

1. Machine Specifications

Machine specifications

Specifications of DFG8540 are described here.

Power requirements	Supply power	200 VAC \pm 10 %, 3-phase, 50/60 Hz	
	Power consumption	- during warming up : 3.3 kW	
		- during grinding : 5.8 kW	
		(The above values are reference values. They may vary depending on the operating conditions.)	
	Maximum consumption	19 kVA	
	Noise	Less than 2000 V with a pulse width at 500 ns (square wave)	
Ground	A ground connection must be made. The grounding method should comply with the applicable regulations of the area the machine is installed.		
Air supply	Pressure	0.5 to 0.8 MPa (approx. 5.0 to 8.0 kgf/cm ²)	
	Consumption rate	400 L/min or higher (A.N.R.)	
Water	(For wheel coolant and cleaning use)		
	Water used	Deionized water	
	Pressure	0.3 to 0.4 MPa (approx. 3 to 4 kgf/cm ²)	
	Flow rate	25 L/min or higher	
	Water temperature	Room temperature \pm 2 °C (the maximum permissible hourly temperature variation is 1 °C)	
	(for spindle coolant use)		
	Water used	City water or tap water (meeting the specified water quality standard)	
	Pressure	0.2 to 0.3 MPa (approx. 2 to 3 kgf/cm ²)	
	Flow rate	4 L/min or higher	
	Water temperature	20 to 25 °C (the maximum permissible hourly temperature variation is 2 °C)	

Machine specifications (Continued)

Water	(for vacuum unit use)	
	Water used	City water or tap water (meeting the specified water quality standard)
	Pressure	0.052 to 0.49 MPa (approx. 0.5 to 4.9 kgf/cm ²)
	Flow rate	3 L/min or higher (When water temperature is 22 °C or higher) 1 L/min or higher (When water temperature is less than 22 °C)
	Water temperature	20 to 25 °C (the maximum permissible hourly temperature variation is 2 °C)
Air exhaust	Displacement	4 m ³ /min (at the duct connection port of the machine main body when static pressure is as below mentioned)
	Static pressure	0.4 kPa (at the duct connection port of the machine main body)
	Connection port (duct hose)	Machine main body: 88.9 mm ID x 100.1 mm OD Vacuum unit: 38 mm ID x 45.8 mm OD
Machine dimensions	Main body	1,200 (W) × 2,670 (D) × 1,800 (H) mm (2,124 mm (H) if the status indicator is included)
	Vacuum unit	500 (W) × 815 (D) × 670 (H) mm
Machine dry weight	Main body	Approx. 3,100 kg
	Vacuum unit	Approx. 75 kg
Paint color	Munsell No. 2.5 GY 8.0/0.5 and N2.4	

Quality standard for city water/tap water

To prevent the machine parts/hoses from corroding/clogging, the city water or tap water to be used should meet the following water quality criteria.

If water contains any dirt, install a filter whose mesh size is 30 μm or less.

pH	6.5 to 7.5	Sulfur ion	0
M alkalinity	100 ppm or less	Sulfate ion	100 ppm or less
Electricity conductivity	500 μS/cm or less	Ammonia ion	0
Total hardness	200 ppm or less	Total iron	1.0 ppm or less
Chlorine ion	100 ppm or less	Silica	50 ppm or less

2. Dimensions and Weight of Machine on Delivery

Dimensions and weight of the machine

Dimensions and weight of the machine upon delivery are as follows.

	Dimension (mm)	Weight (kg)
Main body	1,200 (W) × 2,670 (D) × 1,800 (H)	Approx. 3,100
Vacuum unit	500 (W) × 815 (D) × 670 (H)	Approx. 75

3. Environmental Conditions

Summary of this section

This section describes about the space required as well as the environmental conditions for installing the machine.

Section No.	Title	Contents
3-1	Installation Space	- Installation drawing of the machine with required space indications
3-2	Environmental Conditions for Installation	- Environmental conditions required for installing the machine

3-2. Environmental Conditions for Installation

Environmental conditions required for installing the machine

Accuracy of the machine is greatly affected by the environmental conditions in which the machine is installed. Make sure to use the machine in the following operating condition ranges.

Ambient temperature (room temperature)	20 to 25 °C (variation: ± 1 °C max.)
Ambient humidity	55 ± 15 % (non-condensing)
Wheel coolant temperature	Room temperature + 2 °C (hourly temperature variation: 1 °C max.)
Spindle coolant temperature	20 to 25 °C (hourly temperature variation: 2 °C max.)
Power requirements	200 VAC ± 10%, 3-phase <ul style="list-style-type: none"> - The employed power source must be free from significant voltage variations. - The employed power source must be free of noises equivalent to a voltage of 2000 V or higher at a noise stepping width of 500 ns. - A momentary power failure must not occur with the employed power source.
Vibration	Amplitude: 5 µm max. (10 Hz or lower) Acceleration: 0.02 m/s ² (2 Gal) max. (10 Hz or higher)
Air	Filtration efficiency: 0.00001 mm / 99.5% or better Dew point: -15 °C or lower Residual oil content: Less than 0.1 ppm
Ground	A grounding connection must be made according to the local regulations.
Others	<ul style="list-style-type: none"> - Make sure that the air, water, and power sources and the water drain ports are positioned near the machine. - Ensure that the insides of the employed hoses are free of dirt. - Install the machine on the floor of adequate strength (refer to section 3-1, [Installation Space] in this chapter for the required load-carrying capacity of the floor). - Do not install the machine in places where noise, vibration, heat, or oil mist is generated or near fans and ventilation openings. - Machine anchors are optionally available. They are designed to provide human/equipment protection in the event of earthquake or other disasters. It is recommended that the installed machine be secured with these anchors.

4. Piping and Wiring Diagram

Summary of this section

This section describes about the connection points of the hoses and wires of the machine.

Section No.	Title	Contents
4-1	Rear Panel Connection Ports	- Piping and wiring connections on the machine rear panel
4-2	Piping/Wiring Diagram	- Piping/wiring diagram (outline) of the machine

Rear panel piping and wiring connection ports (Continued)

No.	Name	Applicable hose (Unit: mm) / cable	Connection Port ^{(*)1}
1	Air supply	Braided hose (15 ID × 22 OD)	Rp3/8 ^{(*)2}
2	Sub air supply	Braided hose (15 ID × 22 OD)	Rp3/8 ^{(*)2}
3	Wheel coolant water/cleaning water supply (Standard)	Braided hose (19 ID × 26 OD)	Rp3/4 ^{(*)2}
4	Vacuum unit water supply (Standard)	Braided hose (12 ID × 18 OD)	Rp3/8 ^{(*)2}
5	Spindle coolant water supply	Braided hose (9 ID × 15 OD)	Rp1/4 ^{(*)2, *)5}
6	Spindle coolant supply unit water supply	Braided hose (15 ID × 22 OD)	Rc3/8 ^{(*)2}
7	Wheel coolant water/cleaning water supply (DTU152)	Braided hose (25 ID × 33 OD)	Rc1 ^{(*)2}
8	Refrigerator coolant water supply (DTU152)	Braided hose (25 ID × 33 OD)	Rc3/4 ^{(*)2, *)6}
9	Wheel coolant water/cleaning water supply (Booster pump)	Braided hose (19 ID × 26 OD)	Rp3/4 ^{(*)2}
10	Wheel coolant water/cleaning water drainage	Duct hose (76.4 ID × 87 OD)	Flange pipe OD: 76 ^{(*)3}
11	Vacuum unit water drainage (Standard)	Duct hose (76.4 ID × 87 OD)	Flange pipe OD: 76 ^{(*)3}
12	Vacuum unit drain pan drainage (Standard)	Braided hose (12 ID × 18 OD)	Rc1/4 ^{(*)2, *)3}
13	Spindle coolant water drainage	Braided hose (12 ID × 18 OD)	Rp1/4 ^{(*)2, *)5}
14	Spindle coolant supply unit overflow water drainage	Braided hose (15 ID × 22 OD)	Rc3/8 ^{(*)2}
15	Spindle coolant supply unit tank drainage	Braided hose (15 ID × 22 OD)	Rc3/8 ^{(*)2}
16	Spindle coolant supply unit drain pan drainage	Braided hose (15 ID × 22 OD)	Rc3/8 ^{(*)2}
17	DTU152 overflow water drainage	Braided hose (25 ID × 33 OD)	Rc3/4 ^{(*)2}
18	DTU 152 drain pan drainage	Braided hose (15 ID × 22 OD)	Rc1/2 ^{(*)2}
19	Refrigerator coolant water drainage (DTU152)	Braided hose (25 ID × 33 OD)	Rc3/4 ^{(*)2, *)6}
20	Air exhaust (Standard)	Duct hose (88.9 ID × 100.1 OD)	Flange pipe OD: 90 ^{(*)3}
21	Vacuum unit air exhaust (Standard)	Duct hose (38 ID × 45.8 OD)	Flange pipe OD: 38 ^{(*)4}
22	Duct unit air exhaust	Duct hose (125.9 ID × 139.3 OD)	Flange pipe OD: 123 ^{(*)3}

Rear panel piping and wiring connection ports (Continued)

No.	Name	Applicable hose (Unit: mm) / cable	Connection Port ^{(*)1}
23	Power supply	Cable (AWG4)	R22-8
24	Power supply (DTU152)	Cable (AWG4)	

(*1) Diameter of the flange pipe or piping screw to be furnished by the user.

(*2) Connection port for hard piping to be made by the user.

(*3) Discharges contaminated water or mist that contains cutting dust or silicon debris.

(*4) Outdoor exhaust type and therefore has no silencer.

(*5) Water can be circularly used when its flow rate and temperature meet the specified conditions. (Refer to Section 1, [Machine Specifications] in this chapter for the specified conditions.)

(*6) Water can be circularly used when its flow rate and temperature meet the specified conditions. (Refer to the instruction manual of DTU152 for the specified conditions.)
