



W600 Series

Text for technical training

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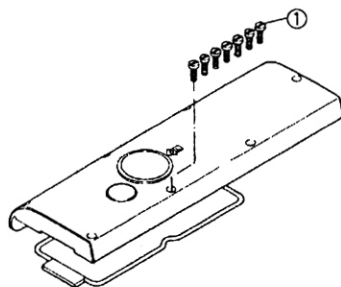
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Disassembly

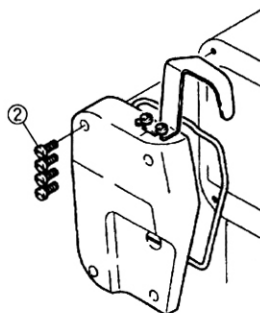
(1) Removing the arm cover (upper) assembly

- 1) Remove seven screws ①.



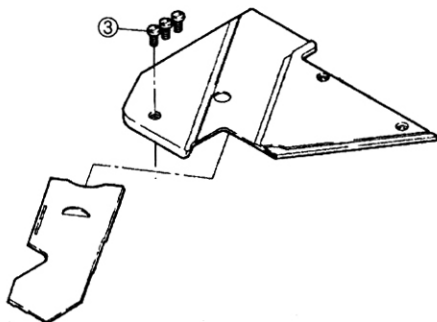
(2) Removing the arm cover (left) assembly

- 1) Remove four screws ②.



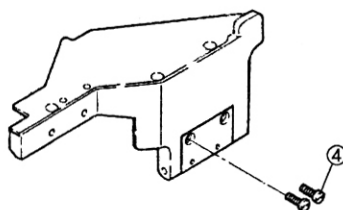
(3) Removing the bed cover

- 1) Remove three screws ③.



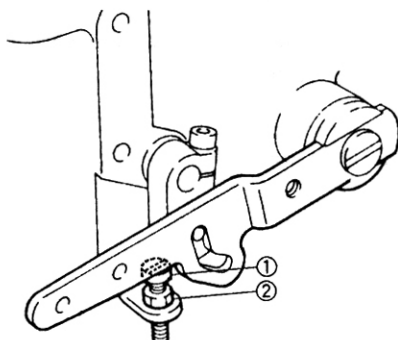
(4) Removing the front cover assembly

- 1) Remove two screws ④.



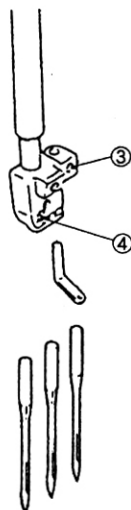
(5) Remove the presser foot lift adjusting screw and nut

- 1) Remove screw ①.
- 2) Remove nut ②.
- 3) Use a 8mm open end wrench.



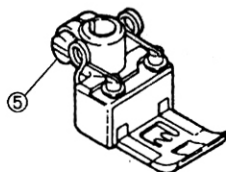
(6) Removing the needles/thread guide

- 1) Loosen three screws ③ with a 1.5mm key wrench.
- 2) Loosen screw ④ with a 1.5mm key wrench.



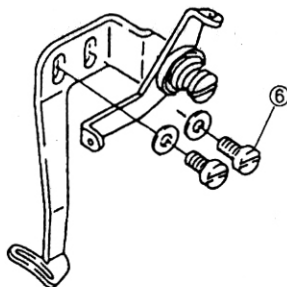
(7) Removing the presser foot

- 1) Loosen screw ⑤.
- 2) Loosen the foot pressure adjusting bar.
- 3) Remove the presser foot by pressing the presser foot lever down.



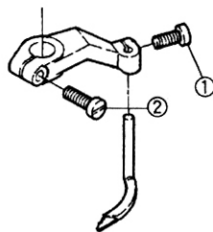
(8) Removing the spreader thread guide assembly

- 1) Remove two screws ⑥.



(9) Removing the spreader lever assembly

- 1) Loosen screw ①.
- 2) Loosen screw ②.



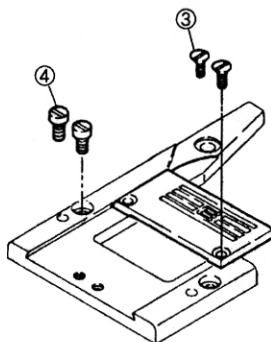
(10) Removing the needle holder

- 1) Bring the needle bar up to its highest position.
- 2) Loosen the needle holder by turning counterclockwise with a 7mm wrench.



(11) Remove the needle plate

- 1) Remove two screws ③.



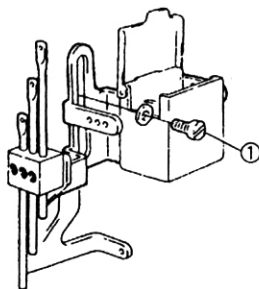
(12) Remove the needle plate bracket

- 1) Remove two screws ④.

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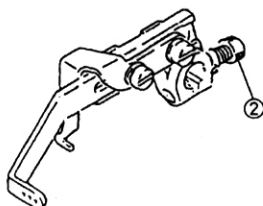
(13) Removing the thread guide and the
silicone oil reservoir (upper)
assembly

- 1) Remove screw ①.



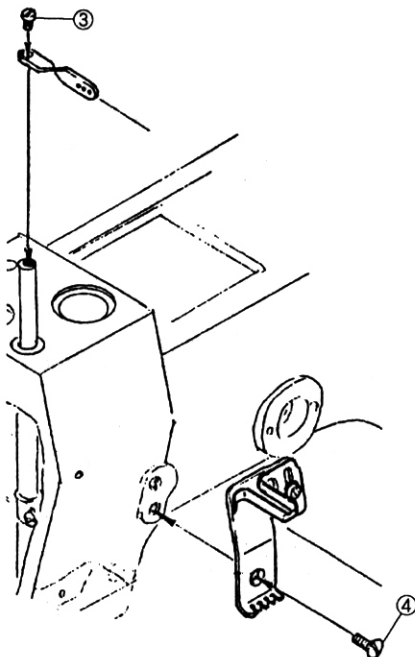
(14) Removing the needle thread take-up
and spreader thread take-up

- 1) Loosen screw ② with a 4mm key wrench.



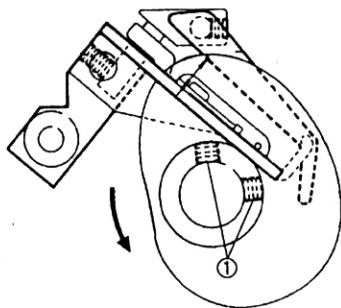
(15) Removing the needle thread guide

- 1) Remove screws ③ and ④.



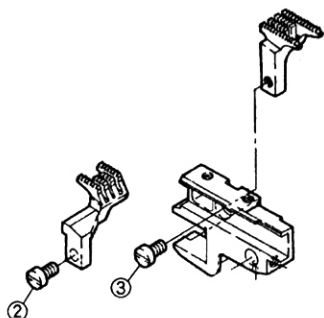
(16) Looper thread take-up

- 1) Loosen two screws ① with a 2mm key wrench.



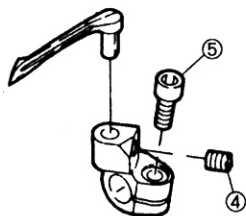
(17) Removing the main feed dog/differential feed dog

- 1) Remove screws ② and ③.



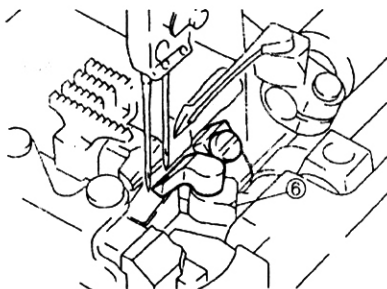
(18) Removing the looper/loop holder assembly

- 1) Loosen screw ④ with a 2mm key wrench.
2) Loosen screw ⑤ with a 3mm key wrench.
3) Remove the looper holder by moving to the left.



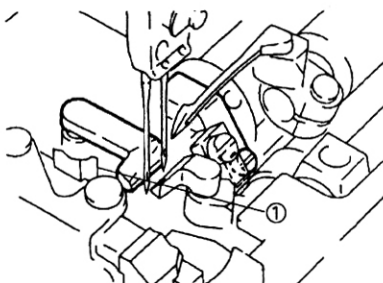
(19) Removing the needle guard (front)

- 1) Loosen screw ⑥ with a 2mm key wrench.



(20) Removing the needle guard (rear)

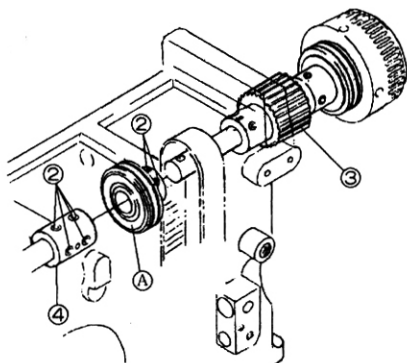
- 1) Loosen screw ① with a 2mm key wrench.



(21) Removing the upper shaft (right)

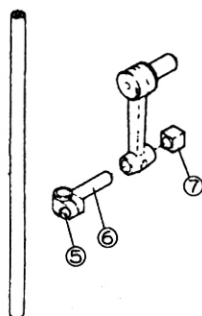
- 1) Loosen six screws ② with a 3mm key wrench.
2) Remove upper shaft (right) ③ and joint ④ while turning the pulley.

※ Do not remove bearing ⑤.



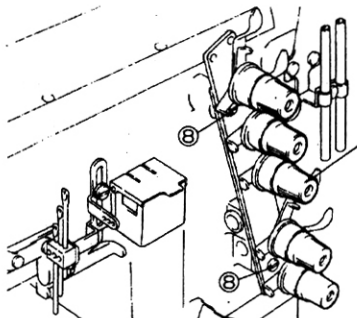
(22) Removing the needle bar

- 1) Loosen screw ⑤. Take the needle bar up out.
2) Remove needle bar clamp ⑥ and guide block ⑦.



(23) Removing the thread tension mechanism

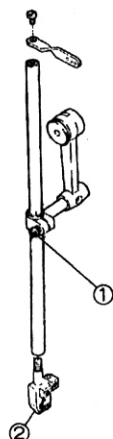
- 1) Remove two screws ⑧.



Assembly

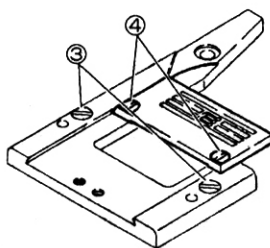
(1) Installing the needle holder

- 1) Tighten screw ①.
- 2) Turn needle holder ② clockwise with a 7mm wrench and secure it when the needle bar is at the top of its stroke. Loosen screw ① and then tighten it temporarily.



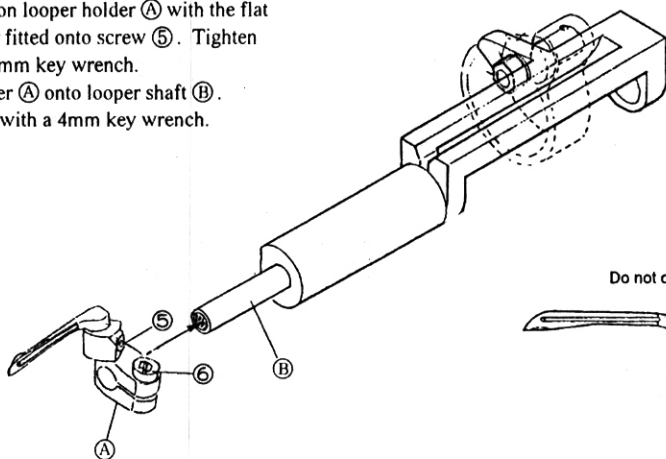
(2) Installing the needle plate bracket/needle plate assembly.

- 1) Secure the bracket with two screws ③.
- 2) Install the needle plate temporarily with two screws ④.



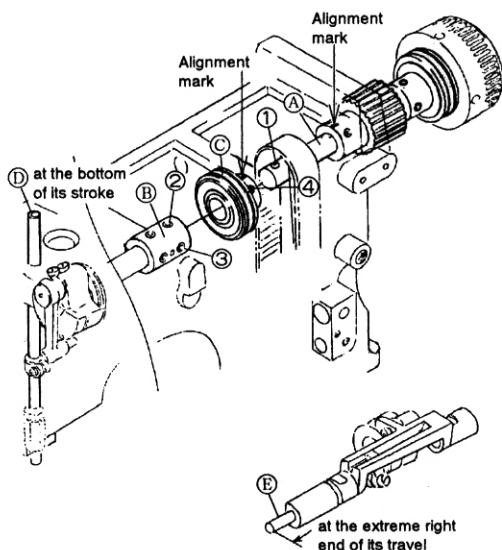
(3) Installing the looper

- 1) Install the looper on looper holder ① with the flat spot on the looper fitted onto screw ⑤. Tighten screw ⑤ with a 2mm key wrench.
- 2) Place looper holder ① onto looper shaft ②. Tighten screw ⑥ with a 4mm key wrench.



(4) Installing the upper shaft (right)

- 1) Align screw ② with screw hole ① on upper shaft (right) ①. Then tighten screw ② with a 3mm key wrench. Also tighten screw ③ with a 3mm key wrench.
- 2) Align the alignment mark on upper shaft (right) ① with that on bearing ④. Tighten two screws ④ with a 3mm key wrench.
- 3) Bring needle bar ① to the bottom of its stroke.
- 4) Bring looper shaft ⑤ to the extreme right end of its travel.
- 5) Place the timing belt without turning the upper shaft (right).



(5) Adjusting the height of the needle

- 1) Install needles with a 1.5mm key wrench.
- 2) Adjust distance (a) from the point of the left needle to the top surface of the needle plate when the needle is at the top of its stroke. Select distance (a) according to needle space by referring to the table at the back of the book.

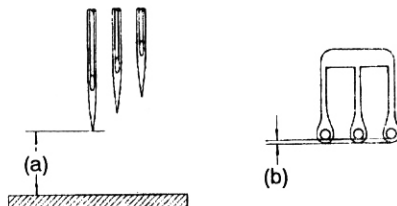
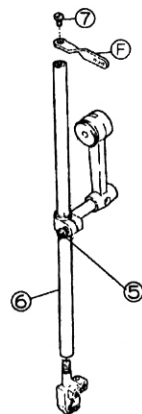
To make this adjustment,

Loosen screw ⑤. Move needle bar ⑥ up or down as required.

Before tightening screw ⑤, check to see if clearance (b) between needle drops and needles is equal (see the illustration).

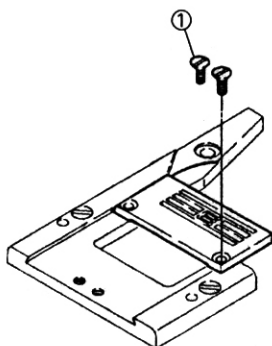
Remove the needle plate bracket/needle plate assembly.

Secure needle thread guide ⑦ with screw.



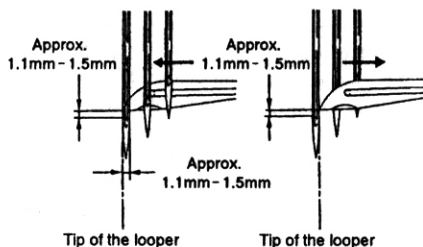
(6) Remove the needle plate

- 1) Remove two screws ①.

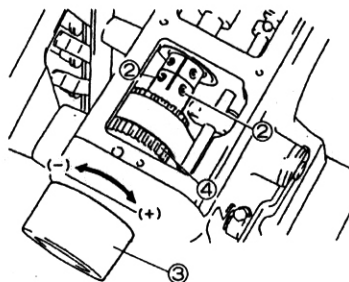


(7) Adjusting timing of the needle and the looper

The distance between the point of the looper and the top of the left needle's eye should be approximately 1.1mm-1.5mm when the looper is moving to the left or right on the back or front side of the needles. Timing at which the point of the looper is moving to the left on the back side of the left needle is approximately 0.8mm faster than timing at which the point of the looper is moving to the right on the front side of the left needle. Adjust the timing as the instructions shown below.



- 1) Loosen four screws ②. Turn handwheel ③ to adjust belt gear (upper) ④.
- To increase the timing at which the tip of the looper moves to the left behind the needles, turn the handwheel in the direction of +.
- To decrease the timing at which the tip of the looper moves to the left behind the needles, turn the handwheel in the direction of -.



(8) Adjusting the looper left to right and front to back

1) To adjust the looper left to right

When the looper is at the extreme right end of its travel, adjust distance (a) from the center of the right needle to the tip of the looper. Adjust according to the needle space by referring to the table at the back of the book.

To make the above adjustment, loosen screw ③ on looper holder ②, move the holder to the left or right as required.

2) Relationship between the looper and the left needle

Make sure the tip of the looper is 1.1-1.5mm above the top of the left needle's eye when the tip of the looper reaches the center of the left needle from the extreme right end of its travel.

3) Make sure there is a distance of 5.5- 6.0mm from the center of the looper's eye to the center of the left needle when the point of the left needle reaches the top blade of the looper while the tip of the looper is moving to the right from the extreme left end of its travel.

4) To adjust the looper front to back

Set the clearance between the left needle and the tip of the looper at 0.05mm - 0.1mm when the tip of the looper reaches the center of the left needle from the extreme right end of its travel.

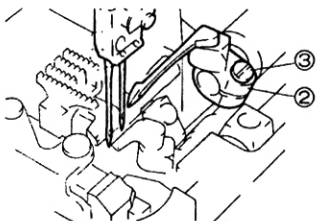
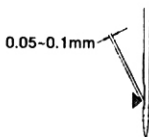
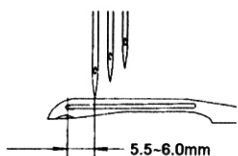
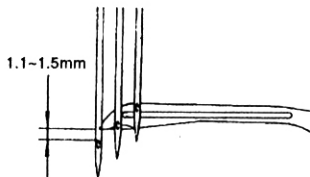
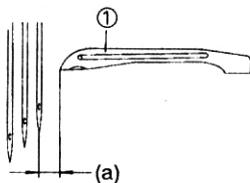
5) Adjustment for 3-needle machines:

Set the clearance between the middle needle and the tip of the looper at 0 - 0.05mm when the tip of the looper reaches the center of the middle needle from the extreme right end of its travel.

6) To make the above adjustment, loosen screw ③ on looper holder ② and then move the looper holder front to back as required.

7) Note:

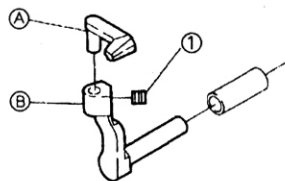
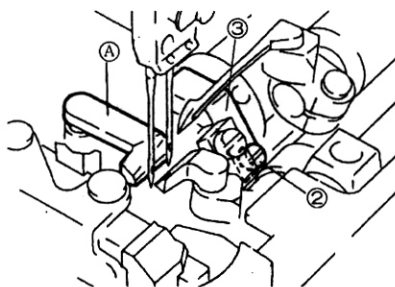
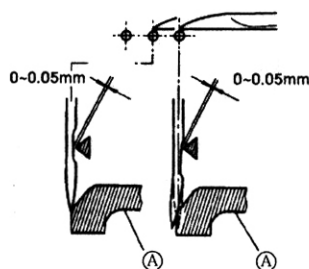
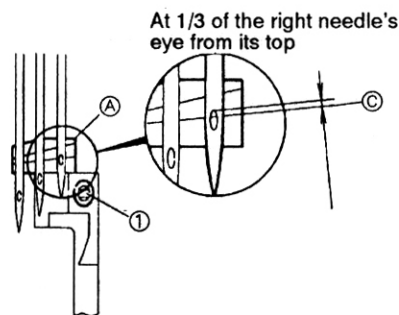
The right needle slightly touches the tip of the looper (with no needle guard installed) when the tip of the looper reaches the center of the right needle from the extreme right end of its travel.



(9) Adjusting the needle guard (rear)

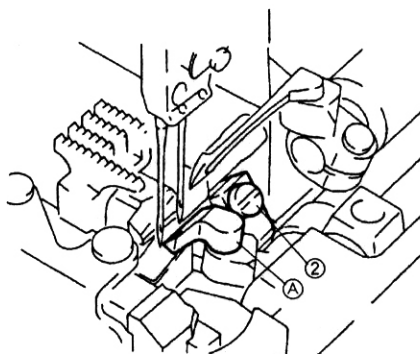
- 1) Install needle guard (rear) ① on needle guard holder ②.
- 2) Tighten screw ① with a 2mm key wrench temporarily.
- 3) Line ③ on needle guard (rear) ① should be at 1/3 of the right needle's eye from its top when the needle bar is at the bottom of its stroke. To make this adjustment, loosen screw ① and move needle guard (rear) ① front or back as required.
- 4) When the tip of the looper has reached the center of the right needle from the extreme right end of its travel, there should be a clearance of 0 - 0.05mm between the right needle and the tip of the looper.
To obtain this clearance, loosen screw ② and move the needle guard (rear) ① front or back as required.
- 5) When the tip of the looper has reached the center of the middle needle, the middle needle should slightly touch the needle guard (rear) ① with 0 - 0.05mm clearance between the middle needle and the tip of the looper. To make this adjustment, loosen screw ① and turn the needle guard (rear) clockwise or counterclockwise as required.

After the above adjustment, assemble the needle guard (rear) and needle guard holder ② and then tighten screw ②. Tighten screw ①.



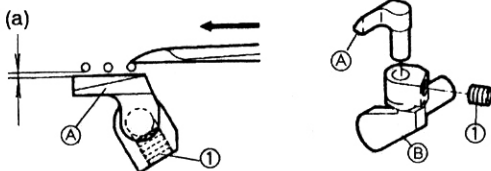
(10) Adjusting the needle guard (front)

- 1) Install needle guard (front) ① on needle guard holder ②.
- 2) Tighten screw ① temporarily with a 2mm key wrench.
- 3) Adjust clearance (a) between the needles and the needle guard (front) ① when the looper moves to the left behind the needles. According to the type and/or size of thread, install needle guard (front) ① as close to the needles as possible so that the needle thread can go through the clearance smoothly. To make the above adjustment, follow the procedures below.



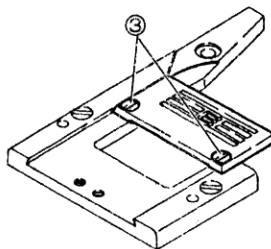
- (1) Loosen screw ①. Turn needle guard (front) ① clockwise or counterclockwise as required so that clearance (a) is horizontal.

- (2) Loosen screw ②. Adjust distance (a) by moving needle guard (front) ① front or back as required.



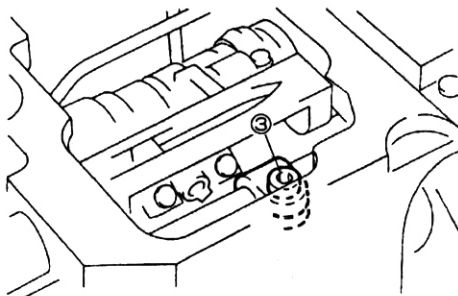
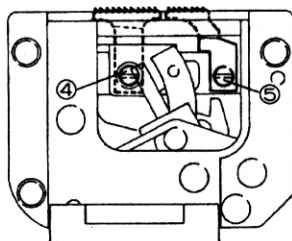
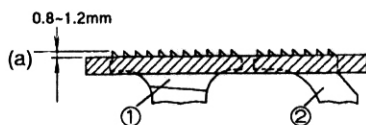
(11) Installing the needle plate

- 1) Secure the needle plate with two screws ③.



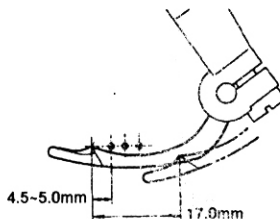
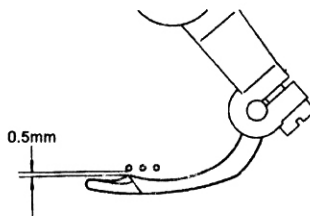
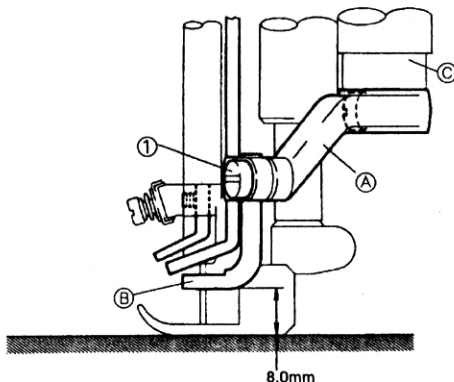
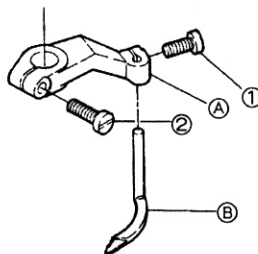
(12) Adjusting the main and differential feed dogs

- 1) Tighten screws for the main and differential feed dogs temporarily.
- 2) Secure the needle plate bracket/needle plate assembly with screws.
- 3) When the feed dogs are at the top of their stroke, clearance between the top surface of the needle plate and a straight line (a) formed by the tips of the main and differential feed dog teeth should be 0.8 - 1.2mm.
- 4) To make this adjustment, loosen screws ④ and ⑤ and then move feed dogs ① and ② up or down as required.
- 5) To make the feed dog tilt adjustment, loosen screw ③ with a 4mm key wrench.



(13) Installing the spreader

- 1) Install spreader ② on lever ① with screw ① temporarily.
- 2) Place lever ① onto spreader crank shaft and tighten screw ② temporarily.
- 3) Adjust the height of the spreader so that there is a distance of 8.0mm from the top surface of the needle plate to the bottom of the spreader.
- 4) To make this adjustment, tighten screw ① temporarily and then move spreader ② up or down as required.
- 5) To adjust the spreader front to back and left to right:
There should be a clearance of 0.5mm between the left needle and the thread carrying notch of the spreader when the spreader is moving to the left from the extreme right end of its travel.
Then there should be a clearance of 4.5 - 5.0mm between the center of the left needle and the thread carrying notch of the spreader when the spreader is all the way to the left.
- 6) To make this adjustment, tighten screws ① and ② temporarily. Then move lever ① left to right and move spreader ② front to back.
- 7) Tighten screws ① and ② securely.



(14) Installing the spreader thread guides

Secure the spreader thread guides with two screws ②.

1) Positioning the spreader thread guide ①

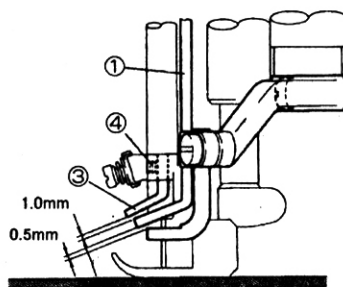
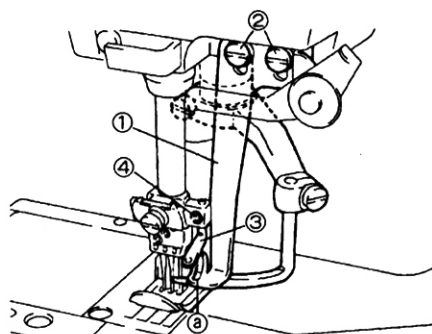
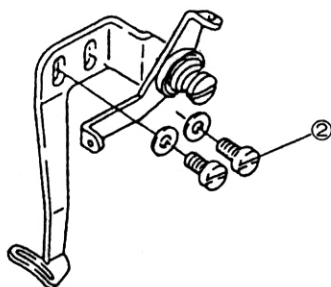
Front point (a) of the slot on spreader guide ① should be just under spreader guide ③.

Then there should be a distance of 0.5mm from the bottom of spreader guide ① to the top of the spreader.

2) To make the above adjustment, loosen screws ② and move the spreader guide ① up or down as required.

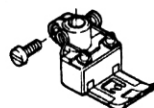
3) To install spreader guide ③, set the clearance between the top surface of the spreader guide ① and the bottom of spreader guide ③ at 1.0mm when the needle bar is at the bottom of its stroke.

4) To make the above adjustment, loosen screw ④ and move spreader guide ③ up or down as required.



(15) Installing the presser foot

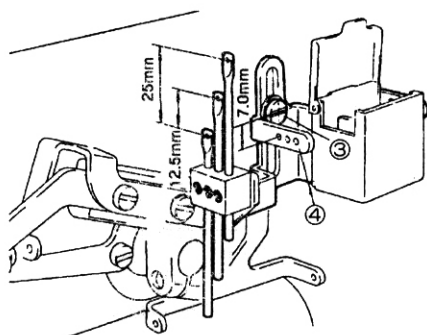
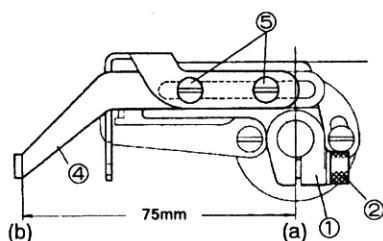
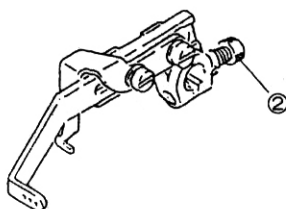
1) Install the presser foot. The slots on the presser foot should be aligned with the needle drops.



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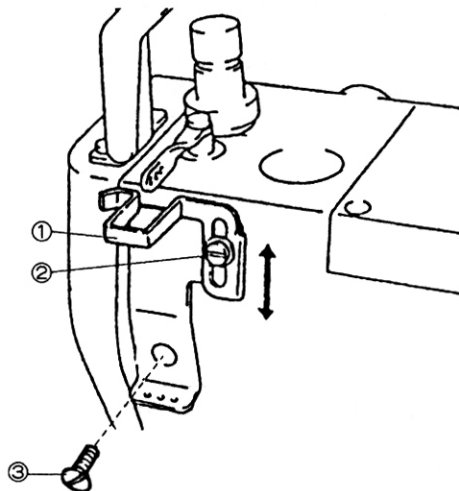
(16) Installing the needle thread take-up/needle thread guide

- 1) Install bracket ① with its top surface placed horizontally when the needle bar is at the bottom of its stroke. Tighten screw ② with a 4mm key wrench.
- 2) Install needle thread guide ④. There should be a distance of 7.0mm from the center of screw ③ to that of the eye of needle thread guide ④.



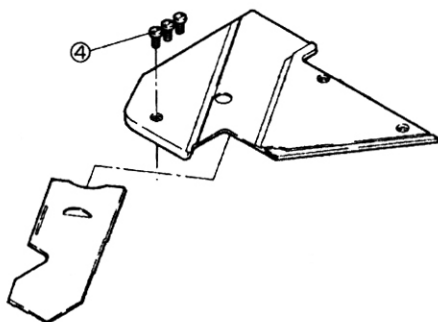
(17) Installing the needle thread support

- 1) Tighten screw ③.
- 2) For standard installation, tighten screw ② in the center of the slot on needle thread support ①.



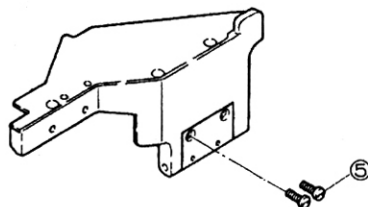
(18) Installing the bed cover

- 1) Secure the bed cover with 3 screws ④.



(19) Installing the front cover assembly

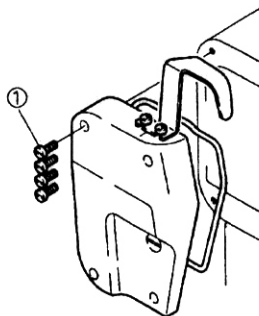
- 1) Secure the front cover with two screws ⑤.
The front cover should be level with the bed cover.



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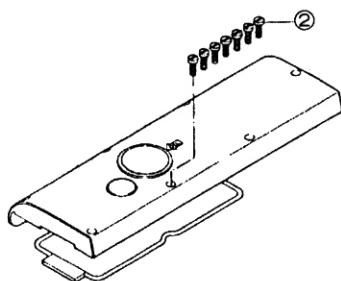
(20) Installing the arm cover (left)

- 1) Secure the arm cover with four screws ①.
- 2) When securing the arm cover, apply oil to the O ring and fix it.



(21) Installing the arm cover (left)

- 1) Secure the arm cover with four screws ②.
- 2) When securing the arm cover, apply oil to the O ring and fix it.



Appendix

W600 adjustment specifications

(mm)

	×□□□								
W664 - 01 W644 - 02 03 05 08AB,AC BB,BC 71	100	11.0	5.5~5.8	-	-	-	0.8~1.2		
	232	9.1	4.7~5.0	7.8~8.2	4.5~5.0	17.0	"		
	240	8.6	4.3~4.6	"	"	"	"		
	248	8.2	3.9~4.2	"	"	"	"		
	256	7.8	3.5~3.8	"	"	"	"		
	264	7.4	3.1~3.4	"	"	"	"		
	356	7.8	3.5~3.8	"	"	"	"		
W664 - 30 W644 - 32 33 34 35 81	364	7.4	3.1~3.4	"	"	"	"		
	240	9.8	3.9~4.1	8.6	5.0~5.3	"	"		
	248	9.4	3.5~3.7	"	"	"	"		
	256	9.0	3.1~3.3	"	"	"	"		
	264	8.6	2.7~2.9	8.2	"	"	"		
	356	9.0	3.1~3.3	8.6	"	"	"		
	364	8.6	2.7~2.9	8.2	"	"	"		
W664 - 35DC W644 - 35DC W664 - 08DC,EC W644 - 08DC,EC	248	8.9	3.5~3.7	8.6	"	"	"		
	248	7.7	3.9~4.2	7.8~8.2	"	"	"		

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Cat. No.9766 May, 2000

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