

PRESSURE REDUCTION SYSTEM AND VACUUM TREATMENT DEVICE

ABSTRACT

A depressurization system includes a plurality of depressurization devices, each of which includes a cooling;
5 and a compression device (42). The compression device (42) includes a compression unit, which is provided with an AC electric motor (43), and supplies a compressed coolant to each cooling unit at a flow rate corresponding to a rotation speed of the AC electric motor. Each cooling unit
10 supplements gas when adiabatically expanding the compressed coolant. The depressurization system also includes a temperature detection unit (50), which detects the temperature of each cooling unit, an inverter device (52), which is capable of changing a frequency of AC power
15 supplies to the AC electric motor, and a frequency controller (51), which controls an output frequency of the inverter device. The frequency controller (51) relatively raises the output frequency of the inverter device when the temperature of the cooling unit of at least one
20 depressurization device of the depressurization devices is greater than or equal to a first threshold value, and relatively lowers the output frequency of the inverter device when the temperature of the cooling unit of all of the depressurization devices decreases to less than the
25 first threshold value.

Fig. 4