

# PS-800-12080 Active tension INSTRUCTION MANUAL



**CAUTION:** 

This Instruction Manual provides instructions for the active tension. When you want to use your sewing machine with this product attached, refer to the "Safety precautions" in the Instruction Manual for your sewing machine carefully until you fully understand the included precautions in prior.

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# 1. List of parts



#### WARNING :

In order to prevent accidents caused by a sudden start of the sewing machine, the following procedure has to be carried out after turning OFF the power supply and air supply to the sewing machine.



#### Active tension (asm.)

| No.  | Part number | Part name                              | Qty |
|------|-------------|--|-----|
| 1    | 40244934    | Tension release auxiliary shaft (asm.) | 1   |
| 1)-1 | 40236683    | Tension release auxiliary shaft        | (1) |
| 1)-2 | 40236685    | Tension release auxiliary pin          | (1) |
| 1)-3 | 26201004    | Guide pin                              | (1) |
| 1)-4 | RE0320000K0 | E retaining ring                       | (1) |
| 2    | 40244974    | AT solenoid asm.                       | 1   |
| 2 -1 | 40236465    | Solenoid                               | (1) |
| 2 -2 | RE0500000K0 | E retaining ring                       | (1) |
| 2 -3 | NM6040000SN | Hexagonal nut M4 1 type                | (1) |
| 2 -4 | 40236686    | Solenoid screw                         | (1) |
| 2 -5 | 40236680    | Solenoid mounting plate                | (1) |
| 2 -6 | 40236681    | Left AT shaft bushing                  | (1) |
| 2 -7 | SM1850600SP | Countersunk head screw                 | (2) |
| 2 -8 | SM6040802TP | Bolt screw                             | (2) |



| No.  | Part number | Part name                            | Qty |
|------|-------------|--------------------------------------|-----|
| 3    | 40172470    | Thread tension controller (asm.)     | 1   |
| (4)  | 40243919    | AT spring                            | 1   |
| 5    | SM6041402TP | Bolt M4 L=14                         | 2   |
| 6    | 40243045    | AT SOL PCB asm.                      | 1   |
| 7    | 40243046    | AT SOL cable asm. A                  | 1   |
| 8    | 40243047    | AT SOL cable asm. B                  | 1   |
| 9    | KX00000210  | Cable tie mount                      | 2   |
| 10   | SM4051601SC | Countersunk head screw M5 x 0.8 L=10 | 2   |
| 1)   | HX002940000 | Fixation base                        | 1   |
| (12) | SM6041002TN | Bolt M4, L=10                        | 1   |
| 13   | EA9500B0200 | Cable clip band                      | 6   |

### 2. Assembling the parts



#### WARNING :

In order to prevent accidents caused by a sudden start of the sewing machine, the following procedure has to be carried out after turning OFF the power supply and air supply to the sewing machine.



 Loosen screw ①. Detach tension release solenoid ②.



 Loosen screw 3 . Detach thread tension controller 4 .



 Detach the face plate. Take out tension disc releasing solenoid tension release auxiliary shaft asm. from the solenoid mounting hole.



Pull the auxiliary shaft in the direction of the arrow until it comes off.



 Secure AT solenoid asm 2 in the mounting hole with screws 5 (two pieces).



5) Put a little amount of grease (white) supplied in the accessory bag on a piece of cloth. Then, apply a thin coat of the grease to the AT shaft, reseat spring and tension release pin with that cloth.



6) Put the end A of tension release auxiliary shaft asm. ① into the thread tension controller mounting hole.
Put spring ④ on the end B of the tension release auxiliary shaft asm.



- Pressing the retaining spring of the AT thread tension controller asm. against the end surface of the tension controller mounting hole, secure it with screw ③ at a position where the stroke of the thread take-up spring becomes 4 to 5 mm.
  - If you cannot press the retaining spring of the thread tension controller asm. against the end surface of the mounting hole, loosen bracket screw of of the AT thread tension controller. After pressing the retaining spring against the end surface of the mounting hole, temporarily tighten bracket screw of.

### 3. Wiring (miscellaneous cover components of the sewing machine)



 Wire AT solenoid cable (2) along the route indicated with the red dotted line as shown in the figure on the left.

During this procedure, loosen the screw and tighten fixing base (9). Then, secure the cable with cable clip band (3).





 Wire AT solenoid cable (2) along the route indicated with the red dotted line as shown in the figure on the left.

Insert the termina-side cable through the intermediate-part opening in the cover and pass it through the sewing machine.

During this procedure, loosen the screw and tighten fixing base (9). Then, secure the cable with cable clip band (3).

 Wire AT solenoid cable (2) along the route indicated with the red dotted line as shown in the figure on the left.

Draw out the cable from the rear opening in the cover and secure it together with other cables with cable clip band (13).



4) Pull AT solenoid cable (2) into the electrical equipment rack through cable entrance of the rack.

### 4. Wiring (inside the electrical equipment rack)

#### [Standard type and the laser type]



1) Connect AT solenoid cable (2) and AT SOL cable asm. A (7) to the AT SOL PCB asm. (6) in the electrical equipment rack.



- 2) Insert the pin contact of the black wire (GND) of AT\_SOL cable asm. \_A ⑦ into the GND (pin No. 4 or 7 or 10) of the IN4/IN5/IN6/IN7 connector.
- 3) Connect AT SOL cable asm. A connector ⑦ to the loose line / LOOSE connector of the electrical control box.



4) Put the cables together in the duct. Secure the PCB with cable clip band (3).

#### [Rotary knife type]



5) Connect AT solenoid ② cable and AT SOL cable asm. B ⑧ to AT SOL PCB asm. ⑥ in the electrical equipment rack.



6) Connect terminals of AT SOL cable asm. B (8) to the IO PCB.

Refer to the table shown below for the connection destinations of the respective terminals.

| Color of line | Cable | Connection desti-<br>nation |
|---------------|-------|-----------------------------|
| Brown         | 24V   | +24V (J12)                  |
| Gray          | LOOSE | Loose thread - (J3)         |
| Black         | GND   | GND (J12)                   |

7) Put the cables together in the duct.

## 5. Method for adjusting the AT

Use the software of the below-stated version or later. Caution If the version of the software is earlier than the above, upgrade it. Panel: V177 MAIN PCB: V192

#### 5-1. Setting of the parameters







1) Press button (2).

 Press button <sup>(2)</sup>.
 In the default state, the password that has been factory-prepared at the time of delivery is provided.
 The factory-provided password is "1111111".

3) Press button **O**.

|        |                   | Ģ                    |       |
|--------|-------------------|----------------------|-------|
| クランプ設定 | 2                 | 2021-02-09 15:       | 05:30 |
|        | クランプ開放時遞製禁止 はい    | 100 F22              |       |
|        | 移動時クランプ必須ない       | ens 🔛                |       |
|        | ダブルクランブ開放遅延(ma) 0 | 9743                 | 4000  |
|        | デザルクランプ接下機話(ma) 0 | FTQR                 | 4444  |
|        | 料理ネタイプ 外掘み        | pile.                | -     |
|        | クリップスレッド補正 -10    |                      | ROM   |
|        |                   | 100-2-5 <sup>7</sup> | ·#4   |
|        | • •               |                      |       |

4) When you want to enable the AT function, change the setting of ● from "Tension disk release" to "Thread clamp".
In the case of the sewing machine for lightweight materials, set correction value ● to "-10". After you have set the correction value, press button ●.

#### 5-2. Adjusting the projection amount of the plunger



 Press plunger ① of the solenoid into the solenoid. Measure projection amount ② of the plunger.



2) Loosen screw ③ of the thread tension controller bracket. Adjust the longitudinal position of the bracket so that projection amount ② of the plunger becomes 1.5 ± 0.1 mm. Then, tighten screw ③.

# 6. Method for using the AT

#### 6-1. Method for setting the AT thread tension







1) Select the sewing pattern thread tension for which you want to set.

2) Press presser foot/thread tension setting button (

- 3) The tension can be set by pressing default tension <sup>(2)</sup>. Input any set value you desire and carry out trial stitching.
  Observing the stitches produced by trial stitching, confirm the appropriate tension set value.
- 4) Press return button ( to return to the main screen.

| 主页面       | 2021-02-        | 09 13:31:12     |
|-----------|-----------------|-----------------|
| 锁文件 555   | X:575.7 Y:150.2 | 07:X切P=2.0      |
| 64 L      |                 | 08:555          |
|           |                 | 09:P=5 X-+      |
| 2800      |                 | 10:P=5 X+-      |
|           |                 | 11:P=5 Y *      |
|           |                 | 12:P=5 Y↓       |
| 1556 XX S |                 | < 文件 ▶          |
| 夏位 基;     | 住 压框 压脚 压       | 初央线<br>天夏<br>下页 |
|           |                 |                 |

5) Press the reset button **()** on the main screen to return to the origin.

|                  | 9                  |
|------------------|--------------------|
| 压脚夹线设置 23        | 0 1-03-31 12:46:45 |
| 玉颜颜料所通度《篇》[2.300 | 电机压脚               |
| 1>               | 0.00               |
|                  | 删除 确定              |
|                  | streks and stress  |
|                  | ×521 50            |
|                  | 夹线2 0 000          |
| 默认夹线强度 1.0 m     | 清除夹裁1              |
| 近回 压脚 1148       | interest 清除<br>压脚  |
|                  |                    |
| Θ                |                    |

 Press in the same way as in step 2) to enter the tension setting screen, and enter the tension setting value confirmed in step 3) into tension 1<sup>(2)</sup>.

Set the default tension **B** to "1".



Thread tension 1 at the start of sewing : 30



#### 6-2. Method for changing the thread tension during sewing



 Set the thread tension in the entry field of "Thread tension 1" at a midpoint of the stitching line at which you want to change the thread tension.

Thread tension setting method in the case of the picture shown on the left

| 30   |   | 60 |  |
|------|---|----|--|
| <br> | - |    |  |

Thread tension 1 at the start of sewing : 30 Thread tension from the changing point -(To the end of sewing) : 60



 If you want to change the thread tension again during sewing, set the thread tension in the entry field of "Thread tension 1" at a desired midpoint of the stitching line.

Thread tension setting method in the case of the picture shown on the left



Thread tension 1 at the start of sewing : 30 Thread tension from the first changing point - : 60 Thread tension from the second changing point -(To the end of sewing) : 30



#### 6-3. Method for deleting the changes in thread tension setting during sewing



 If you press "Tension 1 button" (2) and "delete button" (2), individual thread tension settings you have set in a sewing pattern will be totally deleted.

| 压脚夹线设置<br>压制防治器度(mm) 3:000 mm | 2021-02-09 13:58:54                      |
|-------------------------------|--|
| 1) 16 16                      | 电机压脚 ( ) 00                              |
|                               | 来线1 30 册除                                |
| 教议未決選擇 80.0 pm                | 央线2 0 1000 1000 1000 1000 1000 1000 1000 |
| 近回 压脚 1148<br>144             |  |

 If you wan to delete the individual thread tension settings separately, move cross mark cursor (+) to the target thread tension setting position and press delete button <sup>(3)</sup>.