User´s Manual

GARUDAN®

CTD9000 Series

ANITA B s.r.o.
Průmyslová 2453/7
680 01 Boskovice
Czech Republic
tel: +420 516 454 774
+420 516 453 496
fax: +420 516 452 751
e-mail: info@anita.cz

Preface :

CT series is high speed cylinder bed intelock machine and can achive excellent efficiency, stable quality and durable machine life. In order to let the users to know the characteristic and the best use of these machines, please refer to this instruction manual in order to conduct proper installation, maintenance adjustment, using and other impartant items.

Safety notice :

1. Belt cover muct be installed.
2. Make sure the motor wiring is installed properly.
3. Make sure to cut off the electricity and wait till motor stops completely before conduct pre-operation inspection, cleaning, threading and changing the needles..
4. For new machines, please do not run exceed 4,500 rpm during the first month usage.
5. Do not over adding the lubrication oil.
6. Please drip one drop of oil on the needle bar beofe operation.
7. Please make sure the needles are installed properly and no curve and no damaged.
8. Please make sure the threading is correctly.
9. Please make sure to clean the machine after sewing operation daily and covered with dustproof cover.

General Safety Instructions

Warning ! When using this machine, basic safety precautions should always be followed to reduce the risk of fire, electric shock and personal injury .

Read all these instructions before operating this product and save these instructions.

1. Keep work area clean

Cluttered areas and benches invite injuries.

2. Consider work area environment

Do not expose power to rain. Do not use machine tools in damp or wet locations. Keep work area well lit. Dot not use power tools where there is risk to cause fire or explosion.

3. Guard against electric shock

Avoid body contact with earthed or grounded surfaces (e.g. pipes , radiators , refrigerators)

4. Keep children away

Do not let visitors touch the tool or extension cord.

5. Dress properly

Do not wear loose clothing or jewelry, they can be caught in moving parts. Wear protecting hair covering to contain long hair.

6. Do not abuse the cord

Never carry the machine by cord or yank it to disconnect it from the socket. Keep the cord away from heat, oil and sharp edges.

7. Maintain machine with care

Follow instructions for lubrication and changing accessories. Inspect tool cord periodically and if damaged , have it repaired by an authorized serviced facility.

8. Disconnect machine power

When not in use, before servicing and changing accessories , please disconnect electricity.

General Safety Instructions

9. Avoid unintentional starting

Do not carry plugged - in tool with finger on the switch. Ensure switch is off when plugging in.

10. Check damaged parts

Before further use of the machine, after replaced the damaged parts, the machine should be carefully checked to determine that it will operate properly and perform its intended function.

11. Warning

The use of any accessory or attachment, other than those recommended in this instruction manual, may present a risk of personal injury.

12. Have your machine repaired by a qualified person

Repairs should only be carried out by qualified persons and using original spare parts.

Special Warning For Electric Connection !

1. Incorporate this machine only with "CE" certificate switch.

2. Follow the instruction manual to install control device.

3. Always earth machine appropriately during operation.

4. Before adjustment, parts change or servicing must be sure to pull out the plug from socket to prevent the hazard of unintentionally start of machine.

CTD9000 CONTENTS

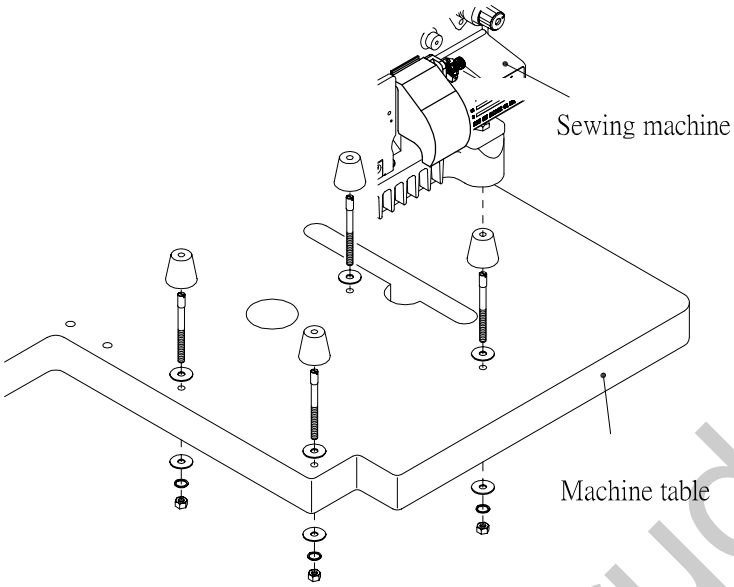
CTD9000 THREAD TRIMMER CONTENTS

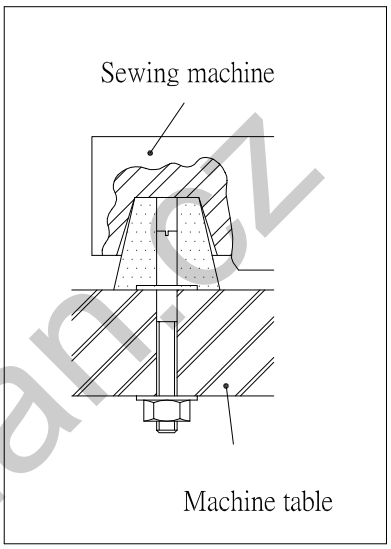
CTD9000 THREAD TRIMMER CONTENTS

3. Installation

3-1. Table top installation

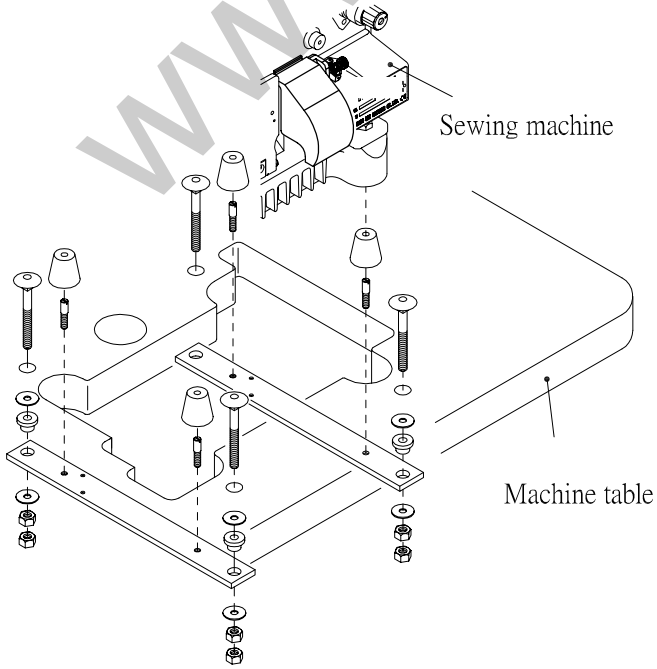
Install the machine correctly referring to the illustration. Set bolts and nuts to machine table and put rubber cushions on bolts and rest the machine on them securely.

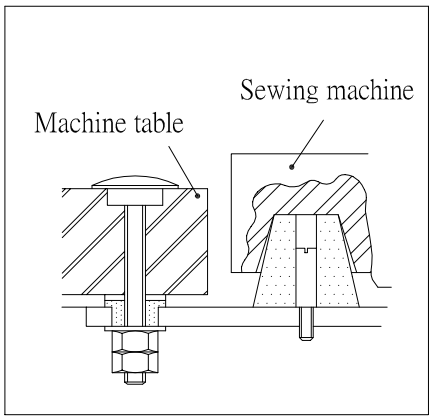




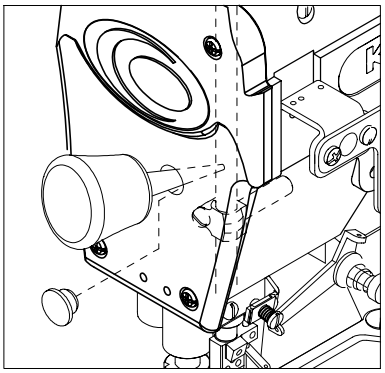
3-2. Semi submerged installation

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.

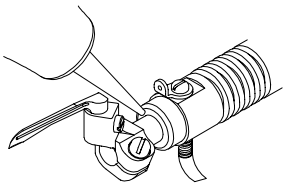




4. Before operation



If yor use a new machine or a machine which has not been running for a while, oil the needle bar and the looper bar 2 or 3 drops.

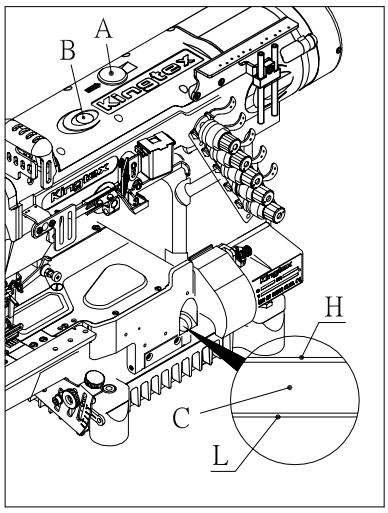


5. Lubrication oil and cooling oil

5-1. Lubrication oil and cooling oil

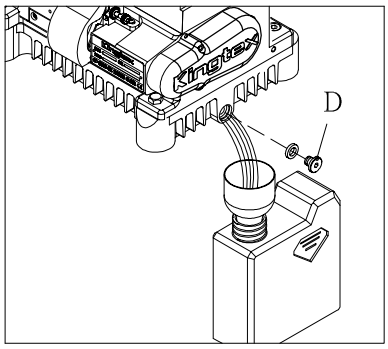
Please use mobil #10 or equivalent oil for lubrication oil and use silicone oil for cooling oil.

5-2. Feeding oil



The lubrication oil has been drained off completely before delivery, adding oil till between upper line and lower line of the oil Window C by removing seal plug A. Also, please make sure the oil flows out of nozzle B at the start of operation.

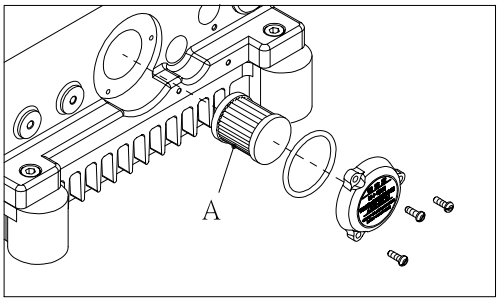
5-3. Changing oil



For the longer life of machines, change lubrication oil completely after 250 hours (or 4 weeks) of initial operation.

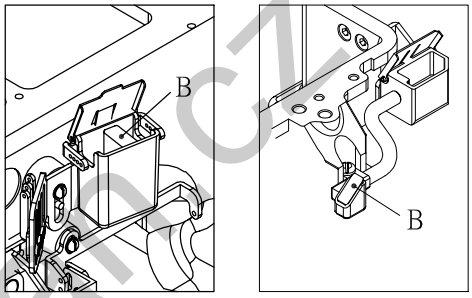
A. Remove machine head from machine table.
B. Loosen screw D and drain off all the oil from inside of the machine.
C. After drained, tighten screw D back.
D. When replenishing oil , please refer to paragraph 5-2. "Feeding oil" above.

5-4. Oil filter



Although the machine is using oil pump lubrication and Splashing lubrication systems, please check and clean oil Filter every month. And when there is no oil or very little oil comes out of nozzle even indicator shows normal, please check oil filter A and replace it if necessary.

5-5. Adding cooling oil



Avoid needle breaking, stitch jumping or thread melting problems etc. Please fill cooling oil tank and felt B with silicone oil under some special circumstances. You can take felt B off from reservoir. When you can not use or do not need to use silicone oil.

6. Needle

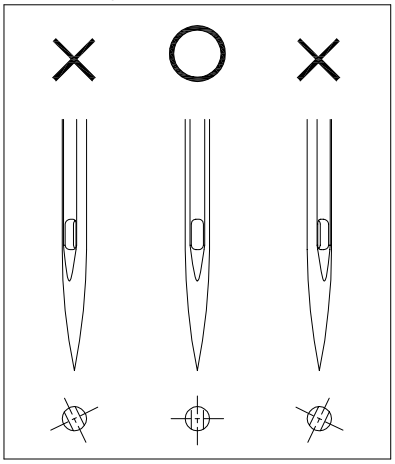
6-1. Needle selection

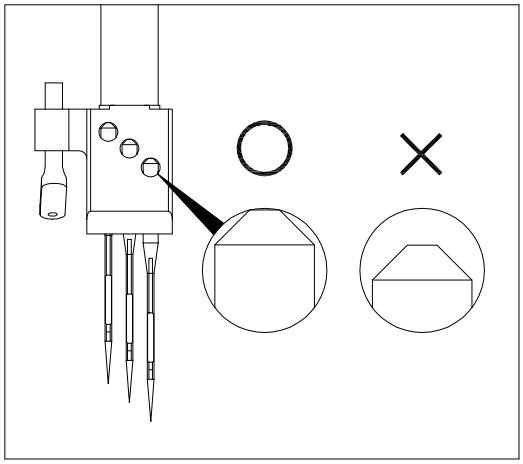
Needle UY128GAS of schmetz or organ is to be used there are many sizes of needle, and the most suited needle to the thickness and the kind of material should be selected.

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

6-2. How to replace the needles

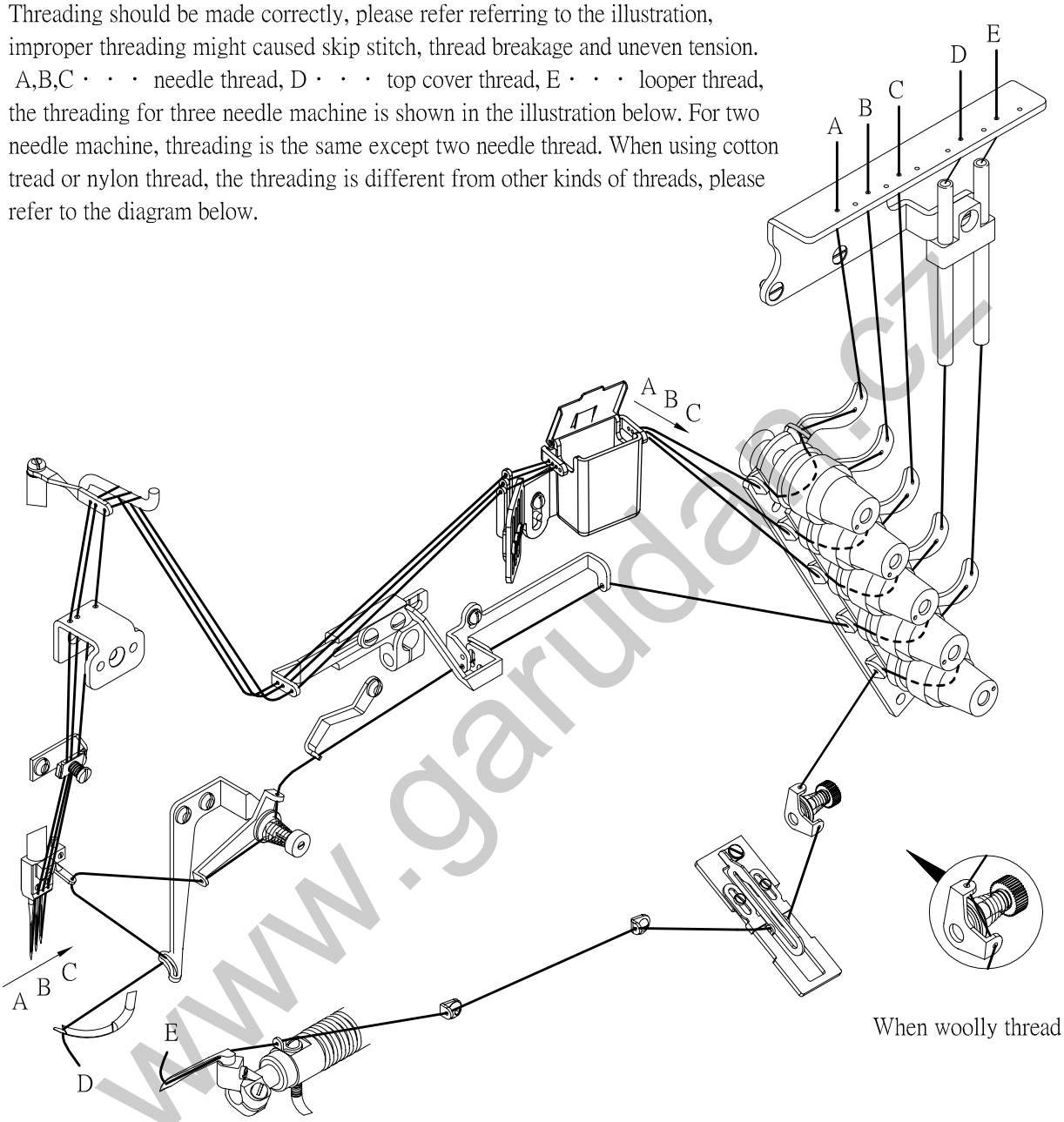
When replacing needle should be made correctly with the scarf facing rightly backward as shown in the illustration, and at its uppest dead point.





6-3. Threading

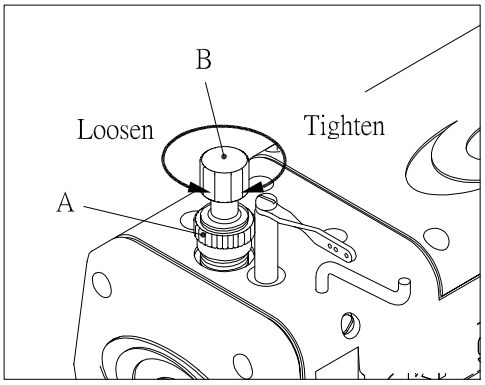
Threading should be made correctly, please refer referring to the illustration, improper threading might caused skip stitch, thread breakage and uneven tension. A,B,C・・・needle thread, D・・・top cover thread, E・・・looper thread, the threading for three needle machine is shown in the illustration below. For two needle machine, threading is the same except two needle thread. When using cotton tread or nylon thread, the threading is different from other kinds of threads, please refer to the diagram below.



When woolly thread used.

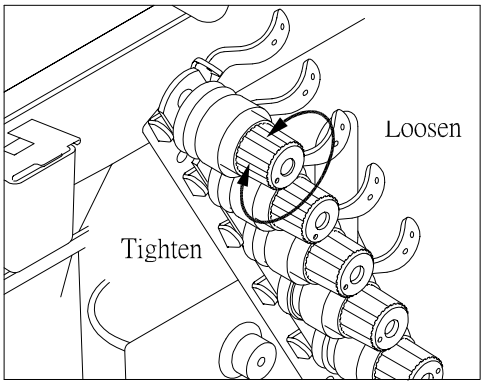
7. Proper operation adjustment

Due to some reasons will affect the sewing effects. such as thickness of sewing fabrics, different kinds of sewing threads and its thickness requirements for narrow on wider stitches, the changes of feed ratio etc. Thus, machines must be adjusted and test running first in order to obtain the best sewing effects.



7-1. Pressure of presser foot

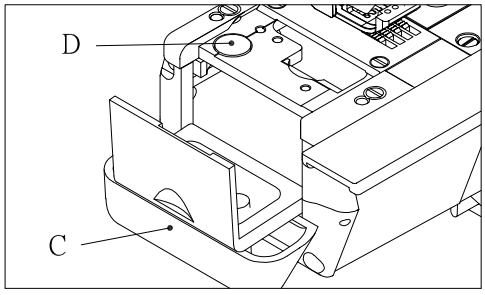
To increase the pressure of presser foot, turn adjusting screw B clockwise after loosening lock nut A, to decrease the pressure, turn it counter clockwise. Pressure of presser foot should be as weak as possible so long as presser foot can operate properly.

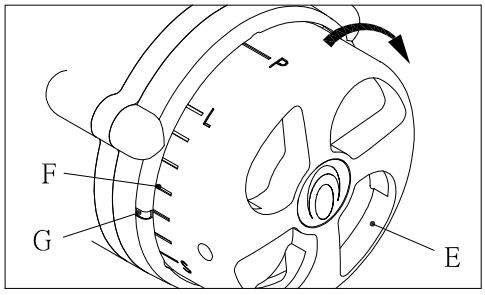


7-2. Thread tension

Different threads have different tensions and even same threads will have different tensions when go through different threading holes. Each thread tension can be adjusted by individual tension nut. Turn tension nut clockwise to increase thread tension, turn tension nut counter clockwise to decrease thread tension. Please use least thread tension as long as it will not affect the sewing effects.

7-3. Adjusting stitch length





Adjustment of stitch length can be made steplessly from 1.4mm/per stitch to 3.6mm/per stitch, please refer to stitch length chart as listed below.

Please open up side cover C press, then push button D with left hand lightly till the tip of which contact with the parts with groovy inside, keep pressing, turn hand wheel E with right hand till push button D gets into the groovy, at this line, press in push button D strongly and turn hand wheel E, a graduation F on the circumference of hand wheel E indicates the stitch length (mm), which should be aligned with the set mark G, then, release hand, and close back the side cover C.

Note :
In case of machine with UT device (Lower thread trimmer) which is equipped with the motor with automatic needle positioning system, power switch must be turned off when changing stitch length.

Stitch length (mm)	Number of stitch per	
	inch	30 mm
1.4	18	21
2.0	13	15
3.0	8.5	10
3.6	7	8

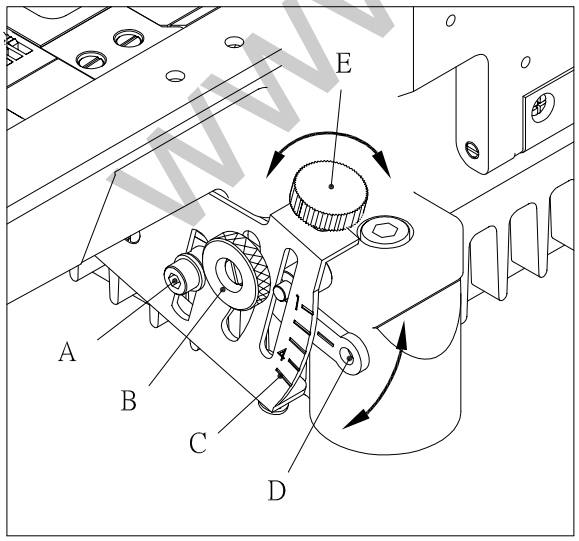
7-4. Adjusting differential feed

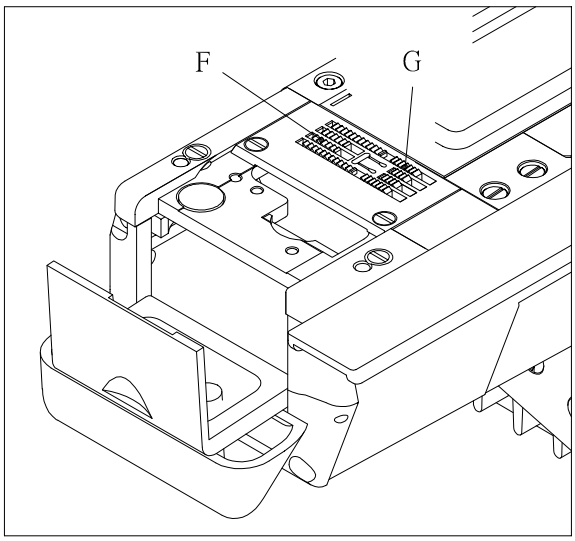
In order to overcome the difference among all kinds of fabrics and threads, our sewing machine has equipped with differential ratio adjustment mechanism.

Differential ratio divides into stretch and shrinkage differential, loosen nut B adjust level D and turn knob E in order to adjust differential ratio, tighten nut B after the adjustment. Adjust screw A in order to obtain the upper limit of differential ratio. By adjusting differential ratio in order to create puckering effects during the sewing process.

Normal differential feed or reverse differential feed can be adjusted freely by turning knob E. As differential feed and main feed are driven individually, when main feed amount (stitch length) is changed, the differential ratio should change accordingly. In this case, readjustment is necessary. The graduation shows the amount of differential feed. For instance, in case of the desired feed amount (stitch length) is "3.6" and the graduation is set at "3.6" by turning knob E, the differential ratio becomes 1:1. When setting the graduation over "3.6", it will become normal differential and if setting is under "3.6", then, it becomes reverse differential. For the main feed amount the upper limit is "4". Please refer to following chart for the correlationship between stitch length and differential feed ratio (please refer to section 7-3 for stitch length adjustment).

Stitch length	Max. normal diff	Max. reverse diff
3.6 mm	1 : 1.1	1 : 0.3
2.5 mm	1 : 1.6	1 : 0.4
2.0 mm	1 : 2	1 : 0.5
1.4 mm	1 : 2.9	1 : 0.7





7-5. Adjusting the needle thread take-up

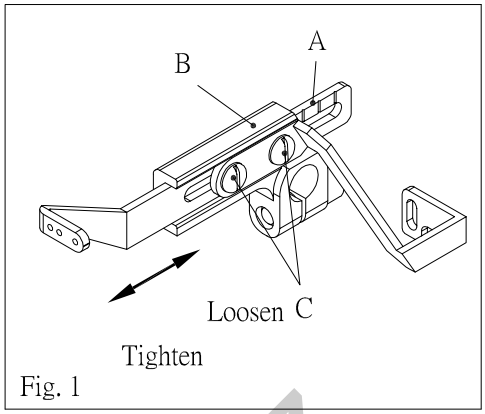


Fig. 1

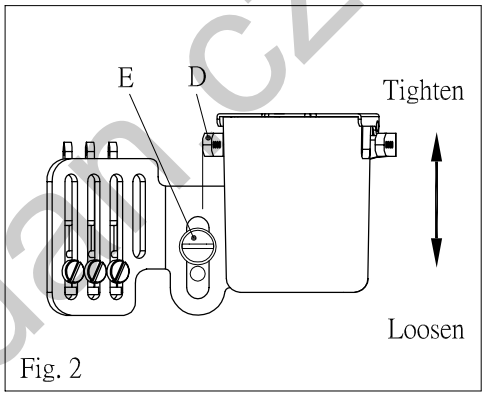


Fig. 2

Different threads have different strectch tension and cause skip stitching thread breaking and unstable stitching easily. This machine equipped with thread take-up, front needle thread guide, rear thread guide and auxiliary thread tension control guide in order to give letter control of the looper thread take-up and stabilize the strectching of looper thread.

Thread take-up A, rear thread guide D were set-up at standard position when machines were out of factory.

There are 6 marks on thread take-up A and the third mark line from right to left, should even with the edge of bracket B and can be adjusted by screw C and rear thread guide's D portion as shown on illustration, can be adjusted by screw E. And bath can be adjusted according the arrow direction in order to obtain tighten or loosen effects. (Fig. 1、2)

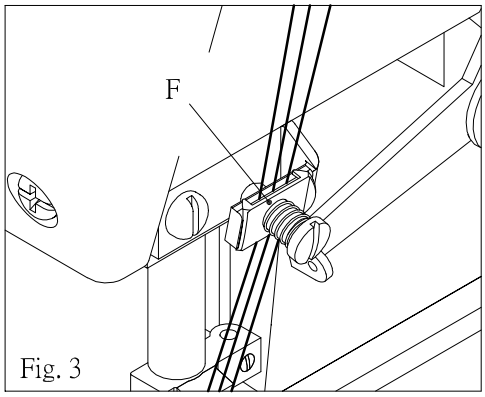


Fig. 3

Some times, it is not so easy to make loop for some kinds of thread and also make it difficult for looper to catch the needle thread, causing skip stitch. In such case, can use auxiliary thread tension control guide F to stabilize the threads. (Fig. 3)

In case of the formation of needle thread loop is unstable or skip stitching happened when using strectchable thread, you can solve this problem by adjusting the height of front needle thread guide G, especially, when looper moves from right to the left. If the left needle skip the stitch when using sysnthetic thread, or right needle interfere with the formation of thread loop when using blended thread, You can adjust front needle thread guide G, by adjusting the needle bar to its lowest position and by loosening screw I to adjust the top of front needle guard G to even with the centers of eyelets of thread guide H in order to loosen the needle thread tension. (Fig. 4)

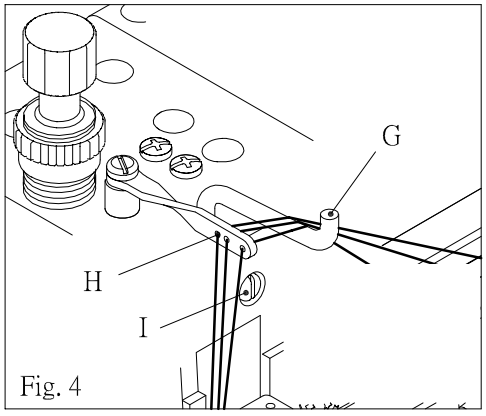


Fig. 4

7-6. Adjusting the looper thread take-up

When left needle comes down to the half point the thread A must get off from the highest position of looper thread take-up C. The adjustment is made by loosening screw B, turn the looper thread take-up C to the proper position and tighten the screw B. (Fig. 1、2)

To decrease the amount of looper thread in the seam, move thread guide D eyelet to aligning mark E. To increase move it backward. (Fig. 3)

For stretchable threads, move right and left thread guides to aligning mark and also do not pass the thread between thread guide F. (Fig. 4)

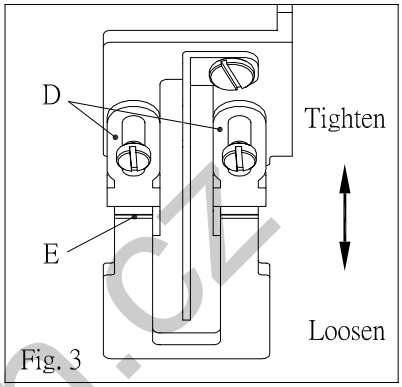


Fig. 3

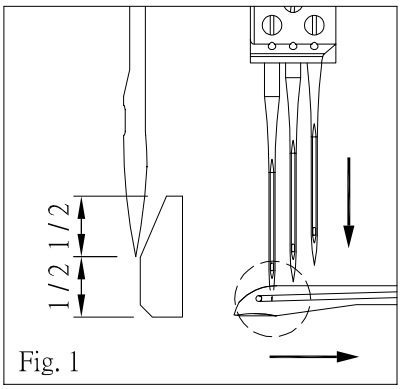


Fig. 1

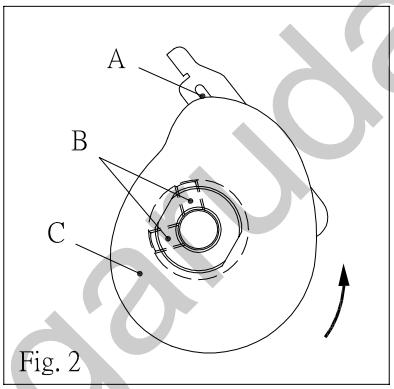


Fig. 2

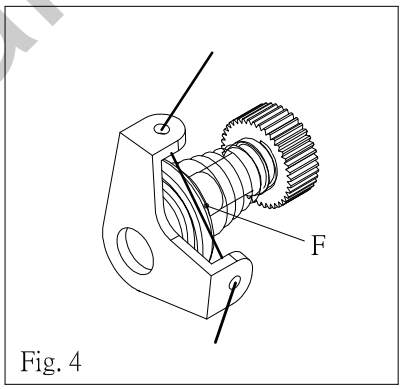
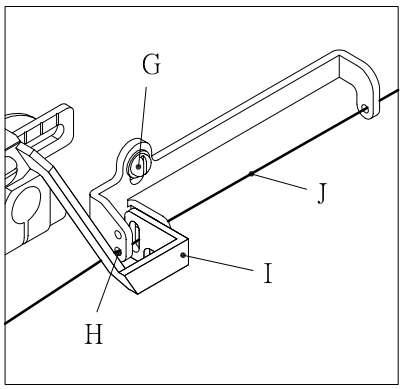


Fig. 4

7-7. Adjusting spreader thread take-up

The thread amount of top cover thread can be adjusted by spreader thread take-up I. For standard position, move the spreader thread take up I all the way up to the highest point, and sewing thread J should lightly touch with spreader thread take-up I. Loosen the set screw G and move the spreader thread guide eyelet H upward in order to tighten the top cover thread, then tighten the screw G. Vice versa for loosen the top cover thread.



8. Adjustment of machine

This machine was sent to the standard position before delivery and it's unnecessary to re-adjust unless under some situation as changing the needle, looper, different kind of fabric or different sewing threads. Please adjust according to following items.

8-1. Adjusting presser foot and setting the height of presser foot

It will be easier to conduct some adjustments by taking off the presser foot as follows : Loosening screw B in order to loosen stopper B, loosening screw D and collar screw E pressing down level A, lifting needle bar in order to take off presser foot. (Please refer to Fig. 1 and Fig. 2)

After finished the adjustment, please tighten the screw in reverse sequence and please make sure needle F point right into the center of the needle hole G of presser foot. (Please refer to Fig. 3)

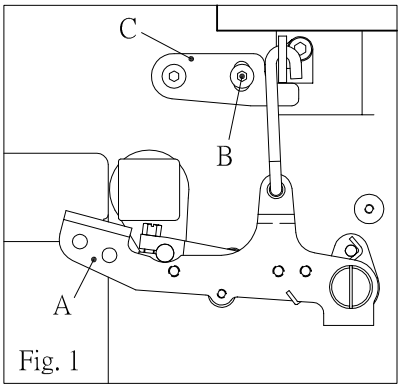


Fig. 1

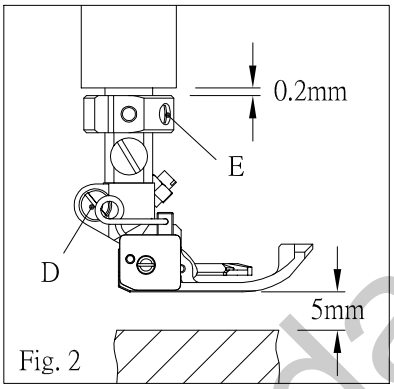


Fig. 2

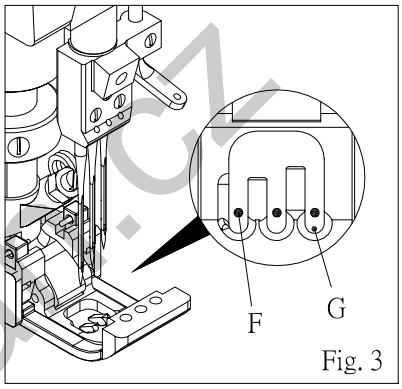


Fig. 3

8-2. Adjusting the height of needle bar and needle drop point

When the tip of looper I comes to the center of left needle H, the looper should position above the upper end of needle eye by 0.5~1.0 mm as this is the standard position for needle bar. (Fig. 4)

Loosen the screw K of needle bar clamp and adjust the needle bar to get proper height. After adjustments, tighten the screw K of needle bar clamp and make sure the needles are in the center of needle drop hole L of needle plate. (Fig. 5、6)

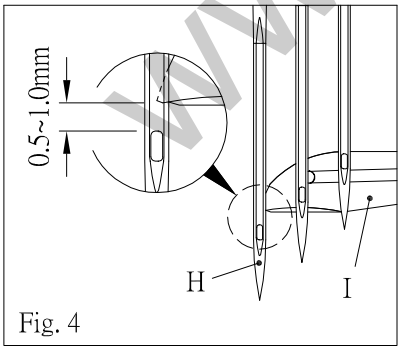


Fig. 4

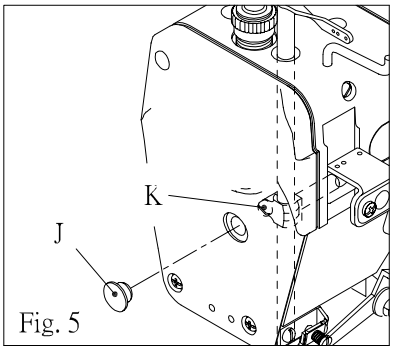


Fig. 5

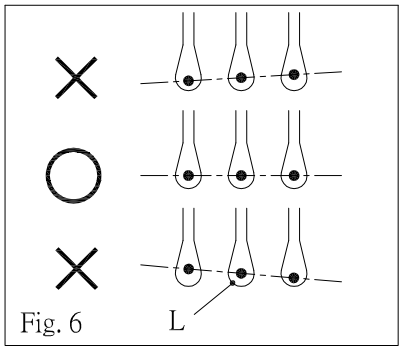
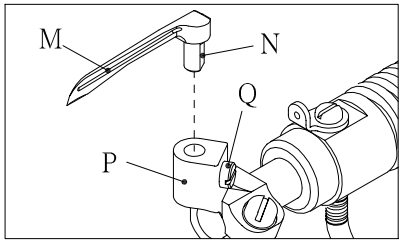


Fig. 6

8-3. How to install looper

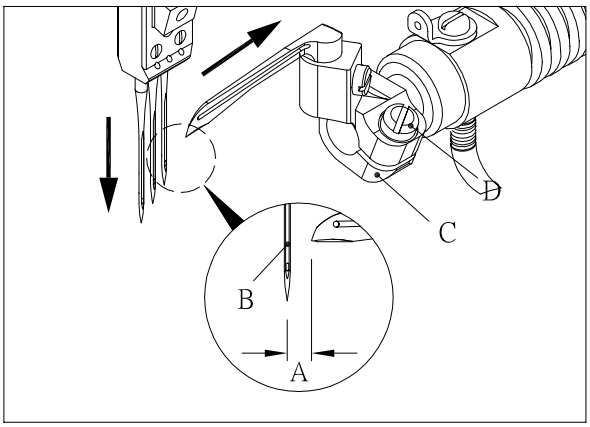
Insert looper M into looper holder P, make sure flat surface N. of looper crank point to the set screw Q, then, tighten set screw Q.



8-4. How to set looper position

When needle bar reached its lowest dead point, looper moved to its most right position. There should have a standard distance A, as chart listed, between the tip of looper and the center of right needle B.

Adjusting : Loosen screw D, moves looper holder C right or left till required position, then, tighten screw D. When adjusting please do not move looper holder C front or back, otherwise will affect the clearance between looper and needles.



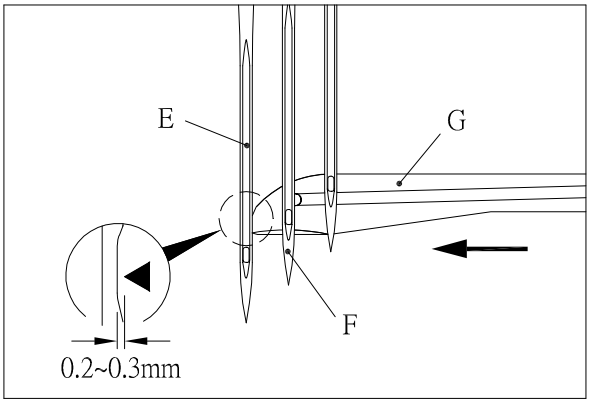
Needle gauge	Standard distance (A)
4.0	4.0 mm
4.8	3.6 mm
5.6	3.2 mm
6.4	2.8 mm

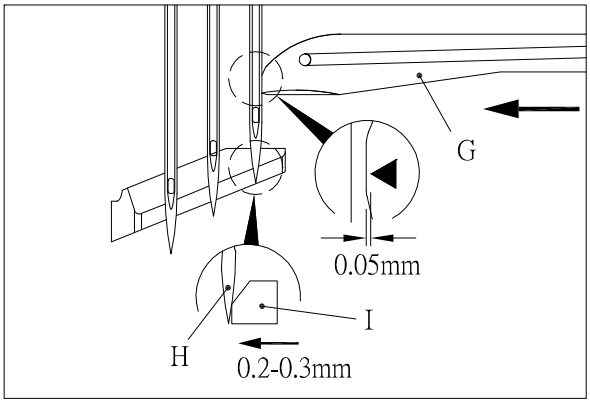
8-5. The clearance between looper and needle

When looper G moves to the center of left needle E, the clearance should be 0.2~0.3 mm, and when looper G moves to middle needle F, the clearance between looper G and middle needle F should be as close as possible. When looper G moves to right needle H, the rear needle guide I should push right needle H forward approx 0.2~0.3 mm, by then, the clearance between looper G and right needle H should be 0~0.05 mm.

For two needle machine, the adjusting methods are the same as left needle and right needle. Please refer to the illustration as underneath.

How to adjust :
Loosen screw D, move looper holder C front and back till reached its desired position, then, tighten screw D. Please refer to the illustration as section 8-4 above. Please refer to next section for how to adjust the rear needle guide.





8-6. Needle and rear needle guide

How to set the height of rear needle guide :
When needle bar reached to its lowest dead point, the ridge line C of rear needle guide (A) should be positioned at the center of right needle eye B. (Fig. 1)

How to set the angle and timing of rear needle guide : When the tip of looper F moves to the center of right needle E, the rear needle guide A should push the right needle E forward approx. 0.2~0.3 mm and the clearance between rear needle guide and leftest needle D should be 0~0.05 mm by then, the clearance between looper F and rightest needle E should be 0~0.05 mm and looper should touch middle needle lightly and the clearance between rear needle guide and leftest needle D should be 0.2~0.3 mm. (Fig. 2)

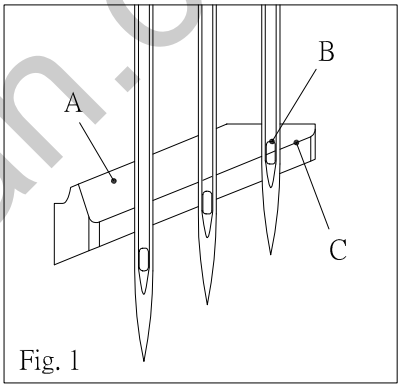


Fig. 1

Adjustment :
Loosen the set screw G from rear needle guide and can adjust the positions, up and down, front or back, of rear needle guide's height and angle. Loosen the screw H from rear needle guide, can adjust the front and back clearance between rear needle guide and needles. (Fig. 3)

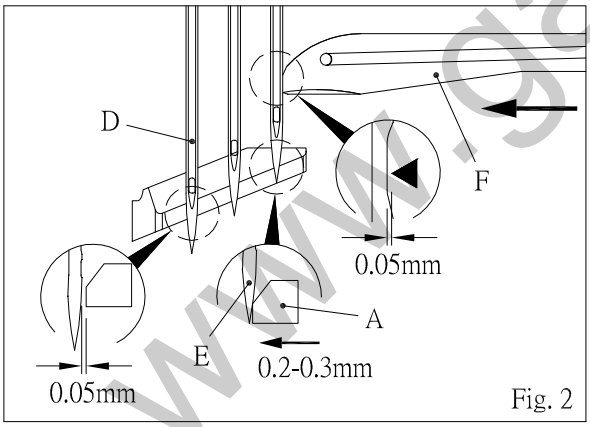


Fig. 2

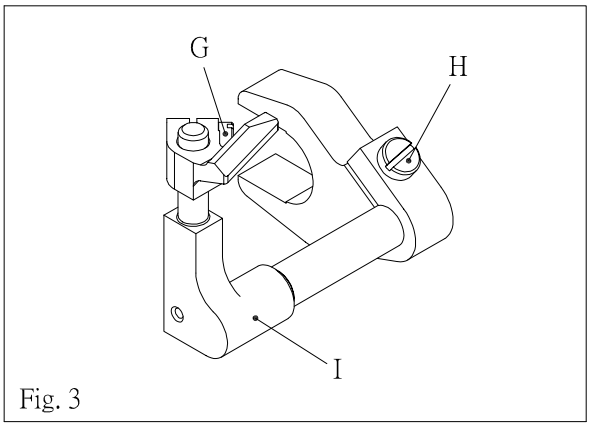


Fig. 3

8-7. Needle and front needle guide

How to set the angle and timing of front needle guide : When looper B reach the center of left needle A, the ridge line D of frons needle guide C should positioned at 1.5~2.0 mm above from the tip of needle and the clearance between left needle A and front needle guide C should be 0~0.3 mm and when looper B retreated to right needle E, the clearance between needle and front needle guide C should be 0~0.3 mm. (Fig. 1、2)

Adjustment : Loosen screw G can adjust the height and angle of front needle guide, loosen screw F and turning the front needle guide holder H can adjust the clearance between front needle guide and needle. When adjusting, turning hand wheel and make sure needle, looper and front needle guide at its corelation position, then tighten related screws. (Fig. 3)

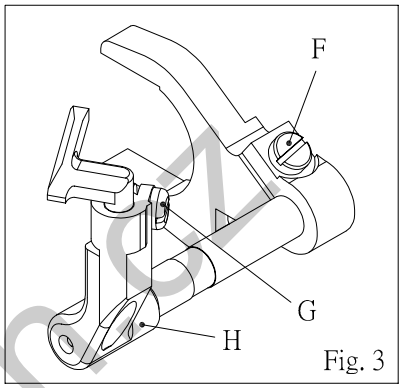


Fig. 3

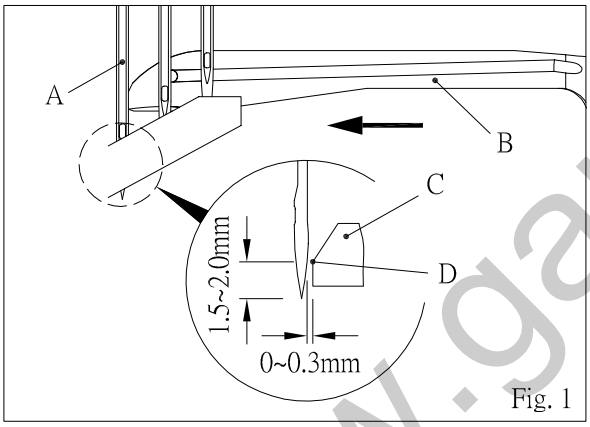


Fig. 1

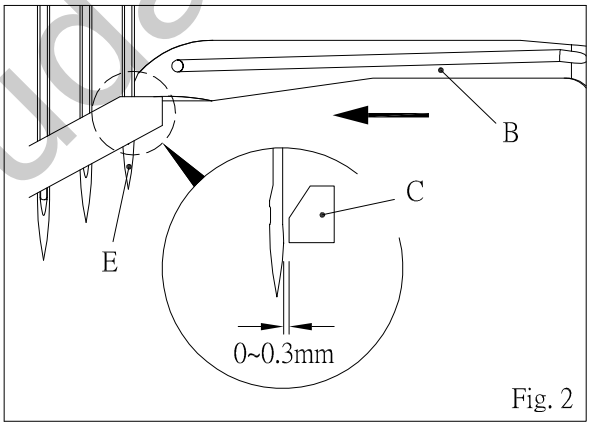
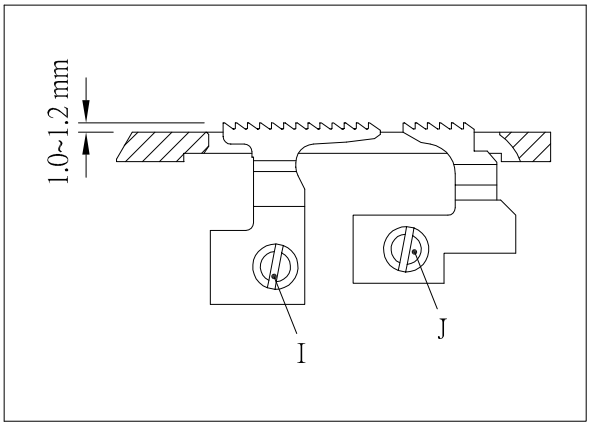


Fig. 2

8-8. Setting the height of feed dogs



When feed dogs reach its highest position during its movement, main feed dog and differential feed dog should be at same height and parallel with needle plate and also above the needle plate 1.0~1.2 mm.

Adjustment :
Adjusting screw I and J in order to adjust the height of main feed dog and differential feed dog.

9. Coverstitich

9-1. Installing and setting the spreader looper

The distance between spreader A and the surface B of needle plate should be 8.5~9.5 mm. (Fig. 1)

How to set the angle of spreader looper :
When spreader looper moves to its left, the hook blade C meets left needle, the clearance between hook blade C and left needle should be 0.5~0.8 mm, when spreader looper moves to its leftest dead point, the distance between its hook blade C and the center of left needle should be 4.5~5.5 mm. When adjusting, loosen screw D and E from spreader arm in order to adjust its position of spreader looper. (Fig. 2、3)

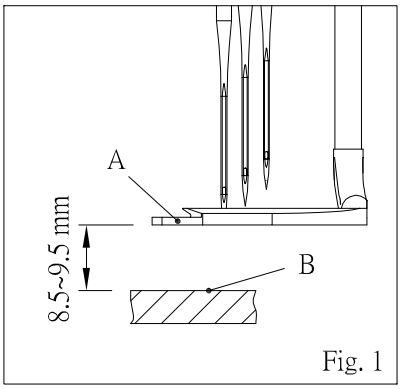


Fig. 1

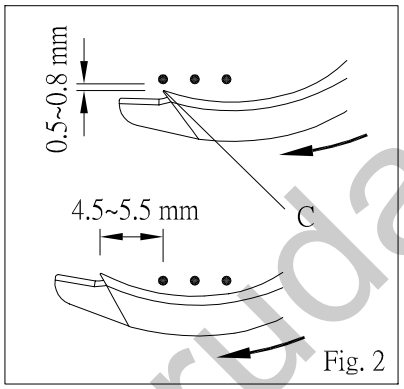


Fig. 2

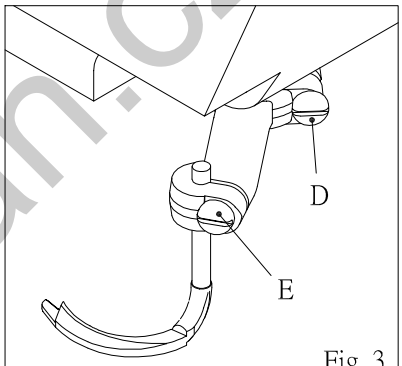


Fig. 3

9-2. Installation of thread guide of spreader looper

The distance should be 0.5 mm between the bottom of thread guide G and the top surface of spreader looper F. When spreader looper F moves to its most righ position, the coverstitch thread should hanging in the thread guide G loosely, please tighten screw I after the adjustments. (Fig. 4)

When needle bar moves to its lowest dead point, the clearance should be 1.0 mm between thread guide H and thread guide G and the thread holes should be lined up with each other. (Fig. 4 , 5). After adjustments, please tighten screw J.

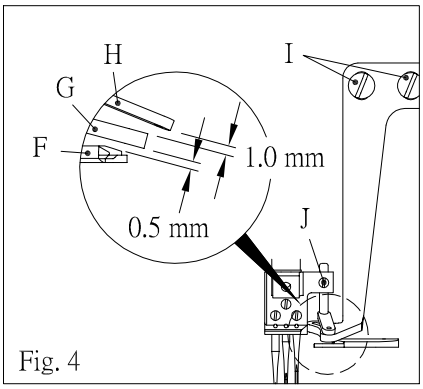


Fig. 4

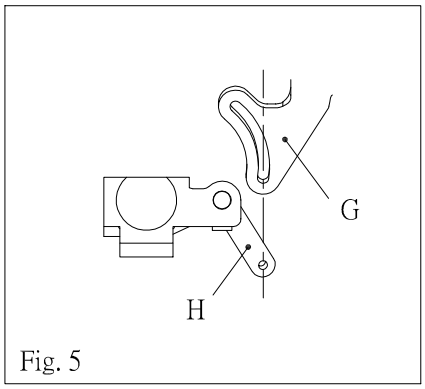


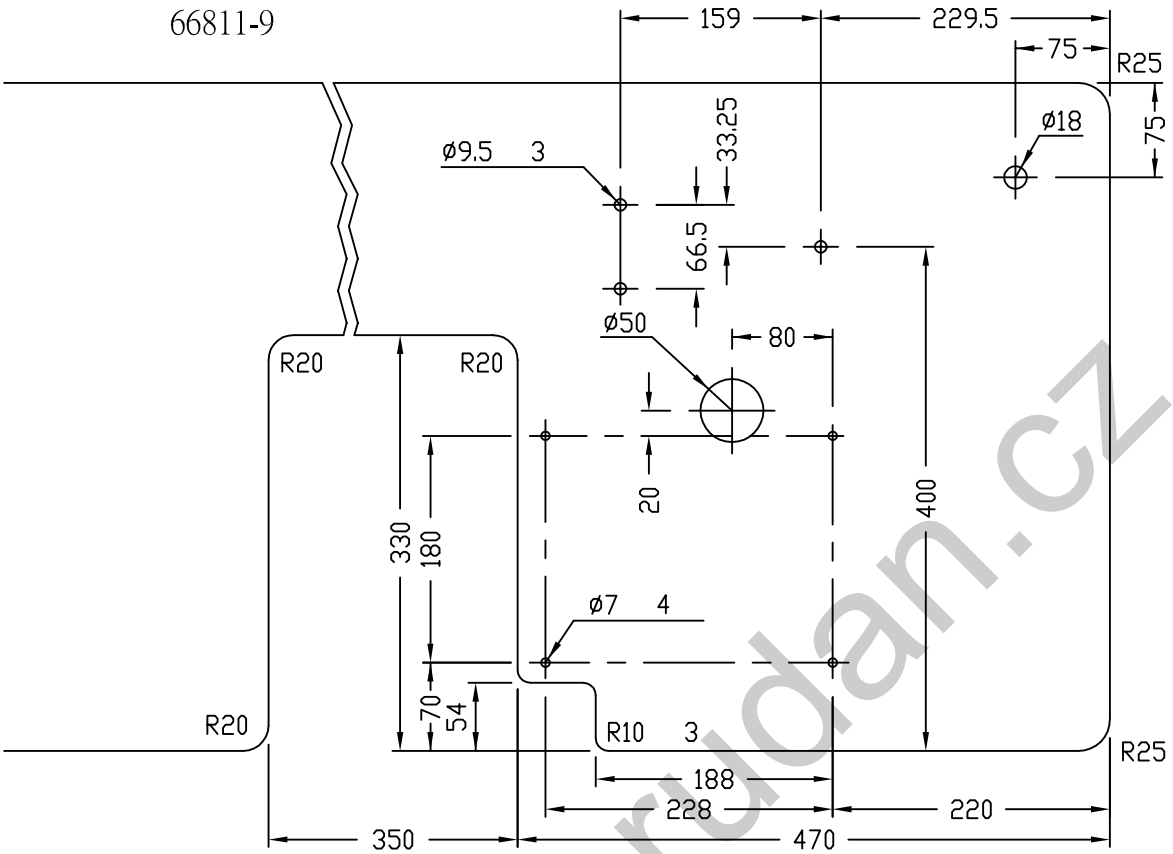
Fig. 5

10. Table top cut-out

10-1. CTD9000 / CTD9085 / CTD9311 / CTD9711 / CTD9811 / CTU9811 / CXD2311 / CXU2311

Open-cut table top type

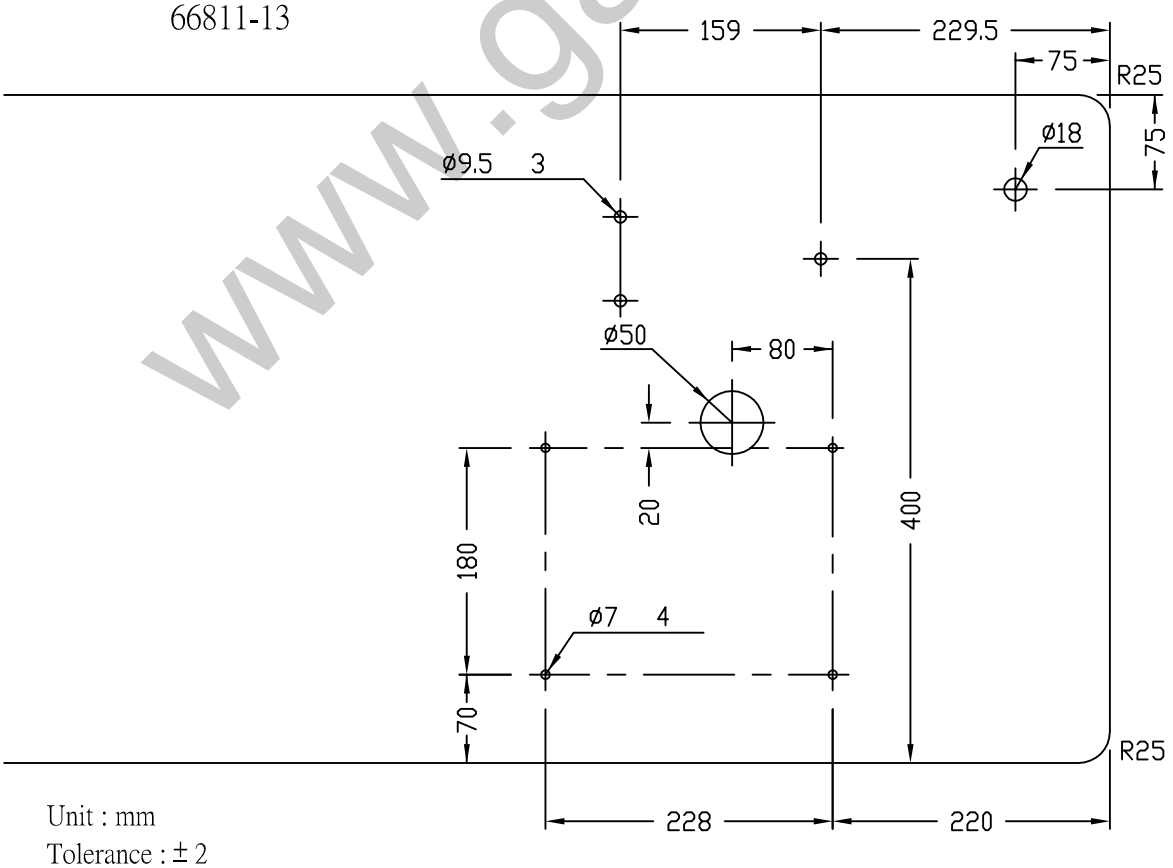
66811-9



10-2. CTD9000 / CTD9611

Standard table top type

66811-13



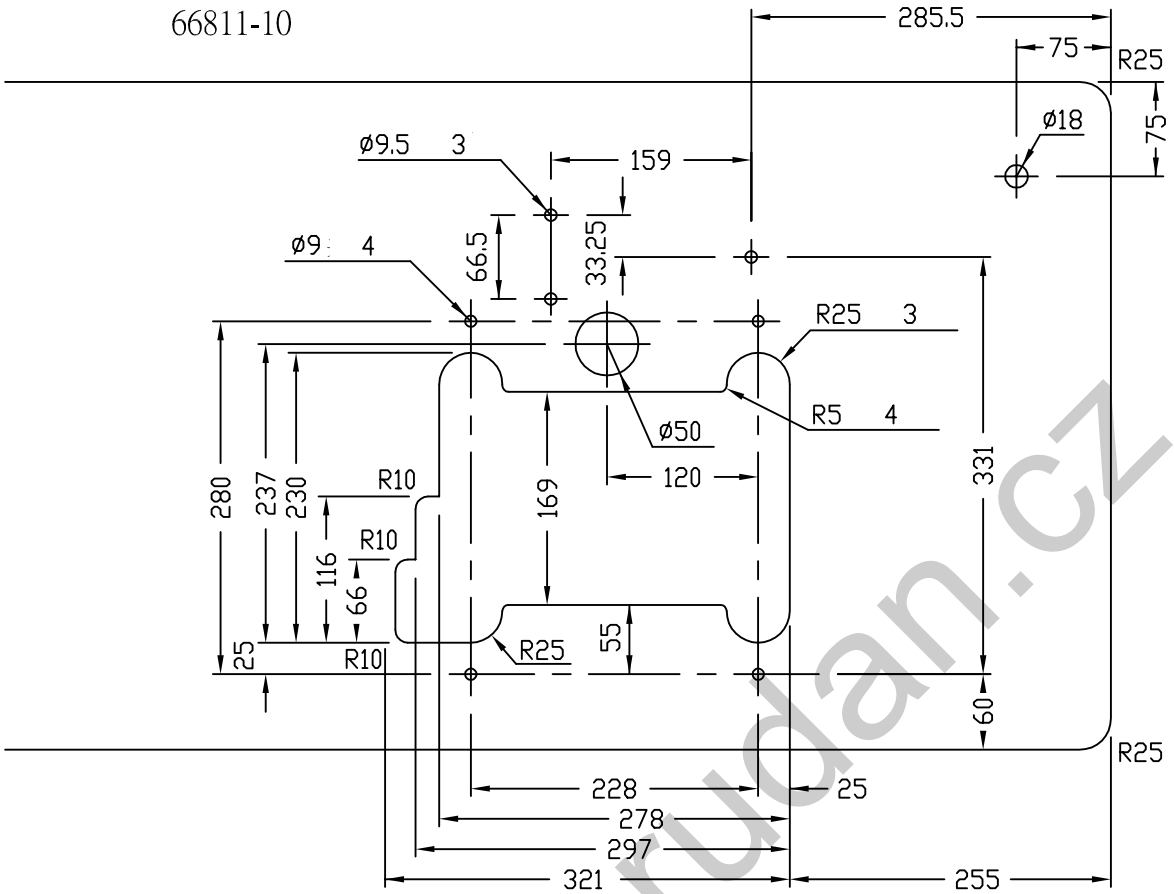
Unit : mm

Tolerance : ± 2

10. Table top cut-out

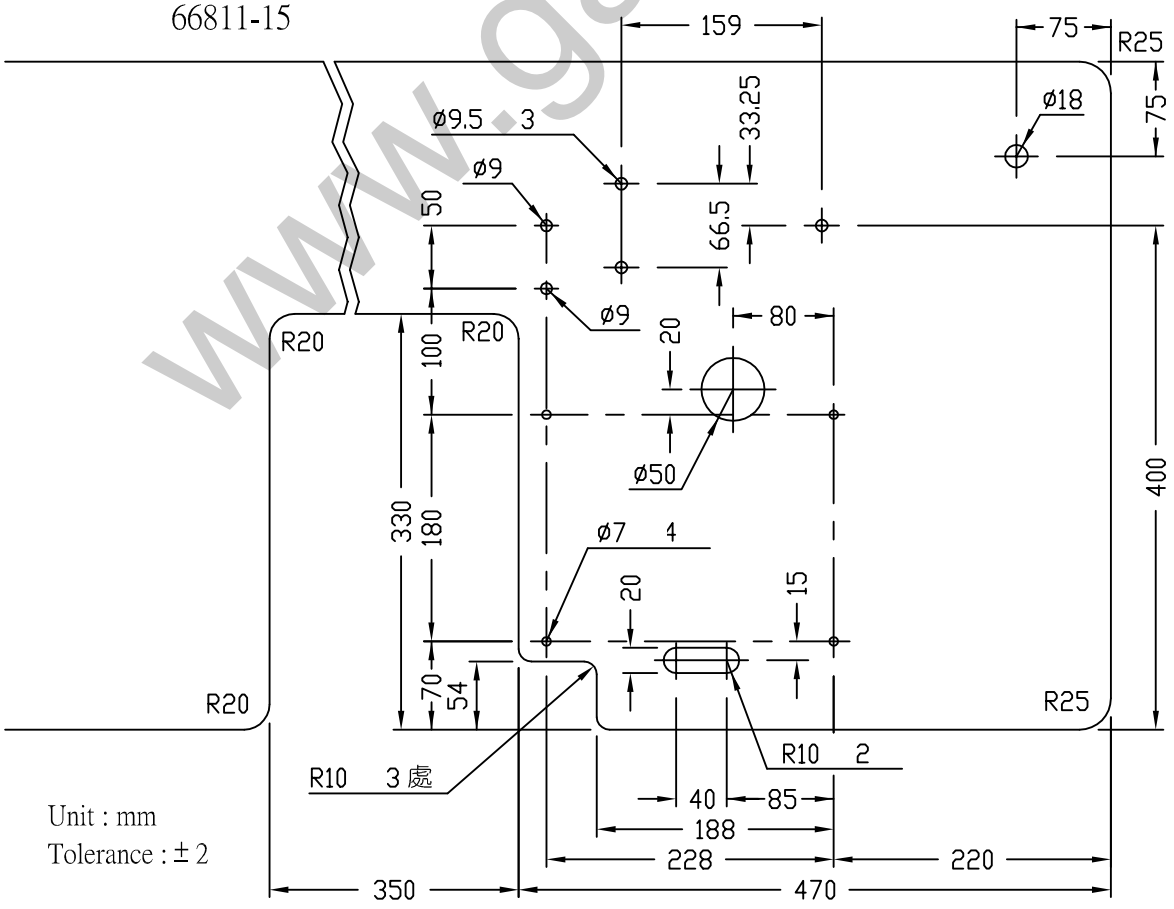
10-3. CTD9000 Semi-submerged type

66811-10



10-4. CTD9042 Open-cut table top type

66811-15



Unit : mm
Tolerance : ± 2

1. Adjustment of driving devices

1-1. Solenoid

(1) Adjusting driving distance

The standard solenoid driving distance is 15mm and if necessary, please remove dust cover G and adjust nuts F.

(2) Adjusting the position of driving lener

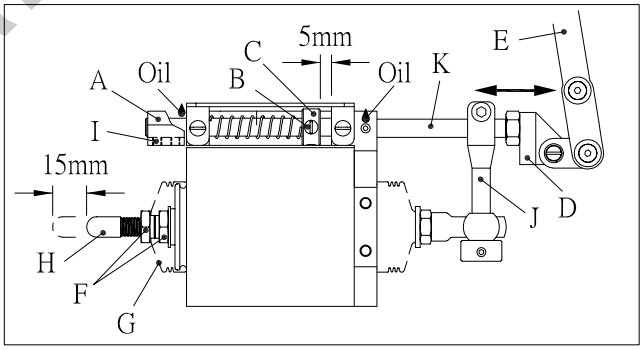
The right or left moving set position of driving lever can be adjusted by adjusting screws of B、I and J, when adjusting please loosening screws in sequence move plunger D left or right in order to set the driving lever in desirous position , then tighten screw J, next adjusting collar C and plunger A into it's proper position, when adjusting driving lever, please push solenoid shaft to it's rightest position, during the adjustment process, in order to obtain it's precise movement. (Please refer to section 5 for the adjustment of connecting rod.) (Please refer to following illustration for adjusting collar.)

(3) Adjusting spring

When solenoid shaft reached it's rightest position, the standard clearance between collar and plunger is 5mm, and also can be adjusted according to the demand by adjusting screw B.

(4)

When the solenoid shaft is moving, shaft K must be moved swiftly, please add some lubricating oil between solenoid shaft Kand plunger which can increasing it's mobility adn the life of plunger.



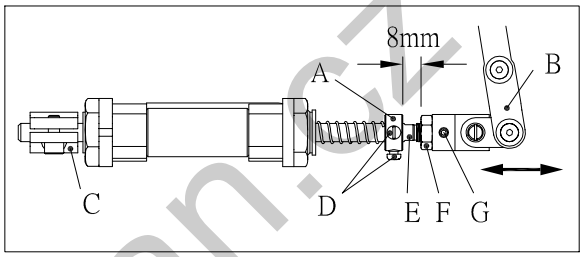
1-2. Cylinder

(1) Adjusting driving lever

Driving level B right and left set position druing the trimming movement could be adjusted by loosen screw G and adjust the level between nut F and cylinper shaft E. In addition, collar A and connecting block C will also have to be adjusted at the same time in order to make proper adjustment. (Please refer to section 5 for connecting block adjustment and please see following procedures for collar adjustment.)

(2) Adjusting spring

When cylinder shaft reached its most right position, the standard tolerance should be 8mm between collar A and nut F, it also can be adjusted by screw D according to the actual sewing situation needed.



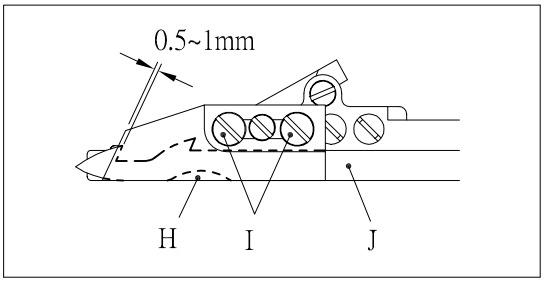
2. The adjustment for under bed thread trimmer mechanism

2-1. Illustration before conducting adjustment

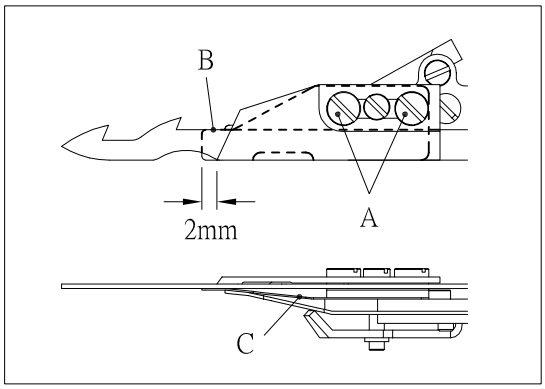
When adjusting or testing the right / left movement of trimming knife, the P set mark of hand wheel must be set even with the set mark on machine head. (Please refer to the diagram on section 2 prior.) Then, swing trimming knife back and forth by moving the cylinder shaft or solenoid shaft after adjustment or testing, please make sure trimming knife set is at its most right position in order to make further adjustments. (Please refer to the diagram on section 4-8 prior.)

2-2. Adjusting the position between movable knife and fixed knife

When trimming knife moves to its set position, there should have 0.5~1mm overlap between fixed knife H and hook blade of movable knife J, and this overlap can be adjusted by screw I.

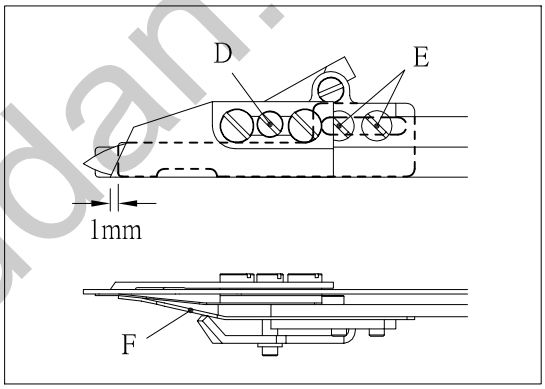


2-3. Adjustment of clamp spring



Clamp spring C should be positioned 2mm in front of the front edge of fixed knife and can be adjusted by screw A. If positioned too much ahead then the thread end will be too long and vice versa, will be too short. In addition, clamp spring must be even with the side edge B of movable knife to prevent from holding the needle threads.

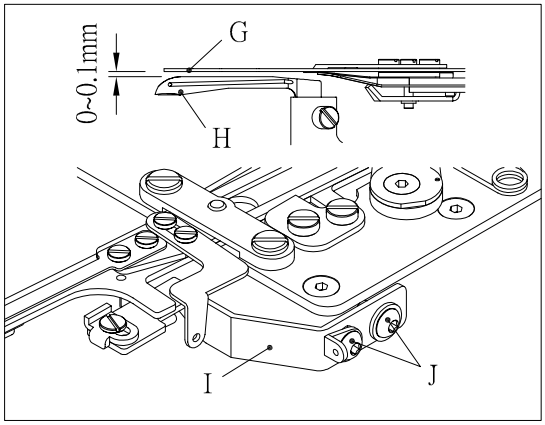
2-4. Adjusting knife pressure spring



The knife pressure spring F should be positioned 1mm behind the front edge of fixed knife and it can be adjusted by screw E.

Can needle thread and looper thread be clean cut ? and can looper thread can be held ? All can be done by adjusting the screw D, clock-wise turning the thread can be cut cleanly but the fixed knife will be worn out faster and the thread end will be langer since looper thread was been holding too tight, vice versa for counter-clockwise turning.

2-5. Adjusting of lower knife carrier guide



When movable knife G moving forward, there should have 0~0.1mm tolerance between movable knife and looper H. Adjustment can be made by loosen screw J and adjust lower knife carrier guide I upward or downward to its proper position, then tighten screw J. After such adjustment, please make sure movable knife can be moved forward backward smoothly.

2-6. Adjusting moving route position of movable knife

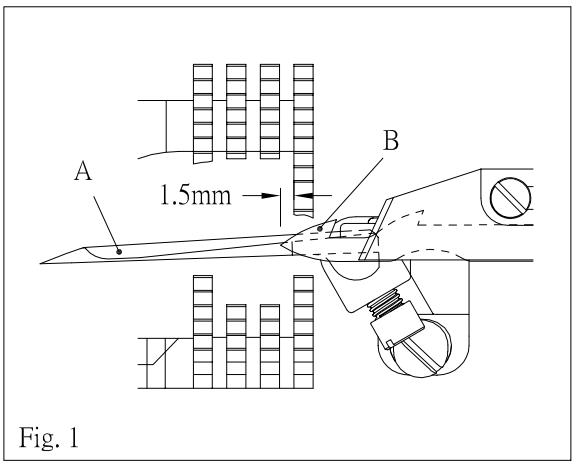


Fig. 1

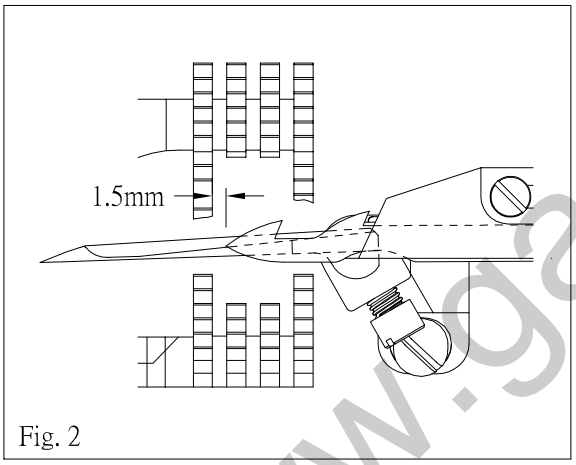
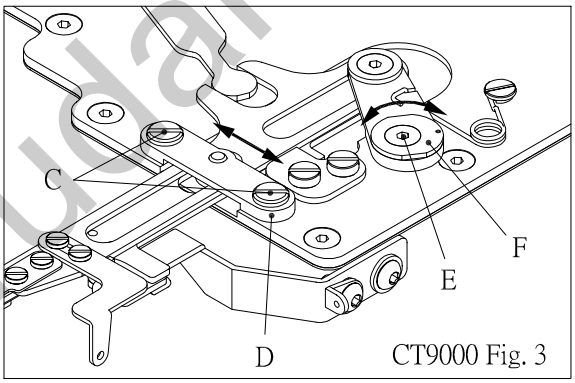


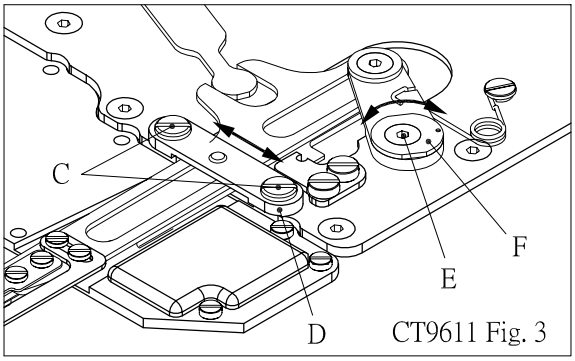
Fig. 2

When movable knife B moves over 1.5mm from the left edge of most right row of feed dogs, its knife tip should be positioned on the center top of looper ridge A.
When movable knife B keep moving to 1.5mm away from the right edge of lestest row of feed dog, its knife tip should be still within on the top of looper ridge A.
(Please refer to diagram 1 and 2.)

While the adjustment loosen screw E, turn adjusting ring F or loosen screw C, then adjust the position of bracket holder D in order to change the moving route of movable knife (See diagram 3)



CT9000 Fig. 3

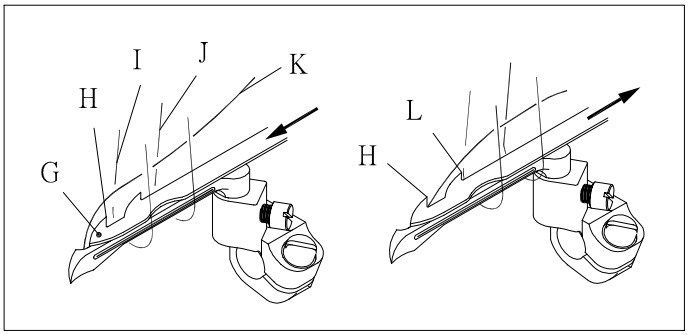


CT9611 Fig. 3

2-7. Co-relationship among needle thread looper and movable knife

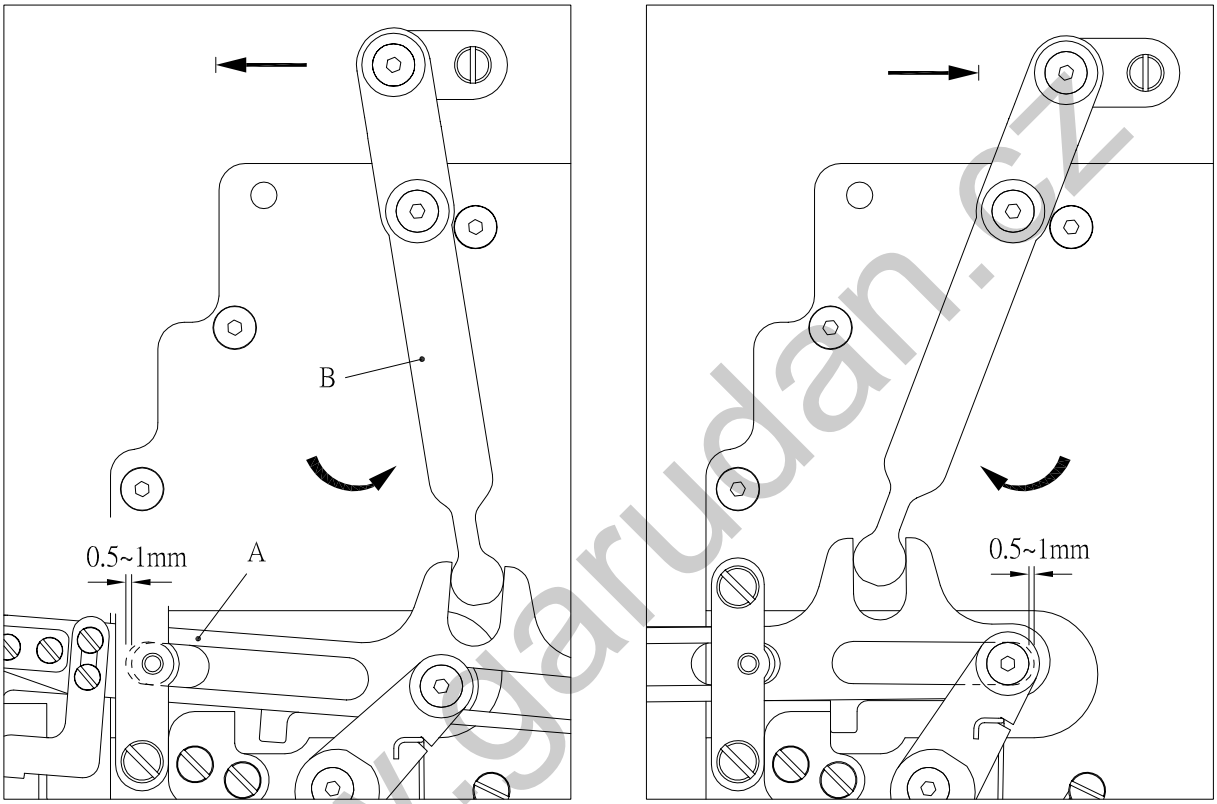
When movable knife G moves from left to the right, it must go thru the needle thread loops I、J, at the same time, the front hook blade H of movable knife must be in front of looper thread K.

When movable knife moves from its leftest position to its right, hook blade H、L should hold needle threads and looper thread and pull it to the fixed knife then cut it sequentially.

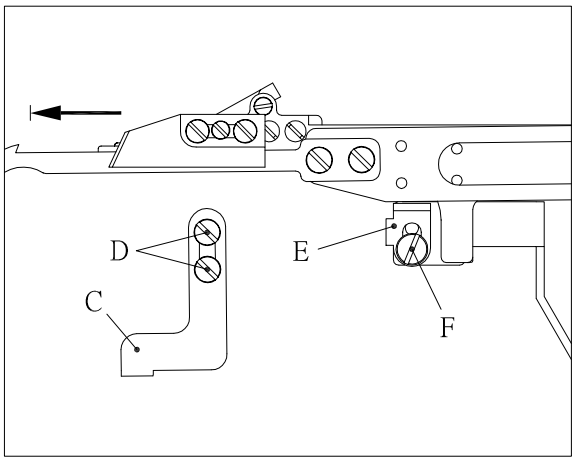


2-8. Adjusting the front and rear position of underbed thread trimmer

When under bed thread trimmer set went back to its most right set position, there should have 0.5~1.0mm tolerance between lower knife carrier A and spacer, when lower knife carrier A moves to its leftest set position, there also should have 0.5~1.0mm tolerance between lower knife carrier and spacer. Then tolerance between lower knife carrier and spacer can be adjusted by changing the position of driving lever B. (Pleaes refer to section 3 for the adjustment of driving lever.)



2-9. Adjusting auxiliary knock block for CT9000



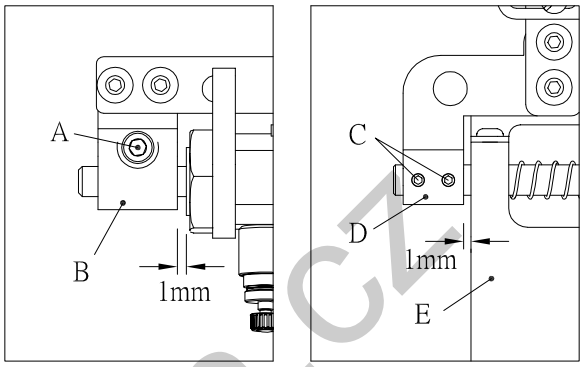
For easy adjustment, please take off thread guide eyelet C by loosening screw D, when the movable knife reached its leftest set position, there should have the tolerance of 0~0.2mm between movable knife and knock block E. Adjustment can be made by adjusting screw F. After the adjustment, please repeat the adjustment of moving route of movable knife as shown on section 4-6 and make sure movable knife moves smoothly, then, mounting thread guide eyelet C back.

3. Adjusting thread tension components

(1) Adjustment of bracket holder

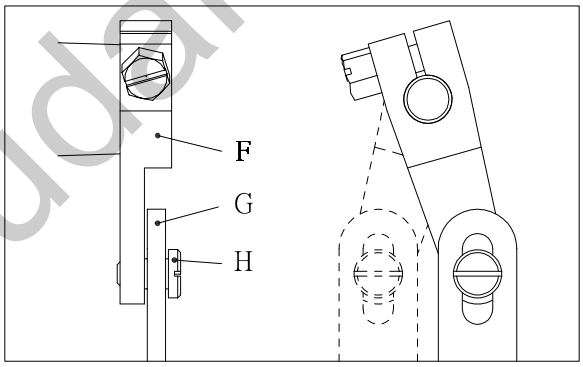
When underbed thread trimmer reach its most right position, there should have 1mm tolerance between bracket holder B and cylinder when using pneumatic type thread trimming knife. If using electric type thread trimming knife, there also should have 1mm tolerance between plunger D and bracket E, and can be adjusted by screw A or C respectively.

When any changes in bracket holder or plunger, please make sure to repest following steps and safety switch's related position. (Please refer section 6 on page 10 for the adjustment of safety switch.)



(2) Adjusting of connecting plate

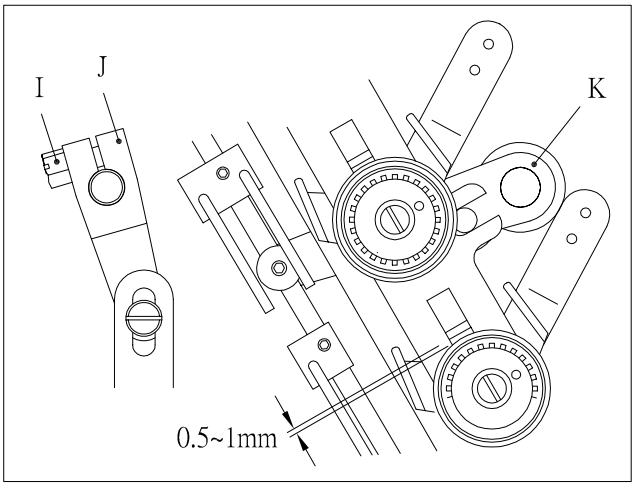
When adjust connecting plate, please pay attention to the even tolerance among connecting plate G, tension release lever F and stud H, in order to make smooth movement between connecting plate and tension release lever.



(3) Adjusting of the tolerance between release wedge and tension disc

There should have the tolerance of 0.5~1mm between release wedge and tension disc before any movement when adjusting, loosen screw I on tension release lever J, then adjust tension release shaft K to its proper position in order to obtain tolerance 0.5~1mm.

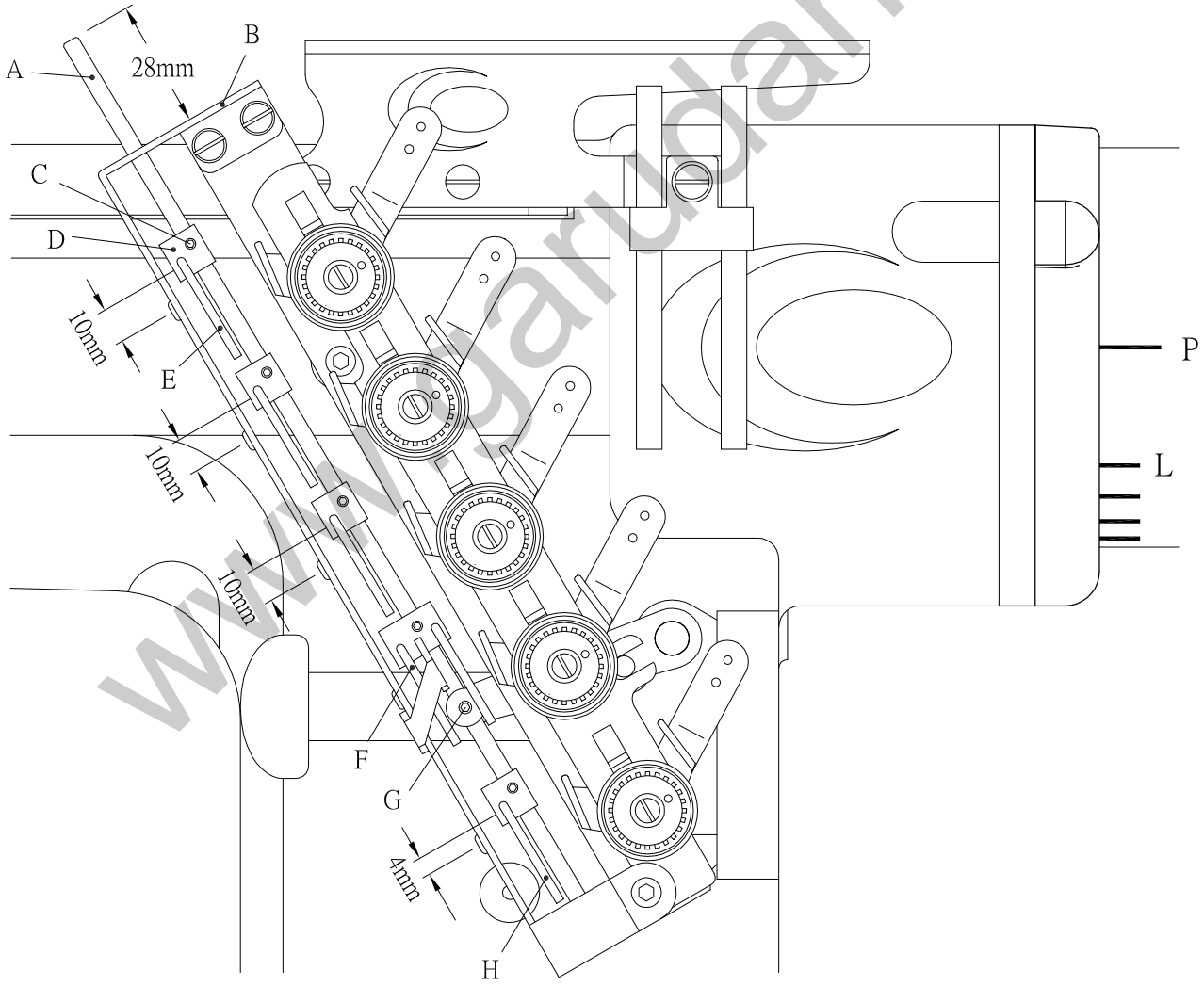
When adjusting tension release lever J or tension release shaft K, please make sure both of them should touch machine head closely, without any tolerance and moving smoothly. Otherwise it will affect the movement of under bed thread trimmer.



(4) Adjusting of thread tension release components

When adjust the position of guide bar A, prior to any actions, the tip of guide bar should be 28mm ahead of thread guide eyelet B, when adjusting, loosen set screw G in order to adjust.

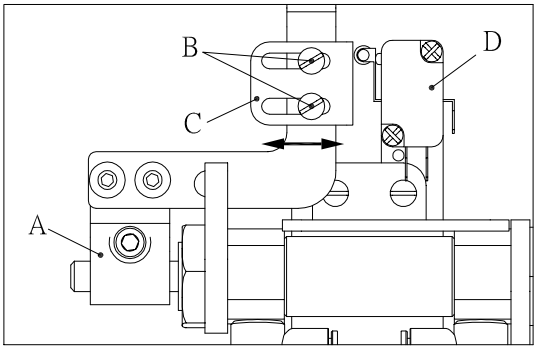
The position and adjusting of needle thread release bar :
There should have 10mm distance between needle thread bar E and needle thread guide hole, and should have 4mm distance between looper thread bar H and thread guide hole and under the circumstance or without changing the stitches of needle thread any looper thread, adjusting spreader thread bar F by loosen screw C and moving upward or downward of thread pull-off block D.

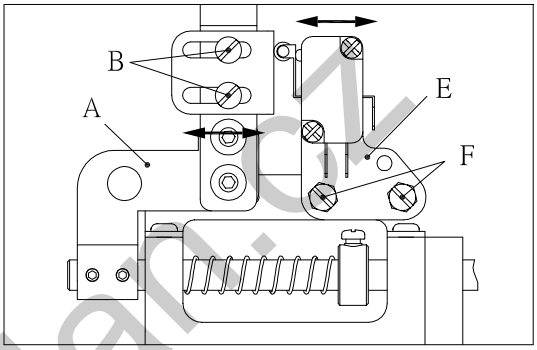


4. Adjusting the position of safety switch

Whenever adjusting thread trimmer or bracket holder A must adjust safety switch D at the same time.

When adjusting, loosen screw B, moving knife holder bracket C to its proper position when underbed thread trimmer moves to its most right position and stop then the push button on safety switch D should touch knife holderbracket. If is using electrical type thread trimmer, (using solenoid), there will have another knife holder bracket E in addition to knife holder bracket C and both knife holder bracket C and E and can be adjusted by screw B and F respectively.



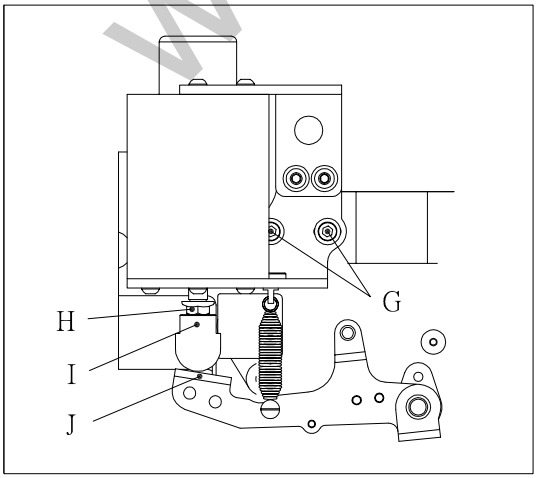


5. Presser foot lifting device

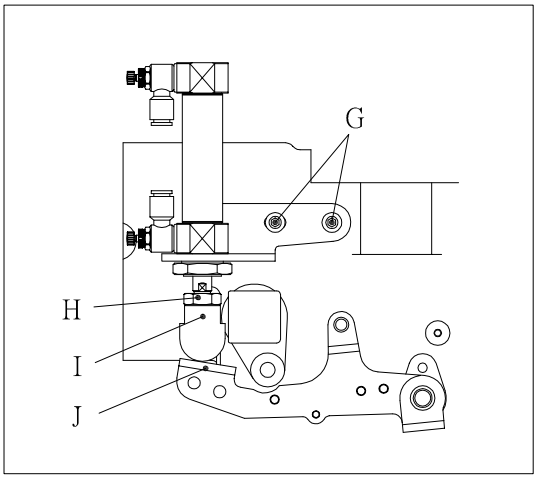
5-1. Electrical / Pneumatic type presser foot lifting device

Presser foot lifting height is 7mm, when adjusting, holding clutch sleeve I and loosen screw H, turning clutch sleeve I clock-wise or counter-clock wise in order to adjust the stroke distance, besides, clutch sleeve I should touch parallel with lifter arm J. In addition, the left or right position of bracket also will affect the lifting height and bracket can be adjusted by screw G.

Electrical type presser foot lifting device



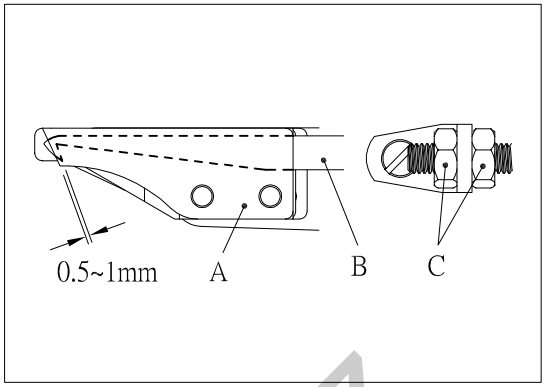
Pneumatic type presser foot lifting device



6. Adjusting of spreader thread trimmer device

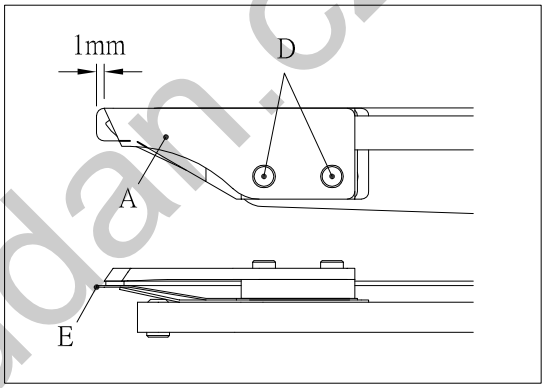
6-1. The position of movable knife any fixed knife

When movable knife B moves to its most upper position, there should have overlapping of 0.5~1mm between movable knife B and fixed knife A and overlapping can be adjusted by screw C.



6-2. Adjusting of thread clamp spring

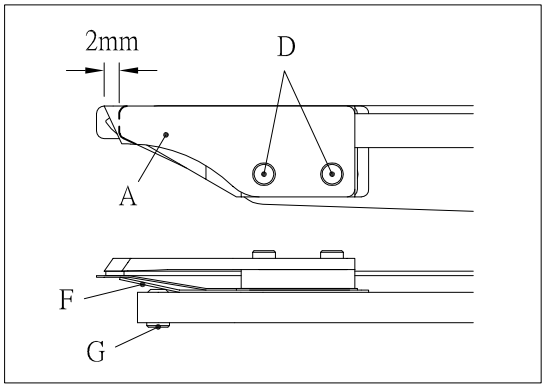
The position of thread clamp spring E should be 1mm ahead the front edge or fixed knife A, and can be adjusted by screw D and also should be even with the right edge of fixed knife A.



6-3. Adjusting of knife pressure spring

The front edge of knife pressure spring F should located 2mm behind the front edge of fixed knife A and can be adjusted by screw D.

Can top coverstitches be cut clean? spreader thread can be held ? All can be done by adjusting screw G in order to change spring pressure, trrning clock-wise, will increase spring pressure and thread can be cut clean and spreader thread can be held tight, however, it will wering out the fixed knife and movable knife faster, vice versa for turning counter-clock wise.



6-4. Adjusting the position of moving route for movable knife

Turning hand wheel and make sure the P set mark on hand wheel even with the set mark on machine head in order to make the correct adjustment later on. (Please refer to figure on the first page 2.)

(2)

Using hand to move movable knife downward, by the time when movable knife meets spreader H, the tip of movable knife F should be even with the hook blade of spreader G and there should have a tolerance of 0.5mm between them, and it can be adjusted by adjusting screw A and E. When 0.5mm tolerance been set, please move knock block C to stud A by adjusting screw B in order to set the foundation for the future adjustments. (Please refer to figure 1 and 2.)

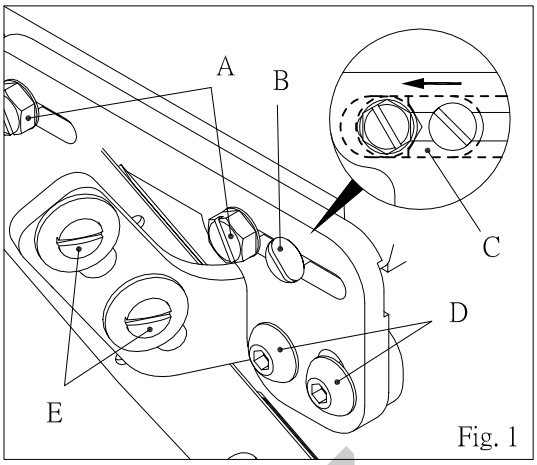


Fig. 1

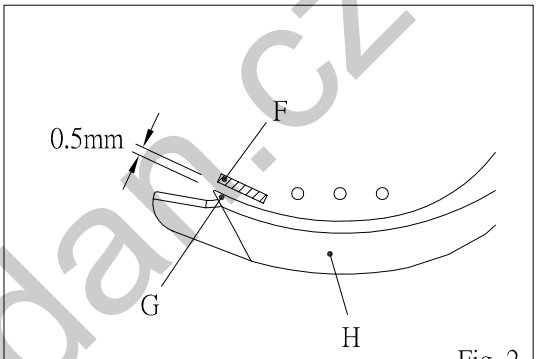


Fig. 2

(3)

After movable knife passed thru spreader, it will touch spreader thread J (Top covering thread) and spreader thread should be located within the slant angle range I of the front of movable knife, so it will falling into the hook blade of movable knife. The right or left angle of the movable knife can be adjusted by screw E, in addition, the front and rear position of movable knife will be varied, depends on the thickness of sewing fabrics, the thicker sewing fabrics, the more slant of movable knife and can be adjusted by screw D, normally, movable knife will be tighten in the middle of long screw hole and must go over all the above mentioned steps after adjustment. (Please refer to figure 1 and 3.)

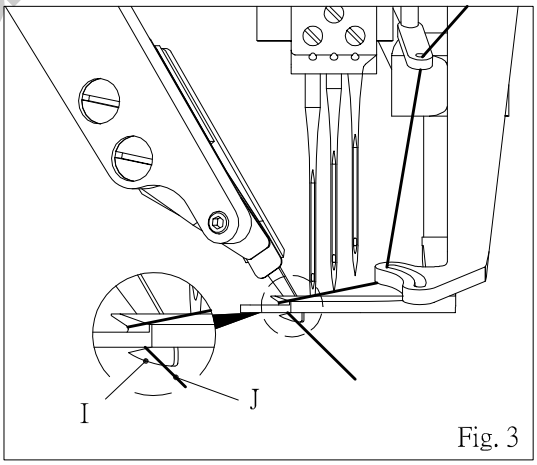


Fig. 3

(4)

When movable knife moves to its lowest point, spreader thread fallen into the hook blade of movable knife, there should have the tolerance of 5.5~6.5mm between the tip L and needle plate surface K, and this tolerance can be adjusted by screw E and must go over all previous adjusting steps after such adjustment. (Please refer to figure 1 and 4.)

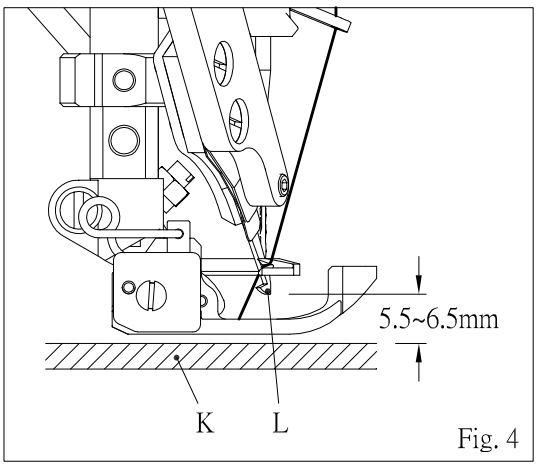


Fig. 4

7. Adjusting of air wiper

(1)

Loosen screw B, moves bracket in order to make blow tube F located 1mm behind the needles.

(2)

Loosen screw E, turn blow tube F and make sure the blowing angle is at the same angle as three needle holes.

(3)

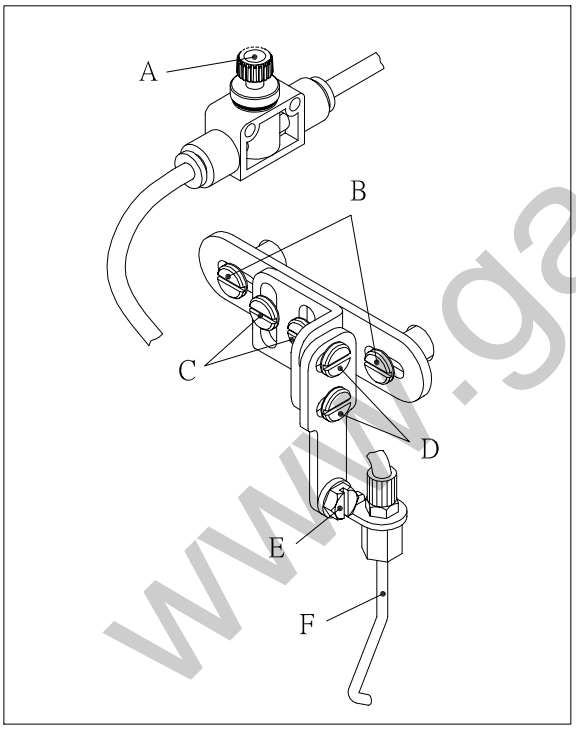
Loosen screw D, adjust blow tube F and make sure there have the tolerance of 1.5mm between blow tube and needle clamp.

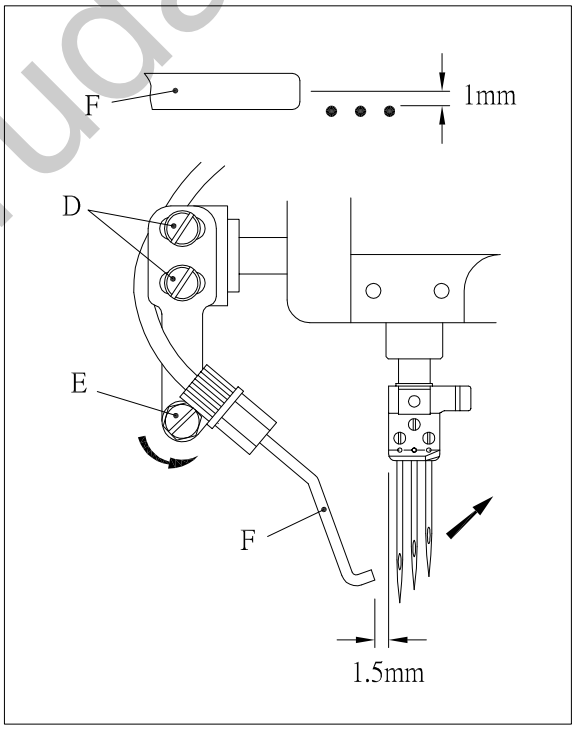
(4)

Loosen screw C, and adjust the height of blow tube F and make sure the blow tube should be positioned at the same slant line of 3 needle holes.

(5)

Air volume can be adjusted by turning knot A on speed controller, tuning clock-wise in order to reduce the air volume, turning counter-clock wise in order to increase the air volume.





8. Adjusting electrical wiper device

(1)

Turn hand wheel and make sure the (P) set mark even with the set mark on the machine head in order to make sure the correct position for future adjustments. (Please refer to figure on the first page 2.)

(2)

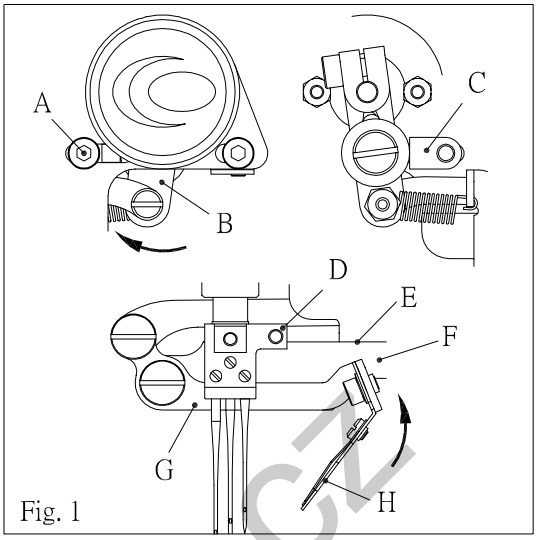


Fig. 1

Adjusting hook blade (H) to its uppest position, by loosening screw (A), set arm (G) parallel with solenoid support (F) by adjusting driving lever (B) and stop block (C), then, tighten screw (A), after such adjustments, please make sure there should have a tolerance between arm (G) and the edge (E) of solenoid support (F), also there should have a tolerance between needle clamp (D) and hook blade (H) in order to avoid any collision among the parts. (Please refer to figure 1.)

(3)

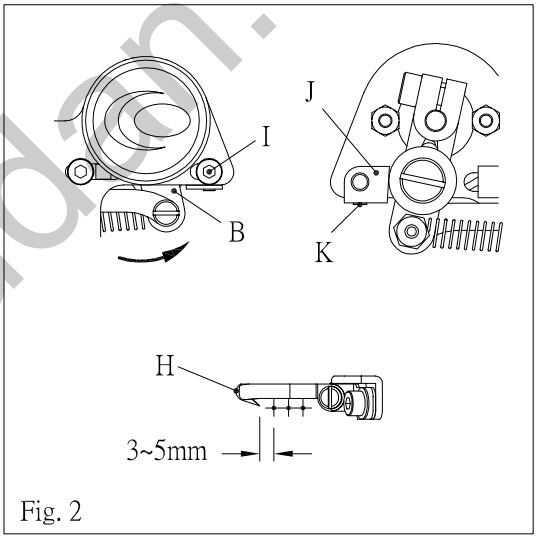


Fig. 2

Adjusting hook blade (H) lowest position, by loosening screw (K) and (I), setting hook blade (H) passed over 3~5mm from the center of leftest needle, by moving driving lever (B) and stop block (J), then, tighten screw (I) and (K). (Please refer to figure 2.)

(4)

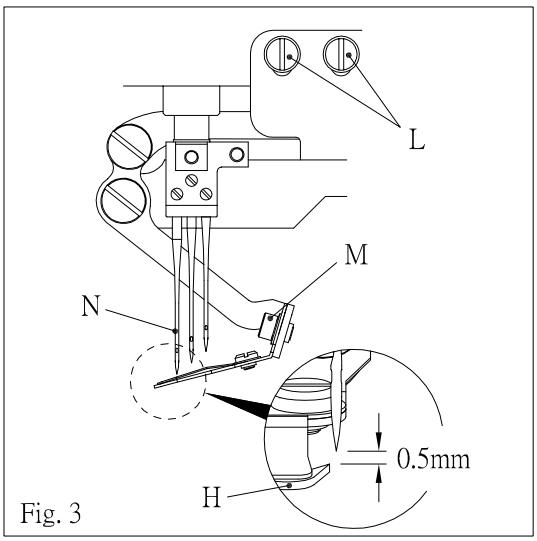


Fig. 3

There should have 0.5mm tolerance when hook blade (H) passing thru the center of leftest needle (N) to its lowest position, this tolerance can be obtained by adjusting screw (L) and also can be micro-adjusted by screw (M) and after finished the adjustments, need to double check step (3) and step (5). (Please refer to figure 3.)

(5)

There should have a tolerance of 0.5mm between hook blade (H) tip and center of leftest needle (N) by the time when hook blade (H) moving thru needles and reaching to its lowest position and the adjustment of such tolerance can be obtained by adjusting screw (M), after such adjustments, will need to double check step (3) and step (4) again.
(Please refer to figure 4.)

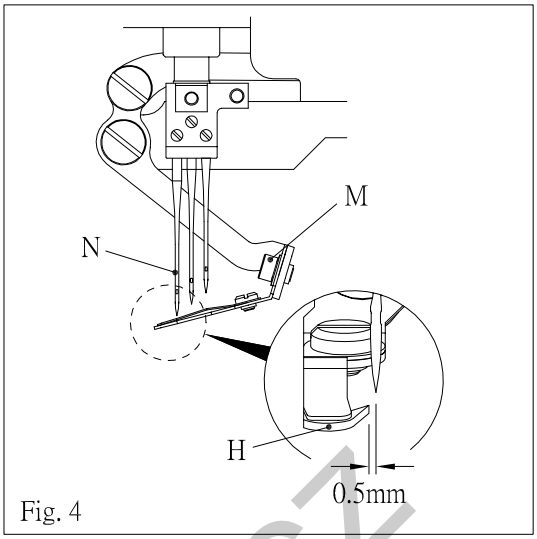


Fig. 4

(6)

Adjust spring (O) in order to let hook blade (H) can be retreated to its uppest position, please loosen screw (P), move bracket (Q) to the left or right if moves to the left side of long hole, then it will increase the pulling force vice versa, if move to the right side of long hole, usually, bracket (Q) will be set at right side of the long hole.
(Please refer to figure 5.)

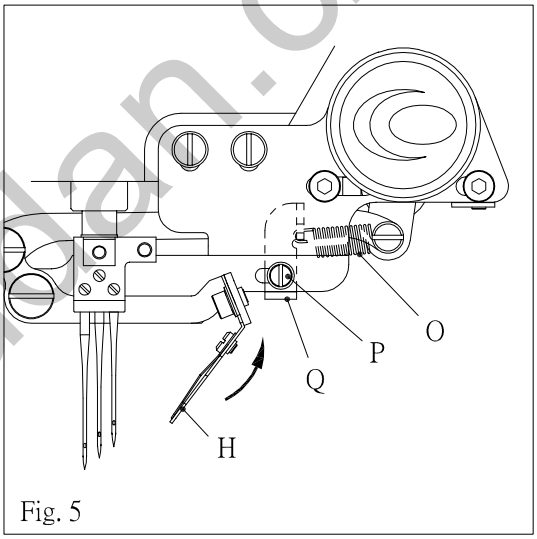
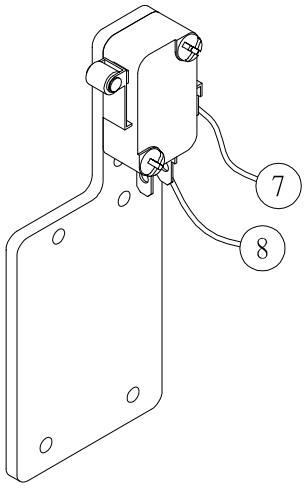
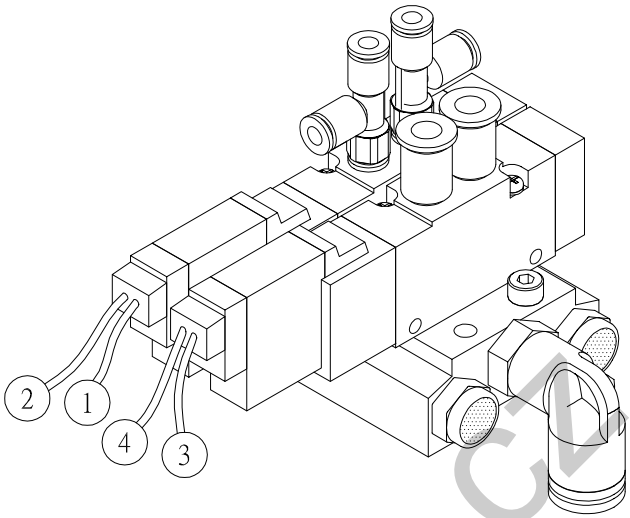


Fig. 5

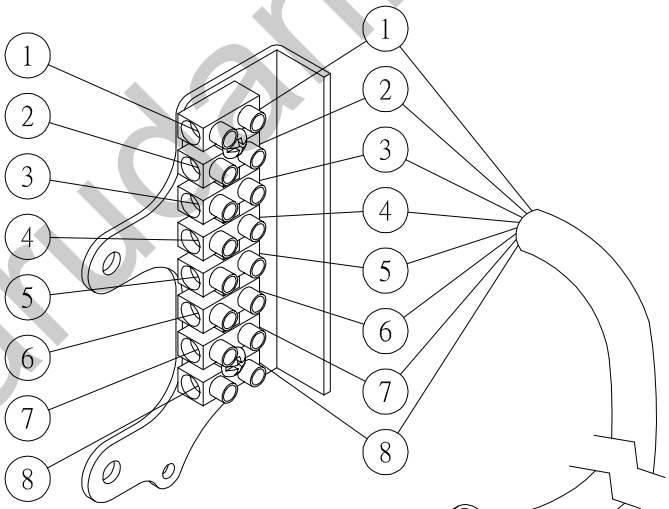
9. Wiring of electromagnetic valve

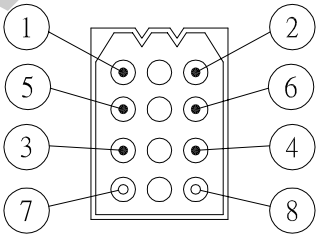
9-1. UTB02 / UTB04 / UTB03 / UTB05 Pneumatic Type

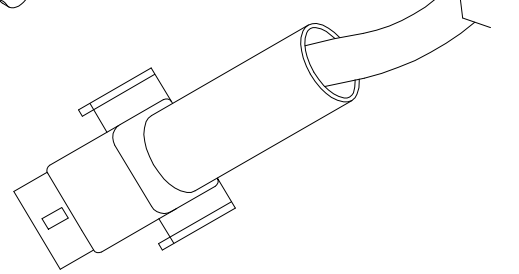




SEWING MACHINE 12P	
1	TRIMMER SOL.
2	+24V
3	WIPER SOL.
4	+24V
5	A.F.L. SOL.
6	+24V
7	OV
8	SAFETY SW.

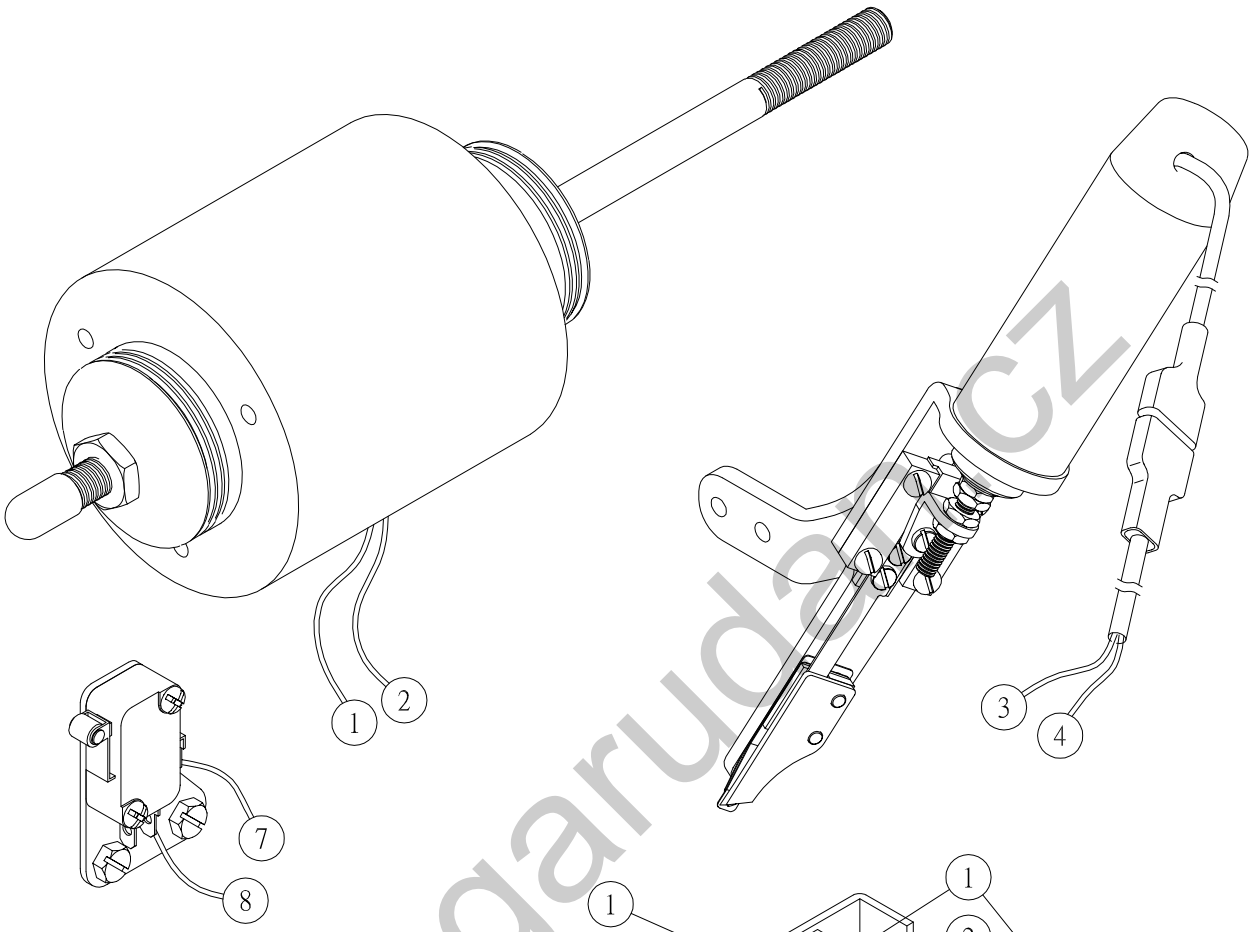




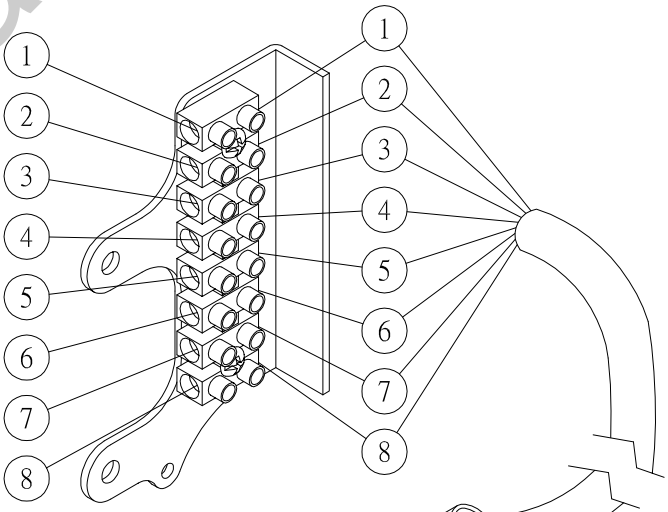


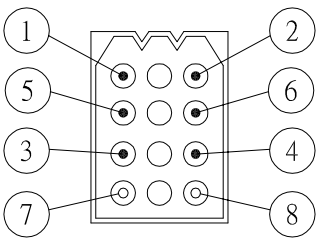
10. Wiring of solenoids

10-1. UCE-B1 (UTC03 / STC03 UTC03 / STC03 For electrical type)



SEWING MACHINE 12P	
1	TRIMMER SOL.
2	+24V
3	WIPER SOL.
4	+24V
5	A.F.L. SOL.
6	+24V
7	OV
8	SAFETY SW.





Important safety instruction

1. Transportation

(1)
The machine packed with two pieces of cover that made of expanded polystyrene.

(2)
Put the machine into a export carton.

(3)
Use a cart or by two men's hands to move it.

2 Storage

(1)
The machine must use dustcover to cover it when it does not work.

(2)
Avoid to storage the machine in the room temperature more than 45℃.

3. Working

The machine doesn't work properly when temperature over 40℃.

4. Warning

Pay attention to these warning advices as follow：

A.
Working area is dangerous.

B.
Never touch the needle when the machine is still running.

C.
Be careful when you feed the fabric.

D.
Do not insert your finger between needle and puller during sewing operation.

5. Pay attention to the warning sticker

A.
Movable parts must be covered with guard when you operate.

B.
Pull out the plug from socket first when you adjusting , threading , changing bobbin or cleaning.