

**SERVICE MANUAL
&
PARTS LIST**

MODEL: Cherry 21

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TROUBLESHOOTING

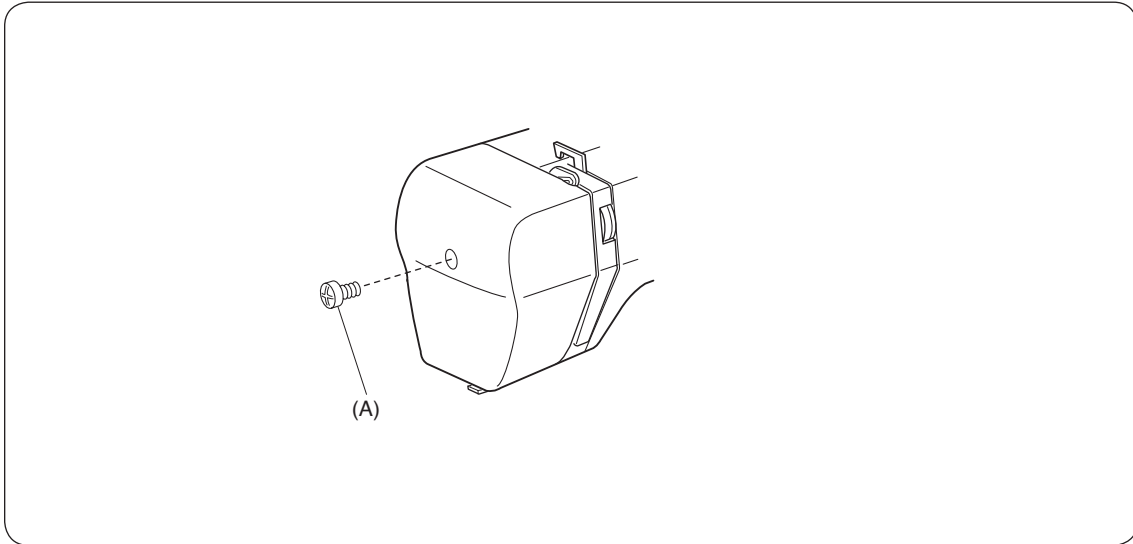
PROBLEM	CAUSE	REMEDY	REFERENCE
<p>1. Skipping stitches</p>	<p>1. Needle is not inserted properly.</p> <p>2. Needle is bent or worn.</p> <p>3. Incorrectly threaded.</p> <p>4. Needle or thread are inappropriate for fabric being sewn.</p> <p>5. Sewing on stretch fabric.</p> <p>6. Inappropriate needle bar height.</p> <p>7. Inappropriate needle to hook timing.</p> <p>8. Inappropriate needle to shuttle race clearance.</p>	<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 shuttle race."</p>	<p>P. 15</p> <p>P. 16</p> <p>P. 12, 13</p>
<p>2. Fabric not moving</p>	<p>1. Incorrect feed dog height.</p> <p>2. Thread on bottom side of fabric is jammed up.</p> <p>3. Feed dog teeth are worn.</p>	<p>See mechanical adjustment "Feed dog height."</p> <p>Make sure to bring both needle and bobbin thread under the foot when starting swing.</p> <p>Change the feed dog.</p>	<p>P. 14</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. 7
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. 8
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 shuttle race."</p> <p>See mechanical adjustment "Needle swing."</p> <p>Guide the fabric gently while swing.</p>	<p>P. 11</p> <p>P. 12, 13</p> <p>P. 10</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 shuttle race (NO. 2)."	P. 13
	2. Lower shaft gear is loose.	Eliminate the looseness.	
	3. Inappropriate belt tension.	See mechanical adjustment "Motor belt tension."	P. 21
	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. 10
	2. Inappropriate disengagement of cam follower.	See mechanical adjustment "Disengagement of cam follower."	P. 20
	3. Upper thread tension is too strong.	Adjust upper thread tension correctly.	P. 7
	4. Inappropriate feed balance.	See mechanical adjustment "Feed balance on stretch stitch."	P. 18

SERVICE ACCESS (1)

FACE COVER



TO REMOVE

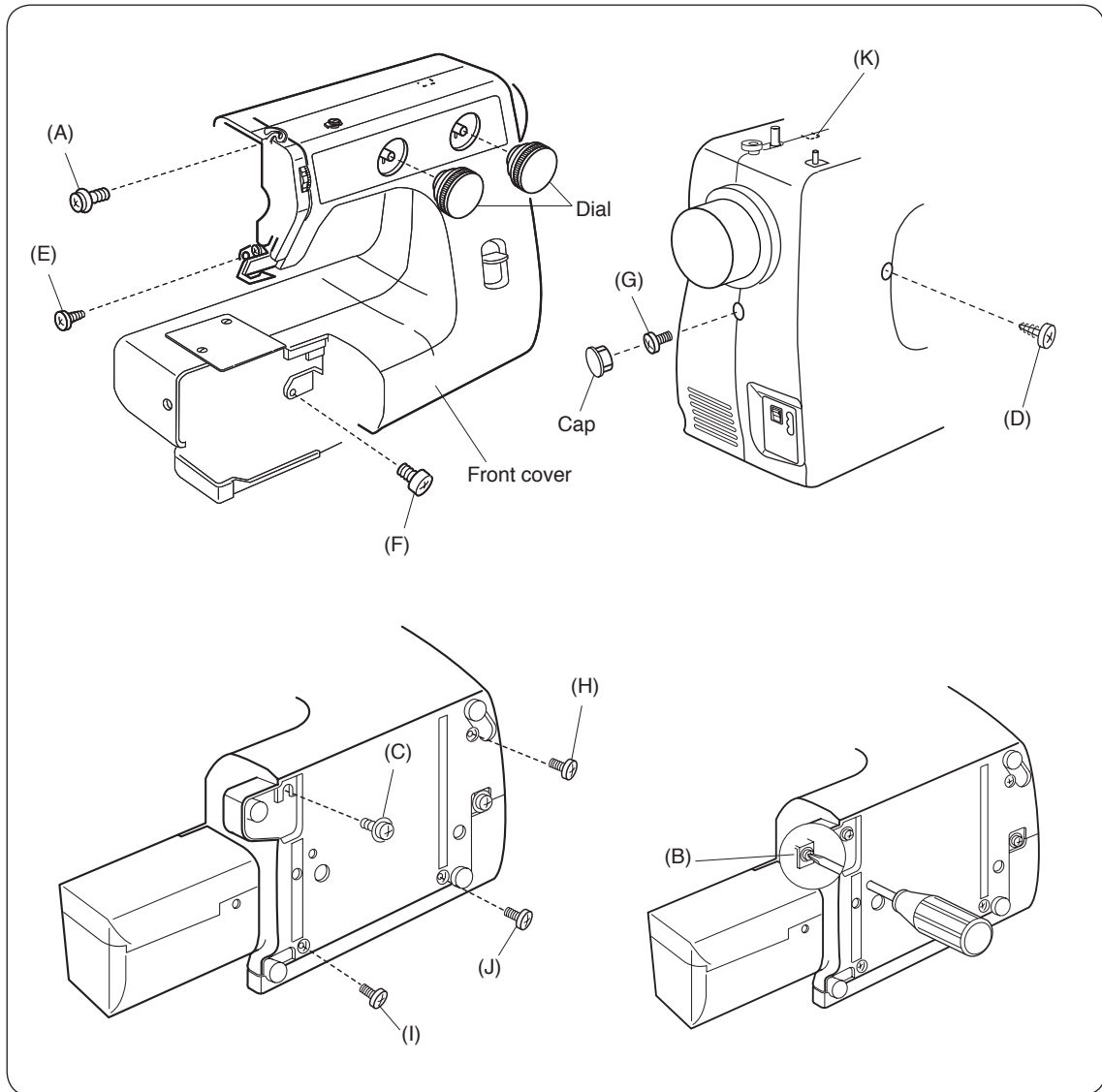
1. Remove the face cover by removing the setscrew (A).

TO ATTACH

2. Follow the above procedure in reverse.

SERVICE ACCESS (1)

FRONT COVER



TO REMOVE

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

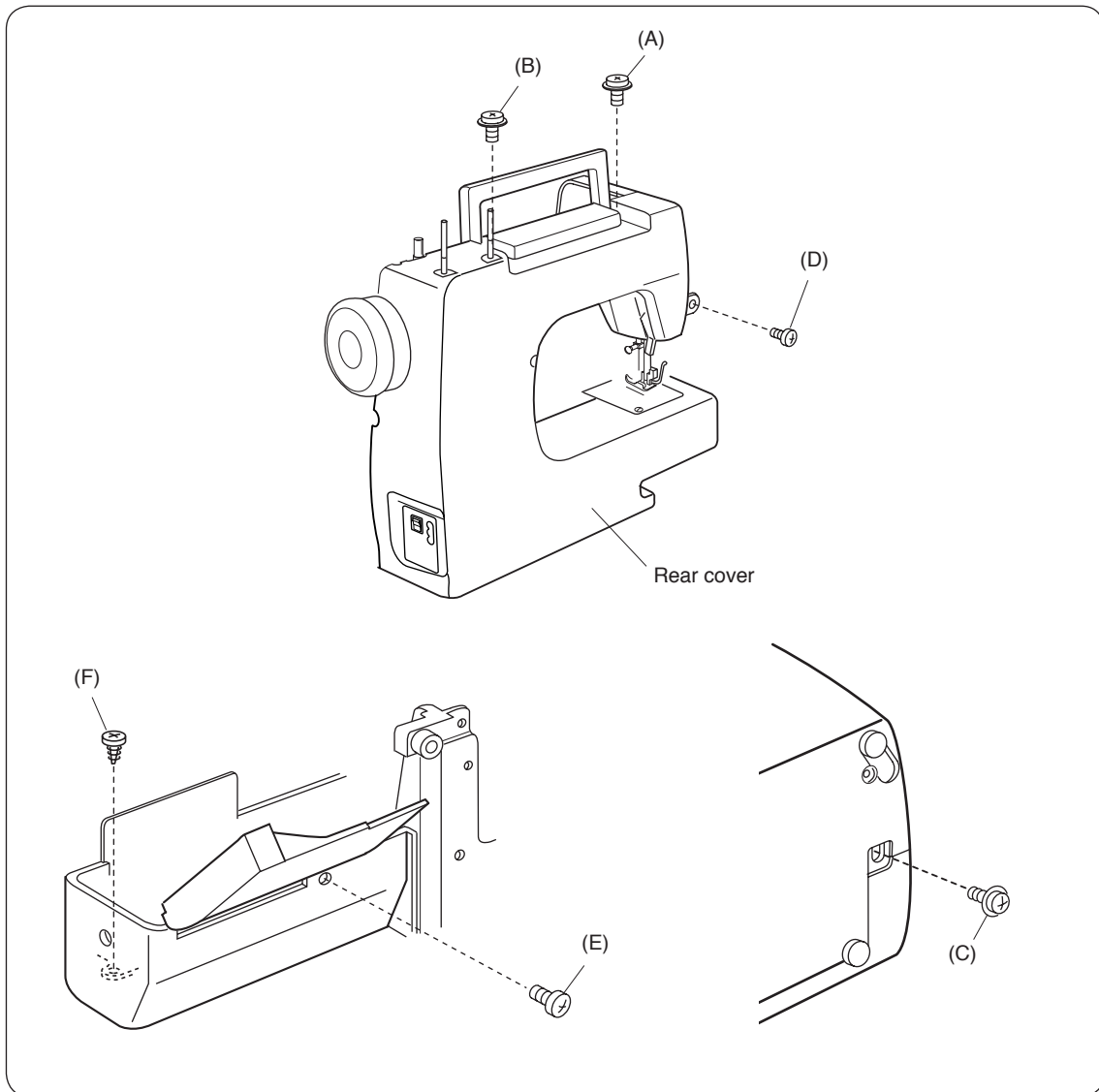
Note: Unhook the tab (K) from the rear cover when removing the front cover.

TO ATTACH

4. Follow the above procedure in reverse.

SERVICE ACCESS (4)

REAR COVER



TO REMOVE

1. Remove the face cover and front cover (see pages 4 to 5).
2. Loosen the setscrews (A), (B), and (C), and remove setscrews (D), (E), and (F).
3. Pull up the spool pins. Remove the machine socket. Remove the rear cover clearing the presser foot lifter from the slit on the cover.

TO ATTACH

4. Follow the above procedure in reverse.

MECHANICAL ADJUSTMENT

TOP TENSION

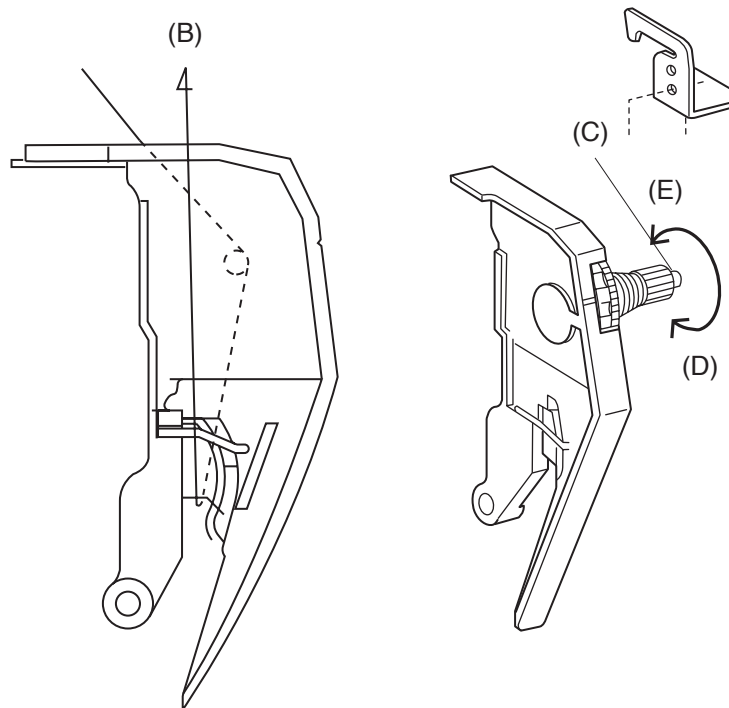
TO CHECK:

The standard upper thread tension should be 65 to 95 grams-force 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(see page 5).
2. Turn the adjusting screw (C) in the direction of (D) when the upper thread tension is too tight.
Turn the adjusting screw (C) in the direction of (E) when the upper thread tension is too loose.
3. Attach the front cover.



MECHANICAL ADJUSTMENT

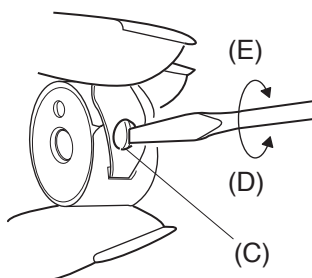
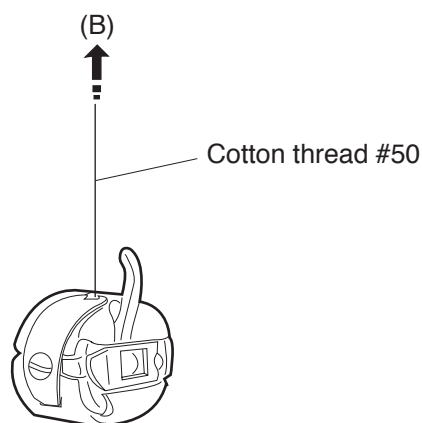
BOBBIN TENSION

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 32 to 38 grams-force 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

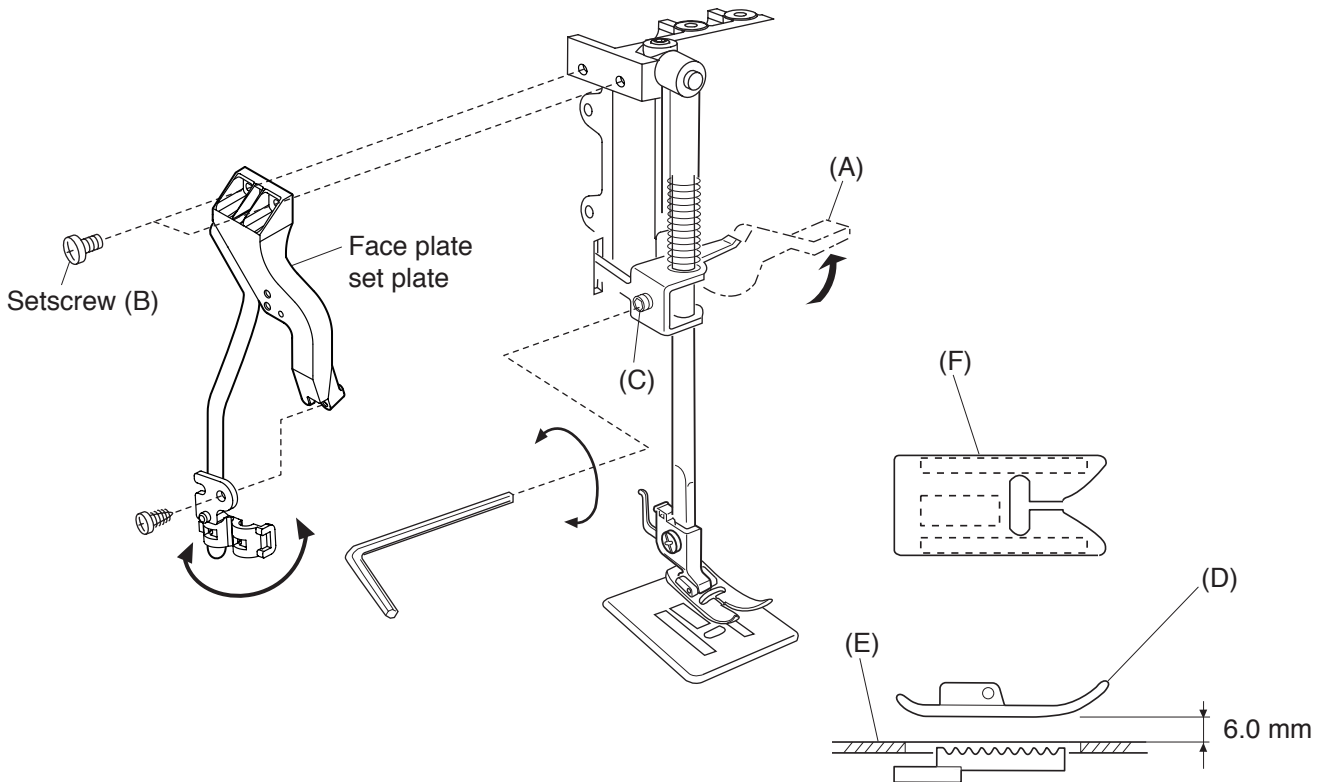
TO CHECK:

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

ADJUSTMENT PROCEDURE:

1. Remove the face cover (see page 4). Remove the setscrews (B) and the face plate set plate.
2. Raise the presser foot lever and loosen the hexagonal socket screw (C) on the presser bar holder. Adjust the distance between the presser foot (D) and the needle plate (E) to 6.0 mm.
3. Tighten the hexagonal socket screw (C) securely.
4. Tighten the setscrew (B) to attach the face plate set plate.
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 slot (F) on the needle plate.



MECHANICAL ADJUSTMENT

NEEDLE SWING

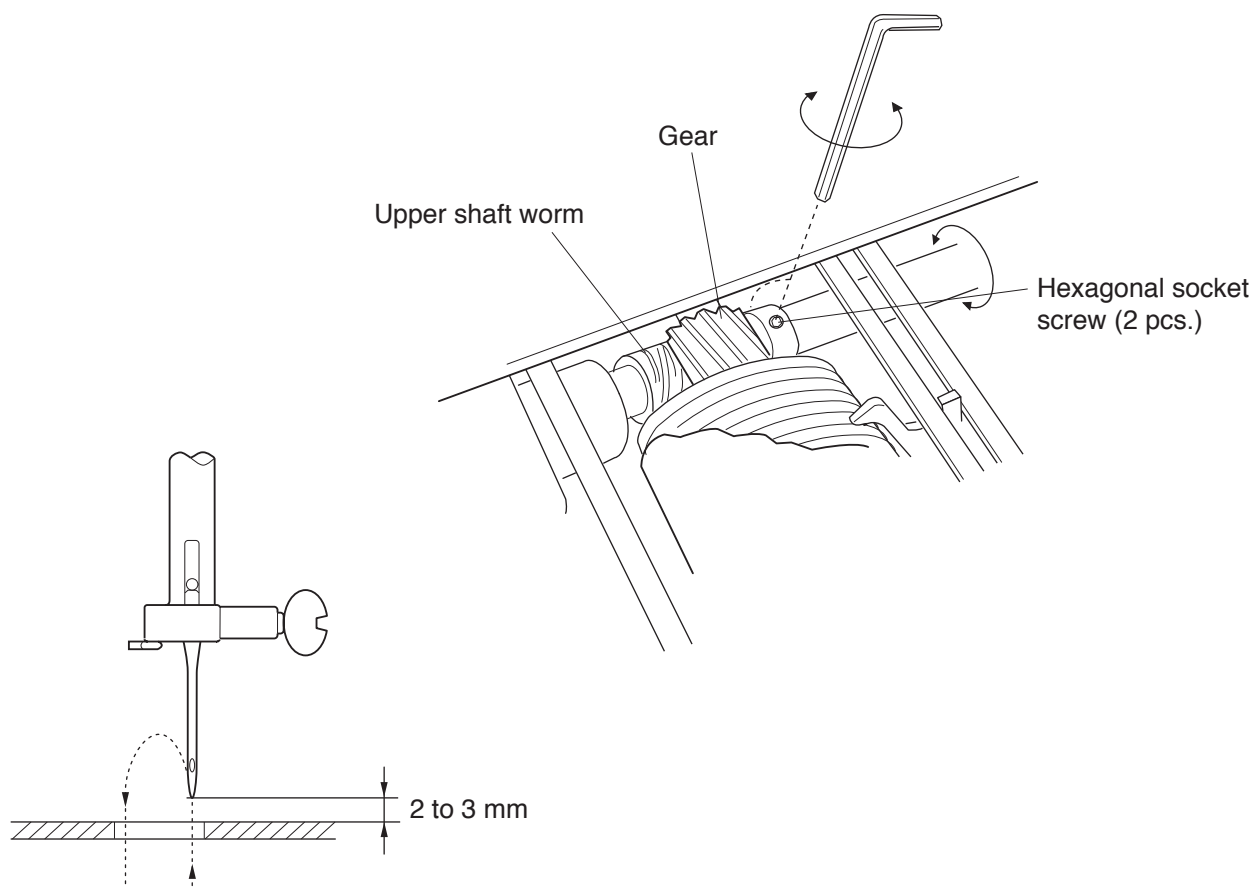
TO CHECK:

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 the maximum zigzag width).

ADJUSTMENT PROCEDURE:

1. Set the pattern selector dial with the maximum zigzag width, and remove the front cover (see page 5).
2. Loosen the hexagonal socket screws (2 pcs.).
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 to 3 mm above the needle plate after the needle has come out of the right side of the needle hole.
4. Tighten the hexagonal socket screws (2 pcs.).
5. Attach 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:

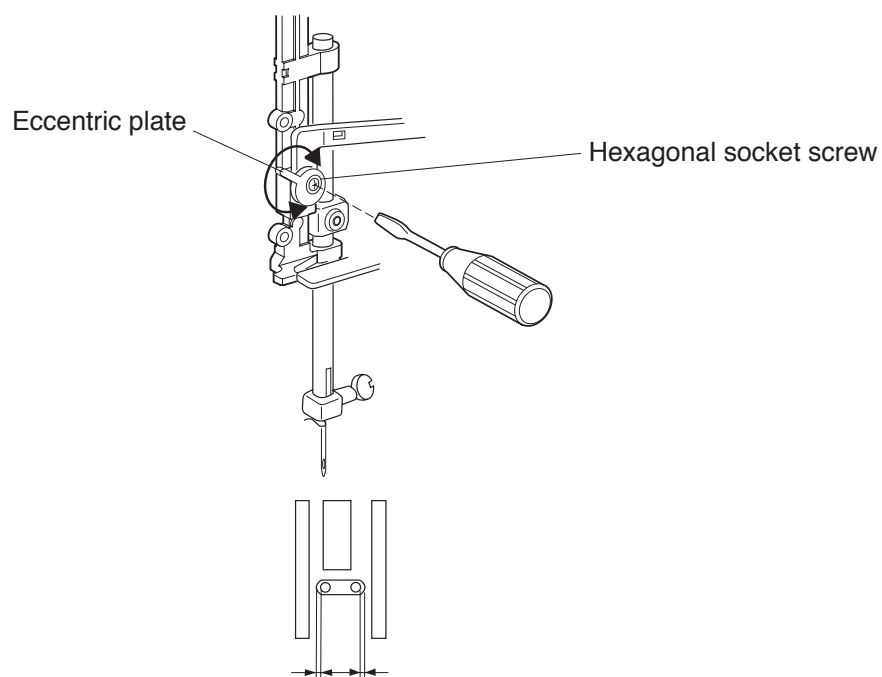
When the needle swings in the maximum zigzag width, the distance between both ends of the needle hole on the needle plate and the needle drop positions should be equal.

If not, adjust as follows:

ADJUSTMENT PROCEDURE:

1. Remove the face cover (see page 4).
2. Set the pattern selector dial at the maximum zigzag width.
3. Loosen the hexagonal socket screw.
4. Turn the eccentric plate to adjust the needle drop.
5. Tighten the hexagonal socket screw.
6. Attach the face cover.

NOTE: Check the hook timing after this adjustment.



Both clearances should be equal

MECHANICAL ADJUSTMENT

CLEARANCE BETWEEN NEEDLE AND SHUTTLE RACE (ADJUSTMENT METHOD NO. 1)

TO CHECK:

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

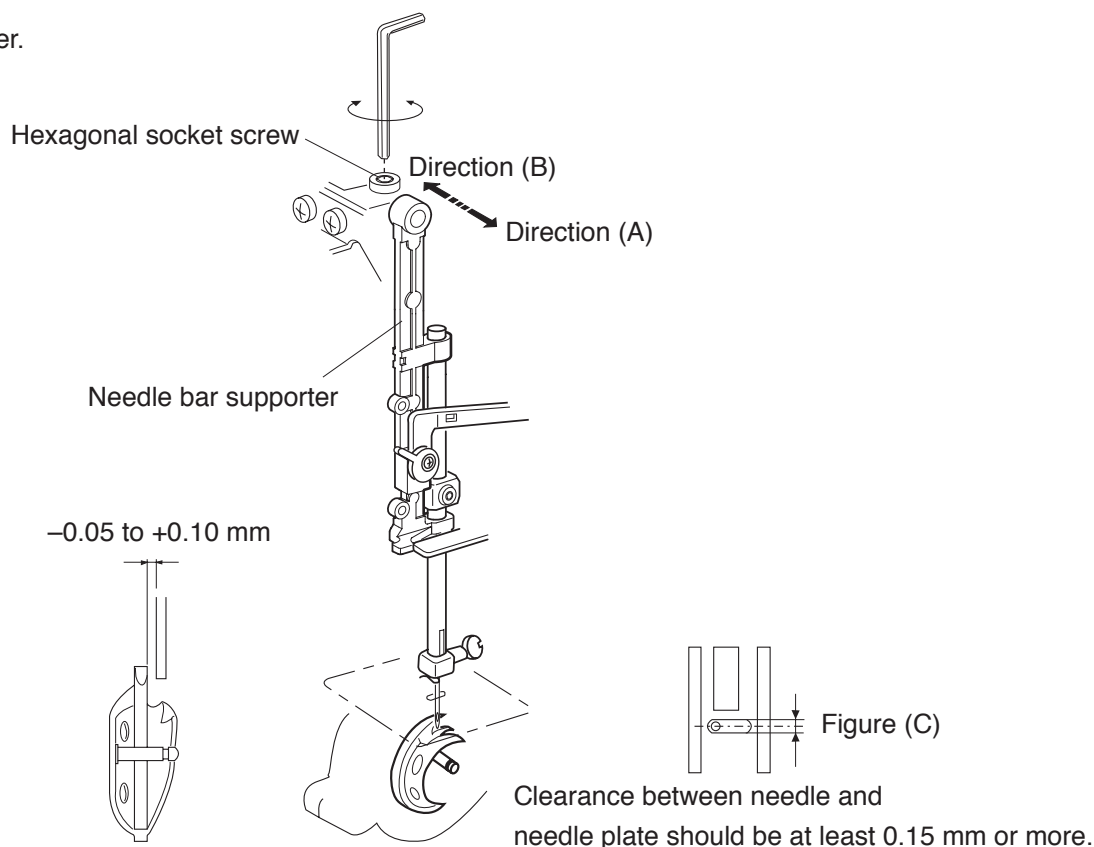
If not, adjust as follows:

ADJUSTMENT PROCEDURE:

1. Remove the face cover (see page 4).
2. Set the pattern select dial at " \downarrow ".
3. Loosen the hexagonal socket screw, 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 (A).
 - * If clearance is too narrow, move the needle bar supporter to direction (B).
4. Tighten the hexagonal socket screw.

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 SHUTTLE RACE RACE (ADJUSTMENT METHOD NO. 2)

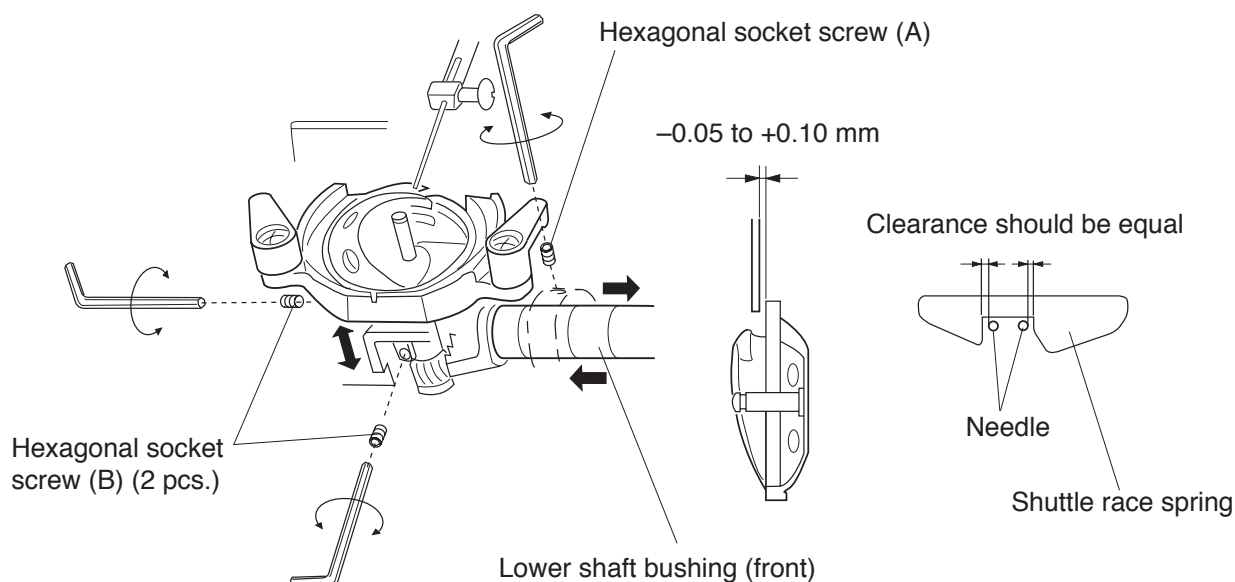
TO CHECK:

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 " $\frac{1}{2}$ ".
2. Remove the rear cover (see page 6).
3. Loosen the hexagonal socket screw (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 hexagonal socket screw (B) (2 pcs.).
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 " $\frac{3}{4}$ ", 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 hexagonal socket screw (B) (2 pcs.).
7. Loosen the setscrew on the lower shaft bushing and slide the gear back to the original position while adjusting the backlash.
8. Tighten hexagonal socket 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

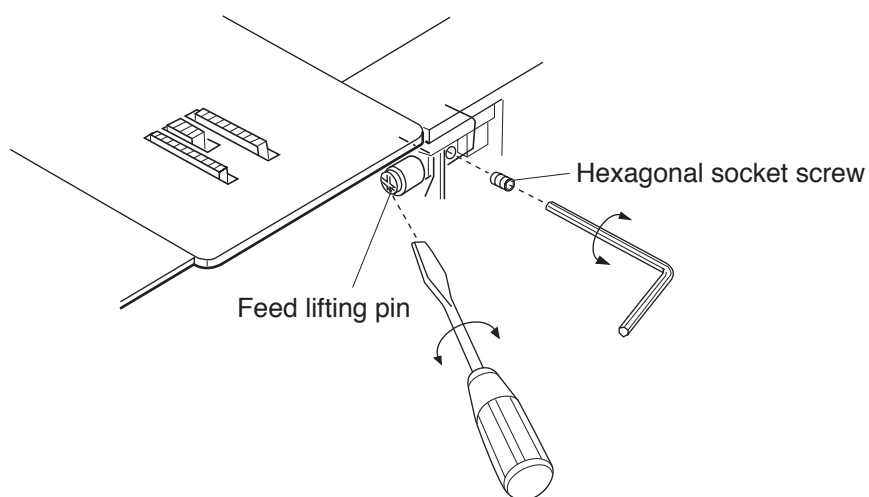
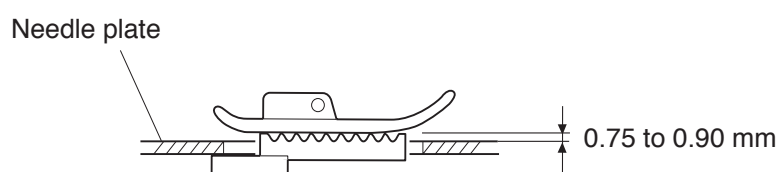
FEED DOG HEIGHT

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 to 0.90 mm.
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 hexagonal socket screw.
4. Turn the feed lifting pin to adjust the height of feed dog (0.75 to 0.90 mm).
5. Tighten the hexagonal socket screw.
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.

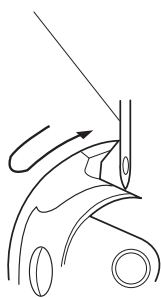
ADJUSTMENT PROCEDURE:

1. Remove the face cover (see page 4).
2. Set the pattern selector dial at "1".
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 hexagonal socket screw.
7. The distance between the top of the needle eye and the tip of the shuttle hook should be in the range of 2.9 to 3.5 mm.

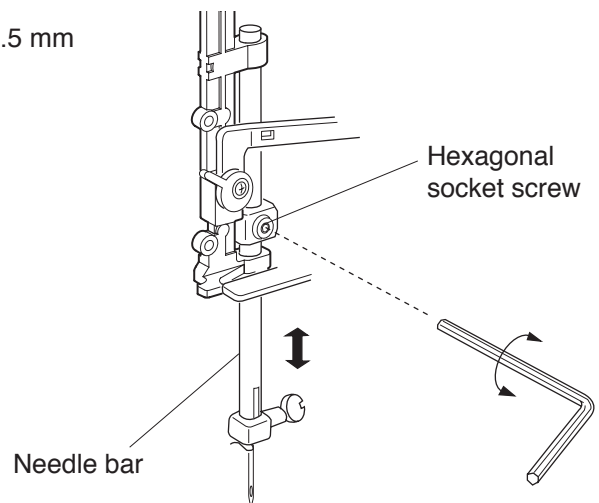
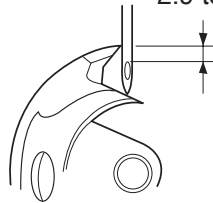
Adjust the height of the needle bar by moving the needle bar upward or downward without turning it.

8. Tighten the hexagonal socket screw.
9. Attach the shuttle race ring.
10. Attach the face cover.

Tip of shuttle hook meets
left side of needle



2.9 to 3.5 mm




MECHANICAL ADJUSTMENT

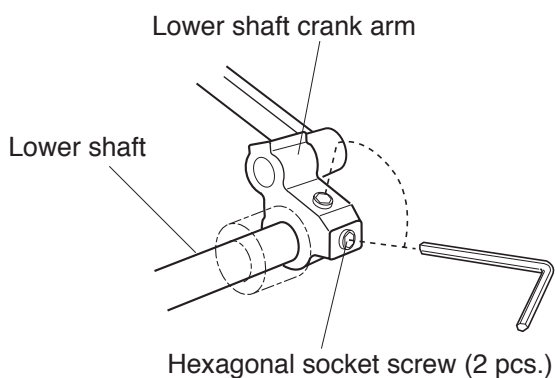
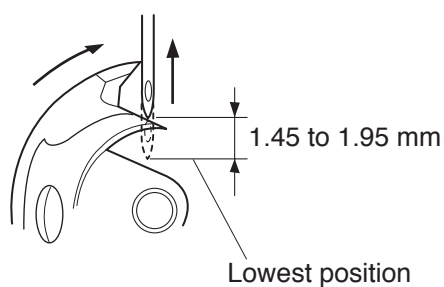
NEEDLE TIMING TO SHUTTLE

TO CHECK:

The height of the needle point from its lowest point of travel should be in the range of 1.45 to 1.95 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 "  ".
2. Remove the front cover (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 hexagonal socket screws (2 pcs.).
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 hexagonal socket screws (2 pcs.).
9. Turn the handwheel toward you to check if the height is in the range of 1.45 to 1.95 mm.
If it is not in this range, repeat the above procedure.
10. Attach the shuttle race ring.
11. Attach the base plate.



MECHANICAL ADJUSTMENT

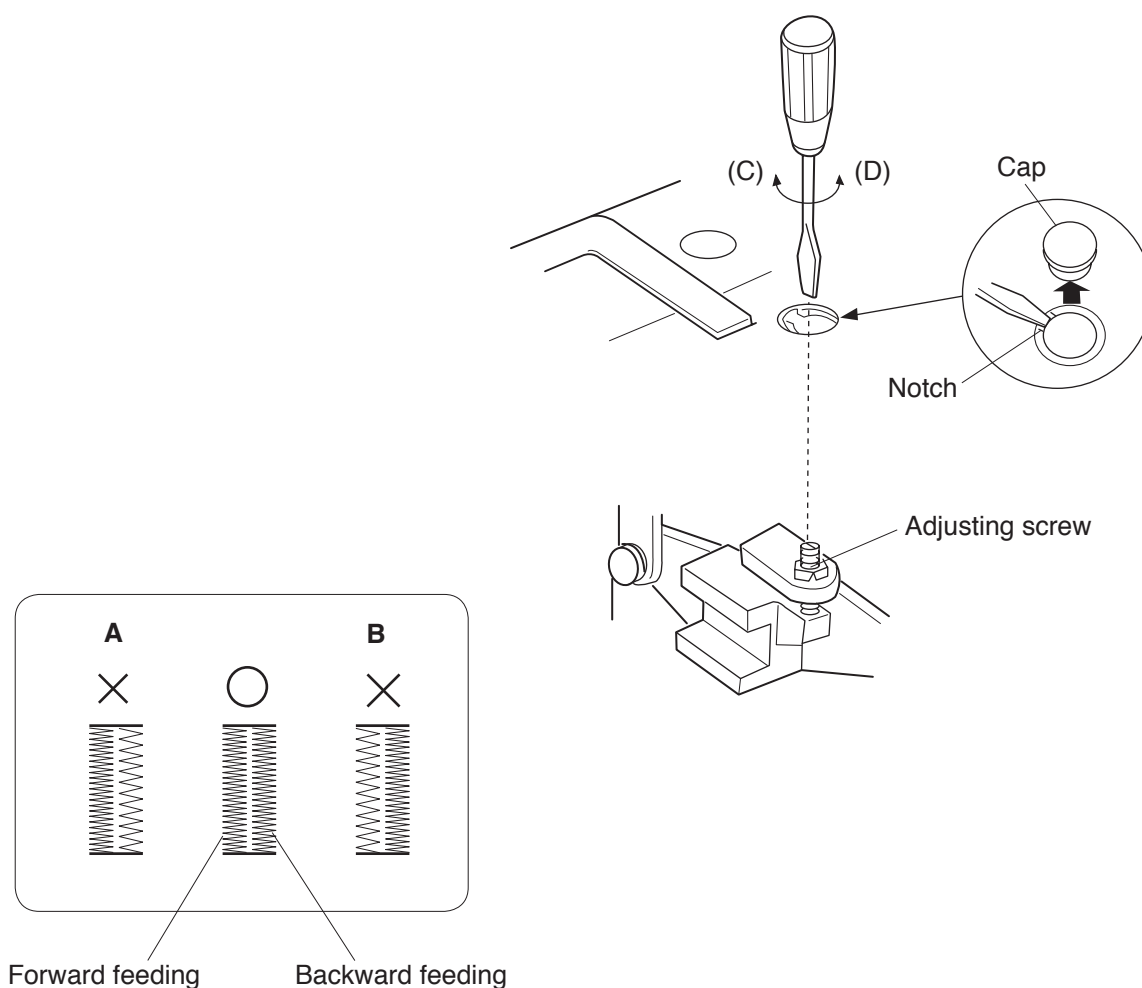
BUTTONHOLE FEED BALANCE

TO CHECK:

When sewing buttonhole, the stitches on each side of buttonhole should be the same stitch density. The range of 9 to 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. Attach the cap.



MECHANICAL ADJUSTMENT


FEED BALANCE ON STRETCH STITCH

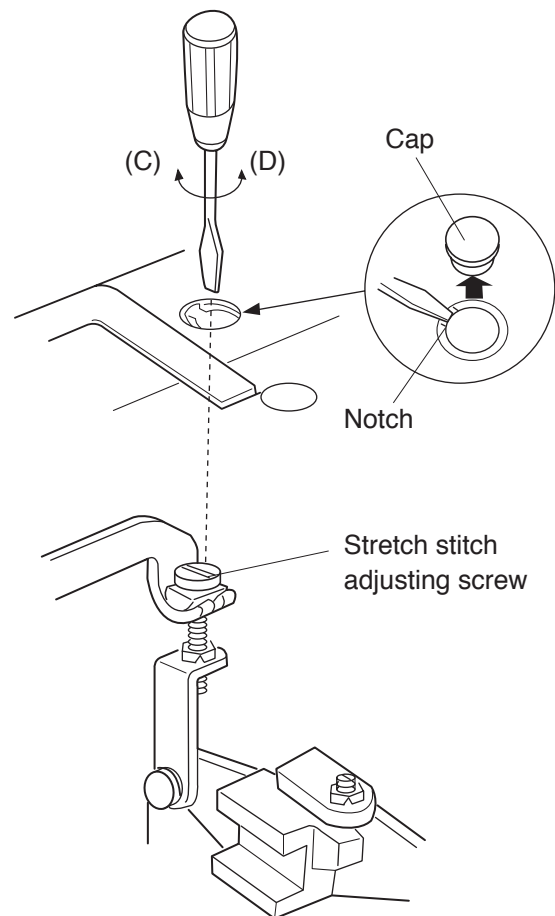
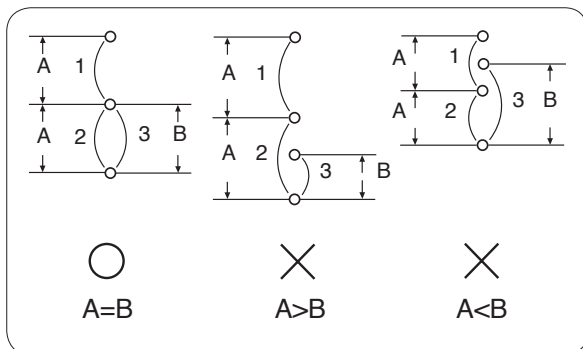
TO CHECK:

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

If there is a difference between forward feeding and backward feeding during stretch stitch patterns, 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

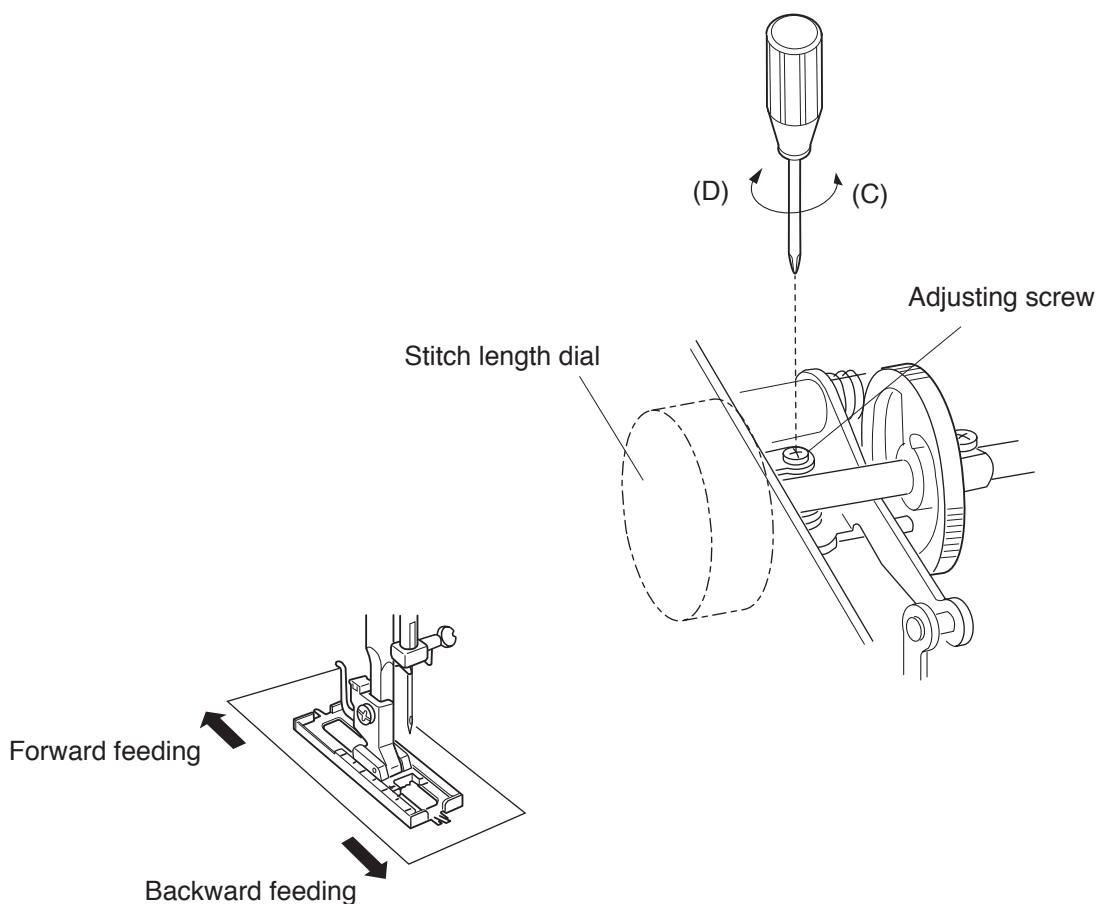
BARTACK FEED OF BUTTONHOLE

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 "□⁴", and the stitch length dial at "4".
2. Remove the front cover (see page 5).
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.

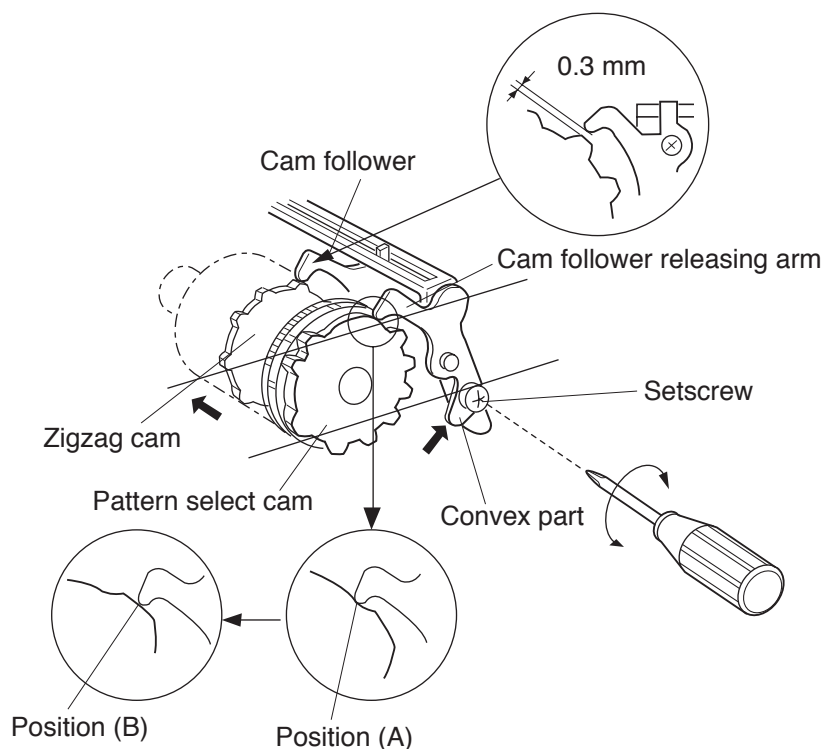
ADJUSTMENT PROCEDURE:

1. Remove the front cover (see page 5).
2. Set the pattern selector dial at pattern " ϕ ".
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 0.3 mm when setting the cam follower releasing arm onto position (B) of pattern selector cam.

6. Attach the front cover.

NOTE: Check the needle movement for straight stitch.



MECHANICAL ADJUSTMENT

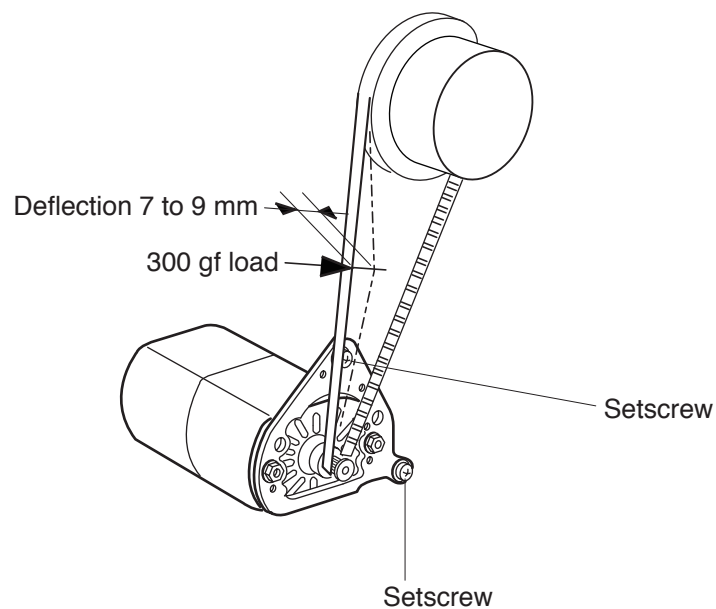
MOTOR BELT TENSION

TO CHECK:

1. If the motor belt tension is too tight or too loose, it can cause a belt noise: If the tension is too tight, it can cause the machine to run slowly and the motor to overload; if the tension is too loose; it can cause the belt to jump.
2. The correct motor belt tension is when the deflection of motor belt is about 7 to 9 mm.
(when pushing the motor belt by finger with a 300 grams-force load.)

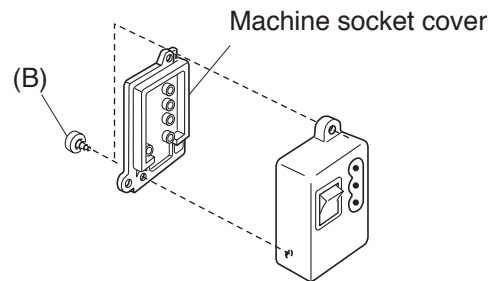
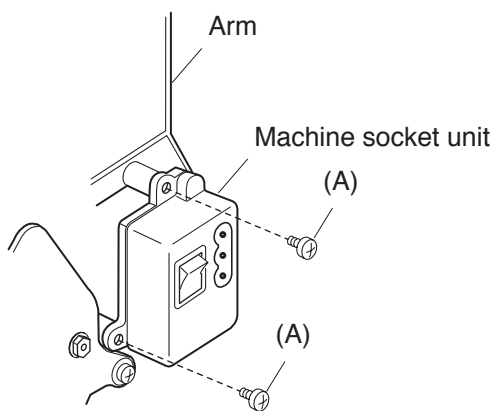
ADJUSTMENT PROCEDURE:

1. Remove the rear cover (see page 6).
2. Loosen the setscrews.
3. Move the motor up or down to adjust the deflection about 7 to 9 mm.
4. Tighten the setscrews.

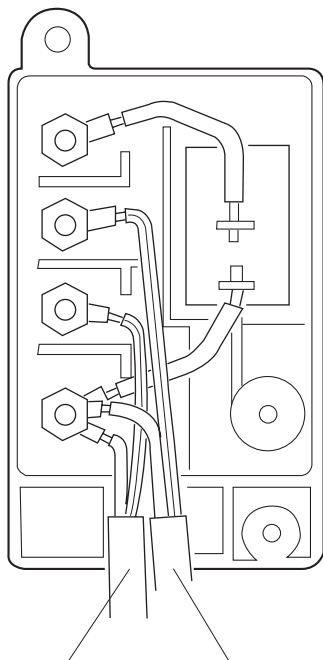


WIRING

1. Remove the rear cover (see page 6).
2. Remove the setscrews (A), (B) and machine socket cover.
3. Follow the above procedure in reverse.

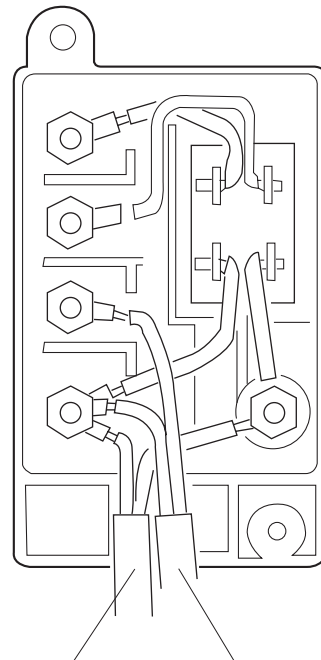


120V



Motor cord Cord from printed
circuit board C (LED)

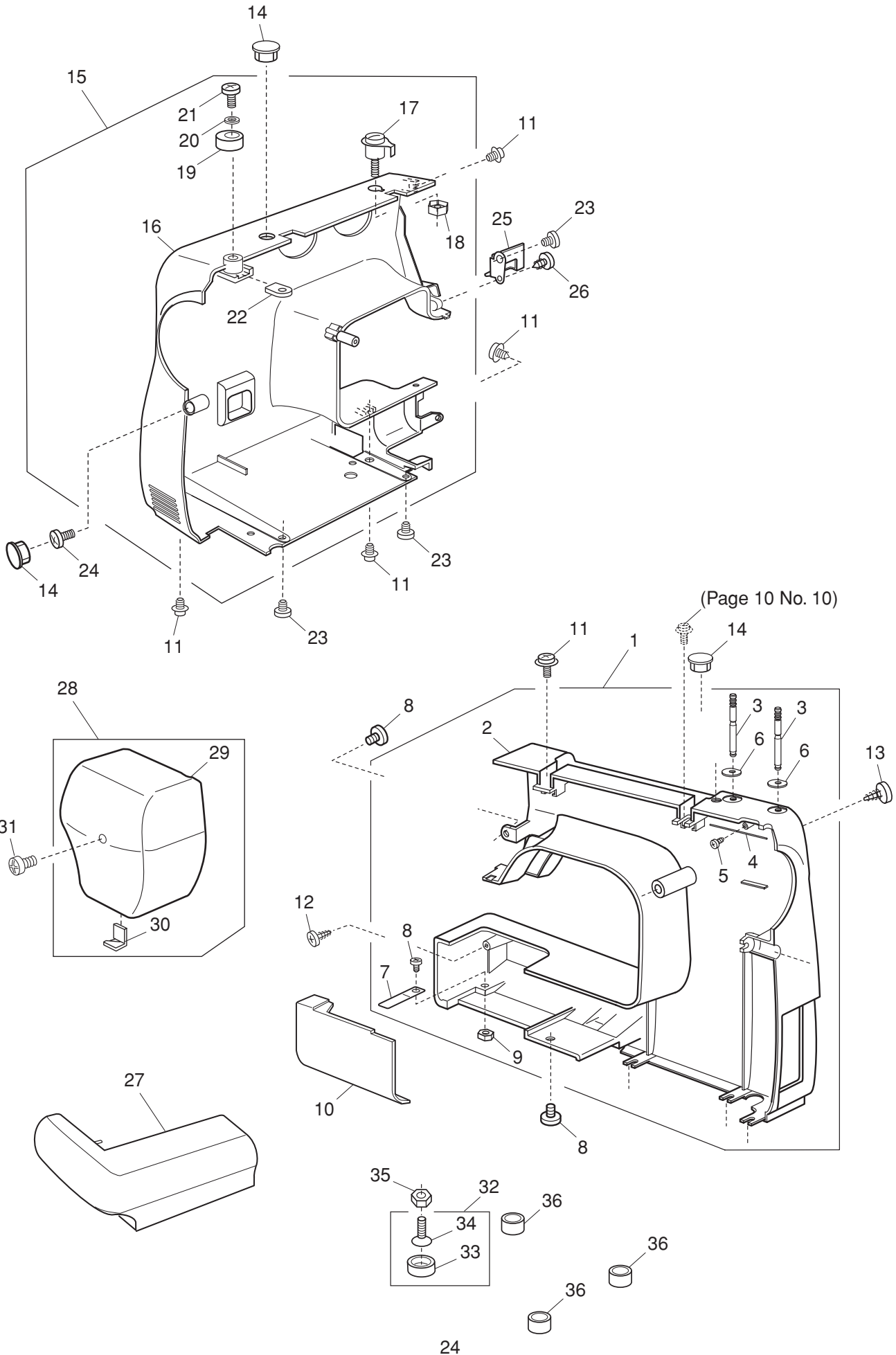
240V



Cord from printed Motor cord
circuit board C (LED)

PARTS LIST

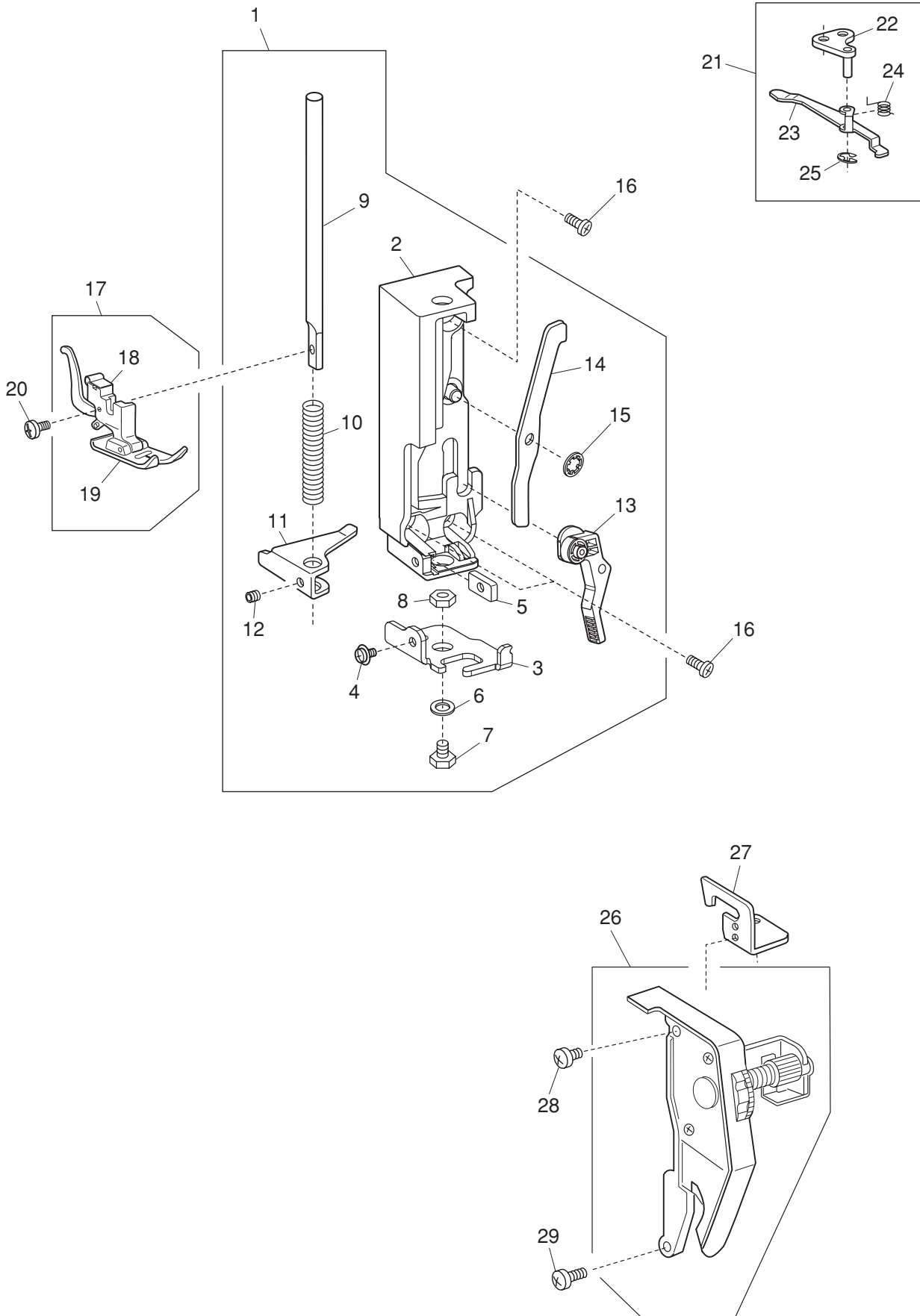
PARTS LIST



PARTS LIST

KEY NO.	PARTS NO.	DESCRIPTION
1	306601222	Rear cover (unit)
2	306101009	Rear cover
3	652205006	Spool pin
4	736007009	Spool pin spring
5	000161206	Setscrew 3x10 (B)
6	735013005	Spool pin spring base
7	730006000	Spring
8	000101404	Setscrew 4x6
9	000061205	Nut 4-3-7
10	739004005	Bed cover plate
11	000115205	Setscrew TP 4x6
12	000121905	Setscrew 4x12 (B)
13	000198604	Setscrew 4x14 (B)
14	653006101	Cap
15	306607424	Front cover (unit)
16	306109A42	Front cover
17	730501011	Thread guide plate (unit)
18	000160102	Adjustable lock nut 4
19	735016307	Bobbin winder stopper
20	000071013	Washer 4
21	000103107	Setscrew 4x14
22	843014004	Nut
23	000081005	Setscrew 4x8
24	000101703	Setscrew 4x12
25	745031000	Thread guide plate
26	000107307	Setscrew 3x8 (B)
27	306102000	Extension table (unit)
28	306602430	Face cover (unit)
29	306103A08	Face cover
30	840602006	Thread cutter (unit)
31	000080901	Setscrew 4x25
32	735616200	Rubber base (unit)
33	735002001	Rubber base
34	000097901	Flat screw M5x18
35	000061319	Nut 5-1-8
36	739064003	Bed rubber base

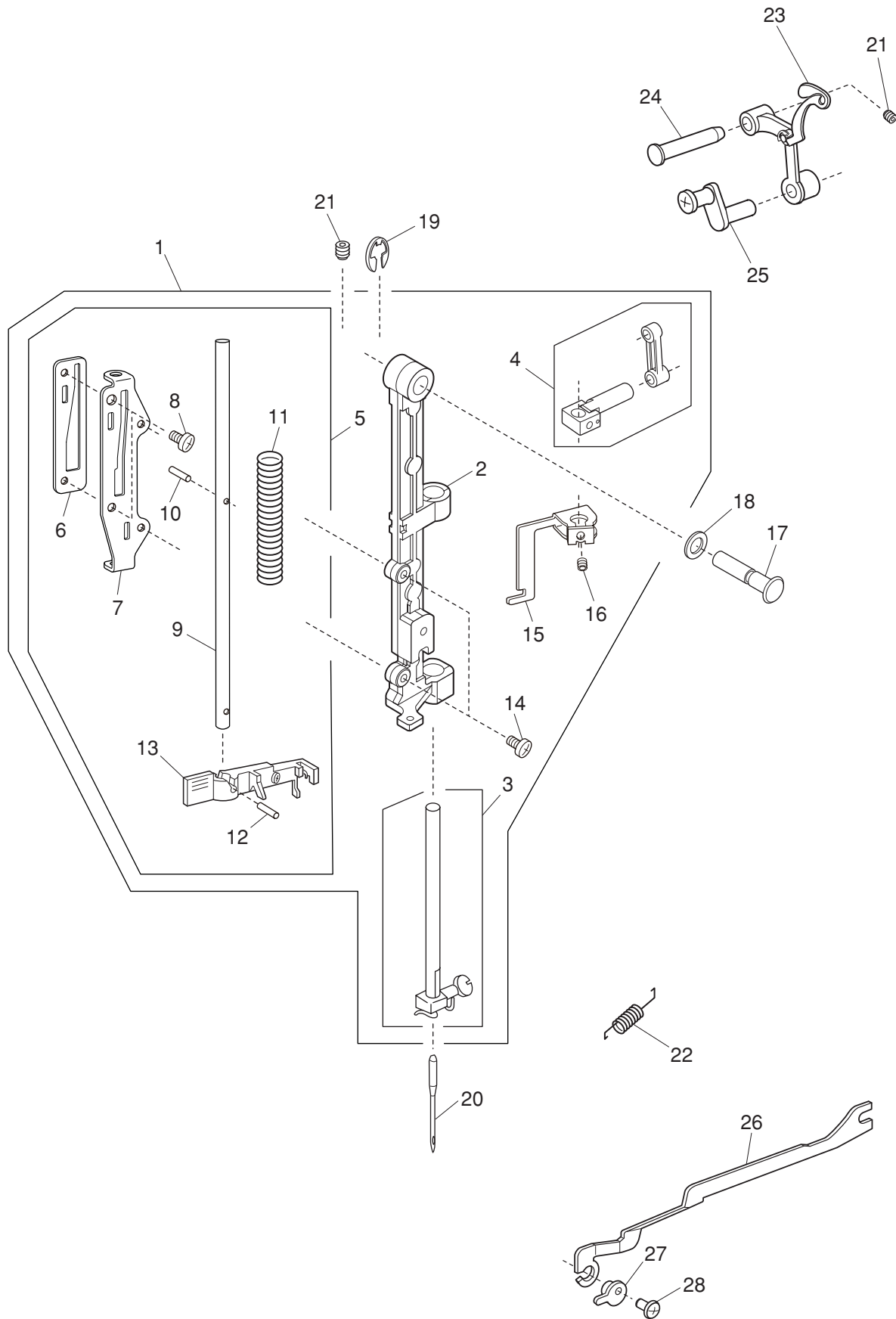
PARTS LIST



PARTS LIST

KEY NO.	PARTS NO.	DESCRIPTION
1	311605107	Presser bar base plate (unit)
2	311009002	Presser bar base plate
3	311031003	Needle drop adjusting plate
4	000115009	Setscrew TP 3x8
5	311023002	Nut
6	000070506	Washer 4
7	000138606	Bolt 4x10
8	000062402	Nut 4-2-7
9	303017101	Presser bar
10	735027002	Presser bar spring
11	735028003	Presser bar bracket
12	000111500	Hexagonal socket screw 4x8
13	311010006	Presser foot lifter
14	735030008	Tension release lever
15	000013903	Snap ring CS-5
16	000081005	Setscrew 4x8
17	301612003	Presser foot (unit)
18	611510000	Presser foot holder (unit)
19	301505002	Zigzag foot (unit)
20	660106001	Setscrew
21	304610000	Tension release arm (unit)
22	739017001	Tension release arm base
23	304045008	Tension release arm
24	739019003	Tension release spring
25	000002105	Snap ring E-3
26	306501139	Tension assembly (unit)
27	739016000	Top cover thread guide
28	000103808	Setscrew 3x5
29	000101703	Setscrew 4x12

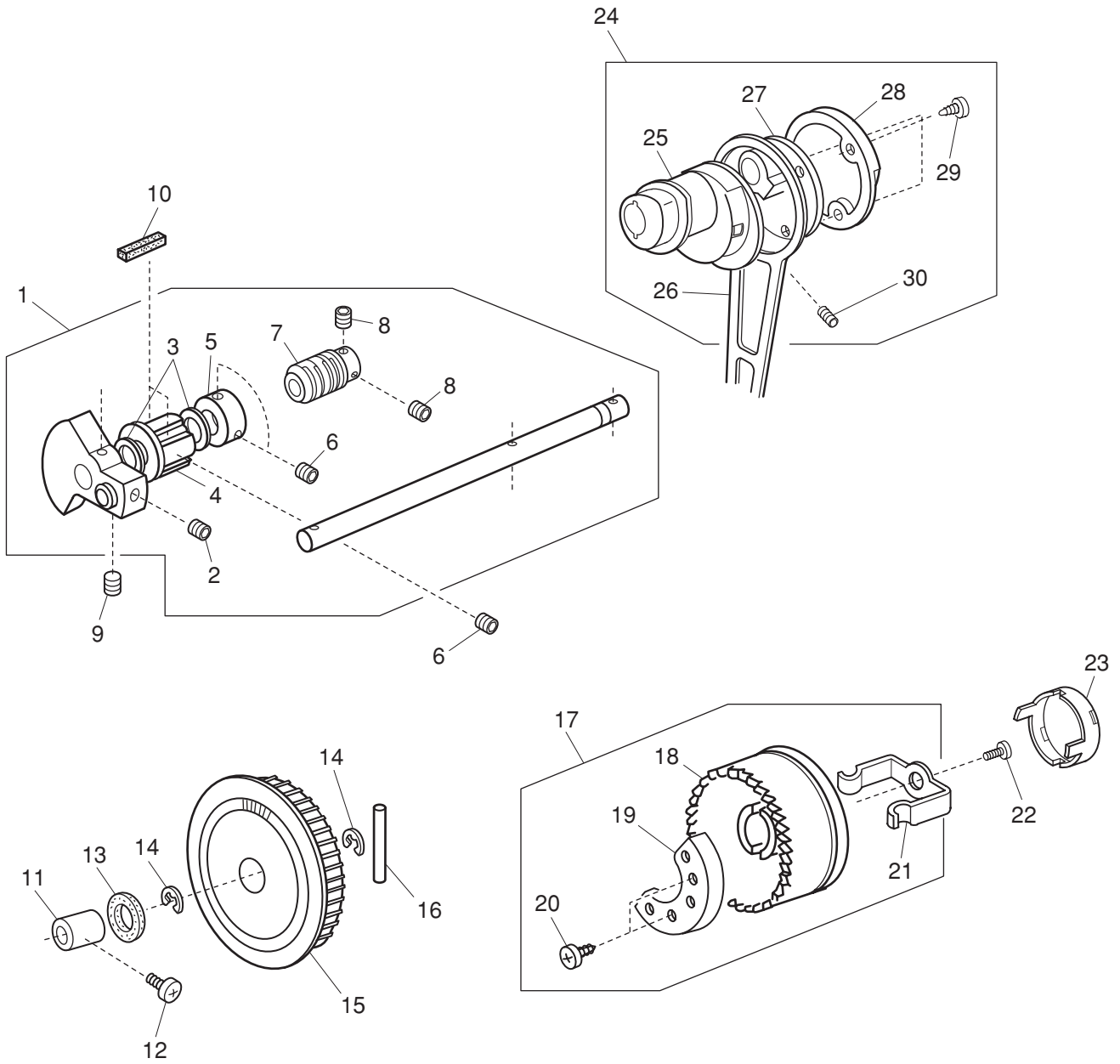
PARTS LIST



PARTS LIST

KEY NO.	PARTS NO.	DESCRIPTION
1	743678205	Needle bar supporter (unit)
2	743246004	Needle bar supporter
3	311622007	Needle bar (unit)
4	311502000	Needle bar connecting stud (unit)
5	311611106	Needle threader guide plate (unit)
6	311027006	Needle threader guide plate
7	311032107	Needle threader shaft plate
8	000101105	Setscrew 3x4
9	301034005	Needle threader shaft
10	000122906	Guide pin E-2x14-CH
11	734094007	Needle threader shaft spring
12	000003508	Spring pin 2x8
13	639643009	Needle threader plate (unit)
14	000103808	Setscrew 3x5
15	311028007	Needle threader set plate
16	000111902	Hexagonal socket screw 3x4
17	730022002	Needle bar supporter pin
18	673022002	Spring washer
19	000002507	Snap ring E-4
20	102408089	Needle
21	000111304	Hexagonal socket screw 5x5
22	743216005	Needle bar supporter spring
23	625506109	Thread take-up lever (unit)
24	647040108	Thread take-up lever supporter pin
25	735504008	Needle bar crank (unit)
26	735119002	Zigzag rod
27	310041003	Eccentric plate
28	000078319	Setscrew 3x6

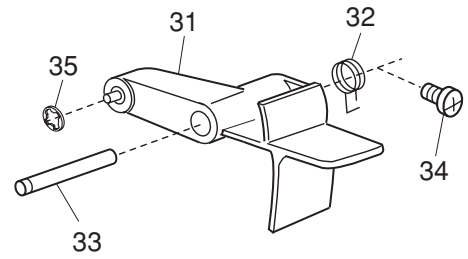
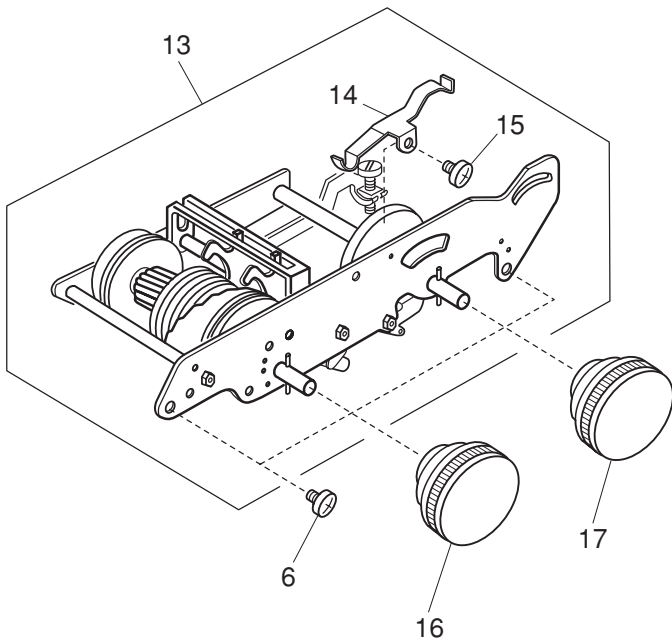
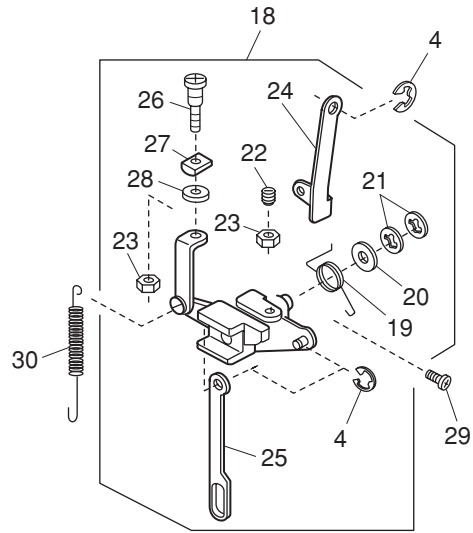
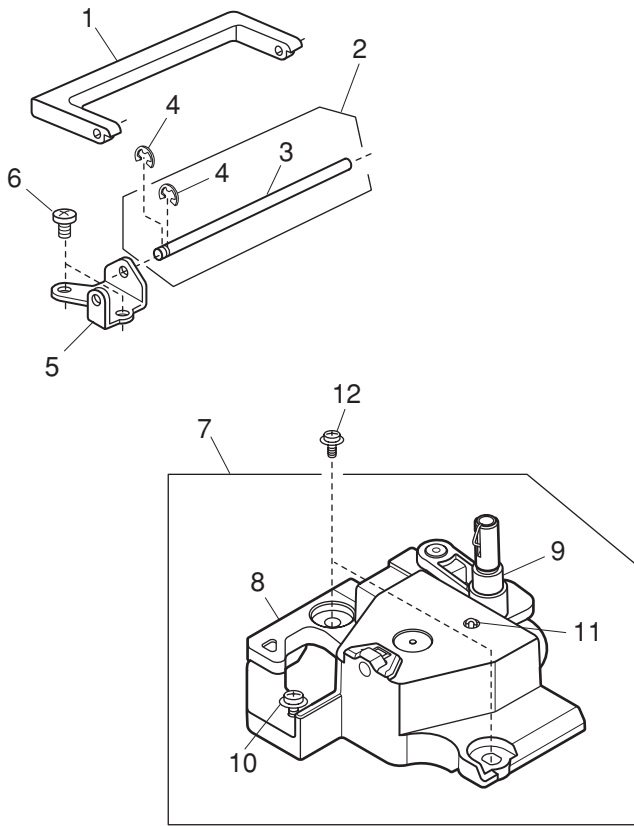
PARTS LIST



PARTS LIST

KEY NO.	PARTS NO.	DESCRIPTION
1	304607200	Upper shaft (unit)
2	102073003	Setscrew
3	000036717	Thrust washer
4	732025001	Upper shaft front bushing
5	639095000	Ring
6	000111304	Hexagonal socket screw 5x5
7	755108000	Worm
8	000111201	Hexagonal socket screw 4x4
9	761052007	Setscrew
10	731312005	Felt
11	732003003	Upper shaft rear bushing
12	000172602	Setscrew 5x8
13	743029009	Felt
14	000030205	Snap ring E-8
15	743019006	Belt wheel
16	000023803	Spring pin 4x40
17	306605112	Handwheel (unit)
18	306105265	Handwheel
19	304050006	Balance weight
20	000107802	Setscrew 3x10 (B)
21	639113016	Clutch spring
22	000081005	Setscrew 4x8
23	739101151	Clutch cap
24	304609006	Crank rod (unit)
25	304042005	Feed cam
26	743011008	Crank rod
27	304044007	Crank cam
28	304043006	Crank cam plate
29	000161309	Setscrew 3x12 (B)
30	000110107	Hexagonal socket screw 5x5

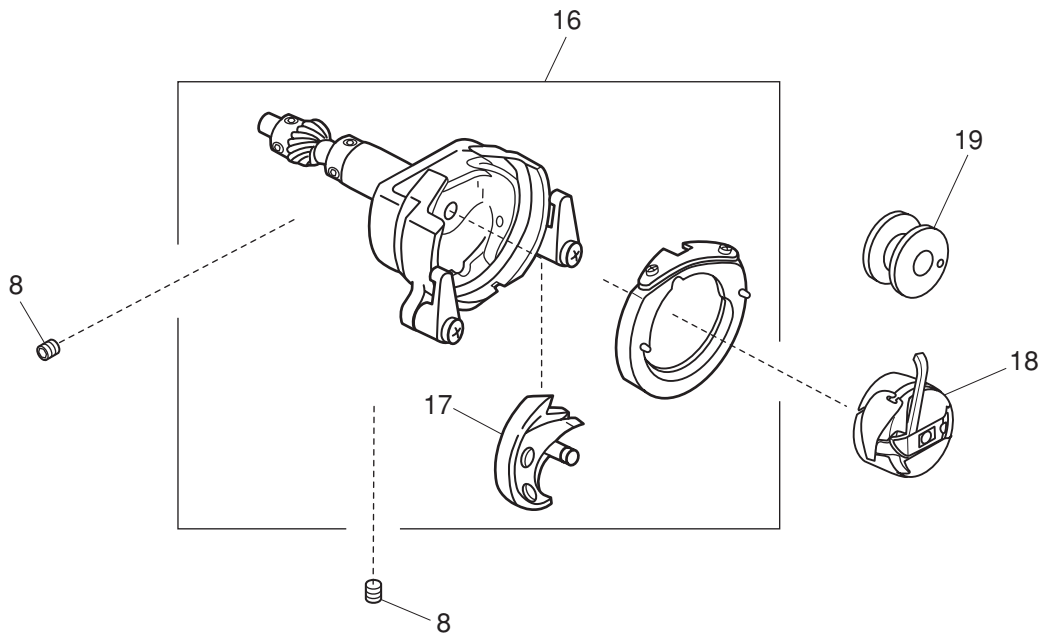
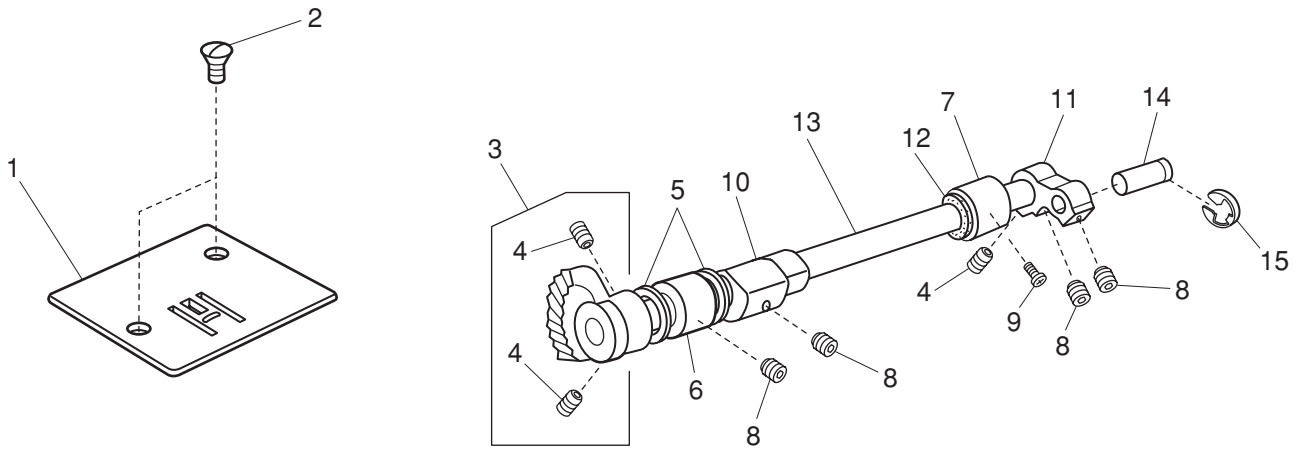
PARTS LIST



PARTS LIST

KEY NO.	PARTS NO.	DESCRIPTION
1	735017308	Handle
2	740624001	Carrying handle set pin (unit)
3	740011009	Handle shaft
4	000002105	Snap ring E-3
5	740010008	Handle supporter
6	000081005	Setscrew 4x8
7	311606005	Bobbin winder supporter (unit)
8	311011007	Bobbin winder base plate
9	311503001	Bobbin winder arm (unit)
10	000109103	Setscrew 4x12
11	740042009	Bobbin winder arm spring
12	000115607	Setscrew TP 4x8
13	745606105	Zigzag mechanism (unit)
14	737011009	Index spring
15	000103808	Setscrew 3x5
16	306114A02	Pattern selector dial
17	306118A02	Feed dial
18	311604106	Feed regulator (unit)
19	735077007	Feed regulating body spring
20	735073003	Plain washer
21	000013800	Snap ring CS-6
22	648010009	Setscrew
23	000160102	Adjustable lock nut 4
24	739020007	Feed regulating rod
25	745052007	Reverse link
26	735074004	SS adjusting screw
27	735076006	SS rod block
28	000071013	Washer 4
29	000172602	Setscrew 5x8
30	670100006	Feed regulating spring
31	306106004	R button
32	739063002	R button spring
33	736015000	R button shaft
34	000101301	Setscrew 5x10
35	000014007	Snap ring CS-4

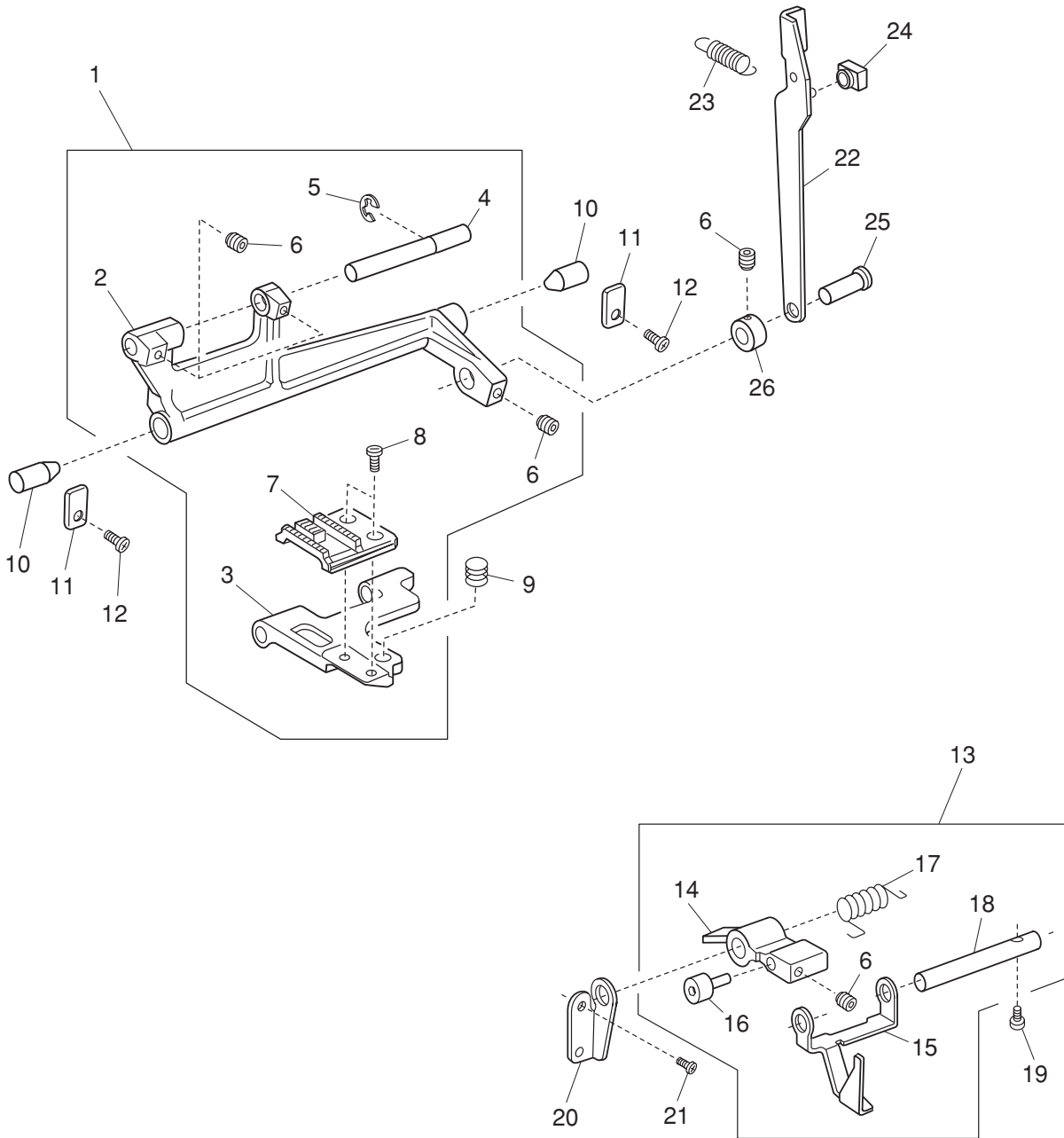
PARTS LIST



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 5x5 (WP)
5	000036201	Washer
6	735233003	Bushing
7	735234004	Bushing
8	000111304	Hexagonal socket screw 5x5
9	000172602	Setscrew 5x8
10	735061101	Feed lifting cam
11	639036003	Lower shaft crank arm
12	822070003	Felt (1)
13	735236006	Lower shaft
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

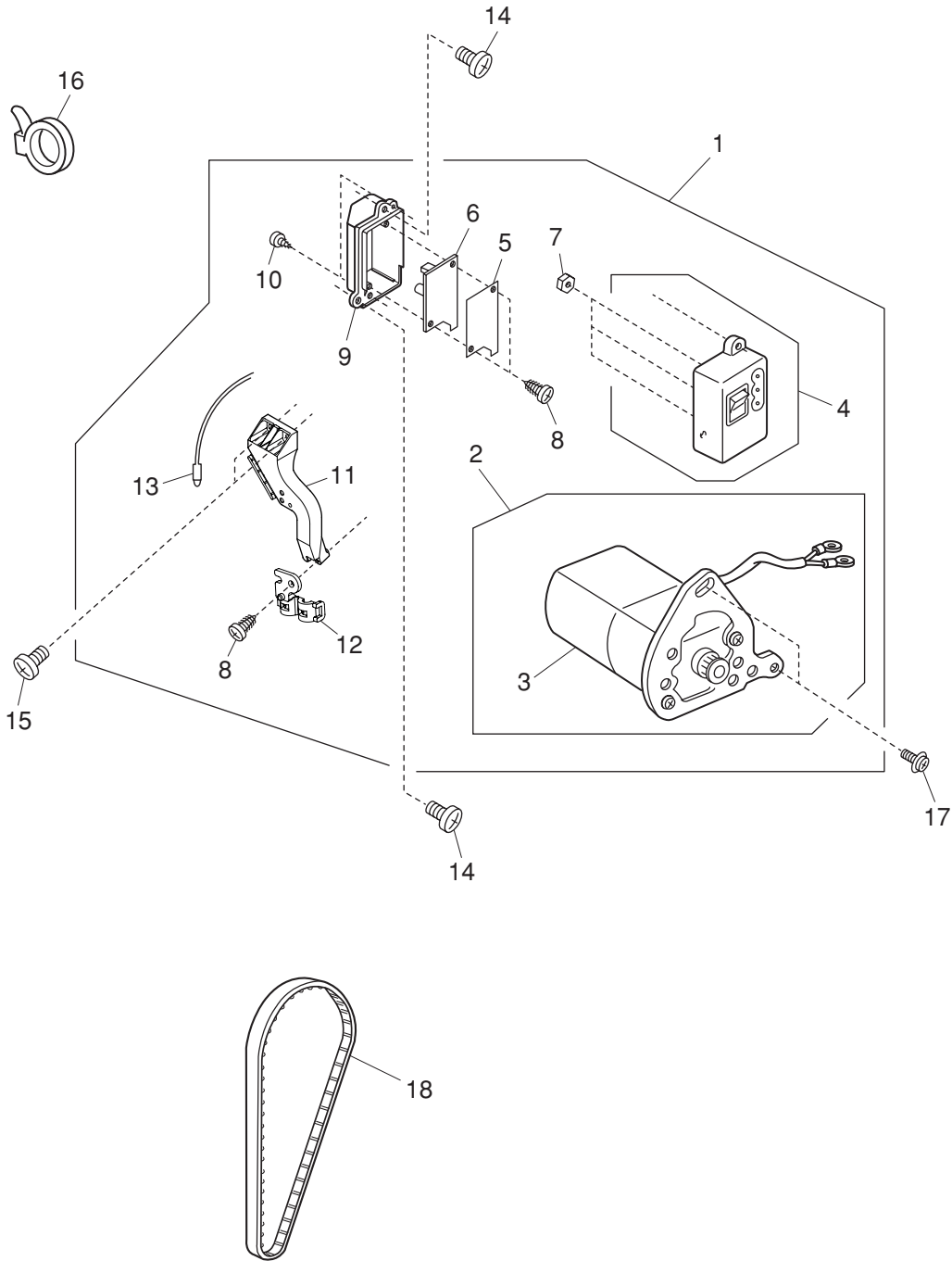
PARTS LIST



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	301609018	Feed lifting arm (unit)
14	301027005	Feed lifting arm
15	740013001	Drop feed selecting plate
16	739105007	Feed lifting pin
17	730061003	Feed lifting spring
18	735090006	Feed lifting shaft
19	000101703	Setscrew 4x12
20	739022009	Feed lifting shaft holder
21	000081119	Setscrew 4x6
22	743012009	Feed rod
23	743013000	Feed rod spring
24	102141003	Feed regulator slide block
25	735071104	Feed rock shaft connecting pin
26	735276008	Ring

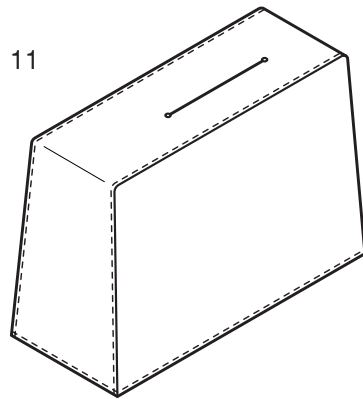
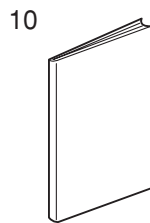
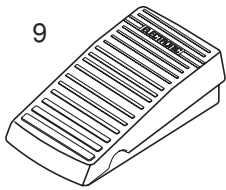
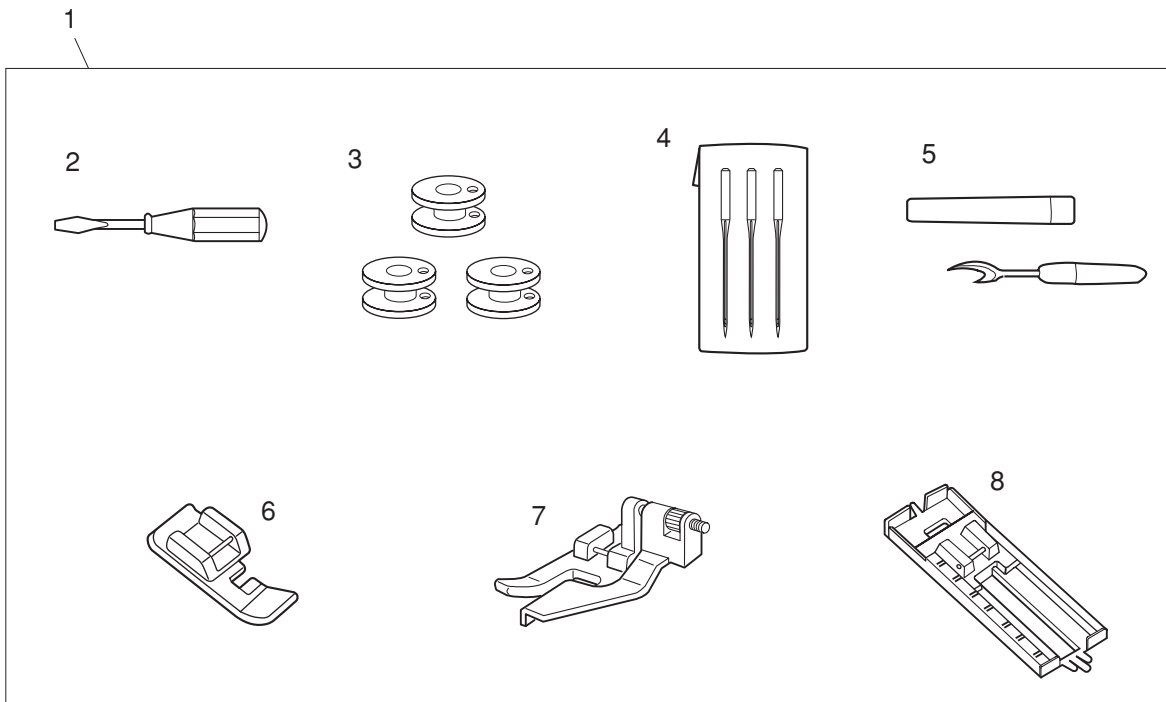
PARTS LIST



PARTS LIST

KEY NO.	PARTS NO.	DESCRIPTION
1	311610105	Motor assy (whole unit)
2	743671002	Motor assembly (unit) including bracket
3	025601004	Motor with pulley
4	739503308	Machine socket (unit)
5	508134003	Insulation sheet
6	508512102	Printed circuit board C (unit)
7	000060802	Nut 3-1-5.5
8	000120203	Setscrew 3x8 (B)
9	508133002	Machine socket cover
10	000107802	Setscrew 3x10 (B)
11	311029008	LED set plate
12	508143005	LED holder
13	508515105	LED (unit)
14	000103509	Setscrew 4x10
15	000081005	Setscrew 4x8
16	000053008	Cord binder
17	000115504	Setscrew TP 5x10
18	650166008	Motor timing belt

PARTS LIST



PARTS LIST

KEY NO.	PARTS NO.	DESCRIPTION
1	302870303	Accessory set
2	647803004	Screwdriver
3	102261000	Bobbin
4	639804000	Needle set (unit)
5	647808009	Seam ripper
6	611406002	Zipper foot
7	611411000	Blind hem foot
8	611413002	Buttonhole foot
9	045501005	Foot control
10	306801637	Instruction book
11	741811000	Cover
