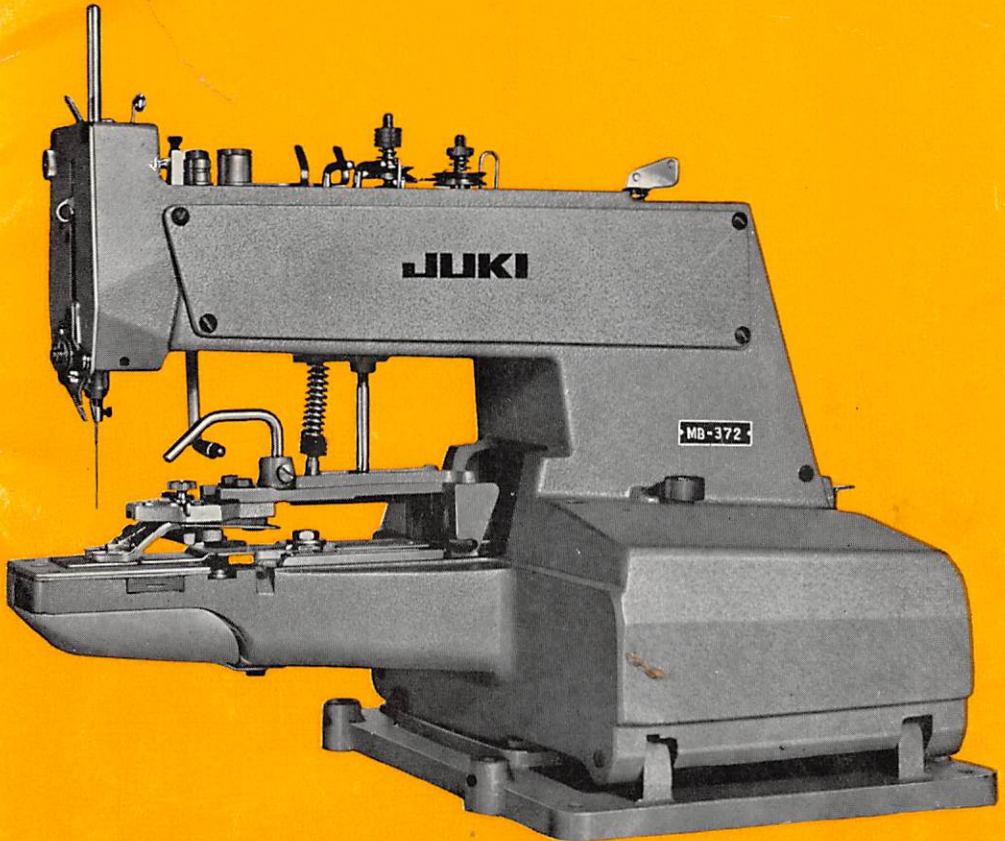




MODEL **MB-372**

HIGH SPEED
SINGLE THREAD CHAINSTITCH
BUTTON-SEWING MACHINE

INSTRUCTION BOOK



TOKYO JUKI INDUSTRIAL CO., LTD.

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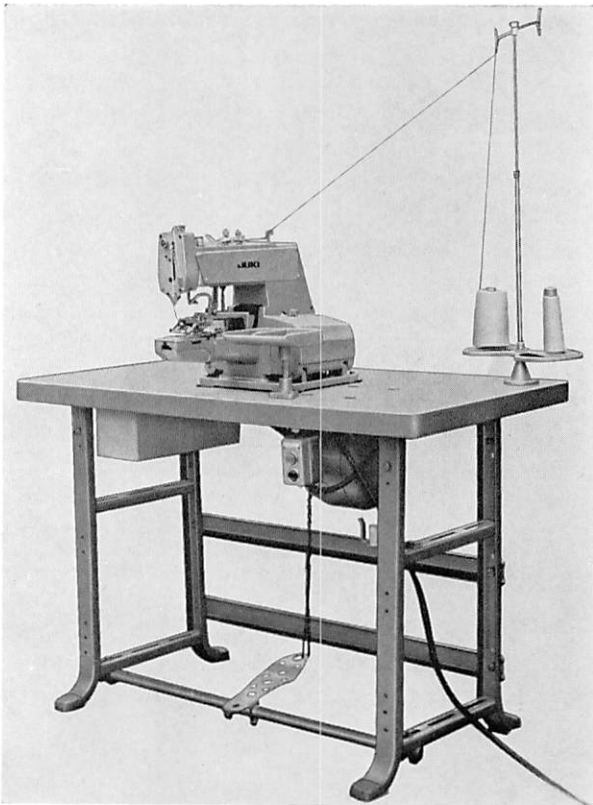
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1. GENERAL DESCRIPTION

JUKI Model MB-372 is a single thread, chain stitch, button sewing machine. It is widely used to attach flat two hole or four hole buttons as well as snap fasteners, shank buttons and metal shank buttons. This is an ideal machine to attach these buttons on all knit goods, men's shirts, work uniforms, ladies' suits and men's suits.

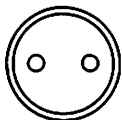
This machine is equipped with 8 stitches, 16 stitches and 32 stitches and these stitches are interchangeable without changing the stop motion



cams. A speed slowing device, an exclusive JUKI attachment, is incorporated into this machine and consequently loosening of screws or malalignment of stitches which sometimes characterize a machine with a stop motion mechanism is completely eliminated and assures a safe and stable stitching condition.

2. SPECIFICATIONS

Model	MB-372
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
Needle bar stroke	48.6 m/m (1-7/8")
Needle	TQ×7 (175×7) or TQ×1 (175×1) #14—#18
Stitch number	8, 16, 32, Cam: not to be changed 6, 12, 24, Cam: to be changed
Feed length	Crosswise feed ...2.5~6.5 m/m (3/32~1/4") Lengthwise feed ...0~2.5~6.5 m/m (0~3/32~1/4")
Button size	Dim: 10~27 m/m (3/8~1-1/32")
Presser bar lift	Std. 12 m/m (15/32")
Button clamp lift	Automatic or foot operated
Thread nipper	2-way cam type
Stop motion	Automatic (with speed-slowng device) type
Lubrication	Hand oil type
Power required	200 W
Lubricating oil	New Defrix Oil No. 1 & New Defrix grease



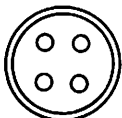
2-hole button



Snap



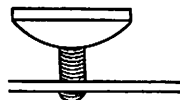
Metal shankbutton



4-hole button

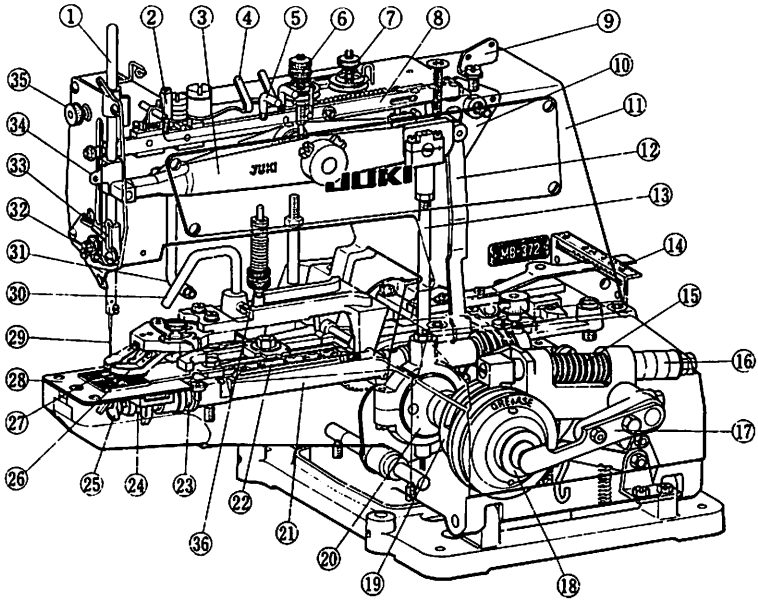


Shank button



Wrapped round button

3. NAMES OF PARTS



- ① Needle 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 disc applying pressure lever ⑱ Needle driving pulley ⑲ Stop motion disc 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 ㉕ 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 ㉟ Nipper releasing plunger knurled thumb nut ㊱ Button clamp pressure adjusting spring nut

4. CAUTIONS BEFORE OPERATION

* After unpacking the crating, clean out all the dirt of packing and oil all the oiling holes.

* Before operating, be sure to read the Instruction Book thoroughly and digest its contents.

* 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.

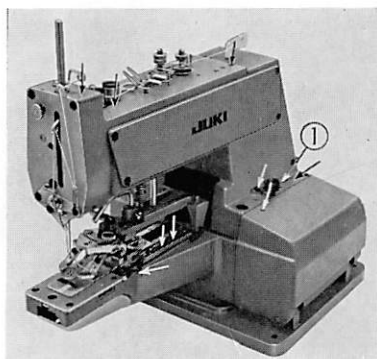


Fig. 1

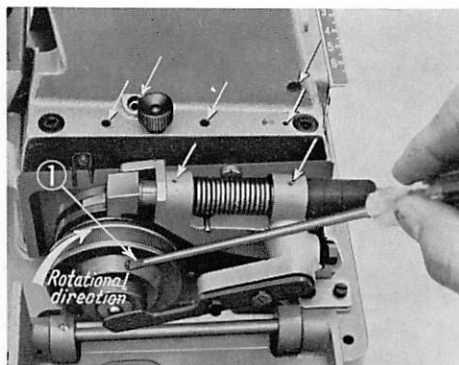


Fig. 2

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 arrows with JUKI New Defrix Oil No. 1 or JIS Special No. 1 White

Spindle 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. Sometimes 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.

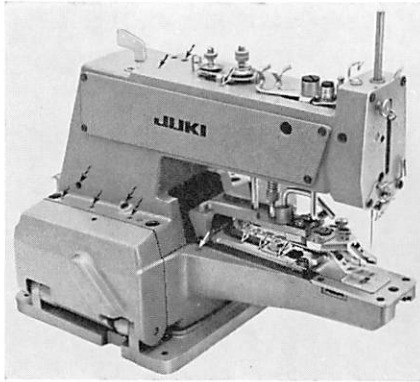


Fig. 3

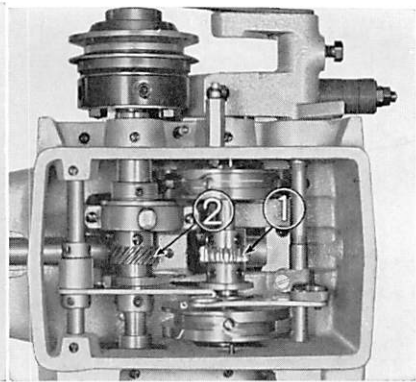


Fig. 4

6. MOTOR PULLEY AND BELT

For connecting directly to the power source, use an electric motor of 3-phase 1/4 HP. The relation between the number of rotation of the machine with the effective diameter of the motor pulley is shown in the table below. (Effective diameter of the motor pulley means the diameter measured from the center of the belt when it is wound around).

Cycles	Rotation	Part No. of motor pulley	Effective diameter of motor pulley
50	1,500 r.p.m.	B710137200H	70 m/m (2 3/4")
	1,200 r.p.m.	B710237200H	58.2 m/m (2 1/4")
60	1,500 r.p.m.	B710237200H	58.2 m/m (2 1/4")
	1,300 r.p.m.	B710337200H	50.3 m/m (1 15/16")

7. NEEDLES

At the time of shipping, the needle No. TQ×7 (175×7) is attached to the machine but needle No. TQ×1 (175×1) can also be used. TQ×1 needle is shorter than TQ×7, so when attaching buttons, take in the height of the button, thickness of the sewing material into consideration and when the needle comes down to the lowest point, be careful to see that the shank of the needle does not hit the button itself.

8. INSERTING THE NEEDLE (Fig. 5)

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 groove to the front and tighten the set screw securely.

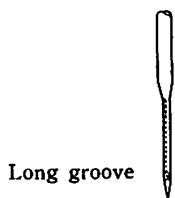


Fig. 5

9. THREADING THE MACHINE (Fig. 6, 7)

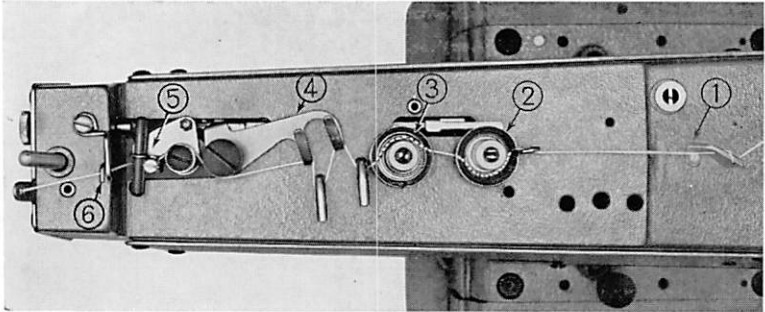


Fig. 6

To thread the machine, put it in stop motion position, and thread in accordance with the diagram as shown in Fig. 6, 7. 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 6~7 m/m (about 1/4").

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.

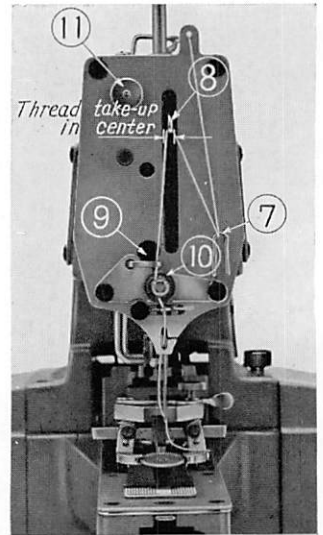
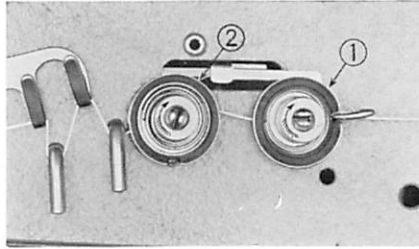


Fig. 7

10. THE THREAD TENSION (Fig. 8)



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.

11. FUNCTIONS OF THE THREAD PULL-OFF LEVER (Fig. 9)

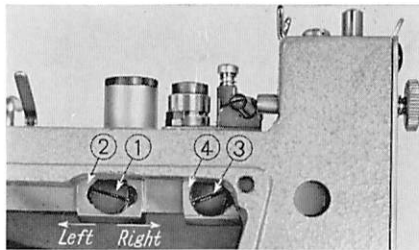


Fig. 9

The thread pull-off lever (Fig. 6 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. 10 arrow A), move it to left but if the tail appears toward the arrow B (Fig. 10), move it toward right so that the tail of the thread will not come out.

12. THE THREAD NIPPER (Fig. 11)

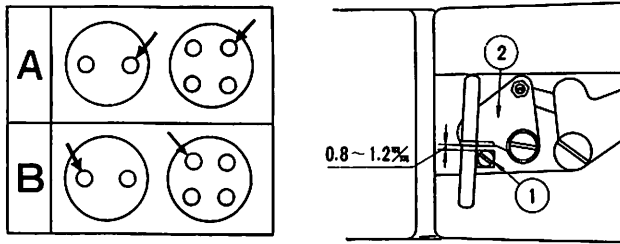


Fig. 10

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. 11, make this adjustment by loosening the nipper bar block set screw ③ Fig. 9, so that during the running, the clearance between the nipper block and the nipper becomes

0.8~1.2 m/m (about 3/64") and by moving the nipper bar block to right and left to attain this clearance.

13. ADJUSTING THE NEEDLE BAR (Fig. 12, 13)

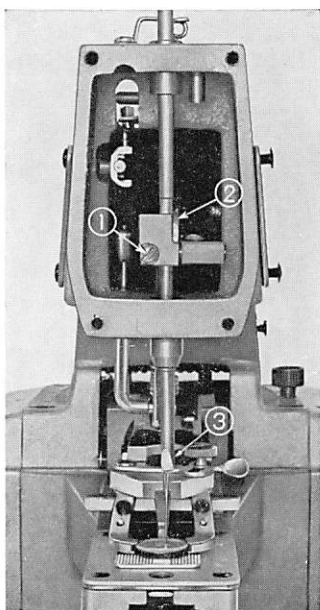


Fig. 12

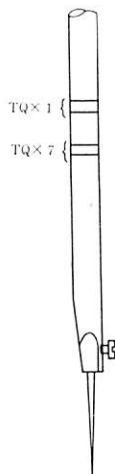


Fig. 13

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 (TQ×1); for using long needles (TQ×7) 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 motor 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. 14 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. 13) 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:

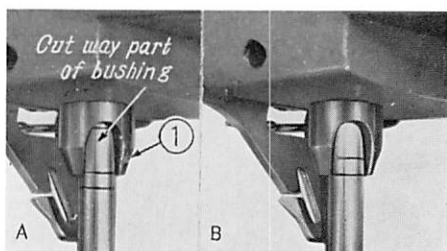


Fig. 14

- (i) When the needle bar has risen, be sure that the needle clamping screw (Fig. 13 ③) goes into the slot of the needle bar lower bushing.
- (ii) Lightly tighten the needle bar bearing 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. 7) and then tighten the set screw.
- (iii) Timing the needle and the looper

As per Chapter 13, 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. 14 B) match the point of the looper (Fig. 15 ④) with the center of the needle and make the clearance between the needle and the point at 0.05~0.1 m/m and then tighten the looper set screw (Fig. 15 ⑧) securely.

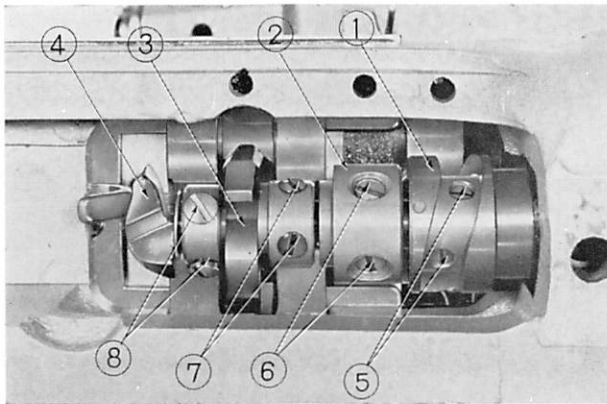


Fig. 15

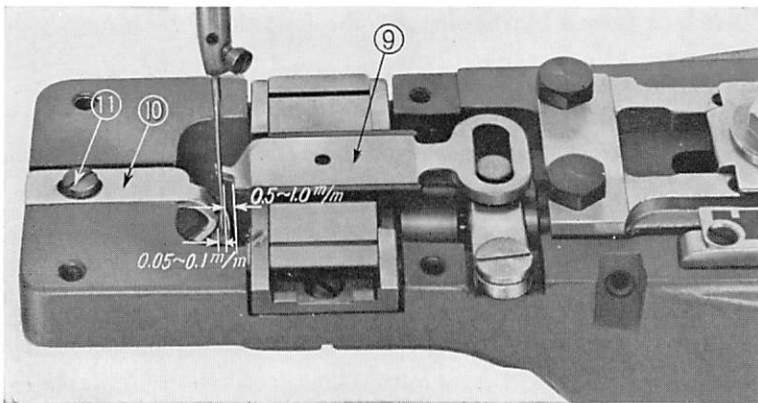


Fig. 16

14. TO PRODUCE OPTIMAL STITCHING CONDITION (Fig. 15, 16)

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 13 (iii)).

(i) *Adjusting the loop positioning finger lever* (Fig. 15, 16)

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) screw ⑤, rotate the loop positioning finger cam and at the farthest advanced position of the loop positioning finger (Fig. 16 ⑨), make a clearance of 0.5~1.0 mm between the needle and the loop positioning finger edge as shown in Fig. 16.

(ii) *Timing the loop positioning finger cam (front)* (Fig. 15)

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 loop positioning finger cam (front) ③ all on a straight line and then tighten screws ⑥ 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.

(iii) *Verification of front and rear positions of the loop positioning finger cams*

Make sure that the height of the loop positioning finger (Fig. 16 ⑨) at the position where it begins to move from right to left (facing the machine) is within 55~58 mm (2-5/64"~2-1/4") from the upper point of the needle bar upper bushing to the upper point of the needle bar. If this height is less than this, it might invite needle breakage.

15. POSITION OF THE NEEDLE GUARD (Fig. 16)

Adjustment should be made so that when the needle bar is at the lowest position, the clearance between the needle and the needle guard ⑩ comes to 0.05~0.1 mm by loosening the screw ⑪ and moving the needle guard ⑩ to right or left.

16. TIMING THE NIPPER RELEASING PLUNGER OF TENSION DISC NO. 2 (Fig. 17)

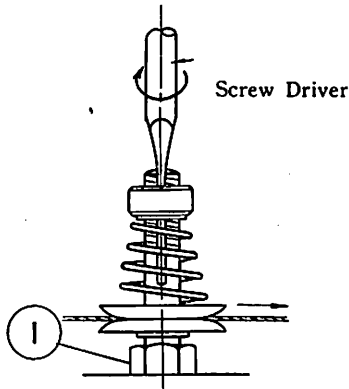


Fig. 17

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

The standard motion is, as shown in Fig. 17, to rotate the needle driving pulley toward the arrow direction as you pull the thread and the tension disc No. 2 will float up and the thread will be slipped out quickly.

At this instant, the height from the needle bar upper bushing surface to the top edge of the needle bar is 54~57 m/m (2-7/64~2-3/16").

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. 17, 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 (ii) When the thread at stop motion instant breaks enrout	Rotate tension post no. 2 in the opposite direction
(iii) Too frequent thread breakage	

17. 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.

18. STITCH SELECTING (Fig. 18)

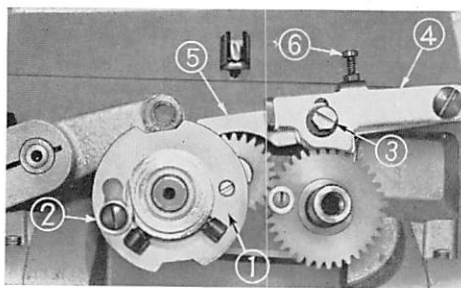


Fig. 18

To select 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 ⑥ 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 can be made without releasing the speed slowing device.

(i) *8-stitch selecting* (Fig. 19, 20)

The Figure 20 shows the 8-stitch selecting.

This 8-stitch selecting can be arranged by pulling the stop motion cam knob ② toward the operator (Fig. 19) and if this is moved to the position shown by the direction of the arrow, and set at the position shown by ② Fig. 20, the stop motion cam ① will stop half revolution and becomes an 8-stitch selection.

(ii) *16-stitch selecting*

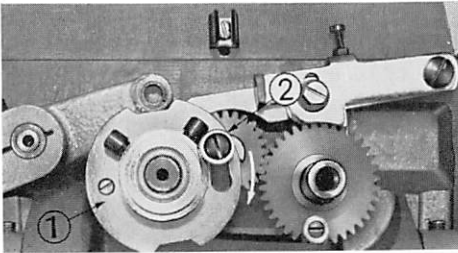


Fig. 19

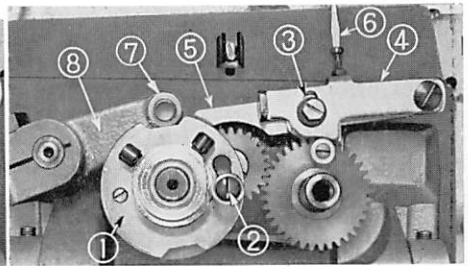


Fig. 20

With the 8-stitch selected position, move the stop motion cam knob ②. The stop motion cam ①, at the position shown in Fig. 19, will rotate one complete revolution at one sewing cycle and becomes a 16-stitch selecting.

(iii) *32-stitch selecting* (Fig. 20)

With the 16-stitch selected position, loosen screw ③, push down the stitch selecting lever ⑤ with your hand and tighten screw ③. When the stitch selecting lever roll ⑦ has gone up as shown in the Fig. 20, it will push up the lever and with this action it will hold up the stop motion tripping lever ⑧. Thus, the cam will revolve once more (2 rotations) and becomes a 32-stitch selecting.

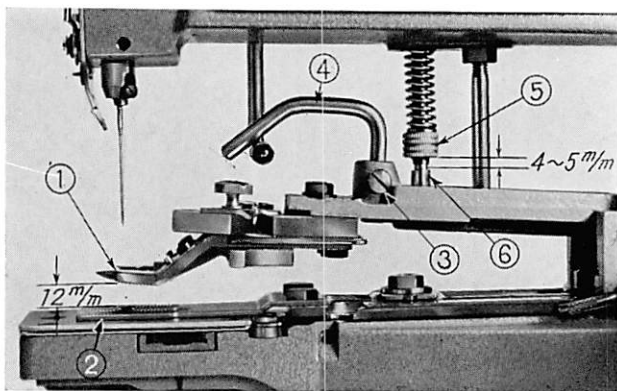


Fig. 21

If the 32 stitch selecting cannot be obtained even after all above manipulations, loosen the clamping screw ③, rotate the adjusting screw ⑥ toward the arrow direction and re-tighten the clamp screw ③.

19. HEIGHT OF BUTTON CLAMP (Fig. 21)

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 12 m/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.

20. ADJUSTING THE BUTTON CLAMP PRESSURE (Fig. 21)

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 4~5 m/m (5/32"~3/16").

21. ADJUSTING THE BUTTON CLAMP STOP LEVER (Fig. 22)

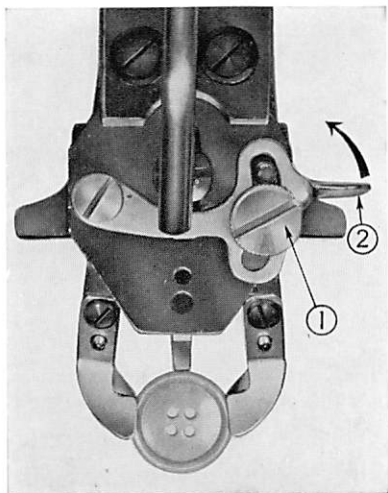


Fig. 22

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. 22 and after making it easy for the button to be inserted or taken out, tighten the clamp screw ①.

22. ADJUSTING FOR 2-HOLES AND 4-HOLES

First, measure the distance between 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 lengthwise scale and the other as the crosswise scale.

(i) *Lengthwise scale* (Fig. 23)

By pushing down the handle and indicator spring (Fig. 23 ①), set the indicator at the arrow position (0 position) for 2 holes and for 4 holes set it to the previously measured scale.



Fig. 23

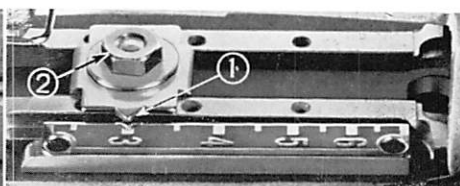


Fig. 24

(ii) *Crosswise scale* (Fig. 24)

After the lengthwise scale is set, next, set the crosswise scale. Loosen the crosswise feed indicator pin nut (Fig. 24 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 motion 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, 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.

23. CHANGING THE BUTTON HOLDING CLAMP AND ADJUSTING ITS HEIGHT (Fig. 25, 26)

With the Model MB-372 Machine, when the shank button clamp attachment is to be used or when the clamping of buttons is done by the pedal, the clamp holding device is attached. For this purpose, loosen the engaging button clamp lifting link lever hinge screw ①, move it the hole ② in its front and tighten the screw.

Then if the S-shaped chain hook, which is connected to the newly installed pedal, is hung on the button clamp lifting link hole ③, the button holding clamp will move by the action of the pedal. When pedal system is to be employed, please order the pedal and chain separately.

The clamp holding range is measured by moving the button clamp lifting lever stop ④ up and down but when changing to automatic system from pedal system, make absolutely certain that the button clamp lifting lever stop ④ is pulled way up from the contacting surface of the machine arm.

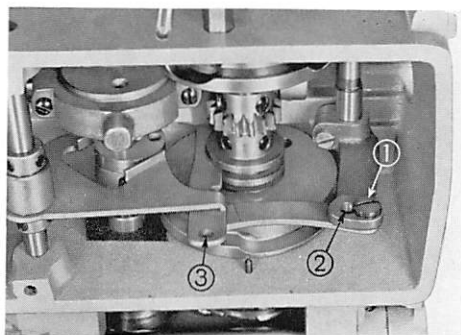
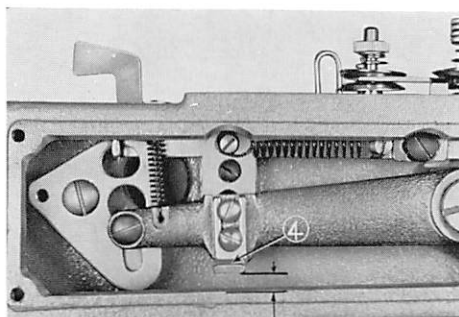


Fig. 25



When converting to automatic system,
open this space wide

Fig. 26

24. CAUSES OF MALFUNCTIONS AND REPAIRING

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

25. ATTACHMENTS TO MB-372 BUTTON ATTACHING MACHINE

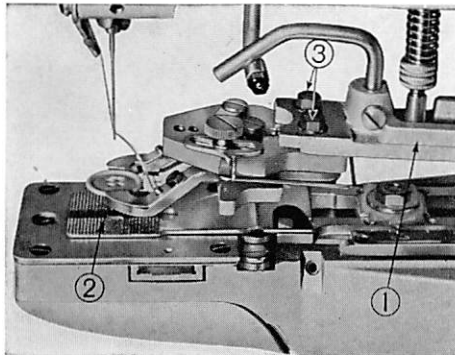


Fig. 27

As shown in Fig. 27, 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. 29), 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 button*

(i) *How to install snap fastener attachment*

First, remove the button clamp components ① Fig. 27, also the button clamp work support plate ② and in their place, install the snap fastener attachment. Then, after setting the cross-wise feed and the length-wise feed at 4 m/m ($5/32''$) each, install the button clamp work support plate ③ Fig. 28 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. 28 ① while it is holding the snap to the snap fastener clamp jaw lever and lower the needle and see that it falls into the snap hole correctly.

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

and correct it. Finally verify if the \sqcup shape of the button clamp work support plate ② and the \sqcap 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. 29. The thread guide No. 3 should be installed vertically.

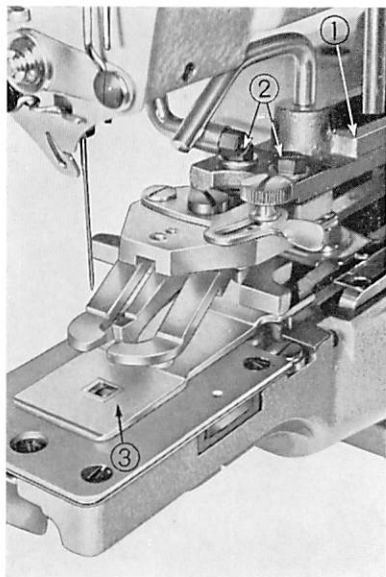


Fig. 28

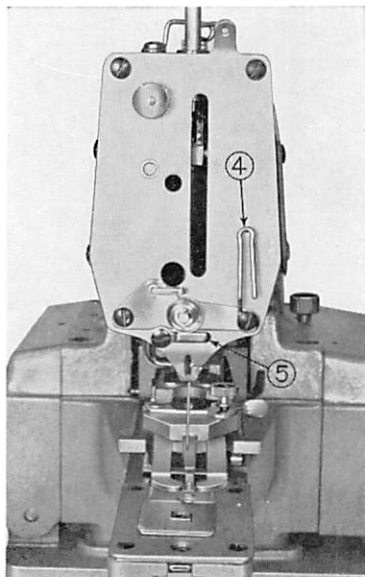


Fig. 29

(ii) *How to install the wrapped-around button clamp* (Fig. 30, 31, 32)

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 wrapping around process and the distance between the button and the cloth is lengthened beforehand and the button is sewn on and finally the warped around process is done with the wrapped around attachment.

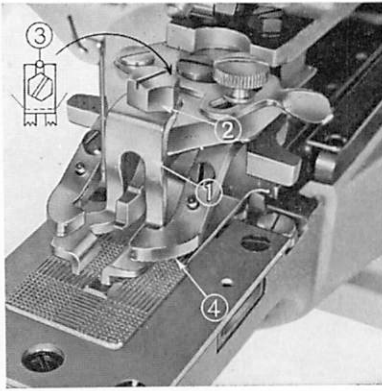


Fig. 30

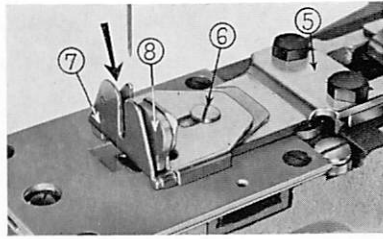


Fig. 31

B. Installing the attachment

a. Attaching the button attaching attachment (Fig. 30)

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 careful to see that both button clamp jaw lever ④ and the 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 completed, remove the button clamp component ① and button clamp work support plate ② Fig. 27, and in the place of support plate ②, install the wrapped-around attachment (Fig. 31 ⑤). This attachment should be adjusted by loosening the button necking attachment set screw Fig. 31 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. 31 and the small guide ⑧, Fig. 31.

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. 31) by twisting it somewhat as shown in Fig. 32. 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.

(iii) *How to install the shank button clamp attachment*

A. Remove the button clamp component, Fig. 27 ① and the button clamp work support plate ② and install the shank button clamp bracket (Fig. 33 ①). Adjust the button clamp bracket ① so that the needle will fall in the middle of the needle groove and tighten the screw ③.

The shank button adapter ④ is a part of a set with the button clamp holder ⑩, 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 ⑦ of the jaw of the arm and tighten the screw ⑥.

The button clamp block ⑮ 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, exchange the button holding clamp in accordance with the method described in Chapter 23.

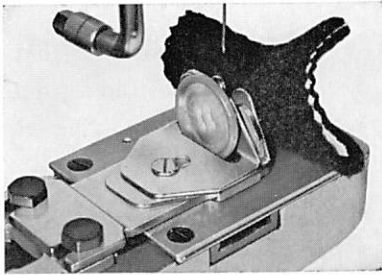


Fig. 32

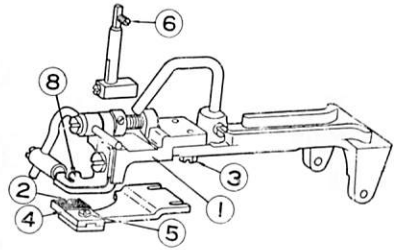


Fig. 33

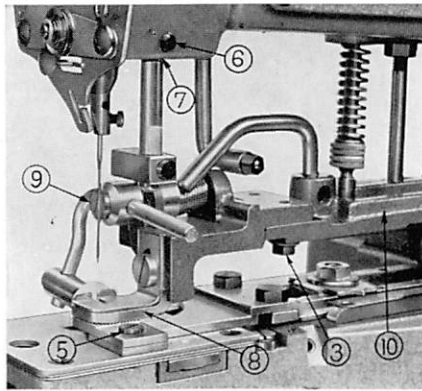
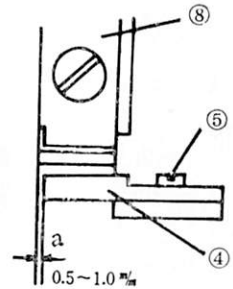


Fig. 34



B Adjusting the attachment

Make sure that the needle groove of the adapter ⑧ Fig. 33 perfectly fits into the needle groove 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 0.5~1.0 mm between the button clamp work support plate ④ left end surface and the left end surface 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. 35 and make adjustment so that the shank button holding 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. 35, and if the thrust collar ⑱ Fig. 35 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. 35 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. 35 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. 36, 37)*

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. 27 and, as shown in Fig. 36, attach the shank button clamp feed plate ④ to the installing part of screw ⑤. At the same time, adjust the

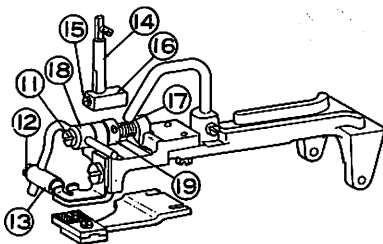


Fig. 35

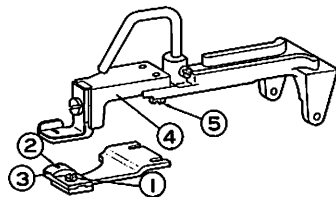


Fig. 36

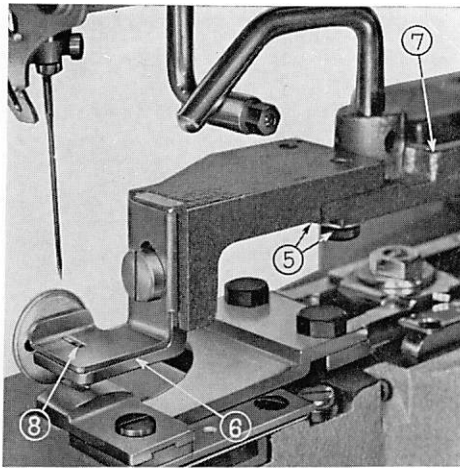


Fig. 37

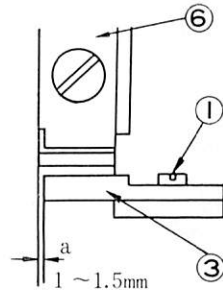


Fig. 38

④ so that the needle falls between the needle 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. 37.

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 sup-

port 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 1~1.5 m/m.

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.

**SUBCLASS MACHINES OF MODEL MB-372 HIGH SPEED
SINGLE THREAD CHAIN STITCH BUTTON SEWING
INDUSTRIAL SEWING MACHINE**

SUBCLASS 1 FOR SMALL BUTTONS (STANDARD MACHINE)

- Diameter of button 10~20mm (3/8"~25/32")
- Distance between outer
circumference of buttons Under 4.8mm (5/32")
- Button clamp lever jaw, right B-2555-372-000
- Button clamp lever jaw holding spring right B-2556-372-000
- Button clamp lever jaw, left B-2557-372-000
- Button clamp lever jaw holding spring, left B-2558-372-000
- Material presser lower plate B-2529-372-000

SUBCLASS 2 FOR MEDIUM SIZE BUTTONS

- Diameter of button 12~20mm (15/32"~25/32")
- Distance between outer diameter of buttons
..... 4~6mm (5/32"~1/4")
- Material presser lower plate for medium size buttons
.....D-2529-372-B00

(Note) All other specifications are same as SUBCLASS 1

SUBCLASS 3 FOR LARGE SIZE BUTTONS

- Diameter of button 15~25mm (9/16"~31/32")
- Distance between outer circumference of buttons
..... 5~7.5mm (3/16"~9/32")
- Button clamp lever jaw, right
 - for large size buttons D-2555-372-C00
 - for large size buttons holding spring..... D-2555-372-C00
- Button clamp lever jaw, left,
 - for large size buttons D-2557-372-C00
 - for large size buttons holding spring..... D-2558-372-C00
- Material presser lower pleat D-2529-372-C00

SUBCLASS 4

- Number of stitches 6, 12, 24

(Note) All other specifications are same as other subclasses

CONVERSION TABLE

Milli Meter to Inch	Inch to Milli Meter
1 mm.....5/128"	1" 25.4 mm
1.5mm.....1/16" less 1/256"	1/2"..... 12.7 mm
2 mm.....1/16" plus 1/64"	1/4"..... 6.35 mm
2.5mm.....3/32" plus 1/256"	3/4"..... 19.05 mm
3 mm.....1/8" less 1/128"	1/8"..... 3.175 mm
3.5mm.....1/8" plus 3/256"	3/8"..... 9.525 mm
4 mm.....5/32"	5/8"..... 15.875mm
4.5mm.....5/32" plus 5/256"	7/8"..... 22.225mm
5 mm.....3/16" plus 1/128"	1/16" 1.5785mm
5.5mm.....7/32" less 1/256"	3/16" 4.7625mm
6 mm.....1/4" less 1/64"	5/16" 7.9375mm
6.5mm.....1/4" plus 1/256"	7/16" 11.1125mm
7 mm.....1/4" plus 3/128"	9/16" 14.2875mm
7.5mm.....9/32" plus 3/256"	11/16"..... 17.4625mm
8 mm.....5/16"	13/16"..... 20.6375mm
8.5mm.....5/16" plus 5/256"	15/16"..... 23.8125mm
9 mm.....3/8" less 3/128"	1/32" 0.79375mm
9.5mm.....3/8" less 1/256"	1/64"..... 0.396875mm
10 mm.....3/8" plus 1/64"	1/128"..... 0.19844mm
11 mm.....7/16" less 1/128"	
12 mm... 15/32" plus 1/256"	
13 mm... 33/64" less 1/256"	
14 mm... 35/64" plus 3/640"	
15 mm... 9/16" plus 3/128"	
16 mm... 5/8" plus 3/640"	
17 mm... 43/64" less 1/256"	
18 mm... 11/16" plus 1/64"	
19 mm... 3/4" plus 3/128"	
20 mm... 25/32"	