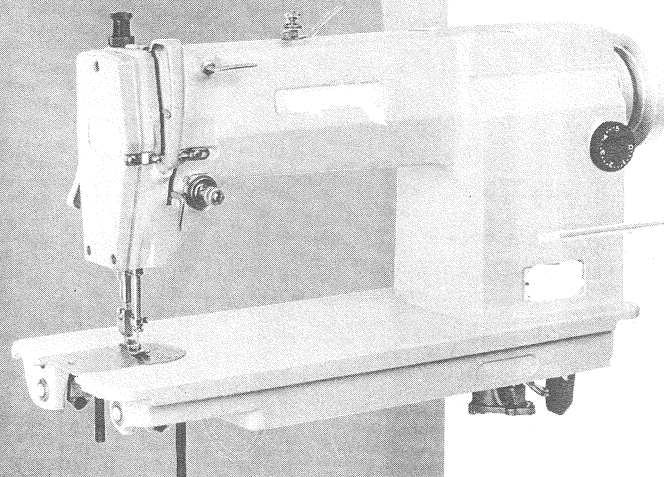


Since 1898  
**CONSEW®**

## USER'S MANUAL

SUPER HIGH SPEED,  
1-NEEDLE LOCK-  
STITCH SEWING  
MACHINE



### Manual Versions For Servo Motor Controller Box Types

Version 0.65 → Types A, B, C, CO and CM

Version 1.0 → Type E

Version 2.0 → Type F

※ Use Caution to Read and Follow Operation Instructions of a Correct Type  
※ After you install the sewing machine & motor, and as per instruction of item B) in 15th page, you must effect the required process of the contents in item K) of 13th page in this manual. And thereafter please operate the machine.

- 1) FOR AT MOST USE WITH EASINESS, PLEASE CERTAINLY READ THIS MANUAL BEFORE STARTING USE.
- 2) KEEP THIS MANUAL IN SAFE PLACE FOR REFERENCE WHEN THE MACHINE BREAKS DOWN.

Thank you for choosing to use our SunStar Industrial Sewing Machine.

The SunStar High-speed 1-needle Lock-stitch machine adopts a new type of mechanism, and is especially designed for strong power, stable function, and ease of use.

Please read this instruction manual carefully before using the unit, in order to get the most out of it.

#### SPECIAL FEATURES:

- \*Rubber hinge and support pads prevent vibration and noise.
- \*Extremely light knee bar lift.
- \*Full automatic lubrication with centrifugal pump ensures perfect oiling of all moving parts.
- Oil stain-proof system.
- \*Built-in knee lifter level inside of Arm & Bed.

#### APPLICATION

Shirt, blouses, dresses, overcoats, women's wear, jackets, work clothes.

Jeans, heavy overcoats, heavy duty trousers, vinyl products athletic shoes, woven bags and other heavy weight materials.

## 1. Specifications

#### a) Machine Head Specifications

	Thin, medium materials	Thick materials
Application	Thin, medium materials	Thick materials
Max. Sewing Speed	5500 spm	4500 spm
Max. Stitch Length	5 mm	7 mm
Needle-Bar Stroke	31 mm	35 mm
Thread Take-Up Stroke	62.3 mm	62.3 mm
Needle Class & No.	DB × 1 #41 (#9-#18)	DB × 1 #21 (#20-#25)
Thread	Cotton thread #30-#120	Nylon thread 150-250 Denier
Feed-Dog Height	0.8-1 mm	1.2 mm
Feed-dog	Standard-3 Teeth (Thin material-4 Teeth)	
Presser Foot Height	Manually 5.5 mm by Knee Lifter 12 mm	
Hook	Fully-rotary automatic oil supply type	
Oil Lubrication	Fully automatic lubrication system	
Bed Size	457 × 177 mm	
Power Requirement	Single-phase 110/220V Three-phase 220/380V	

#### b) Clutch Motor Specifications

Single-phase 110/220V	2P. 250W Motor
Three-phase 220/380V	2P. 250W Motor

## 2. Installation

### 1) Oil Tank Installation

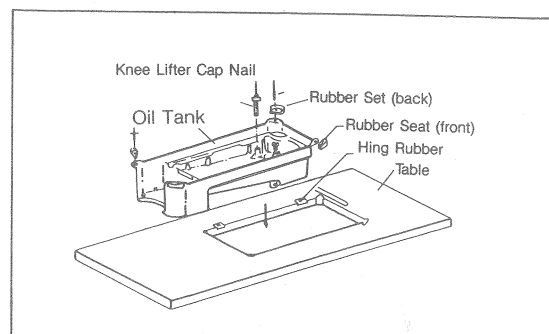


Fig. 2

(a) As shown in Fig. 2, install the Oil Tank so that it rests on the four corners of the machine table groove.

(b) Fill the Oil Tank with SunStar Industrial Sewing Machine Oil, or SHELL TELLUS C

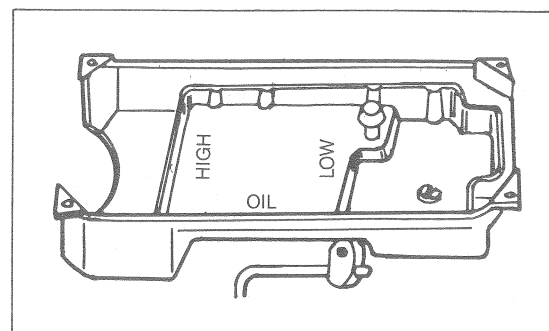
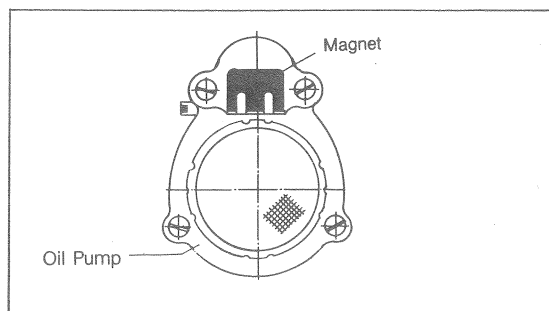


Fig 3

\* Place the metal chips' removal magnet, which is cased in the accessories box, in the Oil Pump. Operating the Sewing Machine without the magnet may cause some problems on the machine.



### 2) Precautions when Linking the Belt

The amount of vibration of the machine and table during operation of the sewing machine varies, according to the linked condition of the belt. Refer to the following, to correctly link the belt.

(a) Selecting the Size of the Motor Pulley and the Belt

- \* Applicable Belt: M type of V-belt
- \* Sewing Machine Pulley:  $\phi$  74mm
- \* Motor: 2P (3450 r.p.m)

Outer diameter of the Motor Pulley Division	65mm	70	75	80	85	90	95	100	105	110	115
SPM for 60-Hz	3030	3280	3530	3780	4040	4290	4540	4790	5040	5300	5550
SPM for 50-Hz	2540	2750	2960	3170	3380	3590	3800	4020	4230	4440	4650
Belt Size (inch)	41"	42"	42"	43"	43"	43"	44"	44"	44"	45"	45"

(b) Adjust the centers of the machine pulley and the motor pulley so that they can be aligned with each other.

(c) Use a non-twisted belt of uniform width.

(d) Adjust the Motor Securing Nut until the deflection of the belt, when pressing the belt line by finger, with a force of about 1Kg, at a belt height from the upper side of the table of 30-50mm, is within 5-10mm.

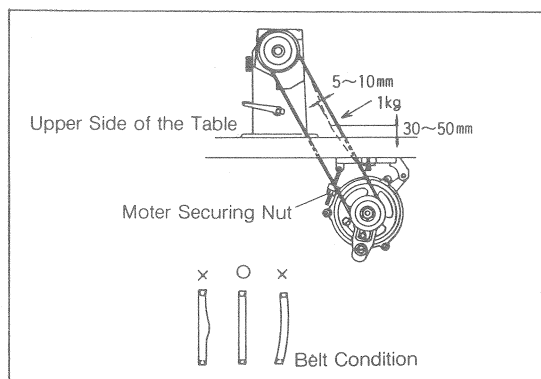


Fig 5

### 3. Preparations Before Sewing

1) Confirm the Connection of the Power Plug Before the power is supplied, confirm the voltage of the outlet, and confirm that the voltage transformer plug of the motor has been connected in the right direction, as specified.

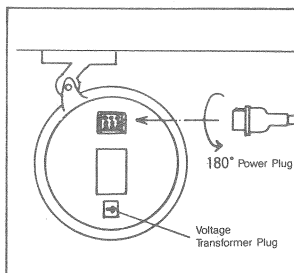


Fig. 6

2) Confirm the Level of Oil in the Oil Tank Confirm, again, that the oil tank has been filled with oil up to the mark "HIGH" When the oil level drops below the mark "LOW" during operation, refill the oil tank immediately, until its level reaches the "HIGH" mark. The oil should be exchanged every two weeks. (See Fig. 3)

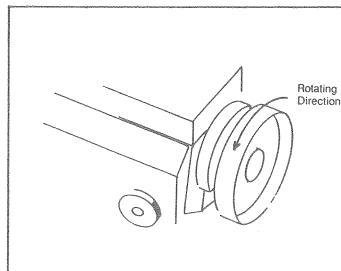


Fig 7

3) Confirm the Rotating Direction of the Machine After turning on the power, confirm that the machine is in full operating condition. Then, check the rotating direction of the machinery, by depressing the pedal toward the LOW SPEED position. The correct rotating direction of the machinery is counterclockwise, as seen by the pulley. If the rotating direction is not correct, turn off the power immediately, remove the power plug of the motor, and reconnect it after turning it 180 degrees in the opposite direction (See Fig. 6 and 7)

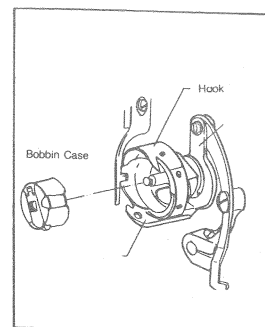


Fig. 8

4) Making the Machine Ready for use Carry out the following procedures to make the machine ready for use.

a) Apply oil, with the filling tube two or three times on the moving parts of the Movable Knife Holder, and on the inside of the Hook, with the Bobbin Case removed. (See Fig. 8)

b) In the case of a new machine, which was delivered a long time previously, or of a machine which has not been run for a long period, apply oil with the filling tube two or three times on the friction parts of the Thread Take-Up unit, Needle Bar and other units. (See Fig. 9)

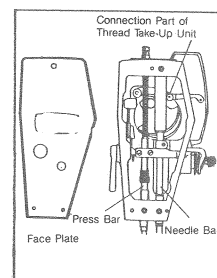


Fig. 9

c) Run the machine intermittently at a speed of 3000 spm for 10 minutes, as a trial run. During the operation, check to see splashing of oil through the Oil Sight Window, to confirm if lubrication is adequate. (See Fig. 10)

d) Run the machine at a lower speed than 3500 spm for the first 4-5 days. Then, run it at normal speed in order to maintain a good operating condition.

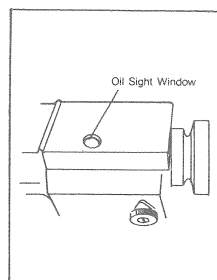
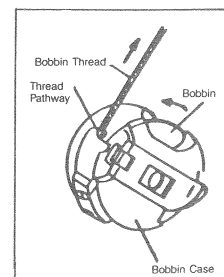


Fig. 10

5) Inserting the Bobbin into the Bobbin Case After inserting the Bobbin into the Bobbin Case, check that the Bobbin rotates counterclockwise when the thread is pulled out through the Thread Pathway, as shown in Fig. 11.



- 3) Inserting the Needle in the Correct Way Hold the Needle with its grooved side facing exactly to the left, as observed from you. Then, insert the Needle until its upper end sticks to the upper side of the Stopper Hole, so that it can go no further. Finally, tighten the setscrew to secure the needle. See Fig. 12.

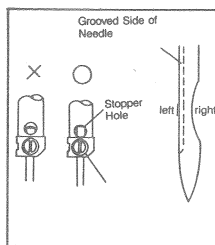


Fig. 12

- 7) Threading the Needle Thread Thread the Needle Thread in the order of the numbers indicated in Fig. 13.

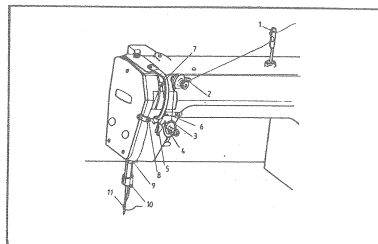


Fig. 13

- 3) Adjusting the Stitch Length As shown in Fig. 14, the numbers on the Stitch Length Adjusting Dial indicate the Stitch length in millimeters. When you want to adjust the Stitch Length, turn the Stitch Length Adjusting Dial, clockwise or counterclockwise, to make the required adjustment.

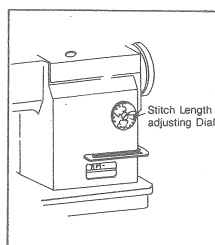


Fig. 14

- Winding the Bobbin Thread  
Fix the bobbin Winder on the table, with a gap of 3 mm to the Belt, when the Winder Wheel is not clutched. Check that the Winder Wheel does not contact with the inner side of the Belt Cover.

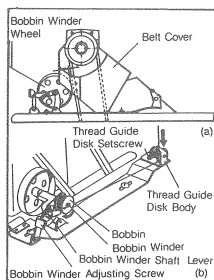


Fig. 15

- Fit the Bobbin to the Bobbin Winder Shaft as shown in Fig. 15 (b), wind by hand the thread 5-6 turns in the winding direction, and then depress the Bobbin Winder Lever.

- The threading surface in the Bobbin should be flat, as shown in Fig. 16. If the Bobbin is not wound up evenly, release the securing screw of the Thread Guide Disk and move the disk to the right or left, to adjust. Adjust the tension of the wound thread with the Thread Tension Adjusting Nut.

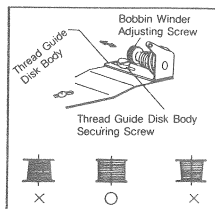


Fig. 16

- d) The volume of the winding thread can be adjusted by means of the Adjusting Screw of the Thread-Winder Adjusting Disk. The thread is wound to about 80% of the bobbin capacity

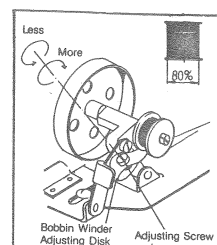


Fig. 17

## 4. Adjustment of the Main Parts

### 1) Adjusting the Thread Tension

The Thread Tension Should be adjusted in accordance with the sewing conditions, because it varies with the material, thread, stitch length, etc.



—Good sewing condition. The Needle thread and the Bobbin Thread meet at the center of the material



—Needle Thread Tension is excessive and Bobbin Thread Tension is weak.



—Needle Thread Tension is weak and Bobbin Thread Tension is excessive.

Fig. 18

### a) Adjusting the Needle Thread Tension

As Shown in Fig. 19, adjust the Needle Thread Tension by turning the Thread Tension Adjusting Nut of the Thread Adjusting unit: turn clockwise to increase, or counterclockwise to reduce the tension.

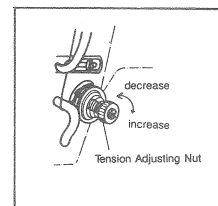


Fig. 19

- b) Adjusting the Bobbin Thread Tension As shown in Fig. 20, adjust the Bobbin Thread Tension by turning the Tension Adjusting Screw on the Bobbin Case: turn clockwise to increase, or counterclockwise to reduce, the tension.

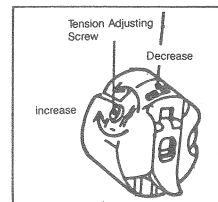


Fig. 20

- # Standard tension for pulling the thread out of the Bobbin Case ranges from 30 g to 50 g

### 2) Adjusting the Stroke and Tension of the Thread Take-Up Spring

#### a) Adjusting the Stroke

As shown in Fig. 21, loosen the setscrew of the Thread Tension Adjusting Shaft, and turn the Thread Tension Adjusting Unit knob clockwise, whereupon the stroke of the Thread Take-Up Spring will be increased. As you turn the knob counterclockwise, the stroke will be decreased.

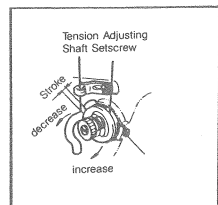


Fig. 21

b) Adjusting the Tension of the Thread Take-Up Spring.

As shown in Fig. 22, turn the Thread Adjusting Shaft Post clockwise with a screwdriver, whereupon the tension of the Thread Take-Up Spring will be increased. As you turn the post counterclockwise, the tension will be decreased. Increase the tension for thick material, and decrease it for thin material

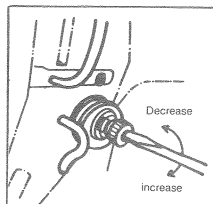


Fig. 22

Caution

After adjusting by loosening the Thread Adjusting Shaft Post, operate the Knee Lifter and check the opening condition of the Thread Guide Disk.

3) Adjusting the Presser Foot Pressure

As you turn the Pressure Regulator Screw clockwise, the pressure of the Presser Foot will be increased. As you turn the screw counterclockwise, the pressure of the Presser Foot will be decreased. After adjustment, tighten the Setting Nut. (See Fig. 23)

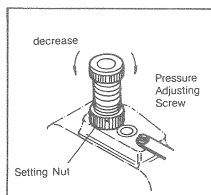


Fig. 23

4) Adjusting the Arm Thread Guide

As shown in Fig. 24, when you sew heavy-weight materials, set the Arm Thread Guide in the corner of the hand tip. When you sew light-weight materials, set the Arm Thread Guide in the other corner.

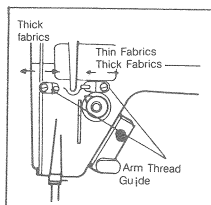
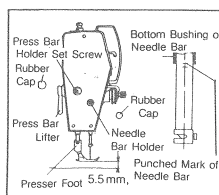


Fig. 24

5) Adjusting the Height of the Presser Foot

Adjust the Press Bar Holder upwards and downwards when the Press Bar Holder Setscrew is released, after removing the rubber cap on the face plate, and after lowering the Presser Foot on the Throat Plate.

As you lift up the Press Bar Holder, the height of the Presser Foot will be lowered. As you lower the Press Bar Holder, the height of the Presser Foot will be raised. Adjust the Presser Foot to keep 5 mm between the bottom of the Presser Foot and the upper side of the Throat Plate by operating the Presser Foot Lifter manually. (See Fig. 25)



6) Adjusting the Needle Bar

Remove the rubber cap at the Needle Bar Adjusting Hole on the face plate, and set the Needle Bar to the lowest position of its stroke by turning the Pulley.

Then, align the upper punched mark on the Needle Bar with the bottom end of the Needle Bar Lower Bushing, and then tighten the Needle Bar Holder Setscrew, and fit the rubber cap. (See Fig. 25)

between it and the inside of the groove, which has been made at the neck. Then, tighten the two Setscrews again. (See Fig. 26)

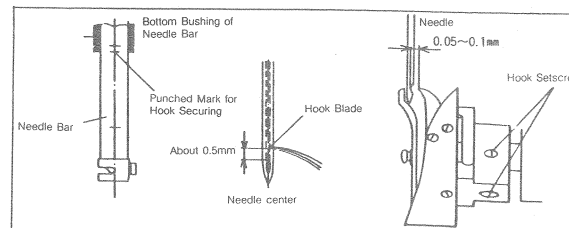


Fig. 26

8) Adjusting the Timing of the Feed-Dog Movement and the Needle

It is a standard adjustment that the blade and of the Feed Dog keeps the same level as the upper side of the Throat Plate, just as the upper side of the Needle Hole keeps the same level as the upper side of the Throat Plate. (See Fig. 27) If the timing not matched, release the two Feed Cam Setscrews and adjust the setting position of the Cam by moving it. (Fig. 28) If the Feed Dog descends too fast, turn the Feed Cam in the opposite direction to the rotating one of the Main Shaft. And if the Feed Dog descends too slowly, adjust by turning the Feed Cam in the same direction as the rotating one of the Main Shaft. After adjustment, tighten the Feed Cam Setscrews.

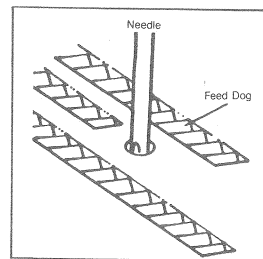


Fig. 27

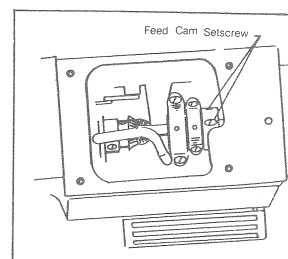


Fig. 28

9) Adjusting the Height of the Feed Dog

Loosen the Lifting Bar Crank (front) Setscrew (see Fig. 29) and adjust the level of the Feed Dog, by moving the Lifting Bar Crank. When the Stitch length is maximum and the Feed Dog is in the highest position of the stroke, the standard protrusion of the Feed Dog from the upper side of the Throat Plate is 0.8 mm in the case of light-weight fabrics, 1 mm in the case of medium-weight materials, and 1.2 mm for heavy-weight materials.

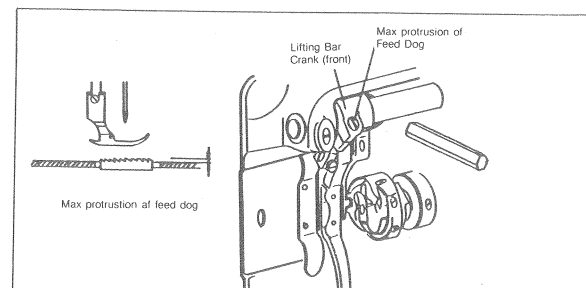


Fig. 29

7) Adjusting the Timing of the Needle and the Hook

After aligning the lower punched mark on the Needle Bar with the bottom end of the Needle Bar Lower Bushing, release the two Hook Setscrews. With the blade-point of the Hook set at the vertical center line of the Needle, adjust the blade-point of the Hook, in order to keep a clearance of 0.05-0.1 mm

10) Adjusting the Tilt of the Feed Dog.

It is the normal condition that the Feed Dog does carry the fabrics on a

horizontal level during sewing. If the Feed Dog does not keep a horizontal level, release the Feed Dog Tilt Adjusting Shaft Setscrew and turn the Feed Dog Tilt Adjusting Shaft, leftwards and rightwards, with a screw driver, in order to adjust the horizontal level of the Feed Dog.

As you turn the Feed Dog Tilt Adjusting Shaft clockwise, the Feed Dog will tilt with the back up. As you turn the shaft counterclockwise, the Feed Dog will tilt with the back down. The height can be adjusted within 1mm. Then tighten the Feed Dog Tilt Adjusting Shaft Setscrew in order to maintain the Feed Dog Tilt horizontal.

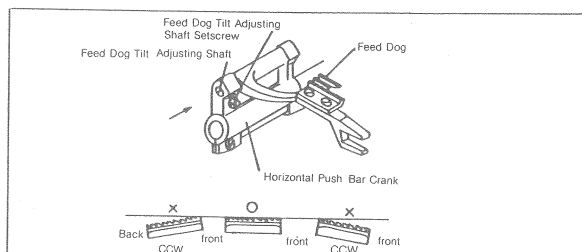


Fig 30

#### 11) Adjusting the Stitch Length for Forward and Reverse Feed.

Check that the Stitch Lengths of the Forward Feed and the Reverse Feed are the same as each other, by stitching ten times on paper in the maximum stitching condition. If there is a difference in the Stitch Lengths, remove the top cover, release the Feed Adjusting Shaft Setscrew, and turn the Feed Adjusting Shaft, clockwise or counterclockwise, in order to adjust the Stitch Length. As you turn the punched mark of the Feed Adjusting Shaft counterclockwise, the Stitch Length of the Forward Feed will be increased. And if you turn it clockwise, the Stitch Length of the Reverse Feed will be increased. The difference between the two stitches of the Forward Feed and the Reverse Feed can be eliminated by adjusting the Feed Adjusting Shaft. After adjustment, tighten the Feed Adjusting Shaft Setscrew, and replace the Top Cover.

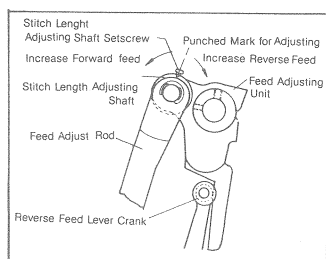


Fig 31

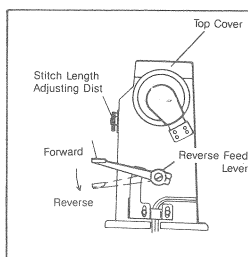


Fig 32

## 5. STANDARD ACCESSORIES.

Needle : 6pcs  
Driver Large & Small : 2ea  
  
Wrench Large & Small: 2ea  
Spool Holer : 1set  
Belt Cover : 1pc  
Accessor Box : 1 pc

Bed Hinge : 2pcs  
Hinge Cushion : 2pcs  
Bobbin Winder : 1set  
Machine Head Cover : 1pc  
Oil Can : 1 can  
Rubber Pad For Bed : 2 pcs  
Bobbin : 3 pcs

#### 12) Adjusting the Oil Supply to the Thread Take-Up Unit.

As shown in Fig. 33, when the dot which is marked on the head of the Oil Adjusting Pin aligns with the center of the Thread Take-Up Crank Shaft Hole, the most oil is supplied. And the more you turn the Oil Adjusting Pin to the left or right, the less the oil supplied. (The Oil Adjusting Pin can be turned by up to 30 degrees to the left and right.)

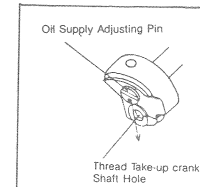


Fig 33

#### 13) Adjusting the Oil Supply to the Hook.

As you turn the Oil Adjusting Screw, which is fitted at the Lower Shaft Front Bushing, clockwise (+), more oil is supplied.

As you turn the screw counterclockwise (-), less oil is supplied. (See Fig. 34)

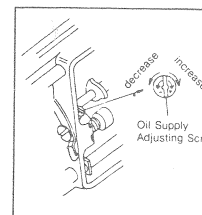


Fig 34

#### (References Points)

# Open the Filter Cap, which is fitted under the Filling Pump, and remove dust to clean the Filter Mesh, once every week.

# When you Transport the machine, be careful not to damage the filling Pump.

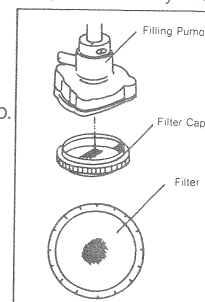


Fig 35

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