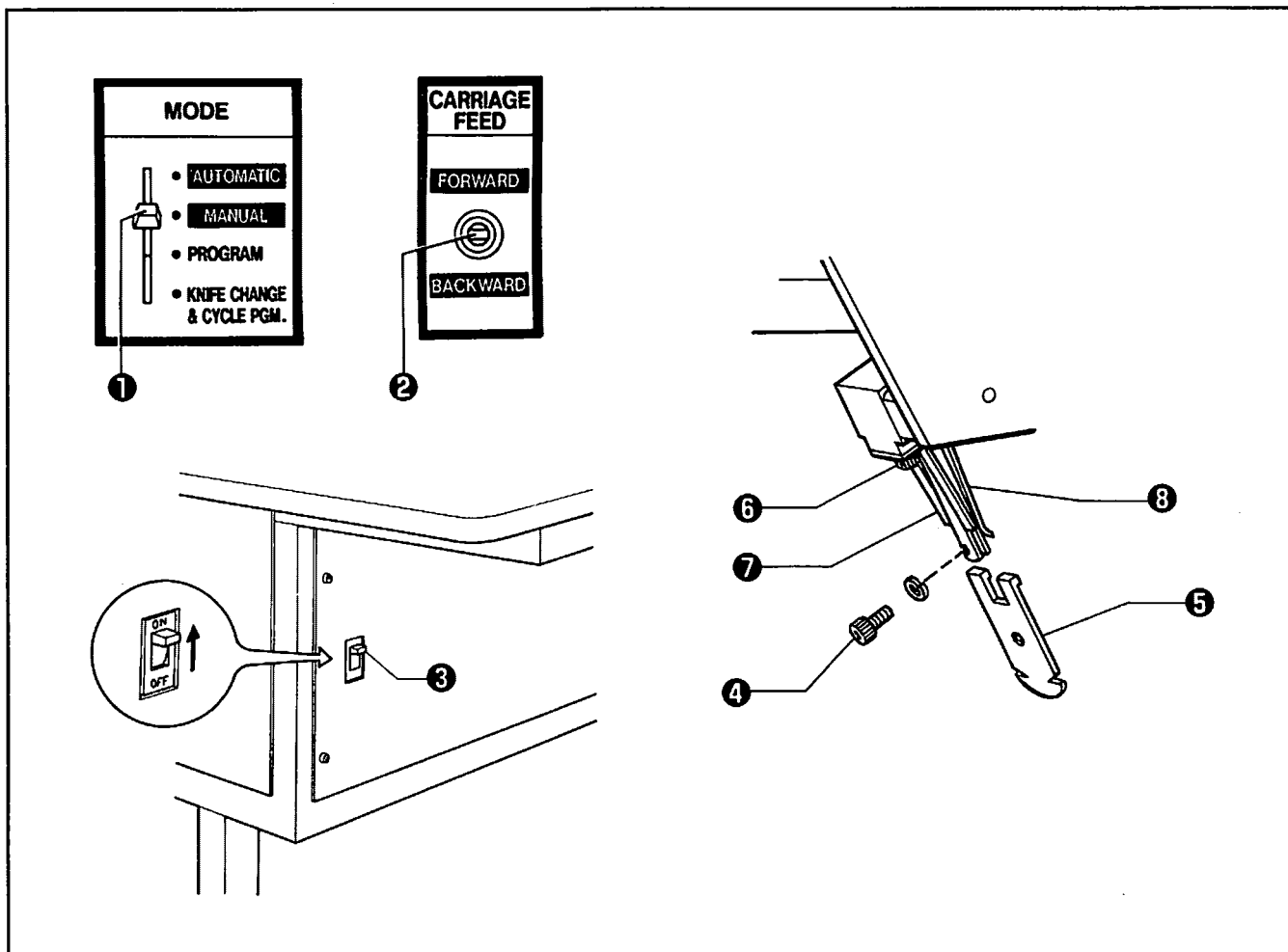
Retract the rod ⑤ to increase the clearance.

(2) Adjusting the movable knife sensor



1. Set the MODE switch ① to PROGRAM.
Set the seam length to 150 mm.
2. Set the MODE switch ① to MANUAL.
3. Set a piece of material in place so that the cushion on the underside of the carriage feed will not wear.
4. Press the start switch ②.
The carriage feed will move to the sewing start position.
5. Set the THREAD TRIMMER switch ③ to UPPER.
The movable knife ④ will descend.
Use the movable knife sensor ⑤ to adjust the timing of when the thread trimmer turns off.
6. Slide the movable knife sensor ⑤ up or down, and secure it at the position where the movable knife ④ does not strike the flap presser (or folding plate).
※ When the movable knife ④ is off, it will not operate if the movable knife sensor indicator ⑥ is already on.

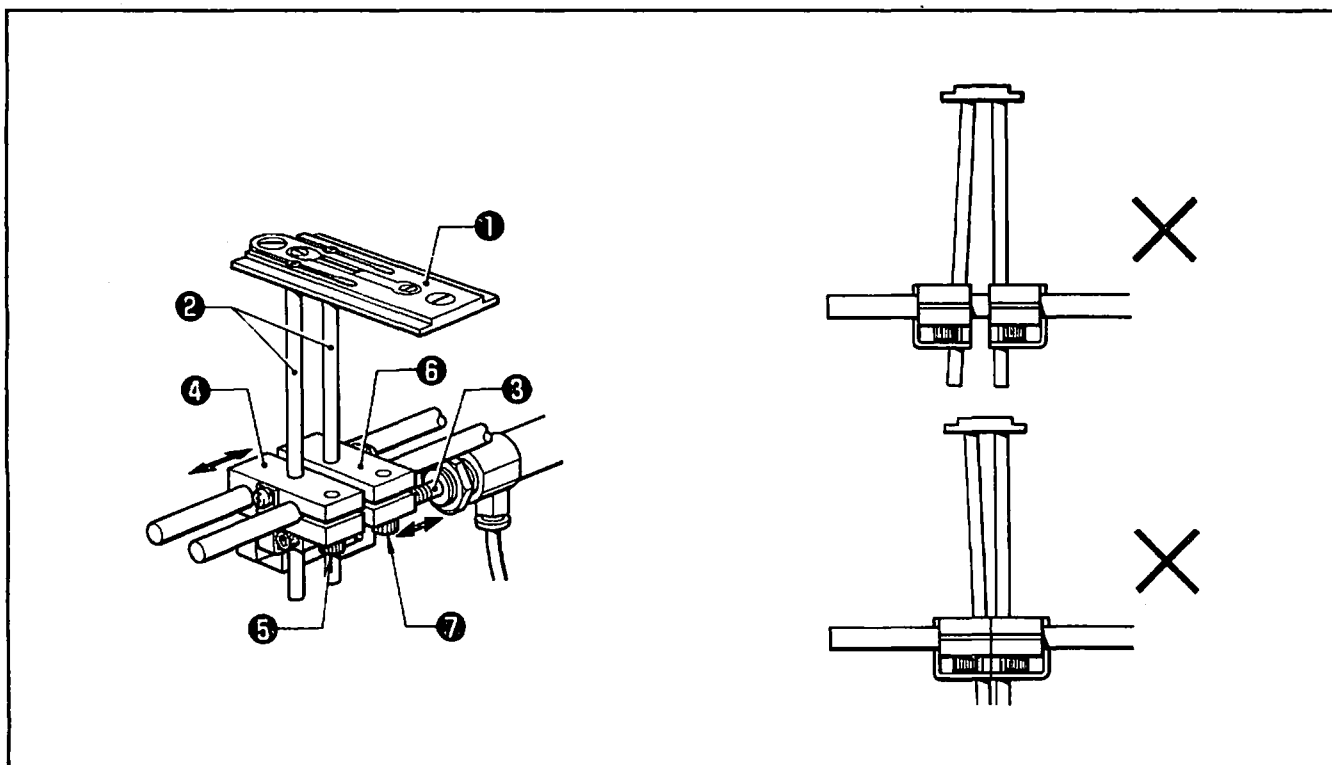
(3) Replacing the movable knife



1. Set the MODE switch ① to MANUAL.
2. Set the CARRIAGE FEED switch ② to FORWARD to move the carriage feed out of the way so that knife replacement is easier.
3. Set the power switch ③ to OFF.
4. Remove the screw ④, and the movable knife ⑤.
5. Remove the screw ⑥, and the fixed knife ⑦.
※ Attachment is the reverse of removal.
※ Increase the pressure if the knife does not cut properly.

12 Adjusting the bobbin thread knife assembly

(1) Adjusting the bobbin thread knife left-right position



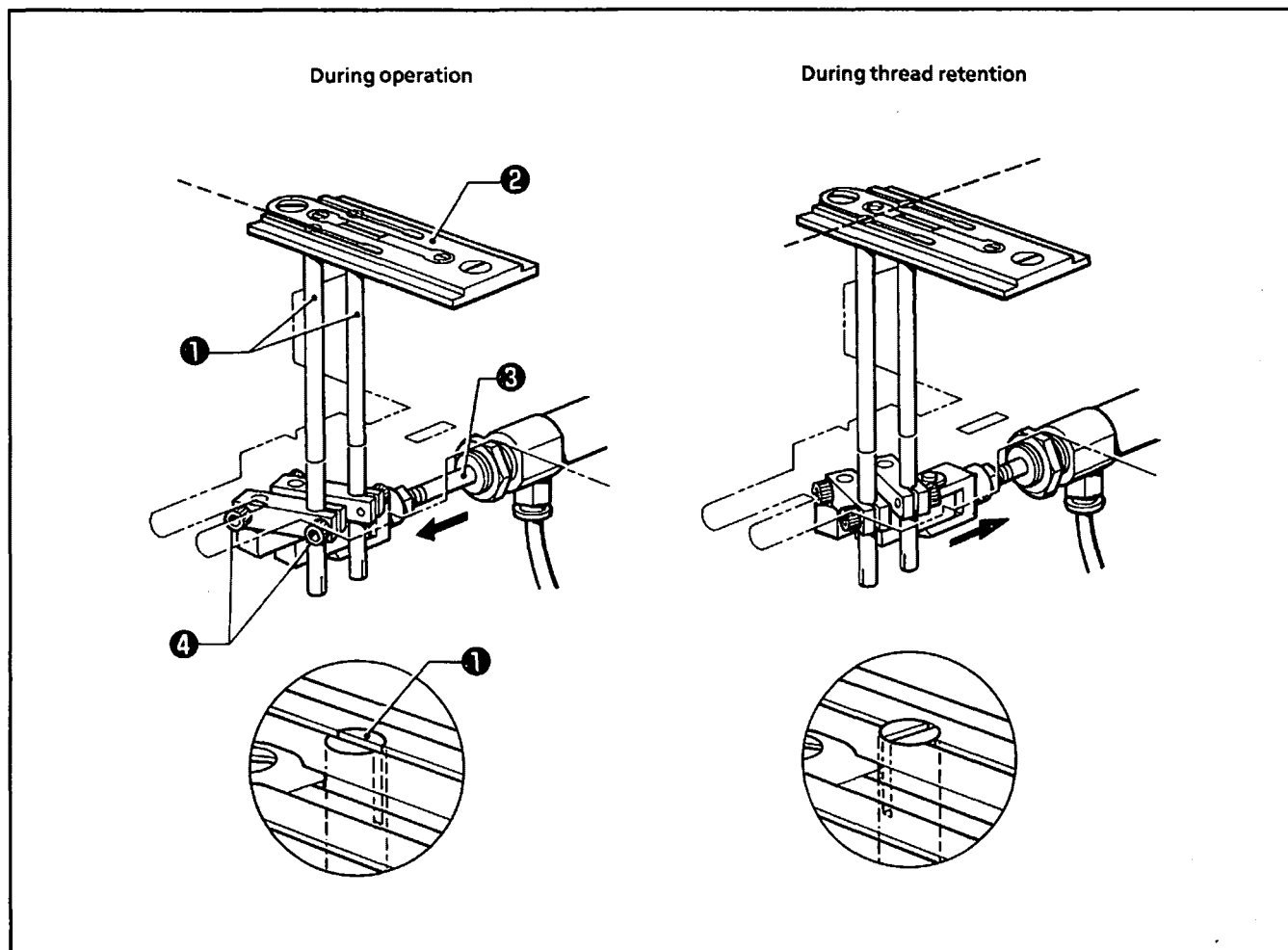
When the bobbin thread knives ② are in the two knife holes of the needle plate ①, move the cylinder rod ③ left or right manually. The cylinder rod ③ should move smoothly.

※ If the cylinder rod ③ movement is stiff, the knives ② may be twisted because only the tops of the knives ② are in the needle plate knife holes.

(Adjustment)

1. Loosen the bolt ⑤ in knife holder (L) ④.
 2. Move knife holder (L) ④ and the cylinder rod ③ left or right. Tighten the bolt ⑤ at the position where the cylinder rod ③ moves easily.
- ※ There is usually no need to loosen the bolt ⑦ in knife holder (R) ⑥. However, if the right knife is not positioned properly or if the cylinder rod movement is stiff, loosen the bolt ⑦ in knife holder (R) ⑥, and adjust the position of knife holder (R) ⑥ while moving the cylinder rod ③. Then tighten the bolt ⑦ at the position where the cylinder rod ③ moves easily.

(2) Adjusting the bobbin thread knife height and angle



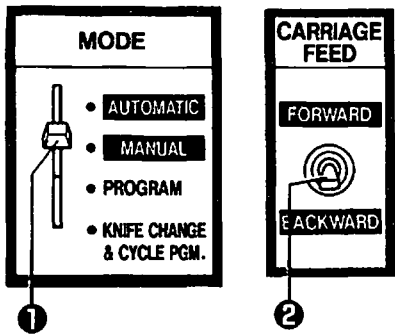
The bobbin thread knives ① should be flush with the top of the needle plate ② or up to 0.2 mm lower. The groove of the bobbin thread knives ① should align with the needle plate ② groove when the knives ① operate (when the cylinder rod ③ retracts).

(Adjustment)

Loosen the bolts ④, and move the bobbin thread knives ① up or down to adjust their heights. Turn the knives ① left or right so that the knives ① are parallel to the groove in the needle plate ② when the knives ① operate (when the cylinder rod ③ extends to the left). Then tighten the bolts ④.

※ Sew to make sure there are neither thread trimming errors nor thread retention errors.

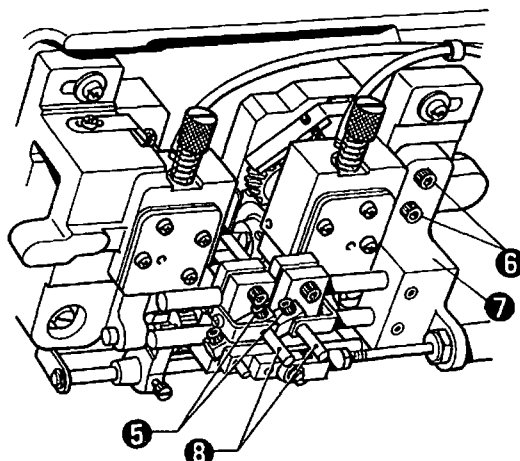
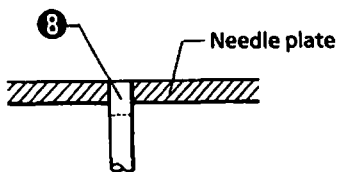
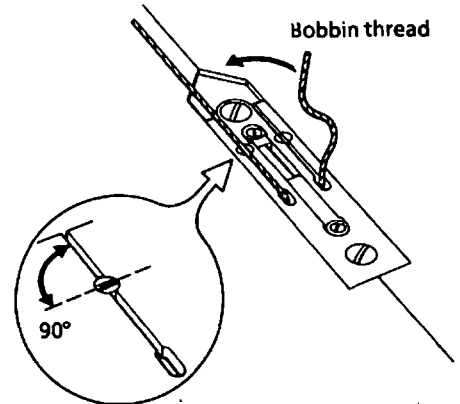
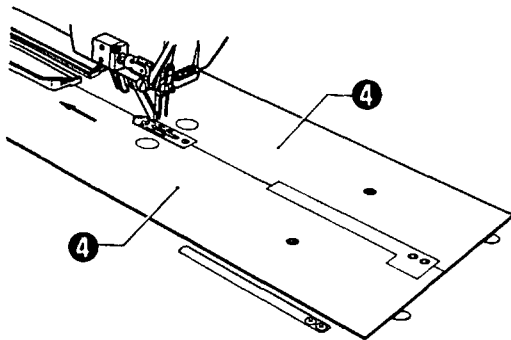
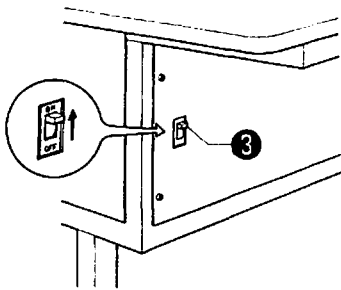
(3) Replacing the bobbin thread knives



1. Set the MODE switch ① to MANUAL.
 2. Set the CARRIAGE FEED switch ② to FORWARD. The carriage feed will advance.
 3. Set the power switch ③ to OFF.
 4. Remove slide plates (R) and (L) ④.
 5. Tilt the machine head until it stops.
 6. Loosen the two screws ⑤, and remove the screws ⑥, and the knife base ⑦.
- ※ Attachment is the reverse of removal.

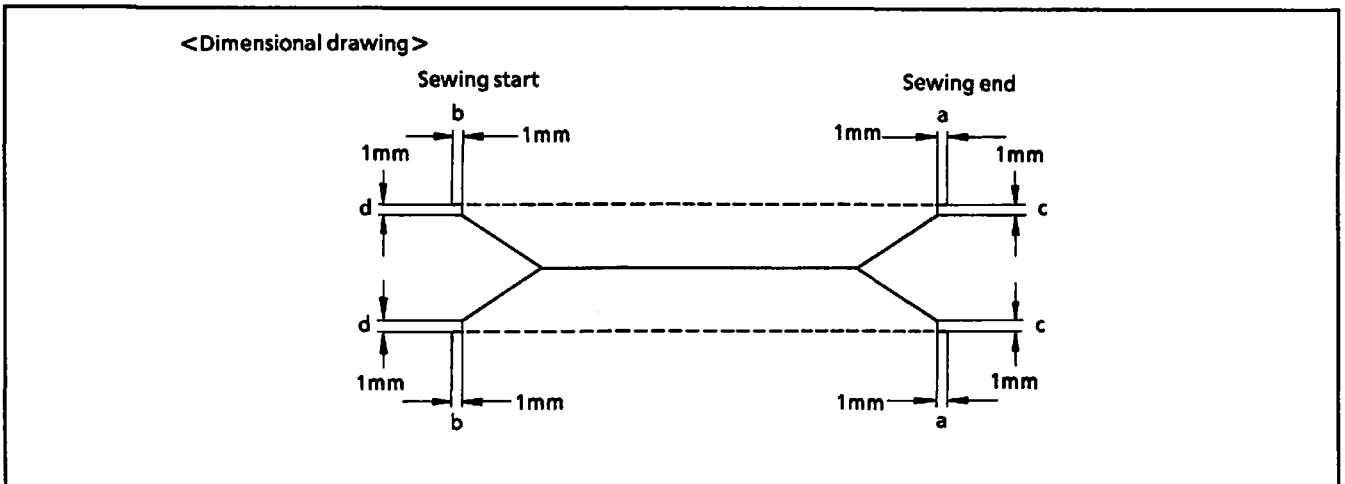
Cautions on attachment

1. Make sure that the bobbin thread knives ⑧ do not extend above the needle plate top.
2. When the cylinder rod is fully retracted, the grooves in the bobbin thread knives ⑧ should be aligned with the grooves in the needle plate.



13 Adjusting the corner knives

(1) Adjusting the corner knife standard position



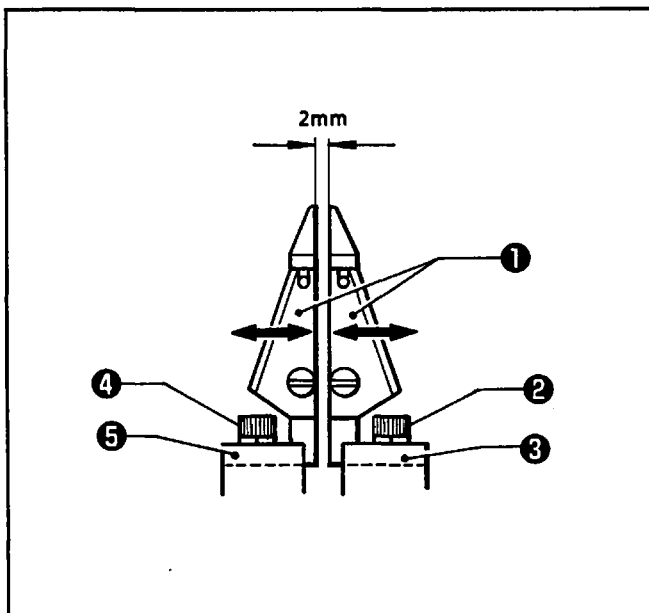
When two pieces of serge are sewn after corner knife position correction value is set to 5-5 and center knife correction value is set to 0-0, the above dimensions should be 1 mm.

※ Change the corner knife position correction value according to material thickness.

When the ceramic corner knife is used, the dimensions may change according to the knife position.

(2) Adjusting the corner knife front-rear position (standard)

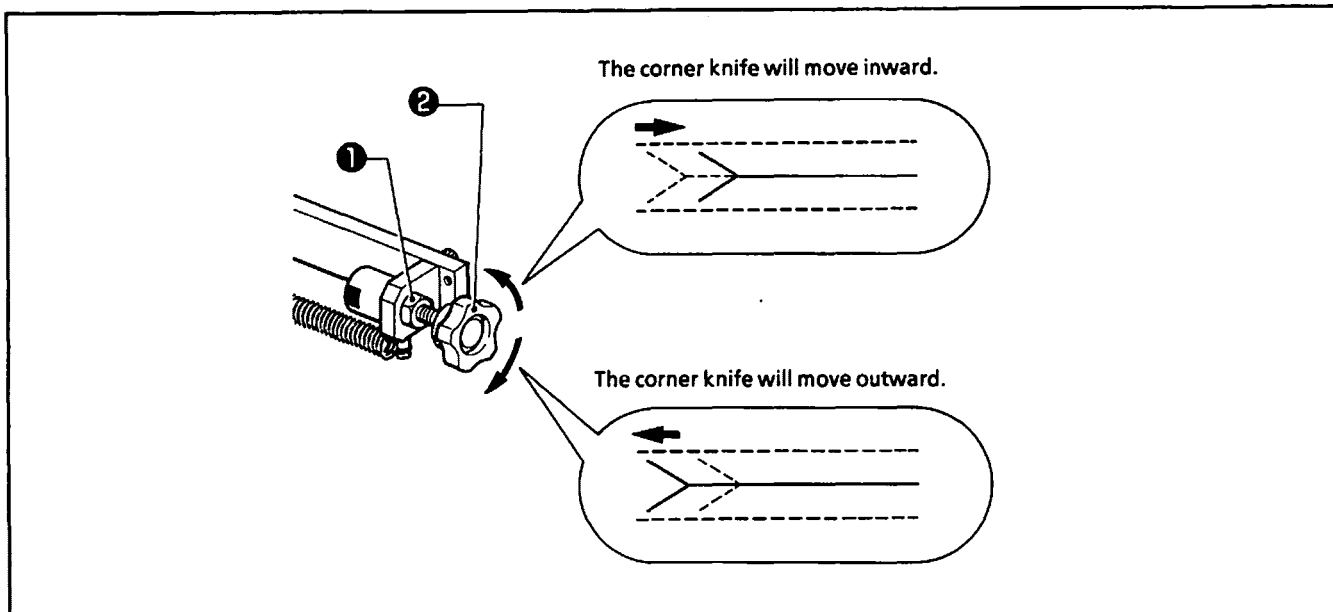
1. Adjusting the corner knife position at the end of sewing



- 1) Set the MODE switch to KNIFE CHANGE & CYCLE PGM., raise the corner knives ①, and release the air.
- 2) The corner knives ① cutting position should be 1 mm in from the sewing end position as shown in Value a. Loosen the bolt ② on the sewing end side, and move the knife base assembly ③ back and forth to adjust it, then retighten the bolt ①.
- 3) Loosen the bolt ④ on the sewing start side, and adjust the knife base assembly ⑤ back and forth so that the clearance between the back sides of the two corner knives ① is 2 mm, then retighten the bolt ④.

※ When the knife base assembly is replaced because of gauge replacement, replace one knife base assembly (either on the sewing start or sewing end side), and adjust the clearance to 2 mm. There should be no significant change in the cutting position.

2. Adjusting the corner knife position at the start of sewing



After performing the adjustment in 1. on the preceding page, perform this adjustment if the sewing start front-rear position is not correct.

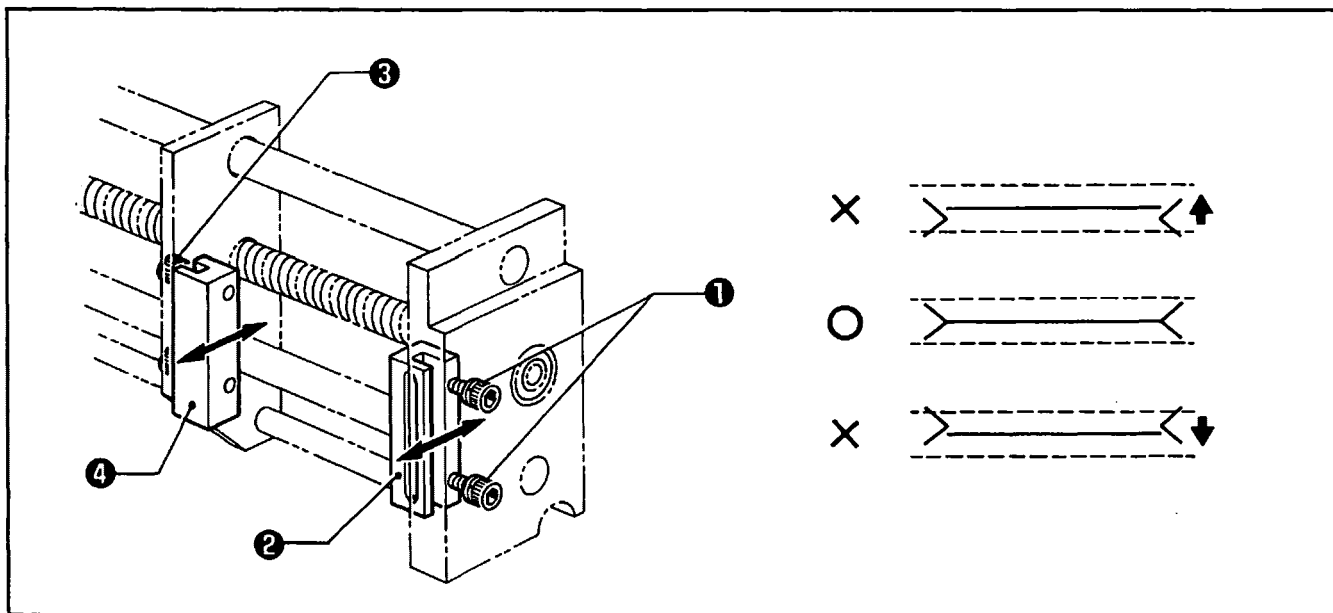
Adjust the corner knife position so that the corner knife cutting position of the sewing start is 1 mm in from the sewing start position as shown in Value b on the preceding page.

(Adjustment)

Loosen the nut ①, turn the knob ② to adjust it, then retighten the nut ①.

※ Sew to confirm the above dimensions.

(3) Adjusting the corner knife left-right position (angle) (standard)



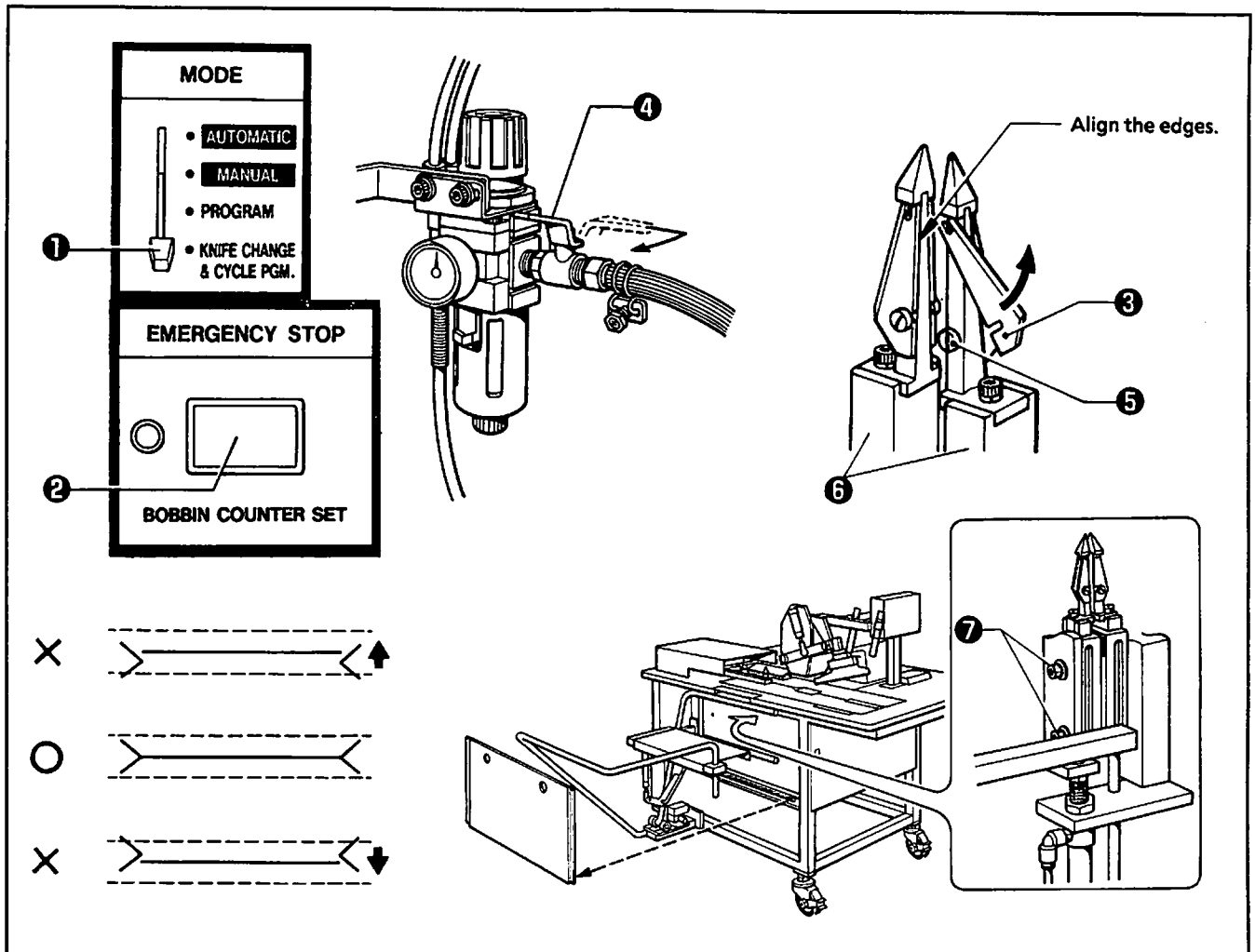
★ The cutting position of the corner knives should be 1 mm in from both the sewing start and end positions, as shown in Values c and d on the preceding page. The left and right clearances should also be identical.

(Adjustment)

Sewing end: Loosen the two bolts ①, move slide guide (L) ② left or right to obtain the dimensions (Value c), then tighten the two bolts ①.

Sewing start: Loosen the two bolts ③, move slide guide (R) ④ left or right to obtain the dimensions (Value d), then tighten the two bolts ③.

(4) Replacing the corner knives

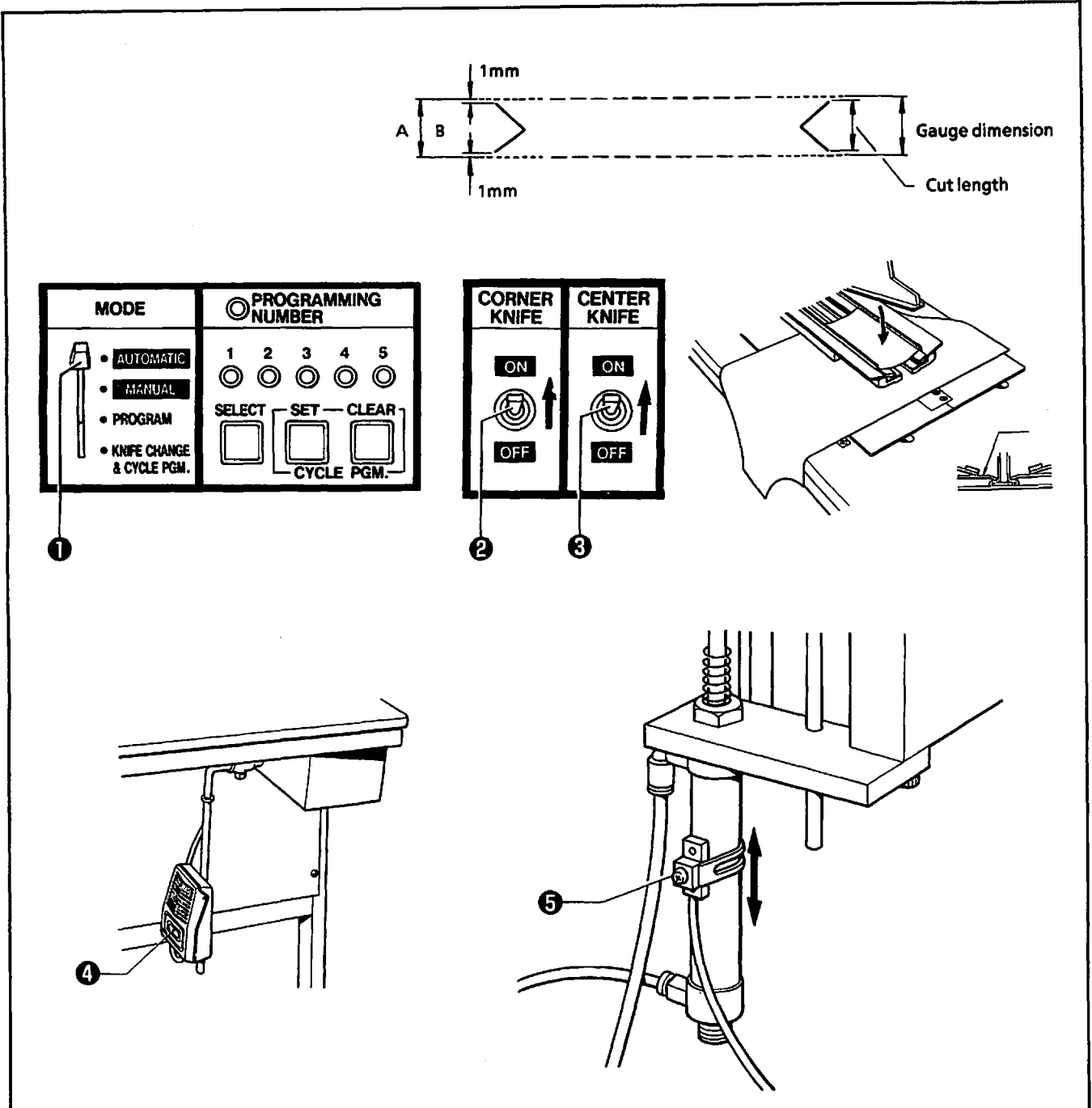


1. Set the MODE switch ① to KNIFE CHANGE & CYCLE PGM.
2. Press the EMERGENCY STOP switch ②.
An alarm will sound once, and the carriage feed will move to the knife replacement position.
The alarm will sound once more when the carriage feed stops.
3. Press the EMERGENCY STOP switch ② again.
The alarm will sound twice, the carriage feed and the flap pressers will descend, and the corner knives ③ will rise above the table.
※ Keep your hands away from the rising knife. The display shows "AIR OFF."
4. Turn the air cock ④ to stop the air supply. (Release the air.)
The corner knives will be locked at the upper position.
5. Loosen the set screw ⑤, and replace the corner knives ③ with new ones.
※ Align the edge of the corner knife ③ with the edge of the sliders ③.
6. After replacing the knives, turn the air cock ④ to restore the air supply.
7. Press the EMERGENCY STOP switch ②.
The alarm will sound twice, the carriage feed and the flap pressers will rise, and the corner knives ③ will descend.
The carriage feed will move to the stop position, and the alarm will sound once.

Caution concerning attachment

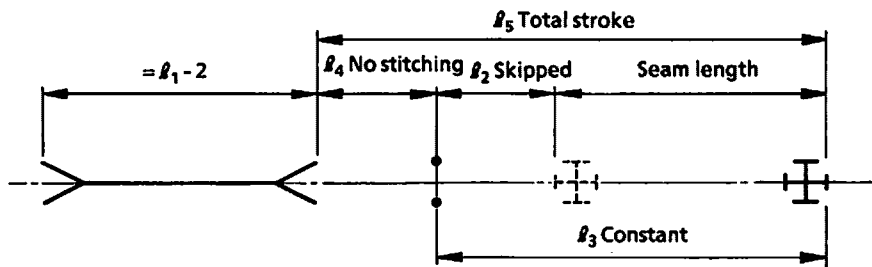
- When you failed to restore the air supply in step 6, the corner knives will not be lowered even if air is applied halfway. Do over steps 1 to 7.
- If the corner knife ③ is not in the center as shown in the figure, loosen the screws ⑦, and adjust the corner knife ③ angle.

(5) Adjusting the corner knife sensor



1. Set the MODE switch ① to AUTOMATIC.
2. Set the CORNER KNIFE switch ② and the CENTER KNIFE switch ③ to ON.
3. Set a piece of material in place, and press the start switch ④.
4. When the corner knives operate after sewing, adjust the position of the sensor ⑤ to where the alarm stops.
 Make sure that the blade of the corner knife cuts the material at this time. If the sensor position is too low, the corner knives will not rise sufficiently.

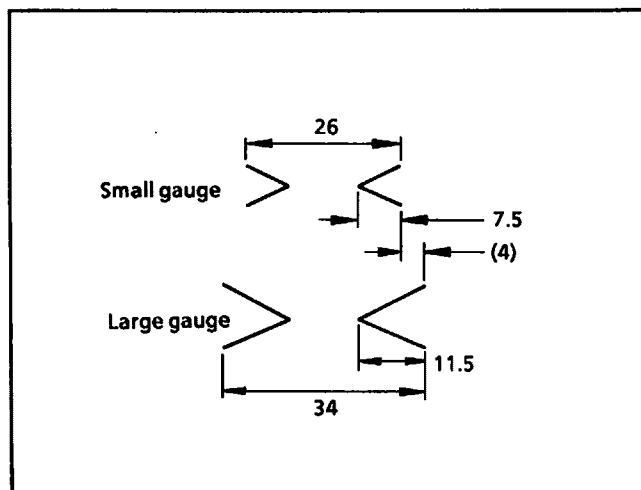
(6) Corner knife operation timing in respect to seam length



- l_1 : Seam length
- l_2 : Feed amount to sewing start position
- l_3 : Feed amount from feed operation start position to sewing end position
($l_3 = l_1 + l_2$)
- l_4 : Feed amount from sewing end position to corner knife operating position
- l_5 : Total feed amount
($l_5 = l_1 + l_2 + l_4$)

(mm)

	l_1	l_2	l_3 ($l_1 + l_2$)	l_4	l_5 ($l_1 + l_2 + l_4$)
Small gauge	28-190	47-209	237	124	361
Large gauge	36-190	47-201	237	120	357

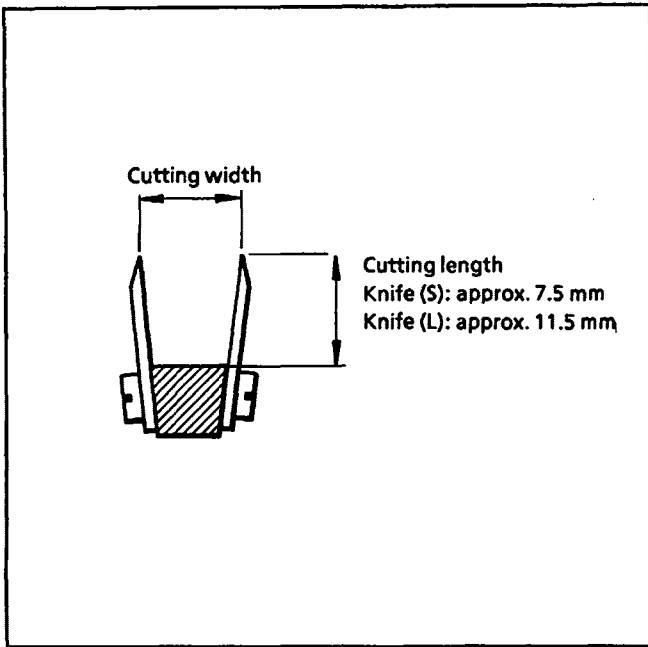


★ Because the cutting length of the large knives (L) for the large gauges (16,18,20 mm) are 4 mm longer than that of the small knives (S) for small gauges (8,10,12,14 mm), the dimensions below will be divided into the large and small gauges.

No stitch feed (l_4)	Small gauge 124 mm	Large gauge 120 mm
Min. sewing length	Small gauge 28mm	Large gauge 36mm

※ Actual dimensions when the material is cut :
28→26, 36→34

(7) Corner knife cutting width

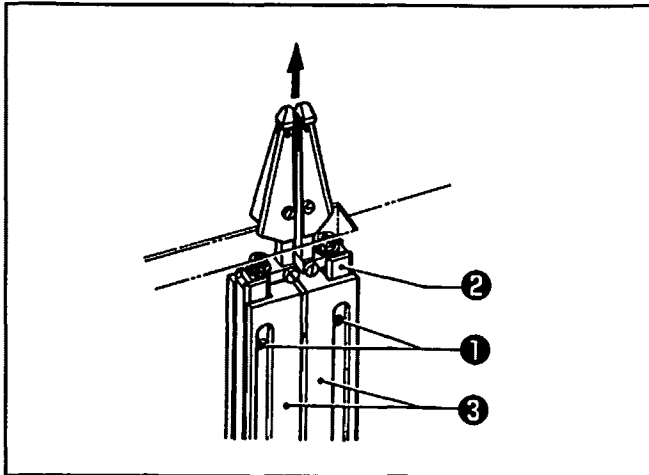


1. To increase the cutting width to greater than standard:
 When the material is thin, increase the cutting width to obtain a better finish angle.
 Turn over one corner knife when attaching it (so that the left side of the knife is attached on the right side for example) to increase the width by 0.8 mm.
 Turn over both knives to increase width by 1.6 mm.
2. To increase the cutting length by attaching corner knife (L) on the small gauge:
 Cutting width increases 0.8 mm.
 Cutting length increases from 7.5 mm to 11.5 mm.
 ※ Set DIP switch 3-1 to OFF, and turn the knob to bring the corner knife 4 mm closer to the front.
 This adjustment can not be performed for the ceramic corner knife because its cutting edge is sharp.

Cutting width according to gauge size

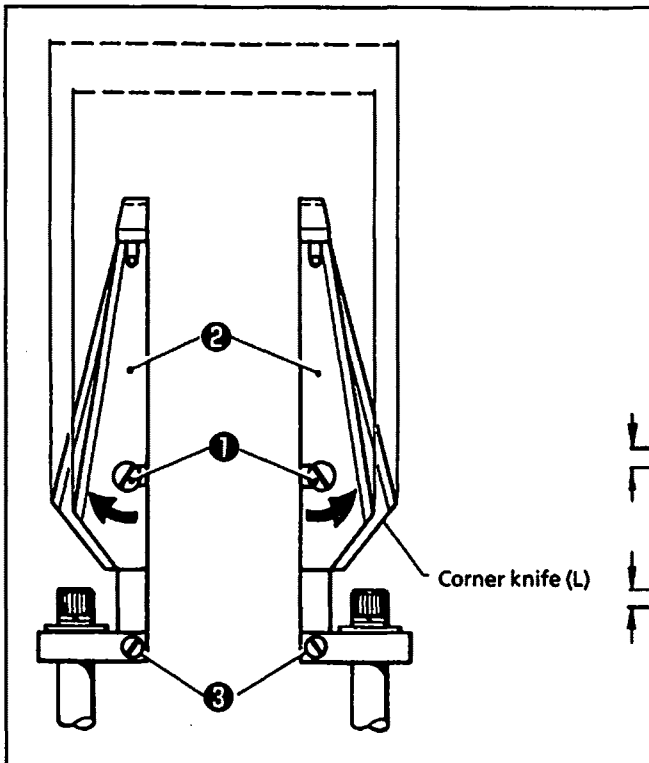
Gauge size (mm) \ Knife cutting width (mm)	8	10	12	14	16	18	20
Standard	6	8	10	12	14	16	18
One corner knife reversed	6.8	8.8	10.8	12.8	14.8	16.8	18.8
Both corner knives reversed	7.6	9.6	11.6	13.6	15.6	17.6	19.6
Using corner knife (L) or ceramic corner knife (S)	6.8	8.8	10.8	12.8			
Using ceramic corner knife (L)	7.6	9.6	11.6	13.6	14.8	16.8	18.8

(8) Replacing the knife base set

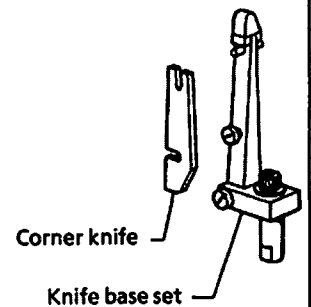
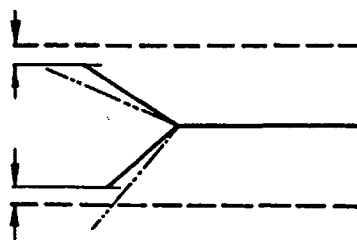


1. Set the MODE switch to KNIFE CHANGE & CYCLE PGM.
2. Loosen the set screws ❶ half a turn.
3. Press the EMERGENCY STOP switch twice.
The corner knives will be raised above the table.
4. Stop the air. Replace the knife base set ❷.
※ If the set screw is loosened too much, it may contact the slide guide ❸.

Setting the knife for slant welding



1. Loosen the screws ❶, move knives (5) ❷ to the direction of the arrow, and attach them to the knife base set by adjusting the position to the sewing start position.
2. It is possible to set the deviation to maximum 4 mm.
3. As the knife base set for slant welding is adjusted using the set screws ❸, the distance from the stitch can be easily adjusted.

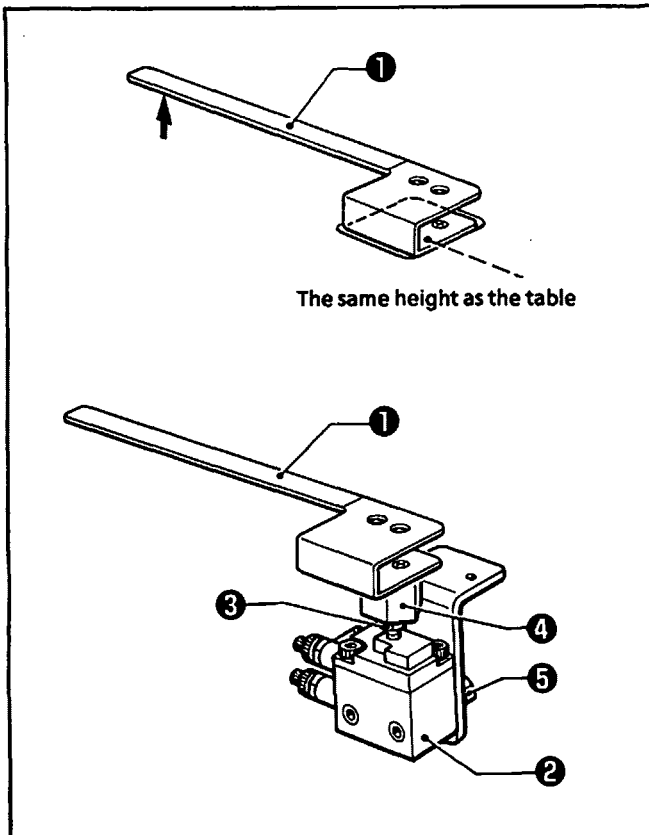


Corner knives (Knife base set is optional part.)

Size		8	10	12	14	16	18	20
Knife base set		S15881-001	S15882-001	S15883-001	S15884-001	S15885-001	S15886-001	S15887-001
Corner knife	LR	S09416-001						
	LL	S09417-001						
Corner knife	SR	S08322-001						
	SL	S08302-001						
Ceramic corner knife	L	S14051-001						
	S	S14050-001						

14 Adjusting the padding cloth presser foot spring

(1) Adjusting the padding cloth presser foot spring (R) height



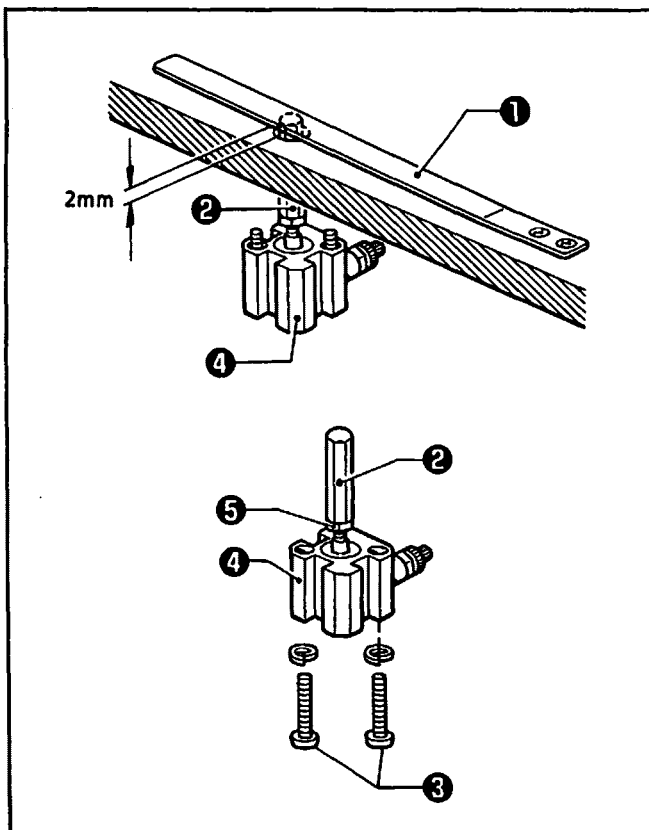
★ When padding cloth presser foot spring (R) ① is raised (when the treadle is pressed backward), the installation surface should be the same height as the table.

(Adjustment)

Loosen the nut ⑤ of the cylinder assembly ②, and adjust the protrusion of the cylinder rod so that the distance between the top of the cylinder and the spring fitting shaft ④ is 33.5 mm.

Also, loosen the nut ⑤, and adjust the height of the cylinder ② so that padding cloth presser foot spring (R) ① holds the padding cloth when padding cloth presser foot spring (R) ① is lowered, then tighten the nut ⑤.

(2) Adjusting the padding cloth presser foot spring (L) height



1. When padding cloth presser foot spring (L) ① is raised, the padding cloth pusher ② should be 2 mm higher than the table.

(Adjustment)

Remove the two screws ③, and the cylinder assembly ④ from the table.

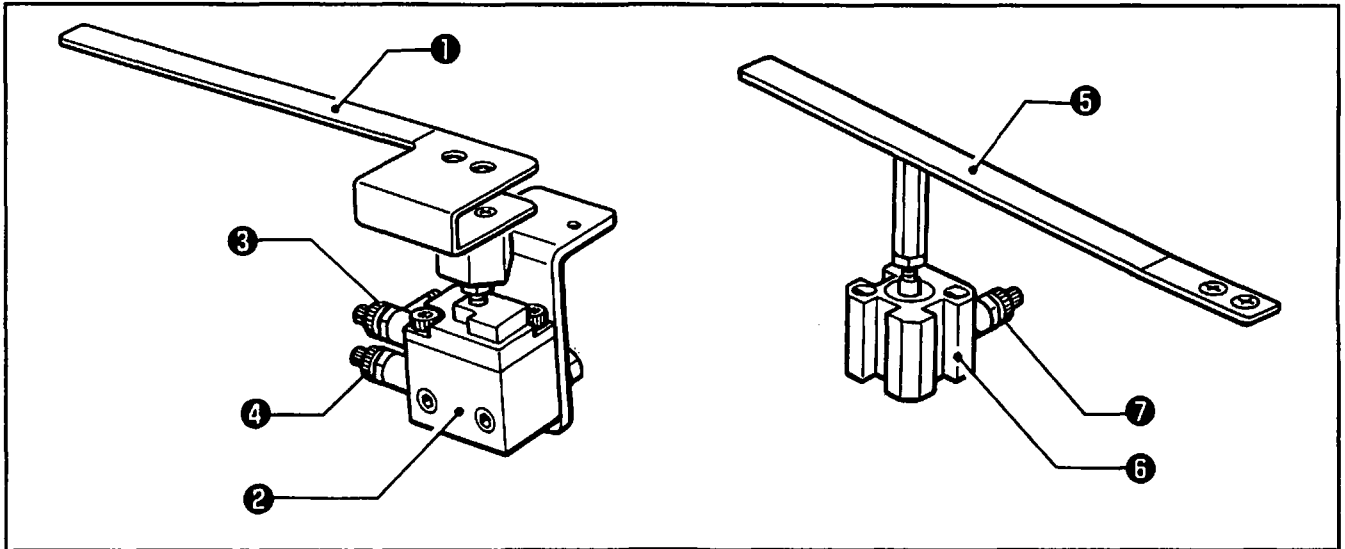
Loosen the nut ⑤, and adjust the protrusion of the cylinder rod, then tighten the nut ⑤.

Reattach the cylinder assembly ④ to the table using the two screws ③.

2. Make sure that the spring tension of the two springs (R) and (L) is adjusted so that when the padding cloth or sacking cloth is being positioned, the cloth will not slip easily, and so that when the carriage feed operates, the padding cloth and sacking cloth can be removed smoothly.

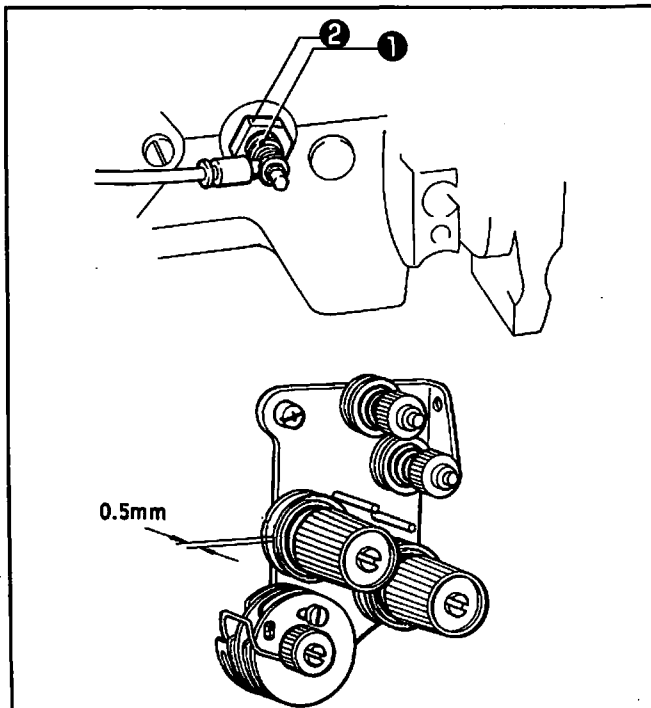
3. Make sure that when sewing has been completed and the carriage feed returns to the home position with the material held, the material is not caught on spring (R) or (L).

(3) Adjusting the padding cloth presser foot spring ascend speed



1. Adjusting padding cloth presser foot spring (R) ① ascend and descend speed
 The ascend and descend speed should be adjusted to be as fast as possible without causing any shock during presser foot spring operation.
 (Adjustment)
 Tighten the screw ③ of the cylinder assembly ② to decrease the ascend speed; loosen it to increase the speed.
 Tighten the screw ④ of the cylinder assembly ② to decrease the descend speed; loosen it to increase the speed.
2. Adjusting padding cloth presser foot spring (L) ⑤ ascend speed
 The ascend speed should be adjusted to be as fast as possible without causing any shock during presser foot spring operation.
 (Adjustment)
 Tighten the screw ⑦ of the cylinder assembly ⑥ to decrease the ascend speed; loosen it to increase the speed.

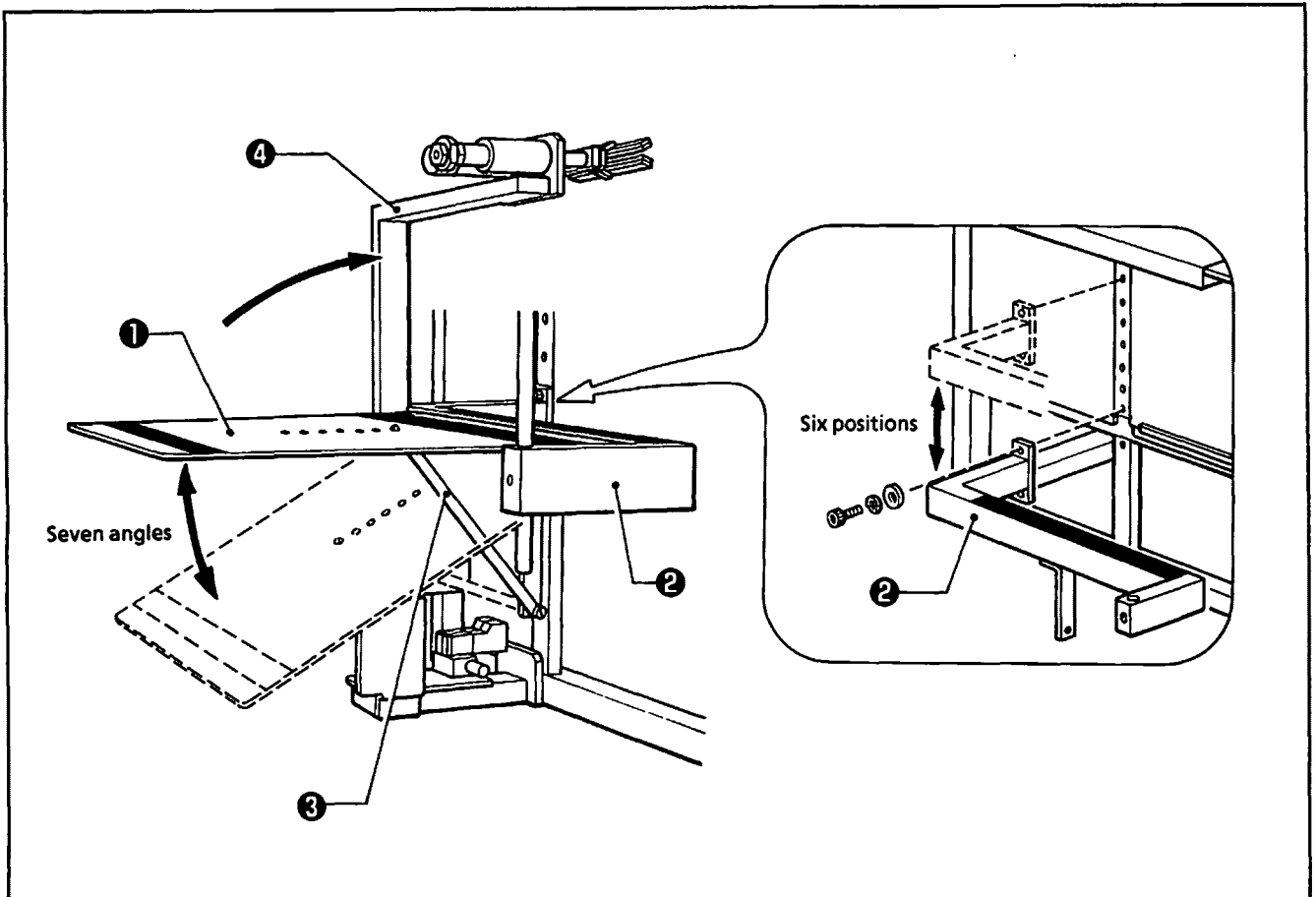
15 Adjusting the tension release



- ★ Make sure that the play in the needle thread tension disk is at least 0.5 mm when the tension release operates (when the power is turned off and not sewing).
 (Adjustment)
 Loosen the nut ② of the tension release cylinder assembly ①, and adjust the position of the cylinder.

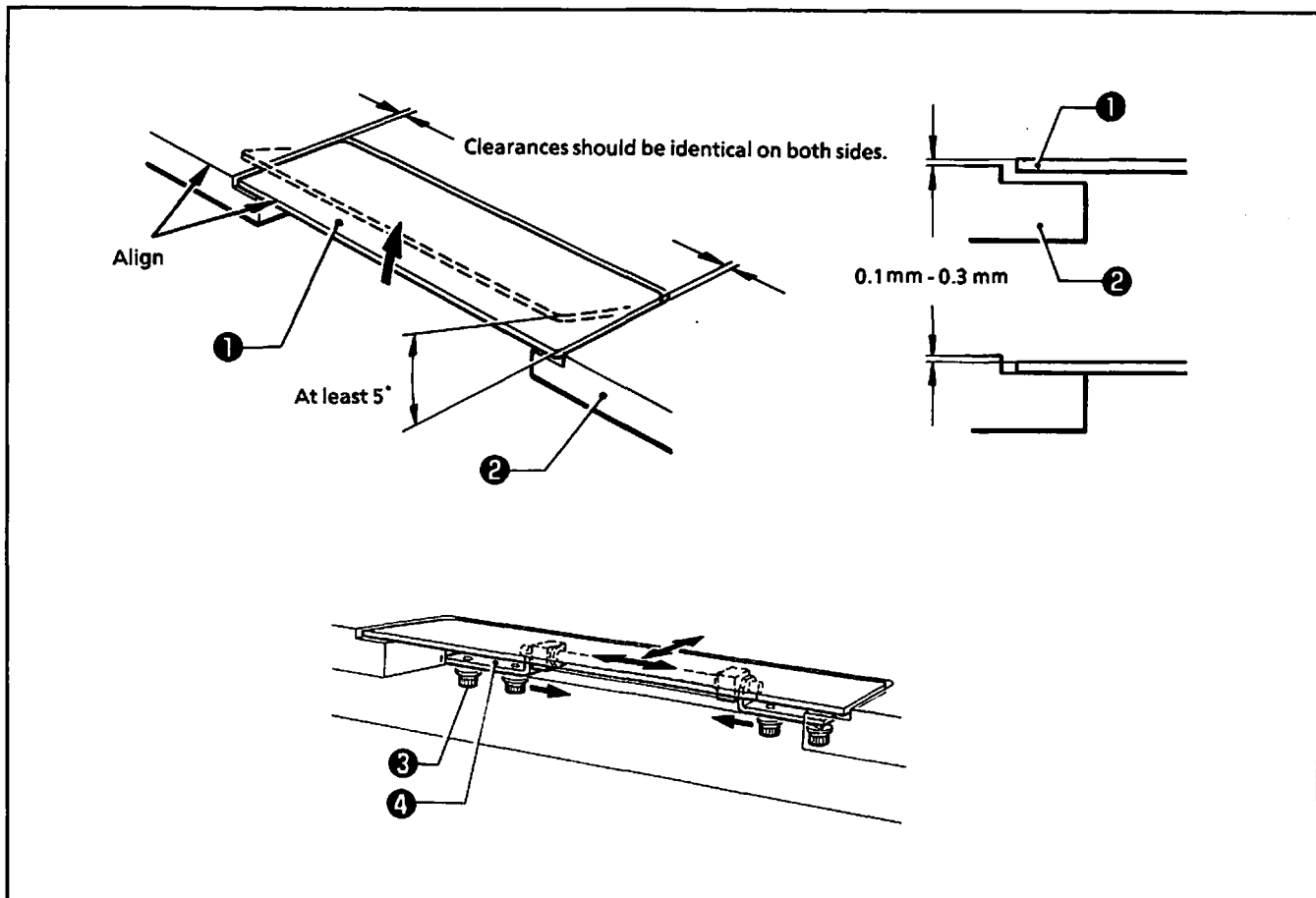
16 Adjusting the pickup stacker

(1) Adjusting the stacker table position



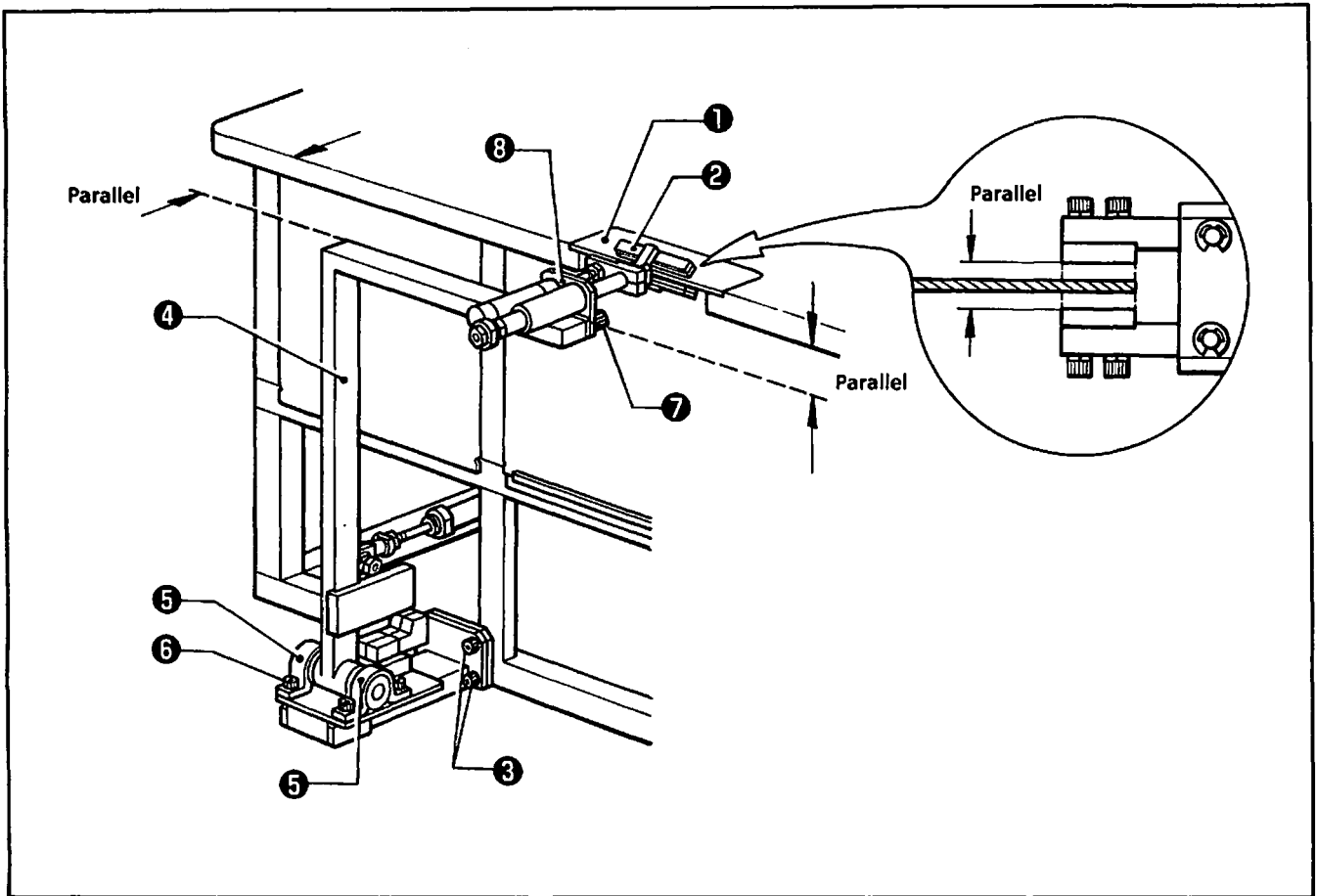
1. Stacker table ① height
There are six vertical adjustment positions for the stacker table depending upon the installation position of the cloth stock arm ②.
Raise the arm to reduce the stock number; lower the arm to increase the number.
2. Stacker table ① angle
The stacker table can be adjusted to one of seven angles depending upon the hole in the stacker table ① into which the table supporter bar ③ is inserted.
※ When the above stacker table ① height and angle adjustments have been completed, move the stacker arm ④ in the direction of normal operation by hand to make sure the arm does not strike the stacker table ①. If the arm strikes the table, readjust the angle and height.

(2) Adjusting the sub table position



1. Sub table ① left-right position
Adjust the sub table ① so that the clearances between the sub table ① and the table ② are identical on the right and left sides, and there is no play on either side.
2. Sub table ① height
The sub table ① should be at most 0.1 mm higher, and at most 0.3 mm lower than the table ②.
3. Sub table ① front-rear position
The sub table ① should be approximately flush with the front of the table ②.
4. Sub table ① operating angle
There should be at least a 5° angle in the sub table ① when it is raised.
※ The table will not rise if step 3. above is not adjusted correctly.
(Adjustment)
 - (1) Loosen the four bolts ③.
 - (2) To remove any play left-right, slide the sub table supporter ④ inward, and move the sub table ①. Move the sub table ① back and forth so that the front-back edge of the sub table ① is flush with the table ②, and so that the clearances on the right and left sides are identical. Retighten the four bolts ③.
 - (3) Make sure that the conditions in steps 1.-4. above are satisfied, and that the sub table ① moves smoothly up and down.
(If the table is too heavy, the sub table supporter ④ may be too close.)

(3) Adjusting the stacker clamp position 1

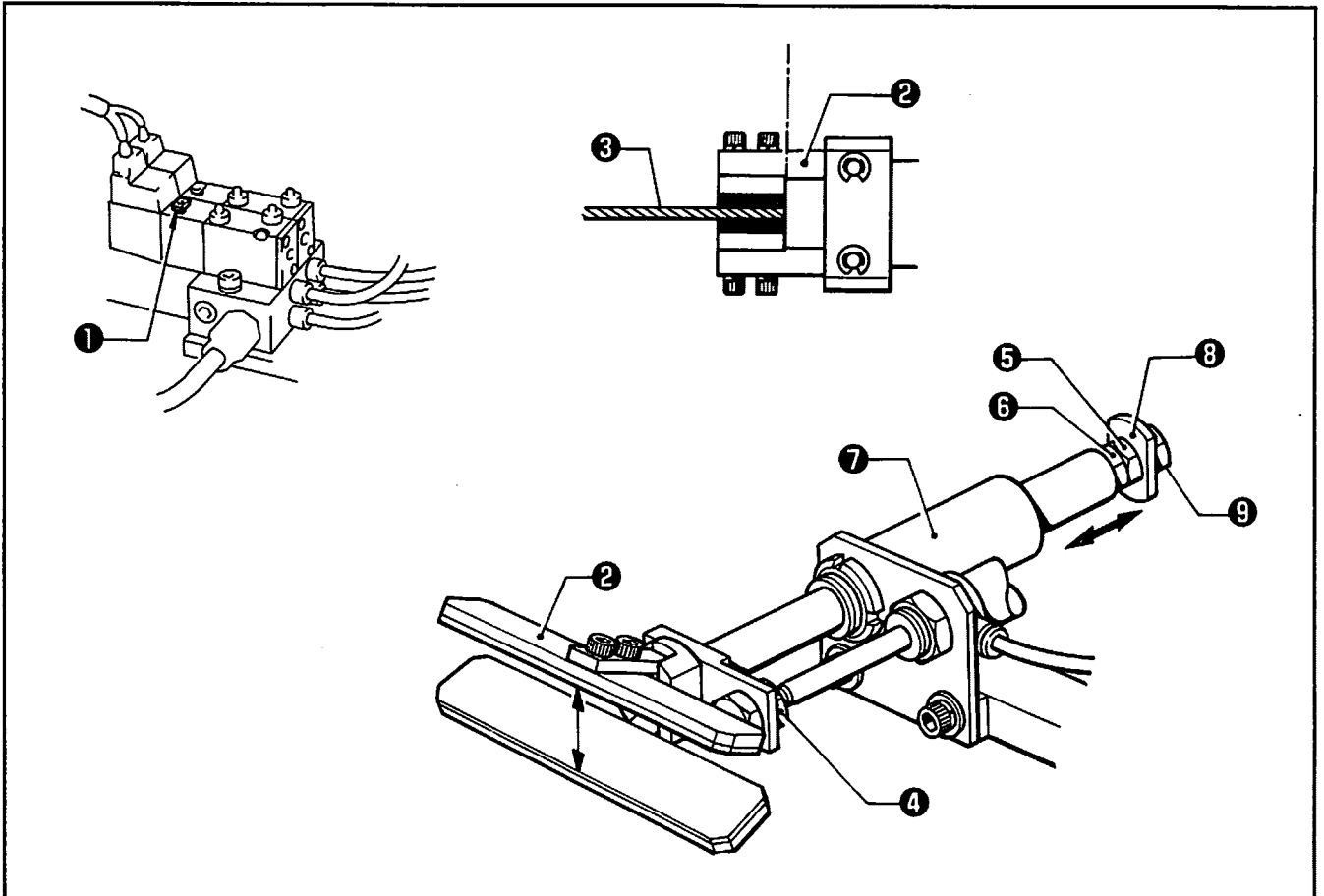


Make sure the chuck holder ② is positioned at the center of the sub table ① and parallel to it.

(Adjustment)

1. Loosen the four bolts ⑥, and adjust the stacker arm ④ so that the top of the stacker arm ④ is parallel to the table surface, then tighten the four bolts ⑥.
2. Loosen the four bolts ⑥ in the two pillow blocks ⑤, adjust the stacker arm ④ so that it is parallel with the edge of the table, then tighten the bolts ⑥.
3. Loosen the two bolts ⑦, adjust the setting plate ③ vertically so that the chuck holder ② is positioned at the center of the sub table ①, then tighten the two bolts ⑦.

(3) Adjusting the stacker clamp position 2



Make sure the stacker reaches to the edge of the sub table.

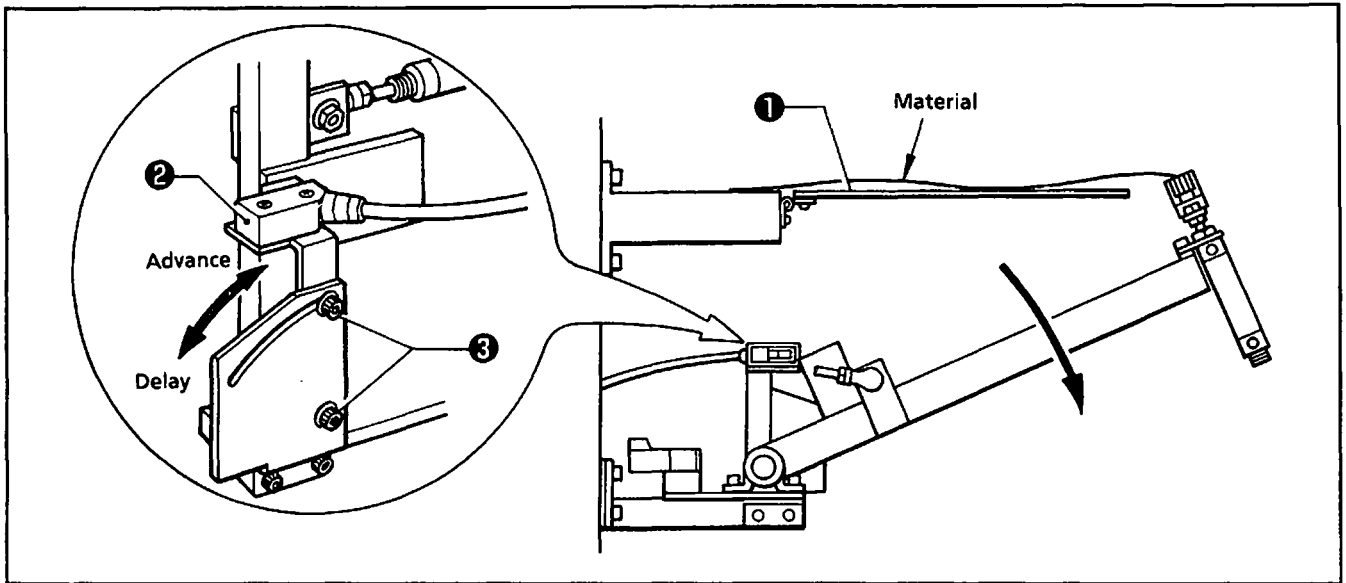
(Adjustment)

1. Press the check button ① to operate the chuck holder assembly ②, and make sure that the chuck holder assembly ② is flush with the edge of the sub table ③.
2. Loosen the nut ④, and adjust the length of the cylinder rod so that the edge of the chuck holder assembly ② is flush with the edge of the sub table ③, then tighten the nut ④.
3. The standard opening of the chuck holder assembly ② should be 35 mm.

(Adjustment)

1. Loosen the nuts ⑤ and ⑥.
2. Tighten the nut ⑤ to move the chuck holder assembly ② towards the slide guide ⑦. The opening will be decreased.
Loosen the nut ⑤ to move the chuck holder assembly ② away from the slide guide ⑦. The opening will be increased.
3. When the position is adjusted, retighten the nuts ⑤ and ⑥.
4. Operate the chuck holder assembly ② so that it closes, then secure the stopper ⑧ using the nut ⑨.

(4) Adjusting the cloth release timing



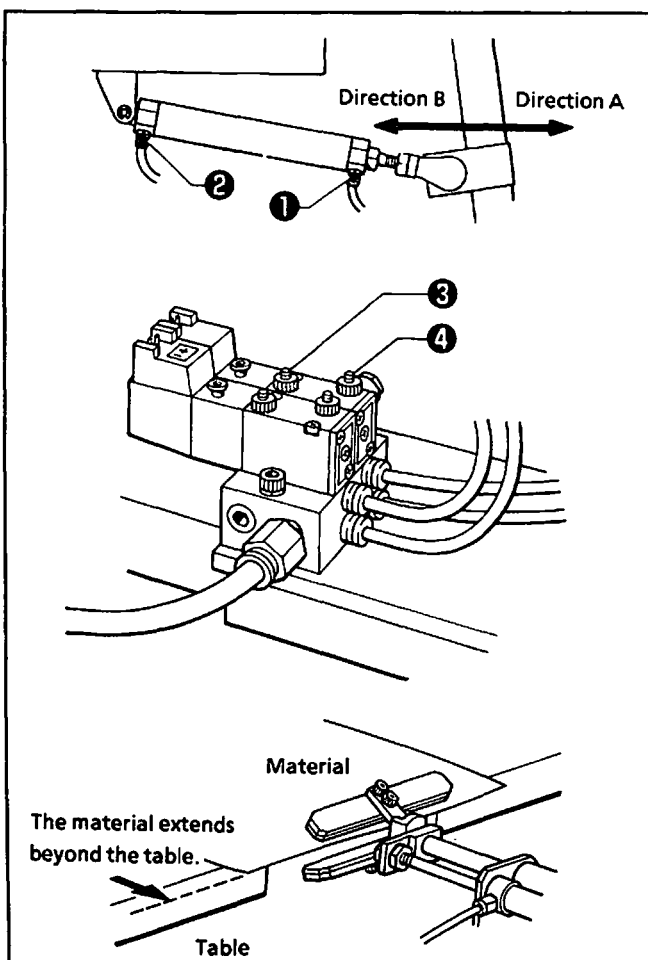
★ Adjust the position of the limit switch assembly ② so that the material is placed on the stacker table ①. (Adjustment)

Loosen the two bolts ③, move the limit switch assembly ② to the top right or bottom left so that the material is placed on the stacker table ①, then tighten the bolts ③.

Move the limit switch assembly ② to the top right to advance the cloth release timing.

Move the limit switch assembly ② to the bottom left to delay the cloth release timing.

(5) Adjusting the pickup stacker operating speed and the stop cushion



Adjusting the cushion when stopping toward A

Tighten the screw ① to decrease the stop speed.

Loosen the screw ① to increase the stop speed.

Adjusting the cushion when stopping toward B

Tighten the screw ② to decrease the stop speed.

Loosen the screw ② to increase the stop speed.

※ The pickup stacker cannot be used unless the material extends beyond the table on the stacker side.

Adjusting the speed in direction A

Tighten the screw ③ clockwise to decrease the air cylinder speed.

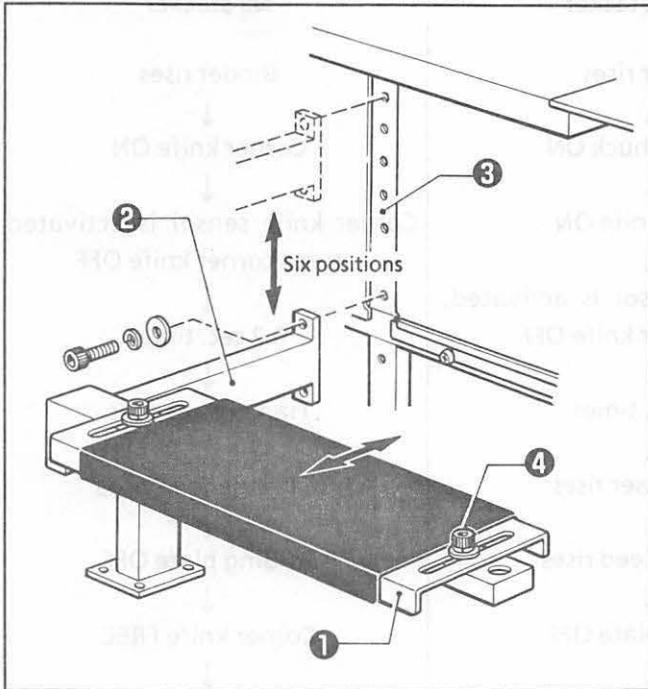
Loosen the screw ③ to increase the speed.

Adjusting the speed in direction B

Adjust the valve speed control screw ④ as above.

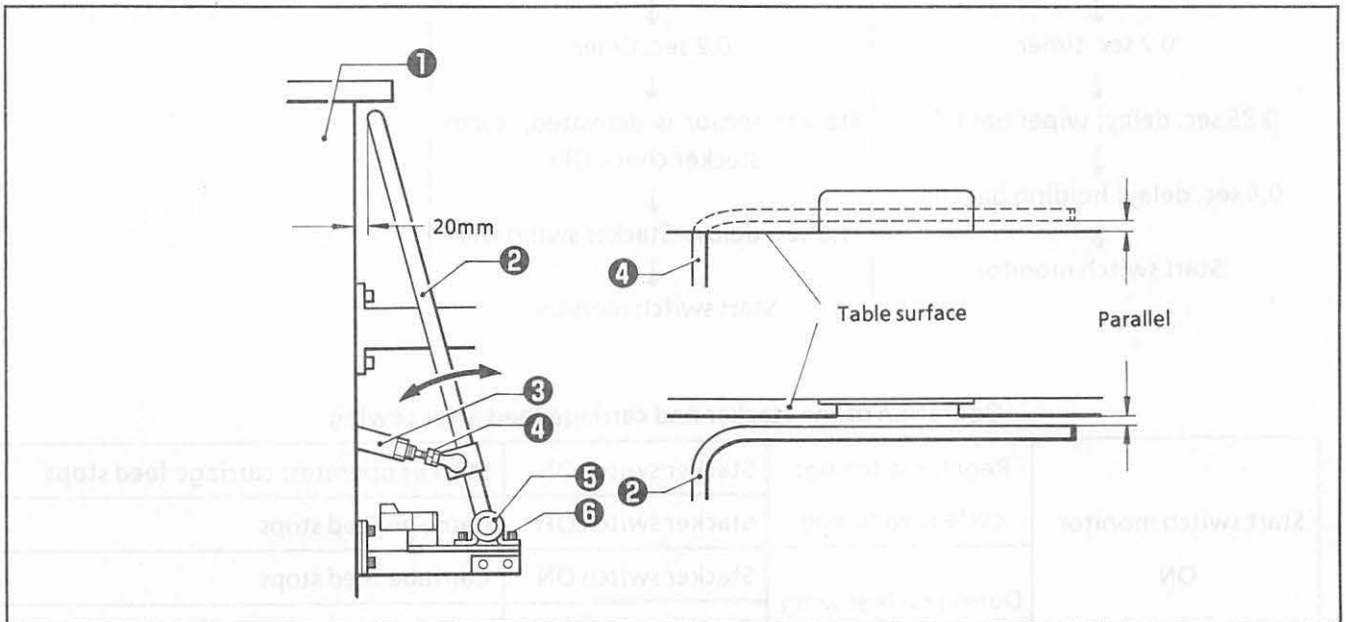
17 Adjusting the bar stacker

(1) Stacker plate



1. Stacker plate ① height
The height can be adjusted to six positions depending upon the position of the bar stacker cloth base ② in the frame ③.
2. Stacker plate ① left-right position
Loosen the two bolts ④, adjust the position of the stacker plate ① left or right so that the material drapes evenly over the stacker plate ①, then retighten the bolts ④.

(2) Stacker bar stop position



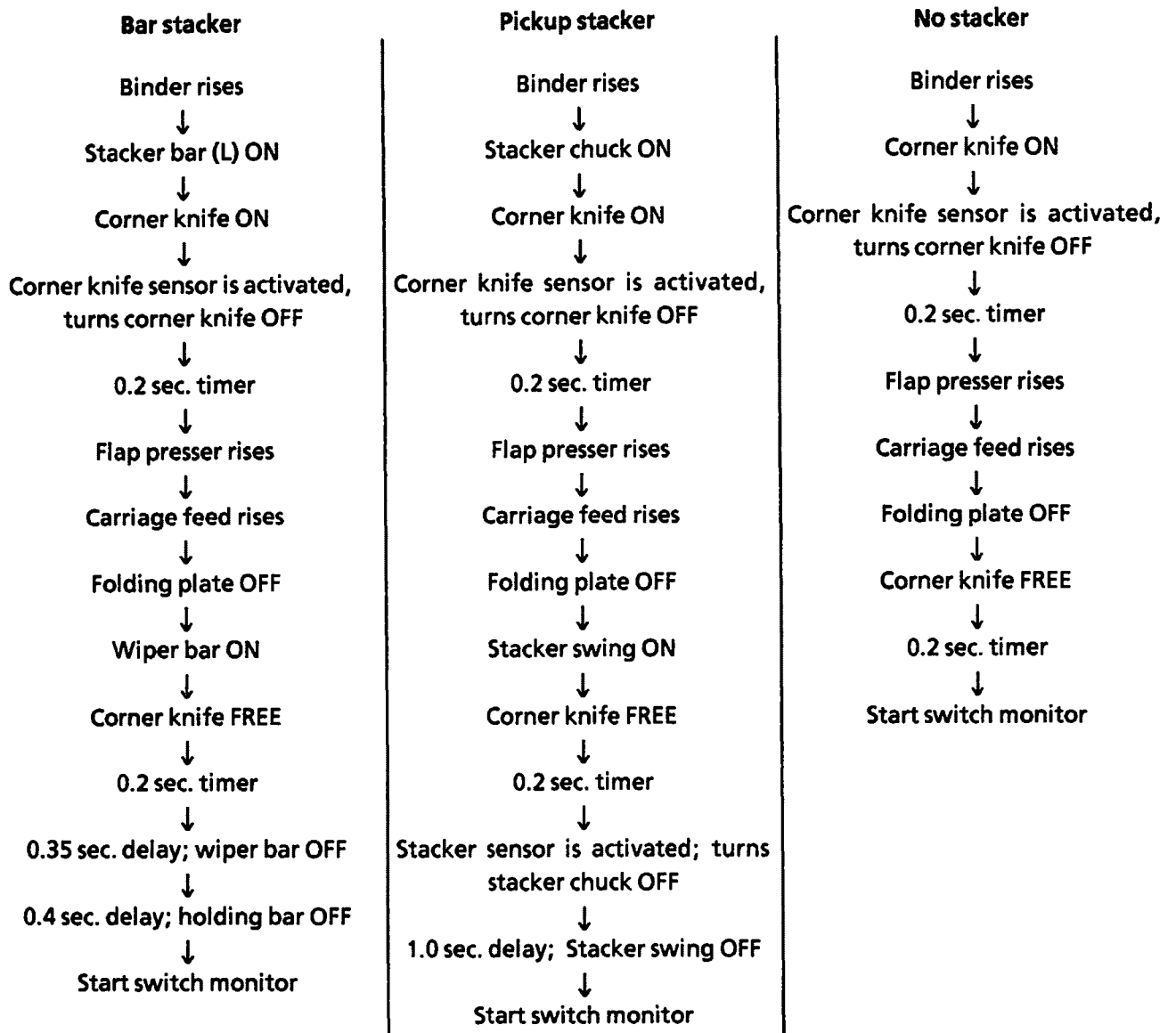
★ Make sure that the stacker bar ② stops 20 mm away from the frame ①, and is below and parallel to the table.

(Adjustment)

1. Loosen the nut ④ in the cylinder assembly ③, adjust the protrusion of the cylinder rod so that the stacker bar ② is 20 mm away from the frame ①, then retighten the nut ④.
2. Loosen the four bolts ⑥ in the pillow block ⑤, adjust the stacker bar ② so that it is parallel to the edge of the table, then retighten the bolts ⑥.

※ The stacker bar must not extend beyond the edge of the table.

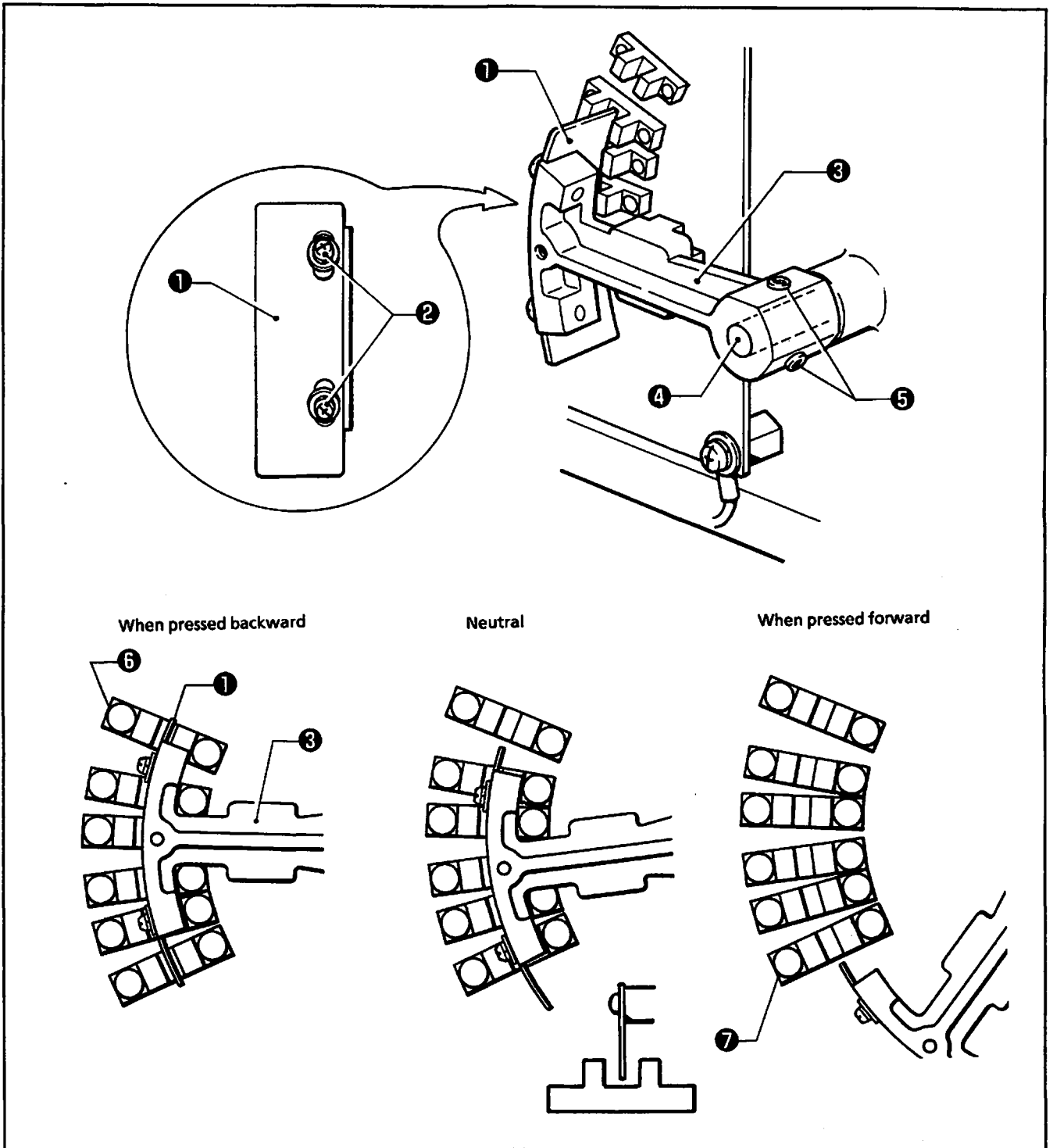
18 Stacker operation



Operation of the stacker and carriage feed after sewing

Start switch monitor ON	Regular stitching; cycle sewing end	Stacker switch ON	Stacker operates; carriage feed stops
		Stacker switch OFF	Carriage feed stops
	During cycle sewing	Stacker switch ON	Carriage feed stops
		Stacker switch OFF	Carriage feeds stop
Start switch monitor OFF	Regular stitching; cycle sewing end	Stacker switch ON	Stacker operates; carriage feed is reset
		Stacker switch OFF	Cloth held; carriage feed is reset
	During cycle sewing	Stacker switch ON	Cloth held; carriage feed is reset
		Stacker switch OFF	Cloth held; carriage feed is reset

19 Adjusting the foot switch (BAS-610, 611, 612)

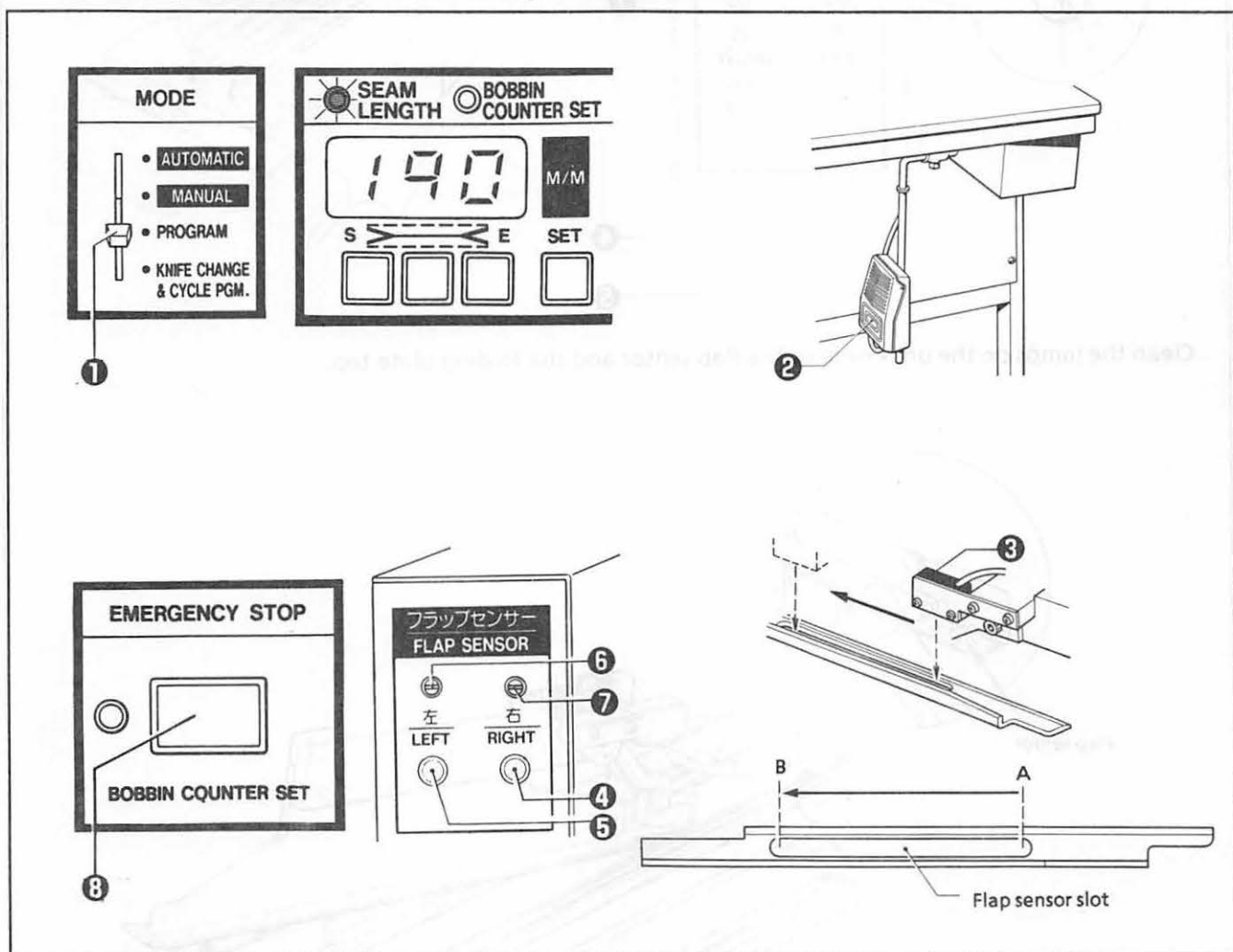


★ Adjust the foot switch so that the all switches turn on when the foot switch is pressed.

1. Attach the photocoupler actuator plate ① to the arm ③ so that the screws ② are in the centers of the oval holes on the photocoupler actuator plate ①.
2. Secure the arm ③ to the foot switch lever ④ using the two screws ⑤ so that there is no play to the left or right.
3. Position the arm ③ so that: when the foot switch is pressed backward, the photocoupler actuator plate ① breaks through the top photosensor ⑥: when the foot switch is pressed forward, the top of the photocoupler actuator plate ① is released from the bottom photosensor ⑦.
Fine adjustment can be made by loosening the screws ② and moving the photocoupler actuator plate ①.

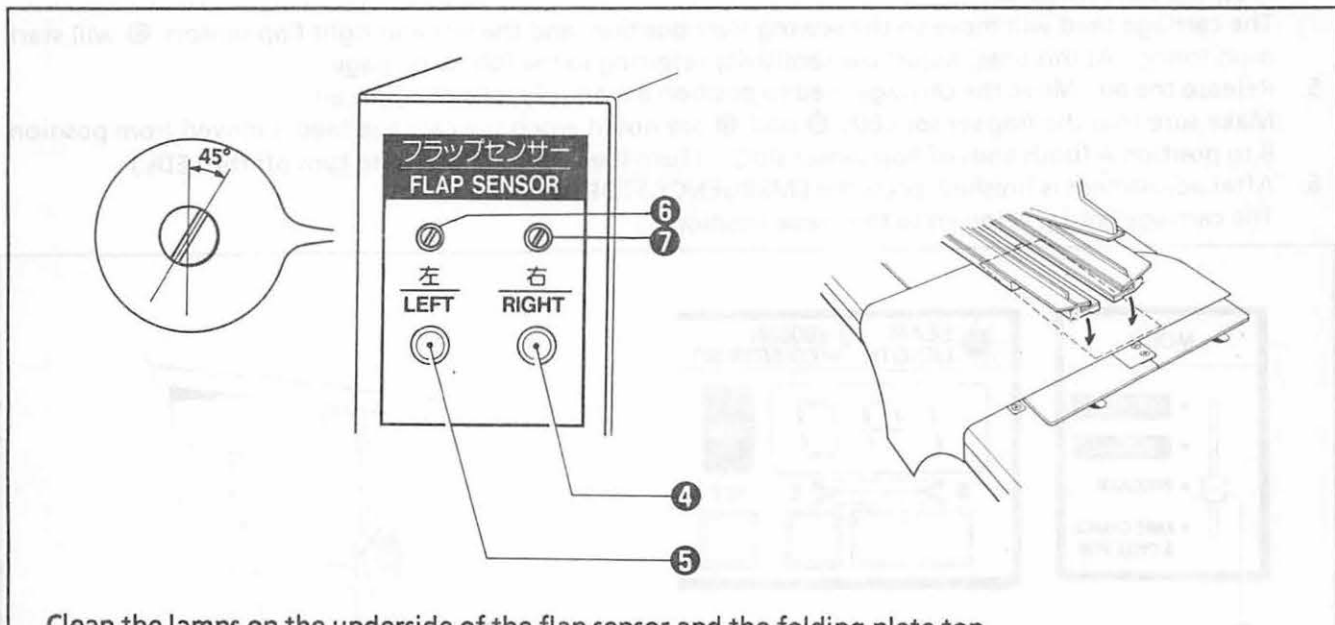
Adjusting the flap sensor sensitivity

1. Set the MODE switch ① to PROGRAM, and set the seam length to 190 mm.
2. Set the MODE switch ① to MANUAL.
3. Insert a piece of material to prevent the rubber on the underside of the carriage feed from being damaged.
4. Press the start switch ②.
The carriage feed will move to the sewing start position, and the left and right flap sensors ③ will start monitoring. At this time, adjust the sensitivity referring to the following page.
5. Release the air. Move the carriage feed to position B manually, and resupply air.
Make sure that the flap sensor LEDs ④ and ⑤ are not lit when the carriage feed is moved from position B to position A (both ends of flap sensor slot). (Turn the screws ⑥ and ⑦ to turn off the LEDs.)
6. After adjustment is finished, press the EMERGENCY STOP switch ⑧.
The carriage feed will return to the home position.

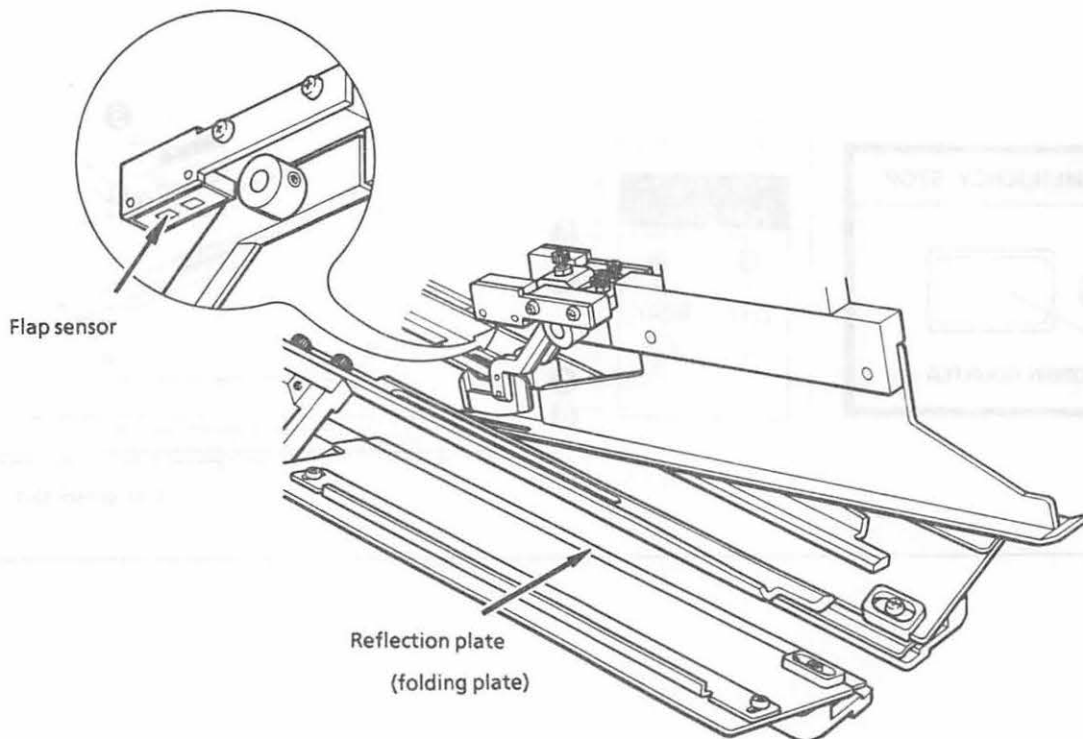


<Adjusting the sensitivity>

1. With the reflection plate under the sensor, turn the sensitivity adjusting knobs ⑥ and ⑦ to the positions where the flap sensor LEDs turn on and off.
2. Turn them clockwise about 45° from these positions.
3. Place a piece of material on the reflection plate, and make sure that the flap sensor LEDs are lit.



Clean the lamps on the underside of the flap sensor and the folding plate top.



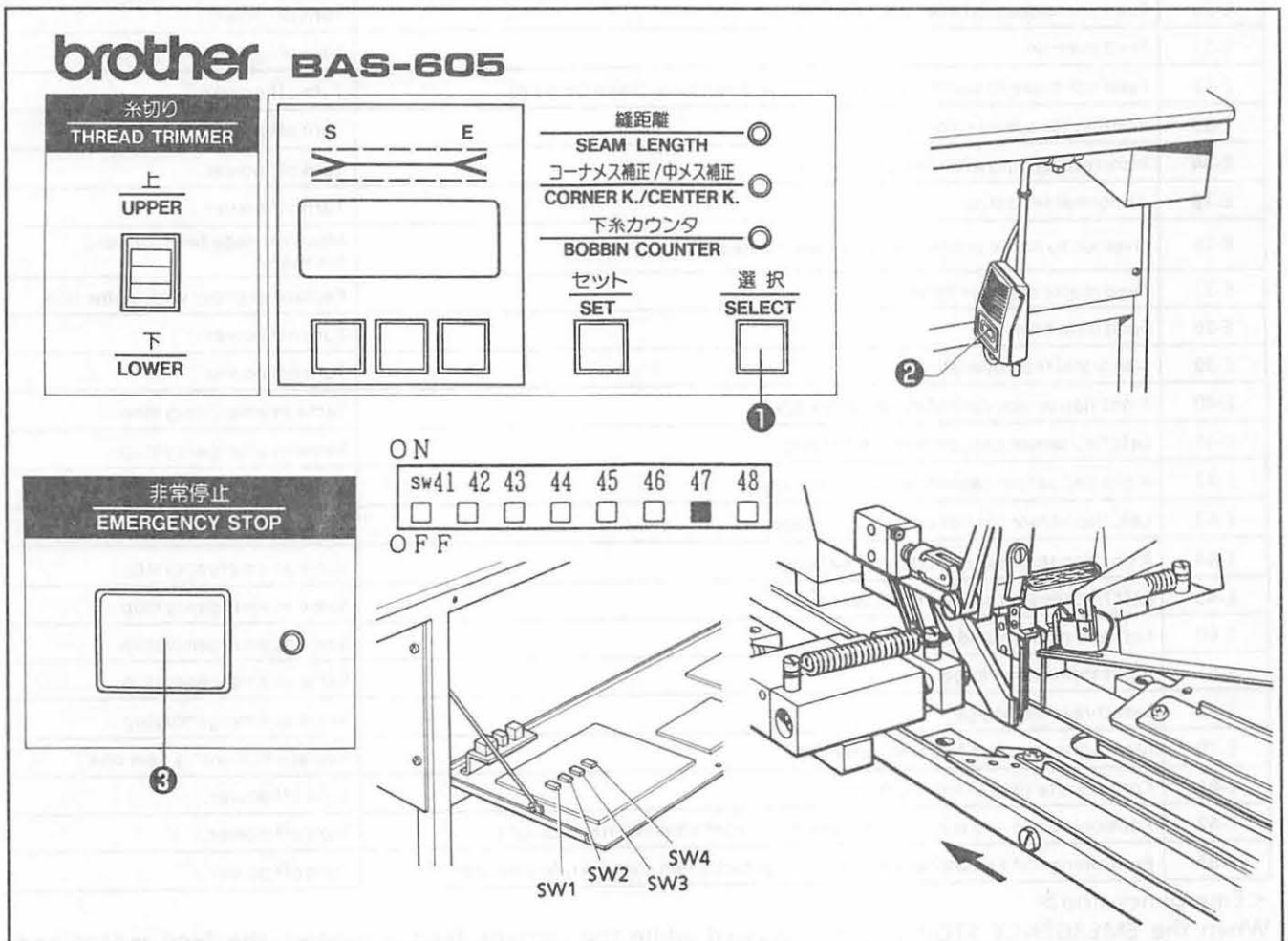
21 Carriage feed step operation

★ This function is used to move the carriage feed as memorized on a program by each step without operating the machine every time the start switch is pressed.

Set DIP SW 4-7 to ON to operate the stacker.

Set DIP SW 4-7 to OFF to deactivate the stacker.

1. Insert a piece of material.
2. Holding down the SELECT switch, ① press the start switch ②.
The carriage feed will move to the sewing start position.
3. Press the start switch ②.
The carriage feed will move to the end position of condensed stitching or backtacking.
4. Every time the start switch ② is pressed, the carriage feed will move to the next step.
5. On the second to last step, the carriage feed, the flap presser, and the binder will rise, and the stacker will operate.
When DIP SW 4-7 is set to OFF, the stacker will not operate.
6. Press the start switch ②.
The carriage feed will return to its home position.
※ During the above steps 3 - 5, when the EMERGENCY STOP switch ③ is pressed with the carriage feed stopped, it will return to its home position.



22 Error codes (BAS-605, 606)

★ The machine will not operate when characters unrelated to the program appear on the LED display, either when turning on the power or during sewing.

The following are description of each error code.

E-1※	Switch related error	E-4※	Sensor related error
E-2※	Machine related error	E-6※	Thread breakage related error
E-3※	Carriage feed related error	E-8※	Corner knife related error

Code	Contents of error codes	Reset procedure
E-00	Emergency stop switch pressed while carriage feed moving.	See below.
E-10	Start switch pressed when power turned on.	Release start switch.
E-11	Pedal pressed when power turned on. (Padding cloth presser foot spring is raised.)	Release your foot from pedal.
E-12	Pedal pressed when power turned on. (Carriage feed or binder is lowered.)	Release your foot from pedal.
E-20	Machine motor not stopping machine with needle at upper position.	Turn pulley to set needles to upper position.
E-21	Needle not at upper position at sewing start.	Turn off power.
E-22	Needle not stopping at upper position at sewing end.	Turn off power.
E-30	Feed home position overrun.	Turn off power.
E-31	Feed overrun.	Turn off power.
E-32	Feed not move to specified position within fixed time. (Feed time-up)	Turn off power.
E-33	Waiting for a feed command.	Turn off power.
E-34	Incorrect feeding after restoring error.	Turn off power.
E-35	Abnormal feed stop	Turn off power.
E-36	Overrun to home position when power turned on.	Move carriage feed forward manually.
E-37	Feed motor encoder defective.	Replace encoder with a new one.
E-38	Feed data broken.	Turn off power.
E-39	Abnormal feed operating.	Turn off power.
E-40	Right flap sensor cannot detect front edge.	Same as emergency stop.
E-41	Left flap sensor cannot detect front edge.	Same as emergency stop.
E-42	Right flap sensor cannot detect front edge.	Same as emergency stop.
E-43	Left flap sensor cannot detect front edge.	Same as emergency stop.
E-44	Right flap sensor cannot detect rear edge.	Same as emergency stop.
E-45	Left flap sensor cannot detect rear edge.	Same as emergency stop.
E-60	Left and right thread breakage	Same as emergency stop.
E-61	Right thread breakage	Same as emergency stop.
E-62	Left thread breakage	Same as emergency stop.
E-70	Memory write/read function defective.	Replace PCB with a new one.
E-81	Corner knife rises at sewing start.	Turn off power.
E-82	Positioning rod and corner knife base make contact when rod is caught.	Turn off power.
E-83	Positioning rod and corner knife do not contact when corner knife operates.	Turn off power.

<Emergency stop>

When the EMERGENCY STOP switch is pressed while the carriage feed is moving, the feed motor and machine motor will stop immediately. The machine will now be in the same status when the power is turned on. The carriage feed will remain in the same position as when the EMERGENCY STOP switch was pressed.

Resetting after emergency stop

★ Press the EMERGENCY STOP switch again. The machine will trim the thread, and the carriage feed will move to the thread trimming position and rise. Both the movable knife and the bobbin thread knives will operate.

Press the EMERGENCY STOP switch again, then press the start switch.

The carriage feed will return to the home position, and the machine will be ready to start sewing.

Error codes (BAS-610 series)

★ The machine will not operate when characters unrelated to the program are shown on the LED display, either when turning on the power or during sewing.
The following are description of each error code.

E-1-※※	Switch related error	E-4-※※	Sensor related error
E-2-※※	Machine related error	E-6-※※	Thread breakage related error
E-3-※※	Carriage feed related error	E-8-※※	Corner knife related error

	Contents of error code	Resetting procedure
E-0-00	EMERGENCY STOP switch pressed while carriage feed moving.	See below.
E-1-00	Start switch pressed when power turned on.	Release start switch.
E-1-01	Treadle pressed when power turned on. (Padding cloth presser foot spring is raised.)	Release your foot from treadle.
E-1-02	Treadle pressed when power turned on. (Carriage feed or binder is lowered.)	Release your foot from treadle.
E-2-00	Machine motor not stopping machine with needle at upper position.	Turn pulley to set needle to upper position.
E-2-01	Needles are not at upper position at sewing start.	Turn off power.
E-2-02	Machine does not stop with needles at upper positions at sewing end.	Turn off power.
E-2-03	Upon stopping, pulley has passed the correct stopping point by a fixed angle.	Turn off power.
E-2-04	Upon stopping, pulley has not reached the correct stopping point by a fixed angle.	Turn off power.
E-3-00	Carriage feed overruns to home position side after sewing.	Turn off power.
E-3-01	Carriage feed overruns to feeding direction.	Turn off power.
E-3-02	Feed time-up.	Turn off power.
E-3-03	Waiting for a feed command.	Turn off power.
E-3-04	Incorrect feeding after restoring error.	Turn off power.
E-3-05	Abnormal feed stop.	Turn off power.
E-3-06	Carriage feed overruns to home position side when power turned on.	Move carriage feed away from operator manually.
E-3-07	Feed counter error	Same as emergency stop.
E-4-01	Right flap sensor defective.	Same as emergency stop.
E-4-02	No flaps	Insert flap.
E-4-10	Left flap sensor defective.	Same as emergency stop.
E-5-00	Cycle program interrupted. (Cycle program is cleared.)	Cycle program will be automatically reset after it is cleared.
E-6-01	Right thread breakage	Same as emergency stop
E-6-10	Left thread breakage	Same as emergency stop
E-7-00	Memory read/write function defective	Replace circuit board.
E-8-01	Corner knife rises at sewing start.	Turn off power.
E-8-02	Positioning rod and corner knife base make contact when rod is caught.	Turn off power.
E-8-03	Positioning rod and corner knife do not contact when corner knife operates.	Turn off power.
E-9-01	Malfunctioning welt piece tray	Adjust cylinder position.
E-9-02	Incorrect binder vertical motion	Adjust cylinder sensor position.
E-9-03	Incorrect binder sliding motion	Adjust cylinder sensor position.
E-9-04	Incorrect flap feeder motion	Adjust cylinder sensor position.

< Emergency stop >

When the EMERGENCY STOP switch is pressed while the carriage feed is moving, the feed motor and machine motor will stop immediately. The machine will now be in the same status when the power is turned on. The carriage feed will remain in the same position as when the EMERGENCY STOP switch was pressed.

Resetting after emergency stop

★ Press the EMERGENCY STOP switch again. The machine will trim the thread, and the carriage feed will move to the thread trimming position and will rise. Both the movable knife and the bobbin thread knives will operate.

Press the EMERGENCY STOP switch again, then press the start switch.

The carriage feed will return to the home position, and the machine will be ready to start sewing.

23 Initializing the memory

★ This is used to clear and initialize the backup data required for sewing.

1. Turn off the power.
Set DIP SW 3-8 on the main circuit board to ON.
2. Turn on the power.
Memory will be cleared, and standard data will be written to the machine.
After writing is completed, the buzzer will sound once, and program number LEDs 1 to 5 and the bobbin thread number LEDs 1 to 3 will all light.
3. Turn off the power.
Set DIP SW 3-8 to OFF.

<Default values for BAS-605, 606>

Display	Seam length
Seam length	36 mm (for large gauge) 28 mm (for small gauge)
Reference position	Rear
Corner knife correction value	5 = 5
Center knife correction value	0-0
Bobbin thread counter value	100
Production counter value	0

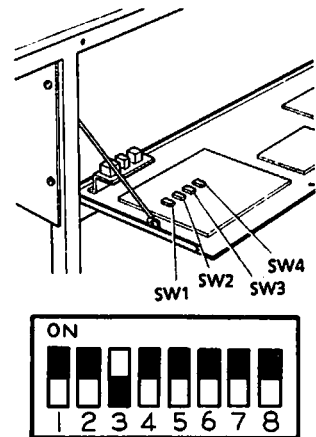
<Default values for BAS-610, 611, 612>

Cycle sewing	1→2→3
Program ①	28 mm (36 mm)
Program ②	50 mm
Program ③	100 mm
Program ④	150 mm
Program ⑤	190 mm
Flap correction ①	40.0 mm
Flap correction ②	40.0 mm
Flap correction ③	40.0 mm
Flap correction ④	40.0 mm
Flap correction ⑤	40.0 mm
Corner knife correction ①	5-5
Corner knife correction ②	5-5
Corner knife correction ③	5-5
Corner knife correction ④	5-5
Corner knife correction ⑤	5-5
Bobbin thread ①	100
Bobbin thread ②	150
Bobbin thread ③	200 pcs.

24 DIP switch settings (BAS-605, 606)

※ Be sure to turn off the power before changing the DIP switch setting.

Lockstitch pitch	SW1-1	OFF	ON	OFF	ON	OFF	ON	OFF	ON
	SW1-2	OFF	OFF	ON	ON	OFF	OFF	ON	ON
	SW1-3	OFF	OFF	OFF	OFF	ON	ON	ON	ON
	(mm)	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.2
Fraying prevention	SW1-4	ON : Backtacking (V, N)				OFF : Condensed			
Backtacking stitch length	SW1-5	OFF	ON	OFF	ON				
	SW1-6	OFF	OFF	ON	ON				
	(mm)	0.8	1.2	1.6	2.0				
Condensed stitch length	SW1-7	OFF	ON	OFF	ON				
	SW1-8	OFF	OFF	ON	ON				
	(mm)	0.4	0.6	0.8	1.0				
Backtacking seam length condensed seam length	SW2-1	OFF	ON	OFF	ON				
	SW2-2	OFF	OFF	ON	ON				
	(mm)	3.0	4.0	5.0	6.0				
Motor speed	SW2-3	ON : 2500 spm		OFF : 2200 spm					
Carriage feed rapid feed speed	SW2-4	ON : 20 m/min		OFF : 15 m/min					
Carriage feed operating sequence	SW2-5	OFF	ON	OFF	ON				
	SW2-6	OFF	OFF	ON	ON				
		Right→Left		Left→Right		Simultaneous L&R carriage feeds		Simultaneous carriage feed and flap pressers	
Flap presser operating sequence	SW2-7	ON : Right flap Right→Left		Left flap Left→Right					
		OFF : Right flap Left→Right		Left flap Right→Left					
Foot switch operation	SW2-8	ON : Multi-steps				OFF : Timer			
Gauge	SW3-1	ON : 8, 10, 12, 14 mm				OFF : 16, 18, 20 mm			
Operation after thread breakage	SW3-2	OFF	ON	OFF	ON				
	SW3-3	OFF	OFF	ON	ON				
		No monitoring		Stop at corner knife position		Immediately stop		Re-sewing	
Stacker type	SW3-4	OFF	ON	OFF	ON				
	SW3-5	OFF	OFF	ON	ON				
		Pick-up		Bar		Roller		Pneumatic	
Carriage feed standby	SW3-6	ON : Start switch monitor				OFF : Timer			
Sensor adjustment	SW3-7	ON : Adjusting sensor							
Memory initialization	SW3-8	ON : Initializing memory							
Option	SW4-1	ON : Darts stretcher							
	SW4-2	ON : Corner knife sensor							
	SW4-3	ON : Automatic welt piece feeder							
	SW4-4	ON : Automatic flap feeder							
	SW4-5	Unused							
	SW4-6	ON : Center knife used							
	SW4-7	ON : Stacker used							
	SW4-8	ON : N-shaped backtacking				OFF : V-shaped backtacking			

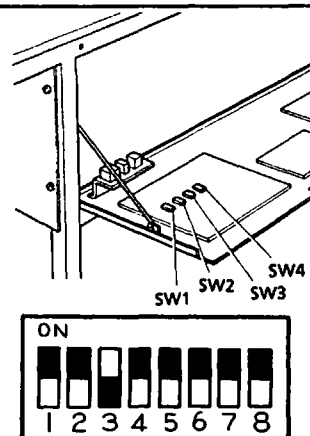


★ Be sure to turn off the power before changing the DIP switch setting.

Lockstitch pitch	SW1-1	OFF	ON	OFF	ON	OFF	ON	OFF	ON
	SW1-2	OFF	OFF	ON	ON	OFF	OFF	ON	ON
	SW1-3	OFF	OFF	OFF	OFF	ON	ON	ON	ON
	(mm)	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.2

※ When the BAS-612 is used, V backtacking will start even if DIP SW1-4 is set.

Fraying prevention	SW1-4	ON : Backtacking				OFF : Condensed			
Backtacking pitch	SW1-5	OFF	ON	OFF	ON				
	SW1-6	OFF	OFF	ON	ON				
	(mm)	0.8	1.2	1.6	2.0				
Condensed pitch	SW1-7	OFF	ON	OFF	ON				
	SW1-8	OFF	OFF	ON	ON				
	(mm)	0.4	0.6	0.8	1.0				
Backtacking length Condensed length	SW2-1	OFF	ON	OFF	ON				
	SW2-2	OFF	OFF	ON	ON				
(mm)		3.0	4.0	5.0	6.0				
Motor speed	SW2-3	ON : 2500 spm				OFF : 2200 spm			
Carriage feed speed to corner knife position	SW2-4	ON : 20 m/mim				OFF : 15 m/mim			
Carriage feed operating sequence	SW2-5	OFF	ON	OFF	ON				
	SW2-6	OFF	OFF	ON	ON				
		Right → Left		Left → Right		Simultaneous		Simultaneous carriage feed and flap presser	
Flap presser operating sequence	SW2-7	ON : Right flap Right → Left		Left flap Left → Right					
		OFF : Right flap Left → Right		Left flap Right → Left					
Switch operation	SW2-8	ON : FOOT				OFF : Timer start			



※ When the BAS-612 is used, set DIP SW3-1 to OFF.

Gauge	SW3-1	BAS-610 · 611			BAS-612				
		ON : 8, 10, 12, 14 mm							
		OFF : 16, 18, 20 mm			8 - 20 mm				
Operation after thread breakage	SW3-2	OFF	ON	OFF	ON				
	SW3-3	OFF	OFF	ON	ON				
		No monitoring		Stop at corner knife position		Immediately stop		Re-sewing	
Stacker type	SW3-4	OFF	ON	OFF	ON				
	SW3-5	OFF	OFF	ON	ON				
		Pick-up		Bar		Roller		Pneumatic	
Carriage feed position	SW3-6	ON : Start switch monitored							
Check routine	SW3-7	ON : Sensor initialization							
	SW3-8	ON : Memory initialization							
Option	SW4-1	ON : Darts stretcher							
	SW4-2	ON : Corner knife sensor							
	SW4-3	ON : Automatic welt piece feeder							
	SW4-4	ON : Automatic flap feeder							
	SW4-5	ON : Corner knife used (for slant sewing)							
	SW4-6	Reserved							
	SW4-7	Reserved							
	SW4-8	ON : N backtacking				OFF : V backtacking			

DIP switch descriptions (supplement)

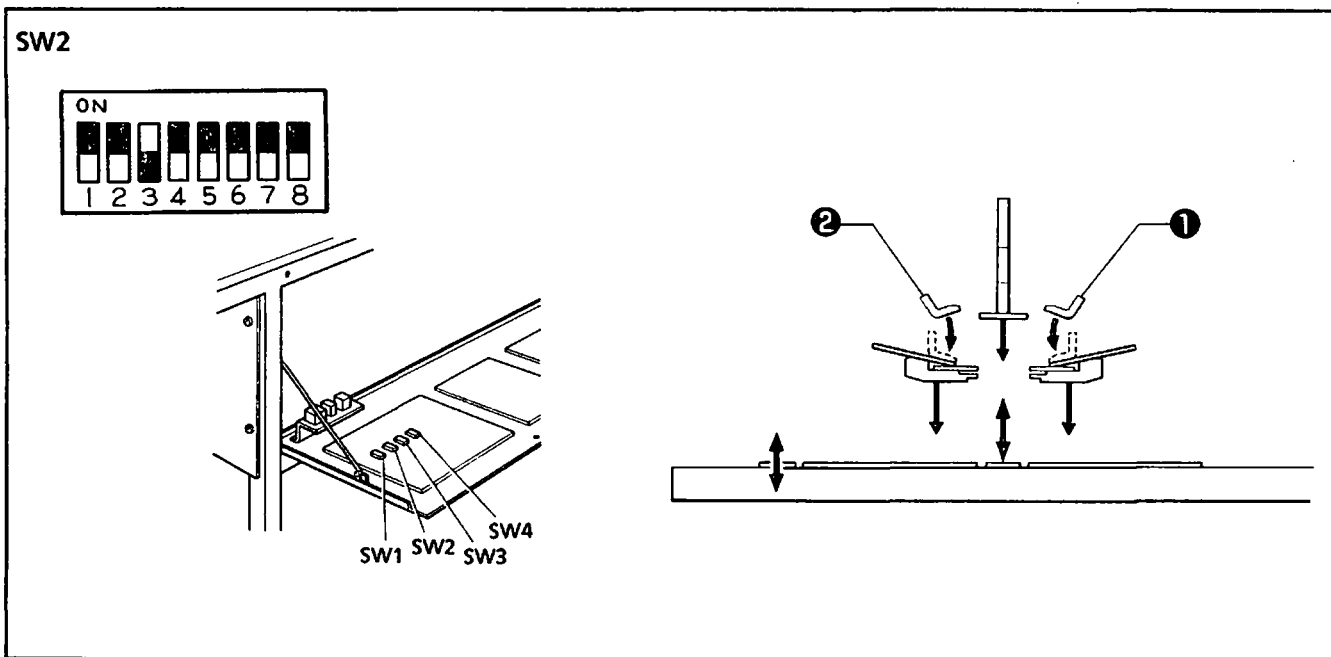
- SW1-1 - SW1-3 Determines the lockstitch pitch.
- SW1-4 Selects either backtacking or condensed stitching for fraying prevention.
- SW1-5 - SW1-6 Set the backtacking stitch length.
- SW1-7 - SW1-8 Set the condensed stitch pitch.
- SW2-1 - SW2-2 Selects the stitch length of either backtacking or condensed stitching.
- SW2-3 Selects the sewing speed according to cloth sewability.
- SW2-4 Selects the rate of the carriage feed to the sewing position and the corner knife position according to cloth sewability.
- SW2-5 - SW2-6 Controls carriage feed operation.
- SW2-7 Controls the order of the flap presser operation.
- SW2-8 Selects the foot switch operation.
- SW3-1 Automatically adjusts the positions of the center and corner knives according to the gauge size.
- SW3-2 - SW3-3 Selects whether or not to use the thread breakage detector.
- SW3-4 - SW3-5 Selects the stacker type.
- SW3-6 Selects whether or not to operate the carriage feed after sewing.
- SW3-7 Adjusts the home position sensor.
- SW3-8 Initializes the memory.
- SW4-1 (option) Selects whether or not to use the darts stretcher.
- SW4-2 Selects whether or not to operate the corner knife sensor.
- SW4-3 (option) Selects whether or not to use the automatic welt piece feeder.
- SW4-4 (option) Selects whether or not to use the automatic flap feeder.
- SW4-5 Selects whether or not to operate the corner knife in slant welting.
- SW4-8 Selects the backtacking type N or V.

★ The treadle can be set for 3, 4 or 5 position operation by setting the DIP switches.

	SW2-5	OFF	ON	OFF	ON
	SW2-6	OFF	OFF	ON	ON
Treadle	Position 1	Right carriage feed	Left carriage feed	Left and right carriage feeds	Left and right carriage feeds
	Position 2	Left carriage feed	Right carriage feed	Binder and folding plate	Binder and folding plate
	Position 3	Binder and folding plate	Binder and folding plate	Flap presser ①	Left and right flap pressers
	Position 4	Flap presser ①	Flap presser ①	Flap presser ②	—
	Position 5	Flap presser ②	Flap presser ②	—	—

When the flap presser ① is on the left, the flap presser ② will be on the right; when the flap presser ① is on the right, the flap presser ② will be on the left.

The setting of DIP SW2-7 determines which of the flap pressers operates.



Treadle operation for standing position

Set DIP SW 2-8 to OFF to adjust the treadle for two position operation (one position forward, one backward). This makes operation and material placement easier when the operator is standing up.

1. Press the treadle backward. Padding cloth presser foot springs (R) and (L) will rise.
2. Release your foot from the treadle. Padding cloth presser foot springs (R) and (L) will descend.
3. Press the treadle to position 1. Carriage feed (L) will descend.
4. Keep depressing the treadle for 0.5 second. Carriage feed (R) will be lowered.
5. Keep depressing the treadle for more 1.7 seconds. The binder will be lowered, and the folding plate will operate.
6. Keep depressing the treadle for more 1.5 seconds. Flap presser (L) will be lowered.
7. Keep depressing the treadle for more 1 second. Flap presser (R) will be lowered.
8. Press the start switch. The carriage feed will operate.

If the treadle is released after steps 3-7 above, the carriage feeds will not be released, but will remain as it were.

To proceed to the next step, press the treadle to position 1 again. At this time, operation will begin immediately irrespective of the time the treadle is pressed.

To return to a previous step, press the treadle backward. The machine will return to one step each time the treadle is pressed back.

Relationship between sewing speed and feed rate according to stitch pitch

Lockstitch pitch	1.4 mm	1.6	1.8	2.0	2.2	2.4	2.6	2.8
Motor speed	2500 spm	2188	2500	2500	2273	2500	2308	2143
Feed speed	3.5 m/min.		4.5 m/min.	5 m/min.		6 m/min.		

SW2-1 = ON

Lockstitch pitch	1.4 mm	1.6	1.8	2.0	2.2	2.4	2.6	2.8
Motor speed	2200 spm	1925	2200	2200	2000	2200	2031	1886
Feed speed	3.0 m/min.		3.96 m/min.	4.4 m/min.		5.28 m/min.		

SW2-1 = OFF

Condensed pitch	0.8 mm	1.0	1.2	1.4
Motor speed	2188 spm	1750	1458	1250
Feed speed	1.75 m/min.			

Backtacking pitch	1.4 mm	1.6	1.8	2.0	2.2	2.4	2.6	2.8
Motor speed	1571 spm	1375	1222	1100	1000	917	846	786
Feed speed	2.2 m/min.							

When SW2-3 is set to ON (2500 spm is set)

Lockstitch pitch	1.8 mm	2.0	2.2	2.4	2.6	2.8	3.0	3.2
Motor speed	2500 spm	2250	2500	2292	2500	2321	2500	2344
Feed speed	4.5 m/min.		5.5 m/min.		6.5 m/min.		7.5 m/min.	

When SW 2-3 is set to OFF (2200 spm is set)

Lockstitch pitch	1.8 mm	2.0	2.2	2.4	2.6	2.8	3.0	3.2
Motor speed	2200 spm	1980	2200	2017	2200	2043	2200	2063
Feed speed	3.9 m/min.		4.8 m/min.		5.7 m/min.		6.6 m/min.	

Backtacking pitch	0.8 mm	1.2	1.6	2.0
Motor speed	1000 spm	1000	1000	1000
Feed speed	0.8 m/min.	1.2 m/min.	1.6 m/min.	2.0 m/min.

Condensed pitch	0.4 mm	0.6	0.8	1.0
Motor speed	1600 spm	1600	1600	1600
Feed speed	0.6 m/min.	0.9 m/min.	1.2 m/min.	1.6 m/min.

25 I/O checking

★ Switch malfunctions can be isolated and identified by the following procedure.

1. Turn off the power.
2. Replace the main circuit board ROM with the I/O check ROM (option).
3. Turn on the power.
4. Set the switch to be checked to ON or OFF.
5. "※" will be replaced with numbers from 0 to 9 at the start and end of the center knife correction switch.

Switch		LED
MODE	AUTOMATIC	" × 1 × " (Length)
	MANUAL	" × 2 × " (Length)
	PROGRAM	" × 3 × " (Length)
	KNIFE CHANGE & CYCLE PGM.	" × 4 × " (Length)
CENTER KNIFE	START	"※ × × " (Length)
	END	" × × ※ " (Length)
EMERGENCY STOP		Emergency stop
PROGRAM	SELECT	Needle thread breakage
	SET	No bobbin thread
	CLEAR	Program error
× 100		Program 1
× 10		Program 2
× 1		Program 3
BOBBIN COUNTER SET	SET	Program 4
	SELECT	Program 5
CORNER KNIFE ON		Seam length
CENTER KNIFE ON		Bobbin thread setting
CARRIAGE FEED	FORWARD	Bobbin thread 2 " " (Bobbin thread)
	BACKWARD	Bobbin thread 2 " " (Bobbin thread)
THREAD TRIMMER	UPPER ON	Bobbin thread 3 " " (Bobbin thread)
	LOWER ON	Bobbin thread 3 " " (Bobbin thread)
STACKER ON		Bobbin thread 1
FOOT SWITCH	Padding cloth presser foot	"111" (Bobbin thread)
	Carriage feed ①	"222" (Bobbin thread)
	Carriage feed ②	"333" (Bobbin thread)
	Binder	"444" (Bobbin thread)
	Flap presser ①	"555" (Bobbin thread)
	Flap presser ②	"666" (Bobbin thread)
Start		Program number
SLANT WELTING PROGRAM (BAS-612)	SELECT switch	All LEDs R, L, S, and E will light.
	S side switch	8" (S side)
	E side switch	8" (E side)

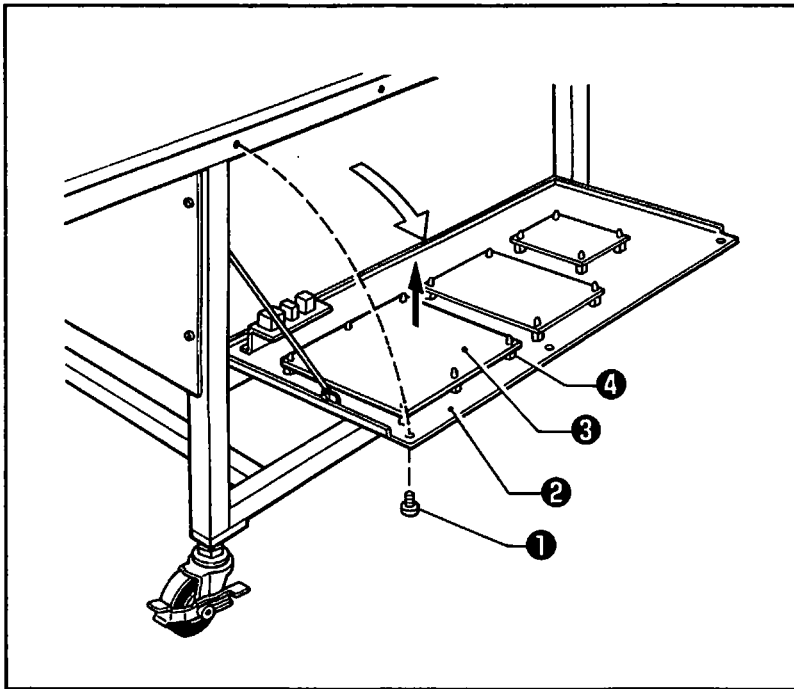
※ If the LED corresponding to one of the above switches does not light, a switch malfunction should be assumed.

STANDARD ADJUSTMENT

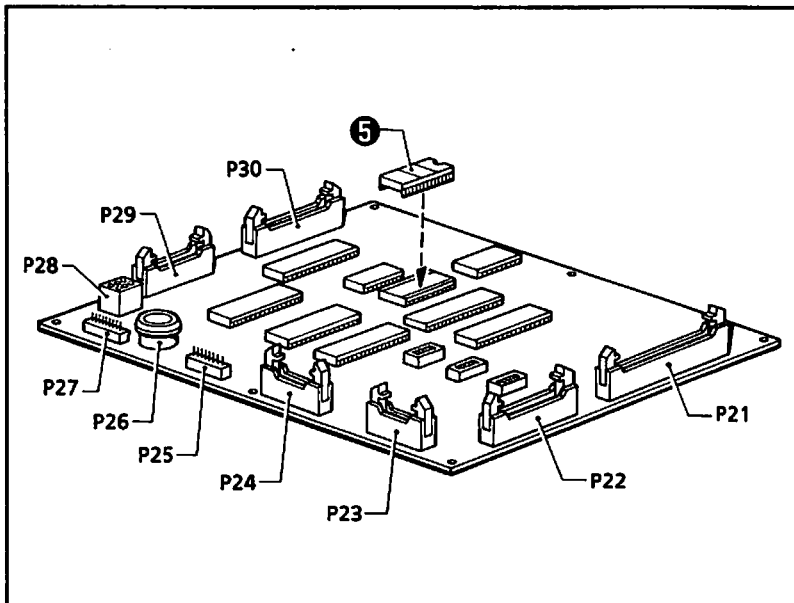
(ELECTRONIC PORTION)

1 Replacing the circuit board

(1) Replacing the main circuit board



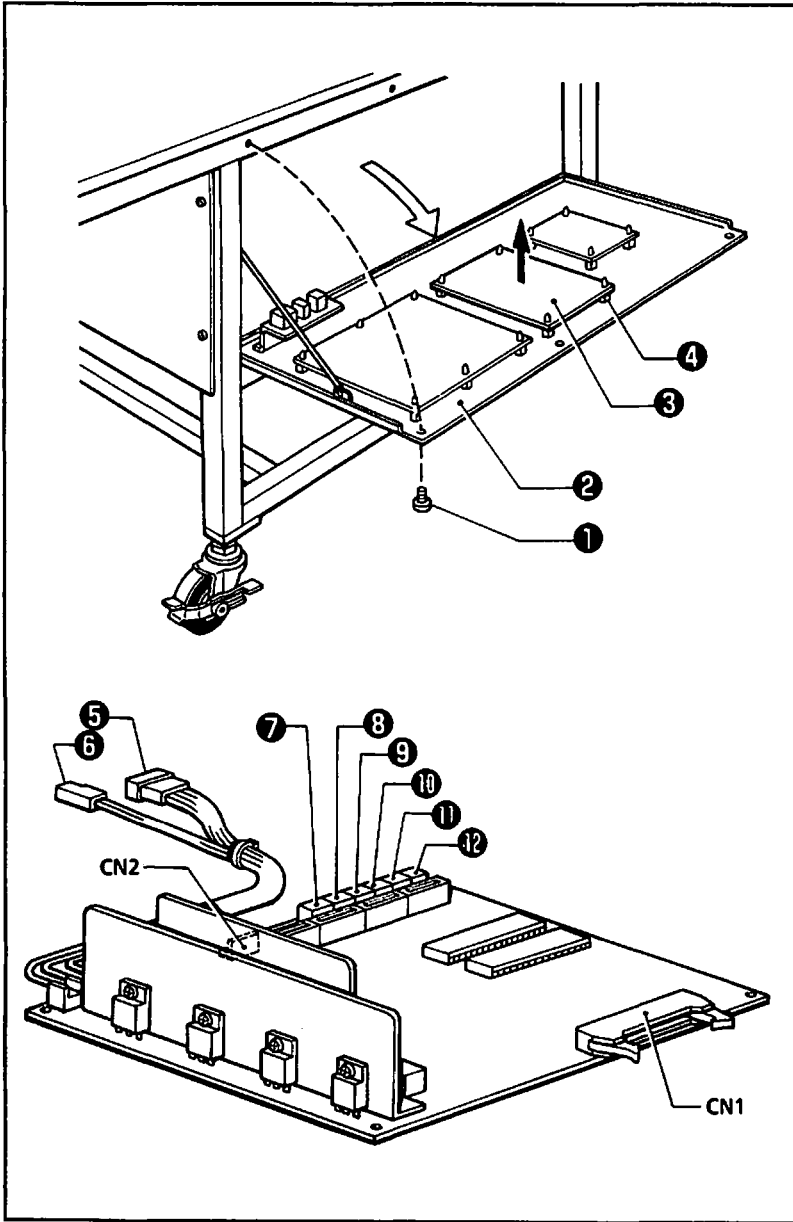
1. Remove the three screws ①, and open the cover ②.
2. Remove the connectors from the sockets in the main circuit board ③.
3. Remove the main circuit board ③ from the six supports ④.



4. Connector assignments
 - P21... Not used
 - P22... Panel circuit board in operation box
 - P23... Flap circuit board (BAS-611 only) in operation box
 - P24... Relay panel, foot switch, start switch, thread breakage monitor
 - P25... Position sensor, cylinder sensor
 - J26 ... Synchronizer
 - P27... Machine motor circuit board
 - P28... Power supply unit
 - P29... Solenoid valve
 - P30... DC motor circuit board

5. When replacing the main circuit board ③ with a new one, refer to the following and reverse the removal procedure above.
 - ※ Firmly insert the connectors in the sockets, and secure those with locks.
 - ※ Make sure the PROM ⑤ is connected.
 - ※ When attaching a new circuit board, set DIP switches 1-4 to the same settings as those in the removed circuit board. (To change the settings, see pages 82-83, "DIP switch settings".)

(2) Replacing the DC motor circuit board



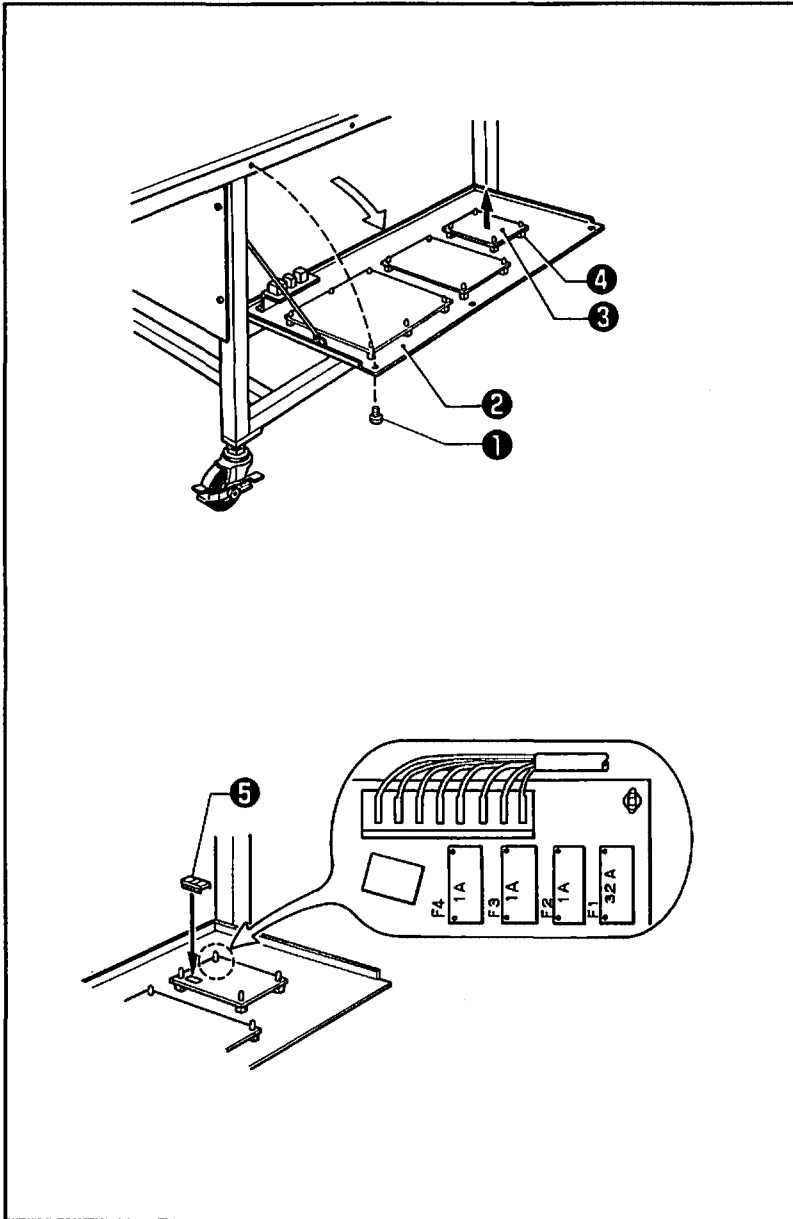
1. Remove the three screws ①, and open the cover ②.
2. Remove the connectors from the sockets in the DC motor circuit board ③.
3. Remove the DC motor circuit board ③ from the four supports ④.
4. Connector assignment
 CN1 Main circuit board
 CN2 DC motor encoder
 4P connector ⑤ ... Power supply unit
 2P connector ⑥ ... DC motor
5. When replacing the DC motor circuit board ③ with a new one, refer to the following, and reverse the removal procedure above.

※ Firmly insert the connectors in the sockets, and secure those with locks.

※ The switches ⑦ to ⑫ are set prior to shipping. Confirm the settings and do not change them.

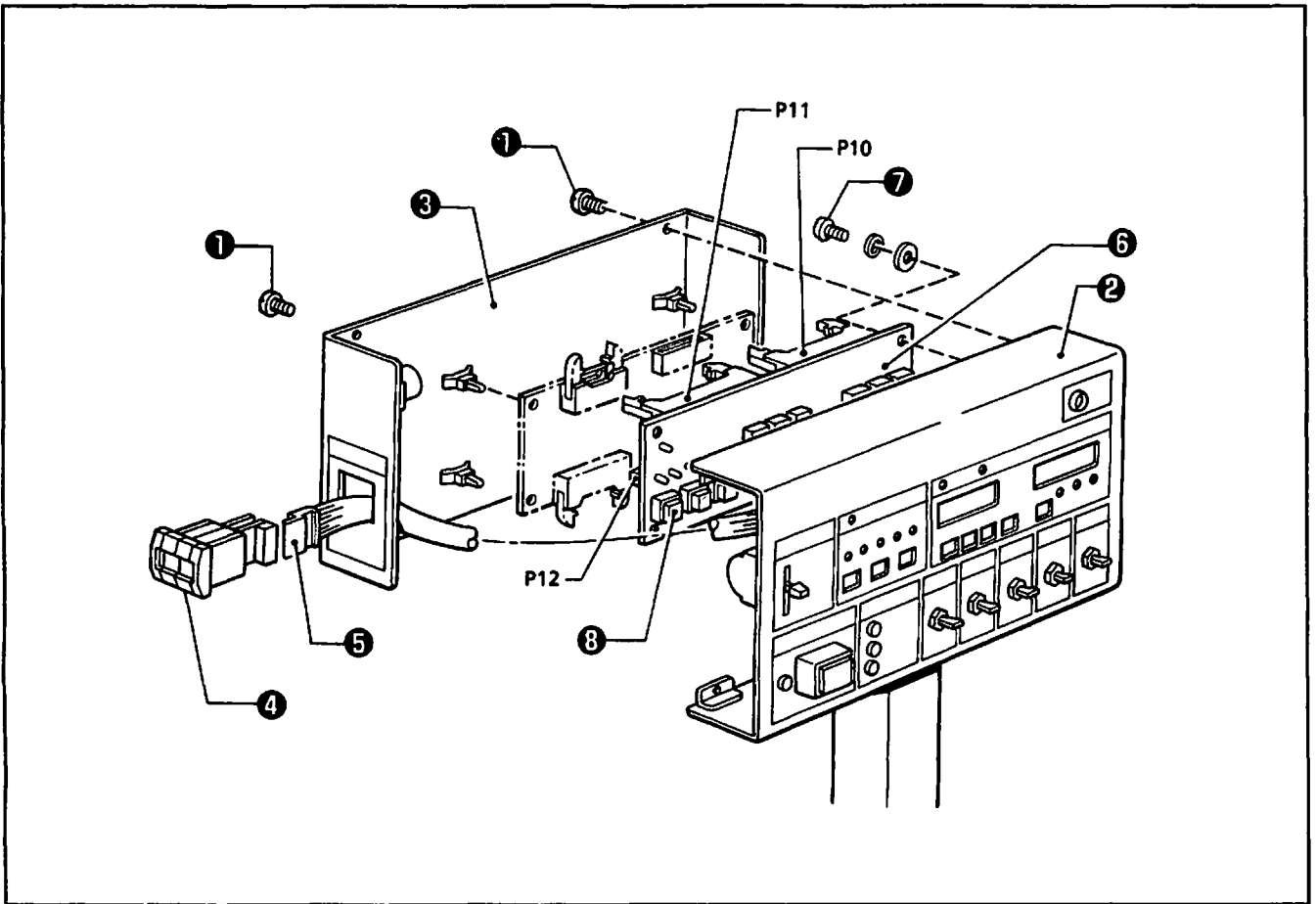
- Switch ⑦ ... STEP U ... [∅]
- Switch ⑧ ... STE P L ... [4]
- Switch ⑨ ... H P U ... [∅]
- Switch ⑩ ... H P M U ... [∅]
- Switch ⑪ ... H P M L ... [E]
- Switch ⑫ ... H P L ... [∅]

(3) Replacing the machine motor circuit board



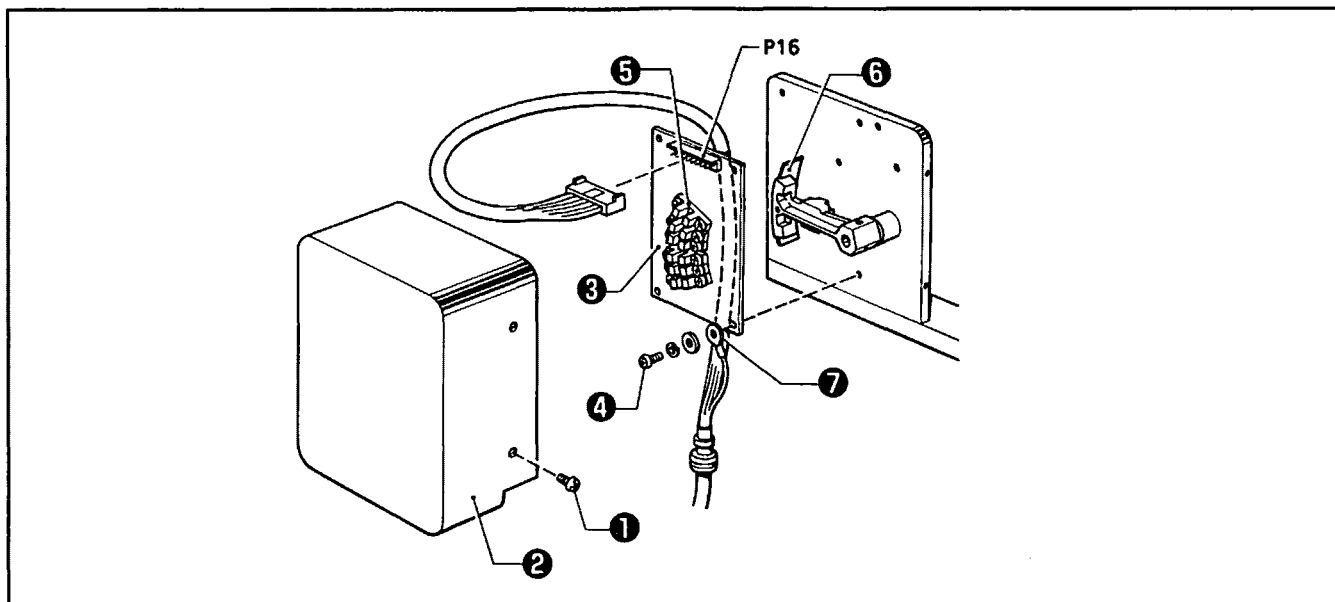
1. Remove the three screws ❶, and open the cover ❷.
 2. Remove the connectors from the sockets in the machine motor circuit board ❸.
 3. Remove the machine motor circuit board ❹ from the four supports ❺.
 4. Connector assignments
 P1... Power supply unit
 P2... Power supply unit
 P3... Main circuit board
 5. When replacing the machine motor circuit board ❸ with a new one, refer to the following, and reverse the removal procedure above.
 - ※ Firmly insert the connectors in the sockets, and secure those with locks.
 - ※ Make sure the PROM ❸ is connected.
 - ※ Make sure that fuses F1-F4 are the correct ones.
 - Fuse F1 ... 3.2 A
 - Fuse F2 ... 1.0 A
 - Fuse F3 ... 1.0 A
 - Fuse F4 ... 1.0 A
- Special fuses are used.
- F1 ... Microfuse LM32
(manufactured by Daito Tsushin)
 - F2 - F4... Microfuse LM10
(manufactured by Daito Tsushin)

(4) Replacing the panel circuit board (BAS-611, 612)



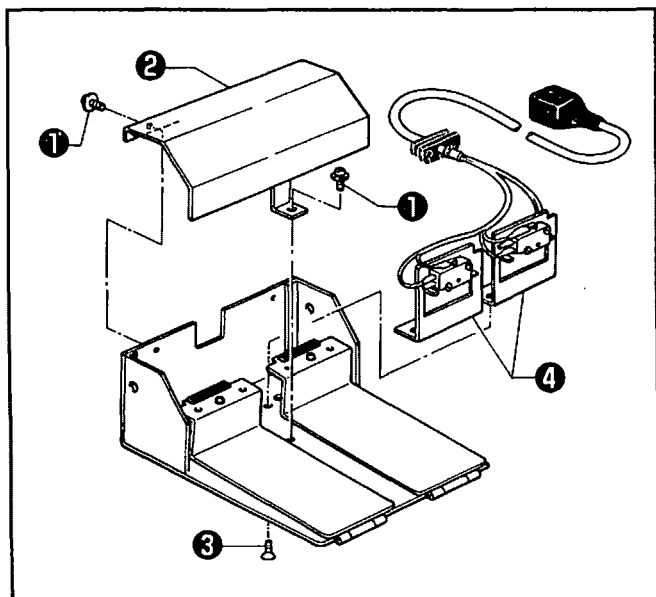
1. Remove the screws ①, and open the cover ② of the operation box ② slightly.
2. Remove the connector ⑤ from the switch ④, and remove the cover ②.
3. Remove all connectors from the sockets on the panel circuit board ⑥.
4. Remove the screw ⑦, and the panel circuit board ⑥.
5. Connector assignments
 - P10 ... Main circuit board
 - P11 ... Panel operation switch
 - P12 ... Buzzer
6. When replacing the panel circuit board ⑥ with a new one, refer to the following, and reverse the removal procedure above.
 - ※ Tighten the screw ⑦ where the switches ③ on the panel circuit board ⑥ operate correctly.
 - ※ Firmly insert the connectors in the sockets, and secure those with locks.

(5) Replacing the foot switch circuit board (BAS-610, 611, 612)



1. Remove the four screws ①, and the cover ②.
2. Remove the connectors from the sockets on the foot switch circuit board ③.
3. Remove the four screws ④, and the foot switch circuit board ⑤.
4. Connector assignment
P16 ... From relay panel to main circuit board
5. When replacing the foot switch circuit board ⑤ with a new one, refer to the following, and reverse the removal procedure above.
 - ※ Firmly insert the connectors in the sockets, and secure those with locks.
 - ※ Make sure the photosensor ⑥ on the circuit board does not make contact with the photocoupler actuator plate ⑥. Also, confirm that the operation position of the photocoupler actuator plate ⑥ is as described in "Adjusting the foot switch" on page 74. (The position of the photocoupler actuator plate ⑥ to the circuit board should not change unless the photocoupler actuator plate ⑥ is removed.)
 - ※ Do not forget to reattach the ground terminal ⑦.

(6) Replacing the pedal switch

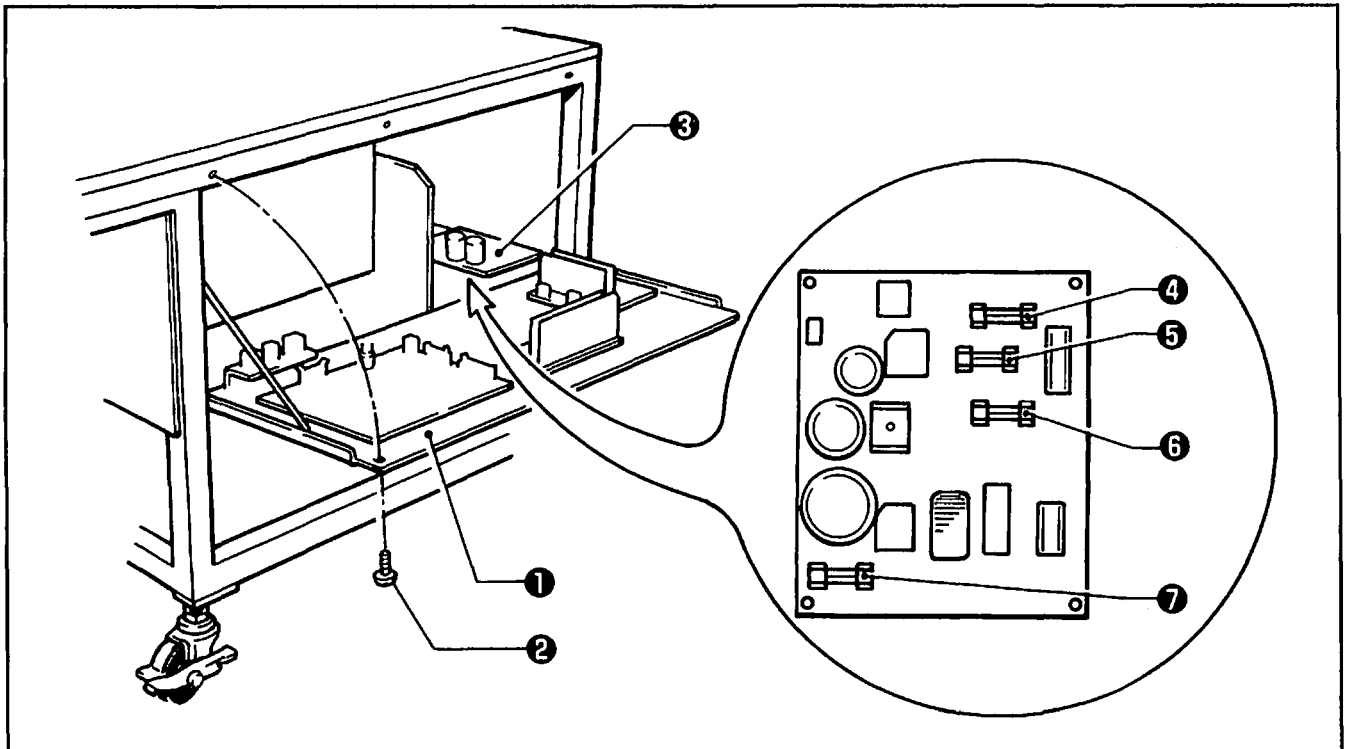


1. Remove the connector.
2. Remove the three screws ①, and the pedal cover ②.
3. Remove the four screws ③, and the switch assembly ④.

2 Replacing the fuse

- ★ When a fuse blows, refer to the table below to assure replacement with one of equivalent capacity.
- ★ Make sure the machine motor circuit board and the driver have no problems, then replace the fuse.

Power supply unit fuses (BAS-605, 606)

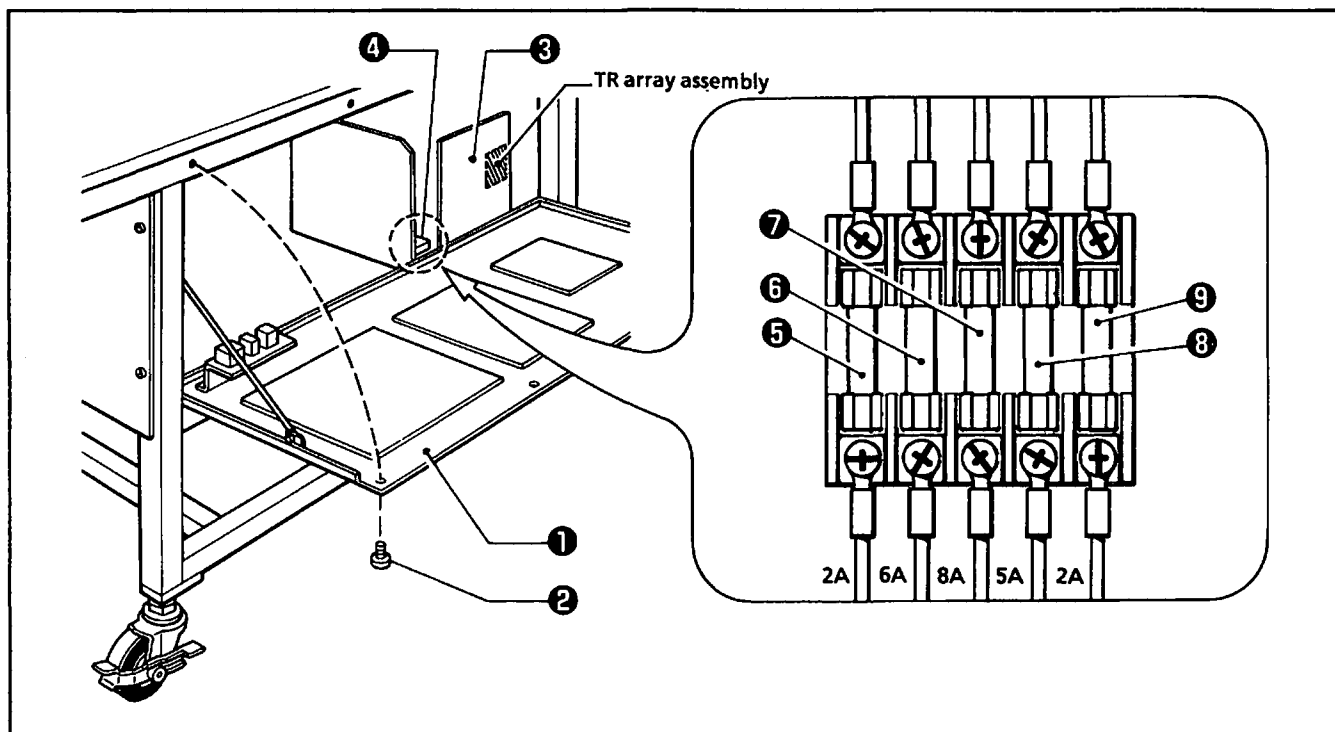


1. Remove the three screws ②, and open the cover ①.
2. Replace the fuses ④-⑦ on the power supply unit circuit board ③.

	Capacity	Application	What happens when fuse blows
Fuse ④	2A	Valve power supply	Cylinder does not operate.
Fuse ⑤	6A	5V power supply	Power supply indicator goes out; machine does not operate.
Fuse ⑥	8A	High voltage power supply	Error message E-3-03 or E-3-05 appears.
Fuse ⑦	5AFB	Machine motor power supply	Error message E-2-01 appears.

- ★ When a fuse blows, refer to the table below to assure replacement with one of equivalent capacity.
- ★ Make sure the machine motor circuit board and the driver have no problems, then replace the fuse.

(1) Power supply unit fuses (BAS-610, 611, 612)

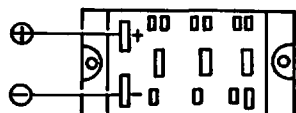


1. Remove the three screws ②, and open the cover ①.
2. Replace the fuses ⑤-⑨ in the fuse holder ④ on the power supply unit ③.

	Capacity	Application	What happens when fuse blows
Fuse ⑤	2A	Valve power supply	Cylinder does not operate.
Fuse ⑥	6A	5V power supply	Power supply indicator goes out; machine does not operate.
Fuse ⑦	8A	High voltage power supply	Error message E-3-03 or E-3-05 appears.
Fuse ⑧	5AFB	Machine motor power supply	Error message E-2-01 appears.
Fuse ⑨	2A	Thread winding motor power supply	Thread winding motor does not operate.

Fuse ⑧, 5AFB is a fast-blow fuse; all others are standard (ø6.4 x 30 m/m)

TR array assembly



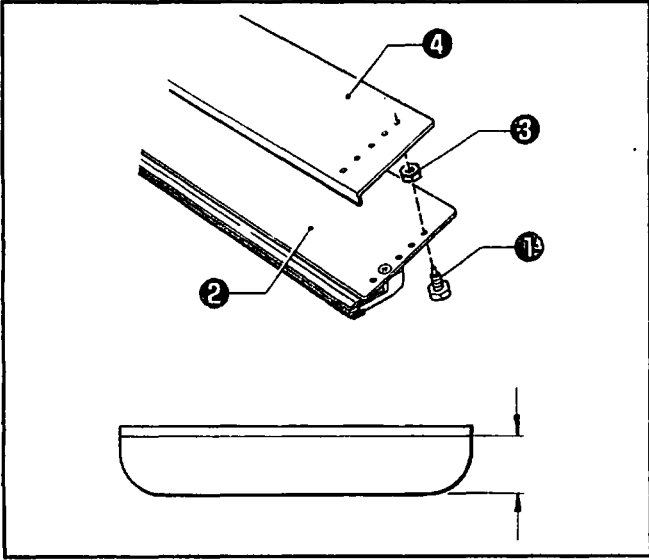
Perform the following before replacing fuse ⑧. Measure the resistance between the + pin and - pin. It should be 60 ohms. If it is 0 or ∞ ohms, replace the TR array assembly and the motor circuit board.

(2) Circuit board fuses

The machine motor circuit board is the only circuit board with on-board fuses. See page 90 for replacement.

OPTIONAL PARTS INSTALLATION

1 Flap guide (S11504-001)

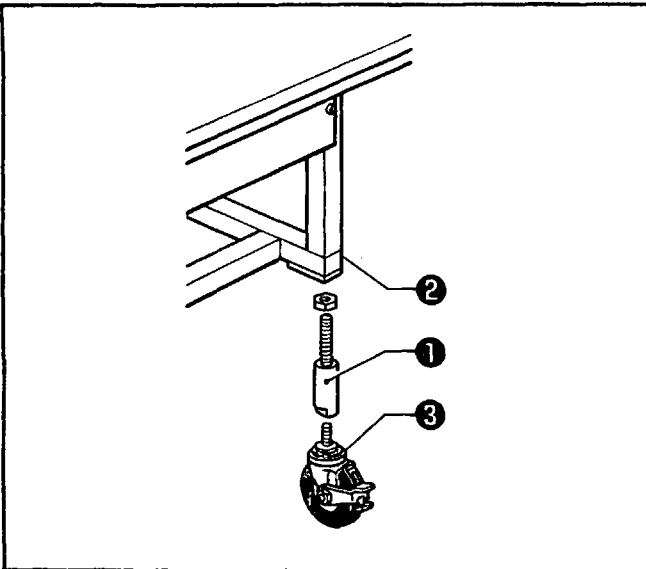


★ The flap length can be easily adjusted after flap sewing has been completed.

<Attachment>

- (1) Pass the flap guide pin ① through the underside of carriage feed U-R ②, and secure it using the nut ③.
- (2) Fit the hole of the flap guide ④ over the flap guide pin ①, and secure it.
- (3) Adjust the position of the flap guide pin ① so that the number beside the hole matches the flap length (in the figure on the left) after sewing has been completed.

2 Spacer for working while standing up (S11148-001)



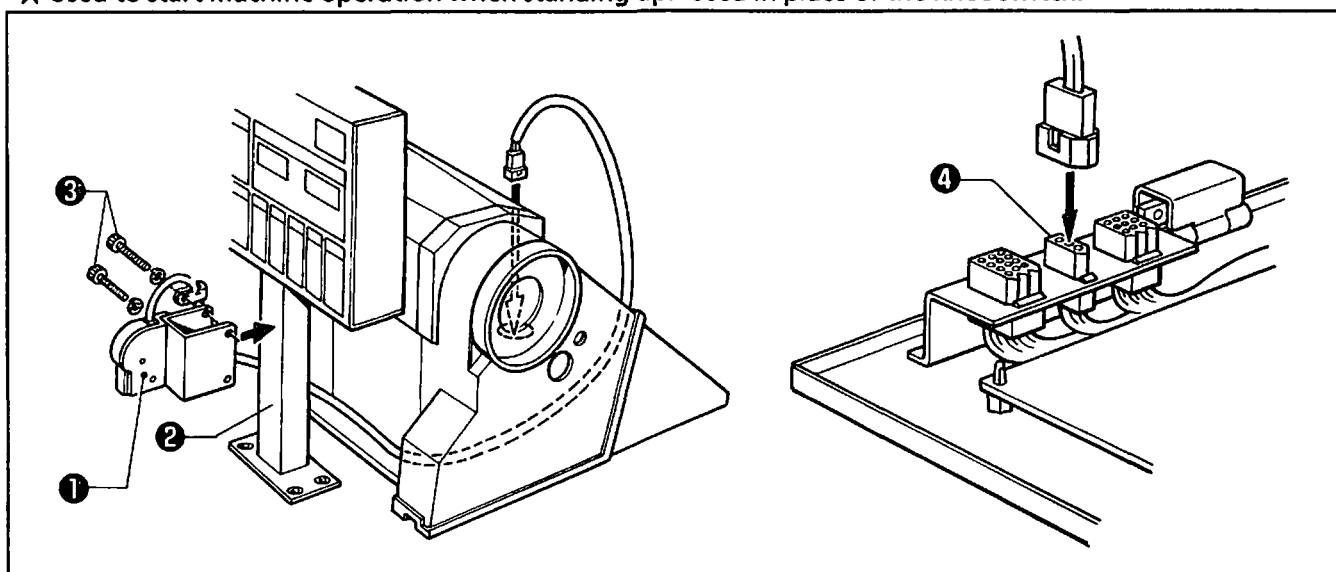
★ These spacers are used to raise the table height for working while standing up.

<Attachment>

- Insert the spacer ① between the frame ② and the caster ③.

3 Hand switch (S11503-009)

★ Used to start machine operation when standing up. Used in place of the knee switch.

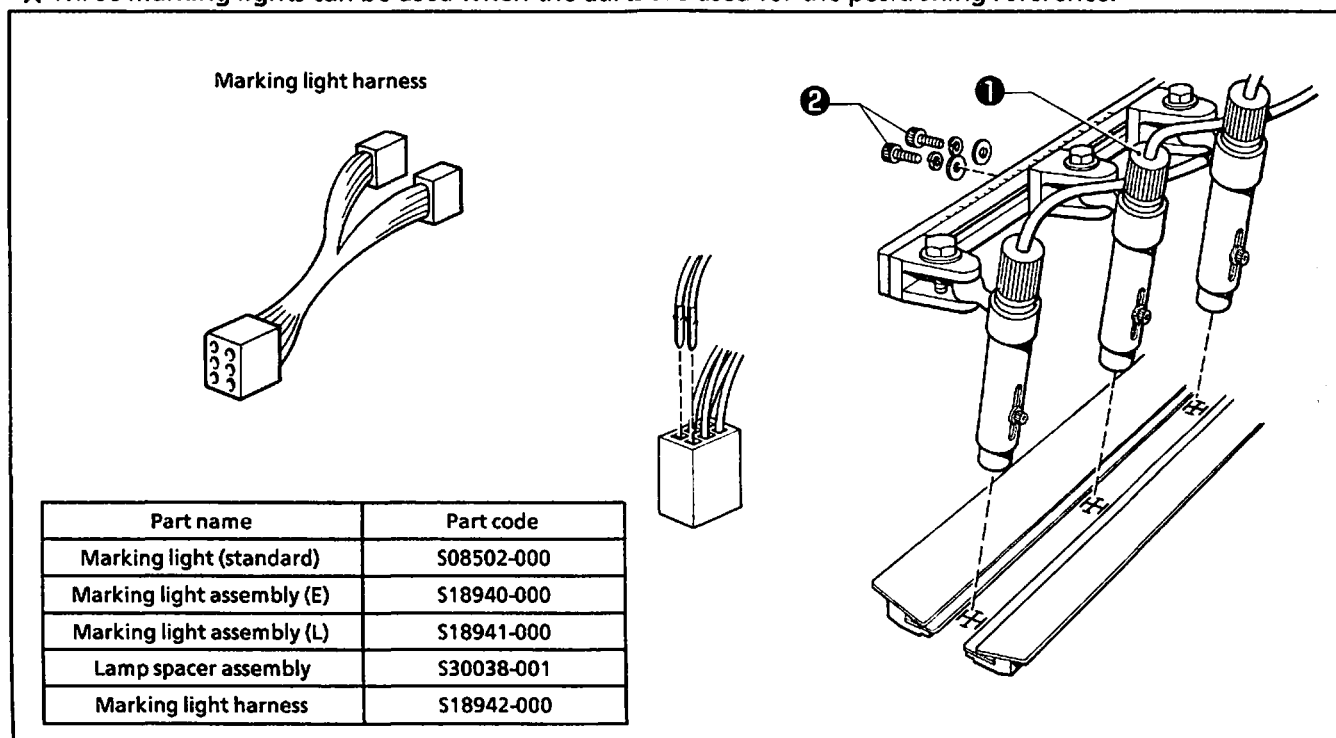


<Attachment>

- (1) Secure the hand start switch assembly ① to the control box support ② using the two bolts ③.
 - (2) Pass the cord through the hole in the table as shown in the figure below.
 - (3) Plug the connector into the 2P connector ④.
- ※ If the knee switch is already connected, change it for the hand switch connector.

4 Marking lights

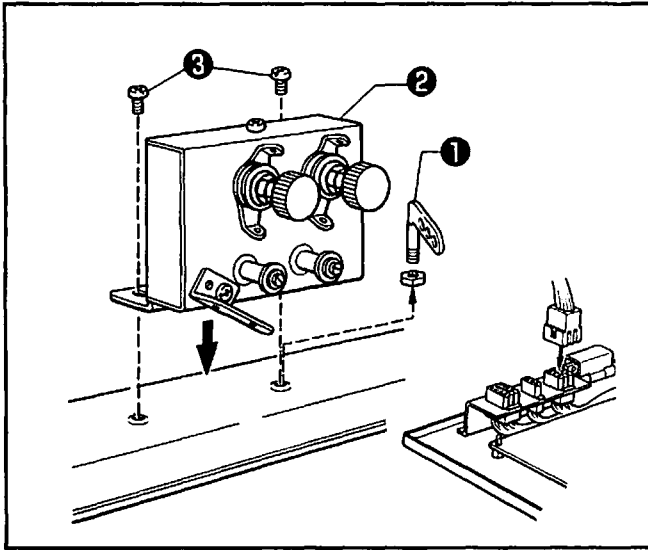
★ Three marking lights can be used when the darts are used for the positioning reference.



<Attachment>

- (1) Attach the marking light assembly ① using the bolts ② as shown in the figure above.
 - (2) Keep the cord together with the cords from the other two lights, and plug the cords into the connector.
- ※ The cords can be plugged into any of holes.

5 Thread breakage detector (S09399-009)

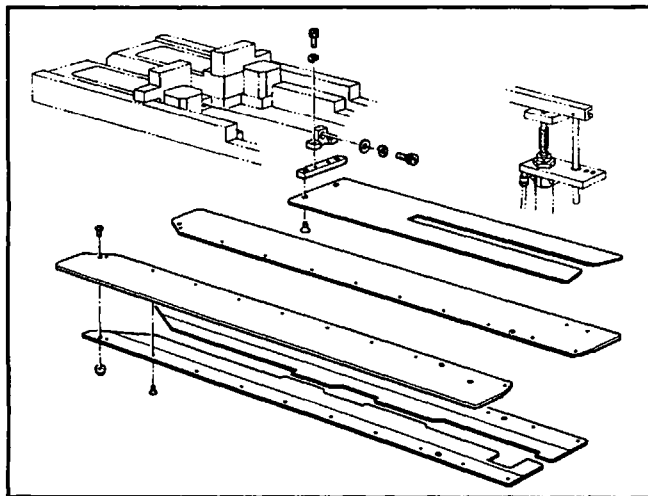


★ When the thread breaks, the machine is stopped automatically, and the material is not damaged.

<Attachment>

- (1) Remove the two thread guides ①.
- (2) Attach the thread breakage detector ② using the two screws ③ provided.
- (3) Pass the cord through the hole in the table, and connect it to the circuit board.

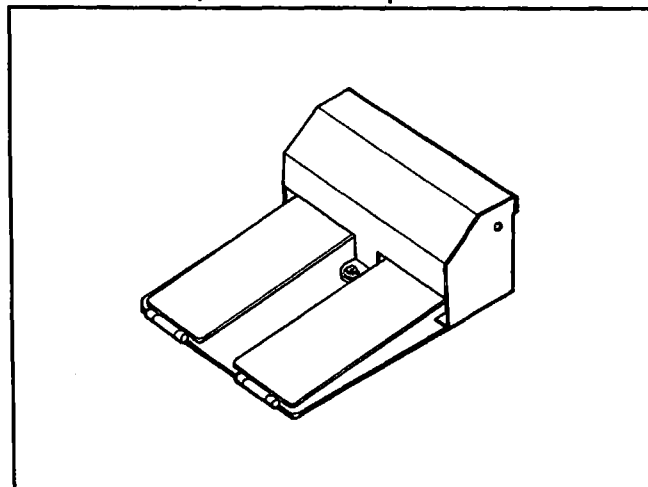
6 Lower feed device



Part name	Dimension	Part code
Lower feed device	8 - 12 mm	S21616-001
	14 - 16 mm	S21617-001
	18 - 20 mm	S21618-001

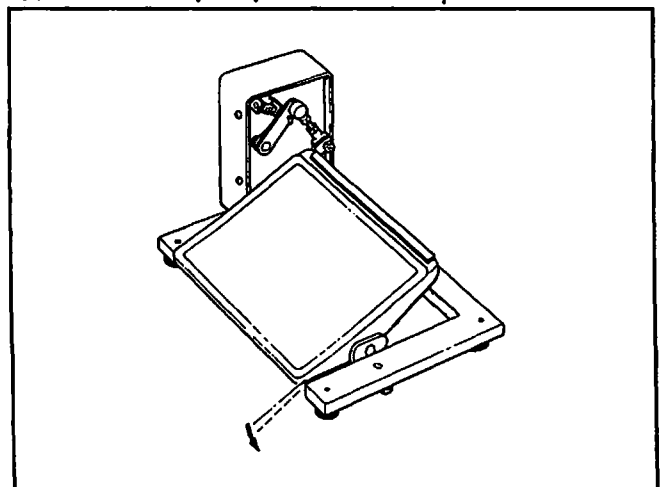
7 Pedal (S18091-001)

★ For BAS-605, 606 standard specifications



8 Foot switch (S32012-009)

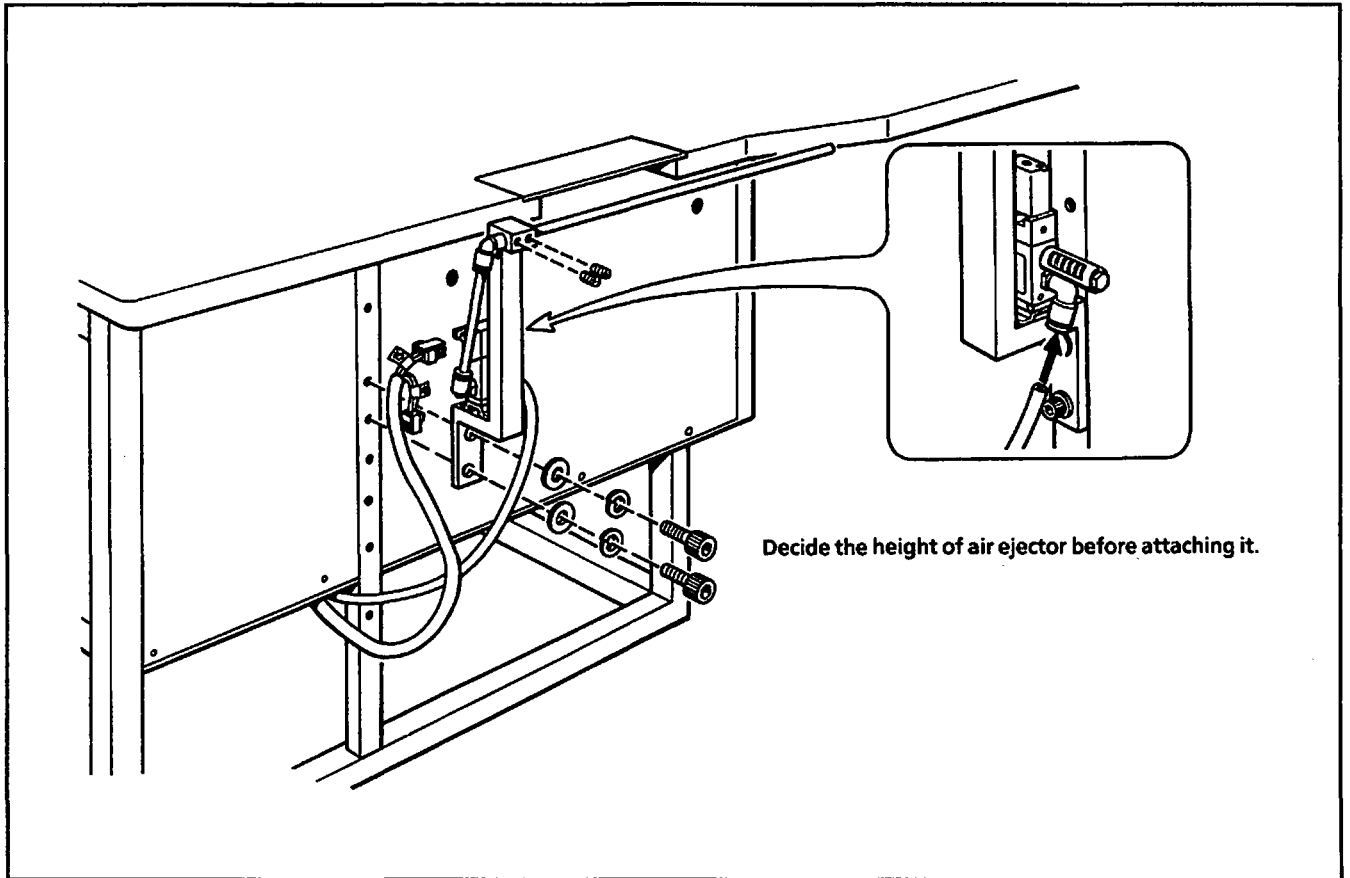
★ For BAS-610, 611, 612 standard specifications



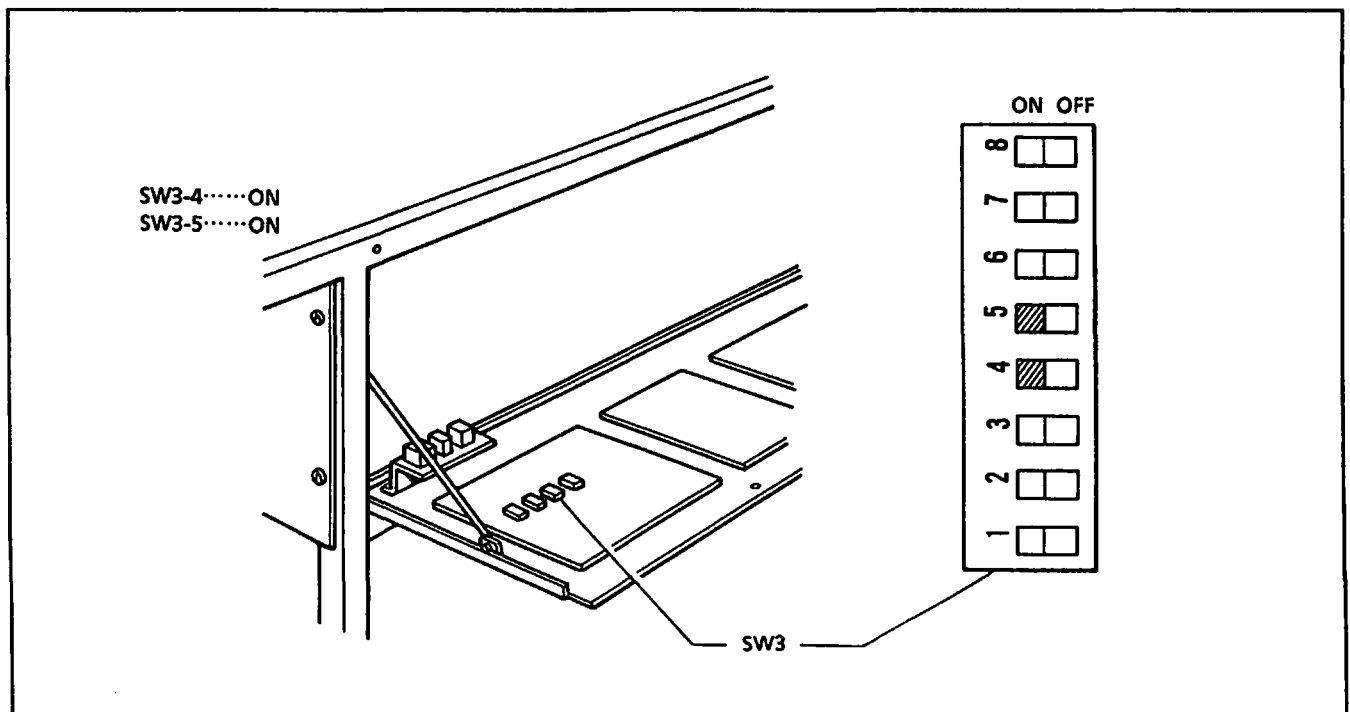
8 Air ejector (S14155-009)

★ In the hanger conveyor system, the air ejector is convenient when sewing trousers transported on the hangers (there is no need to remove them from the hangers).

1. Wiring



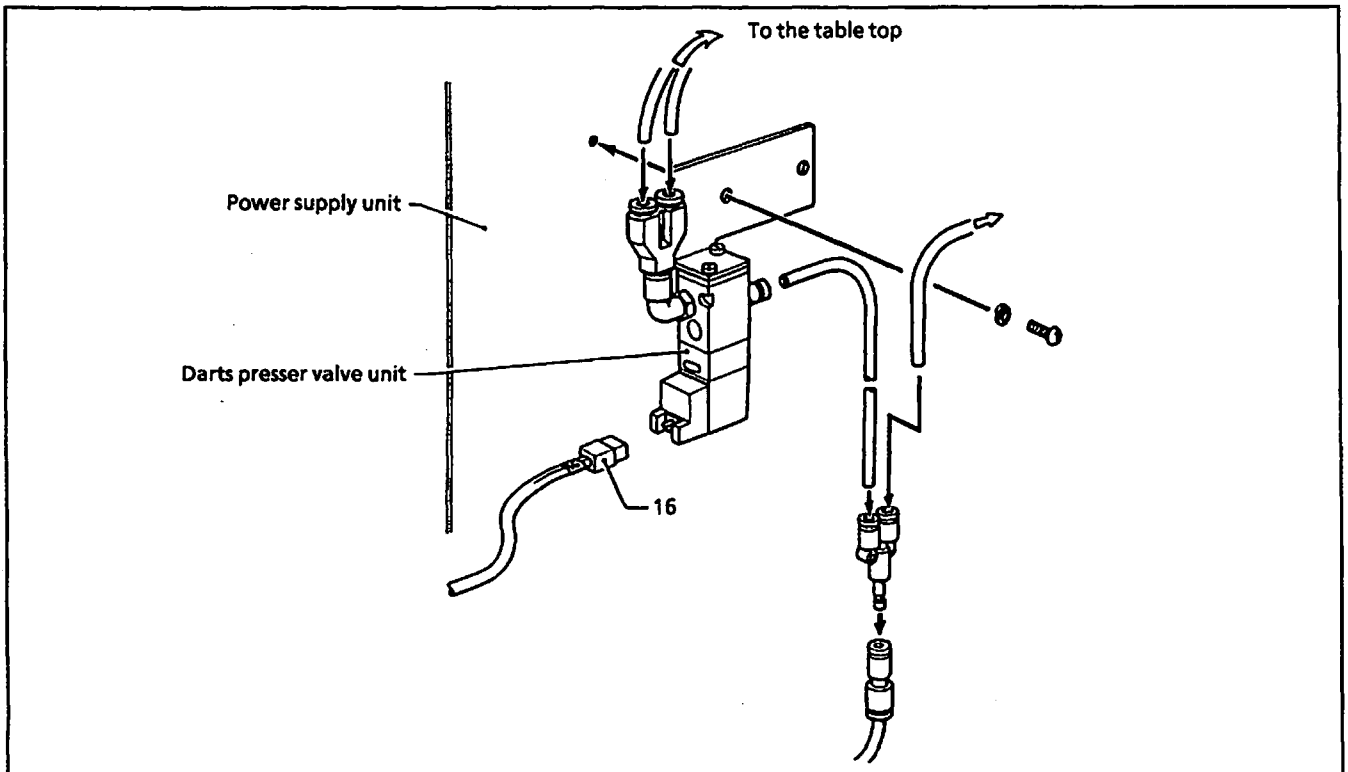
2. DIP switch settings



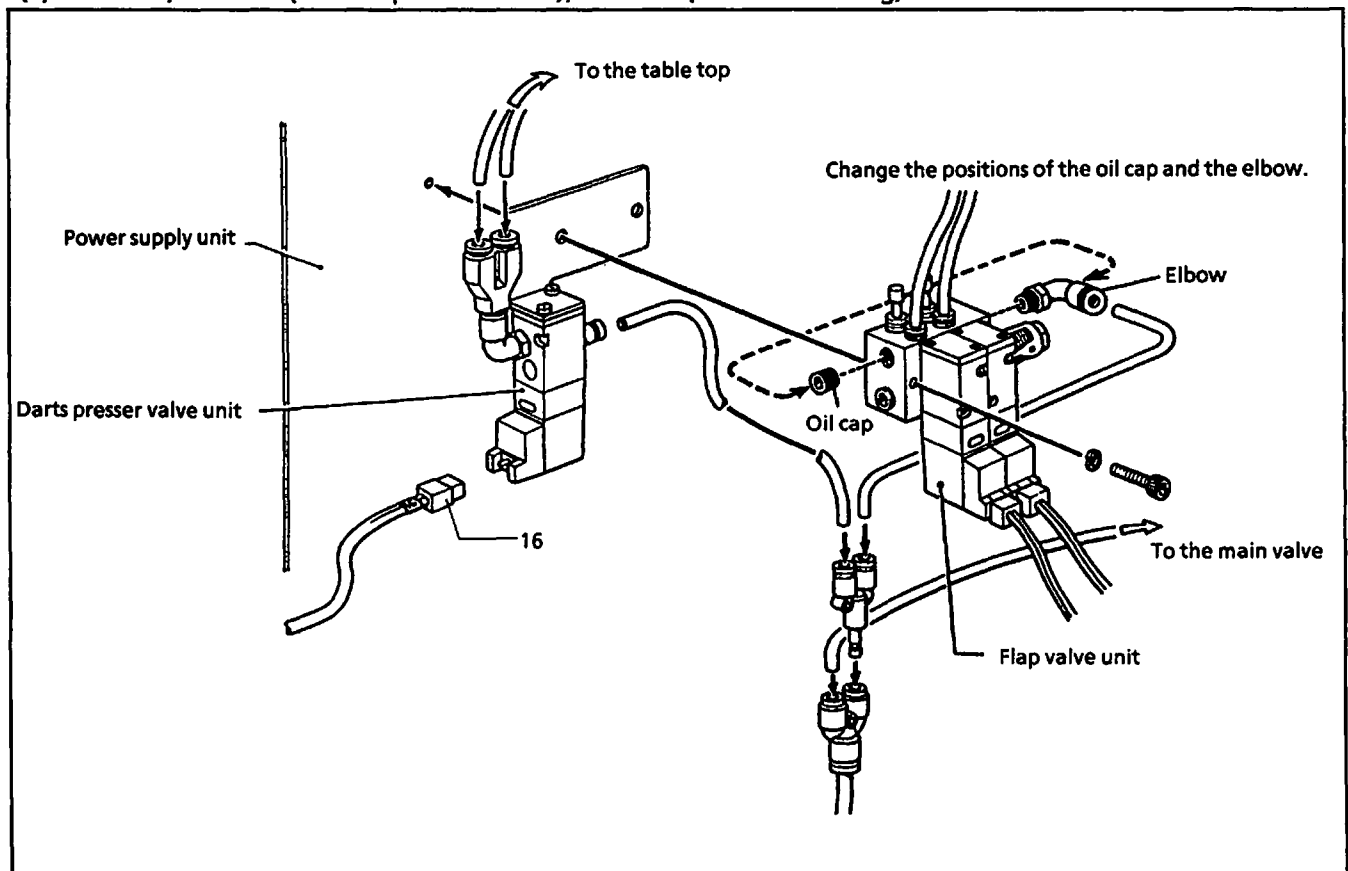
9 Darts stretcher assembly (S15890-001)

1. Attaching the valve unit

(1) BAS-605, 610



(2) BAS-606, BAS-611 (with flap attachment), BAS-612 (for slant welding)

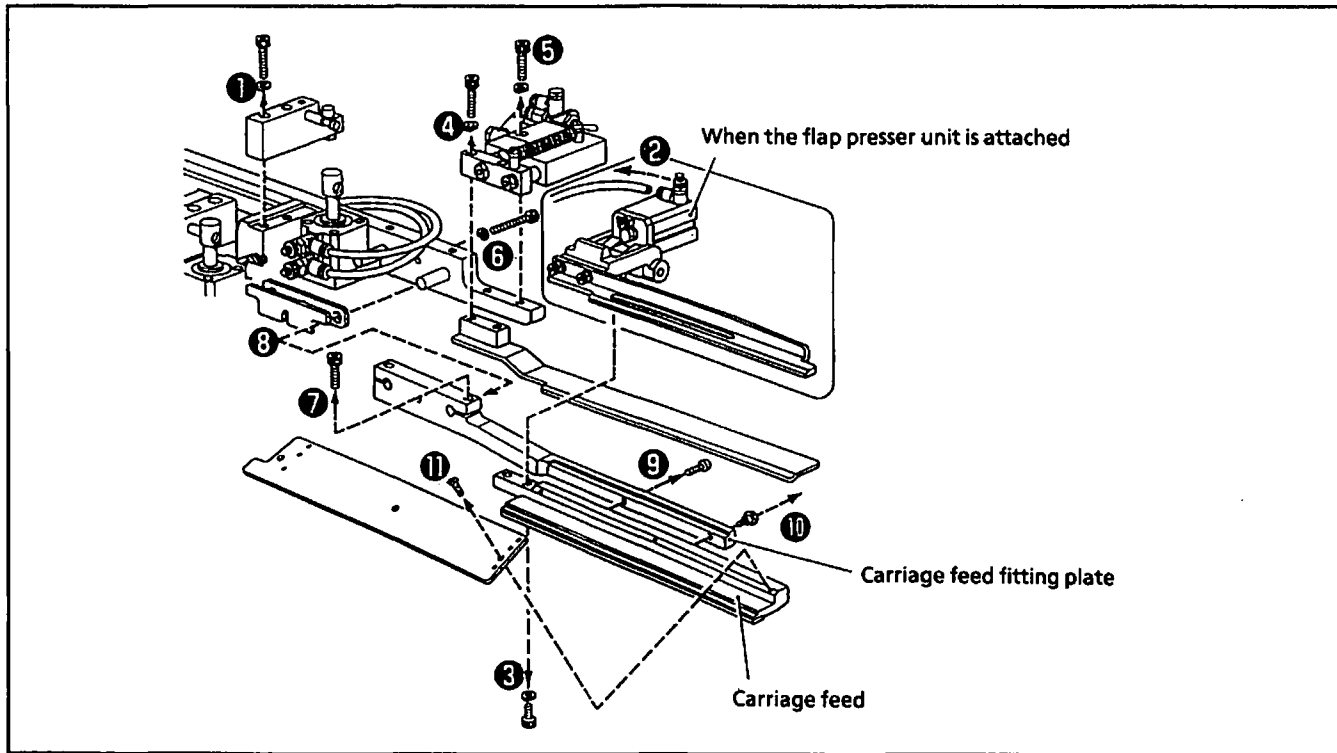


2. Attaching the darts stretcher assembly

(1) Removing the carriage feed from the machine (Follow the order ① to ⑩.)

★ Remove the carriage feed and the carriage feed fitting plate.

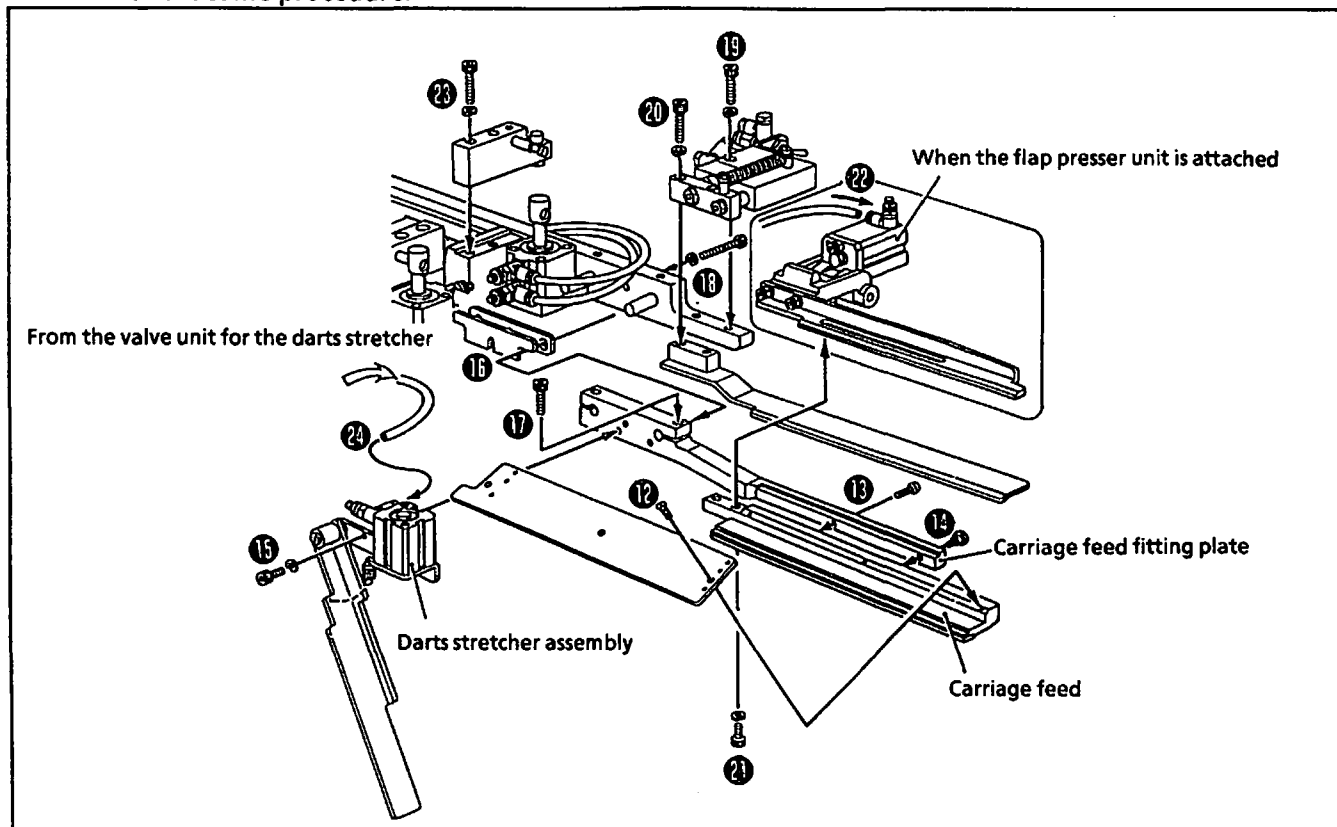
★ The figure below shows the right carriage feed. Remove the left ones with the same procedure.



(2) Attaching the darts stretcher assembly (Follow the order ⑫ to ⑳.)

★ Replace the carriage feed and the carriage feed fitting plate.

★ The figure below shows the right carriage feed and carriage feed fitting plate. Attach the left ones with the same procedure.

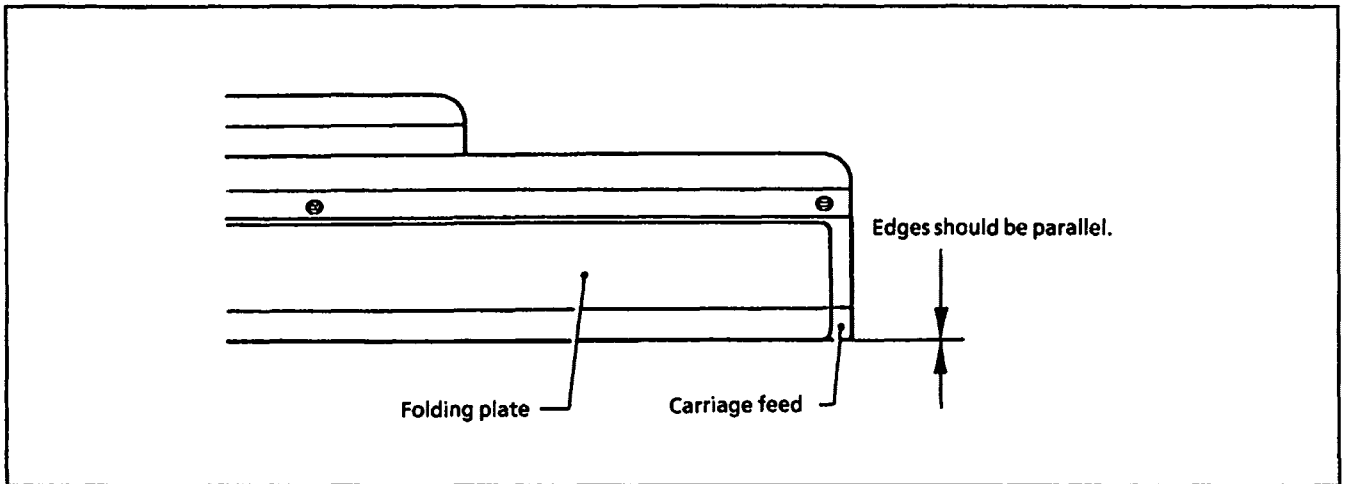


(3) Notes on attachment

※ Adjust the following parts when attaching them

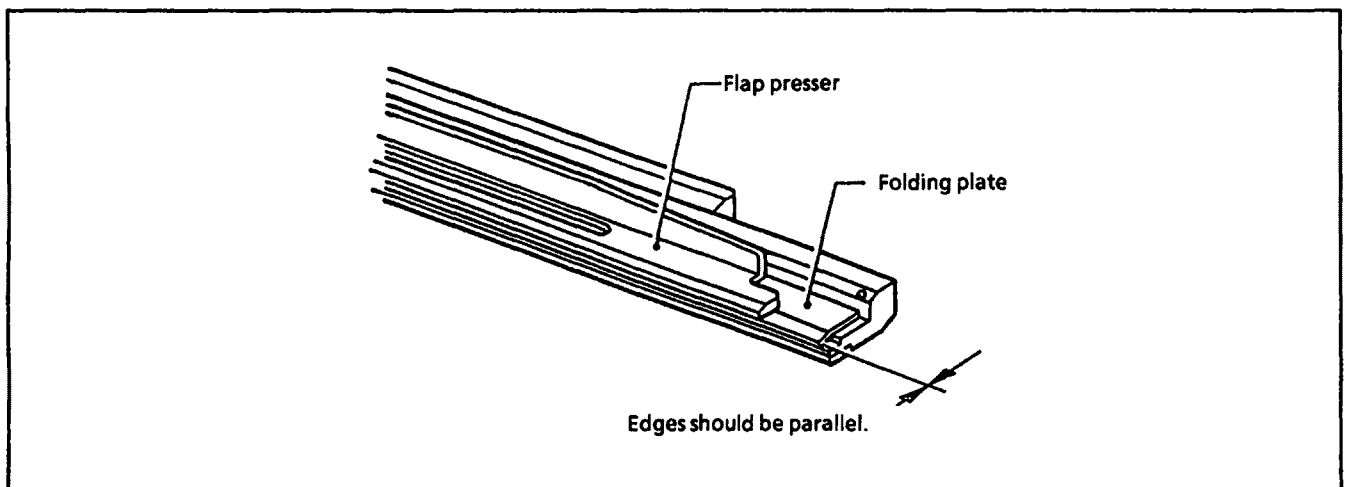
Adjustment 1

Two screws ⑩



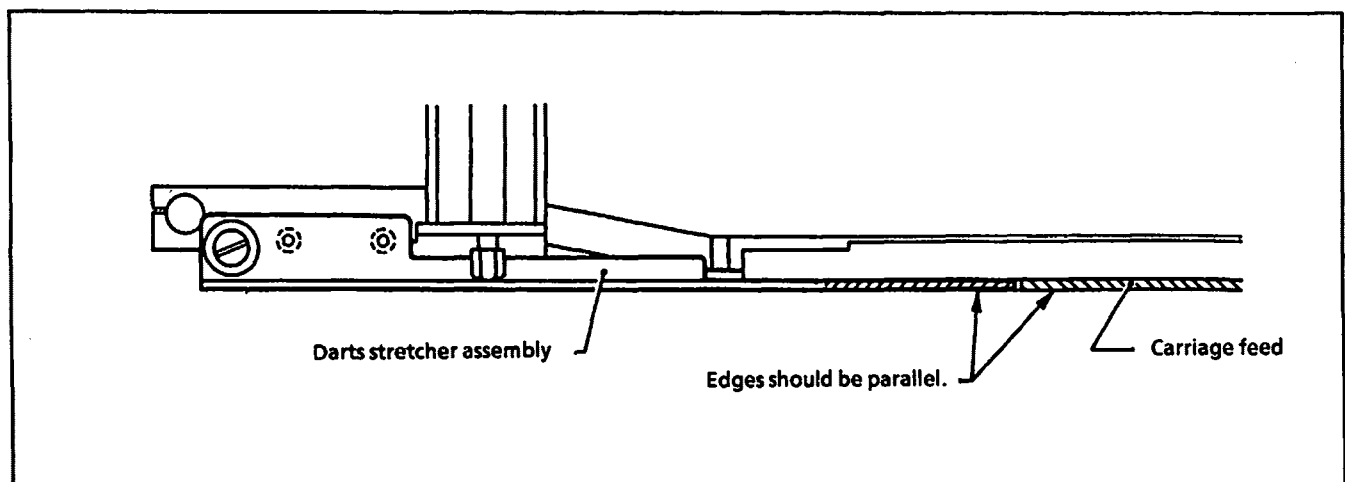
Adjustment 2

Two screws ⑪



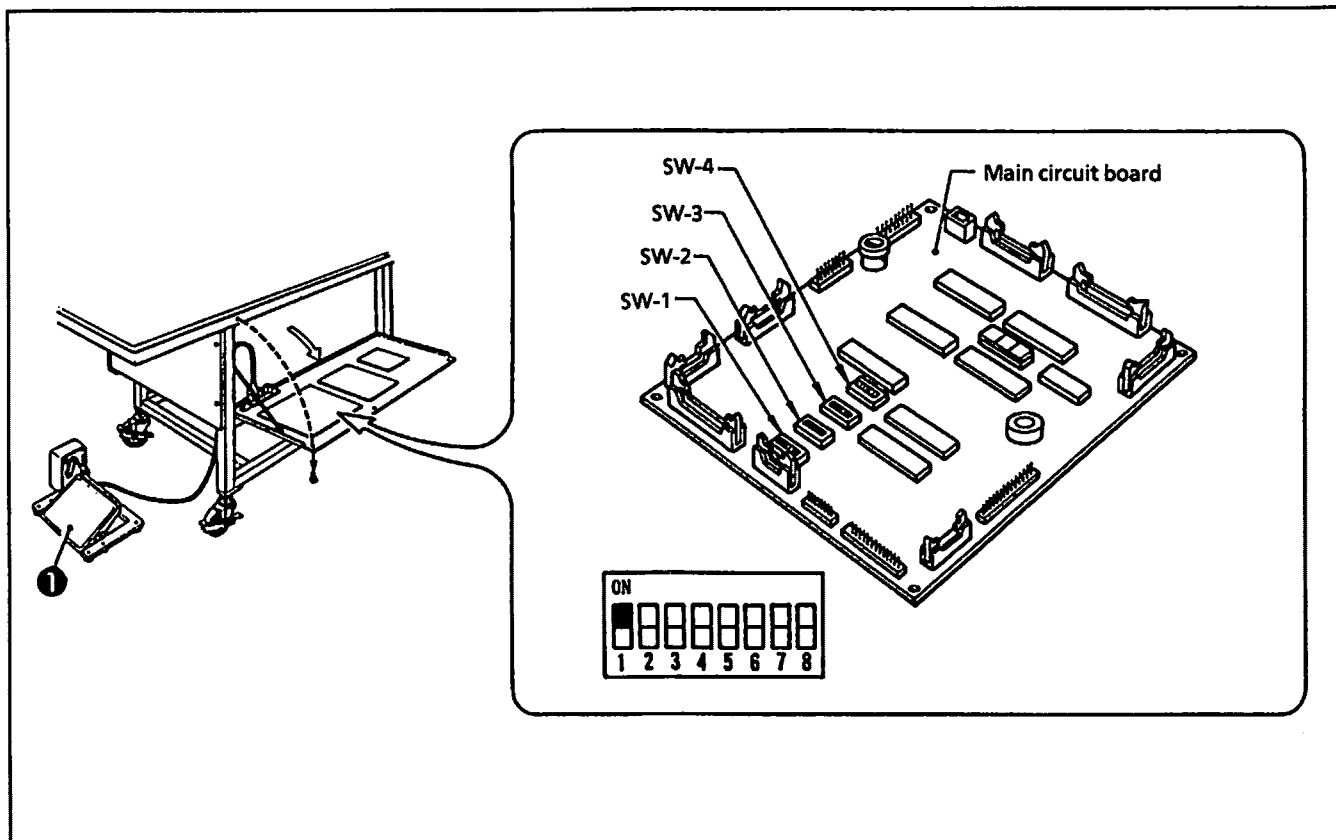
Adjustment 3

Two screws ⑫



(4) DIP switch setting

★ Set DIP SW 4-1 to ON.



(5) Operating the darts stretcher assembly

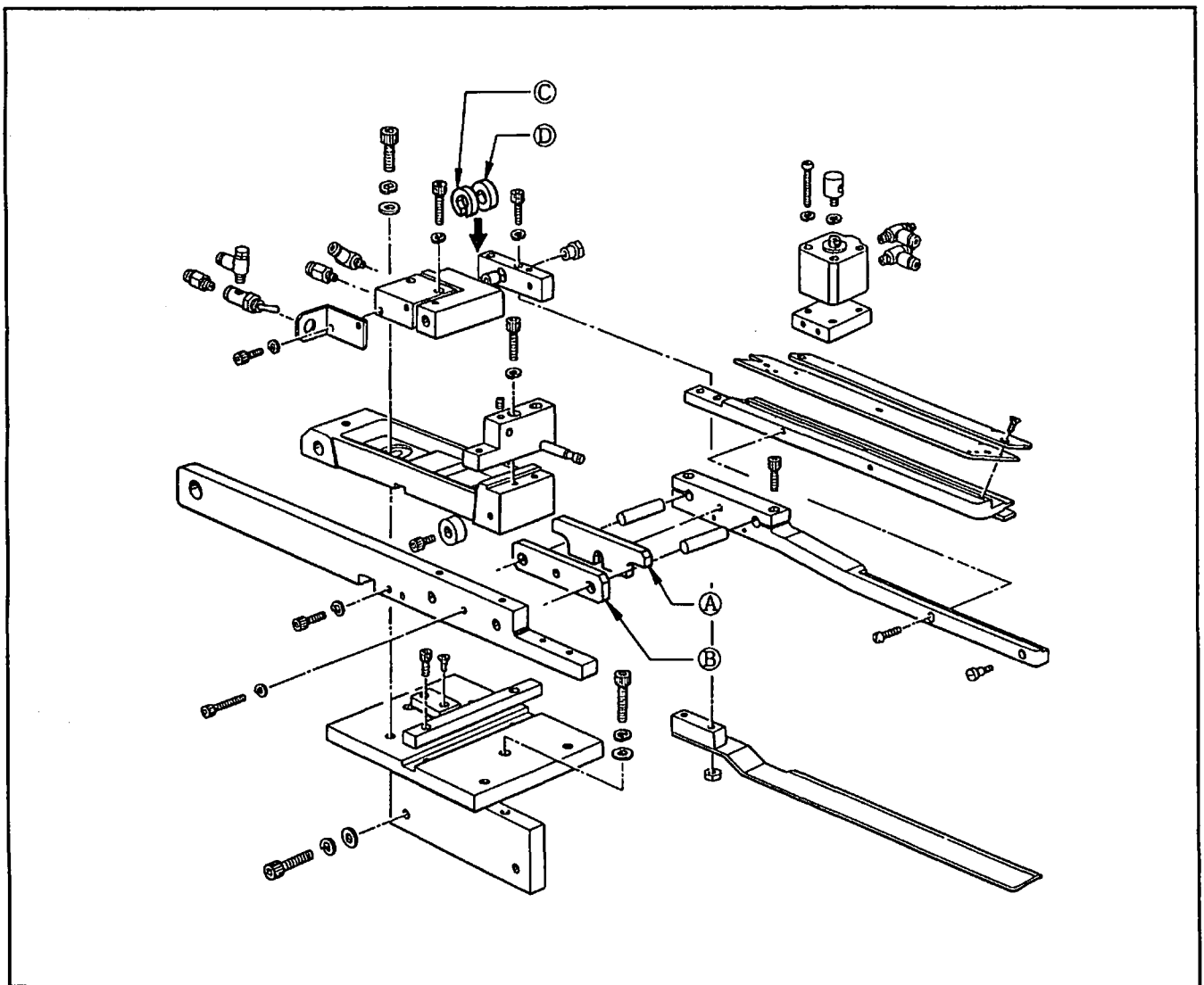
There are the following two methods to operate the darts stretcher assembly.

1. When the left and right carriage feed is set so that they are simultaneously lowered (when DIP SW 2-6 is set to ON) or when timer start is set (when DIP SW 2-8 is set to OFF)
Press the treadle forward ❶ to position 1. The darts stretcher will be lowered.
To raise the darts stretcher, lower the carriage feed, then press the treadle ❶ backward. The carriage feed and the darts stretcher will be raised.
2. When the left and right carriage feed is set so that they are separately lowered (when DIP SW 2-6 is set to OFF) or when timer start is set (when DIP SW 2-8 is set to ON)
Set the start switch to ON with the treadle ❶ not being pressed. The darts stretcher will be lowered.
To raise the darts stretcher, press the treadle ❶ forward, then set the treadle ❶ to the neutral position. The darts stretcher will be raised.

10 Replacing the gauge

When changing from double welting to off-set welting
When attaching a spacer, refer to the following table.

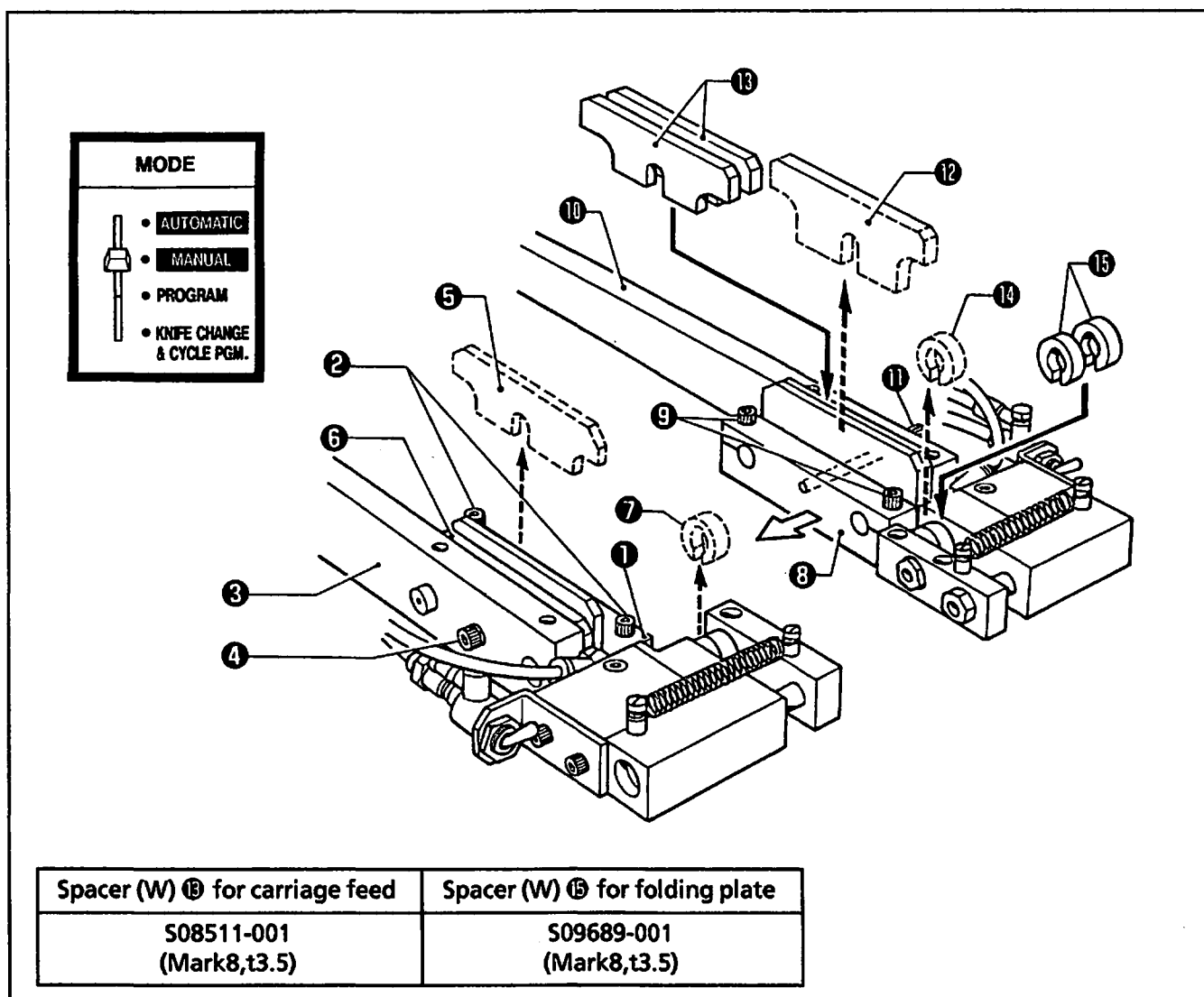
Gauge	Carriage feed spacers		Folding plate spacers	
	Ⓐ	Ⓑ	Ⓒ	Ⓓ
10 mm	S08511-001 (Mark8,t3.5)	S08510-001 (Mark8,t6)	S09689-001 (Mark8,t3.5)	S09688-001 (Mark8,t8.5)
12 mm	S08511-002 (Mark10,t4.5)	S08510-002 (Mark10,t5)	S09689-002 (Mark10,t4.5)	S09688-002 (Mark10,t7.5)
14 mm	S08511-003 (Mark12,t5.5)	S08510-003 (Mark12,t4)	S09689-003 (Mark12,t5.5)	S09688-003 (Mark12,t6.5)



※ When changing to the off-set welting, be sure to replace the left carriage feed spacer and folding plate spacer.

When changing double welting to off-set welting (when 10 mm gauge is used)

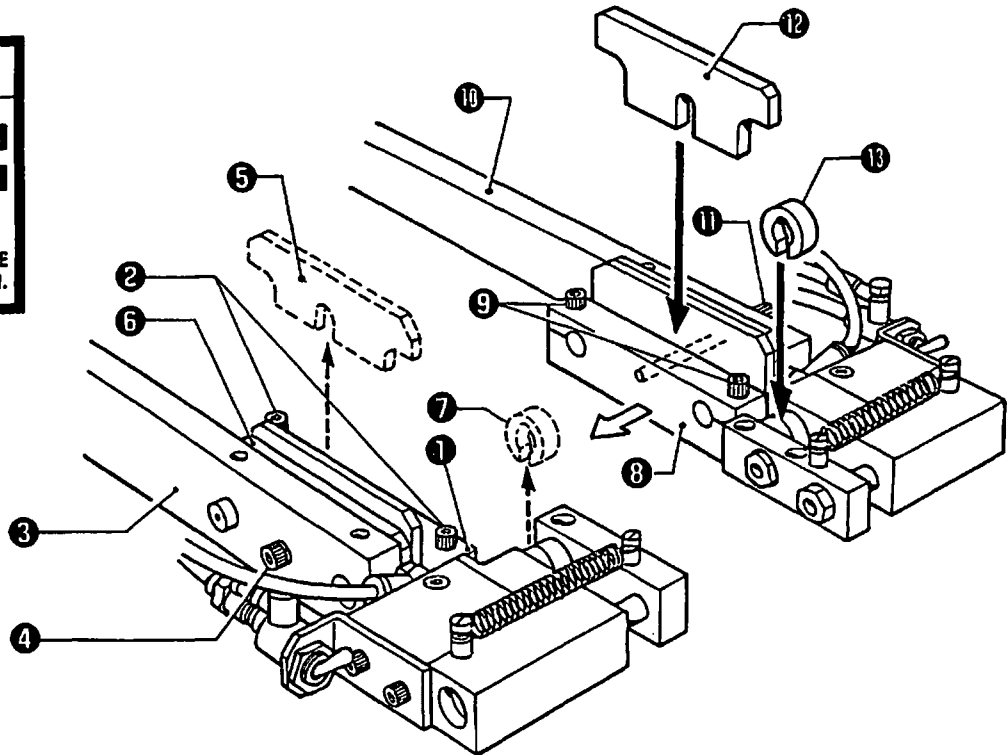
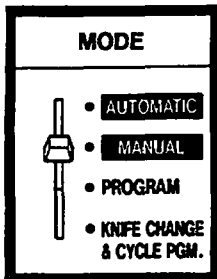
<When changing double welting to off-set welting>



1. Set the MODE switch to MANUAL to advance the carriage feed to thread trimming position.
2. Replace the binder assembly for double welting with the one for off-set welting. Press the treadle forward to operate the binder assembly, and adjust its height.
3. Loosen the screws ② of carriage feed fitting plate L ①, and the screw ④ of carriage feed arm L ③, and remove spacer W ⑤.
4. Slide carriage feed fitting plate L ① toward carriage feed arm L ③, and securely tighten the screw ④. Make sure that there is no clearance among carriage feed fitting plate L ①, spacer (S) ⑤, and carriage feed arm L ③, and securely tighten the screws ②.
5. Release the air. Remove spacer (W) ⑦ from the cylinder rod for folding plate L.
6. Loosen the screws ⑨ of carriage feed fitting plate R ③ and the screw ⑪ of carriage feed arm R ⑩. Remove spacer (W) ⑫.
7. Slide carriage feed fitting plate R ③ in the direction of the arrow, insert the two spacers (W) ⑬, and tighten the screw ⑪.
8. Make sure that there is no clearance among carriage feed fitting plate R ③, spacers (W) ⑬, and carriage feed arm R ⑩. Tighten the screws ⑨.
9. Remove spacer (W) ⑭ from the cylinder for folding plate R, and insert the two spacers ⑮.

When changing from double welting to off-set welting (when 12 mm or 14 mm gauge is used)

<When changing from double welting to off-set welting>



Gauge	Spacer (W) ⑫ for carriage feed	Spacer (W) ⑬ for folding plate
12 mm	S08511-001 (Mark8,t3.5)	S09689-001 (Mark8,t3.5)
14 mm	S08511-002 (Mark10,t4.5)	S09689-002 (Mark10,t3.5)

1. Set the MODE switch to MANUAL to advance the carriage feed to thread trimming position.
2. Replace the binder assembly for double welting with the one for off-set welting. Press the treadle forward to operate the binder assembly, and adjust its height.
3. Loosen the screws ② of carriage feed fitting plate L ①, and the screw ④ of carriage feed arm L ③, and remove spacer W ⑤.
4. Slide carriage feed fitting plate L ① toward carriage feed arm L ③, and securely tighten the screw ④. Make sure that there is no clearance among carriage feed fitting plate L ①, spacer (S) ⑥, and carriage feed arm L ③, and securely tighten the screws ②.
5. Release the air. Remove spacer (W) ⑦ from the cylinder rod for folding plate L.
6. Loosen the screws ⑨ of carriage feed fitting plate R ③, and the screw ⑪ of carriage feed arm R ⑩.
7. Slide carriage feed fitting plate R ③ in the direction of the arrow, insert spacer (W) ⑫, and tighten the screw ⑪.
8. Make sure that there is no clearance among carriage feed fitting plate R ③, spacer (W) ⑫, and carriage feed arm R ⑩. Tighten the screws ⑨.
9. Insert spacer (W) ⑬ into the cylinder for folding plate R.

TROUBLESHOOTING GUIDE

Problem	Cause	Check	Solution	page	
Thread breakage Skipped stitches	Damaged rotary hook holding slot in the needle plate		Polish the rotary hook holding slot.	/	
	Improper needle thread tension	Needle thread tension	See "Thread tension."	/	
		Bobbin case opener and rotary hook clearance	Set clearance to 0.2 mm.	40	
	Improper needle and rotary hook timing	Needle and rotary hook point clearance	Set clearance to 0.05 mm.	39	
		Rotary hook and needle plate clearance	Set clearance to approx. 0.6 - 0.9 mm.	40	
		Needle bar lift stroke and height	Adjust needle bar lift stroke and height.	40	
	Insufficient lubrication to rotary hook assembly	Rotary hook lubrication	Adjust lubricating oil supply.	7	
	Thread breakage Skipped stitches	Improper thread take-up spring tension and stroke	Thread take-up spring stroke and tension	See "Thread tension."	/
		Rotary hook point damaged		Polish rotary hook point.	/
		Improper needle and needle guard clearance		Set clearance to 0 - 0.15 mm.	/
		Improper threading	Threading	See "Threading thread."	/
		Improper needle installation	Needle direction	Install needle in proper direction.	/
		Bent or blunt needle	Needle	Replace needle.	/
		Scratch, burr on cloth guide	Cloth guide	Remove burr and polish.	/
Seizure, thread jam in rotary hook race			Lubricate or replace.	/	
Burr on edge of binder			Remove burr and polish.	/	
Improper cloth guide height			Adjust cloth guide height.	46	

Problem	Cause	Check	Solution	page
Loose threads	Same as problem item "Thread breakage, skipped stitches" on the preceding page. Also other causes are listed below.			106
	Bobbin sticks		Replace bobbin.	/
	Excessive binder and slide plate clearance		Adjust binder position.	/
	Improper opener clearance		See 'Adjusting the clearance between the rotary hook and the bobbin case opener'.	40
Excessive puckering	Needle thread tension is too high	Needle thread tension	Set it as weak as possible.	/
	Bobbin thread tension is too high	Bobbin thread tension	Set it as weak as possible.	/
	Thread take-up spring is too strong	Thread take-up spring tension	Set it as weak as possible.	/
	Thread take-up spring stroke is too large	Thread take-up spring stroke	Set it as small as possible.	/
	Improper cloth guide height		Adjust cloth guide height.	46
	Sewing speed is too fast. (Motor speed is too fast.)		Decrease sewing speed. (Replace motor pulley with smaller one.)	/
	Improper binder and slide plate clearance		Adjust binder position.	45
	Using polyester thread		Replace with spun core thread.	/

Problem	Cause	Check	Solution	page	
Needle thread not trimmed Thread retention errors	Damaged or bent movable knife tip		Replace movable knife.		
	Movable knife tip and needle plate clearance is too large		Set clearance to 1.5 - 2.0 mm		
	Improper tension release adjustment		Adjust tension release.		
	Spring not holding thread	Improper spring installation; striking knife bar?		Install spring so as not to strike knife bar.	
		Thread retention section of spring		Replace spring.	
		Spring pressure		Adjust spring pressure.	
	Insufficient stroke of movable knife		Adjust movable knife stroke.	52	
	Thread take-up not properly adjusted	Height when thread take-up arm is raised		See "Adjusting thread take-up".	47
	Excessive knife pressure makes operation difficult		Adjust knife pressure.	54	
	Bobbin thread not trimmed Thread retention errors	Knife tip is too low	Knife position	Adjust knife height.	57
Improper bobbin thread trimming unit installation			See "Adjusting fixed knife assembly".	65	
Burr on knife tip			Replace knife.	57	
Knife groove not aligned with needle plate groove			Straight line between knife and needle plate groove when cylinder is retracted.	56	

Problem	Cause	Check	Solution	page	
Skipped stitches, thread cast-offs at sewing start	Needle up stop position is too high	Height from needle plate to needle tip after thread trimming	See "Adjusting needle position detector."	/	
	Bobbin thread not held after thread trimming		See "Adjusting bobbin thread knife assembly".	55	
	Bobbin spinning	Bobbin thread amount	Wind bobbin less than 80% capacity.	/	
	Thread take-up spring tension too high, or stroke too large	Thread take-up spring	Decrease thread take-up spring tension, or reduce stroke.	/	
	Needle thread not held after thread trimming		See "Adjusting movable knife".	52	
	Thread take-up in retention too little		See "Adjusting thread take-up".	47	
	Thread tension too low during thread trimming		Adjust tension release.	/	
	Bobbin races during thread trimming	Bobbin thread not running in normal direction		Wind bobbin thread in the same direction rotary hook rotates.	/
		Bobbin thread amount		Wind bobbin 80% capacity.	/
		Bobbin tension spring pressure too weak		Replace bobbin tension spring.	/
Broken needle	Needle and rotary hook tip strike		See "Needle and rotary hook timing".	39	
	Needle and needle guard strike		Adjust clearance between needle and needle guard.	/	
	Needle and needle plate hole strike		Adjust needle bar base position.	/	
	Needle strikes other components	Binder position		Adjust binder position.	45
		Folding plate extension		Adjust folding plate position.	43
	Folding plate raised during single welt sewing		Activate folding plate. See "Single welt sewing".	43	

Problem	Cause	Check	Solution	page
Welting width different on right and left	Binder is not centered with needle	Needle in center of binder needle groove	Adjust binder position.	45
	Binder - carriage feed clearance not identical on left and right	Binder shape	Replace binder.	45
	Binder - carriage feed clearance not identical on left and right		See "Carriage feed".	41
	Improper clearance between needle and folding plate		See "Folding plate".	43
	Flap folding plate is not activated during single welt flap sewing		Activate folding plate. See "Single welt sewing".	44
	Folding plate raised		See "Folding plate".	43
Welting width not identical at sewing start and end	Carriage feed not parallel to needle		Install carriage feed to feed parallel to needle.	29
	Carriage feed not parallel to binder	Binder position	Install binder straight to needle.	33
			Install carriage feed parallel to binder.	36
Welting slips	Insufficient clearance between binder and slide plate		See "Adjusting binder".	45
	Material caught on cloth guide	Cloth guide and binder clearance	See "Adjusting cloth guide height and width".	46
		Excessive cloth guide arm spring pressure	Adjust pressure.	46
	Insufficient clearance between binder and carriage feed		See "Carriage feed".	36
	Loading speed too fast		Reduce speed with DIP SW 2-2 if material easily slides.	83
Cloth guide does not move	Flap sensor		Adjust flap sensor position.	75

Problem	Cause	Check	Solution	page	
Improper sewing end corner knife position (front, back)	Improper knife base position		Adjust corner knife position.	58	
	DIP switch 3-1 (gauge) not set for gauge in use		Set 8 - 14 mm gauge SW to ON. Set 16 - 20 mm gauge SW to OFF.	82 84	
Improper sewing start corner knife position (front, back)	Improper positioning rod position	If occurs every time	See "Adjusting the corner knife position at the start of sewing".	58	
		Positioning rod	See "Installing positioning rod".	42	
		Clamp presser cushion	Replace clamp presser assembly.	/	
Improper corner knife position (right, left)	Improper corner knife base installation		See "Adjusting corner knife position."	55	
	Insufficient carriage feed pressure	Air pressure	Set air pressure to 5.0 kgf/cm ² .	5	
		Carriage feed holds entire bodice.	See "Carriage feed".	41	
Center knife does not cut well	Defective corner knife		Replace it. (See "Installing corner knife.")	58	
	Improper center knife position (front, back)	a = 6.5 mm (8 - 14 mm gauge) (16 - 20 mm gauge)	See "Adjusting center knife assembly".	47	
		Insufficient carriage feed pressure	Air pressure	Set air pressure to 5.0 kgf/cm ² .	5
			Carriage feed holds entire bodice	See "Carriage feed".	36
			Carriage feed	Install correctly. See "Carriage feed".	36
	Due to cloth type		Apply unwoven material on cloth.	/	

Problem	Cause	Check	Solution	page	
Corner knife does not cut well	Due to cloth type		Apply unwoven material on cloth.	/	
	Defective center knife		Replace center knife.	47	
	Defective fixed knife		Replace fixed knife.	51	
	Improper center knife pressure adjustment		Adjust center knife pressure.	47	
	Insufficient carriage feed pressure	Air pressure		Set air pressure to 5.0 kgf/cm ² .	5
		Carriage feed holds entire bodice		See "Carriage feed".	41
		Check carriage feed operation		Install correctly. See "Carriage feed."	41
Cylinders do not operate	Low air pressure	Air pressure	Set air pressure to 5.0 kgf/cm ² .	5	
	Excessive load during operation	Stiff operating parts	Adjust parts. (See each adjusting procedure.)	/	
	Defective cylinder	Bent rods?	Replace cylinder. (See adjusting procedure.)	/	
	Defective air tube	Air leak in piping	Replace air tube.	6	
	Solenoid valve not operating	Connector shorts, poor connections		Repair or replace.	/
		24V DC is supplied		Replace cylinder.	/
Solenoid valve			Replace valve.	/	

ERROR CODES

- 1) Some problems will be indicated by an error code, others will not. Refer to both sections.
- 2) A defective circuit board (main circuit board and others) can also cause problems. If the problem cannot be corrected, replace the circuit board.
- 3) Be sure to turn the power off before checking continuity.
- 4) A special I/O diagnostics PROM is available to check the operation of the operation box switches, the treadle, and the start switch.

1. Problems indicated by an error code

※ Refer to the following tables to rectify the problem when an error code appears.

① <E00> or <E-0-00> appears when carriage feed is moving.

Cause	Check	Solution	Page
1. Emergency stop switch pressed during carriage feed operation.	<Normal operation>	See reset procedure and reset.	33 (Instruction manual)
2. Emergency stop signal received during carriage feed operation.	Emergency stop switch continuity.	Replace emergency stop switch.	
3. Defective emergency stop switch circuit	—————	Replace main circuit board.	88

② <E10> or <E-1-00> appears when power is turned on.

1. Start switch pressed or shorted.	Remove start switch connector; if error code disappears, check start switch continuity.	Replace start switch.	
3. Defective start switch circuit	—————	Replace main circuit board.	88

③ <E11> or <E-1-01> appears when power is turned on.

Cause	Check	Solution	Page
1. Treadle pressed backward.	<Normal operation>	Release your foot from treadle so it returns to neutral.	
2. Loose connector	Foot switch circuit board connector J16 Relay panel 12P connector Main circuit board connector J24	Reinsert connectors.	88
3. Short in harness.	Treadle harness continuity	Replace harness.	
4. Improper positioning of treadle photosensor actuator.	Remove cover, and check position.	Readjust position.	84
5. Defective treadle signal circuit.	Remove relay panel 12P connector, short pins #4 and #8 in relay panel; if error code disappears, check foot switch circuit board; if it does not disappear, check main circuit board.	Replace main circuit board.	88

④ <E12> or <E-1-02> appears when power is turned on.

1. Treadle depressed forward.	<Normal operation>	Release your foot from treadle so it returns to neutral.	
2. Improper positioning of treadle photosensor actuator	Remove cover, and check position.	Readjust position.	84
3. Defective treadle signal circuit board	Remove relay panel 12P connector; if error code disappears, check foot switch circuit board; if it does not disappear, check main circuit board.	Replace foot switch circuit board.	92
		Replace main circuit board.	88
4. Shorted harness.	Treadle harness continuity	Replace harness.	

⑤ <E20> or <E-2-00> appears before carriage feed operates, and when carriage feed is at home position or thread trimming position.

Cause	Check	Solution	Page
1. Machine did not stop with needle at its upper position.	<Normal operation>	Turn pulley by hand to set needle to its upper position.	
2. Improper positioning of needle up sensor	Remove cover, and check needle up sensor position.	Readjust position.	
3. Loose connector	Main circuit board connector P26	Reinsert connector.	88
4. Short in harness or defective needle up sensor circuit	Remove main circuit board connector P26, short pins #4 and #7 in main circuit board; if error code disappears, check detector; if it does not disappear, check main circuit board.	Replace detector. Replace main circuit board.	88

⑥ <E21> or <E-2-01> appears during automatic sewing.

1. Machine starts, but does not begin sewing within specified time. (First stitch signal not received.)	Turn pulley by hand to check if operation is extremely heavy.	Adjust if operation is stiff.	
2. Machine V-belt off	V-belt	Remount V-belt.	
3. Pulley screws have loosened.	Screws in pulley	Tighten them.	
4. Loose connector	Main circuit board connector J27 Machine motor circuit board connectors J1, J2, J3 Machine motor connector	Reinsert connector.	88
5. Fuse has blown.	Power supply unit 5AFB fuse (Fuse ☉) Machine motor circuit board fuse	Replace fuse. (Make sure pulley turns easily by hand before power is turned on, and that machine circuit board and driver have no problems.)	93 88
6. Short in harness	Machine motor drive harness continuity	Replace harness.	
7. Defective drive circuit, including machine motor circuit board	—————	Replace machine motor circuit board. Replace drive circuit.	93
8. Defective machine motor	Shorted or broken coil, or mechanically locked	Replace machine motor.	
9. Defective needle up sensor	Turn pulley by hand to make sure <E-2-00> error code or normal display appears.	Replace detector.	

⑦ <E22> or <E-2-02> appears during automatic sewing.

Cause	Check	Solution	Page
1. Sewing not completed during specified time (needle up signal not received)	Turn pulley by hand to check if operation is extremely heavy.	Adjust if operation is stiff.	
2. Unstable needle up signal	Turn pulley by hand to make sure <E-2-00> error code or normal display appears.	Replace detector.	

⑧ <E30> or <E-3-00> appears when carriage feed returns to home position.

1. Carriage feed overruns home position.	Turn off the power when error code appears; remove main circuit board connector J25, and check continuity across pins #3 and #4 in sensor. If "0Ω," home position is overrun.	Readjust.	
2. Improper positioning of home position overrun sensor			
3. Home position overrun, or defective home position sensor or sensor circuit	Check continuity. Make sure continuity is "∞" when dog is far from home position, "0Ω" when close to it.	Replace sensor. Replace main circuit board.	88
4. Defective DC motor encoder	_____	Replace DC motor.	27, 30

⑨ <E31> or <E-3-01> appears when carriage feed moves to corner knife operating position or to home position.

1. Improper positioning of end overrun sensor	Turn off the power when error code appears; remove main circuit board connector J25, and check continuity across pins #5 and #6 in sensor. If "0Ω," home position is overrun.	Readjust position.	
2. Defective end overrun sensor or sensor circuit			
3. Defective DC motor	_____	Replace DC motor.	27, 30

⑩ <E32> or <E-3-02> appears when carriage feed moves.

1. Carriage feed does not finish moving within specified time.	Check if carriage feed operation is stiff.	Adjust if operation is stiff.	
2. DC motor belt off	DC motor timing belt	Remount belt.	30
3. Pulley screw has loosened.	Motor and carriage feed timing pulley screws	Retighten screw.	30

⑪ <E33> or <E-3-03> appears when carriage feed moves.

Cause	Check	Solution	Page
1. Loose connector	Main circuit board connector J30, DC motor circuit board 4P connector, and connector CN1	Reinsert connector.	88
2. Fuse has blown.	Power supply unit 8A fuse	Replace fuse.	93
3. Defective DC motor circuit board	—————	Replace DC motor circuit board.	89

⑫ <E34> or <E-3-04> appears when resetting after error code appears. (e.g. "emergency stop")

1. Carriage feed does not finish moving within specified time.	Check if carriage feed operation is stiff.	Adjust if operation is stiff.	
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⑬ <E35> or <E-3-05> appears when carriage feed moves.

1. Carriage feed stopped short.	Check if carriage feed operation is stiff.	Adjust if operation is stiff.	
2. Loose connector	Main circuit board connector J25, DC motor circuit board 2P connector, and connector CN3	Reinsert connector.	88 89
3. Fuse has blown.	Power supply unit 8A fuse	Replace fuse. (Make sure carriage feed is not heavy before power is turned on.)	93
4. Improper positioning of home position sensor	Remove main circuit board connector J25; check continuity across pins #1 and #2 in sensor.	Readjust position.	
5. Defective home position sensor or sensor circuit	Make sure continuity is " ∞ " when dog is far from home position, " 0Ω " when close to it.	Replace sensor. Replace main circuit board.	88
6. Screw in DC motor circuit board terminal block has loosened.		Tighten screws in terminal block.	89
7. Defective DC motor	—————	Replace DC motor.	27, 30

⑭ <E36> or <E-3-06> appears when power is turned on.

Cause	Check	Solution	Page
1. Carriage feed overruns home position.	Carriage feed at home position overrun position (Normal operation)	Move carriage feed by hand slightly away from operator's side.	
2. Defective home position overrun sensor or sensor circuit	Remove main circuit board connector J25; check continuity across pins #3 and #4 in sensor. Make sure continuity is " $\infty\Omega$ " when dog is far from home position, " 0Ω " when close to it.	Replace sensor. Replace main circuit board.	88

⑮ <E41> or <E-4-01 or E-4-10> appears during flap program operation; E-4-01 is for right flap errors, E-4-10 is for left flap errors.

1. Dust or other obstruction on flap sensor reflector (folding plate) or emitter	—————	Clean sensor and reflector.	
2. Improper positioning of flap sensor	Check sensor operation with flap sensor adjustment.	Readjust position.	76
3. Disconnected connector, or short in harness (including flap sensor)	Main circuit board connector J23, and flap circuit board connectors J13, J14, and J15 Flap sensor relay connector Flap sensor harness continuity.	Reinsert connector. Replace harness (including flap sensor.)	88
4. Improper adjusting of flap sensor sensitivity, or defective sensor circuit for adjustment control	Check sensor operation with flap sensor adjustment.	Readjust sensor. Replace control. Replace flap circuit board.	

⑥ <E50> or <E-5-00> appears when power is turned on.

Cause	Check	Solution	Page
1. Memory erased due to extended non-use	—————	Turn power on and wait for 15 min. and recharge back-up capacitor, then write to memory using DIP SW 3-6.	88
2. Memory contents not retained due to defective memory back-up circuit	Recharge, then check if error code is still displayed after writing.	Replace main circuit board.	

⑦ <E61> or <E-6-01 or E-6-10> appears during automatic sewing; E-6-01 is for right, E-6-10 is for left thread breakage errors; E-6-11 is for both right and left thread breakage error.

1. Needle thread broke.	Check needle and bobbin thread breakage.	Rethread the machine.	88
2. Defective thread breakage detector operation	Make sure detector threading is correct. Make sure pulley is turned by hand easily.	Thread detector correctly. Replace thread breakage detector.	
3. Loose connector, or short in harness (including thread breakage sensor)	Relay panel 9P connector Thread breakage sensor harness continuity	Reinsert connector. Replace thread breakage sensor.	
4. Defective thread breakage sensor circuit	—————	Replace main circuit board.	
5. Improperly set DIP switch	Check "monitor on" status even though thread breakage detector is not installed.	Set DIP SW 3-2 to OFF.	

⑧ <E70> or <E-7-00> appears when memory written with DIP switch (SW 3-7).

Program data write error	—————	Replace main circuit board.	88
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⑨ <E80, E81, E82, or E83> or <E-8-01, E-8-02, or E-8-03> appears when corner knife error occurs.
Turn off the power.

2. Problems not indicated by an error code

※ Refer to the table below on how to repair when an error code does not appear.

① Carriage feed does not operate. (Power indicator is turned off.)

Cause	Check	Solution	Page
1. Loose connector or short in harness	Check connections in power supply line, including power outlet, and check harness continuity. Main circuit board connectors J22 and J28, and harness continuity. Panel circuit board connectors J10 and J11, and harness continuity.	Reinsert connector. Replace harness.	88
2. Extremely low power supply voltage or power supply connector improperly wired	Power supply voltage and outlet wiring.	Wire correctly.	
3. Fuse has blown.	Power supply unit 6A fuse	Replace fuse.	91
4. Screws in breaker and transformer have loosened.	Screws in power supply outlet, breaker, transformer, and fuse hol	Tighten screws.	
5. Short in breaker, transformer, or noise filter	Check continuity.der	Replace parts.	
6. Defective power supply circuit, main circuit board, or panel circuit board	—————	Replace power supply unit, main circuit board, or panel circuit board.	88 91

② Carriage feed does not operate. (Power indicator is turned on, but home position is not located.)

1. Defective emergency stop switch	Emergency stop switch continuity	Replace emergency stop switch.	
2. Short in emergency stop switch circuit		Remove short.	

③ Valve (cylinder) does not operate.

Cause	Check	Solution	Page
1. Loose connector	Main circuit board connector J29, or valve unit connectors	Reinsert connector.	88
2. Fuse has blown.	Power supply unit 2A	Replace fuse.	93

④ Thread winding motor does not turn.

1. Loose connector	Thread winding motor relay connector.	Reinsert connector.	93
2. Fuse has blown.	Power supply unit 2A fuse.	Replace fuse.	
3. Transformer screws have loosened.	Power supply transformer #40 and #41 terminals.	Tighten screws.	
4. Improper adjustment or short in thread winding unit switch	Check continuity.	Readjust or replace switch.	
5. Defect or short in thread winding power supply circuit	Check voltage.	Remove short or replace parts.	
6. Defective thread winding motor	_____	Replace thread winding motor.	

⑤ Marking lights do not light.

1. Loose connector	Marking light relay connector	Reinsert connector.	10
2. Transformer screws have loosened.	Power supply transformer #5 and #6 terminals	Tighten screws.	
3. Short in light or harness	Check continuity.	Replace light. Replace harness.	

⑥ Can't start.

Cause	Check	Solution	Page
1. Defective start switch or short in harness	Check continuity.	Replace start switch or harness.	
2. Loose connector	Relay panel 3P connector	Reinsert connector.	

⑦ Center knife position cannot be adjusted.

1. Loose connector or short in harness	Digital switch connector on control box cover	Reinsert connector.	88
2. Defective digital switch	_____	Replace digital switch.	

⑧ Abnormal noise during corner knife operation.

1. Improper positioning of corner knife sensor	_____	Readjust position.	61
2. Defect or short in corner knife sensor	_____	Replace corner knife sensor.	

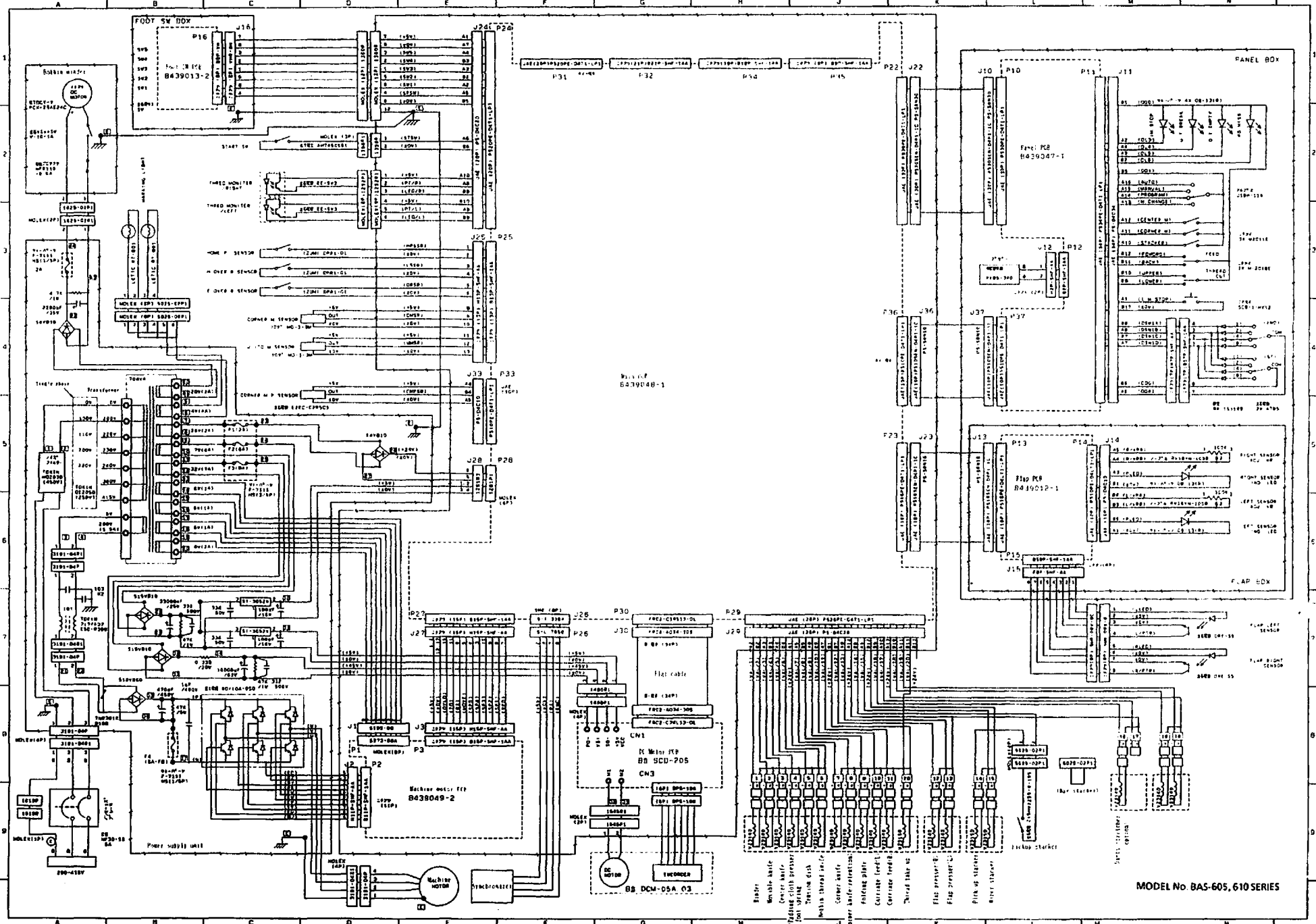
⑨ Movable knife strikes folding plate during operation.

1. Improper positioning of movable knife sensor	_____	Readjust position.	53
2. Defect or short in movable knife sensor	_____	Replace movable knife sensor.	

BAS-612 Automatic welt piece/flap feeder error

Error code	Contents	Solution
E - 9 - 01	Malfunctioning welt piece tray	Turn off the power.
E - 9 - 02	Incorrect binder vertical motion	Turn off the power.
E - 9 - 03	Incorrect binder sliding motion	Turn off the power.
E - 9 - 04	Incorrect flap feeder motion	Turn off the power.

BAS-612 CONTROL CIRCUIT BLOCK DIAGRAM



MODEL No BAS-605, 610 SERIES