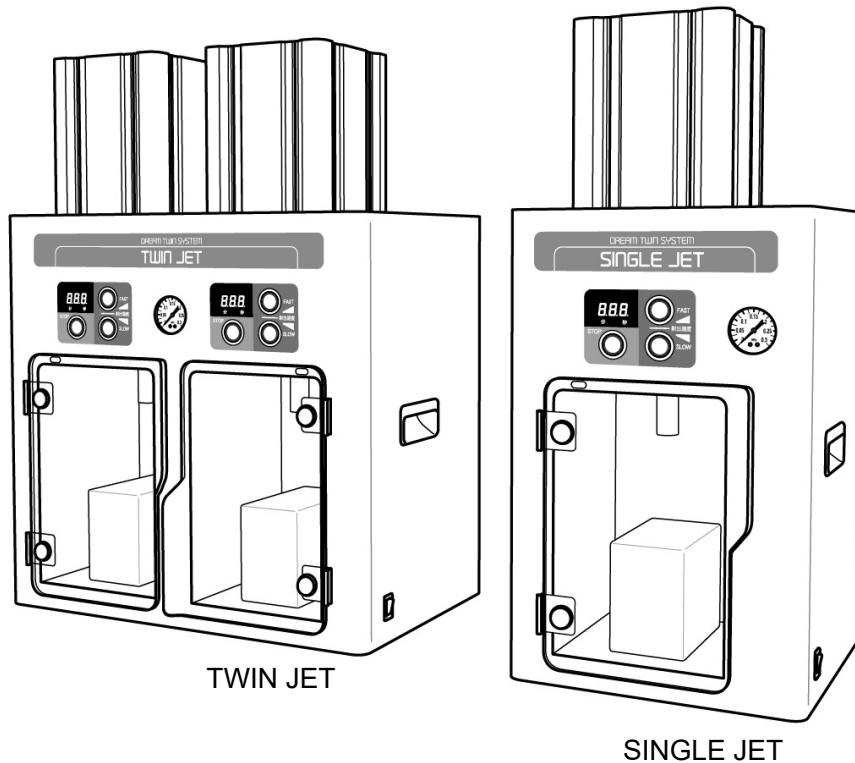


### Injection machine **TWIN JET/SINGLE JET**

Thank you for purchasing KDF Injection machine with pressure control unit, TWIN JET/SINGLE JET.

Before using the unit, please read the manual thoroughly and understand the capabilities and proper usage for this machine.

Please keep this manual in an easily accessible location for future reference.



DENKEN-HIGHDENTAL Co., Ltd.


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# Safety Precautions






We recommend you to follow these instructions for proper use of the unit.

The safety precautions contained herein and the accompanying icons provided for the safe use of this machine and to prevent injuries and loss on material resources. Please read them carefully prior to your actual machine operation.







About labels which are put on the unit.	
	For safety reason, the injection operation cannot be performed when the safety door is open. There is a switch on the top of the door to identify the opening and closing of the safety door, so do not operate this switch intentionally by any method other than "opening and closing the door".

Directions	
	<b>WARNING</b> Failure to follow or ignorance of the directions may cause severe injury or death.
	<b>CAUTION</b> Failure to follow or ignorance of the directions may cause injuries or damages to material properties.
	⊘ This mark means prohibited actions as shown inside or around it. The illustration on the left means "Do not disassemble".
	● This mark means forced action and directions to follow as shown inside or around it. The illustration on the left means "Unplug out of power outlet".

## WARNING

	<ul style="list-style-type: none"> <li>• In the event when there is smoke, abnormal odors or sounds, turn off the power, unplug immediately and contact the dealer for repairs.</li> <li>• In the event when water enters the machine, turn off the power, unplug immediately and contact the dealer for advice. Continued use may cause electric shock or fire.</li> <li>• In the event when debris enters the machine, turn off the power, unplug immediately and contact the dealer for advice. Continued use may cause electric shock or fire.</li> </ul>
	<ul style="list-style-type: none"> <li>• Do not remove the panels or parts uninstructed or modify them in any manner. This may cause electric shock or fire.</li> </ul>
	<ul style="list-style-type: none"> <li>• In the event, when the machine is dropped or the furnace frame is dented, unplug immediately and contact the dealer for advice. Continued use may cause electric shock or fire.</li> </ul>
	<ul style="list-style-type: none"> <li>• Do not use other than the indicated power supply voltage. It may cause fire or electric shock.</li> </ul>
	<ul style="list-style-type: none"> <li>• Plug to the outlet of the designated voltage described in the main specifications.</li> <li>• Use of other voltage may cause fire or shock.</li> </ul>

## CAUTION

	<ul style="list-style-type: none"> <li>• Unplug the main power cord from the power outlet when the machine is not in use for a long period of time.</li> <li>• In case of a periodic machine maintenance, unplug the power cord from the power outlet.</li> </ul>
	<ul style="list-style-type: none"> <li>• Do not handle the plug with wet hands.</li> <li>• When you unplug the power cord from the power outlet, do not pull the cord. If the cord is damaged, it may cause fire or shock. Always remove by handling the plug.</li> </ul>
	<ul style="list-style-type: none"> <li>• This machine is an injection machine for thermoplastic resin / heat cure resin for dental technicians. Do not use it for any other purpose.</li> </ul>
	<ul style="list-style-type: none"> <li>• When you move this machine, power off the switch, and unplug the main power cord from the power outlet. This may cause fire.</li> </ul>
	<ul style="list-style-type: none"> <li>• Do not operate the operation buttons with the safety door open. There is a switch on the top of the safety door to identify the opening and closing of the door. For safety, do not press the switch from the outside except by "closing the door". If you press the operation button, the press cylinder will be moved and you may be injured.</li> </ul>
	<ul style="list-style-type: none"> <li>• Do not use a flask made by another company for this injection machine. Not only may it not be injected properly, but it may also damage the equipment or cause injury.</li> </ul>

# Before you start using your Injection machine

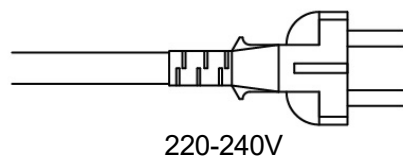
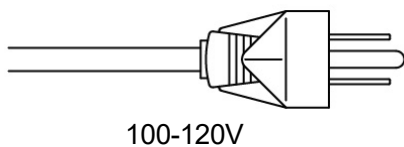
When you open the box, we recommend you to make sure that the following standard accessories are included. In addition, please check the unit for any damage or dent. Contact our technical support team if there is any damage.

## Standard Accessories

- Instruction Manual : 1 booklet
- Resin spacer : 2 sheets (Single Jet)  
3 sheets (Twin Jet)



- 8mm air piping : 5m
- Power Cord : 2 types



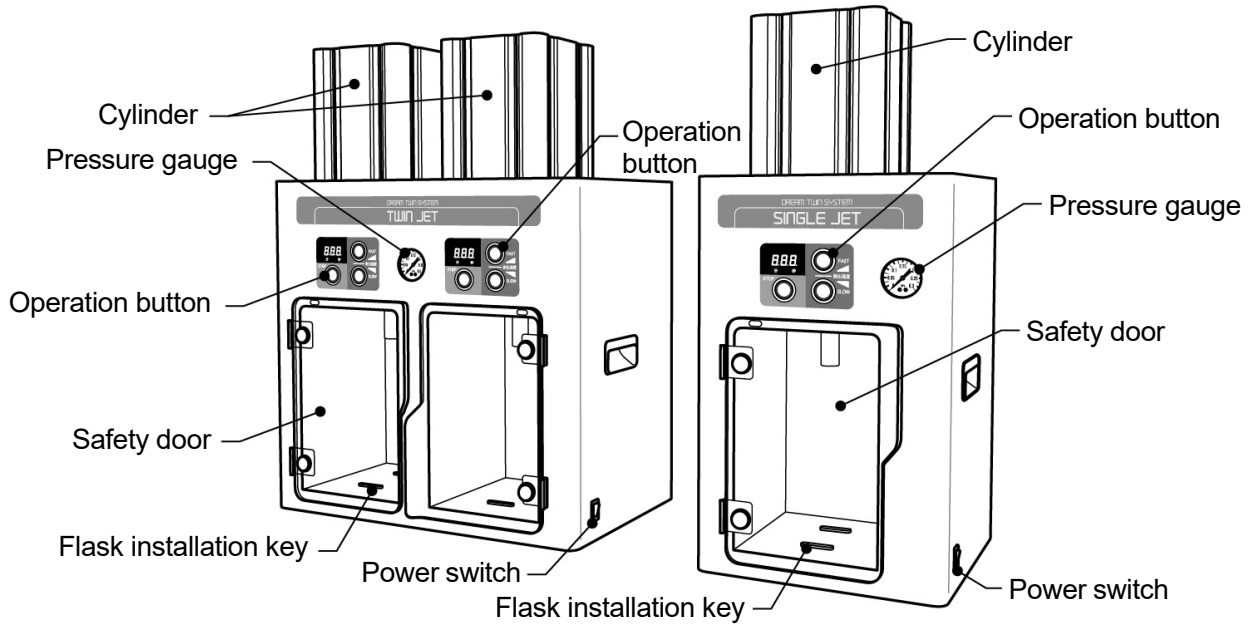
- Sleeve adapter
- Packing (small)
- Packing (large)



Single Jet : 1 each (sheets)  
Twin Jet : 2 each (sheets)

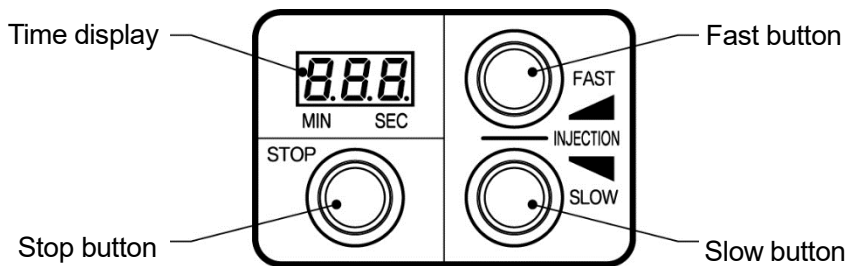
# Descriptions and Functions of each Component part

## ■ Descriptions of each Component part



- Power switch——Power switch of the machine
- Safety door——The door to prevent splashes  
If the door is not closed, the injection operation will not be performed.
- Operation button——The button to operate the injection or stop the operation.
- Cylinder——The equipment to perform injection.
- Pressure gauge——The pressure of the compressed air supplied to the cylinder
- Flask installation key——The key to install the Dream flask.

## ■ Operation button function



- Time display——Shows the pressing time. The remaining time is displayed during pressing.
- Fast button——If you press it while the lamp is lit, the press operation will be performed at the fastest speed. Mainly used for injection of thermoplastic resins.
- Slow button——If you press it while the lamp is lit, the press operation will be performed at the slow speed. Mainly used for injection of heat cure resins
- Stop button——Press the stop button to stop the press operation

# Operation

## ■ Location & Environment

- Set up the unit on the center of a flat stable table.
- Secure the unit with the side handle of the unit to prevent turnover or drop.
- As the unit is in high temperature, do not place any flammable thing around the unit.

## ■ Electricity

- AC100V-240V

## ■ Power Switch On

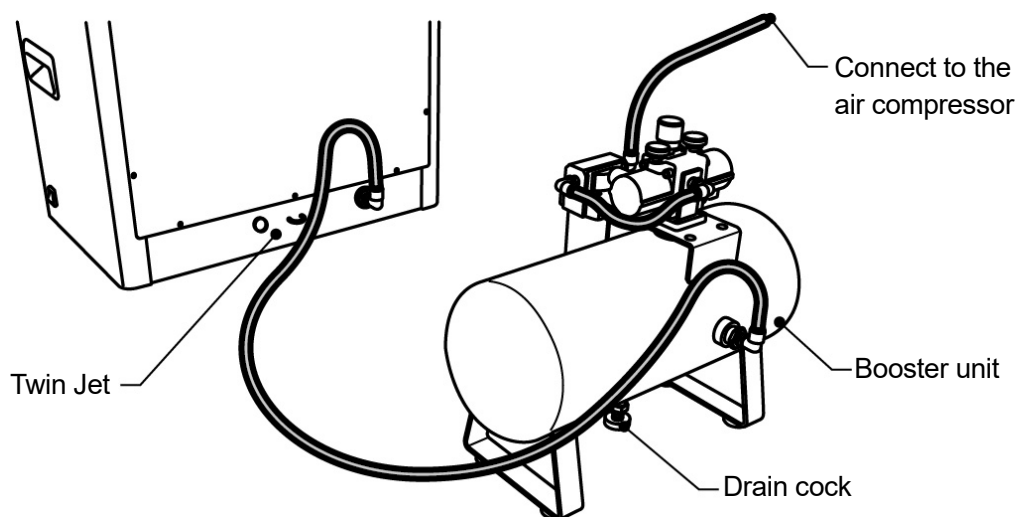
- When the unit is set up press the Power switch ON.

## ■ Connect Single Jet to compressed air

- Connect to compressed air with the air hose attached to the mist separator joint at the rear of the main unit.
- 0.7MPa~1MPa Pressure is recommended.

## ■ Connect Twin Jet to compressed air

- As shown in the figure, pipe the joint at the rear of the main body and the attached pressure boosting unit "auxiliary tank with booster valve (10L) + mist separator" with the attached air hose.



## CAUTION

- The pressure in the booster unit has been adjusted in advance and should not be touched.
- The water accumulated in Single Jet and the mist separator of the pressure boosting unit should be drained regularly. Also, once a month, open the drain cock at the bottom of the booster unit tank to drain water.

## When turn on the power at the first time

- After installation, turn on the power at the bottom right of the main unit.

FAST lights up and 1.00 is displayed.

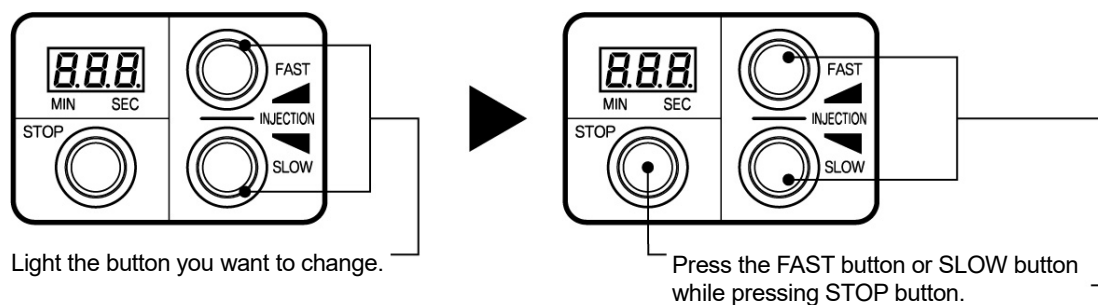
(FAST is using for injection of thermoplastic resin and pressurizes for 1.00 minute.)

When you press the SLOW, SLOW lights up and 1.00 is displayed.

(SLOW is using for injection of heat cure resin and pressurizes for 1.00 minute.)

## Program operation

- The pressurization time for both FAST and SLOW is programmed in advance on this instrument for 1 minute.
- The pressurization time of the lit button can be changed by pressing the FAST button or SLOW button while pressing STOP button.



- Pressurization time is 1sec to 99minutes, or continuous pressurization is possible. Continuous pressurization is displayed as UL
- The pressurization time of FAST and SLOW can be changed arbitrarily, and the changed time is memorized even when the power is turned off.

Injection operation (next page)



## Injection operation

- After installing the resin spacer (\* 1) inside the safety door, install it along to the Dream flask installation key. [See the figure below]
- After putting the resin ready for injection into the cylinder, place it on the Dream flask that has been dewaxing and close the safety door.
- Select FAST or SLOW and press the button.
- The cylinder operates to perform injection.
- The remaining time is displayed as Mins and Secs during the injection operation. However, when continuous pressurization is set, the elapsed injection time is displayed in Mins for about 3 seconds after the operation button is pressed.
- Press STOP button to cancel the continuous injection operation.
- When the injection time elapses, the buzzer sounds and the pressure rod rises to complete the operation.
- When the injection operation is finished, the buzzer will continue to sound.
- If you press the any operation buttons or open the safety door, the buzzer will stop.

### ※1) What is a Resin spacer?

It is a plate to prevent the resin discharged from the vent part of the flask from coming into direct contact with the product body. Please remove and clean it regularly.

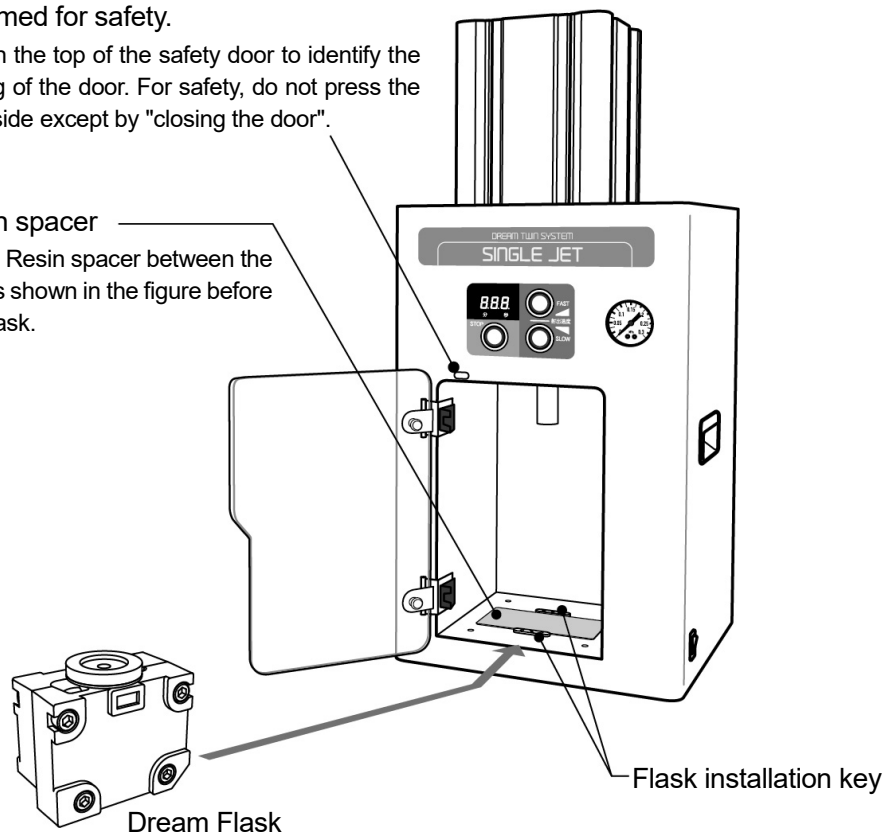


When the safety door is open, the injection operation cannot be performed for safety.

There is a switch on the top of the safety door to identify the opening and closing of the door. For safety, do not press the switch from the outside except by "closing the door".

### • Installation of Resin spacer

When using, place the Resin spacer between the flask installation key as shown in the figure before installing the Dream flask.



# Trouble shooting

- The molding shrinks or bubbles enter

In the case of a Single Jet, the pressure of the compressed air may be low.

- Make sure the plumbing tubes are securely connected.
- If the pressure gauge indicating 0.7MPa or less, it may be improved by installing the optional pressure boosting unit "Auxiliary tank with Booster valve (5L) + Mist separator".

- It does not work even if I press the injection button

The safety door may not be closed.

- Make sure the safety door is securely closed.

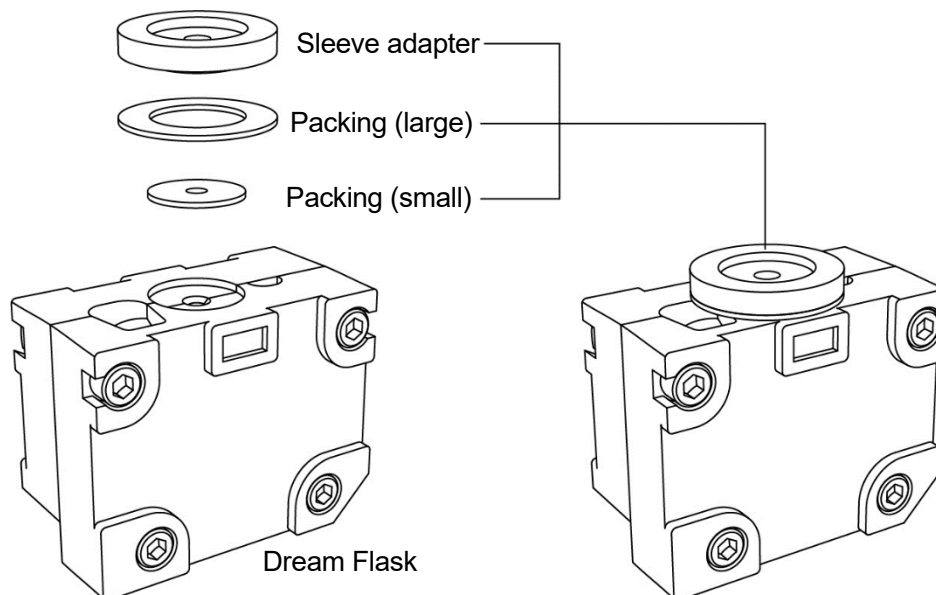
- Resin leak out when injecting Heat cure resin

If the dream flask is used for a long time, the gap will become large and the resin may leak out from there.

- It can be improved by using the Sleeve adapter and Packing.

(See the figure below)

If that doesn't help, please purchase a new Dream Flask.



# Maintenance

■ Make the following maintenance about once a week.



Before cleaning, turn off the power switch and unplug the power cord from the outlet.

- Cleaning the main body

If the exterior of the main unit is dirty, dilute it with a neutral detergent and wipe it with a soft cloth.  
If anything is dropped in the injection chamber, the flask will tilt and it is dangerous, so remove it.

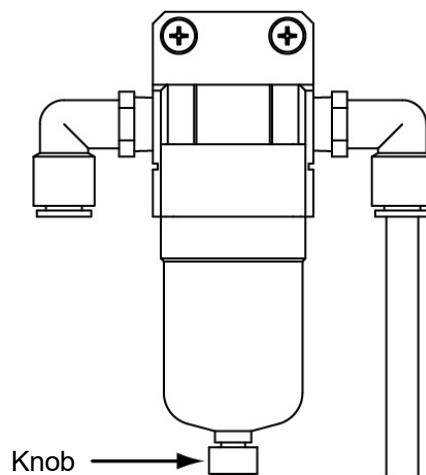
- Maintenance of the Mist separator and Tank

When using a Pressure booster unit, if water has accumulated in the Mist separator of the Pressure booster unit, press the button at the bottom of the Mist separator to drain the water.

Also, once a month, open the drain cock attached to the bottom of the Booster unit to drain water.

The water pooled in the Mist separator at the rear of the main body of the Single Jet can be discharged by loosening the knob of the Mist separator.

Be sure to drain the water before use, regardless of how much water is pooled. If the amount exceeds the permissible level, water may get mixed in the container and cause a malfunction.



# Main Specifications

## TWIN JET

Product Name	TWIN JET
Environment for use	Indoor use、 Temperature 5-40 ° C、 Humidity 10-95% RH(no condensation)、 Altitude 2000m or less
Power Requirement	100-240V ± 10% 50/60Hz
Power Consumption	10VA
Injection time	1 sec to 9 mins 59 secs、 10.0 mins to 99.0 mins、 continuous
Overall Dimensions	450(W)×602(H)×280(D) mm
Weight	50.5 kg
Accessories	8mm air hose for piping (5m)、 Packing (small)×2、 Packing (large)×2、 Pressure booster unit "auxiliary tank with booster valve (10L) + Mist separator"×1、 Sleeve adapter×2、 Resin spacer×3、 Power Cord (2 types)、 Instruction manual×1

## SINGLE JET

Product Name	SINGLE JET
Environment for use	Indoor use、 Temperature 5-40 ° C、 Humidity 10-95% RH(no condensation)、 Altitude 2000m or less
Power Requirement	100-240V ± 10% 50/60Hz
Power Consumption	7VA
Injection time	1 sec to 9 mins 59 secs、 10.0 mins to 99.0 mins、 continuous
Overall Dimensions	275(W)×602(H)×280(D) mm
Weight	30 kg
Accessories	8mm air hose for piping (5m)、 Packing (small)×1、 Packing (large)×1、 Sleeve adapter×1、 Resin spacer×2、 Power Cord (2 types)、 Instruction manual×1

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