

SERVICE MANUAL
PARTS LIST

MODEL : 2012

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TROUBLESHOOTING

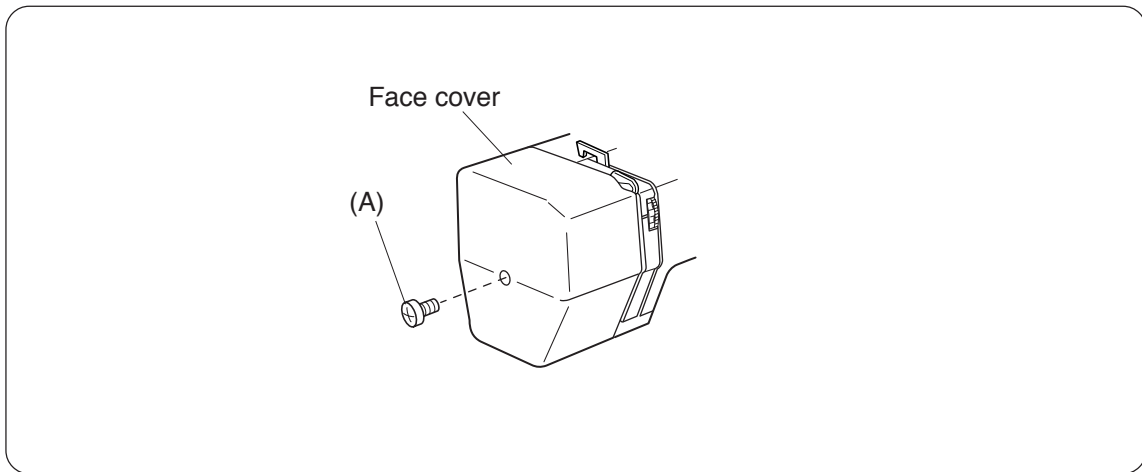
PROBLEM	CAUSE	REMEDY	REFERENCE
1. Skipping stitches	<ol style="list-style-type: none"> 1. Needle is not inserted properly. 2. Needle is bent or worn. 3. Incorrectly threaded 4. Needle or thread are inappropriate for fabric being sewn. 5. Sewing on stretch fabric 6. Inappropriate needle bar height 7. Inappropriate needle to hook timing 8. Inappropriate needle to hook clearance 	<p>Insert the needle properly.</p> <p>Change the needle.</p> <p>Rethread.</p> <p>Use the recommended sewing needle and thread.</p> <p>Use A #11 blue tip needle.</p> <p>See mechanical adjustment "Needle bar height."</p> <p>See mechanical adjustment "Needle timing to shuttle."</p> <p>See mechanical adjustment "Clearance between needle and hook."</p>	<p>P. 16</p> <p>P. 17</p> <p>P. 13, 14</p>
2. Fabric not moving	<ol style="list-style-type: none"> 1. Incorrect feed dog height 2. Thread on bottom side of fabric is jammed up. 3. Feed dog teeth are worn. 	<p>See mechanical adjustment "Feed dog height."</p> <p>Make sure to bring both needle and bobbin thread under the foot when starting sewing.</p> <p>Change the feed dog.</p>	<p>P. 15</p>

PROBLEM	CAUSE	REMEDY	REFERENCE
3. Breaking upper thread	<ol style="list-style-type: none"> 1. Initial sewing speed is too fast. 2. Thread path is incorrect. 3. Needle is bent or dull. 4. Upper thread tension is too strong. 5. Needle size is inappropriate for fabric. 6. Needle eye is worn. 7. Needle hole in needle plate is worn or burred. 	<p>Start with medium speed.</p> <p>Use the proper thread path.</p> <p>Replace with a new needle.</p> <p>Adjust upper thread tension correctly.</p> <p>Use appropriate needle and thread for fabric in use.</p> <p>Change the needle.</p> <p>Repair the hole or replace the needle plate.</p>	P. 8
4. Breaking bobbin thread	<ol style="list-style-type: none"> 1. Incorrectly thread bobbin case. 2. Too much thread is around on the bobbin. 3. Lint is stuck inside the hook race. 4. Thread quality is too low. 5. Thread is jamming around the bobbin. 6. Bobbin thread tension is too strong. 	<p>Thread bobbin case correctly.</p> <p>Adjust the position of stopper.</p> <p>Clean the hook race.</p> <p>Change to a high quality sewing thread.</p> <p>Clear out the jamming thread.</p> <p>Adjust bobbin thread tension correctly.</p>	P. 9
5. Needle breaks	<ol style="list-style-type: none"> 1. Needle is hitting the needle plate. 2. Needle is bent or worn. 3. Needle is hitting the hook race. 4. The fabric moves while the needle is piercing it, or the needle zigzags while in fabric. 5. Fabric is being pulled too strongly while sewing. 	<p>See mechanical adjustment "Needle drop ."</p> <p>Change the needle.</p> <p>See mechanical adjustment "Clearance between needle and hook ."</p> <p>See mechanical adjustment "Needle swing."</p> <p>Guide the fabric gently while sewing.</p>	<p>P. 12</p> <p>P. 13, 14</p> <p>P. 11</p>

PROBLEM	CAUSE	REMEDY	REFERENCE
6. Noisy operation	1. Backlash between shuttle hook gear and lower shaft gear is too great.	See mechanical adjustment "Clearance between needle and hook (NO. 2)."	P. 14
	2. Lower shaft gear is loose.	Eliminate the looseness.	
	3. Inappropriate belt tension.	See mechanical adjustment "Motor belt tension."	P. 22
	4. Upper shaft gear is loose.	Eliminate the looseness.	
	5. Not enough oil.	Oil all moving parts.	
7. Deformation of pattern	1. Inappropriate zigzag synchronization.	See mechanical adjustment "Needle swing."	P. 11
	2. Inappropriate disengagement of cam follower.	See mechanical adjustment "disengagement of cam follower."	P. 21
	3. Upper thread tension is too strong.	Adjust upper thread tension correctly.	P. 8
	4. Inappropriate feed balance BALANCE	See mechanical adjustment "Feed balance on stretch stitch."	P. 19

SERVICE ACCESS (1)

FACE COVER



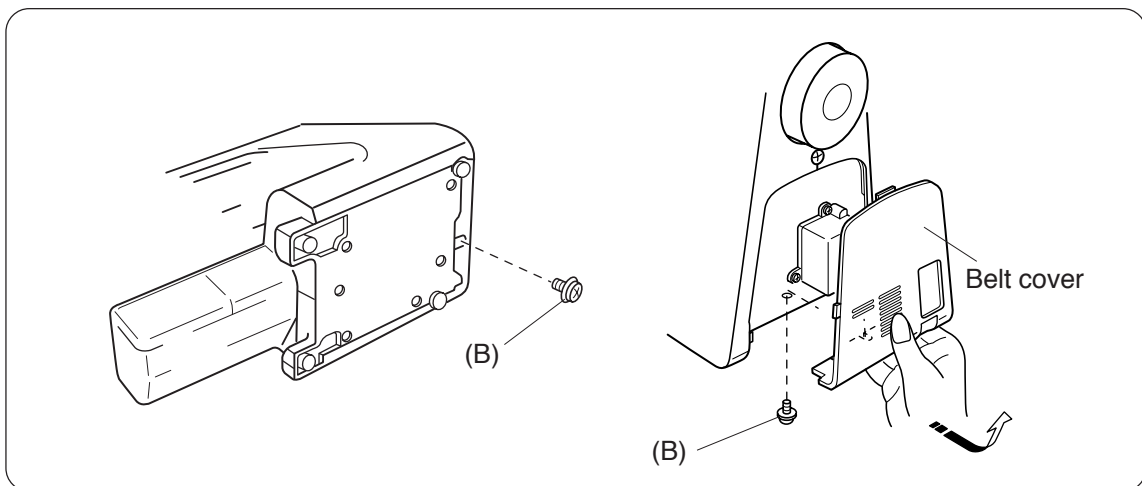
(To remove)

1. Remove the face cover by removing the setscrew (A).

(To attach)

2. Mount the face cover in reverse procedure of the removing.

BELT COVER



(To remove)

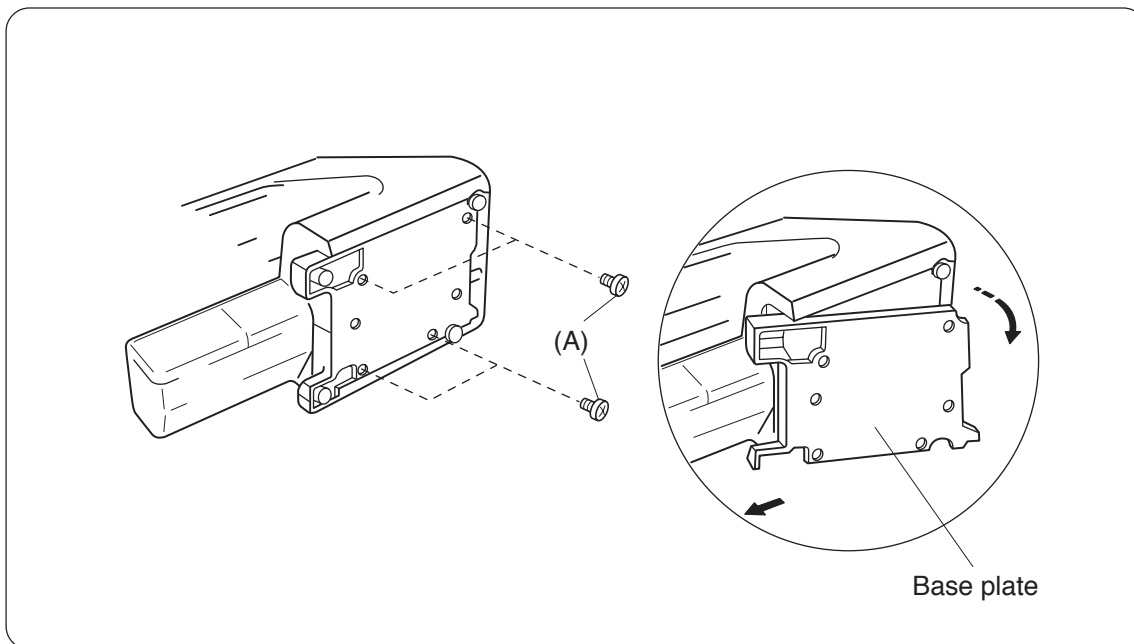
1. Loosen setscrew (B).
2. Take the belt cover out.

(To attach)

3. Mount the belt cover in reverse procedure of the removing.

SERVICE ACCESS (2)

BASE PLATE



(To remove)

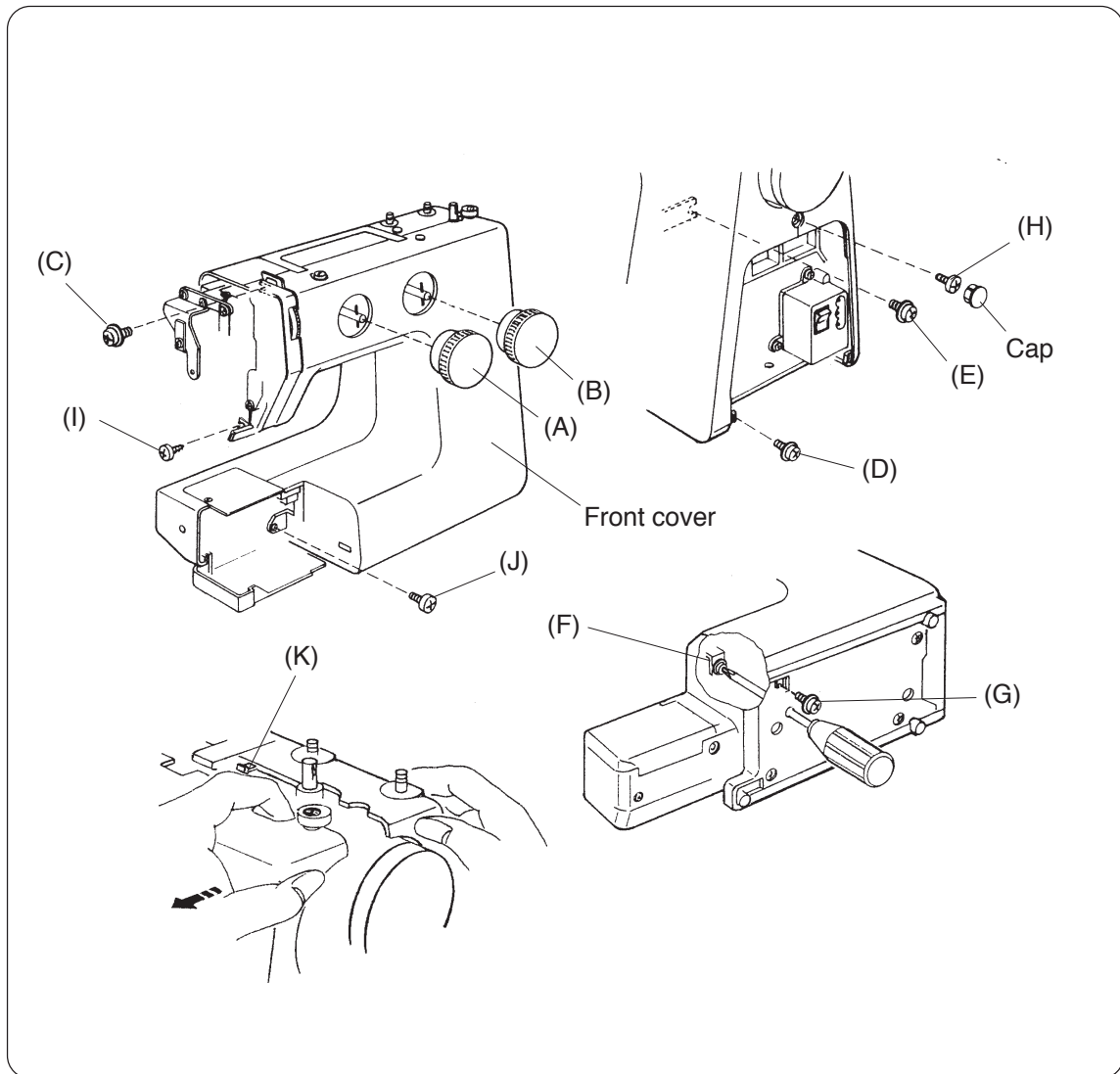
1. Remove the setscrews (A).
2. Remove the base plate.

(To attach)

3. Mount the base plate in reverse procedure of the removing.

SERVICE ACCESS (3)

FRONT COVER



(To remove)

1. Remove the face cover, and remove the belt cover (See page 4).
2. Remove dials (A) and (B).
3. Loosen setscrews (C), (D), (E), (F), and (G) and then, remove the front cover by removing setscrews (H), (I), and (J).

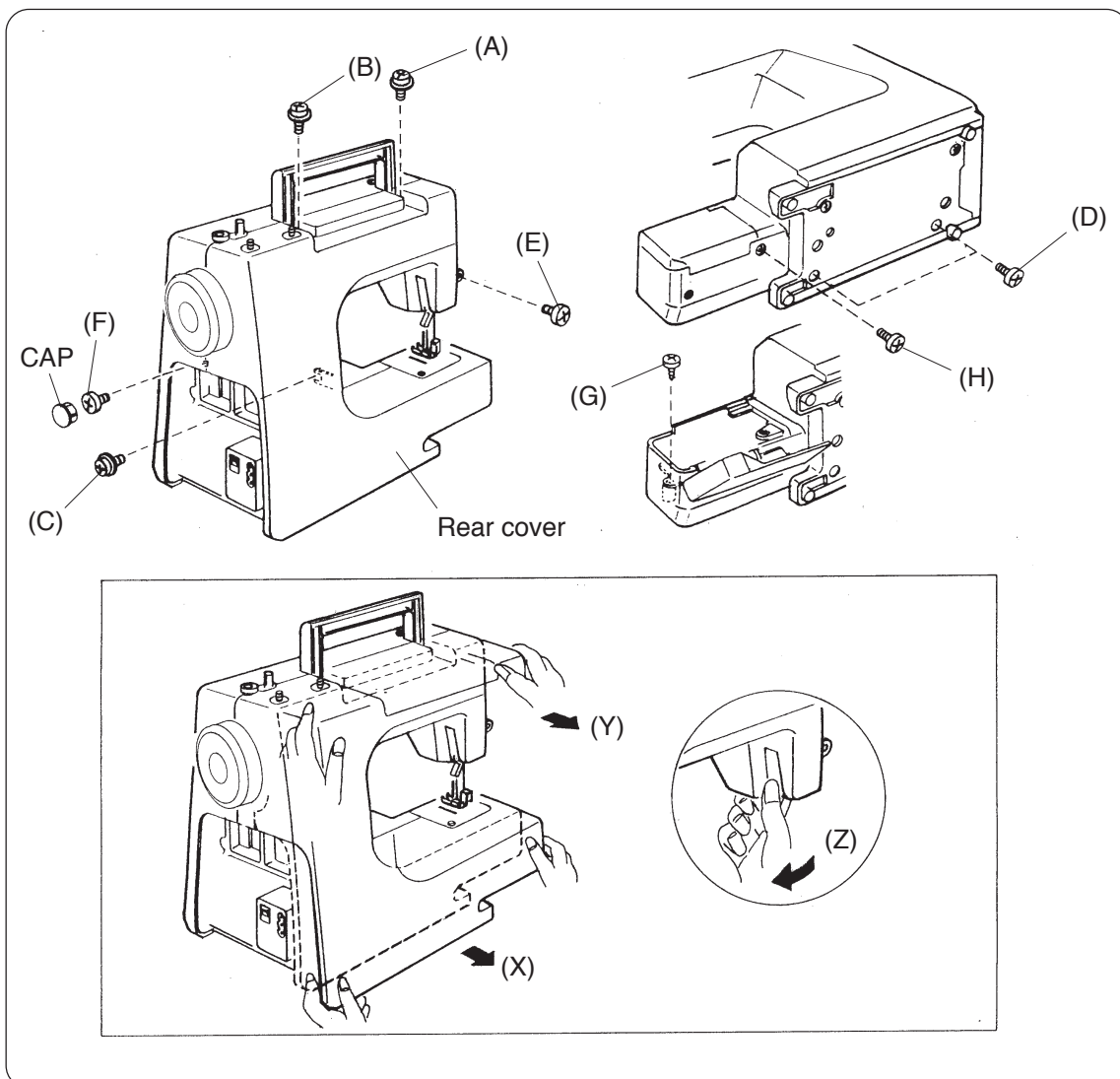
NOTE: Unhook the tab (K) from the rear cover when removing the front cover.

(To attach)

4. Mount the front cover in reverse procedure of the removing.

SERVICE ACCESS (4)

REAR COVER



(To remove)

1. Remove the face cover and belt cover (See page 4).

NOTE: Pull up the spool pins.

2. Loosen setscrews (A), (B), (C) and (D) (2 pcs.), and then, remove the rear cover by removing setscrews (E), (F), (G) and (H).

NOTE: Remove the rear cover in the order of (X) (lower part) → (Y) (upper part) → (Z) (presser foot lifter part).

(To attach)

3. Mount the rear cover in reverse procedure of the removing.

MECHANICAL ADJUSTMENT

TOP TENSION

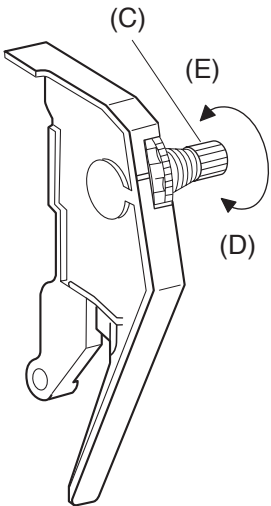
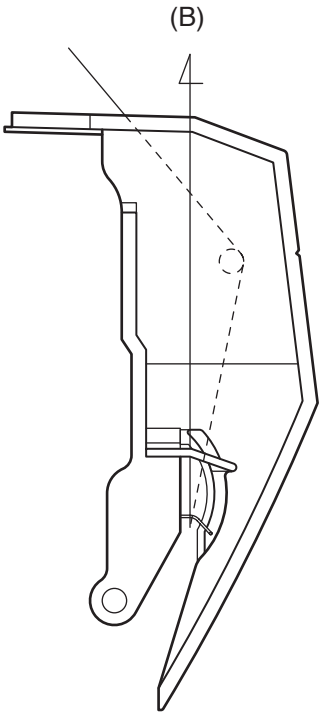
To check:

The standard upper thread tension should be 65–95 g when pulling the thread (cotton thread #50) in the direction of (B) with setting the tension dial at "3". (make sure the foot should be lowered.)

If the tension is out of the standard range, adjust it as follows:

Adjustment procedure:

1. Remove the front cover unit (See page 6).
2. Turn the adjusting nut (C) in the direction of (D) when the upper thread tension is too tight.
Turn the adjusting nut (C) in the direction of (E) when the upper thread tension is too loose.
3. Attach the front cover unit.



MECHANICAL ADJUSTMENT

BOBBIN TENSION

To check:

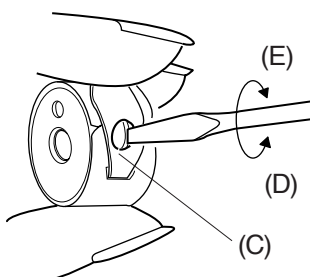
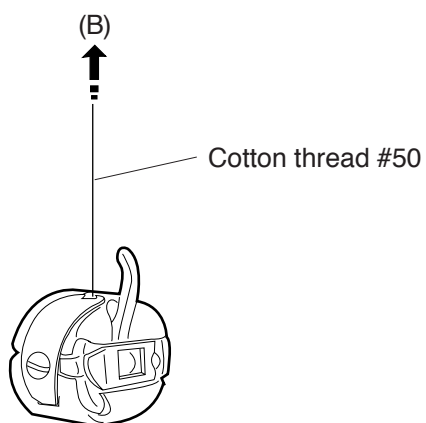
Set the bobbin in the bobbin case and pass the thread (cotton #50) through the tension spring.

The bobbin thread tension should be 45–55g when pulling the thread in the direction of (B).

If the tension is out of the range, adjust it as follows:

Adjustment procedure:

1. Turn the adjusting screw (C) in the direction of (D) when the bobbin thread tension is too tight.
2. Turn the adjusting screw (C) in the direction of (E) when the bobbin thread tension is too loose.



MECHANICAL ADJUSTMENT

PRESSER BAR HEIGHT AND ALIGNMENT

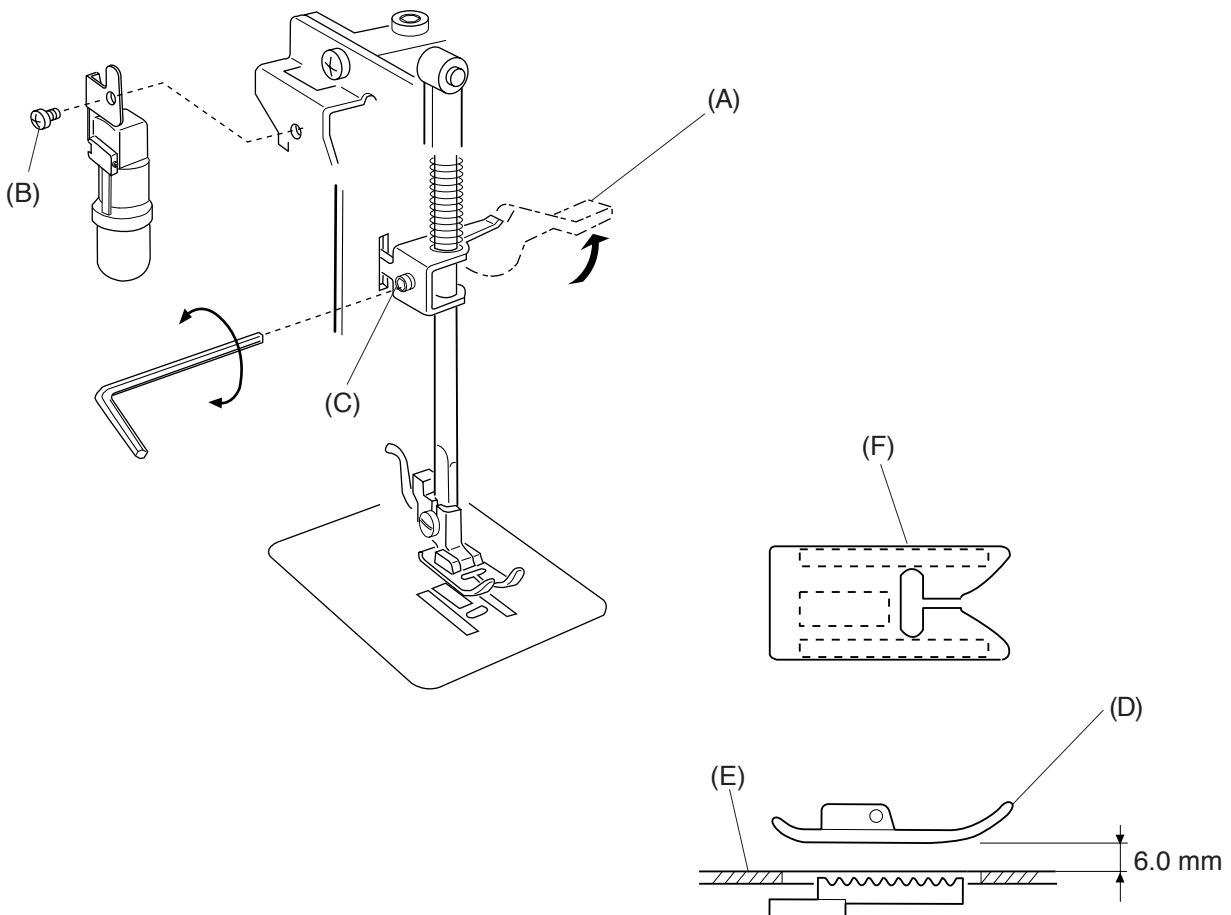
To check:

1. Raise the presser foot lever (A).
2. The distance between the presser foot (D) and the needle plate (E) should be 6.0 mm (0.24").

Adjustment procedure:

1. Remove the face cover (See page 4).
2. Raise the presser foot lever and loosen the setscrew (C) on the presser bar holder.
Adjust the distance between the presser foot (D) and the needle plate (D) to 6.0 mm (0.24").
3. Tighten the setscrew (C) securely.
4. Tighten the setscrew (B) to secure the lamp socket.
5. Attach the face cover.

NOTE: When you tighten the setscrew (B), make sure that both sides of the presser foot are parallel to the feed dog slots (F) on the needle plate.



MECHANICAL ADJUSTMENT

NEEDLE SWING

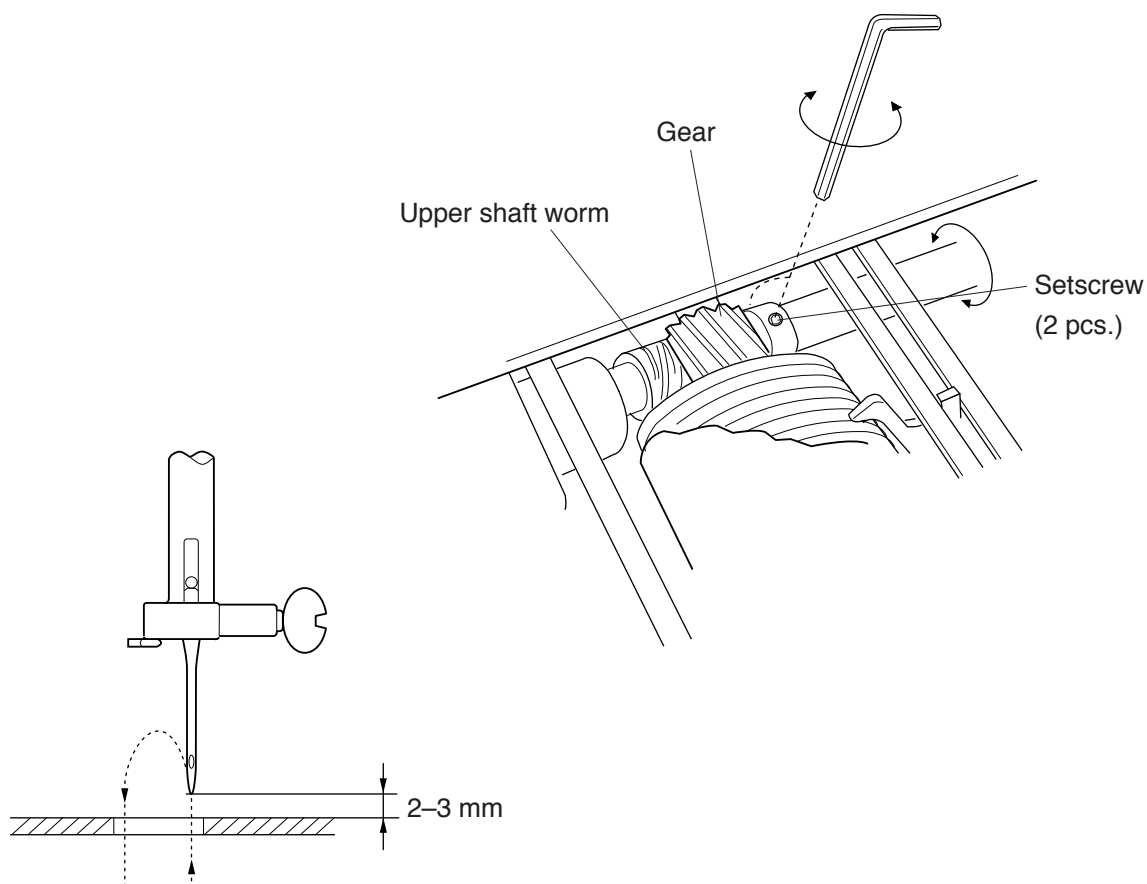
To check:

Adjust the needle swing according to the following procedure, If the needle bar starts moving sideways while the needle is in the fabric when sewing the zigzag pattern (with maximum zigzag width).

Adjustment procedure:

1. Set the pattern selector dial with maximum zigzag width, and remove the front cover (See page 6).
2. Loosen two setscrews.
3. Adjust the needle swing by turning the handwheel, while holding the worm so as not to rotate it, until the needle swing starts at 2–3 mm above the needle plate after the needle has come out of the right side of the needle hole.
4. Tighten two setscrews.
5. Mount the front cover.

NOTE: After adjusting the needle swing, check that the upper shaft worm and gear rotate smoothly without any backlash between them.



MECHANICAL ADJUSTMENT

NEEDLE DROP

To check:

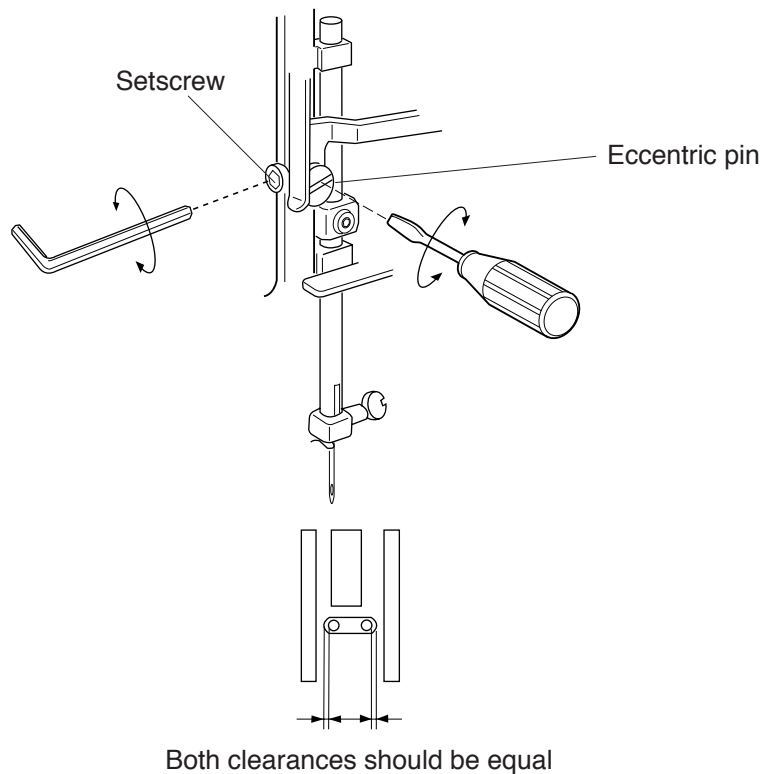
When the needle swings in maximum zigzag width, the distance between both ends of the needle hole on the needle plate and the needle drop positions should be equal.

If not, adjust as follows:

Adjustment procedure:

1. Remove the face cover (See page 4).
2. Set the pattern selector dial at maximum zigzag width.
3. Loosen the setscrew.
4. Turn the eccentric pin to adjust the needle drop.
5. Tighten the setscrew.
6. Attach the face cover.

NOTE: Check the hook timing after this adjustment.



MECHANICAL ADJUSTMENT

CLEARANCE BETWEEN NEEDLE AND HOOK (ADJUSTMENT METHOD NO. 1)

To check:

The clearance between the needle and shuttle race should be -0.05 to $+0.10$ mm.

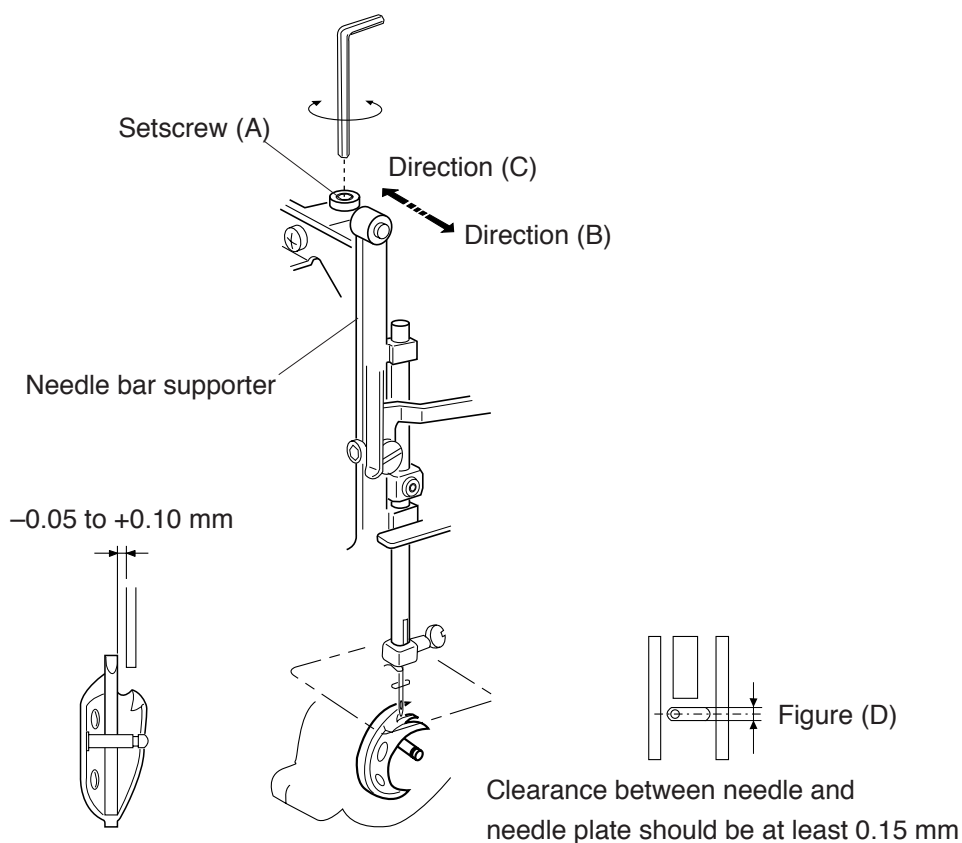
If not, adjust as follows:

Adjustment procedure:

1. Remove the face cover (See page 4).
2. Set the pattern select dial at "C".
3. Loosen setscrew (A), and move the needle bar supporter in the direction of the arrows to get a clearance between -0.05 to $+0.10$ mm.
 - * If clearance is too wide, move the needle bar supporter to direction (B).
 - * If clearance is too narrow, move the needle bar supporter to direction (C).

NOTE: After this adjustment, check that the clearance between the needle and needle plate is more than 0.15 mm as shown in figure (D). If not, adjust the clearance between needle and shuttle race by using adjustment method NO.2 (see next page). Readjust the clearance between needle and needle plate more than 0.15 mm.

4. Attach the face cover.





MECHANICAL ADJUSTMENT

CLEARANCE BETWEEN NEEDLE AND HOOK (ADJUSTMENT METHOD NO.2)

To check:

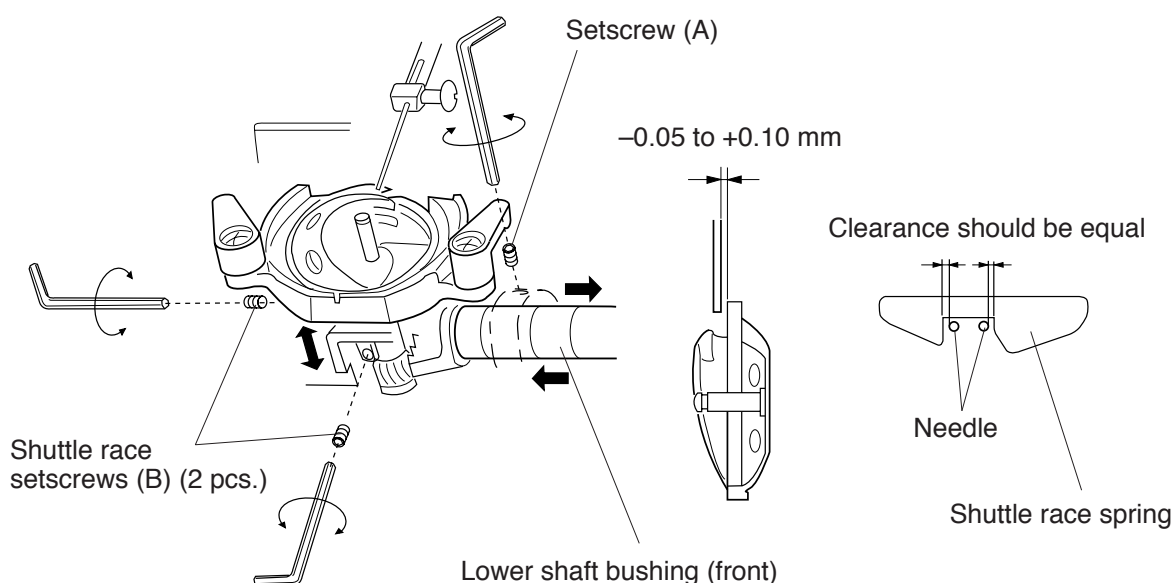
Use this adjustment method NO. 2 if the clearance cannot be adjusted by the method NO.1.
The clearance between the needle and shuttle race should be -0.05 to $+0.10$ mm.

Adjustment procedure:

1. Set the pattern selector dial at " ".
2. Remove the rear cover (See page 7).
3. Loosen the setscrew (A) on the lower shaft bushing and slide the gear about 0.5 mm to the right to create some slack between the gears.
4. Lower the needle and loosen the two shuttle race setscrews (B).
Move the shuttle race unit axially either forward or backward to adjust the clearance between the needle and the shuttle race in the range of -0.05 to $+0.10$ mm.
5. Set the pattern select dial at " ", turn the handwheel to check if the clearance between the needle and inner edges of the shuttle race spring at the left and right needle drops are equal.
If not, adjust by turning the shuttle race unit.
6. Tighten the two shuttle race setscrews (B).
7. Loosen the setscrew on the lower shaft bushing and slide the gear back to the original position while adjusting the backlash.
8. Tighten screw (A) firmly.
9. Attach the rear cover.

NOTE: The rotary play of the tip of the shuttle driver should be less than 0.3 mm and the lower shaft should turn smoothly.

After the adjustment, check the hook timing.



MECHANICAL ADJUSTMENT

FEED DOG HEIGHT

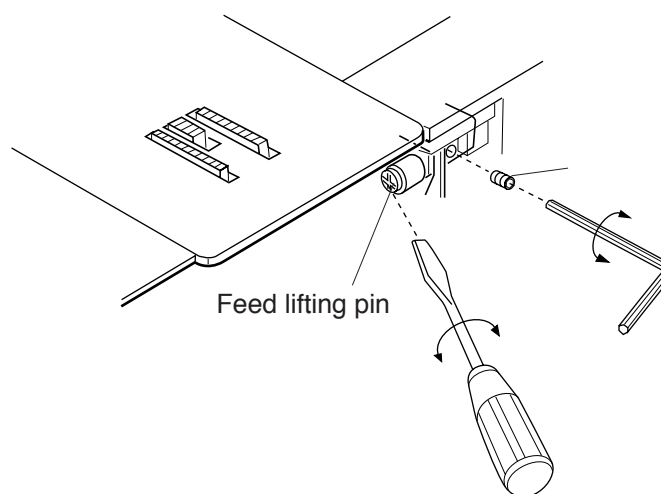
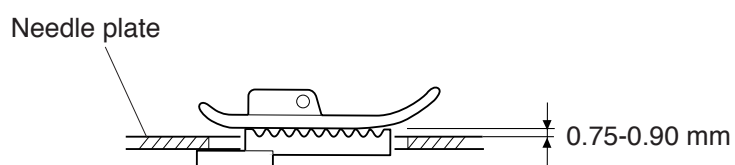
To check:

1. Lower the presser foot.
2. Turn the handwheel toward you to bring the feed dog to its highest position. The height of the feed dog from the needle plate should be 0.75-0.90mm.

If it is not in the range, adjust as follows.

Adjustment procedure:

1. Open the shuttle cover.
2. Lower the presser foot and turn the handwheel toward you until the feed dog comes to its highest point.
3. Loosen the setscrew (A) .
4. Turn the feed lifting pin to adjust the height of feed dog (0.75-0.90 mm).
5. Tighten the setscrew (A).
6. Turn the handwheel toward you to recheck the height of feed dog.




MECHANICAL ADJUSTMENT

NEEDLE BAR HEIGHT

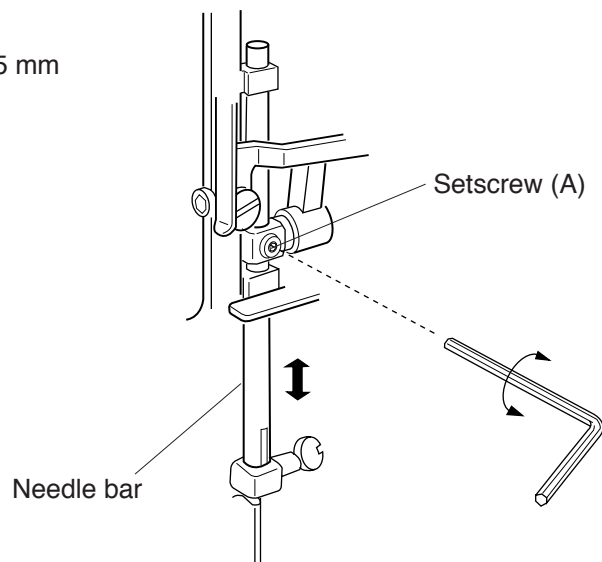
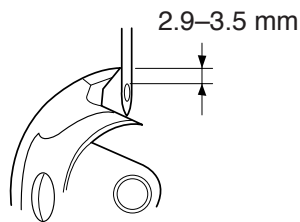
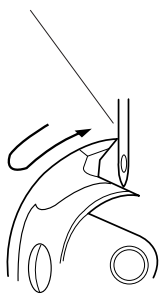
To check:

When the tip of shuttle hook meets the left side of the needle in ascending travel of the needle from its left and lowest position, The distance between the top of the needle eye and the tip of the shuttle hook should be in the range of 2.9-3.5 mm.

Adjustment procedure:

1. Open the face cover.
2. Set the pattern selector dial at "  ".
3. Open the shuttle cover.
4. Remove the shuttle race ring.
5. Turn the handwheel toward you until the tip of the shuttle hook meets the left side of the needle.
6. Loosen the lower shaft crank arm screw (A).
7. Adjust the height of the needle bar by moving the needle bar upward or downward without turning it.
8. Tighten the setscrew (A).
9. Attach the shuttle race ring.

Tip of shuttle hook meets
left side of needle



MECHANICAL ADJUSTMENT

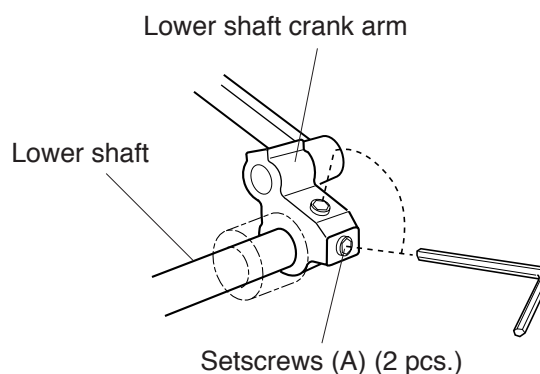
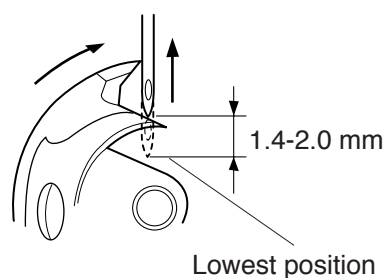
NEEDLE TIMING TO SHUTTLE

To check:

The height of the needle point from its lowest point of travel should be in the range of 1.4-2.0 mm when the tip of the shuttle hook just meets the left side of the needle at the left needle position.

Adjustment procedure:

1. Set the pattern selector dial at " C: D ".
2. Remove the base (See page 5).
3. Open the shuttle cover.
4. Remove the shuttle race ring.
5. Turn the handwheel toward you until the tip of the shuttle hook meets the left side of the needle.
6. Loosen the lower shaft crank arm screws (A).
7. While holding the shuttle hook so it doesn't turn, turn the handwheel toward you until the needle comes to its lowest position.
Then, further turn the handwheel to raise the needle about 1.7 mm from its lowest position.
8. Tighten the setscrews (A).
9. Turn the handwheel toward you to check if the height is in the range of 1.4-2.0 mm.
If it is not in this range, repeat the above procedure.
10. Attach the shuttle race ring.
11. Attach the base.



MECHANICAL ADJUSTMENT

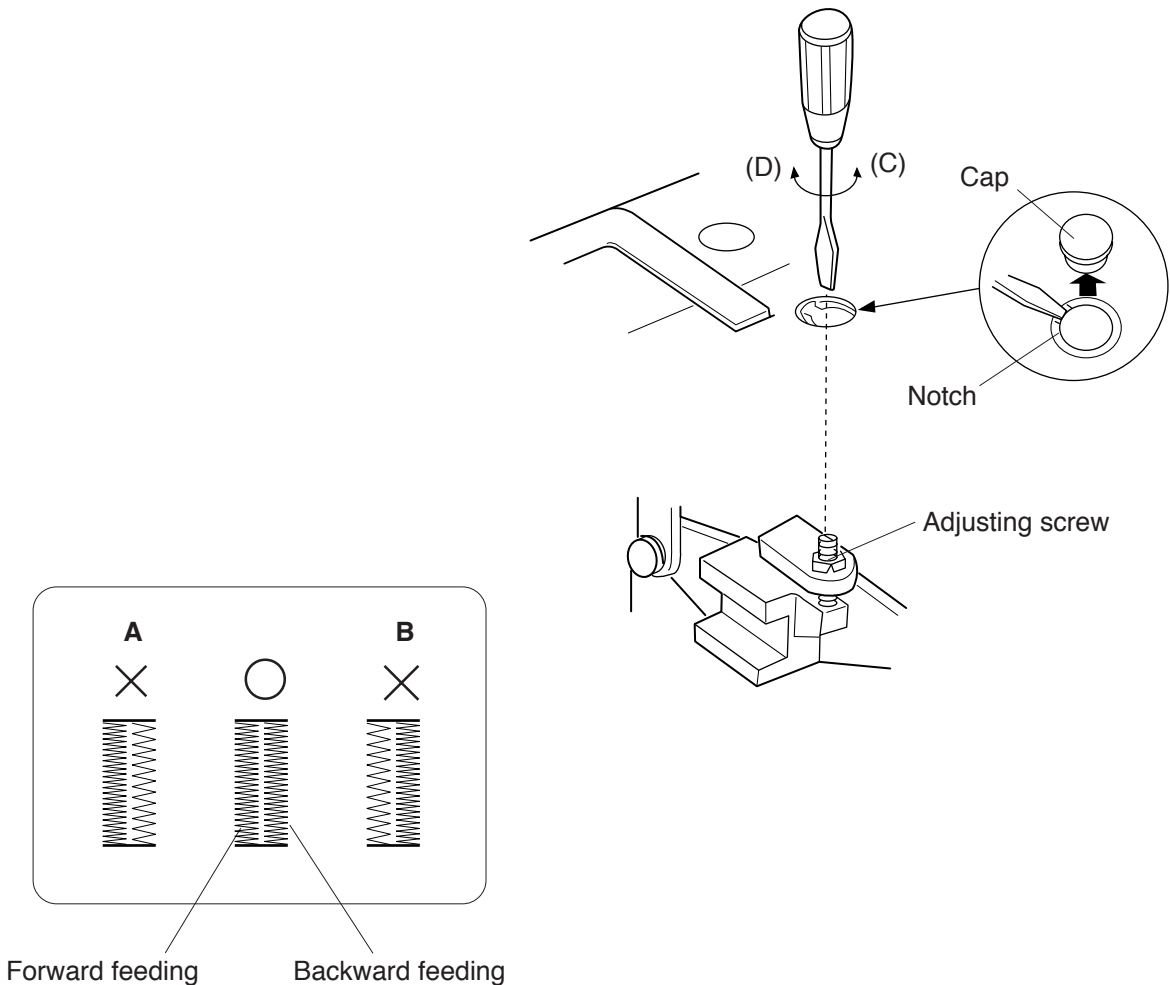
BUTTONHOLE FEED BALANCE

To check:

When sewing buttonhole, the stitches on each side of buttonhole should be the same stitch density. The range of 9-12 stitches in the right side row "backward feeding" against 10 stitches in the left side row "forward feeding" is considered acceptable.

Adjustment procedure:

- 1. Check the stitches by sewing buttonholes, and remove the cap.
- 2. Turn the adjusting screw in the direction of (C) in case of (A) (right stitches are rough), or in the direction of (D) in case of (B) (left stitches are rough).
- 3. Mount the cap.



MECHANICAL ADJUSTMENT


FEED BALANCE ON STRETCH STITCH

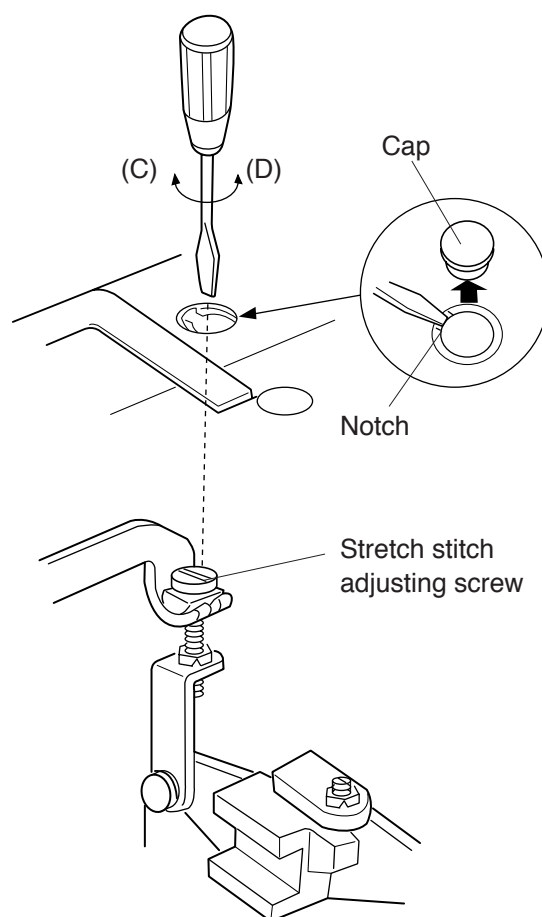
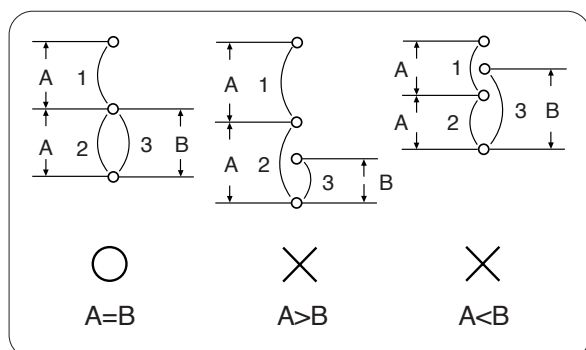
To check:

If the stretch stitch patterns are distorted with setting the stitch length dial at " S.S. ".

(In case of being a difference between forward feeding and backward feeding during stretch stitch pattern sewing), make an adjustment as follows:

Adjustment procedure:

1. Remove the cap.
2. Set the pattern selector dial at "  ", and the stitch length dial at "S.S.".
3. Turn the stretch stitch adjusting screw in the direction of (C) when $A > B$, or in the direction of (D) when $A < B$.
4. Attach the cap.




MECHANICAL ADJUSTMENT

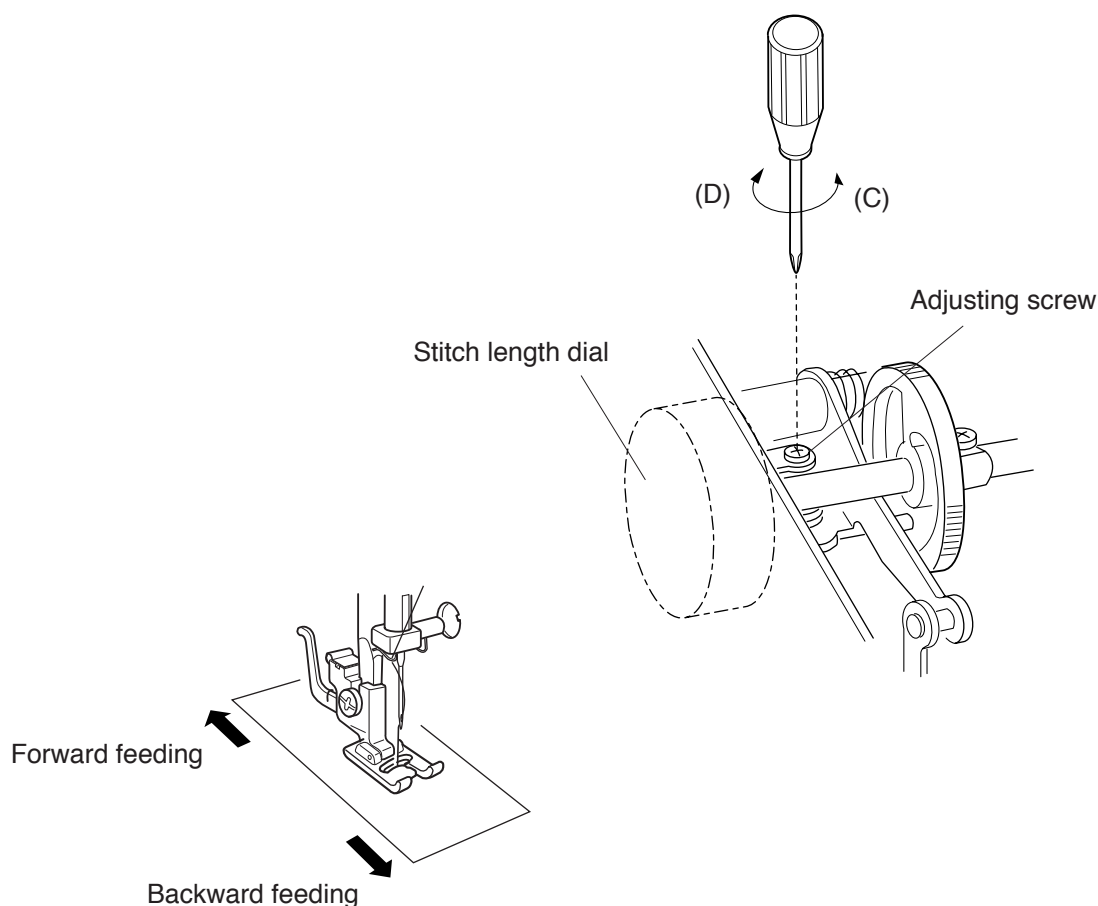
BARTACK FEED OF BUTTONHOLE

To check:

If the material is fed forward or backward when sewing bartack on buttonhole, make an adjustment as follows:

Adjustment procedure:

1. Set the pattern selector dial at "2" , and the stitch length dial at "4".
2. Remove the front cover (See page 6).
3. Place a piece of paper under the foot and turn the handwheel.
If the paper is fed forward, turn the adjusting screw in the direction of (C).
If the paper is fed backward, turn the adjusting screw in the direction of (D).
4. Attach the front cover.




MECHANICAL ADJUSTMENT

DISENGAGEMENT OF CAM FOLLOWER

To check:

If the clearance between the cam follower and the top convex of the zigzag cam is not enough, the pattern selector dial is blocked or will not select the correct pattern.

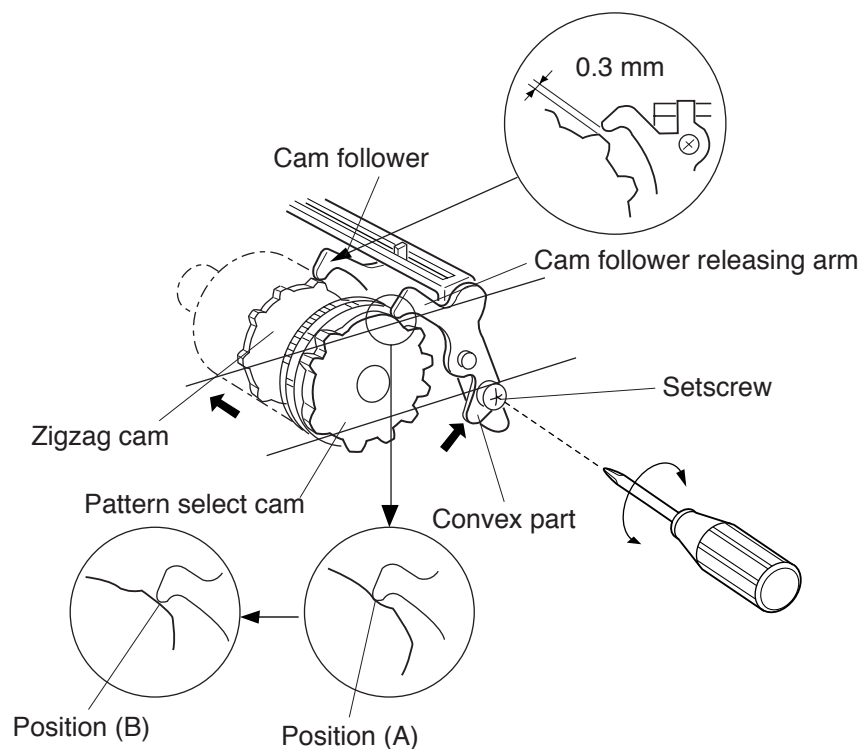
Adjustment procedure:

1. Remove the front cover (See page 6).
2. Set the pattern selector dial at pattern "  ".
3. Put the cam follower to the zigzag cam and put the cam follower releasing arm to the pattern selector cam.
4. Loosen the setscrew.
5. Push the convex part of the cam follower releasing arm in the direction of arrow until the cam follower releasing arm touches position (A) of the pattern select cam, and then, tighten the setscrew.

NOTE: After this adjustment, check that the clearance between the zigzag cam and the cam follower is about 0.3mm when setting the cam follower releasing arm onto position (B) of pattern selector cam.

6. Mount the front cover.

NOTE: Check the needle movement for straight stitch.



MECHANICAL ADJUSTMENT

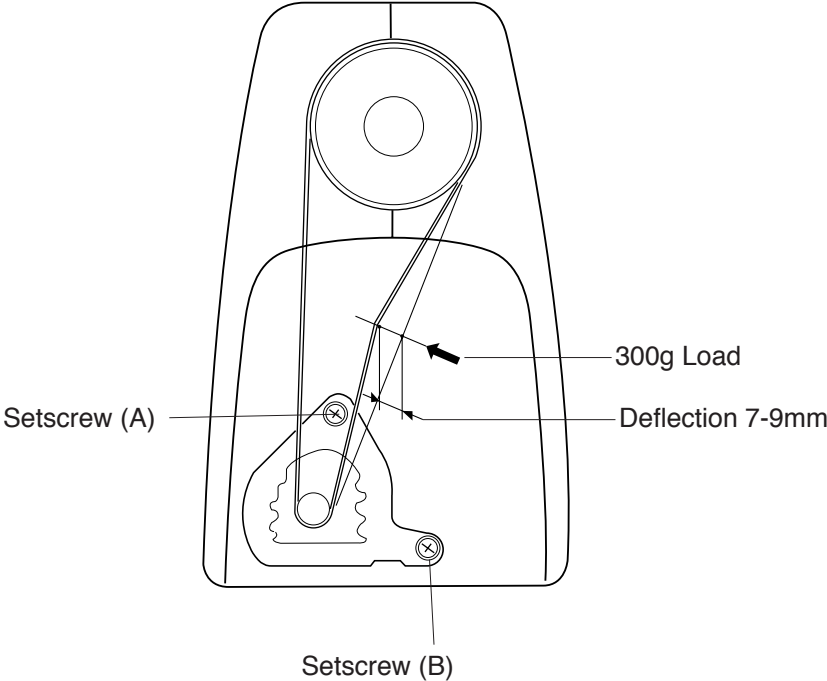
MOTOR BELT TENSION

To check:

- 1. Improper belt tension may cause noise, overload of motor, slow running or motor belt jumping.
- 2. The belt deflection should be 7mm - 9mm when pressing the middle of the motor belt with approximately 300 grams of pressure.

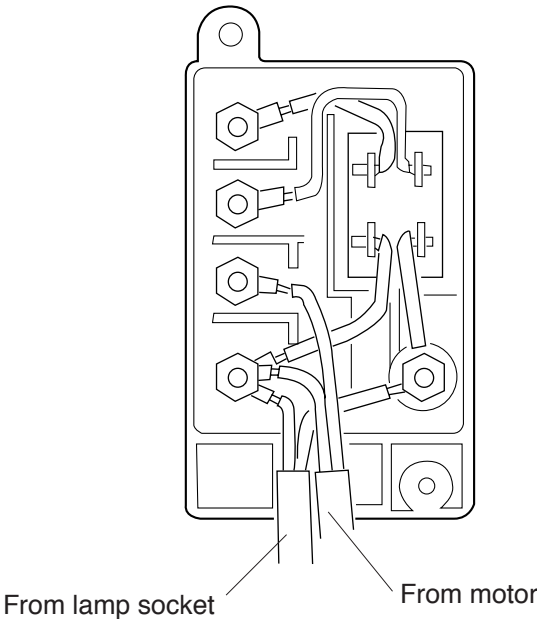
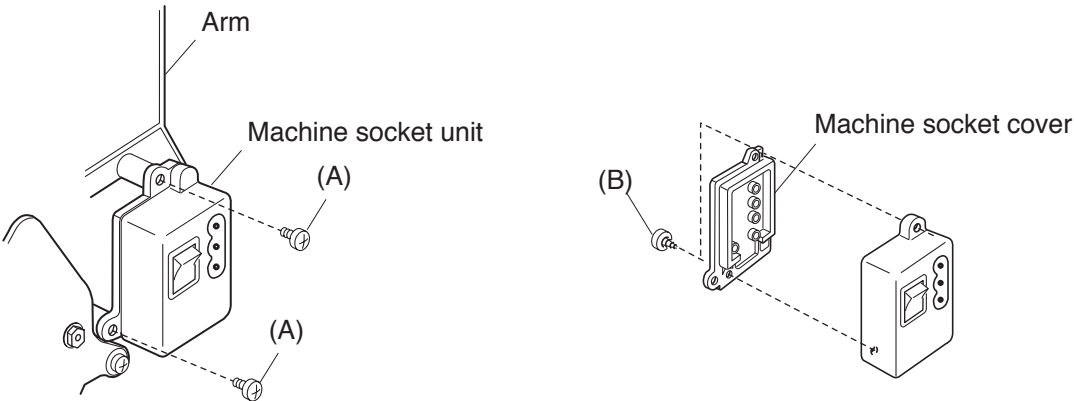
Adjustment procedure:

- 1. Remove the belt cover (See page 4).
- 2. Loosen the setscrews (A) and (B).
- 3. Move the motor up or down to adjust the deflection about 7mm - 9mm.
- 4. Tighten the setscrews (A) and (B).
- 5. Attach the belt cover.

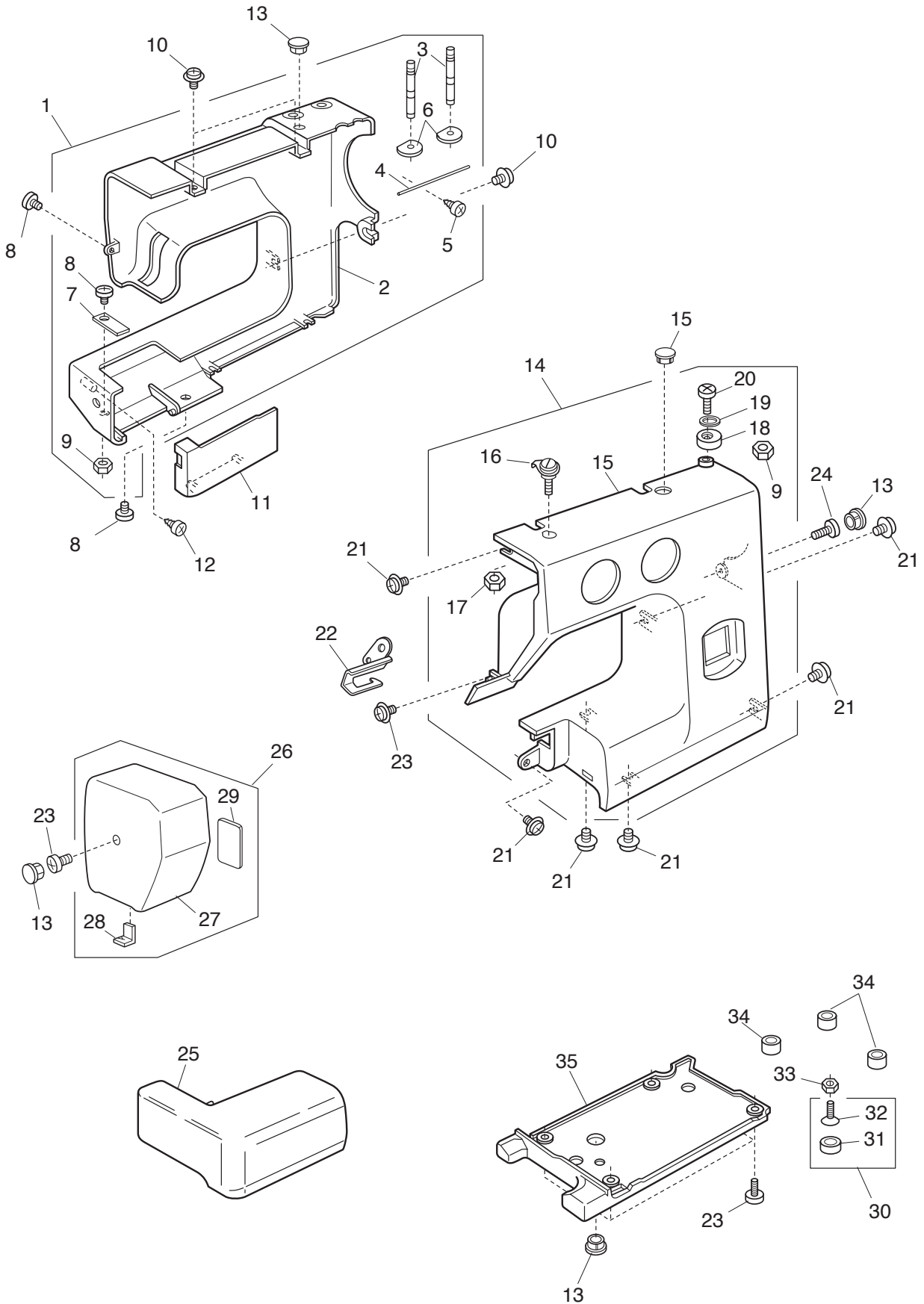


WIRING

- 1. Remove the belt cover. (See page 4.)
- 2. Remove the screws (A), (B) and machine socket cover.
- 3. Follow the above procedure in reverse.



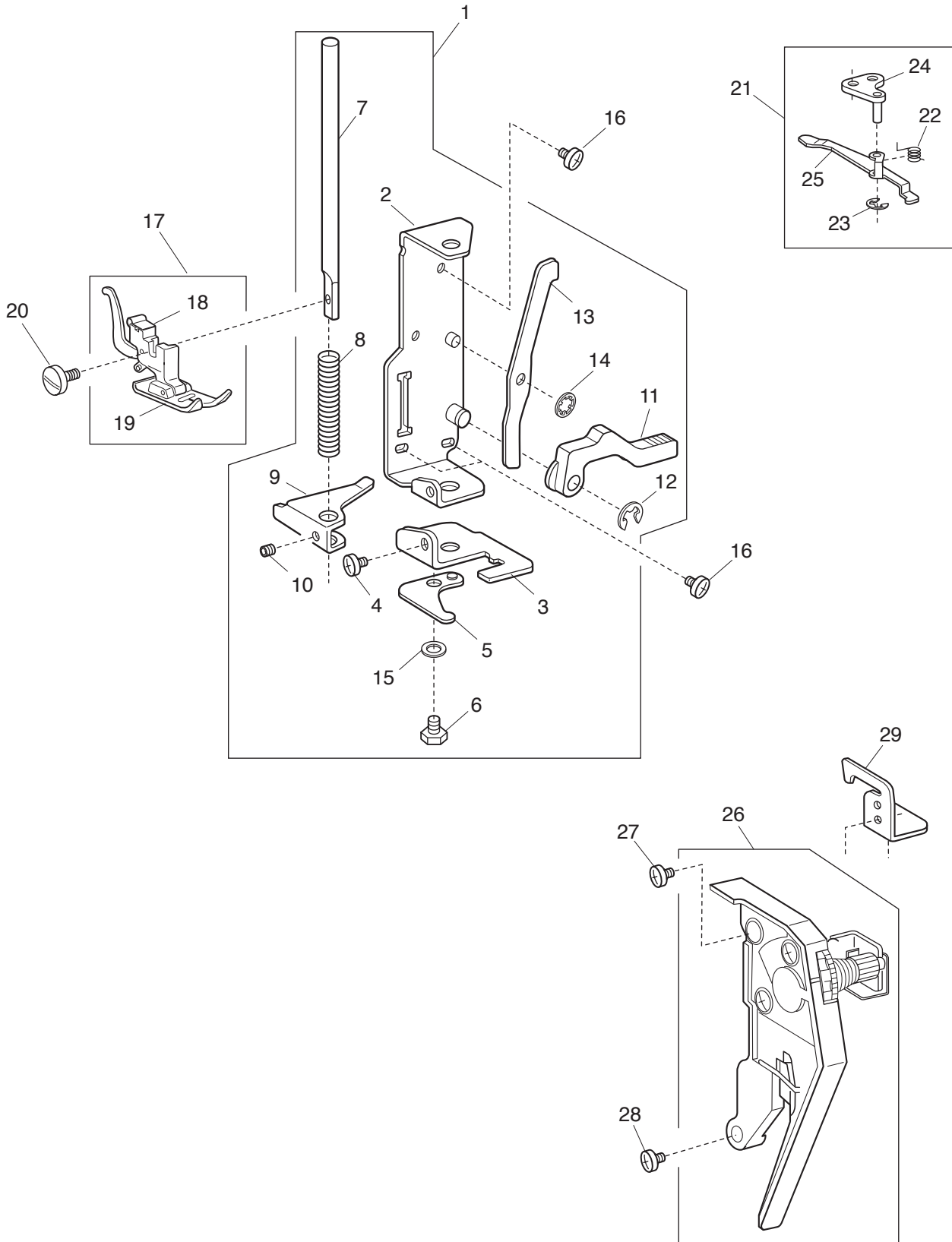
PARTS LIST



PARTS LIST

KEY NO.	PARTS NO.	DESCRIPTION
1	743617309	Rear cover (unit)
2	743003007	Rear cover
3	652205109	Spool pin
4	736007009	Spool pin spring
5	000076317	Setscrew 3x10
6	735013005	Spool pin spring base
7	730006000	Spring
8	000101404	Setscrew 4x6
9	000061205	Nut
10	000115205	Setscrew TP 4X6
11	739004005	Bed cover plate
12	000121905	Tapping screw 4X12B
13	653006101	Cap
14	743663377	Front cover (unit)
15	743209120	Front cover
16	730501011	Thread guide plate (unit)
17	000160102	Adjustable lock nut 4
18	735016307	Bobbin winder stopper
19	000071013	Washer
20	000103107	Setscrew 4X14
21	000115205	TP screw 4X6
22	740022003	Thread guide plate
23	000081005	Setscrew 4X8
24	000107307	Tapping screw 3X8B
25	743004008	Extension table (unit)
26	743602367	Face cover (unit)
27	743005294	Face cover
28	840602006	Thread cutter (unit)
29	724025006	Reflex sticker
30	735616200	Rubber base (unit)
31	735002001	Rubber base
32	000097901	Flat screw 5X18
33	000061319	Nut
34	739064003	Bed rubber base
35	739005006	Base plate

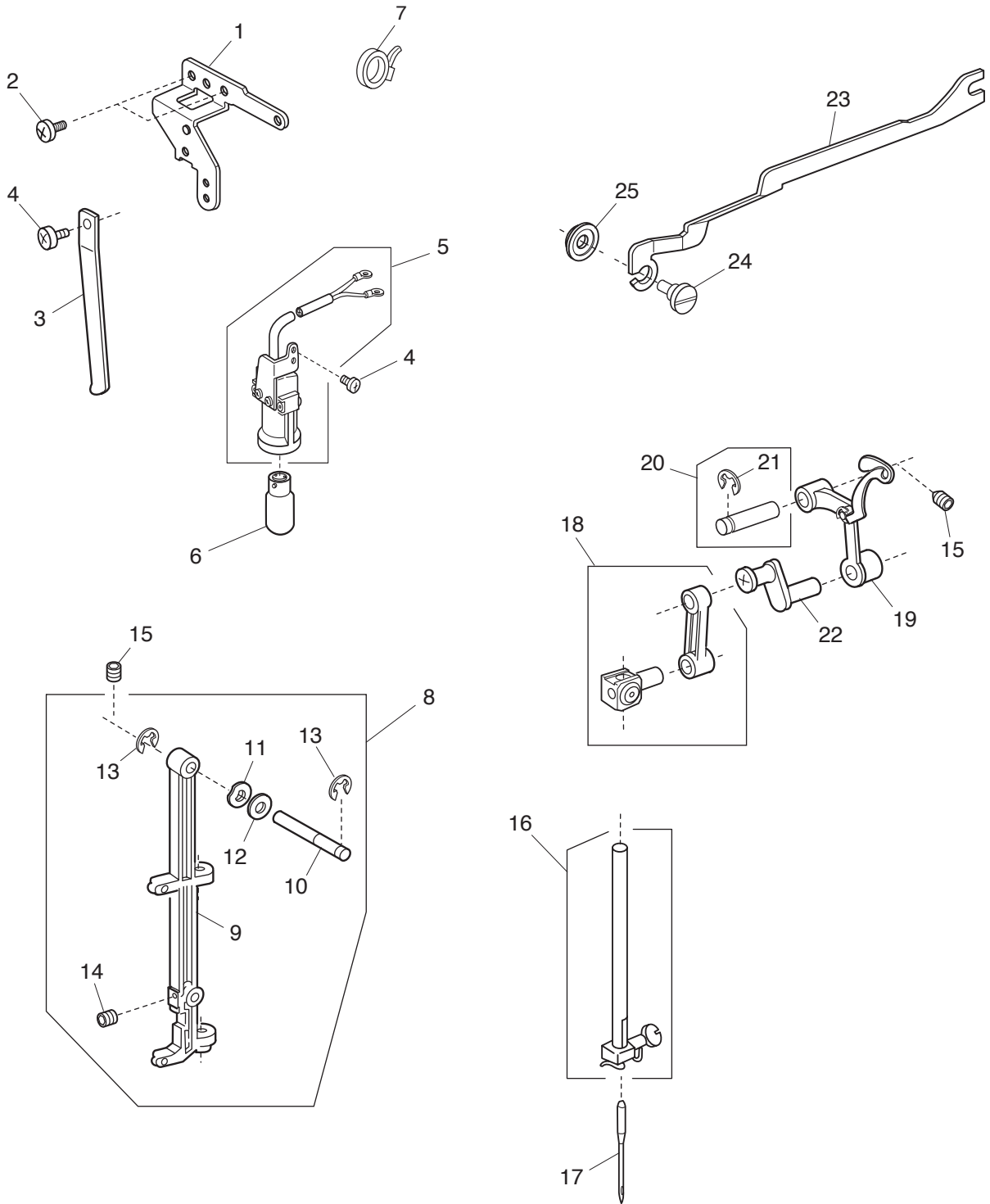
PARTS LIST



PARTS LIST

KEY NO.	PARTS NO.	DESCRIPTION
1	305604004	Presser bar base plate (unit)
2	735221008	Presser bar base plate
3	735222009	Needle drop adjusting plate
4	000101404	Setscrew 4X6
5	735025000	Needle bar supporter stopper
6	000138307	Bolt 4X8
7	735026001	Presser bar
8	735027002	Presser bar spring
9	735028003	Presser bar bracket
10	000111500	Hexagonal socket screw 4X8
11	735029004	Presser foot lifter
12	000001609	Snap ring E-5
13	735030008	Tension release lever
14	000013903	Snap ring CS-5
15	000070506	Washer
16	000081005	Setscrew 4X8
17	301612003	Presser foot (unit)
18	611510000	Presser foot holder (unit)
19	301505002	Zigzag foot (unit)
20	660106001	Thumb screw
21	739605002	Tension release arm (unit)
22	739019003	Tension release spring
23	000002105	Snap ring E-3
24	739017001	Tension release arm base
25	739018002	Tension release arm
26	743501000	Tension assembly
27	000103808	Setscrew 3X5
28	000101703	Setscrew 4X12
29	739016000	Top cover thread guide

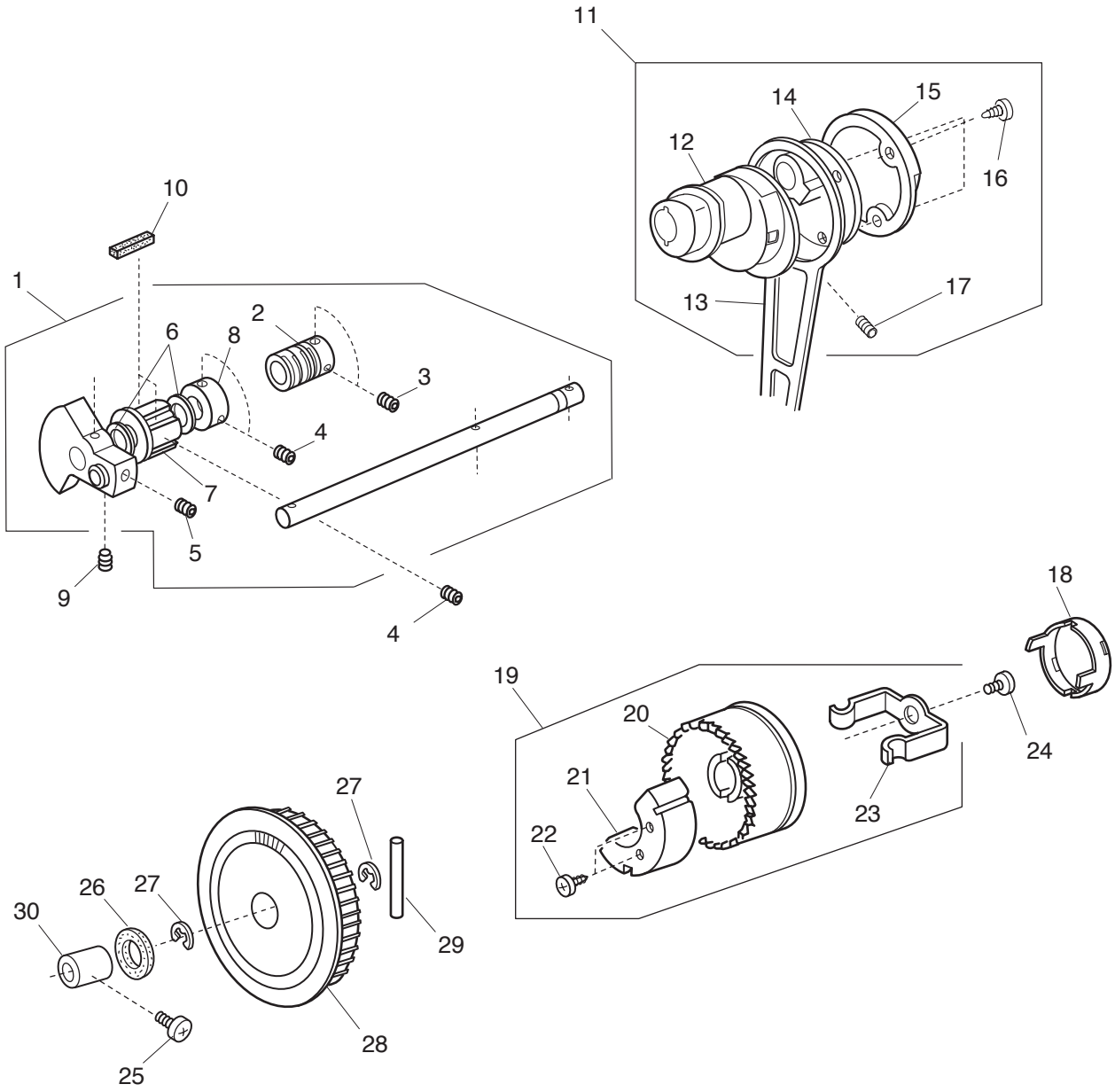
PARTS LIST



PARTS LIST

KEY NO.	PARTS NO.	DESCRIPTION
1	740007013	Face cover set plate (unit)
2	000081005	Setscrew 4X8
3	730024004	Needle bar supporter spring
4	000101404	Setscrew 4X6
5	743634003	Lamp socket (unit)
6	000009009	Lamp 240V 15W
7	000053008	Cord tie band
8	301610001	Needle bar supporter (unit)
9	301032003	Needle bar supporter
10	730022002	Needle bar supporter pin
11	673022002	Wave washer
12	000070609	Plain washer
13	000002507	Snap ring E-4
14	000111902	Hexagonal socket screw 3X4
15	000111304	Hexagonal socket screw 5X5
16	730503116	Needle bar (unit)
17	102408089	Needle HA1-14
18	680504005	Needle bar connecting stud (unit)
19	625506109	Thread take-up lever (unit)
20	731511006	Thread take-up lever pin (unit)
21	000002806	Snap ring E-6
22	735504008	Needle bar crank pin (unit)
23	735119002	Zigzag rod
24	678084007	Eccentric pin
25	748021006	Zigzag rod plain washer

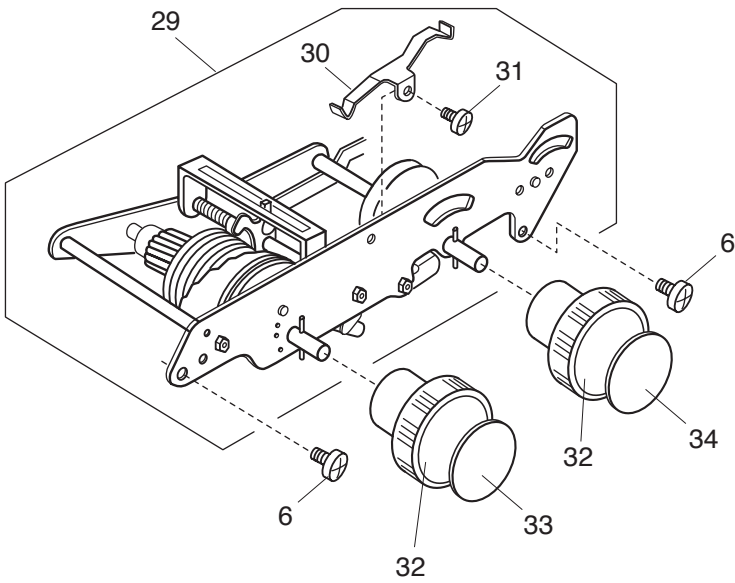
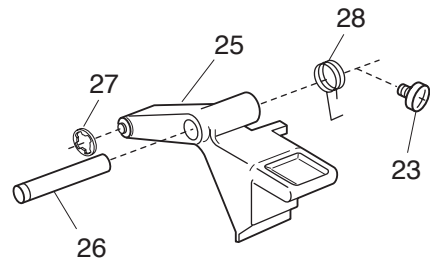
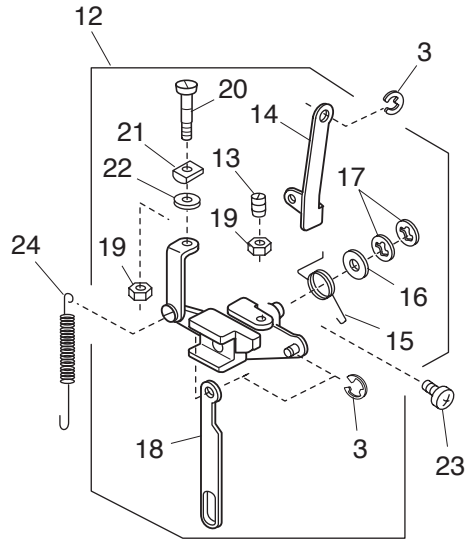
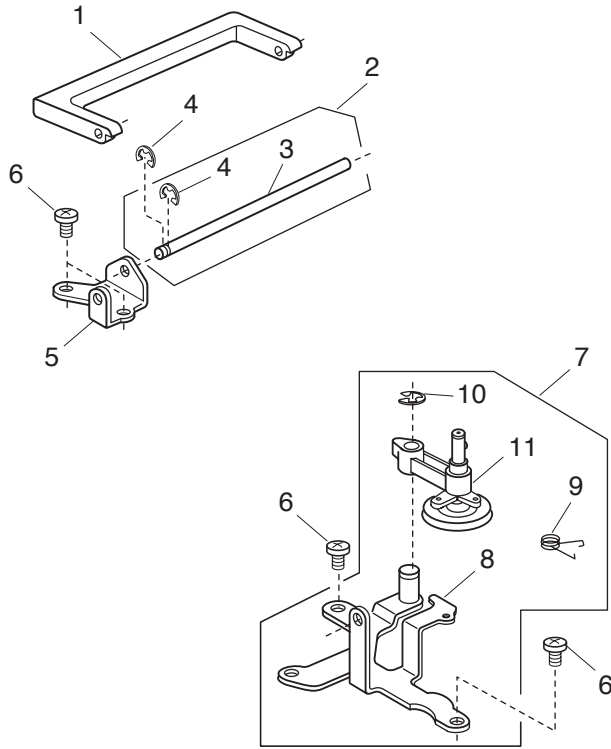
PARTS LIST



PARTS LIST

KEY NO.	PARTS NO.	DESCRIPTION
1	304607200	Upper shaft (unit)
2	751146101	Worm
3	000111201	Hexagonal socket screw 4X4
4	000111304	Hexagonal socket screw 5X5
5	102073003	Setscrew
6	000036717	Thrust washer
7	732025001	Upper shaft front bushing
8	639095000	Ring
9	761052007	Setscrew
10	731312005	Felt
11	304609006	Crank rod (unit)
12	304042005	Feed cam
13	743011008	Crank rod
14	304044007	Crank cam
15	304043006	Crank cam plate
16	000161309	Tapping screw 3X12
17	000110107	Hexagonal socket screw 5X5
18	650070381	Clutch cap
19	743630216	Handwheel (unit)
20	639097275	Handwheel
21	743030003	Balance weight
22	000121400	Tapping screw 3X14B
23	639113016	Clutch spring
24	000081005	Setscrew 4X8
25	000172602	Setscrew 5X8
26	743029009	Felt
27	000030205	Snap ring E-8
28	743019006	Belt wheel
29	000023803	Spring pin
30	732003003	Upper shaft rear bushing

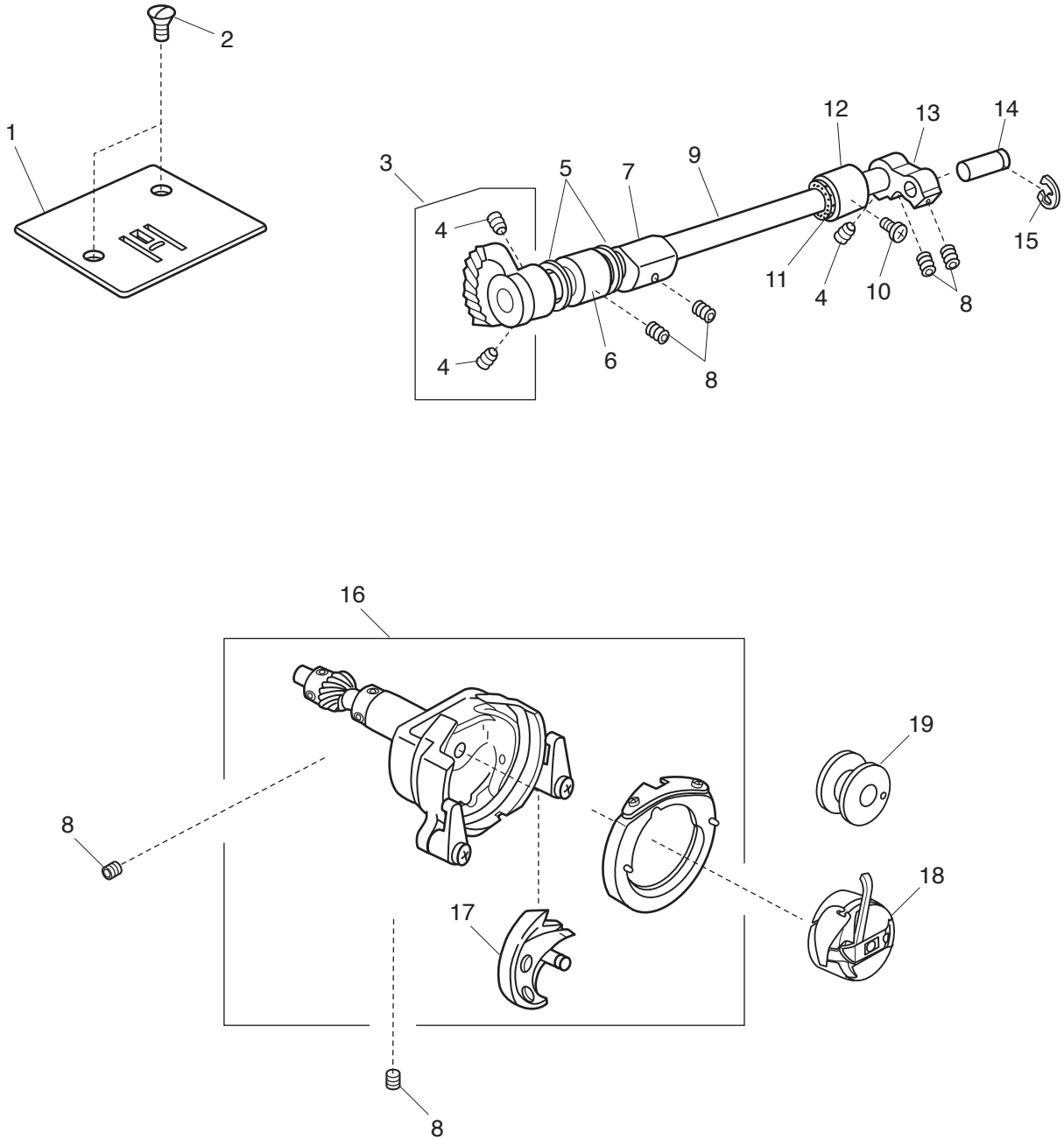
PARTS LIST



PARTS LIST

KEY NO.	PARTS NO.	DESCRIPTION
1	735017308	Handle
2	740624001	Handle shaft (unit)
3	740011009	Handle shaft
4	000002105	Snap ring E-3
5	740010008	Handle supporter
6	000081005	Setscrew 4X8
7	740602209	Bobbin winder base plate (unit)
8	740003101	Bobbin winder base plate
9	740042009	Bobbin winder arm spring
10	000002806	Snap ring E-6
11	735501005	Bobbin winder arm (unit)
12	736604105	Feed regulator (unit)
13	648010009	Setscrew
14	739020007	Feed regulating rod
15	735077007	Feed regulating body spring
16	735073003	Plain washer
17	000013800	Snap ring CS-6
18	745052007	Reverse link
19	000160102	Adjustable lock nut 4
20	735074004	SS adjusting screw
21	735076006	SS rod block
22	000071013	Washer 4
23	000172602	Setscrew 5X8
24	670100006	Feed regulator spring
25	743014001	R button
26	736015000	R button shaft
27	000014007	Snap ring CS-4
28	739063002	R button spring
29	740606100	Zigzag mechanism (unit)
30	737011009	Index spring
31	000103808	Setscrew 3X5
32	743015002	Dial
33	743018119	Pattern indicator plate
34	740019317	Stitch length indicator plate

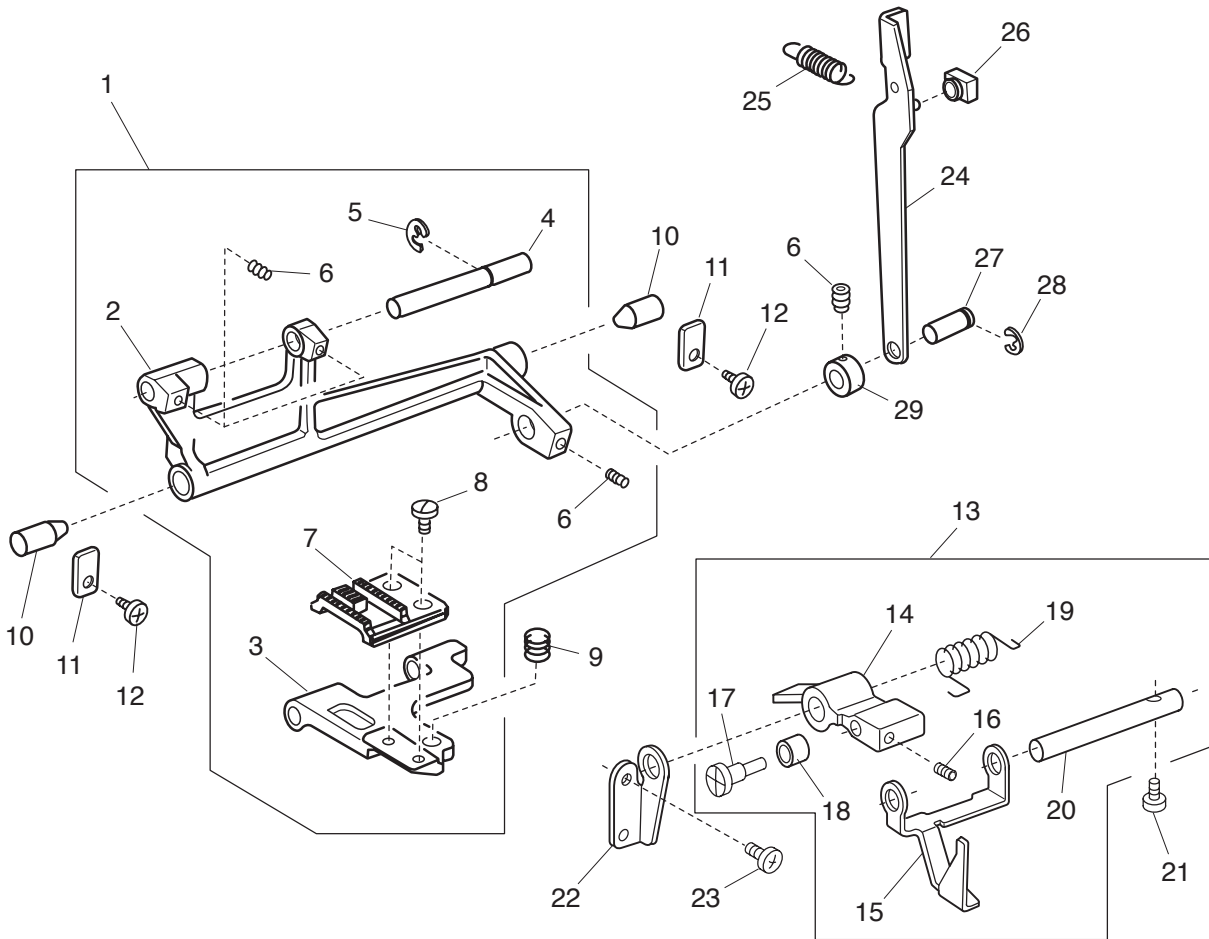
PARTS LIST



PARTS LIST

KEY NO.	PARTS NO.	DESCRIPTION
1	744004001	Needle plate
2	681009101	Setscrew
3	735950003	Lower shaft gear (unit)
4	000110107	Hexagonal socket screw 5X5WP
5	000036201	Washer 8-0.5
6	735233003	Bushing
7	735061101	Feed lifting cam
8	000111304	Hexagonal socket screw 5X5
9	735236006	Lower shaft
10	000172602	Setscrew 5X8
11	822070003	Felt
12	735234004	Bushing
13	639036003	Lower shaft crank arm
14	639037004	Pin
15	000001609	Snap ring E-5
16	735610101	Shuttle race body (unit)
17	532096007	Shuttle hook
18	647515006	Bobbin case (unit)
19	102261000	Bobbin

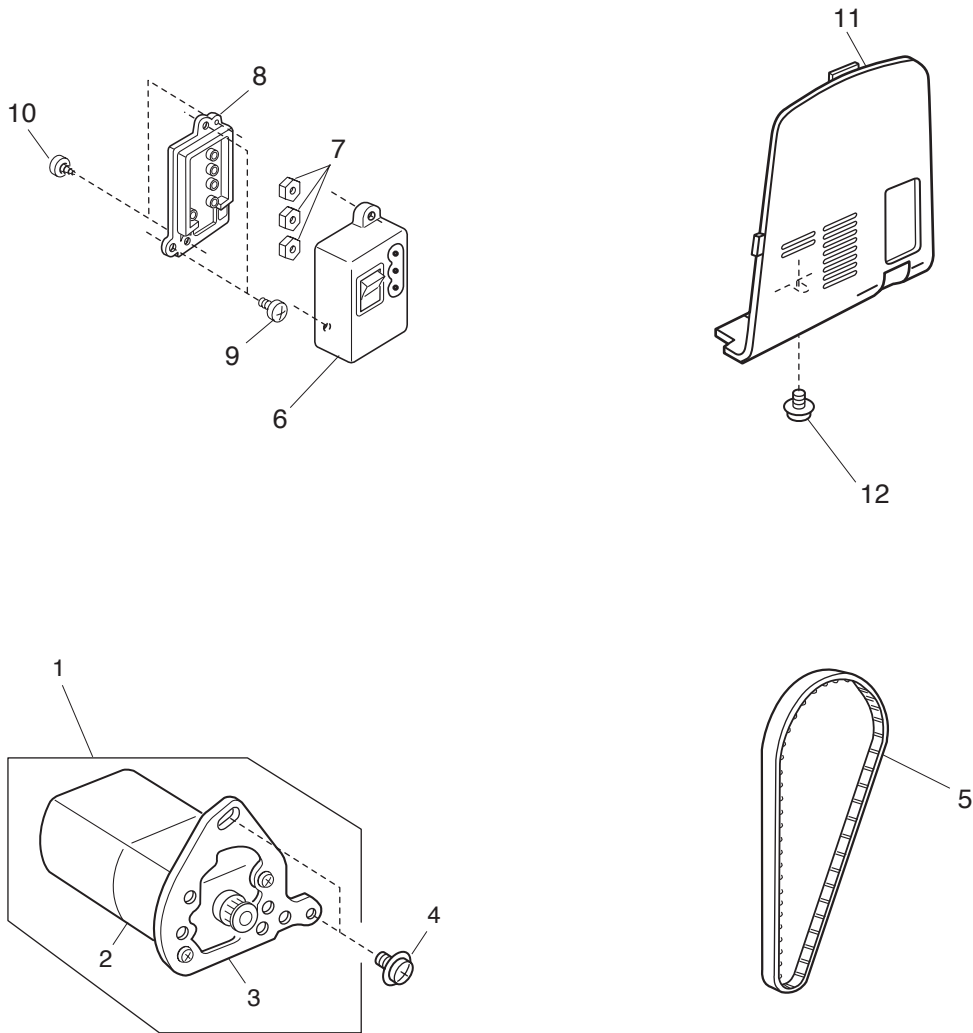
PARTS LIST



PARTS LIST

KEY NO.	PARTS NO.	DESCRIPTION
1	735612000	Feed rock shaft (unit)
2	735078008	Feed rock shaft
3	735079009	Feed bar
4	735080003	Feed bar shaft
5	000002507	Snap ring E-4
6	000111201	Hexagonal socket screw 4X4
7	735081004	Feed dog
8	735082005	Setscrew
9	735083006	Feed bar spring
10	735084007	Feed rock shaft center
11	735085008	Feed rock shaft center plate
12	000101404	Setscrew 4X6
13	301609007	Feed lifting arm (unit)
14	301027005	Feed lifting arm
15	740013001	Drop feed selecting plate
16	000111201	Hexagonal socket screw 4X4
17	735087000	Feed lifting pin
18	735088001	Feed lifting roller
19	730061003	Feed lifting spring
20	735090006	Feed lifting shaft
21	000097200	Setscrew 4X12
22	739022009	Feed lifting shaft holder
23	000081119	Setscrew 4X6
24	743012009	Feed rod
25	743013000	Feed rod spring
26	102141003	Feed regulator slide block
27	735071104	Feed rock shaft connecting pin
28	000002806	Snap ring E-6
29	735276008	Ring

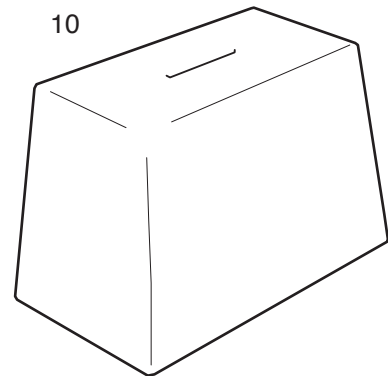
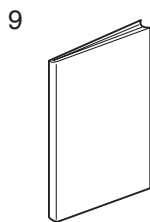
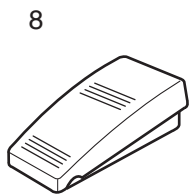
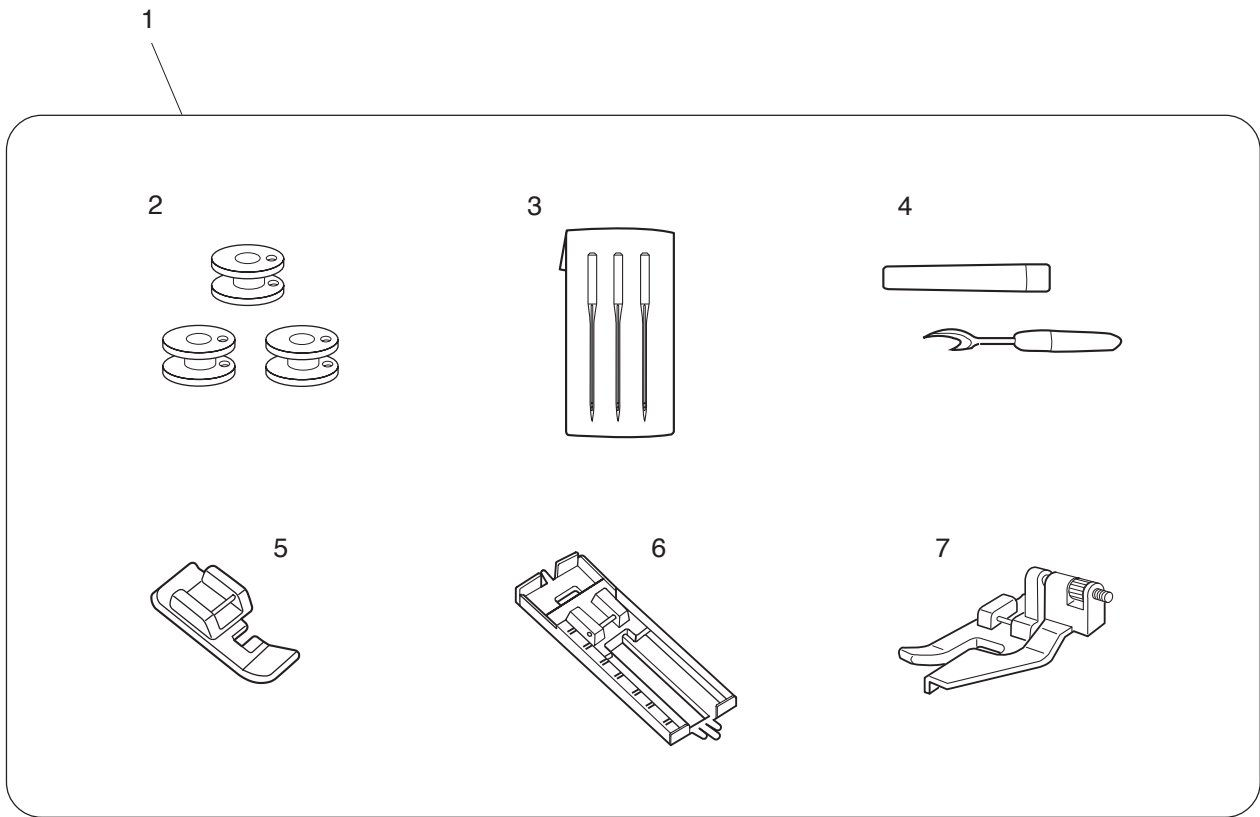
PARTS LIST



PARTS LIST

KEY NO.	PARTS NO.	DESCRIPTION
1	743611004	Motor (unit)
2	024070108	Motor assy
3	743025005	Motor set plate
4	000201209	Setscrew 5X12
5	650166008	Motor timing belt
6	739503308	Machine socket (unit)
7	000060802	Nut
8	739037007	Machine socket cover
9	000103509	Setscrew 4X10
10	000107802	Setscrew 3X10
11	743017004	Belt cover
12	000115205	Setscrew TP 4X6

PARTS LIST



PARTS LIST

KEY NO.	PARTS NO.	DESCRIPTION
1	743870380	Accessory set
2	102261000	Bobbin
3	639804000	Needle set
4	647808009	Seam ripper
5	611406002	Zipper foot
6	611413002	Buttonhole foot
7	611411000	Blind foot
8	042970402	Foot control
9	743801852	Instruction book
10	743812100	Cover
