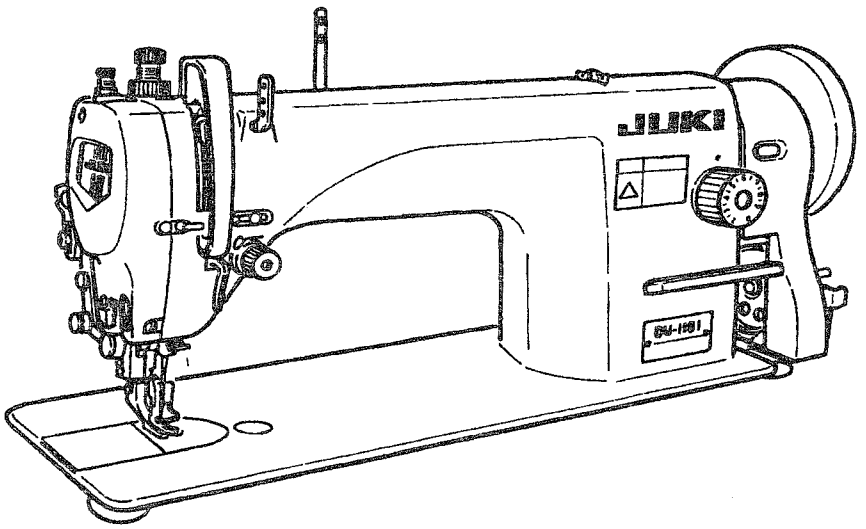
JUKI®

1-NEEDLE, TOP AND BOTTOM FEED LOCKSTITCH MACHINE WITH A LARGE HOOK

DU-1181

ENGINEER'S MANUAL



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Introduction

This Engineer's Manual is for technical service engineers. In the instruction manual for the maintenance engineers of sewing machines and sewing workers in a sewing factory, how to operate a sewing machine is also described in detail. However, in this manual, [Adjustment Procedure], [Results of Value Change for Adjustment], and the roles of each component are described: these are not included in the instruction manual.
When maintenance is performed for our sewing machines, refer not only to this manual, but also to the instruction manual and parts list.

This engineer's manual describes the basic adjusting values as the reference values in the first page, and the observed events caused by sewing and mechanical faults as the [Results of Value Change for Adjustment] and [Adjustment Procedure] in the second page.

CONTENTS

1. Specifications 1

2. Model Designation of the Head Section 2

3. Standard adjustment 3
   (1) Height of Needle Bar 3
   (2) Timing between the Needle and the Hook 3
   (3) Lengthwise Position of Bobbin Case Positioning Finger 5
   (4) Height and Position of the Feed Dog 5
   (5) Feeding Alignment 7
   (6) Hand Lifter 7
   (7) Upper Feed Motion 9
      1) Outer Presser Foot Position 9
      2) Amount of Interactive Movement of the Outer Presser Foot and the Inner Presser Foot 9
      3) Amount of Alternating Vertical Movement of the Outer Presser Foot and the Inner Presser Foot 9
   (8) Upper Feed Differential 11
   (9) Upper Feed Cam Timing 11
   (10) Stitch Length in Forward and Reverse Feed 13
   (11) Thread Tensioner 13
   (12) Lubrication 15

4. Grease Application 17

5. List of Selective Combination Parts and Maintenance Parts 19

6. Optional Parts 19

7. Troubles in Sewing and Corrective Measures 20

8. Table Dimension Diagram 24

1. Specifications

No.	Item	Specifications
1	Model	DU-1181
2	Model Name	1-needle, top and bottom feed lockstitch machine with a large hook
3	Applications	For medium-weight and heavy-weight materials
4	Sewing Speed	Max. 2,000 rpm.
5	Needle	DP x 17#14 to #23 (Standard: #21), (DB x 1 available)
6	Thread	#40 to #8
7	Stitch Length	Max. 9 mm (for both normal and reverse feed stitching)
8	Presser Foot Lift	Using hand lifter: 5.5 mm, Using a knee lifter: 15 mm
9	Stitch Length Regulating Method	Using butterfly dial
10	Reverse Feed Stitching	Using hand lever
11	Thread Take-up Lever	Link type
12	Needle Bar Stroke	36.5mm
13	Amount of Alternating Vertical Movement of the Walking Foot and Presser Foot	2mm to 5mm
14	Hook	Large hook with automatic lubrication system
15	Feed mechanism	Feed forked connecting slider type
16	Top Feed Mechanism	Linked with hook driving mechanism
17	Rotating Hook Driving Shaft System	Using beveled gear
18	Lubrication	Automatic lubrication (Manual lubrication only for top feed section)
19	Oil Return Flow	Circulated with plunger pump
20	Lubricating Oil	JUKI Machine Oil No. 1 (equivalent to ISO VG7)
21	Grease	JUKI Grease A (White) Tube of 10g grease (Part No. : 40006323), or 500g can (P/art No. : 23640204)
22	Bed Size	178mm to 476.6mm
23	Space under the Needle	261mm to 122.6mm
24	Motor	4P-400W Clutch Motor
25	Transmission Belt	M Type V-Belt
26	Weight of Machine Head	31Kg

2. Model Designation of the Head Section

Name: 1-Needle, Top and Bottom Feed Lockstitch Machine with a Large Hook

1	2	3	4	5	6	7	8	9
D	U	1	1	8	1	–	□	A

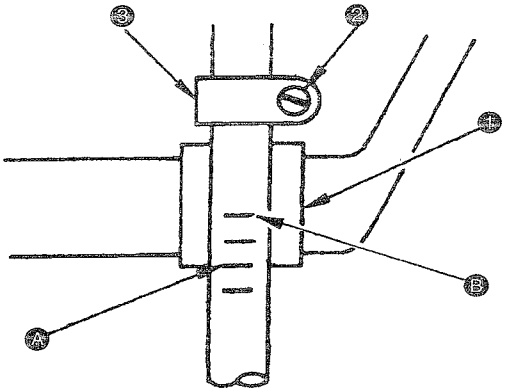
8	Specification Code for Destination
A	Standard
G	China (within China)
D	U.S.A. and Japan

9	Accessory Specification Code
A	Standard

3. Standard Adjustment

(1) Height of Needle Bar

Standard Adjustment



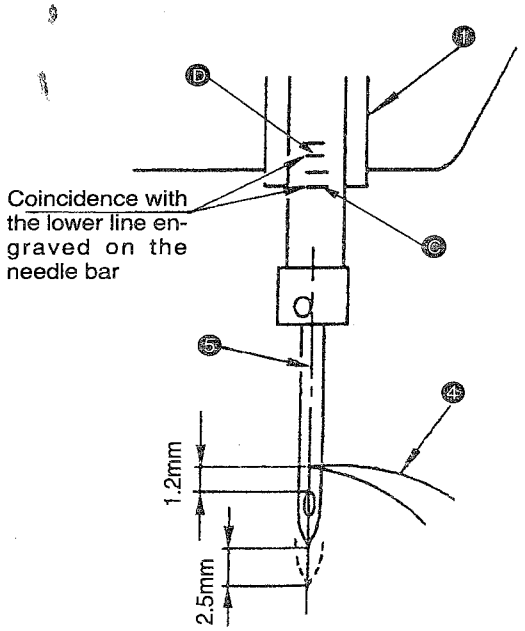
Requirement:
- The needle bar should be brought to the lowest dead point.

Marker Lines engraved in the Needle Bar (for DP x 17): (Standard) A
Marker Lines engraved in the Needle Bar (for DB x 1): B

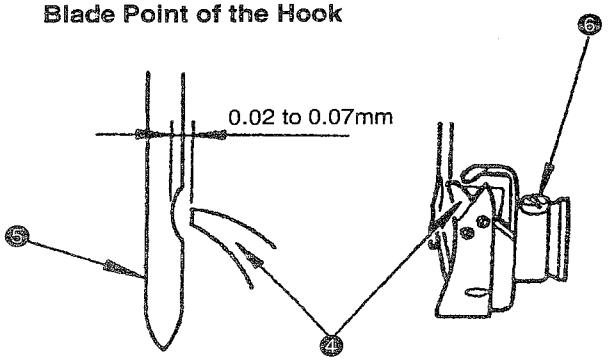
(2) Timing between the Needle and the Hook

Standard Adjustment

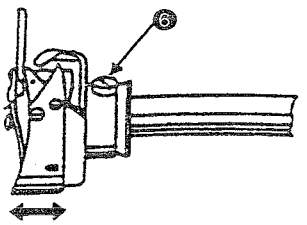
1) Needle Lifting Amount and Positions of the Needle and Blade Point of the Hook



2) Clearance between the Needle and the Blade Point of the Hook



Requirement:
- The needle bar should be lifted from the lower dead point.



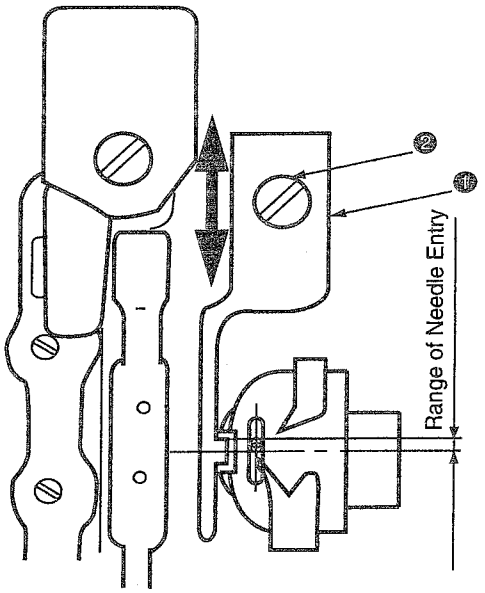
Marker Lines engraved in the Needle Bar (for DP x 17): (Standard) C
Marker Lines engraved in the Needle Bar (for DB x 1): D

Adjustment Procedure	Results of Improper Adjustment
1. Turn the hand-wheel to bring the needle bar to the lowest dead point. 2. Loosen the clamping screw ② of the needle bar connecting bracket ③. 3. Align the marker line Ⓐ engraved in the needle bar with the lower end of the needle bar lower metal ① and fasten the clamping screw ② of the needle bar connecting bracket ③. **(Cautions) 1. For the needle DP x 17 (Standard), use the second marker line Ⓐ from the lowest, engraved in the needle bar.** **2. For the needle DB x 1, use the fourth marker line Ⓑ from the lowest, engraved in the needle bar.** **3. After adjustment, make sure that the outer presser foot does not come in contact with the needle bar.**	o Stitch skipping or thread breakage may be caused.

Adjustment Procedure	Results of Improper Adjustment
1. Loosen the set screw of the throat plate and remove the throat plate. 2. Lift the needle bar 2.5 mm up from the lowest dead point. (For the needle DP x 17 (Standard), use the lowest engraved marker line Ⓒ on the needle bar. For the needle DB x 1, use the third marker line Ⓓ from the lowest engraved on the needle bar.) 3. Align the marker line Ⓒ (for DP x 17) with the lower end of the needle bar lower metal ①. 4. When the positions of the needle ⑤ and the blade point ④ of the hook are adjusted, loosen the hook set screw ⑥ and turn the hook by hand. Then align the center of the needle ⑤ with the blade point ④ of the hook. 5. When setting the clearance between the needle ⑤ and the blade point ④ of the hook, loosen the hook set screw ⑥, and move the hook in the direction of the arrow. Then fasten the hook set screw ⑥ so that the clearance of 0.02 to 0.07 mm is provided between the needle ⑤ and the blade point ④ of the hook.	o Irregular stitches, stitch skipping or thread breakage may be caused. o Irregular stitches, particularly isolated idling loops, will occur when the hook timing is too early or too late. o Irregular stitches can be improved when the hook timing is appropriately set later. o When the hook timing is set too late, the thread tension may be lowered. o Isolated idling loops can be improved when the hook timing is set appropriately earlier.

(3) Lengthwise Position of Bobbin Case Positioning Finger

Standard Adjustment

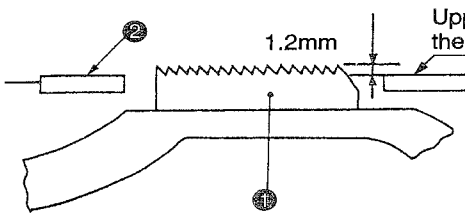


Requirements:
- The needle entry should be within a range between the center of the bobbin case positioning finger ❶ projection and the shoulder section.
- The needle bar should be brought to the lowest dead point.

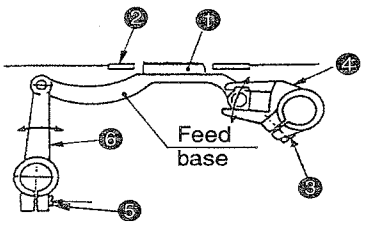
(4) Height and Position of the Feed Dog

Standard Adjustment

1) Height of the Feed Dog

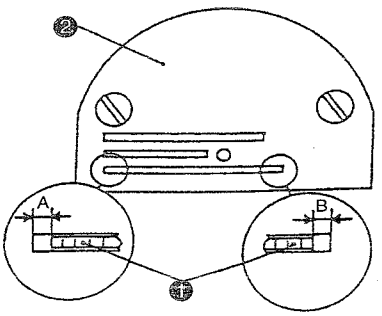


Requirements
- Feed Level: Minimum (0mm)
- The maximum projection of the feed dog ❶ should be 1.2 mm above the surface of the throat plate.



2) Position

Requirements:
- Feed Level: Maximum (9 mm)
- The clearances A and B between the throat plate ❷ and the front and rear of the feed dog ❶ should be equal (both in the forward and reverse feed stitching).

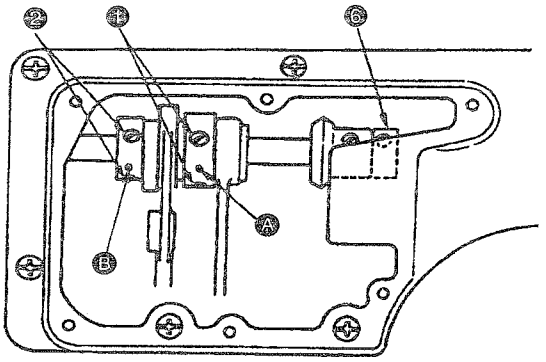


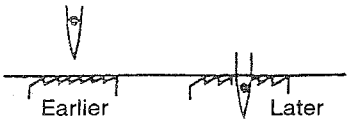
Adjustment Procedure	Results of Improper Adjustment
1. Turn the hand-wheel to bring the needle bar to the lowest dead point. 2. Loosen the set screw ❷ of the bobbin case positioning finger ❸. 3. Move the bobbin case positioning finger ❶ in the arrow direction so that the needle entry is within the range between the center of the projection on the bobbin case positioning finger ❶ and the shoulder section and fix it using the set screw ❷ of the bobbin case positioning finger ❸.	o Thread tension failure may be caused.

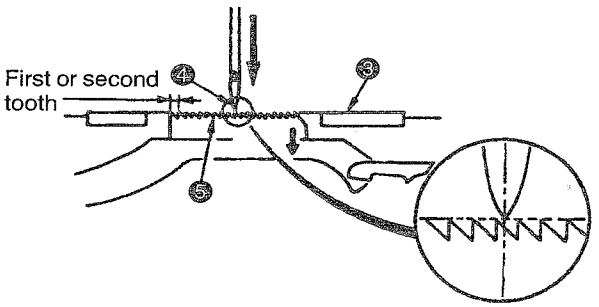
Adjustment Procedure	Results of Improper Adjustment
Height of the Feed Dog 1. Set the stitch dial to 0 on the scale. 2. Turn the hand-wheel and set the feed dog ❶ to the position where it projects to the upper limit from the throat plate ❷. 3. Loosen the feed driving fork end clamping screw ❸ to move the feed driving fork end ❹ up and down and set the height of the feed dog ❶ 1.2 mm higher than the upper surface of the throat plate. Then, fix the clamping screw. **Position** 1. Set the stitch dial to 9 on the scale. 2. Loosen the feed bar arm clamping screw ❺ and make sure that the feed dog ❶ moves evenly to both the front and rear grooves on the throat plate ❷. Then, fix the clamping screw. (A = B)	If the height of the feed dog is excessive: o The feed dog ❶ will come in contact with the throat plate ❷. o The stitch length may become larger than the value specified in the stitch dial. o Irregular stitches may be caused. If the height of the feed dog ❶ is insufficient: o The stitch length may become shorter than the value specified in the stitch dial. o The feed driving force may be weakened. Position: o The throat plate ❷ may come in contact with the feed dog ❶, and the feed bar arm ❻ may come in contact with the bed, resulting in abnormal noise.

(5) Feeding Alignment

Standard Adjustment





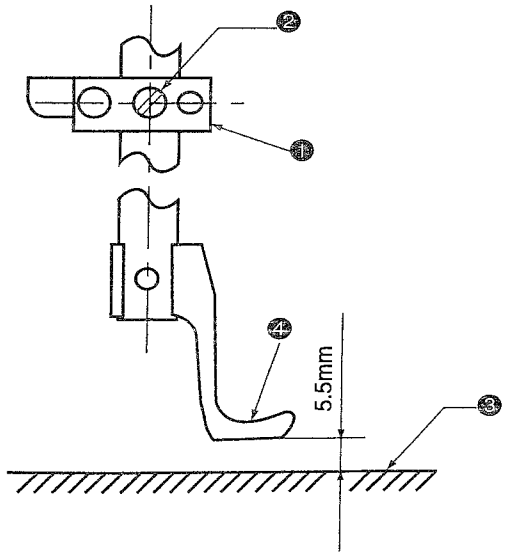


Requirements:

- Feed Level: Maximum (9 mm)
- Just when the first or second tooth at the front end of the feed dog ❺ is lowered from the upper surface ❸ of the throat plate, the tip ❹ of the needle should come in contact with the upper surface ❸ of the throat plate.
- The marker dot Ⓐ engraved on the feed driving cam should agree with the marker dot Ⓑ engraved on the feed rock cam.

(6) Hand Lifter

Standard Adjustment



Requirements:

- The lifting amount of the inner presser foot ❹ should be 5.5 mm using the presser lifting lever.

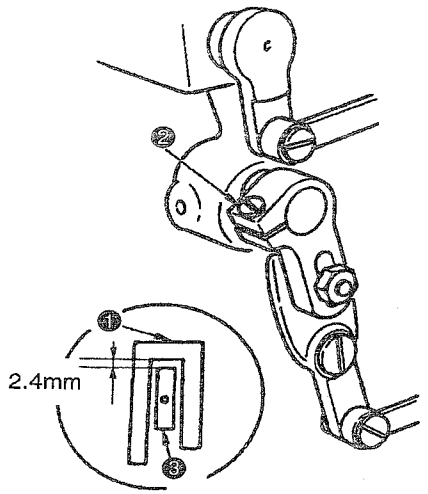
Adjustment Procedure	Results of Improper Adjustment
Feed Driving Cam 1. Loosen the feed driving cam set screw ❶. 2. Turn the feed driving cam to the position where the tip ❹ of the needle contacts the upper surface ❸ of the throat plate and the first or second tooth at the front of the feed dog ❺ sinks from the upper surface ❸ of the throat plate. Then, fix the feed driving cam. **Feed Rock Cam** 1. Loosen the feed rock cam set screw ❷. 2. Align the marker dot Ⓐ engraved on the feed driving cam with the marker dot Ⓑ engraved on the feed rock cam and fix the feed rock cam. (Reference) Three points; the screw No. 1 of the feed driving cam, the screw No. 1 of the feed rock cam and the screw No. 2 of the arm shaft thrust collar ❻, are almost aligned in line. **(Caution) In the adjustment, if the feed rock cam is deviated in the direction of the arm shaft, the machine operation may feel heavy.**	Feed Driving Cam If the feed driving timing is earlier: o Isolated idling loops will be improved, but the thread tension is lowered. If the feed driving timing is later: o Irregular stitches may be caused. The thread tension will be improved. o The needle breakage may be caused. The feed dog action will be different in forward feed stitching from that in the reverse feed stitching, compared to that in standard adjustment. Feed Rock Cam o The stitch length in forward and reverse feed stitching, also, the sewing pitch may differ from those specified in the stitch dial. Irregular stitching may be caused.

Adjustment Procedure	Results of Improper Adjustment
1. Lift the hand lifter. 2. Loosen the clamping screw ❷ of the presser lifting bracket ❶. 3. Adjust the distance from the upper surface ❸ of the throat plate to the bottom surface of the inner presser foot ❹ to set it to 5.5 mm. Then fix the hand lifter using the clamping screw ❷ of the presser lifting bracket ❶.	If the height is too high: o The cloth feeding operation may not be stable because the bottom surface of the inner presser foot ❹ is not in close contact with the upper surface ❸ of the throat plate.

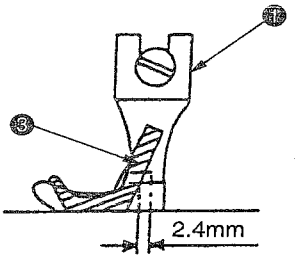
(7) Upper Feed Motion

Standard Adjustment

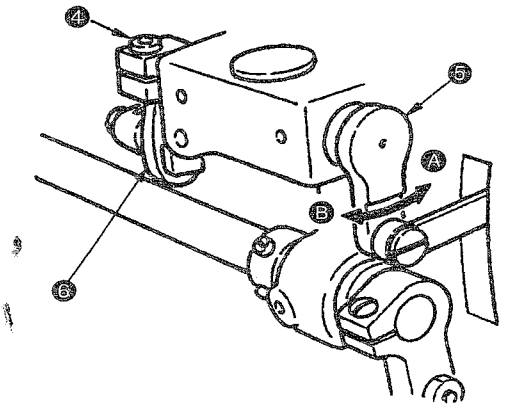
1) Outer Presser Foot Position

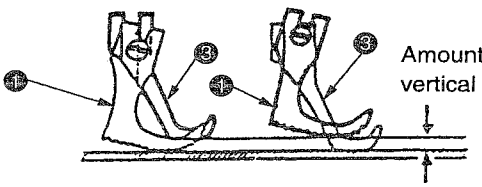


Requirements:
- Feed Level: Maximum (9 mm)
- A clearance of 2.4 mm should be provided between the outer presser foot and inner presser foot when the outer presser foot ❶ and the inner presser foot ❸ are rested on the throat plate and the outer presser foot ❶ is brought closest to the inner presser foot ❸.



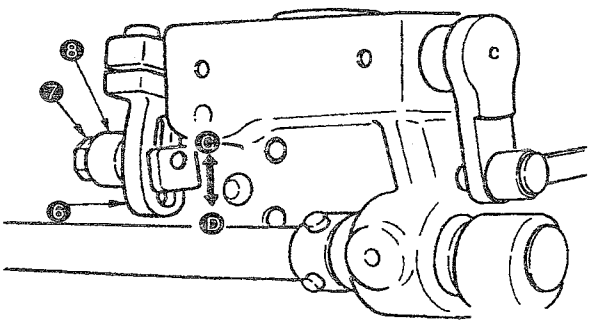
2) Amount of Interactive Movement of the Outer Presser Foot and the Inner Presser Foot



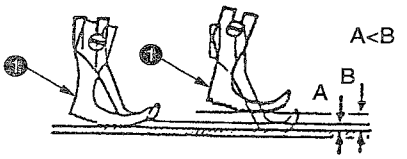


Requirements:
- Feed Level: Minimum (0 mm)
- The inner pressure foot ❸ should be 1.2 mm (the height of the feed dog) higher than the outer presser foot ❶.
- The amount of alternating vertical movement of the outer presser foot ❶ should be equal to that of the inner presser foot ❸.

3) Amount of Alternating Vertical Movement of the Outer Presser Foot and the Inner Presser Foot

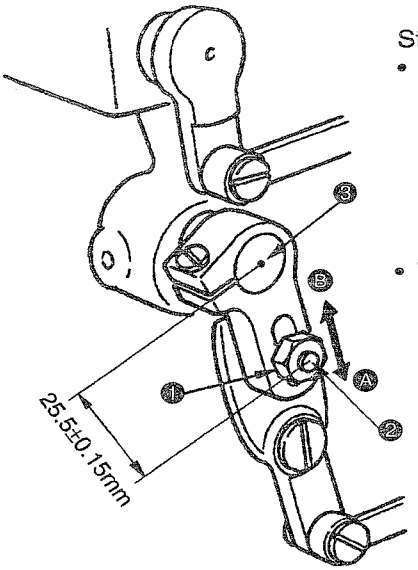


Requirement:
- The marker line engraved on the top feed arm ❻ should be aligned with the center of the cam rod hinge screw ❼.
  (Amount of alternating vertical movement for top feed: 2.5 mm)

Adjustment Procedure	Results of Improper Adjustment
o **Position Adjustment for the Outer Presser Foot** 1. Set the stitch dial to 9 mm on the scale. 2. Lower the inner presser foot ⑥ onto the throat plate and turn the hand-wheel. Stop the hand-wheel when the outer presser foot ⑪ is brought closest to the inner presser foot ⑥. 3. Loosen the connecting arm clamping screw ②. 4. Move the outer presser foot ⑪ by hand and fix it with the connecting arm clamping screw ② so that the clearance of 2.4 mm is provided between the outer presser foot and the inner presser foot ⑥.	o If the position is set incorrectly, top feed components may come in contact each other, which results in abnormal noise.
o **Amount of Interactive Movement of the Outer Presser Foot and the Inner Presser Foot** 1) If the movement of the outer presser foot is insufficient: (Movement of the inner presser foot ⑥ is excessive). 1. Loosen the clamping screw ④ of the top feed arm ⑥. 2. Align the thread take-up lever with the upper dead point and lower the presser bar lifter. 3. Move the top feed shaft ⑤ slightly in the direction Ⓑ and fix it with the clamping screw ④. 2) If the movement of the outer presser foot is excessive: (Movement of the inner presser foot ⑥ is insufficient). 1. Loosen the clamping screw ④ of the top feed arm ⑥. 2. Align the thread take-up lever with the upper dead point and lower the presser bar lifter. 3. Move the top feed shaft ⑤ slightly in the direction Ⓐ and fix it with the clamping screw ④. **(Caution) When the amount of alternating vertical amount is 3 mm or more, the amount of alternating vertical movement of the outer presser foot ⑪ and the inner presser foot ⑥ should be set to equal.**	o Depending on the materials to be sewn, set the alternating vertical movement of the outer presser foot ⑪ to a slightly larger value. In the following cases: • Sponge material is sewn. • Overlapped section of the material is sewn. • Piping stitches are performed.  If the amount of alternating vertical movement of the outer presser foot and inner presser foot is greatly different from the standard values: o The stitch length may differ from the value specified in the stitch dial. o The feed force will be lowered. In such a case, lower the sewing speed (the number of motor revolutions).
o **Amount of Alternating Vertical Movement of the Outer Presser Foot and the Inner Presser Foot** 1. Loosen the cam rod hinge screw ⑦ using a spanner of 14 mm. 2. Adjust the cam rod ⑧ boss position by moving it up or down (Ⓒ ⟷ Ⓓ) and fix it using the cam rod hinge screw ⑦. o Upper Position Ⓒ: Max. Movement (5 mm) o Lower Position Ⓓ: Min. Movement (2 mm) **(Cautions) 1. When the sewing operation is performed while the amount of alternating vertical movement of the outer presser foot and the inner presser foot is at around the maximum, irregular stitch length may be caused. In such a case, lower the sewing speed (reduce the number of motor revolutions).** **2. When the amount of alternating vertical movement is changed for sewing a heavy material, make sure that the needle bar does not come in contact with the outer presser foot ⑪.**	o Depending on the material to be sewn, increase the height of the presser feet. In the following cases: • Sponge material is sewn. • Overlapped section of the material is sewn. o When the movement amount is increased, the stitch length may differ from the value specified in the stitch dial. o When the movement amount is increased, the feed force may be decreased. In this case, lower the sewing speed (the number of motor revolutions) slightly.

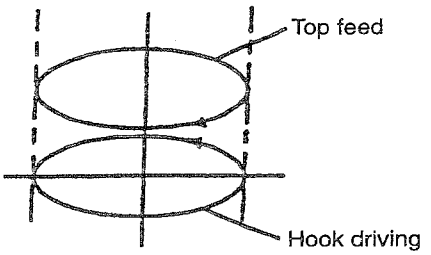
(8) Upper Feed Differential

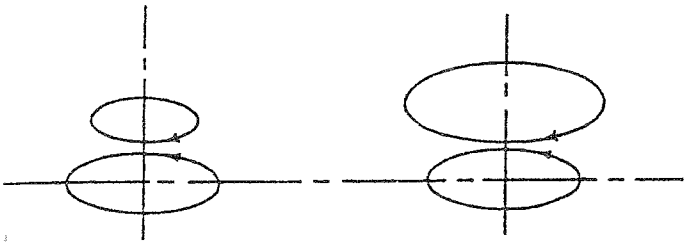
Standard Adjustment



Standard:

- Attach the slide block assembly ❷ through the long eccentric hole so that the distance between the center of the upper feed driving shaft ❸ and the center of the slide block assembly bolt becomes 25.5 ± 0.15 mm.
- The ratio of hook driving to top feed is 1:1.



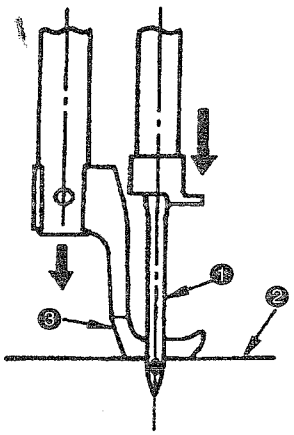


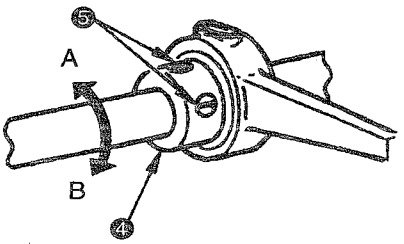
Upper position (Direction Ⓑ)
Smaller top feed amount

Lower position (Direction Ⓐ)
Larger top feed amount

(9) Upper Feed Cam Timing

Standard Adjustment

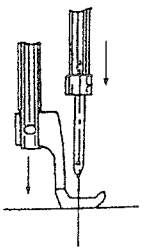




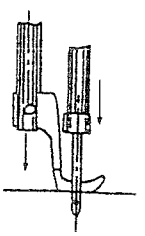
Requirement:

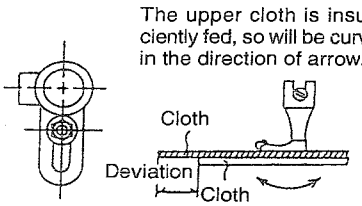
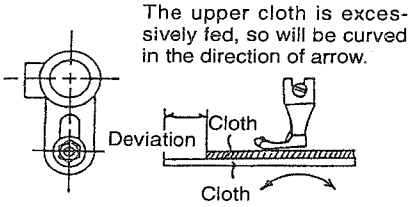
- When the needle ❶ is lowered and the inner presser foot ❸ is also lowered and aligned with the upper surface ❷ of the throat plate, the needle eyelet top end should be aligned with the upper surface ❷ of the throat plate.

If the timing is early (Direction A):



If the timing is late (Direction B):

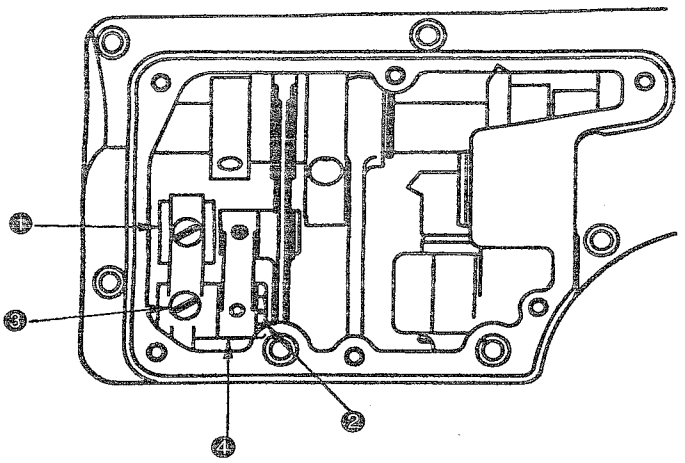


Adjustment Procedure	Results of Improper Adjustment
1. Lift the presser bar lifter. 2. Loosen the slide block nut ⑰ using a spanner of 11 mm. 3. Adjust the position of the slide block assembly ㉒ up or down (Ⓑ, Ⓐ) and fix it using the slide block nut ⑰.	If it is set to the upper position:  If it is set to lower position:  o Check the item of (5)-1) because the position of the outer presser foot is changed. o Deviation will occur between the upper cloth and the lower cloth. o Change it depending on the sewing condition.

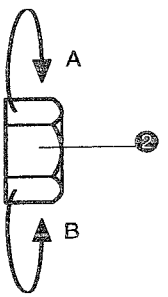
Adjustment Procedure	Results of Improper Adjustment
1. Loosen the two set screws ⑤ of the upper feed cam ④. 2. When the upper surface ② of the throat plate is aligned with the inner presser foot ③, turn the upper feed cam ④ and so adjust that the top end of the needle ① eyelet is aligned with the upper surface ② of the throat plate. Then fix it, using the set screws ⑤.	If the timing is early (Direction A): o The stitch length may differ from the value specified in the stitch dial. (The stitch length becomes smaller). o The load of the reverse feeding may be given to the walking foot. If the timing is late (Direction B): o The needle thread may easily split finely. o The stitch length may differ from the value specified in the stitch dial. (The stitch length becomes larger).

(10) Stitch Length in Forward and Reverse Feed

Standard Adjustment



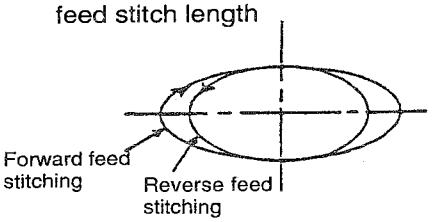
Requirements:
- Feed Level : 6 mm
- When the hand-wheel is turned by hand and a cloth is sewn 10 stitches in both forward and reverse feed stitching the difference in stitch length should be 2 mm or less.



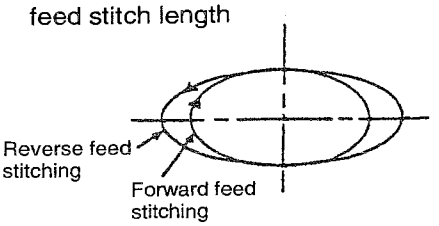
Direction A
The stitch length for the forward feed stitching is increased.
The stitch length for the reverse feed stitching is decreased.

Direction B
The stitch length for the forward feed stitching is decreased.
The stitch length for the reverse feed stitching is increased.

Turn it in direction A.
Forward feed stitch length > Reverse feed stitch length

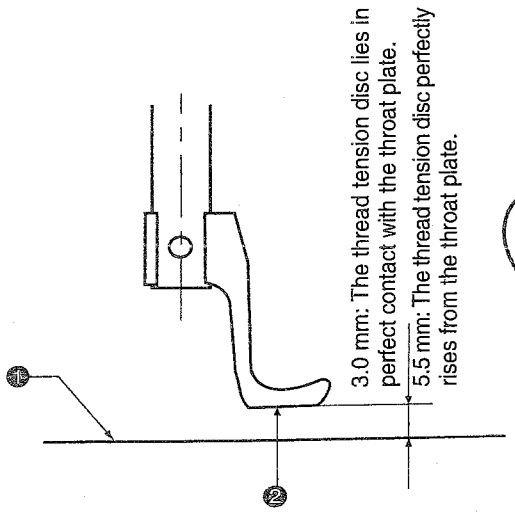


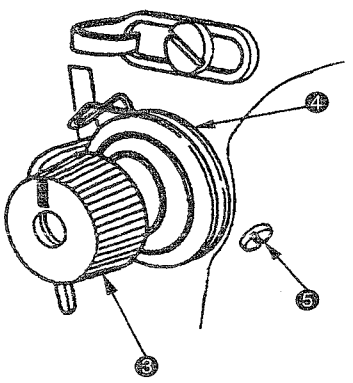
Turn it in direction B.
Forward feed stitch length < Reverse feed stitch length



(11) Thread Tensioner

Standard Adjustment





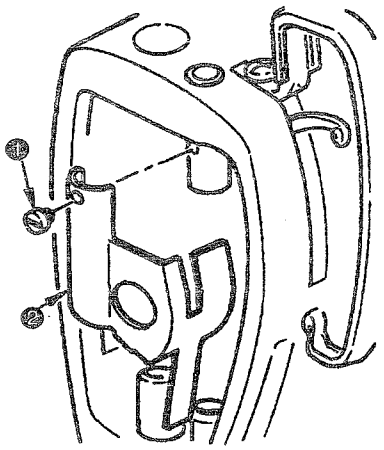
Requirement:
- When the presser foot is lifted and the distance between the upper surface ❶ of the throat plate and the bottom surface of the inner presser foot ❷ is set to 3.0 mm, the thread tension disc comes in perfect contact with the throat plate. When the distance is set to 5.5 mm, the thread tension disc ❹ perfectly rises from the throat plate.

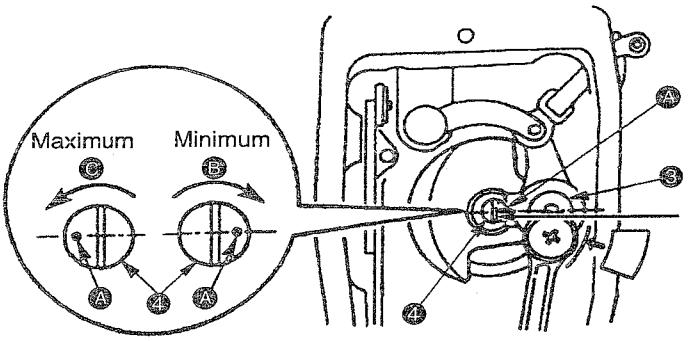
Adjustment Procedure	Results of Improper Adjustment
1. Set the stitch dial to 9 on the scale. 2. Loosen the set screw ❸ of the pin ❷ on the feed regulator base ❶. 3. Adjust the feed regulator base pin ❷ using a spanner of 14 mm, fix it using the set screw ❸. **(Caution) 1. After adjustment, make sure there is no backlash in the forked link ❹ because it may cause stitch failure.** **2. After adjustment, make sure that the stitch length in forward feed is the same as that in reverse feed. Also, reconfirm the amount (2 to 5 mm) of alternating vertical movement for the upper feed, and the feeding alignment (positions of feed driving cam and feed rock cam).**	o The stitch length in the normal feed stitching may differ from that in the reverse feed stitching.

Adjustment Procedure	Results of Improper Adjustment
1. Insert a gauge of 3.0 mm into the gap between the throat plate upper surface ❶ and the inner pressure foot ❷ and lower the hand lifter. 2. Loosen the set screw ❺ of the thread tensioner (assembly) ❸. 3. Push in the thread tensioner (assembly) ❸ and fix it with the set screw ❺ of the thread tensioner (assembly) ❸ at a position where the thread tension disc ❹ does not rise.	If the thread tension disc starts rising too early: o The thread tension disc ❹ may rise during stitching, which may cause thread tension failure. If the thread tension disc ❹ starts rising too late: o The thread tension disc may not rise even when the hand lifter is lifted. The thread is pulled out while tension is given to it.

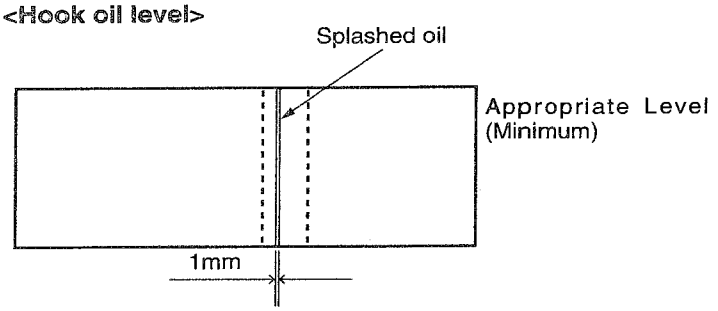
(12) Lubrication

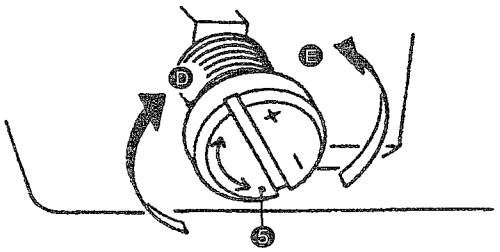
Standard Adjustment





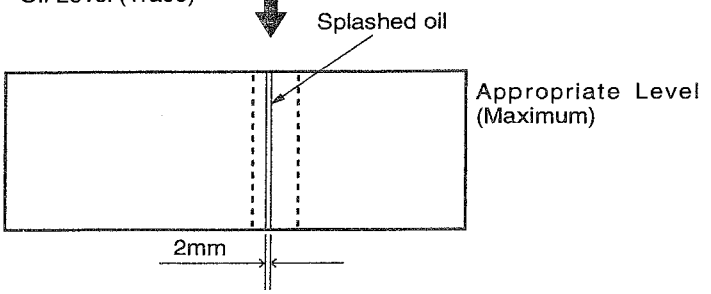
<Hook oil level>



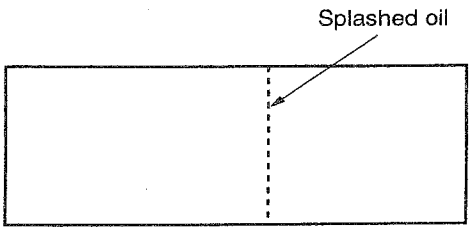


Requirements: 2000rpm

Oil Level (Trace)

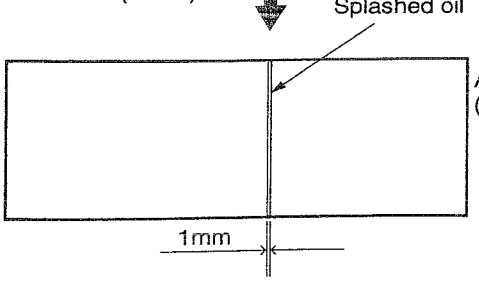


<Face section oil level>



Oil Level (Trace)

Requirements: 2000rpm



Adjustment Procedure	Results of Improper Adjustment
1) Face Section Oil Level Adjustment 1. Loosen the set screw ① of the oil preventive plate and remove the oil preventive plate ②. 2. For adjustment of the oil level for the thread take-up lever and needle bar crank section ③, turn the oil level adjusting pin ④. 3. Turn the oil level adjusting pin in the direction ⑧ and, when the marker dot ⑧, engraved on the oil level adjusting pin, becomes close to the needle bar crank ③, then the oil level becomes minimal. When the oil level adjusting pin is turned in the direction ⓒ ffrom the position shown in the figure and the marker dot ⑧ becomes close to the opposite side of the needle crank ③, then the oil level becomes maximal. Adjust it properly. 4. After adjusting the oil level, by using the oil level adjusting pin ④, warm-up the sewing machine for 30 seconds. Then insert an oil level check (trace) paper from the arrow direction for 10 seconds to measure the oil level. (Speed: 2000 rpm.)	
2) Hook Oil Level Adjustment 1. When the oil level adjusting screw ⑤, attached to the hook shaft metal, is turned in the direction of + (Direction ⓓ), the oil level is increased. When the oil level adjusting screw is turned in the direction of – (Direction ⓔ), the oil level is decreased. Adjust it properly. 2. After adjusting the oil level, using the oil level adjusting screw ⑤, warm-up the sewing machine for about 30 seconds. Then, insert the oil level check paper into the hook bottom for 5 seconds to measure the oil level. (Speed: 2000 rpm.)	If the hook oil level is insufficient: o Thread tension may be insufficient. o The hook will generate heat and be worn out earlier, which may cause seizure of the hook. o Irregular stitches may be caused. If the hook oil level is excessive: o The thread will be stained with oil. The cloth also may be stained with oil.

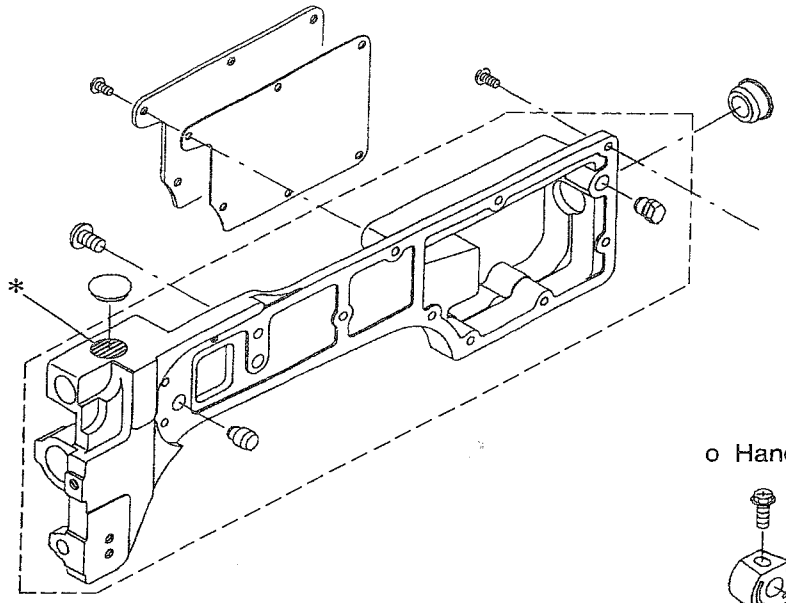
4. Grease Application

The lubricating locations in component assembling work are as follows.

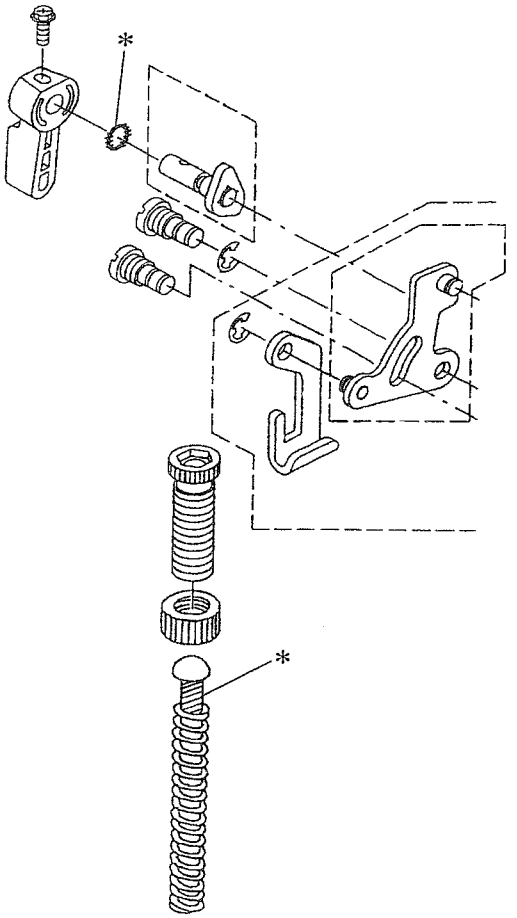
o If any component disassembling work is performed, apply JUKI Grease A (a tube of 10g white grease: P/N 40006323) or 500g can (P/N 23640204) onto the specified locations.

* Greasing : ▨

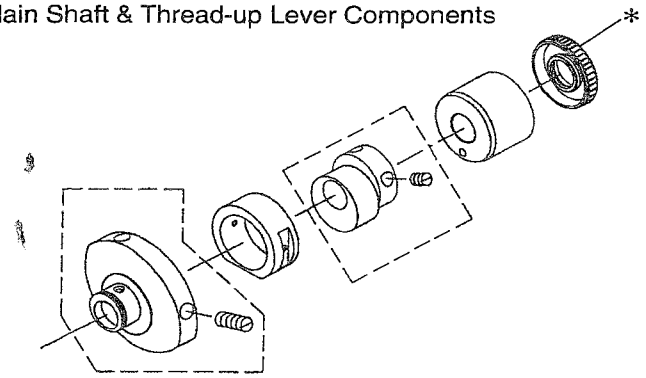
o Machine Frame & Miscellaneous Cover Components



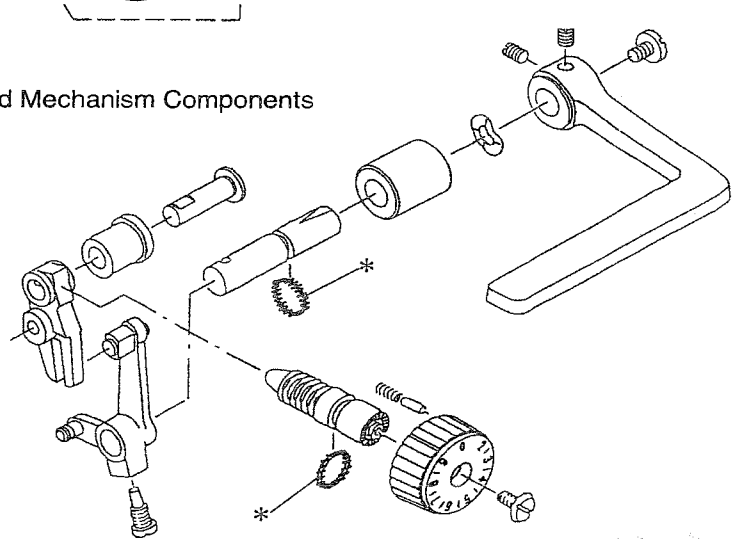
o Hand Lifter Components



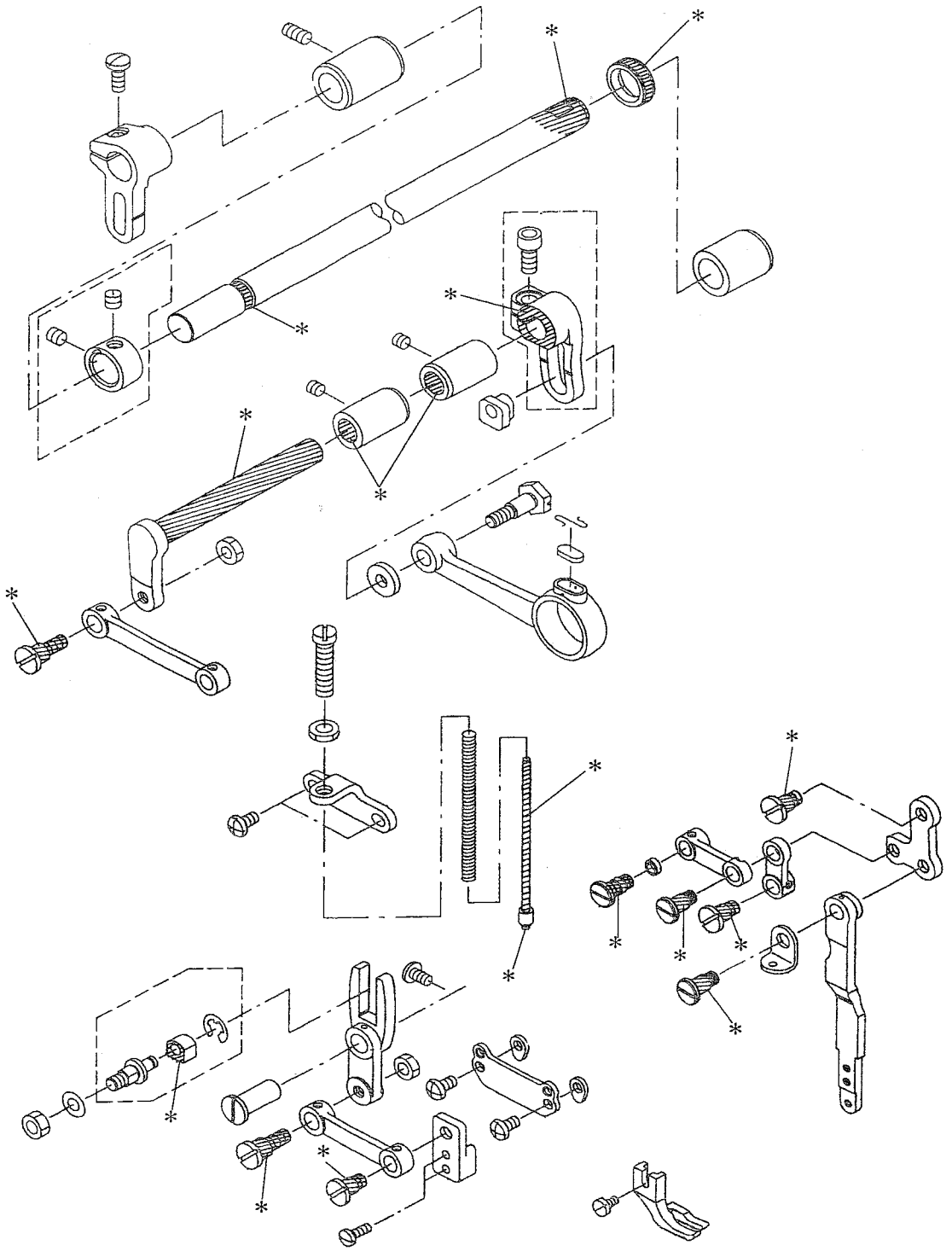
o Main Shaft & Thread-up Lever Components



o Feed Mechanism Components



o Upper Feed Mechanism Components



5. List of Selective Combination Parts and Maintenance Parts

Selective Combination Parts

No.	Selective Combination Part Name	Part No.	Remarks
1	L-plate Rod Presser Washer A	40029413	Standard (t = $2.1^{0}_{-0.02}$ mm)
2	L-plate Rod Presser Washer B	40029414	Selective (t = $2.05^{0}_{-0.02}$ mm)
3	L-plate Rod Presser Washer C	40029415	Selective (t = $2.0^{0}_{-0.02}$ mm)

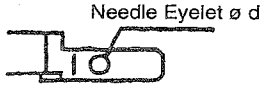
Maintenance Parts

No.	Maintenance Part Name	Part No.	Remarks
1	Hook (Assembly)	40032702	
2	Bobbin	40021610	
3	Bobbin Case (Assembly)	40021609	
4	Needle (DP x 17 #21)	MDP170B2100	

6. Optional Parts

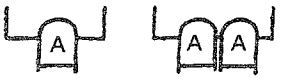
No.	Note	Part No.	Part Name	Remarks
1		B1524141HAB	Movable Walking Foot	
2	1	B1525141H0□	Movable Presser Foot	
3		B1526141H0A	Fixed Walking Foot	
4		B1526141H00	Fixed Presser Foot	
5	2	B1527141H0□	Grooved Walking Foot	Cord Piping
6		B1527141H00	Grooved Presser Foot	
7	2	B1528141H0□	Back-cut Grooved Walking Foot	For cord piping (Curve)
8		B1527141H00	Back-cut Grooved Presser Foot	
9	2	B1529141H0□	Double Grooved Walking	For double cord piping
10		B1527141H0W	Double Grooved Presser Foot	
11		B1525141H0P	Walking Foot for Decorative Stitching	
12		B1526141H0P	Presser Foot for Decorative Stitching	
13		B1526141H0Q	Walking Foot Left Piece	For edge stitching (Right)
14		B1526141H0U	Presser Foot Left Piece	
15		B1526141H0R	Walking Foot Right Piece	For edge stitching (Left)
16		B1526141H0S	Presser Foot Right Piece	
17		B1526141H0T	Walking Foot for Small Material	
18		B1526141H0B	Presser Foot for Small Material	

Note 1:



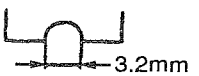
Mark	0	L
ø d mm	2.5	2.8

Note 2:

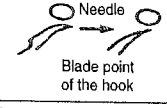


□	Mark	B	C	D	E	F	H	K
A mm	Size	3.2	4.0	4.8	5.6	6.4	7.9	9.5

Example: B1527141HOB
Grooved Walking Foot

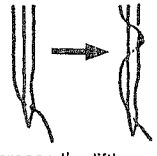


7. Trouble in Sewing and Corrective Measures

Problems	Description	Causes	Check	Treatment and Corrective Measures
1. Needle Thread Breakage	1-1) Needle thread splits finely or breaks during sewing.	1-A) Scratches in needle path, needle tip, hook blade point, or throat plate bobbin case resting groove section.	A-1) Check the scratches in each section.	For the scratches on the hook blade point, polish the hook blade point with fine sandpaper. For the groove section on the throat plate, finish it off, using a buff.
		1-B) Needle thread tension is excessive.		Adjust the needle thread tension properly.
		1-C) Needle comes in contact with the blade point of the hook.	C-1) Check for the clearance between the needle and the hook.	Refer to 3.-(2) Timing between the Needle and the Hook.
		1-D) Oil level in the hook is insufficient.	D-1) Check the oil level.	Replenish oil properly. Refer to 3.-(12) Lubrication.
	1-2) 2 to 3 cm of the needle thread is left on the rear of the material.	2-A) Needle thread tension is insufficient.		Adjust the needle thread tension properly (in many cases, it is caused by synthetic thread).
		2-B) Tension of the thread take-up spring is too high or stroke of the thread take-up spring is too small.		Re-adjust the thread take-up spring tension and stroke.
		2-C) Feed timing is improper.		Refer to 3.-(5) Timing of the Cloth Feed Action.
		2-D) Timing between the hook and the needle is too early or too late.	D-1) Check for the specified dimensions.	Refer to 3.-(2) Timing between the Needle and the Hook.
		2-E) Needle generates heat, resuting in thread breakage.		Decrease the sewing speed, or use silicon oil.
2. Stitch Skipping		2-A) Clearance between the needle and the blade point of the hook is too large.	A-1) Check for the clearance between the needle and the blade point of the hook.	Refer to 3.-(2) Timing between the Needle and the Hook.
		2-B) Timing between the needle and the hook is too early or too late.	B-1) Check for the specified dimensions.	Refer to 3.-(1) Height of Needle Bar and 3.-(2) Timing between the Needle and the Hook.
		2-C) Presser foot fails to rest on throat plate. (Pressure is too low)	C-1) Check for the presser foot pressure.	Fasten the presser adjusting screw.
		2-D) Height of the needle bar is incorrect.	D-1) Check for the needle bar lowest dead point.	Refer to 3.-(1) Height of Needle Bar.
		2-E) Blade point of the hook is blunt.	E-1) Check for the blade point shape.	Repair the blade point of the hook or replace the hook with a new one. 
		2-F) Selected needle is incorrect.		Select the needle which is one-rank thicker.

Test Report

- o In the case that needle thread breakage and stitch skipping occurs frequently, in particular when synthetic thread is used:
  (TETLON #30 to TETLON # 50)
  1. It will be improved if the thread is wound around the needle.



- o To decrease the lifting amount of the presser foot will help with needle breakage.

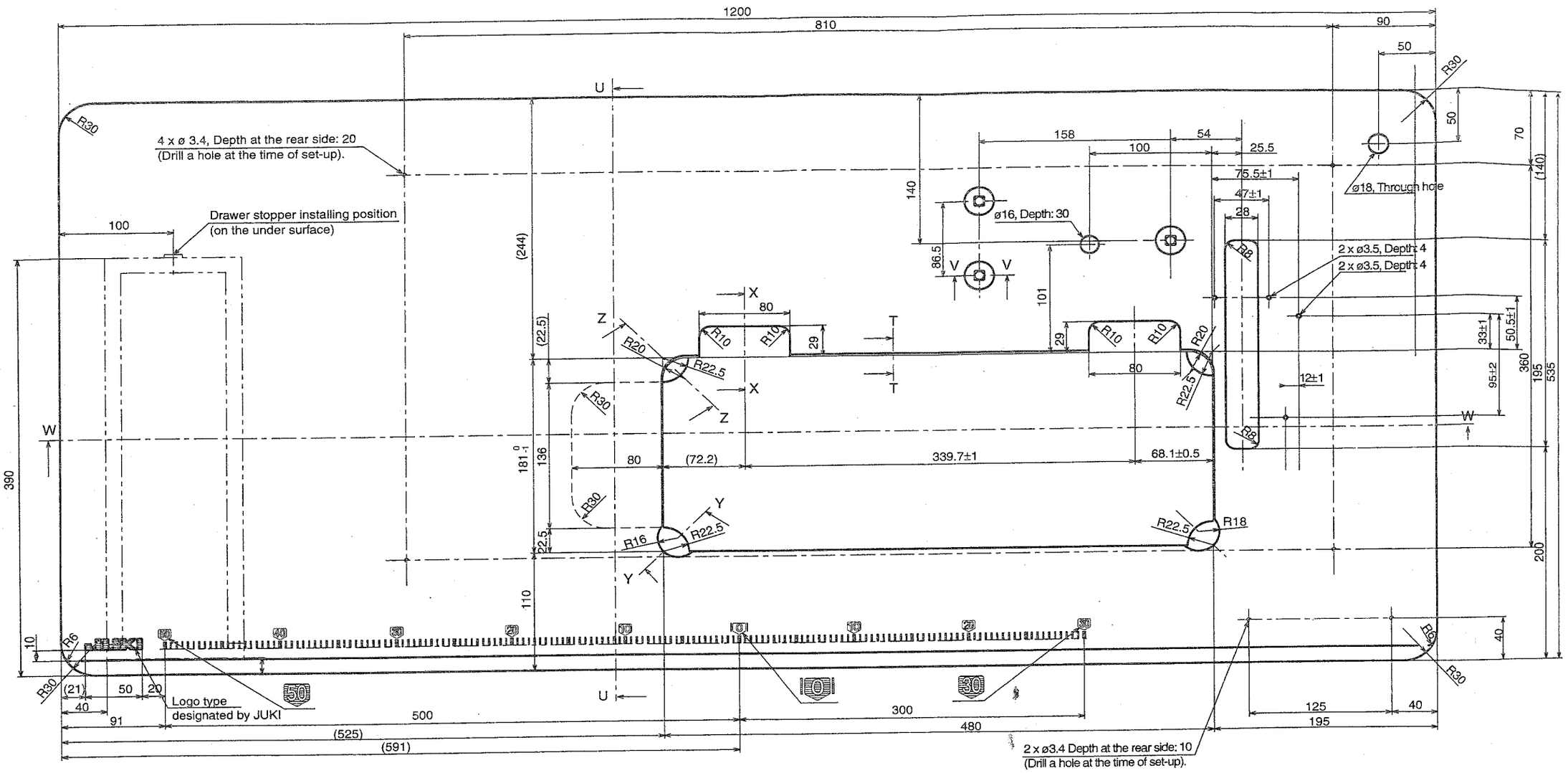
To the next page

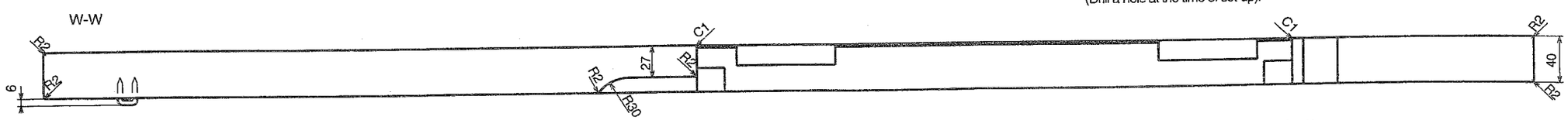
Problems	Description	Causes	Check	Treatment and Corrective Measures
3. Thread tension is incorrect.	From the previous page	2-G) Feed timing is improper.		Refer to 3.-(5) Feeding Alignment
		2-H) Tension of the thread take-up spring is too high or stroke of the thread take-up spring is too small.		Re-adjust the thread take-up spring tension and stroke.
		3-A) Bobbin thread does not pass through the bobbin thread take-up spring in the bobbin case.	A-1) Check for the bobbin thread path.	Correct the thread path in the bobbin case.
		3-B) Thread path is not smooth.	B-1) Check for the thread path in each section.	Polish with fine sandpaper or finish it with buff.
		3-C) Bobbin does not perform smoothly.	C-1) Pull the bobbin thread out and check for the change in the bobbin thread tension.	Replace the bobbin or hook with a new one.
		3-D) The bobbin case is not properly engaged with the hook.	D-1) Check if the bobbin case is engaged with the hook.	Replace the bobbin case or the hook with a new one.
		3-E) Feed dog height is too high.	E-1) Compare it with the standard value.	Refer to 3.-(4) Height and Position of the Feed Dog.
				If it occurs again, lower the height by 0.2 mm from the standard value.
		3-F) The feed timing is too early.		Retard the feed timing.
		3-G) Selected needle is improper.		Replace the needle with one which is one-rank thicker.
		3-H) Thread take-up amount of the thread take-up lever is improper.		Adjust the arm thread guide A.

Problems	Description	Causes	Check	Treatment and Corrective Measures
4. Irregular Stitching	o Any irregular stitches can be improved when the tension and the stroke of the thread take-up spring is adjusted to be reduced and smaller, respectively. ⇒ As the tension of the needle thread adjusting spring becomes relatively stronger, the thread delivery will be stabilized.	4-A) Bobbin thread tension is insufficient.		Re-adjust the bobbin thread adjusting spring in the bobbin case.
		4-B) The bobbin thread is tightly wound around the bobbin.	B-1) Check for the winding level of the thread (particularly with synthetic thread).	Decrease the tension of the bobbin thread winder.
		4-C) Stroke of the thread take-up spring is improper.	C-1) Check the movement level level of the thread take-up spring from the initial position when the hook draws the thread at maximum.	Adjust the thread take-up spring so that the movement level is about 1 mm from the initial position when the hook draws the threat at maximum.
		4-D) Bobbin thread does not pass through the bobbin thread take-up spring in the bobbin case.	D-1) Check for the bobbin thread path.	Correct the thread path in the bobbin case.
		4-E) Thread path is not smooth.	E-1) Check for the thread path in each section.	Polish with fine sandpaper or finish it with buff.
		4-F) Bobbin does not perform smoothly.	F-1) Pull the bobbin thread out and check for the change in the bobbin thread tension.	Replace the bobbin or hook with a new one.
5. Pitch Error		5-A) Feed timing is improper.		Refer to 3-(5) Timing of the Cloth Feed Action.
		5-B) Backlash in Feed mechanism section.	B-1) Check the feed base, forked rod and forked sheath for backlash.	Remove the backlash in each section.
6. Thread comes off from the thread tension disc of the thread winder.		6-A) Thread is twisted.		Wind the thread around the spool arm of the hread spooling unit.

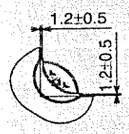
MEMO

8. Table Dimension Diagram

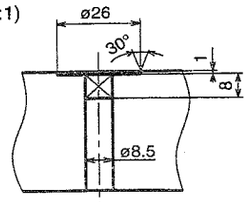




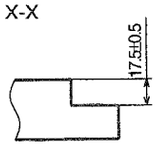
Y-Y Section Rubber Installation Referen



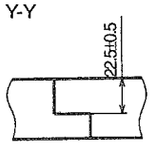
V-V (1:1)



X-X



Y-Y



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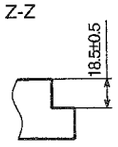

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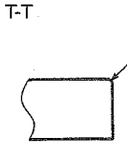
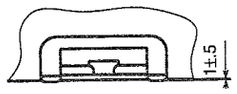
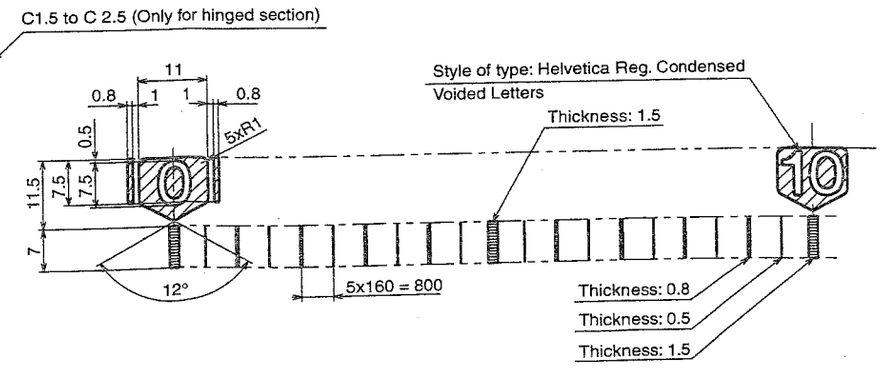


X-X Section Rubber Installation Reference Figure

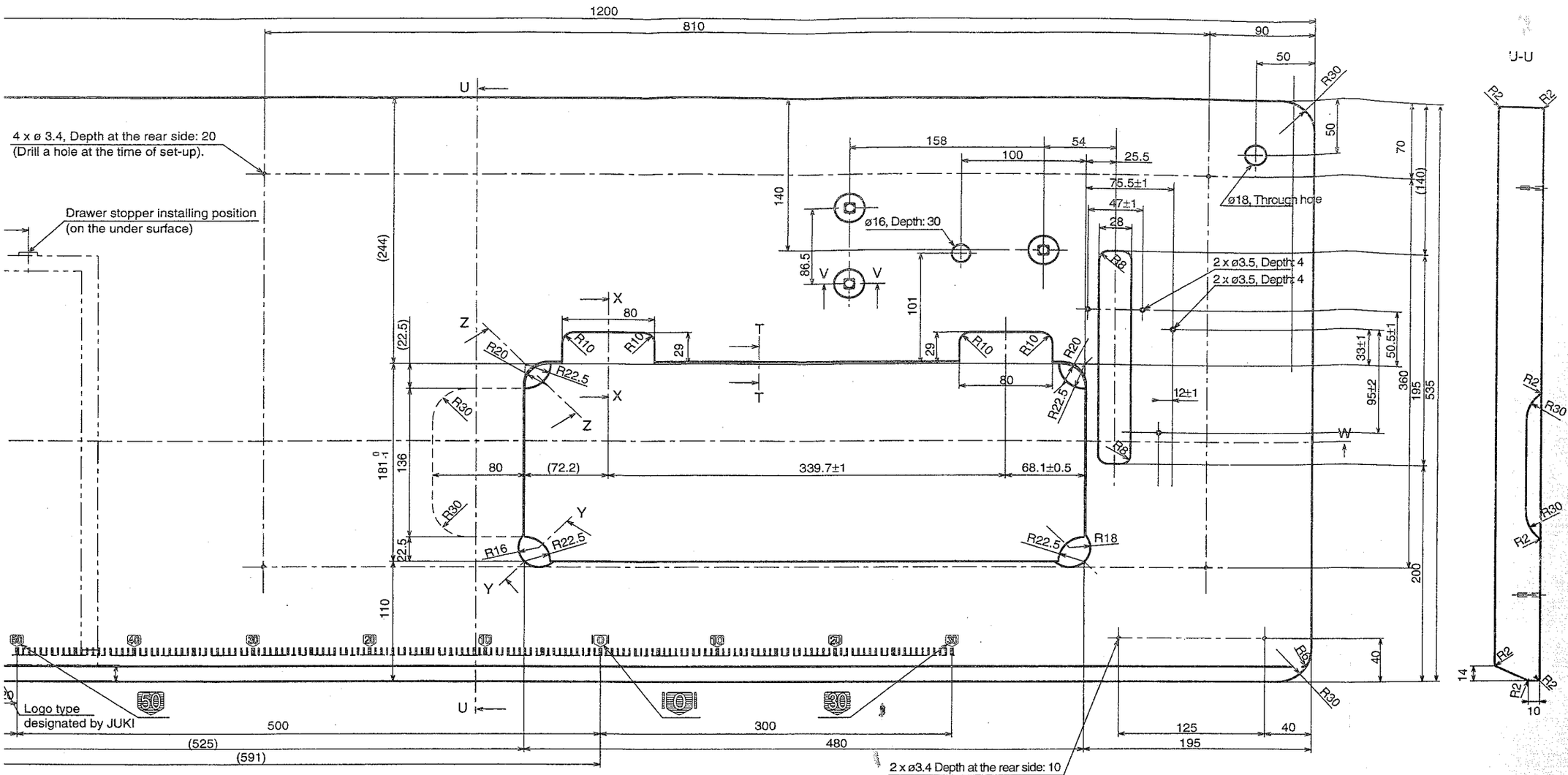


Dimension Drawing in Detail (2:1)

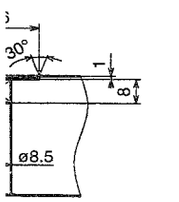


Part No. : 11155009

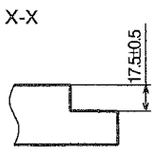
nension Diagram



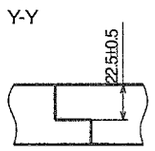
Dimension Drawing in Detail (2:1)



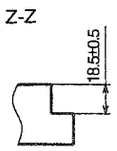
X-X



Y-Y



Z-Z



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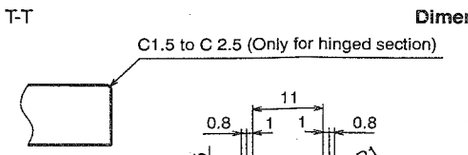
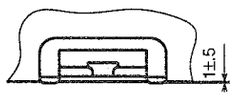
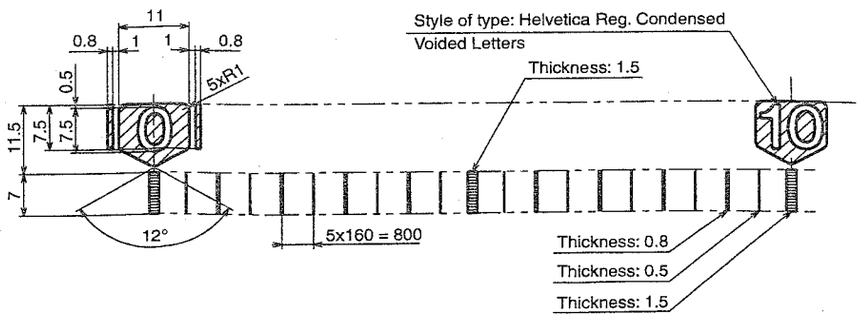
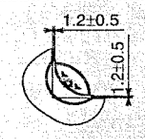


X-X Section Rubber Installation Reference Figure

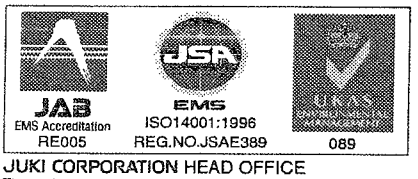




Y-Y Section Rubber Installation Reference Figure



Part No. : 11155009



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