

# **JUKI®**

INDUSTRIAL SEWING MACHINE  
Attachment

**MODEL**

# **MP-G20R-TH**

TECHNICAL MANUAL


Upper Thread-Holding Device



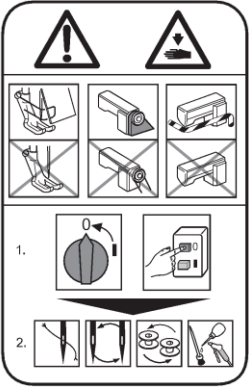


# FOR SAFE USE

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><b>CAUTION</b></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>
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## 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"> <li>● Please do not operate the sewing machine without protective equipment such as a needle guard, an eye guard, a belt cover or the others.</li> <li>● Please turn off the power switch when threading, changing a needle and a bobbin, cleaning, and lubricating.</li> </ul>
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

Upper Thread-Holding Device will improve the quality of the sewing start point. By gripping the upper thread after thread trimming sewing end, to prevent the thread fall out at the sewing start point.

## 2. Applicable models

PLK-G2010R

PLK-G2516

PLK-G2516R

PLK-G2516-YU

PLK-G4030 / G4030R

PLK-G6030 / G6030R

PLK-G5050 / G5050R

PLK-G10050 / G10050R

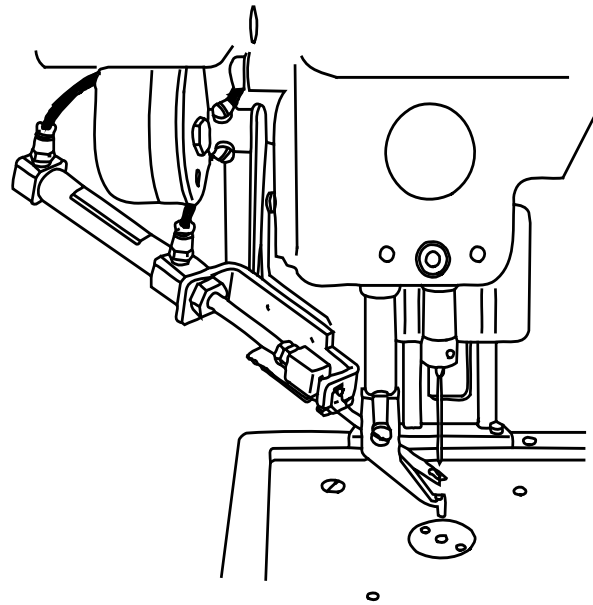


Fig.1

Mounting example of  
the upper thread holding mechanism

## 3. Specifications

Upper thread holding stroke		: 23mm
Control power supply		: DC24V
Drive source air pressure	Primary side	: 0.5 MPa (5 kgf /cm <sup>2</sup> ) or more
	Secondary side	: 0.4 MPa (4 kgf /cm <sup>2</sup> )



### 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 /cm<sup>2</sup>).

## 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 Upper thread holding mechanism (Parts list)

Fig No.	部品コード Parts No.	品名	Description	数量 Amt. Req.
101	MB10H0429	ササエタ	Support plate	1
102	MB10H0751	トリツケブロック	Installation block	1
103	M90859004	SW-PW プラマイナベネジ M3X6	Screw M3X6	3
104	MB10H0700	ホジハネ	Holding spring	1
105	MB10H0477	ストッパ	Stopper	1
106	ML30A0181	イトサハキ	Thread distributor	1
107	MA20A9571	ワンタッチツキテ	One-touch coupling	2
108	ME25H0434	エアシリンダ	Air cylinder	1

#### 4.2 Pneumatic pressure control unit (Parts list)

Fig No.	部品コード Parts No.	品名	Description	数量 Amt. Req.
201	MB25S0599	ソレノイドバルブアセンブリ	Solenoid valve assy	1
202	MH10A8508	セツソクセンサケーブル	Cable assy	1
203	MB10K4567	エアチューブ	Air tube assy (A)	1
204	MB10K5567	エアチューブ	Air tube assy (B)	1

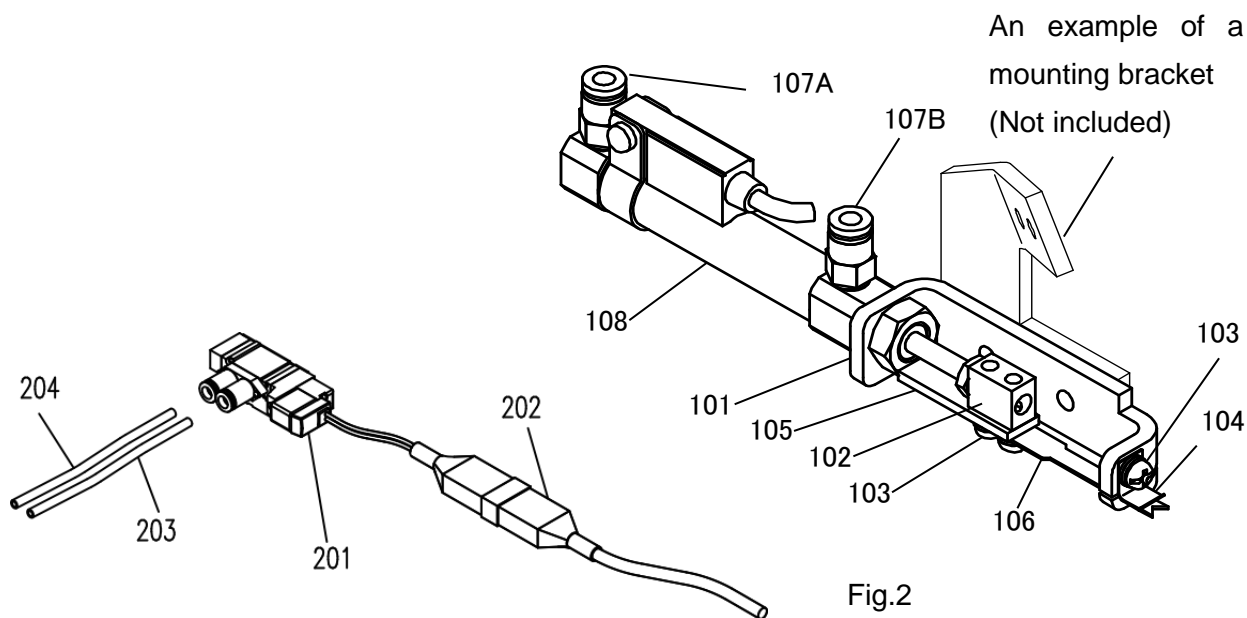


Fig.3  
Pneumatic pressure control unit

Fig.2  
Upper thread holding  
mechanism

#### 4.3 Accessories (Parts list)

Fig No.	部品コード Parts No.	品名	Description	数量 Amt. Req.
301	MG51A0201	ケツソクバンド	Cable tie	6

### 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 upper thread holding mechanism

- (1) Make a bracket for mounting the upper thread holding mechanism.

(Shows an example in Figure 2.)

- ★ Please consult sewing machine shop for the fabrication of bracket.

The mounting of the upper thread holding mechanism, you can use the mounting holes of the wiper mechanism, to or attached to the face cover. Attach a position that does not interfere with the holding jig to position the sewing material, consider including the sewing pattern and workability.

- (2) Remove the wiper mechanism from the machine arm. Is not only part of the wiper drive, please remove the connection wires from the sewing machine.

- ★ Can not be shared with the wiper mechanism and Upper Thread-Holding Device.

- (3) Attach the upper thread holding mechanism to the machine arm. Please adjust the position of the upper thread holding mechanism so that the thread distributor Fig.No.106 scoop a thread between the presser foot and the needle, as shown in Figure 1.

#### 5.2 Installing the pneumatic pressure control related parts and piping

Please connect the pipes so that the state of the air cylinder rod is returned when the power is turned off. If the rod is advanced, please replace the pipe to the joint A and B of the solenoid valve after the removal of the air pressure to stop the air.

- (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 packing and C blanking plate D from the solenoid valve as shown in Figure 4, and install a solenoid valve attached. At this time, attach the packing included with this in order to prevent air leakage.

- (3) Insert to match the symbols A and B of the air tubes "Fig.No.203 and 204" into the ports "Fig.No.107A and 107B" of the upper thread holding mechanism.

- (4) Insert to match the symbols A and B of the air tubes into the ports "A and B" of the solenoid valve.

- (5) Bind the air tubes appropriately with the enclosed Fig.No.301 Cable ties.

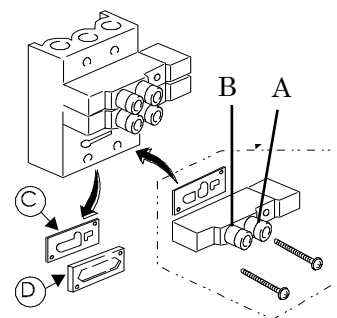


Fig.4

### 5.3 How to setup and cable connection

- (1) Remove the circuit board cover on the back of the sewing machine.
- (2) Disconnect the cable connector of the wiper connected to CON11 on the circuit board.
- (3) Connect the connector of Fig.No.202 cable assy to CON11 on the circuit board.
- (4) Connect the connector of sensor of the air cylinder to CON9 on the circuit board.
- (5) Install the circuit board cover removed.




Output (CON 11)

Printed character	Signal		Pin No.
W	O2	Upper thread holding	1
	-	-	2
	+24V	DC24V	3

Input (CON 9)

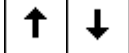





Printed character	Signal		Pin No.
FSW	+12V	DC12V	1
	I7	S6 (Thread trimming protection signal)	2
	GND	Ground	3

### 5.4 How to setup and cable connection

- (1) Press the  on the standard screen to open the MENU mode.
- (2) Press the  in the menu icon. The Input/Output setting mode screen is displayed.
- (3) Press the  on the Input/Output setting mode, and enter a password.

Please ask the dealer about a password.

Input Customize Setting screen, press the button on the lower side of the physical input RAM "I7". (Input signal is displayed on the button, the default is "NO".) The Function Section screen will open.

- (4) Select input signal "S6" by pressing the button  .
- (5) Press the  and display the screen of the Detailed Setting.
- (6) Change the "reversed" from the "normal" a logical setting by pressing the button  ,  
press the button  .
- (7) Press the  .
- (8) Press the  and return to standard screen.

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

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

	Default value	After changing the setting
Input signal	NO	S6
Signal name	--	Thread trimming protection signal
Logical setting	normal	reversed

## 6. Operation



### CAUTION

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

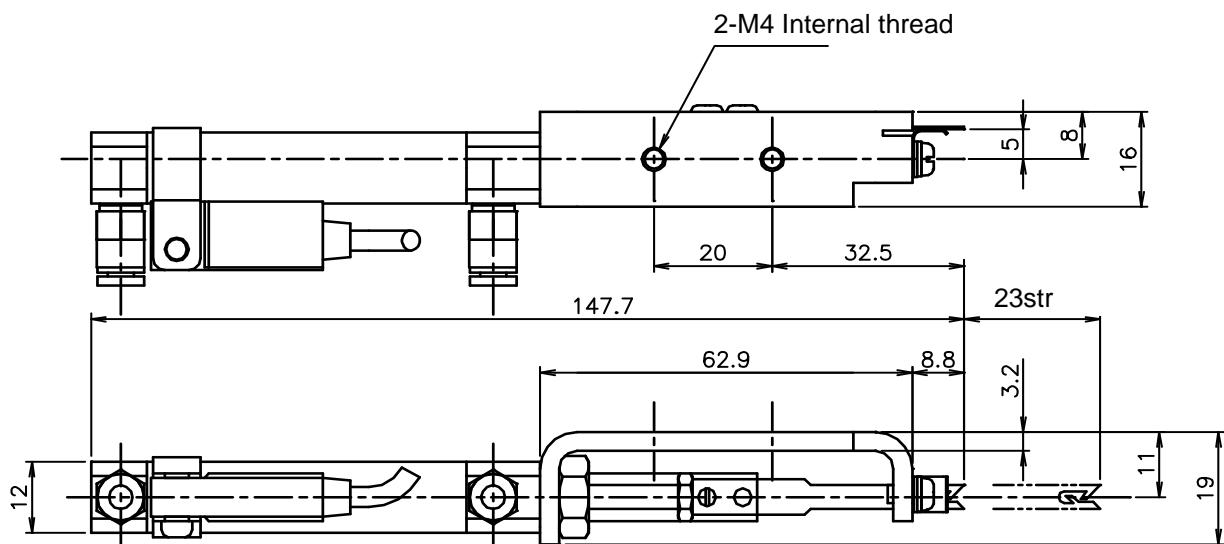
Because there is a case to unexpected behavior, please away from the sewing machine when the power is turned on and the air pressure.

(1) Pull up on the handle of the filter regulator, adjust to 0.4MPa(4kgf/cm<sup>2</sup>) air pressure by turning in a clockwise direction.

(2) Upper Thread-Holding Device will work in the program of the wiper.

For the timing adjustment of the operation, refer to the clause of the technical manual "Control Unit".

## 7. Upper thread holding mechanism outline drawing





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**

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