Yasui®

DIGITAL VACUUM WAX INJECTOR

DVWI Series

Model *DVWI* 115 V
Model *DVWI* 230 V
Model *DVWI* 230 V CE

INSTRUCTIONS

This instructions manual is for Production Serial No. 14351 and later.
(Program Ver.1.02-)

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Keep this manual for your future reference.

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- THE MANUFACTURER SHALL IN NO EVENT BE LIABLE FOR ANY DAMAGE RESULTING FROM IMPROPER USE, NEGLIGENCE TO FOLLOW THE WARNINGS AND CAUTIONS IN THE INSTRUCTIONS MANUAL OR THE LABELS ON THE MACHINE, UNSKILLFULNESS, USE OF NON-ORIGINAL OPTIONAL/CONSUMABLE ACCESSORIES/ SPARE PARTS, NON-AUTHORIZED MODIFICATION.
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- DAMAGES TO THE INSTRUMENT AND/OR HUMAN BODIES RESULTING FROM CONTACTING WITH HIGH TEMPERATURE PARTS, AND THEIR CONSEQUENTIAL OR INDIRECT DAMAGES ARE NOT COMPENSATED BY THE MANUFACTURER.
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- MOLD PRODUCTION RESULTS BY THE MACHINE OR BY THIS MANUAL ARE NOT COMPENSATED BY THE MANUFACTURER.

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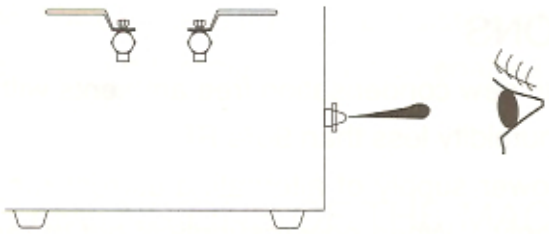
1. SAFETY INSTRUCTIONS

⚠ WARNING

1. Do not position your eyes in front of the nozzle any time.



2. Erroneous stepping on the foot switch by a person or dropping something heavy on the foot switch could cause burns to skin by hot wax ejected from the nozzle, especially during rest hour.
3. When the operator leaves the machine for long minutes, the foot switch should be stored away from view so as to avoid accidental stepping on it by someone else.
4. Do not leave anything heavy right above the foot switch.
5. The machine should be properly grounded.

⚠ CAUTION

1. Some exterior metal parts (areas not coated with paint, such as the nozzle, the lid of the wax pot) may become very hot. When you need to touch those parts, wait until they become cool.
2. Turn the air pressure regulator knob to 'zero' when the operator leaves the machine for long minutes.
3. When you want to use the machine in the manual mode, press the MANU key so that its LED should be on.
4. Rated fuse should be installed in place, so that damage to the machine at unexpected short-circuit can be prevented.
5. At the time of cleaning or maintenance work, do not wipe surface of the warning labels affixed to the surface of the machine.

2. INTRODUCTION

2-1. IDENTIFICATION OF MACHINE DATA

The machine is identified by the data shown on the plate affixed to its rear panel.

2-2. USING CONDITIONS

1. The machine can be used in dew condensation free ambients with temperature range 0 to 40 degrees Celsius and humidity less than 90% RF.
2. Connect the machine to power supply of alternating current range 115V +/- 10% or 230V +/- 10%, and 50/60Hz only. When power supply is out of range, take measures for normalizing, such as a transformer, automatic voltage regulator, or stabilizer, so that power supply for the machine will be kept within the above mentioned range.
3. Do not use the machine at a place where dust or harmful gas is generated.

2-3. USING WITH ADVANCED AUTO CLAMP

1. The Digital Vacuum Wax Injector *DVWI* Serial No. 14351 and more can be used with the *Yasui* Advanced Auto Clamp *AAC II* (option) - Serial No. E2411 and more. See the instructions manual provided with the *AAC II* .
2. The Digital Vacuum Wax Injector *DVWI* Serial No. 14351 and more can be used with the *Yasui* Advanced Auto Clamp *AAC II* (option) - Serial No. B0601 to E 2410, however the cable from *AAC II* for 2-pin connector B has to be replaced as described in P.30. Also see the instructions manual provided with the *AAC II*.
3. The Digital Vacuum Wax Injector *DVWI* can not be used with the *Yasui* Advanced Auto Clamp *AAC I* (option) - Serial No. A 0600 and less.

	AAC II E2411 and more	*AAC II* B0601 to E 2410	*AAC I* A0600 and less
DVWI No.14351 and more	Can be used.	Can be used, if the cable from *AAC II* for CONNECTOR B is replaced (See P.30).	Can not be used.

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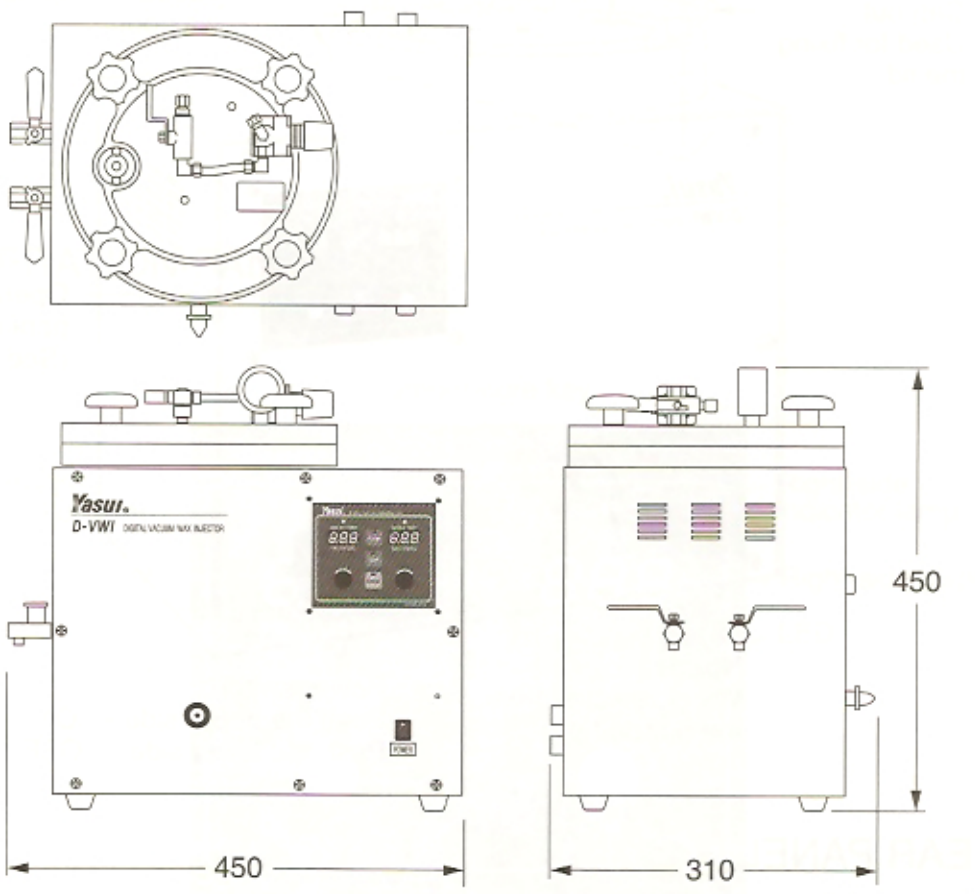
2-4. MAIN CHARACTERISTICS OF THE MACHINE

1. First, inside of a rubber mold is evacuated and second wax is injected to fill the vacuum cavity of the rubber mold, thereby wax patterns can be obtained with high fidelity to a master model.
2. The heater of wax pot and the heater of nozzle is individually controlled, so that optimum injection temperature is obtained.
3. The concentric double cylinder structure consisting of inner vacuum chamber and outer wax pot has downsized the machine which enables wide selection of installment place.

2-5. OVERALL DIMENSIONS OF THE MACHINE



(Unit : mm)

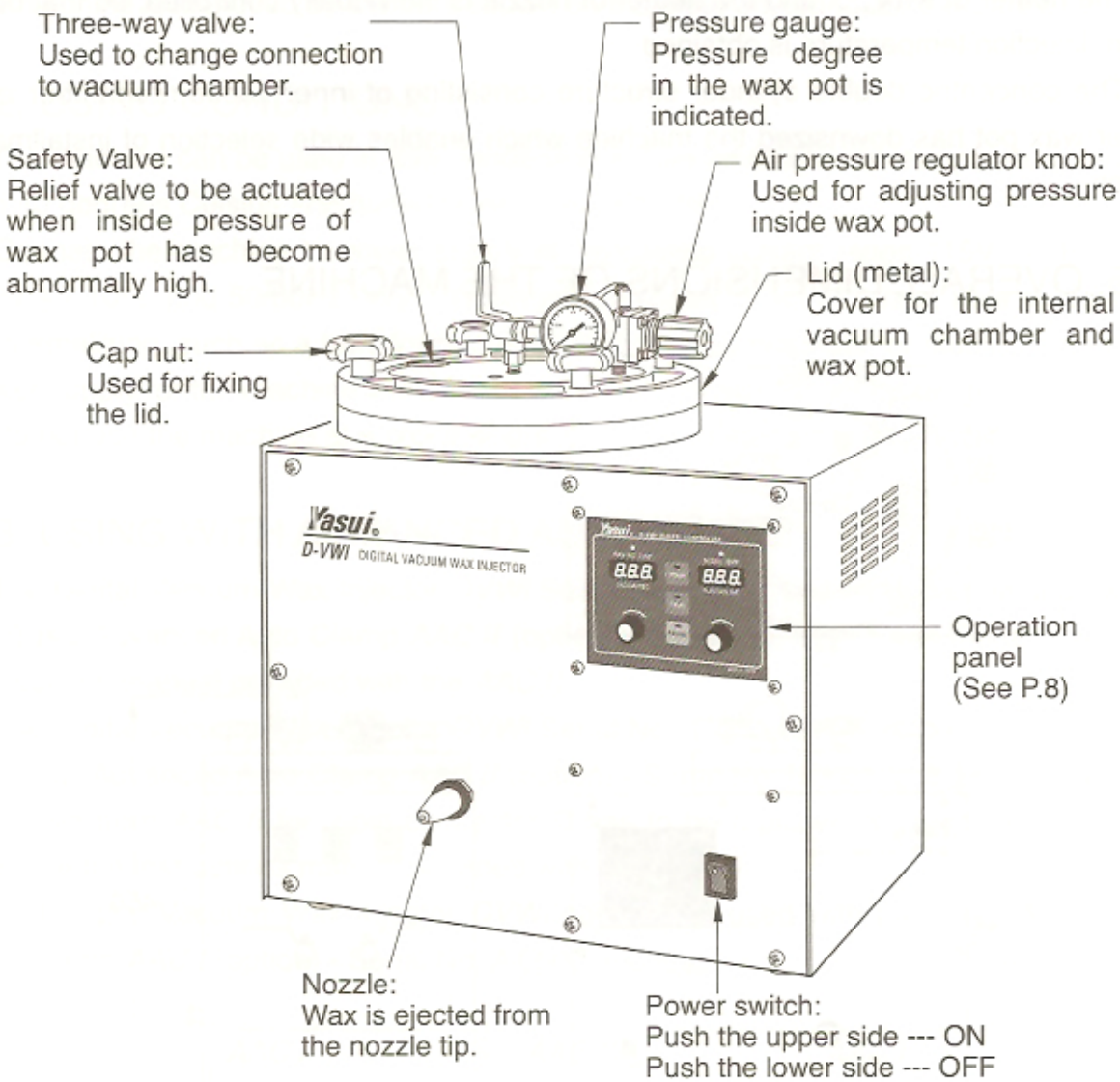
2-6. TRANSPORTATION

When you transport the machine, put cushion material provided in the package.
Use a double carton box.

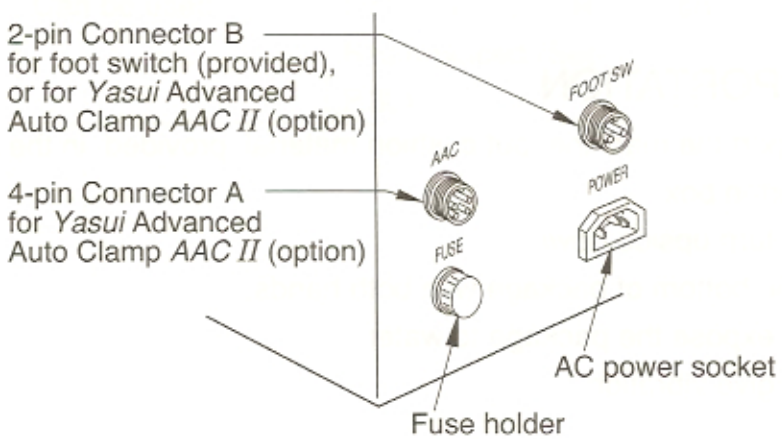
Do not turn upside down.
Hold the bottom of package with both hands.
Do not expose the package to water.
Do not give vibration.

3. NOMENCLATURE

3-1. FRONT VIEW



3-2. REAR PANEL



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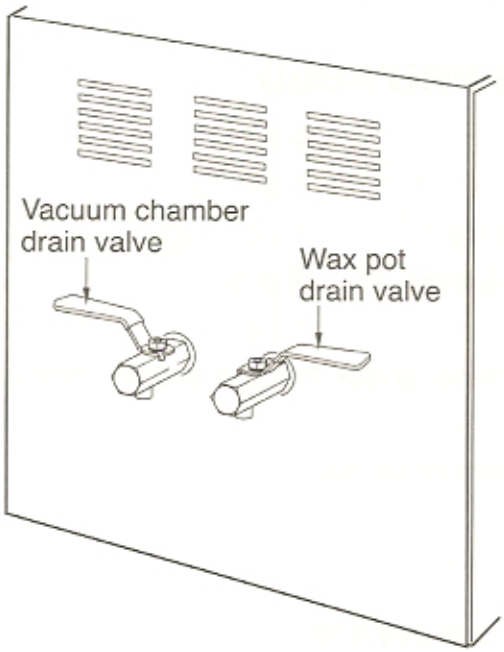
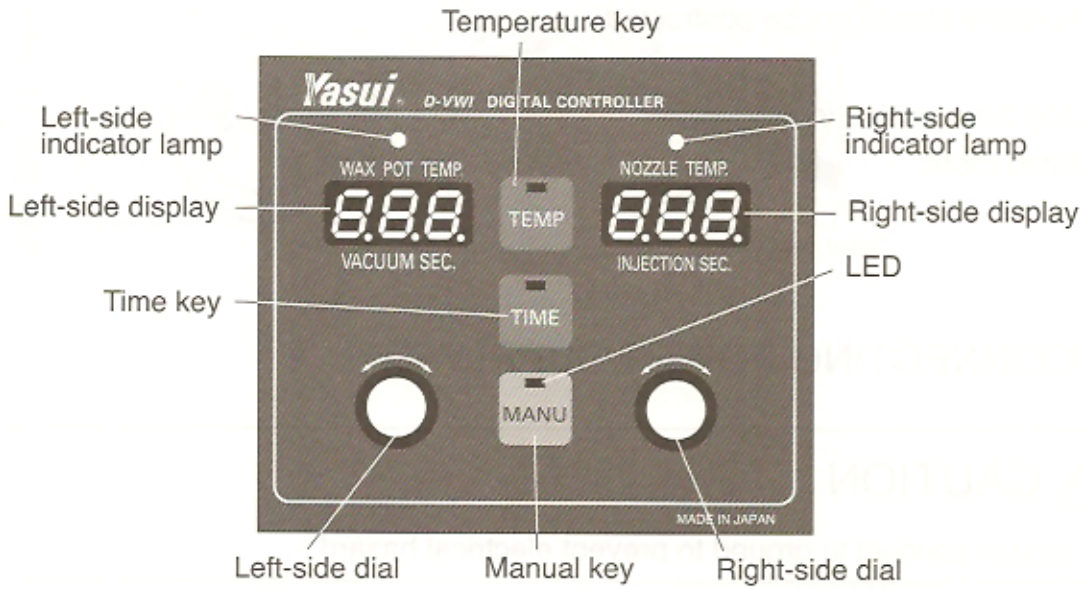
3-3. LEFT SIDE PANEL



3-4. OPERATION PANEL



4. INSTALLING

4-1. ACCESSORIES PROVIDED

(1) Foot switch	1 pc.
(2) Power cable	1 pc.
(3) Dia.6 mm tube (black, 3 m)	1 pc.
(4) Union joint (PT 1/4 dia.6 mm)	2 pcs.
(5) 5A Fuse	1 pc.

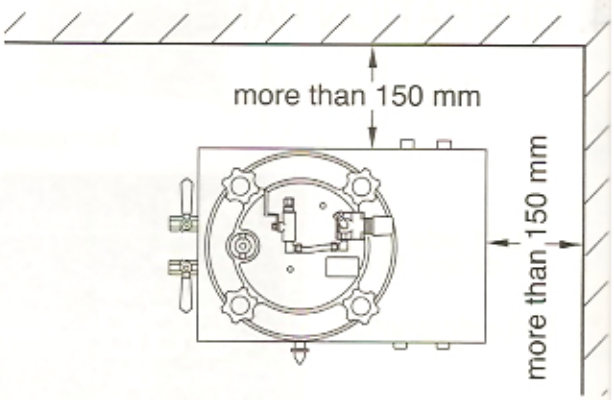
- When unpacking the machine, check that the supply corresponds to the above accessory list.
- Prepare a wrench for 12 mm head nut.

4-2. PLACE

1) Mount the machine on a sturdy and stable bench.

2) Leave sufficient clearance around the machine so that daily work and maintenance should not be obstructed.

3) Place the machine in well-ventilated room.



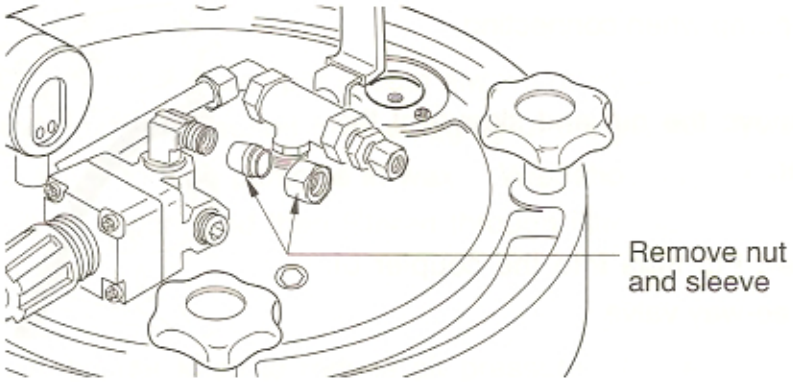
4-3. CONNECTING POWER SUPPLY

> ⚠ CAUTION
>
> Be sure to connect to ground to prevent electrical hazard.

4-4. CONNECTING AIR COMPRESSOR

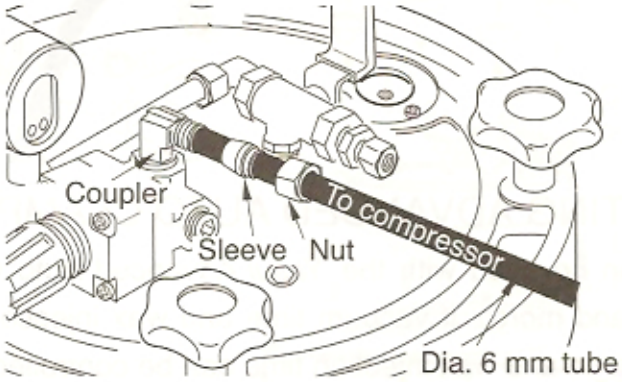
Connect the machine to an air compressor with minimum pressure of 0.40 MPa.

1) Remove the nut and sleeve of the coupler with a wrench for 12 mm head.



2) Pass the dia. 6 mm tube into the nut and sleeve, then connect to the coupler securely.

3) Tighten the nut by hand and then give another 1 and 1/4 turns with a spanner.



4-5. CONNECTING VACUUM PUMP

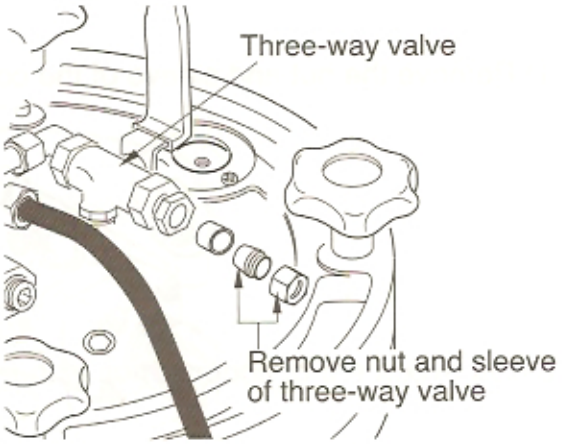
Connect the machine to a vacuum pump with a minimum pumping speed 20 liters/min.

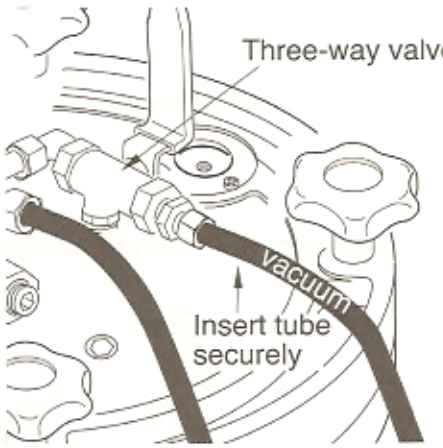
[NOTE] Observe instructions of vacuum pump when connecting.

1) Remove the nut and sleeve of the coupler.

2) Insert the tube into the coupler of the three-way valve.

3) Insert the tube into the connector as far as it will go. Tighten the nut by hand and then give another 1 and 1/4 turns with a spanner.





4-6. CONNECTING ADVANCED AUTO CLAMP (OPTION)

1. The machine can be used with the *Yasui* Advanced Auto Clamp *AAC II* (option) - Serial No. E 2411 and more. If vacuum time and wax injection time are set to ' 99.9 ' (P.15-16), vacuum time and wax injection time can be controlled by the *AAC II*. See the instructions manual provided with the *AAC II*.

2. The machine can be used with the *Yasui* Advanced Auto Clamp *AAC II* (option) - Serial No. B0601 to E2410, however the cable from *AAC II* for 2-pin connector B has to be replaced as described in P.30. If vacuum time and wax injection time are set to ' 99.9 ' (P.15-16), vacuum time and wax injection time can be controlled by the *AAC II*. See the instructions manual provided with the *AAC II*.

3. The machine can not be used in combination with the *Yasui* Advanced Auto Clamp *AAC I* (option) - Serial No. A 0600 and less.

4-7. CONNECTING FOOT SWITCH

The foot switch provided can be connected to the machine.

1) Connect the connector of the foot switch to the 2-pin connector B on the rear panel of the machine.

2) Turn the fixation ring of the connector of the foot switch clockwise to tighten.

5. BEFORE USE

5-1. WAX FILLING

[NOTE]

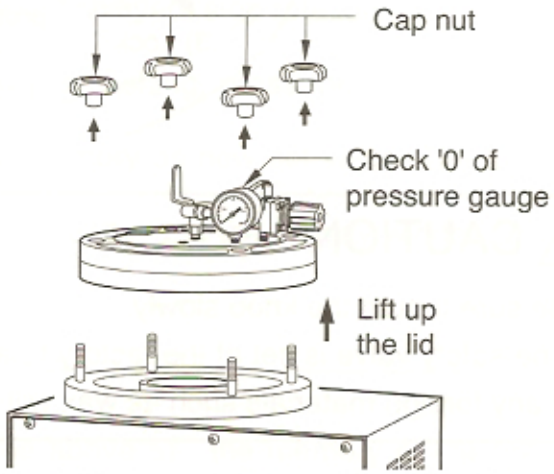
Wax which is to be charged into the wax pot should always be clean. Continuous leakage of wax from the nozzle is caused from clogging of the plunger tip inside the valve assembly by dirt or foreign particles in wax. Wax should be heated to melt in a container such as a pan, and then filtered through filter paper available on the market.

1) Turn the air pressure regulator knob to reduce air pressure. Make sure that the pressure gauge reads '0 (zero)'.

2) Unscrew the four cap nuts on the lid of the body and lift the lid to remove.

⚠ CAUTION

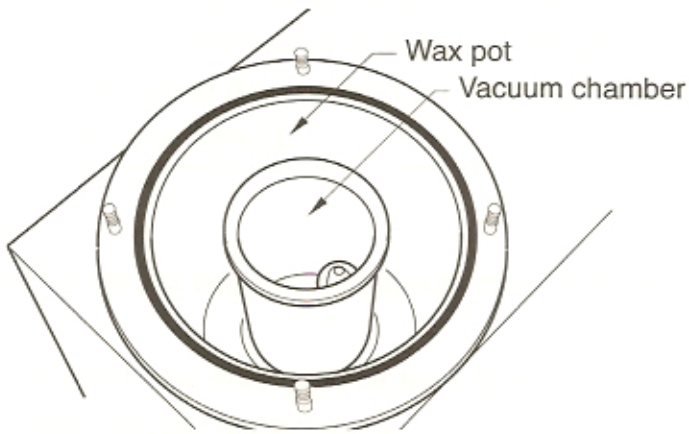
Lift the lid straight upward so that the bolts should not be damaged.



3) Pour the filtered wax into the wax pot.

⚠ CAUTION

Never pour wax into the inner vacuum chamber.



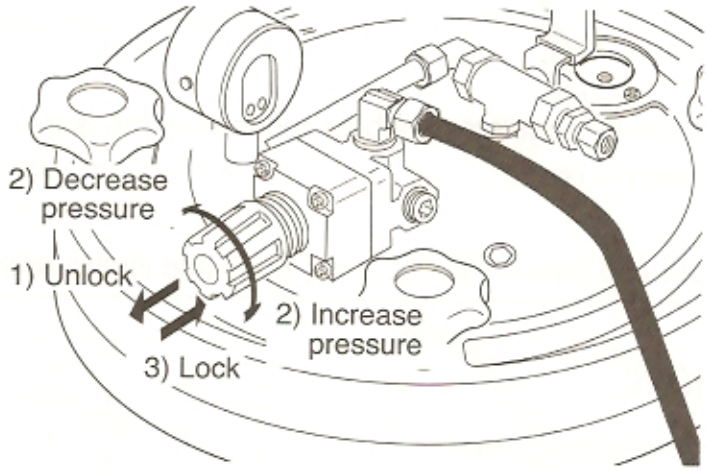
5-2. ADJUSTING AIR PRESSURE

Turn the air pressure regulator knob to change air pressure.

1) First, pull the knob.

2) Second, rotate it around its own axis.

3) After setting, push the knob back so that the knob should be locked and the set value should be maintained during operation.



⚠ CAUTION

1. Be sure to turn the knob slowly.
2. The safety valve is set at the factory to approx. 0.35 MPa (+/- 0.02). Take care that any foreign materials such as wax will not enter into the safety valve.

6. SETTING ON OPERATION PANEL

6-1. SETTING TEMPERATURE

1) Turn the power switch on.

2) The LED of the TEMP key is on. Process value of wax pot temperature is displayed on the left-side display window. Process value of nozzle temperature is displayed on the right-side display window.

3) Press the left-side (right-side) dial in. Display of wax pot temperature (nozzle temperature) of the left-side (right-side) display window will change from process value to set value. At this time, the LED of the TEMP key flashes.

4) If you rotate the left-side (right-side) dial when the LED of the TEMP key is flashing, the set value varies. When desired value is displayed, stop rotation.

5) Further, when the LED of the TEMP key is flashing, press the left-side (right-side) dial once again. Display value is set into memory as new set value. The LED of the TEMP key will be changed from flashing to steady, and the display window will be restored from set value to process value.

IMPORTANT:

1. If the dial is pressed once again in the above 5), the memory of change into new set value is not erased even when power is turned OFF.

2. If the dial was not pressed once again in the above 5), the LED of the TEMP key will be changed from flashing to steady and the display window will be restored from set value to process value automatically after about 2 seconds. However, in this case, change of set value is valid only while the power is on. Once power is turned off, change into new set value becomes invalid.

[NOTE]

1. Temperature of the nozzle should be set 2-3 degrees centigrade lower than temperature of wax pot.
2. When setting of the nozzle temperature was changed, be sure to wait until actual temperature of the wax pot will reach proper temperature.
3. Air bubbles produced in a wax pattern may be caused from the fact that temper-

ature of the nozzle was set higher than its proper temperature.

4. Insufficient filling of wax to the cavity of rubber mold may be caused from the fact that temperature of wax was lower than its proper temperature.

6-2. SETTING TIME

1) Press the TIME key, so that the LED of this key is lit.

2) Press the left-side (right-side) dial in. Display of vacuum time (wax injection time) of left-side (right-side) display will change from process value to set value. At this time, the LED of the TIME key flashes.

3) Change display value by either of the below 3-1) or 3-2).

3-1) If you rotate the left-side (right-side) dial when the LED of the TIME key is flashing, the set value of the least significant digit (*1) varies.

3-2) If you rotate the left-side (right-side) dial while pressing and holding the TIME key, you can change the most significant digit (*2) .

Increment of digit (*1) and (*2) varies as follows, depending upon setting by "6-3. SELECTING TIMER DISPLAY RANGE" (P.16).

	Left-side display (VACUUM SEC.)		Right-side display (INJECTION SEC.)	
Timer display range (P.16 "6-3.SELECTING TIMER DISPLAY RANGE")	0.00 - 9.99 sec.	0.0 - 99.9 sec.	0.0 - 99.9 sec.	00 - 600 sec.
(*1) Increment by rotating dial (above mentioned (3-1))	0.01 sec.	0.1 sec.	0.1 sec.	1 sec.
(*2) Increment by rotating dial while pressing and holding TIME key (above mentioned (3-2))	1 sec.	10 sec.	10 sec.	100 sec.

4) Further, when the LED of the TIME key is flashing, press the left-side (right-side) dial once again. Display value is set into memory as new set value. The LED of the TIME key will be changed from flashing to steady, and the display window will be restored from set value to process value.

IMPORTANT:

1. If the dial is pressed once again in the above 4), the memory of change into

new set value is not erased even when power is turned OFF.

2. If the dial was not pressed once again in the above 4), the LED of the TIME key will be changed from flashing to steady and the display window will be restored from set value to process value automatically after about 2 seconds. However, in this case, change of set value is valid only while the power is on. Once power is turned off, change into new set value becomes invalid.

6-3. SELECTING TIMER DISPLAY RANGE

Timer display range can be selected as follows.

Left-side display (VACUUM SEC.):
either 0.00 - 9.99 seconds or 0.0 - 99.9 seconds
Right-side display (INJECTION SEC.):
either 0.0 - 99.9 seconds or 00 - 600 seconds

1) Press the TIME key, so that the LED of this key will be lit.

2) Press and hold the corresponding right or left dial for more than 1.5 seconds to change the timer range.

6-4. PRELIMINARY MELTING OF WAX

By this preliminary melting, wax in the wax pot is once heated to high temperature so that the whole of wax is thoroughly molten, and then temperature is lowered and stabilized to working temperature.

6-4-1. SETTING PRELIMINARY MELTING OF WAX

1) Pressing both the left-side dial and MANU key simultaneously, turn on the power switch.

2) Preliminary melting temperature is displayed on the left-side display window. Press the left-side dial in. At this time, the LED of the TEMP key flashes.

3) If you rotate the left-side dial, the set value of preliminary melting temperature varies. When desired value is displayed, stop rotation.

4) When the LED of the TEMP key is flashing, press the left-side dial once again. Display value is set into memory as new set value. The LED of the TEMP key will be changed from flashing to steady, and the display window will be restored to process value.

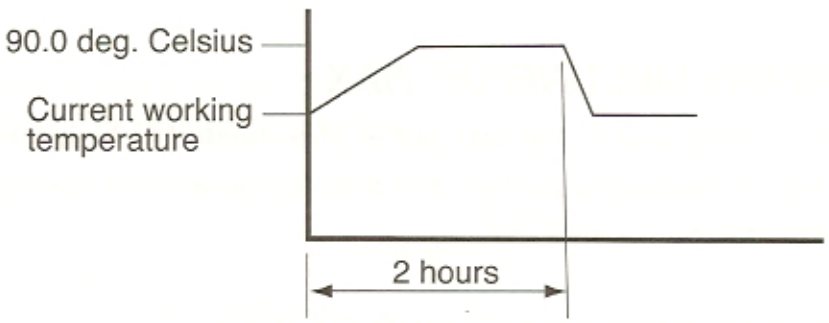
5) "P" and preliminary melting time are displayed on the right-side display window. Press the right-side dial in. At this time, the LED of the TEMP key flashes.

6) If you rotate the right-side dial, the set value of preliminary melting time varies. When desired value is displayed, stop rotation.

7) When the LED of the TEMP key is flashing, press the right-side dial once again. Display value is set into memory as new set value. The LED of the TEMP key changes from flashing to steady.

8) Turn the power switch OFF, and then turn it ON again.

Example: When the left-side display window (preliminary melting temperature) is set to 90.0 and the right-side display window (preliminary melting time) is set to P02, temperature is controlled as the below graph.



6-4-2. STARTING PRELIMINARY MELTING

If you press and hold both the right-side and left-side dials simultaneously for two seconds, preliminary melting of wax is started as below.

- Wax pot temperature flashes on the left-side window.
- Temperature is controlled as the graph in the previous page.
- During preliminary melting, the LED of MANU key is lighted.

↓

When the set time has elapsed, flashing of temperature display stops.

↓

Temperature is lowered to normal set value of working temperature.

To suspend preliminary melting of wax, press and hold both the right-side and left-side dials simultaneously again for two seconds or turn the power switch OFF.

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[NOTE]
During preliminary melting of wax, evacuation and wax injection do not work.

6-5. SET AND RELEASE OF HEATER-ON DELAY TIMER

6-5-1. SET OF HEATER-ON DELAY TIMER

1) Pressing both the MANU key and TEMP key simultaneously, turn the power switch ON. "H" and delay time are shown on the right-side display.

Example:  (setting 12 hours)

2) Turn the right-side dial until the desired delay time is shown on the right-side display. You can set delay time between 0 to 99 hours.

3) Finally, press the right-side dial in, so that the time can be set into memory.

6-5-2. RELEASE OF HEATER-ON DELAY TIMER

When you want to release set of the heater-ON delay timer, turn the power switch OFF, and then turn it ON again.

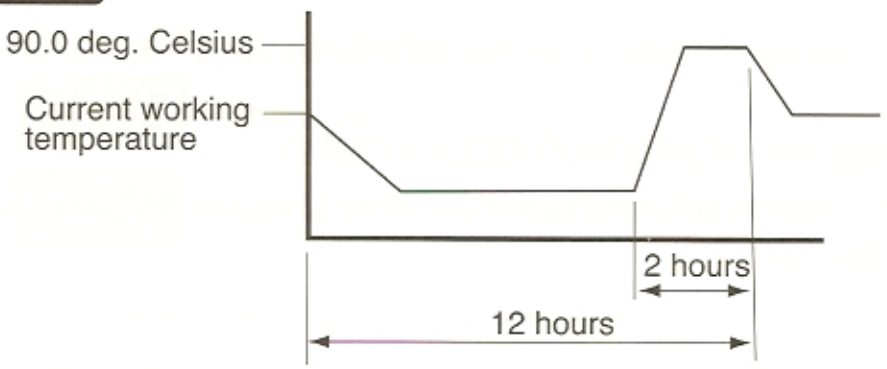
IMPORTANT:
Even if you set the timer to "H 0 0" only, the heater-ON delay timer can not be released.

6-6. COMBINATION OF PRELIMINARY MELTING AND TIMER

By this function, it is possible to turn power OFF at the end of a day work, and then wax in the wax pot is molten and its temperature is stabilized before starting work in the next morning.

Once preliminary melting has been set, and the heater-ON delay timer is turned ON, preliminary heating and the heater-ON delay timer work together.

Example: When the heater-ON delay timer is set to H 12, preliminary melting temperature is set to 90.0 and preliminary melting time is set to P02, temperature is controlled as the below graph.



IMPORTANT:
When combination of preliminary melting and heater-ON delay timer is not used, and when heater-ON delay timer only is to be used, set the preliminary melting time to "P 0 0".

6-7. INITIALIZING SET VALUES

Pressing both the MANU key and TIME key simultaneously, turn the power switch ON.

Then, the memory of the machine is reset to the below initial set values.

VACUUM SEC. 2.0 sec.
INJECTION SEC. 2.0 sec.
WAX POT TEMP. 75.0 degrees C / 166 degrees F
NOZZLE TEMP. 72.0 degrees C / 160 degrees F
Temperature display unit: 0.1 degree C / 1 degree F

6-8. SELECTING CELSIUS AND FAHRENHEIT

Pressing both the right-side and left-side dials simultaneously, turn the power switch ON. Then, either Celsius or Fahrenheit can be selected for temperature readout unit.

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7. WAX INJECTING

7-1. CHECKING BEFORE OPERATION

1) Turn on the power switches of the machine and external device.

2) Open the valve of air compressor.

3) Turn the lever of the three-way valve located on the lid to vertical position.

4) Turn the air pressure regulator knob clockwise slowly to increase air pressure.

IMPORTANT:
Check that no air-leak is found. When pressure gauge indication changes, check each connecting part of hoses.

5) Process values of the left display and the right display come close to the set values, then the right and left pilot lamps start to flash alternately.

6) Wait for one or two hours (waiting time depends on room temperature) until wax inside will be melted thoroughly. Then, you can start wax injection.

[NOTE]
Determining optimum vacuum time and injection time depends on practice and experience of operator.

7) Before starting operation, it is recommended to let the machine run in the AUTO mode and test it several times for checking functions of each unit.

⚠ CAUTION

Hold a rubber mold against the nozzle, so that wax will not be ejected during running test.

7-2. PROCEDURE OF AUTO INJECTION

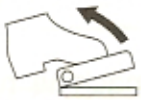
- WHEN FOOT SWITCH IS USED

(When this machine is used in combination with the Advanced Auto Clamp *AAC II*, refer to the instruction manual provided with the Advanced Auto Clamp *AAC II*.)

Automatic wax injection is possible with the foot switch by the below procedure. When you wish to suspend operation during the below procedure, press the MANU key.

IMPORTANT:

When you use the foot switch by the AUTO mode (the LED of the MANU key is OFF), take care not to press the foot switch too long, otherwise the injection cycles will be repeated automatically.

Foot switch	Machine's function
Hold rubber mold against nozzle and continue to hold it. Foot switch is not depressed yet. 	
Depress foot switch lightly.  ↓ Remove foot from foot switch quickly. 	A sequential cycle of automatic operation is started.
Continue to hold rubber mold against nozzle. Foot switch is not depressed. 	Evacuation from rubber mold is started. ↓ Vacuum timer is started. ↓ Vacuum timer is turned OFF. (Evacuation is finished.) ↓ Automatic wax injection is started. ↓ Wax is injected. Injection timer is started. ↓ Injection timer is turned OFF. (Injection is finished.)
Remove rubber mold from nozzle. Foot switch is not depressed. 	Machine is ready for next injection.

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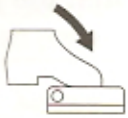
7-3. PROCEDURE OF MANUAL INJECTION

-WHEN FOOT SWITCH IS USED

(When this machine is used in combination with the Advanced Auto Clamp *AAC II*, refer to the instruction manual provided with the Advanced Auto Clamp *AAC II*.)

Manual wax injection is possible with the foot switch by the below procedure.

Foot switch	Machine's function
Hold rubber mold against nozzle and continue to hold it. Foot switch is not depressed yet. 	
Depress foot switch lightly. 	Evacuation from rubber mold is started. ⬇
Continue to depress foot switch.  IMPORTANT: Estimate by yourself necessary time to complete injection.	Vacuum timer is started. (Even when machine is set to MANUAL, evacuation only is automatically started by vacuum timer.) ⬇ Vacuum timer is turned OFF. (Evacuation is finished.) ⬇ Automatic wax injection is started. ⬇ Wax is kept injected so long as foot switch is being depressed. ⬇
Remove foot from foot switch. 	Injection of wax is stopped.
Remove rubber mold from nozzle. Foot switch is not depressed. 	Machine is ready for next injection.

8. AFTER FINISHING INJECTION WORK

1. Remove wax residue trapped in the bottom of the vacuum chamber.

> IMPORTANT:
> Wax draining should be carried out every day when injection work is finished.

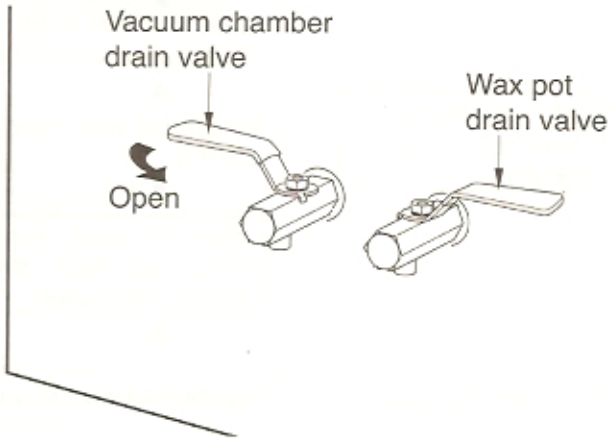
1) Place a wax receiving container under the outlet of drain valve.

2) Turn the power switch of the vacuum pump OFF.

3) Turn the air pressure regulator knob counterclockwise, so that the pressure gauge on the lid of the body should indicate 0.01 to 0.02 MPa.

4) Turn the lever of the three-way valve to horizontal position.

5) Turn the lever of the vacuum chamber drain valve to operator's side. (See the below figure.) Wax will be drained out.



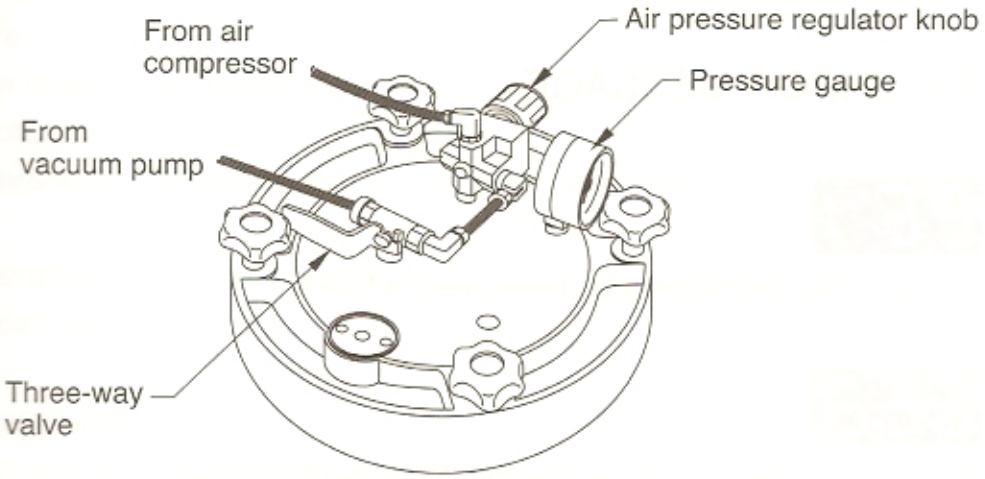
[NOTE]
1. When wax ejecting speed is too slow, raise set temperature for wax-pot a little.
2. When room temperature is low, draining speed may be slow. In this case, heat the tip of the valve with a hair-dryer or the like.

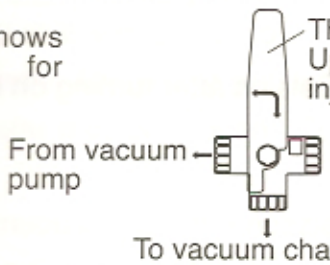
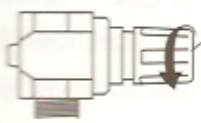
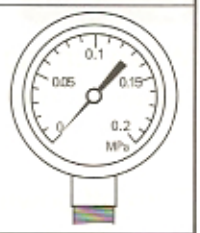
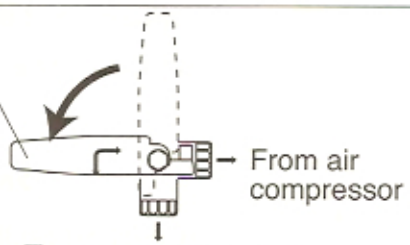
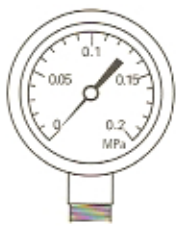
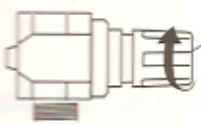
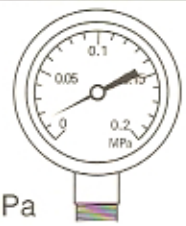
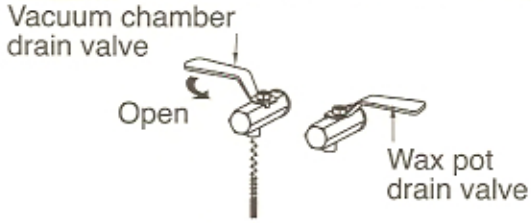
6) When wax is drained out completely, turn back the vacuum chamber drain valve and the three-way valve to original position.

7) Turn the air pressure regulator knob, so that the pressure gauge on the lid of the body should indicate 0 MPa.

2. Close the valve of air compressor. Turn power off.

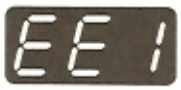
REMOVING TRAPPED WAX FROM VACUUM CHAMBER



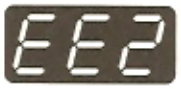
	Operation of three-way valve and air pressure regulator knob	Reading of pressure gauge
	This figure shows usual setting for wax injection. 	 0.07 to 0.08 MPa (example)
1	 Turn air pressure regulator knob around its own axis counterclockwise as far as it will go.	 0.00 MPa
2	Set lever of three-way valve to horizontal position. 	 0.00 MPa
3	 Turn air pressure regulator knob around its own axis clockwise until pressure gauge indicates 0.01 to 0.02 MPa. IMPORTANT: Do not turn knob over 0.02 MPa.	 0.01 to 0.02 MPa
4	Open vacuum chamber drain valve fully, so that residue wax inside will be drained. 	

9. TROUBLES

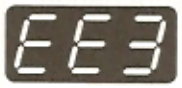
9-1. ERROR MESSAGE



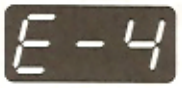
Wiring of the thermo-sensor (thermistor) is broken.



Wiring of the thermo-sensor (thermistor) is short-circuited.



Temperature does not rise above 40 degrees Celsius after turning on the heater.
(Watch time 60 minutes)



When turning on the machine, the start switch of the external device is ON.

Turn off power of the controller. Then, solve the cause.

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9-2. CAUSE OF MALFUNCTION

1. When malfunction happened, first check the below points, then proceed to next checking procedure.

   The power cable is securely plugged in?

   The power switch is turned on?

   The fuse is not broken? The connectors are securely connected?

2. Lamp on the operation panel does not light.

   Another lamp does not light either?

3. Foot switch will not function.

   Is the foot switch connector securely connected ?

4. Wax is not injected from the nozzle. (See also P.27)

   Wax injection timer is set to 0 (zero).

   Pressure is proper? Check the pressure gauge.

   The internal heater may be broken. Contact the distributor at your place.

5. Wax leaks continuously from the nozzle.

   Dirt or foreign particles mixed in the wax may clog the plunger tip inside the valve assembly.

   Call technician of your local distributor, because cleaning or replacing parts or repair may be necessary.

6. Injection cycle is repeated endlessly.

   Is the *AAC II* or the foot switch connector securely connected ?

7. Air bubbles remain in wax.

   Perform preliminary melting (P.16-19).

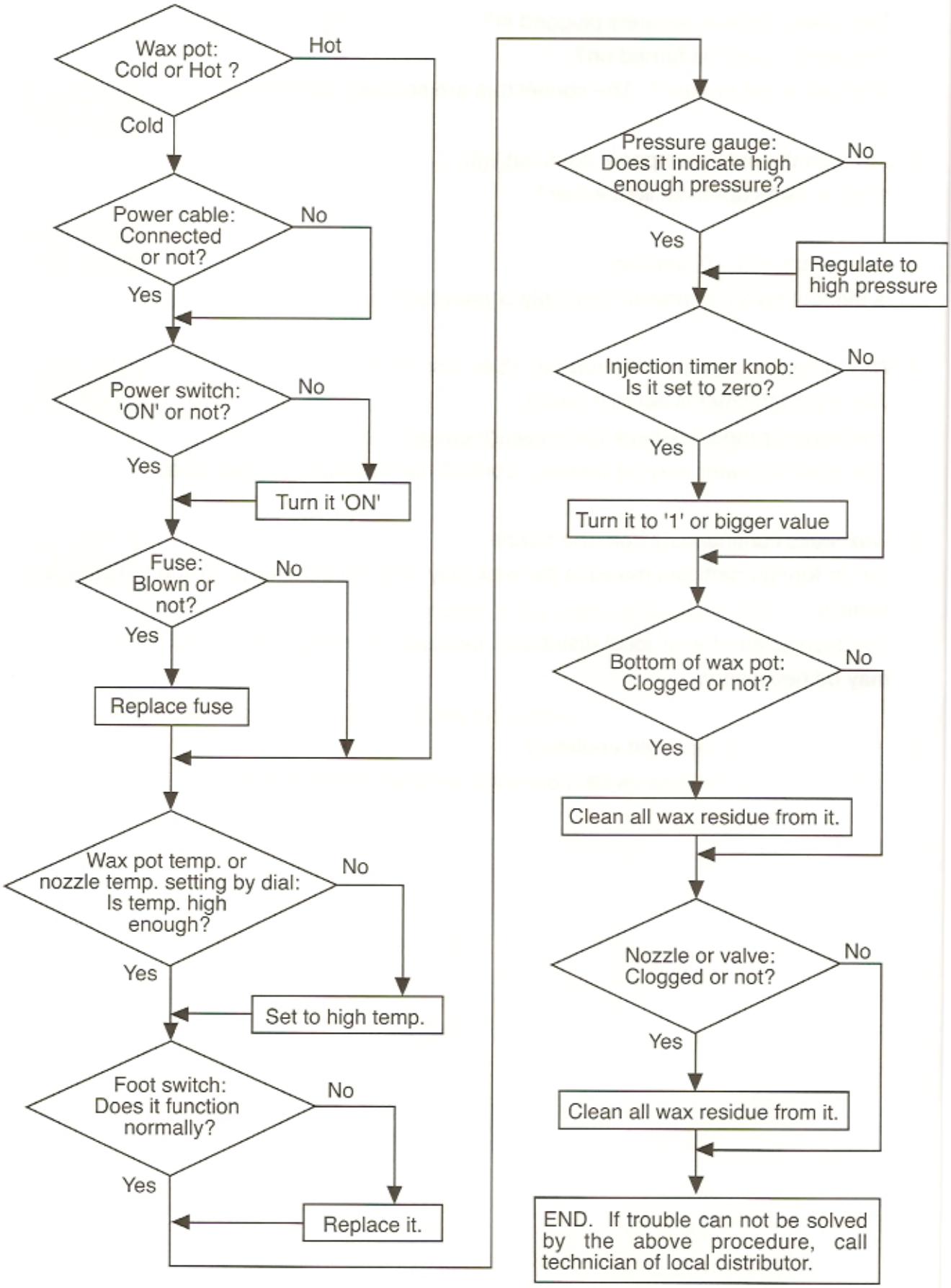
   Set temperature of nozzle is too high (P.14-15).

8. Upper part of wax in the wax tank can not be melted.

   Perform preliminary melting (P.16-19).

9-3. TROUBLE SHOOTING

9-3-1. NO WAX COMES OUT FROM NOZZLE



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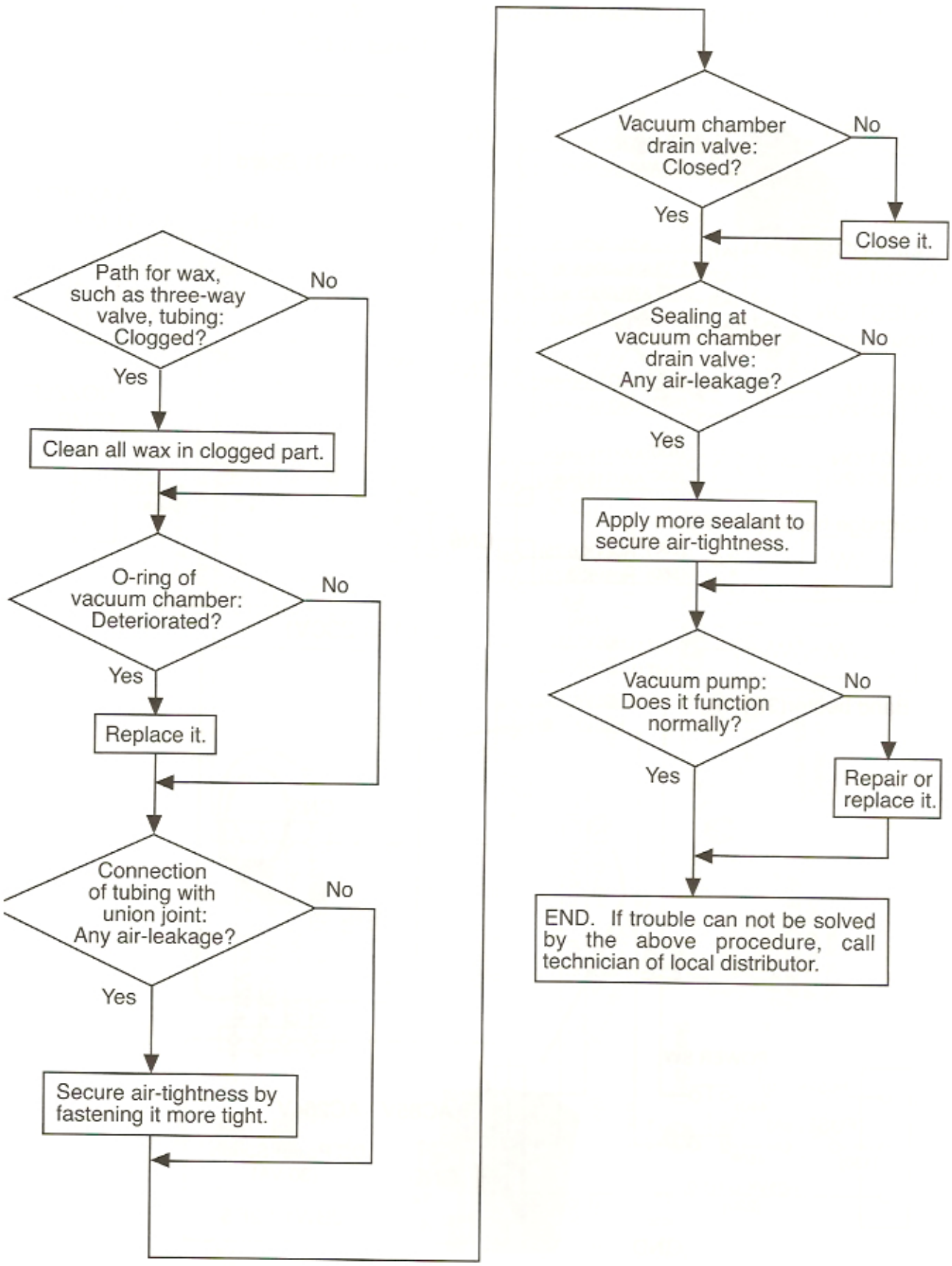
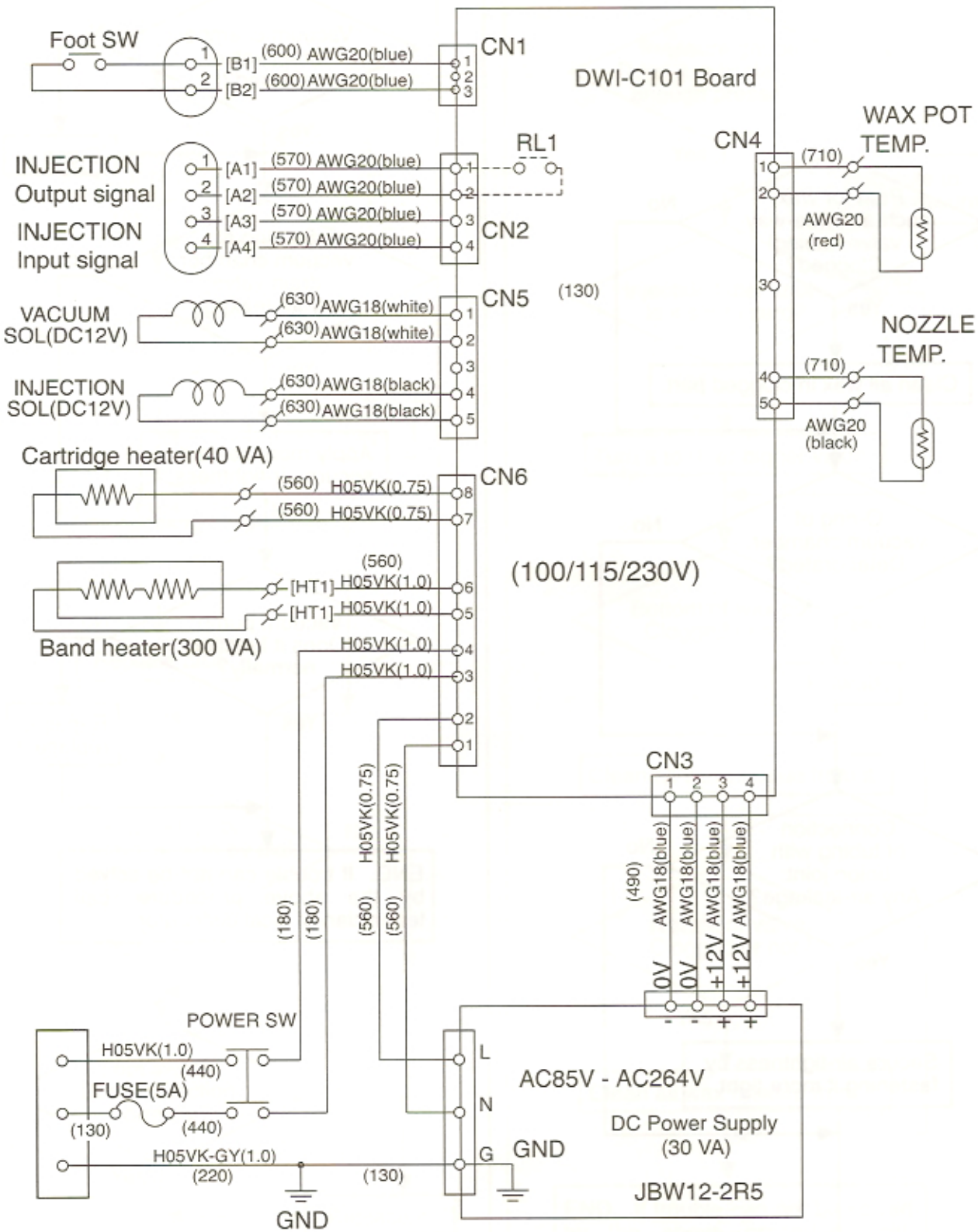
9-3-2. VACUUM IS INSUFFICIENT



10. WIRING DIAGRAM



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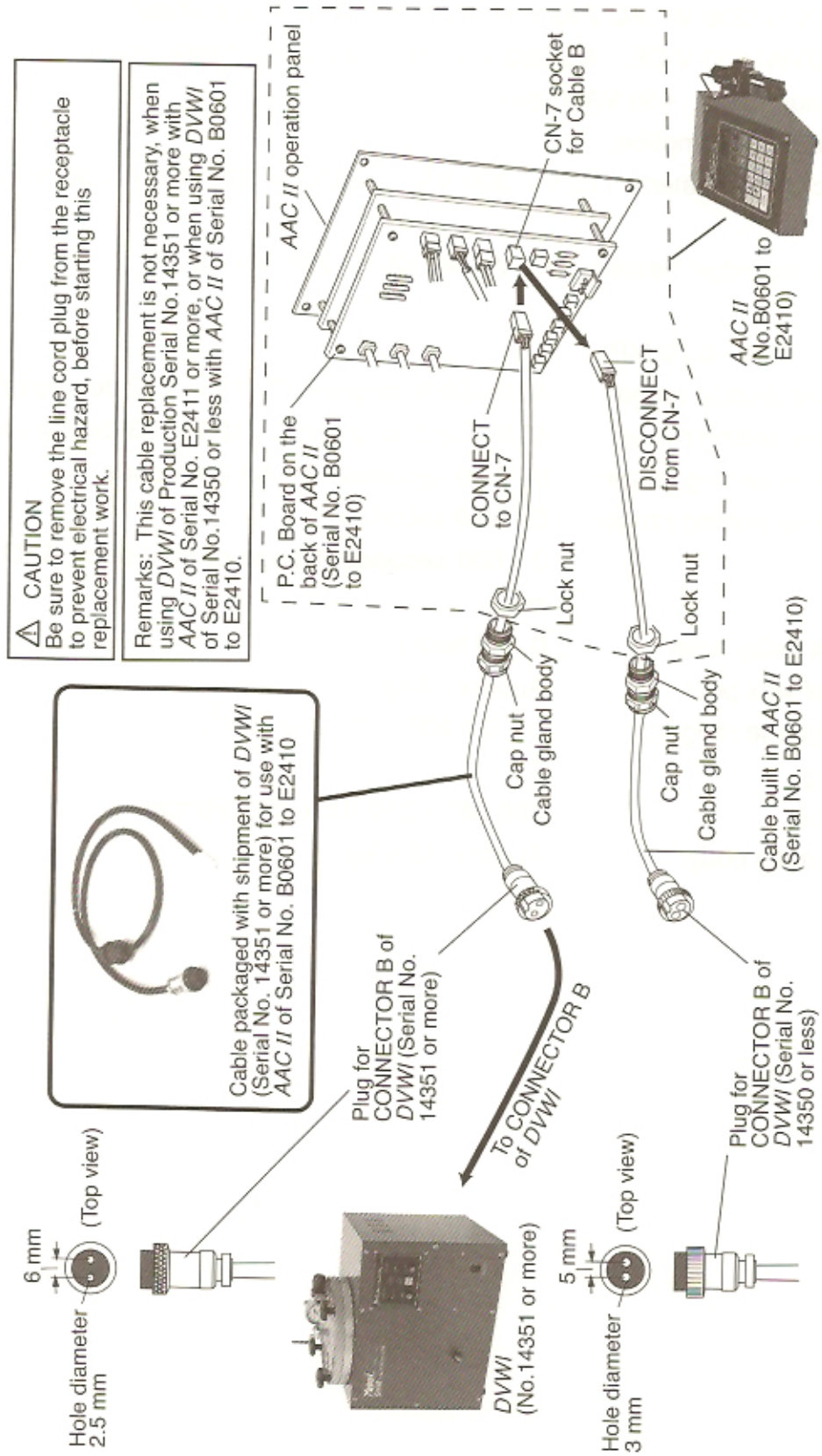
11. CONNECTING *AAC II* SERIAL NO. B0601- E2410

Refer below when using *DVWI* of Production Serial No.14351 or more with *AAC II* of Production Serial No. B0601 to E2410.



12. SPECIFICATIONS

Power supply:

Model *DVWI* 115 V: AC 100/115 V +/- 10%, 50/60Hz, single phase

Model *DVWI* 230 V: AC 230 V +/- 10%, 50/60Hz, single phase

Model *DVWI* 230 V CE: AC 230 V +/- 10%, 50/60Hz, single phase

Power consumption: 450 VA (max.)

Heater power consumption:

Electric band heater: 115 V - 300 VA / 230 V - 300 VA / 230 V CE - 300 VA

Electric cartridge heater: 115 V - 40 VA / 230 V - 40 VA / 230 V CE - 40 VA

Air supply: 0.40 - 0.70 MPa

Temperature display range:	40.0 - 99.9 degrees C (103 - 210 degrees F)
Temperature setting range:	40.0 - 90.0 degrees C (103 - 193 degrees F)
Vacuum timer setting range:	0 - 9.99 seconds / 0 - 99.9 seconds
Injection timer setting range:	0 - 99.9 seconds / 0 - 600 seconds (Range of control by *AAC II* is 0 - 99.9 sec.)
Heater ON delay timer:	0 - 99 hours
Capacity of wax pot:	Approx. 3 kg
Pressure gauge range:	0 - 0.2 MPa (0 - 2 kgf/cm^2)
Fuse rating:	5 A
Dimensions:	450 (W) x 310 (D) x 450 (H) mm
Weight of main body:	Approx. 15.5 kg