

**SINGER**  
**569U2100A**

**Service  
Manual**

**SINGER**

**569U**

**2100 A SERIES**

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## GENERAL DESCRIPTION

569U Class machine is a high speed lockstitch bar tacking machine recommended for men's suits, slacks, working clothes, denim and cotton products, and other general clothing.

## FEATURES

- One pedal type pneumatic clamp foot lifter
- Central lubrication system with oil wicks
- Oil reservoir needle thread lubrication system
- Positive feed adjustment by lock nut
- Driven by AC servo motor
- Easy-to-change stitch pattern
- Thread trimming completed during clamp lifting
- Left and right clamp foot adjustable independently

SPECIFICATION

Model	569U2108A-42M	569U2141A-28M	569U2142A-36M	569U2108A-42H	569U2141A-28H	569U2142A-36H
Application	General Clothing	General Clothing	General Clothing	Denim	Denim	Denim
Stitch Pattern						
No. of Stitches	42	28	36	42	28	36
Bar Tack Length	3.2 ~ 16.0 mm	3.2 ~ 16.0	3.2 ~ 16.0	3.2 ~ 16.0	3.2 ~ 16.0	3.2 ~ 16.0
Bar Tack Width	1.0 ~ 3.0 mm	1.0 ~ 3.0	1.0 ~ 3.0	1.0 ~ 3.0	1.0 ~ 3.0	1.0 ~ 3.0
Needle (Catalog No.)	1955-01	1955-01	1955-01	1955-01	1955-01	1955-01
Max. Clamp Foot Lift	17 mm	17	17	17	17	17
Max. Speed	2,300 s.p.m.	2,300	2,300	2,300	2,300	2,300

Model	569U2108A-42L	569U2109A-21L	569U2109A-28L	569U2111A-42L	569U2141A-28L	569U2142A-36L
Application	Light Material	Light Material	Light Material	Light Material	Light Material	Light Material
Stitch Pattern						
No. of Stitches	42	21	28	42	28	36
Bar Tack Length	3.2 ~ 16.0 mm	3.2 ~ 8.0	3.2 ~ 8.0	9.6 ~ 22.2	3.2 ~ 16.0	3.2 ~ 16.0
Bar Tack Width	1.0 ~ 3.0 mm	1.0 ~ 3.0	1.0 ~ 3.0	1.0 ~ 3.0	1.0 ~ 3.0	1.0 ~ 3.0
Needle (Catalog No.)	1955-01	1955-01	1955-01	1955-01	1955-01	1955-01
Max. Clamp Foot Lift	17 mm	17	17	17	17	17
Max. Speed	2,300 s.p.m.	2,300	2,300	2,300	2,300	2,300

Model	569U2149A-28L	569U2139A-28M	569U2149A-28M	569U2138A-21M	569U2138A-28M	569U2138A-36M
Application	Light Material	Belt Loops	Belt Loops	Buttonholing	Buttonholing	Buttonholing
Stitch Pattern						
No. of Stitches	28	28	28	21	28	36
Bar Tack Length	4.8 ~ 12.7 mm	3.2 ~ 12.7	4.8 ~ 25.4	3.2 ~ 8.0	3.2 ~ 8.0	3.2 ~ 8.0
Bar Tack Width	—————	—————	—————	1.0 ~ 3.0	1.0 ~ 3.0	1.0 ~ 3.0
Needle (Catalog No.)	1955-01	1955-01	1955-01	1955-01	1955-01	1955-01
Max. Clamp Foot Lift	17 mm	17	17	17	17	17
Max. Speed	2,000 s.p.m.	2,000	2,000	2,000	2,000	2,000

Model	569U2105A-22			569U2117A-16			
Application	Button Sewing			Button Sewing			
Stitch Pattern							
No. of Stitches	22	11+11	11	16	8+8	8	
Across Arm Length	2.5 ~ 6.5 mm			2.5 ~ 6.5			
Up Arm Length	0 ~ 6.5 mm			0 ~ 6.5			
Diameter of Button	8.7 ~ 31.8 mm			8.7 ~ 31.8			
Needle (Catalog No.)	3355-01			3355-01			
Max. Button Clamp Lift	13 mm			13			
Max. Speed	2,000 s.p.m.			2,000			

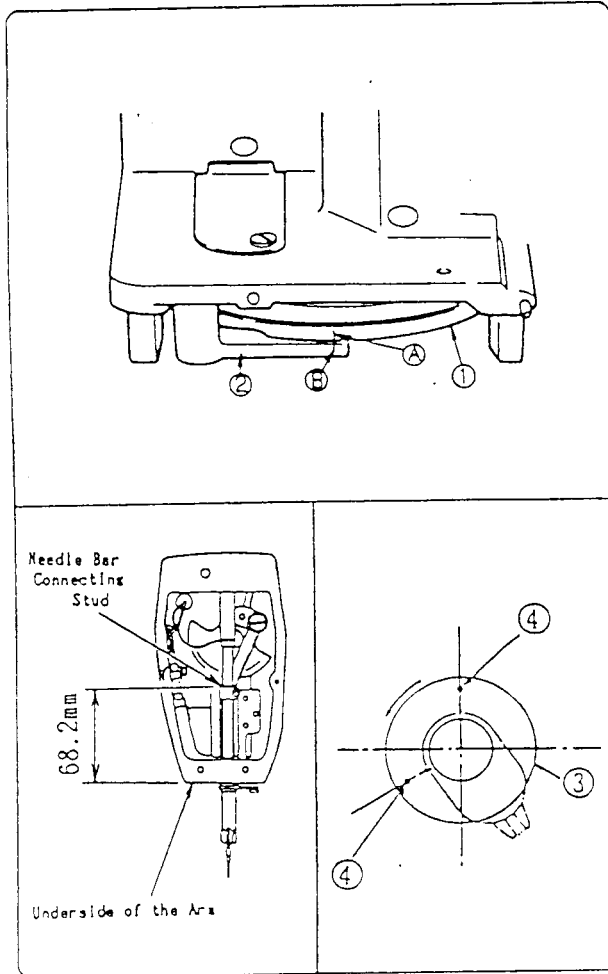
# MOTOR PULLEY AND BELT

Motor Pulley  
Belt

DIR 60  
M type V-Belt(50")  
M type V-Belt(49")  
M type V-Belt(52")

Part No. 373031-001  
Part No. 418487 (U 41 series motor)  
Part No. 418415 (U 43 series motor)  
Part No. 418484 (SYNCHRO 6040 series motor)

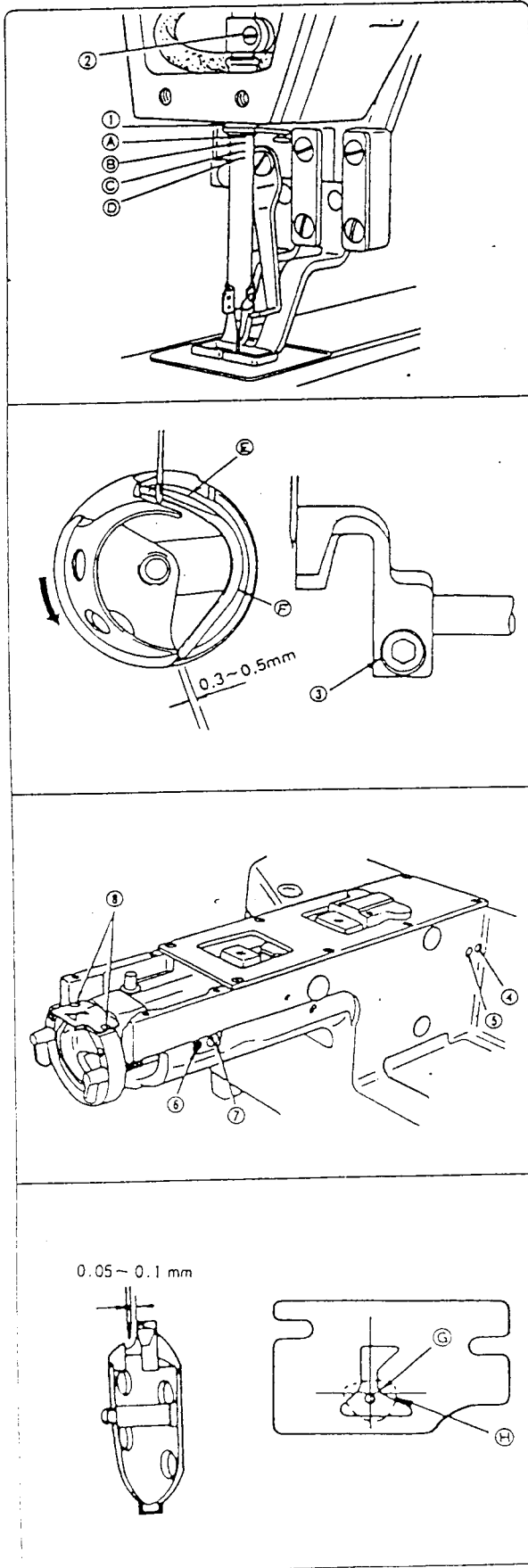
## MACHINE STOP POSITION



The machine is in stop position when the timing mark A on feed cam 1 is almost aligned with the timing mark B on lateral rock driving arm 2 with the top surface of needle bar connecting stud positioned 68.2mm from the underside of the needle end of the arm.

When machine is in correct stop position, the timing mark 4 on machine pulley 3 should be located at the position shown in the sketch.

## ADJUSTMENT OF NEEDLE AND SHUTTLE



### 1. To Adjust Needle Bar Height

Turn driving wheel by hand until needle bar is at its lowest point. Loosen needle bar connecting link screw ② and move needle bar up or down until the highest mark ① on needle bar aligns with lower end of needle bar lower bushing ①. If Catalog No. 3355-01 needle is used, align mark ③ on needle bar with lower end of needle bar lower bushing.

### 2. To Adjust Timing of Needle and Shuttle

Raise needle bar from its lowest point by turning driving wheel with hand and align the second mark ② on needle bar with end of needle bar lower bushing ①. Loosen screw ③ and turn shuttle body in the arrow direction so that the center of needle aligns with shuttle point. If Catalog No. 3355-01 needle is used, align mark ④ on needle bar with lower end of needle bar lower bushing.

### 3. To Adjust Needle and Shuttle Driver

Turn driving wheel by hand and align shuttle point with the center of needle. Loosen screw ④ and turn oscillating shaft bushing adjusting stud ⑤ so that needle contacts with shuttle driver. If shuttle driver does not properly contact needle, needle and shuttle point will interfere causing damage to the parts. If the contact is too heavy, it will cause skip stitching.

### 4. Adjustment of Shuttle Body and Driver Rotational Direction Clearance

Tap part ⑥ and ⑦, and adjust so that clearance between shuttle body and driver in the rotational direction is 0.3~0.5mm.

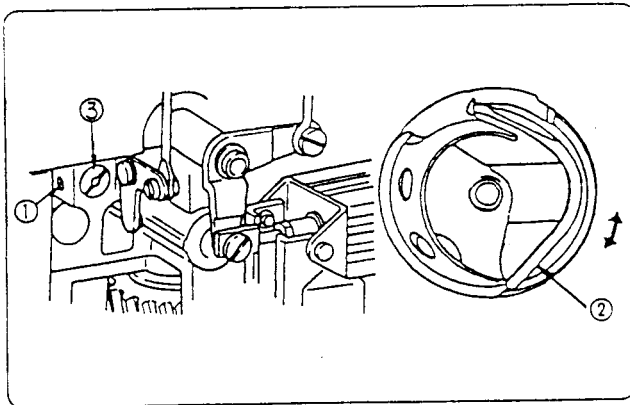
### 5. To Adjust Clearance Between Needle and Shuttle Point

Turn driving wheel by hand and align shuttle point with the center of needle. Loosen set screw ⑥ and turn shuttle race body adjusting stud ⑦ so that clearance between needle and shuttle point is 0.05 ~ 0.1mm.

### 6. To Adjust Shuttle Bobbin Cap Location

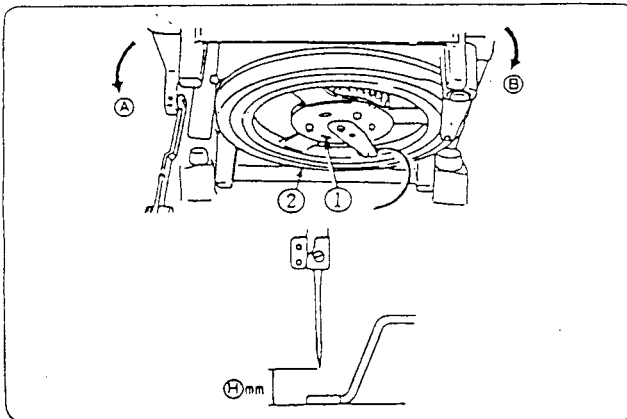
Loosen two screws ⑧, move and adjust shuttle bobbin cap so that needle location at penetration is equal in the left and right direction, and back of needle is even with corner ⑨ in the back and forth direction. Care must be taken as when shuttle bobbin Cap is out of position either in left and right or back and forth direction, needle thread will be caught in shuttle. If there should be any bruises at location ⑩, this will be causes for bobbin thread breakage and so remove bruises with emery cloth and polish with green rouge.

### ADJUSTMENT OF OSCILLATING SHAFT GEAR BACKLASH



Loosen set screw ①, turn and adjust oscillating rock shaft eccentric hinge pin ③ so that when shuttle driver ② is turned by hand in the rotating direction, play at the end of driver is less than 0.05mm.

### ADJUSTMENT OF FEED TIMING

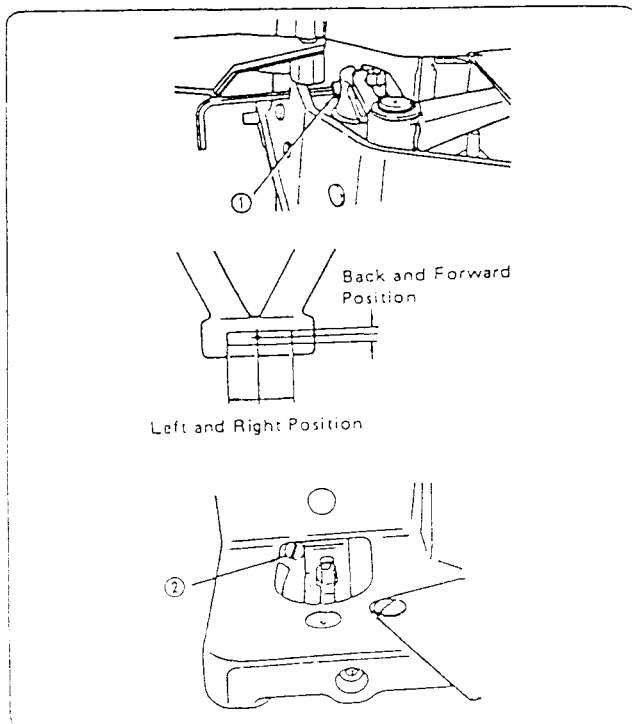


Loosen three socket head bolts ① and adjust timing by turning feed cam ② so that when needle point is lowered to the height of H mm from throat plate upper surface, feed dog stops. For earlier feeding, turn feed cam to direction ①, and for later feeding turn to direction ②. Height H differs according to models as shown in the following chart.

Whenever feed cam has been removed, replace feed cam so that mark C will be aligned with mark D on lateral rock driving arm ③ when machine is in its stop position. Then adjust feed timing.

Model	2108A-42L 2108A-42M 2108A-42H 2109A-21L	2111A-42L 2138A-21M	2109A-28L 2138A-28M 2139A-28M 2141A-28L	2141A-28M 2141A-28H 2149A-28L 2149A-28M	2105A-22 2117A-15	2138A-35M 2142A-35L 2142A-35H 2142A-35H
H Height (mm)	6		10		7	

### ADJUSTMENT OF CLAMP FOOT POSITION

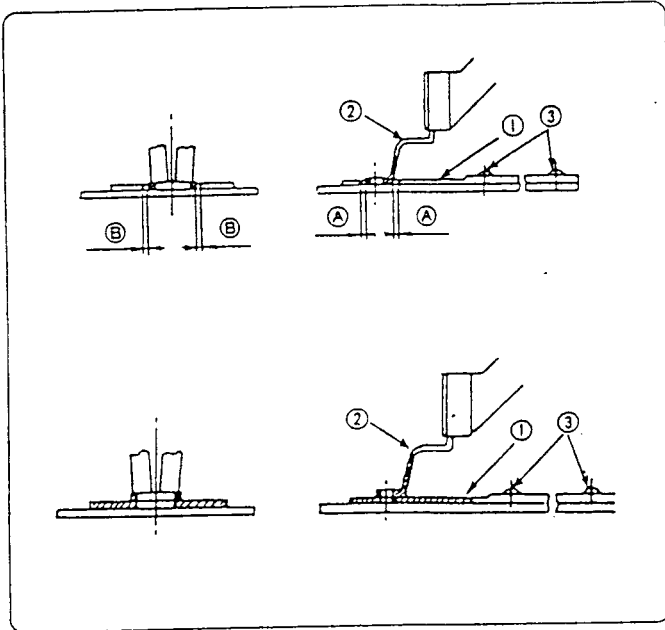


- To Adjust Back and Forward Position Clamp Foot  
Turning driving wheel by hand, lower needle into needle hole the specified times shown in the chart below and with needle in the hole, loosen socket head bolt ① and move clamp foot back or forward.
- To Adjust Left and Right Position of Clamp Foot  
Lower needle into needle hole in the same way as item 1. With needle in hole, loosen screw ② and move clamp foot left or right so that clearance between needle and clamp foot is even left and right.

Model	2108A-42L 2108A-42M	2108A-42H	2109A-21L 2109A-28L	2138A-21M 2138A-28M	2109A-28M
Stitch	6		4		1
Model	2109A-28M 2142A-35L	2142A-35M 2142A-35H	2149A-28L 2149A-28M	2111A-42L 2141A-28L	2141A-28M 2141A-28H
Stitch	7		2		5



### ADJUSTMENT OF FEED PLATE LOCATION



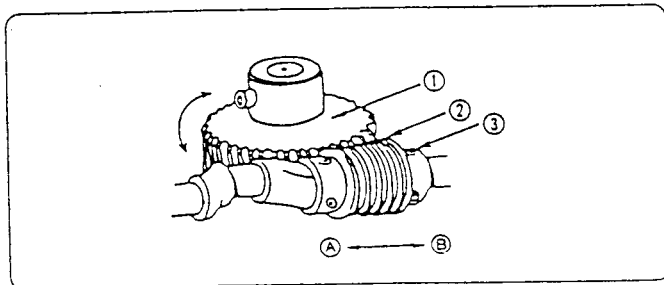
#### For Light Material

Loosen screws ③ and adjust so that each of the clearances ① (front and back direction) and each of the clearances ② (left and right direction) between opening in feed plate ① and arch clamp foot ② are even.

#### For Heavy Material

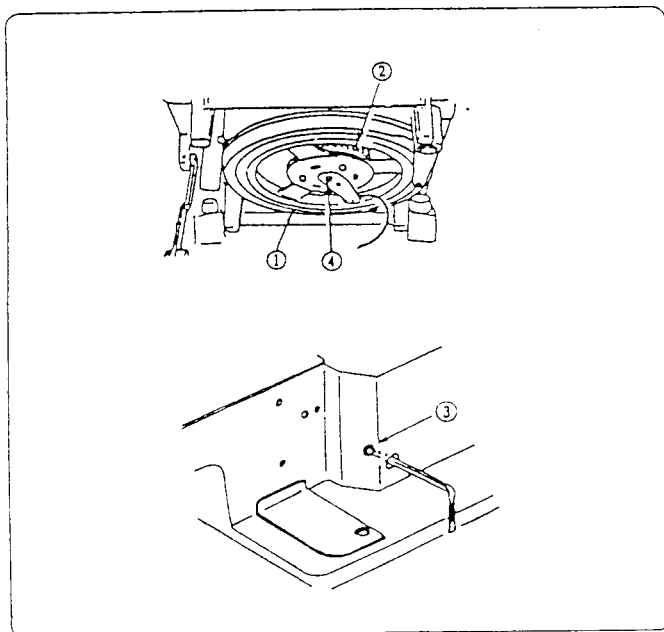
Loosen screws ③ and adjust so that openings in feed plate ① and arch clamp foot ② match both in front and rear, left and right direction.

### ADJUSTMENT OF WORM WHEEL BACKLASH



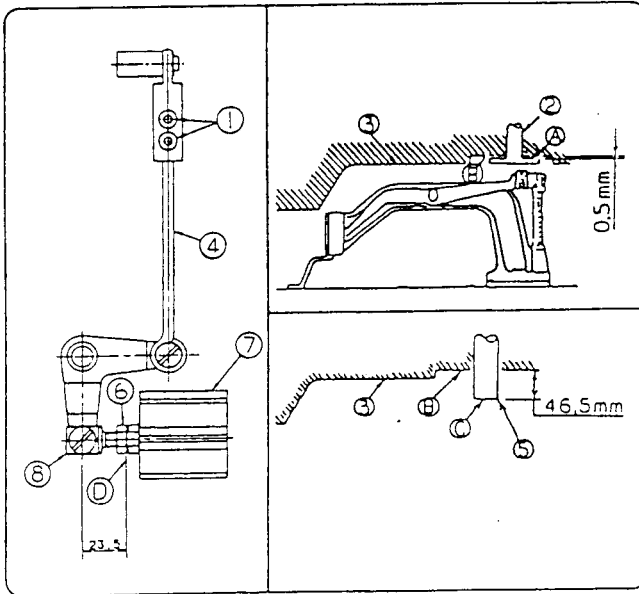
Loosen 4 socket head set screws ③ in worm ② and adjust worm so that when driving wheel stop cam is lightly moved by hand at machine stop position, play of worm wheel ① is less than 0.05mm. when moved in ① direction, play becomes smaller and when moved in ② direction, play becomes larger.

### ADJUSTMENT OF FEED CAM GEAR BACKLASH



Loosen socket head set screw ③, turn and adjust feed cam gear shaft ④ so that when feed cam ① is turned by hand at machine stop position, play of feed cam gear ② is less than 0.05mm.

### ADJUSTMENT OF CLAMP LIFTING CONNECTING ROD

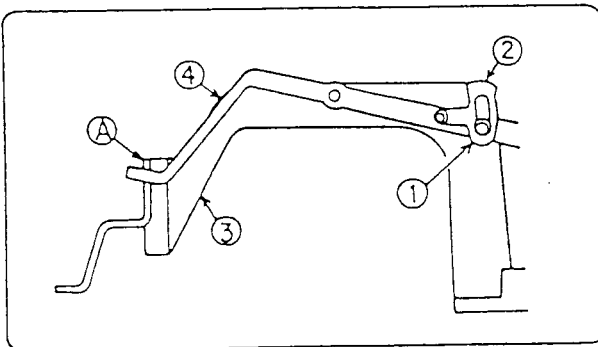


With clamp foot down, loosen socket head bolts ① and move clamp lifting connecting rod (lower) ④ up or down as required, until there is 0.5mm clearance between surface A of clamp lifting plate ② and surface B of arm ③.

In case of 569U2138A-21M, 569U2138A-28M, 569U2138A-36M, 569U2105A-22 and 569U2117A-16 machines, lower the clamp foot, loosen socket head bolts ① and move clamp lifting connecting rod (lower) ④ up or down as required, until the distance between surface C of clamp lifting shaft ⑤ and surface D of arm ③ is 46.5mm.

To adjust the length of clamp lifting cylinder connecting rod, loosen nut ⑥ and move connecting rod ⑧ as required so that the distance between the face end E of clamp lifting cylinder ⑦ and the center of connecting rod ⑧ is 23.5mm.

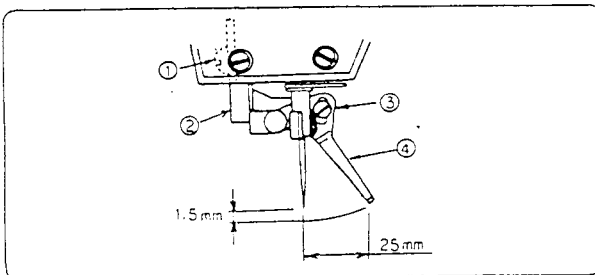
### ADJUSTMENT OF CLAMP FOOT HEIGHT



Loosen socket head bolt ① and adjust clamp foot height by moving arch clamp foot lifting lever adjusting plate ② up or down. Maximum clamp foot lift amount is 17mm from throat plate upper surface. Check and make sure there is no interference between arch clamp frame ③ and arch clamp foot lifting lever ④ at point A.

Note: When clamp foot height is set higher than 17mm, there is a possibility that interference may occur between arch clamp frame ③ and clamp foot lifting lever ④.

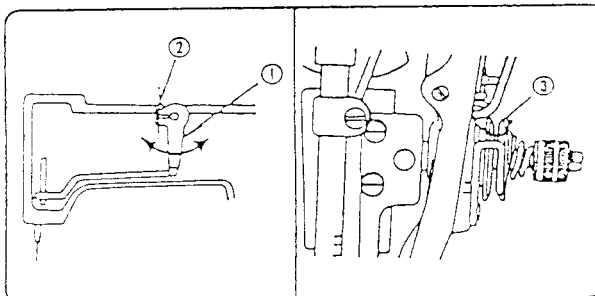
### ADJUSTMENT OF WIPER HEIGHT



Loosen screw ① and move wiper bracket ② up or down, as required, so that clearance between wiper and needle point is 1.5mm when wiper passes the needle point. Tighten screw.

Loosen screw ③ and move wiper ④ to the left or right, as required, so that the distance between wiper point and needle point is 25mm. Tighten screw ③.

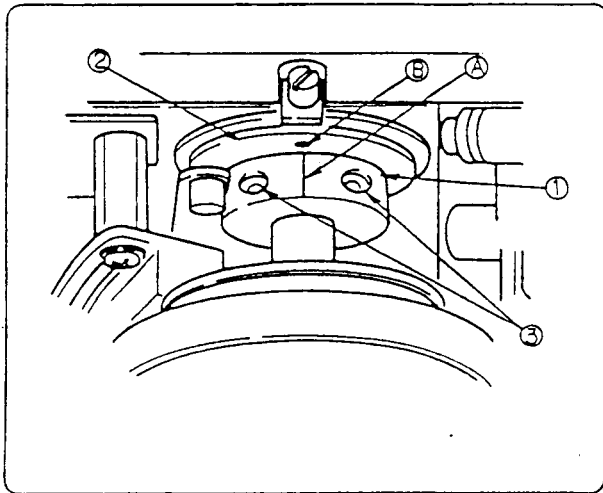
### ADJUSTMENT OF TENSION RELEASING BAR



Loosen tension releasing bar operating arm screw ② and adjust tension releasing bar operating arm ① so that the tension discs ③ will begin to release when movable knife start to move as the clamp foot is raised.

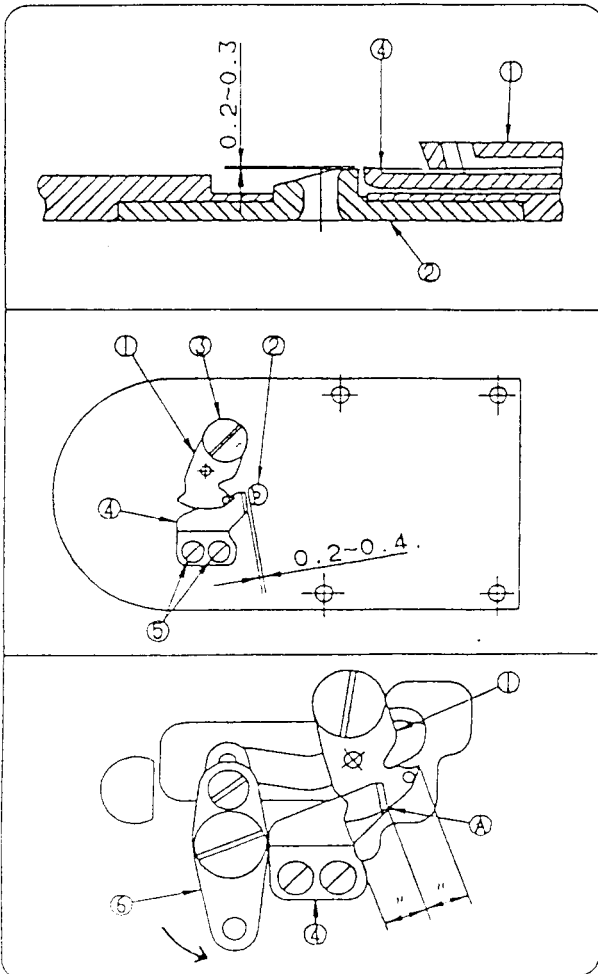
Note: Be sure the tension discs are not open when clamp foot is in its down position.

### ADJUSTMENT OF KNIFE BAR OPERATING CAM POSITION



Loosen screw ③ and adjust the location of knife bar operating cam ① so that the timing mark A on knife bar operating cam ① is aligned with the timing mark B on arm shaft ball bearing (back) retaining plate ② when machine is in stop position.

### ADJUSTMENT OF KNIFE POSITION



Adjust height of knife (movable) ① with adjusting washer ③ so that clearance between knife ① and high edge of throat plate needle hole bushing ② is 0mm.

Following size adjusting washers can be made available.

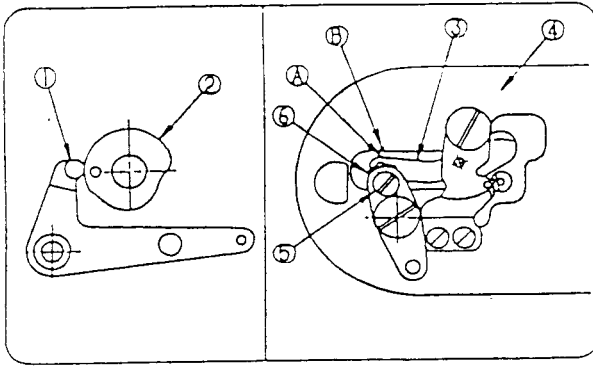
Part No.	Adjusting Washer Thickness
418314-004	$0.5 \pm 0.02$
418314-003	$0.45 \pm 0.02$
418314-002	$0.4 \pm 0.02$
418314-001	$0.35 \pm 0.02$

Loosen screw ⑤ and adjust setting of stationary knife ④ so that the clearance between its edge and edge of throat plate needle hole bushing ② is 0.2~0.4mm.

Adjust height of stationary knife ① so it is 0.2~0.3mm higher than throat plate needle hole bushing ② higher edge.

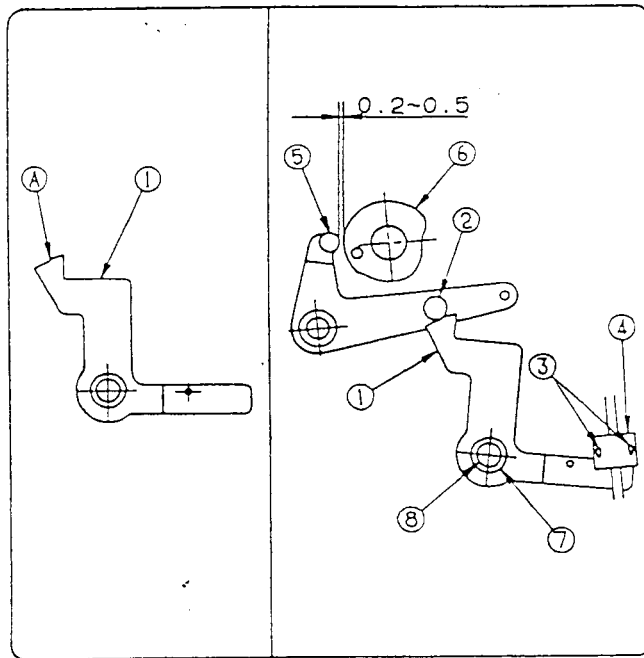
Check engaging torque between movable knife ① and stationary knife ④. Push lever ⑥ in the direction indicated by arrow. The movable knife ① should come into engagement with stationary knife ④ when its center reaches the cutting edge A of stationary knife ④.

### ADJUSTMENT OF KNIFE TIMING



Loosen screw ⑤ and move knife (movable) lever ⑥ backward or forward, as required, so that timing mark ① on knife (movable) link ③ is aligned with timing mark ② on throat plate ④ when knife bar operating cam connecting crank roller (upper) ① comes in contact with knife bar operating cam ② at the last stitch.

### ADJUSTMENT OF THREAD TRIMMING CAM TIMING

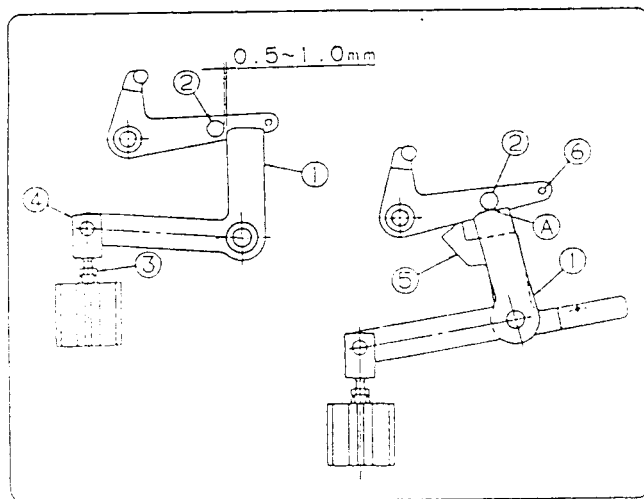


To adjust thread trimming cam timing, loosen set screw ③ and move thread trimming cam operating block ④ up or down so that thread trimming cam ① is rotated to a point where knife bar operating cam connecting crank roller (lower) ② rests on the portion ① of the thread trimming cam ① at the completion of trimming cycle (clamp foot in up position).

After the adjustment, make sure that thread trimming cam ① does not move by moving clamp foot up and down.

Adjust eccentric stud ⑧ so that there is a clearance of 0.2~0.5mm between knife bar operating cam connecting crank roller (upper) ⑤ and the maximum diameter of knife bar operating cam ⑥ when knife bar operating cam connecting crank roller (lower) ② rests on the portion ① of thread trimming cam ①.

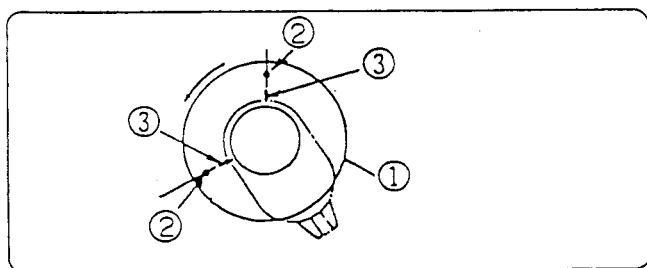
### ADJUSTMENT OF KNIFE BAR OPERATING CAM CONNECTING CRANK RELEASING CAM



Loosen nut ③ and adjust releasing cam cylinder connecting rod ④ so that there is a clearance of 0.5~1.0mm between releasing cam ① and knife bar operating cam connecting crank roller (lower) ② when clamp foot is in up position.

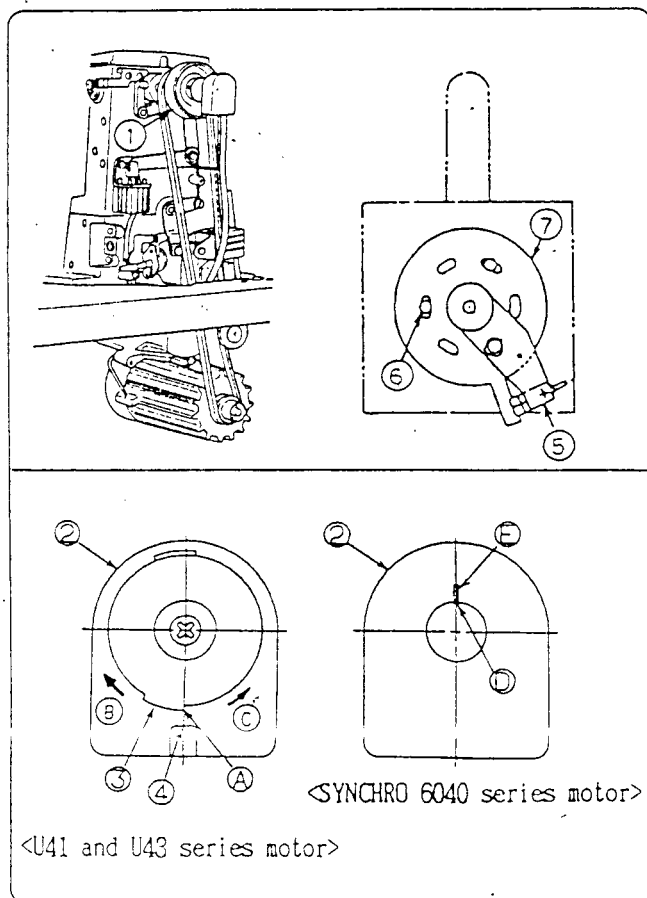
Check to see thread trimming cam ⑤ is released from knife bar operating cam connecting crank roller (lower) ② when knife bar operating cam connecting crank roller (lower) ② rests on the portion ① of releasing cam ① at the last stitch, thereby actuating knife bar operating cam connecting crank ⑥.

### ADJUSTMENT OF SYNCHRONIZER SETTING



Set synchronizer in position so that set screw ③ in synchronizer is inline with the timing mark ② on the machine pulley ① and tighten the set screw ③.

### ADJUSTMENT OF STOP SENSOR DETECTING PLATE TIMING



<U41 and U43 series motor>

Rotate machine pulley ① clockwise (looking at machine from rear end) two turns from the machine stop position.

Turn on power switch, loosen set screw ⑥ and adjust stop sensor detecting plate ⑦ so that the LED for stop sensor ⑤ will light up when end ④ of detecting plate ③ on synchronizer ② is located opposite the sensor ④ on synchronizer ②.

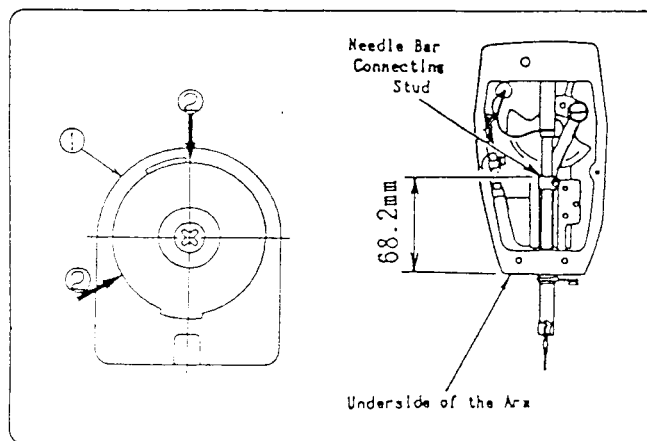
Note: When machine sews one stitch more than the number of stitches programmed, turn synchronizer ② clockwise in the direction ⑧ and when number of stitches fall short by one stitch, turn synchronizer ② counterclockwise in the direction ⑨ and readjust stop sensor detecting plate.

<SYNCHRO 6040 series motor>

Rotate machine pulley ① clockwise (looking at machine from rear end) two turns from the machine stop position.

Turn on power switch, loosen set screw ⑥ and adjust stop sensor detecting plate ⑦ so that the LED for stop sensor ⑤ will light up when timing mark ⑩ on synchronizer ② is located opposite timing mark ⑪ on synchronizer ②.

### CHECKING AND ADJUSTING MACHINE STOP POSITION

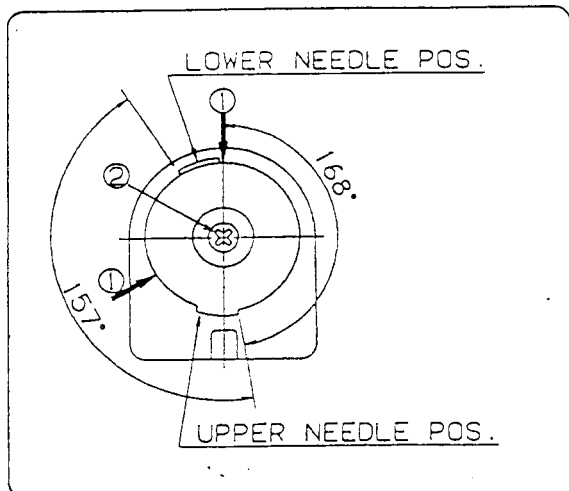


Remove needle after making sure the machine is in stop position. Turn power switch 'ON', run the machine and check height of needle bar when machine is in stop position.

If needle bar height require readjustment, loosen set screw ② and adjust needle bar to correct height (68.2mm from the underside of arm to top surface of needle bar connecting stud) by turning synchronizer ①, as required, and tighten set screw ②.

Note: After making the adjustment, check and make sure the wiper does not interfere with the needle.

## ADJUSTMENT OF SENSOR PLATE



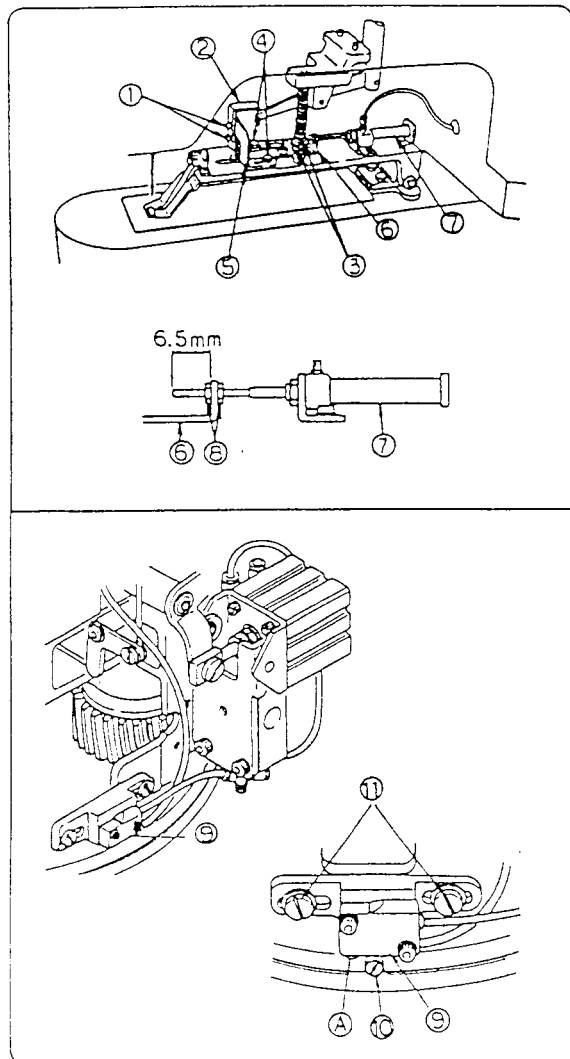
<U41 and U43 series motor>

Before the synchronizer leaves the factory, the sensor plate is set correctly in position however, if for any reason it is necessary to alter the setting, it should be fine tuned as instructed below.

The setting of sensor plate in relation to screw ① of the synchronizer is as shown in the sketch. To adjust setting of the sensor plate, loosen screw ② located at the end of the synchronizer and turn sensor plate as required, then tighten screw ②.

Also, set upper needle position to approximately 157° opposite the lower needle position.

## ADJUSTMENT OF CLAMP FOOT (569U2138A-21M · 569U2138A-28M · 569U2138A-36M)



### 1. Adjustment of Clamp Foot Height

Loosen socket head bolts ① and move arch clamp lifting plate (upper) ② up or down as required so that maximum clamp foot lift is 17mm from throat plate surface.

### 2. Adjustment of Clamp Foot Spring Tension

Loosen lower arch clamp foot spring adjusting nut ③ and adjust spring tension by moving upper adjusting nut ③ upward or downward as required. Tighten lower adjusting nut ③ when correct tension is obtained.

### 3. Adjustment of Closing Amount of Clamp Foot (left and right)

Adjust distance between arch clamp foot guide plate (upper) ⑥ and arch clamp foot guide cylinder ⑦ to 6.5mm with nuts ⑧ as shown in sketch.

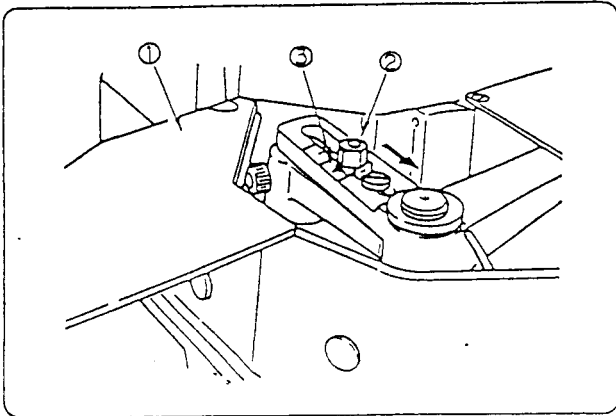
Loosen screw ④ and adjust closing amount of left and right clamp foot by moving arch clamp lifting plate (lower) ⑤ forward or backward, as required.

### 4. Adjustment of Arch Clamp Foot Guide Cylinder Limit Switch

Loosen two screws ⑩ and adjust limit switch ⑨ sideways, as required, so that the operating roller ⑩ will press point A of the limit switch ⑨ activating the limit switch to open the air valve and thus close the clamp foot just before the needle enters the needle hole in throat plate when machine is rotated by hand from its stop position.

Note: Check and make sure the limit switch is not in function when machine is in its stop position.

### 1. ADJUSTMENT OF UP ARM LENGTH



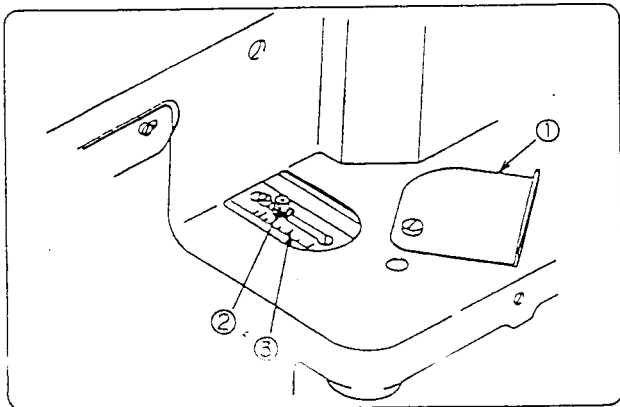
Open cover ①, loosen nut ② and while turning the machine pulley slowly by hand, move nut ② forward or backward as required, until the up arm length corresponds with the distance between the holes in the button. Check and make certain the needle descends into the center of the button holes.

Note: The graduation marks ③ are for reference purpose only and do not denote actual distance between the button holes.

To increase the up arm length, move nut ② in the direction indicated by arrow and to decrease the up arm length, move nut ② in the opposite direction of the arrow.

Adjustment range : 0~6.5mm

### 2. ADJUSTMENT OF ACROSS ARM LENGTH



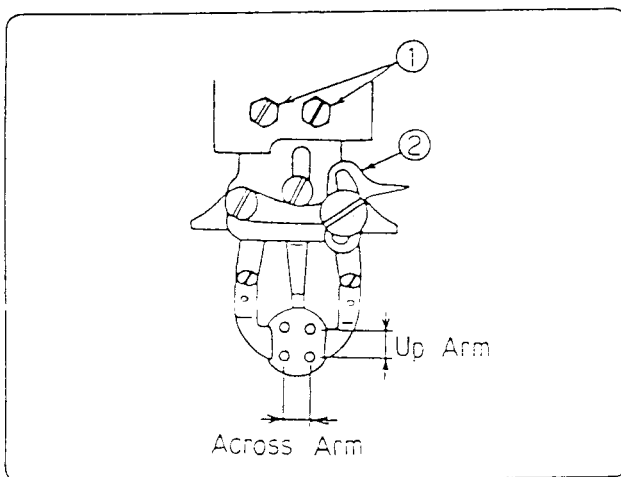
Open cover ①, loosen nut ② and while turning the machine pulley slowly by hand, move nut ② sidewise as required, until the across arm length corresponds with the distance between the holes in the button. Check and make certain the needle descends into the center of the button holes.

Note: The graduation marks ③ are for reference purpose only and do not denote actual distance between the button holes.

To increase the across arm length, move nut ② in the direction indicated by arrow and to decrease the across arm length, move nut ② in the opposite direction of the arrow.

Adjustment range : 2.5~6.5mm

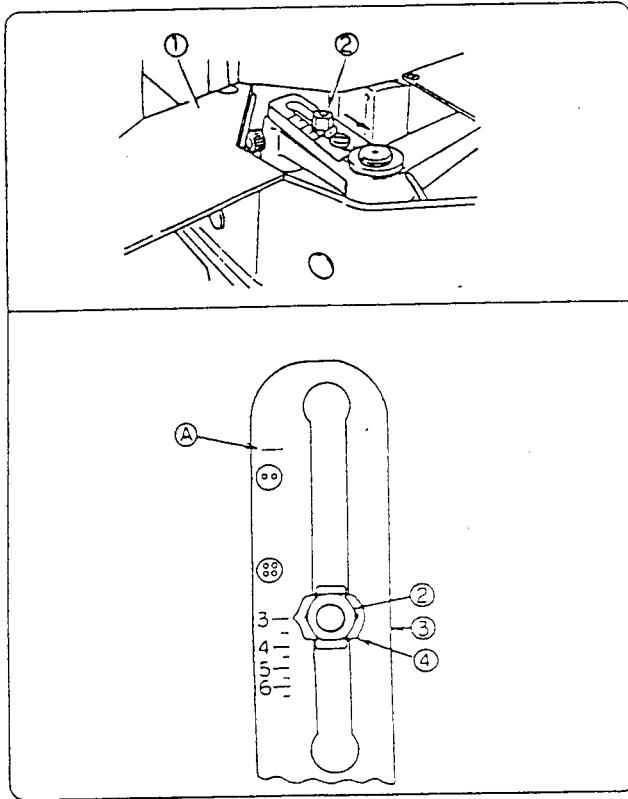
### 3. ADJUSTMENT OF SETTING OF BUTTON CLAMP



If needle is not located centrally in the button holes even if across arm and up arm lengths correspond with the distance between the button holes, loosen two bolts

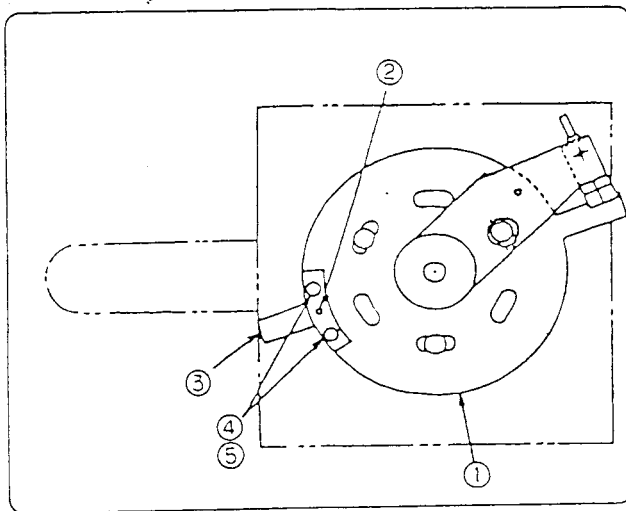
① and while turning the machine pulley slowly by hand, move button clamp ② across arm or up arm as required, until correct setting is obtained. Securely tighten the two bolts ①.

#### 4. TO SET MACHINE FOR TWO HOLE AND FOUR HOLE BUTTON SEWING



1. To convert setting from four hole button sewing to two hole button sewing, open cover ①, loosen nut ② and move nut ② to bring point of slide block stud washer ④ on longitudinal pivot driving arm ③ for two hole button sewing.
2. To convert setting from two hole button sewing back to four hole button sewing, open cover ①, loosen nut ② and move nut ② away from point (A) until the up arm length corresponds with the distance between the button holes.

#### 5. TO CHANGE NUMBER OF STITCHES



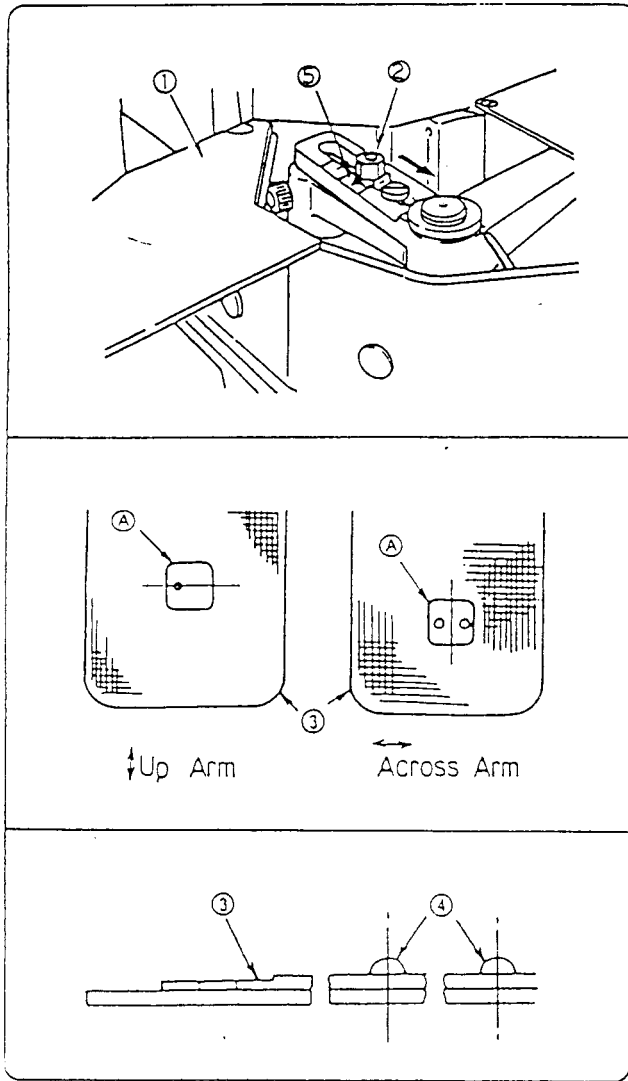
On 569U2105A-22 machine, the number of stitches can be changed from 22 to 11 stitches and on 569U2117A-16 machine, from 16 to 8 stitches.

To make this change, align position pin ② on stop sensor detecting plate ① to hole in stop sensor detecting blade ③ and fasten stop sensor detecting blade ③ to stop sensor detecting plate ① with screw ④ and washer ⑤.

To change the number of stitches from 11 to 22 and 8 to 16, make adjustments in the same manner as above except in reverse order.



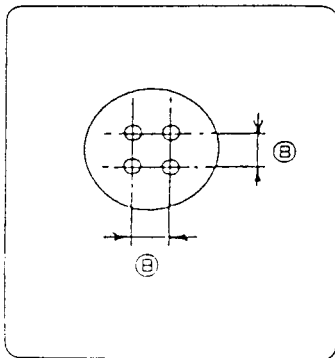
## 6. ADJUSTMENT OF FEED PLATE LOCATION



Open cover ①, loosen nut ② and set machine for two hole button sewing. Turn machine pulley slowly by hand and check that the needle locations of both first and second 11 stitches (569U2117-16 8 stitches) are centrally located in relation to front and rear of the opening ① in the feed plate ③.

If adjustment is necessary, loosen screw ④ and adjust feed plate ③ as required, so that the needle is centrally located in relation to front and rear of the opening ① and also equally distanced laterally in relation to centerline of the opening ①.

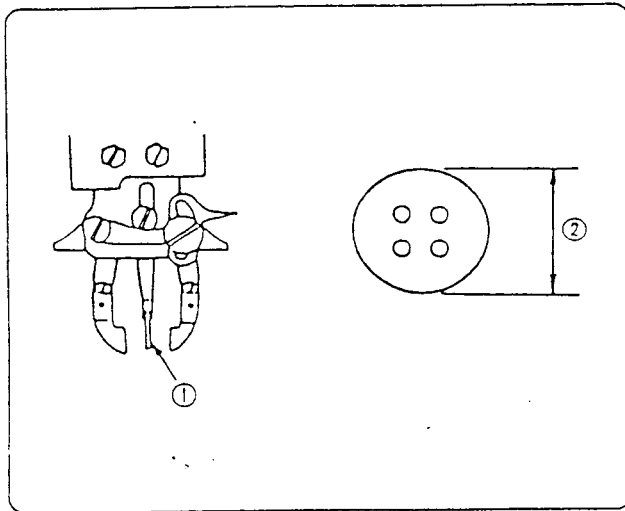
## 7. COMBINATION OF THROAT PLATE NEEDLE HOLE BUSHING AND FEED PLATE IN RELATION TO DISTANCE BETWEEN BUTTON HOLES



Distance Between Button Holes ② mm	Throat Plate Needle Hole Bushing P/N	Feed Plate P/N
2.5 ~ 3.5	281634 (standard)	418947-001 (standard)
	281673 (optional)	418947-003 (optional)
	281674 (optional)	418947-003 (optional)
3.5 ~ 4.5	281634 (standard)	418947-002 (optional)
	281673 (optional)	418947-004 (optional)
	281674 (optional)	418947-004 (optional)
4.5 ~ 6.5	281634 (standard)	418947-003 (optional)
	281673 (optional)	418947-005 (optional)
	281674 (optional)	418947-005 (optional)

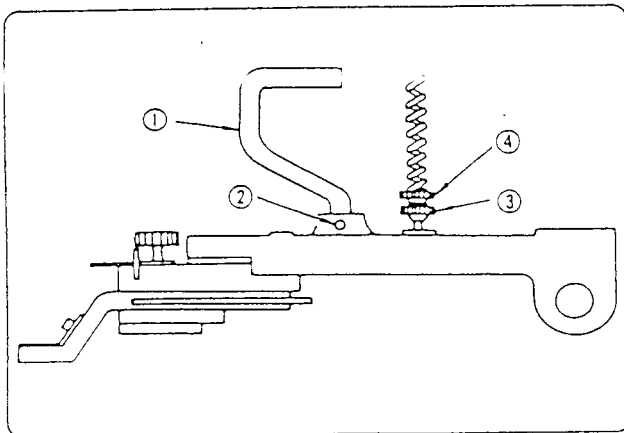
Note: Throat Plate Needle Hole Bushing P/N 281673 (2.0  $\phi$  needle hole with boss)  
 Throat Plate Needle Hole Bushing P/N 281674 (1.6  $\phi$  needle hole with boss)

## 8. COMBINATION OF BUTTON CLAMP AND BUTTON CLAMP SPREADER WIRE IN RELATION TO SIZE OF BUTTON



Size of Button ② mm	Button Clamp Spreader Wire ① P/N	Button Clamp (assembled) P/N	Button Clamp (complete) P/N
8 ~ 13	372866-001 (standard)	418923-006	418925-001
13 ~ 20	372866-002 (optional)	418923-007	418925-002
20 ~ 32	372866-003 (optional)	418923-008	418925-003

## 9. ADJUSTMENT OF BUTTON CLAMP



### 1. Adjustment of Button Clamp Height

Loosen screw ② and move button clamp arm hook ① up or down, as required, and firmly tighten screw ②.

Note: Maximum button clamp lift above throat plate surface should be 13mm.

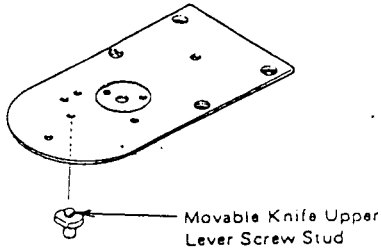
### 2. Adjustment of Button Clamp Spring Pressure

Loosen button clamp arm spring adjusting nut lock nut ③ and move adjusting nut ④ upward or downward, as required, and firmly tighten lock nut ③.

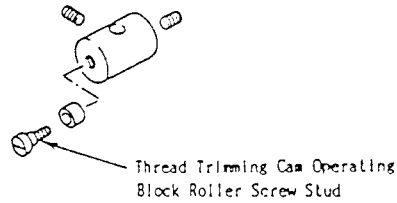
## THREAD LOCK APPLYING POINTS

As this machine is a cycle machine constantly starting and stopping, there are parts where screws are apt to become loose and so thread lock has been applied to fix the screws. When these parts are disassembled, always clean the bonded part with thinner and after completely drying, apply thread lock and assemble. When it is difficult to remove screws with thread lock applied, apply a little heat and it can be easily removed. For applying thread lock, use THREE BOND 1321B or LOCTITE 242. Points where thread lock is applied are as follows.

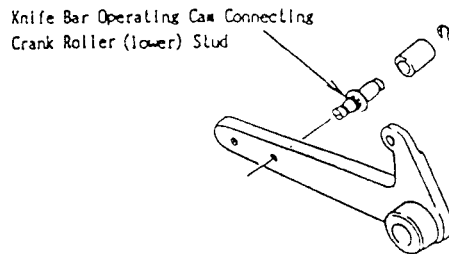
### 1. Movable Knife Upper Lever Screw Stud



### 2. Thread Trimming Cam Operating Block Roller Screw Stud



### 3. Knife Bar Operating Cam Connecting Crank Roller (lower) Stud



Note: When thread lock sticks to stud part of screw stud, it can harm functions and so be careful.

## GREASE LUBRICATING POINTS

### 1. Greasing Time

Grease once every year and also when the greasing point is disassembled.

### 2. Grease Used

Lithium Grease, Consistency No.2

Firm	Brand
Idemitsu	Daphne Coronex EP2
Esso	Lithtan No.2 , Beacon No.2
Shell	Albania No.2

### 3. Greasing Method

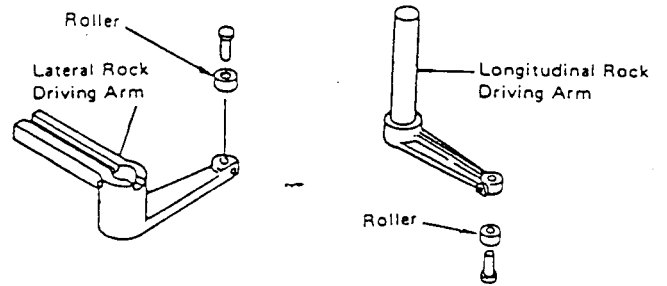
Use grease gun for greasing. When there is no grease gun, use of a plastic oiler or a syringe without the needle may be handy for greasing.

#### 4. Greasing Points

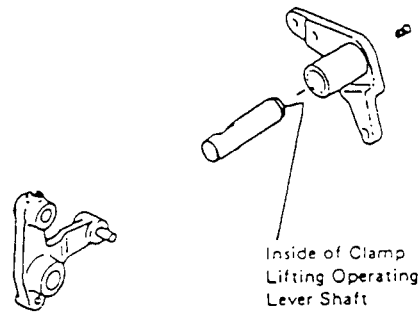
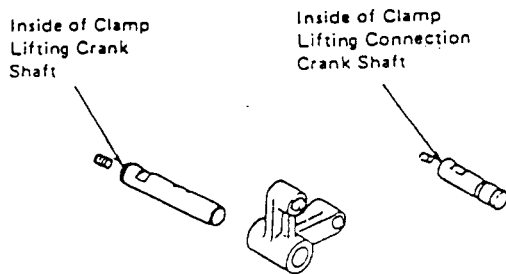
1) Vertical Drive Gear and Cam Gear



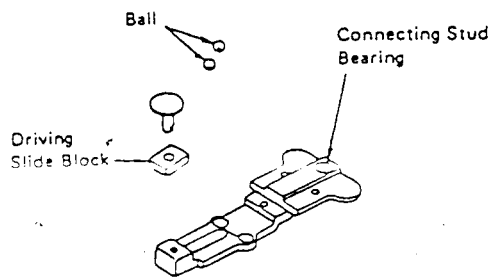
2) Lateral and Longitudinal Rock Driving Arm Roller



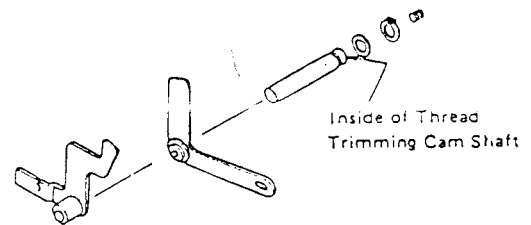
3) Arch Clamp Foot Lifter



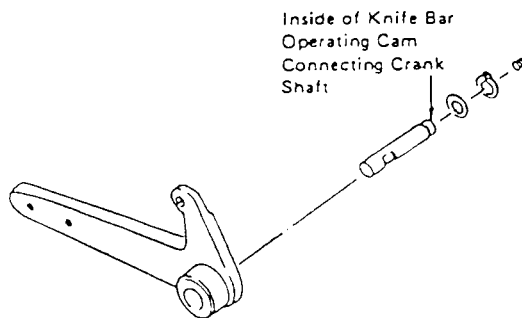
4) Feed Plate Carrier Bar



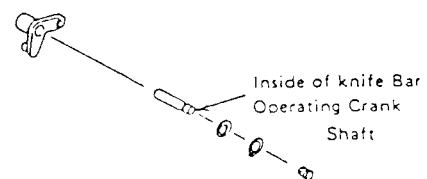
5) Thread Trimming Cam Shaft



6) Knife Bar Operating Cam Connecting Crank Shaft




7) Knife Bar Operating Crank (upper) Shaft



## TROUBLE-SHOOTING GUIDE

Trouble	Cause	Correction
1. Skipped stitches	1. Improper timing of needle and shuttle body.	Adjust timing and clearance. (see page 4)
	2. Hook or burr on needle point or needle bent.	Replace needle.
	3. Improperly set needle.	Insert needle into needle bar as far as it will go with long groove to the front.
	4. Improper feed timing.	Adjust timing of feed cam. (see page 5)
	5. Improper clearance between needle and shuttle driver.	Readjust clearance between needle and shuttle driver. (see page 4)
2. Needle breakage	1. Needle interferes with shuttle body.	Adjust clearance between needle and shuttle body. (see page 4)
	2. Needle bent.	Replace needle.
	3. Needle size too small.	Replace with needle suited for size of thread used and material being sewn.
	4. Needle interferes with shuttle driver	Adjust setting of shuttle driver. (see page 4)
	5. Needle interferes with clamp foot.	Adjust setting of clamp foot. (see page 5)
	6. Wiper interferes with needle.	Adjust height of wiper. (see page 7)
	7. Needle interferes with movable knife.	Adjust setting of knife bar operating cam (see page 8) and timing of knife (see page 9).
	8. Machine stop position shifting out of position.	Adjust setting of synchronizer. (see page 10)
3. Thread breakage	1. Shuttle body and shuttle driver marred.	Remove mar with oil stone and polish with polishing compound or replace with new part.
	2. Insufficient clearance between shuttle driver and shuttle body.	Adjust clearance. (see page 4)
	3. Throat plate needle hole bushing marred.	Remove and buff or replace.
	4. Needle interfering with clamp foot.	Adjust setting of clamp foot. (see page 5)
	5. Needle thread tension too tight.	Adjust needle thread tension.
	6. Thread take-up spring tension too strong.	Adjust spring tension.
	7. Thread take-up spring stroke excessive.	Adjust amount of stroke.

Trouble	Cause	Correction
4. Needle thread jams in the shuttle race	1. Shuttle race cap improperly positioned.	Adjust setting of shuttle race cap. (see page 4)
	2. (A) portion of shuttle body rounded. 	Replace with new part.
	3. Lints adhering to raceway of shuttle race body.	Remove shuttle race body and clean out raceway.
	4. Improper timing of needle and shuttle body.	Adjust timing. (see page 4)
5. Thread breaks when trimming	1. Thread trimming takes place before needle thread tension is released.	Adjust timing of tension releasing bar. (see page 7)
	2. Mar on movable knife.	Remove mar with oil stone taking care not to damage cutting edge and polish with polishing compound.
	3. Mar on shuttle race cap.	Remove mar or replace with new part.
	4. Inproper height and setting of stationary knife.	Adjust height and setting of stationary knife. (see page 8)
	5. Thread handling area of throat plate needle hole bushing marred.	Polish with polishing agent or replace with new part.
	6. Improper setting and timing of movable knife.	Adjust setting of knife bar operating cam (see page 8) and movable knife (see page 8). Also adjust timing of knife (see page 9).
6. Malfunction of thread trimmer (Needle thread or bobbin thread cannot be trimmed when clamp foot is in its up position at end of cycle. Also trimmed thread ends are either extremely long or short)	1. Knife dull.	
	1-1 Worn stationary and movable knives.	Replace with new knives.
	1-2 Improper engagement of movable and stationary knives.	Adjust setting of knives. (see page 8)
	1-3 Excessive vertical play of movable knife.	Replace movable knife or hinge screw.
	2. Movable knife does not spread the needle thread.	
	2-1 Improper setting of knife bar operating cam.	Adjust setting of knife bar operating cam. (see page 8)
	2-2 Improper timing of movable knife.	Adjust timing of knife. (see page 9)
	2-3 Insufficient brake pressure.	Adjust brake. (see page 4)
	3. Improper timing of thread trimming cam and setting of knife bar operating cam connecting crank releasing cam.	Adjust setting of knife bar operating cam connecting crank releasing cam after adjusting timing of thread trimming cam. (see page 9)
	4. Skip stitches at last stitch.	Adjust timing of needle and shuttle body and also clearance between needle and shuttle body. (see page 4)

Trouble	Cause	Correction
7. Poor stitch tightness	1. Improper feed timing.	Adjust feed timing. (see page 5)
	2. Needle thread tension too loose.	Increase needle thread tension.
8. Poor sewing performance with synthetic thread	1. Sewing speed fast.	Reduce machine speed to 1800 S.P.M.
	2. Needle size too large.	Replace with smaller size needle or needle for synthetic thread.
	3. Fusing of thread caused by heating.	Use silicone oil.
	4. Frayed thread.	Polish all thread handling areas with polishing compound.
9. Thread end pulls out of needle eye (Thread end pulls out of needle eye before any stitch is formed)	1. Skip stitches at first stitch.	
	1-1 Improper timing of needle and shuttle body.	Adjust timing of needle and shuttle body and also clearance between needle and shuttle body. (see page 4)
	1-2 Improper feed timing.	Adjust feed timing. (see page 5)
	2. Needle thread end too short.	
	2-1 Improperly adjusted pre-tension.	Adjust pre-tension.
	2-2 Improper timing of tension release.	Adjust timing of tension releasing bar. (see page 7)
	2-3 Thread take-up spring stroke excessive.	Adjust amount of take-up spring stroke.
	2-4 Improper setting and timing of movable and stationary knives.	Adjust setting and timing of knives. (see page 8 and 9)
	3. Bobbin thread end too short.	
	3-1 Improper setting and timing of movable and stationary knives.	Adjust setting and timing of knives. (see page 8 and 9)
	3-2 Shuttle race cap marred.	Remove mar or replace with new part.
	3-3 Bobbin thread tension too tight.	Adjust bobbin thread tension.
	4. Thread spillage due to racing of bobbin.	Use bobbin and bobbin case made for 569U machine.
10. Clamp foot fails to rise	1. Improperly set clamp foot height.	Adjust clamp foot height. (see page 7)
	2. Wiper interferes with clamp foot.	Adjust height of wiper. (see page 7)

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