

SINGER®

INDUSTRIAL PRODUCTS

INSTRUCTION MANUAL

FOR

299U MACHINES

299U 1350
1351
1353S
1353M
1353L
1357S
1357M

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This SINGER 299U two thread chain-stitch buttonhole machine is for;

- Eyelet-end Buttonhole (With/Without Taper bar).
- Straight-end Buttonhole (With/Without Taper bar).

Model 299U 1350
1351
1353S
1353M
1353L
1357S
1357M

This machine is manufactured for buttonhole sewing and is suited for sewing light weight to heavy weight materials.

2. Notices on safety

The machine must only be commissioned in full knowledge of the instruction manual and operated by persons with appropriate training.

Before putting into service, also read the safety notes and the instruction manual of the motor supplier.

The machine must be used only for the purpose intended. Use of the machine without the safety devices belonging to it is not permitted.

When gauge parts are exchanged (e.g. needle, presser foot, needle plate, feed dog and bobbin), during threading, when the workplace is left unattended, and during service work, the machine must be isolated from the mains by switching off the main switch or disconnecting the mains plug.

On mechanically operated clutch motors without start inhibitor, it is necessary to wait until the motor has stopped.

General servicing work must be carried out only by appropriately trained persons.

Repairs, conversion and special maintenance work must only be carried out by technicians or persons with appropriate training.

For service or repair work on pneumatic systems, the machine must be isolated from the compressed air supply system. Exceptions to this are only adjustments and function checks made by appropriately trained technicians.

Work on the electrical equipment must be carried out only by electricians or appropriately trained persons.

Work on parts and systems under electric current is not permitted, except as specified in regulations EN50110.

Conversions or changes to the machine must be made only on adherence to all safety regulations.

For repairs, only replacement parts approved by us must be used.

Commissioning of the sewing head is prohibited until such time as the entire sewing unit is found to comply with EC regulations.

Be sure to replace the covers after making adjustments.

Meanings of the symbols:



Danger spot!
Items requiring special attention



Danger of injury to operative or service staff.
Be sure to observe and adhere to these safety notes!



Earth

3. Commissioning



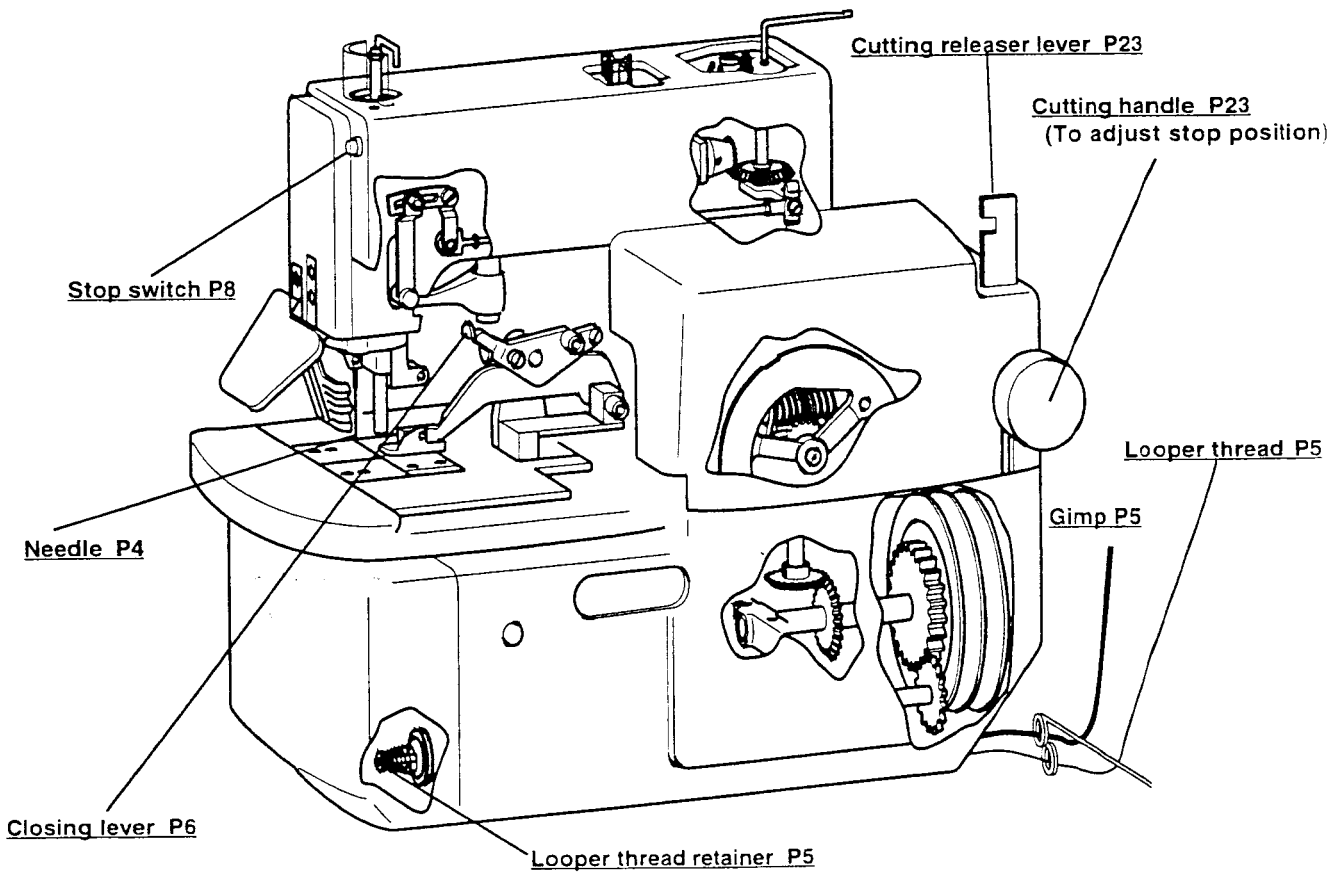
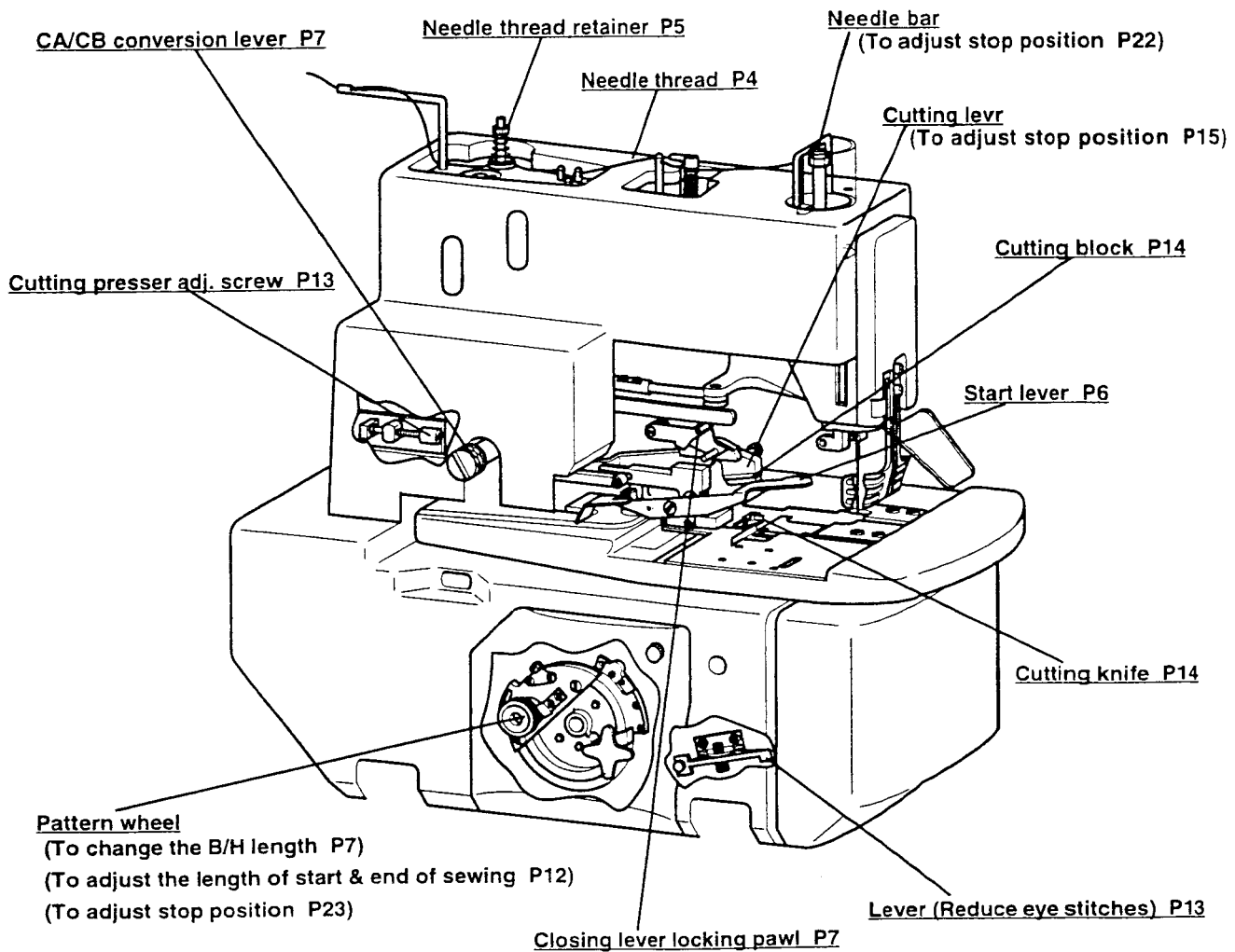
To avoid disturbances or damages, it is absolutely necessary to observe the following instructions:

Before you put the machine into operation for the first time, clean it thoroughly and oil it well (see page 16).

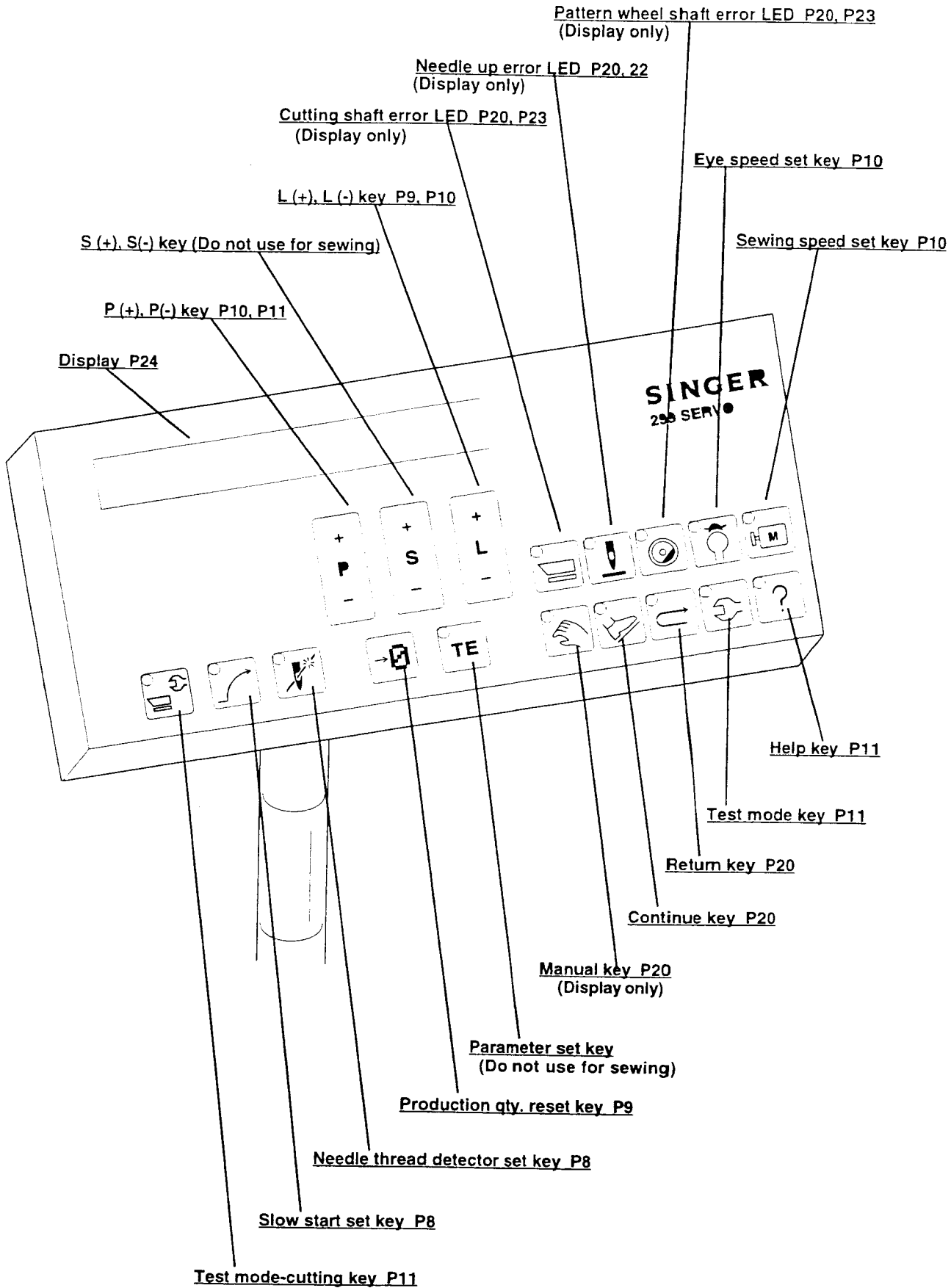
Have the mechanic check whether the motor can be used with existing mains voltage or not, and that junction box is correctly connected. Do not start the machine if the voltage is not correct!

When the machine runs, the balance wheel must rotate toward the operator. If it does not, have the electrician change the wires on the motor.


4. Needle threader



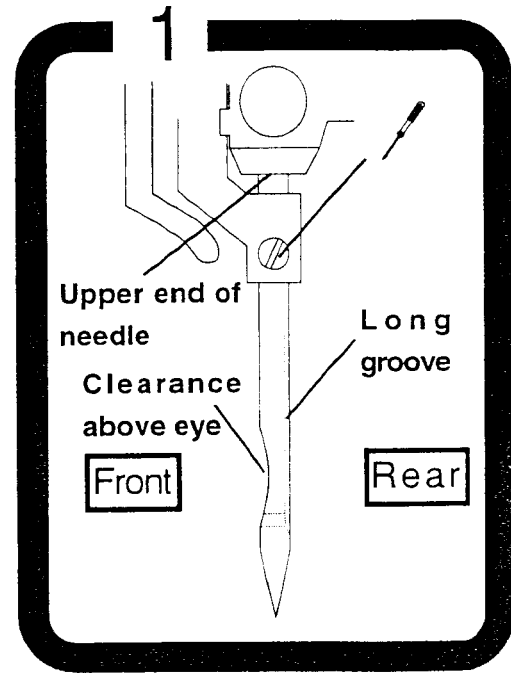
Control panel




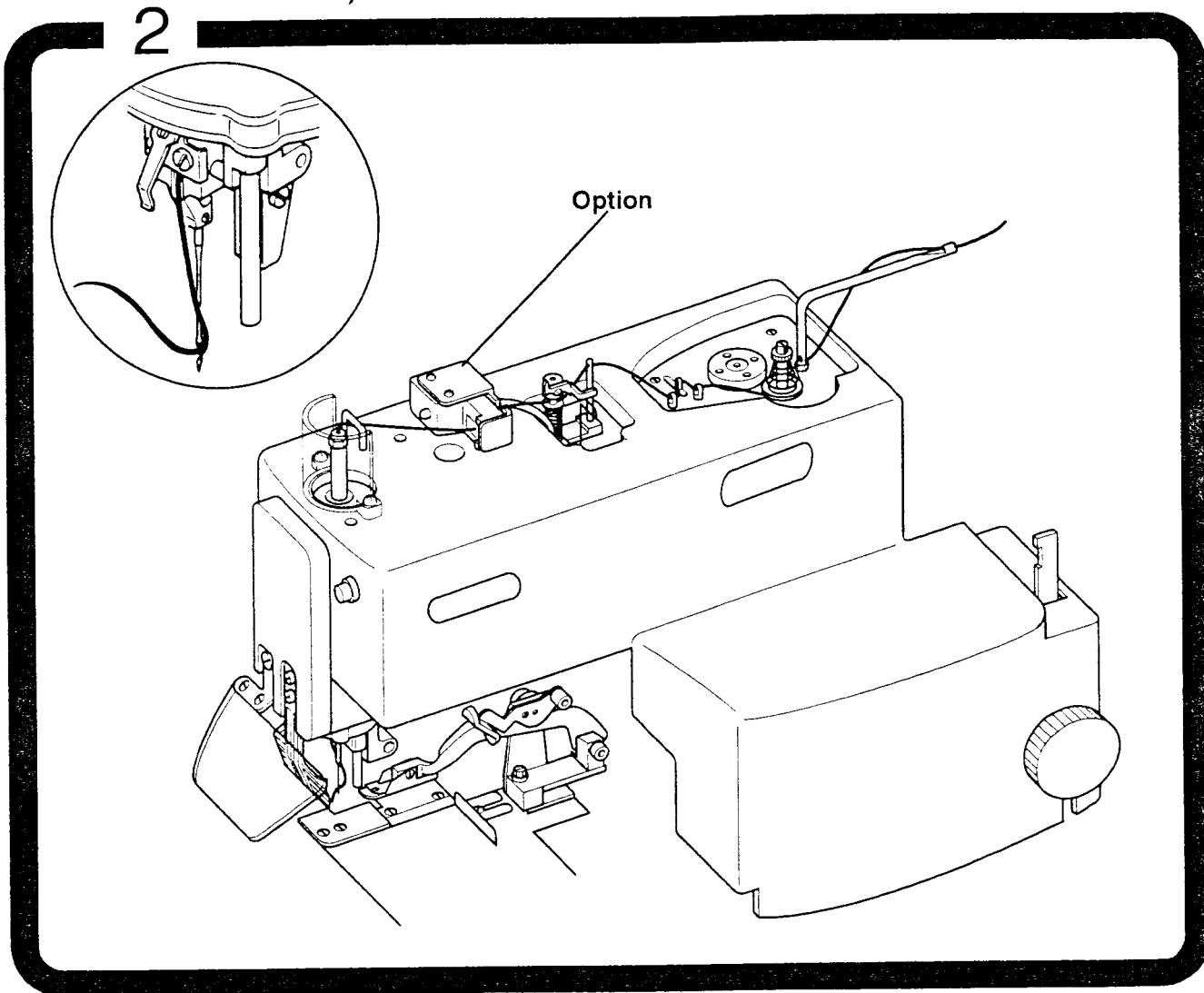
1. Attach needle to machine.
2. Thread the needle thread.
3. Thread the looper thread and gimp.
4. Adjust the needle thread tension
5. Adjust the looper thread tension.



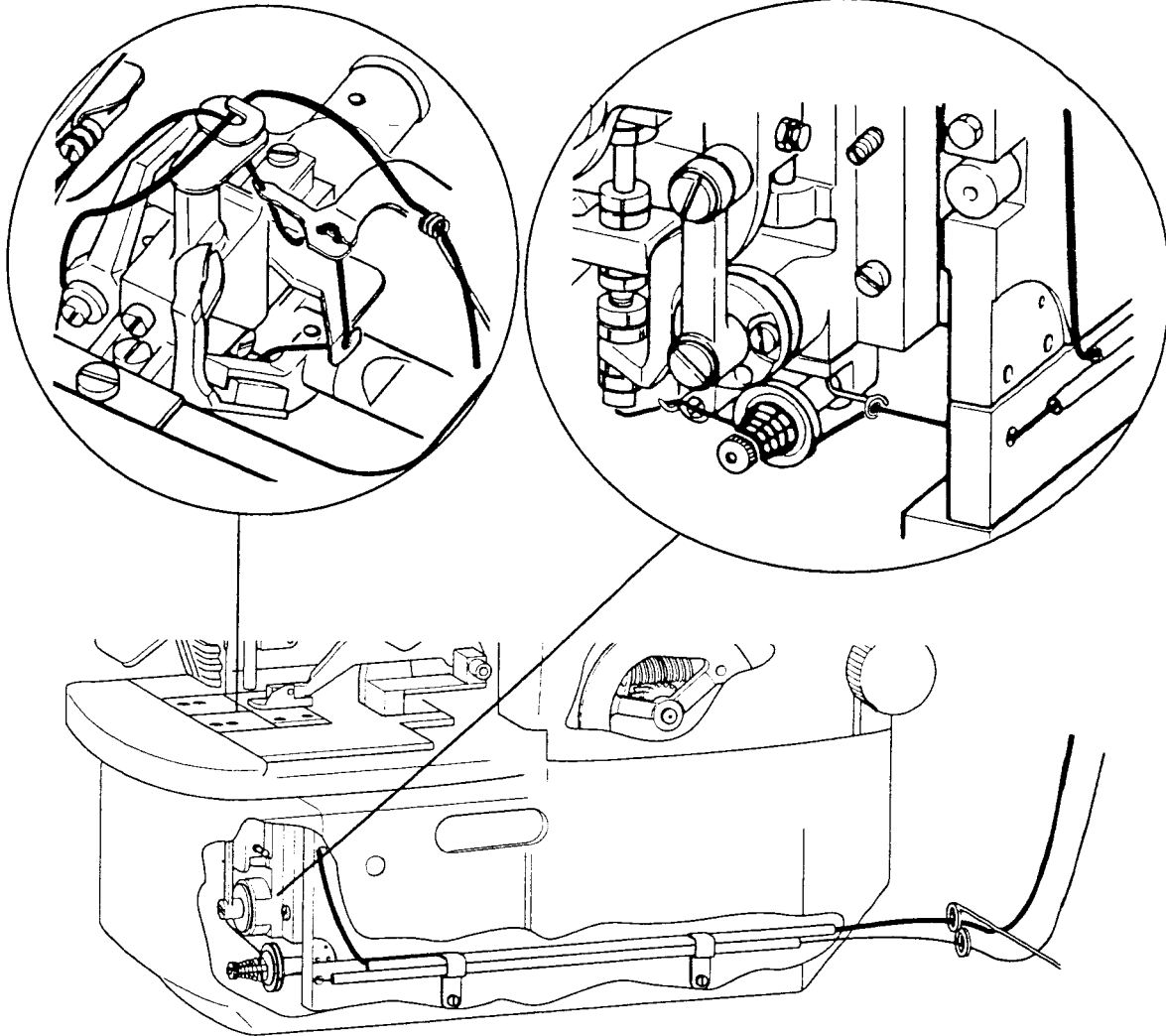
Switch off the machine. (See page 6)
 Do not run machine without eye guard, finger guard and needle bar guard!
 Danger of injury!



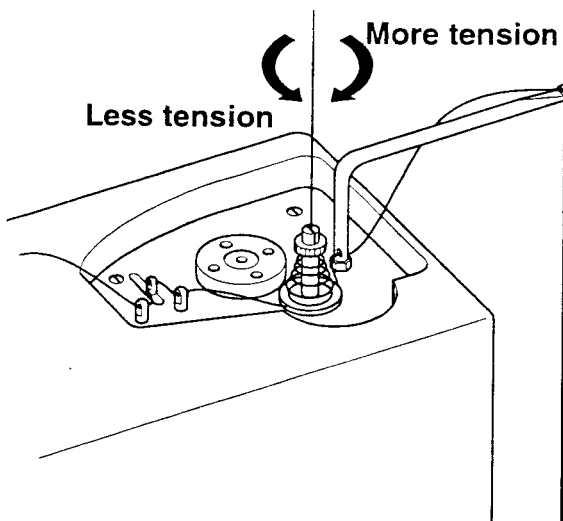
Be sure to tighten screws firmly after making adjustments



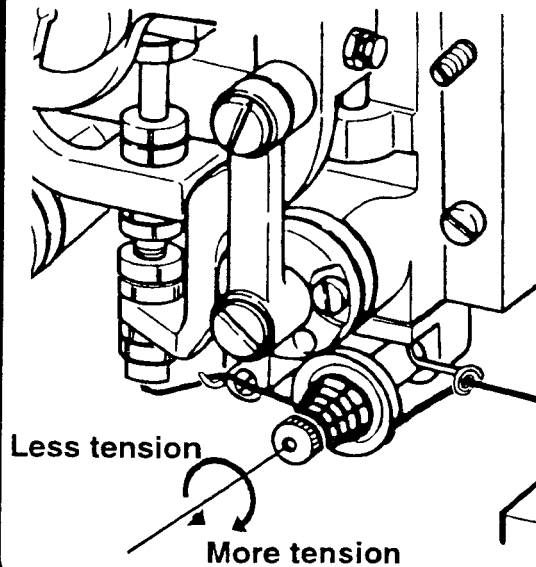
3



4



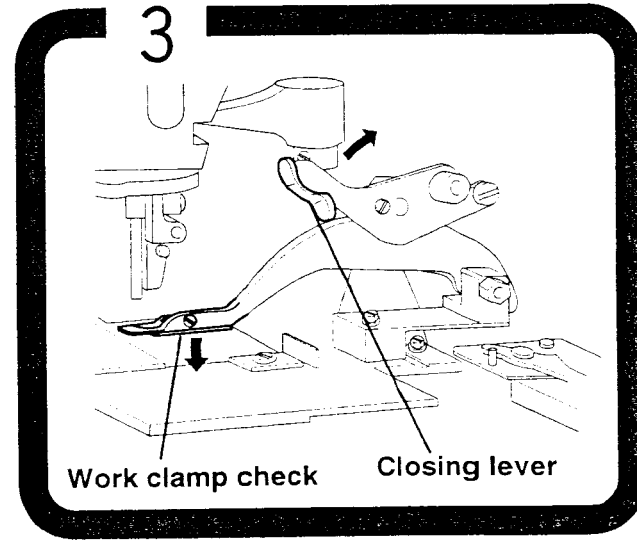
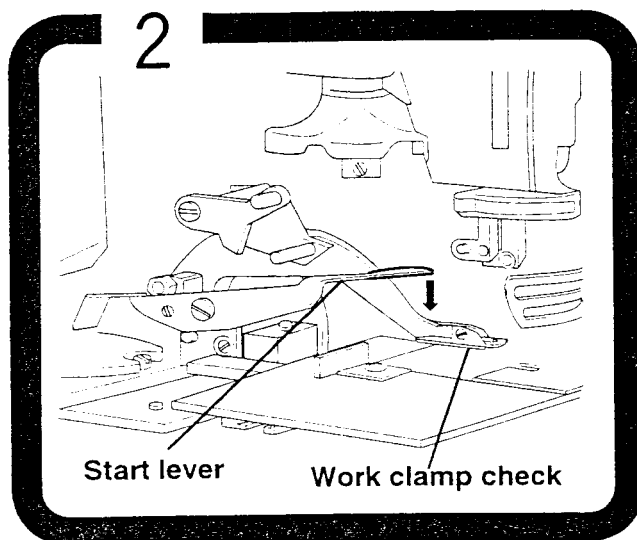
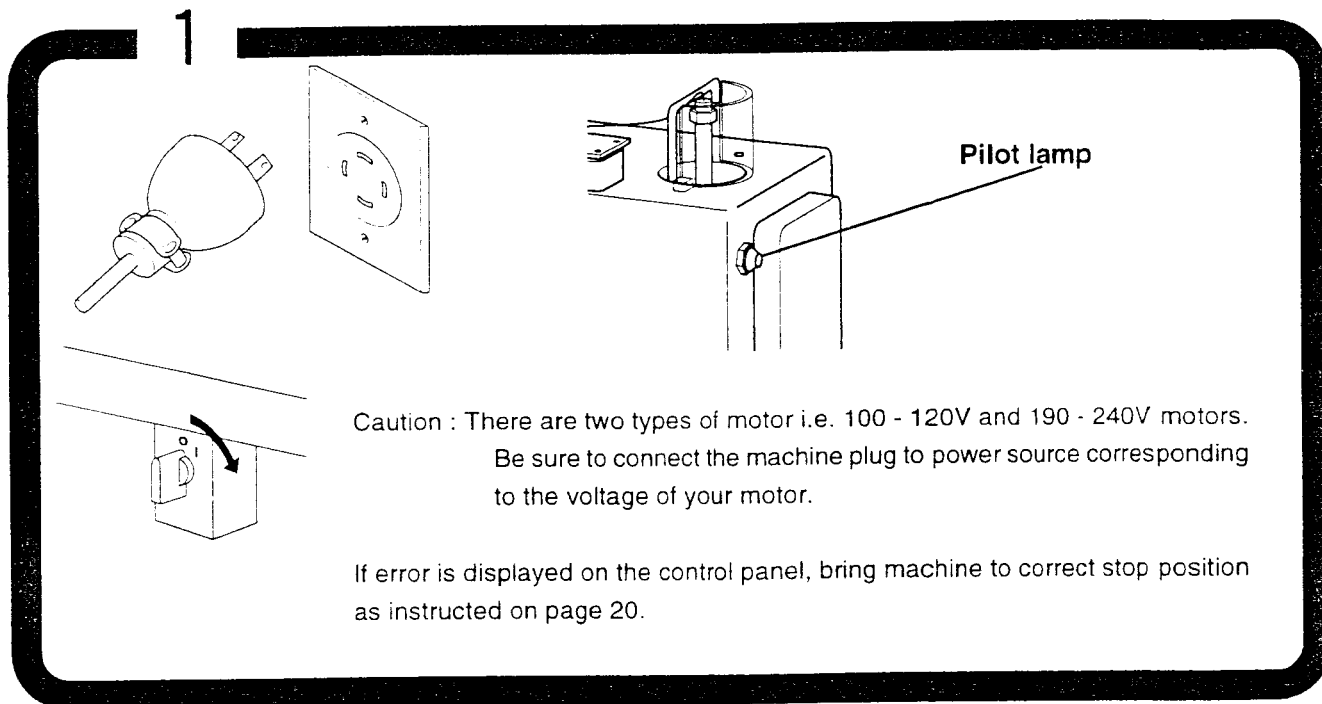
5



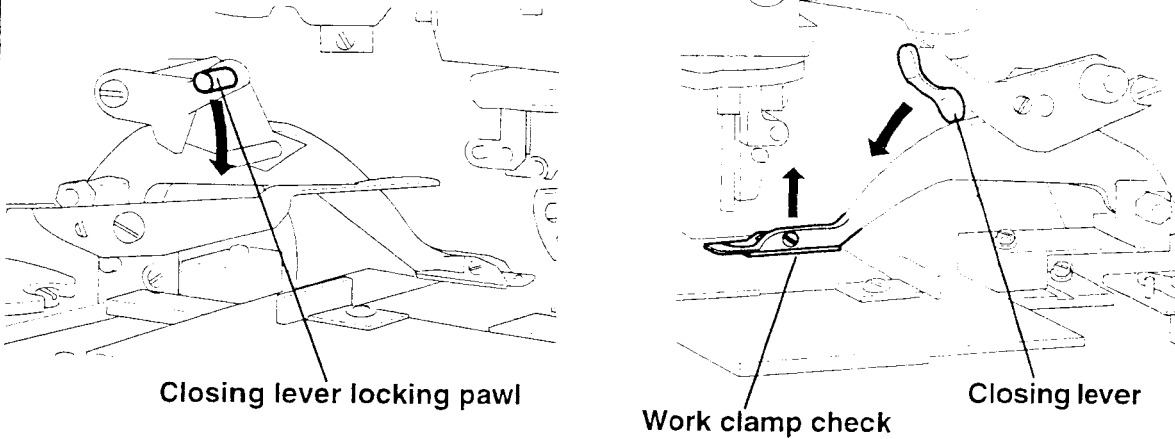
To operate the machine

NOTE: Be Sure to add oil before running machine. (See page 16)

1. Connect machine plug to wall outlet and turn on main switch (from 0 to 1). (Pilot lamp will light up)
2. Press the starting lever.
3. To lower the work clamp check manually.
4. To raise the check manually.
5. To change the length of buttonhole.
6. To convert to CA or CB.



4

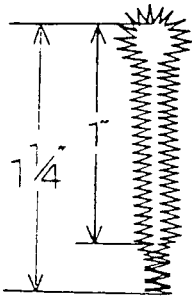


The work clamp check will rise when closing lever is lowered while lowering the closing lever locking pawl.

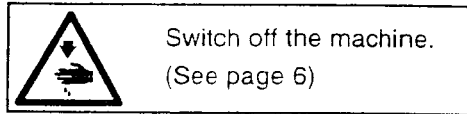
5

Loosen knob on pattern wheel and set dial to desired setting.

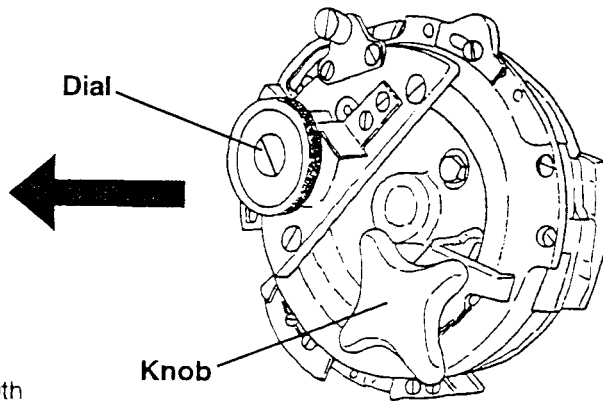
Example : Buttonhole 1 inch
Sewing length 1 1/4 inch



1 1/8	7/8
1/4	1
EYE B AND A ST. R	



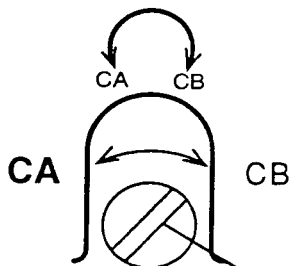
Switch off the machine.
(See page 6)



Tighten knob after setting the sewing length

6

Turn conversion lever toward CB (cut before) or CA (cut after).

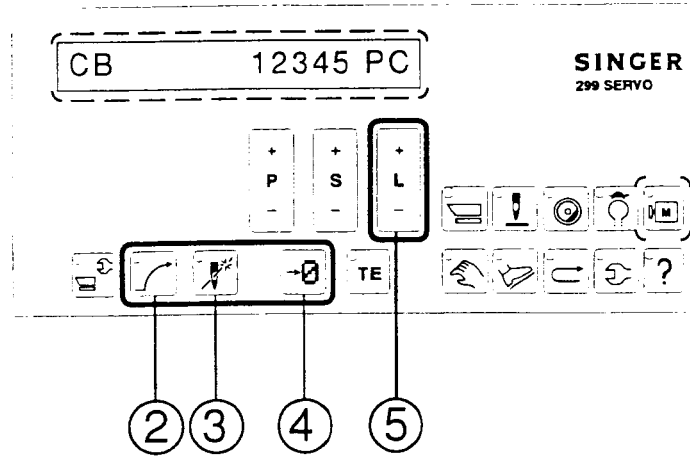



Note : NEVER convert to CA or CB during sewing because it may cause interference between clamping mechanism and spreading mechanism and damage these parts.

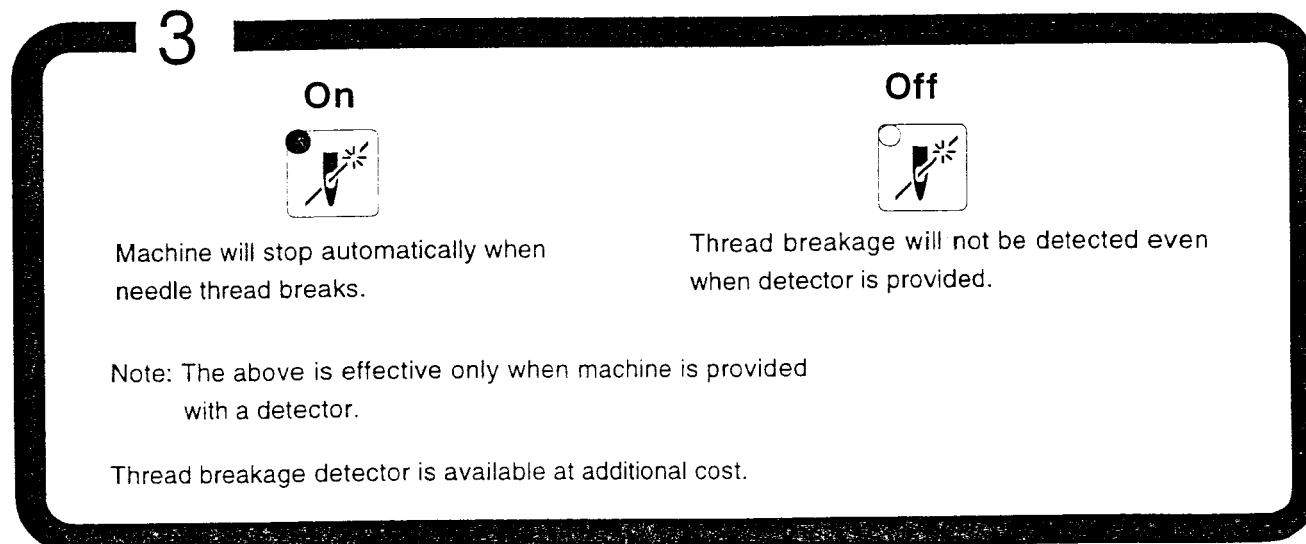
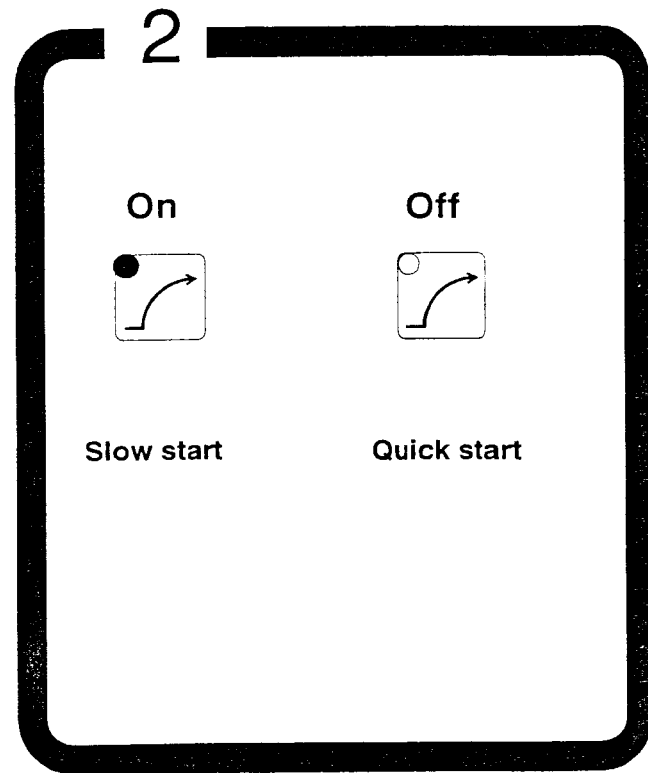
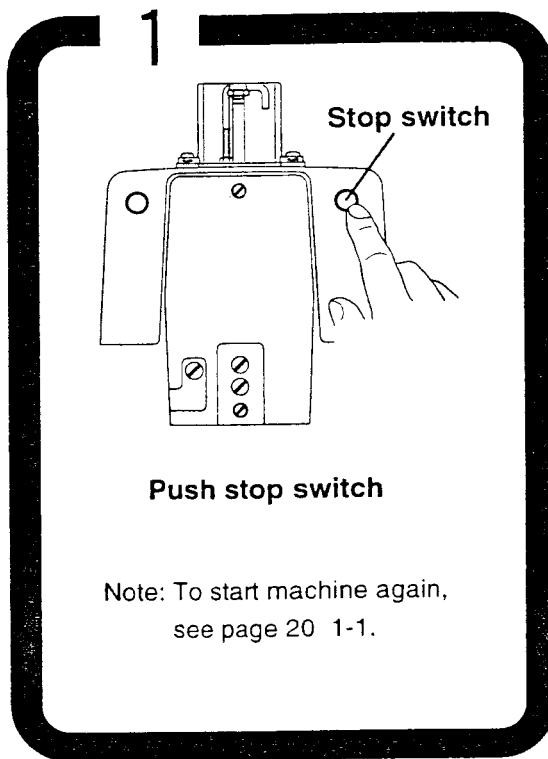
Conversion lever

Self-operation

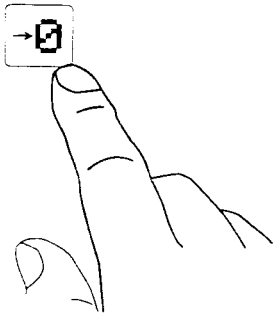
1. To stop machine during sewing.
2. To sew under slow start mode.
3. To effectuate function of needle thread breakage detector.
4. To reset production quantity.
5. To modify production quantity.



 LED on upper left corner of the key will go on and off each time the key is pressed.



4




LCD on control panel

*** 1 2 3 4 5 P C



*** 0 P C

Display of production quantity will change to "0".

Note: When LED on key to set the sewing speed is "On", the sewing speed will be displayed on the LCD therefore, be sure to press  key before pressing the reset key.

On



Off



LCD on control panel.

*** 2 0 0 0 R P M

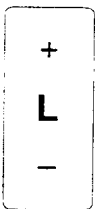


*** 1 2 3 4 5 P C

Reset after changing the display as shown above.

5

Production quantity can be changed with L(+) and L(-) keys.



LCD on control panel

*** 1 2 3 4 6 P C

↑ L (+) ≠ -

*** 1 2 3 4 5 P C


↓ L (-) ≠ -

*** 1 2 3 4 4 P C

Production quantity can be counted from 0 up to 99,999.

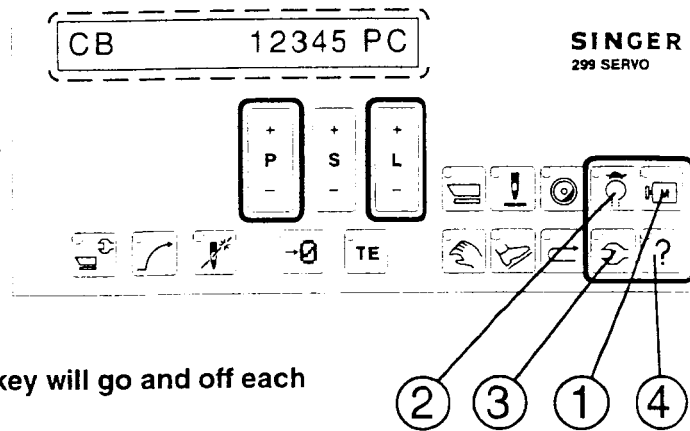
Off




Note: When LED on key to set the sewing speed is "On", press  key and turn off LED the same as item 4 above.

Useful operations

1. To change the sewing speed.
2. To decelerate sewing speed only at eyelet end of buttonhole.
3. To check function of machine.
4. To display function of the keys.

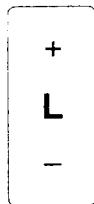


 LED on upper left corner of the key will go on and off each time the key is pressed.

1

Sewing speed is displayed at right side of the LCD and it can be changed with the L(+) and L(-) keys.

On



LCD on control panel

*** 1 9 0 0 R P M

↑ L (+) ｷ-

*** 1 8 0 0 R P M

↓ L (-) ｷ-

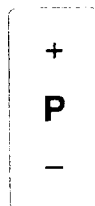
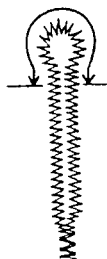
*** 1 7 0 0 R P M

Speed can be set from 800 to 2,000rpm in increments of 100 rpm.

2

Sewing speed at eyelet end of buttonhole as indicated by arrow is decelerated corresponding to the speed shown at left side of LCD.

On



Speed can be changed with P(+) P(-) keys.

LCD on control panel

R P M - 3 0 0 1 2 3 4 5 P C

↑ P (+) key

R P M - 2 0 0 1 2 3 4 5 P C

↓ P (-) key

R P M - 1 0 0 1 2 3 4 5 P C

Speed can be set from 100 to 600 rpm in increments of 100 rpm.

Off



Cutting mode will be shown at left side of display.

Example: When in cut before mode.

C B 1 2 3 4 5 P C

3

P(+) and P(-) keys are used to change the mode to knife function check mode and needle bar function check mode.

On



When key with its LED blinking is pressed, it will activate the next function necessary.

Test mode

Check function of knife

When  key is pressed, the cutting knife will function.

LCD on control panel

CUTTING ADJ MODE

↑ ↓ P (+) (-) key

INCHING MODE

Off



Sewing mode

Check function of needle bar

When  key is pressed, the electromagnetic clutch will be energized.

When  key is pressed, the needle bar will function slowly.

4

On



Help mode















Off



Sewing mode

If other key is pressed while LED is lighted up, the function of the key pressed will be displayed on LCD as shown below.

See page 3 for name and function of keys.

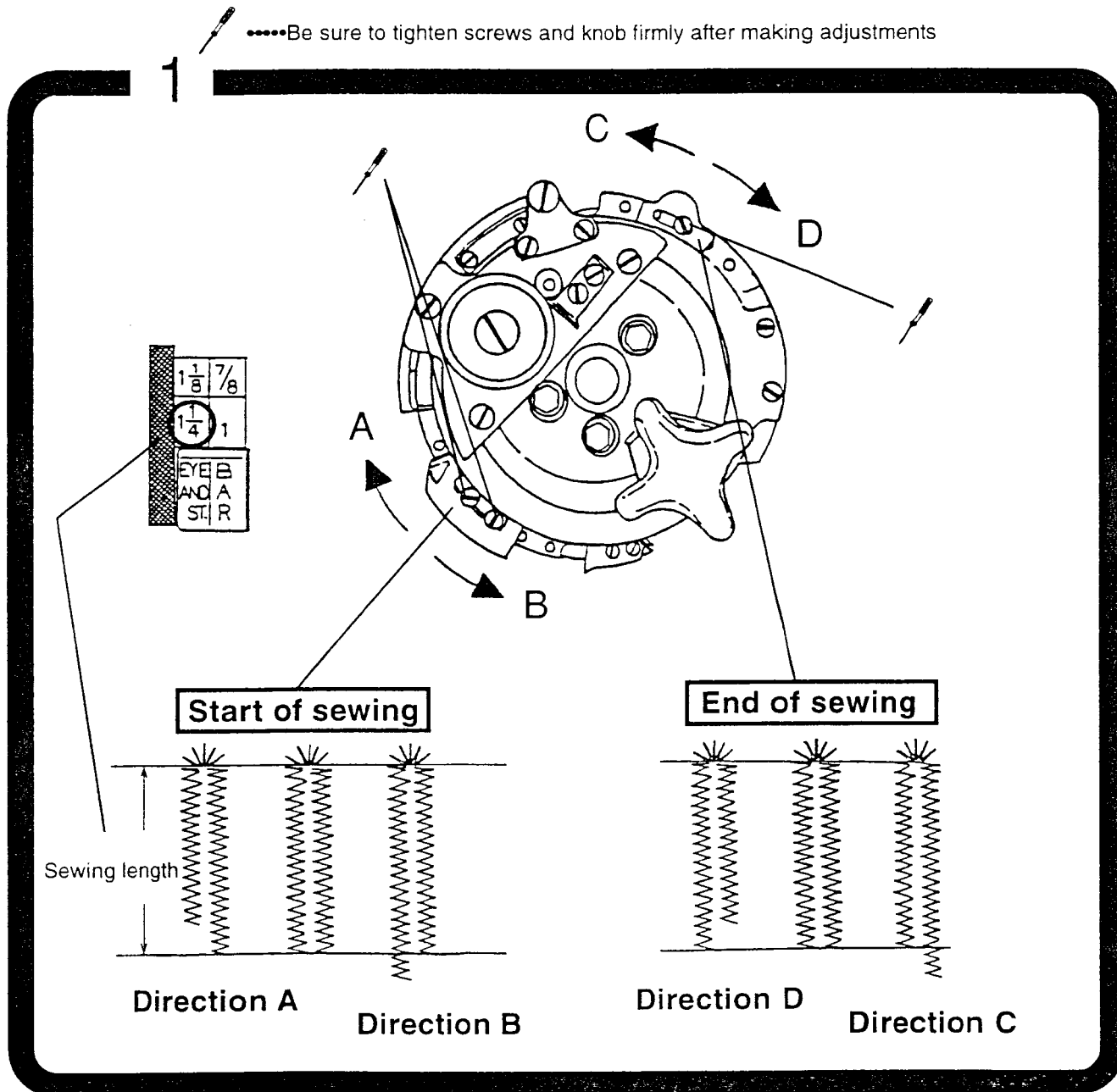
	HELP MODE		STOP POS. ERROR
	SLOW/FAST START		SLOW EYE SPEED
	SET THD DETECTOR		SET MOTOR SPEED
	PRODUCT NO RESET		ADJUST BY HAND
	PARAMETER SET		CONTINUE CYCLE
	KNIFE POS. ERROR		RETURN STOP POS.
	NEEDLE POS ERROR		FOR TESTING

Adjustment for sewing

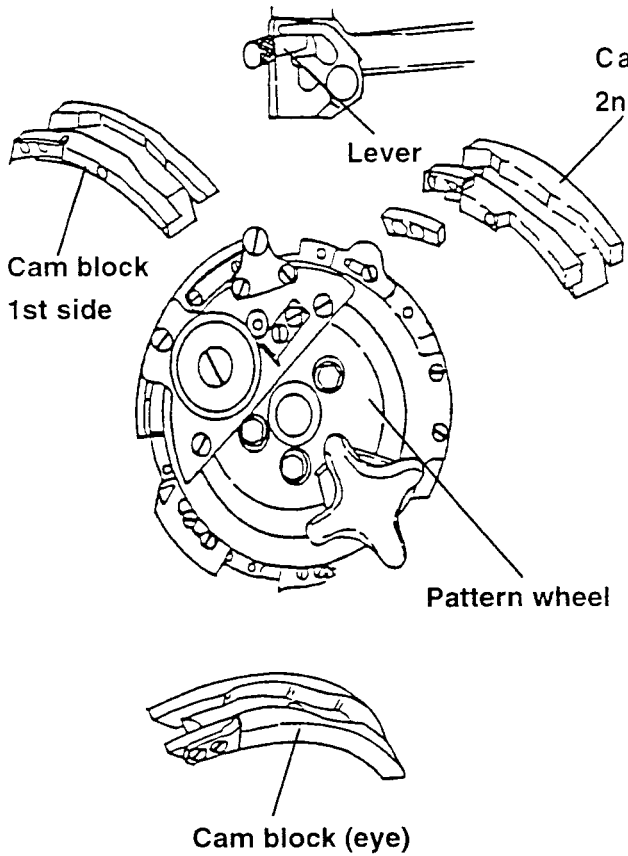
1. To adjust the length of start and end of sewing .
2. To change the style of buttonhole.
3. To reduce number of stitches at eyelet end of buttonhole.



Switch off the machine. (See page 6)



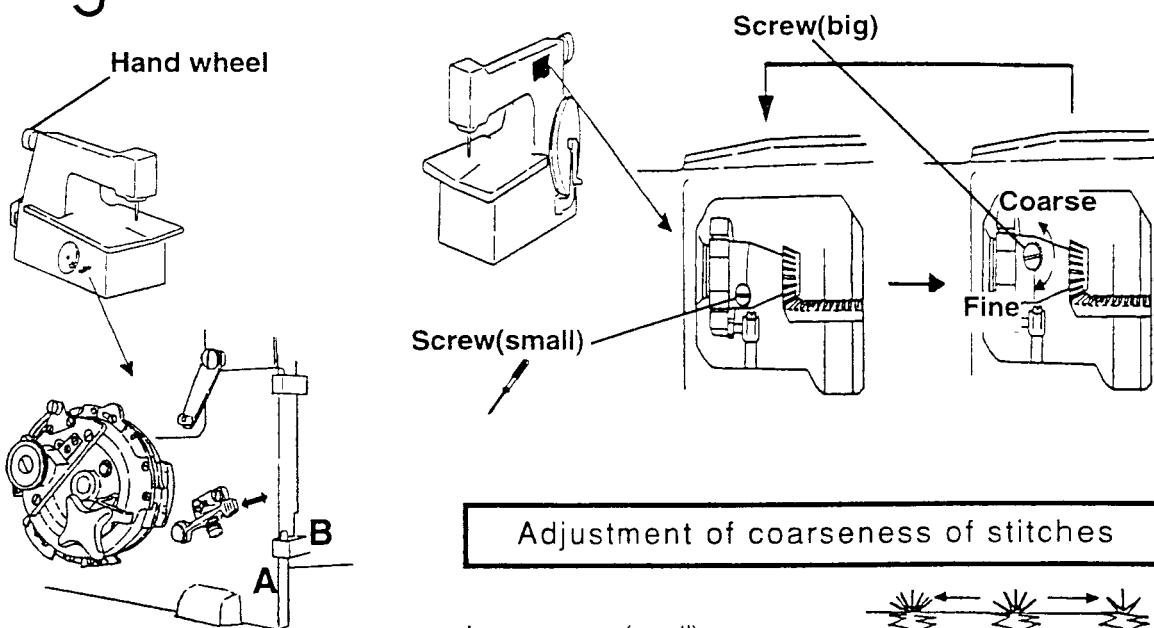
2



○ : Attach cam block
 — : Remove cam block

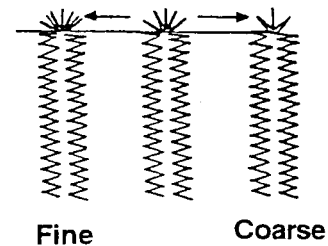
	Pattern Wheel cam block			Lever position
	Eye	1st side	2nd side	
	○	○	○	Down
	○	○	○	Up
	○	—	—	Down
	—	○	○	Down

3



A: Coarse stitches
B: Normal stitches

Loosen screw (small).
 Rotate hand wheel one half turn.
 Adjust as required screw (big).
 Rotate hand wheel one half turn.
 Tighten screw (small).



Adjustment

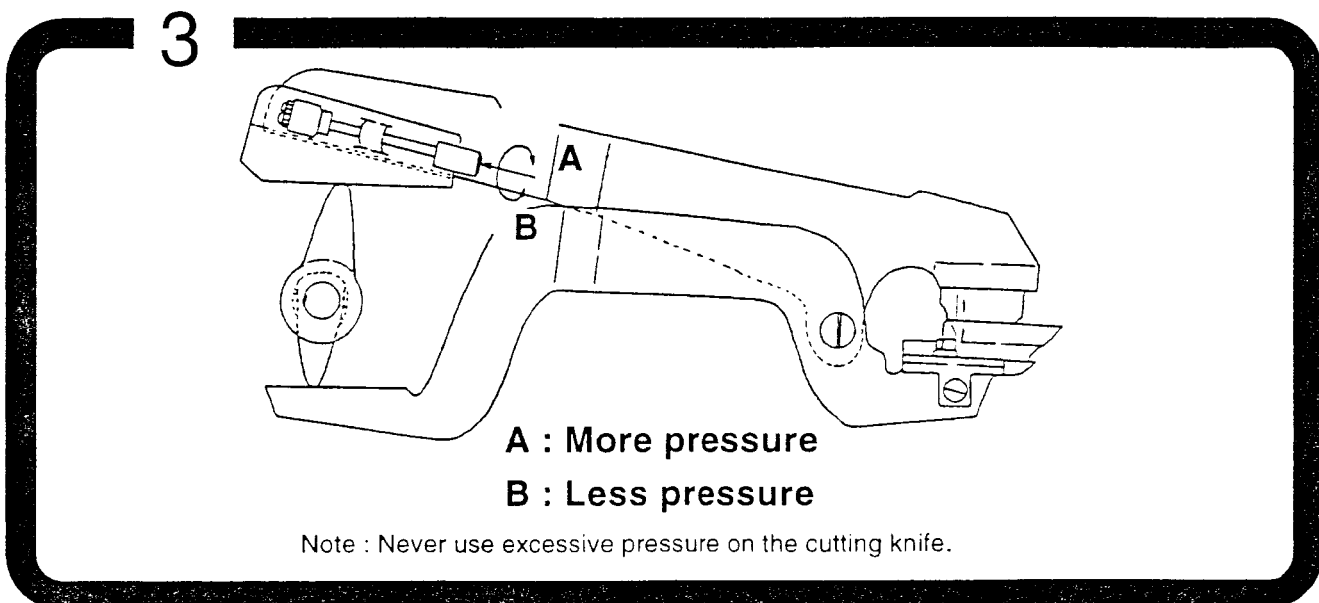
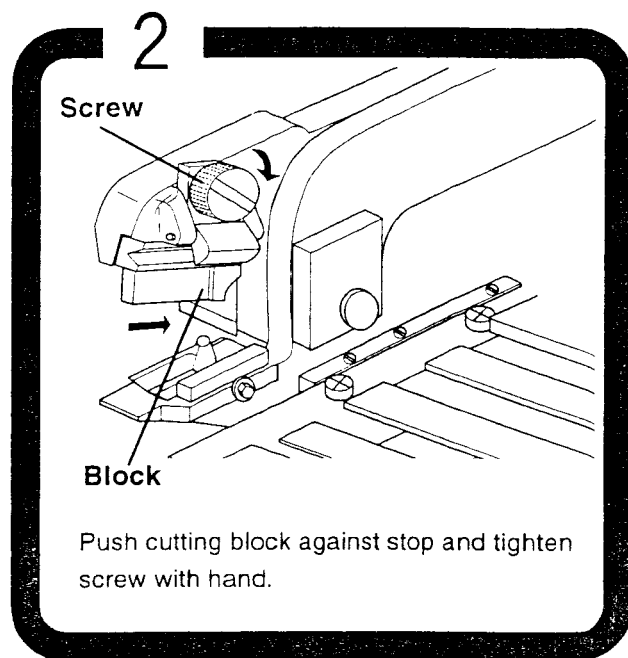
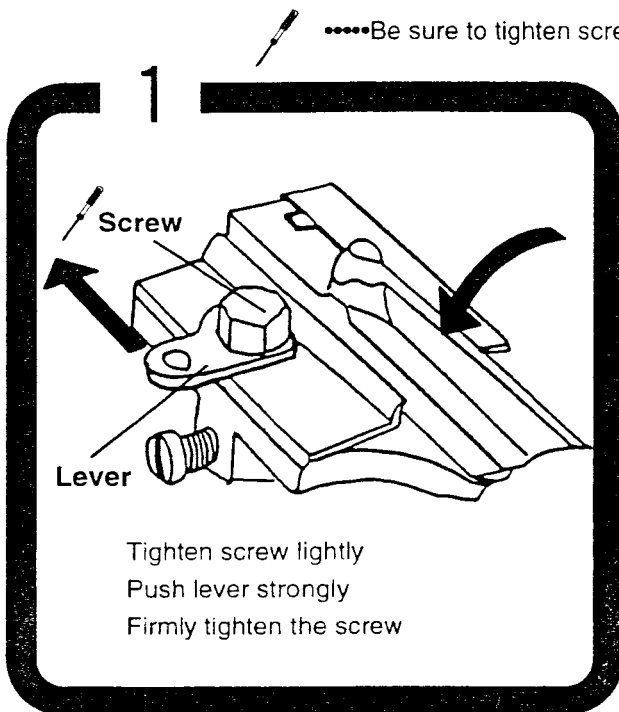
To adjust buttonhole cutting mechanism.

1. To install the cutting knife.
2. To install the cutting block.
3. To adjust the pressure on the cutting knife.
4. Endwise adjustment in relation to stitching of buttonhole.
5. Sidewise adjustment in relation to stitching of buttonhole.



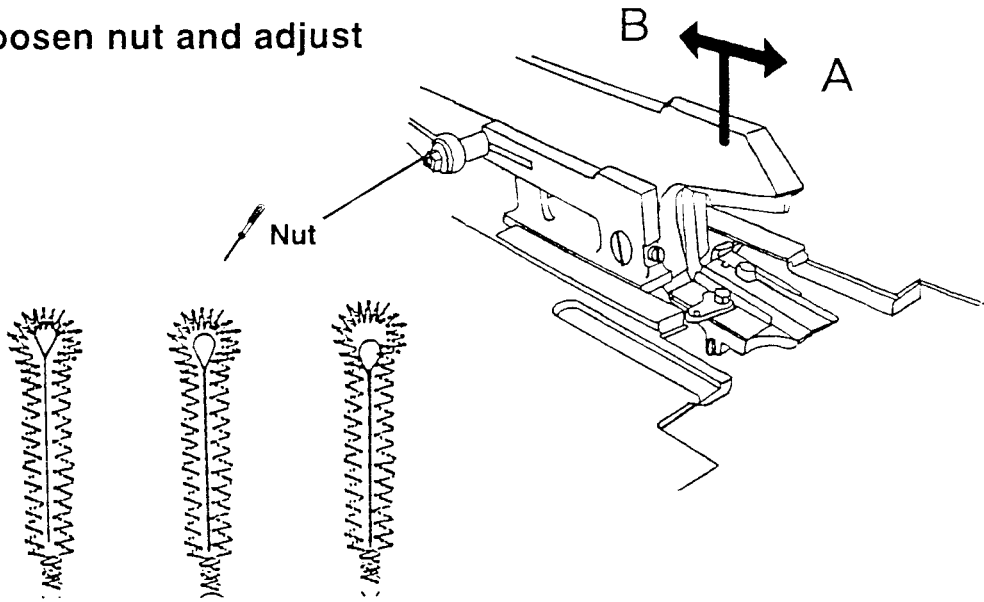
Switch off the machine. (See page 6)

.....Be sure to tighten screws firmly after making adjustments



4

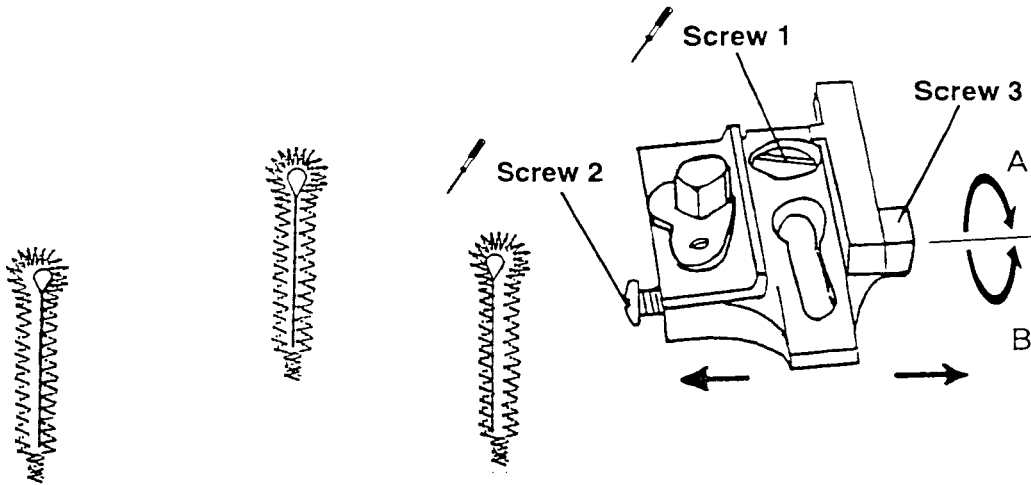
Loosen nut and adjust



Direction A

Direction B

5



To move toward left

- Loosen screw 2
- Turn screw 3 toward A
- (Knife will move)
- Tighten screw 1
- Tighten screw 2

To move toward right

- Turn screw toward B
- (Knife will move)
- Tighten screw 1
- Tighten screw 2

Tighten screw 1 after adjustment.


Maintenance



1. When machine is in normal use, the loopers and area around the loopers should be cleaned once every day. When used more frequently, it should be cleaned more often.

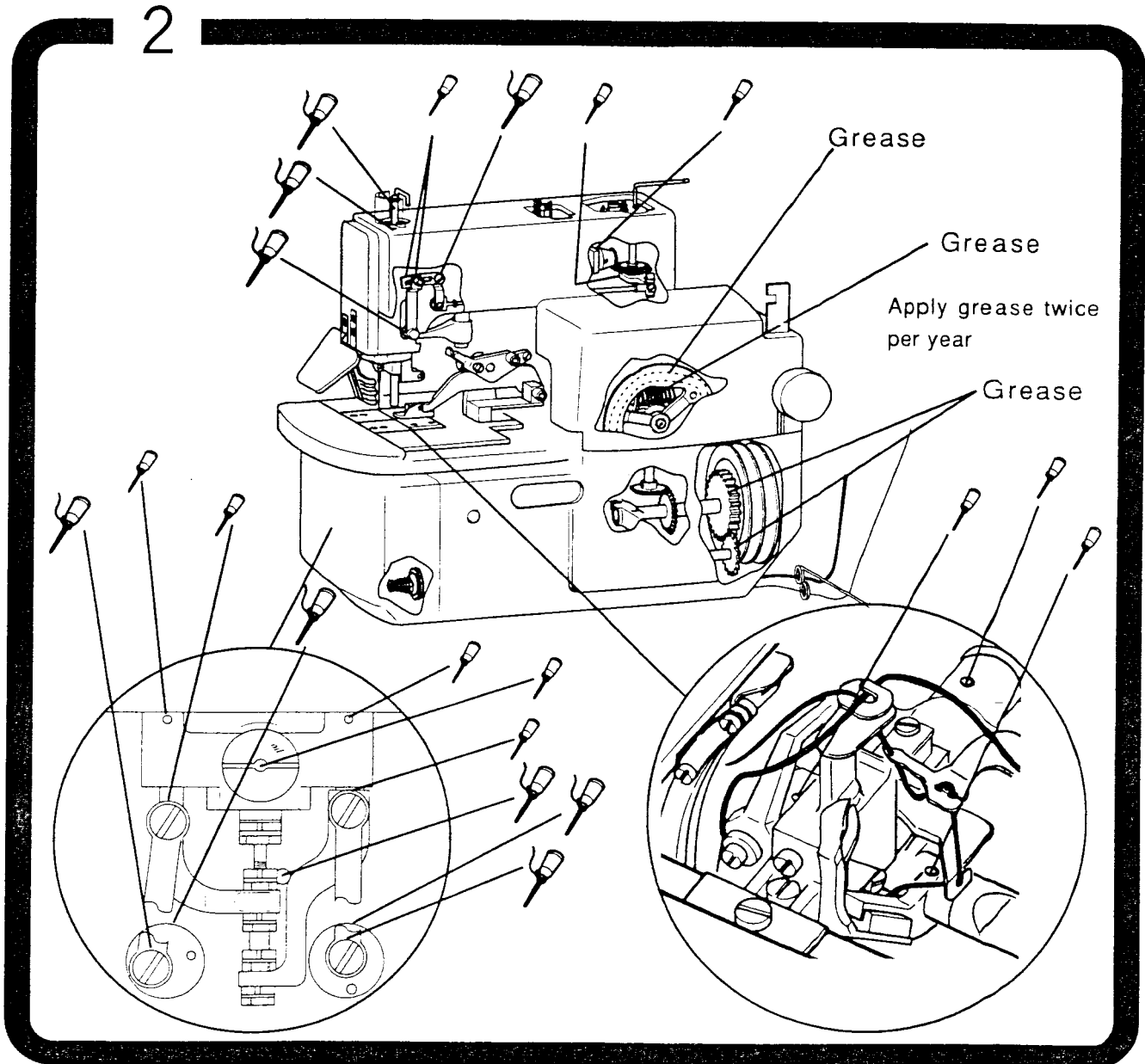
2. Lubrication

When machine is under normal use (approx. 2,000 buttonholes / day), apply oil once every week.

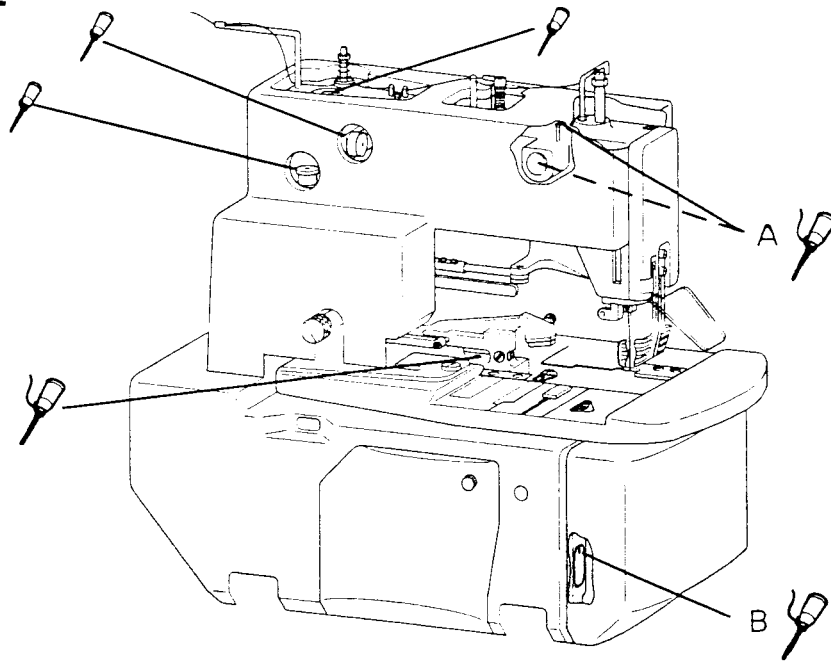
3. The area never to apply oil.

 Switch off the machine. (See page 6)
Danger of crushing between sewing head and table top.

 Important oiling point
 Oiling point

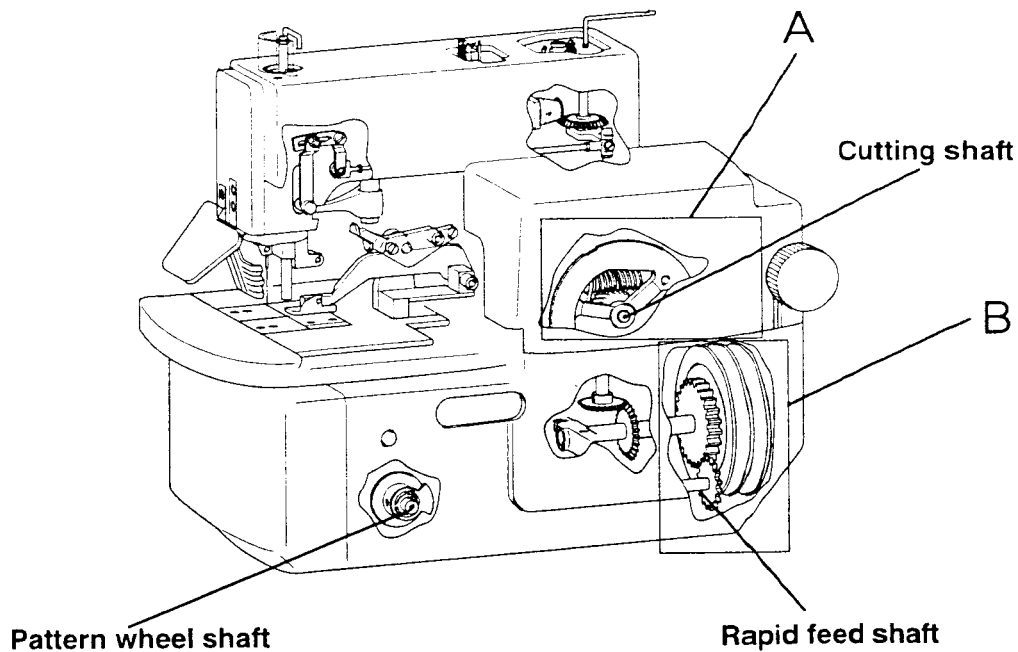


2



- Oil filled in oil sump A and B lubricates the arm shaft and bed shaft by means of a wick.
- Fill oil in oil sump A and B slowly to about 70% of its capacity. Rapid and / or excessive filling may result in overflow of the oil.

3



- Note:**
1. Electromagnetic clutch is used in A and B areas. Therefore oil should never be applied to these areas with the exception of applying grease to the gears.
 2. Pattern wheel shaft, cutting shaft and rapid feed shaft do not require lubrication.

9. Preparation

To set up the machine

1. Unpack the machine.
2. Fasten machine support to table with wood screws.
3. Set machine on machine support.
4. Install belt and adjust belt tensions.
5. Attach fittings to machine.

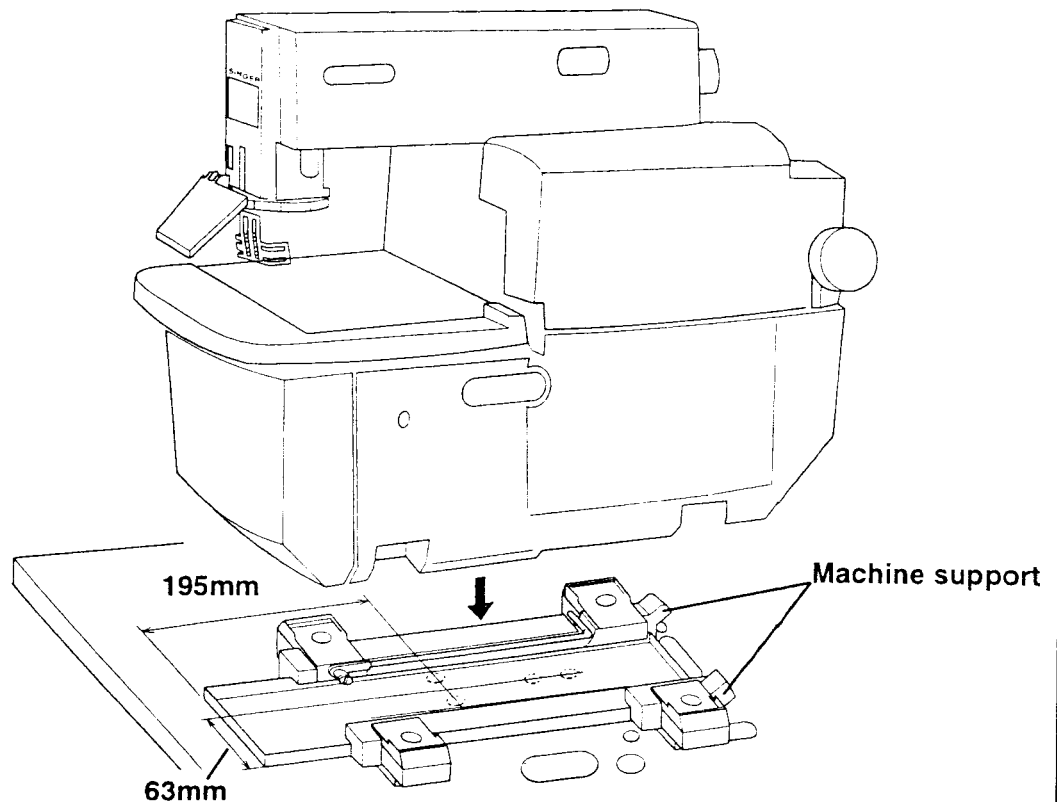


Switch off the machine. (See page 6)
Danger of crushing between sewing head
and table top.

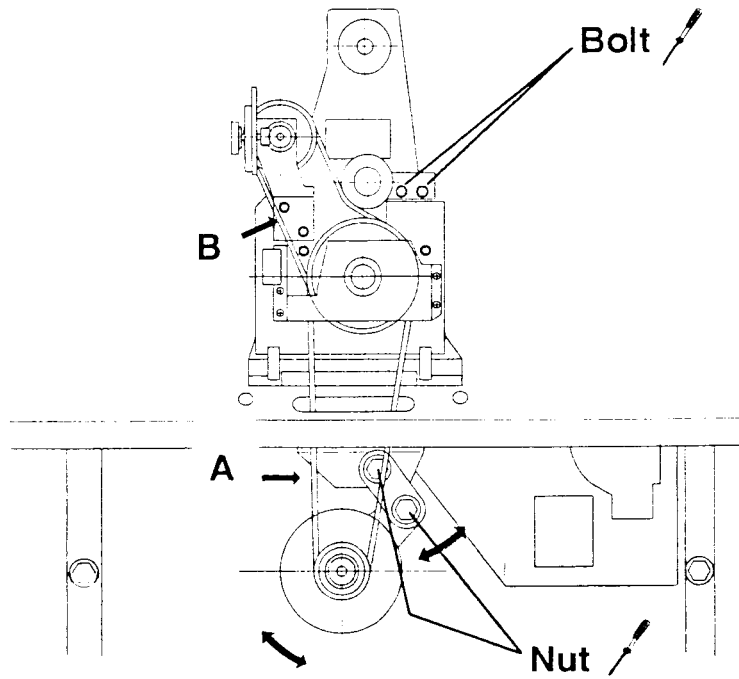


.....Be sure to tighten screws firmly after making adjustments

1 ~ 3

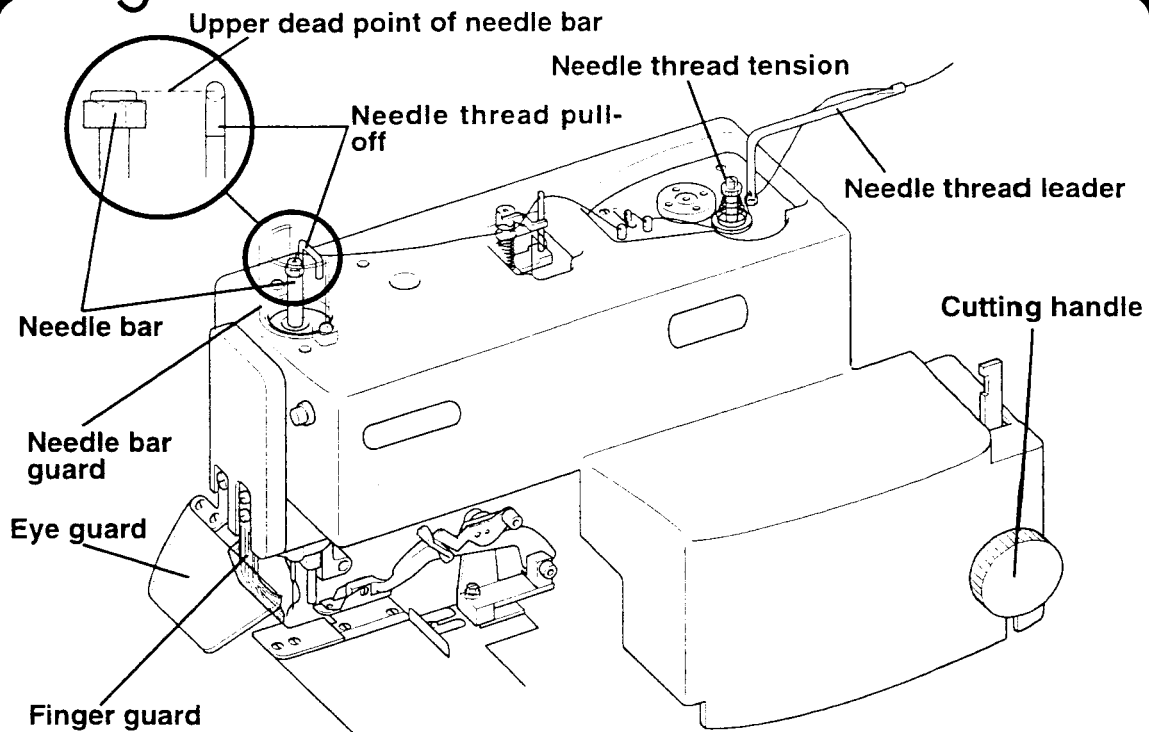


4



1. Loosen nut and adjust belt tension so that belt will deflect 10mm when 800g force is applied to point A.
2. Loosen bolt and adjust belt tension so that belt will deflect 5mm when 500g force is applied to point A.

5




Set height of needle thread pull-off to same as upper dead point of needle bar.

1. When error is displayed on LCD on control panel.

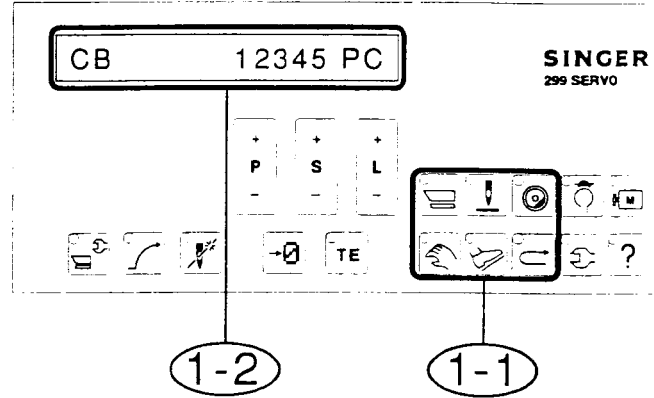
1.1 When LED on ,  and  keys light up.

1.2 In case of error other than above.

2. Others



Be careful not to start the machine when adjusting the stop position manually .



1-1



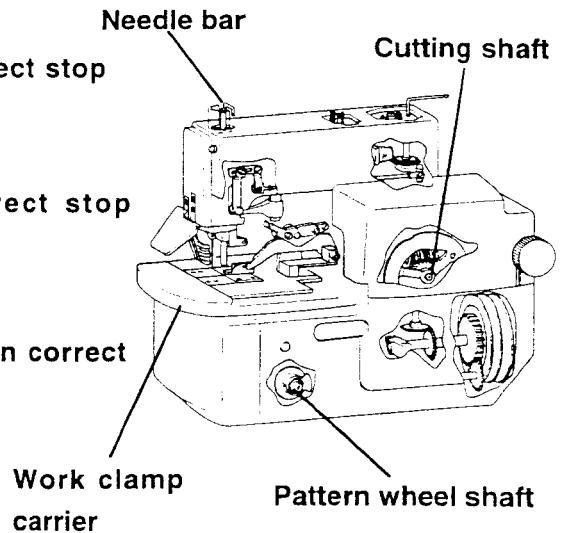
Cutting shaft not in correct stop position.



Needle bar not in correct stop position.

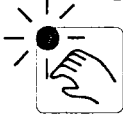


Pattern wheel shaft not in correct stop position.



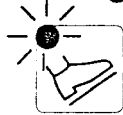
Corrective measure:  Press key with blinking LED to correct the problem.

LED blinking



Error can be corrected by rotating machine manually. (See page 24 for detail)
(LED is blinking only to indicate error therefore no function can be obtained by pressing the key.)

LED blinking






When key is pressed, the machine will continue to complete the sewing cycle.

LED blinking



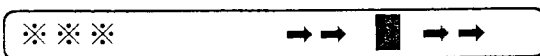
When key is pressed, the machine will stop sewing and return the carrier to its stop position by rapid feed.

1-2



If LED on , ,  keys does not light up when error number is displayed.

1. Turn off power switch.
2. Wait over 10 seconds and then turn on power switch.
3. If error mentioned in item 1-1 above is displayed, return machine to stop position as instructed above.
4. If same error occurs repeatedly, contact your dealer or your nearest service center.

Following is displayed on LCD.






This display is not indicating error but is indicating that the machine is in the midst of sewing.

Manual adjustment and use of  and  keys the same as in item 1-1 above is an effectual method in correcting this problem.

2

Others

NO.	Problem	Solution
1	Movement of needle bar is slow only at start of sewing.	If LED on  key is "On", press key and turn off the LED.
2	Though the machine is fitted with needle thread breakage detector, it does not stop even when thread breaks.	If LED on  key is "Off", press key and turn on the LED.
3	Sewing speed slow down at eyelet end of buttonhole.	If LED on  key is "On", press key and turn off the LED.
4	Work clamp check can not be raised by hand.	Lower closing lever while lowering the closing lever locking pawl as instructed on page 7.
5	Error 4 is displayed on LCD and machine stops.	Adjust the length of start and end of sewing. (See page 12)
6	Cutting knife stops functioning while in cutting motion and error 25 is displayed on LCD.	Return cutting knife to its rest position as instructed on page 23. Adjust pressure on the cutting knife (page 14) and also check wear of cutting block.
7	Cutting handle can not be turned.	When carrier is not in correct stop position, the safety device prevents the cutting handle from rotating. Return carrier to its correct stop position. (See page 23)

To adjust machine stop position

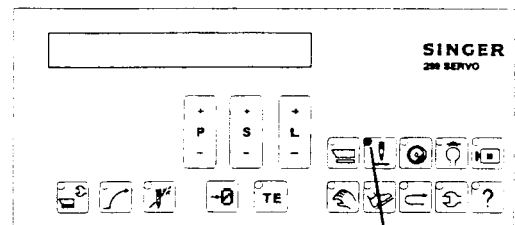
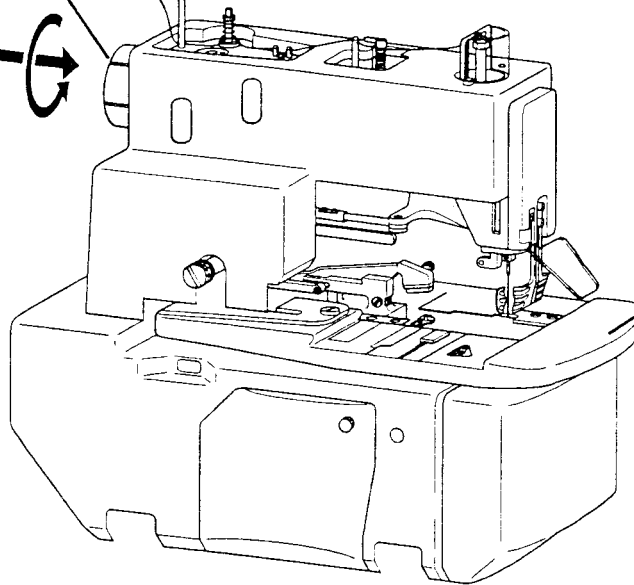
1. Needle up stop position
2. Buttonhole cutting shaft stop position
3. Pattern wheel shaft stop position



Be careful not to start the machine when adjusting the stop position manually .

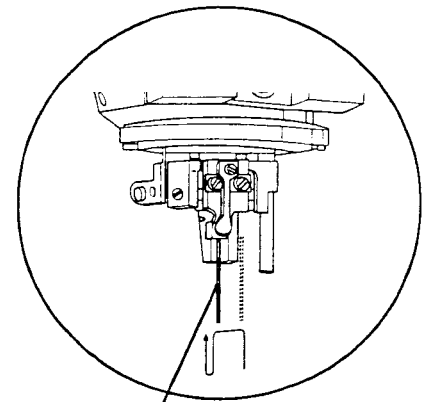
1

Hand wheel



Needle up error LED

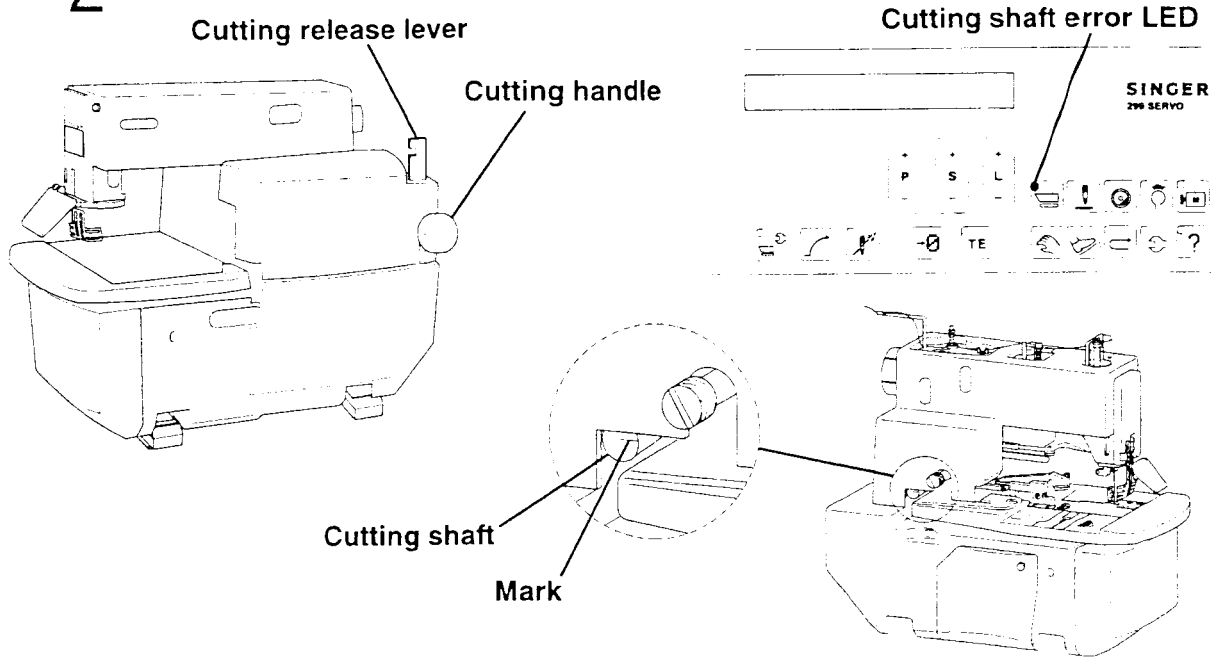
Work clamp carrier



Needle

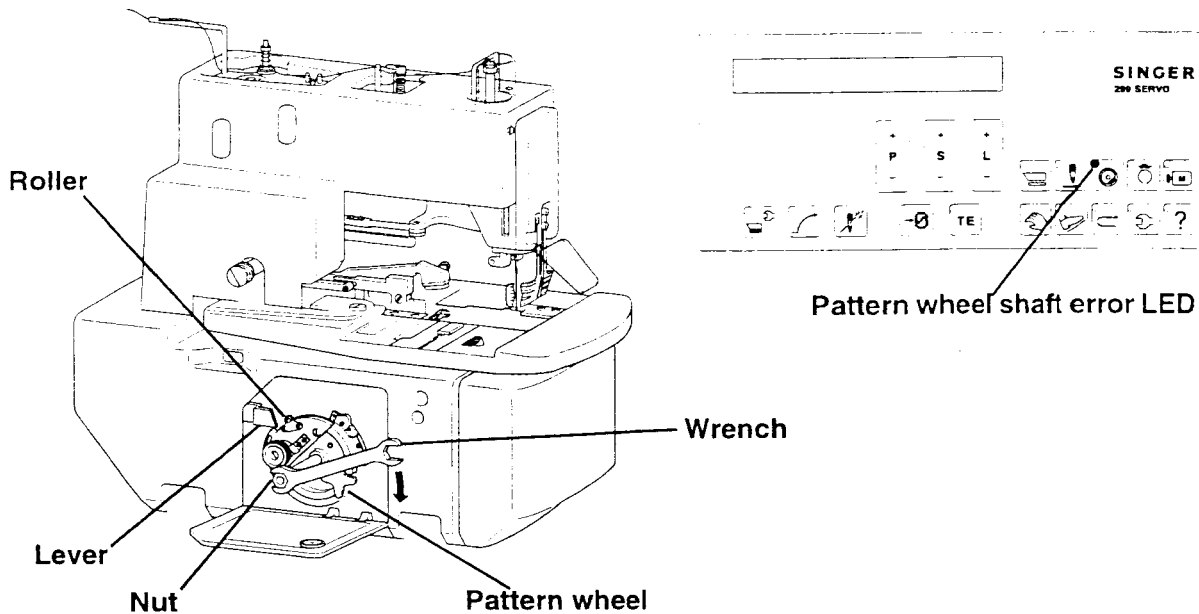
1. Push hand wheel inward and turn it in the direction indicated by arrow until needle is at its highest position on the left side.
2. LED on control panel indicating needle up error will go out.

2



1. Push cutting handle toward machine.
2. If ERROR 1 occurs, turn cutting handle until mark on cutting shaft is at the front.
If ERROR 8 occurs, turn cutting handle until mark on cutting shaft is at the bottom.
3. LED on control panel indicating cutting shaft error will go out.
4. Pull up the cutting releaser lever. (Clutch will disengage)

3




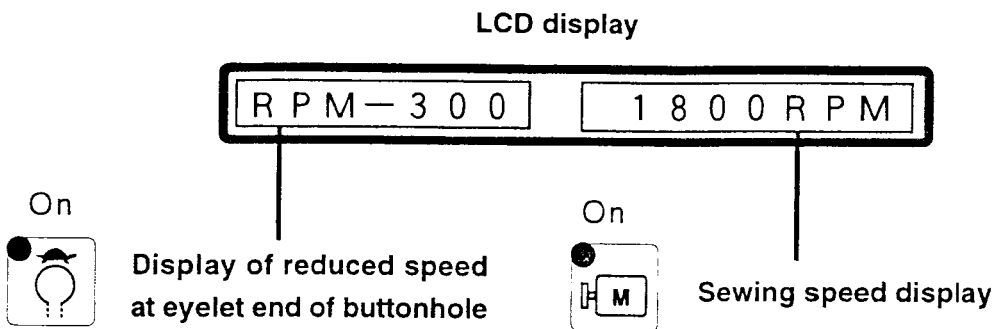
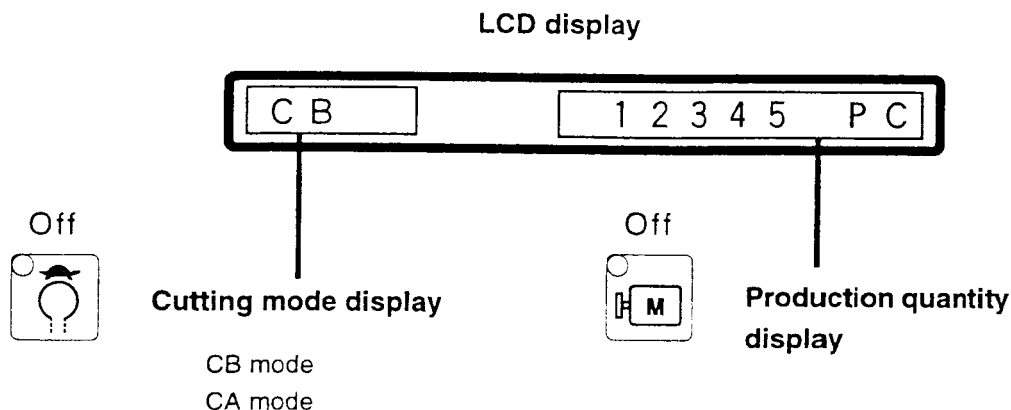
1. Using a wrench furnished with the machine, turn nut in the direction indicated by arrow until the pattern wheel rides over just beyond the roller.
2. LED on the control panel indicating pattern wheel shaft error will go out.

11. Display on control panel

LCD on control panel

Highest priority is given to the display of modes noted below.

1. Error display. (including display indicating that the machine is in the midst of sewing)
2. Test mode. (LED on  key lighted up)
3. The following is displayed on the LCD when machine is in condition other than above.



Variety	1350	1351	1353 S	1353M	1353 L	1357 S	1357M
Stitch type	Two thread chain stitch						
Style of buttonhole	Eyelet-end buttonhole/Straight-end buttonhole(w/taper bar / w/o taper bar)						
Application	Light to heavy weight				Heavy weight		
Needle bar stroke	34.1mm						
* Max. sewing speed	2,000 SPM						
Max. b/hole length(w/taper bar)	38mm	35mm	22mm	29mm	35mm	22mm	29mm
Min. b/hole length(w/taper bar)	13mm	13mm	13mm	16mm	22mm	13mm	16mm
Max. sewing length	40mm	35mm	25mm	32mm	38mm	25mm	32mm
Min. sewing length	16mm	16mm	19mm	25mm	32mm	19mm	25mm
Clamp lift	9.5mm				12.7mm		
Needle	Cat. No. 1413						
Looper(threaded)	#548232						
Looper(non-threaded)	#548231						
Loop retainer(left)	#548205						
Loop retainer(right)	#544520						
Thread trimmer	Needle thread	Needle thread, looper thread, gimp					
Lubrication system	Semiautomatic lubrication system						
Oil	Singer type `B` oil						
Working space(width)	300mm						
Working space(behind needle)	53mm						
Noise	82 dB						
Weight	80 kg						
Size	350x550x480 mm (Width x Length x Height)						

* The machine should be operated at a speed slower than maximum recommended speed depending on material and thread used and type of work being done.

Alteration may be made to design, dimensions and weight without notice.

