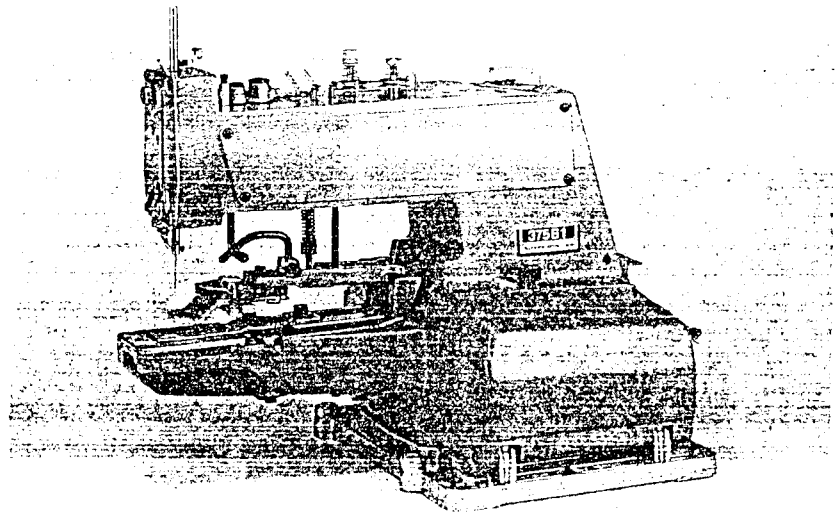
SINGER
375B1, 375B11

INSTRUCTION BOOK

SINGER*

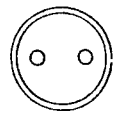


375B1
375B11

Form U-3996
Part No 379282-002

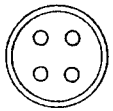
2. SPECIFICATIONS

Model	375B1
Sewing type	Single thread chainstitch button-sewing
Sewing fabric	Knit goods, shirts & working wear etc.
Sewing speed	Max. 1500 s.p.m.Button-sewing
	1 .... Lengthwise feed 0... 2-hole button
	2 .... Lengthwise/crosswise feed ... 4-hole button
	3 .... By attachment .... snap, Shank, Metal shank or Wrapped round, Reinforcing-Stay, LABEL
Needle bar stroke	48.6m/m (1-29/32")
Needle	4536-05 or 2852-05 # 14-#18
Stitch number	8, 16, 32, Cam: not to be changed
	6, 12, 24, Cam: to be changed
Feed length	Crosswise feed ... 2.5 ~ 6.5m/m (3/32 ~ 1/4")
	Lengthwise feed ... 0 ~ 2.5 ~ 6.5m/m (0 ~ 3/32 ~ 1/4")
Button size	Dim: 10 ~ 27m/m (3/8 ~ 1-1/32")
Presser bar lift	Std. 12m/m (15/32")
Button clamp lift	Automatic
Thread nipper	2-way cam type
Stop motion	Automatic (with speed-slowing device) type
Lubrication	Hand oil type
Power required	200W
Lubricating oil	SINGER "B" TYPE oil & grease

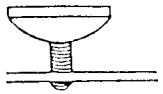

2-hole button

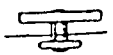

Snap


Metal shankbutton


4-hole button

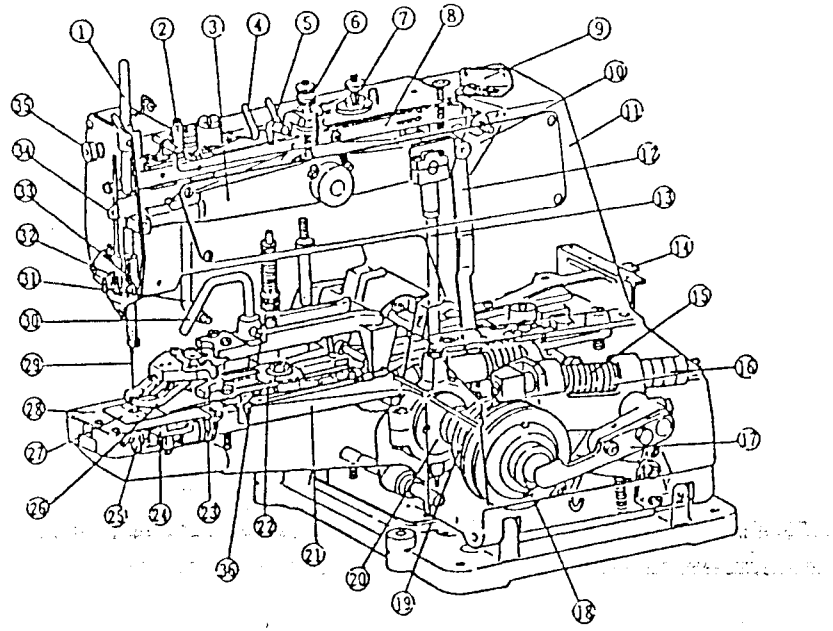

Shank button


Wrapped round button


Reinforcing-Stay

LABEL

3. NAMES OF PARTS



① Needel bar ② Nipper block ③ Needle bar lever ④ Thread pull-off lever ⑤ L shaped thread guide ⑥ Tension disc No. 2 ⑦. Tension disc No. 1 ⑧ Nipper bar ⑨ Thread guide No. 1 ⑩ Nipper bar actuating lever ⑪ Machine arm ⑫ Button clamp lifting link ⑬ Needle bar lever connecting rod ⑭ Lengthwise feed graduated plate ⑮ Stop motion disc spring ⑯ Rubber washer ⑰ Stop motion dise applying pressure lever ⑱ Needle driving pulley ⑲ Stop motion dise ⑳ Ball joint eccentric ㉑ Looper shaft tube ㉒ Crosswise feed graduated plate ㉓ Loop positioning finger cam, rear ㉔ Loop positioning finger cam, front ㉔ Looper ㉖ Button clamp lever jaw ㉗ Feed plate ㉘ Needle plate ㉙ Needle ㉚ Button clamp lifting rod ㉛ L shaped button clamp lifting rod ㉜ Tension disc No.3 ㉝ Thread guide No.3 ㉞ Needle bar bearing block & thread guide Nipper releasing plunger knurled thumb nut ㊱ Button clamp pressure adjusting spring nut.

4. CAUTIONS BEFORE OPERATION

* In low temperature areas, run machine approximately 5-10 minutes before starting to sew.

* The machine is thoroughly adjusted at the time of shipping but to be absolutely sure, release the stop motion mechanism and rotate the machine with your hand before turning the switch on.

* The maximum sewing speed of this machine is 1,500 s.p.m. but for the first month operate the machine at the speed of 1,200-1,300 s.p.m.

For the number of revolutions, please refer to the Chapter on "Motor pulley and Belt".

* The rotational direction of the machine is shown by the arrow in Fig. 2.

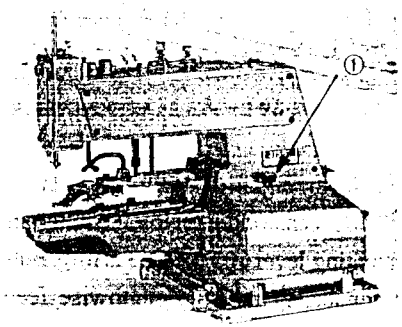
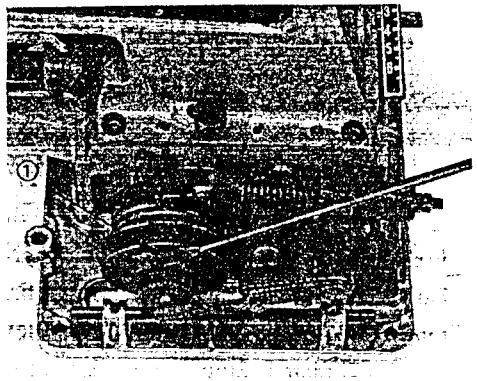


Fig.1



Fing.2

5. LUBRICATION (Refer to Fig. 1, 2, 3, and 4)

In order to ensure a long life of the machine and to run it in a smooth-running condition. the machine should be oiled twice daily, before the morning and afternoon starts. Oil all holes shown by the RED with SINGER "B" TYPE OIL

Remove the right side arm cover, remove the screw ①. Fig. 2, of the needle driving pulley, check the grease level and replenish it, if required.

Also, loosen the machine arm and bed set screw ①, Fig.1, and if the machine is tilted as shown in Fig.4, you can see the driving gear ① and the looper shaft driven gear ②. Grease these gears too. Some-times check and see if the oil comes up to the surface of the felt inside the machine sub-base and if not, fill up with oil.

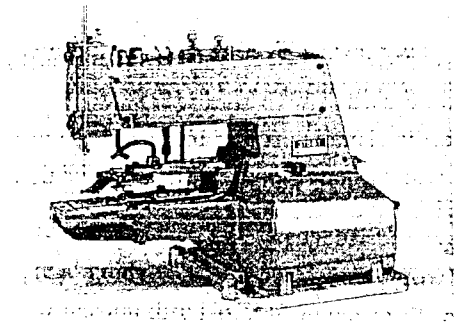


Fig. 3

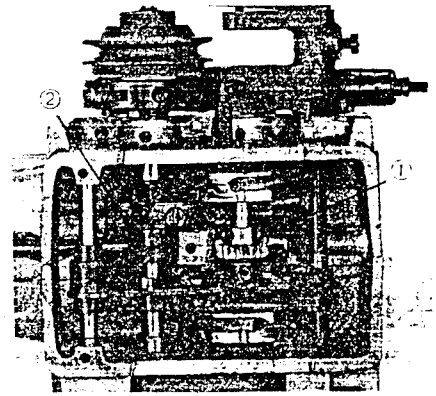


Fig. 4

6. MOTOR PULLEY AND BELT

For connecting directly to the power source, use an electric motor of 3-phase 1/4HP. The relation between the number of rotation of the machine with the effective diameter of the motor pulley is shown in the table below.

Hz	Rotation	OUTSIDE diamater of motor pulley
50	1,500 r.p.m. 1,200 r.p.m.	76.2m/m (3'') 60.3m/m (2⅜'')
60	1,500 r.p.m 1,300 r.p.m	63.5m/m (2½'') 57.2m/m (2¼'')

7. NEEDLES

At the time of shipping, the needle cat No. 2852-05 is attached to the machine but needle cat No. 4536-05 can also be used.

To insert the needle, loosen the needle clamping screw and insert the needle into the needle bar as far as it will go, with the long gloove to the front and tighten the set screw securely.

8. THREADING THE MACHINE (Fig. 5,6)

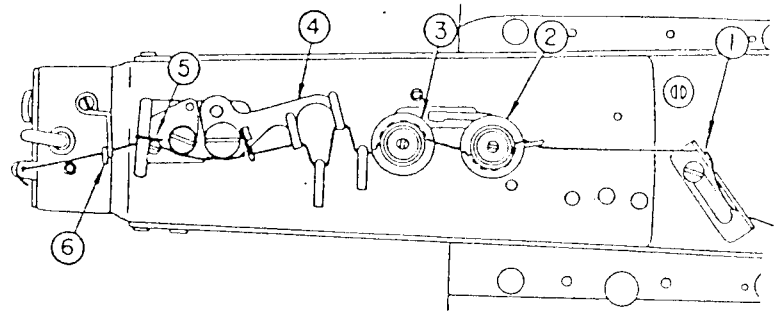


Fig.5

To thread the machine, put it in stop motion position, and thread in accordance with the diagram as shown in Fig. 5, 6 Start from thread spool stand needle thread guide pin No. 1 ① tension disc No. 1 ② tension disc No. 2 ③ thread pull-off lever ④ nipper ⑤ thread guide No. 2 ⑥ upper eyelet of face plate thread guide No. 3 ⑦ needle bar bearing block and thread guide ⑧ thread tension disc No. 3 thread guide ⑨ tension disc No. 3 ⑩ to the needle eye from front toward rear and draw the thread out about 60-70 m/m (about 2²³⁄₆₄'' ~ 2¾'')

To draw out the thread, push the nipper releasing plunger knurled nut, ⑪ the nipper will be released and the thread can be drawn out.

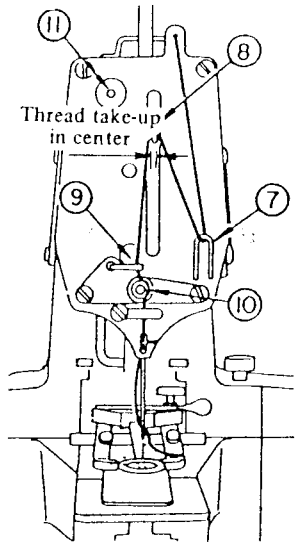


Fig. 6

9. THE THREAD TENSION (Fig.7)

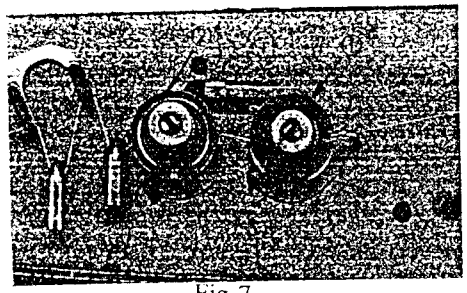


Fig 7

The thread tension disc No. ① controls the tightness of the button but only a light tension is required.

The thread tension disc No. 2 ② regulates the tension of the under side of the button but a stronger tension than the disc No. 1 is required. To adjust the tensions of these discs, turn the adjusting screw of the disc toward the arrow direction to make the tension stronger but the tension required will vary in relation to the types of thread, materials, and thickness of buttons used.

10. FUNCTIONS OF THE THREAD PULL-OFF LEVER (Fig.8,9)

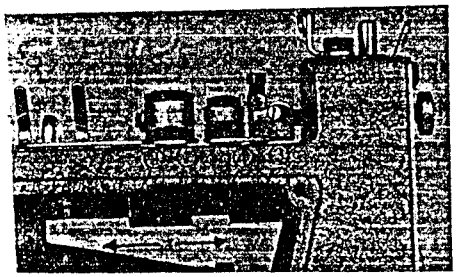


Fig.8

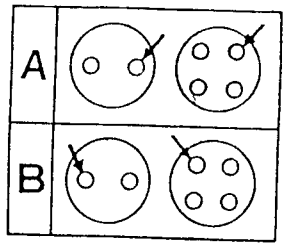


Fig.9

The thread pull-off lever (Fig.5 ④) controls the amount of thread which is pulled through the tensions at the end of a stitching cycle to provide sufficient

thread for the first stitch of the following cycle. It should be adjusted according to the size and kinds of buttons such as flat button, shank button, etc.

This adjustment is made by loosening screw ① of the nipper bar rear block ② by inserting a screw driver through the hole of the left side front cover and move the block to right and left. If it's moved to right, the sagging of the thread is increased and if it's moved to left, the sagging decreases.

When, at the end of a sewing cycle, if the tail of the thread appears through the button hole (Fig. 9 arrow A), move it to left but if the tail appears toward the arrow B (Fig. 9), move it toward right so that the tail of the thread will not come out.

11. THE THREAD NIPPER (Fig. 10)

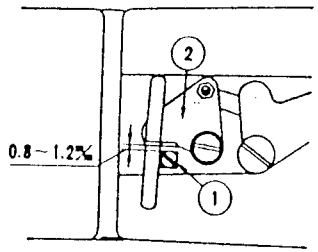


Fig.10

The function of the thread nipper is to prevent the thread from drawing out when, at the conclusion of a sewing cycle, the button clamping device goes up and cuts the thread. The nipper will pinch and hold the thread until it's cut.

However, during the sewing operation, adjust the nipper so that it will not hold the thread. As shown in Fig. 10 make this adjustment by loosening the nipper bar block set screw ③ Fig. 8 so that during the running, the clearance between the nipper block and the nipper becomes 0.8-1.2m/m (about 3/64'') and by moving the nipper bar block to right and left to attain this clearance.

12. ADJUSTING THE NEEDLE BAR (Fig.11, 12)

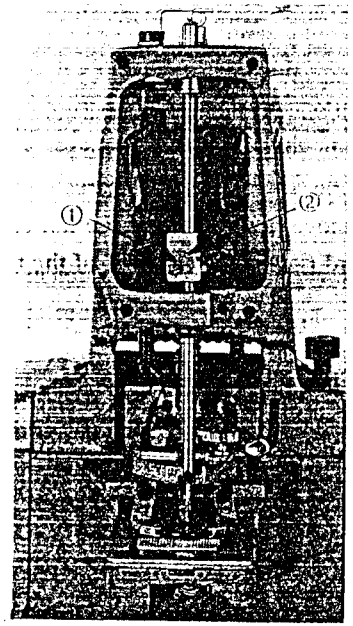


Fig. 11

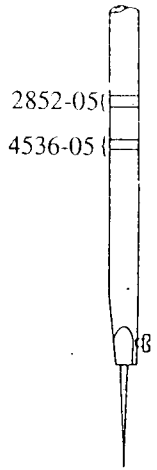


Fig. 12

There are two timing lines at the top of the needle bar and two timing lines at the bottom, a total of 4 timing lines (Fig. 12). For adjusting the height of the needle bar, use the upper pair of timing lines when using short needles 2852-05 for using long needles 4536-05 use the lower pair of timing lines.

Step on the pedal fully to release the stop motion trip lever and in that position rotate the needle driving pulley toward the operating direction with your right hand (Fig. 2) and when the needle bar has reached the lowest position, the upper line of the each pair of timing lines (Fig. 13 A), depending upon the length of needle used, should be even with the lower edge of the needle bar bushing ①.

If it's not even, loosen the needle bar bearing block and thread guide clamp screw ① (Fig. 11. when the needle bar is at its lowest position and make the upper timing line even with the lower timing line of the needle bar lower bushing.

At this point, bear in mind the following important points:

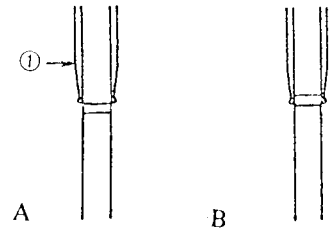


Fig. 13

(i) Lightly tighten the needle bar bearign block and thread guide clamp screw, and after installing the face plate, adjust so that the bearing block and thread guide comes to the center of the machine arm front cover slot (Fig. 6) and then tighten the set screw.

(ii) Timing the needle and the looper

As per Chapter 12, the upper timing line of the pair of timing lines became even with the lower edge of the needle bar lower bushing at the lowest point of the needle bar, so rotate the pulley toward the operating direction and adjust so that the lower timing line comes even with the needle bar lower bushing. At this position, (Fig. 13B) match the point of the looper (Fig. 14 ④) with the center of the needle and make the clearance between the needle and the point at 0 ~0.05m/m and then tighten the looper set screw (Fig. 14 ⑧) securely.

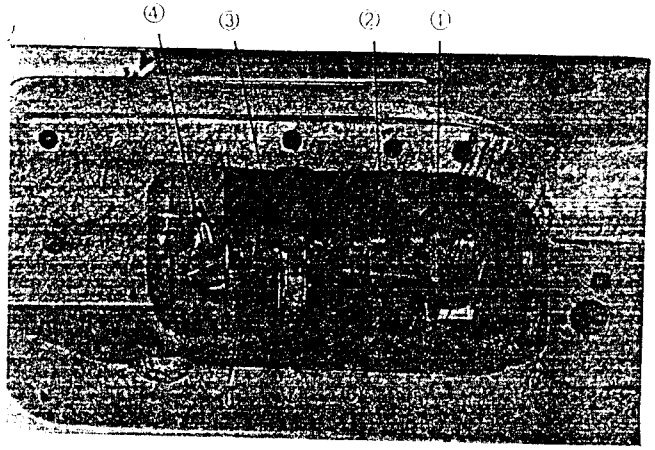


Fig. 14

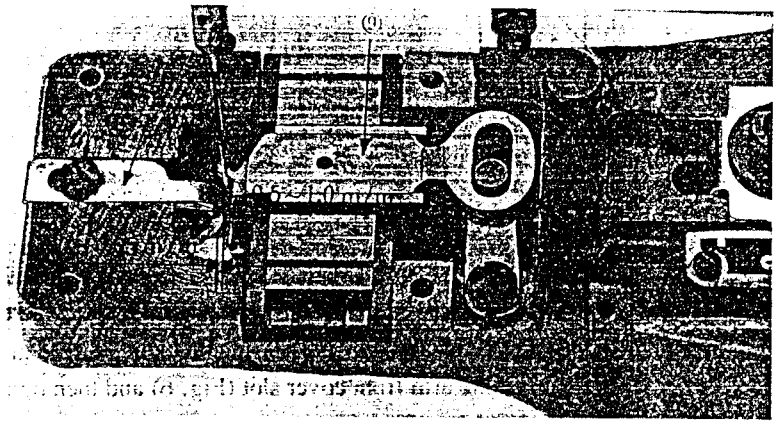


Fig. 15

13. TO PRODUCE OPTIMAL STITCHING CONDITION (Fig. 14. 15)

There are two methods to produce an ideal stitching condition: one is by a simple adjustment of the looper and the other is to match the timing of the looper positioning finger with the loop positioning finger cam (front. The latter should be applied when disassembling the machine and for any other purposes, do not move the machine. For adjusting the looper, refer to the chapter on "Timing the needle and the looper" (Chapter 12 (iii).)

(i) Adjusting the loop positioning finger lever (Fig. 14. 15)

Release the stop motion and rotate the machine toward the operating direction twice. (To release the stop motion, the machine must be rotated more than twice).

At the lowest position of the needle bar, loosen the screw ⑥ of the cam and looper sleeve ② by locking from under the bed, slide the cam and looper sleeve toward the front and create a clearance with the loop positioning finger cam (rear). To prevent the machine from moving during the adjustment, lightly tighten one side of the cam and looper sleeve screw ⑥. Loosen the loop positioning finger cam (rear) ccrew ⑤, rotate the loop positioning finger cam and at the fartherest advanced position of the loop positioning finger (Fig. 15 ⑨), make a clearance of 0.5-1.0m/m between the needle and the loop positioning finger edge as shown in Fig. 15

(ii) Timing the loop positioning finger cam (front) (Fig. 14)

In order to time the loop positioning finger cam (front), match the carved line of the loop positioning finger cam (rear) ① with the cam and looper sleeve ② carved line and also with the carved line of the toop positioning finger cam (front) ③ all on a straight line and then tighten screws ⑤ ⑦. At this position, contact the rear end of the cam and looper sleeve ② with the loop positioning finger cam (rear) ①, then tighten the set screw.

14. POSITION OF THE NEEDLE GUARD (Fig. 15)

Adjustment should be made so that when the needle bar is at the lowest position, the clearance between the needle and the needle guide ⑩ comes to 0～0.05mm by looseming the screw⑪and moving the needle guard ⑩ to right or left.

15. TIMING THE NIPPER RELEASING PLUNGER OF TENSION DISC NO.2 (Fig.16)

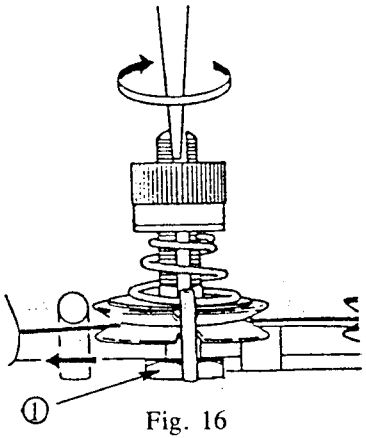


Fig. 16

(Note: This is a very delicate technical adjustment, so be extremely careful)

The standard motion is, as shown in Fig. 16 to rotate the needle driving pulley toward the arrow direction as you pull the thread and the tensio disc No. 2 will float up and the thread will be slipped out quickly.

As this instant, the height from the needle bar upper bushing surface to the top edge of the needle bar is 44-46 m/m (1 13/32"-1 51/64")

When defective signs, as shown below, occur too frequently, try the following adjustments:

Insert a screw driver into the tension post No. 2, as shown in Fig. 16, loosen nut ① and rotate the tension post toward the arrow direction.

When this nut is tightened, the distance between the needle bar upper bushing surface and the top edge of the needle bar becomes less than standard distance and if this tension post is rotated in the opposite direction of the arrow, this distance will become greater than standard.

Defective signs	Adjustment
(i) When thread tightening of back of fabric bad.	Rotate tension post no. 2 in the opposite direction
(ii) When the thread at stop motion instant breaks enrout	
(iii) Too frequent thread breakage	Rotate tension post no. 2 toward the arrow diuection.

16. CHANGING THE POSITION OF BUTTON TRAY

Normally, the button tray is attached to the right side of the machine. But if this position is inconvenient depending upon the nature of operation, loosen the button tray leg set screw and insert the tray into the hole which is on the left side of the front part of the table.

17. STITCH SELECTING

To seleet the number of stitches, first open the left side cover, do the selection by means of the stop motion cam knob ②, stitch selecting latch ④, adjusting screw ⑤ and the tightening screw ③.

The illustration which shows the selection of stitches with the speed slowing device in a released condition is shown in the figure, but the selection car be made without releasing the speed slowing device.

(i) 8-stitch selecting (Fig. 17 18)

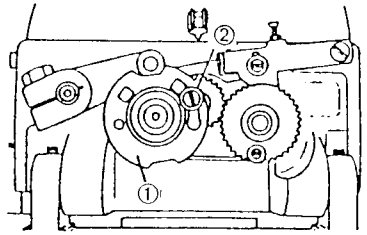


Fig. 17

The Figure 17 shows the 8-stitch selecting.

This 8-stitch selecting can be arranged by pulling the stop motion cam knob ② (Fig 18) toward the operator and if this is moved to the position shown by the direction of the arrow, and set at the position shown by ② Fig. 17, the stop motion cam ① will stop half revolution and becomes and 8-stitch selection.

(ii) 16-stitch selecting (Fig 18)

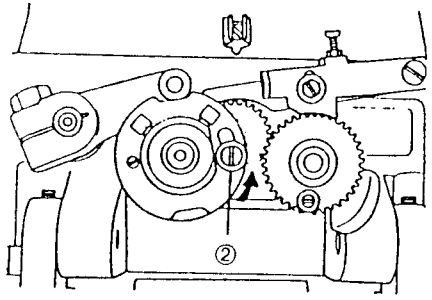


Fig. 18

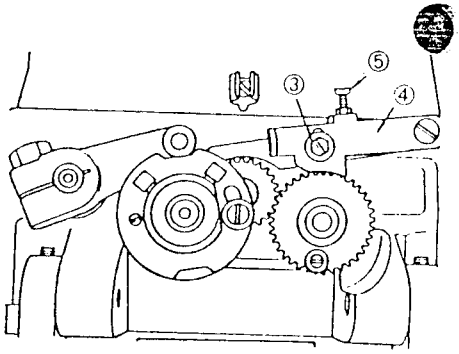


Fig. 19

With the 8-stitch selected position, move the stop motion cam knob ②. The stop motion cam ①, at the position shown in Fig. 18 will rotate one complete revolution at one sewing cycle and becomes a 16-stitch selecting.

(iii) 32-stitch selecting (Fig. 19)

With the 16-stitch selected position, loosen screw ③, push down the stitch selecting latch ④ with your hand and tighten screw ③. Thus, the cam will revolve once more (2 rotations) and becomes a 32-stitch selecting.

If the 32 stitch selecting cannto be obtained even after all above manipulations, loosen the clamping screw ③, rotate the adjusting screw ⑥ and re-tighten the clamp screw ③.

18. HEIGHT OF BUTTON CLAMP (Fig. 20)

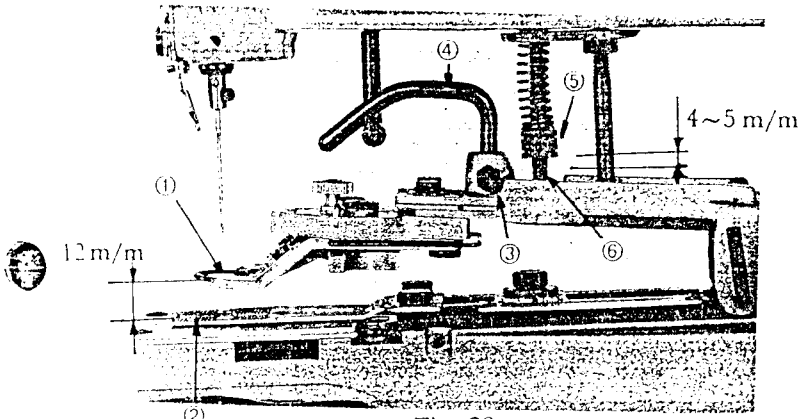


Fig. 20

The standard distance between the bottom surface of the button clamp foot ① and the upper surface of the feed plate ② at the stop motion position is 12m/m (15/32''). To adjust to this distance, loosen the set screw ③ of the button clamp lifting rod and move it up or down.

19. ADJUSTING THE BUTTON CLAMP PRESSURE (Fig. 20)

To adjust the button clamp pressure, rotate the button clamp pressure adjusting spring nut ⑤ so that the clearance between the bottom surface of the button clamp pressure adjusting spring nut ⑤ and the screwed top part of the button clamp pressure adjusting screw stud ⑥ comes to about 4-5m/m (5/32'' ~ 3/16'').

20. ADJUSTING THE BUTTON CLAMP STOP LEVER (Fig.21)

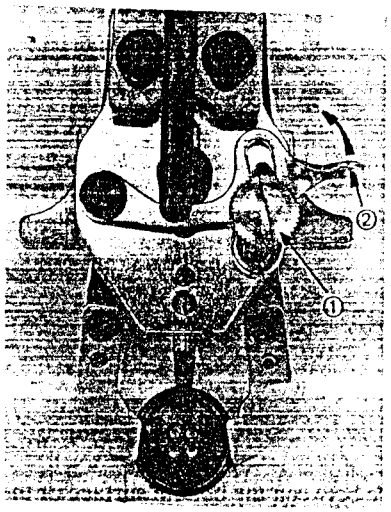


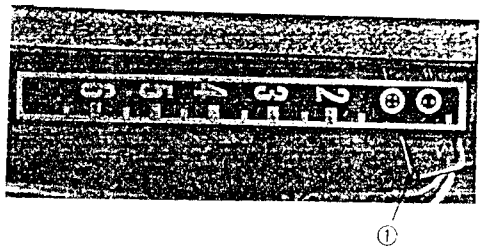
Fig. 21

With the machine at stop motion position, loosen the button clamp stop lever set screw ① and as the button clamp foot will either open or close by the action of button clamp lever ②, set the button correctly as shown in Fig. 21 and after making it easy for the button to be inserted or taken out, tighten the clamp screw ①.

21. ADJUSTING FOR 2-HOLES AND 4-HOLES

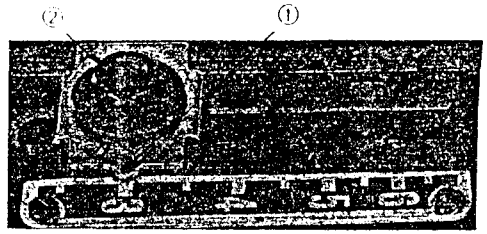
First, measure the distance beween the button holes (in mm or inches). In the case of 4 button holes, as all standard button holes have holes at the corners of the 4-hole square, match one side as the length-wise scale and the other as the crosswise scale.

(i) Lengthwise scale (Fig. 22)



By pushing down the handle and indicator spring (Fig. 22 ①), set the indicator at the arrow position (0 position) for 2 holes and for 4 holes set it to the previously measured scale.

(ii) Crosswise scale (Fig. 23)



After the lengthwise scale is set, next, set the crosswise scale. Loosen the crosswise feed indicator pin nut (Fig. 23 ②), set the crosswise feed indicator to the previously measured position, tighten the nut ②, and by releasing the stop motion plunger from the stop motiong disc and rotating the needle driving pulley toward the operating direction, verify if the needle falls right in the center of each hole. If it does not fall in the center of the hole, o loosen the nut ② again, move the crosswise feed indicator, tighten the nut ② and by rotating the pulley, make the needle fall in the center of the hole.

22. CAUSES OF MALFUNCTIONS AND REPAIRING

Nature of malfunctions	Reasons	Repairing
Thread breakage	Loop positioning motion bad	Quicken the right and left timing of the loop positioner
	Nipper is holding the thread	Adjust with nipper bar block
	Needle does not fall in the center of hole	Adjust with button clamping lever jaw holder
Thread tightening inadequate	Inadequate loop positioning	Adjust right and left timing of the loop positioner
	Timing of tension disc No. 2 bad	Retard the float timing of tension disc no. 2
	Tension of tension disc No. 2 bad	Adjust the tension of tension disc No. 2
	Needle does nto fall in the center of hole	Adjust with the button clamping lever jaw holder
	Button clamp pressure bad	Adjust the button clamping pressure
First stitching thread comes out on top of button excessively	Inadequate adjustment of tension lever	Adjust the nipper bar block, rear
Thread cutting bad at stop motion	Bad timing of tension disc No. 2	Rotard the float timing of tension disc and adjust the thread tension
	Needle hitting the button hole	Reset the needle fall
	Inadequate rising range of button clamp	Make the button clamp lever jaw about 12m/m (15/32'') from lower plate
	Nipper thread holding bad	Adjust with nipper bar block
	Button clamp pressure too strong	Adjust with button clamp pressure adjusting nut

23. EXCLUSIVE ATTACHMENTS FOR 375B1 BUTTON ATTACHING MACHINE

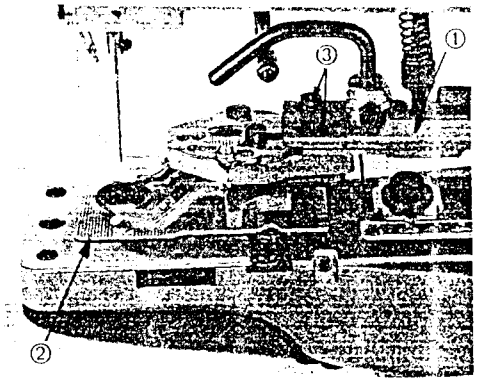


Fig. 24

As shown in Fig.24, by changing the various attachments such as button clamp components ①, button clamp work support plate ②, or in case of snap attaching, thread guide No. 3 ④ (Fig. 26), the following kinds of buttons can be attached: (Note: Please order corresponding attachments for different kinds of buttons)

(i) Snap fastener
(ii) Wrapped-around
(iii) Shank button
(iv) Metal shank buttan
(v) LABEL
(vi) Reinforcing-stay button

(i) How to install snap fastener attachment

First, remove the button clamp components ① Fig. 24 also the button clamp FEED PLATE ② and in their place, install the snap fastener attachment. Then, after setting the cross-wise feed and the length-wise feed at 4m/m (5/32'') each, install the SNAP clamp FEED PLATE ③ Fig.25. in such a way for the needle to fall evenly on the four corners of the square hole. Next, install the snap fastener clamp, fig. 25 ① while it is holding the snap to the snap fastener clamp jaw lever and lower the needle and the see that it falls into the snap hole correctly.

If the needle does not fall correctly, loosen the hexagonal screws ② and cor-

rect it. Finally verify if the ⊔ shape of the button clamp FEED PLATE ② and the ⊔ shape at the lower surface of the snap fastener clamp slide are in perfect unison or not. Next, exchange the thread guide No. 3 ④ to that of snap fastener as shown in Fig. 26 The thread guide No. 3 should be installed vertically.

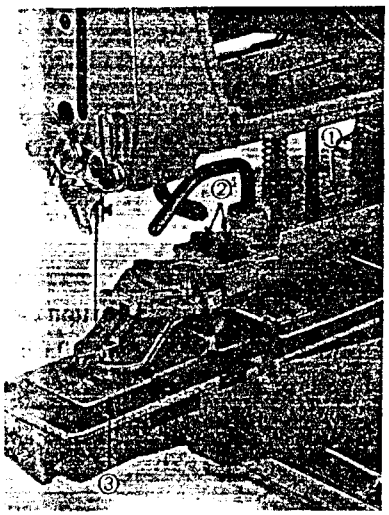


Fig. 25

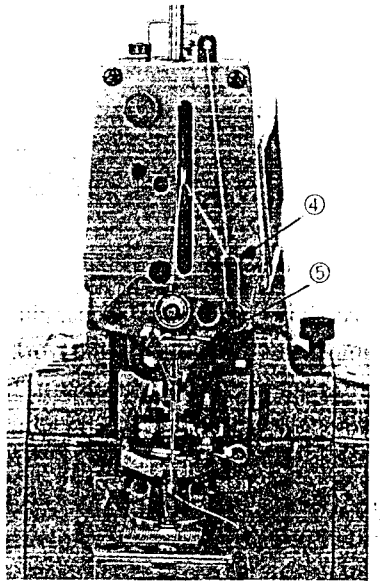


Fig. 26

ii) How to install the wrapped-around button clamp (Fig. 27, 28, 29.)

A. Sewing flow of work

In sewing in the wrapped-around button, there are 2 stages of work flow: the so-called "button attaching" process and the "wrapping around" process.

The button attaching process is a preliminary process before the warpping roung proces and the distance between the button and the cloth is lengthened beforehand ane the button is sewn on and finally the warpped around process is done with the wrapped around attachment.

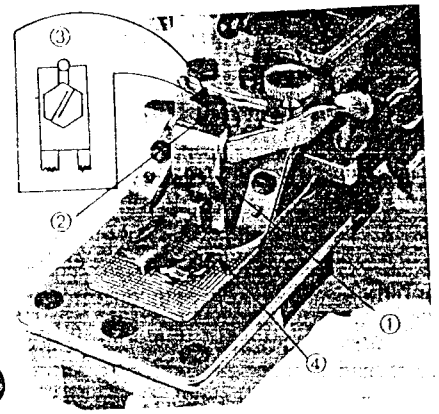


Fig. 27

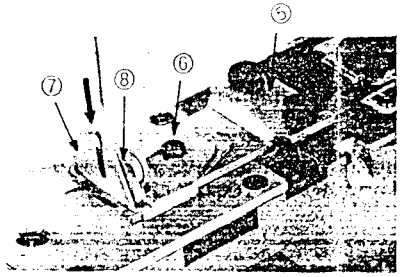


Fig. 28

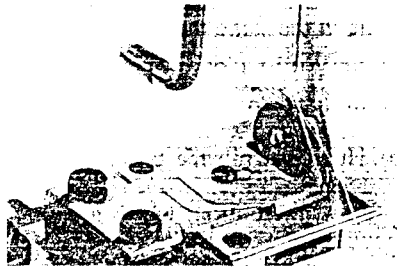


Fig. 29

B. Installing the attachment

a. Attaching the button attaching attachment (Fig. 27)

For the button attaching process, securely fix in the wrapped-around button clamp snaking foot ① to the button clamp jaw lever with the wrapped around installing screw ② and guide pin screw ③. Be cardful to see that both button clamp jaw lever ④ and teh clamp snaking foot ① are placed equi-distant from the center of the button to the right and left and also even if the needle falls into the button hole, it will not touch the button clamp snaking foot ①.

b. Attaching the wrapped-around attachment

After the button attaching process is conpleted. remove the button clamp component ① and button clamp FEED PLATE ② Fig. 24 and in the place of support plate ②, install the wrapped-around attach-ment (Fig.28 ⑤). This attachment should be adjusted by looseniug the button pecking attachment set screw Fig. 28 ⑥ and with the needle fall position as the central pivot, the clearance between front and rear and right and left should be all equi-distant. Also, the length of

the wrap-ping can be adjusted by the clearance between the button necking large guide ⑦, Fig. 28 and the small guide ⑧, Fig. 28

C. Sewing process

a) How to attach buttons

When the button attaching attachment is installed, the sewing process can be done in the same manner as an ordinary flat button, but as the distance from the button to the cloth is long, it is necessary to adjust the thread adjusting lever beforehand to make the drawing out of the thread longer.

b) How to wrap the button

Insert the button, which is already attached by the button attaching process, into the position shown by the arrow (Fig. 28) by twisting it somewhat as shown in Fig. 29 The graduation should be so set that the length-wise feed should be in the same position as in the case of 2-hole buttons.

(ii) 2 Second process attachment for wrapped around button (Fig.30, 31, 32, 33)

A. How to install the attachment

Release the knob attaching shaft ① from 375B11 and remove the knob unit ③ and pressure adjusting bar ② (Fig. 30) Then, as shown in Fig. 31, install the attachment ⑤.

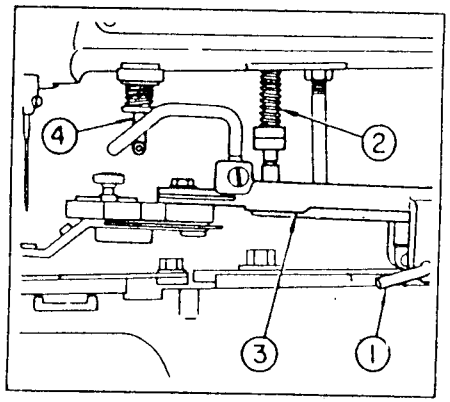


Fig. 30

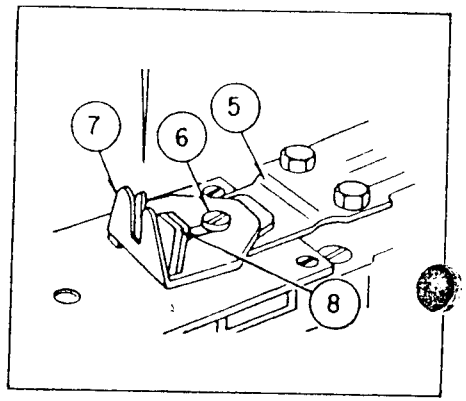


Fig. 31

Remove the ④ of Fig. 30 and install the accessory parts as shown in Fig. 32 Set the following parts to the spring reataining bar ⑨ in the following order: moving knife returning spring ⑩, stop-motion cushion washer⑪, stop-motion ⑫and stop-motion cushion washer ⑪

After verifying that the stop-motion is completely inserted-in, contact the arm with the and surface of the stop-motion cushion closely and install them so that there will be no rattling.

B. Adjustment at installing time

As shown in Fig. 31, the clearance between ⑦ and ⑧ can be adjusted by means of wooden screw ⑥

Rotate the machine with the hand and adjust the position of the metal fitting so that the needle drops equally to fore and aft and to right and left.

Match the lengthwise feed amount to 1.5mm position in case of 16 stitches and to "0" position in case of 8 stitches.

C. Attaching the wrapped around button

As shown in Fig. 33 insert the button whose first process was completed and after passing the end of the thread to the part shown by the arrow start the machine.

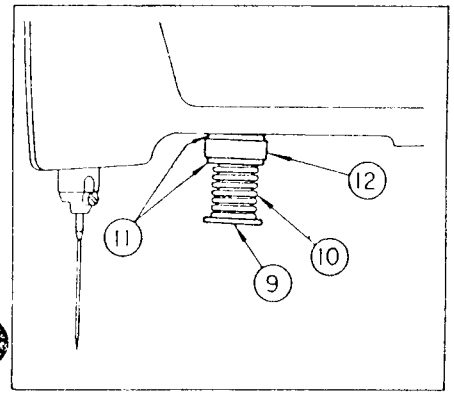


Fig. 32

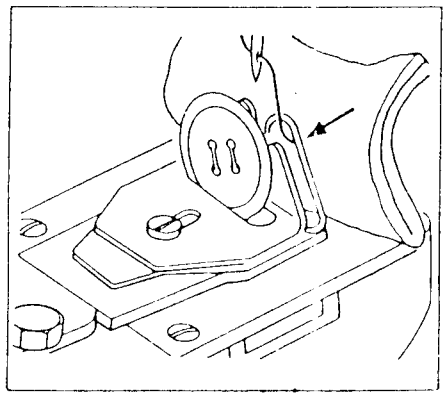


Fig. 33

(iii) How to install the shank button clamp attachment

A. Remove the button clamp component, Fig. 24 ① and the BUTTON CLAMP FEED PLATE ② and install the shank button clamp HOLDER (Fig.34 ①). Adjust the button clamp bracket ⑦ so that the needle will fall in the middle of the needle groove and tighten the screw ③.

The shank button adapter ⑧ is a part of a set with the button clamp holder ①, so install this adapter on the built-in button clamp position as shown in Fig. 34 Also, plug in the button clamp stud ⑭ into the hole of the jaw of the arm and tighten the screw ⑥.

The button clamp block ⑯ should be fixed in such a position as to make it easier to handle depending on the size of the button or sewing condition Then,

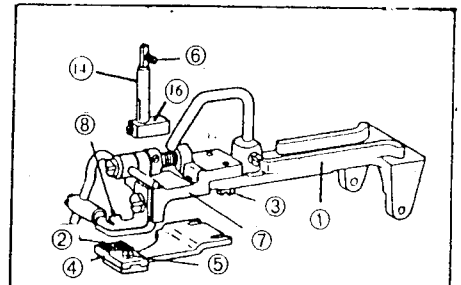


Fig. 34

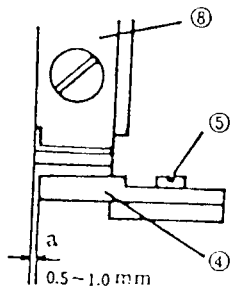


Fig. 35

B. Adjusting the attachment

Make sure that the needle groove of the adapter ⑧ Fig. 34 perfectly fits into the needle grooove ② of the button clamp work support plate ④. If it doesn't fit, then adjust by loosening the button clamp holder set screw ③. Rotate the pulley with your hand and drop the needle to see that it falls equi-distant, right and left, with the shank of the shank button as the central pivot. When this is verified, tighten the button holder set screw ③. Also, make sure that there is just sufficient space of about 0.5-1.0mm between the button clamp work support plate ④ left end surface and the left end suface of the adapter ⑧ as to prevent the sewing cloth from pushing out the button. Then, tighten the screw ⑤.

Next, loosen the screw ⑪ ⑫ Fig.36 and make adjustment so that the shank button holdig clamp ⑬ holds the exact center of the button.

To adjust the holding pressure of the shank button holding clamp ⑬, loosen the thrust collar set screw ⑰, Fig. 36 and if the thrust collar ⑲ Fig. 36 is rotated, the pressure of the spring will change, so set it at an optimal pressure.

When you do this, be sure that the button clamp lever holding ⑱ Fig. 36 will not develop any rattling along the shaft direction.

C. In order to attach the shank button securely, try to minimize the cross-wise feed as much as possible.

To maintain a stable stitching condition, make doubly sure that the needle is not contacting the needle groove of the adapter or the button clamp work support plate, then start the button attaching task.

The holding pressure of the button holding clamp ⑬ Fig. 36 should be sufficiently strong enough so that the button does not move during the stitching operation.

(iv) How to install the metal shank button clamp attachment (Fig. 37, 38) A. To install the metal shank button clamp attachment, remove the button clamp holder ① and the button clamp feed plate ② as shown in Fig. 24 and, as shown in Fig. 37 attach the shank button clamp bracket ④ to the installing part of screw ⑤. At the same time, adjust the ④ so that the needle falls between the needle

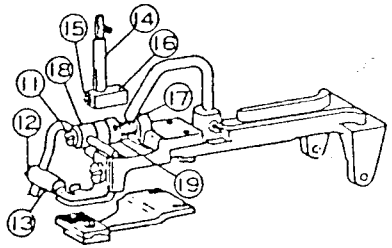


Fig. 36

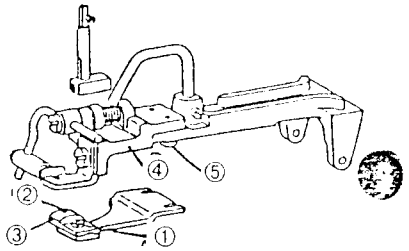


Fig. 37

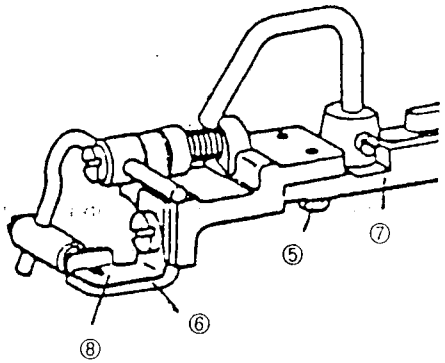


Fig. 38

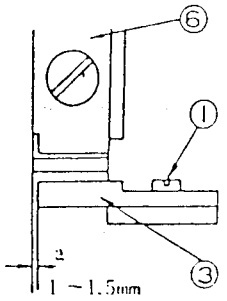


Fig. 39

groove ② of the metal shank button work support plate ③ and then tighten the screw ⑤.

As the metal shank button adapter 6 is a part of the set of the button clamp holder ⑦, attach it to the built-in clamp holder spot, as shown in Fig. 38

B. To adjust this attachment, first, insert the metal button to be attached to the foot of the adapter ⑥

If the metal shank button guard ⑧, is too loose, tighten it, somewhat. It would be better at this time to raise up the right shoulder of the button guard ⑧ and set the foot of the metal button solely by the left shoulder.

Next, loosen the button clamp bracket set screw ⑤ and adjust so that the circular groove surface of the lower part of the adapter ⑥ exactly meets the grooved surface of the work support plate ③.

After adjusting, drop the needle to see that needle falls evenly to right and left with the base of the metal button as the central pivot and when this is verified, tighten the adapter set screw ⑤. And here also, be sure to create a distance "a" between the left end of the work support plate ③ and the left end of the adapter ⑥ just sufficient to prevent the sewing cloth from pushing out the button, then tighten the set screw ①.

Normally, this distance "a" is 1-1.5m/m (Fig. 39)

C. Cautions on sewing operation

a) In order to attach the metal shank buttons securely, try to make the crosswise feed as little as possible.
b) To maintain a stable stitching condition, be sure to verify that the needle is not touching either the adapter or the needle groove of the work support plate or the base of the metal button.

I. SPECIFICATIONS

Sewing speed	Up to 1,500 s.p.m.
Number of stitches	8, 16, 32 stitches (without exchanging cam) 6, 12, 24 stitches (possible with exchanging cam)
Feed length	Lengthwise 2.5 ~ 6.5mm (3/32'' ~ 17/64'') Crosswise 0, 2.5 ~ 6.5mm (3/32'' ~ 17/64'')
Stop-motion device	Automatic system (with reserve stop device)
Needle bar stroke	48.6mm ($1^{29}/_{32}$'')
Button clamp foot lifting system	Automatic
*Thread trimming system	All mechanical system
*Needles	4536-05, 2852-05 #16
Sewing type	Single thread, chain stitch button-sewing
Button size	Diameter 10mm-27mm (25/64'' ~ 1-1/16'')
(Note) * Exclusive use for 375B11	(Other specifications are same as 375B1)

II. THREAD TRIMMING MECHANISM AND MAIN FEATURES

This mechanism consists of driving the moving knife by linking it to the driving shaft of the machine and by means of the thread separating pawl, only the thread, which is caught on the looper, is separated and the thread is trimmed.

Consequently, it possesses following main features:

1) As the knife activates in conformance with the movements of the looper of the machine and the thread take-up, the thread is separated and trimmed (thread remaining on back of cloth is trimmed to 3 ~ 5mm (1/8'' ~ 13/64'') at the most approp riate time to accomplish ideal trimming job.
2) As the trimming is completed before the machine stops to save idel time and thus efficiency is heightened.

III. ADJUSTING THE THREAD TRIMMING MECHANISM

1) Construction of thread trimming mechanism and names of various parts. Fig. 1 shows the construction of the mechanism and names of various parts.

As shown by the figure, when the button clamp lifting lever is driven by the last stitch, the thread trimming connecting link (rear) moves forward and with this movement the moving knife separates the thread by its thread separating pawl and trims the thread.

In contrast with the previous Model 375B1 the timing of the stop-motion is delayed and as the thread is trimmed after the thread take-up has completed the thread tightening, there are no frays on the stitches.

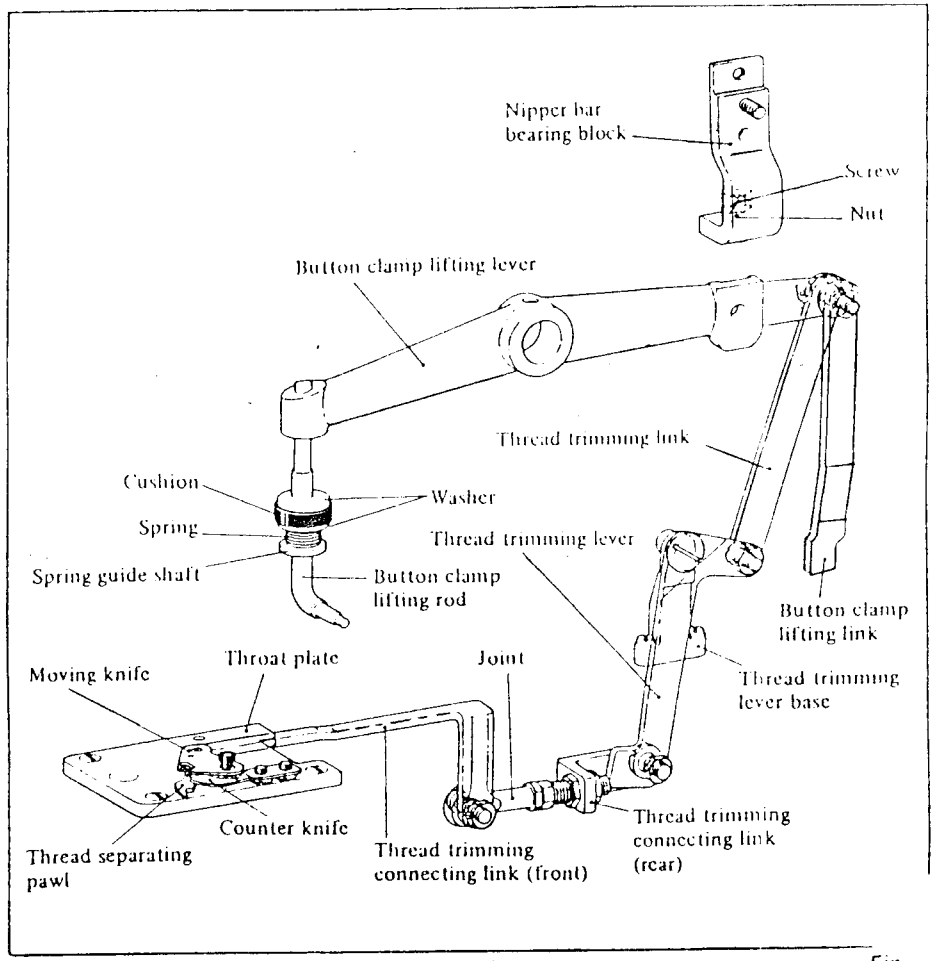


Fig.

2) Adjusting the button clamp foot lifting amount (Fig.2)

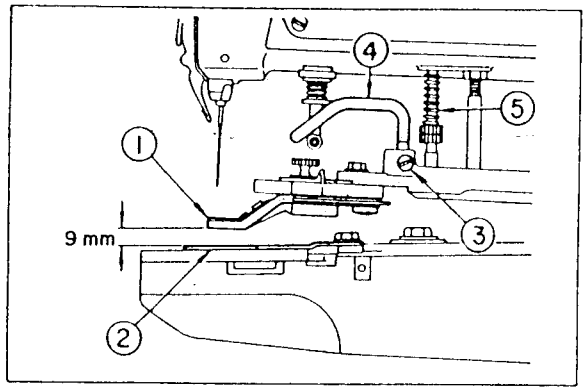


Fig. 2

As the button clamp foot goes up, the knife which is linked to the button clamp foot, activates and depending on the height of the button clamp foot when the thread is trimmed due to the button clamp foot lifting amount, the length of the thread which remains on the back of the cloth changes.

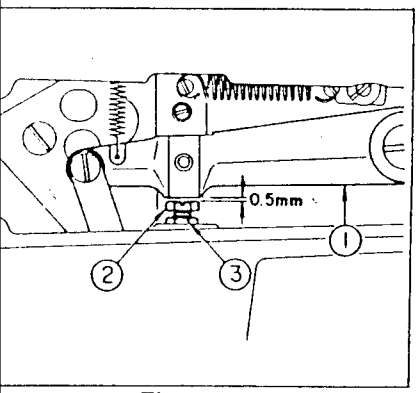


Fig. 3

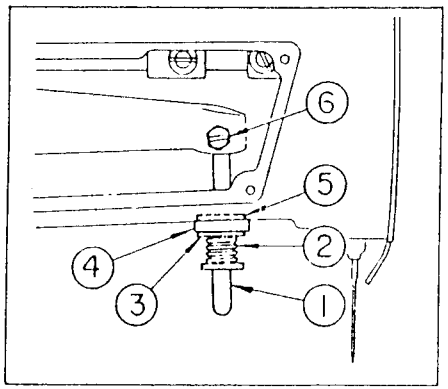


Fig. 4

3) Clearance between the button clamp lifting lever and the adjusting screw (Fig.3)

Adjust the clearance between the end surface of button clamp lifting lever ① and the adjusting screw ② to 0.5mm and clamp-in tight with the adjusting nut ③

4) How to install the L-shaped button clamp lifting link (Fig.4)

Set the moving knife returning spring ②, stop-motion cushion washer ③, stop – motion cushion ④ and the stop-motion cushion washer ⑤ to the L-shaped button clamp lifting rod ① in this order.

After verifying that the stop-motion is securely inserted in contact the jaw part of the arm closely to the end surface of the washer of stop-motion cushion and by setting them so that they will not reattle, righten them with screw ⑥

If the lifting amount is made bigger, the remaining thread gets longer. In order to shorten the remaining thread, match the lifting amount of the button clamp foot ① to 9 mm (23/64'') from the button clamp foot bottom plate ②.

5) Adjusting the position of moving knife (Fig. 5, 6)

The standard adjusting value of adjustment is, when the stop-motion is set-in and the presser foot is completely raised up, the clearance between the thread trimming connecting link (front) ② and the groove surface of the throat plate to be 13.0 mm as shown in Fig. 6.

This adjustment can be done by loosening the thread trimming connecting link nut (2 nuts) 1 by means of hexagonal spanner and moving the connecting screw 2 fore and aft after laying down the machine and removing the oil-proof bed cover.

For tightening the nut, be careful that the joint ③ is placed nearly horizontally. By making the space wider, the thread can be divided positively but if it's made narrower, the length of the remaining thread on the back of the cloth after trimming will be shorter.

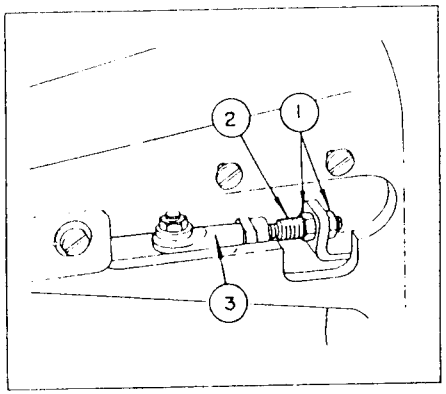


Fig. 5

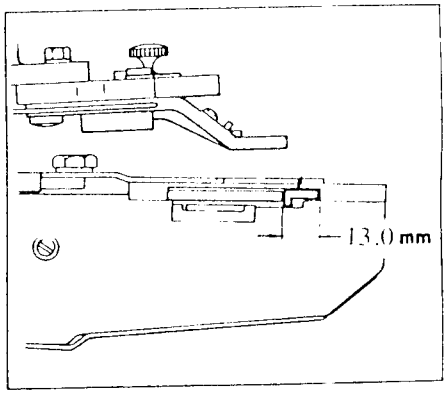


Fig. 6

If this distance is made too big, the timig of thread trimming will be delayed and the thread remaining on the back of the cloth gets longer. If it's made too small, the thread trimming timing becomes too fast and will invite thread trimming errors such as inadequate thread tightening (fray) of the last stitch needle drop, trimming 2 threads at the same time due to inadequate separation of thread and completely no trimming, etc.

(Note)

The thread trimming connecting device can be returned by the button clamp foot cloth press pressure spring (Fig.2 ⑤).

When the cloth press pressure spring is in released condition. sometimes the thread trimming connecting device does not return to the original position. When adjusting various parts by released condition of this spring, do not run the machine.

Adjusting the height of the thread separating pswl (Fig.7)

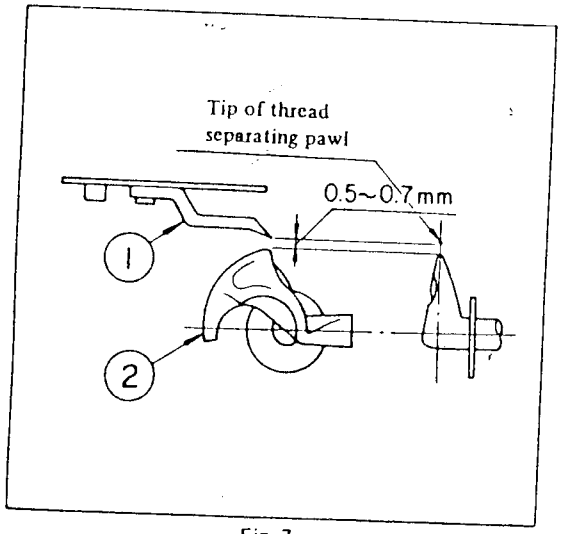


Fig. 7

If the height of the thread separating pawl ① is raised too high, the thread on the needle side and the thread on the cloth side can not be accurately separated and thus, sometimes the thread can not be trimmed or both threads are trimmed at the same time and the thread might slip out at the start of next sewing cycle.

If the height of the thread separating pawl is wrong, bend the thread separating pawl ① and the looper ② comes to the dimension as shown in Fig. 7

IV. MALFUNCTIONS AND CORRECTIVE MEASURES OF THREAD TRIMMING

Malfunctions	Causes	Corrective measure
Thread can not be trimmed	Thread of cloth side is nto positively separated by the miving knife thread separating pawl.	Adjust the position of the moving knife. Refer to chapter III-3) on adjusting the position of the moving knife.
	Needle in not dropping to the center of button hole.	Adjust by the button clamp installing base. Refer to the Chapter on height of the button Clamp base, INSTRUCTIN BOOK on 375B1
	Skip-stitching of the last needle drop.	Adjust the matching of the looper. Refer to the chapter on matching the looper INSTRUCTION BOOK 375B1
	Inadequate height of the moving knife thread separating pawl.	Adjust the height of the moving knife thread separating pawl. Refer to chapter III-4) on the height of the thread separating pawl.
Both needle thread and thread on back side of cloth are trimmed.	Defective position of moving knife.	Adjust the postion of the moving knife at stop-motion time. Refer to chapter III-3) on adjusting the position of moving knife.
	Inadequate height of the moving knife thread separating pawl.	Adjust thre height of the moving knife thread separating pawl. Refer to chapter III-4) on the height of the moving knife thread separating pawl.
Thread, which comes out to backside of cloth after trimming, is too long.	Inadequate thread trimming timing of moving knife.	Adjust the position of the moving knife. Refer to chapter III-3) on adjusting the position of moving knife.
	Lifting amount of the button clamp device is too big.	Adjust the button clamp lifting amount to 9mm (23/64''). Refer to chapter III-2) on adjusting the lifting amount of button clamp foot