

# 1. SPECIFICATIONS

No.	Item	Specifications			
1	Model	LS-1340	LS-1341	LS-1342	LS-1342-7
2	Model name	Cylinder-Bed, 1-Needle, Unison Feed, Lockstitch Machine (Standard Hook)	Cylinder-Bed, 1-Needle, Unison Feed, Lockstitch Machine (Large Hook)	Cylinder-Bed, 1-Needle, Unison Feed, Lockstitch Machine with Automatic Thread Trimmer (Large Hook)	
3	Application	For heavy-weight materials			
4	Sewing speed	Max. 2,500 rpm			
5	Needle	SCHMETZ 135 X 17 Nm 100 to 180 Standard : Nm 140	SCHMETZ 135 X 17 Nm 100 to 180 Standard : Nm 160		
6	Thread possible to be sewn	#50 to #8	#40 to #5		#30 to #5
7	Thread possible to be trimmed	_____			#30 to #5
8	Stitch length	Max. 6 mm (normal/reverse feed)			
9	Presser foot lift	Hand lifter : 9 mm Knee lifter : 16 mm			
10	Stitch length adjusting mechanism	By dial			
11	Reverse stitch adjusting method	Lever type			Air cylinder type (with touch-back switch)
12	Thread take-up	Slide thread take-up			
13	Needle bar stroke	36 mm			
14	Alternate foot stroke	2.5 mm to 6.5 mm Slot adjusting type	1 mm to 6.5 mm Alternate foot stroke adjusted by dial		
15	Hook	Full-rotary vertical-axis standard hook (Latch type)	Full-rotary vertical-axis 1.6-fold hook (Cap type)	Full-rotary vertical-axis 1.6-fold hook (Latch type)	
16	Feed mechanism	Ellipse feed			
17	Top and bottom feed actuation mechanism	Timing belt			
18	Thread trimming mechanism	_____			Cam-driven scissors type
19	Lubrication	Central oil wick lubrication by tank (partially by manual)			
20	Lubricating oil	JUKI New Defrix Oil No. 2 (equivalent to ISO VG32)			
21	Cylinder bed diameter	72mm			
22	Free space for sewing	255 x 100 mm			
23	Size of handwheel	V belt effective diameter : $\varnothing$ 93.3 mm Outer diameter : $\varnothing$ 160 mm			
24	Motor	4P, 400W			SC-380

## 2. STANDARD ADJUSTMENT

### (1) Needle entry position

**Standard Adjustment**

**Conditions : Needle bar at lowest dead point  
: Feed amount : 0 mm**

Model	Dimension A
LS-1340	8.5 ±0.1 mm
LS-1341	
LS-1342	5.5 ±0.1 mm
LS-1342-7	

### (2) Longitudinal position of the feed dog

**Standard Adjustment**

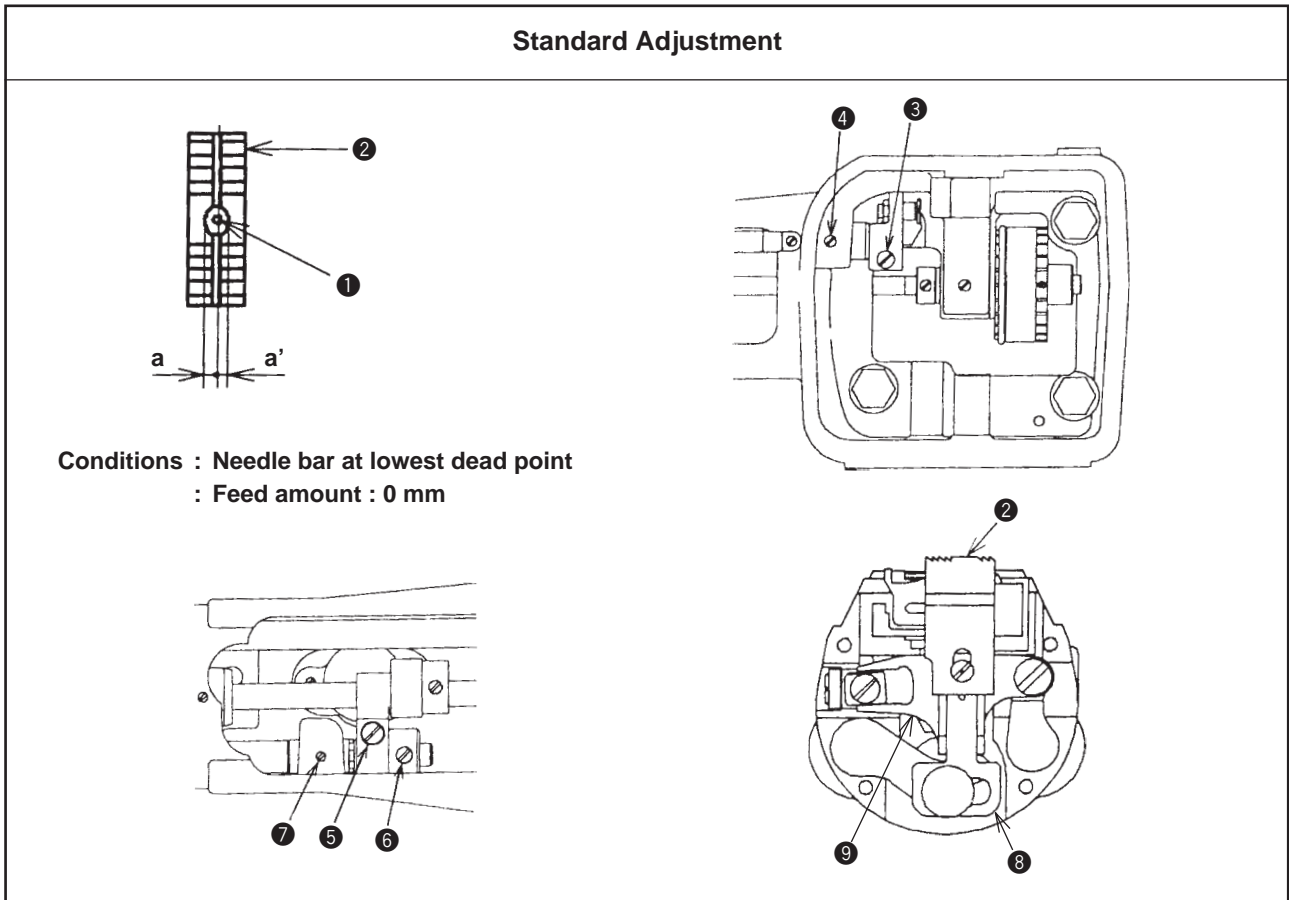
**Conditions : Needle bar at lowest dead point  
: Feed amount : 0 mm**

**A = Clearance between the feed dog and the throat plate when the feed dog travels fully to the front.**

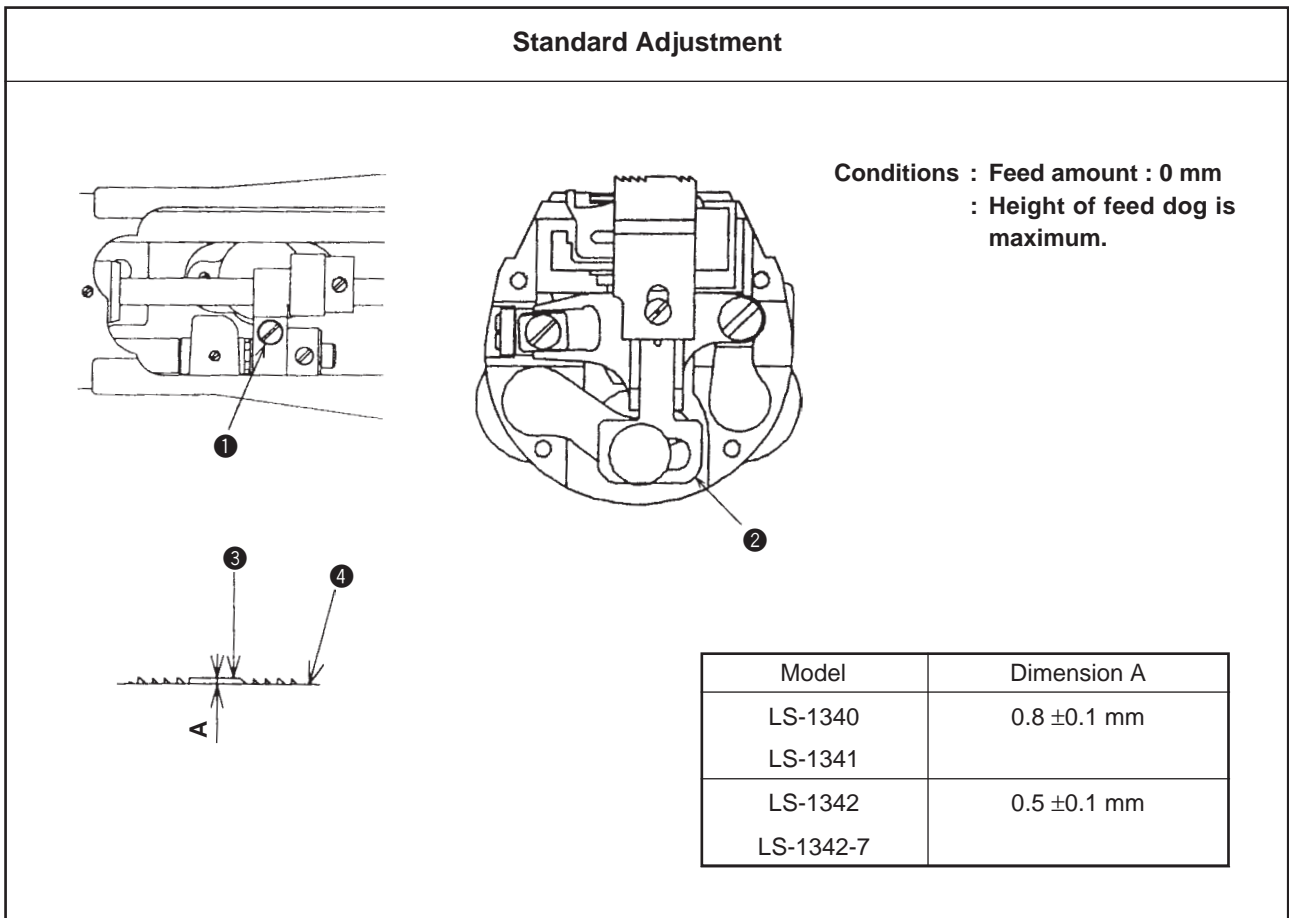
Adjustment Procedures	Results of Improper Adjustment
<ol style="list-style-type: none"> <li>1. Set the stitch dial to “0 mm”.</li> <li>2. Turn the handwheel to bring the needle bar to the lowest dead point of its stroke.</li> <li>3. Loosen clamping screw ❶ in the needle bar rocking rear arm.</li> <li>4. Provide a clearance of dimension A between presser bar ❷ and walking bar ❸, and securely tighten the clamping screw. At this time, adjust the clearance to dimension A at the position where the distance from the top surface of the throat plate to the presser foot is 60 mm in the state that the presser foot is raised.</li> </ol> <p><b>(Caution) Tighten the screw so that the needle bar rocking shaft has no thrust play.</b></p>	<ul style="list-style-type: none"> <li>○ Stitch skipping or needle breakage will result.</li> <li>○ Poorly tensed stitches will result.</li> </ul>

Adjustment Procedures	Results of Improper Adjustment
<ol style="list-style-type: none"> <li>1. Set the stitch dial to “0 mm”.</li> <li>2. Turn the handwheel to bring the needle bar to the lowest dead point of its stroke.</li> <li>3. Loosen clamping screw ❸ in the feed rocker.</li> <li>4. Move the feed base and adjust so that needle ❶ enters in the center of the needle hole in feed dog ❷. Then securely tighten the clamping screw in the feed rocker. (a = a')</li> </ol> <p>Checking method</p> <ol style="list-style-type: none"> <li>1. Set the stitch dial to the maximum.</li> <li>2. Turn the handwheel and check that clearance A in terms of the groove of the throat plate is 1.5 mm when feed dog ❷ travels fully to the front. In addition, make sure that feed dog ❷ does not come in contact with the throat plate at the position where the feed dog travels fully to the rear.</li> </ol> <p><b>(Standard)</b> <b>When the feed amount is maximum, A = approximately 1.5 mm.</b></p>	<ul style="list-style-type: none"> <li>○ The throat plate comes in contact with the feed dog and contacting noise occurs and the throat plate or the feed dog may be damaged.</li> <li>○ Irregular stitches may result.</li> </ul>

### (3) Lateral position of the feed dog



### (4) Height of the feed dog

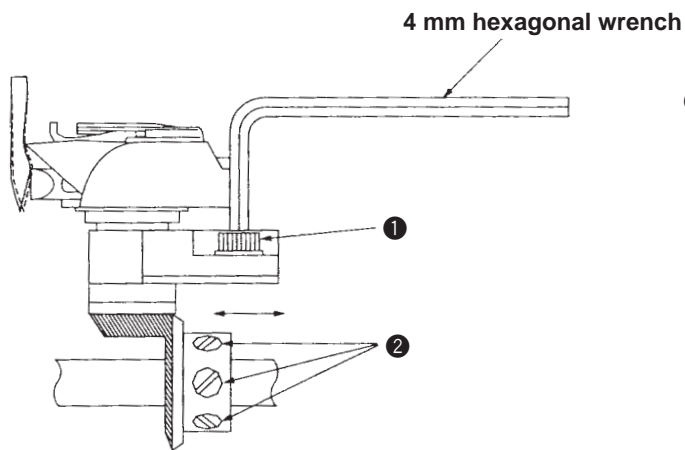


Adjustment Procedures	Results of Improper Adjustment
<ol style="list-style-type: none"> <li>1. Set the stitch dial to “0 mm”.</li> <li>2. Remove throat plate and throat plate base.</li> <li>3. Loosen setscrew ③ in the feed rocker shaft crank.</li> <li>4. Loosen setscrew ④ in the feed rocker shaft rear bushing.</li> <li>5. Loosen setscrew ⑤ in the vertical feed arm.</li> <li>6. Loosen setscrew ⑥ in the vertical feed shaft thrust collar.</li> <li>7. Loosen setscrew ⑦ in the vertical feed rocker shaft bushing.</li> <li>8. Turn the handwheel to bring the needle bar to the lowest dead point of its stroke.</li> <li>9. Move the feed rocker shaft bushing and the vertical feed rocker shaft bushing. Slightly move horizontal feed base ⑨ and feed base ⑧, and adjust so that needle ① enters in the center of the needle hole of feed dog ②. (a = a')</li> <li>10. After the adjustment, securely tighten the setscrews.</li> </ol>	<ul style="list-style-type: none"> <li>○ Stitch skipping or thread breakage will result.</li> <li>○ Poorly tensed stitches will result.</li> <li>○ Needle breakage will result.</li> </ul>

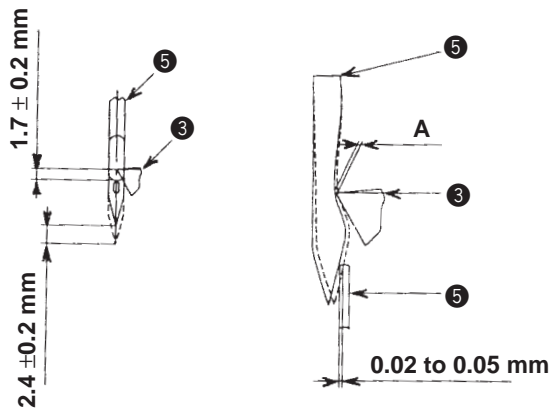
Adjustment Procedures	Results of Improper Adjustment
<ol style="list-style-type: none"> <li>1. Set the stitch dial to “0 mm”.</li> <li>2. Turn the handwheel to bring the height of the feed dog to the maximum. (Bring the needle bar to the lowest dead point of its stroke.)</li> <li>3. Loosen setscrew ① in the vertical feed bar shaft arm, move feed base ② up or down and adjust feed dog ③ from top surface ④ of the throat plate (center section) to the dimension A. Then securely tighten the setscrew.</li> </ol>	<p>When the height of the feed dog is higher than the specified value :</p> <ul style="list-style-type: none"> <li>○ Stitch pitch becomes larger than the scale of the feed dial.</li> <li>○ Balloon stitches will result.</li> <li>○ Return of sewing product will occur.</li> </ul> <p>When the height of the feed dog is lower than the specified value :</p> <ul style="list-style-type: none"> <li>○ Stitch pitch becomes smaller than the scale of the feed dial.</li> <li>○ Feed force will be deteriorated.</li> </ul>

## (5) Needle-to-hook timing

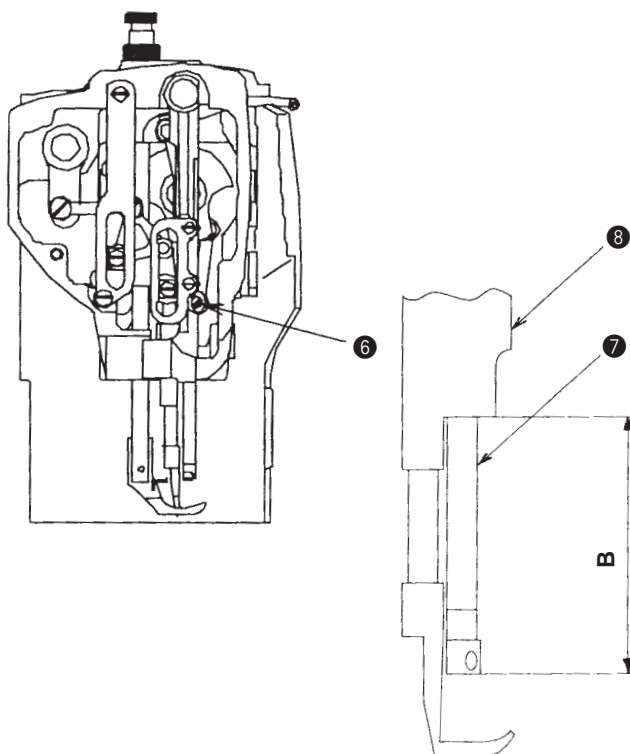
### Standard Adjustment



Conditions : Feed amount : 0 mm



Model	Dimension A
LS-1340	0.01 to 0.06 mm
LS-1341	0 to 0.05 mm
LS-1342	
LS-1342-7	

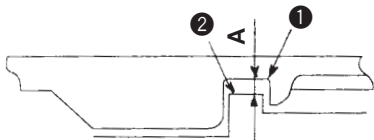


Model	Dimension B
LS-1340	60.3 mm
LS-1341	59.3 mm
LS-1342	61.4 mm
LS-1342-7	

Adjustment Procedures	Results of Improper Adjustment
<p><b>1) Standard of the lowest dead point of the needle bar</b></p> <ol style="list-style-type: none"> <li>1. Set the stitch dial to 0 mm.</li> <li>2. Turn the handwheel to bring needle bar ⑦ to the lowest dead point of its stroke.</li> <li>3. Remove the face plate, loosen clamping screw ⑥ in the needle bar holder, move needle bar ⑦ up or down and adjust the distance from the lower end of needle bar frame ⑧ to the lower end of the needle bar to dimension B. Then tighten clamping screw ⑥ in the needle bar holder.</li> </ol> <p><b>2) Clearance between the needle and the blade point of the hook</b></p> <ol style="list-style-type: none"> <li>1. Set the stitch dial to 0 mm.</li> <li>2. Remove the throat plate base cover.</li> <li>3. Loosen three setscrews ② in the hook driving shaft bevel gear and turn the handwheel to raise needle bar ⑦ by 2.4 mm from the lowest dead point of the needle bar.</li> <li>4. Loosen two setscrews ① in the hook driving shaft saddle, move the hook driving shaft in the direction of arrow and adjust the clearance between needle ⑤ and blade point ③ of the hook to dimension A.</li> </ol> <p><b>3) Needle-to-blade point of hook timing</b></p> <ol style="list-style-type: none"> <li>1. Raise needle bar ⑦ by 2.4 mm from its lowest dead point, turn the hook so that blade point ③ of the hook is aligned with the center of needle ⑤, and securely tighten three setscrews ②.</li> <li>2. At this time, the distance between blade point ③ of the hook and the top end of the needle eyelet is to be 1.7 mm. If the distance has not been obtained, loosen setscrew ⑥ in the needle bar holder and perform fine adjustment. Then securely tighten setscrew ⑥ in the needle bar holder.</li> </ol> <p><b>4) Adjusting the needle guard of the hook</b></p> <p>Bend needle guard ④ and adjust so that the needle guard comes in contact 0.02 to 0.05 mm with the needle.</p> <p><b>(Caution) When the hook shaft saddle is shifted, the backlash of the bevel gear will change, It is necessary to adjust the axial direction of the hook driving shaft bevel gear.</b>  <b>(Backlash : 1 degree)</b></p>	<ul style="list-style-type: none"> <li>○ Stitch skipping or thread breakage will result</li> <li>○ Needle breakage will result</li> <li>○ Irregular stitches will result.</li> </ul>

## (6) Height of the hook

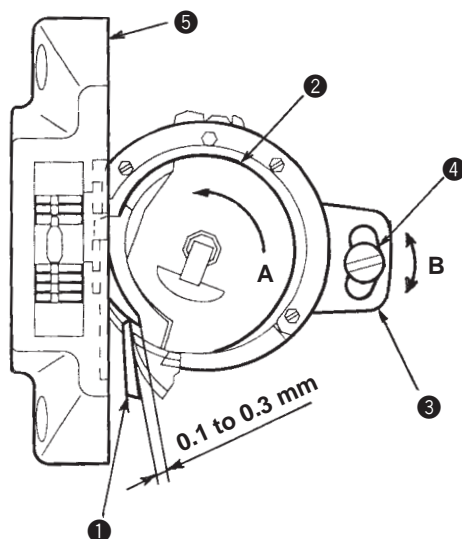
### Standard Adjustment



Model	Dimension A
LS-1340	1.7 to 2.2 mm
LS-1341	1.4 to 2.0 mm
LS-1342	
LS-1342-7	

## (7) Adjusting the inner hook guide

### Standard Adjustment



**Conditions** : When the inner hook guide travels to its back end.  
 : Press the inner hook stopper to the groove in the throat plate.



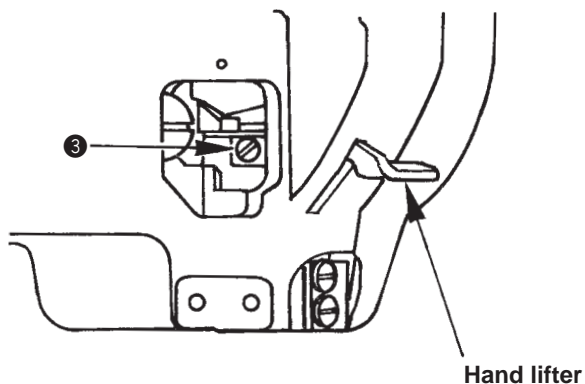
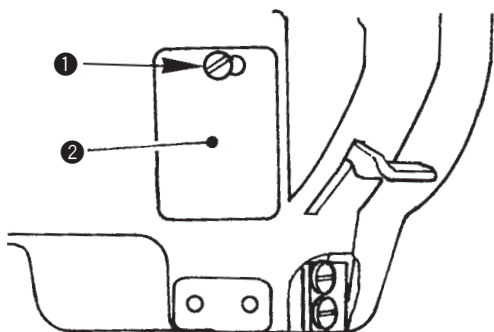
Adjustment Procedures	Results of Improper Adjustment
<p>1. Clearance provided between inner hook stopping section ❶ in the throat plate and top surface ❷ of inner hook stopper section is dimension A.</p> <p><b>(Caution)</b></p> <ol style="list-style-type: none"> <li>1. It is not possible to change the height of the hook of all models.</li> <li>2. When dimension A is outside the range, Replace the parts since there is a possibility that the parts around the hook may be defective.</li> <li>3. When there is a play in the axial direction of the hook, replace the thrust plate which is located between the hook shaft bushing and the hook shaft bevel gear and adjust the play. (For the kind of the thrust plate, refer to “6. Selective parts and consumable parts”.</li> </ol>	<ul style="list-style-type: none"> <li>○ Stitch skipping or thread breakage will result.</li> <li>○ Needle breakage will result.</li> <li>○ Irregular stitches will result.</li> </ul>

Adjustment Procedures	Results of Improper Adjustment
<ol style="list-style-type: none"> <li>1. Turn the handwheel to bring inner hook guide ❶ to its back end position.</li> <li>2. Turn inner hook ❷ in the reverse direction of rotation of the hook (in the direction of arrow mark A) and fit the inner hook stopper to the inner hook stopping section in throat plate ❺.</li> <li>3. Loosen setscrew ❹ in the inner hook guide arm, move inner hook guide adjusting plate ❸ in the direction of arrow mark B and adjust the clearance between inner hook guide ❶ and the protruding section of inner hook ❷ to 0.1 to 0.3 mm.</li> <li>4. After the adjustment, securely tighten setscrew ❹ in the inner hook guide arm.</li> </ol> <p><b>(Caution) When attaching throat plate ❺ again in case of replacing gauge or the like, re-check the clearance of inner hook guide ❶.</b></p>	<p>When the clearance is larger than the specified value :</p> <ul style="list-style-type: none"> <li>○ Loose stitches or thread breakage will result.</li> </ul> <p>When the clearance is smaller than the specified value :</p> <ul style="list-style-type: none"> <li>○ Inner hook or inner hook guide may be damaged.</li> </ul>

## (8) Lift of the presser foot

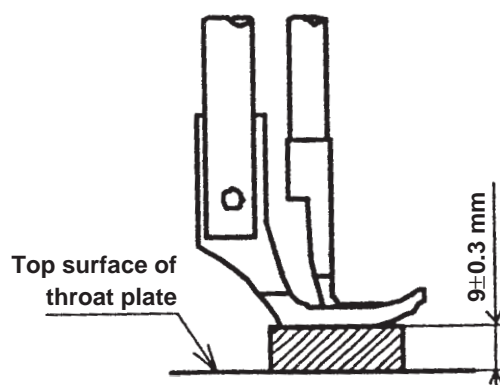
### Standard Adjustment

#### 1) Hand lifter

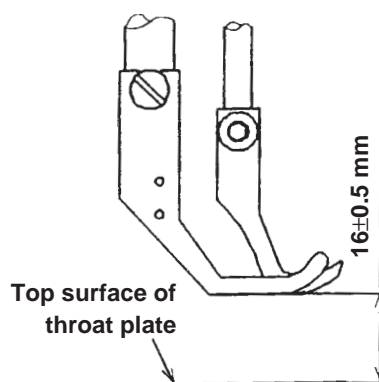
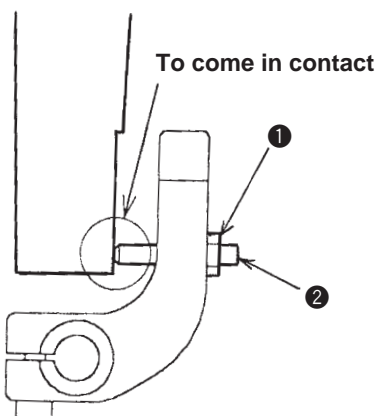


#### Condition

- State that the hand lifter is raised



#### 2) Knee lifter

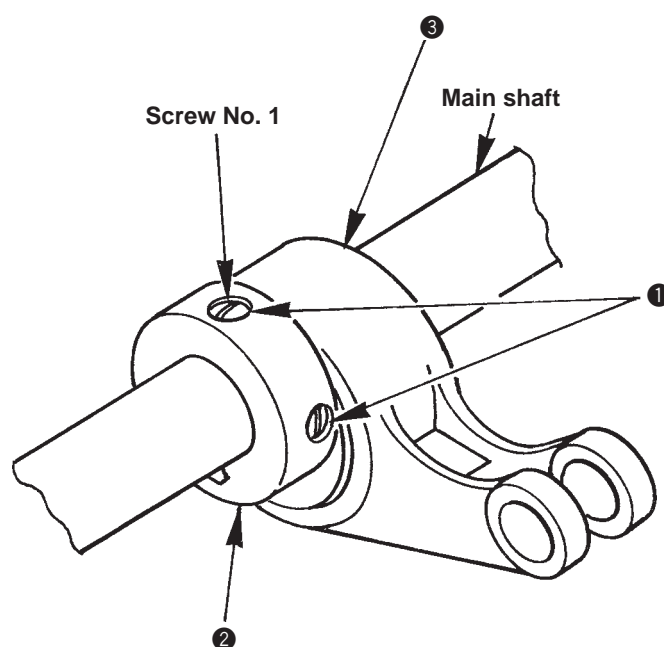


Adjustment Procedures	Results of Improper Adjustment
<ol style="list-style-type: none"> <li>1. Loosen setscrew ❶ in the side cover located on the antioperator's side of the machine arm and remove side cover ❷.</li> <li>2. Loosen clamping screw ❸ in the presser bar bracket to set the hand lifter to the raised state.</li> <li>3. Adjust the lifting amount to <math>9 \pm 0.3</math> mm. At this time, the adjustment can be easily performed when inserting a thing of 9 mm thick between the top surface of the throat plate and the bottom face of the presser foot.</li> <li>4. Tighten clamping screw ❸ in the presser bar bracket. Move the presser foot to the left or the right and tighten the screw in the state that the presser foot does not interfere with the walking foot.</li> <li>5. Remove the thing inserted between the top surface of the throat plate and the bottom face of the presser foot, and attach side cover ❷.</li> </ol>	<p>When the lifting amount is higher than the specified value :</p> <ul style="list-style-type: none"> <li>○ The presser foot is held raised from the top surface of the throat plate even when the hand lifter is returned to its home position.</li> </ul> <p>When the lifting amount is lower than the specified value :</p> <ul style="list-style-type: none"> <li>○ The presser foot is not sufficiently raised and the working property may be deteriorated.</li> </ul>
<ol style="list-style-type: none"> <li>1. Remove the knee press plate, loosen the thumbscrew, remove the latch and tilt the machine arm.</li> <li>2. Loosen stopper screw nut ❶ and adjust the lifting amount by the screwing amount of stopper screw ❷. Adjust the height from the top surface of the throat plate to the bottom face of the presser foot to <math>16 \pm 0.5</math> mm.</li> <li>3. Taking care not to move stopper screw ❷, tighten stopper screw nut ❶. <ul style="list-style-type: none"> <li>○ Tighten stopper screw ❷    Lifting amount is decreased.</li> <li>○ Loosen stopper screw ❷    Lifting amount is increased.</li> </ul> </li> </ol>	<p>When the lifting amount is higher than the specified value :</p> <ul style="list-style-type: none"> <li>○ The top end of the needle bar interferes with the walking foot and the walking foot may be damaged when the presser foot is raised.</li> </ul> <p>When the lifting amount is lower than the specified value :</p> <ul style="list-style-type: none"> <li>○ The presser foot is not sufficiently raised and the working property may be deteriorated.</li> </ul>

## (9) Feed cam timing

### Standard Adjustment

#### 1) Horizontal feed cam timing



**Conditions :** Feed amount : maximum  
: Needle bar at lowest dead point (LS-1340 and LS-1341)  
: Needle-to-hook timing : (LS-1342 and LS-1342-7)

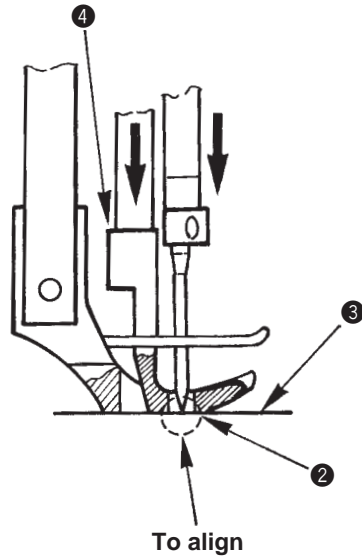
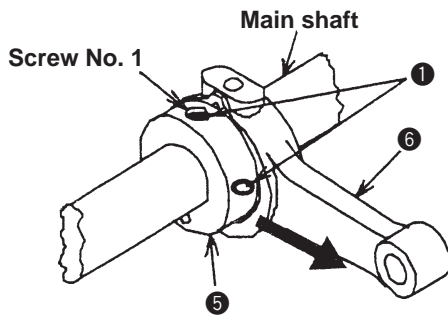
Adjustment Procedures	Results of Improper Adjustment
<p><b>1) Horizontal feed cam timing</b></p> <ul style="list-style-type: none"> <li>○ In case of LS-1340 and LS-1341 :</li> <li>1. Set the stitch dial to the maximum.</li> <li>2. Loosen two setscrews ❶ in the horizontal feed eccentric cam.</li> <li>3. Turn the handwheel to bring the needle bar to the lowest dead point of its stroke.</li> <li>4. Turn feed eccentric cam ❷ and adjust the timing so that the feed dog no longer moves even when the reverse feed control lever is moved.</li> <li>5. Securely tighten setscrews ❶ in the horizontal feed eccentric cam.</li> </ul> <p><b>(Standard) The setscrew No. 1 in the horizontal feed eccentric cam faces almost right above at the lowest dead point of the needle bar.</b></p> <ul style="list-style-type: none"> <li>○ In case of LS-1342 and LS-1342-7 :</li> <li>1. Set the stitch dial to the maximum.</li> <li>2. Loosen two setscrews ❶ in the horizontal feed eccentric cam.</li> <li>3. Turn the handwheel and adjust the needle bar to the position of the hook adjusting timing ((5) Needle-to-hook timing).</li> <li>4. Turn feed eccentric cam ❷ and adjust the timing so that the feed dog no longer moves even when the reverse feed control lever is moved.</li> <li>5. Securely tighten setscrews ❶ in the horizontal feed eccentric cam.</li> </ul> <p><b>(Caution)</b></p> <ol style="list-style-type: none"> <li><b>1. If the cam slips in the axial direction at the time of adjustment, torque becomes heavy. So, be careful.</b></li> <li><b>2. Adjust the horizontal feed rod so that it comes almost in the center between the edge of horizontal feed cam lid ❸ and that of horizontal feed eccentric cam.</b></li> <li><b>3. After adjusting the horizontal feed timing, re-adjust the vertical feed timing.</b></li> </ol>	<ul style="list-style-type: none"> <li>○ Pitch error at high or low speed will be deteriorated.</li> <li>○ Thread tension will vary.</li> <li>○ Stitch tightness at normal and reverse feed will vary.</li> </ul>

## Standard Adjustment

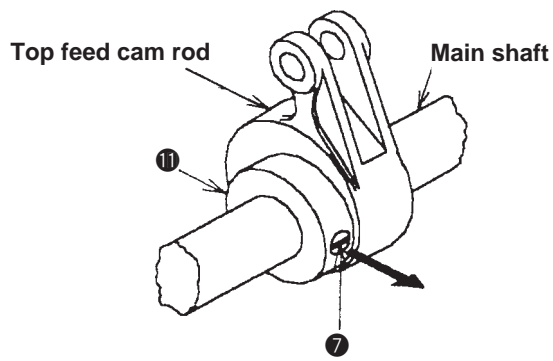
### 2) Top feed cam timing

- In case of LS-1340 and LS-1341

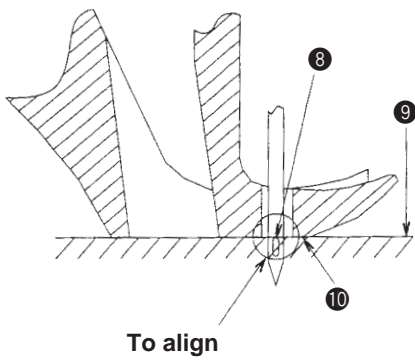
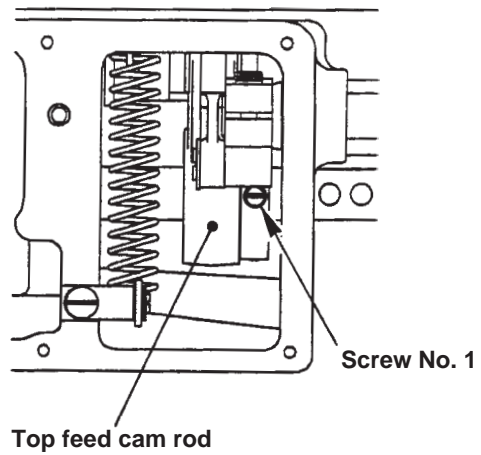
Conditions : Feed amount : 6 mm  
 : When needle comes down.



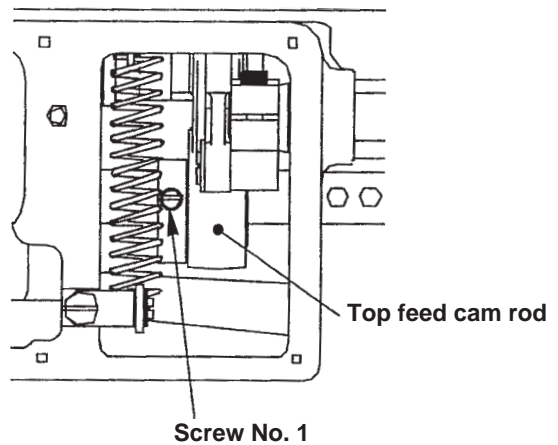
- In case of LS-1342 and LS-1342-7



- In case of LS-1342-7



- In case of LS-1342



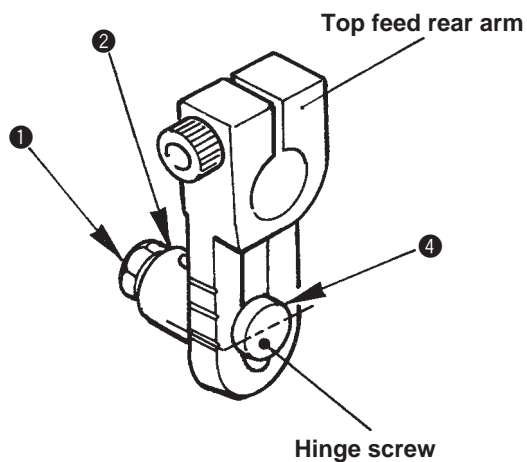


## (10) Feed motion

### Standard Adjustment

#### 1) Amount of alternate vertical movement

- In case of LS-1340 and LS-1341



#### Table of sewing speed

- In case of LS-1340 and LS-1341

Amount of alternate vertical movement of the walking foot and presser foot	Stitch length : 6 mm or less
Less than 3 mm	2500 rpm
3 mm to less than 4 mm	2000 rpm
4 mm to less than 6.5 mm	1600 rpm

- In case of LS-1342 and LS-1342-7, refer to “3. (2)-1) Installing position of the detection switch of the amount of alternate vertical movement”.

**Standard :** When hinge screw ④ is in the lowest point.

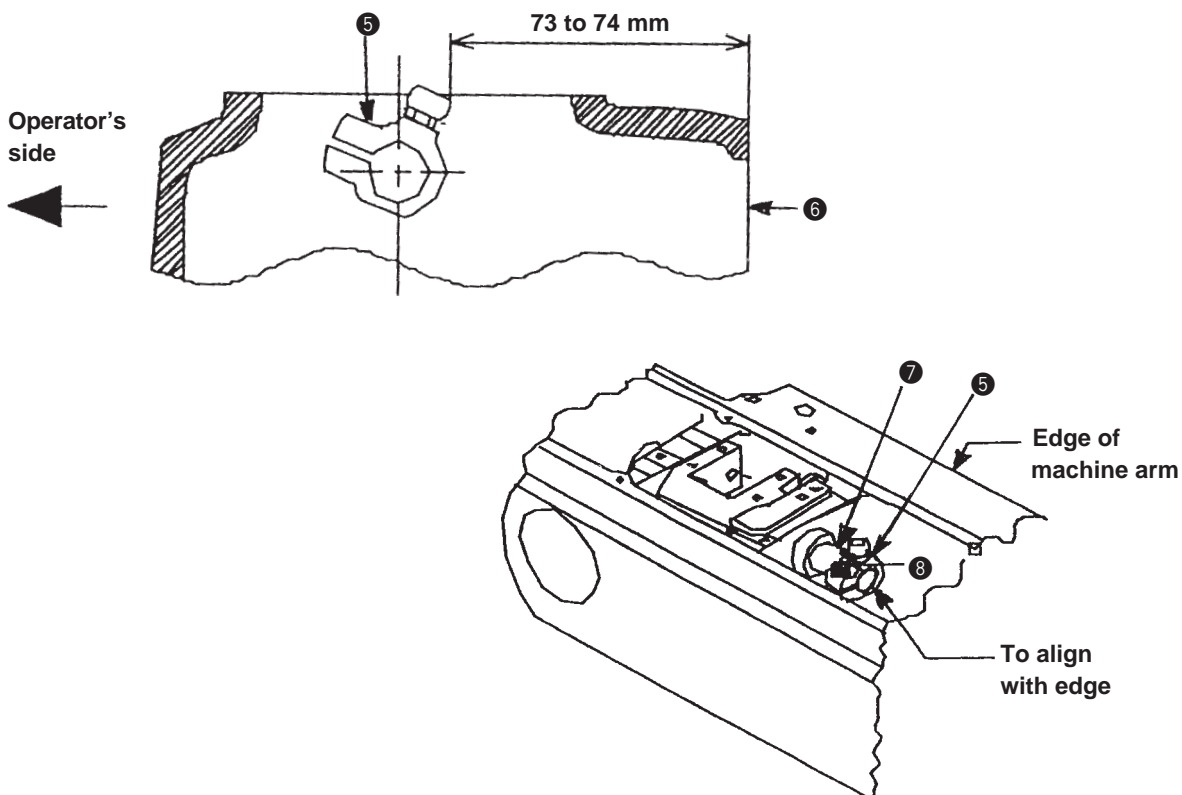
**Standard of amount of alternate vertical movement**

: Upper engraved marker line : Approx. 5 mm

: Medium engraved marker line : Approx. 4 mm

: Lower engraved marker line : Approx. 3 mm

- In case of LS-1342 and LS-1342-7



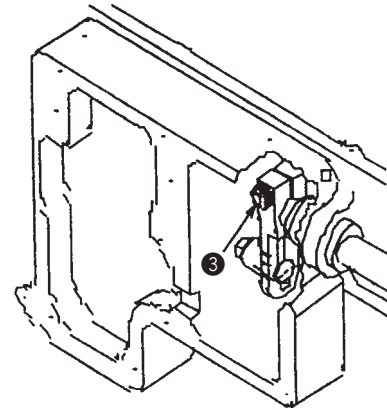
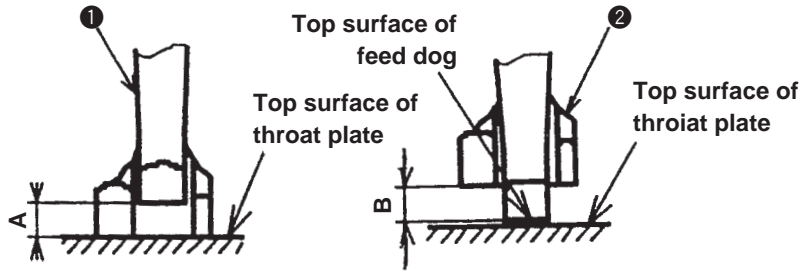




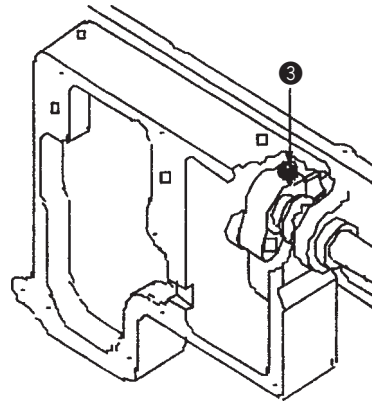
### Standard Adjustment

#### 2) Alternate momentum

Conditions : Feed amount : 0 mm  
: Amount of alternate vertical movement : standard



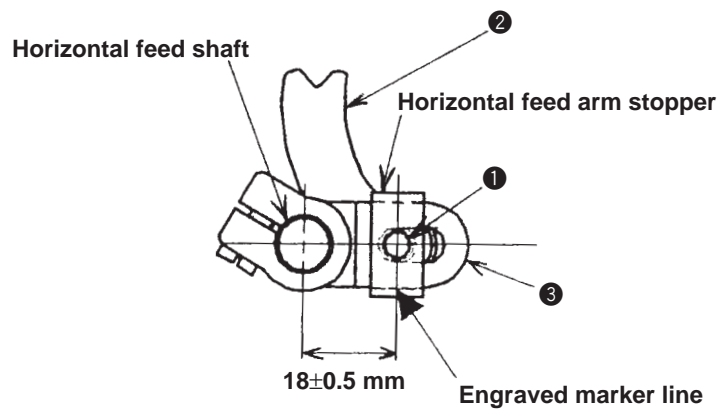
○ In case of LS-1340 and LS-1341



○ In case of LS-1342 and LS-1342-7

#### (11) Horizontal feed arm

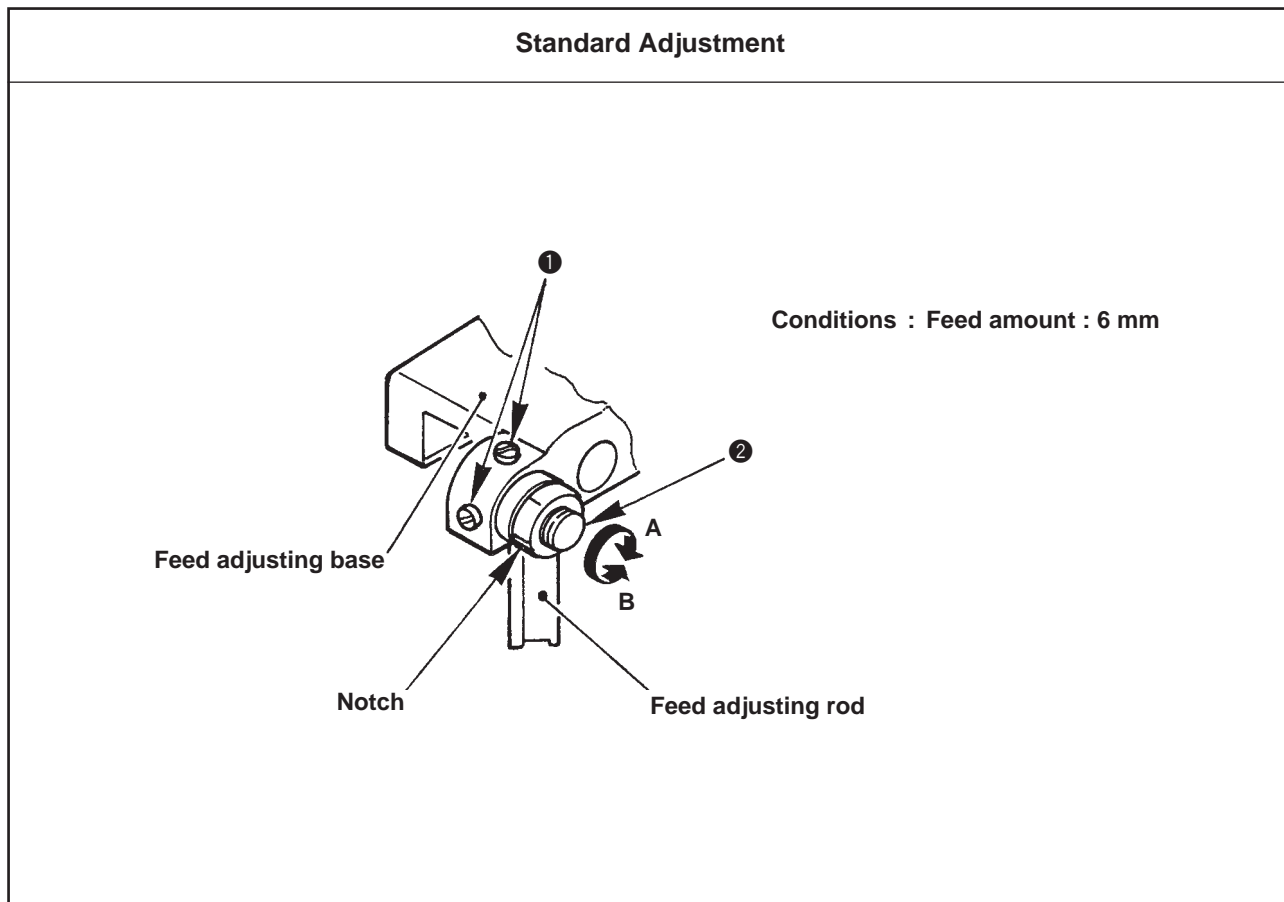
### Standard Adjustment



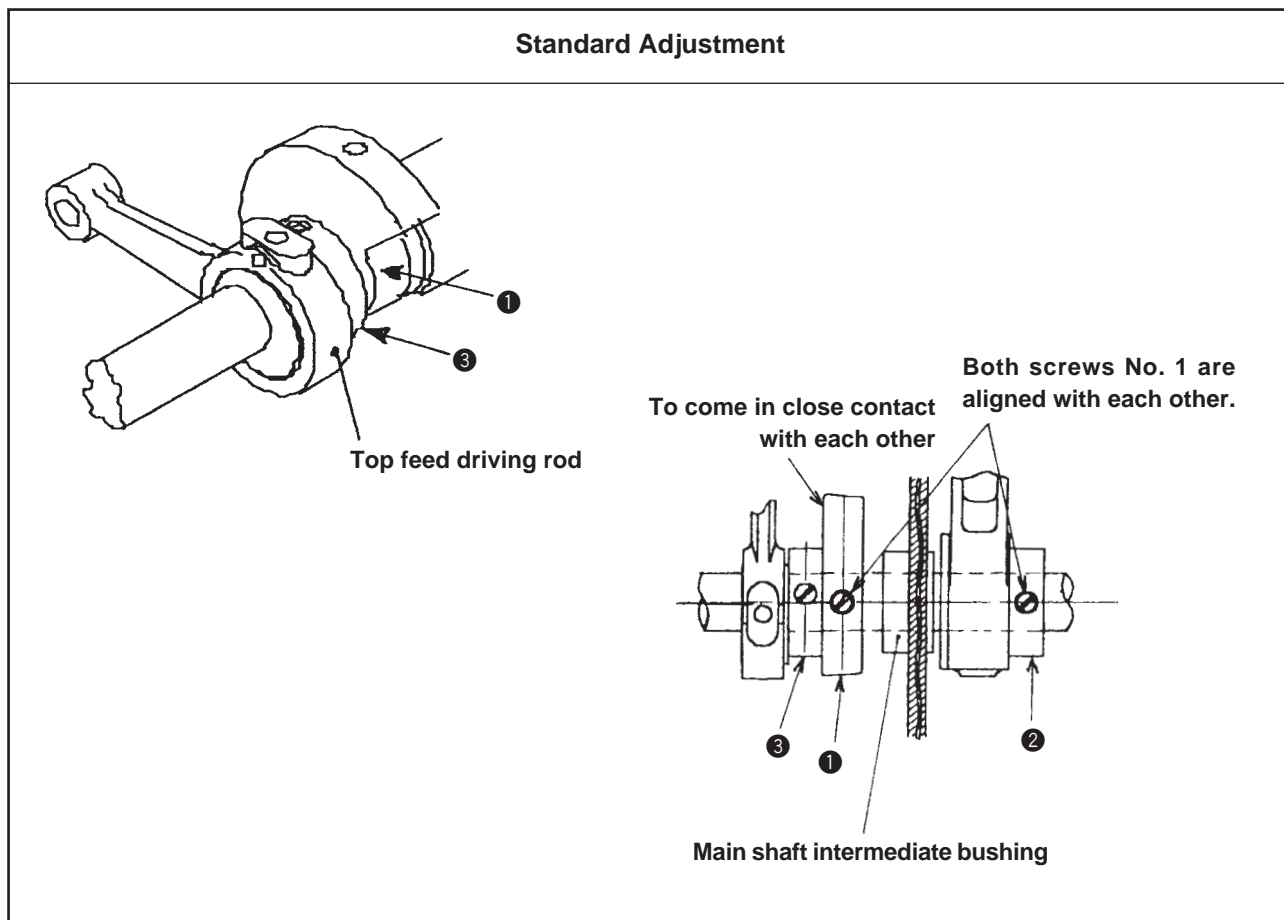
Adjustment Procedures	Results of Improper Adjustment
<p>2) Alternate momentum</p> <ol style="list-style-type: none"> <li>1. Set the stitch dial to "0".</li> <li>2. Turn the handwheel to make sure that the amount of alternate vertical movement of walking foot ❶ and presser foot ❷ is almost equal.</li> <li>3. When the amount is not equal, loosen setscrew ❸ in the top feed rear arm and adjust so that the amount should be equal. Adjust the amount almost to A = B.</li> </ol> <ul style="list-style-type: none"> <li>○ When the amount of alternate vertical movement of the walking foot is larger than that of the presser foot : <ol style="list-style-type: none"> <li>1) Loosen setscrew ❸ in the top feed rear arm in the state that walking foot ❶ is raised a little, press walking foot ❶ to the feed dog.</li> <li>2) Re-tighten setscrew ❸ in the top feed rear arm and turn the handwheel to make sure of the amount of alternate vertical movement of the walking foot and the presser foot.</li> </ol> </li> </ul>	<p>Adjust the vertical stroke of the walking foot so that it is larger than that of the presser foot in accordance with the sewing products.</p> <ul style="list-style-type: none"> <li>○ Sewing sponge material or the like</li> <li>○ Sewing material with overlapped sections</li> </ul> <p>When the alternative vertical strokes of the walking foot and presser foot are considerably different :</p> <ul style="list-style-type: none"> <li>○ The stitch pitch is different from the value set by the dial.</li> <li>○ Decrease the number of revolution of the motor a little since the feed efficiency is decreased.</li> </ul>

Adjustment Procedures	Results of Improper Adjustment
<ol style="list-style-type: none"> <li>1. Loosen hinge screw ❶ in the horizontal feed arm.</li> <li>2. Move horizontal feed connecting rod ❷ so that the distance from the center of the horizontal feed shaft to that of the hinge screw is <math>18 \pm 0.5</math> mm and tighten the nut.</li> <li>3. Turn the handwheel to check the needle sway.</li> </ol> <p><b>(Standard) The engraved marker line on horizontal feed arm ❸ aligns with the center of the hinge screw.</b></p>	

**(12) Stitch length of normal/reverse feed**



**(13) Balancer (LS-1340 and LS-1341 only)**



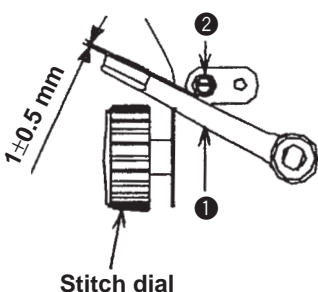
Adjustment Procedures	Results of Improper Adjustment
<p>1. Set the stitch dial to “6 mm”.</p> <p>2. Loosen two setscrews ❶ in the feed adjusting eccentric pin.</p> <p>3. Turn feed adjusting eccentric pin ❷ to adjust the stitch length.</p> <ul style="list-style-type: none"> <li>○ Direction A reverse feed pitch is increased.</li> <li>○ Direction B normal feed pitch is increased.</li> </ul> <p>4. After the adjustment, securely tighten two setscrews ❶ in the feed adjusting eccentric pin.</p> <p><b>(Standard) When the direction of the notch of feed adjusting eccentric pin ❷ is set to the right sideways, the feed amount of normal and reverse feeds are nearly the same.</b></p>	<ul style="list-style-type: none"> <li>○ Respective stitch lengths of normal and reverse feeds do not match.</li> </ul>

Adjustment Procedures	Results of Improper Adjustment
<p>1. Turn the handwheel to face the screw No. 1 in horizontal feed cam ❷ directly above.</p> <p>2. Adjust so that the screw No. 1 in balancer ❶ is aligned with the screw No. 1 in horizontal feed cam ❷, and securely tighten the setscrews.</p> <p>At this time, the edge of top feed cam ❸ comes in close contact with that of balancer ❶.</p>	<ul style="list-style-type: none"> <li>○ Vibration is increased.</li> </ul>

### (14) Position of the reverse feed control lever

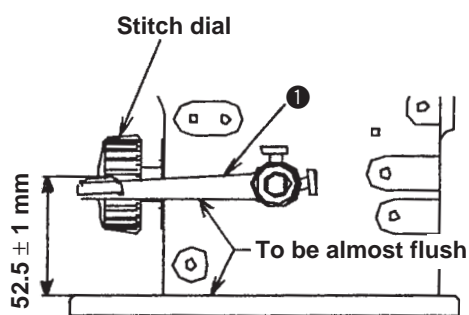
**Standard Adjustment**

○ In case of LS-1342-7

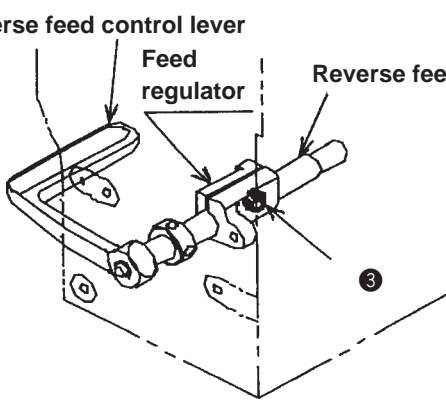


Stitch dial

○ In case of LS-1340, LS-1341 and LS-1342



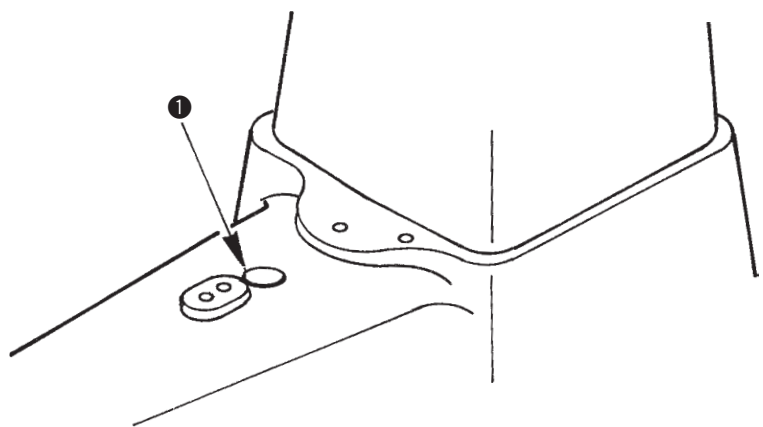
Stitch dial



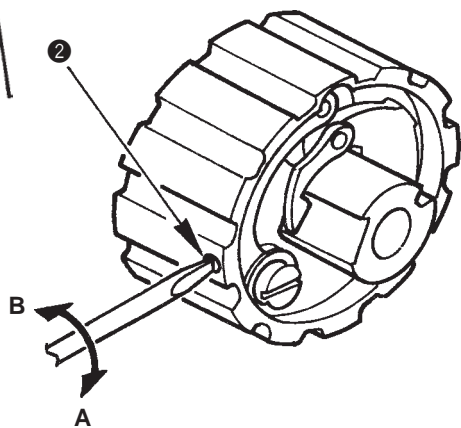
Reverse feed control lever  
Feed regulator  
Reverse feed lever shaft

### (15) Safety clutch

**Standard Adjustment**



1



2

A B

Adjustment Procedures	Results of Improper Adjustment
<p>○ In case of LS-1342-7</p> <ol style="list-style-type: none"> <li>1. Set the stitch dial to the maximum.</li> <li>2. At this time, loosen hexagon headed bolt ③ in the feed regulator to adjust so that a clearance of <math>1 \pm 0.5</math> mm is provided between reverse feed control lever ① and reverse feed control lever stopper ②.</li> </ol> <p>○ In case of LS-1340, LS-1341 and LS-1342</p> <ol style="list-style-type: none"> <li>1. Set the stitch dial to “0 mm”.</li> <li>2. At this time, loosen hexagon headed bolt ③ in the feed regulator to adjust so that the joint face of the machine arm and bed is almost flush (<math>52.5 \pm 1</math> mm) with reverse feed control lever ①.</li> </ol> <p><b>(Caution) Check that reverse feed control lever ① does not interfere with the machine bed or machine arm when the stitch dial is set to the maximum.</b></p>	<p>When the position of the reverse feed control lever is low :</p> <ul style="list-style-type: none"> <li>○ Reverse feed control lever interferes with the machine bed and the stitch length of the reverse feed stitching will be decreased.</li> </ul> <p>When the position of the reverse feed control lever is high :</p> <ul style="list-style-type: none"> <li>○ Reverse feed control lever interferes with the stopper or the machine arm and stitch length of the normal feed stitching will be decreased.</li> </ul>

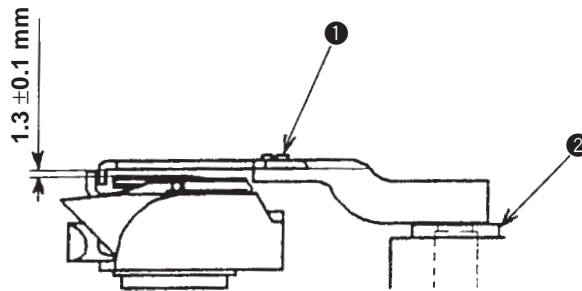
Adjustment Procedures	Results of Improper Adjustment
<p>The safety clutch functions when an excessive load is applied to the hook driving shaft or the like during sewing. When the safety clutch functions, the hook will not rotate even if turning the handwheel, and the hook driving shaft sprocket wheel only will run idle since the power is not transmitted to the hook driving shaft.</p> <p>○ Resetting procedure</p> <ol style="list-style-type: none"> <li>1. Checking the moving part of the sewing machine, and look for and remove the cause which the safety clutch has functioned.</li> <li>2. Pressing push button ① located on the top surface of the machine bed, strongly turn the handwheel in the reverse direction of rotation.</li> <li>3. Resetting procedure completes when the handwheel cannot be turned with “click”.</li> </ol> <p>○ Adjusting the working torque of the safety clutch</p> <ol style="list-style-type: none"> <li>1. Tilt the machine head.</li> <li>2. Turn torque release adjusting screw ② located at the periphery of hook driving shaft sprocket wheel to adjust the torque release. <ul style="list-style-type: none"> <li>○ Direction A Working torque increases.</li> <li>○ Direction B Working torque decreases.</li> </ul> </li> </ol>	

### 3. STANDARD ADJUSTMENT OF THREAD TRIMMER COMPONENTS (LS-1342-7)

#### (1) Thread trimmer device

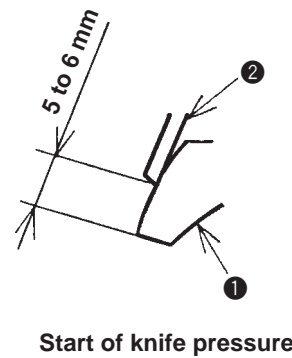
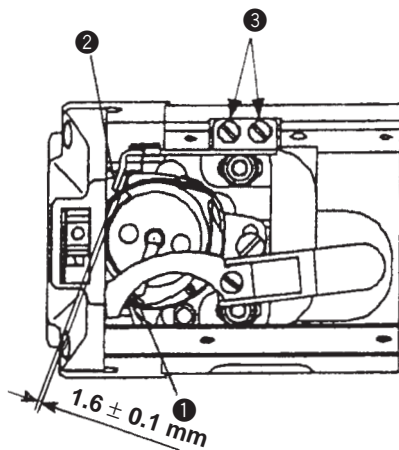
##### Standard Adjustment

##### 1) Vertical position of the moving knife

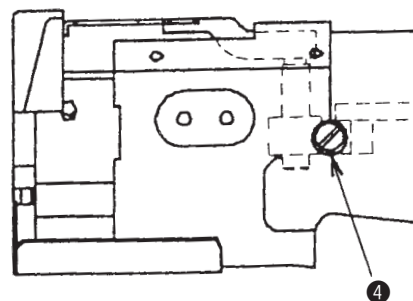
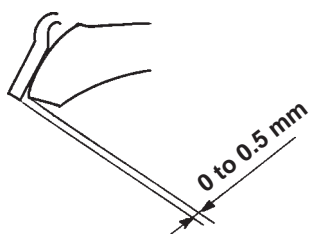


For the selective parts of moving knife base thrust plate ②, refer to "6. Selective parts and consumable parts".

##### 2) Position of the fixed knife



○ Initial position

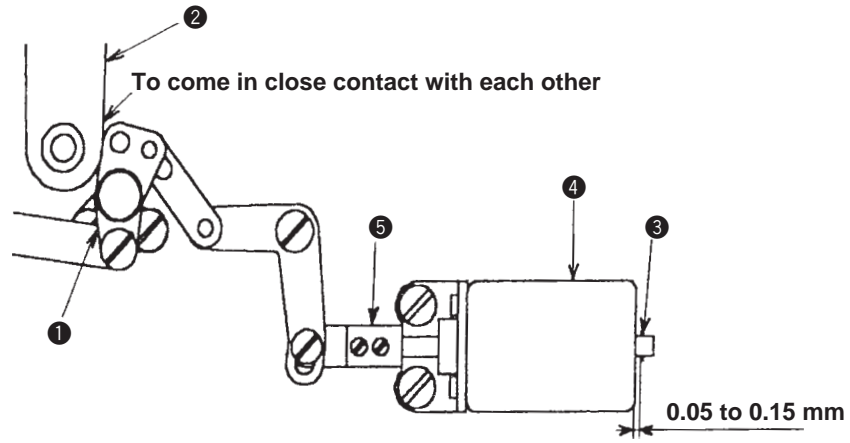




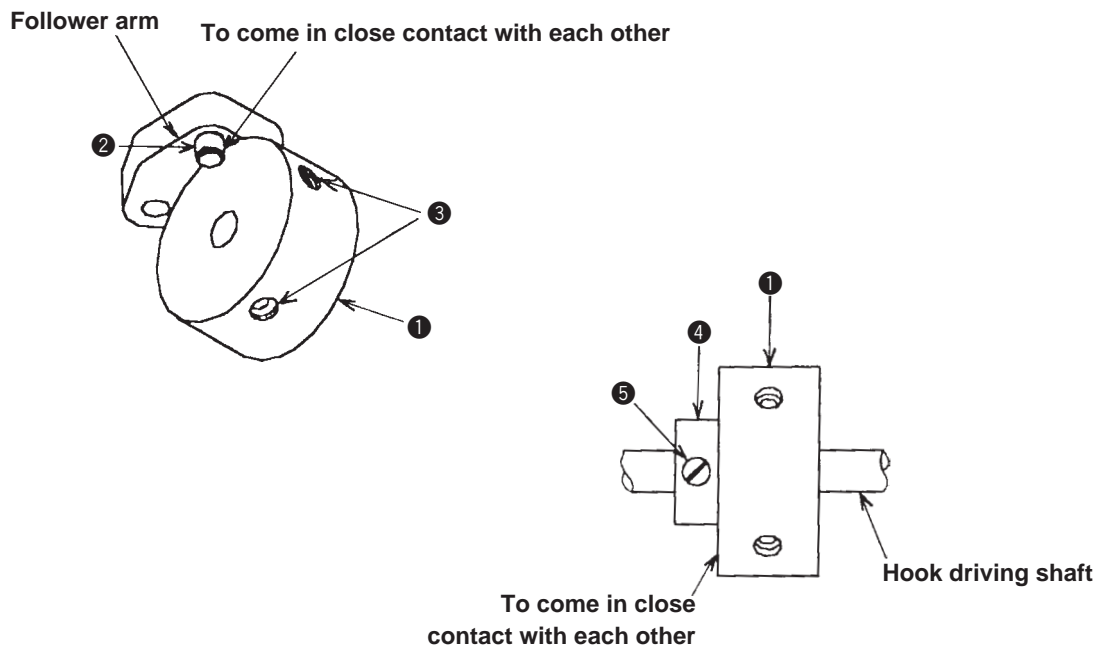
Adjustment Procedures	Results of Improper Adjustment
<ol style="list-style-type: none"> <li>1. Loosen setscrew ❶ in the moving knife.</li> <li>2. Select moving knife base thrust plate ❷ so that the clearance between the top surface of the bobbin case and the bottom face of the moving knife is <math>1.3 \pm 0.1</math> mm.</li> <li>3. After the adjustment, tighten setscrew ❶.</li> </ol>	<p>When the clearance is larger than the specified value :</p> <ul style="list-style-type: none"> <li>○ Defective catching of needle and bobbin threads will result.</li> </ul> <p>When the clearance is smaller than the specified value :</p> <ul style="list-style-type: none"> <li>○ There is no space where the thread enters in between the moving knife and the bobbin case. As a result, defective thread trimming will result.</li> </ul>
<p>Adjusting the knife pressure</p> <ol style="list-style-type: none"> <li>1. Move moving knife ❶ to the front end by hand.</li> <li>2. Loosen setscrews ❸ in the fixed knife and move the fixed knife to the left or right to adjust the position.</li> <li>3. To adjust the knife pressure, move fixed knife ❷ and adjust so that the knife pressure starts from the position where the distance from the top end of the moving knife to the top end of the fixed knife is 5 to 6 mm.</li> </ol> <p><b>(Caution)</b></p> <ol style="list-style-type: none"> <li>1. <b>Adjust the clearance between the fixed knife and the clamp spring to <math>1.6 \pm 0.1</math> mm.</b></li> <li>2. <b>Reduce the knife pressure as low as possible to such an extent that the needle and bobbin threads are cut together.</b></li> </ol> <ul style="list-style-type: none"> <li>○ Initial position <ul style="list-style-type: none"> <li>○ When the play at the top end of the moving knife is 0 to 1 mm, the distance from the top end of the moving knife to the top end of the fixed knife is 0 to 0.5 mm when the moving knife travels to the rear end.</li> <li>○ Loosen setscrew ❹ in the moving knife arm and move the moving knife base to adjust the initial position.</li> </ul> </li> </ul>	<p>When the knife pressure is excessively high :</p> <ul style="list-style-type: none"> <li>○ Blade sections of the fixed knife and the moving knife may be damaged.</li> <li>○ Torque at the time of thread trimming becomes large. As a result, machine lock will result.</li> <li>○ Defective thread trimming action will result.</li> </ul> <p>When the knife pressure is excessively low :</p> <ul style="list-style-type: none"> <li>○ Defective thread trimming will result.</li> </ul> <p>When the engagement of the blade faces of the moving knife and the fixed knife is not proper :</p> <ul style="list-style-type: none"> <li>○ Thread trimming will be dull.</li> </ul>

## Standard Adjustment

### 3) Position of the solenoid



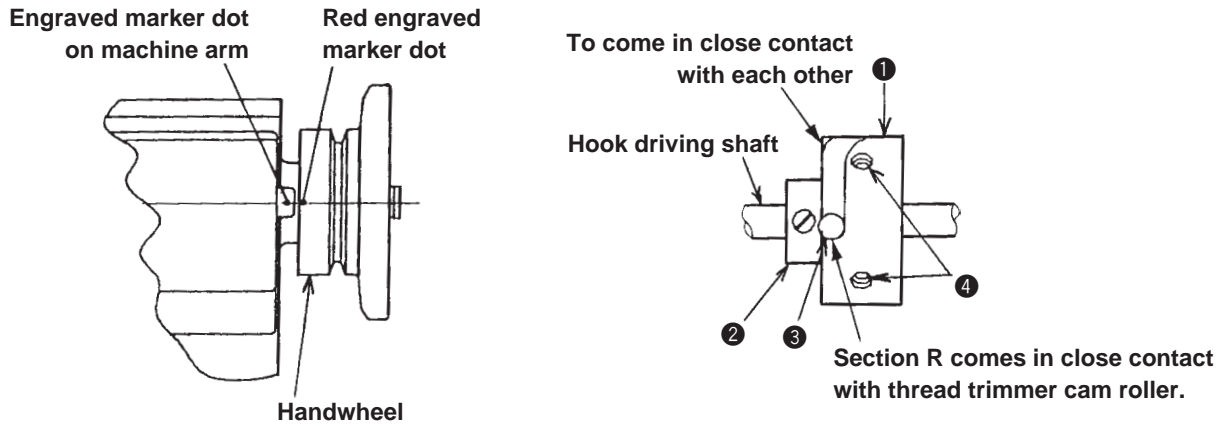
### 4) Thread trimmer cam



Adjustment Procedures	Results of Improper Adjustment
<p>1. Make follower arm ❶ come in close contact with the edge of boss section ❷ of the safety device.</p> <p>2. In this state, install thread trimmer solenoid arm ❺ so that a clearance of 0.05 to 0.15 mm is provided between plunger stopper ❸ (roll pin) of the thread trimmer solenoid and solenoid main body ❹.</p> <p><b>(Check) Turn the handwheel by hand to actuate the thread trimmer and the state that the top end of the moving knife is aligned with the top end of the fixed knife becomes the initial position.</b></p> <p><b>At this time, check that the clearance between plunger stopper ❸ of the thread trimmer solenoid and solenoid main body ❹ is 0.05 to 0.15 mm.</b></p>	
<p>1. Move the moving knife to the rear end.</p> <p>2. Move forward the top end of the moving knife by 0.5 to 1 mm.</p> <p>3. In this state, make the edge of thread trimmer cam ❶ come in close contact with thread trimmer cam roller ❷ and temporarily tighten setscrews ❸ in the thread trimmer cam.</p> <p>4. Make thrust pad ❹ come in close contact with thread trimmer cam ❶ and securely tighten setscrew ❺ in the thrust pad.</p> <p><b>(Caution) Make sure that there is a play of 0.5 to 1 mm at the top end of the moving knife.</b></p>	

## Standard Adjustment

### 5) Thread trimmer cam timing

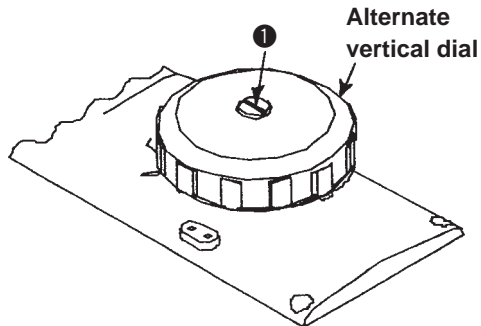


Conditions : Engraved marker dot on handwheel is aligned with engraved marker dot on machine arm.

### (2) Alternate vertical dial

## Standard Adjustment

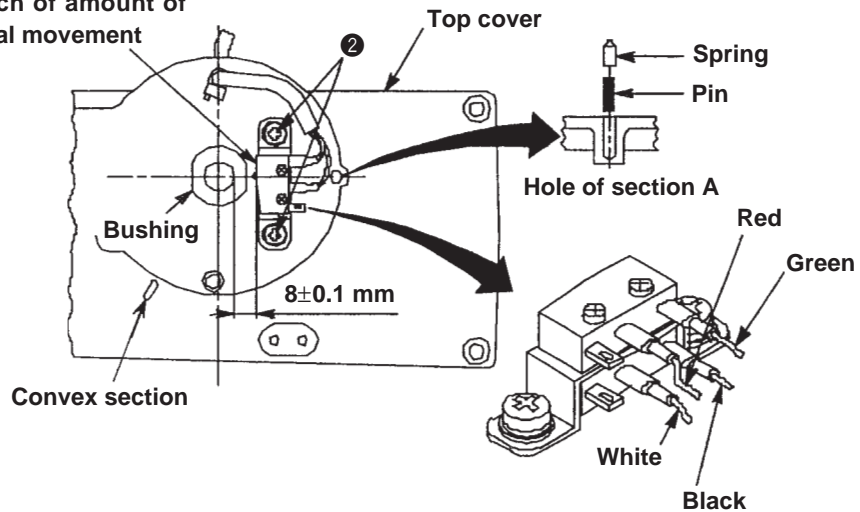
### 1) Installing position of the detection switch of the amount of alternate vertical movement



○ Sewing speed of LS-1342 and LS-1342-7

Amount of alternate vertical movement of the walking foot and presser foot	Stitch length : 6 mm or less
Less than 2.5 mm	2500 rpm
2.5 mm to less than 4 mm	2200 rpm
4 mm to less than 4.75 mm	1800 rpm
4.75 mm to less than 6.5 mm	1600 rpm

Detection switch of amount of alternate vertical movement



Adjustment Procedures	Results of Improper Adjustment
<ol style="list-style-type: none"> <li>1. Turn the handwheel to align the red engraved marker dot on the handwheel with the engraved marker dot on the machine arm.</li> <li>2. Make thread trimmer cam ❶ come in close contact with thrust pad ❷.</li> <li>3. In this state, make the R section come in close contact with thread trimmer cam roller ❸ at the position where the cam groove starts.</li> <li>4. Securely tighten setscrews ❹ in the thread trimmer cam.</li> </ol> <p><b>(Caution) Make sure that the edge of thread trimmer cam ❶ comes in close contact with the edge of thrust pad ❷.</b></p>	<p>When the timing is retarded :</p> <ul style="list-style-type: none"> <li>○ Thread trimming action does not complete even at the needle-up stop position and thread is not trimmed.</li> </ul> <p>When the timing is advanced :</p> <ul style="list-style-type: none"> <li>○ Defective thread trimming will result.</li> <li>○ Length of needle thread remaining on the needle after thread trimming is not secured and needle thread may slip off at the start of sewing or after thread trimming.</li> <li>○ Stitch skipping at the start of sewing will result.</li> </ul>

Adjustment Procedures	Results of Improper Adjustment
<ol style="list-style-type: none"> <li>1. Turn the alternate vertical dial to adjust the scale “1” to the convex section on the top cover.</li> <li>2. Loosen setscrew ❶ in the alternate vertical dial and remove the alternate vertical dial. At this time, be careful that a pin and a spring are in the hole of section A.</li> <li>3. Loosen installing screws ❷ of the detection switch of the amount of alternate vertical movement and adjust the distance from the inner diameter of the bushing to the edge of the switch body to <math>8 \pm 0.1</math> mm. Then tighten installing screws ❷.</li> <li>4. Adjust the scale “1” to the convex section on the top cover, place the pin and the spring in the hole of section A, install the alternate vertical dial and tighten setscrew ❶ in the alternate vertical dial.</li> </ol> <p><b>(Caution) When the position of the detection switch of the amount of alternate vertical movement is changed, check whether the relation between the alternate vertical dial and the sewing speed is normal.</b></p>	<ul style="list-style-type: none"> <li>○ Sewing speed may not change even when turning the alternate vertical dial.</li> </ul>

### (3) Adapting SC-380 to LS-1342/1342-7

When using SC-380 for LS-1342/1342-7, it is necessary to set the parameters below.

However, the manufacturing No. (Mfg. No.) of SC-380 is :

In case of "\*\*\*\*\* A" (in case there is "LU56" of the model LU-1560 is in the table of simplified setting value for JUKI sewing machine of SC-380) and in case of "\*\*\*\*\*" (in case there is no "LU56" of the model LU-1560 in the table of simplified setting value for JUKI sewing machine of SC-380), the contents to be set are different. So, be careful.

#### 1) In case the manufacturing No. (Mfg. No.) is "\*\*\*\*\* A" :

1. Select LU-1560 (LU56) from the table of simplified setting value.

(Select program mode [1] : + [A] + [B])

2. Change the parameters below.

For the selection of each program mode from the normal mode and the details of functions, refer to the Engineer's Manual for the SC-380.

##### ① A mode (selection : + A) : setting of motor performance

Function name	Symbol	Initial value	Modified value	Remarks
Change-over of high/low gain	GA	H	L	

##### ② P mode (selection : + ) : setting of number of rotation of the machine head used, stopping angle, etc.

Function name	Symbol	Initial value	Modified value	Remarks
Presser lifter output duty	FUD	MF	FL	

##### ③ C mode (selection : + C) : setting of input

Function name	Symbol	Initial value	Modified value	Remarks
Change-over of input signal function	I D	TL	U	Needle lifting signal
	I 2	U	I01	DL signal
	I 7	no	BTL	Cancel signal
	I F	F	no	Refer to (Caution).
	OB	W	no	

**(Caution)** In case of the machine head with 2-pitch device, set as IF = IO4, IFA = ON and OB = OT4.

#### 2) In case the manufacturing No. (Mfg. No.) is "\*\*\*\*\*" :

1. Select LU-22\*0 (LU2S) from the table of simplified setting value. (Select program mode [1] : + A + B)

**(Caution)** Do not select LU2v. The alternate vertical movement amount device does not work normally with LU2v.

2. Change the parameters below.

For the selection of each program mode from the normal mode and the details of functions, refer to the Engineer's Manual for the SC-380.

##### ① Normal mode : slow start OFF ON

##### ② P mode (selection : + ) : setting of number of rotations of the machine head used, stopping angle, etc.

Function name	Unit	Symbol	Initial value	Modified value	Remarks
Max. speed	(rpm)	H	3500	2500	
Start tacking speed	(rpm)	N	1200	600	
End tacking speed	(rpm)	V	1200	600	
Medium speed	(rpm)	M	2000	1600	
No. of stitches of slow start	(stitch)	SLN	0	1	
Reverse revolution angle	(deg)	R8	60	48	Reverse revolution after thread trimming
Needle DOWN stop angle	(deg)	D8	32	24	
Presser lifter output duty	-	FUD	MF	FL	

③ C mode (selection : + C) : setting of input

Function name	Symbol	Initial value	Modified value	Remarks
Change-over of input signal function	IF	F	no	Refer to (Caution) .
	OB	W	no	

**(Caution) In case of the machine head with 2-pitch device, set as IF = IO4, IFA = ON and OB = OT4.**

④ D mode (selection : + D) : setting of improving the quality of tacking alignment

Function name	Symbol	Initial value	Modified value	Remarks
Stop immediately before end tacking	CSJ	OFF	ON	Stop before tacking
Tacking alignment	BM	OFF	ON	Tacking compensation
No. of stitch compensation for tacking	BT1	C	1	Start tacking ON compensation
	BT2	2	0	Start tacking OFF compensation
	BT3	5	2	End tacking OFF compensation

⑤ G mode (selection : + + C) : setting of thread trimming sequence

Function name	Symbol	Initial value	Modified value	Remarks
Starting angle of thread trimming output	TS	24	0	
Section of thread trimming output	TE	30	66	
Starting angle of tension release output	LS	188	150	
Section of tension release output	LE	134	60	

⑥ Q mode (selection : + A + C) : setting of the speed inflection point by means of the alternate vertical dial

Function name	Symbol	Initial value	Modified value	Remarks
Max. speed when speed is limited	VL1	86	88	
VC 2 speed inflection point 1	VP1	56	64	
VC 2 speed inflection point 2	VP2	71	72	

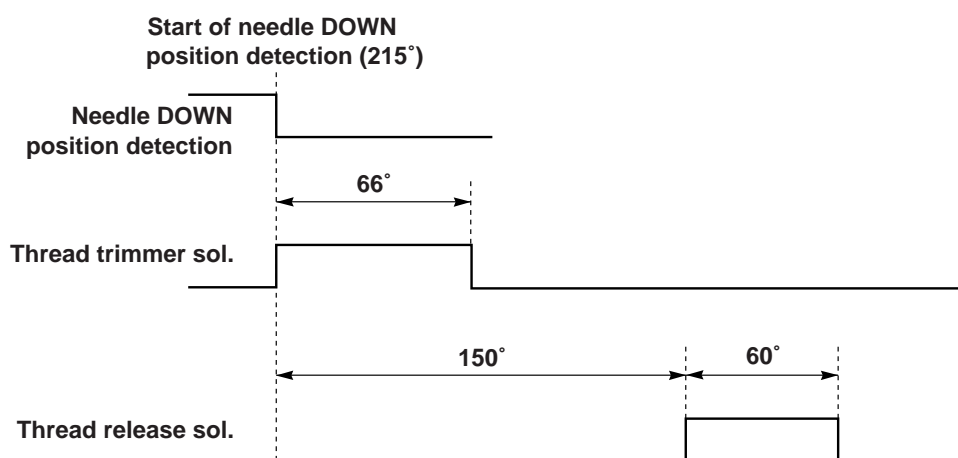
⑦ H mode (selection : + + D) : setting of the speed that does not exceed maximum speed of machine head

Function name	Symbol	Initial value	Modified value	Remarks
Limitation of maximum speed	LHH	41	26	

⑧ A mode (selection : + A) : setting of motor performance

Function name	Symbol	Initial value	Modified value	Remarks
Change-over of high/low gain	GA	H	L	

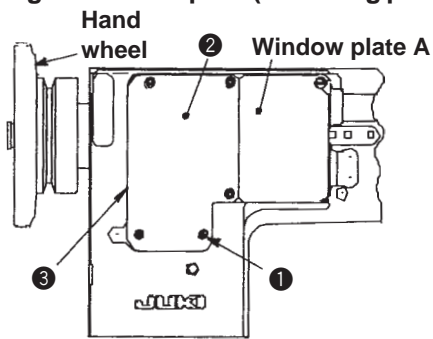
### 3) Thread trimming sequence (LS-1342-7)



## 4. INSTALLATION OF THE OPTIONAL PARTS

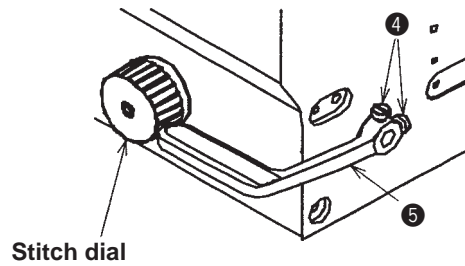
### (1) Automatic reverse feed device (LS-1340, LS-1341, LS1342)

#### 1) Removing the window plate (Removing parts list)



1. Loosen setscrew ① in the window plate B located at anti-operator's side of the machine arm.
2. Remove window plate B ②.
3. Remove window plate packing B ③.

#### 2) Removing the reverse feed control lever (Removing parts list)



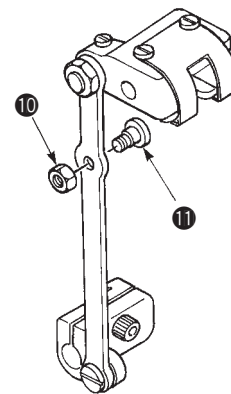
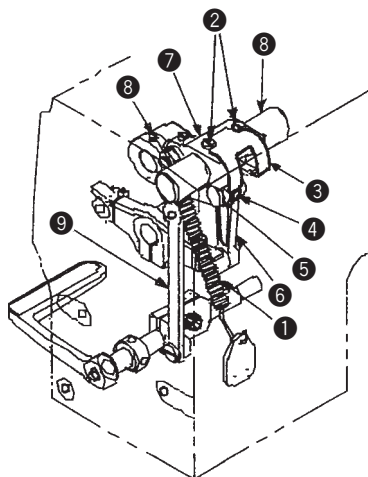
1. Loosen the respective setscrews in the belt cover and remove the belt cover.
2. Remove two setscrews ④ in the reverse feed control lever.
3. Remove reverse feed control lever ⑤.

Removing parts list of window plate and reverse feed control lever

Note	No.	Part No.	Name of part	Q'ty
	①	SS4110815SP	Window plate B setscrew	5
	②	21331806	Window plate B	1
	③	21332002	Window plate packing B	1
	④	SS6120930SP	Reverse feed control lever setscrew	2
	⑤	22610505	Reverse feed control lever	1

- (Caution) 1. The parts with (asterisk) mark are those to be used after replacing.  
 2. The part with mark is the exclusive part for the machine without the automatic reverse feed device.

#### 3) Installing the reverse feed link hinge screw (List 1)



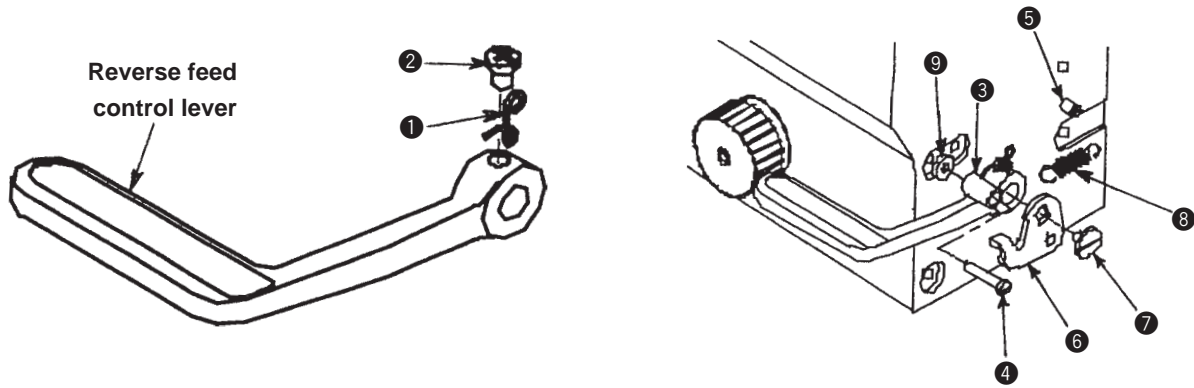
1. Remove feed driving rocker tension spring ①.
2. Loosen felt presser setscrews ② and remove felt presser ③.
3. Loosen setscrew ④ in the feed rocker link pin and remove feed rocker link pin ⑤.
4. Remove feed rocker link ⑥ from feed driving rocker ⑦.
5. Loosen the setscrew in the feed driving rocker support and move feed driving rocker support ⑧ to the right or left.
6. Draw out feed driving rocker ⑦.
7. Install reverse feed link hinge screw nut ⑩ and reverse feed link hinge screw ⑪ to feed regulator connecting rod ⑨.
8. Install the above parts by reversing the above order.

Installing parts list of reverse feed link hinge screw (List 1)

Note	No.	Part No.	Name of part	Q'ty
	⑩	NS6150430SP	Reverse feed link hinge screw nut	1
	⑪	SD0800402TP	Reverse feed link hinge screw	1



#### 4) Installing the reverse feed control lever (List 2)



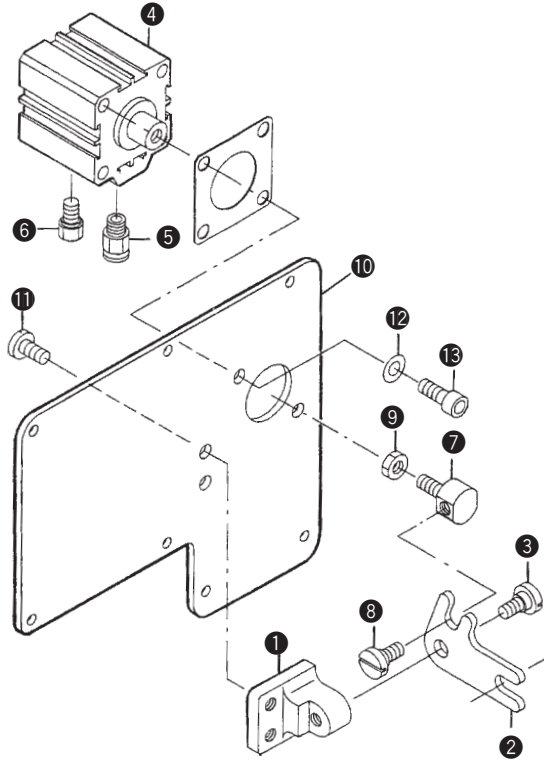
1. Install reverse feed control lever spring bracket ① with setscrew ②.
2. Install reverse feed control lever stopper ③ to the machine arm with setscrew ④ and washer ⑨.
3. Install lever return spring bracket ⑤ to the machine arm.
4. Insert the reverse feed control lever into the reverse feed control lever shaft, and install reverse feed shaft link ⑥ with push screw ⑦.  
(Install so that the projection of the reverse feed shaft link enters under the reverse feed control lever.)
5. Hook lever return spring ⑧ to the lever spring bracket ① and the tension spring bracket.
6. Adjust the position of the reverse feed control lever.

For the adjusting procedure, refer to “(14) Position of the reverse feed control lever”.

#### Installing parts list of reverse feed control lever (List 2)

Note	No.	Part No.	Name of part	Q'ty
	①	226563003	Lever spring bracket	1
	②	SS4120615SP	Setscrew	1
	③	11100500	Reverse feed control lever stopper	1
	④	SS7112420SP	Setscrew	1
	⑤	10120004	Lever return spring bracket	1
	⑥	22656102	Reverse feed shaft link	1
	⑦	SS7120760SP	Push screw	1
	⑧	13515606	Lever return spring	1
	⑨	WP0502616SD	Washer	1

## 5) Installing the automatic reverse feed device (List 3)

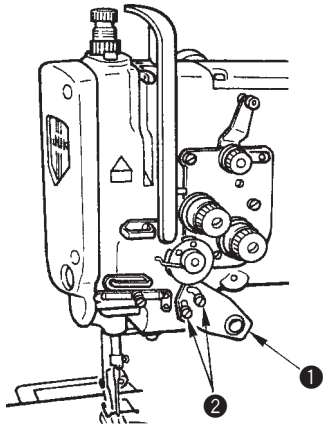


1. Install reverse feed link ② to reverse feed link installing base ① with reverse feed link hinge screw ③.
2. Install straight joint ⑤ to the inlet port of reverse feed cylinder ④ and install muffler ⑥ to the exhaust port.
3. Install reverse feed link hinge screw ⑧ and cylinder connecting screw nut ⑨ to cylinder connecting screw ⑦.
4. Install cylinder connecting screw ⑦ to reverse feed cylinder ④.
5. Temporarily tighten reverse feed link installing base ① to window plate D ⑩ with setscrew ⑪.
6. Enter reverse feed cylinder ④ to window plate D ⑩ and tighten with washer ⑫ and setscrew ⑬. (Adjust so that straight joint ⑤ and muffler ⑥ face downward and enter reverse feed link hinge screw ⑧ in the groove of reverse feed link ②.)
7. Move the piston rod of reverse feed cylinder ④ by hand and tighten setscrew ⑬ so that reverse feed cylinder ④ smoothly moves.
8. Tighten the window plate packing B and window plate D ⑩ in order with the setscrew. At this time, enter the groove of reverse feed link ② the reverse feed link hinge screw ③ on the side of the feed regulator connecting rod.
9. Insert the air hose into straight joint ⑤.

### Installing parts list of automatic reverse feed device (List 3)

Note	No.	Part No.	Name of part	Q'ty
	①	21348503	Reverse feed link installing base	1
	②	21348701	Reverse feed link	1
	③	SD0800352SP	Reverse feed link hinge screw	1
	④	PA320150200	Reverse feed cylinder	1
	⑤	PJ301065104	Straight joint	1
	⑥	PX015101000	Muffler	1
	⑦	21348602	Cylinder connecting screw	1
	⑧	SD0800352SP	Reverse feed link hinge screw	1
	⑨	NM6060003SC	Cylinder connecting screw nut	1
	⑩	21348909	Window plate D	1
	⑪	SS7151210SP	Reverse feed link installing base setscrew	2
	⑫	SP0641601SD	Washer	2
	⑬	SM6061602TP	Setscrew	2

**6) Installing the touch-back switch (List 4)**

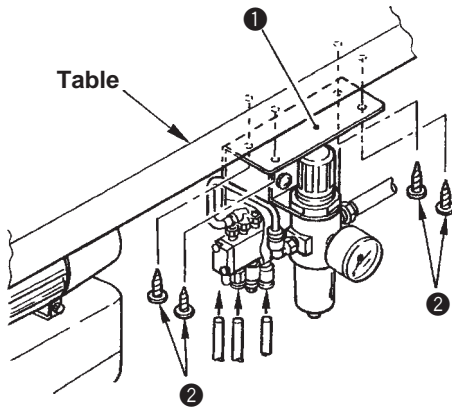


1. Install touch-back switch ❶ with switch installing plate setscrew ❷ .

Installing parts list of touch-back switch (List 4)

Note	No.	Part No.	Name of part	Q'ty
	❶	21348859	Touch-back switch	1
	❷	SS7110840SP	Switch installing plate setscrew	2

**7) Installing the pneumatic components (In case of installing the touch-back switch only) (List 5)**



1. Install pneumatic components (asm.) ❶ onto the table with setscrews ❷.
2. Connect the air hose with pneumatic components (asm.) ❶.

Installing parts list of pneumatic components (List 5)

Note	No.	Part No.	Name of part	Q'ty
	❶	23105554	Pneumatic components (asm.)	1
	❷	SK3482500SC	Setscrew	4

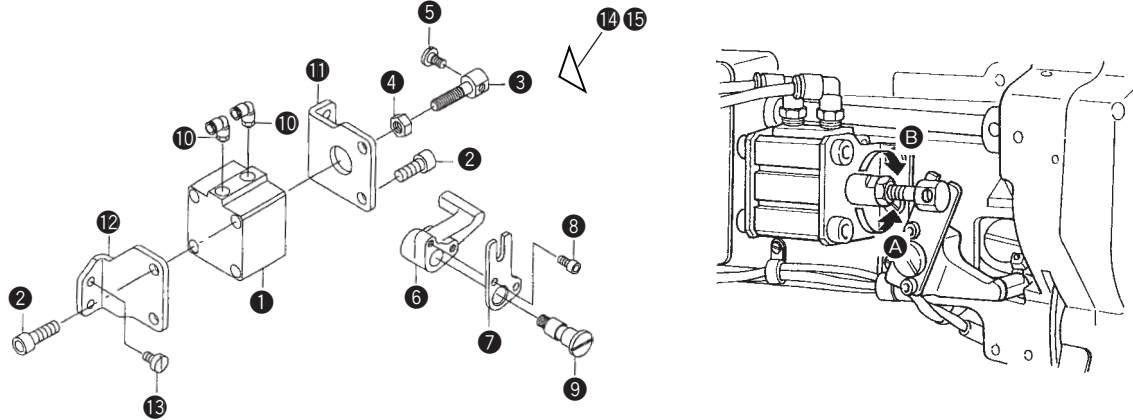
○ Part No. of the automatic reverse feed device set

Note	No.	Part No.	Name of part	Q'ty
		21348552	Automatic reverse feed device set	1

**(Caution) This part No. is the set part No. of the parts from list 1 to list 5.**

## (2) Automatic presser foot lifter

### 1) Installing the automatic presser foot lifter



1. Remove the side plate located on the anti-operator's side of the machine arm. (List of the parts to be removed)
2. Install two elbows 10 to automatic presser foot lifter cylinder 1.
3. Install cylinder connecting screw 3 to automatic presser foot lifter cylinder 1.  
For the standard, adjust the distance from the end face of piston rod of automatic presser foot lifter cylinder 1 to the end face of cylinder connecting screw 3 to 24 mm, and tighten nut 4.
4. Tighten cylinder stay, front 11 and cylinder stay, rear 12 to automatic presser foot lifter cylinder 1 with cylinder stay setscrews 2.
5. Install automatic presser foot lifter cylinder 1 which has been assembled at the above step 4. to the machine arm with setscrews 13.
6. Assemble automatic presser foot lifter lever B 7 with automatic presser foot lifter lever A 6.  
(Insert automatic presser foot lifter lever shaft 9 into the holes of both levers and tighten with hexagon headed bolt 8.)
7. Install automatic presser foot lifter lever A 6 which has been assembled at the above step 6. to the machine arm with automatic presser foot lifter lever shaft 9.  
(Groove of automatic presser foot lifter lever B 7 enters hinge screw 5 attached to cylinder connecting screw 3.)
8. Install pneumatic components.  
For the LS-1342-7, add the device for presser foot lifter to the pneumatic components being used now.  
For the models other than LS-1342-7, install pneumatic components (asm.) 1.
9. Insert the air hose and check the operation.  
When actuating the automatic presser foot lifter, make sure that the distance from the bottom face of the presser foot to the top surface of the throat plate is  $16 \pm 0.5$  mm.  
When adjustment is required, remove automatic presser foot lifter lever shaft 9 and automatic presser foot lifter lever A 6, loosen nut 4, and turn cylinder connecting screw 3. (Turning in the direction of A will decrease the distance, or in the direction of B will increase it.)  
After the completion of adjustment, tighten nut 4.
10. Make sure that a clearance of 0.5 to 1.5 mm is provided between automatic presser foot lifter lever A 6 and the thread release supporting plate when the presser foot is lowered.
11. For the kit A (knee lifter switch), tighten presser foot lifter knee switch B (asm.) with the wood screws.

#### Automatic presser foot lifter components (For all models)

Note	No.	Part No.	Name of part	Q'ty
	1	PA400150100	Automatic presser foot lifter cylinder	1
	2	SM6082502TP	Setscrew	4
	3	21356506	Cylinder connecting screw	1
	4	NM6080001SE	Nut	1
	5	SD0720331SP	Hinge screw	1
	6	21356605	Automatic presser foot lifter lever A	1
	7	21356803	Automatic presser foot lifter lever B	1
	8	SM6051002TP	Hexagon bolt	2
	9	21356704	Automatic presser foot lifter lever shaft	1
	10	PJ304065102	Elbow	2
	11	21356308	Cylinder stay, front	1
	12	21356407	Cylinder stay, rear	1
	13	SS6151040SP	Setscrew	4
	14	CM3002000B1	Caution seal for being caught (For domestic market)	1
	15	CM300200001	Caution seal for injury to finger (For export)	1

Neumatic device components (For LS-1340, LS-1341 and LS-1342)

Note	No.	Part No.	Name of part	Q'ty
	①	GAKA14010A0	Pneumatic components (asm.)	1

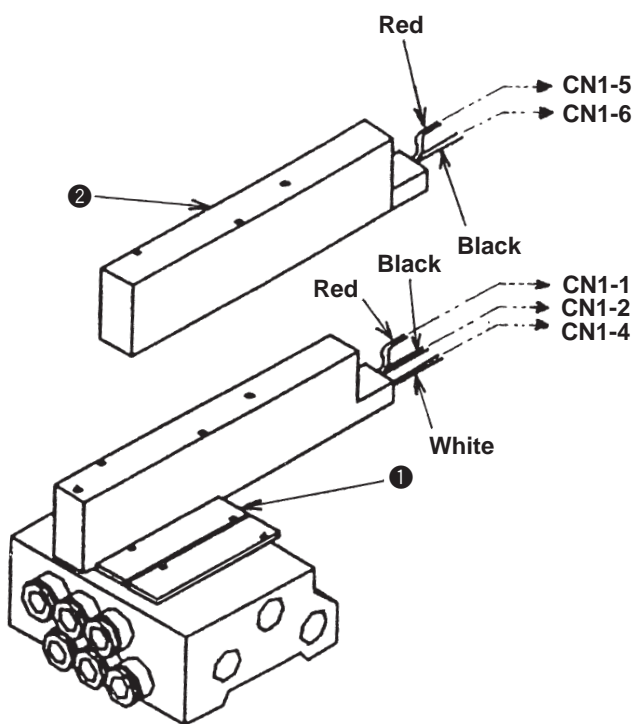
**(Caution)** When simultaneously installing the automatic reverse feed device and the automatic presser foot lifter, install the pneumatic device as described below.

**Part No. : GAKA17010A0**

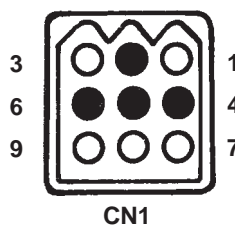
**Name of Part : Pneumatic components (asm.)**

**2) Installing the pneumatic device components**

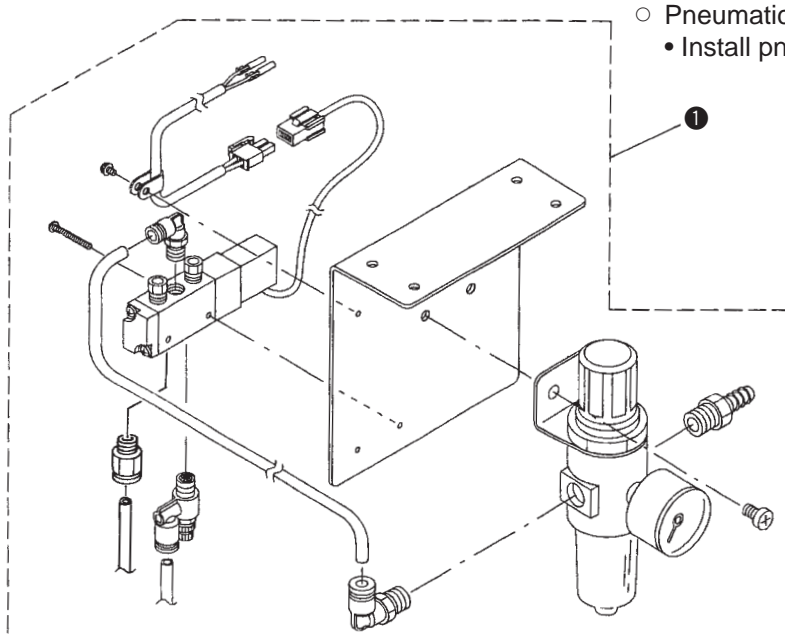
When installing the automatic presser foot lifter to LS-1342-7 after set-up of the machine



- Pneumatic device used : AK-123A and AK-123B
- 1. Remove block plate ① and install solenoid valve E ② in the form of adding it to solenoid valve A (asm.) which is being used now.
- 2. Caulk the pin terminal, male to the top end of the cord.
- 3. Insert the pin terminal, male into the plug CN1. Insert it after making sure of the inserting position.



When installing the automatic presser foot lifter only to LS-1340, LS-1341 and LS-1342 after set-up of the machine



- Pneumatic device used : AK-120A and AK-120B
- Install pneumatic components (asm.) ① as listed.

Specifications of the pneumatic device

- AK-            A : Knee switch type
- AK-            B : Pedal switch type

Removing parts list

Note	No.	Part No.	Name of part	Q'ty
	1	21332309	Side cover	1
	2	SS4110815SP	Side cover setscrew	1

Installing parts list

Note	No.	Part No.	Name of part	Q'ty	Applicable model
	1	GAKA2302EB0	AK device (asm.)	1	LS-1342-7
	2	GAKA20010A0	AK device (asm.) with knee switch	1	LS-1340/41
	3	GAKA20010B0	AK device (asm.)	1	LS1342

Kit A (Knee lifter switch)

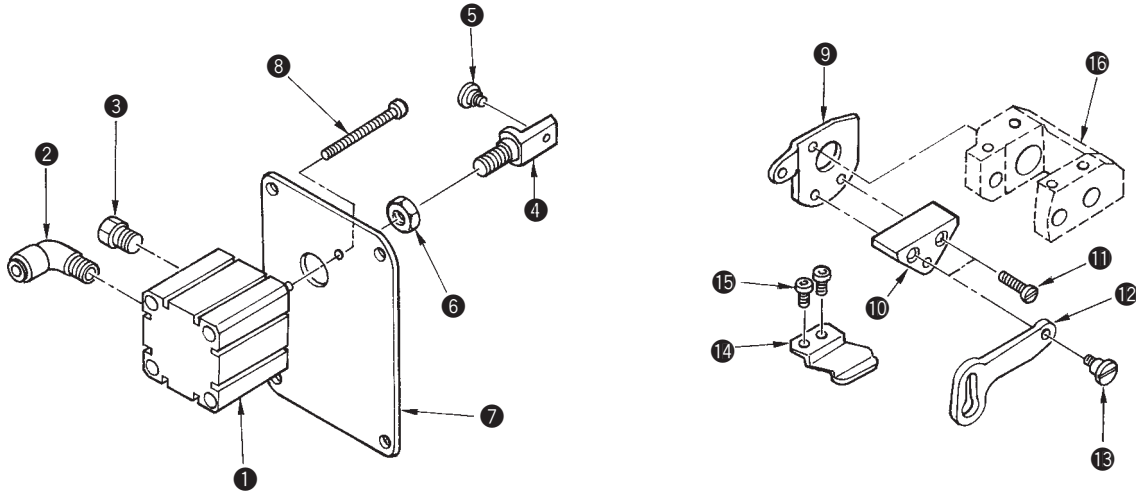
Note	No.	Part No.	Name of part	Q'ty
	1	GAKA14040D0	Presser foot lifter knee switch B (asm.)	1
	2	SK3514000SC	Wood screw	2

Pneumatic device components (For LS-1342-7)

Note	No.	Part No.	Name of part	Q'ty
	1	GAKA2302E00	Solenoid valve E	1
	2	D6043555B0	Pin terminal, male	2
	3	BT0600401EB	Air hose	2
	4	HX00295000A	Wire mark [2]	3
	5	HX00295000B	Wire mark [3]	3

### (3) DL device (LS-1342)

#### 1) Installing the DL device



#### 2) Installin procedure of the DL device after set-up of the machine

1. Remove the window plate E located on the anti-operator's side of the machine arm.
2. Attach elbow ②, muffler ③, cylinder connecting screw ④, alternate vertical link hinge screw ⑤ and nut ⑥ to jig cylinder ①.
3. Attach the jig cylinder ① which has been assembled at the above step 2. to window plate F ⑦ and tighten it with jig cylinder setscrew ⑧.
4. Remove the top feed stopper plate A attached to alternate vertical change base ⑯ and attach top feed stopper plate B ⑨.
5. Tighten alternate vertical link spacer ⑩ to top feed stopper plate B ⑨ with setscrew ⑪ and tighten alternate vertical link ⑫ with hinge screw ⑬.
6. Tighten alternate vertical link support ⑭ to the machine arm with setscrews ⑮.
7. When installing window plate F ⑦, enter alternate vertical link hinge screw ⑤ to the hole of alternate vertical link ⑫ and attach it to the machine arm.
8. Install the pneumatic device components (asm.).
9. Install the 5-step switch (asm.) and connect the relay cord with it.
10. Insert the air hose and check the operation.
  - When actuating DL, the amount of the alternate vertical movement becomes maximum and the walking foot goes up.

#### DL device components

Note	No.	Part No.	Name of part	Q'ty
	①	PA320200101	Jig cylinder	1
	②	PJ304065102	Elbow	1
	③	PX015101000	Muffler	1
	④	21438403	Cylinder connecting screw	1
	⑤	SD0600403TP	Alternate vertical link hinge screw	1
	⑥	NM6080721SE	Nut	1
	⑦	21437207	Window plate F	1
	⑧	SM6044002TP	Jig cylinder setscrew	2
	⑨	21438106	Top feed stopper plate B	1
	⑩	21438601	Alternate vertical link spacer	1
	⑪	SS6111610SP	Setscrew	2
	⑫	21438502	Alternate vertical link	1
	⑬	SD0600452TP	Hinge screw	1
	⑭	21438700	Alternate vertical link support	1
	⑮	SS4110815SP	Setscrew	2



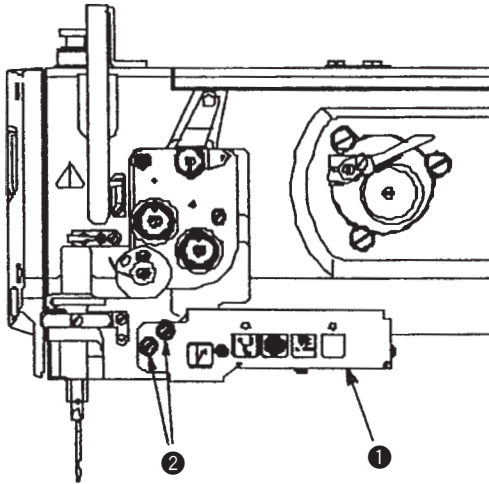
Removing parts list of DL device

Note	No.	Part No.	Name of part	Q'ty
	1	21339601	Top feed stopper plate A	1
	2	21437108	Window plate E	1

Installing parts list of DL device

Note	No.	Part No.	Name of part	Q'ty
	1	GDL21000AB0	Kit DL-21 (Without AK knee switch)	1

3) Installing the 5-step switch

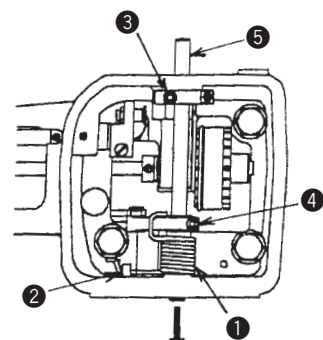
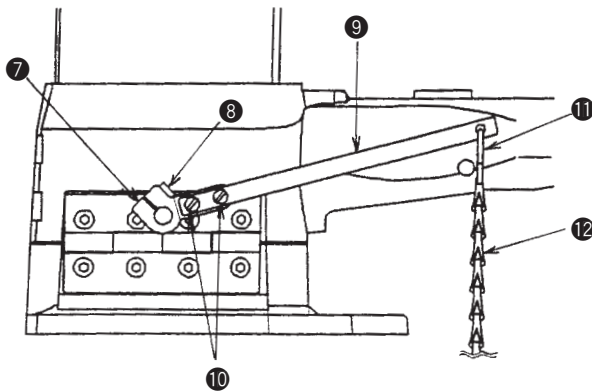


Attach 5-step switch (asm.) ❶ with setscrews ❷.

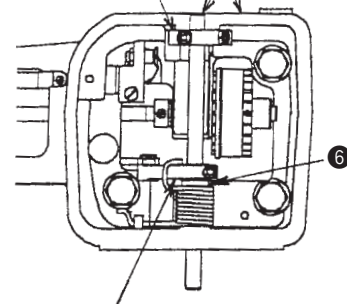
5-step switch components

Note	No.	Part No.	Name of part	Q'ty
	❶	21442553	5-step switch (asm.)	1
	❷	SS711084SP	Setscrew	2

(4) Knee lifter shaft (pedal type)



To come in contact with each other To align the edges with each other



To come in contact with each other



**1) Installing procedure of the knee lifter shaft (pedal type) after set-up of the machine**

1. Remove the knee press plate (asm.) and tilt the machine head.
2. Remove knee lifter spring ❶ from spring pin ❷.
3. Loosen setscrew ❸ in the knee lifter stopper arm.
4. Loosen setscrew ❹ in the knee lifter arm.
5. Move knee lifter shaft ❺ in the direction of arrow mark.
6. Align the edge of the knee lifter shaft with the edge of the machine bed.
7. Make the knee lifter stopper arm come in contact with the boss section of the knee lifter shaft and securely tighten the setscrew.
8. In the state of the above step 7., make the knee lifter arm come in contact with thrust pad ❻ of the knee lifter shaft and securely tighten the setscrew.
9. Hook knee lifter spring ❶ on spring pin ❷.
10. Combine presser lifter arm ❽ with presser lifter plate ❾ and attach to knee lifter shaft ❺. Then temporarily tighten setscrew ❿ in the presser lifter arm.
11. Attach S-shaped hook ⓫ and chain ⓬ to the hole located at the top end of presser lifter plate ❾ and connect it to the pedal.
12. Adjust the length and securely tighten setscrew ❿ in the presser lifter arm.

- (Caution) 1. After replacing the parts, make sure of the lift of the presser foot when depressing the pedal.**
- 2. When the adjustment is necessary, refer to “(8) Lift of the presser foot 2) Knee lifter”.**

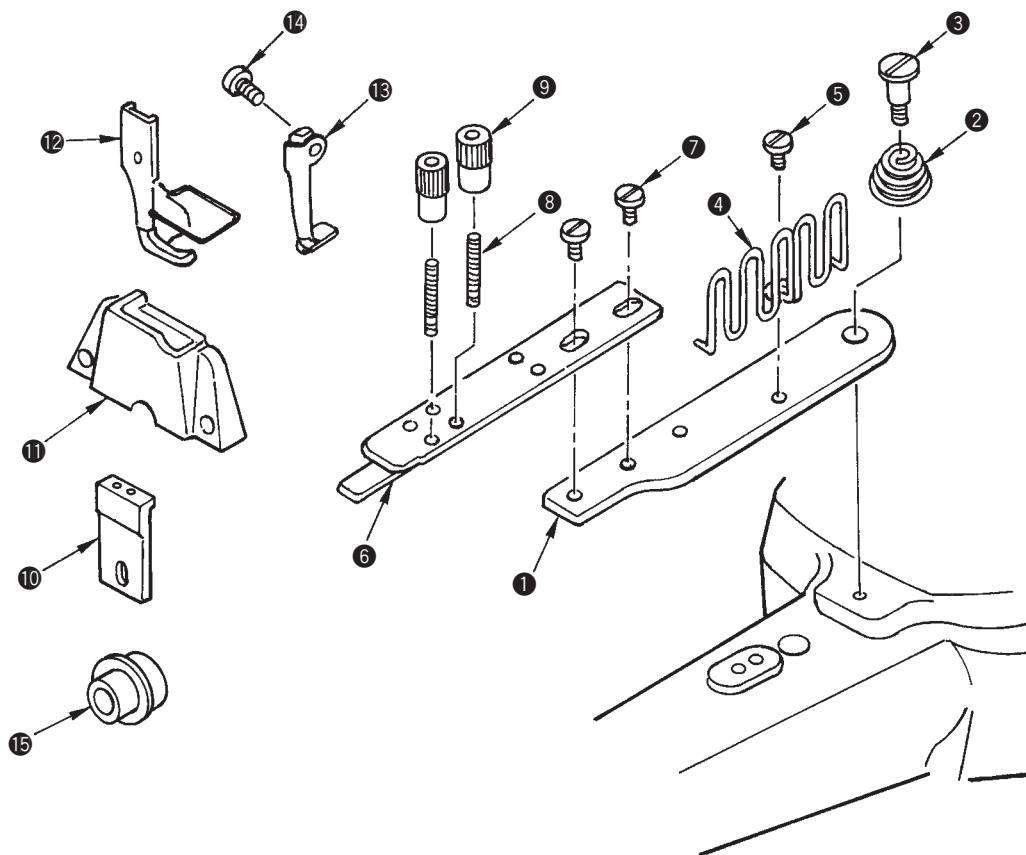
Removing parts list of the knee lifter shaft components

Note	No.	Part No.	Name of part	Q'ty
	1	21433354	Knee press plate (asm.)	1

Installing parts list of the knee lifter shaft (pedal type)

Note	No.	Part No.	Name of part	Q'ty
	❽	21433404	Presser lifter arm	1
	❿	SM6051602TP	Presser lifter arm setscrew	1
	❾	21433503	Presser lifter plate	1
	❿	SM6051552TP	Presser lifter plate setscrew	2
	⓫	B8133019000	S-shaped hook	2
	⓬	B8131019000	Chain	1

## (5) Binder kit



### 1) Installing procedure of the binder kit after set-up of the machine

1. Attach tape guide 4 to feed plate B 1 with tape guide setscrew 5.
2. Attach binder setscrews 8 to feed plate A 6 and attach binder lock nuts 9 to binder setscrews 8.
3. Temporarily tighten feed plate A 6 which has been assembled at the step 2. to feed plate B 1 with feed plate connecting screws 7.
4. Pass feed plate hinge screw 3 through feed plate presser spring 2 and with the screw assemble feed plate B 1 which has been assembled at the step 3. to the binder installing section on the machine bed.
5. Remove the throat plate and the feed dog, and install feed dog 10 and throat plate 11.
6. Remove the presser foot (asm.) and the walking foot (asm.), and install walking foot 13 and presser foot (asm.) 12. (Walking foot 13 setscrew 14)
7. Remove the knee press plate and tilt the machine head.
8. Draw out the hook driving shaft, remove the vertical feed cam and install vertical feed cam 15.
9. Loosen feed plate connecting screws 7, adjust the projection of feed plate A 6 to the hole of feed dog 10 and tighten the setscrews.

**(Caution)** When drawing out the hook driving shaft, needle-to-hook timing changes. Re-adjust the timing. Refer to “ (5) Needle-to-hook timing”.

Removing parts list of the binder kit components

Note	No.	Part No.	Name of part	Q'ty	Model
	1	B1105340000	Throat plate	1	LS-1340
	1	21221908	Throat plate	1	LS-1341
	1	21437405	Throat plate	1	LS-1342
	2	21435003	Feed dog (2.5 X 6)	1	LS-1340/41
	2	21435102	Feed dog (2.5 X 5)	1	LS-1342
	3	B1525563DA0	Presser foot (asm.)	1	LS-1340
	3	B1525241HA0	Presser foot (asm.)	1	LS-1341
	3	21444658	Presser foot (asm.)	2	LS-1342
	4	B14700530A0	Walking foot (asm.)	1	LS-1340
	4	B1470241HA0	Walking foot (asm.)	1	LS-1341
	4	21444559	Walking foot (asm.)	2	LS-1342
	5	21429303	Vertical feed cam	1	LS-1340/41/42

Installing parts list of the binder kit

Note	No.	Part No.	Name of part	Q'ty
	1	21434758	LS-1340 binder set	1
	2	21434857	LS-1341 binder set	1
	3	21434956	LS-1342 binder set	1

Common parts

Note	No.	Part No.	Name of part	Q'ty
	①	MAQ14303000	Feed plate B	1
	②	21232004	Feed plate presser spring	1
	③	SD0721112SN	Feed plate hinge screw	1
	④	MAQ09206000	Tape guide	1
	⑤	SS7110510SP	Tape guide setscrew	1
	⑥	MAQ14302000	Feed plate A (compl.)	1
	⑦	SS7110510SP	Feed plate connecting screw	2
	⑧	MAQ09204000	Binder setscrew	2
	⑨	MAQ09205000	Binder setscrew nut	2
	⑩	MAQ14306000	Feed dog	1
	⑭	SS6110710TP	Setscrew	1
	⑮	21445200	Vertical feed cam (for binder)	1

Exclusive parts

Note	No.	Part No.	Name of part	Q'ty	Model
	⑪	MAQ14301000	Throat plate	1	LS-1340
	⑪	21427406	Throat plate	1	LS-1341/42
	⑫	MAQ093080A0	Presser foot (asm.)	1	LS-1340/41
	⑫	21445150	Presser foot (asm.)	1	LS-1342
	⑬	MAQ09307000	Walking foot	1	LS-1340/41
	⑬	21445002	Walking foot	1	LS-1342

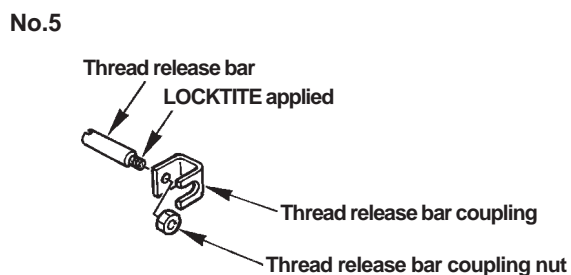
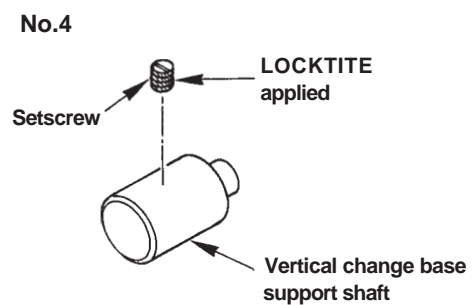
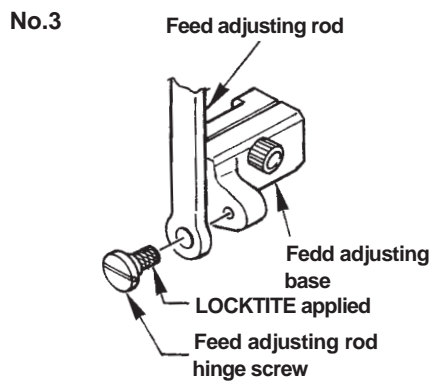
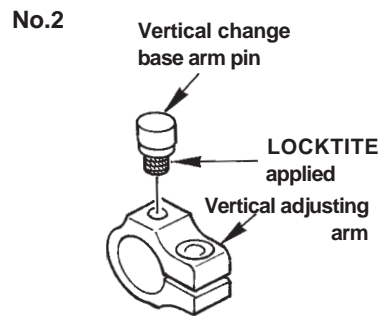
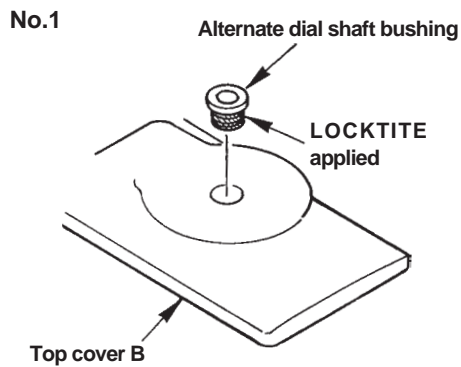
## 5. PORTION TO WHICH LOCKTITE IS APPLIED

LOCKTITE has been applied to the following parts at the time of assembly at the factory. When an assembly which includes the aforementioned parts has been disassembled, be sure to wash the LOCKTITE applied part using a paint thinner or the like, and re-assemble it using LOCKTITE after removing any moisture from the mating faces.

If it is hard to remove a part which has been fixed using LOCKTITE, heat it using a torch lamp or the like to help remove the part.

No.	Portion to which LOCKTITE is applied	Part No.	LOCKTITE No.
1	Alternate dial shaft bushing	10715100	LOCKTITE #638
2	Vertical change base arm pin	10715308	LOCKTITE #638
3	Feed adjusting rod hinge screw	SD0800402TP	LOCKTITE #638
4	Vertical change base support shaft screw	21337803	LOCKTITE #243
5	Thread release bar	21441209	LOCKTITE #243

**(Caution) Avoid disassembling these parts to the most.**



## 6. SELECTIVE PARTS AND CONSUMABLE PARTS

○ Common to all models

Name of selective part	Part No.	Marking	Remarks
Hook shaft washer	B1820246000	0	t=2.1 mm
Hook shaft washer	B182024600A	1	t=2.05 mm
Hook shaft washer	B182024600B	2	t=2.0 mm (standard)
Hook shaft washer	B182024600C	3	t=1.95 mm
Hook shaft washer	B182024600D	4	t=1.9 mm

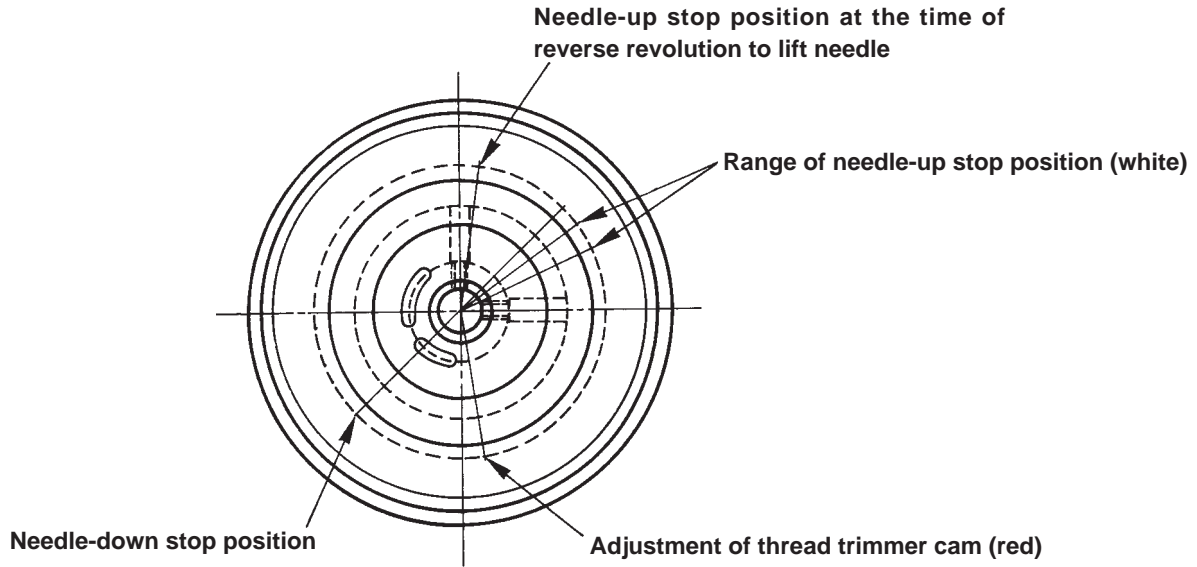
Name of consumable part	Part No.	Remarks	Model
Needle	MC372001600	SCHMETZ DP X 17 Nm 160	LS-1341/42/42-7
Needle	MC372001400	SCHMETZ DP X 17 Nm 140	LS-1340
Hook (asm.)	B18013400A0	Latch hook	LS-1340
Hook (asm.)	21431358	Cap hook	LS-1341
Hook (asm.)	21431457	Latch hook	LS-1342
Hook (asm.)	21441753	Latch hook	LS-1342-7
Bobbin	B9117051000		LS-1340
Bobbin	B9114201000		LS-1341/42
Bobbin	10759603	Aluminum bobbin	LS-1342-7

○ For LS-1342-7

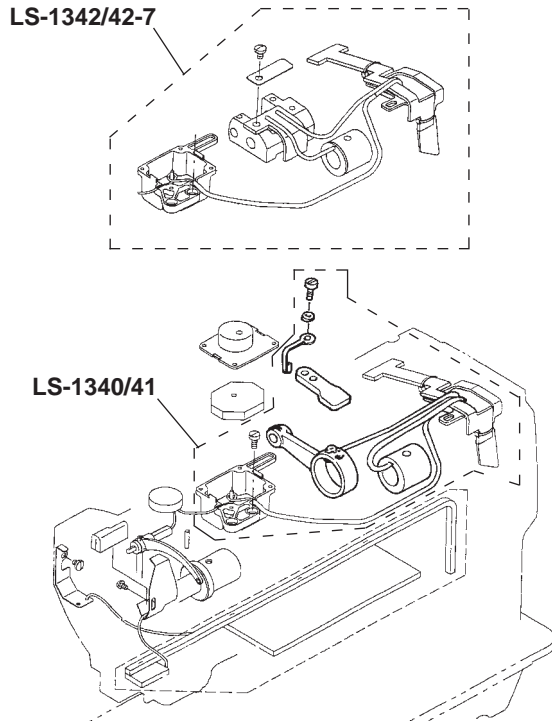
Name of selective part	Part No.	Marking	Remarks
Moving knife base thrust plate	B185351200AA	A	t=2.7 mm
Moving knife base thrust plate	B185351200BA	B	t=2.6 mm
Moving knife base thrust plate	B185351200CA	C	t=2.5 mm (standard)
Moving knife base thrust plate	B185351200D	D	t=2.4 mm
Moving knife base thrust plate	B185351200E	E	t=2.3 mm

Name of consumable part	Part No.	Remarks
Moving knife	21440607	
Fixed knife	21440102	
Clamp plate	21440201	

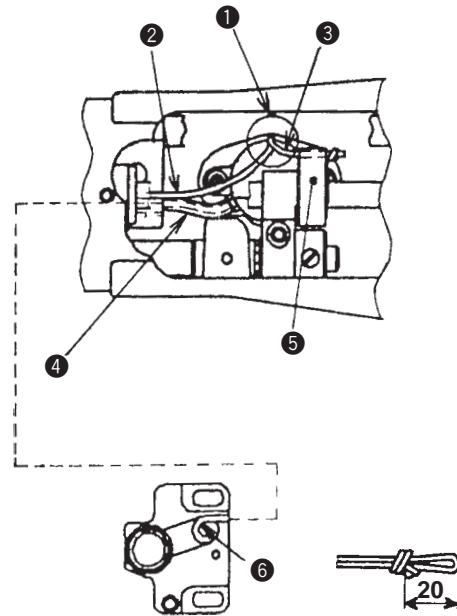
## 7. ENGRAVED MARKER DOTS ON THE HANDWHEEL



## 8. LUBRICATION ROUTE DIAGRAM



(Upper side lubrication route)



- ① Tie oil wicks in oil tank as shown in the illustration above.
- ② Oil wick (to hook driving shaft front bushing)
- ③ Oil wick ((to vertical feed rod)  
Tie the end of oil wick as shown in the illustration above.
- ④ Tube and oil wick (to hook shaft saddle)  
Tie the end of oil wick in oil tank as shown in the illustration above.
- ⑤ Vertical feed rod felt
- ⑥ Enter oil wick under hook shaft saddle felt.

(Lower side lubrication route)

## 9. TABLE OF TROUBLES AND CORRECTIVE MEASURES

### (1) With regard to sewing

Troubles	Causes	Checking	Corrective measures
1 Thread breakage	Thread path, needle point, hook blade point or inner hook resting groove on the throat plate has sharp edges or burrs.	Check the sharp edge or burr on the respective parts.	Remove the sharp edges or burrs on the blade point of hook using a fine emery paper. Buff up the groove section on the throat plate.
Thread is worn out.	Needle thread tension is too high.		Adjust the needle thread tension.
	Needle comes in contact with the blade point of hook.	Check the clearance.	Refer to "(5) Needle-to-hook timing"
	Clearance of inner hook guide is too large.	Check the clearance.	Decrease the clearance. Refer to "(7) Adjusting the inner hook guide".
Needle thread trails 2 to 3 cm from the wrong side of the fabric.	Needle thread tension is too low.		Adjust the needle thread tension. (This trouble occurs a lot when using synthetic threads.)
	Thread take-up spring works excessively or the stroke of the spring is too small.		Decrease the tension of of the thread take-up spring and increase the stroke of the spring.
	Feed timing is not proper.		Refer to "(9) Feed cam timing".
	Timing between the needle and the hook is excessively advanced or retarded.	Check the specified dimension.	Refer to "(5) Needle-to-hook timing".
	Thread melts due to needle heat.		Decrease the sewing speed. Use silicone oil.
Thread is partially caught by hook when thinner thread is used.	Clearance between the needle and the blade point of hook is too large.	Check the clearance.	Refer to "(5) Needle-to-hook timing". Replace needle guide with one with felt. Turn the thread once around the needle.
Thread breaks in idle stitching.	Thread is pushed and cut by the presser foot and the corner of throat plate.		Make a presser foot by special order.

Troubles	Causes	Checking	Corrective measures
2 Stitch skipping	Clearance between the needle and the blade point of hook is too large.	Check the clearance.	Refer to “(5) Needle-to-hook timing”.
	Needle-to-hook timing is excessively advanced or retarded.	Check the specified dimension.	Refer to “(5) Needle-to-hook timing”.
	Presser foot is rising.	Check the pressure of the presser foot.	Tighten the presser spring regulator.
	Height of the needle bar is improper.	Check the lowest point of the needle bar.	Refer to “(5) Needle-to-hook timing”.
	Blade point of the hook is blunt.	Check the blade point of the hook.	Correct the blade point of the hook or replace the hook.
	Improper type of needle is used.		Replace the needle with one which is thicker than the current needle by one count.
	Hook needle guard is not functioned.	Check the functional amount of the needle guard.	Refer to “(5) Needle-to-hook timing”.
	Thread take-up spring excessively works or the stroke of the spring is too small.		Decrease the tension of the thread take-up spring and increase the stroke of the spring.
	Feed timing is not proper.		Refer to “(9) Feed cam timing”.



	Troubles	Causes	Checking	Corrective measures
3	Loose stitches (Balloon stitches or isolated idling loop)	Clearance between the inner hook guide and the protruding section of inner hook is too large.	Check the clearance.	Refer to “(7) Adjusting the inner hook guide”.
		Thread paths have been poorly finished.	Check the finish of the respective thread paths.	Finish using a fine emery paper or buff.
		Bobbin fails to move smoothly.	Check the change of bobbin thread tension.	Replace the bobbin or the hook.
		Thread is not well tightened in the reverse feed.		Use the optional walking foot and presser foot.
		Height of the feed dog is too high.	Compare the height with the standard value.	Refer to “(4) Height of the feed dog”. Lower the height by 0.2 mm than the standard value.
		Feed timing is excessively advanced.		Retard the feed timing.
	Loose stitches (Needle thread rises.)	Needle thread has not been fully pulled up.		Increase the needle thread tension. Use the optional walking foot. (Top-devided type)
4	Irregular stitches	Stroke of the thread take-up spring is improper.	Check the stroke of the thread take-up spring.	Adjust the thread take-up spring to move to approximately 1 mm from the initial position when hook draws thread maximumly.
		Thread paths have been poorly finished.	Check the finish of the respective thread paths.	Finish with a fine emery paper or buff.
		Bobbin fails to move smoothly.	Check the change of bobbin thread tension.	Replace the bobbin or the hook.
		Bobbin thread tension is too low.		Increase the tension of the bobbin thread.
		Bobbin has been wound too tight or too weak.	Check the state of bobbin winding.	Decrease or increase the tension applied to the bobbin winder.

#### Adjustment of the thread take-up spring

- Decrease the tension of the thread take-up spring and decrease the stroke of the spring to improve irregular stitches.

## (2) With regard to thread trimming

Troubles	Causes	Checking	Corrective measures	
1 One or several stitches skip at the start of sewing.	Thread remaining at the needle top after thread trimming is short.	Check the routing of needle thread.	Thread the needle thread correctly. Make the winding of the thread guide once.	
		Thread tension given by the tension controller No.1 is too high.	Decrease the tension given by the tension controller No.1.	
		Check the rising amount of the thread tension disk No.2 at the time of thread trimming.	Adjust so that the disk is raised by means of the thread release solenoid.	
		Thread trimming timing is excessively advanced.	Refer to "5) Thread trimmer cam timing" .	
		There are scratches on the moving knife and the hook.	Polish with buff or replace the part.	
	Bobbin thread is not clamped.	Position of the clamp spring.	Refer to "2) Position of the counter knife".	
		Pressure of the clamp spring is too low.	Refer to "2) Position of the counter knife".	
		There are scratches on the clamp spring.	Replace the clamp spring with a new one.	
		Needle thread removes bobbin thread.	Increase or decrease the tension of the tension controller No.1.	
	Needle is too thick.			Replace the needle with a thinner one.
	Needle hole in the feed dog is too large.			Replace the feed dog with an optional one with small needle hole.
	Pressure of the presser foot is too low.			Increase the pressure of the presser foot.

Troubles	Causes	Checking	Corrective measures
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2	Thread slips off the needle eyelet.	Needle thread slips off the needle eyelet immediately after thread trimming.	Check whether the needle thread remaining at the needle top after thread trimming is short.	Refer to the Cause "Needle thread remaining at the needle top after thread trimming is short"
	Needle thread slips off the needle eyelet at the start of sewing.	Check whether the needle thread remaining at the needle top at the start of sewing is short.	A hard-to-slip thread is used.	

3	Defective thread trimming.	Thread cannot be trimmed.	The blades of moving knife and fixed knife have been improperly adjusted.	Refer to "2) Position of the fixed knife".
			The blades of moving knife and fixed knife have worn out or broken.	Replace the moving knife and fixed knife with new ones.
			Pressure of the fixed knife is insufficient.	Refer to "2) Position of the fixed knife".
		Thread remains uncut after thread trimming.	The blades of moving knife and fixed knife have been improperly adjusted.	Refer to "2) Position of the fixed knife".
			The blades of moving knife and fixed knife have worn out or broken.	Replace the moving knife and fixed knife with new ones.
			Thread trimming timing is excessively retarded.	Refer to "5) Thread trimmer cam timing"
	Moving knife stops during operation.	Thread is too thick.	Pressure of the fixed knife is insufficient.	Refer to "2) Position of the fixed knife".
			Thread trimming timing is excessively retarded.	Refer to "5) Thread trimmer cam timing"
			Needle thread tension is too high.	Decrease the tension of the thread tension No. 1.

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Troubles	Causes	Checking	Corrective measures
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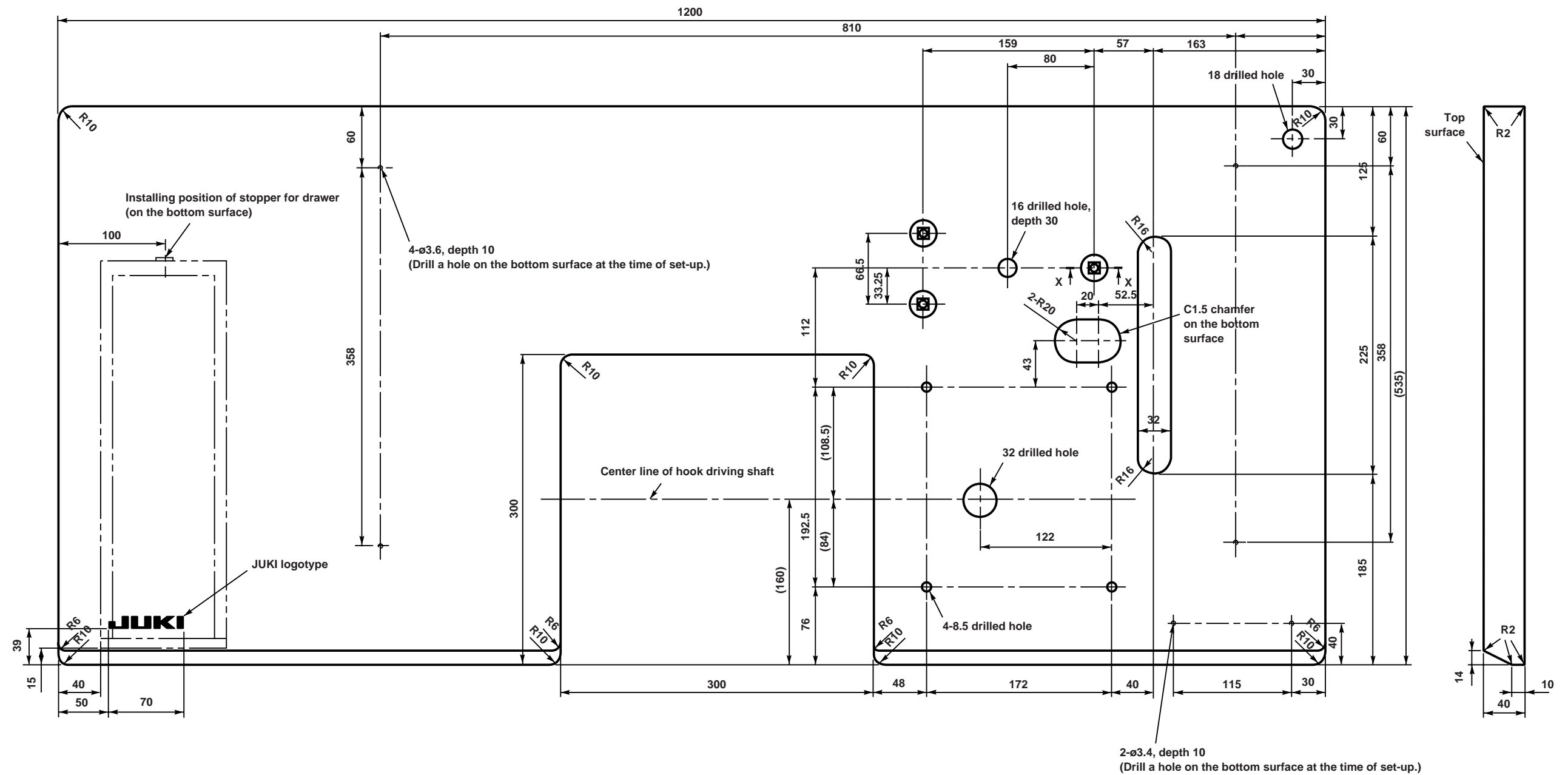
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		Tension of the bobbin thread is too high.	Adjust the tension of bobbin thread.
		Knife pressure of the fixed knife is too high.	Refer to "2) Adjusting the knife pressure".
		Initial position of the moving knife is placed excessively in the front.	Refer to "5) Thread trimmer cam timing".
		Thread is not cut sharply.	Refer to Causes "Thread cannot be trimmed" and "Thread remains uncut after trimming".
Needle thread is not caught.		Stitch skipping at the last stitch.	Refer to "(5) Needle-to-hook timing"
		Check the thread trimmer cam timing.	Refer to "5) Thread trimmer cam timing".
		Top end of the moving knife has broken or been scratched.	Replace the moving knife with a new one.
Bobbin thread is not caught.		Stroke of the moving knife is small.	Adjust the initial position of moving knife.
		Check the routing of bobbin thread.	Correctly thread bobbin thread.
		Top end of the moving knife has broken or been scratched.	Replace the moving knife with a new one.
		Check the height of moving knife.	Adjust the height of moving knife.
Both needle and bobbin thread cannot be trimmed.		The blades of moving knife and fixed knife have been improperly adjusted.	Refer to "2) Adjusting the knife pressure".
		Pressure of the fixed knife is too low.	Refer to "2) Adjusting the knife pressure".
		Moving knife fails to work.	Adjust the synchronizer timing. Replace the thread trimmer solenoid.

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# 10. DRAWING OF THE TABLE



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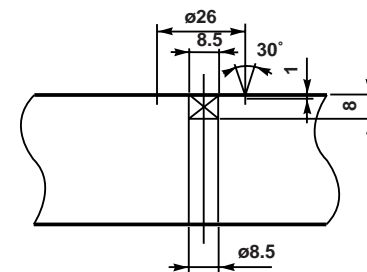


Table Part No. : 21444005

Cylinder bed, 1-Needle, Unison Feed,  
Lockstitch Machine (Standard Hook)

**JUKI**®

**LS-1340**

Cylinder bed, 1-Needle, Unison Feed, Lockstitch Machine (Large Hook)

**LS-1341**

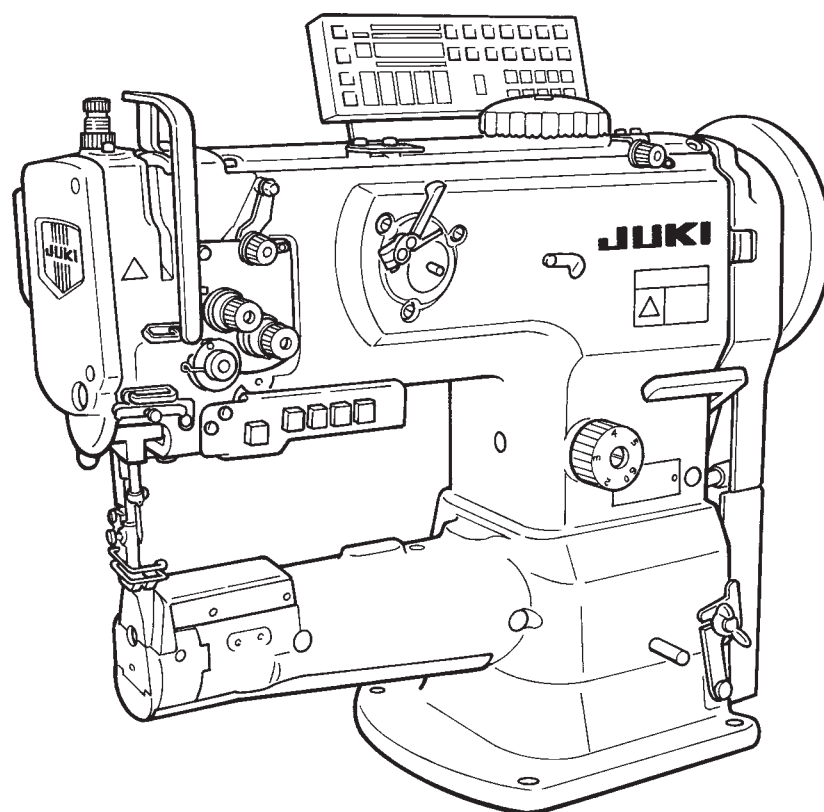
Cylinder Bed, 1-Needle, Unison Feed, Lockstitch Machine (Large Hook)

**LS-1342**

Cylinder Bed, 1-Needle, Unison Feed, Lockstitch Machine with Automatic Thread  
Trimmer (Large Hook)

**LS-1342-7**

# ENGINEER'S MANUAL



29353406

No.00



## **PREFACE**

This Engineer's Manual is written for the technical personnel who are responsible for the service and maintenance of the machine.

The Instruction Manual for this machine intended for the maintenance personnel and operators at an apparel factory contains operating instructions in detail. And this manual describes "Standard Adjustment", Adjustment Procedures", "Results of Improper Adjustment", and other important information which are not covered in the Instruction Manual.

It is advisable to use the relevant Instruction Manual and Parts List together with this Engineer's Manual when carrying out the maintenance service of this machine.

Regarding the motor for the sewing machine with automatic thread trimmer, separately refer to the Instruction Manual for the motor and Engineer's Manual. In addition, for the control panel, refer to the Instruction Manual for the control panel.

This manual gives the "Standard Adjustment" on the former page under which the most basic adjustment value is described and on the latter page the "Adjustment Procedures" and "Results of Improper Adjustment" under which the steps of adjusting procedure, and stitching errors and troubles arising from mechanical failures are described.

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