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**

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

b) **Clutch Motor Specifications**

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

2. **Installation**

1) **Oil Tank Installation**

(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 TELLIUS C

![Fig. 2](image)

* 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.

![Fig. 3](image)

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.
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 power transformer plug of the motor has been connected in the right direction, as specified.

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)

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).

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)

   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.

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.
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.

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.
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.

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)

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.

5) Adjusting the Height of the Presser Foot
Adjust the Press Bar Holder upwards and downwards when the Press Bar Holder Set screw 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 Set screw, and fit the rubber cap. (See Fig. 26)

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

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

9) Adjusting the Height of the Feed Dog
Loosen the Lifting Bar Crank (front) Setscrew (see Fig. 29) and adjust the lever 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 0.6 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.

10) Adjusting the Tilt of the Feed Dog
It is the normal condition that the Feed Dogicia's active height is.
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

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 oil is 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

5. STANDARD ACCESSORIES.

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Needle</td>
<td>6pcs</td>
</tr>
<tr>
<td>Driver Large &amp; Small</td>
<td>2ea</td>
</tr>
<tr>
<td>Wrench Large &amp; Small</td>
<td>2ea</td>
</tr>
<tr>
<td>Spool Holer</td>
<td>1set</td>
</tr>
<tr>
<td>Belt Cover</td>
<td>1pc</td>
</tr>
<tr>
<td>Accessor Box</td>
<td>1 pc</td>
</tr>
<tr>
<td>Bed Hinge</td>
<td>2pcs</td>
</tr>
<tr>
<td>Hinge Cushion</td>
<td>2pcs</td>
</tr>
<tr>
<td>Bobbin Winder</td>
<td>1set</td>
</tr>
<tr>
<td>Machine Head Cover</td>
<td>1pc</td>
</tr>
<tr>
<td>Oil Can</td>
<td>1 can</td>
</tr>
<tr>
<td>Rubber Pad For Bed</td>
<td>2 pcs</td>
</tr>
<tr>
<td>Bobbin</td>
<td>3 pcs</td>
</tr>
</tbody>
</table>

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