



INDUSTRIAL SEWING MACHINE

MODEL

**PLK-G1306**

TECHNICAL MANUAL

SEWING MACHINE HEAD BASIC

## 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, “Control Unit” and “Operation Panel” describing some instructions, which are not in this manual, and use the sewing machine properly.

## SAFETY INDICATIONS

	<b>DANGER</b>	Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.
	<b>CAUTION</b>	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		<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>
4		<p><u>Indication of pulley rotation direction:</u></p> <p>Indicates a normal pulley rotation direction of sewing machine. (For sewing machine with pulley)</p>

## SAFETY PRECAUTIONS



To prevent from receiving an electric shock, always turn off a power switch and unplug power supply when opening a control box, and then open after ten minutes passes.



### USAGE ENVIRONMENT

Please do not operate the sewing machine under the following conditions.

- (1) In the ambient temperature of 35 degrees (95°F) or more than 35 degrees, or the ambient temperature of 5 degrees or less than 5 degrees (41°F).
- (2) In the ambient temperature of 55 degrees (131°F) or more than 55 degrees, or the ambient temperature of -10 degrees or less than -10 degrees (18°F) during transportation.
- (3) In the relative humidity exceeding 85% or less than 45%.
- (4) In the open-air place or the location that receives direct sunlight.
- (5) In the place near heat sources such as heating devices.
- (6) In the atmosphere filled with dust, explosive gas, or corrosive gas.
- (7) In the place where the fluctuation in the power voltage of 10% or more than 10%, or the power voltage of -10% or less than -10% of the fixed power voltage.
- (8) In the place where the power source cannot supply enough voltage to keep the motor running.
- (9) In the place filled with strong electric noises such as high-frequency welders.

### INSTALLATION

- (1) Please have some specialists, who have enough experience for the sewing machine installations, install the sewing machine.
- (2) Please have a qualified electrician perform necessary electric wiring.
- (3) Please do not operate until the sewing machine is repaired when any damage or fault is found on the sewing machine at the installation.
- (4) Please do not refurbish the sewing machine.
- (5) The sewing machine is heavy. For the safety, please make sure to install the sewing machine head by more than one person.
- (6) When tilting the sewing machine, please stand at the hinge side and hold the sewing machine with both hands. Also, please lock the caster on the steel stand
- (7) When tilting the sewing machine, the work clamp slides toward the hinges. Remember to move the work clamps Fully to the right side of the casting before placing the sewing head in the sewing position.
- (8) Please lock the caster on the steel stand to prevent the machine from moving before tilting the sewing machine.

- (9) Please make sure to fit the safety protective equipment (the motor cover or the others) and the accessory protective equipment (the eye guard) that removed temporarily for installation.
- (10) If the table and the steel stand are not MITSUBISHI original, the table and the steel stand have to be strong enough to withstand the weight and Vibration of the sewing machine.
- (11) When fitting the caster to the steel stand that are not MITSUBISHI original, the caster with locking function has to be strong enough to withstand the weight and Vibration of the sewing machine.

### SEWING

- (1) Please make sure to turn the power switch off before installing or replacing needles.
- (2) Please pay attention for the fingers not to be injured by the needle point.
- (3) Please make sure to turn power switch off before lubricating.
- (4) Please pay attention that oil does not get on your skin or in your eyes as it may cause an inflammation.
- (5) Please make sure to keep oil out of the reach of children who may drink oil by mistake.
- (6) Please make sure to turn the power switch off before threading a needle.
- (7) Before starting the sewing, please make sure the position and the function of the halt switch.
- (8) Please do not touch the operating parts during sewing operation.
- (9) It is very dangerous to operate the sewing machine without safety guards (eye guards, belt covers, link covers, finger guards or the others).  
Please make sure to operate the sewing machine with safety guards.
- (10) Please make sure to turn the power switch off when stopping the sewing machine temporarily.

### ADJUSTMENT

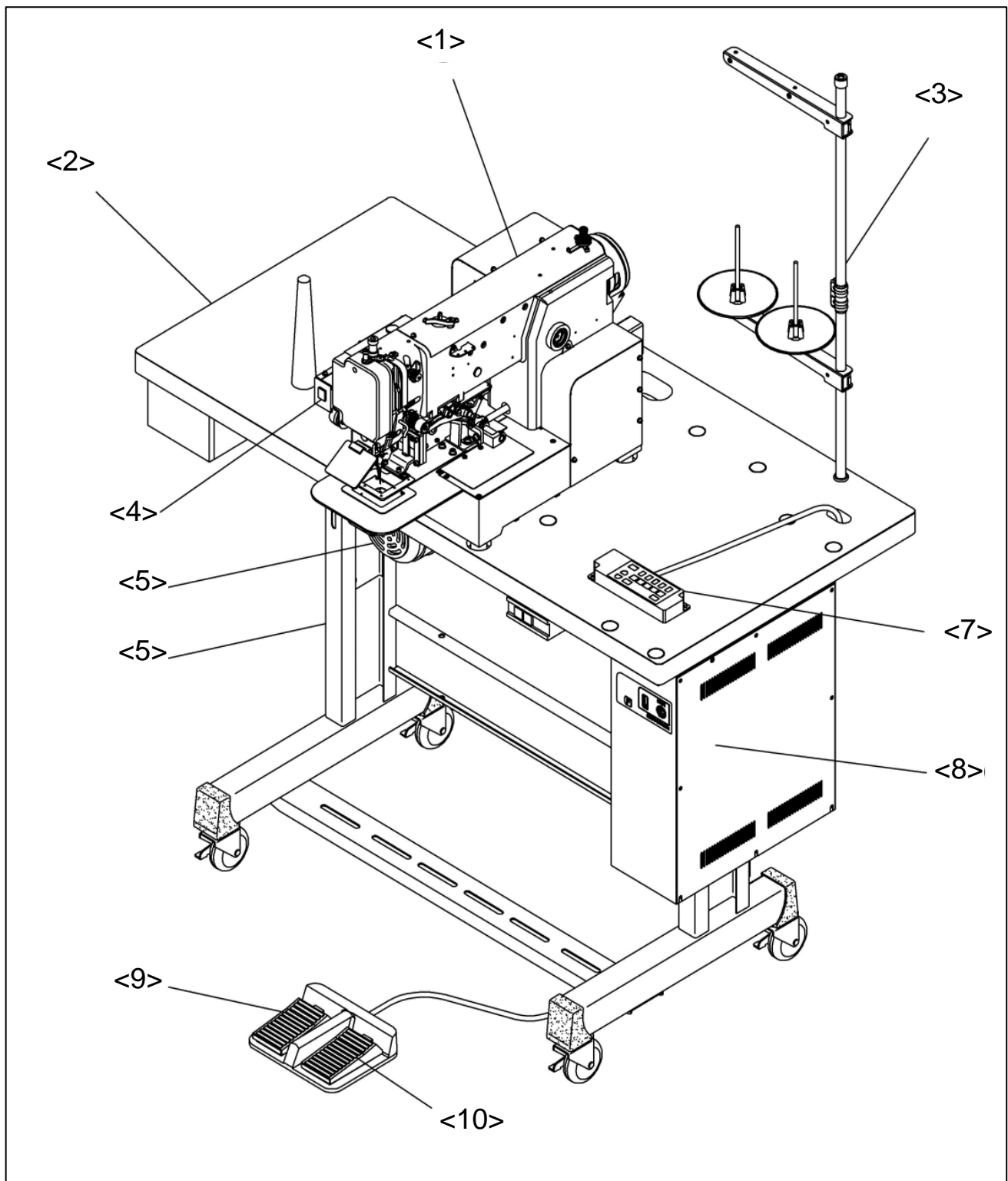
- (1) Please make sure to turn the power switch off before adjusting the sewing machine.
- (2) If the adjustment is required while the power switch on, do not step on the foot switch by mistake.
- (3) Please be careful not to be injured by a sharp part such as the needle and the shuttle hook point.
- (4) Please make sure to put the safety guards (eye guards, belt guards, link covers, and finger guards or the others) back on the initial position after the sewing machine adjustment.
- (5) Please make sure to lock the caster on the table when tilting the sewing machine.

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# 1. STRUCTURE OF THE SEWING MACHINE

PLK-G1306 electronic pattern sewing machine consists of the following main parts.



- <1> : Sewing machine head   <2> : Tabletop   <3> : Thread stand   <4> : Halt Switch  
<5> : Main shaft motor   <6> : Steel stand   <7> : Operation panel   <8> : Control box  
<9> : Start foot switch   <10> : Work holder switch

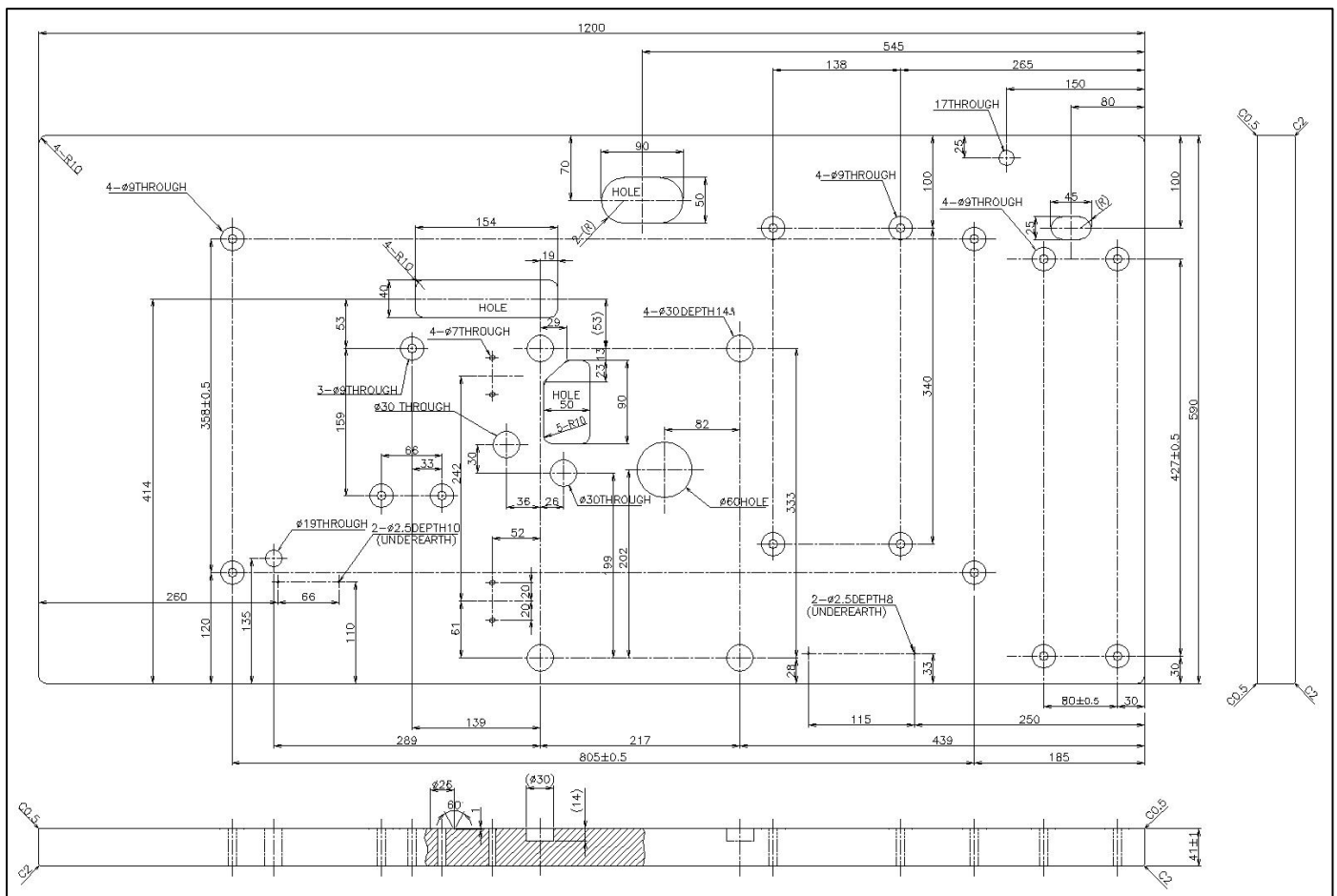
## 2. INSTALLATION

### ⚠ CAUTION

- (1) Please have some specialists, who have enough experience for the sewing machine installations, install the sewing machine.
- (2) Please have a Qualified Electrician perform necessary electric wiring.
- (3) Please do not operate until the sewing machine is repaired when any damage or fault is found on the sewing machine at the installation.
- (4) Please do not refurbish the sewing machine.
- (5) If the table and the steel stand are not MITSUBISHI original, the table and the steel stand have to be strong enough to withstand the weight and Vibration of the sewing machine.
- (6) When fitting the caster to the steel stand that are not MITSUBISHI original, the caster with locking function has to be strong enough to withstand the weight and Vibration of the sewing machine.

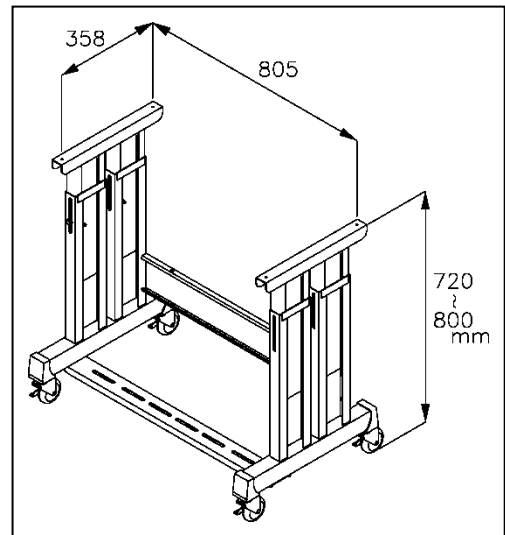
### 2-1. Preparation of the table

- (1) If the table is not MITSUBISHI original, the thickness of the table is required to have 40mm and that is strong enough to withstand the weight and Vibration of the sewing machine.
- (2) Manufacture the table as shown on the figure below.



## 2-2. Preparation of the steel stand

- (1) If the steel stand is not MITSUBISHI original, please refer to the dimensions shown on the figure at the right.
- (2) When fitting the caster to the steel stand, the steel stand has to be strong enough to withstand the weight and Vibration of the sewing machine.
- (3) If the steel stand is MITSUBISHI PLK-G1010 original, assemble the steel stand with the assembling instructions enclosed in the packing.



## 2-3. Installation of the motor

In the case of purchasing sewing machine without assembling to the table, the motor has to be installed underneath the table. Please install the motor with the instructions explained in the paragraph [Installation of the Motor] on the other CONTROL UNIT technical manual.

## 2-4. Installation of the control box

Install the control box with the instructions in the paragraph "[3] Installation" in the CONTROL UNIT technical manual.

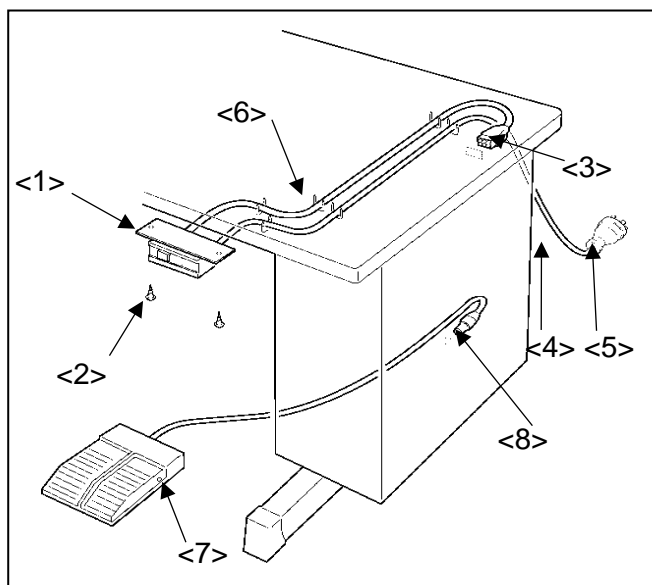
## 2-5. Installation of the operation panel

Connect the operation panel PLK-G10 with the CON A on the rear of the control box.

As for the control box connector, refer to the instructions in the paragraph "3-11.Connection of the electric cables" in this manual.

## 2-6. Installation of the power switch and foot switch

- (1) Mount the power switch (No.1) with the wood screw (No.2) at the position as shown on the figure.
- (2) Hook up the connector (No.3) of the power switch to the control box CON B.
- (3) Attach the power plug (No.5) to the incoming electrical cable (No.4).
- (4) Fix the electric cables with the staples (No.6) to prevent the cables from hanging down.
- (5) Hook up the connector (No.8) of the foot switch (No.7) to the control box CON H.
- (6) As for the control box connector, refer to the instructions in the paragraph "2-12.Connection of the electric cables" in this manual.

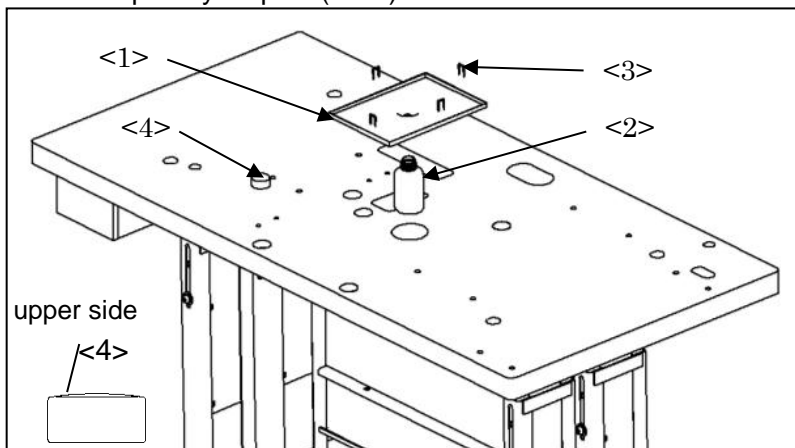


- <1>: Power switch
- <2>: Wood screw
- <3>: Power switch connector
- <4>: Electrical cable
- <5>: Power plug
- <6>: Staple (6)
- <7>: Foot switch
- <8>: Foot switch connector



## 2-7. Installation of the oil pan

- (1) Put the oil pan (No.1) on the table where oil drops from machine head.
- (2) Fix the oil pan by staples (No.3).



- <1> : Oil pan
- <2> : Oil bottle
- <3> : Staples
- <4> : Rubber cushion

## 2-8. Installation of the machine head

### ⚠ CAUTION

(1) The sewing machine is heavy. For the safety, please make sure to install the sewing machine head by more than one person.

(2) When tilting the sewing machine, please stand at the hinge side and hold the sewing machine with both hands. Also, please lock the caster on the steel stand.

(3) When tilting the sewing machine, the work clamp slides toward the hinges. Remember to move the work clamps Fully to the right side of the casting before placing the sewing head in the sewing position.

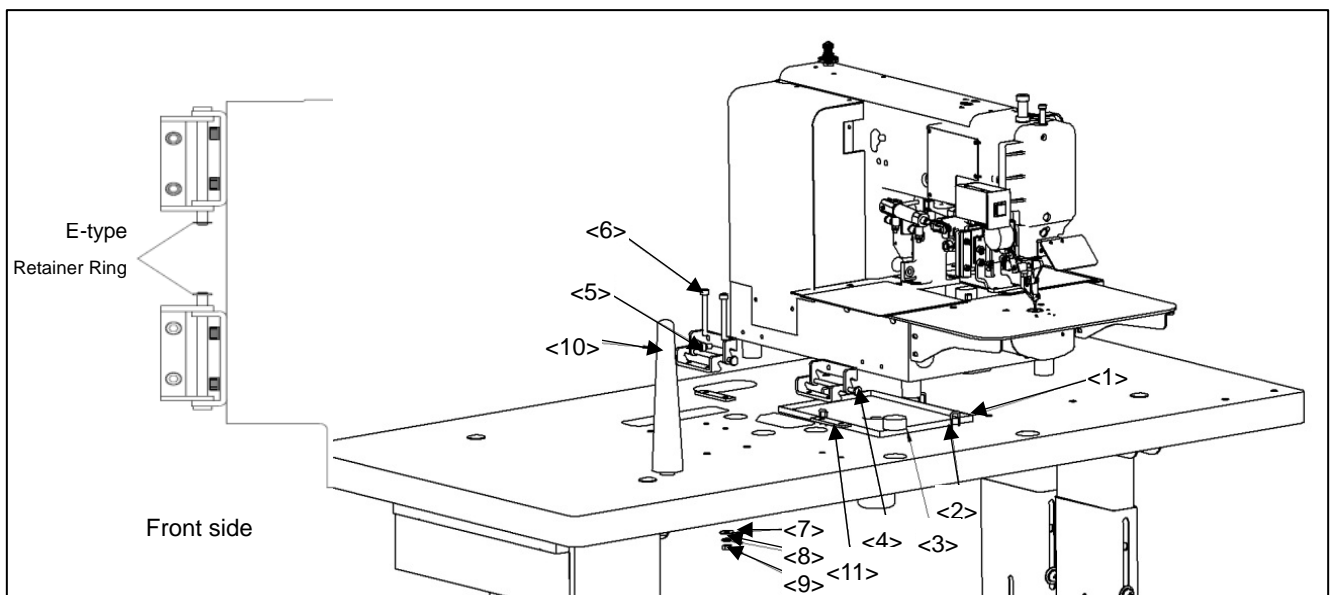
(1) Insert the rubber cushions (No.3) into the table.

(2) Put the machine head carefully on the rubber cushions.

(3) Fix the hinges (No.4) by short bolts (No.5) to the machine head ,refer to the figure.

(4) Fix the hinges by long bolts (No.6),washer(No.7),spring washer(No.8) and nuts(No.9) to the table.  
The sewing machine might fall when hinges attached in mistake direction.

(5) Insert the head rest (No.10) into the table..



- |                     |                    |                      |                        |
|---------------------|--------------------|----------------------|------------------------|
| <1> : Oil pan       | <2> : Staples      | <3> : Rubber cushion | <4> : Hinge(2)         |
| <5> : Short bolt(4) | <6> : Long bolt(4) | <7> : Washer(4)      | <8> : Spring washer(4) |
| <9> : Nut(4)        | <10> : Head rest   | <11> : Spacer        |                        |

## 2-9. Installation of the V-belt

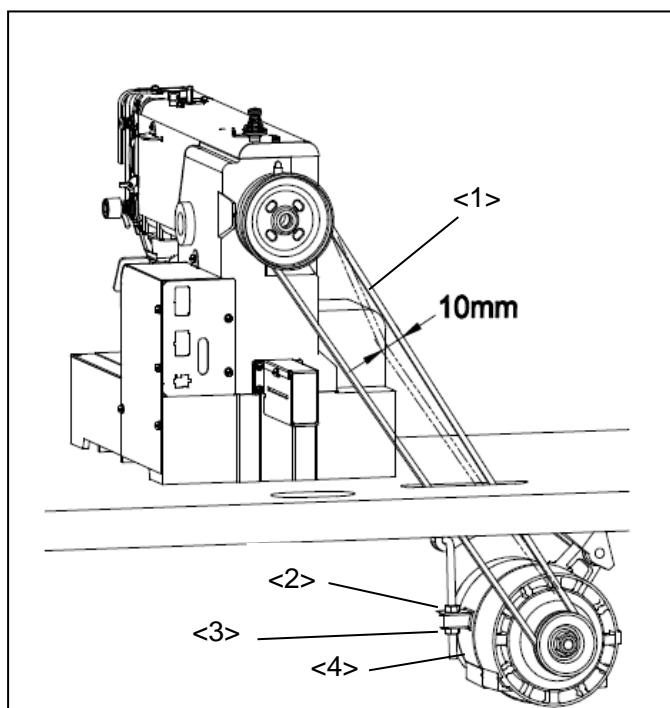
### ! CAUTION

- (1) For safety purposes, tilting or raising of the sewing must always be carried out by two or more workers. Apply a stopper on the leg casters to prevent the table from moving, and then securely support the bed base and the sewing machine head.
- (2) Hold the work holder frame to prevent it from dropping down when tilting the sewing machine.

- (1) Lay the machine head, and hold it with the head rest.
- (2) Set the V- belt (No.1) to each belt pulley of the sewing machine and the motor ,refer to the figure.
- (3) Push the V-belt center by the power of 0.1N.

If the V-belt tension is proper, it should be bent about 10mm.

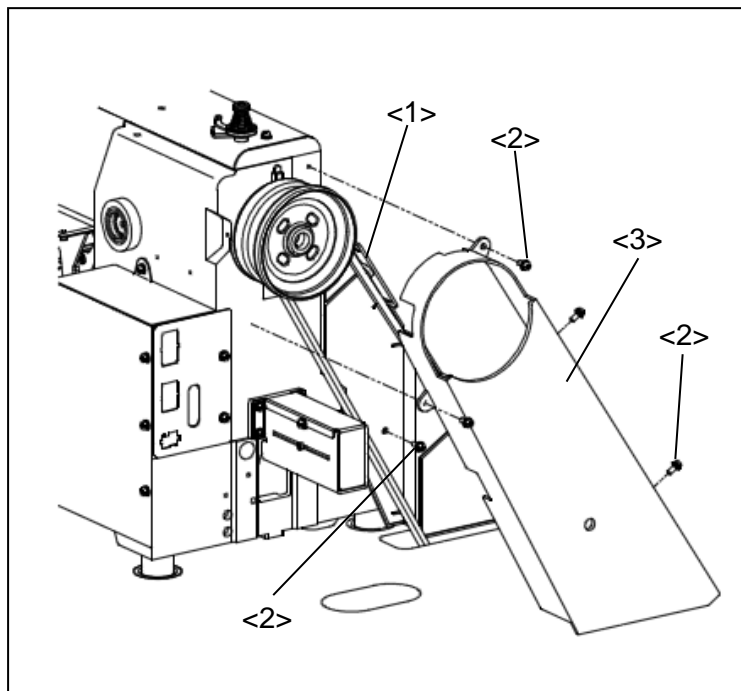
- (4) The tension adjustment is done by loosening the upper nut (No.2) and lower nut (No.3) and moving up and down the motor (No.4). Tighten the nut firmly after it adjusts it.
- (5) Install the pulley cover of the motor at the end.



- <1>: V-belt
- <2>: Upper nut
- <3>: Lower nut
- <4>: Motor

## 2-10. Installation of the belt cover

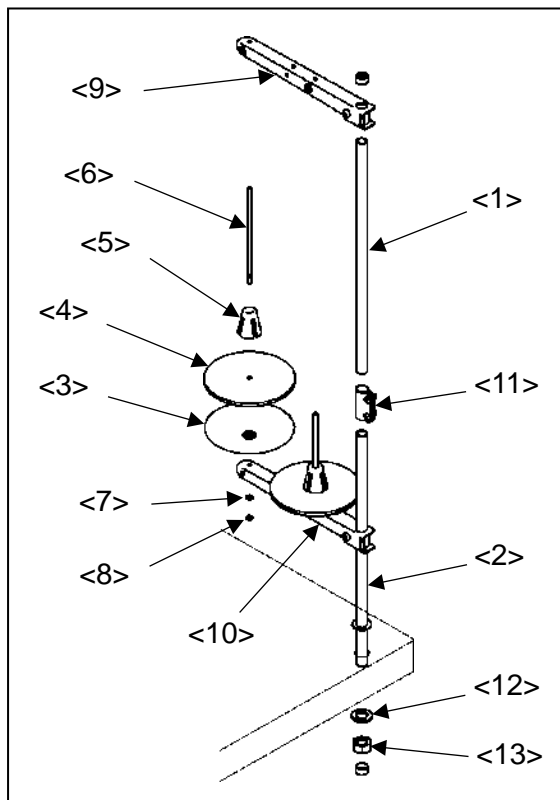
- (1) Attach the small cover (No.1) by screw (No.2) to the machine head loosely.
- (2) Fix the large cover (No.3) by screws (No.2) to the machine head.
- (3) Fix the small cover at the end. Put the driver in the large cover hole and turn the screw.



- <1>: Small cover
- <2>: Screw (5)
- <3>: Large cover

## 2-11. Installation of the thread stand


- (1) Assemble the parts (No.1 to No.11) of the thread stand as shown on the figure.
- (2) Fit the thread stand into the hole at the far right on the table stand with the nut (No.13) and the washers (No.12).



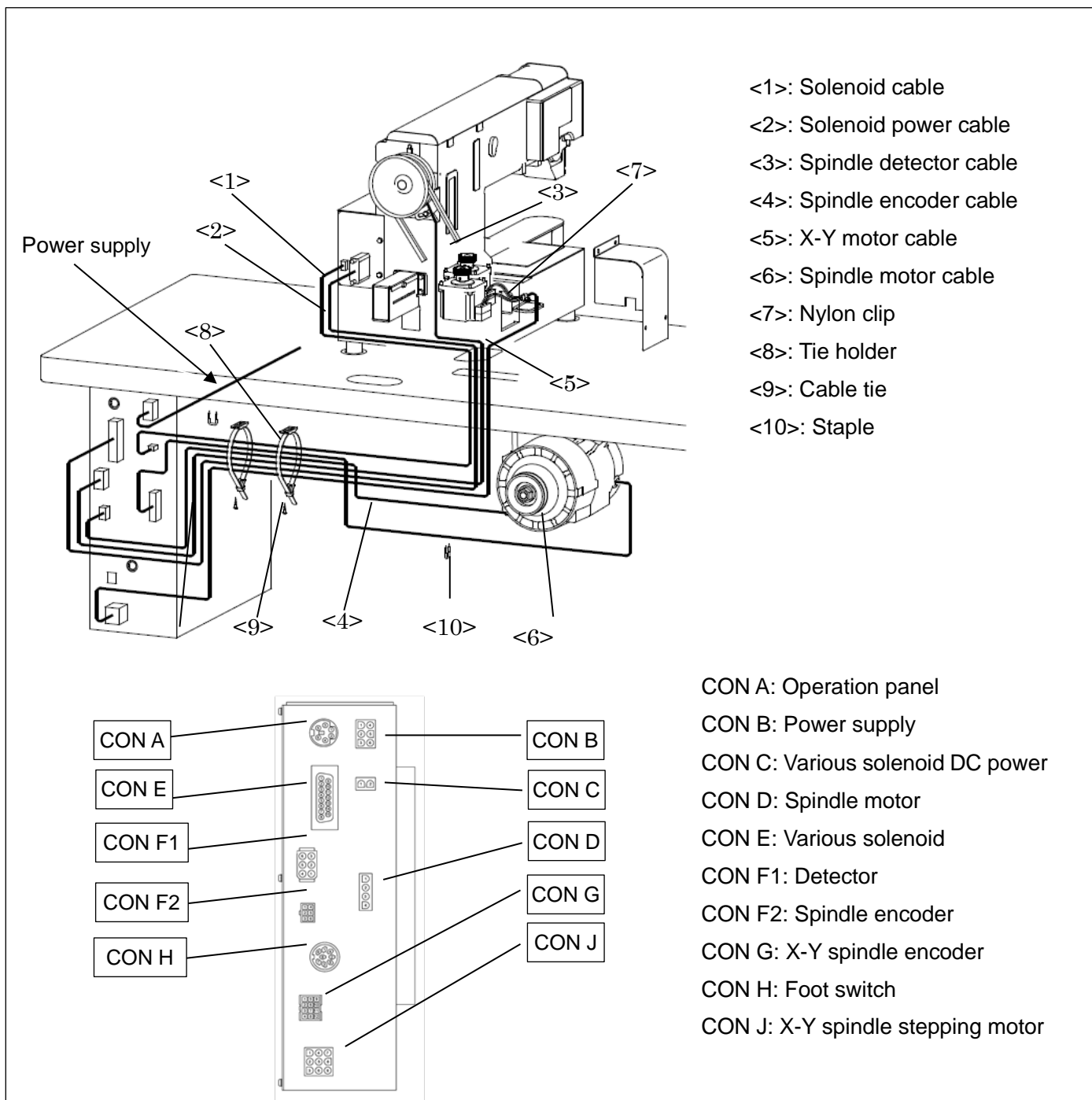
- <1>: Upper column pipe
- <2>: Lower column pipe
- <3>: Spool stand base (2)
- <4>: Spool mat (2)
- <5>: Spool holder (2)
- <6>: Spool shaft (2)
- <7>: Spring washer (2)
- <8>: Nut (4)
- <9>: Thread hunger
- <10>: Spool holder
- <11>: Column joint
- <12>: Washer
- <13>: Nut

## 2-12. Connection of the electric cables

### CAUTION

Please make sure to ground the place where there is a  mark. Failure to do so may cause electric shock and/or malfunction.

- (1) Connect the machine head and the control box with cables as shown on the figure.
- (2) Hold the dangling cables under the table with accessory tie holders <8> and cord ties <9>. At this time, please check whether the cables are not pulled when tilting the sewing machine.



### 3. LUBRICATION

#### CAUTION

- (1) Please make sure to turn power switch off before lubricating.
- (2) Please pay attention that oil does not get on your skin or in your eyes as it may cause an inflammation.
- (3) Please make sure to keep oil out of the reach of children who may drink oil by mistake.

[Notice] Please make sure to lubricate when operating for the first time after the installation.

Also, please make sure to check the amount of oil when the machine has not been used for a long time.

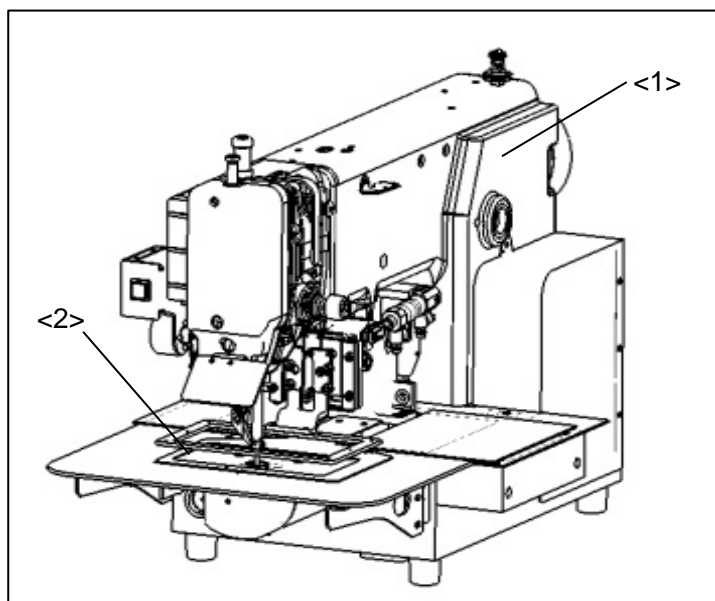
For oil, use "Pulley SF oil" specified by Mitsubishi.

- Refer

Pulley SF oil : Specific gravity(15°C) = 0.86(g/cm<sup>3</sup>)

: Viscosity(40°C) = 18.0(mm<sup>2</sup>/s)

- (1) The oil tanks are set at two places of the machine. Pour oil through the oil holes of (No.1 & No.2) to the oil tanks.
- (2) The oil tanks have level marks (at the center of the tank). Running out the oil may cause the machine to make abnormal noise and seize up. When the amount of oil decreases to one-third or less than one-third, make sure to fill the tank with oil.



### 4. INITIAL SETTING OF THE CONTROL BOX

When using the sewing machine for the first time, the model and the language of the sewing machine in use have to be set.

Refer to the instructions in the paragraph "[3] Initial settings (Language/Model settings)" in the **PLK-G10** technical manual.

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**MITSUBISHI ELECTRIC CORPORATION**

Printed in Japan

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