

JUKI®

INDUSTRIAL SEWING MACHINE
Attachment

MODEL

MP-G10-NC

MP-G20-NC


TECHNICAL MANUAL

Needle Cooler

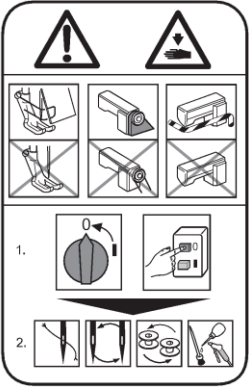


FOR SAFE USE

Before the installation, operation, and inspection for this product, read the “FOR SAFE USE” and the technical manuals carefully. Also read the other technical manuals, “Sewing Machine Head”, “Control Unit” and “Operation Panel” describing some instructions, which are not in this manual, and use the sewing machine properly.

SAFETY INDICATIONS

	<p>CAUTION</p> <p>Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight personal injury or physical damage. Note that CAUTION level may lead to a serious consequence according to the circumstances. Always follow the instructions of both levels because they are important to personal safety.</p>
---	---

CAUTION INDICATIONS

No.	Caution indication	Description
1		<p><u>Precaution for sewing machine operation:</u></p> <p>Indicates that removing the safety and operating the sewing machine for some other purposes with power-on are prohibited.</p> <ul style="list-style-type: none"> ● Please do not operate the sewing machine without protective equipment such as a needle guard, an eye guard, a belt cover or the others. ● Please turn off the power switch when threading, changing a needle and a bobbin, cleaning, and lubricating.
2		<p><u>Caution for fingers injury:</u></p> <p>Indicates a possibility of fingers (hands) injury in a certain condition.</p>
3		<p><u>Caution for squeezing fingers:</u></p> <p>Indicates a possibility of squeezing fingers in a certain condition.</p>

1. Features

The Needle Cooler will cool the needle heated by friction with the sewing material.

2. Applicable models

Name	Applicable models
MP-G10-NC	PLK-G1010
MP-G20-NC	PLK-G2010R

3. Specifications

Control power supply		: DC24V
Drive source air pressure	Primary side	: 0.5 MPa (5 kgf /cm ²) or more
	Secondary side	: 0.4 MPa (4 kgf /cm ²)



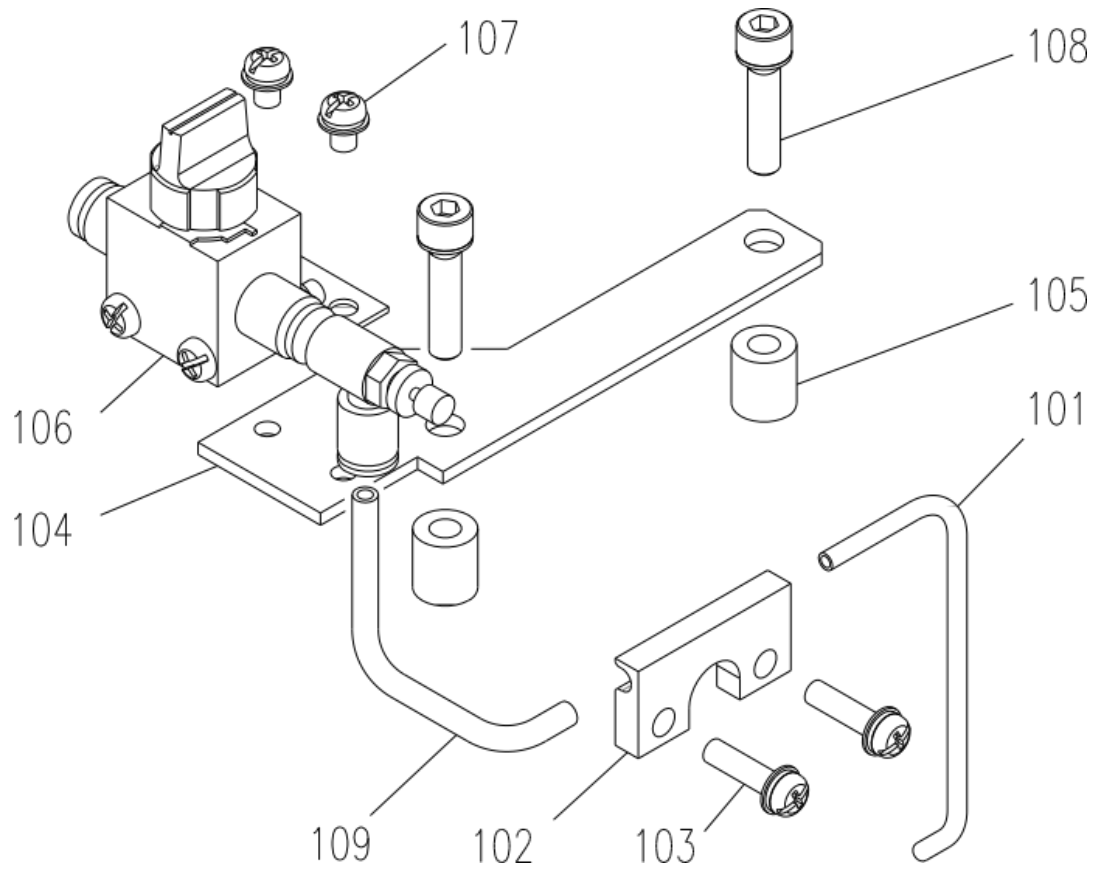
CAUTION

Trouble such as operation errors could occur if the secondary pressure is set too high.
Use within the range of 0.4 MPa (4 kgf /cm²).

4. Configuration

The Fig. numbers in the drawing correspond to the part numbers given in the following explanations.
When ordering service parts, please specify in the Parts No. (M*****).

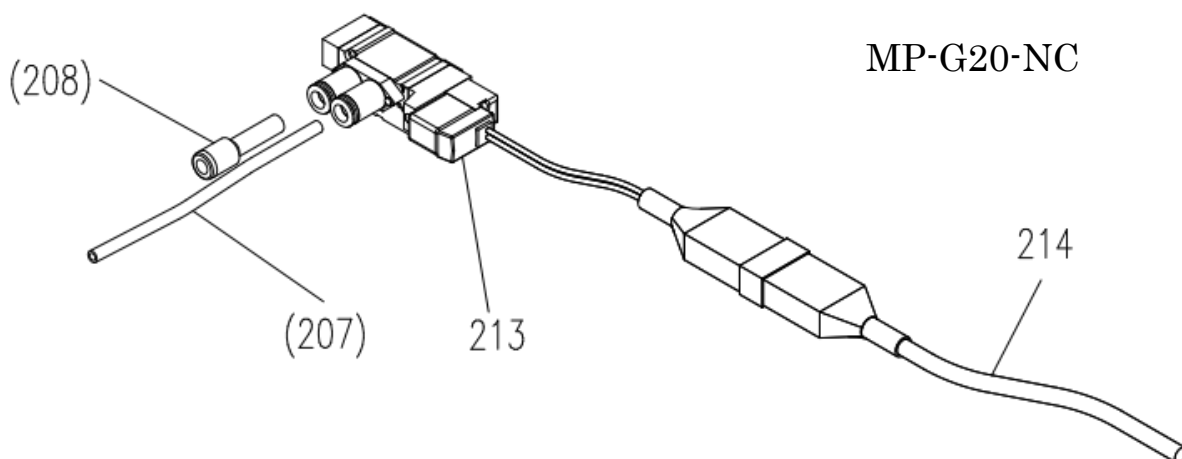
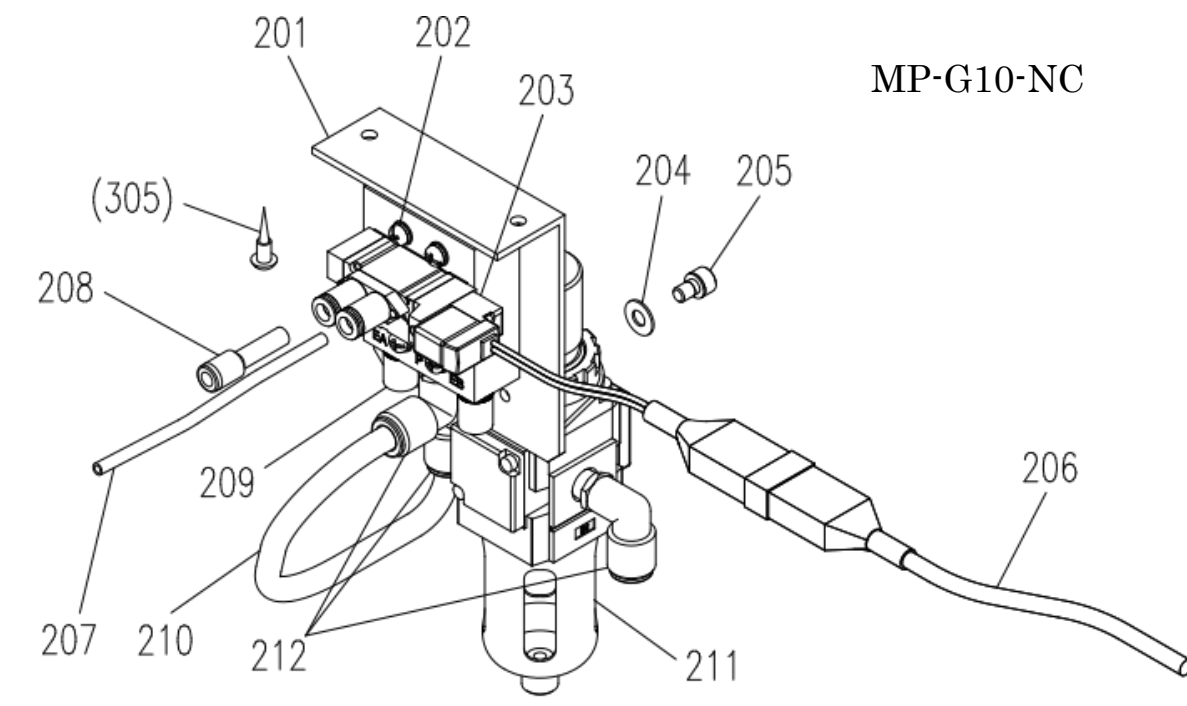
4.1 Needle cooler mechanism



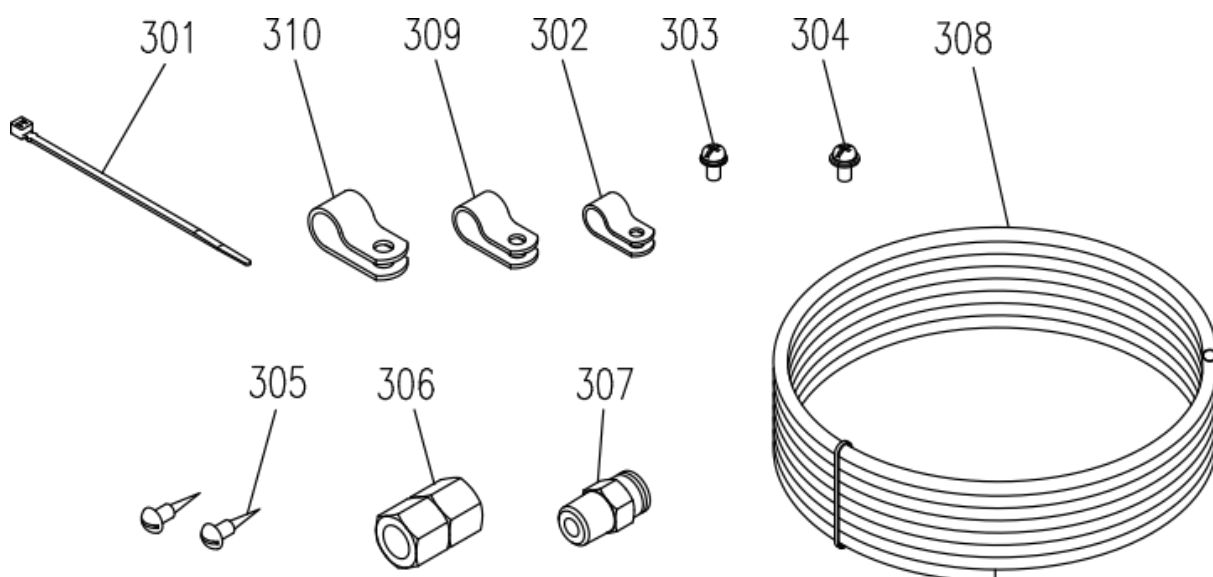
4.1 Needle cooler mechanism (Parts list)

Fig No.	部品コード Parts No.	品名	Description	数量 Amt. Req.
101	M91055089	ノズル	Nozzle	1
102	MH10N0780	ホルダ	Holder	1
103	M91073004	SW-PW プラマイナネジ M4X16	Screw M4X16	2
104	MH10N0758	ブラケット	Bracket	1
105	MH10N0352	キンゾクカラー	Metal collar	2
106	M91560089	フィンガーバルブ	Finger valve	1
107	M91058004	SW-PW プラマイナネジ M4X6	Screw M4X6	2
108	M95008017	セフティソケット M5X25	Safety socket bolt M5X25	2
109	MH10N0567	エアチューブ φ4	Air tube φ4	1

4.2 Pneumatic pressure control unit



4.3 Accessories



4.2 Pneumatic pressure control unit (Parts list)

Fig No.	部品コード Parts No.	品 名	Description	数量 Amt. Req.	
				G10 -NC	G20 -NC
201	MH25A1601	デンジベントリツケイタ	Valve mounting plate	1	
202	M91066004	SW-PW プラマイナヘネジ M4X25	Screw M4X25	4	
203	ME10X0599	デンジベソクミタテ	Solenoid valve assy	1	
204	M90511050	サガネ 5	Washer 5	2	
205	M95003017	セフテイソケット M5X8	Safety socket bolt M5X8	2	
206	MH10N0508	セツゾクデソクミタテ	Cable assy	1	
207	MH10N1567	エアチューブ φ6	Air tube φ6	1	1
208	M91052089	プラグ	Plug	1	1
209	M91035089	サイレンサ	Muffler	2	
210	MB20P1567	エアチューブ	Air tube	1	
211	ME40A0963	フィルタレギュレータ	Filter regulator	1	
212	MA20A8571	L ガタワソクツツギテ	L-type quick joint	3	
213	MH10N0599	デンジベソクミタテ	Solenoid valve assy		1
214	MH20N0508	セツゾクデソクミタテ	Cable assy		1

4.3 Accessories (Parts list)

Fig No.	部品コード Parts No.	品 名	Description	数量 Amt. Req.	
				G10 -NC	G20 -NC
301	MF06A1620	ケツソクバンド	Cable tie	4	4
302	K14S94522004	ナイロンクリップ 4	Nylon clip 4	2	
303	M91054004	SW-PW プラマイナヘネジ M4X8	Screw M4X8	2	2
304	M90443037	SW-MW プラマイナヘネジ M4X10	Screw M4X10	2	
305	M90409041	マルモクネジ 4.5X20	Screw 4.5X20	2	
306	M91010089	ロツカソケット	Socket	1	
307	MA30A0571	ワソクツツギテ	Quick joint	1	
308	MS06A0567	エアチューブ	Air tube	1	
309	M94007099	ナイロンクリップ 6	Nylon clip 6	1	1
310	MB60A1620	ナイロンクリップ 8	Nylon clip 8	1	3

5. Assembly procedures



CAUTION

- ★ To work in the presence of residual pressure in the pneumatic circuit It is dangerous. Please work after you remove the residual pressure always. The method of removing the residual pressure, and pull up the handle of the pressure regulating filter regulator, can be done by turning counter-clockwise until the pressure gauge shows 0.
- ★ When installing removal of parts, please go to turn off the power before. In addition, qualified personnel of electrical work, please be performed by wiring work.

5.1 Installing the nozzle

- (1) Please remove the two screws that secure the face cover the eye guard.
- (2) The tip of the Fig.No.201 nozzle is in the oblique outlet air. Is a beautiful circular mounting side of the nozzle. Please insert 4mm or more Fig.No.109 tubes to the mounting side.
- (3) Please set the nozzle where the tube is inserted into the nozzle as shown in Figure 1 to come to the center of the Fig.No.102 holder.
- (4) The equipment that will be mounted in the holder, the eye guard to face plate as shown in Figure 2, please fix it with the Fig.No.103 screw. In this case, please adjust the air outlet of the nozzle is facing to the needle tip.

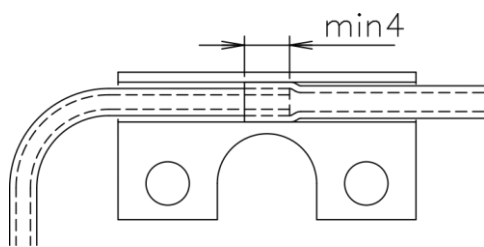


Fig.1

5.2 Installing the valve

- (1) Of the screw that holds the top cover as shown in Figure 3, remove the two front side.
- (2) Throw it to the Fig.No.105 collar of the screw hole is removed.
- (3) Please fix with a Fig.No.108 screw the valve assembly as shown in Figure 2.
- (4) Please to Fig.No.106 speed controller Connect the air tube that is inserted into the nozzle.

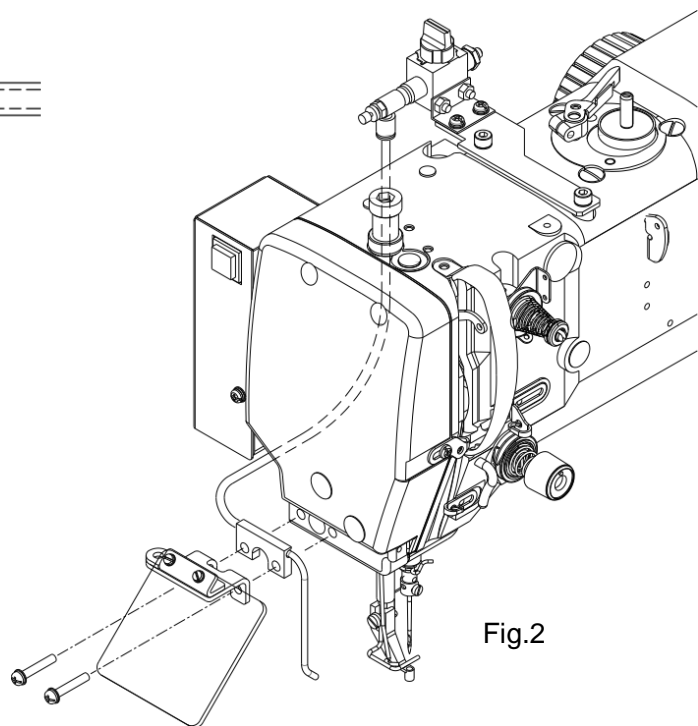


Fig.2

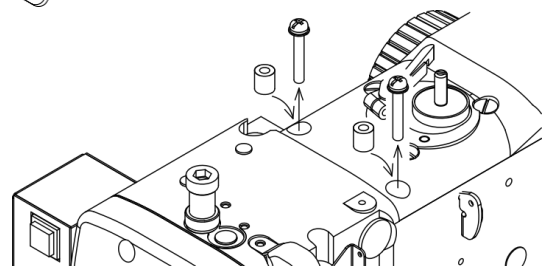


Fig.3

5.3 Installing the pneumatic pressure control related parts and piping (in the case of MP-G10-NC)

- (1) Please fix with two wood screws provided the pneumatic pressure control unit of sewing machine table underside as shown in Figure 4.
- (2) Pass the air tubes through the notched section on the side of the sewing machine unit's motor cover, and lead the tubes to the bottom of the table from the square hole on the table.
- (3) Connect to finger valve and the A port of the solenoid valve mounted in the air tube as shown in Figure 5. Put the Fig.No.208 plug to the B port of the solenoid valve.
- (4) Secure the sewing machine left as shown in Figure 6 with Fig.No.302 nylon clips air tube.

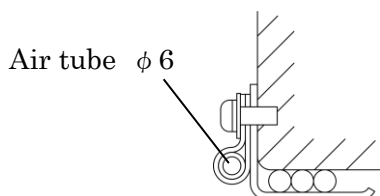


Fig.6

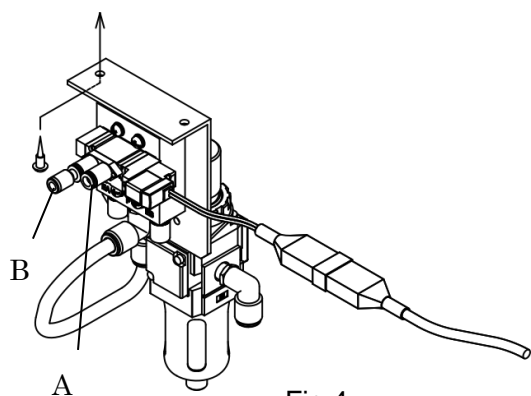


Fig.4

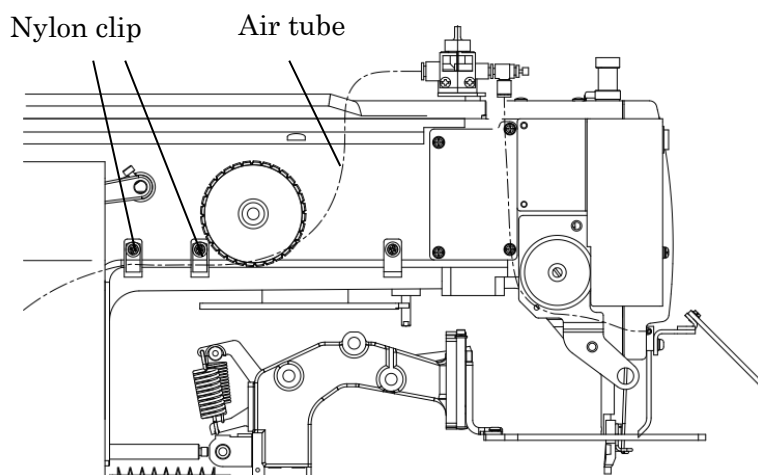


Fig.5

5.4 Installing the pneumatic pressure control related parts and piping (in the case of MP-G20-NC)

- (1) The 0 to the air pressure by turning the pressure adjustment knob of the filter regulator, and remove any residual pressure.
- (2) Remove the cover of the sewing machine body left side, remove the packing and C blanking plate D from the solenoid valve as shown in Figure 7, install the solenoid valve attached. At this time, attach the packing included with this in order to prevent air leakage.
- (3) Connect to finger valve and the A port of the solenoid valve mounted in the air tube as shown in Figure 5. Put the Fig.No.208 plug to the B port of the solenoid valve.
- (4) Secure the sewing machine left as shown in Figure 8 with Fig.No.310 nylon clips air tube.

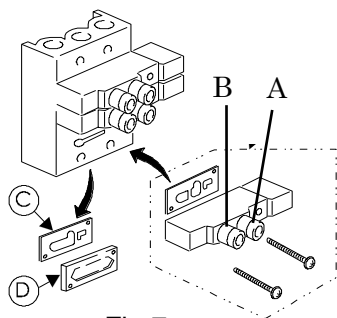


Fig.7

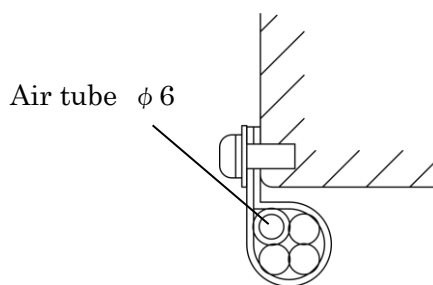




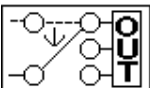
Fig.8

5.5 How to setup and cable connection

(1) Insert the connector of the solenoid valve assembly in to the general purpose output connector CON M (15P).

(2) Press the  on the standard screen to open the MENU mode.


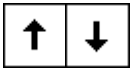
(3) Press the  in the menu icon. The Input/Output setting mode screen is displayed.


(4) Press the  on the Input/Output setting mode.


(5) Enter a password

Please ask the dealer about a password.

(6) Output Customize Setting screen, press the button on the lower side of the physical output RAM "OA".(Output signal is displayed on the button, the default is "NO".) The Function Section screen will open.

(7) Press button  After you select output signal "DRT" by pressing button  .
Make sure that the output signal of the physical output RAM "OA" is changed to "DRT", on the Function Section screen. (Settings that have been changed from the default are highlighted.)

(8) Press the  .

(9) Press the  and return to standard screen.

If you have changed the chopping duty, please return to the default value (66%).

The settings will be changed to the table shown below by the above operation.

For details, refer to the clause [14] Input/output setting mode of the technical manual "Operation Panel".

CON M (General purpose output)

Function name	Default value		Pin No.
OA	DRT	Sewing machine rotation in progress output	4
+24V	+24V	--	14

6. Operation



CAUTION

Assembly of this device is completed, please check your work once again.

Because there is a case to unexpected behavior, please away from the sewing machine when the power is turned on and the air pressure.

- (1) Pull up on the handle of the filter regulator, adjust to 0.4MPa(4kgf/cm²) air pressure by turning in a clockwise direction.
- (2) Needle Cooler will work on the sewing machine rotation.
- (3) Can adjust the flow rate by the speed controller of the finger valve.
- (4) So that it is possible to effectively cool the needle, please adjust the direction of the nozzle.

MEMO

A large rectangular area with a solid border, containing 25 horizontal dashed lines for writing.

MEMO

A large rectangular area with a solid border, containing 25 horizontal dashed lines for writing.

JUKI CORPORATION

Printed in Japan