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1. Description

Series 38S : Lockstitch Pocket Welting Machine

2. Indication of Model Plate

(example) S38S－□□C10－175S－22J－100

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

① Symbol of Series

② S38S ··· Series 38S

③ Indicate when the length of Frame is different

④ Kind of Rack Leg
C: Caster
A: Adjustable Foot

⑤ Needle Bite Size
10: 10 mm
12: 12 mm

⑥ Size of Patch Guide
175: 17.5 mm
220: 22.0 mm

⑦ Kind of Welting
S: Single welting
D: Double welting

⑧ Indication of Operating Voltage
22: 220 V
38: 380 V

⑨ Phase, Frequency and Motor
J: 3 phase, 60 Hz, positioner motor
C: 3 phase, 50 Hz, positioner motor

⑩ Language of Panel Indication
1: English
4: Japanese

⑪ Indication of Special Device
(example)
01: Sandwich type Slide Plate

3. General specification

Model:	Series 38S
Description:	Lockstitch Automatic Pocket Welting Machine
Dimensions:	Width : 75 cm Length: 145 cm Height: 182 cm (including Thread Stand)
Weight:	290 kg (Net), 387 kg (Gross)
Application:	Pocket Welting to the reverse of front facing of trousers and slacks
Sewing Head:	LT2-B833 (2-needle lockstitch machine with Center Knife)
Stitch Type:	ISO(301·301)
Sewing Speed:	2,200 s.p.m.
Needle Bite Size:	10 mm, 12 mm (14, 16, 18 and 20 mm are available on special order.)
Needle to be used:	Schmetz 190R #100 or Organ Mt×190 #16
Material to be sewn:	light to medium-heavy
Sewing Length:	40 to 180 mm
Center Knife:	Upper driving system
Feed:	Numerical Control type with I/O checking function using stepping motor
Control System:	by Micro-computor, contactless type
Power Supply:	Standard ··· 3-phase, 200 V, 50/60 Hz Power consumption: 700 W
Air Supply:	Operating pressure: 5 kgf/cm² Air consumption: 12 ℓ/min.

※ Manual Switch is standard equipment; and Knee Switch is optional.

4. Installation

4-1 Unpacking

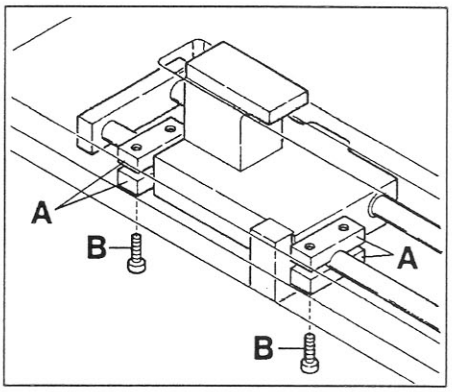
After unpacking carefully, check the damage on each parts of machine.

4-2 Installation

Adjust the height and level using four adjustable feet.
Similar adjustment should be made for the machine with casters.

4-3 Removing shipping lock

To prevent the Carriage from moving in transport, it was pushed back and fastened both at front and rear with Split Clamps(A).
Remove Screws(B) and Clamps(A).

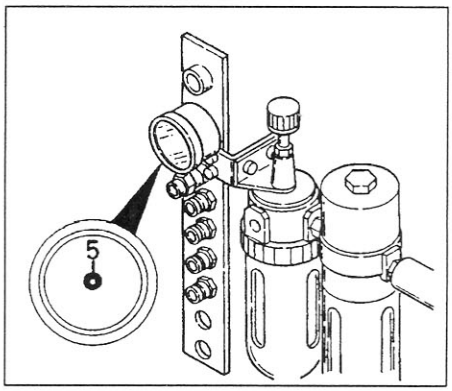


4-4 Connection of Power Cords

Connect red, black and white cords to the power supply system of the factory (AC 200V). Green cord is an earth line. Grounding must be complete.
Note: In case of incomplete connection, malfunctioning might occur by electric noise.

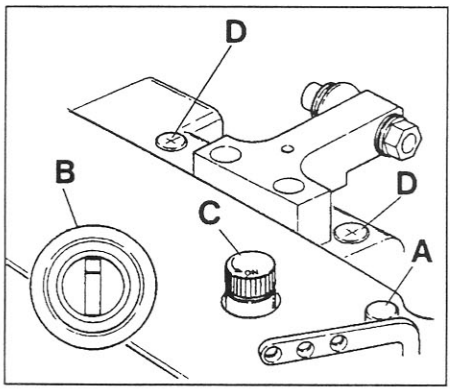
4-5 Connection of Air System

Connect Air Supply Horse with Coupler and fit the horse band without fail.
Set the air pressure to 5kgf/cm² and as illustrated right.
Air Supply pressure must be over 6kgf/cm².
Filter and Oil Mist Separator are automatic, therefor they will automatically purge unnecessary condensation.

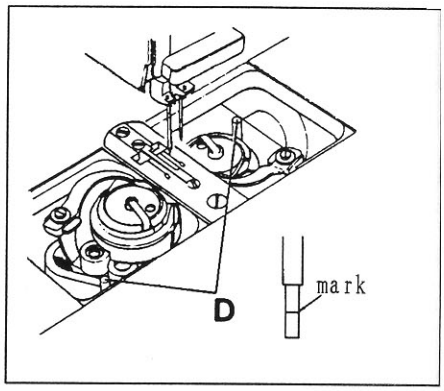


4-6 Lubrication

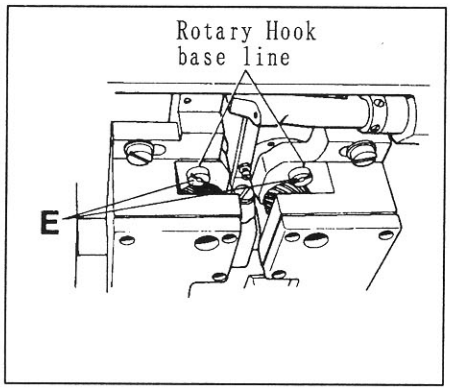
* Filling Oil Reservoir
  Remove Oil Seal Plug(A) and fill the oil up to the mark at Oil Sight Gauge(B). Add oil before the oil level disappears at Sight Gauge without fail.
  At the operation of Sewing Head, push Lubrication Button up to the white line and turn it to the arrow direction.
  When the operation stops, bring the Lubrication Button(C) back to the home position without fail.
  Also feed oil to (D) without fail.

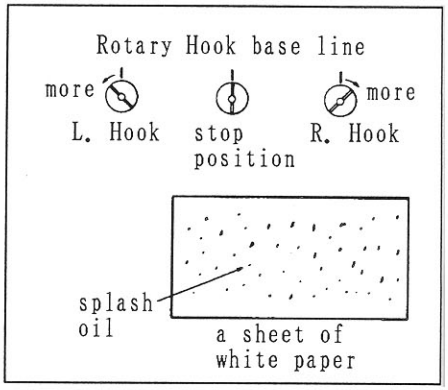


* Lubricating Rotary Hook
  Remove two Oil Gauges(D) (which acts as dip sticks) add oil up to the mark on the gauge through the gauge holes.
  ※ When the oil decreases to the tip of the gauge, lubricating to Rotary Hook stops.



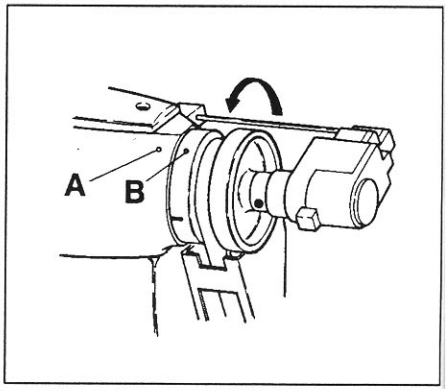
* Adjusting the Rotary Hook oil flow
  Adjust the oil flow by turning Screws(E) to the base line of Rotary Hook.
  ※ When changing Rotary Hook, adjust the rotary hook oil flow as shown in the illustration without fail.
  (The oil splashed from Rotary Hook should look like the illustration below after 10 seconds.)





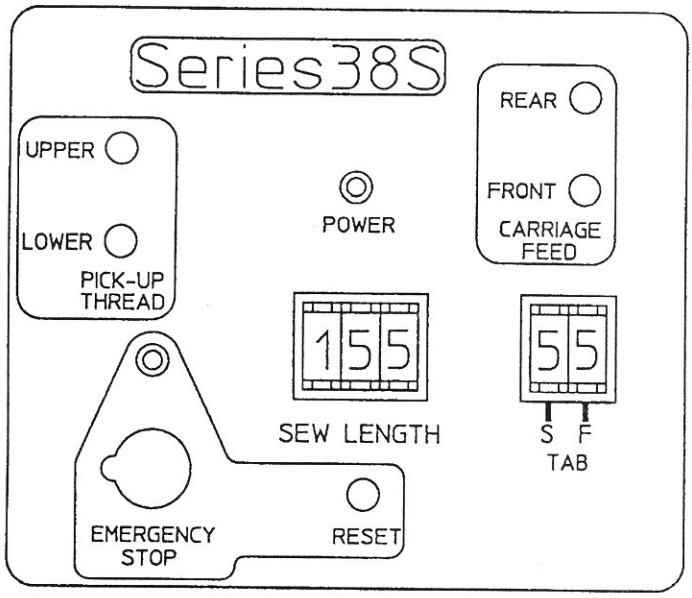
4-7 Sewing Machine rotation

With the red mark(A) of the machine and the white mark(B) of Pulley are not aligned, turn Power Switch on, and make sure that the machine rotates counter-clockwise seen from Pulley side.
If it rotates clockwise, interchange any two of the red, black or white wires of the machine Power Cord.



5. Designation and function of Control Panel and Control Board

5-1 Control Panel



* SEW LENGTH
  Counter to set sewing length.
  Sewing length can be set from 40mm to 180mm.
  If sewing length is set beyond this limit, emergency stop will function.

* TAB
  Counter for fine tuning the position for Tab Knife cut enter.
  Left hand counter adjusts the Tab Knife position at sewing start and right hand counter is for sewing finish.
  1 graduation corresponds to the shift of 0.5mm.
  It shifts outside from seam as the number increases.

* CARRIAGE FEED
  Switch to idle Carriage.
  REAR .... Carriage moves all the way backward.
  FRONT ... Carriage moves all the way forward.
  When actuating emergency stop, Carriage moves slowly while pressing this switch.

* EMERGENCY STOP
  Switch for emergency stop.
  When pressing this switch, lamp lights and all the operation stops.

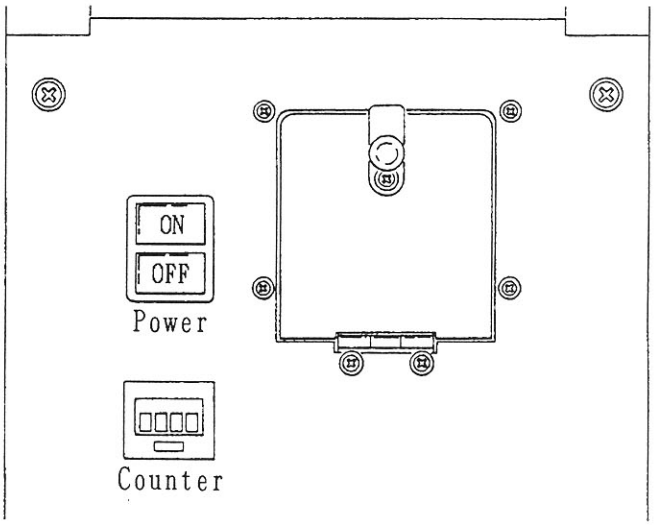
* RESET
  Switch to release emergency stop.

* PICK-UP THREAD, UPPER
  Switch for trimming needle thread manually. The trimming operates while pressing this switch.

* PICK-UP THREAD, LOWER
  The trimming operates while pressing this switch.

* POWER
  Lamp to indicate Power Supply.

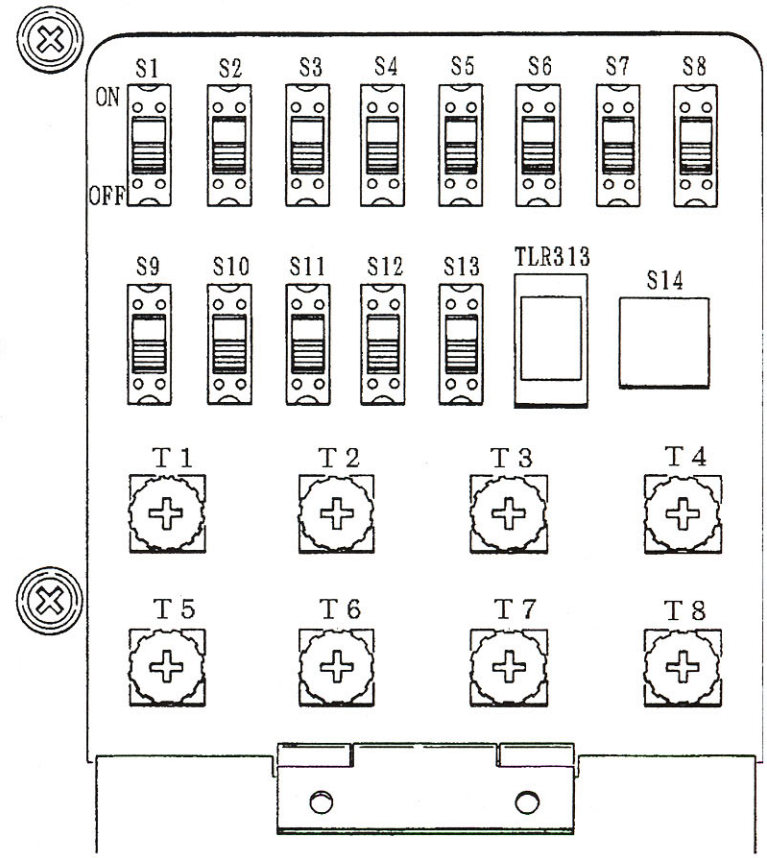
5-2 Lower Switch Panel



* POWER
  Power Switch.

* COUNTER
  Integration counter for counting the number of sewn work piece.

5-3 Lower Switch Panel Board



* S 1
Switch for Sewing Machine Motor.
ON ··· Machine operates.
OFF··· Machine does not operate.

* S 2
Switch to operate Center Knife.
ON ··· Center Knife operates automatically interlocked with the operation of machine during sewing.
OFF··· Center Knife does not operate.

* S 3
Switch to operate Tab Knife.
ON ··· Tab Knife operates automatically interlocked with the operation of machine during sewing.
OFF··· Tab Knife does not operate.

* S 4
This is the switch to operate Stacker.
ON ··· Stacker operates.
OFF··· Stacker does not operate.

* S 5
Switch to select the lowering of Clamp Foot.
ON ··· Left Clamp Foot lowers first.
MIDDLE ··· Left and Right Clamp Foot lower at the same time.
OFF ··· Right Clamp Foot lowers first.

* S 6
Switch to select the rising position of Clamp Foot after sewing finish.
ON ··· At sewing finish, Clamp Foot rises after bringing fabric forward.
OFF··· Clamp Foot rises at the same time with the sewing finish.

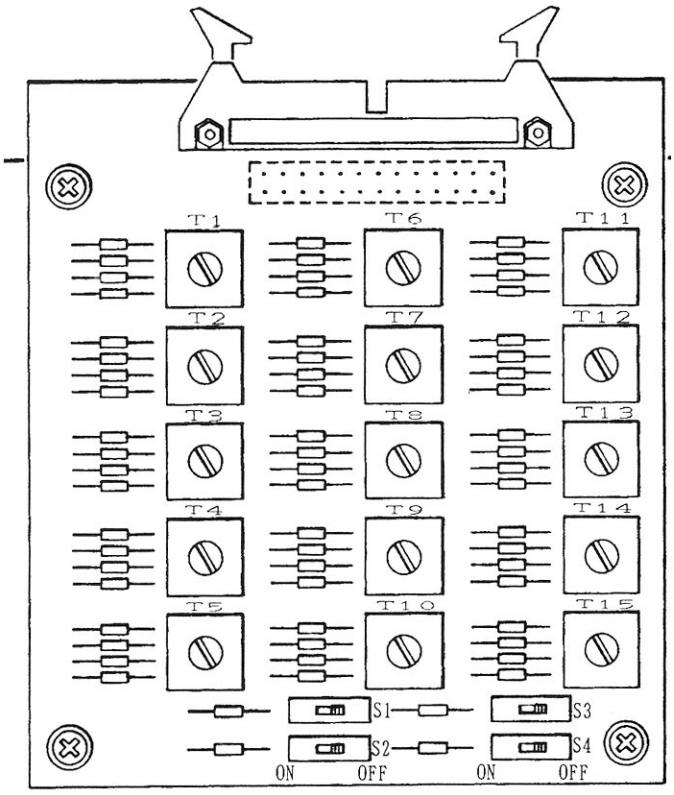
* S 7
Switch for auto-return of Carriage.
ON ··· Carriage returns to the front automatically after sewing finish.
(Waiting time is adjusted by T 1.)
OFF··· Carriage stops at the position of sewing finish.
If Start Switch is turned on, it moves forward.

* S 8 (Spare)

* S 9
Switch to operate Center Knife manually.
This is used to test the engagement and the like after changing Center Knife.
ON ··· Center Knife operates.
OFF··· Center Knife does not operate.
This switch actuates only when Carriage is in the extreme rear position.

* S 10
Switch to raise or lower Tab Knife manually.
This is used when changing Tab Knife.
ON ··· Tab Knife rises.
OFF··· Tab Knife lowers.
This switch actuates only when Carriage is in the extreme rear position.
* S 11
Switch to operate Flap Clamp.
ON ··· Flap Clamp operates. (In case of Flap Clamp is equipped.)
OFF··· Flap Clamp does not operate.
* S 12 (Spare)
* S 13
Switch to select auto-starts.
ON ··· By treadling Pedal fully, sewing starts automatically.
OFF··· Sewing starts only by actuating Start Switch.
(When Flap Clamp operates, auto-start does not actuate.)
* S 14
Switch to operate Sewing Machine Motor without sewing operation.
This is for rotating machine only, and is used for winding bobbin thread.
This switch actuates only when Carriage is in the extreme rear position.
* T 1
Timer to set the time from the downing Patch Guide to the entering Brush Blade. It changes at the intervals of 0.1sec.
* T 2
Timer to adjust the Center Knife position at sewing start.
The position shifts outside as the number increases. It changes at the intervals of about 1mm.
* T 3
Timer to adjust the Center Knife position at sewing finish.
The position shifts outside as the number increases. It changes at the intervals of about 1mm.
* T 4 (Spare)
* T 5
Timer to adjust the sewing start position when flap is attached on the left hand side. It changes at the intervals of 0.5mm.
* T 6
Timer to adjust the sewing start position when flap is attached on the right hand side. It changes at the intervals of 0.5mm.
* T 7, T 8 (Spare)
* TLR 313
This indicates the cause of emergency stop.
0 ··· EMERGENCY STOP Switch is actuated.
1 ··· Sewing length is not set within the limit of 40～180mm, or defective Counter.
2 ··· Limit Switch is not turned on.
3 ··· Defective Sewing Length Counter and Tab Knife Adjust Counter.
4 ··· Machine is not stopped at "NEEDLE UP" position.
5 ··· No bobbin thread.
6 ··· At attaching flap, Optical Sensor does not operate properly.
7 ··· Feed Motor of Carriage does not operate.
8 ··· Needle thread broken.

5-4 Control Board Switch(Inside Power Box)



* T 1
  This adjust the waiting time of Carriage at the position of sewing finish. It changes at the intervals of 0.2sec.

* T 2
  This adjusts the air blowing time for the machine equipped with Air Ejector(AE Device). It changes at the intervals of 0.5sec.

* T 3
  This sets the seam pitch at the portion of short dense at sewing start and sewing finish. ("5" corresponds to 1mm.) the seam becomes coarse as the number increases. It changes at the intervals of 0.1mm.

* T 4
  This indicates the stitch number at "short dense".

* T 5
  This indicates seam pitch at the ordinary sewing part (center dense). The seam becomes coarse as the number increases. ("5" corresponds to 2.6mm.) It changes at the intervals of 0.2mm.

* T 6
  This adjusts the position of Tab Knife at sewing finish. This is used when the adjustment is not possible by T.T.K. It changes at the intervals of 1mm.

* T 7
  This sets the thread trimming position after sewing finish. Adjustment range is 37～52mm.

* T 8 (Spare)

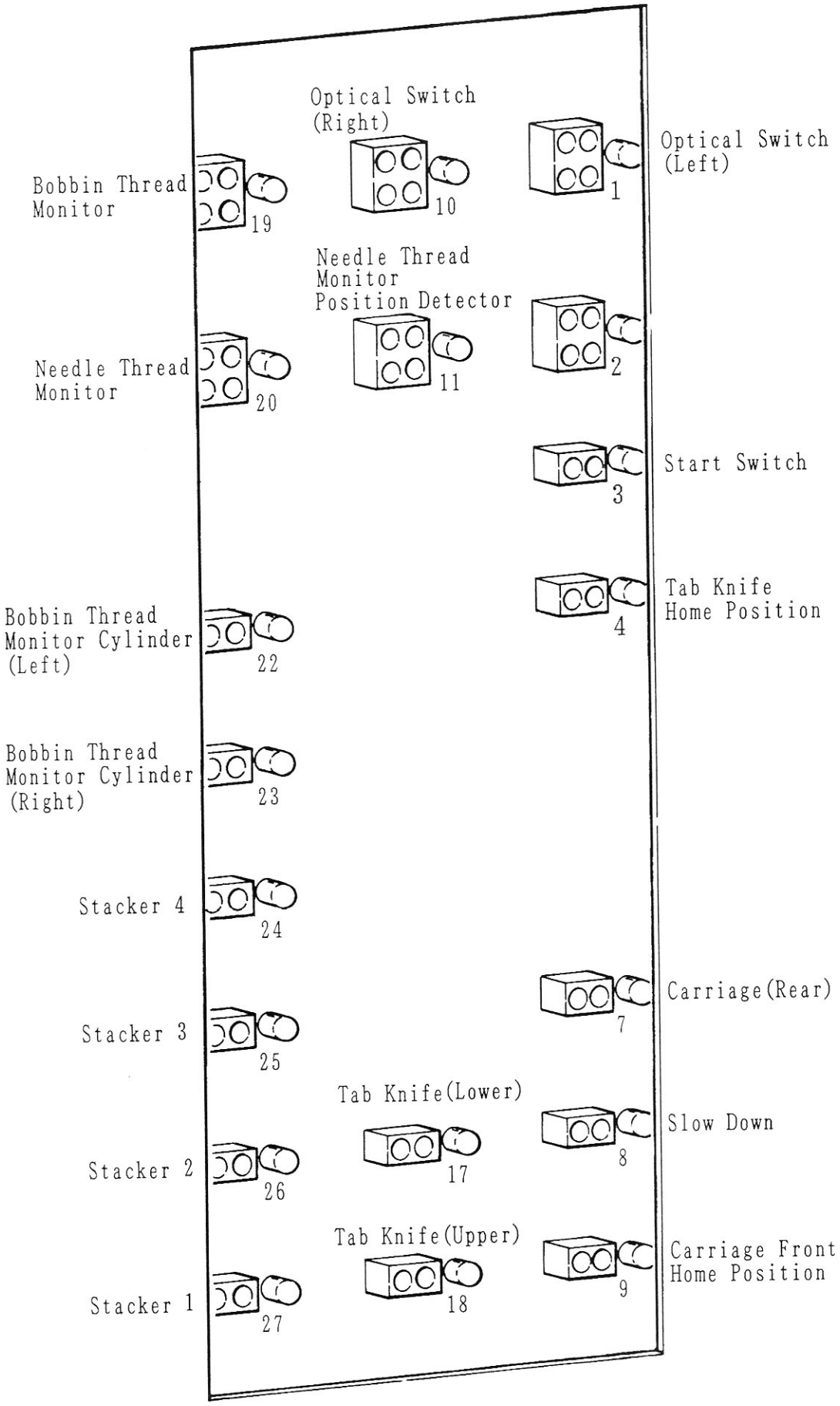
* T 9
  This sets Carriage speed from pressing Start Switch until sewing start.

* T 10
  This selects Stacker.
  0 ··· Trouser Stacker
  1 ··· Remover
  2 ··· Air Ejector (Operating time is adjusted by T 2.)
  3～F ··· not used

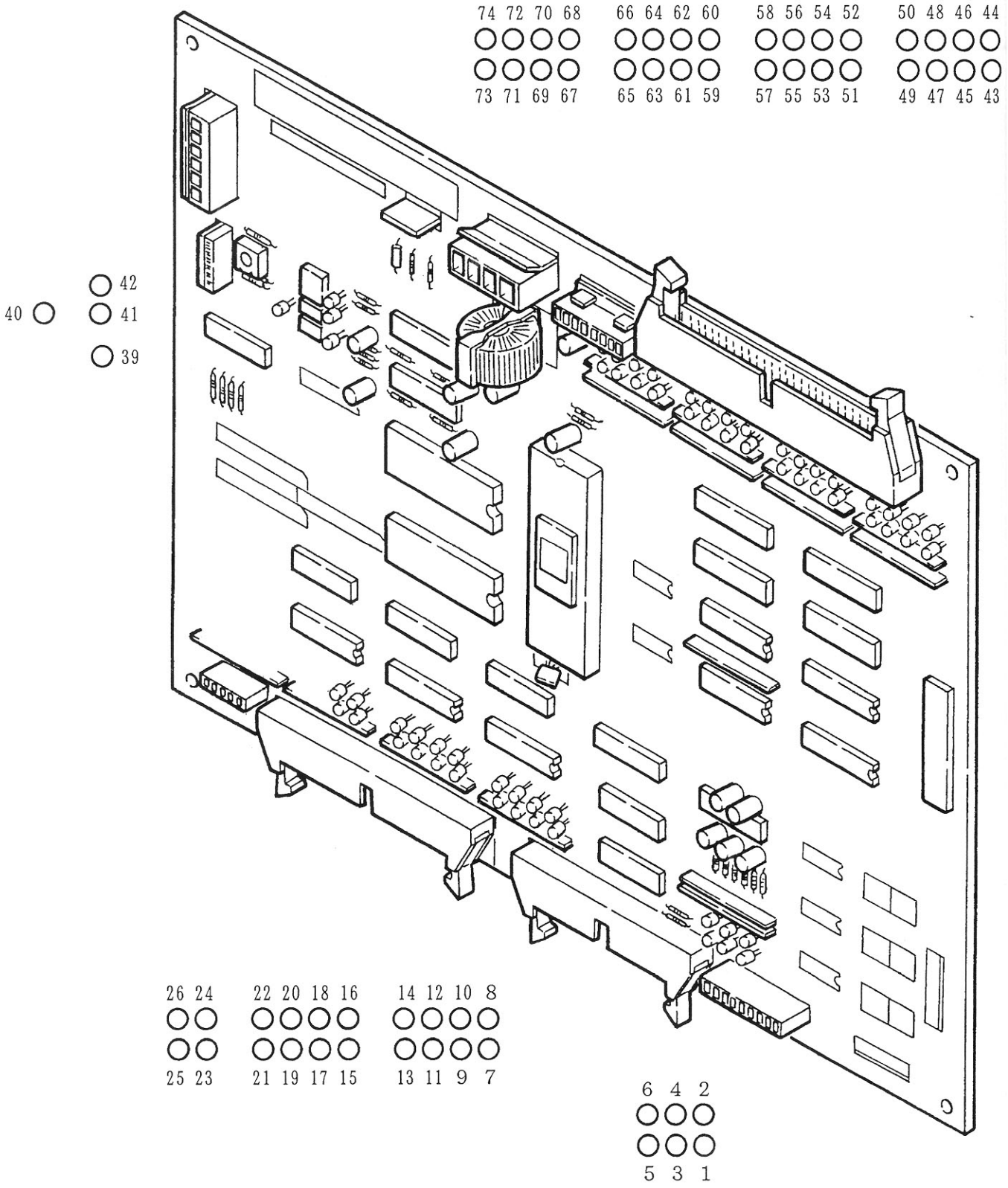
* T 11～T 15 (Spare)

* S 1
  ON ··· Clamp Foot and Patch Guide stop operation at the time Brush Blade advances by treadling Pedal. This is released by pressing RESET Switch.
  OFF··· For standard operation. (Set to OFF at the shipment.)

5-5 Intermediate Board(Connector No. and LED No.)



5-6 Control Board(LED No.)



※ When the switches actuate, corresponding LED on Control Board lights.

* Input signal

LED No.	
1	Emergency stop
2	Not used
3	Needle Thread Monitor
4	Start Switch
5	Not used
6	Not used
43	Motor Stop signal
44	Bobbin Thread Monitor(Right)
45	Bobbin Thread Monitor(Left)
46	Home position of Bobbin Monitor Cylinder
47	Stacker 4
48	Stacker 3
49	Stacker 2
50	Stacker 1
51 ~ 57	Not used
58	Tab Knife(Lower)
59	Tab Knife(Upper)
60	Not used
61	Pedal, 5 stages
62	Pedal, 4 stages
63	Pedal, 3 stages
64	Pedal, 2 stages
65	Pedal, 1 stages
66	Neutral
67	Tab Knife home position
68	Not used
69	Not used
70	Optical Switch(Right)
71	Optical Switch(Left)
72	Carriage(Rear)
73	Carriage slow down
74	Carriage front home position

* Output signal

LED No.	
7	Flap Clamp(Right)
8	Air blow
9	Clamp Foot(Left)
10	Clamp Foot(Right)
11	Brush Blade
12	Patch Guide up
13	Patch Guide down
14	Needle thread hold
15	Thread tension release
16	Tab Knife Clamp
17	Center Knife
18	Bobbin thread trim
19	Needle thread trim
20	Tab Knife
21	Stacker swing
22	Stacker Lamp
23 ~ 26	Not used
39	Motor operation command
40	Needle up signal
41	High speed operation command
42	Low speed operation command

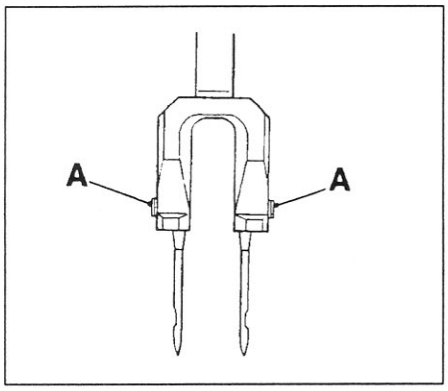
6. Proper operation of machine

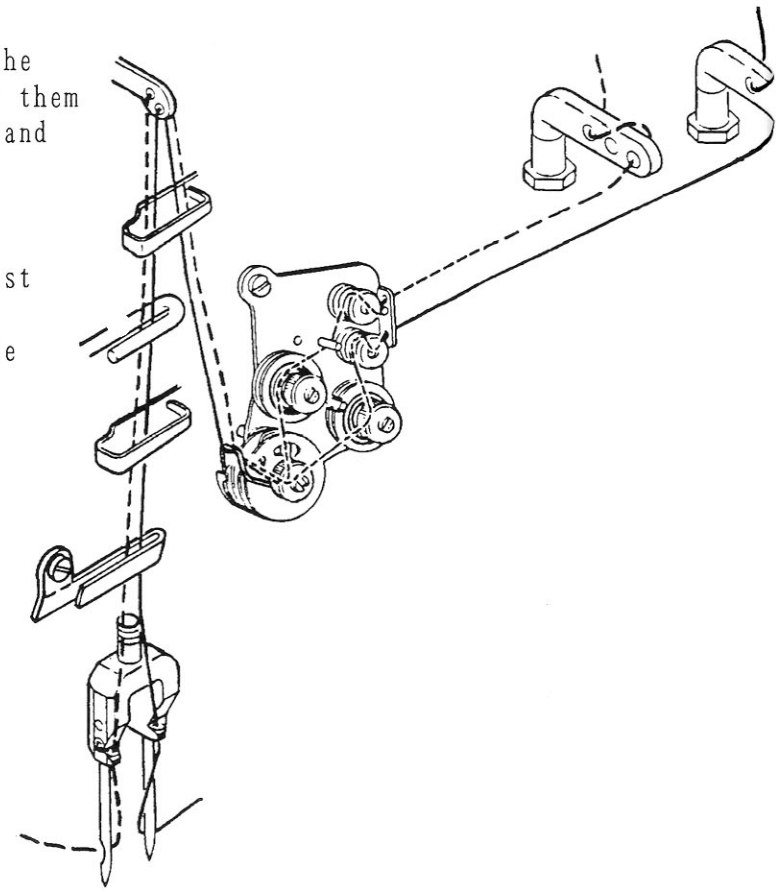
6-1 Setting Needles

After loosening Screws(A), with the long groove facing inward, insert them all the way into the Needle Head and tighten the screws.

6-2 Threading Needles

Raise Thread Take-up to its highest position.
Pass the thread through the needle eyes from inside to outside.

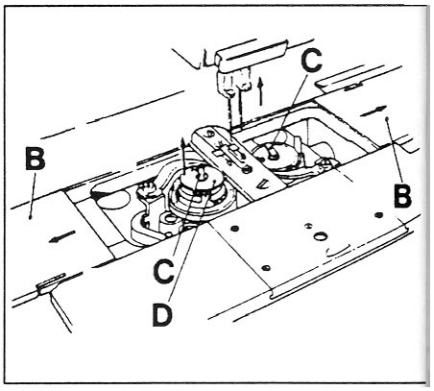




6-3 Removing Bobbins

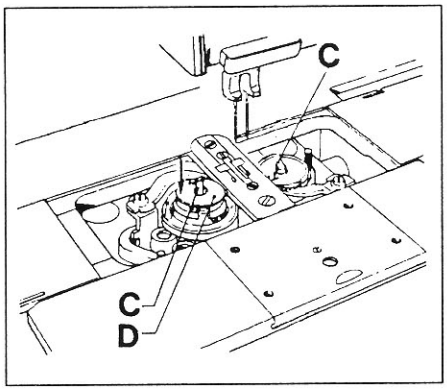
① Raise the needles to their highest position and open Slide Plates(B) by moving them right and left.
② Pull Rotary Hook Latches(C) upward and remove the Bobbins(D).

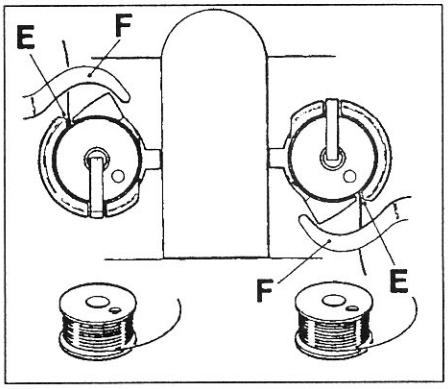
Note: In case the threads of Bobbin(D) are held by Fixed knife, release holding by pushing "LOWER" of "PICK-UP THREAD" Switch on Control Panel.



6-4 Loading Bobbins and threading Bobbins

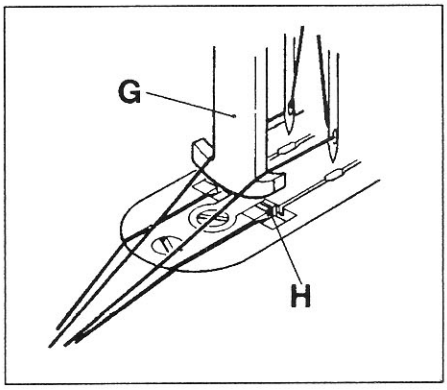
① Raise the needles to their highest position and raise Rotary Hook Latches(C) upward.
② Holding Bobbins(D) so that the end of thread can be turned to the right and place Bobbins(right and left) into Bobbin Case.
③ Close Latches(C) of rotary Hook.
④ Draw out the end of thread about 50mm, pass the thread through the slit(E) in Rotary Hook and put it under Bobbin Case Opener(F).
⑤ Manually turn the Machine Driving Pulley to bring bobbin thread above Throat Plate.
⑥ Pull up the bobbin threads and, holding Bobbin(D) not to turn, pull the two threads forward.
(By doing so, the correct threading is assured.)





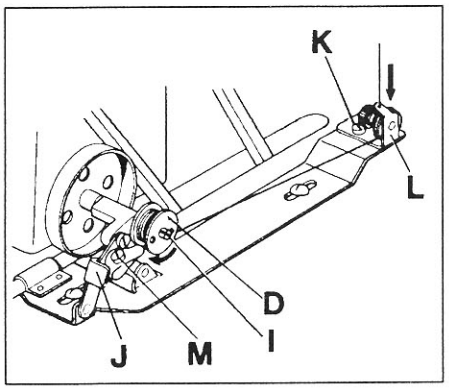
6-5 Holding needle thread and bobbin thread

① Align the red mark on Sewing Head with the white mark on Machine Pulley.
② Pull the 2 needle threads and 2 bobbin threads backward.
③ Push in "PICK-UP THREAD" "UPPER" Switch on Control Board and keep this condition. At this time Pick-Up(G) descends.
④ Pass the 2 needle threads over Upper Thread Pick-up(G). Release the switch; the thread will be trimmed and clamped.
⑤ Keep "PICK-UP THREAD" "LOWER" Switch on Control Panel in the pressed condition. Bobbin Thread Trimming Knife(H) moves to the right.
⑥ Pass the 2 bobbin thread through the slit of Throat Plate.
Release the switch; the threads will be trimmed and clamped.



6-6 Winding bobbin thread

① Push Bobbin(D) onto Bobbin Winder Shaft(I).
② Push Bobbin Winder Stop Latch(J) downward fully.
③ Wind the thread around Bobbin(D) several times to the direction of arrow.
④ Operate the machine.
※ If the thread cannot be wound evenly, loosen Screw(K) and adjust by moving Thread Guide(L) to the side as required.
※ To wind more thread, screw in Screw(M).

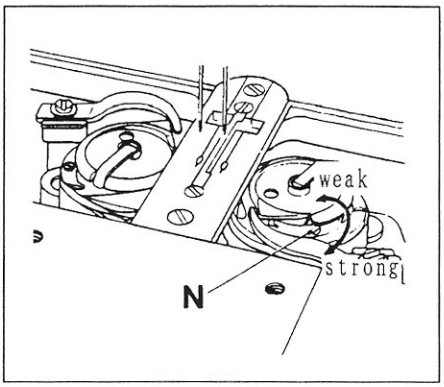


6-7 Sewing performance

① Bobbin Thread Tension

Adjust the bobbin thread tension by turning Tension Screw(N), as the proper bobbin thread tension varies according to the fabrics and thread.

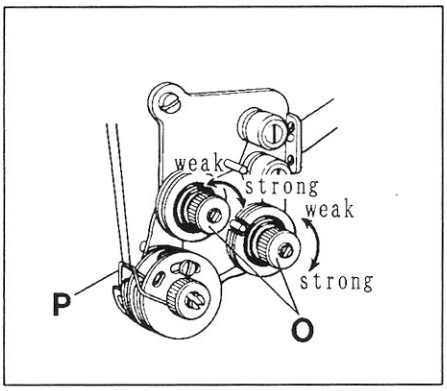
※ When using span yarn #50, the standard tension is 40～50g for medium-heavy and heavy materials.

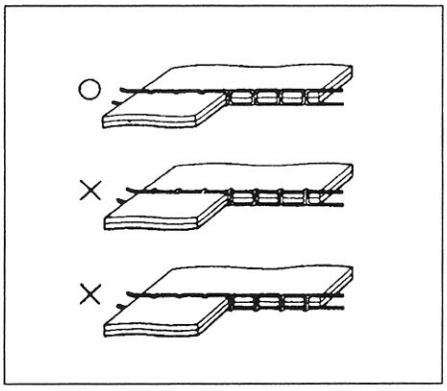


② Needle Thread Tension

Adjust the needle thread tension by turning Tension Nut(O).
(When the threads are not passed through Thread Take-up Spring(P), the standard tension is 100～120g for the same material as above.)

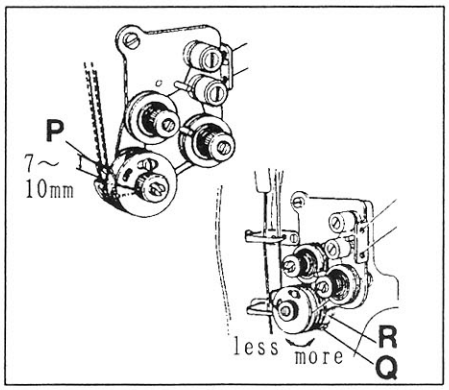
※ After the adjustment of bobbin thread tension, balanced and beautiful seam can be obtained by only changing the needle thread tension.

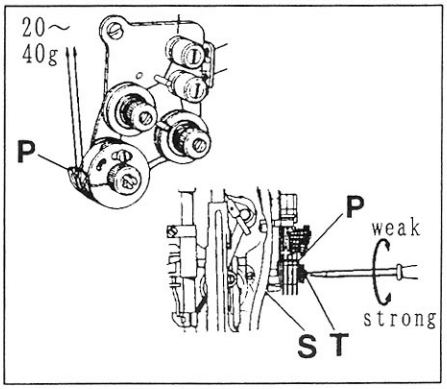




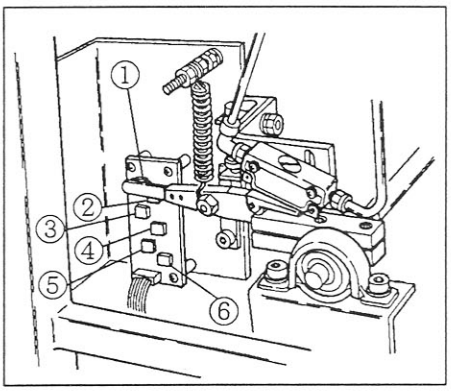
③ Thread Take-up Spring

The standard operating range of Thread Take-up Spring(P) and (Q) are 7～10mm.
The adjustment of operating range is made by Spring Stop(R) after loosening Screw(Q).
The standard strength of Thread Take-up Spring(P) is 20～40g.
The strength of Thread Take-up Spring(P) is adjusted by loosening Screw(S) and turning Spring Sleeve(T).



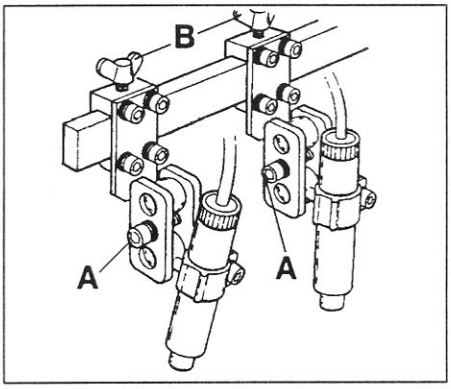


6-8 Foot Pedal Switch



① Neutral
When treadling back the Pedal, Pocket Cloth Presser rises.
② When treadling Pedal to the 1st stage, Clamp Foot(Right) or (Left) descends first.
③ When treadling Pedal to the 2nd stage, Clamp Foot of opposite side descends.
When Switch of Clamp Foot is "BOTH", both Clamp Feet descend at the same time.
④ When treadling Pedal to the 3rd stage, Patch Guide descends.
⑤ When treadling Pedal to the 4th stage, in case of Series 38S, air blows out.
⑥ Spare
* Then, when pressing Start switch, sewing is made.

6-9 Work Locating Lamp



Work Locating Lamp is for indicating the position of pocket of workpiece.
Set mark(⊣⊢) at the position to attach pocket.
Left and right adjustment is made by loosening Screw(A) while front and rear adjustment is made by loosening Wing Bolt(B).

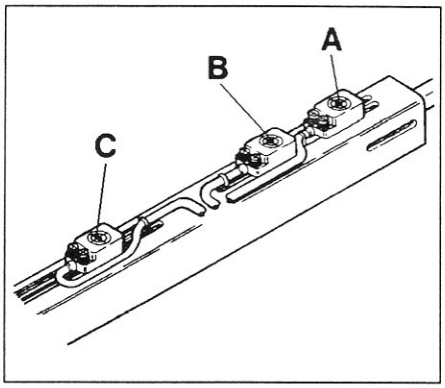
Adjustment of sewing finish position is not necessary after the first setting.

6-10 Pneumatic Valve lay out (Viewed from left side of machine)

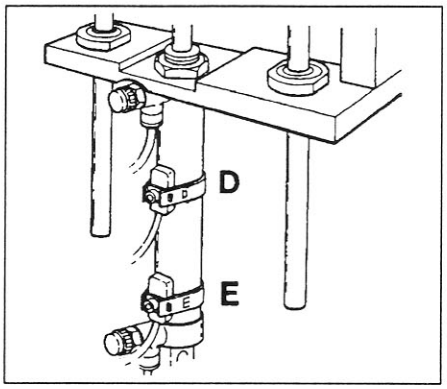
R	Blind Lid	Air blowing 3	Clamp Foot (Left) 3	Clamp Foot (Right) 3	Brush Blade 3	Patch Guide up 3	Patch Guide down, thread take-up 3	Needle thread hold 3	Tension release 3	Tab Knife clamp 5	Center Knife 5	Bobbin thread trim 5	Needle thread trim 5	Tab Knife up 5	Stacker swing 5	Stacker clamp 5	P
R		Series 38S															

3 Port VJ314-5LOZ(#1090042)
5 Port VJ3140-5LOZ(#1090035)

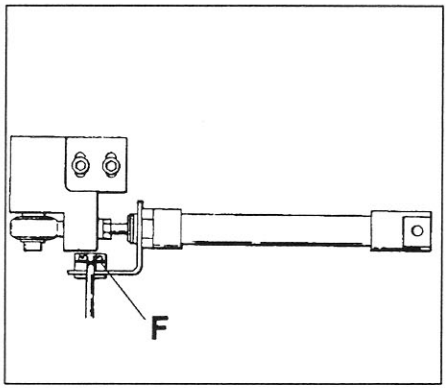
6-11 Designation and function of Metal Sensing Switch



* Clamp Foot Home Position(A)
  Switch(A) is adjusted so that the distance between the center of needle to the tip of Clamp Foot is 250mm when Carriage comes all the way forward and at the time Lamp(9) of Intermediate Board lights. Unless this Switch(A), (E) and (F) are actuated, the machine does not operate.
* Slow Down(B)
  This is Switch to fix the beginning point of slow down of Carriage to stop it at Home Position(A) correctly after Carriage moves to the operator's side at high speed from the rear and slows down on the way to Home Position(A).
  When it is detected, Lamp(8) of Intermediate Board lights.
* Carriage Rear(C)
  This is the switch to fix the position of Carriage when it fully retreats.
  At the time of adjustment of Machine Head, the head can be brought down backward at this point.
  When detected, Lamp(7) of Intermediate Board lights.



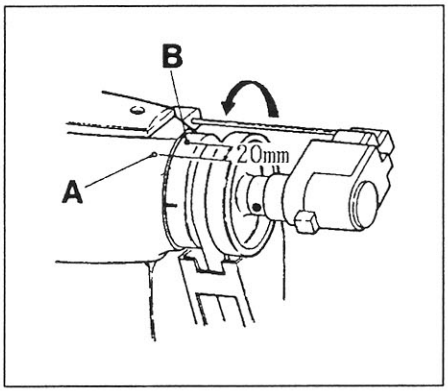
* Tab Knife Upper Limit(D)
  After sewing finish, Tab Knife rises.
  Adjust the position of Switch(D) so that Lamp(18) on Intermediate Board lights when Tab Knife rises 11mm above Slide Plate.
* Tab Knife Lower Limit(E)
  This is the switch to make sure the return of Tab Knife to the lowermost position.
  When it returns correctly, Lamp(17) on Intermediate Board lights.

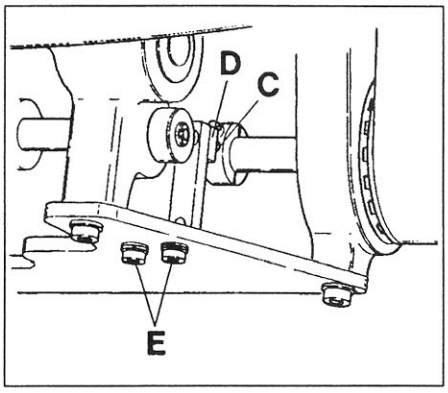


* Tab Knife Home Position(F)
  This is the switch to make sure Movable Tab Knife Holder returns to the home position.
  when it returns, Lamp(4) on Intermediate Board lights.

6-12 Needle Thread Monitor(Optional)

Turn Machine Pulley to the machine rotating direction and match Magnet(C) to Position Detector(D) so that Lamp(11) on Intermediate Board lights when White Mark(B) of machine Pulley comes 25mm before Red Mark(A) of Machine Arm, and puts off at 20mm before the Red Mark.
The clearance between Magnet(C) and Position Detector(D) should be 0.5～1.0mm.
The adjustment is made by loosening Screws(E).





6-13 Bobbin Thread Monitor

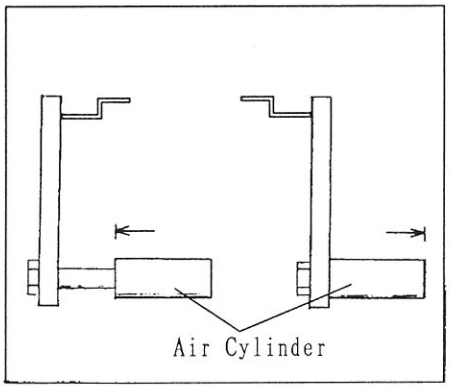
Turn Power Supply "ON" and press "EMERGENCY STOP" Switch. At this time, Air Supply must be off.
Metal Sensing Switches of Bobbin Thread Monitor are installed on both left and right side of Air Cylinder. The adjustment is made as follows:

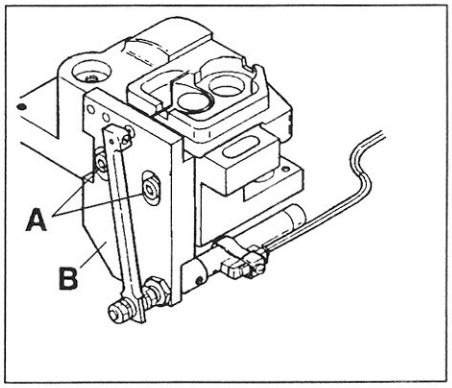
① Position the left hand Sensing Bar to the extreme left. (Cylinder Rod advances)
② Position the right hand Sensing Bar to the extreme right. (Cylinder Rod retreats.)
③ Fix Metal Sensing Switch at the position that Lamp(23) on Intermediate Board lights when moving Metal Sensing Switch left and right gradually after loosening Screws of the switch.

Note: Lamp(23) lights when both left and right Metal Sensing Switch detect. Then move Sensing Bar closer toward Rotary Hook till it contacts bobbin, when the lamp on Intermediate Board lights.
For left hand one, Lamp(19) and for right hand one Lamp(20) lights.
If Lamp(19) and (20) light before Sensing Bar contacts Bobbin, Sensing Bar must contacts Rotary Hook Base or others. In this case, correct the position of Sensing Bar by loosening Screws(A) and moving Thread Monitor Holder(B).

Note 1: Make sure that Lamp(23) puts off when moving Sensing Bar a little from the position where Lamp(23) on Intermediate Board lights.
Also make sure that the tip of Sensing Bar does not interfere the tip of Rotary Hook at the time Lamp(23) puts off.
Make sure the above items both for left and right individually.

Note 2: Even after Air Supply is cut off, the Power Supply is still "ON", therefore machine must not operate when adjusting Bobbin Thread Monitor, which may cause damage of Rotary Hook and Bobbin Thread Monitor.





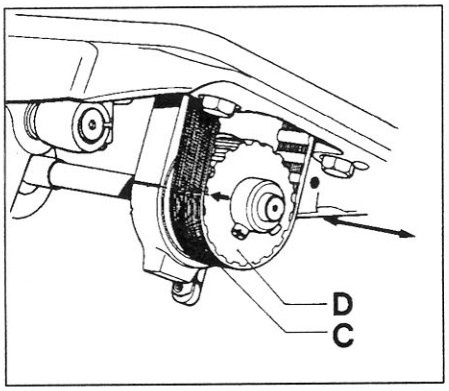
7. Notice before actual sewing

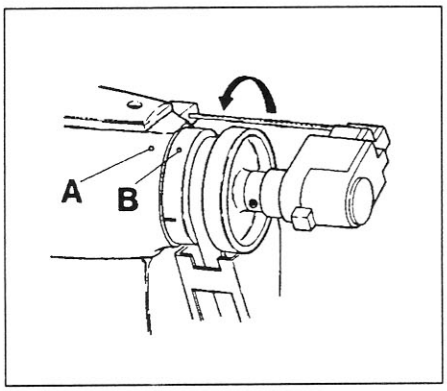
① Make sure the oil amount of each parts of Sewing Head.
Feed oil to the manual oiling points.
② Clean Photo Sensor and Reflective Sheet with soft cloth.
③ Move Carriage back and forth once or twice by actuating "CARRIAGE FEED" Switch.
④ Check each switches on Control Board.
⑤ Check that the needle and bobbin threads are held.
⑥ Check the alignment of White Mark on Pully and Red Mark on Machine Arm.
⑦ Check sewing performance, position of Work Locating Lamp and each operation of mkachine parts once again.

8. Adjustment

8-1 Adjustment of timing between Rotary Hook and Thread Take-up

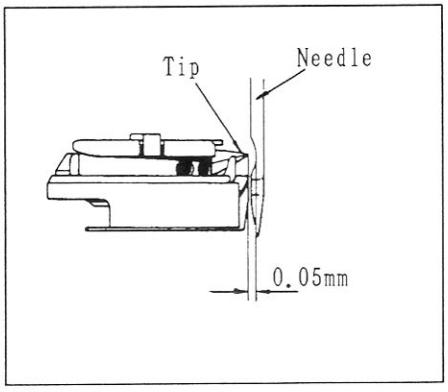
① Remove needles.
② Bring down Sewing Head and remove Timing Belt(C).
③ Align White Mark(B) on Machine Pulley with Red Mark(A) of Sewing Head.
④ Holding Upper Shaft in place, align the arrow mark of Lower Belt Wheel(D) with the base line of Sewing Head, then set Timing Belt(C).
⑤ Raise up Sewing Head and install needles.

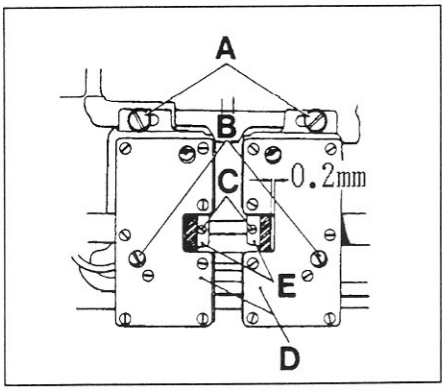




8-2 Adjustment of timing between Needle and Rotary Hook

＊ Clearance between Needles and the tip of Rotary Hook
① Clearance between needle and the tip of Rotary Hook must be 0.05mm. the adjustment is made by loosening Screws(A), (B) and (C) and moving Rotary Hook Bases(D) left and right.
② Adjust the engagement so that the clearance between the inside of Rotary Hook Bases(D) and endsurface of Lowoer Shaft Gear is about 0.2mm. The adjustment is made by moving Lower Shaft Gear left and right.
※ Tighten Screws(C) of Lower Shaft Gears(E) correctly to its flat spot.





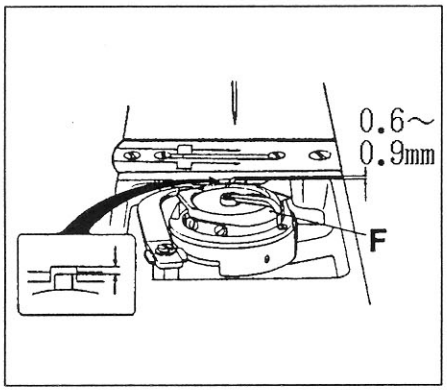
* Clearance between Rotary Hook and Throat Plate

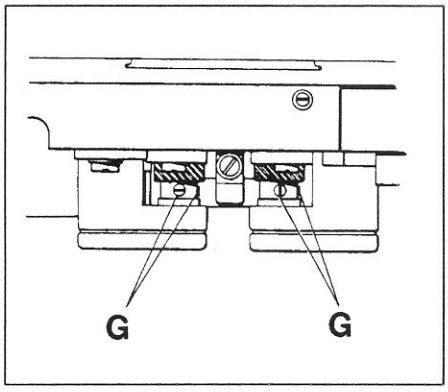
① Adjust the clearance between Rotary Hook(F) and Throat Plate 0.6~0.9mm. The adjustment is made by loosening Screws(G) and moving Rotary Hook up and down.

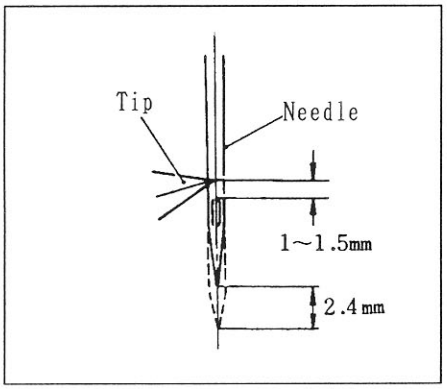
* Needle Bar Lift and Needle Bar Height

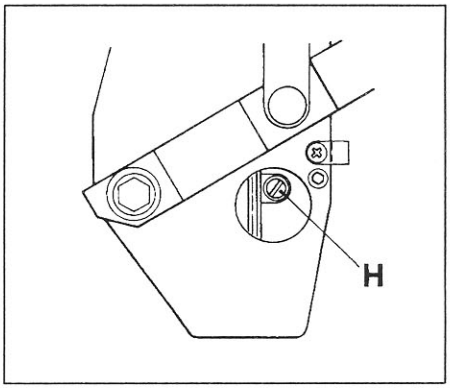
① Adjust so that the tip of Rotary Hook comes to the center line of needle when needle rises 2.4mm from the lowest point. The adjustment is made by loosening Screws(G) and turning Rotary Hook(F).

② Adjust the height of needle so that the distance between upper of nedle eye and the tip of Rotary Hook is 1.0～1.5mm when the tip of Rotary Hook comes to the center line of needle. The adjustment is made by loosening Screw(H) and moving Needle Bar up and down.



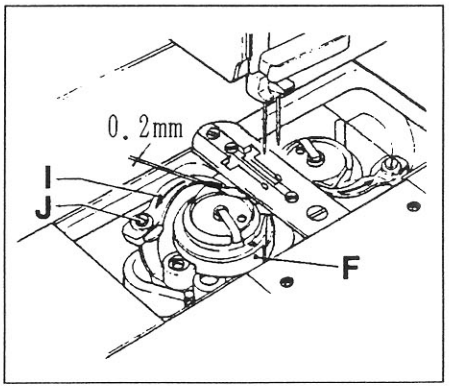






* Clearance between Rotary Hook and Bobbin Case Opener

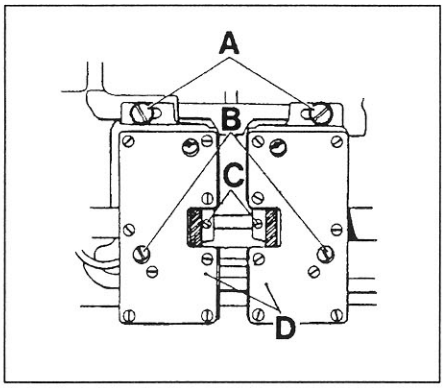
① Clearance between Rotary Hook(F) and Bobbin Case Opener(I) is 0.2mm when Bobbin Case Opener most retreats. The adjustment is made by loosening Screw(J) and moving Bobbin Case Opener left and right.



＊ Adjustment at the change of Needle Bite Size

☆ To widen Needle Bite Size

① Loosen Screw(A), (B) and (C) and move Rotary Hook Base(D) left and right.
② Install Throat Plate.
③ Screw in Needle Head securely.
④ Install needles.
⑤ Adjust the timing between Needle and Rotary Hook. (Refer to **8-2.**)
After adjustment of the clearance between the tip of Rotary Hook and Needle, tighten Screws(A), (B) and (C).



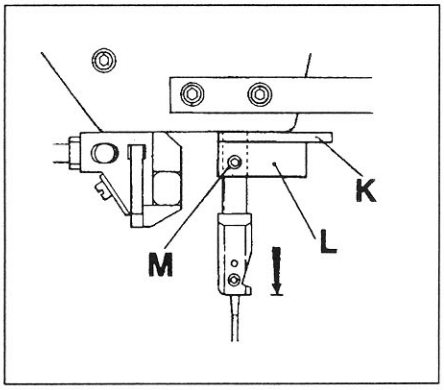
☆ To narrow Needle Bite Size

① Install Throat Plate.
② Screw Needle Head into Needle Bar securely.
③ Install Needles. (Make sure the height and parallelism of needles.)
④ Adjust the timing between Needle and Rotary Hook. (Refer to **8-2.**)
At this time, set Rotary Hook Base(D) with Screws(A), (B) and (C).

8-3 Application of Gauge(For Needle and Rotary Hook)

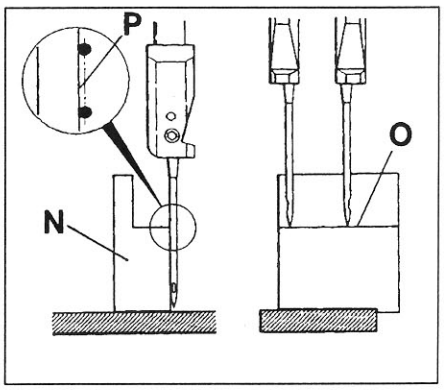
＊ Timing Gauge for Needle and Rotary Hook

① Descend Needle Bar to the lowest position.
② With Gauge(K)(No.46-100-4-806) upper and Gauge(L)(No.46-1001-4-805) lower, put them on Needle Bar.
③ Applying Gauge(K) against the undersurface of Arm and applying Gauge(L) against (K), tighten Screw(M).
④ Draw out Gauge(K). (The thickness of Gauge is 2.4mm.)
⑤ Turn Pulley to the rotating direction of machine until Gauge(L) contacts with the undersurface of Arm. (Needle rise 2.4mm from the bottom.)
⑥ Align the tip of Rotary Hook with the center of needle.



＊ Needle Height Gauge

① Apply Gauge(N)(No.46-1001-4-800) against the right side of Throat Plate.
② Bring Needle Bar to its highest position.
③ After loosening Screw(H) (Refer to 8-2.), make the tips of needles are flush with surface(O) by moving Needle Bar up and down, then tighten Screw(H) tentatively.
④ Apply needles against the surface(P) of Gauge and check the parallelism.
⑤ Tighten Screw(H) securely.



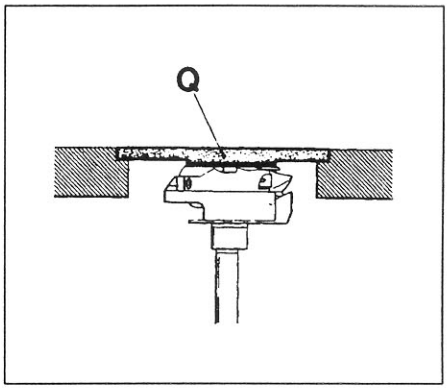
＊ Rotary Hook Height Gauge

① Remove Throat Plate.

② Put Gauge(Q)(No.46-1001-4-803, 46-1001-4-804) on Machine Bed.

③ Applying the surface of Rotary Hook(F) against the undersurface of Gauge(Q), tighten Screw(G), (Refer to **8-2.**)
When using No.46-1001-4-803), the clearance between Rotary Hook and Throat Plate is 0.75mm. (median between 0.6～0.9mm)

※ Gauge No.46-1001-4-803 is for standard thread (0.75mm) and Gauge No.46-1001-4-804 is for thick thread (0.9mm).



8-4 Replacement of Center Knife

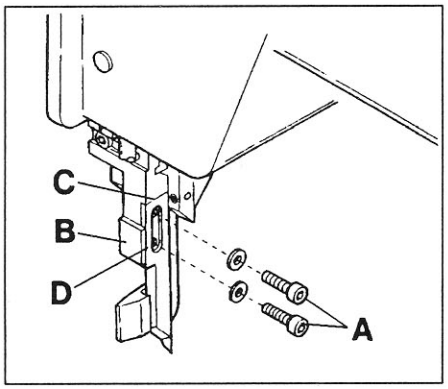
① Remove Screw(A).

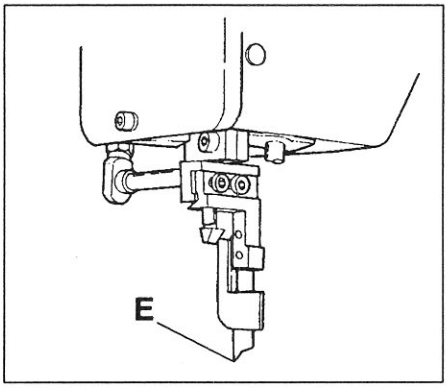
② Install New Center Knife.

Note 1: Installation should be made by applying Center Knife against the part(C) and (D) of Center Knife Holder(B) and then tightening Screw(A).

Note 2: Pay attention to the direction of Center Knife and not to damage the tip(E).

Note 3: Keep screws untouched to the screws other than Screw(A).





8-5 Replacement of Tab Knife

① Move Carriage all the way backward by pressing "REAR" of "CARRIAGE FEED" Switch on Control Panel.

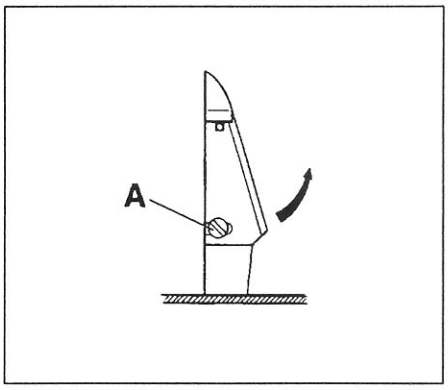
② Press "TAB MAN" Switch "S10" (TAB MAN) on Switch Board.
(Tab Knife appear above Machine Table.)

③ Loosen Screw(A) and remove Tab Knife.

④ Install new Tab Knife.
Make the left endsurface of Tab Knife flush with the left endsurface of Tab Knife Support pushing it downward, tighten Screw(A).

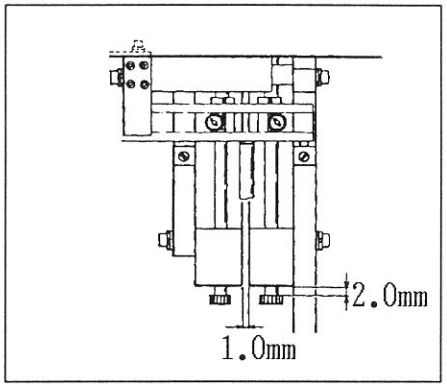
⑤ Press "TAB MAN." Switch again.
(Tab Knife descends.)

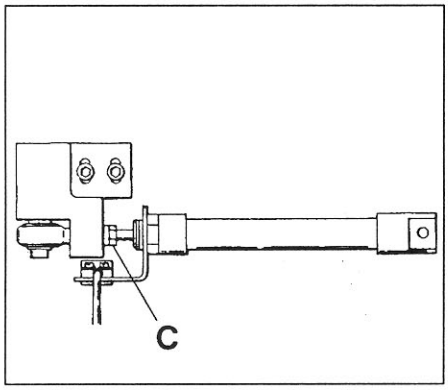
⑥ Move Carriage toward operator by pressing "FRONT" of "CARRIAGE FEED" Switch.

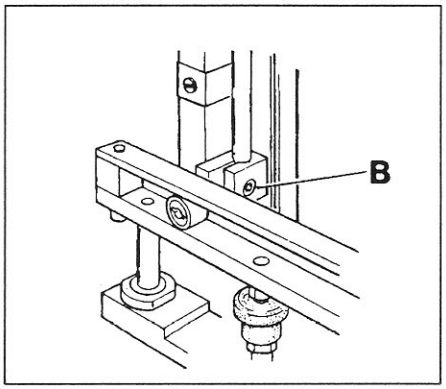


8-6 Adjustment of Tab Knife

Provide a clearance of 0.2mm between fixing Bar and Tab Knife Holder when Tab Knife is uppermost position. The adjustment is made by loosening Screw(B).
Provide a clearance of 1.0mm between Holder(Rear) and Holder(Front) when Movable Tab Knife returns to the home position.
The adjustment is made by loosening Nut(C) of Tab Knife Cylinder.

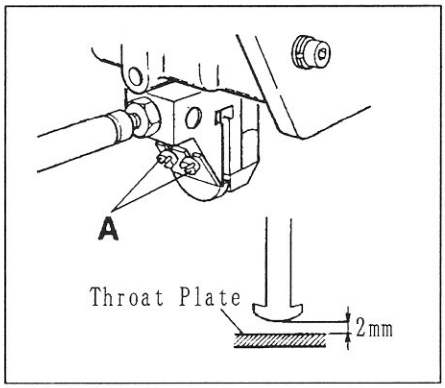


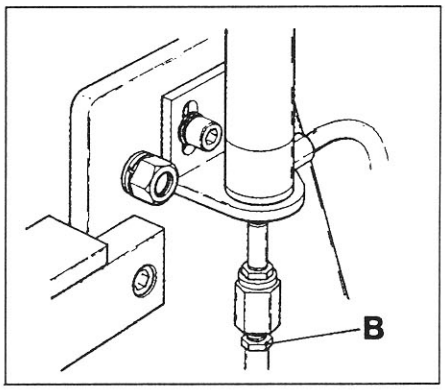




8-7 Replacement of Needle Thread Trimming Knife

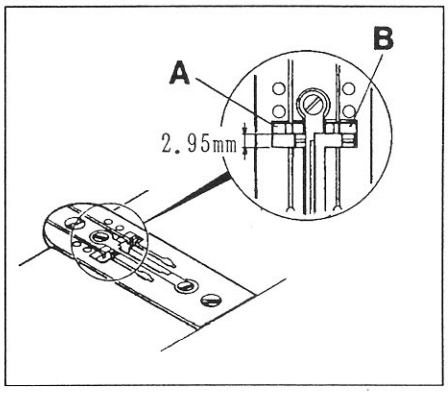
① Loosen Screw(A) and remove Needle Thread Trimming Knife.
② Install new Thread Trimming Knife, applying it to Pick-up, tighten Screw(A).
※ Adjust the height of Pick-up 2mm above the surface of Throat Plate when Pick-up descend to the lowest point.
The adjustment is made by loosening Nut(B) of Universal Joint.
When sewing thicker material, it should be higher than 2mm.



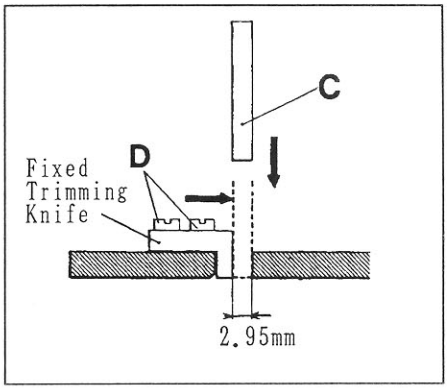


8-8 Replacement of Bobbin Thread Trimming Fixed Knives

① Remove Throat Plate.
② Remove Fixed Knives (A) and (B) installed on the underside of Throat Plate.
③ Install new Fixed Knives to Throat Plate.
Fix engagement pressure by using Gauge.
When the Gauge is not available, fix the clearance to 2.95mm as shown in the illustration.
As for the left/right position, install them so that the right endsurface of slit of Throat Plate aligns with the right endsurface of slit of Fixed Knife.

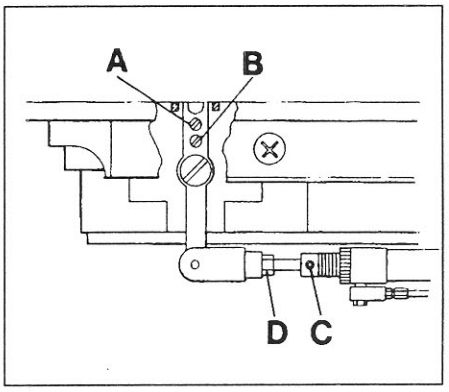


＊ Application of Bobbin Thread Trimming Knife Gauge
① Remove Throat Plate.
② Reverse Throat Plate and insert Gauge(C) (No.46-1001-4-807) between Fixed Knife and Throat Plate.
③ Loosen Screw(D) of Fixed Knife, apply Fixed Knife against Gauge(C) then tighten Screw(D). (Take care left and right position.)

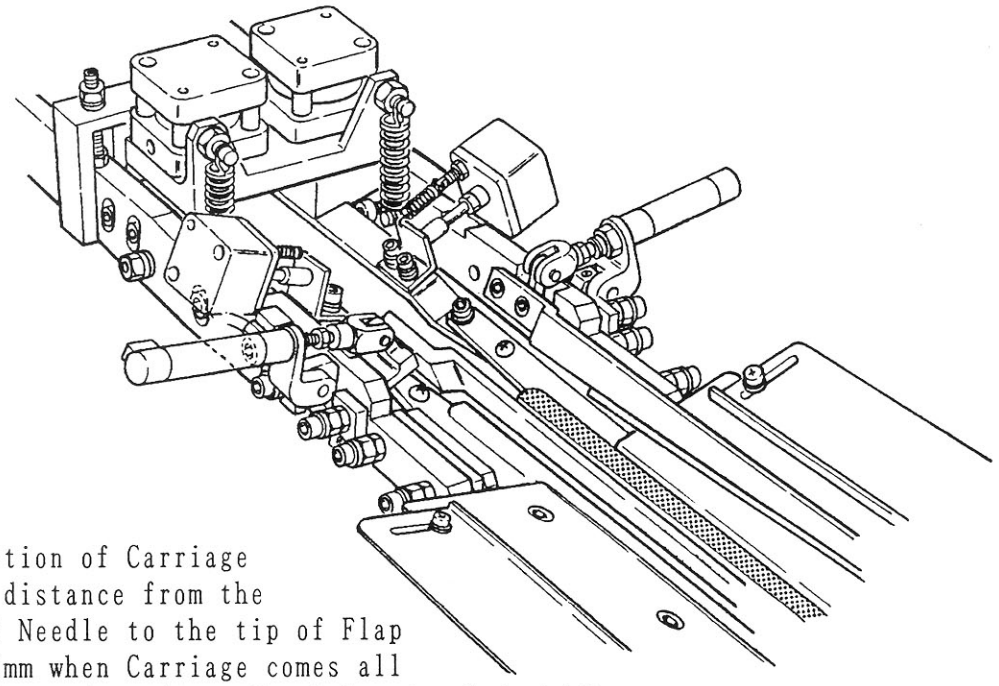


8-9 Replacement of Bobbin Thread Trimming Movable Knife

① Remove Throat Plate.
② Swing two Slide Plates and bring down Sewing Head. At this time, take care not to clamp Slide Plate between Sewing Head and Table.
③ Remove Screw(A) of Movable Knife, loosen Screw(B) and remove Movable Knife.
④ Install new Movable Knife.
Install the Knife so that the trimming position becomes highest (after the Knife moves) and not comes out above the surface of Throat Plate.
※ The adjustment of moving amount of Movable Knife is made by loosening Screw(C) and moving Collar left and right.
Adjust by turning Nut(D), so that Movable Knife does not interfere with Throat Plate when Movable Knife returns (Cylinder Rod extends).



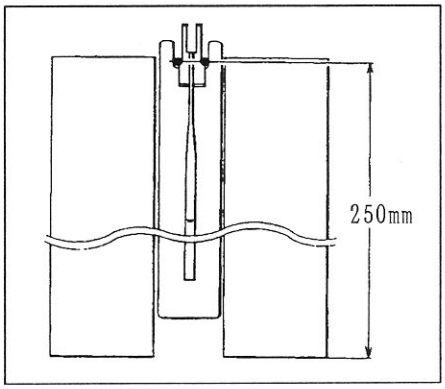
8-10 Adjustment of Carriage

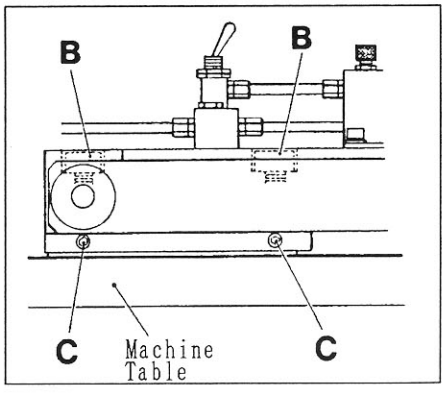


* Home position of Carriage
  Make the distance from the center of Needle to the tip of Flap Clamp 250mm when Carriage comes all the way forward. Adjust Metal Sensing Switch(A) so that Lamp(7) on Intermediate Board light. (Refer to **6-10.**)

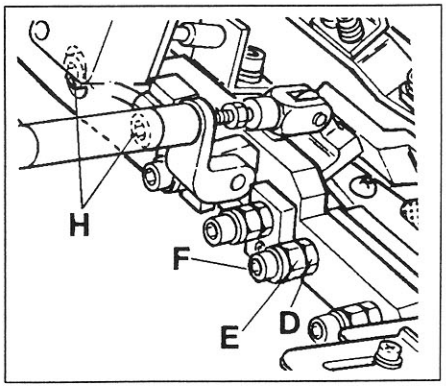
* Parallelism between Needle and Clamp Foot
  Adjust Clamp Foot(Left) and (Right) of Carriage to be parallel with Needle.
  ☆ Big adjustment
  The adjustment is made by loosening Screw(B) of Clamp Foot Adjustment Block and turning Adjusting Screw(C).

  ☆ Fine adjustment
  The adjustment is made by loosening Lock Nut (D) of Clamp Foot Connecting Arm and Adjusting Screw(E), then turning Screw(F).
  ※ After adjustment, check the parallelism between Needle and Clamp Foot following the order below:
  ① Move Carriage forward (to this way).
  ② Clamp the fabric with Clamp Feet by treadling Pedal.
  ③ Press button of "EMERGENCY STOP" on Control Panel.
  ④ Press "FRONT", and "REAR" of "CARRIAGE FEED" Switch on Control Panel and check the action.



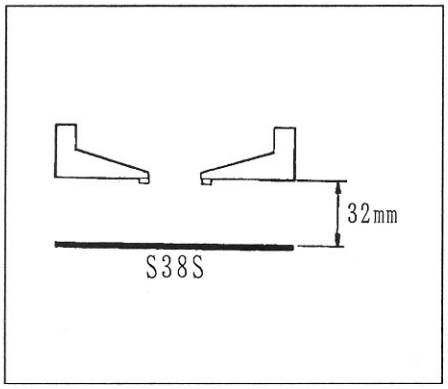


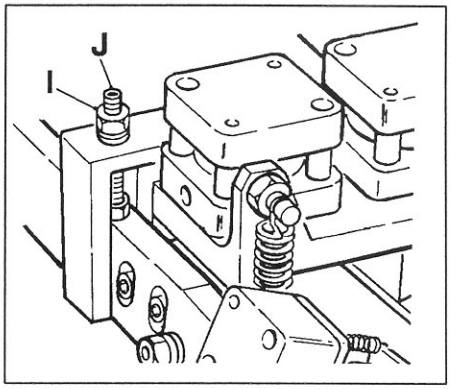
* Pressure of Clamp Foot
  Either when Carriage is in the forward or when backward, the pressure must be the same in the front and in the rear at the time Clamp Foot descends.
  The adjustment is made by loosening Screws(H) of Clamp Foot Connecting Arm.



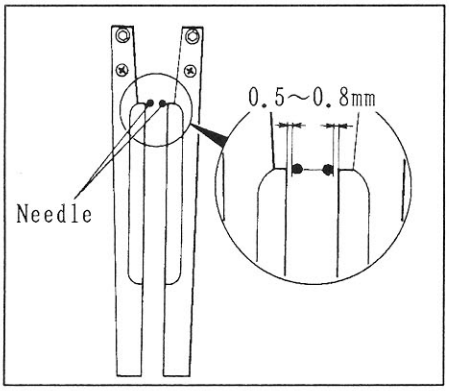
* Height of Clamp Foot
  Make the height of Clamp Foot 32mm when it is in the uppermost position for Series 38S.
  The adjustment is made by loosening Lock Nut(I) and turning Adjusting Screw (J).

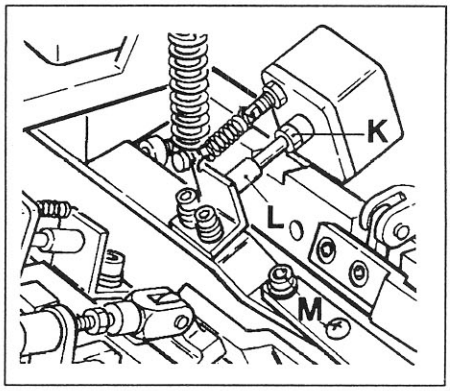
Note: With Carriage moves all the way backward and Clamp Foot rises, be careful not to strike Clamp Foot when Sewing Head is brought down.





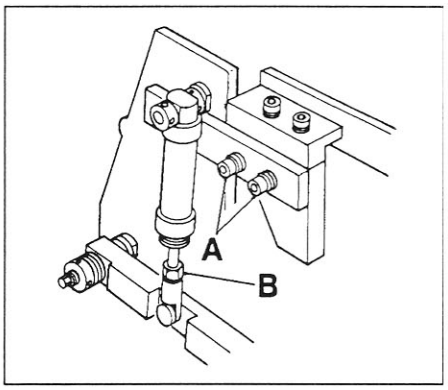
* Needle and Brush Blade
  With Carriage in the forward position, provide a clearance of 0.5～0.8mm between Brush Blade and Needle and they must be parallel with each other.
  The adjustment of clearance is made by loosening Nut(K) of Air Cylinder and turning Clamp Foot Adjusting Block(L) while the adjustment of parallelism is made by loosening Screw(M) of Brush Blade.



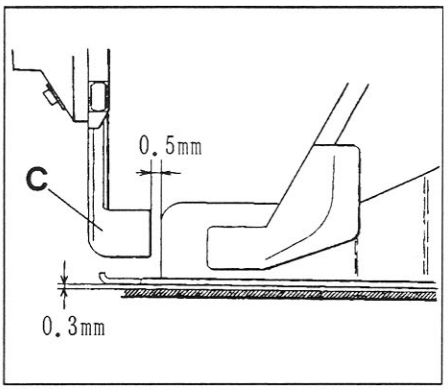


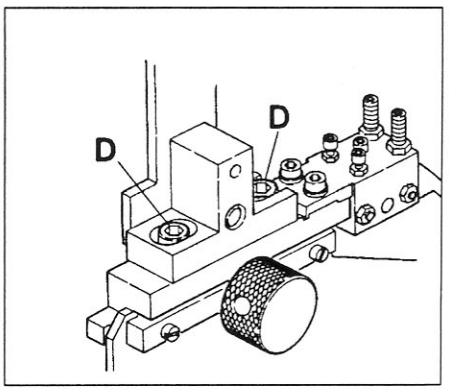
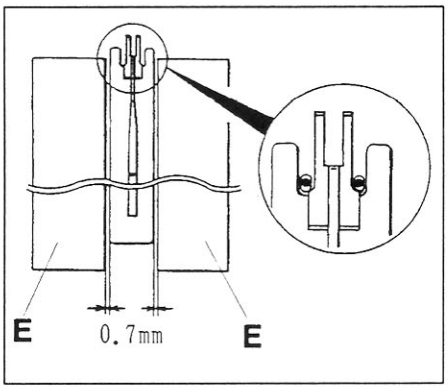
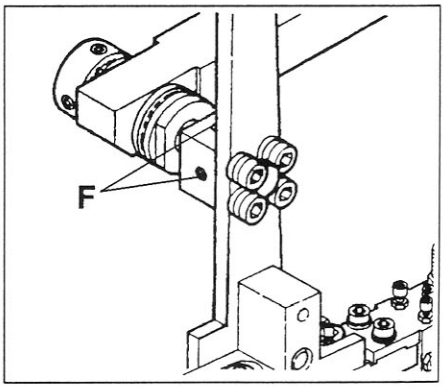
8-11 Adjustment of Patch Guide

① With Patch guide at the lowest position, the clearance between Patch Guide and the surface of Slide Plate must be 0.3mm and they must be parallel.
The adjustment is made by loosening Screws(A), and the adjustment of height is made by loosening Nut(B) of Air Cylinder.



② Provide a clearance of 0.5mm between Patch Guide and Mount Block(C), and make Patch Guide and Clamp Foot parallel.
The adjustment is made by loosening Screws(D).



③ When Patch guide descends, provide a clearance of 0.7mm between it and Clamp Foot(E).
The adjustment is made by loosening Screws(F) and moving Patch guide left and right.
At this time, check the relative position of needle drop of Patch Guide with needle.

Note: Adjust Patch Guide by Speed Controller so that it moves up and down smoothly without shock.