

CKD refrigerating type dryer

GT9000

Applicable air compressor: 90, 120, 150, 190, 240, 300, 380, 450, 710, 960kW

■ Components for air preparation and pressure adjustment / main line unit / refrigerating type air dryer

Overview

Large to extra-large refrigerating type air dryer supporting energy saving and environmental problems with new equipment.

Features

- (1) New incorporated refrigerant R-407C
New refrigerant without destroying ozone layer is installed to all GT Series.
- (2) Incorporated energy saving operation system
For 300kW to 450kW units, energy consumption is reduced by 50% through multi-unit control. For 710kW and 960kW units, 60% energy conservation is realized with inverter control.
- (3) SUS heat exchanger vessel
Oil-free stainless steel vessel is used for all models.
- (4) Easy maintenance
The safe design allows the operation state to be confirmed in a glance.
Central control in the factory is possible by signal exchanges.
- (5) Free installation in any area
The 90 to 190kW units support various environments as the back, left or right faces of the 90 to 190kW units can be flush against a wall.
The 250kW to 450kW save space with top face ventilation.



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Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

Advanced energy saving, ease-of-use, and environment performance.

GT 9000 (air-cooled)
9000W (water-cooled)
9000WV (water-cooled inverter) **Series**

Refrigerating type air dryer

Large model series / 90 to 960kW

The large refrigerating air dryer GT Series with directly connected air compressor has been reborn into three different series with various features.

Promising high quality and high reliability

- **Stainless steel heat exchanger for oil free compressed air**
A heat exchanger incorporating the newly developed stainless steel vessel has been incorporated. This prevents dust generation from the heat exchanger.
- **Outstanding weather resistance**
The refrigerating piping (copper pipes) in the heat exchanger are nickel-plated to improve corrosion resistance. Stainless steel piping specifications are also available. Contact CKD for information.
- **No abnormal stop under high loads (GT9000WV Series)**
The self-protection control activated during high load operation to drop the compressor's speed. This allows operation to be continued without abnormal stopping.

Environment-friendly refrigerant

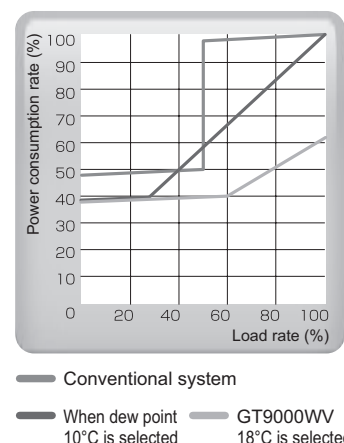
- **Environment-friendly refrigerant R407C**
The new refrigerant R407C has a zero ozone depletion potential. This type surpasses conventional models in terms of global warming.



Energy saving

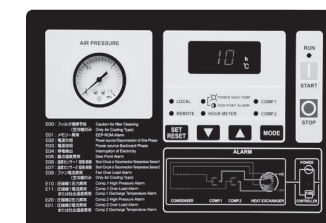
- **Multi-unit control for 50% power reductions (GT9300 to 9450, GT9300W to 9450W)**
The 2-stage selection refrigerant system automatically switches to 1-stage energy-saving operation during low loads. Power consumption can be reduced by up to 50%.
- **Inverter control for 60% power reductions (GT9000WV Series)**
The compressor's inverter control realizes optimum energy-saving operation which corresponds to the load. Power consumption can be reduced by up to 60%.
- **Configurable dew point (GT9000WV Series)**
Configurable pressure dew point in the range of 10 to 18°C. Power consumption can be reduced drastically by setting above 10°C when dew condensation is unlikely to occur such as during the summer.
- **Linking dew point temperature to ambient temperature (GT9000WV Series)**
A function to link the pressure dew point to the ambient temperature and automatically control the link is provided. The dew point temperature is automatically adjusted to a temperature at which condensation does not occur. This eliminates the need to manually change the dew point setting, and realizes ideal energy saving operation.
- **Same performance at 50 and 60Hz (GT9000WV Series)**
The compressor inverter control allows the same performance to be attained in 50 and 60Hz districts.

- **Relation of GT9000WV Series load rate and power consumption**

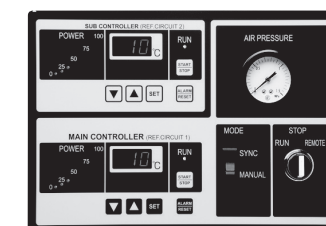


Easy maintenance

- **Easy-to-read operation status**
The electronic operation panel lets you read the dryer's operation state, dew point and fault state in a glance.
- **Standard air pressure gauge**
An air pressure gauge has been mounted on the operation panel of all models.
- **Central control in the factory**
Realize central control in the factory with remote operation, and output of run and abnormal signals.
- **Dust filter (GT9240 to GT9450)**
A dust filter has been mounted for the capacitor. Easily mount and remove the filter without tools.
- **New service port (GT9120 to GT9450, GT9120W to GT9450W, GT9000WV Series)**
A service port (with check joint) has been added on the inlet and outlet pipes. Use this port when monitoring the pressure and dew point, etc.



GT9300(W)~9450(W)



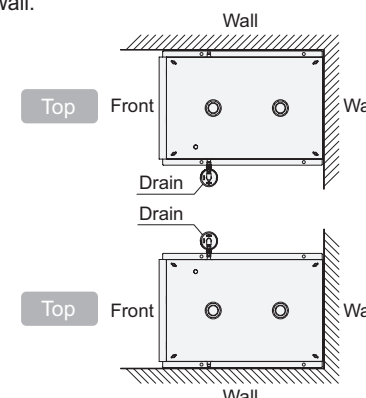
GT9960WV

Series variation

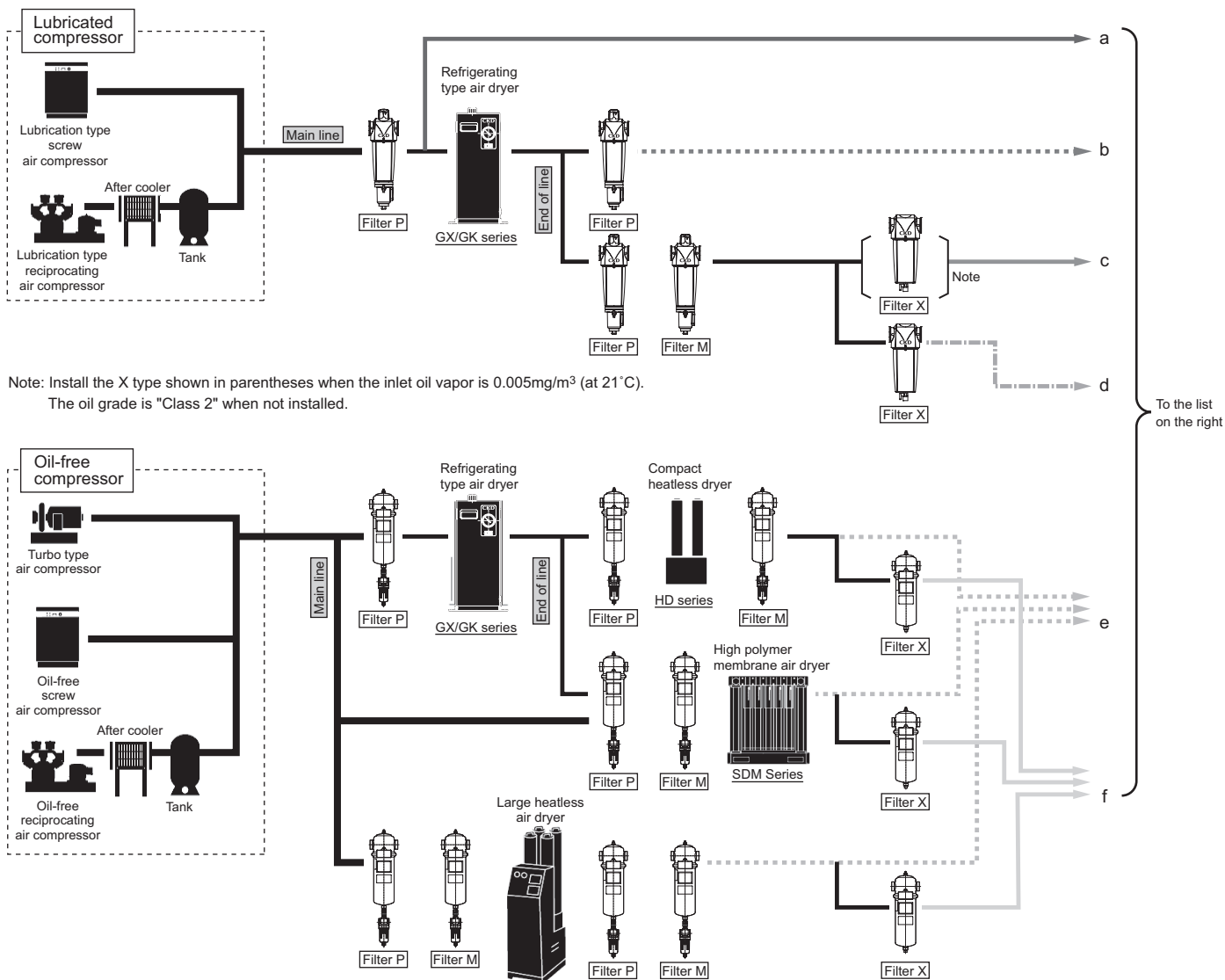
Series		Rated conditions					Applicable air compressor (kW)									
		Pressure dew point (°C)	Inlet air pressure (MPa)	Ambient temperature (°C)	Inlet air temperature (°C)	Cooling water inlet temperature (°C)	90	120	150	190	240	300	380	450	710	960
Air-cooled	GT9000	10	0.7	32	40	—	●	●	●	●	●	●	●	●	—	—
	GT9000W	10	0.7	32	40	32	●	●	●	●	●	●	●	●	—	—
Water-cooled	GT9000WV	10	0.7	32	40	32	—	—	—	—	—	—	—	—	●	●
Performance control							1/1 operation			Multi-unit control (Automatic 1/2 operation)			Inverter control			

Freely install at any place

- **Freely install flush against the wall (GT9090 to 9190, GT9090W to 9190W)**
The drain trap and cooling water pipe can be attached to either the left or right side, allowing the unit back, left or right side to be installed flush against the wall.
- **Space-saving with top face exhaust (GT9240 to 9450)**
Floor space is saved as the exhaust duct is installed on the top of the wall.



Typical working circuit



Compressed air quality grade JIS B 8392-1: 2003

Grade	Solid particles					Temperature and moisture		Oil	
	Max. number of particles per 1m³				Particle diameter µm	Concentration mg/m³	Pressure dew point °C	Water concentration Cw g/m³	Total oil concentration mg/m³
	Particle diameter d m								
	d ≤0.10	0.10<d≤0.5	0.5<d≤1.0	1.0<d≤5.0					
0	Conditions stricter than Class 1 to be determined by user or supplier.								
1	–	100	1	0	–	–	≤ -70	–	≤0.01
2	–	100,000	1,000	10	–	–	≤ -40	–	≤0.1
3	–	–	10,000	500	–	–	≤ -20	–	≤1
4	–	–	–	1,000	–	–	≤ +3	–	≤5
5	–	–	–	20,000	–	–	≤ +7	–	–
6	–	–	–	–	≤5	≤5	≤ +10	–	–
7	–	–	–	–	≤40	≤10	–	Cw≤0.5	–
8	–	–	–	–	–	–	–	0.5<Cw≤5	–
9	–	–	–	–	–	–	–	5<Cw≤10	–

Details have changed due to revision of JIS B 8392-1:2000 to JIS B 8392-1: 2003.

For example,
"Grade 3.6.3" shows the grade that

- Solid particles 0.1 to 0.5μm are 10,000 particles
- Pressure dew point +10°C or less.
- Oil concentration 1mg/m³ or less

	Air quality	Applications	Grade
a	Water drip removal air Coarse dust removal air	Construction, Civil engineering machine Air blow for cleaning (dry air not required)	4.-.-
b	General dry air	General-purpose pneumatic devices, General-purpose pneumatic tool, Labor saving mechanisms, Pneumatic jigs and tools, Air chuck, Air vice, Precision part cleaning air blow	3.6.3 3.5.3
c	Dry air (oil free)	Instrumentation, Measurement, Logic control, Luxury painting	2.6.1 2.5.1
d	Dry air (odorless)	Food processing industry (Where air is not directly blown onto food) Pharmaceutical industry, Agitation, Transportation, Dry, Package, Air for brewing	2.6.1 2.5.1
e	Ultra dry air (oil free)	Ozone generator, Powder transfer, Furnace gas dry Drying high tension generator insulation gas, Drying computer room, Central control instrumentation	2.3.1 2.2.1 2.2.1
f	Ultra dry air (odorless)	Food processing industry (Where air is not directly blown onto food) Pharmaceutical industry, Agitation, Transportation, Dry, Package, Air for brewing	2.3.1 2.2.1 2.2.1

Table of system selections

Rated (Ambient temperature: 32°C, inlet temperature: 40°C, pressure dew point: 10°C)

Air compressor		Refrigerating type air dryer		Main line filter P type (1μm or 3μm)	Main line filter M type (0.01μm)	Main line filter X type (deodorizing)
Output kW	Standard treating flow rate m ³ /min. (ANR)	Air cooling type	Water cooling type			
90	14.8/17.5	GT9090	GT9090W	AF2020P-50 AF4020S-50	AF2020M-50 AF4020M-50	AF2020X-50 AF4020X-50
120	18.7/22.0	GT9120	GT9120W	AF2026P-65	AF2026M-65	AF2026X-65
150	23.8/28.0	GT9150	GT9150W	AF5032P-80	AF5032M-80	AF5032X-80
190	27.5/32.4	GT9190	GT9190W	AF5048P-100	AF5048M-100	AF5048X-100
240	36.5/43.0	GT9240	GT9240W	AF5048P-100	AF5048M-100	AF5048X-100
300	44.2/52.0	GT9300	GT9300W	AF5064P-100	AF5064M-100	AF5064X-100
380	55.2/65.0	GT9380	GT9380W	AF5080P-150	AF5080M-150	AF5080X-150
450	70.3/82.8	GT9450	GT9450W	AF5096P-150	AF5096M-150	AF5096X-150
710	139.1	—	GT9710WV	AF5160P-200	AF5160M-200	AF5160X-200
960	184.2	—	GT9960WV	AF5192P-200	AF5192M-200	AF5192X-200

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto, drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact conf. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

CKD refrigerating type dryer GT
Main line unit



Safety precautions

Always read this section before starting use.
Refer to Intro 67 for general precautions.

Refrigerating type dryer GT Series

Manufacturer's Liability

⚠ DANGER

The manufacturer cannot be held liable in the following cases:

- Serious errors in use occur due to the operator.
- Illegal modifications or repairs using nonstandard parts by user.

General matters

⚠ DANGER

- Use for applications other than dehumidifying compressed air is prohibited.

⚠ CAUTION

- This product must not be used for medical devices for caisson shields or breathing devices.
 - There is a risk of personal injury.
- Do not mount and use this device onto transportation equipment such as vehicles or ships.
 - The internal devices could be damaged by vibration, etc.

Transportation

⚠ WARNING

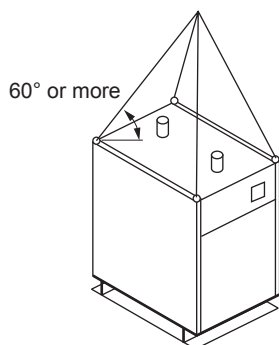
- This product is filled with refrigerant (R-407C). (GT9960WV has 12kg or more, other models have less than 12kg.) Always follow respective laws and ordinances when transporting this product (by land, sea or air).

Transportation

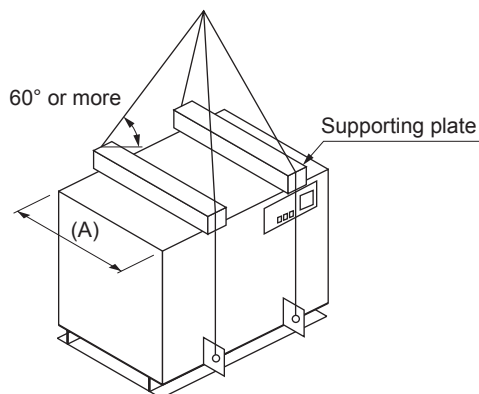
⚠ WARNING

- Tilting, or applying vibration or impact during transportation is prohibited.
- Use a fork lift or suspend the unit when moving.
- When suspending the product, use suspension hooks and rope, etc.

- Target models: GT9090 to 9190
GT9090W to 9190W



- Target models: GT9240 to 9450
GT9240W to 9450W
GT9710WV, GT9960WV



Supporting plate

The supporting plate must be 100 mm longer than the dryer width (A).
Provide protection between the supporting plate and dryer to prevent damage to the panel.

Installation

Ambient temperature

⚠ CAUTION

- Do not use this product in a place exceeding the maximum working temperature.
- Do not install this product where it will be subject to radiated heat.
- If the maximum working temperature may be exceeded, install ventilation fans or provide an air inlet, etc.
- Do not use this product where the temperature is lower than the minimum working temperature.

Location

⚠ CAUTION

- Install this product indoors.
- Install the product in a well-ventilated place free of dirt and dust.
- Do not install to a splashed location of rain water.
- Do not install the product where high levels of humidity or dew could condense.
- Avoid using this product where it may be subjected to direct sunlight, or where heat could be generated.
- Avoid use in the area containing corrosive gas. (Refer to page 19)

Floor

⚠ CAUTION

- Install the product on a vibration-free floor.
- Install this product on a flat surface.
- Provide foundation work if the ground is soft.
- Refer to dimensions for anchor bolt positions and hole dimensions.

Vibration

⚠ CAUTION

- When using a reciprocating compressor, use a flexible tube or high-pressure rubber hose in part of piping with the air dryer to absorb vibration.

Maintenance space

⚠ CAUTION

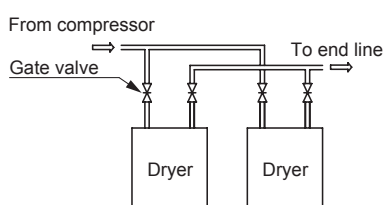
- Select a well-ventilated place where maintenance and inspection can be performed easily.
 - Target models:GT9090 to 9190, GT9090W to 9190W
Approx. 1000mm or more to front and on left or right side
 - Target models:GT9240 to 9450, GT9240W to 9450W, GT9710WV, 9960WV
600mm or more each at front, back and left side

Piping

Air pipe method

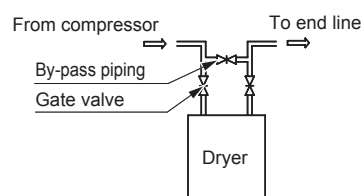
⚠ CAUTION

- For the GT9960WV, attach the two enclosed headers to the air inlet and outlet flanges using the enclosed gaskets, bolts and nuts.
- Pipe the air dryer as shown below.
24 hour operation:
A parallel installation for emergencies is recommended.
Use a unit for normal operation and the other as a spare.



Intermittent operation:

Install the by-pass piping for maintenance.



- Stainless steel or galvanized steel pipes (white pipes) are recommended for pipe materials. Flush pipes before connecting.
- When piping is already laid, when using black pipes or when using an oil-free air compressor and large amount of dirt, etc., form in pipes, install a main line P type filter before the dryer.

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact conf. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

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Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
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Total air system
Total air system (Gamma)
Ending

- If the air piping slopes upward from the compressor to the air dryer, the accumulated drainage could suddenly flow in and pass out of the end. If an upward slope is required, provide a drain trap, etc., so that the drainage does not accumulate.

- Design piping so weight of pipes is not applied to the dryer.

- Use piping that withstands working pressure and temperature. Check that no air leaks from connections.

Drain piping method

⚠ CAUTION

- The drain trap is attached externally to the dryer. When connecting a tube to the drain trap, connect a 6mm or larger inner diameter tube and keep the length within 5m. Avoid laying the tube with an upward slope, and release the discharge end to the atmosphere. (Target models: GT9090 to 9240, GT9090W to 9240W)
- The drain trap is attached externally to the dryer. The drainage discharge interval time is set to 25 to 37 times/30 seconds (0.59MPa) as the default. Adjust the interval time with the drain trap needle valve so that the bowl does not fill up with water. Release the discharge end to the atmosphere. (Target models: GT9300 to 9450, GT9300W to 9450W)
- The drainage in the dryer is periodically discharged from the solenoid valve. Pipe the drain according to the port size of the drainage outlet on the dryer. If the drain piping slopes upward or if it is too long, a back pressure will be applied and drainage may be discharged. Pipe with a downward slope so that drainage is flows naturally. (Target models: GT9710WV, 9960WV)

- If oil enters drainage, it must be drained and treated. Contact an industrial waste specialist for treatment.
- Securely fix the drain discharge tube, etc., so that it does not sway during drain discharge.

Cooling water piping method

⚠ CAUTION

- Check the cooling water inlet and outlet when piping.
- Provide a water discharge outlet or stop valve so maintenance can be done.
- Design piping so that pipe weight is not applied on the product.
- Use piping that withstands working pressure and temperature. Check that no water leaks from connections.
- Use galvanized steel pipes, etc. for pipe materials. Flush pipes before connecting.
- Provide insulation if the ambient temperature drops below 2°C when stopped during the winter.
- The cooling water and replenishment water's quality must comply with the "Refrigerating and Air Conditioning Device Water Quality Guidelines" set forth by the Japan Society of Refrigerating and Air Conditioning Engineers (JRA-GL-02). Refer to page 19 for details.
- Install an approx. 20 mesh strainer on the cooling water inlet.
- Clean the condenser at least once or twice a year.

Wiring

⚠ CAUTION

- Use this product within the power voltage range on specifications.
- Install an overload protection and earth leakage breaker onto the main power supply.
- A crankcase heater is built in to protect the condenser. Always turn the power ON at least 12 hours before starting operation.

- Correctly and securely connect power, signal, operation, and ground cables. Do not connect the ground cable to water pipe, gas pipe, or lightning rod.
- Select wires with suitable capacities.

Air circuit

Quality of air

⚠ CAUTION

- Do not use this product if inlet air contains corrosive gases, chemicals, organic solvents, or combustible gases. (Refer to page 19)

Filter

⚠ CAUTION

- Refer to system selection examples on page 85 for details on the filter used around the product.

Air temperature

⚠ CAUTION

- Do not use where the maximum intake pressure or maximum working pressure are exceeded.
- If the inlet temperature is high, install an after cooler, etc., and lower air to the maximum inlet temperature or less. Drainage generated in the after cooler must be removed before the dryer.

Maintenance

⚠ CAUTION

- With the air-cooling type, clean the dust filter (standard for GT9240 to 9450) once a month with a vacuum cleaner or compressed air. Failure to properly clean could result in compressor or fan motor damage, etc.
- Remove the drain trap once a week, disassemble and clean it. The trap will not function correctly if each section is dirty, and the drainage will be passed to the secondary side. (Target models: GT9090 to 9450, GT9090W to 9450W)

- Check the drain trap solenoid valve's operation once a day by pressing the test button. (Target models: GT9710WV, GT9960WV)
- With the water-cooled type, if water deposits, etc., adhere to the water-cooled condenser, the performance may drop and the dryer could stop abnormally. Inspect the water-cooled condenser once every two years, and wash it as necessary. Connecting piping for washing is recommended when connecting the cooling water piping. Failure to clean the condenser will make it harder to clean the condenser later on, and could damage the condenser, etc.

Repair parts

⚠ CAUTION

- To ensure use for a long time, always periodically inspect the wear state, and replace the parts. Refer to the Instruction Manual enclosed with the product for details.

Periodical maintenance part

⚠ CAUTION

- To ensure long use, regularly inspect maintenance parts and replace them based on the standard replacement cycle. Refer to the Instruction Manual enclosed with the product for details.

Others

⚠ WARNING

- This product is subject to the "Laws Related to the Collection and Destruction of Freon in Specific Products (Freon Collection and Destruction Laws)". Always collect the Freon gas when repairing or disposing of the product. Consult with CKD for Freon gas collection.

⚠ CAUTION

- This unit attaches No. 2 class pressure vessel withstanding pressure certification. Keep this catalog during use the components. (Target models: GT9240 to 9450, GT9240W to 9450W, GT9710WV, 9960WV) (Applications to the Labor Standards Supervision Office are no longer required in Japan.)

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Total air system (Gamma)
Ending



Refrigerating type dryer air cooling type

GT9000 Series

Direct connection to air compressor, standard inlet air type
Applicable air compressor: 90,120,150,190,240,300,380,450kW

JIS symbol



Specifications

Model no.		GT9090	GT9120	GT9150	GT9190	GT9240	GT9300	GT9380	GT9450
Applicable air compressor kW		90	120	150	190	240	300	380	450
Specified range	Working fluid	Compressed air							
	Inlet air temperature °C	5 to 60							
	Inlet air pressure Mpa	0.1 to 0.98					0.29 to 0.93		
	Ambient temperature °C	2 to 40							
Rated	Treated flow rate m³/min. (ANR) 50/60Hz (Note 2)	14.8/17.5	18.7/22.0	23.8/28.0	27.5/32.4	36.5/43.0	44.2/52.0	55.2/65.0	70.3/82.8
	Treated flow rate m³/min. (Compressor suction state) 50/60Hz (Note 3)	15.5/18.4	19.6/23.1	25.0/29.4	28.9/34.0	38.3/45.2	46.4/54.6	58.0/68.3	73.8/87.0
	Inlet air temperature °C	40							
	Inlet air pressure MPa	0.7							
	Ambient temperature °C	32							
Performance	Outlet air pressure dew point °C	10 (Note 4)							
Power supply		Three phase 200/200-220 VAC 50/60Hz							
Electric specifications	Power consumption kW 50/60Hz (Note 5)	3.0/3.7, 3.7	2.9/3.8, 3.6	3.7/4.8, 4.7	4.8/6.0, 5.8	4.6/5.7, 5.6	5.9/6.8, 6.8	8.6/10.1,10.0	9.3/11.2,11.9
	Operating current A 50/60Hz (Note 5)	11.0/12.0,12.0	11.6/13.1,12.6	14.7/16.3,15.9	18.6/20.1,18.8	17.9/19.2,19.1	19.9/22.3,21.2	26.4/29.4,28.9	36.3/38.3,38.2
	Starting current A 50/60Hz	83/77	83/77	98/91	135/135	135/135	83/77	98/91	135/135
Refrigerant		R-407C							
Air inlet/outlet port size (Note 6)		Elbow union Rc2	Flange 21/2B	Flange 3B		Flange 4B	Flange 5B		Flange 6B
Product weight kg		237	258	372	374	555	790	870	970
Exhaust heat kW 50/60Hz		9.8/11.6	10.8/12.8	14.1/16.5	17.8/21.0	18.8/22.1	20.8/24.5	26.7/31.3	33.0/39.0

- Note 1: Outer panel : Quality cool white (munsell No. 5GY7.5/0.5)
Base : munsell No.N3.0
- Note 2: ANR shows conditions where 20°C atmospheric pressure and relative humidity 65%.
- Note 3: Value converted into air compressor intake state at 32°C atmospheric pressure and relative humidity 75%.
- Note 4: Contact CKD for information on the dew point performance guarantee.
- Note 5: The energy consumption and operation current are both references values under the rated conditions, and are not guaranteed.
- Note 6: Flange is 10K flange.

How to order (air cooling type)

GT9 **090** - **G** - **AC380V**

A Capacity code

B Option
Note 1

C Voltage
Note2

⚠ Note on model no. selection

Note 1: Indicate options in alphabetical order.

Note 2: Always indicate the item **C** voltage even for standard parts.
(Example) GT9090-AC200V

Note 3: Option H3 is packaged in plywood.

Note 4: The instruction manual and nameplates are provided in Japanese and English. Note that the Proof of Pressure Resistance (GT9240 and higher) is available only in Japanese. Contact CKD when an English version is required.

Note 5: Contact CKD if a photo of the completed product is required.

Note 6: Consult with CKD to designate the color of the main panel.

Selection guide

(1) Temperature compensation coefficient

Inlet air temperature (°C)		35		40		45	
Pressure dew point (°C)		10	15	10	15	10	15
Ambient temperature (°C)	25	1.29	1.29	1.14	1.24	0.91	0.99
	30	1.25	1.29	1.04	1.13	0.83	0.91
	32	1.20	1.29	1.00	1.09	0.80	0.87
	35	1.13	1.23	0.94	1.02	0.75	0.82
	40	1.01	1.10	0.84	0.92	0.67	0.73
Inlet air temperature (°C)		50		55		60	
Pressure dew point (°C)		10	15	10	15	10	15
Ambient temperature (°C)	25	0.69	0.75	0.46	0.50	0.23	0.25
	30	0.62	0.68	0.42	0.45	0.21	0.23
	32	0.60	0.65	0.40	0.44	0.20	0.22
	35	0.56	0.61	0.38	0.41	0.19	0.20
	40	0.50	0.55	0.34	0.37	0.17	0.18

(2) Inlet air pressure coefficient

Inlet air pressure (MPa)	0.10	0.20	0.29	0.30	0.40	0.50	0.60	0.70	0.80	0.90	0.93	0.98
Coefficient	0.60	0.66	0.72	0.73	0.80	0.87	0.93	1.00	1.07	1.13	1.15	1.19

To find applicable models according to standard treating flow rate

Standard treating flow rate x (1) temperature compensation coefficient x (2) inlet air pressure coefficient = max. treating air flow rate

Conditions	Working conditions	Selecting conditions	Coefficient
Inlet air temperature	30 to 38°C	40°C	0.94
Pressure dew point	10°C	10°C	
Ambient temperature	25 to 33°C	35°C	
Inlet air pressure	0.55 to 0.75MPa	0.5MPa	0.87
Frequency	50Hz	50Hz	50Hz

Substitute the above conditions into the equation above to obtain the treating air flow rate when using the GT9150.

$$23.8 \times 0.94 \times 0.87 = 19.4 \text{ m}^3/\text{min}(\text{ANR})$$

If the working air volume is less than this value, select that model.

Note 1: Select with conditions under which the total of each coefficient does not exceed 1.3.

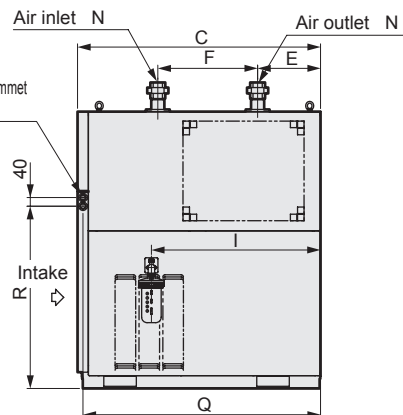
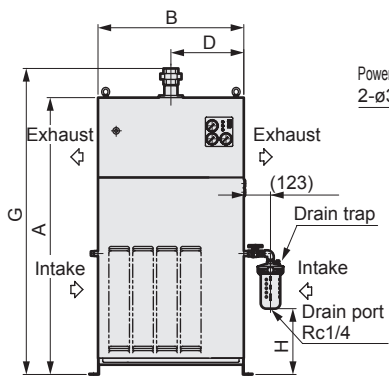
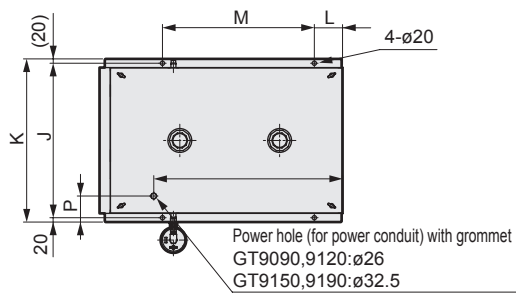
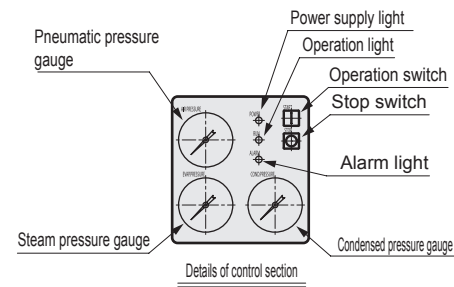
Note 2: Contact CKD for details on models supporting a pressure dew point less than 10°C.

Symbol	Descriptions
A Capacity code	
090	90kW
120	120kW
150	150kW
190	190kW
240	240kW
300	300kW
380	380kW
450	450kW
B Option	
Blank	Standard products
G	Optional voltage
H2	SUS name plate
H3	Simple export packaging
N1	Copper tube rust proof coating
C Voltage	
200 VAC	
220 VAC (standard only for 60Hz)	
230 VAC	
240 VAC	
380 VAC	
400 VAC	
415 VAC	
440 VAC	
480 VAC	

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact conf. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

Dimensions

● GT9090 to GT9190



Note 1: Select the left or right side of the exhaust outlet.

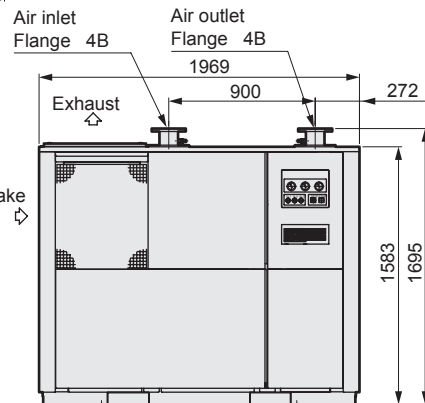
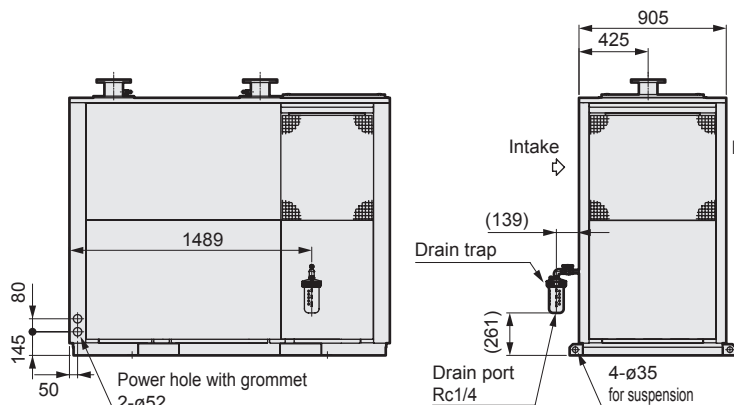
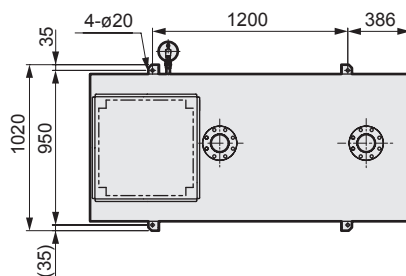
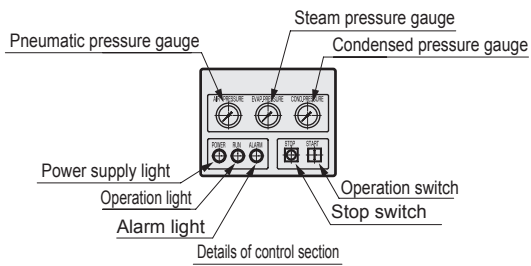
Note 2: Select whether to attach the drain trap to the left or right side. The installation positions are symmetrical.

Note 3: A dust filter is not mounted.

Model no.	A	B	C	D	E	F	G	H	I	J	K
GT9090	1276	672	1120	336	290	460	1411	(303)	780	712	752
GT9120	1276	672	1260	336	403	655	1375	(221)	295	712	752
GT9150	1332	950	1290	475	296	720	1432	(221)	260	990	1030
GT9190	1332	950	1290	475	226	860	1432	(221)	260	990	1030

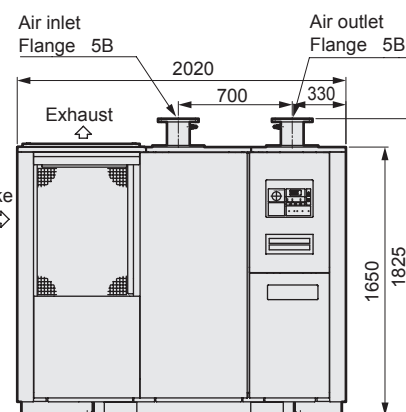
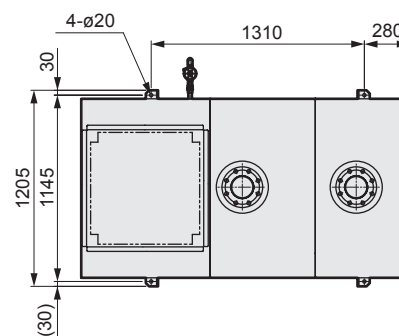
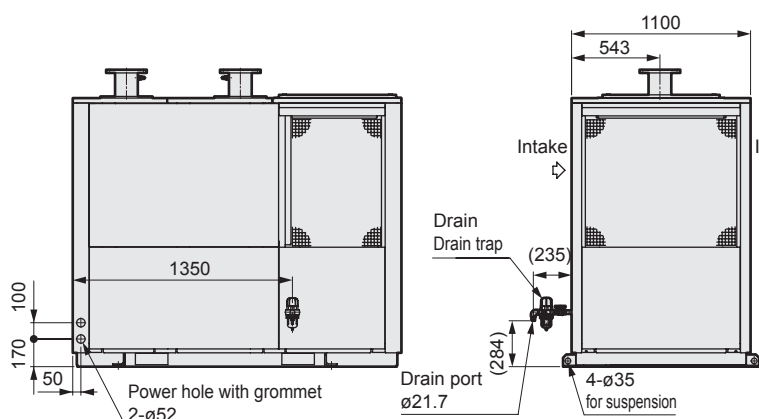
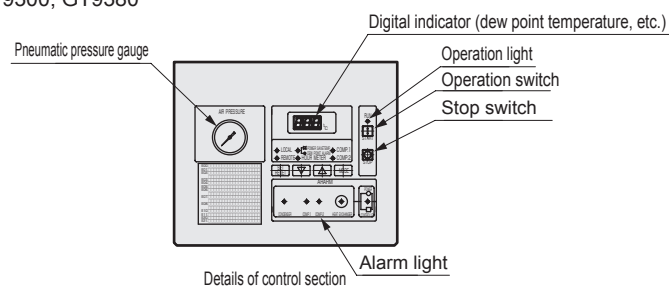
Model no.	L	M	N	O	P	Q	R
GT9090	130	700	Elbow union Rc2	870	120	1095	840
GT9120	214	935	Flange 2 1/2B	1010	120	1235	840
GT9150	245	935	Flange 3B	990	116	1265	896
GT9190	245	935	Flange 3B	990	116	1265	896

● GT9240



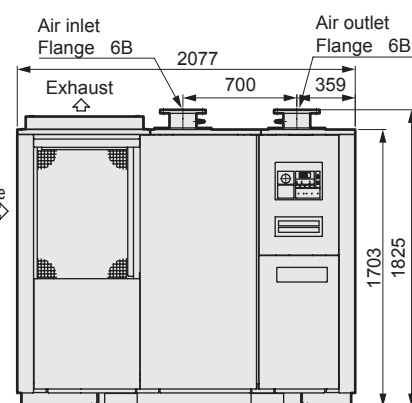
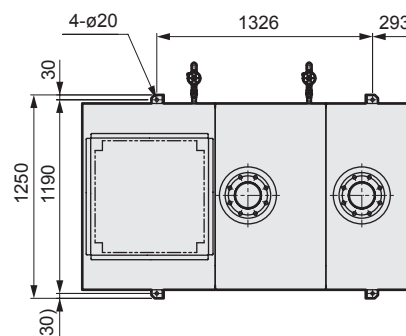
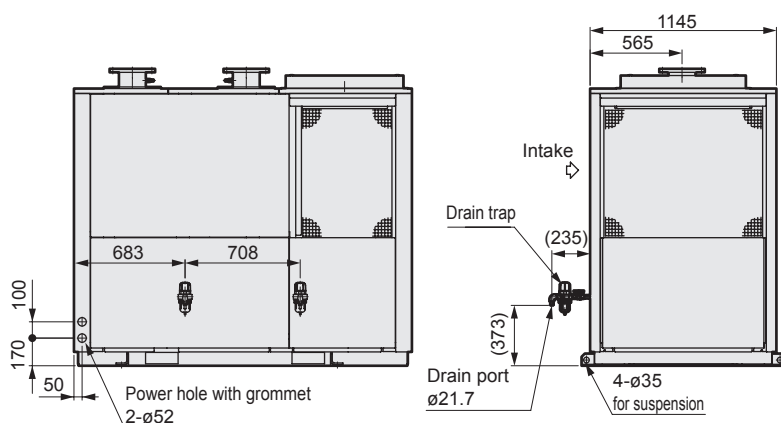
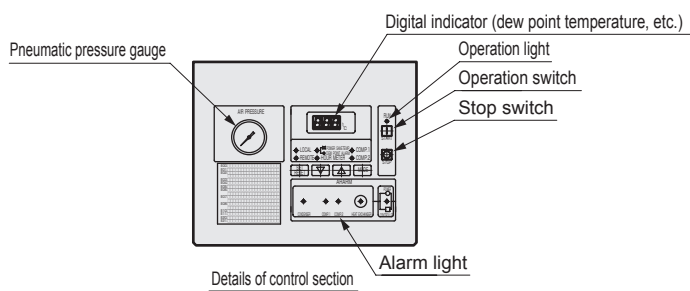
Dimensions

● GT9300, GT9380



Note 1: The dew point indicator value is a guide, and is not the actual dew point.
To measure the actual dew point, measure the secondary air with a dew point gauge.

● GT9450



Note 1: The dew point indicator value is a guide, and is not the actual dew point.
To measure the actual dew point, measure the secondary air with a dew point gauge.

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

CKD refrigerating type dryer GT
Main line unit

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact conf. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending



Refrigerating type dryer water cooling type

GT9000W Series

Direct connection to air compressor, standard inlet air type
Applicable air compressor: 90,120,150,190,240,300,380,450kW

JIS symbol



Specifications

Model no.		GT9090W	GT9120W	GT9150W	GT9190W	GT9240W	GT9300W	GT9380W	GT9450W
Applicable air compressor kW		90	120	150	190	240	300	380	450
Specified range	Working fluid	Compressed air							
	Inlet air temperature °C	5 to 60							
	Inlet air pressure MPa	0.1 to 0.98					0.29 to 0.93		
	Cooling water inlet pressure MPa	0.2 to 0.74							
	Ambient temperature °C	2 to 45							
Rated	Treated flow rate m³/min. (ANR) 50/60Hz (Note2)	15.5/18.3	20.4/24.0	25.5/30.0	29.8/35.1	39.9/47.0	48.4/57.0	60.3/71.0	79.0/93.0
	Treated flow rate m³/min. (Compressor suction state) 50/60Hz (Note 3)	16.3/19.2	21.4/25.2	26.8/31.5	31.3/36.9	41.9/49.4	50.8/59.9	63.3/74.6	83.0/97.7
	Inlet air temperature °C	40							
	Inlet air pressure MPa	0.7							
	Cooling water inlet temperature °C	32							
	Cooling water volume m³/h 50/60Hz	2.4/2.8	2.5/2.9	2.7/3.0	3.0/3.2	3.6/3.8	3.4/4.0	4.3/5.0	6.0/7.1
	Ambient temperature °C	32							
Performance	Outlet air pressure dew point °C	10 (Note 4)							
Power supply		Three phase 200/200-220 VAC 50/60Hz							
Electric specifications	Power consumption kW 50/60Hz (Note5)	2.4/2.9, 2.8	2.1/2.6, 2.5	3.1/3.8, 3.7	4.2/5.3, 5.5	3.5/4.4, 4.3	5.1/5.7, 5.7	6.5/7.6, 7.5	8.5/9.0, 8.9
	Operating current A 50/60Hz (Note 5)	9.0/9.6, 9.1	8.6/9.4, 8.9	11.9/12.8,12.1	15.8/16.8,16.5	14.8/15.0,14.9	17.6/18.9,18.4	22.5/25.0,24.5	29.6/32.0,31.4
	Starting current A 50/60Hz	83/77	83/77	98/91	135/135	135/135	83/77	98/91	135/135
Refrigerant		R-407C							
Air inlet/outlet port size (Note 6)		Elbow union Rc2	Flange 2 1/2B	Flange 3B		Flange 4B	Flange 5B		Flange 6B
Product weight kg		215	238	346	346	532	790	870	940

Note 1: Outer panel : Quality cool white (munsell No. 5GY7.5/0.5)
Base : munsell No.N3.0

Note 2: ANR shows conditions where 20°C atmospheric pressure and relative humidity 65%.

Note 3: Value converted into air compressor intake state at 32°C atmospheric pressure and relative humidity 75%.

Note 4: Contact CKD for information on the dew point performance guarantee.

Note 5: The energy consumption and operation current are both references values under the rated conditions, and are not guaranteed.

Note 6: Flange is 10K flange.

How to order (water cooling type)

GT9 **090** W - **G** - **AC380V**

A Capacity code

B Option
Note 1

C Voltage
Note 2

! Note on model no. selection

Note 1: Indicate options in alphabetical order.

Note 2: Always indicate the item **C** voltage even for standard parts.
(Example) GT9090W-AC200V

Note 3: Option H3 is packaged in plywood.

Note 4: The instruction manual and nameplates are provided in Japanese and English. Note that the Proof of Pressure Resistance (GT9240W and higher) is available only in Japanese. Contact CKD when an English version is required.

Note 5: Contact CKD if a photo of the completed product is required.

Note 6: Consult with CKD to designate the color of the main panel.

Selection guide

(1) Temperature compensation coefficient

Inlet air temperature (°C)	35		40		45	
Pressure dew point (°C)	10	15	10	15	10	15
Coefficient	1.20	1.29	1.00	1.09	0.80	0.87
Inlet air temperature (°C)	50		55		60	
Pressure dew point (°C)	10	15	10	15	10	15
Coefficient	0.60	0.65	0.40	0.44	0.20	0.22

(2) Inlet air pressure coefficient

Inlet air pressure (MPa)	0.10	0.20	0.29	0.30	0.40	0.50	0.60	0.70	0.80	0.90	0.93	0.98
Coefficient	0.60	0.66	0.72	0.73	0.80	0.87	0.93	1.00	1.07	1.13	1.15	1.19

To find applicable models according to standard treating flow rate

Standard treating flow rate x (1) temperature compensation coefficient x (2) inlet air pressure coefficient = max. treating air flow rate

Conditions	Working conditions	Selecting conditions	Coefficient
Inlet air temperature	30 to 33°C	35°C	1.20
Pressure dew point	10°C	10°C	
Inlet air pressure	0.55 to 0.75MPa	0.5MPa	0.87
Frequency	50Hz	50Hz	50Hz

Substitute the above conditions into the equation above to obtain the treating air flow rate when using the GT9150W.

$$25.5 \times 1.20 \times 0.87 = 26.6 \text{ m}^3/\text{min}(\text{ANR})$$

If the working air volume is less than this value, select that model.

Note 1: Select with conditions under which the total of each coefficient does not exceed 1.3.

Note 2: Contact CKD for details on models supporting a pressure dew point less than 10°C.

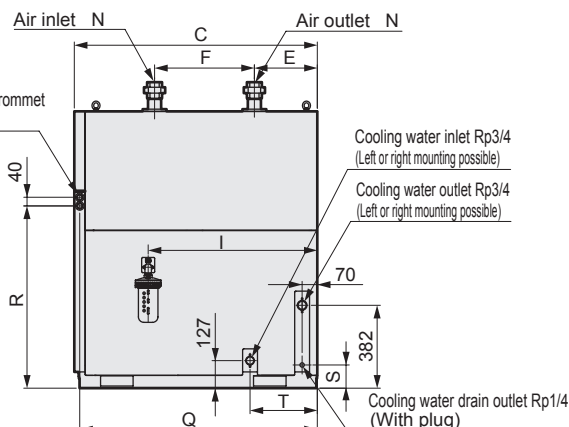
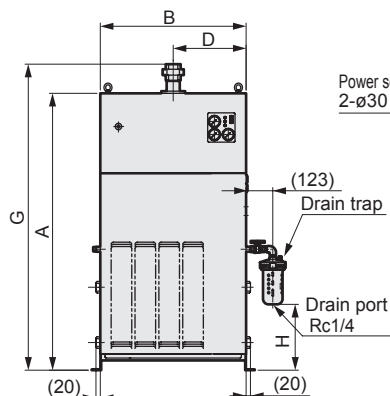
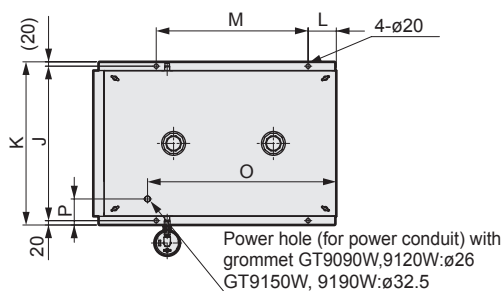
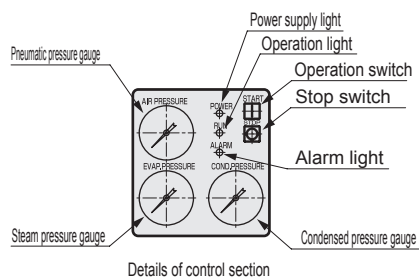
Symbol	Descriptions
A Capacity code	
090	90kW
120	120kW
150	150kW
190	190kW
240	240kW
300	300kW
380	380kW
450	450kW
B Option	
Blank	Standard products
G	Optional voltage
H2	SUS name plate
H3	Simple export packaging
N1	Copper tube rust proof coating
C Voltage	
200 VAC	
220 VAC (standard only for 60Hz)	
230 VAC	
240 VAC	
380 VAC	
400 VAC	
415 VAC	
440 VAC	
480 VAC	

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

GT9000W Series

Dimensions

● GT9090W to GT9190W



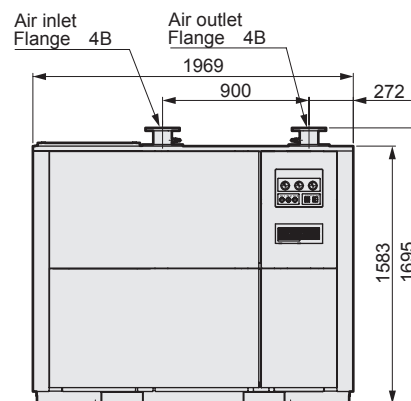
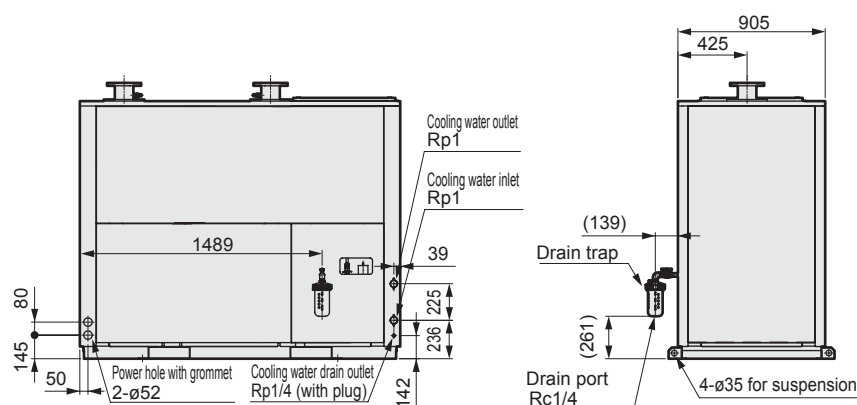
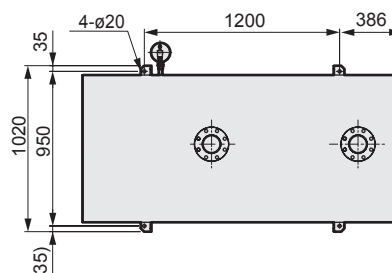
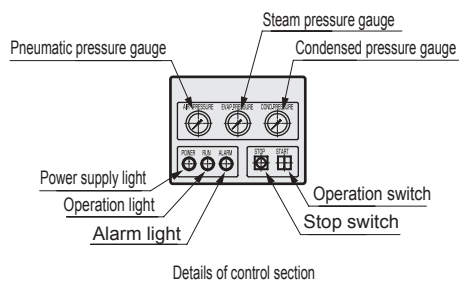
Note 1: Select whether to attach the cooling water pipe to the left or right side.

Note 2: Select whether to attach the drain trap to the left or right side. The installation positions are symmetrical.

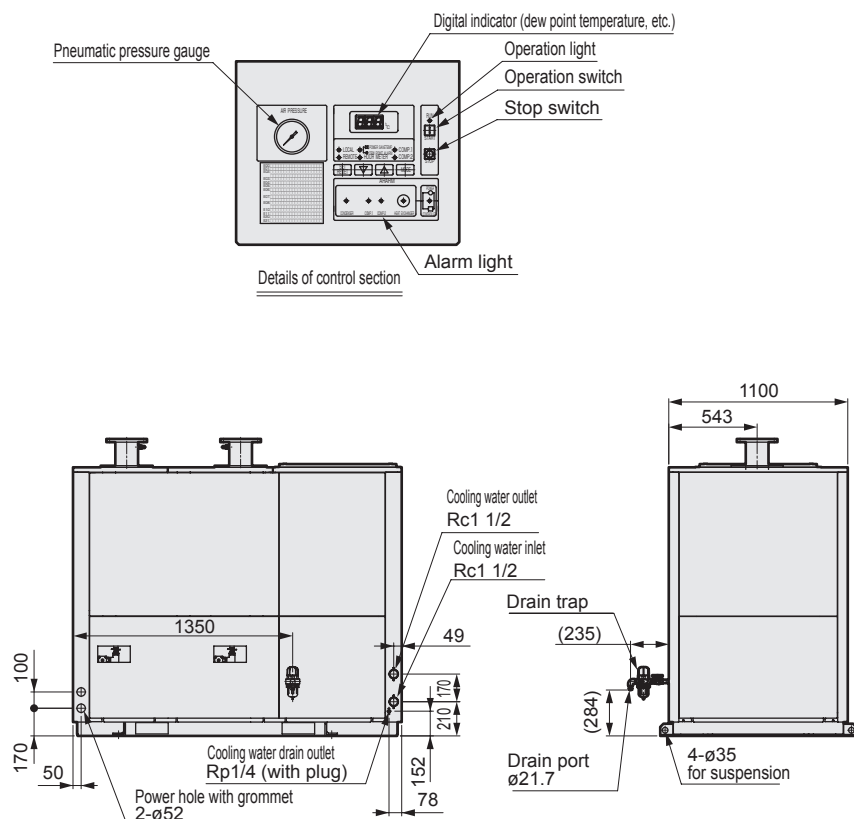
Model no.	A	B	C	D	E	F	G	H	I	J	K
GT9090W	1276	672	1120	336	290	460	1411	(303)	780	712	752
GT9120W	1276	672	1260	336	403	655	1375	(221)	295	712	752
GT9150W	1332	950	1290	475	296	720	1432	(221)	260	990	1030
GT9190W	1332	950	1290	475	226	860	1432	(221)	260	990	1030

Model no.	L	M	N	O	P	Q	R	S	T
GT9090W	130	700	Elbow union Rc2	870	120	1095	840	107	310
GT9120W	214	935	Flange 2 1/2B	1010	120	1235	840	107	445
GT9150W	245	935	Flange 3B	990	116	1265	896	95	475
GT9190W	245	935	Flange 3B	990	116	1265	896	95	475

● GT9240W

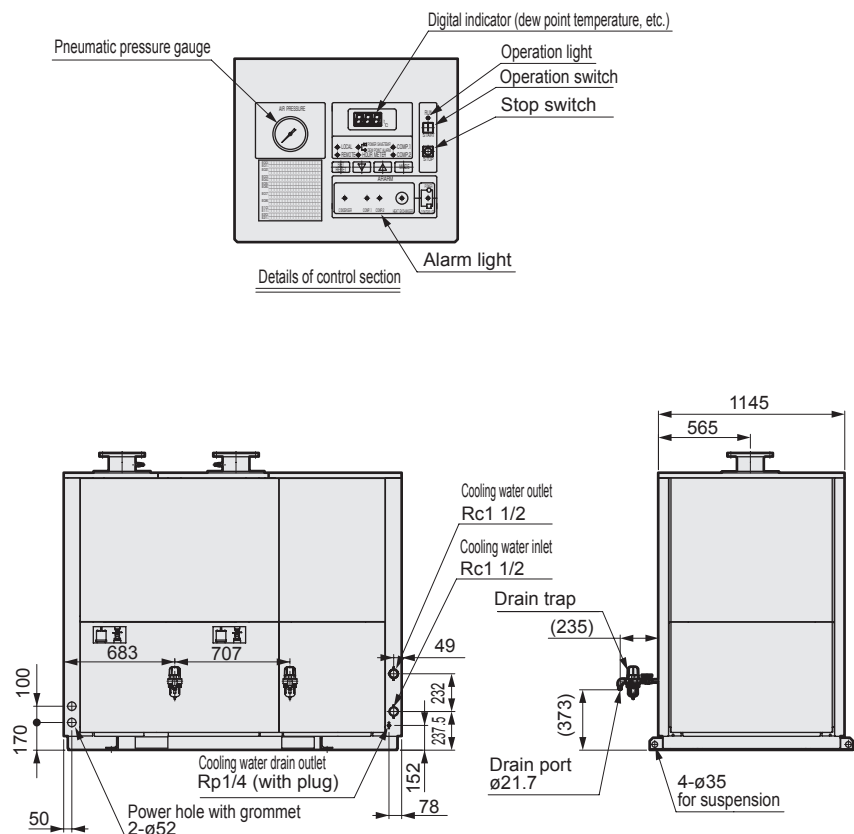


● GT9300W, GT9380W

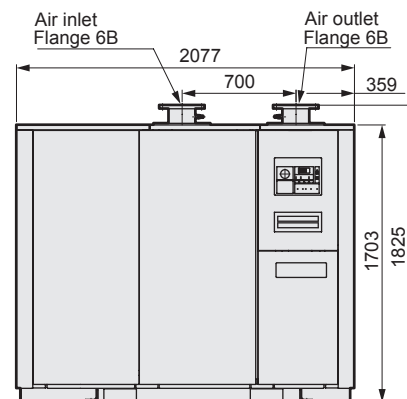
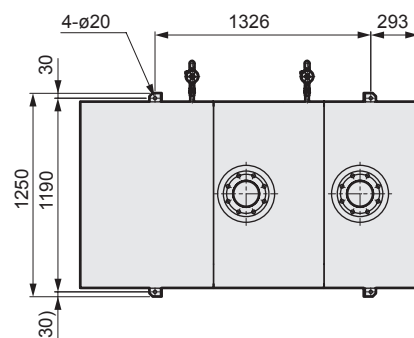
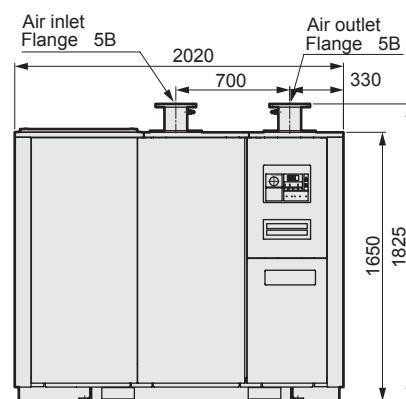
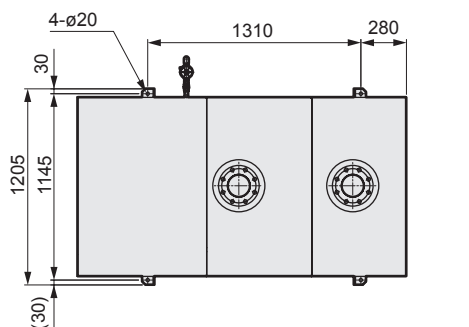


Note 1: The dew point indicator value is a guide, and is not the actual dew point.
To measure the actual dew point, measure the secondary air with a dew point gauge.

● GT9450W



Note 1: The dew point indicator value is a guide, and is not the actual dew point.
To measure the actual dew point, measure the secondary air with a dew point gauge.



Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto, drain (Module)
F.R.L. (Separate)
F.R.L. (Related products)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact conf. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending



Refrigerating type dryer inverter control water cooling type

GT9000WV Series

Direct connection to air compressor, standard inlet air type
Applicable air compressor: 710,960kW

JIS symbol



Specifications

Model no.		GT9710WV	GT9960WV
Applicable air compressor	kW	710	960
Specified range	Working fluid	Compressed air	
	Inlet air temperature °C	5 to 60	
	Inlet air pressure MPa	0.1 to 0.93	
	Cooling water inlet pressure MPa	0.2 to 0.74	
	Ambient temperature °C	2 to 45	
Rated	Treated flow rate m ³ /min. (ANR) 50/60Hz (Note2)	139.1	184.2
	Treated flow rate m ³ /min. (Compressor suction state) 50/60Hz (Note 3)	146.1	193.4
	Inlet air temperature °C	40	
	Inlet air pressure MPa	0.7	
	Cooling water inlet temperature °C	32	
	Cooling water volume m ³ /h 50/60Hz	10.7	14.2
	Ambient temperature °C	32	
	Outlet air pressure dew point °C	10 (Note 4)	
	Outlet air pressure dew point changeover range	10 to 18 (with manual setting/external air interlock changeover function)	
	Power supply	Three phase 200/200-220 VAC 50/60Hz (Note 5)	
Electric specifications	Power consumption kW 50/60Hz (Note 6)	14.8	19.6
	Operating current A 50/60Hz (Note 6)	49.0	68.6
Refrigerant		R-407C	
Air inlet/outlet port size (Note 7)		Flange 8B	
Product weight	kg	1330	2200

Note 1: Outer panel: Quality cool white (munsell No. 5GY7.5/0.5)
Base : munsell No.N3.0

Note 2: ANR shows conditions where 20°C atmospheric pressure and relative humidity 65%.

Note 3: Value converted into air compressor intake state at 32°C atmospheric pressure and relative humidity 75%.

Note 4: Contact CKD for information on the dew point performance guarantee.

Note 5: Keep the unbalance between the power voltage phases to within ±2%.

Note 6: The energy consumption and operation current are both references values under the rated conditions, and are not guaranteed.

Note 7: Flange is 10K flange.

How to order (inverter control water cooling type)

GT9 **710** WV - **G** - **AC380V**

A Capacity code

B Option
Note 1

C Voltage
Note 2

Symbol	Descriptions
A Capacity code	
710	710kW
960	960kW
B Option	
Blank	Standard products
G	Optional voltage
H2	SUS name plate
H3	Simple export packaging
N1	Copper tube rust proof coating
C Voltage	
200 VAC	
220 VAC (standard only for 60Hz)	
230 VAC	
240 VAC	
380 VAC	
400 VAC	
415 VAC	
440 VAC	
480 VAC	

⚠ Note on model no. selection

Note 1: Indicate options in alphabetical order.

Note 2: Always indicate the item **C** voltage even for standard parts.

(Example) GT9710WV-AC200V

Note 3: Option H3 is packaged in plywood.

Note 4: The instruction manual and nameplates are provided in Japanese and English. Note that the Proof of Pressure Resistance is available only in Japanese. Contact CKD when an English version is required.

Note 5: Contact CKD if a photo of the completed product is required.

Note 6: Consult with CKD to designate the color of the main panel.

Selection guide

(1) Temperature compensation coefficient

Inlet air temperature (°C)	35		40		45	
Pressure dew point (°C)	10	18	10	18	10	18
Coefficient	1.20	1.20	1.00	1.20	0.80	0.96
Inlet air temperature (°C)	50		55		60	
Pressure dew point (°C)	10	18	10	18	10	18
Coefficient	0.60	0.72	0.40	0.48	0.20	0.24

(2) Inlet air pressure coefficient

Inlet air pressure (MPa)	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	0.93
Coefficient	0.60	0.66	0.73	0.80	0.87	0.93	1.00	1.07	1.13	1.15

To find applicable models according to standard treating flow rate

Standard treating flow rate x (1) temperature compensation coefficient x (2) inlet air pressure coefficient = max. treating air flow rate

Conditions	Working conditions	Selecting conditions	Coefficient
Inlet air temperature	38 to 43°C	45°C	0.80
Pressure dew point	15°C	10°C	
Inlet air pressure	0.55 to 0.75MPa	0.5MPa	0.87
Frequency	50Hz	50Hz	50Hz

Substitute the above conditions into the equation above to obtain the treating air flow rate when using the GT9710WV.

$$139.1 \times 0.80 \times 0.87 = 96.8 \text{ m}^3/\text{min}(\text{ANR})$$

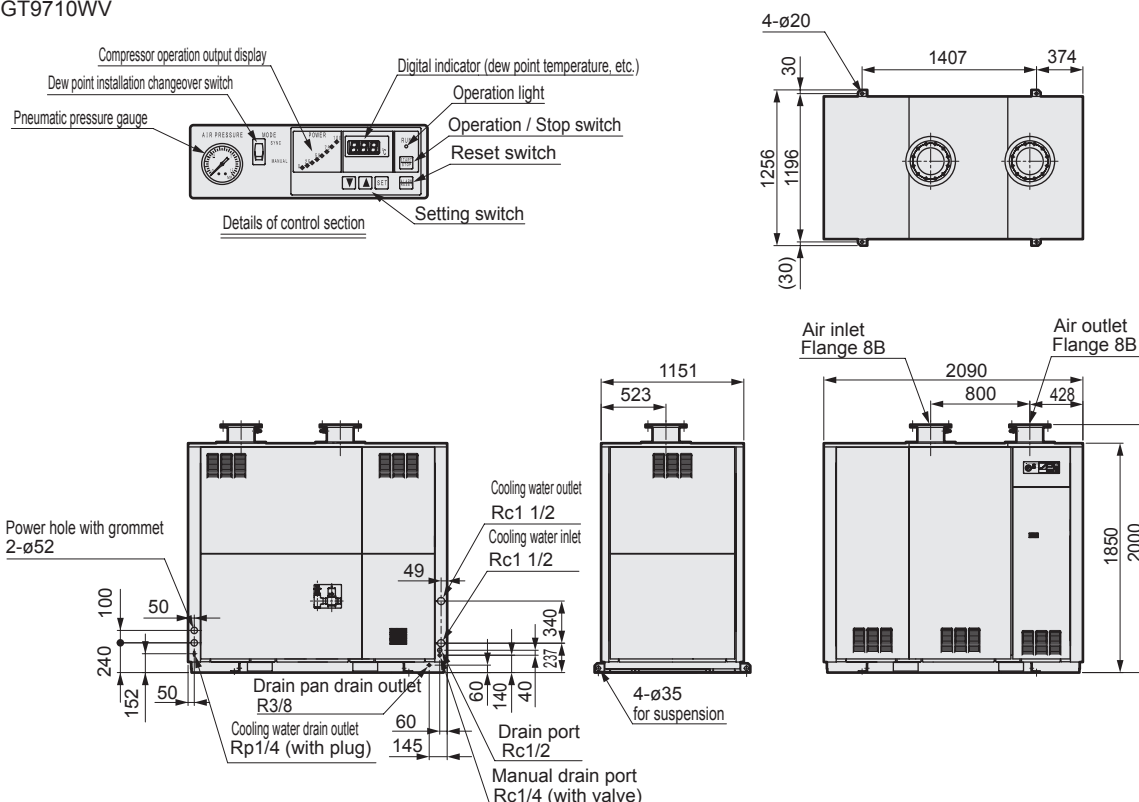
If the working air volume is less than this value, select that model.

Note: Select with conditions under which the total of each coefficient does not exceed 1.3.

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

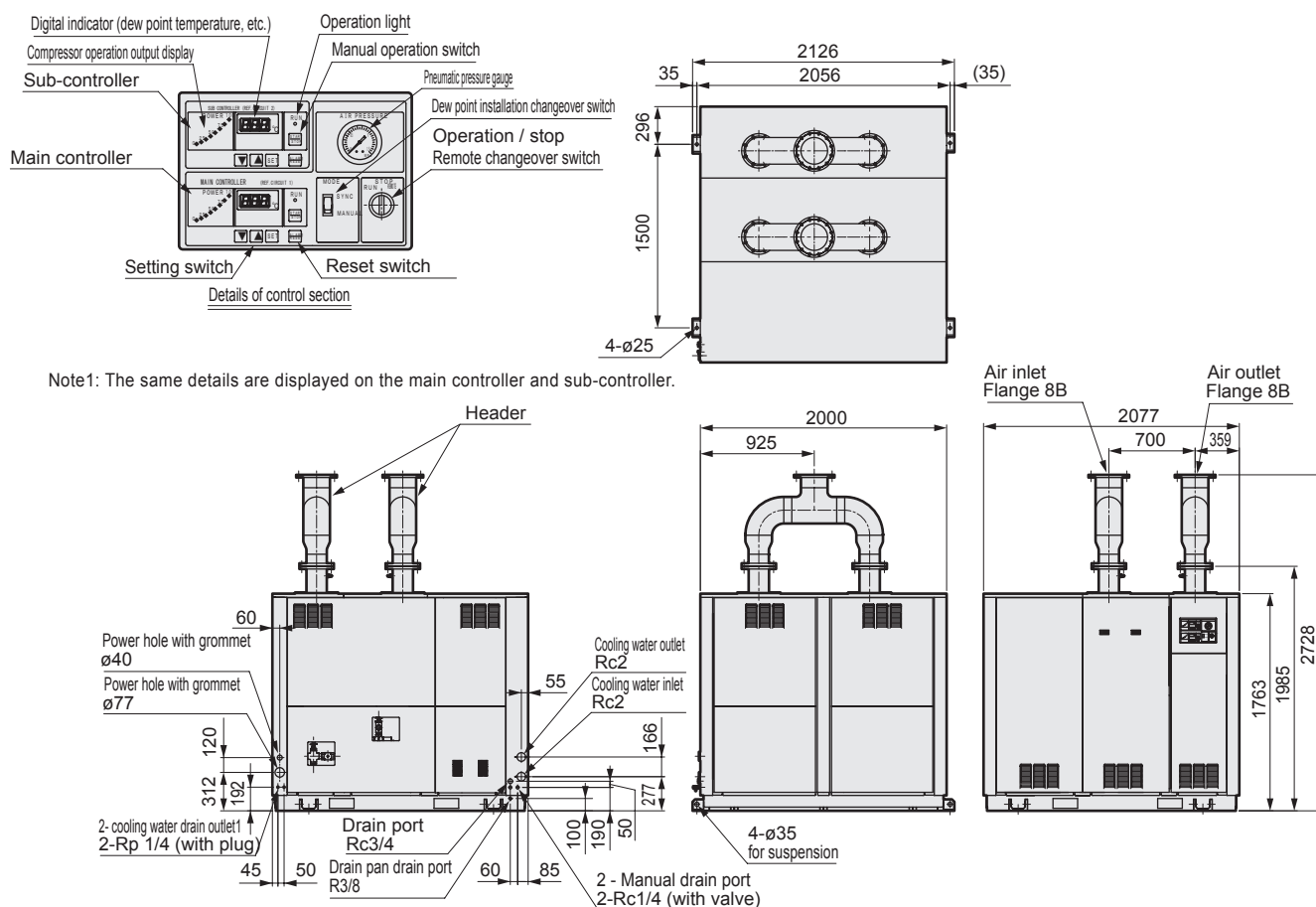
Dimensions

● GT9710WV



Note 1: The dew point indicator value is a guide, and is not the actual dew point.
To measure the actual dew point, measure the secondary air with a dew point gauge.

● GT9960WV



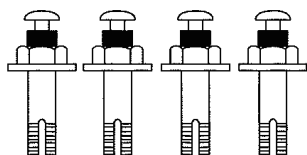
Note1: The same details are displayed on the main controller and sub-controller.

Note 2: The header, gasket and mounting bolts and nuts are enclosed.

Note 3: The dew point indicator value is a guide, and is not the actual dew point.
To measure the actual dew point, measure the secondary air with a dew point gauge.

Accessories (optional)

■ Anchor bolt



Anchor bolt: 4 SUS bolts per set

Applicable model		No.	RD-QFL-436465	RD-QFL-436466
		Size	M16 x L100	M20 x L130
GT9090	GT9090W		○	
GT9120	GT9120W		○	
GT9150	GT9150W		○	
GT9190	GT9190W		○	
GT9240	GT9240W		○	
GT9300	GT9300W		○	
GT9380	GT9380W		○	
GT9450	GT9450W		○	
		GT9710WV	○	
		GT9960WV		○

■ Companion flange

Inserted welded flange, hexagon bolt, nut and gasket set

Applicable model		No.	RD-KFL-436467	RD-KFL-436468	RD-KFL-436469	RD-KFL-436470	RD-KFL-436471	RD-KFL-436472
		Size	Flange 2 1/2B	Flange 3B	Flange 4B	Flange 5B	Flange 6B	Flange 8B
GT9120	GT9120W		○					
GT9150	GT9150W			○				
GT9190	GT9190W			○				
GT9240	GT9240W				○			
GT9300	GT9300W					○		
GT9380	GT9380W					○		
GT9450	GT9450W						○	
		GT9710WV						○
		GT9960WV						○

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Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

CKD refrigerating type dryer GT
Main line unit