

SERVICE MANUAL
&
PARTS LIST

MODEL: 2020

CONTENTS

TROUBLESHOOTING.....	1 - 3
SERVICE ACCESS (1) FACE COVER, BELT COVER.....	4
SERVICE ACCESS (2) BASE PLATE	5
SERVICE ACCESS (3) FRONT COVER.....	6
SERVICE ACCESS (4) REAR COVER	7
TOP TENSION	8
BOBBIN TENSION.....	9
PRESSER BAR HEIGHT AND ALIGNMENT	10
NEEDLE SWING.....	11
NEEDLE DROP.....	12
CLEARANCE BETWEEN NEEDLE AND HOOK (ADJUSTMENT METHOD NO.1).....	13
CLEARANCE BETWEEN NEEDLE AND HOOK (ADJUSTMENT METHOD NO.2).....	14
FEED DOG HEIGHT	15
NEEDLE BAR HEIGHT	16
NEEDLE TIMING TO SHUTTLE.....	17
BUTTONHOLE FEED BALANCE.....	18
FEED BALANCE ON STRETCH STITCH.....	19
BARTACK FEED OF BUTTONHOLE	20
DISENGAGEMENT OF CAM FOLLOWER.....	21
MOTOR BELT TENSION.....	22
WIRING	23
PARTS LIST	24 - 41

TROUBLESHOOTING

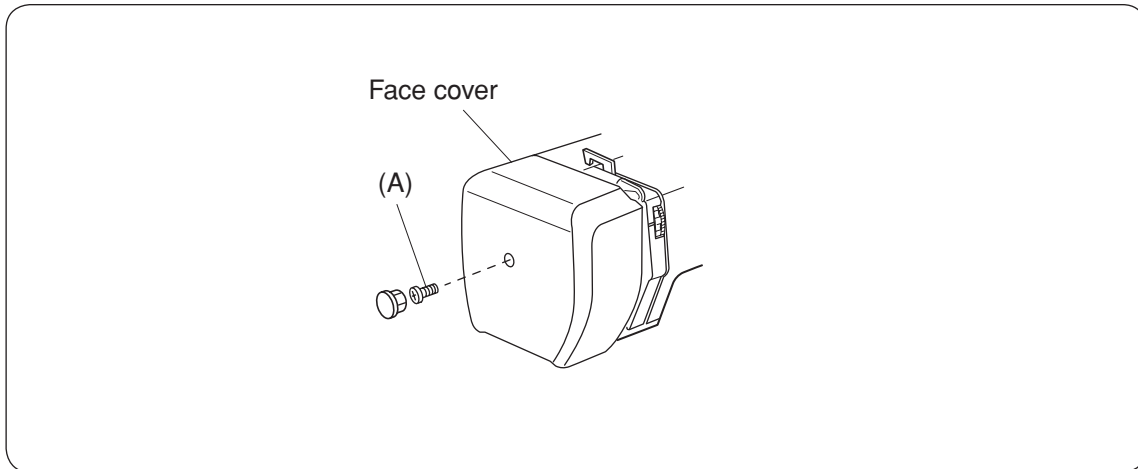
PROBLEM	CAUSE	REMEDY	REFERENCE
<p>1. Skipping stitches</p>	<p>1. Needle is not inserted properly.</p> <p>2. Needle is bent or worn.</p> <p>3. Incorrectly threaded</p> <p>4. Needle or thread are inappropriate for fabric being sewn.</p> <p>5. Sewing on stretch fabric</p> <p>6. Inappropriate needle bar height</p> <p>7. Inappropriate needle to hook timing</p> <p>8. Inappropriate needle to hook 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 hook."</p>	<p>P. 16</p> <p>P. 17</p> <p>P. 13, 14</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 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

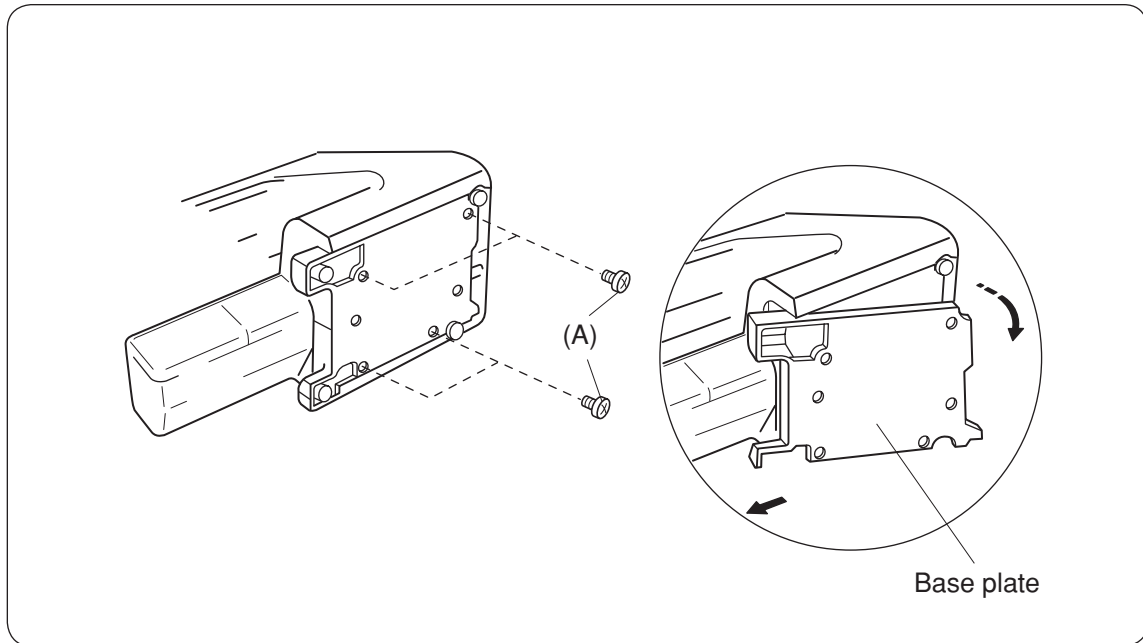
1. Remove the face cover by removing the setscrew (A).

TO ATTACH

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

SERVICE ACCESS (2)

BASE PLATE



TO REMOVE

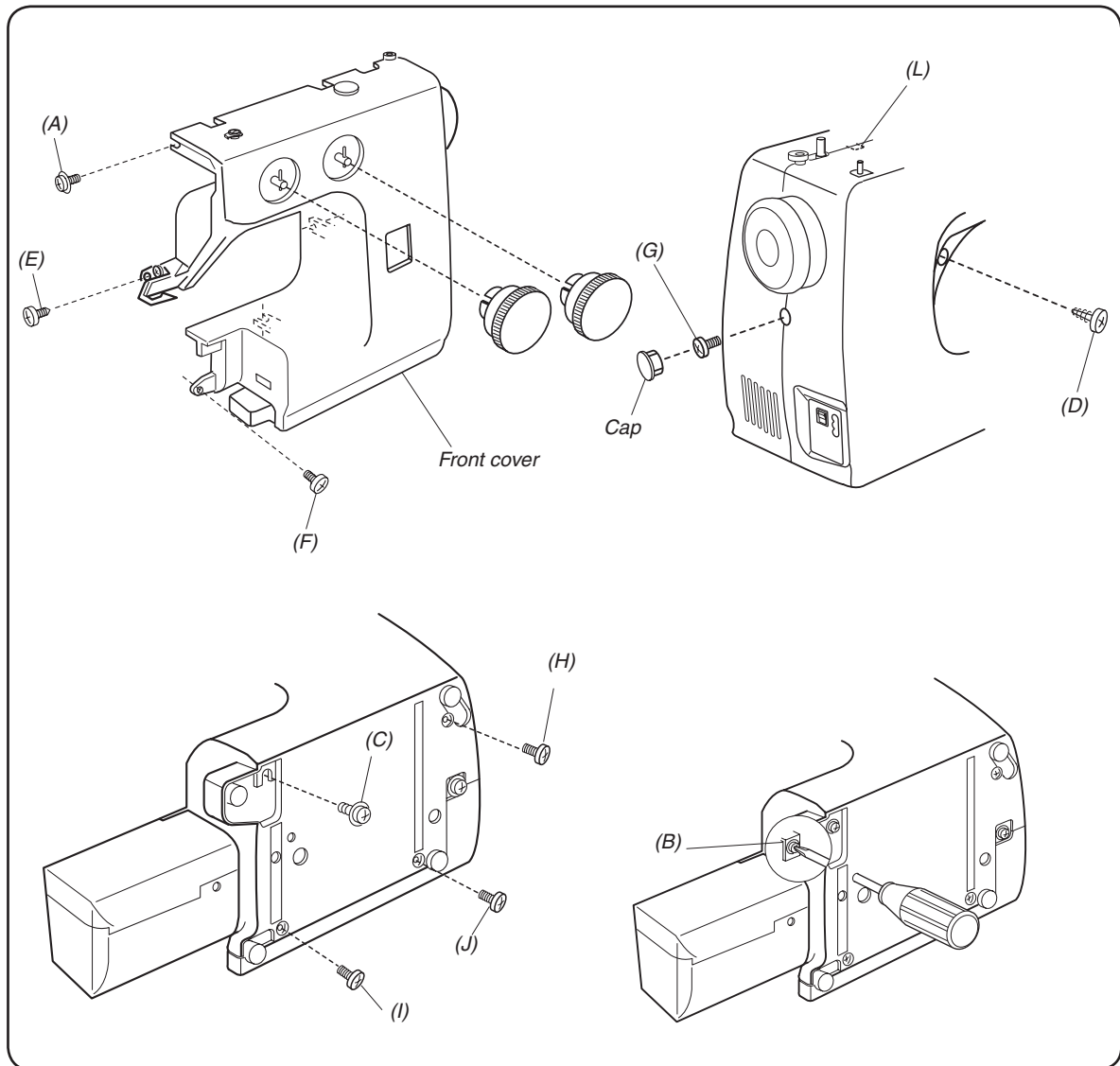
1. Remove the setscrews (A).
2. Remove the base plate.

TO ATTACH

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

SERVICE ACCESS

FRONT COVER



TO REMOVE:

1. Loosen the set screws (A), (B), and (C), and then, remove the front cover by removing the set screws (D), (E), (F), (G), (H), (I) and (J).

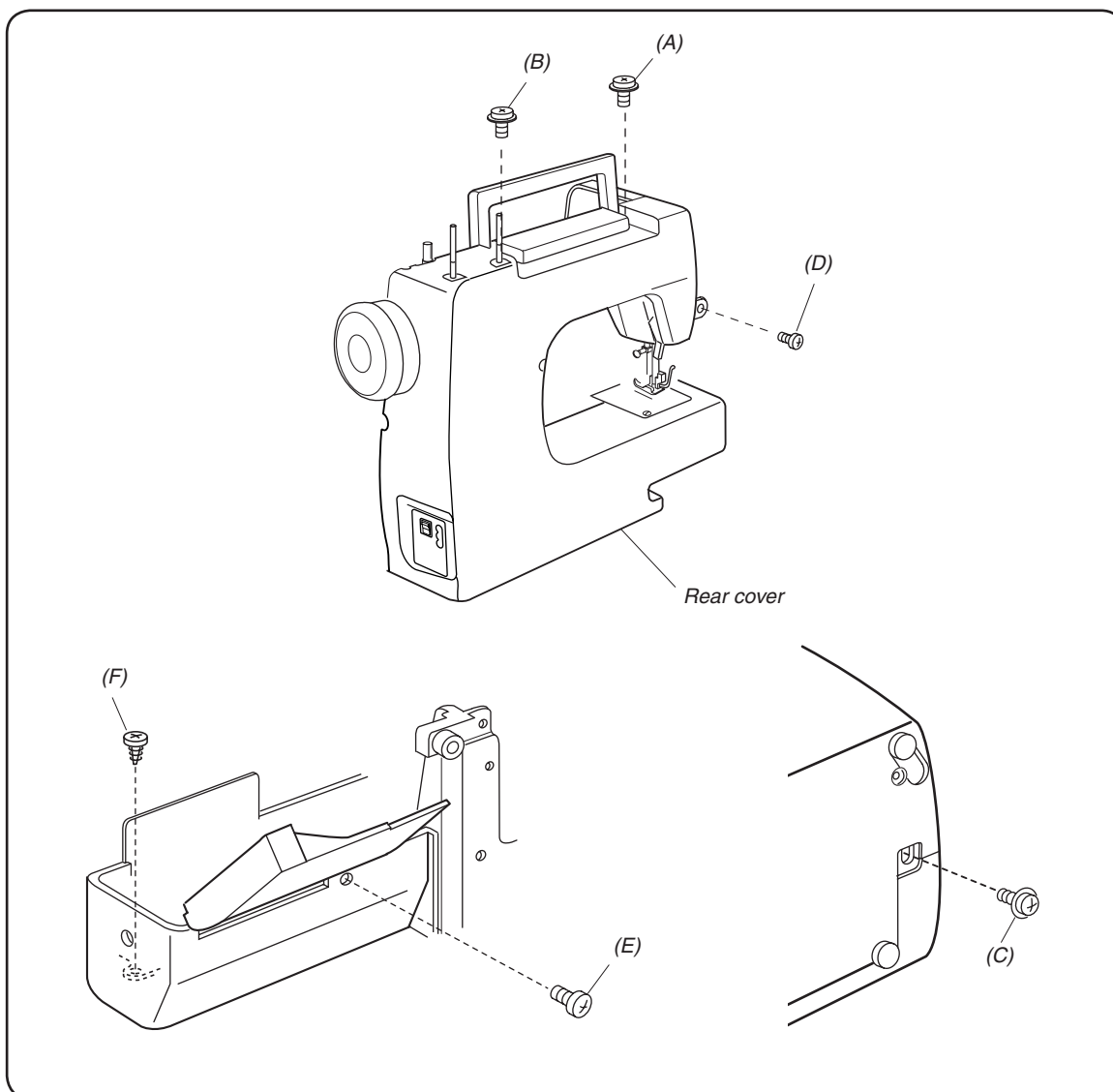
NOTE: Unhook the tab (L) from the rear cover when remove the front cover.

TO ATTACH:

2. Follow the above procedure in reverse.

SERVICE ACCESS

REAR COVER



TO REMOVE:

1. Remove the face cover and front cover. (See page 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

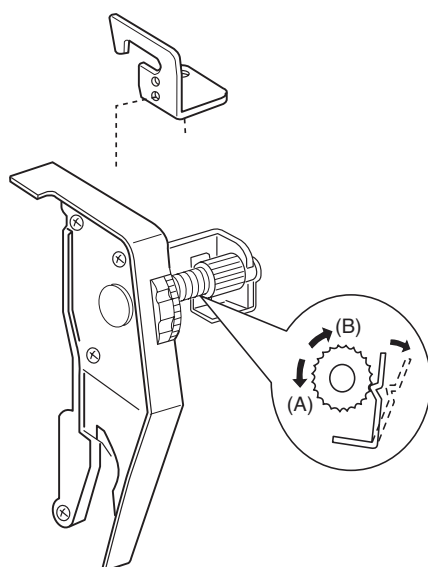
TOP TENSION

The top tension should be between 65 and 95g when pulling the thread up in the direction of C.

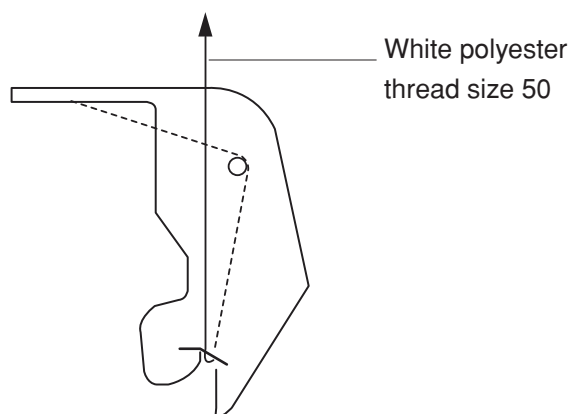
* Use polyester sewing thread #50 (white).

* If it is not within the above limit, adjust as follows

1. Set the tension dial "3".
2. Remove the cover.
3. Lower the presser foot.
 - If the top tension is too loose, turn the lead screw in the direction (A).
 - If the top tension is too tight, turn the screw in the direction (B).
4. Check the top tension and attach the cover.



Pull the thread at the speed of 110mm/sed in the direction of arrow



MECHANICAL ADJUSTMENT

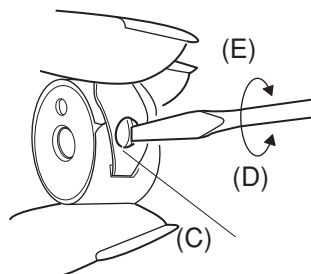
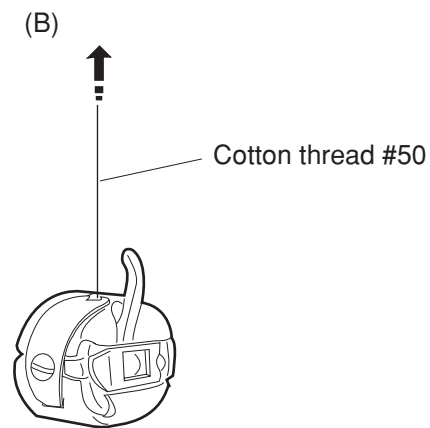
BOBBIN TENSION

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

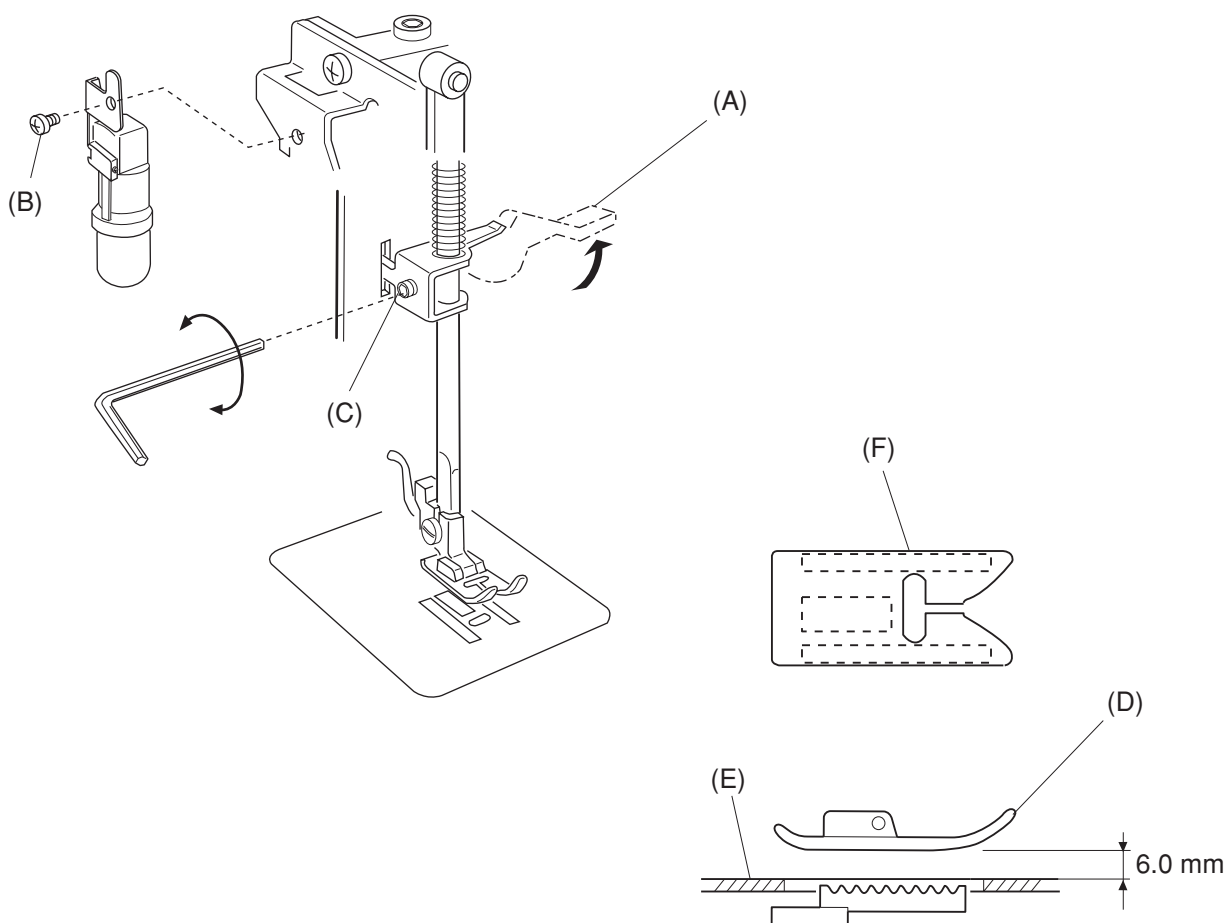
TO CHECK:

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 (E) 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

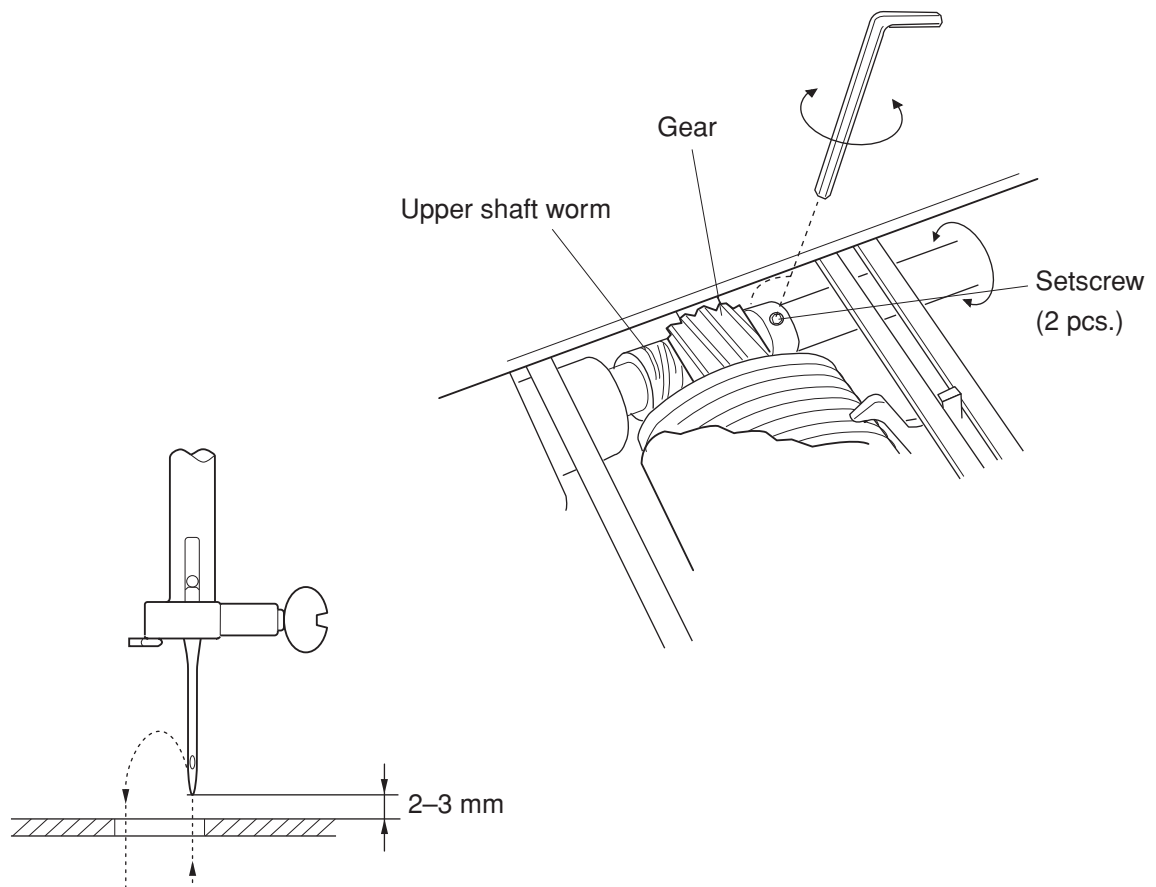
TO CHECK:

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:

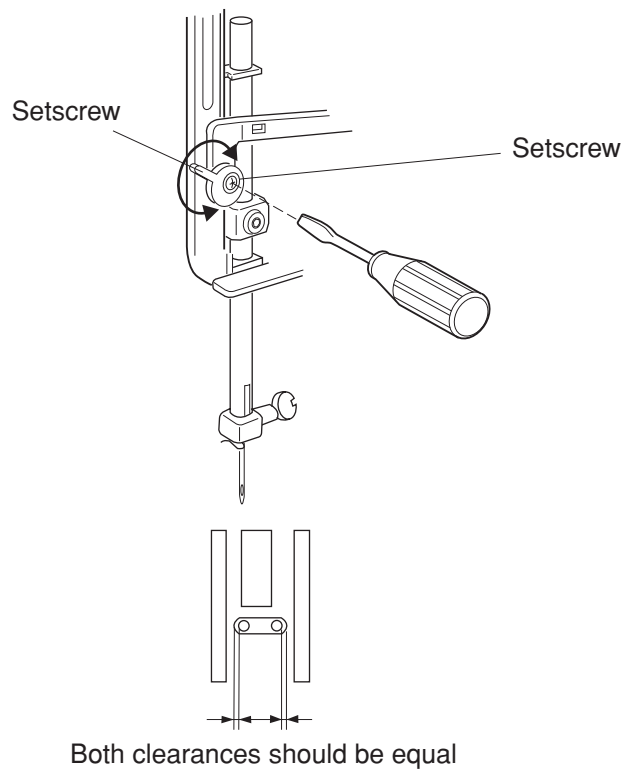
When the needle swings in maximum zigzag width, the distance between both ends of the needle hole on the needle plate and the needle drop positions should be equal.

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.

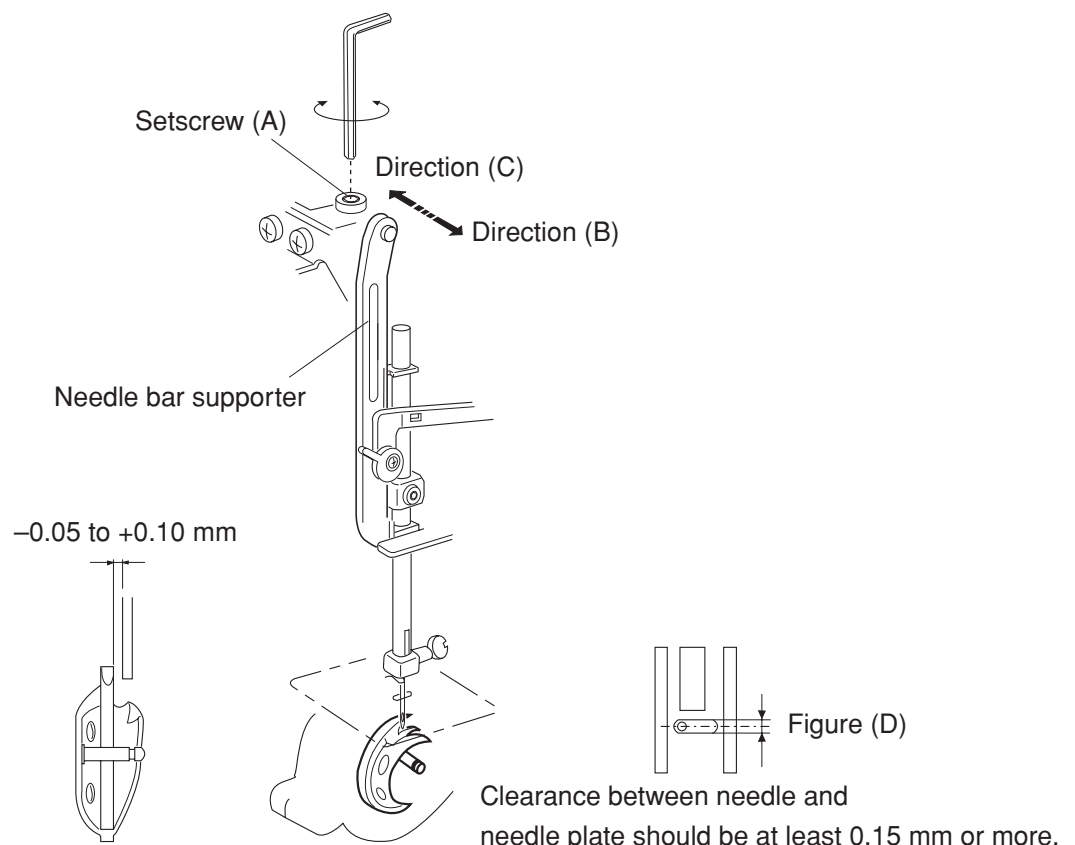
If not, adjust as follows:

ADJUSTMENT PROCEDURE:

1. Remove the face cover (See page 4).
2. Set the pattern select dial at "C: D".
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.

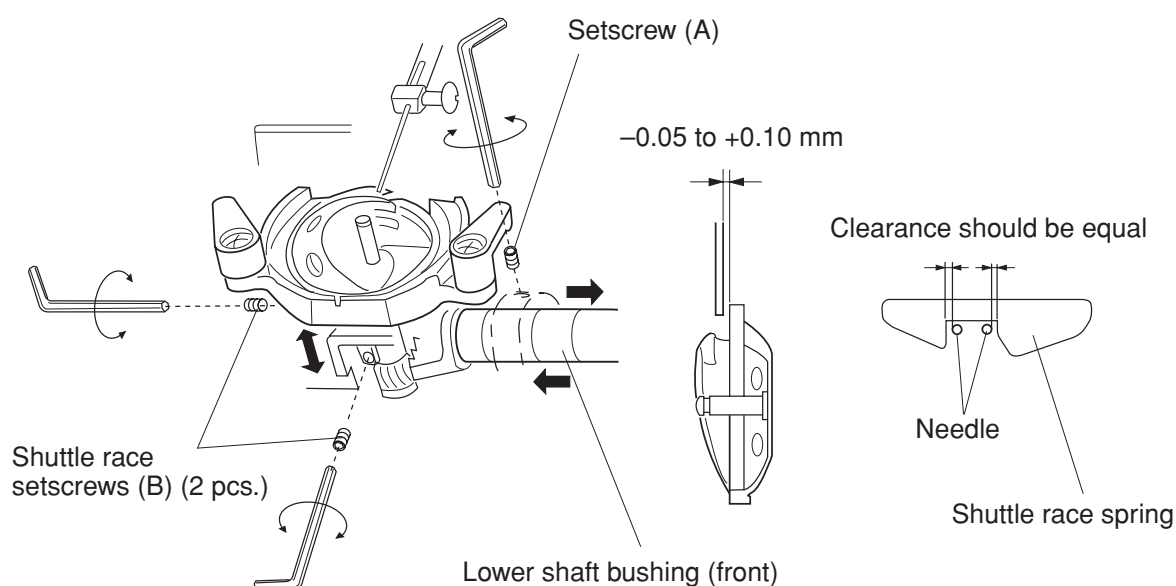
The clearance between the needle and shuttle race should be -0.05 to $+0.10$ mm.

ADJUSTMENT PROCEDURE:

1. Set the pattern selector dial at "C" (with a right-pointing arrow symbol).
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 "W" (with a zigzag symbol), 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

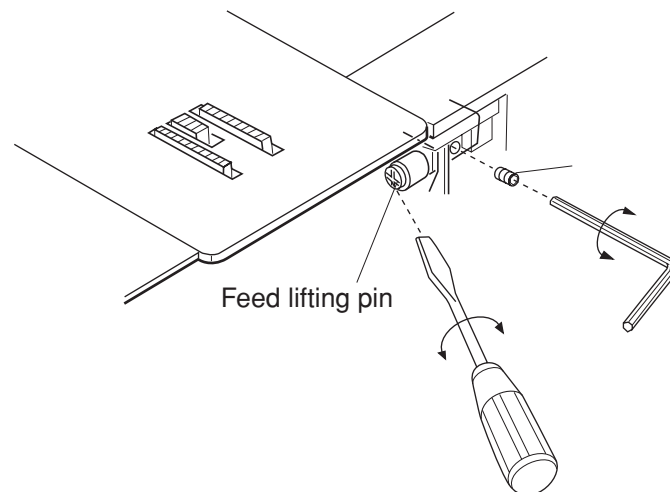
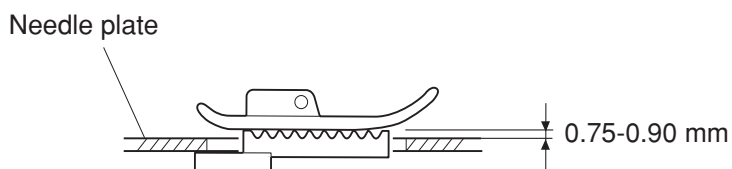
FEED DOG HEIGHT

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

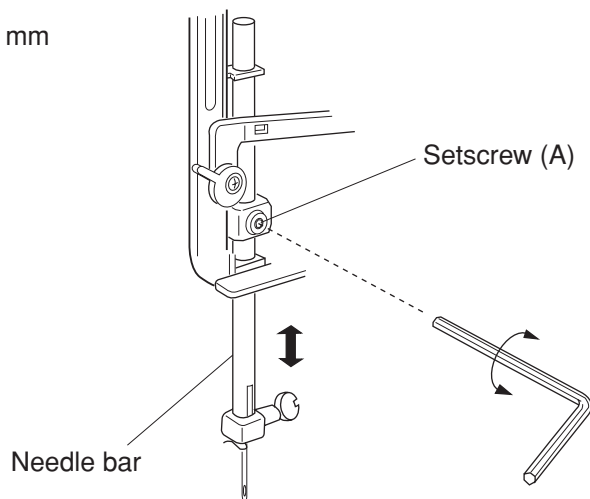
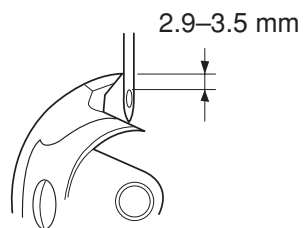
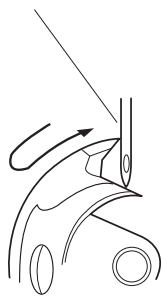
TO CHECK:

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

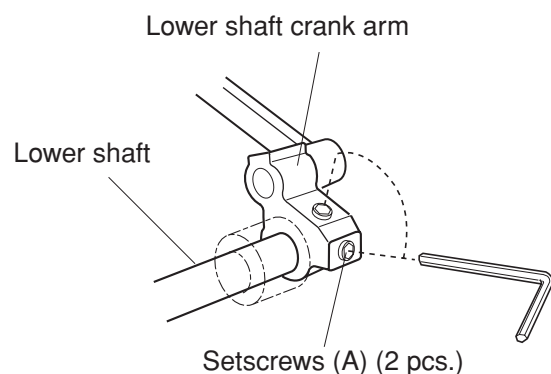
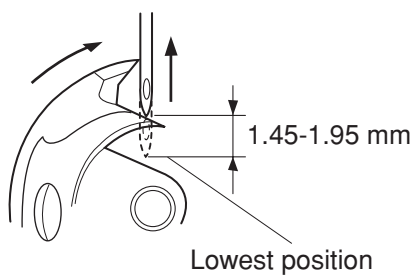
NEEDLE TIMING TO SHUTTLE

TO CHECK:

The height of the needle point from its lowest point of travel should be in the range of 1.45-1.95 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 " 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 1.45-1.95 mm.
If it is not in this range, repeat the above procedure.
10. Attach the shuttle race ring.
11. Attach the base.



MECHANICAL ADJUSTMENT

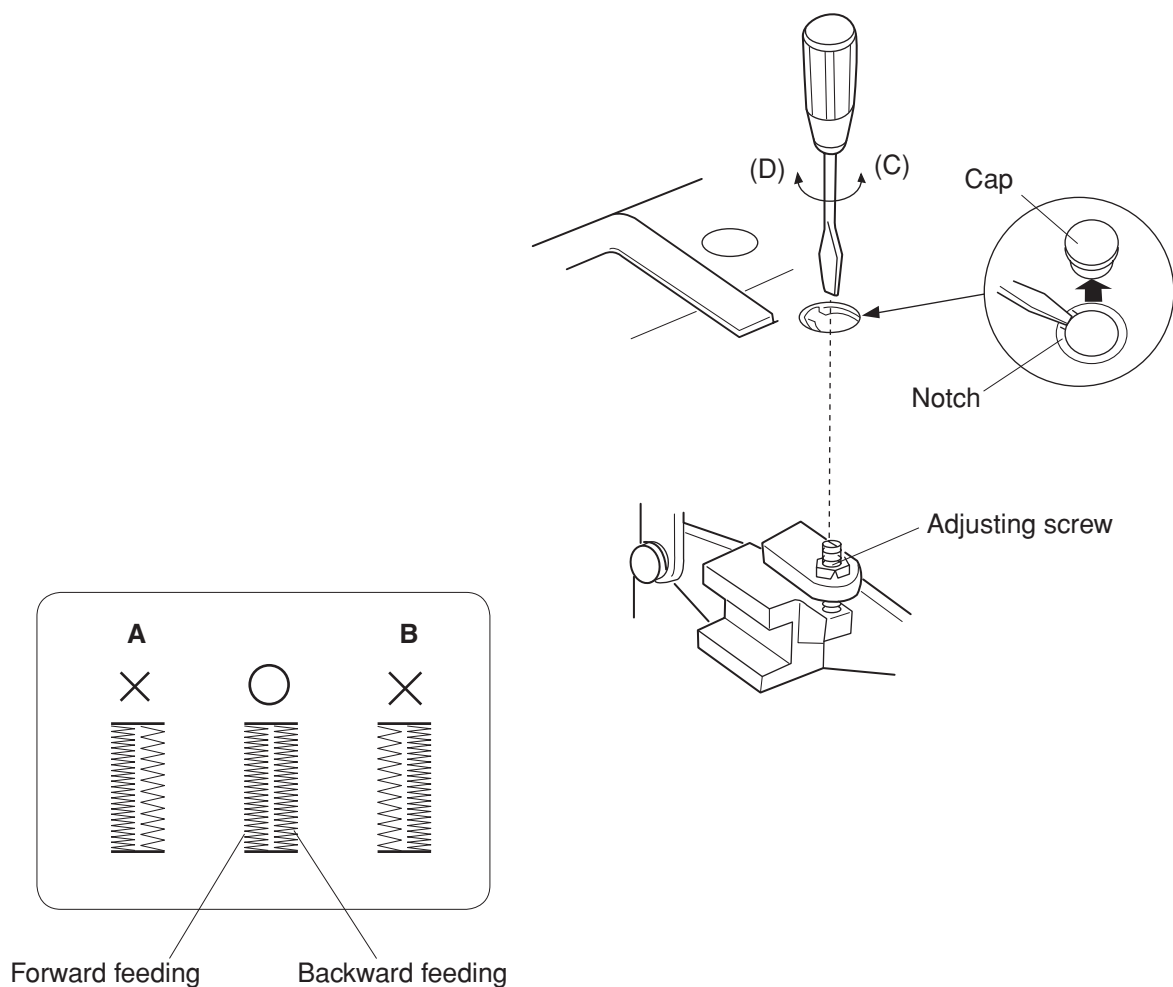
BUTTONHOLE FEED BALANCE

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

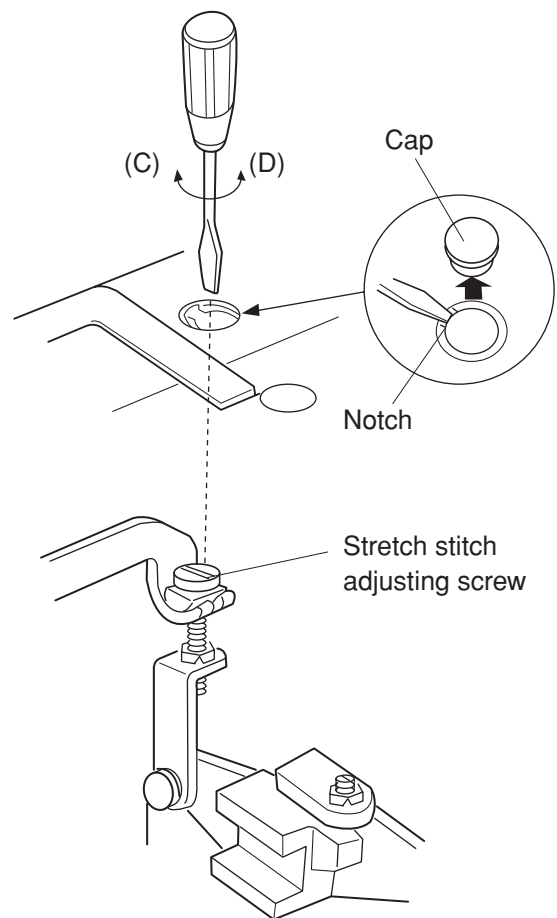
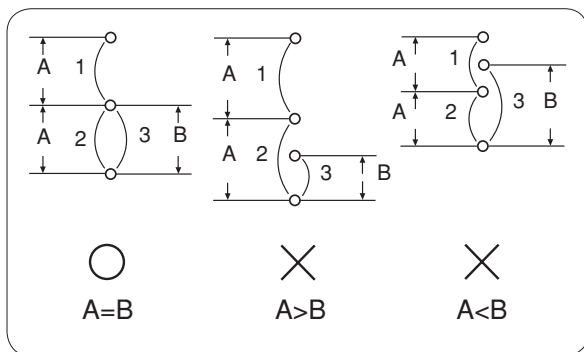
TO CHECK:

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

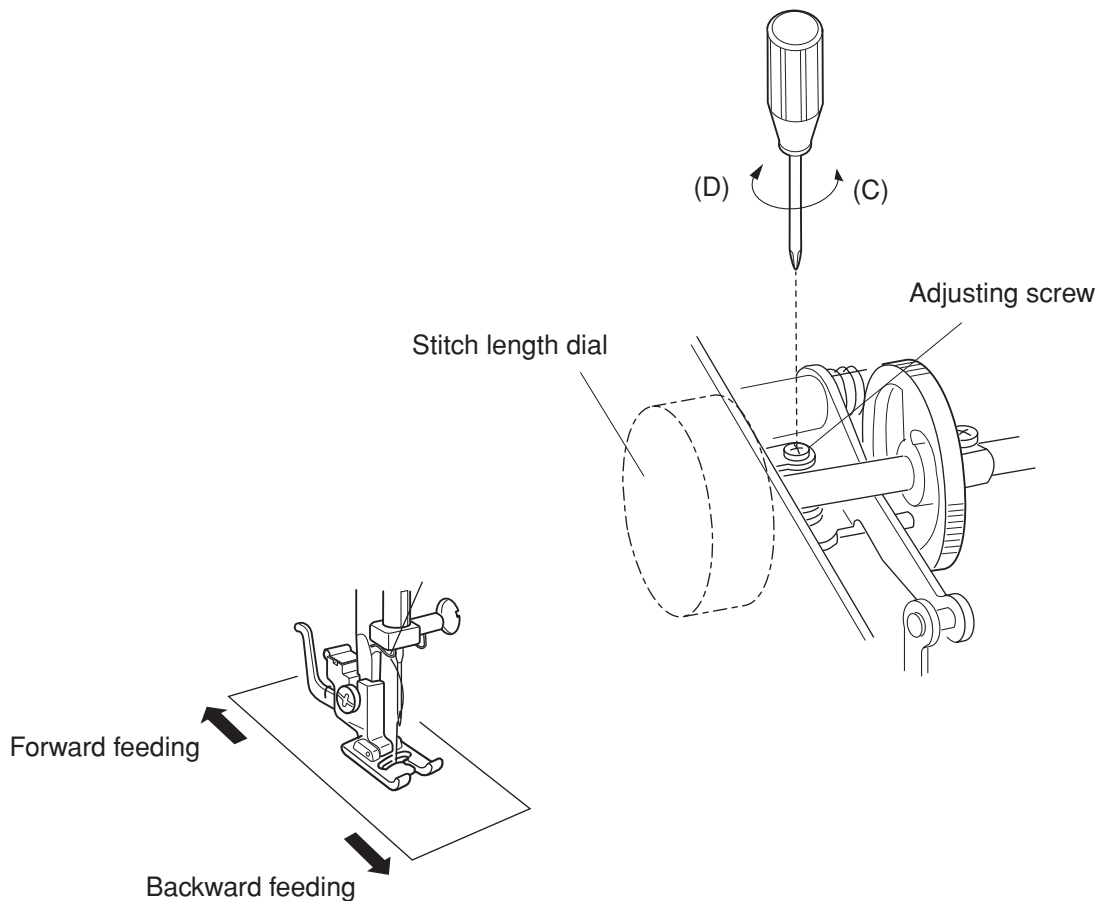
BARTACK FEED OF BUTTONHOLE

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 " \square^4 ", 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

BARTACK FEED OF BUTTONHOLE

TO CHECK:

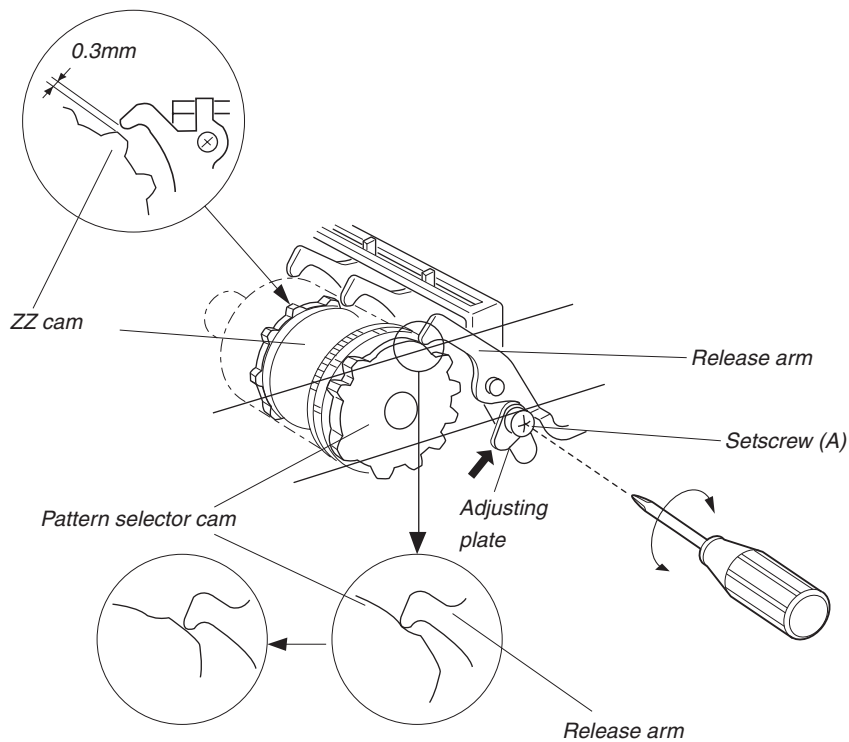
Too narrow clearance between the cam follower and the top convex of zigzag cam may often cause difficulty in turning of the pattern selector dial, or can not correct pattern.

ADJUSTMENT PROCEDURE:

1. Set the pattern selector dial "C 5".
2. Remove the front cover (See page 6).
3. Put the cam follower to the zigzag cam (straight cam), and also put the cam follower releasing arm to the pattern select cam.
4. Loosen the setscrew.
5. Move adjusting plate in the direction of arrow until to touch to the releasing arm and tighten setscrew.

NOTE: After this adjustment, check that the clearance between the zigzag cam and the cam follower releasing arm onto position (A) of pattern select cam.

6. Attach the front cover.



MECHANICAL ADJUSTMENT

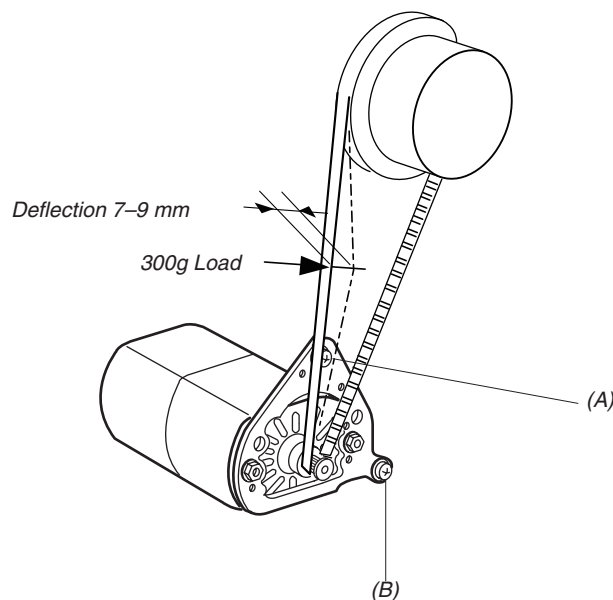
MOTOR BELT TENSION

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 teeth on the motor pulley to jump.
2. The correct motor belt tension is when the deflection of motor belt is about 7mm (0.28") - 9mm (0.36").
(When pushing the motor belt by finger with a 300 gram load.)

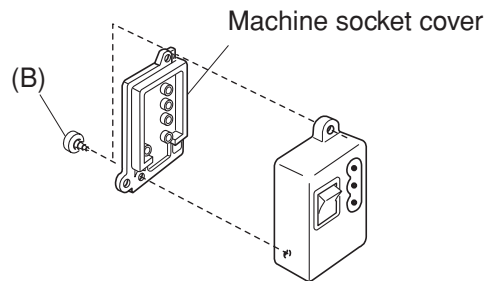
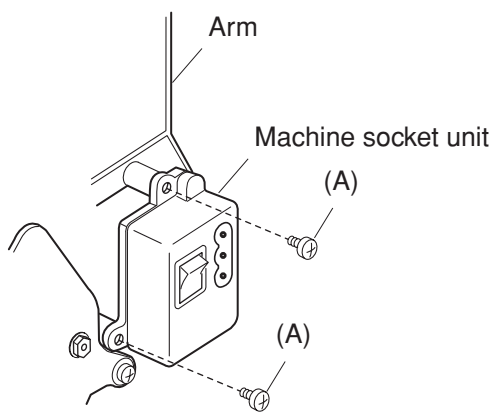
ADJUSTMENT PROCEDURE:

1. Remove the rear cover. (See page 6)
2. Loosen the screws (A) and (B).
3. Move the motor UP or DOWN to adjust the deflection about 7mm (0.28") - 9mm (0.36").
4. Tighten the screws (A) and (B).

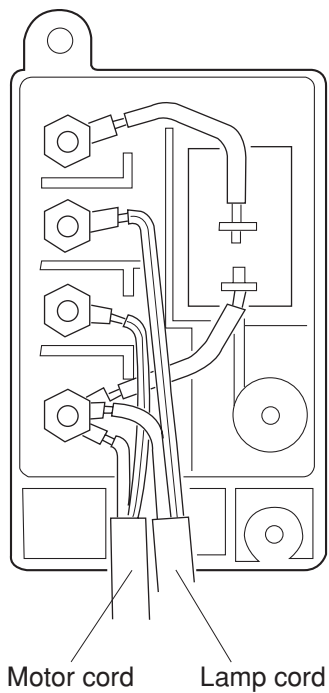


WIRING

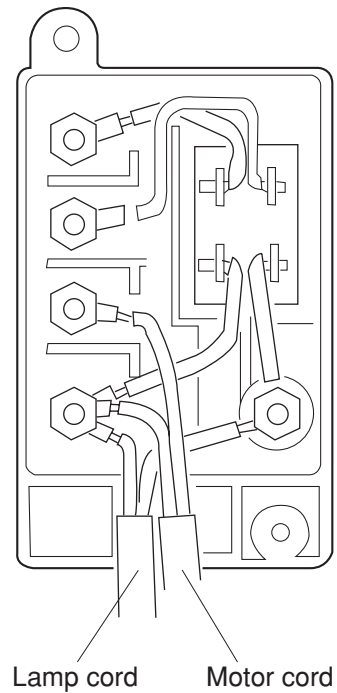
1. Remove the belt cover. (See page 4.)
2. Remove the screws (A), (B) and machine socket cover.
3. Follow the above procedure in reverse.



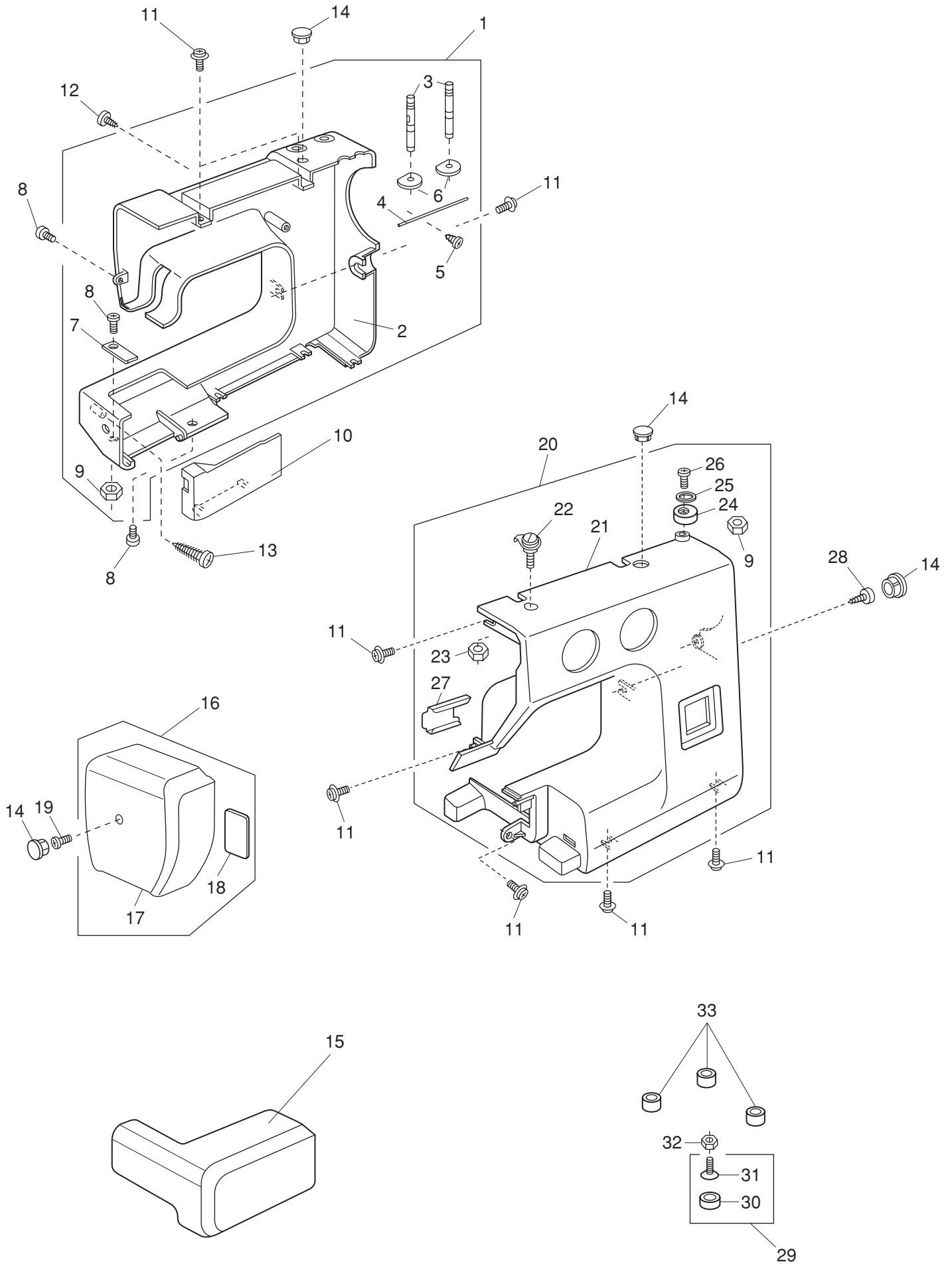
120V



240V



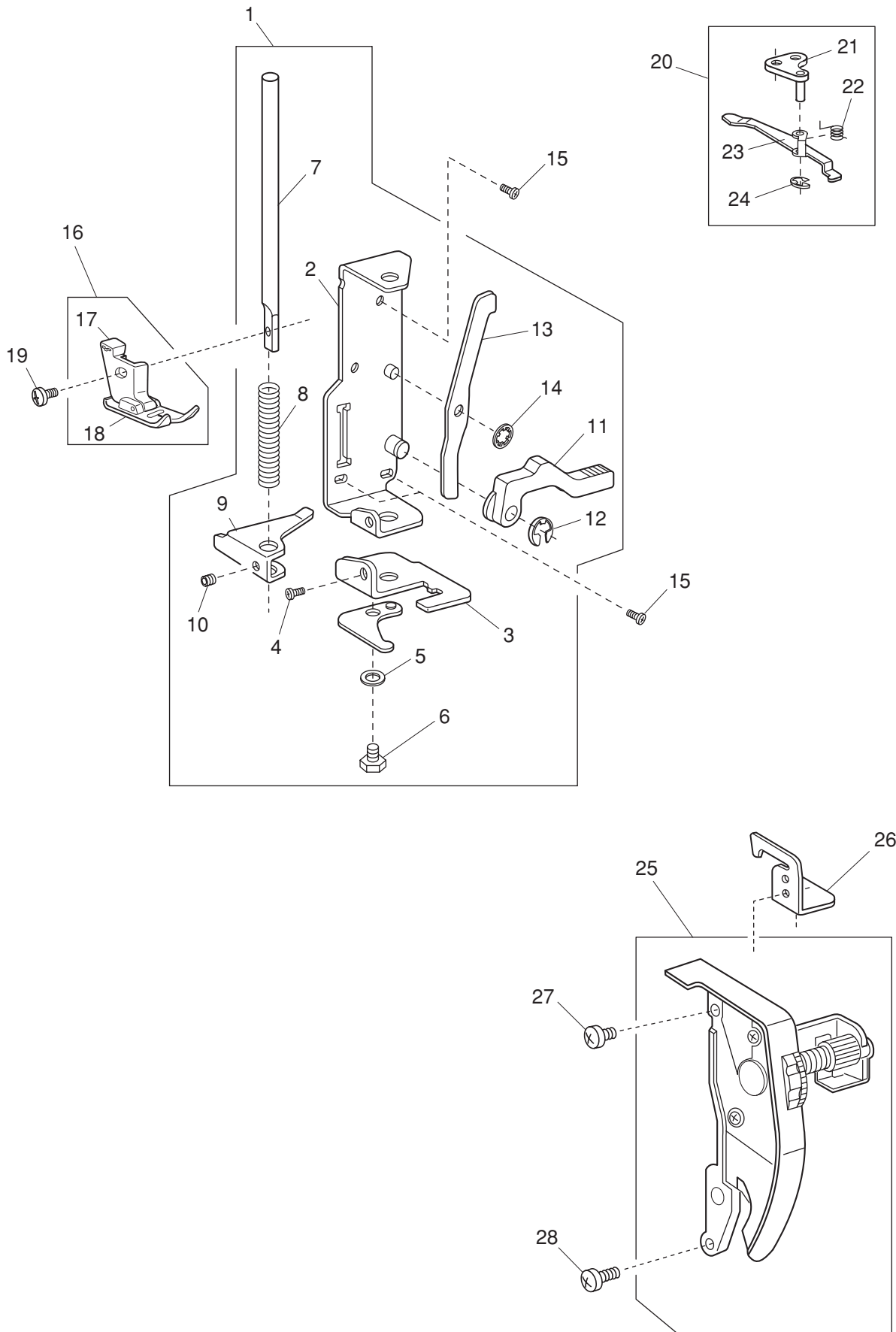
PARTS LIST



PARTS LIST

KEY NO.	PARTS NO.	DESCRIPTION
1	311601011	Rear cover (unit)
2	311001107	Rear cover
3	652205109	Spool pins
4	736007009	Spool pin spring
5	000161206	Setscrew 3x10
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 TP4x6
12	000121905	Tapping screw 4x12 (B)
13	000198604	Setscrew 4x14 (B)
14	653006101	Cap
15	311002005	Extension table (unit)
16	311602012	Face cover (unit)
17	311003109	Face cover
18	724025006	Reflex sticker
19	000081005	Setscrew 4x8
20	311603493	Front cover (unit)
21	311006696	Front cover
22	730501011	Thread guide plate (unit)
23	000160102	Adjustable lock nut 4
24	735016307	Bobbin winder stopper
25	000071013	Washer
26	000103107	Setscrew 4x14
27	735123009	Thread guide plate
28	000101703	Setscrew 4x12
29	735616200	Rubber base (unit)
30	735002001	Rubber base
31	000097901	Flat screw 5x18
32	000061319	Nut 5-1-8
33	739064003	Bed rubber base

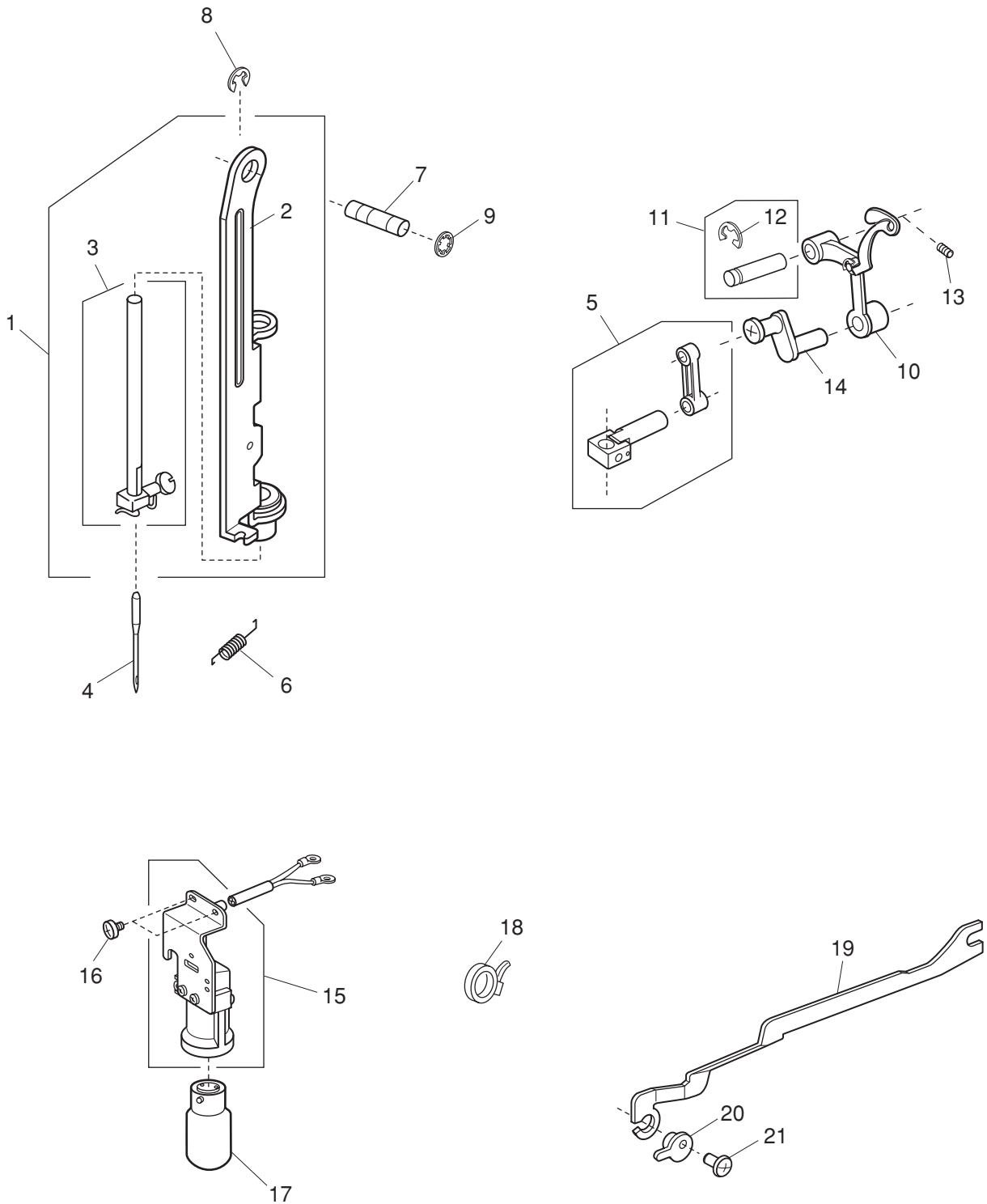
PARTS LIST



PARTS LIST

KEY NO.	PARTS NO.	DESCRIPTION
1	305604303	Presser bar base plate (unit)
2	735221008	Presser bar base plate
3	743212001	Needle drop adjusting plate
4	000101404	Setscrew 4x6
5	000070506	Washer
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	000081005	Setscrew 4x8
16	310621003	Presser foot (unit)
17	310801009	Presser foot holder (unit)
18	301505002	Zigzag foot (unit)
19	660106001	Thumb screw
20	304610000	Tension release arm (unit)
21	739017001	Tension release arm base
22	739019003	Tension release spring
23	304045008	Tension release arm
24	000002105	Snap ring E-3
25	311501009	Tension assembly (unit)
26	739016000	Top cover thread guide
27	000103808	Setscrew 3x5
28	000101703	Setscrew 4x12

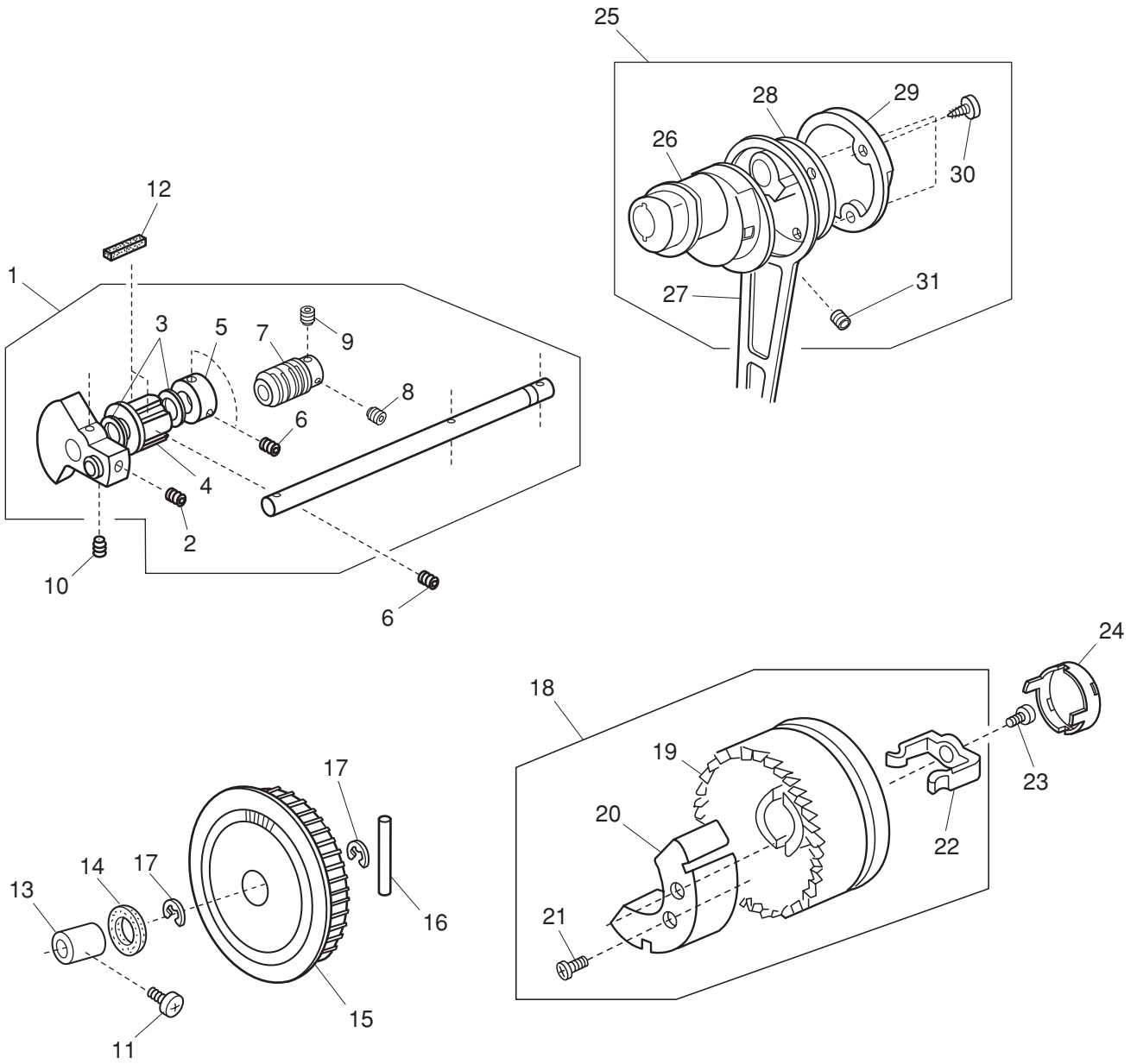
PARTS LIST



PARTS LIST

KEY NO.	PARTS NO.	DESCRIPTION
1	743669007	Needle bar supporter (unit)
2	743213002	Needle bar supporter
3	730503116	Needle bar (unit)
4	102408089	Needle HA 1-14
5	311502000	Needle bar connecting stud (unit)
6	639017008	Needle bar supporter spring
7	310013109	Needle bar supporter pin
8	000001609	Snap ring E-5
9	000013800	Snap ring CS-6
10	625506109	Thread take-up lever (unit)
11	731511006	Thread take-up pin (unit)
12	000002806	Snap ring E-6
13	000111304	Hexagonal socket screw 5x5
14	735504008	Needle bar crank (unit)
15	310622004	Lamp socket (unit)
16	000081005	Setscrew 4x8
17	000009009	Lamp 240V 15W
18	000053008	Cord tie band
19	735119002	Zigzag rod
20	310041003	Eccentric plate
21	000078319	Setscrew 3x6

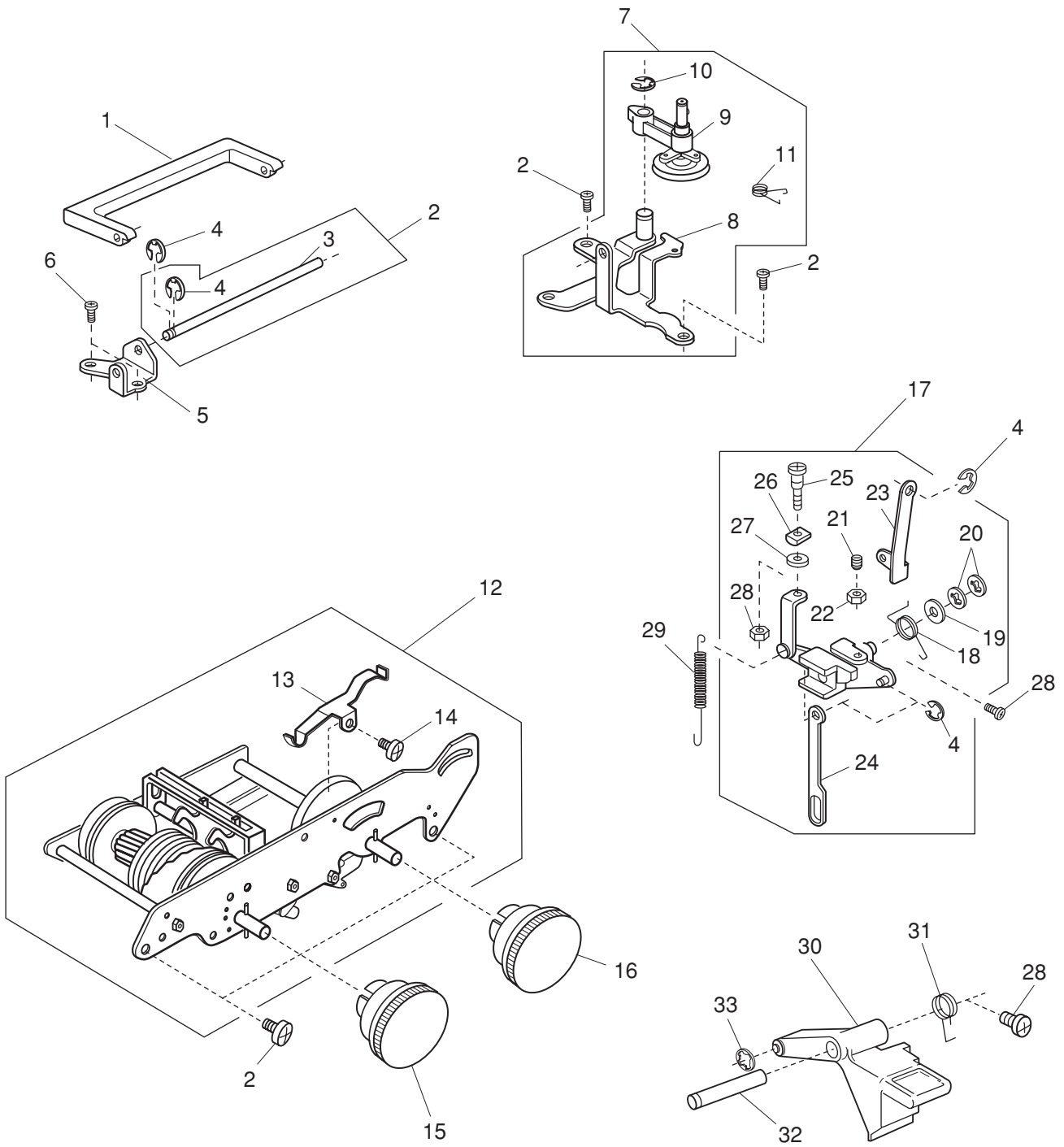
PARTS LIST



PARTS LIST

KEY NO.	PARTS NO.	DESCRIPTION
1	304607406	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	751146101	Worm
8	000111201	Hexagonal socket screw 4x4
9	000112501	Hexagonal socket screw 4x4
10	761052007	Setscrew
11	000172602	Setscrew 5x8
12	731312005	Felt
13	732003003	Upper shaft rear bushing
14	743029009	Felt
15	743019006	Belt wheel
16	000023803	Spring pin
17	000030205	Snap ring E-8
18	306605053	Handwheel (unit)
19	306105210	Handwheel
20	743030003	Balance weight
21	000121400	Tapping screw 3x14 (B)
22	639113016	Clutch spring
23	000081005	Setscrew 4x8
24	650070509	Clutch cap
25	304609006	Crank rod (unit)
26	304042005	Feed cam
27	743011008	Crank rod
28	304044007	Crank cam
29	304043006	Crank cam plate
30	000161309	Tapping screw 3x12 (B)
31	000110107	Hexagonal socket screw 5x5

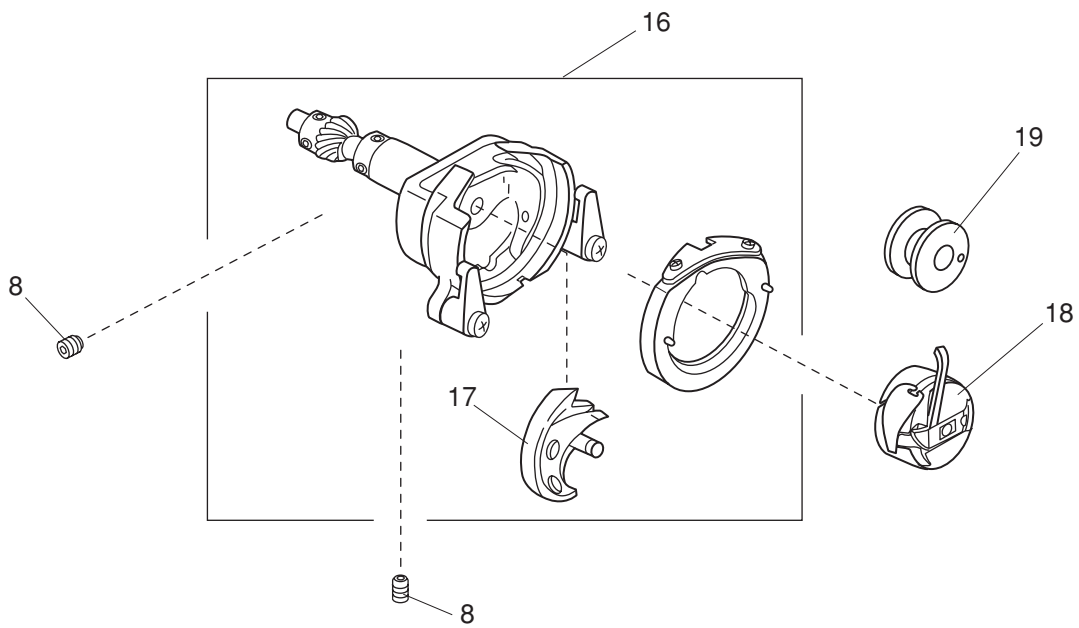
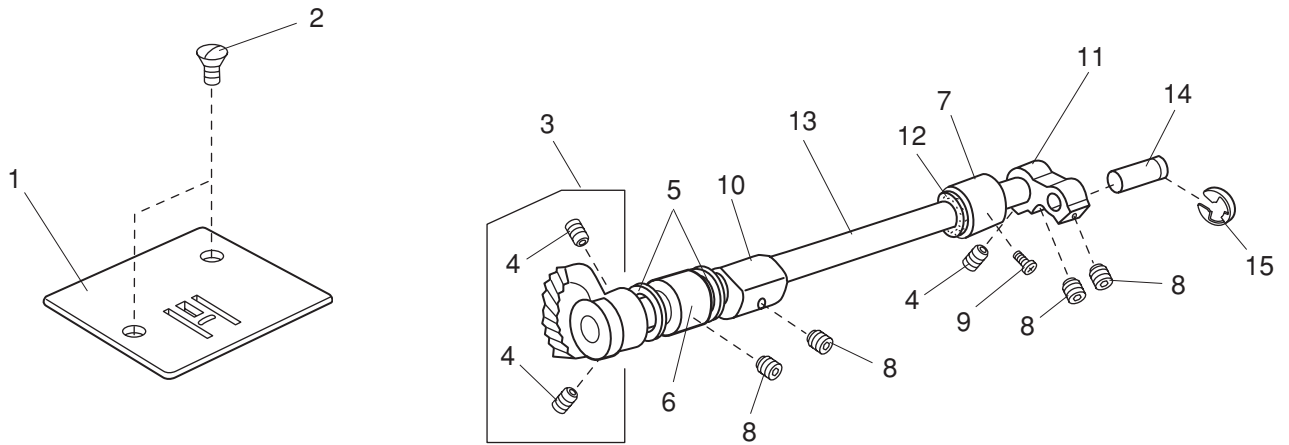
PARTS LIST



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	740602209	Bobbin winder supporter (unit)
8	740003101	Bobbin winder base plate
9	735501005	Bobbin winder arm (unit)
10	000002806	Snap ring E-6
11	740042009	Bobbin winder arm spring
12	745606105	Zigzag mechanism (unit)
13	737011009	Index spring
14	000103808	Setscrew 3x5
15	306108844	Pattern selector dial
16	306107566	Stitch length dial
17	736604301	Feed regulator (unit)
18	735077007	Feed regulating body spring
19	735073003	Plain washer
20	000013800	Snap ring CS-6
21	648010009	Setscrew
22	000160102	Adjustable lock nut 4
23	739020007	Feed regulating rod
24	730045001	Reverse link
25	735074004	SS adjusting screw
26	735076006	SS rod block
27	000071013	Washer 4
28	000172602	Setscrew 5x8
29	670100006	Feed regulator spring
30	742007008	R button
31	739063002	R button spring
32	736015000	R button shaft
33	000014007	Snap ring CS-4

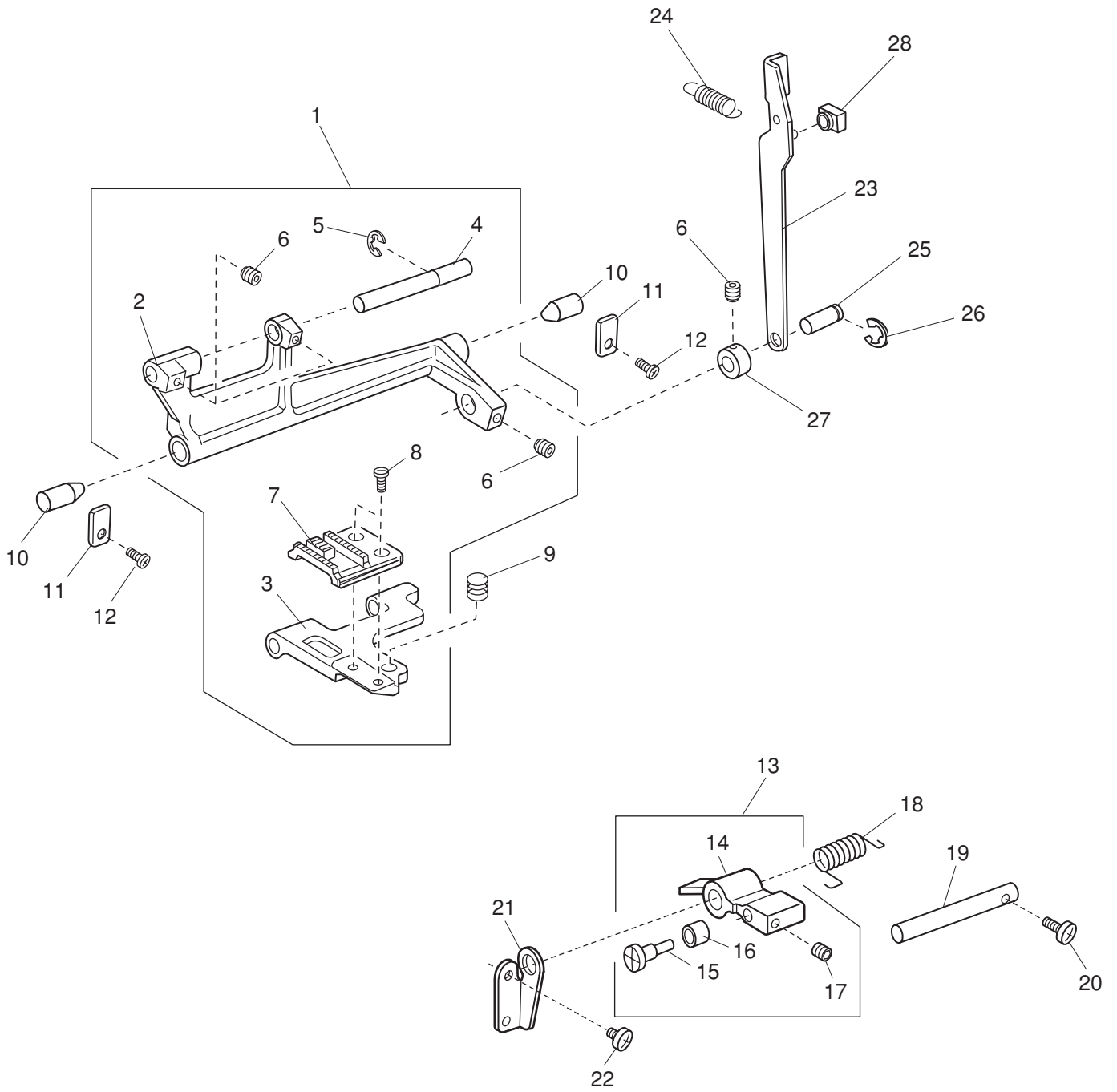
PARTS LIST



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 8-0.5
6	735233003	Bushing
7	735234004	Bushing
8	000111304	Hexagonal socket screw 5x5
9	000172602	Setscrew 5x8
10	735061008	Feed lifting cam
11	639036003	Lower shaft crank arm
12	822070003	Felt
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

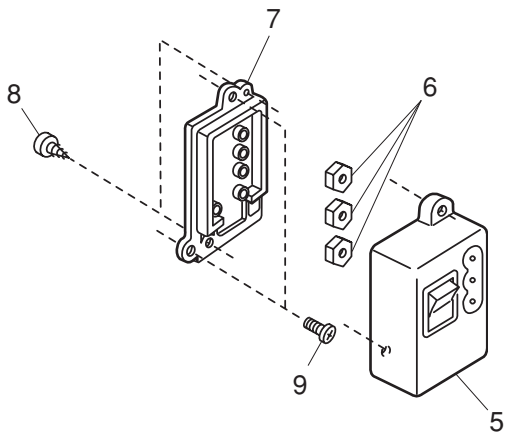
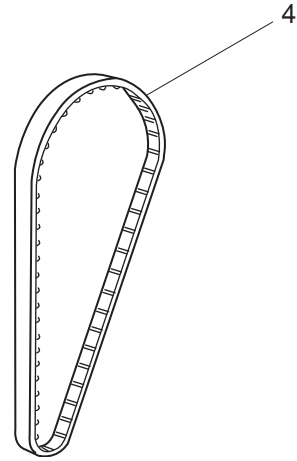
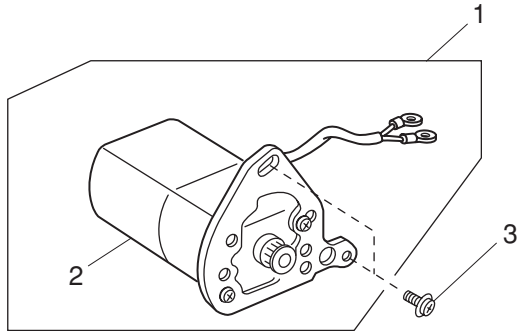
PARTS LIST



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	301608006	Feed lifting arm (unit)
14	301027005	Feed lifting arm
15	735087000	Feed lifting pin
16	735088001	Feed lifting roller
17	000111201	Hexagonal socket screw 4x4
18	735089002	Feed lifting spring
19	735090006	Feed lifting shaft
20	000101703	Setscrew 4x12
21	739022009	Feed lifting shaft holder
22	000081119	Setscrew 4x6
23	743012009	Feed rod
24	743013000	Feed rod spring
25	735071104	Feed rock shaft connecting pin
26	000002806	Snap ring E-6
27	735276008	Ring
28	102141003	Feed regulator slide block

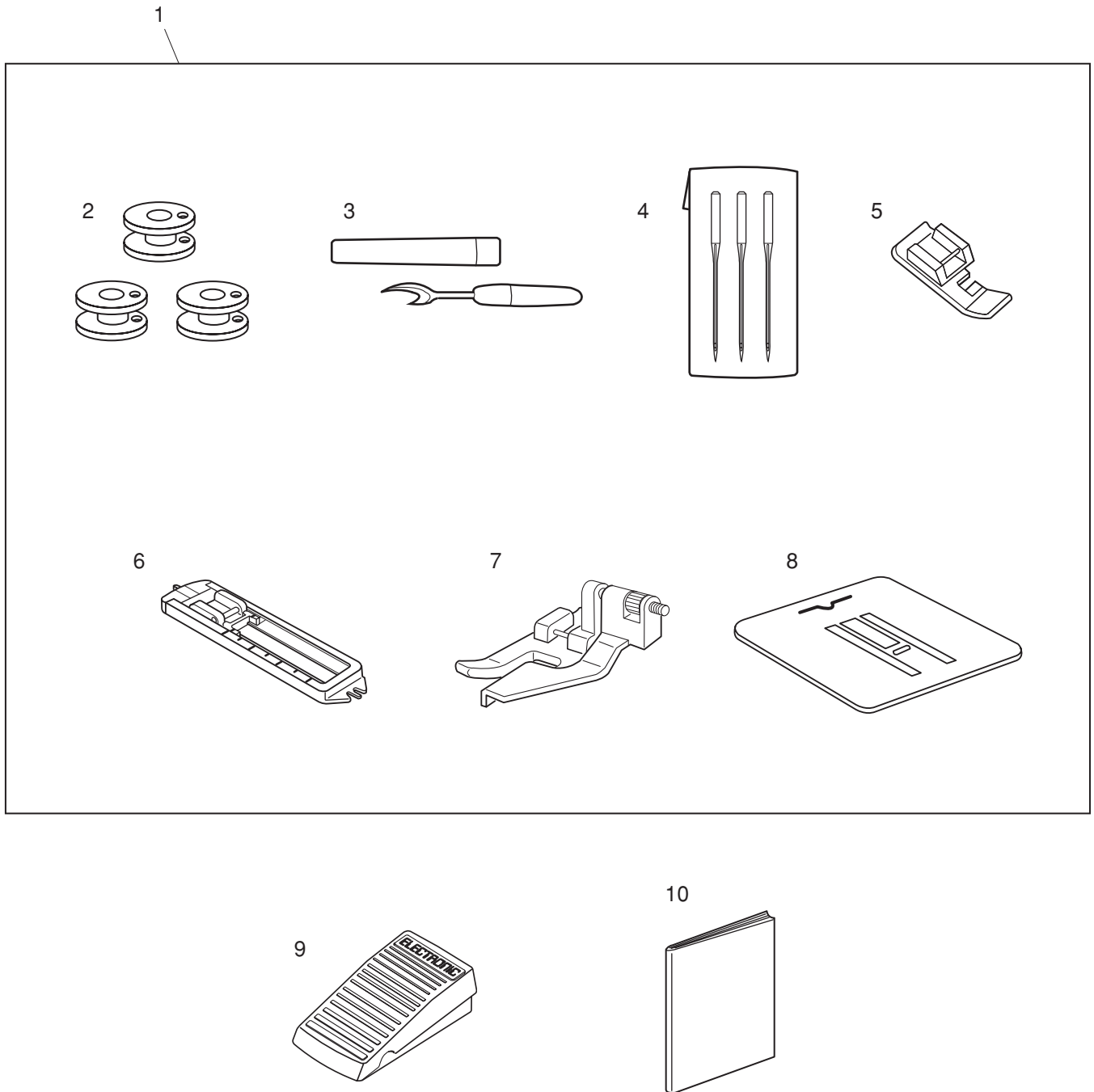
PARTS LIST



PARTS LIST

KEY NO.	PARTS NO.	DESCRIPTION
1	743671002	Motor (unit)
2	025501003	Motor assy
3	000115504	Setscrew TP5x10
4	650166008	Motor timing belt
5	739503308	Machine socket (unit)
6	000060802	Nut
7	739037007	Machine socket cover
8	000107802	Setscrew 3x10
9	000103509	Setscrew 4x10

PARTS LIST



PARTS LIST

KEY NO.	PARTS NO.	DESCRIPTION
1	311870002	Accessory set (unit)
2	102261000	Bobbin
3	647808009	Seam ripper
4	639804000	Needle set (unit)
5	611406002	Zipper foot (unit)
6	639801007	Buttonhole foot (unit)
7	611411000	Blind foot (unit)
8	735801008	Darning plate
9	045501005	Foot control
10	311800171	Instruction book