

FURNACE

SPECIFICATION

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

III FURNACE SYSTEM RELATED SPECIFICATIONS

3-1 Furnace Unit

1-1 Furnace mount frame

- (1) Type/Model No. : VFA-090
- (2) External dimensions : 900mmW × 1900mmD × 3080mmH
(Please refer to the drawing)

1-2 Front panel contents

- (1) Mechanical switches
(only the pause switches are located at both the front and rear side.)
- (2) EMO switches
- (3) Connector for HCT

1-3 Furnace mount rear section contents:

- (1) Cooling water unit
- (2) Mechanical switches (pause switch)
- (3) EMO switches
- ~~(4) Furnace mount temp. controller~~
- (5) Exhaust fan (Electrical Equipment Exhaust)



1-4 Basic specifications

- (1) The furnace unit shall be so structured that it may be divided at its height of 2100 mm.
- (2) The furnace is provided with a heater chamber cooling mechanism in order to prevent the rise of ambient temperature because of the furnace heat radiation.
- (3) The heater chamber is so structured that it may be removed from the rear side of the furnace for maintenance and repair works.
- (4) A heat insulating blanket shall be attached to the furnace ceiling providing the protection against high temperature.
- (5) A safety cover is provided at the front of the heater terminal.
- (6) The interlock is provided at the back door.
- (7) A connector port for the handy communication terminal(HCT) is provided on the lower section of the furnace unit rear side.
- (8) The connection of the cooling water shall be made at the lower portion of the furnace unit rear facing, and joined by means of a 3/4" SWAGELOK.
- (9) A temperature measuring connector (branched from the internal T/C) will be provided on the furnace unit rear facing.
- (10) The each door switches (open/close and enable sw) distance must be 650mm.

2. Heater specifications

- (1) Heater type/model : VOS-40-017
- (2) Effective inner diameter : 320 mm
- (3) Outer diameter : 500 mm
- (4) Heater length : 1161mm(except Air Blow)
- (5) Zone control : 4 zones
- (6) Flat heat zone length : 600mm($\pm 1^{\circ}\text{C}$)(@950°C, No Wafers, No Gas)
- (7) Normal specified temperature range : RT~1000 °C
- (8) Maximum operating temperature range : 1000°C
- (9) Maximum electric power rating : 67.9kW

3. Auxiliary components

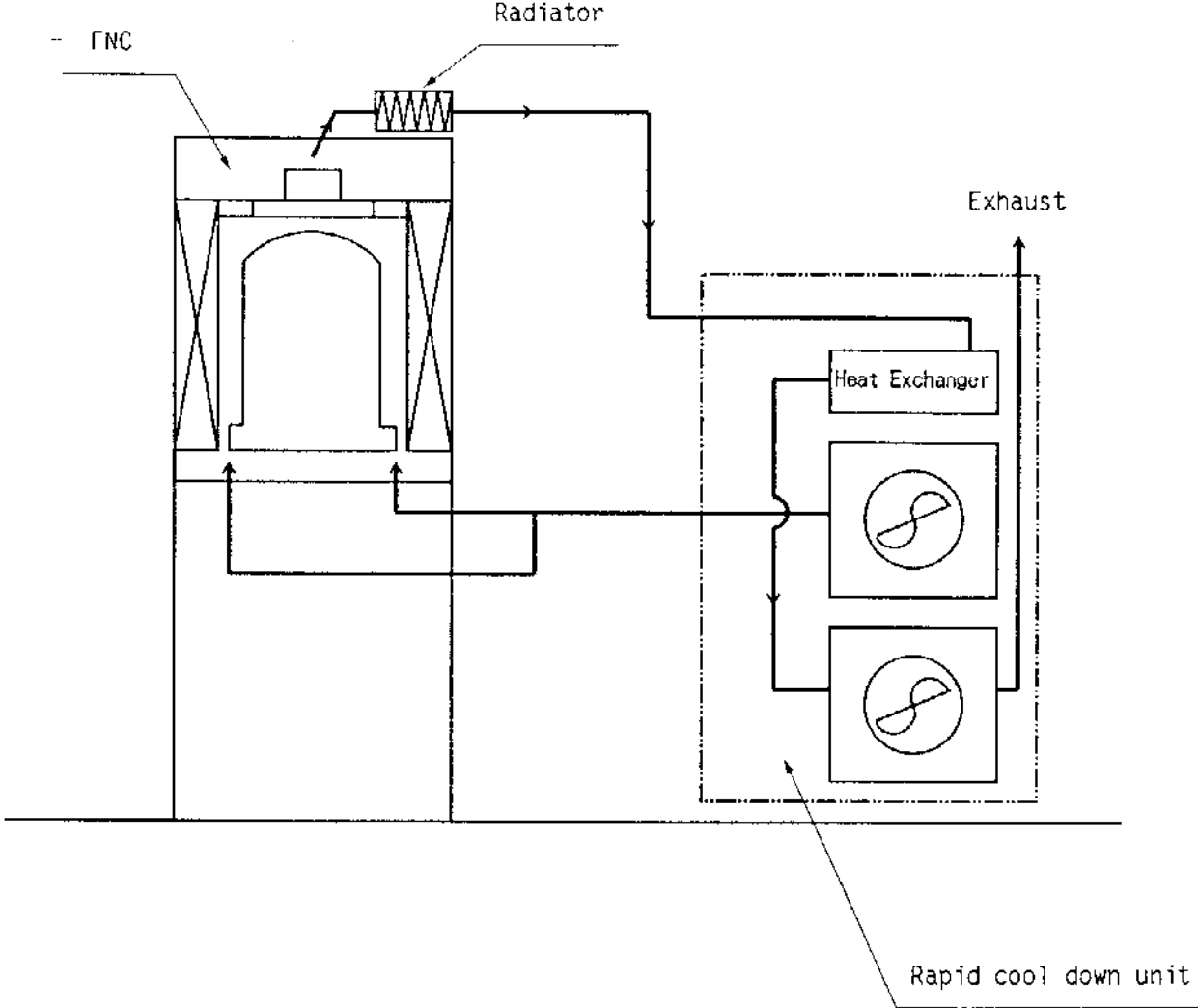
(1) Scavengers

- ① Scavengers are installed between the ceiling of the mount and heater, base plate and loading area to exhaust the hot ambience generate by the heaters.
- ② They shall be made of stainless steel, SUS 316.
- ③ A manually operable damper shall be installed on the scavenger.
- ④ The scavenger at the furnace opening is made dividable into two sections, so that it may be removed even when the elevator is moved up.
- ⑤ A manostat gage(0~30mm H₂O) shall be installed on the exhaust duct. A manostat switch(2~12mm H₂O) shall be installed, then an alarm shall be input to controller.
- ⑥ Gas sampling port shall be installed inside the scavengers.

(2) Rapid cooling down unit

- ① Outer dimension : 900mmW × 500mmD × 2300mmH
- ② Air Blower Flow Schematic
 - * Refer to next page

Air Blower Flow schematic

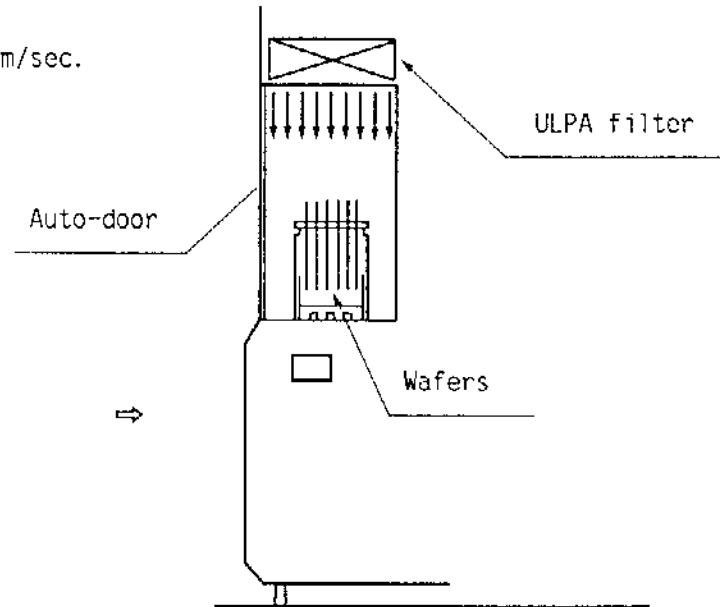


4. Clean air flow specifications

Filters are provided with the system in such a way that clean air flow parallel to the wafer facing while a wafer is at the carrier I/O port, carrier stage, or loading area. (The differential pressure shall be less than 0.5 mm H₂O between the clean room and utility room.)

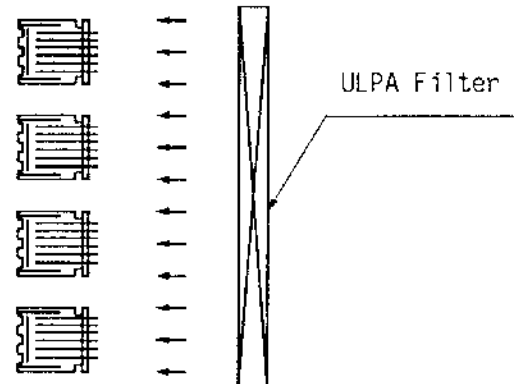
(1) Carrier I/O port

- 1) Flow direction: Down
- 2) Flow rate : 0.5 m/sec.



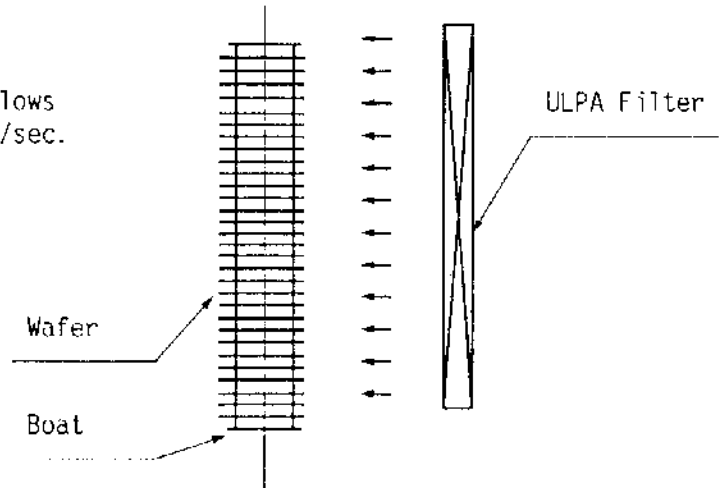
(2) Carrier stage

- 1) Flow direction: Side flow
- 2) Flow rate : 0.3 m/sec.



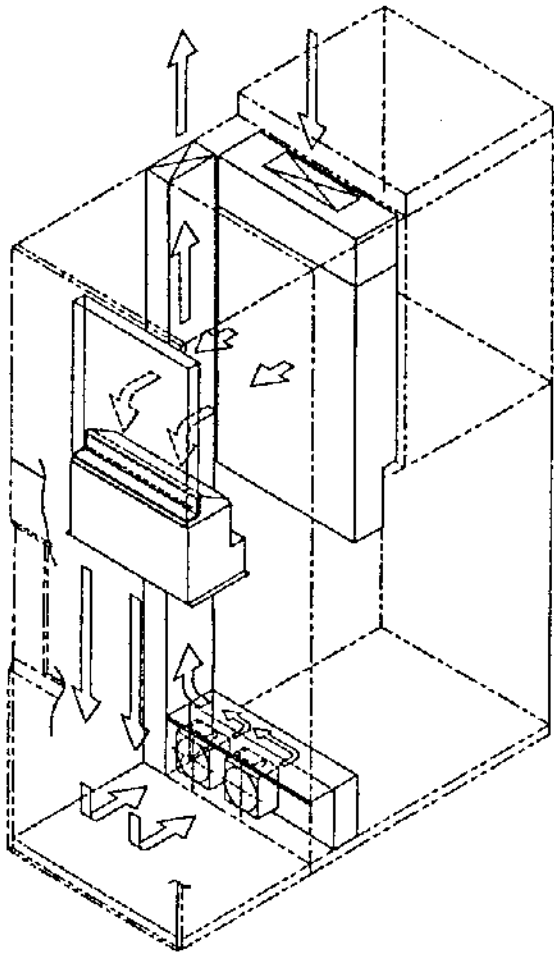
(3) Loading area

- 1) Flow direction: Sideflows
- 2) Flow rate : 0.3 m/sec.

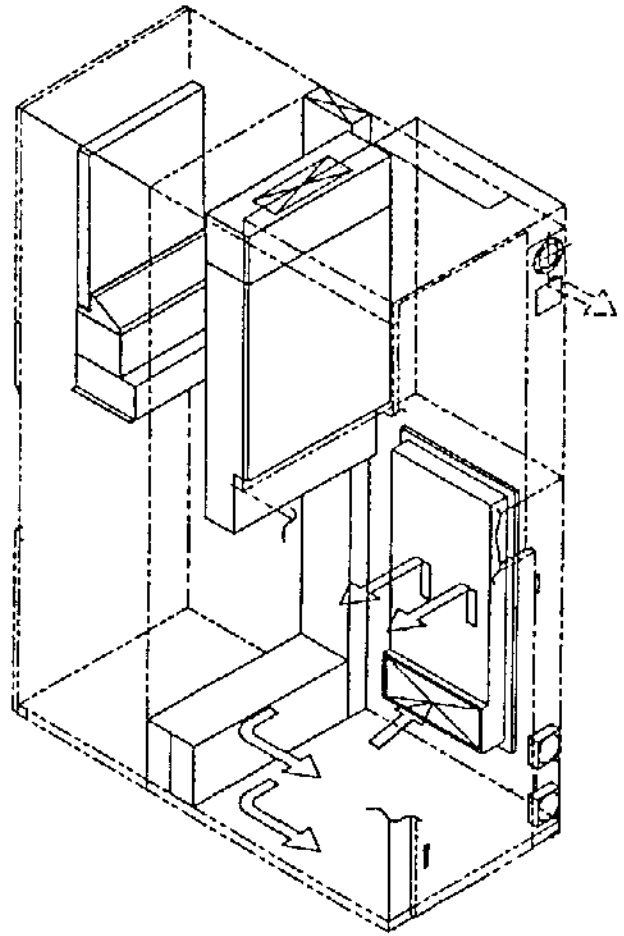


(4) Special notes:

- 1) Each filter has flow rate adjustment mechanism.
- 2) The flow rate adjustment mechanism is installed inside the furnace unit upper door.



↗
Front



↖
Rear

A I R F L O W

(N₂ Purge Box type)