Yamato®

Instruction Manual

CC2700class

Super High Speed Cylinder Bed Interlock Machine

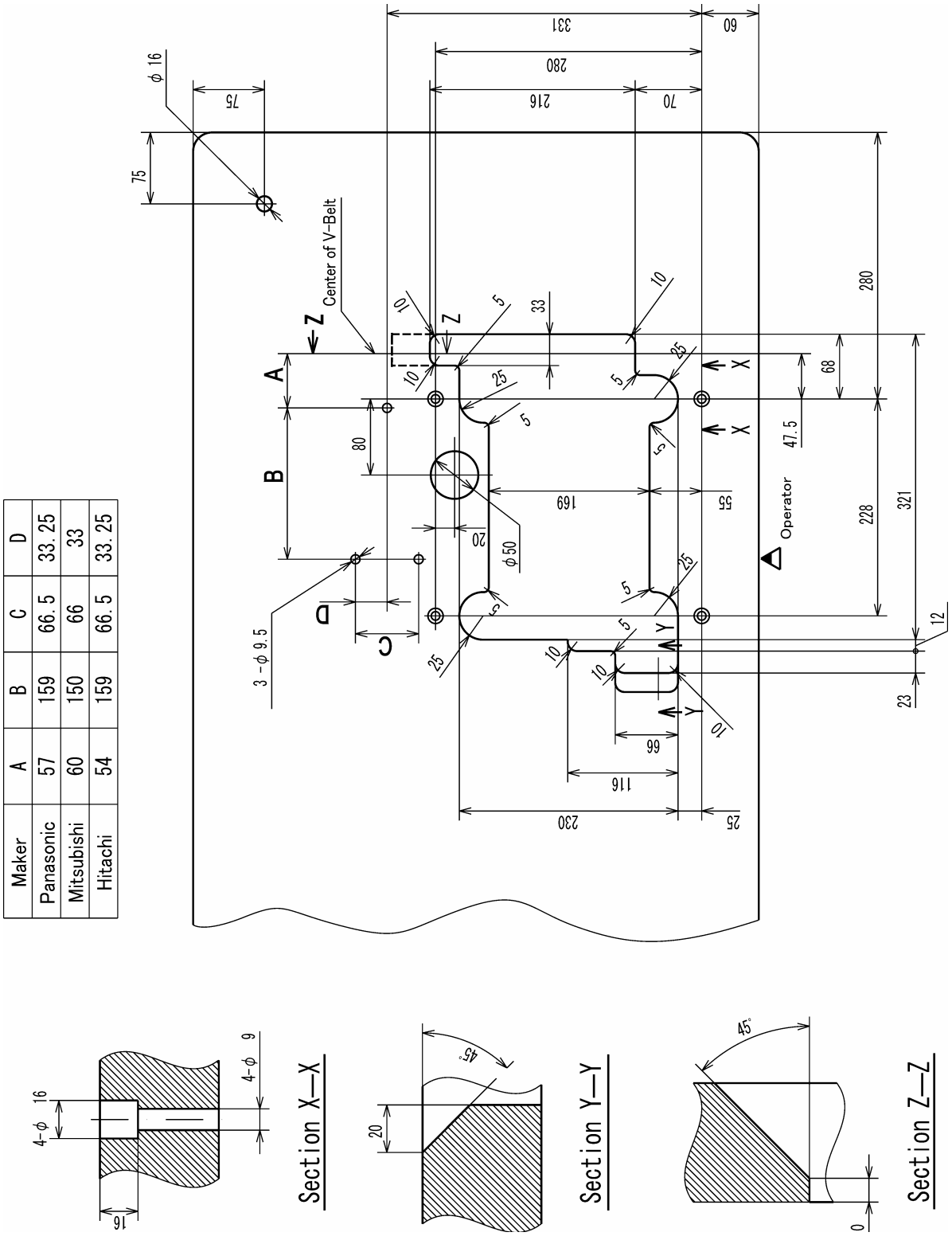
P/N 6820007
No.1

INDEX

1. Installation

1-1 Drawing of Table Top cut-out

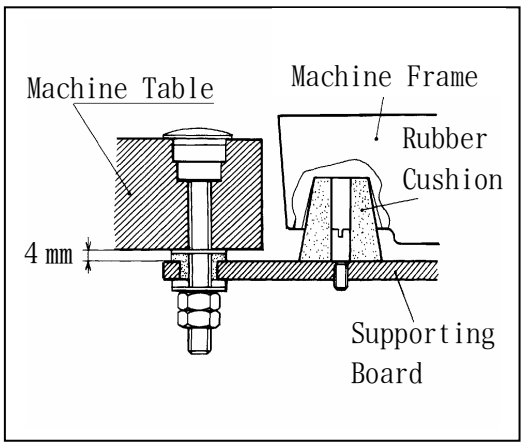
○Semi-submerged Installation



Maker	A	B	C	D
Panasonic	57	159	66.5	33.25
Mitsubishi	60	150	66	33
Hitachi	54	159	66.5	33.25

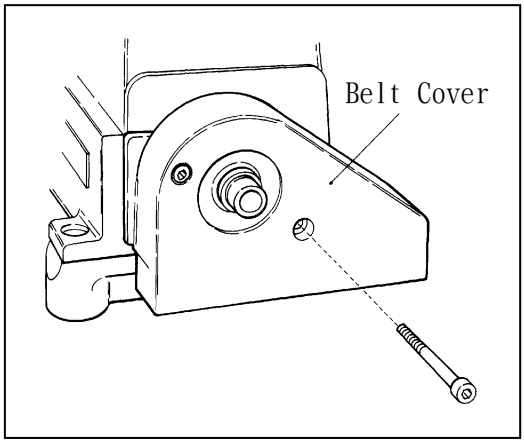
1-2 Semi-submerged Installation

Install the machine correctly referring to the illustration. Set Screws on Supporting Board and set Supporting Board on Machine Table. Then put Rubber Cushions on Screws on which rest the machine securely.



1-3 Installing Belt Cover

Install Belt Cover as shown in the illustration.

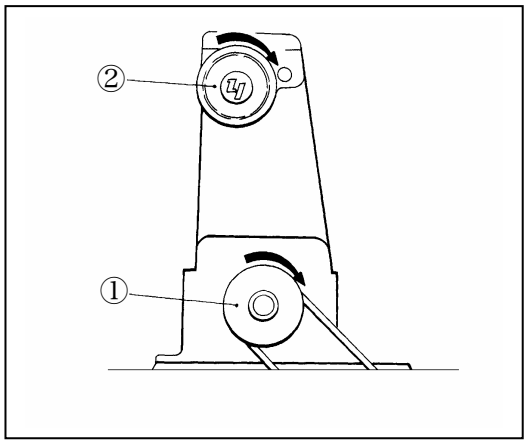


2. Sewing Speed and Rotating Direction of Pulley

The maximum sewing speed of this machine is 6,000 rpm, and ordinary speed is 5,500 rpm (For the machine with Puller, the max. speed is 4,500 rpm and ordinary speed is 4,000 rpm)

When operating new machine, it is recommended for the durability to operate at the speed of 5,000 rpm for the initial 200 hours (about 1 month) then operate at the ordinary speed.

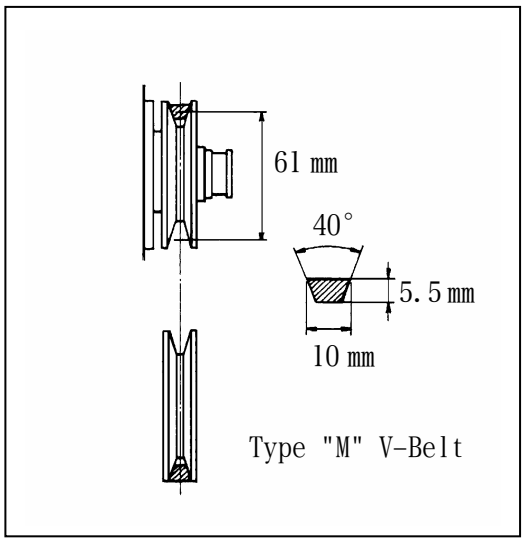
The rotating direction of Pulley① is clockwise like Handwheel② as shown in the illustration.



3. Motor and Belt

Use a clutch motor of 3-phase, 2-pole, 400W(1/2 HP) and a V-Belt of M-type.

Fix the position of motor so that the centers of Motor Pulley and Machine Pulley align when Motor Pulley shifted to the left by treadling Pedal.



dia. of Motor Pulley	rpm of machine	
	50 Hz	60 Hz
75 ㎜		4,000 rpm
80 ㎜		4,200 rpm
85 ㎜		4,500 rpm
90 ㎜	4,000 rpm	5,000 rpm
100 ㎜	4,500 rpm	5,500 rpm
110 ㎜	5,000 rpm	6,000 rpm
120 ㎜	5,500 rpm	
130 ㎜	6,000 rpm	

※ As the diameters of pulley available on general market is intervals of 5 mm, the diameters shown in the above table is the nearest to the calculated value.

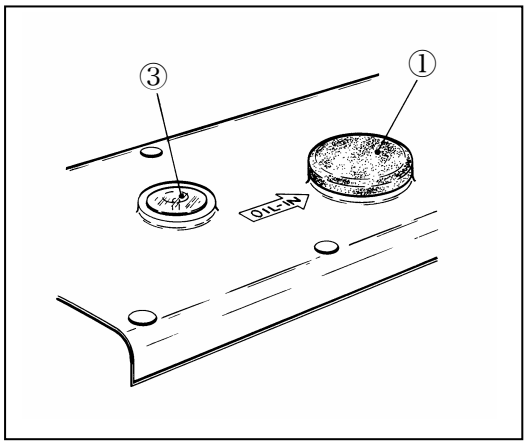
4. Lubrication Oil

4-1 Lubrication Oil

Use YAMATO SF OIL 28

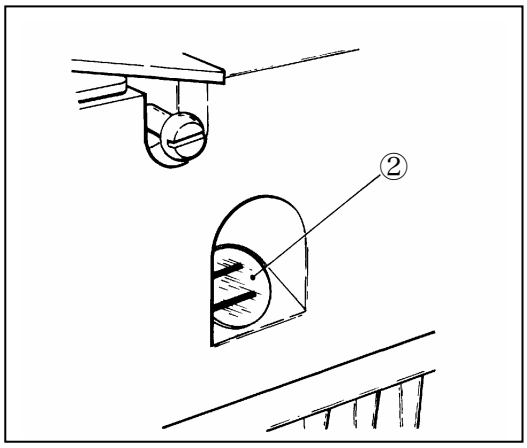
4-2 Feeding Oil

As the oil in the machine is drained completely at the time of shipment, replenish oil to the upper line of Oil Sight Gauge② by removing Seal Plug① indicated "OIL" before operating the machine without fail.



4-3 Oil Sight Gauge and Nozzle

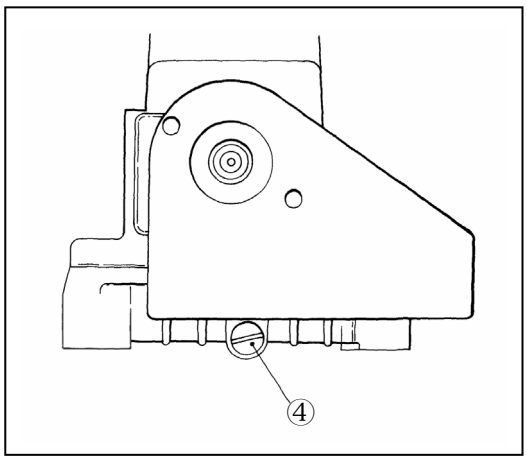
Check Oil Sight Gauge② before operating machine everyday. If the oil surface is below the two lines, supply oil.
Make sure that oil flows out of Nozzle③ at the start of operation.



4-4 Oil Change

For the long life of machine, change lubrication oil completely after 250 hours of initial operation.
Oil change should be made following the next procedure.

1. After removing V-Belt from Motor Pulley, remove Machine Head out of Machine Table.
2. Remove Screw④ and drain oil. At this time, be careful not to smear V-Belt.
3. After draining, tighten Screw④ without fail.
4. When replenishing oil, refer to para "4-2 Feeding Oil".



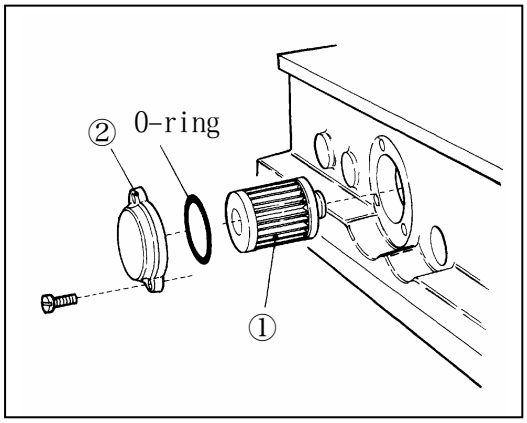
4-5 Changing and Replacing Oil Filter

When Oil Filter ① is clogged with dust, proper lubrication is not possible. Generally check Oil Filter once every six months.

And, when no or very little oil comes out of Nozzle though enough oil is in Oil Reservoir, check Oil Filter.

To check Oil Filter, remove Oil Filter Cap②. If it is clogged with dust, renew it.

Note:When removing Oil Filter Cap, take care not to spill oil sticking to Oil Filter.



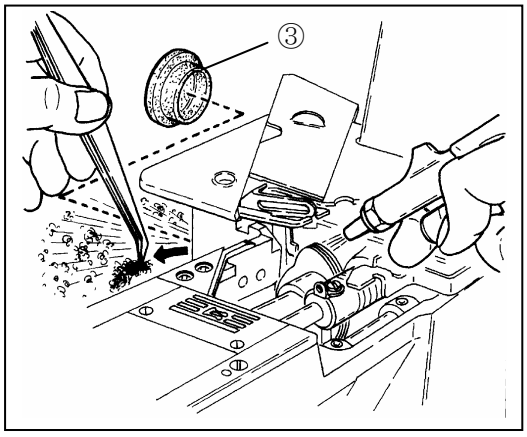
4-6 Cleaning the Machine

Every day after operation, clean the machine to remove dust and thread chips inside.

The cleaning should be made by opening Side Cover and Front Cover and by using air gun and the like.

Remove rubber Seal Plug③ behind the machine and remove dusts and others around Oil Filter Screen using tweezers and air gun once a week or two.

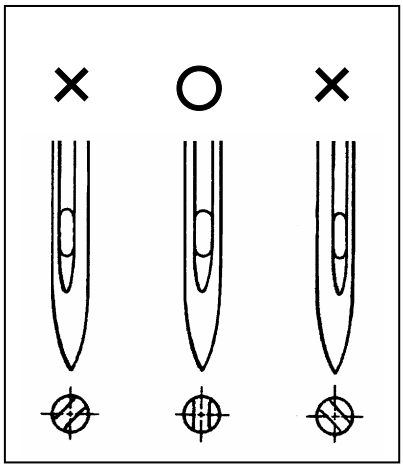
When Oil Filter Screen is clogged, oil around Feed Bar does not return to Oil Reservoir, resulting in splashing of oil by Looper Thread Take-up.



5. Proper Operation

5-1 Needles to be used and the Installation

Needle UY128GAS of Schmetz or Organ is to be used.
There are many sizes of needle, and the most suited needle to the thickness and the kind of material should be selected.

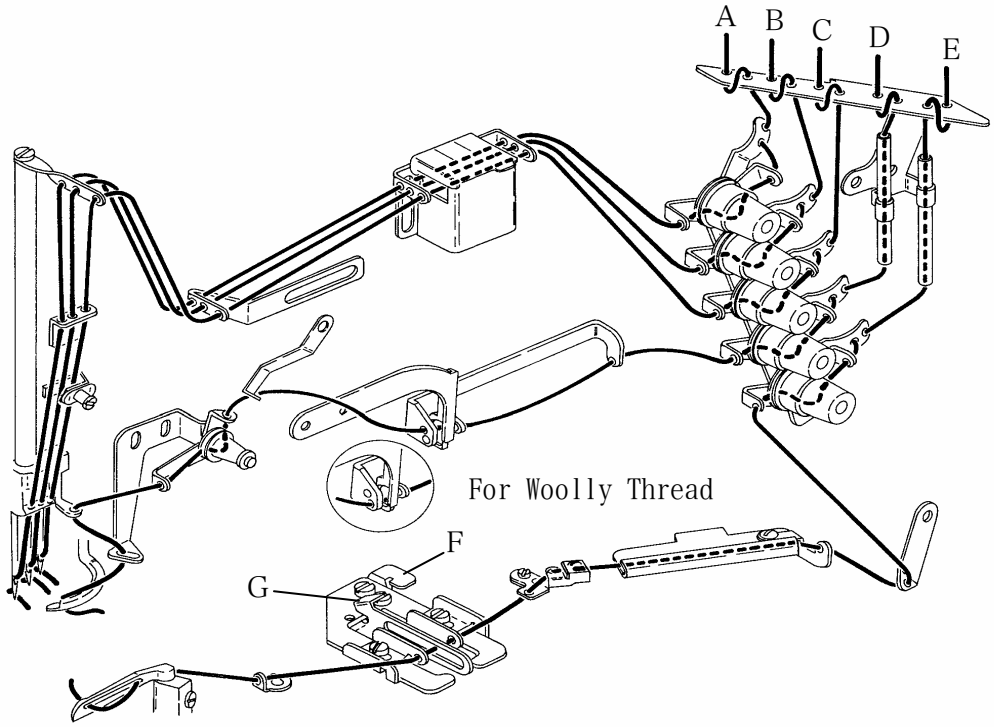


Japanese size	9	10	11	12	13	14
Metric size	65	70	75	80	85	90

Replacing needle should be made correctly with the scarf facing rightly backward as shown in the illustration.

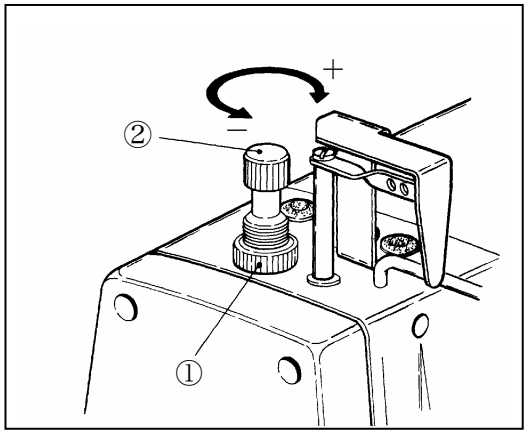
5-2 Threading

Threading should be made correctly referring to the illustration.
Improper threading might cause skip stitch, thread breakage and uneven tension.
A, B, C ... needle thread D ... top cover thread E ... looper thread
The threading for three needle machine is shown in the illustration below.
For two needle machine, threading is the same except two needle thread.
Easy threading is possible with the lifting up of Supporting Plate by pressing Lever(F).
After threading, return it back to the original position by pressing part(G) without fail.



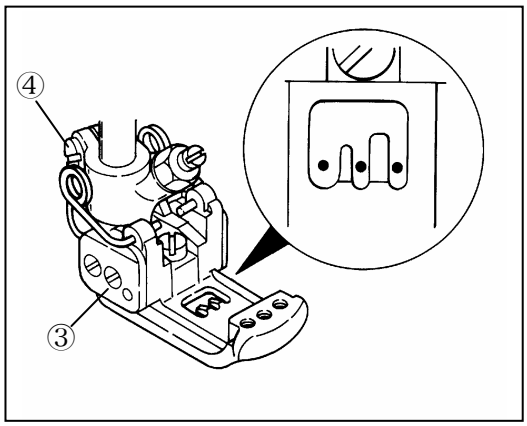
5-3 Pressure of Presser Foot

To increase the pressure of Presser Foot, turn Adjusting Screw② clockwise after loosening Lock Nut① and to decrease turn it counterclockwise.
Pressure of Presser Foot should be as weak as possible so long as Presser Foot can operate properly.



5-4 Adjusting Presser Foot

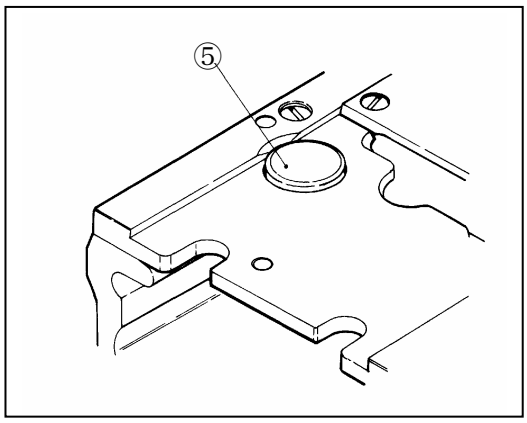
Adjust the right/left position of needle drop point of Presser Foot③ to the center by loosening Screw④ and moving the tip of Presser Foot left and right.
After the adjustment, tighten Screw④.



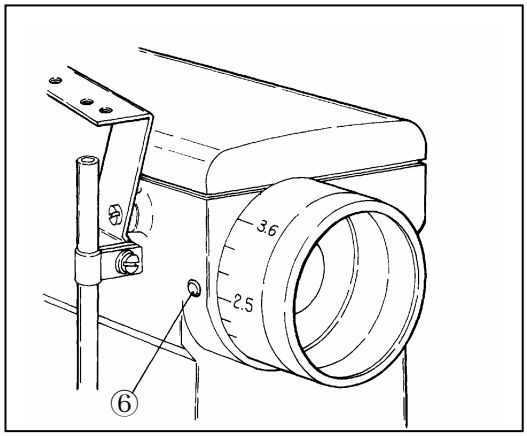
5-5 Adjusting Stitch Length

Adjustment of stitch length can be made steplessly from 1.4mm to 3.6mm.
The table below shows the stitch length, stitch number per inch(25.4mm) and stitch number per 30mm.

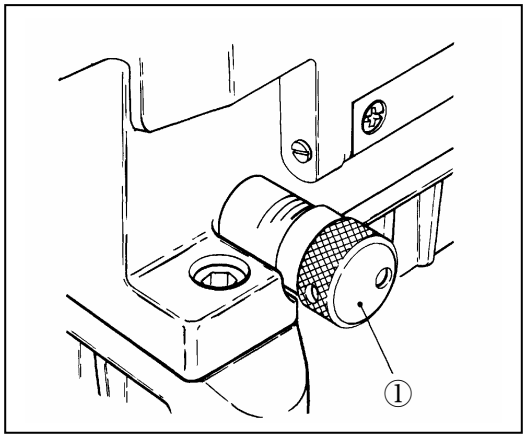
stitch length (mm)	stitch number (per inch)	stitch number (per 30mm)
3.6	7	8
2.4	10.5	12.5
1.4	18	21



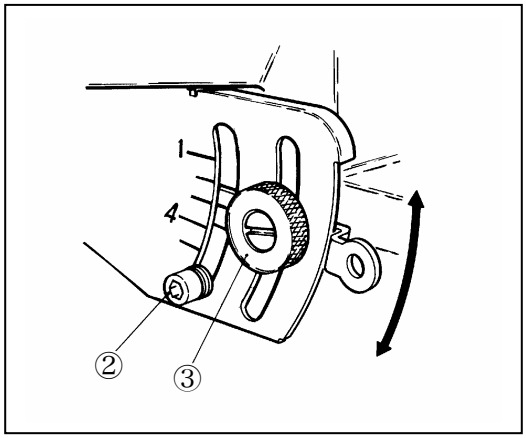
❇Change of stitch length
Press Push Button⑤ with left hand lightly till the tip of which contact to a part inside.
Keep pressing, turn Handwheel with right hand till Push Button gets in. At this point, press in Push Button strongly and turn Handwheel.
A graduation on the circumference of Handwheel indicates a stitch length (mm), which should be aligned with the Mark⑥, then release hand.



5-6 Adjusting Differential Feed



Normal differential feed or reverse differential feed can be set freely by turning Knob①.
As differential feed and main feed is driven individually, when main feed amount (stitch length) is changed, the differential ratio changes accordingly.
In this case readjustment is necessary.
The graduation shows the amount of differential feed.
For instance, in case the desired feed amount (stitch length) is "2" and if the graduation is set at "2" by turning Knob①, the differential ratio becomes 1:1.
When setting the graduation over "2", it becomes normal differential and setting it under "2", it becomes reverse differential.
For the main feed amount the upper limit is "4".



✻ When using Differential Feed Control Lever Fix Differential Feed Control Lever at the desired position with Nut③ within the range from the position of graduation on Lever when turning Knob① to Stopper ②.

At the time of using max. differential feed, turn Knob ① and set Lever at graduation "1".

For adjusting feed amount during operation, attach a chain to the Lever.

※The range of differential ratio varies according to the stitch length. Refer to the table below:

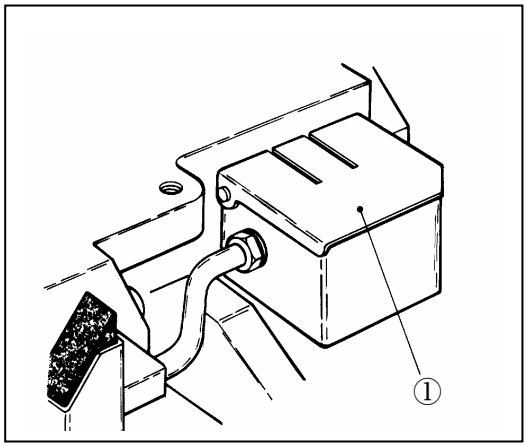
stitch length	max. normal differential	max. reverse differential
3.6 ㎜	1:1.1	1:0.3
2.5 ㎜	1:1.6	1:0.4
2.0 ㎜	1:2	1:0.5
1.4 ㎜	1:2.9	1:0.7

5-7 HR Device and SP Device

Sometimes heat generated on the needle by the friction with the material at high speed operation causes such troubles as thread breakage, skip stitch and widening of stitch hole especially when using synthetic threads and fabrics.

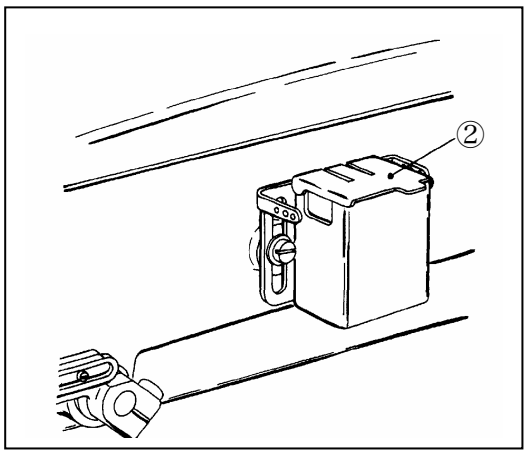
To reduce these troubles, HR Device (needle point cooling) and SP Device (needle thread oiling) are the standard equipment for this machine.

Using oil of sylicone system is most effective.



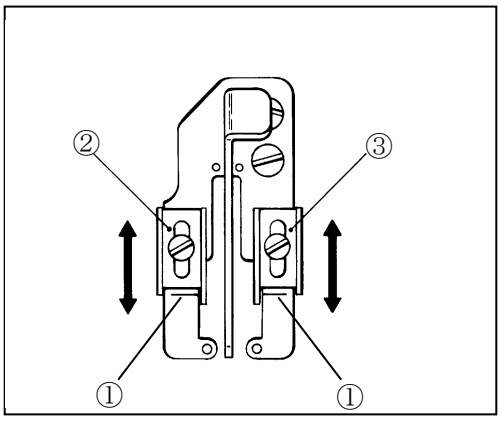
Note 1: Open Lid① of HR Container and Lid② of SP Container and check the oil.
If it is running short, supply it.

Note 2: Though it is recommended to use HR and SP Devices, when they are not used judging from the sewing condition, remove Felt because it might be better for the needle and thread not to touch the dry Felt.

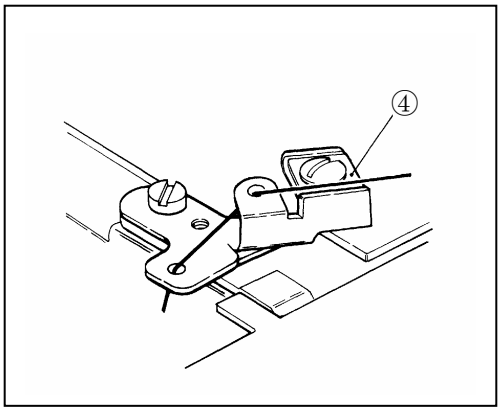


6. Adjustment of Sewing Machine

6-1 Looper Thread Tension

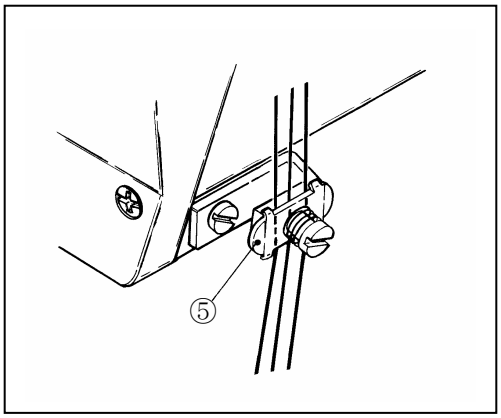


Align Mark① of Supporting Plate and thread holes of Thread Eyelet② and ③.
That is the standard adjustment.
To increase take-up amount of looper thread, move Looper Thread Eyelet forward after loosening screws of Thread Eyelet② and ③, and to decrease move them backward.
Note: Too much take-up amount of looper thread will cause skip stitch.

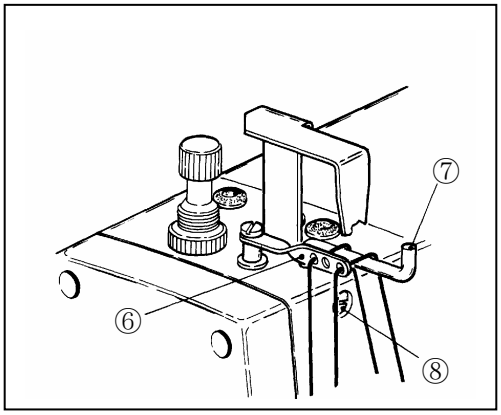


When using wooly thread, move Thread Eyelet② and ③ all the way forward and don't pass the thread between Supplementary Tension Discs④.

6-2 Needle Thread Tension



It is not so easy to make loop for some kind of thread.
This makes it difficult for Looper to catch the needle thread, causing skip stitch.
In such a case, pass the needle thread through Supplementary Tension Disc ⑤ as shown in the illustration.



In case the formation of needle thread loop is unstable when using stretchable thread like synthetic thread, use Needle Thread Guide.
With Needle Bar at the lowest position, the center of thread hole of Needle Bar Thread Eyelet⑥ should be even with the surface of Needle Thread Guide⑦; and ⑥ and⑦ should be parallel with each other.
That is the standard condition.
The adjustment of the height and left/right position of Needle Thread Guide⑦ is made by loosening Screw⑧ and moving Needle Thread Guide⑦ up and down; and left and right.

6-3 Needle and Spreader

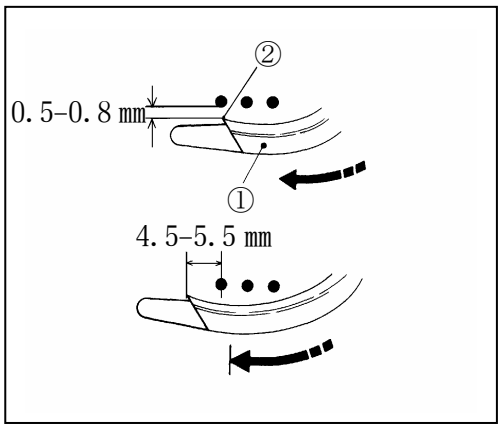
(1) Installing Spreader

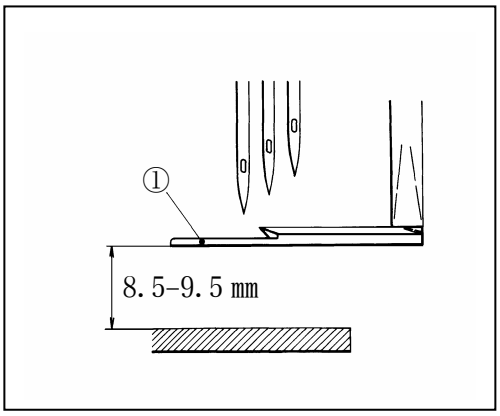
Provide a clearance of 0.5－0.8mm between left needle and the tip of thread hooking part② of Spreader① when Spreader moves to the left.

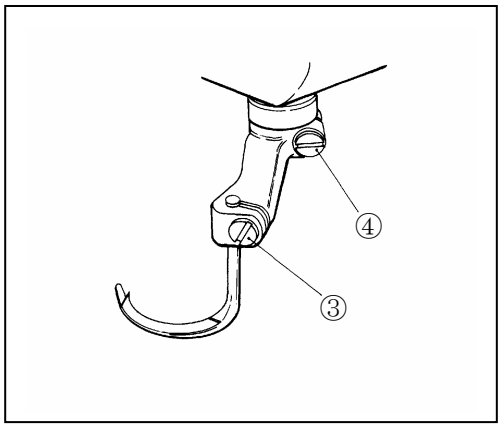
Give the distance of 4.5－5.5mm from the center of left needle to the thread hooking part② when Spreader comes to the extreme left.

The height from the surface of Stitch Plate up to the undersurface of Spreader① should be 8.5－9.5mm.

The adjustment is made by loosening Screw③ of Spreader and Screw④ of Spreader Holder.

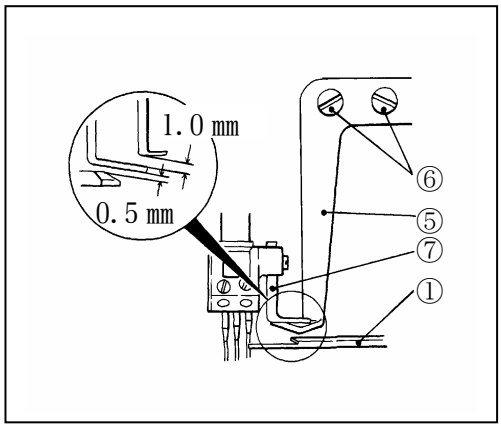






(2) Installing Top Cover Thread Guide

Provide a clearance of 0.5mm between undersurface of Top Cover Thread Guide⑤ and the surface of Spreader① and tighten Screw⑥ so that the thread is caught by thread hooking part properly when Spreader comes to the extreme right.

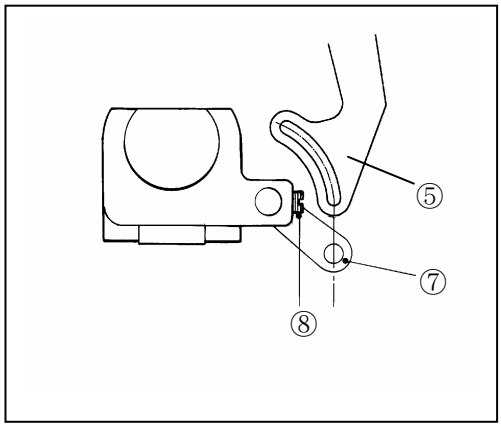


(3) Installing Top Cover Thread Eyelet

When Needle Bar at the lowest position, provide a clearance of 1.0mm between the surface of Top Cover Thread Guide⑤ and the undersurface of Top Cover Thread Eyelet⑦.

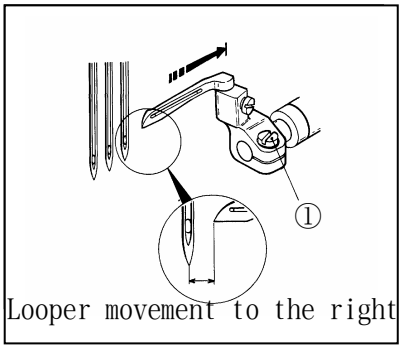
And set the thread hole of Top Cover Thread Eyelet ⑦ on the center line of slot of Top Cover Thread Guide⑤, then tighten Screw⑧.

※ Adjustment (1), (2), and (3) should be made according to the thread to be used.



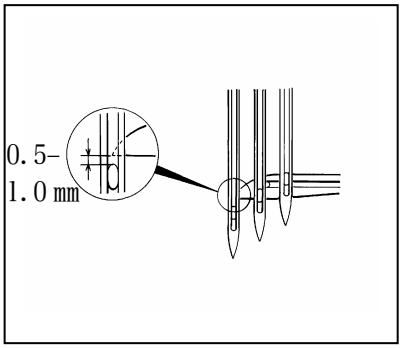
6-4 Timing Adjustment of Needle and Looper

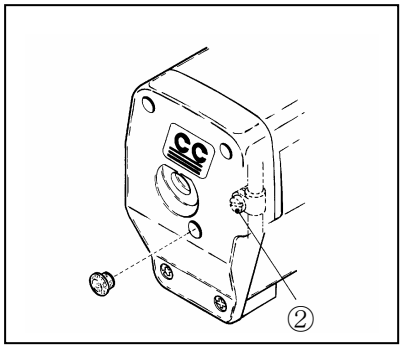
6-4-1 Looper movement to the right



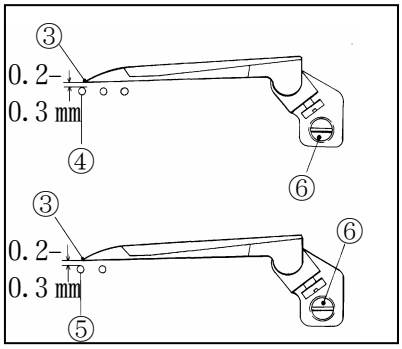
needle(symbol) distance	looper movement to the right
3.2 ㎜(32)	4.4 ㎜
4.0 ㎜(40)	4.0 ㎜
4.8 ㎜(48)	3.6 ㎜
5.6 ㎜(56)	3.2 ㎜
6.4 ㎜(64)	2.8 ㎜

6-4-2 Needle height



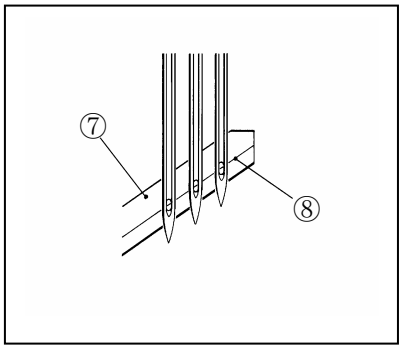


6-4-3 Front/Rear position of Needle and Looper

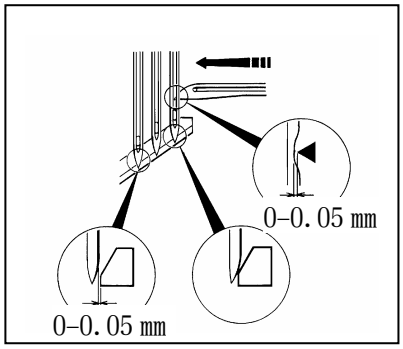


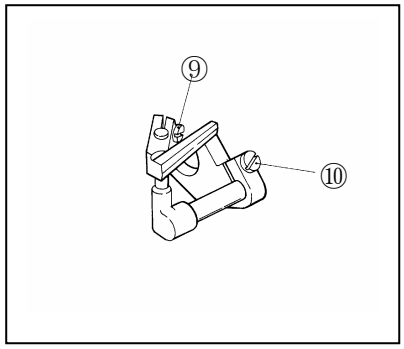
6-4-4 Needle and Needle Guard(Rear)

Height of Needle Guard(Rear)

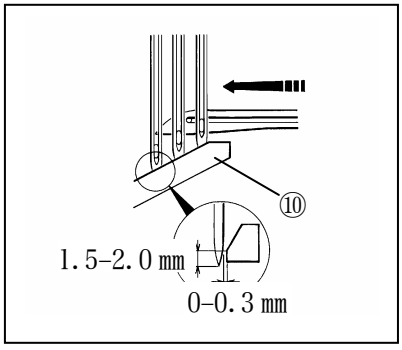


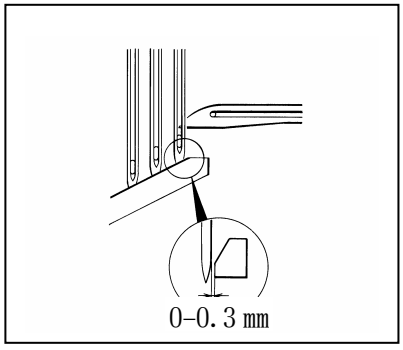
Front/Rear position of Needle Guard(Rear)

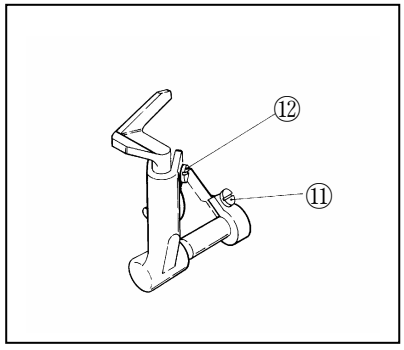




6-4-5 Needle and Needle Guard(Front)







7. Specifications

CC2700 Class
Super High Speed Cylinder Bed Interlock Machine

Dimensions	475 (Length) × 220 (Width) × 405(Height) mm
Circumference of Cylinder Bed	280mm
Weight	39 kg
Stitch Type	ISO 406, 407, 602, 605
Application	General seaming of knitted material
Sewing Speed	Max.6,000 stitch/min
Stitch Length	1.4～3.6 mm stitch number: stitch/inch 7～18 stitch/30mm 8～21
Needle to be used	Schmetz or Organ UY128GAS #65～#90
Needle Distance	for 2 needle : 3.2, 4.0 mm for 3 needle : 4.8, 5.6, 6.4 mm
Needle Stroke	31 mm
Presser Foot Lift	Max. 7.0mm (5.0 mm for machine with top cover thread)
Feed Regulation	by push-button
Differential Ratio	Max. normal differential raito : 1:2.9 Max. reverse differential raito : 1:0.3
Differential Feed Regulation	by Adjusting Screw or by Control Lever (Adjusting during operation from outside is possible by moving Control Lever up and down.)
Lubrication	Automatic lubrication by Oil Pump (combined use with splashing lubrication)
Lubrication Oil	YAMATO SF OIL 28
Capacity of Oil Reservoir	1,000 cc
Installation	Semi-submerged Installation (using exclusive Supporting Board)