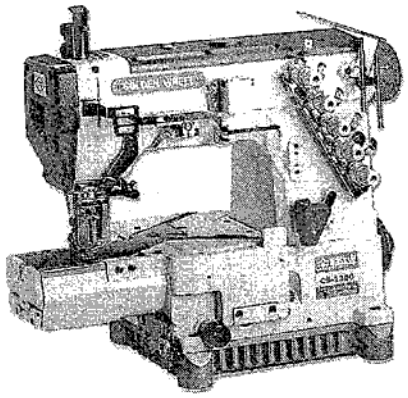
GOLDEN WHEEL



CS-1300
Super High Speed Cylinder Bed
Interlock Stitch Sewing Machine

INSTRUCTIONS

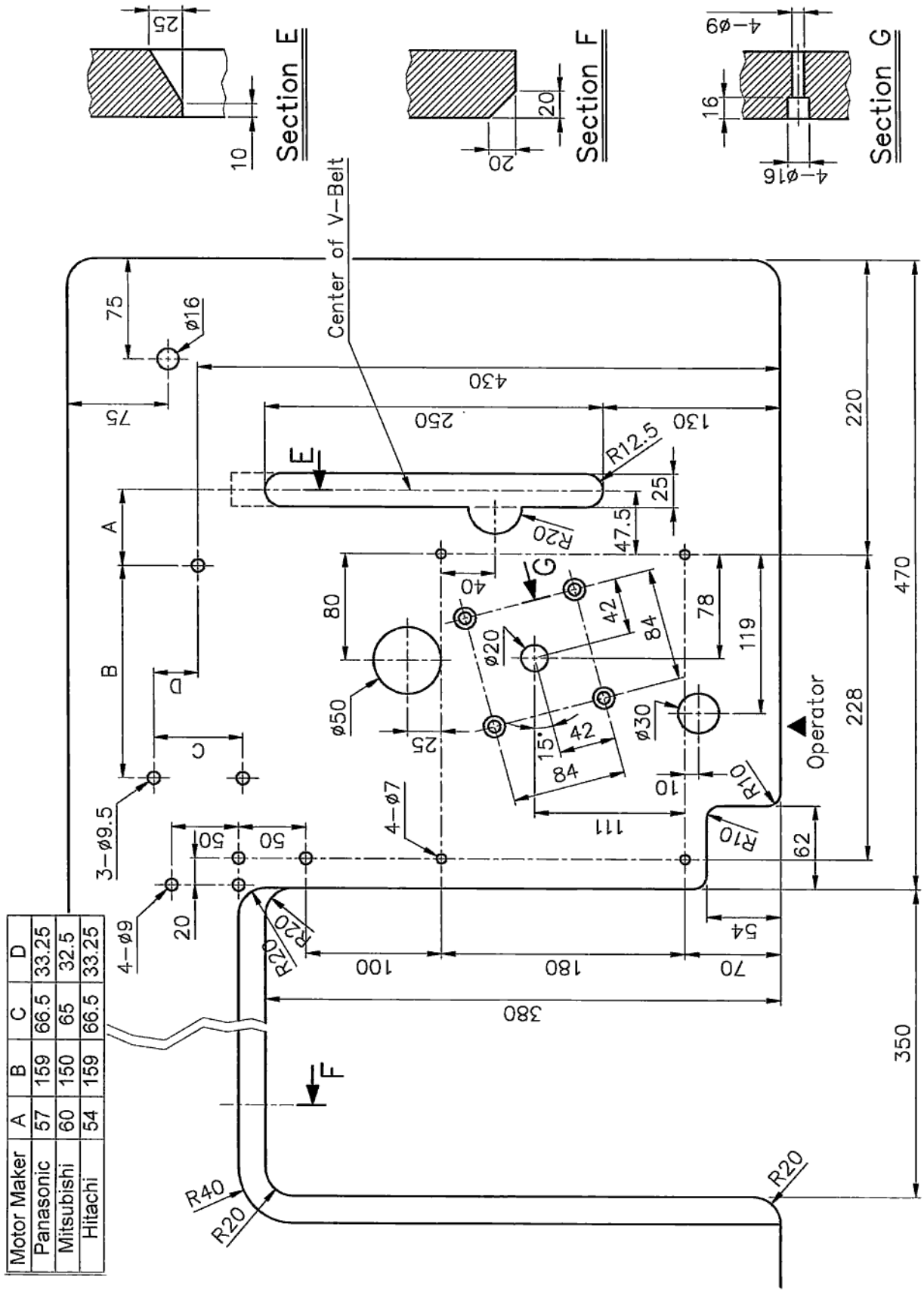
1. Specifications

Model.....CS-1300
Description.....Super High Speed Cylinder Bed 2 or 3 Needle
Interlock Stitch Sewing Machine
Dimensions.....475 (Length) x 220 (Width) x 405 (Height) mm
Circumference of Cylinder Bed.....280 mm
Weight.....39 kg
Stitch Type.....ISO 406, 407, 602, 605
Application.....General seaming of knitted material
Sewing Speed.....Max. 6,000 stitch/mm
(4.500 stitch/mm for the machine with Puller)
Stitch Length.....l.4~3.6 mm
stitch number: 7~18 stitch/inch 8~2l stitch/30 mm
Needle Type.....Schmetz or Organ UY128GAS #65~#90
Needle Distance.....for 2 needle :3.2, 4.0, 4.8, 5.6, 6.4 mm
for 3 needle : 5.6, 6.4 mm
Needle Stroke..... 31mm
Presser Foot Lift.....Max. 7.0 mm
(5.0 mm for machine with top cover thread)
Feed Regulation.....by push-button
Differential Ratio.....Max. normal differential ratio: 1:2.9
Max. reverse differential ratio: 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.....TERESSO 46 or Yamato SF OIL
Capacity of Oil Reservoir.....1,000 cc
Installation.....Table Top Installation or Semi-submerged Installation
(using exclusive Supporting Board)

2. Installation

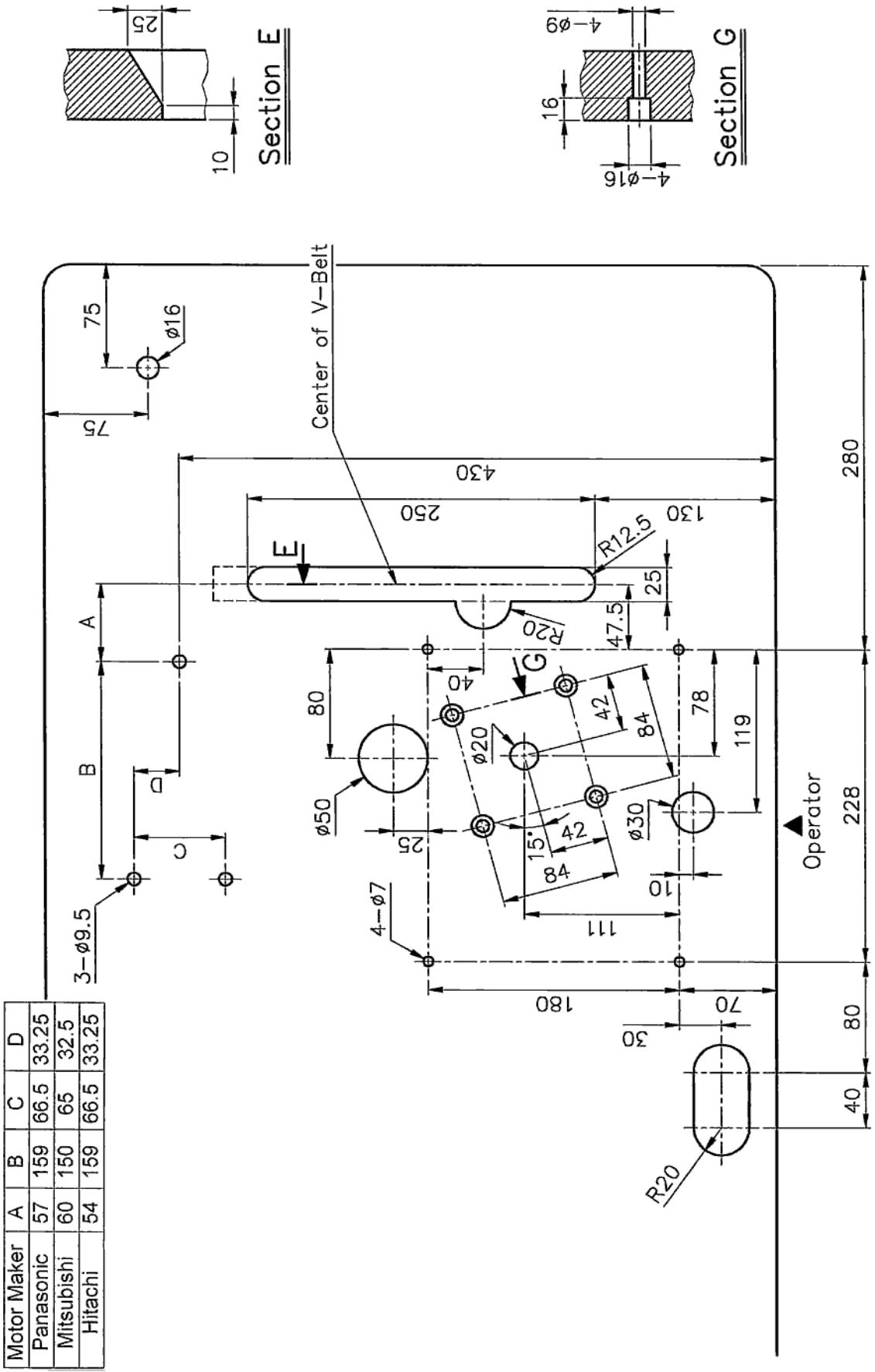
2-1 Drawing of Table Top Cut-out

*Table Top Installation (Type A: Standard)



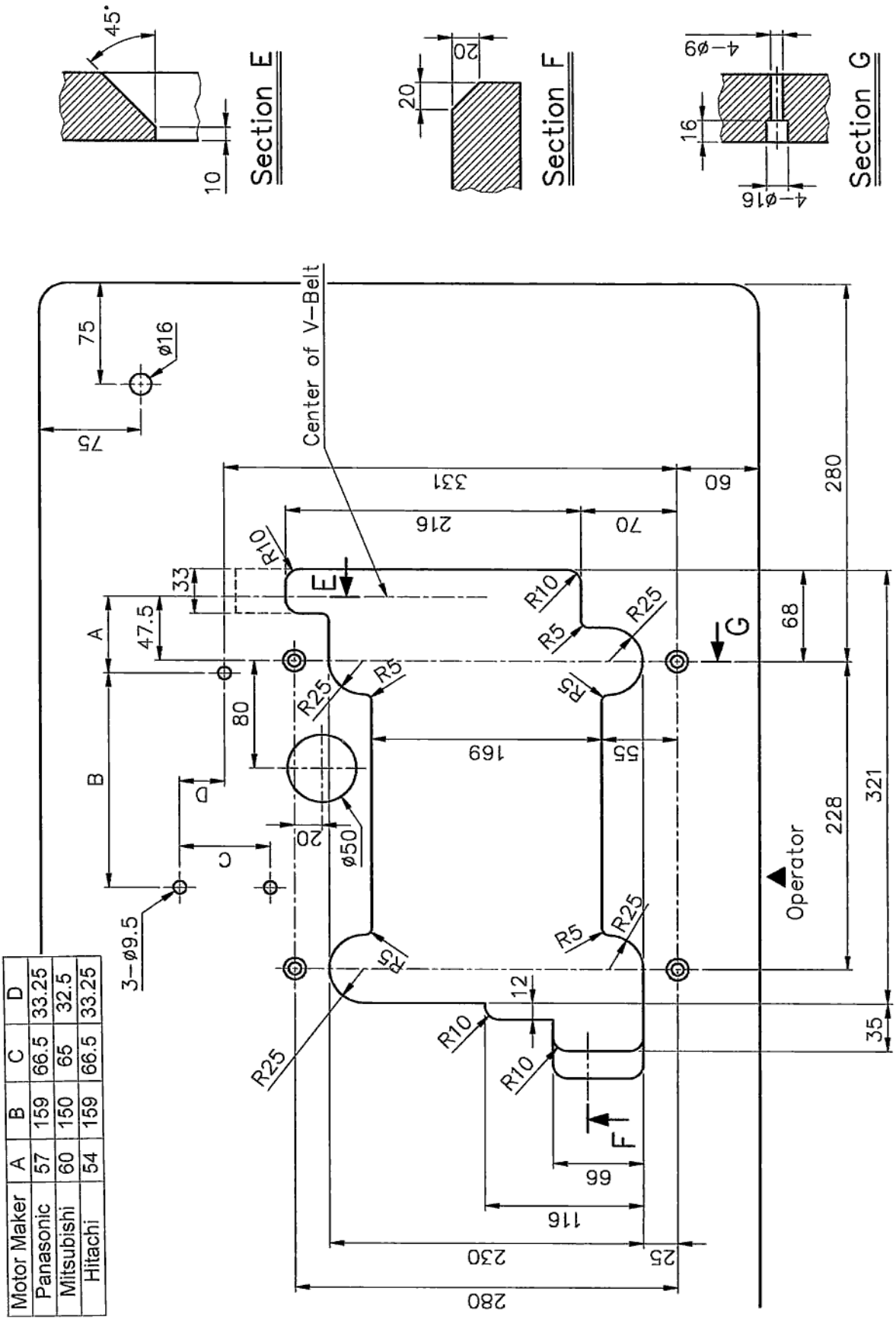
Motor Maker	A	B	C	D
Panasonic	57	159	66.5	33.25
Mitsubishi	60	150	65	32.5
Hitachi	54	159	66.5	33.25

*Table Top Installation (Type B)



Motor Maker	A	B	C	D
Panasonic	57	159	66.5	33.25
Mitsubishi	60	150	65	32.5
Hitachi	54	159	66.5	33.25

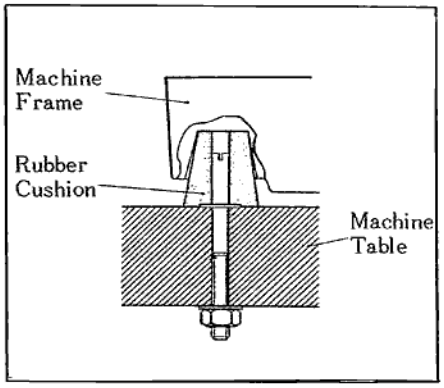
*Semi-submerged Installation



Motor Maker	A	B	C	D
Panasonic	57	159	66.5	33.25
Mitsubishi	60	150	65	32.5
Hitachi	54	159	66.5	33.25

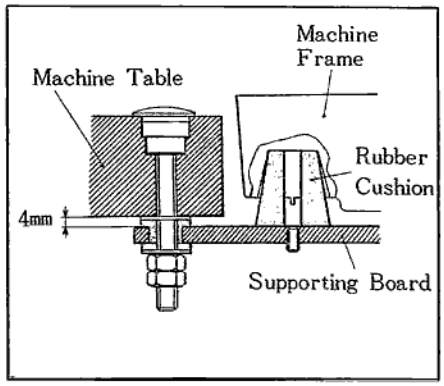
2-2 Table Top Installation

Install the machine correctly referring to the illustration. Set Bolts and Nuts to Machine Table and put Rubber Cushions on Bolts and rest the machine on them securely.



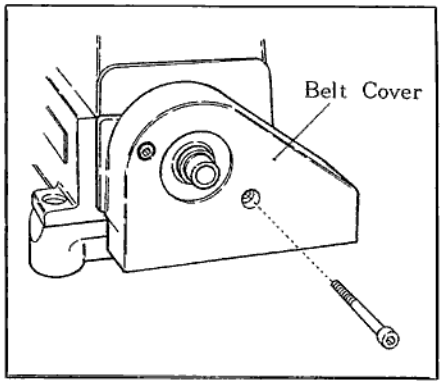
2-3 Semi-submerged Installation

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.



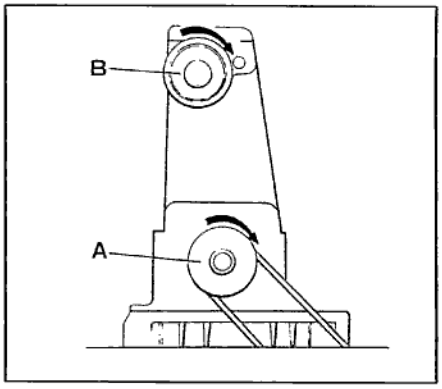
2-4 Installing Belt Cover

Install Belt Cover as shown in the illustration.



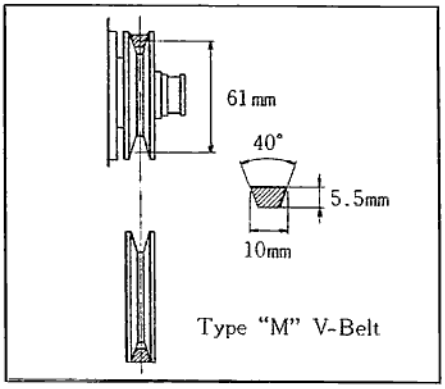
3. Sewing Speed and Rotating Direction of Pulley

The maximum sewing speed of this machine is 6,000 s.p.m., and ordinary speed is 5,500 s.p.m. (For the machine with Puller, the max. speed is 4,500 s.p.m. and ordinary speed is 4,000 s.p.m.) When operating new machine, it is recommended for the durability to operate at the speed of 5,000 s.p.m for the initial 200 hours (about 1 month) then operate at the ordinary speed. The rotating direction of Pulley(**A**) is clockwise like Handwheel(**B**) as shown in the illustration.



4. Motor and Belt

Use a clutch motor of 3-phase, 2-pole, 400 W(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(mm)	s.p.m. of machine	
	50 Hz	60 Hz
75	-	4,000
80	-	4,200
85	-	4,500
90	4,000	5,000
100	4,500	5,500
110	5,000	6,000
120	5,500	-
130	6,000	-

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

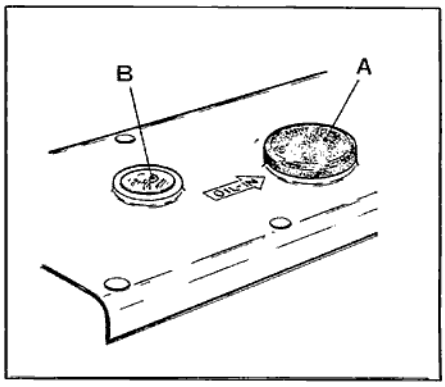
5. Lubrication Oil

5-1 Lubrication Oil

Use TERESSO 46 or Yamato SF OIL

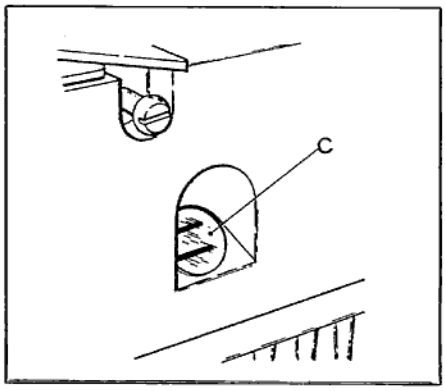
5-2 Feeding Oil

As the oil in the machine is drained completely at the time of shipment, replenish oil to the upper line of Oil Sight Gauge(**C**) by removing Seal Plug(**A**) indicated "OIL" before operating the machine without fail.



5-3 Oil Sight Gauge and Nozzle

Check Oil Sight Gauge(**C**) before operating machine everyday. If the oil surface is below the two lines, supply oil. Make sure that oil flows out of Nozzle(**B**) at the start of operation.



5-4 Oil Change

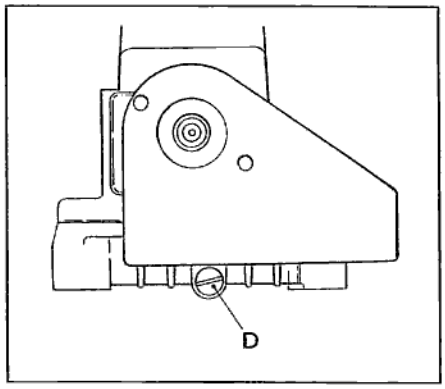
For the long life of machine, change lubrication oil completely after 250 hours of initial operation. Oil change procedure:

(1). After removing V-Belt from Motor Pulley, remove Machine Head out of Machine Table.

(2). Remove Screw(**D**) and drain oil. At this time, be careful not to smear V-Belt.

(3). After draining, tighten Screw(**D**) without fail.

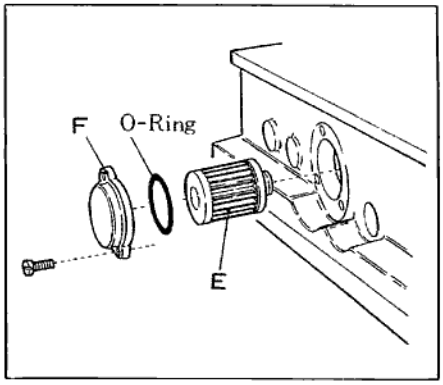
(4). For replenishing oil, refer to para "**5-2 Feeding Oil**".



5-5 Changing and Replacing Oil Filter

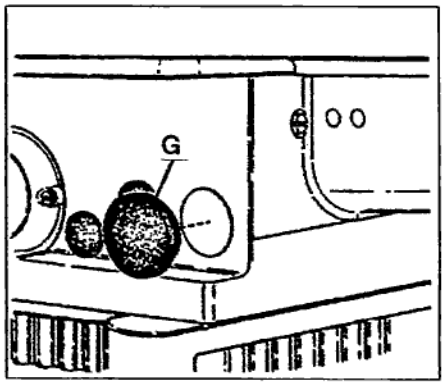
When Oil Filter(**E**) is clogged with dust, proper lubrication is not possible. Generally check Oil Filter once every six months. And, when no or very little oil comes out of Nozzle though enough oil is in Oil Reservoir, check Oil Filter. To check Oil Filter, remove Oil Filter Cap(**F**). If it is clogged with dust, renew it.

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



5-6 Cleaning the Machine

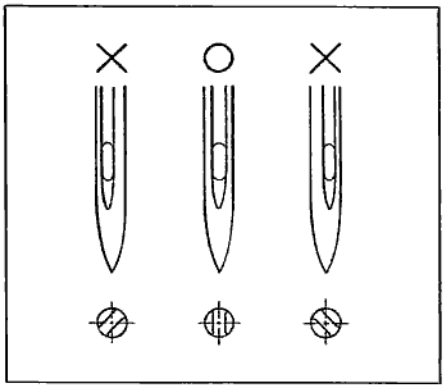
Every day after operation, clean the machine to remove dust and thread chips inside. The cleaning should be made by opening Side Cover and Front Cover and by using air gun and the like. Remove rubber Seal Plug(**G**) behind the machine and remove dusts and others around Oil Filter Screen using tweezers 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.



6. Proper Operation

6-1 Needles to be used and the Installation

Needle UYI28GAS 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

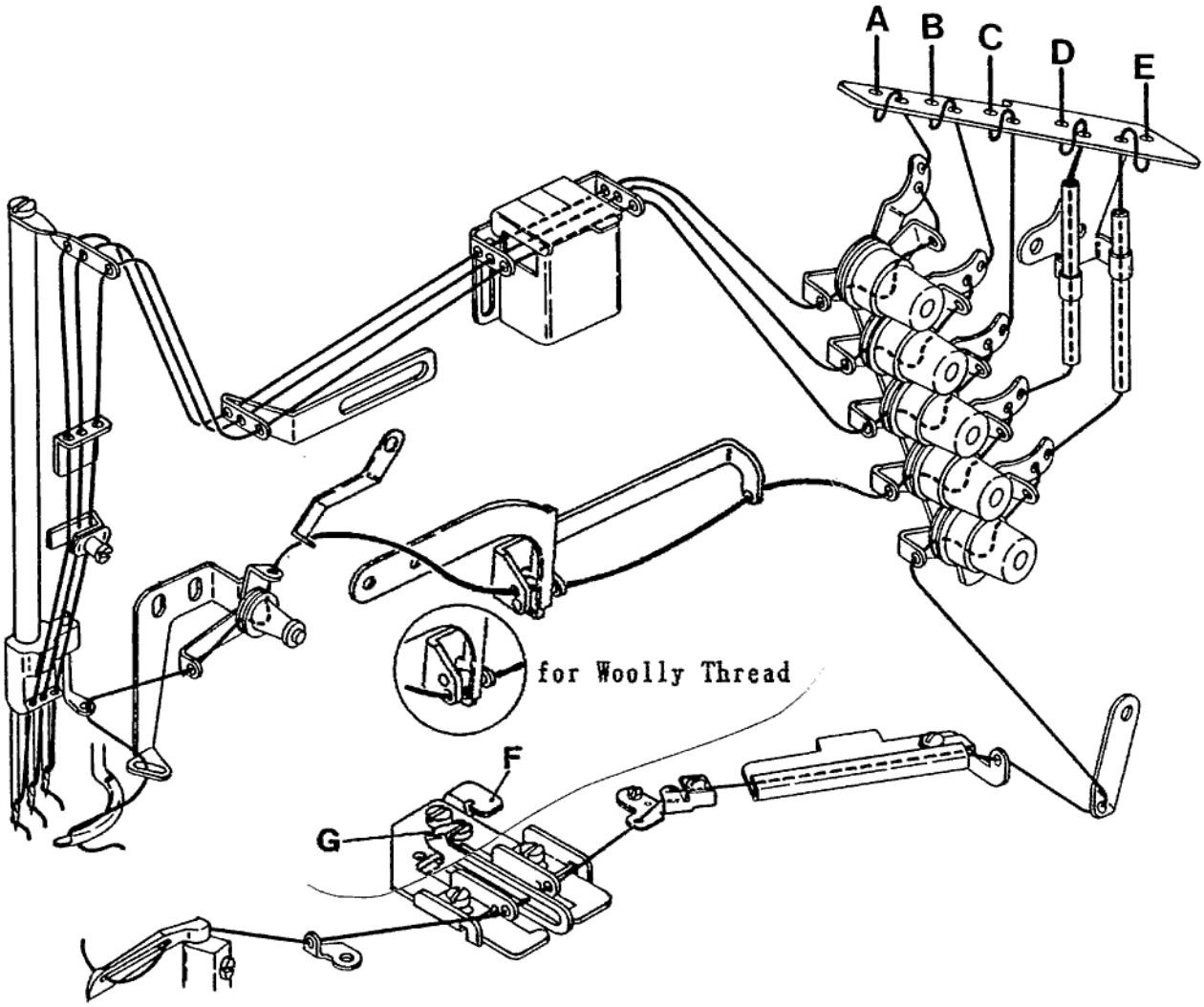
Replacing needle should be made correctly with the scarf facing rightly backward as shown in the illustration.

6-2 Threading

Threading should be made correctly referring to the illustration. Improper threading might cause skip stitch, thread breakage and uneven tension.

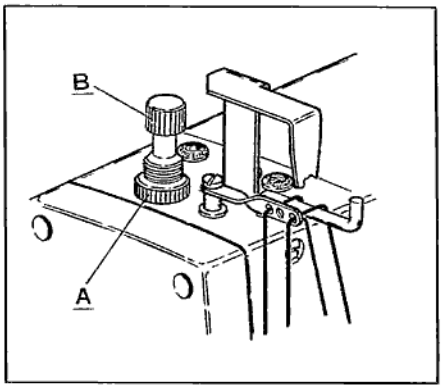
A, B, C.....needle thread **D**.... top cover thread **E**.....looper thread

The threading for three needle machine is shown in the illustration below. For two needle machine, threading is the same except there are only 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.



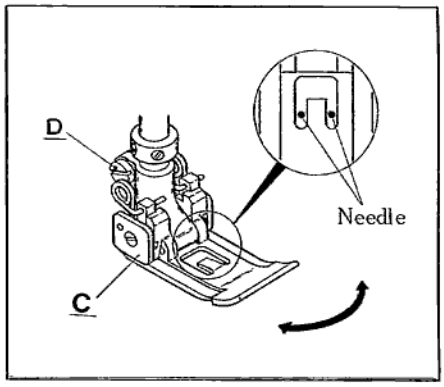
6-3 Pressure of Presser Foot

To increase the pressure of Presser Foot, turn Adjusting Screw(**B**) clockwise after loosening Lock Nut(**A**) and to decrease turn it counterclockwise. Pressure of Presser Foot should be as weak as possible so long as Presser Foot can operate properly.



6-4 Adjusting Presser Foot

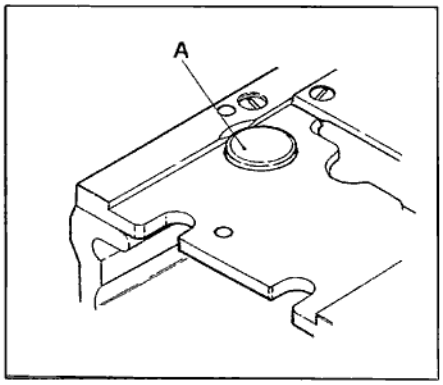
Adjust the right/left position of needle drop point of Presser Foot(**C**) to the center by loosening Screw (**D**) and moving the tip of Presser Foot left and right. After the adjustment, tighten Screw(**D**).



6-5 Adjusting Stitch Length

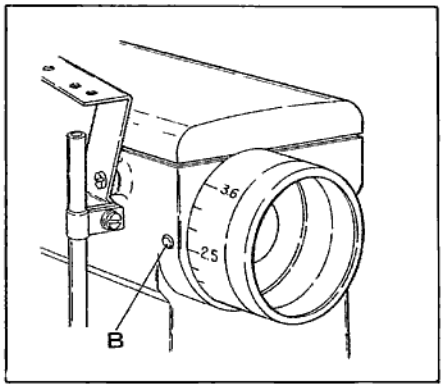
Adjustment of stitch length can be made steplessly from I.4mm to 3.6mm. The table below shows the stitch length, stitch number per inch(25.4mm) and stitch number per 3Omm.

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

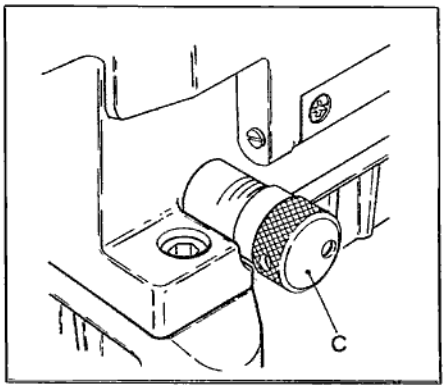


＊Change of stitch length

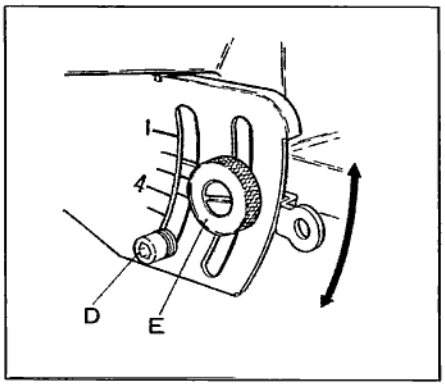
Press Push Button(**A**) with left hand lightly till the tip of which contact to a part inside. Keep pressing, turn Handwheel with right hand till Push Button gets in. At this point, press in Push Button strongly and turn Handwheel. A graduation on the circumference of Handwheel indicates the stitch length (mm), which should be aligned with the Mark(**B**), then release hand. Note : In case of machine with UT Device(Lower Thread Trimmer) which is equipped with a motor with Automatic Needle Positioning System, Motor Switch must be turned off without fail when changing stitch length.



6-6 Adjusting Differential Feed



Normal differential feed or reverse differential feed can be set freely by turning Knob(**C**).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 Knob(**C**), 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".

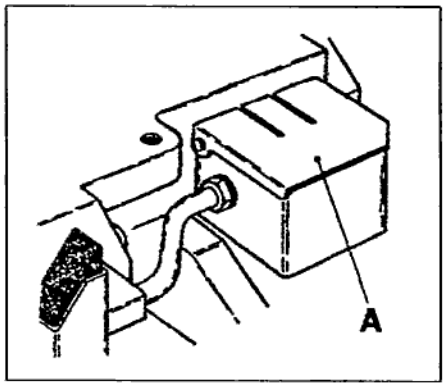


- When using Differential Feed Control Lever, fix Differential Feed Control Lever at the desired position with Nut(**E**) within the range from the position of graduation on Lever when turning Knob(**C**) to Stopper(**D**). At the time of using max. differential feed, turn Knob(**C**) and set Lever at graduation "1". For adjusting feed amount during operation, attach a chain to the Lever.

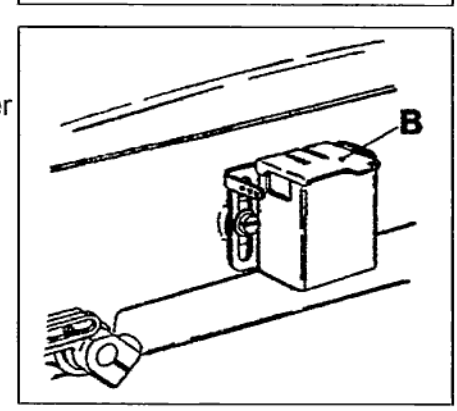
※ The range of differential ratio varies according to the stitch length. Refer to the table below:

Stitch Length (mm)	Max. Normal Differential	Max. Reverse Differential
3.6	1:1.1	1:0.3
2.5	1:1.6	1:0.4
2.0	1:2.0	1:0.5
1.4	1:2.9	1:0.7

6-7 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 silicone system is most effective.



Note 1: Open Lid(**A**) of HR Container and Lid(**B**) of SP Container and check the oil. If it is running short, supply it.

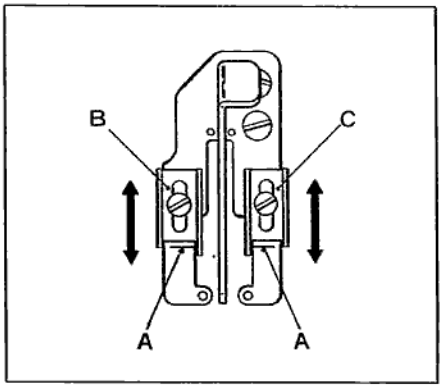
Note 2: Though it is recommended to use HR and SP Devices, when they are not used judging from the sewing condition, remove Felt because it is better for the needle and thread not to touch the dry Felt.

7. Adjustment of Sewing Machine

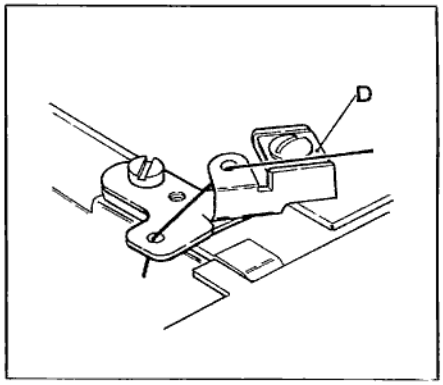
7-1 Looper Thread Tension

Align Mark(**A**) of Supporting Plate and thread holes of Thread Eyelet(**B**) and (**C**). That is the standard adjustment. To increase take-up amount of looper thread, move Looper Thread Eyelet forward after loosening of Thread Eyelet(**B**) and (**C**), and to decrease move them backward.

Note: Too much take-up amount of looper thread will cause skip stitch.

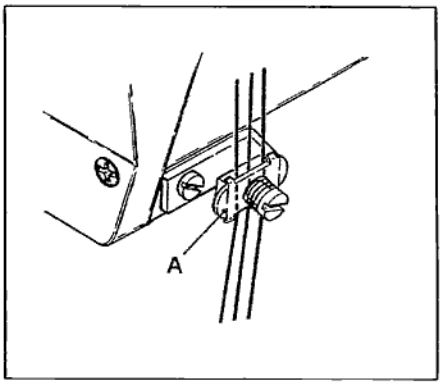


When using wooly thread, move Thread Eyelet(**B**) and (**C**) all the way forward and the thread does not pass between Supplementary Tension Discs(D).

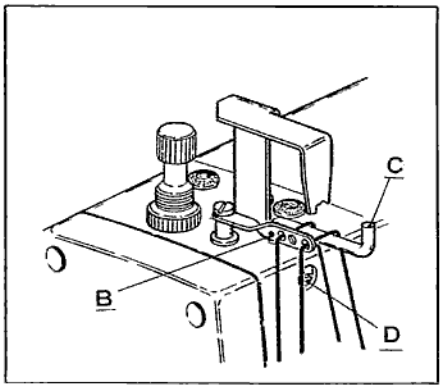


7-2 Needle Thread Tension

◆ 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(**A**) as shown in the illustration.



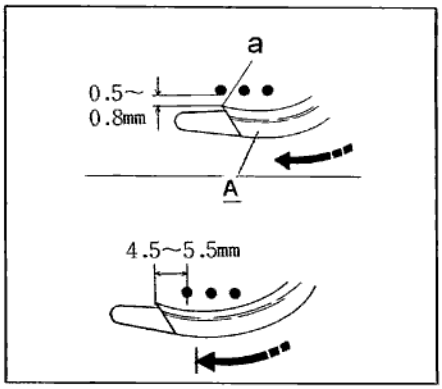
◆ In case the formation of needle thread loop is unstable when using stretchable thread like synthetic thread, use Needle Thread Guide. With Needle Bar at the lowest position, the center of thread hole of Needle Bar Thread Eyelet(**B**) should be even with the surface of Needle Thread Guide(**C**); and (**B**) and (**C**) should be parallel with each other. That is the standard condition. The adjustment of the height and left/right position of Needle Thread Guide(**C**) is made by loosening Screw(**D**) and moving Needle Thread Guide(**C**) up and down; and left and right.

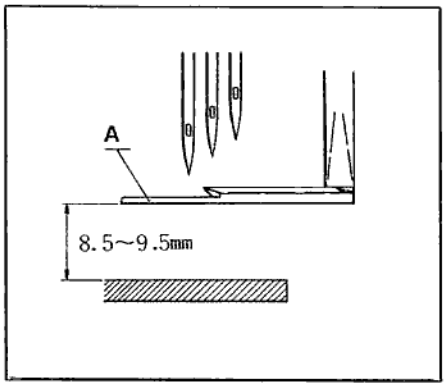


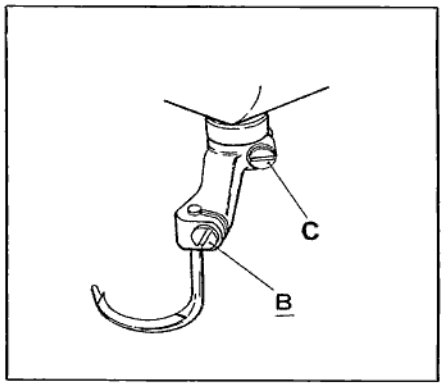
7-3 Needle and Spreader

(1). Installing Spreader

Provide a clearance of 0.5~0.8mm between left needle and the tip of thread hooking part(**a**) of Spreader(**A**) when Spreader moves to the left. Give the distance of 4.5~5.5mm from the center of left needle to the thread hooking part(**a**) when Spreader comes to the extreme left. The height from the surface of Stitch Plate up to the undersurface of Spreader(**A**) should be 8.5~9.5mm. The adjustment is made by loosening Screw(**B**) of Spreader and Screw(**C**) of Spreader Holder.

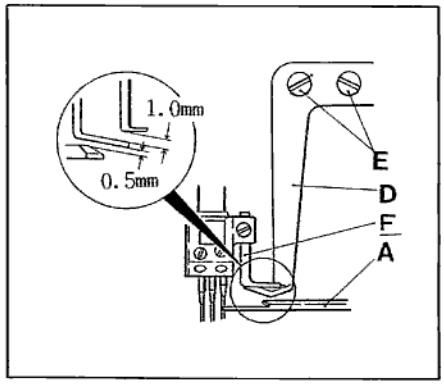






(2). Installing Top Cover Thread Guide

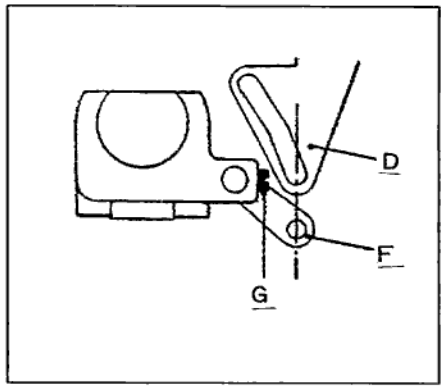
Provide a clearance of O.5mm between under surface of Top Cover Thread Guide(**D**) and the surface of Spreader(**A**) and tighten Screw(**E**) so that the thread is caught by thread hooking part properly when Spreader comes to the extreme right.



(3). Installing Top Cover Thread Eyelet

When Needle Bar at the lowest position, provide a clearance of .0mm between the surface of Top Cover Thread Guide(**D**) and the undersurface of Top Cover Thread Eyelet (**F**). And set the thread hole of Top Cover Thread Eyelet (**F**) on the center line of slot of Top Cover Thread Guide(**D**), then tighten Screw(**G**).

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



7-4 Adjusting Feed Amount of Puller (In case of machine with Puller Mechanism)

The adjustment procedure of feed amount is as follows:

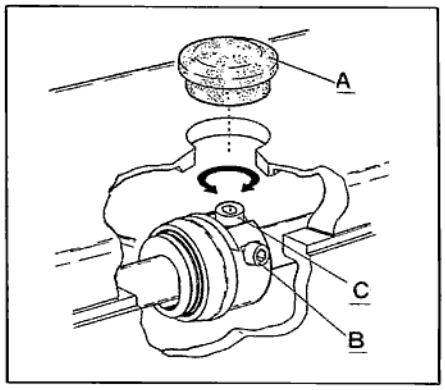
(1). Remove Seal Plug(**A**) on Top Cover.

(2). Turn Handwheel till Screw(**B**) of Feed Roller Eccentric appears, then loosen Screw(**B**).

(3). Turn Handwheel till Adjusting Screw(**C**) appears at the hole of Seal Plug.

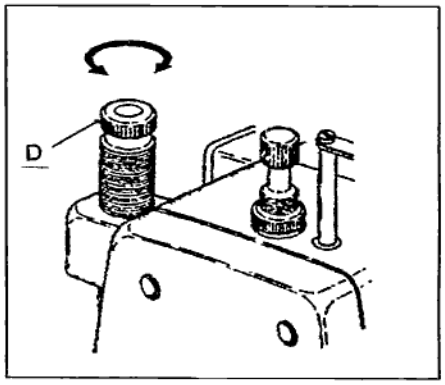
(4). To increase the feed amount, turn Adjusting Screw(**C**) counterclockwise and to decrease turn it clockwise.

(5). Tighten Screw(**B**) of Feed Roller Eccentric. Use a Hexagonal Screwdriver in the accessory box. (Tightening torque : 25kgf-cm.)



7-5 Pressure of Upper Feed Roller

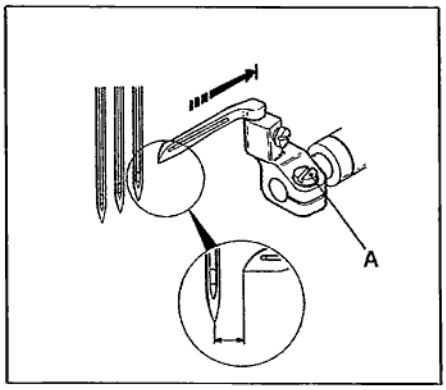
The pressure should be the least necessary for feeding fabric between Upper and Lower Feed Roller. To increase the pressure, turn Adjusting Screw(**D**) clockwise and to decrease, turn it counterclockwise.



Timing Adjustment of Needle and Looper < Reference >

(1). Looper movement to the right

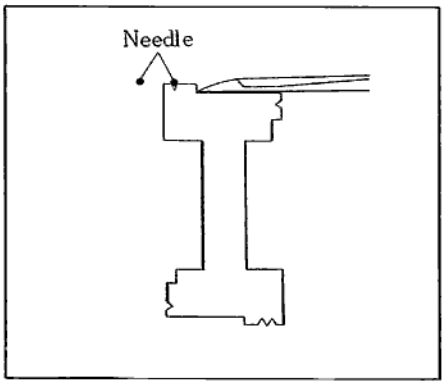
With Needle at the lowest point and Looper at the extreme right, the distance from the tip of Looper to the center of right needle varies according to the needle distance and should be adjusted referring to the value shown below. The adjustment is made by loosening Screw(**A**) of Looper Holder.



※ For any needle distance the distance from the center of Needle Bar to the tip of Looper is 6.0mm.

Needle (Symbol) Distance	Gauge Symbol	Looper Movement to the Right
3.2mm (32)	A	4.4mm
4.0mm (40)	B	4.0mm
4.8mm (48)	C	3.6mm
5.6mm (56)	D	3.2mm
6.4mm (64)	E	2.8mm

＊For easy adjustment of Looper movement to the right, use Timing Gauge. As the Timing Gauge is optional, request it to the agent who sold the machine to you or directly to us.

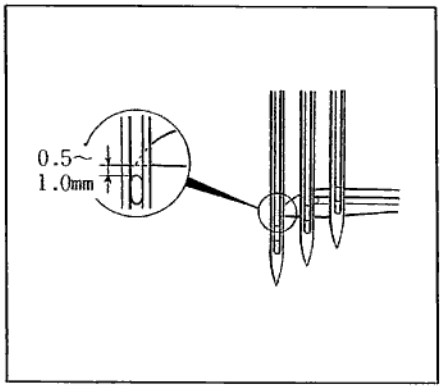


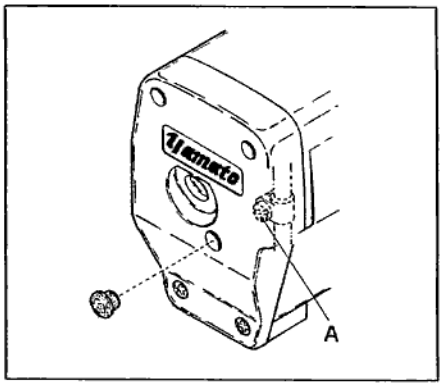
＊ Application of Timing Gauge

Symbol(**A**, **B**, **C**, **D**, **E**) for each needle distance are inscribed on Timing Gauge. With Looper at its extreme right, in the condition that the right needle put in the V-groove for desired needle distance, apply the tip of Looper to Timing Gauge, then tighten Screw(**A**) of Looper Holder.

(2). Needle height

When the tip of Looper comes to the center of left needle, it should pass 0.5~l.0mm over the upper end of needle eye. That is, needle height is set on the basis of Looper. Of course needle must be installed into the needle hole of Needle Clamp correctly while Looper must be put all the way into Looper Holder and be tightened securely. The adjustment of needle height should be made by inserting screwdriver through access hole of Head Cover, loosening Screw(**A**) of Needle Bar Bracket and moving Needle Bar up and down.





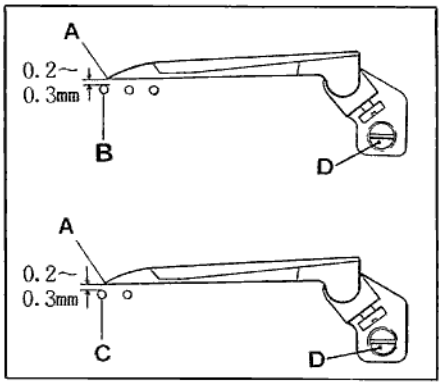
(3). Front/Rear position of Needle and Looper

＊ For 3-needle:

When the tip(**A**) of Looper meets the Left Needle (**B**), clearance between them should be 0.2~0.3mm The adjustment is made by loosening Screw(**D**) of Looper Holder.

＊ For 2-needle:

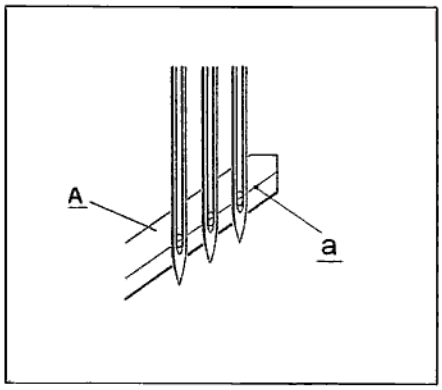
When tip(**A**) of Looper meets the Left Needle(**C**), clearance between them should be 0.2~0.3mm. The adjustment is made by loosening Screw(**D**) of Looper Holder.



(4). Needle and Needle Guard(Rear)

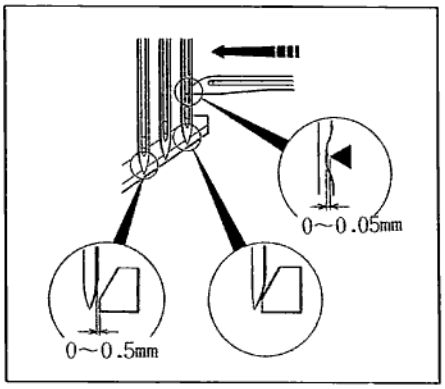
＊ Height of Needle Guard(Rear)

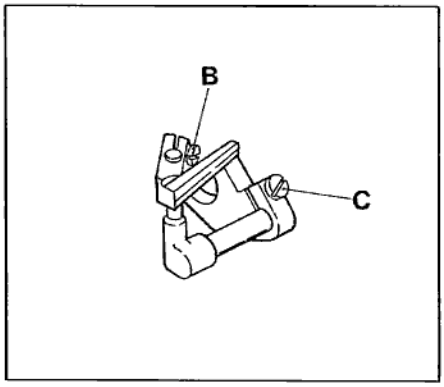
With Needle Bar at the lowest position, align the centers of needles with the line(**a**) of Needle Guard(**A**) (Rear).



＊ Front/Rear position of Needle Guard(Rear)

When the tip of Looper comes to the center of right needle, adjust the clearance between Needle and Looper to 0~0.05mm by pressing Needle Guard (Rear). At this time, provide a clearance of 0~0.05mm between left needle and Needle Guard (Rear). These adjustments are made by loosening Screw(**B**) and (**C**).





(5). Needle and Needle Guard (Front)

When the tip of Looper comes to the center of Left Needle, make it 1.5~2mm higher than the Needle. At this time, provide a clearance of 0~0.3mm between the Needle and Needle Guard(**D**) (Front). And when the tip of Looper is returned to the Right Needle, provide a clearance of 0~0.3mm between the Needle and Needle Guard(Front). These adjustments are made by loosening Screw(**E**) and (**F**).