MITSUBISHI ELECTRIC

INDUSTRIAL SEWING MACHINE
Attachment

MODEL

MP-G10-TS

TECHNICAL MANUAL

Upper-thread Breakage Detector

A180E690P02

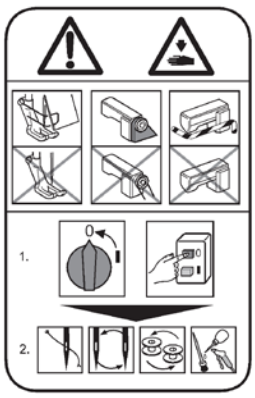
FOR SAFE USE

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

⚠ CAUTION	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.

CAUTION INDICATIONS

No.	Caution indication	Description
1		Precaution for sewing machine operation: Indicates that removing the safety and operating the sewing machine for some other purposes with power-on are prohibited. ● 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		Caution for fingers injury: Indicates a possibility of fingers (hands) injury in a certain condition.
3		Caution for squeezing fingers: Indicates a possibility of squeezing fingers in a certain condition.

1. Installation and wiring method

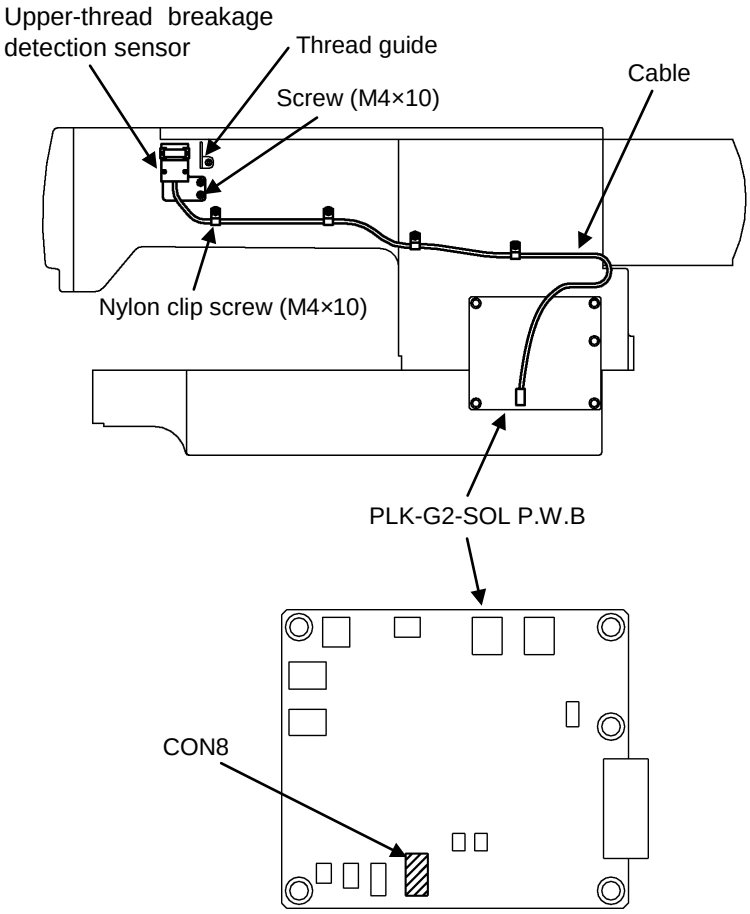
(1) Set the Upper-thread breakage detection sensor with screw (M4×10) to the sewing machine as in the right figure.

(2) Set the cable with nylon clip and screw (M4×10) not to catch on other parts.

(3) Remove the thread guide.

(4) Remove the P.W.B cover.

(5) Insert the cable connector to CON8 on the SOL P.W.B.



Pin No. (CON8)	Signal name	Cord color
1	+12V	Red
2	I6 (THS)	Blown
5	0V	White

(6) Install the P.W.B. cover.

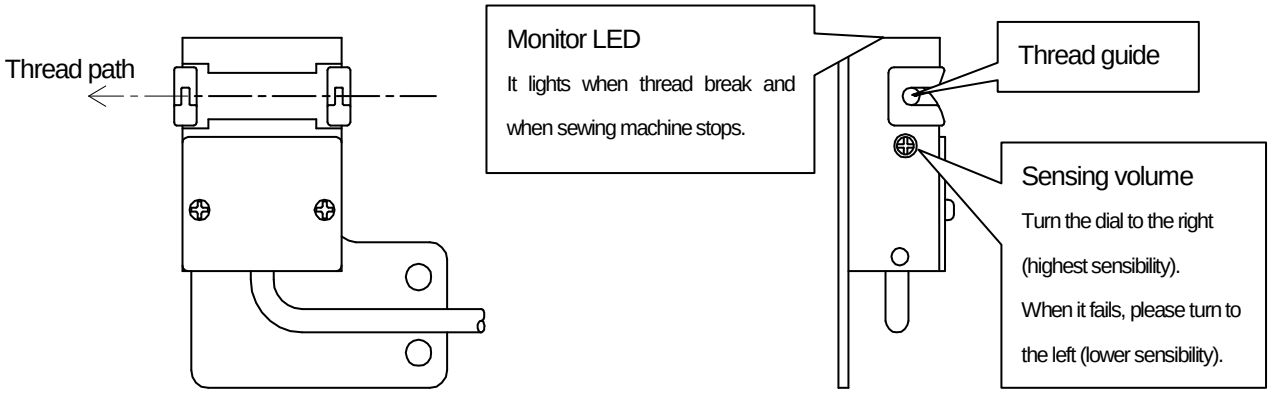
Caution!!

1. Make sure that the power is OFF before installation.
2. Be careful handling, because of the weakness against vibrations, shocks etc.
3. Keep the sensor clean. If it's with oil, wasted thread, etc., the detector may break down.

*When you order the following parts, please specify by Parts No.

Parts No.	Description	Amt.Req
M94003099	Nylon clip	5
M91056004	Screw M4x10	7

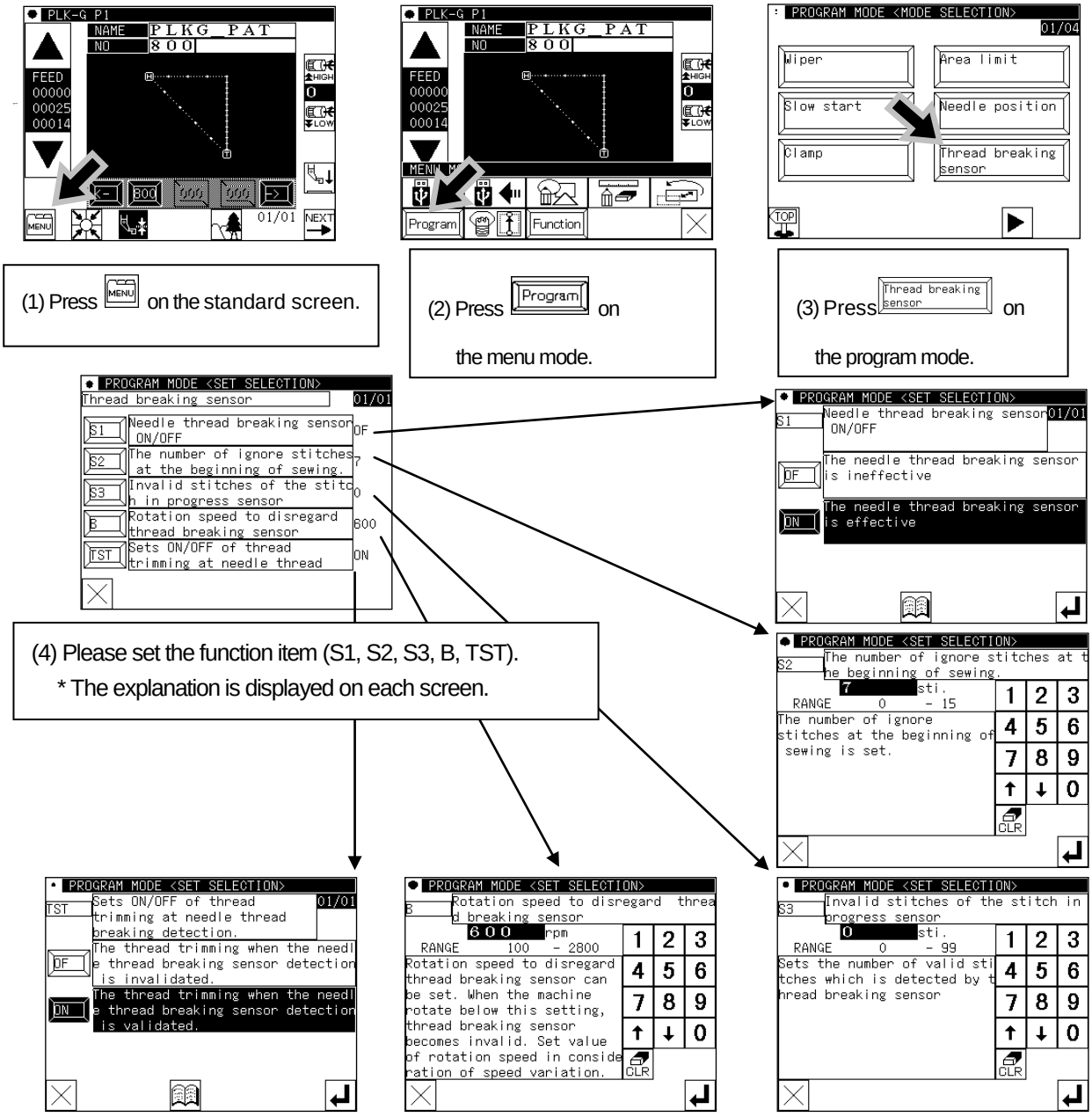
2. Outline



3. Setting methods

Please set the Upper-thread Breakage Detector on according to the following.

（Please select " Thread breaking sensor " of the program mode.）



4. Standard Settings

Using more fine thread, it fails more frequency.

Also material of the thread, color of the thread, pitch of pattern…etc., various conditions have each value.

So please change standard settings according follows.

(1) Rotation speed to disregard thread breaking sensor [B]

Sewing high speed, Monitor LED keeps OFF.

Slowing down the speed, Monitor LED turns ON / OFF every stich.

In those cases, it can sense normally.

‘Rotation speed to disregard thread breaking sensor [B]’ should be above then rotation speed.

Furthermore slowing down, Monitor LED turns ON / OFF irregularly.

In that case, it fails to sense.

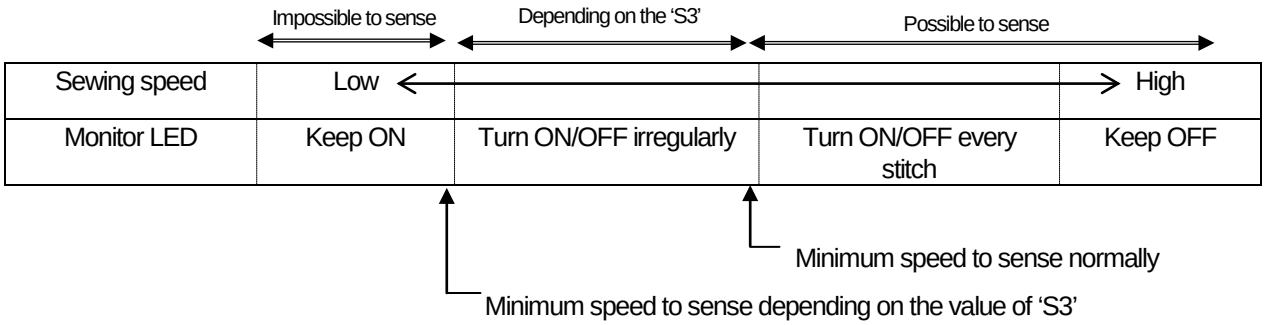
But increasing the value of 'Invalid stitches of the stitch in progress sensor [S3]', sometimes it can sense.

Then, you can vary 'Rotation speed to disregard thread breaking sensor [B]' in that range.

More and more slowing down, Monitor LED keeps ON.

In that case, it cannot sense.

You don't have to set 'Rotation speed to disregard thread breaking sensor [B]' in that range.



Caution!

The value of [B] should be more than 200 rpm in order not to fail sensing.

(2) Invalid stitches of the stitch in progress sensor [S3]

The smaller 'S3', the faster the sewing machine will be able to stop after thread breaking.

But we recommend setting 'S3' more than 2 in high speed, more than 3 in middle speed in order not to fail sensing.

To detect in the range of Monitor LED turning ON / OFF irregularly, 'S3' should be higher value.

And it can reduce failing to sense though stop of the sewing machine will be delayed after thread breaking.

(3) The number of ignore stitches at the beginning of sewing [S2]

Beginning of sewing, sensor keeps ON since there isn't movement of thread.

So you should set the number of ignore stitches.

Numbers of stitches beginning of moving thread depends on sewing condition.

Please change the value by yourself.

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MITSUBISHI ELECTRIC CORPORATION

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