

Refrigerated Air Dryer

Xeroaqua GT9000•GT9000W•GT9000WV Series

REFRIGERATED AIR DRYER



New water cooled inverter to the line up of air cooled and water cooled large air driers.

Easier and Energy Efficient

than Ever

Refrigerated type air dryer

Large Series/90~960kW

Air compressor direct connection
large Xeroaqua GT Series
with improved 3 features.

High quality and reliability

- **SUS heat exchanger suitable for oil free air.**

Stainless heat exchanger with SUS vessel without dust generation.

- **Excellent wetherability**

Improved corrosion resistance with nickel plating inside the refrigerant pipe (copper). Contact CKD for SUS piping specifications.

- **Stop free at high loads (GT9000WV Series)**

The protective circuit reduces the speed of the compressor at high loads to prevent irregular stops and continue running.

Eco-Refrigerant

- **New R-407C refrigerant with eco friendly properties**

Not only it does not damage the ozone layer, it causes less green house effect compared to conventional refrigerants.



Energy efficient

- **Reduce power consumption by 50% with unit control (GT9300 to 9450)**

The 2-stage refrigerant system will automatically swith down to stage 1 at low Power consumption can be reduced by up to 50%.

- **Reduce 60% of power consumption with inverter control (GT9000WV Series)**

Optimizing inverter power to load to achieve energy efficiency.

- **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.

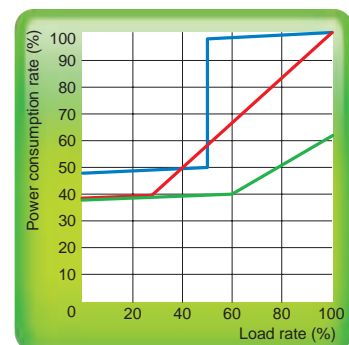
- **Auto-adjusting dew point (GT90000WV Series)**

New function that will automatically adjust press dew point according to the ambient temperature. This eliminates the task of configuring the the dew point temperature manually and provides optimal performance.

- **Same performance under 50Hz and 60Hz. (GT90000WV Series)**

Same performance can be achieved in 50Hz and 60Hz area with inverter control of compressor.

- **GT9000WV Series Load rate/power consumption chart**



— Conventional system
— GT9000WV with dew point set to 10°C.
— GT9000WV with dew point set to 18°C.

GT 9000 (Air cooling) 9000W (Water cooled) Xeroaqua 9000WV (Water cooled inverter) Series



Easy maintenance

● Check it at a glance

Dew point, errors and status of the drier can be checked at a glance with electronic control panel.

● Standard air pressure gauge

Air pressure gauge provided as standard on all models

● Central control

Remote control and operation, alarm signal output

● Dust filter (GT9240~GT9450)

Tool free dust filter for the condenser.

● Newly added service port (GT9120~GT9450, GT9120W~GT9450W, GT9000WV Series)

Installed an service port with check joint on the inlet and outlet pipe. Useful for monitoring pressure and dew point.



GT9300(W)~9450(W)

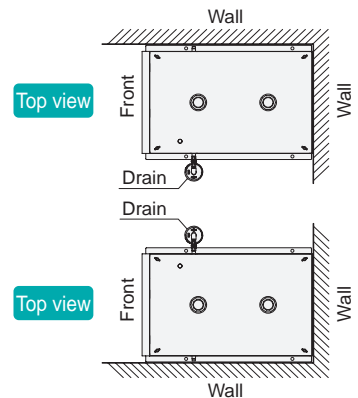


GT9960WV

Flexible placement

● Flexible contact installation (GT9090~9190, GT9090W~9190W)

Drain trap and coolant piping can be placed on either left or right and the rear and either the left or the right side can contact the wall upon installation.



● Less footprint with top exhaust (GT9240~9450)

Exhaust duct is placed on the top, eliminating required space for installation.

● Series variation

Series	Rated conditions						Applicable air compressor (kW)									
	Pressure dew point (°C)	Inlet air pressure (MPa)	Ambient temperature (°C)	Inlet air temp. (°C)	Coolant water inlet temp. (°C)		90	120	150	190	240	300	380	450	710	960
Air cooled	GT9000	10	0.7	32	40											
Water cooled	GT9000W	10	0.7	32	40	32										
	GT9000WV	10	0.7	32	40	32										

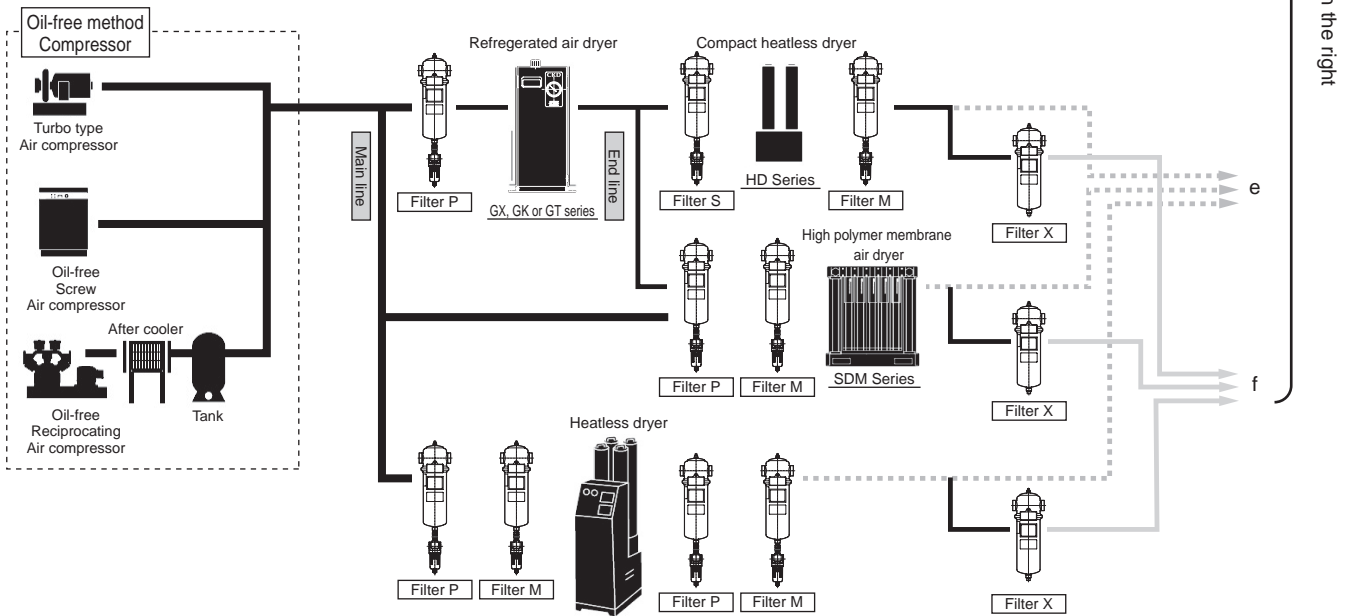
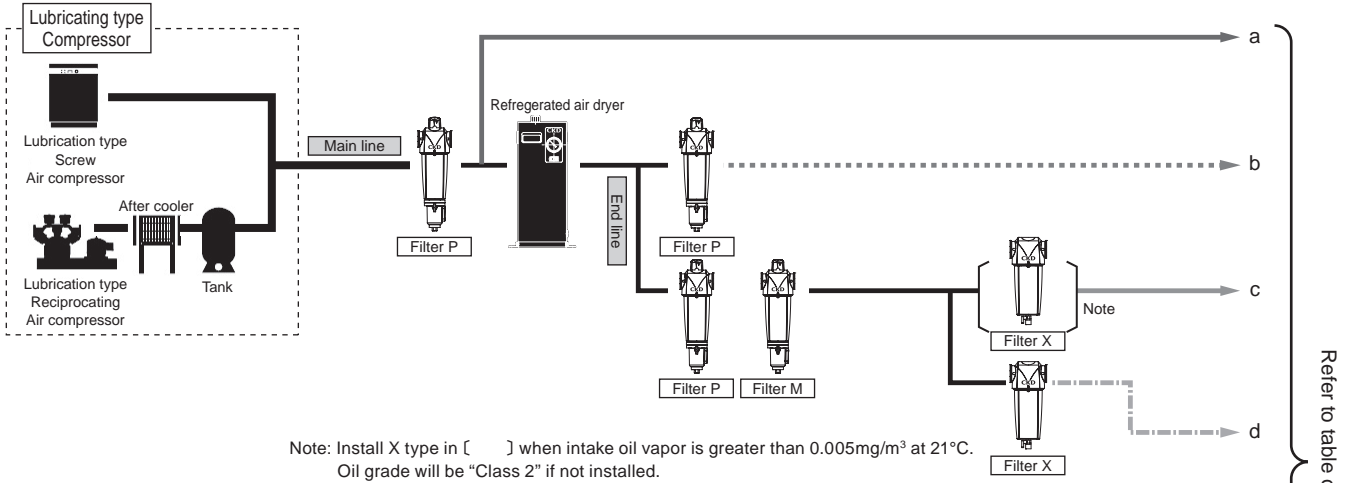
Power control

1/1 operation

Unit control (automatic 1/2 operation)

Inverter control

Conventional system



Compressed air purity grade of JIS B8392-1: 2003

Grade	Solid particles				Humidity and water		Oil	
	Max. particle number of 1m³ contact			Particle diameter µm	Concentration mg/m³	Pressure dew point °C	Water concentration Cw g/m³	Total oil concentration mg/m³
	Particle diameter d µm							
0	d ≤ 0.10	0.10 < d ≤ 0.5	0.5 < d ≤ 1.0	1.0 < d ≤ 5.0	-	-	-	-
To be decided by the customer and the seller under conditions tougher than grade 1.								
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	-

JIS B 8392-1:2000 has been revised to JIS B 8392-1:2003 and the contents has been updated.

For example,
"Grade 3.6.3" means

- Solid particle 0.5 to 1.0µm is a 10,000 piece
- Pressure dew point + 10°C or less
- Oil content of 1mg/m³ or less

	Air quality	Applications	Grade
a	Air water blow Air dust blow	Construction machines Cleaning air blow (drying not required)	4.-.-
b	General dry air	Fixture tool for general pneumatic components, general pneumatics tools, labor saving mechanisms, air tools, air chuck, air vice or precision part cleaning air	3.6.3
			3.5.3
c	Dry air (oil free)	Instrumentation measurement Logic control and high quality painting	2.6.1
			2.5.1
d	Dry air (odorless)	Food industry (air should not blow directly on to foodstuffs. Pharmaceutical industry, stirring, transportation, drying, packaing and brewing	2.6.1
			2.5.1
e	Ultra dry air (oil free)	Ozone generator, powder transportation, during furnace gas, Dry of dry of high voltage generator insulation gas, computer room or central control instrumentation	2.3.1
			2.2.1
			2.2.1
f	Ultra dry air (odorless)	Food industry (air should not blow directly on to foodstuffs. Pharmaceutical industry, stirring, transportation, drying, packaing and brewing	2.3.1
			2.2.1
			2.2.1

System selection list

Rated (ambient temp.:32°C, inlet temp.: 40°C, pressure dew point: 10°C)

Air compressor		Refrigerated air dryer		Main line filter P type	Main line filter M type (0.01µm)	Main line filter X type (Deodorization)
Output kW	Rated air capacity m³/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



Refrigerated type dryer air cooling type

GT9000 Series

Standard inlet air type for air compressor directly connected

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	Treating flow rate m ³ /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
	Treating flow rate m ³ /min (Compressor intake status) 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 AC200/200, 220V 50/60Hz								
Electrical 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)	Union Rc2	Flange 2 ¹ / ₂ B	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: This is an equivalent value of intake condition of air compressor at 32°C at atmospheric pressure and relative humidity of 75%.

Note 4: Contact CKD for performance guarantee of dew point.

Note 5: Power consumption and operating current are only reference values under rated conditions. These are not guaranteed values.

Note 6: The flange is a 10K flange.

How to order (air cooling type)

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

A Capacity code

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B Option
Note 1

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C Voltage
Note 2

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 product
G	Optional voltage
H2	SUS name plate
H3	Simple export packing
N1	Copper tube rust proof coating
C Voltage	
200VAC	
220VAC (only 60Hz standard)	
230VAC	
240VAC	
380VAC	
400VAC	
415VAC	
440VAC	
480VAC	

Cautions for model No. selection

Note 1: Indicate options in alphabetical order.

Note 2: Always specify voltage for standard products in **C** as well (e.g.) GT9090-AC200V

Note 3: Option H3 is plywood packaging.

Note 4: The instruction manual and name plate are indicated in Japanese and English. However, the withstanding pressure certificate (GT9240 and over) is only Japanese. Consult with CKD if it is required in English.

Note 5: Consult with CKD. later if product photo is required.

Note 6: Contact CKD for custom body panel color.

Selection guide

(1) Temperature correction 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 correction 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

If applicable models are asked from rated air capacity in each model.

Rated air capacity x (1) temperature correction coefficient x (2) inlet air pressure correction coefficient = max. treating air flow rate

Conditions	Operating 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 conditions above into the formula above to obtain the treating air rate when using GT9150.

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

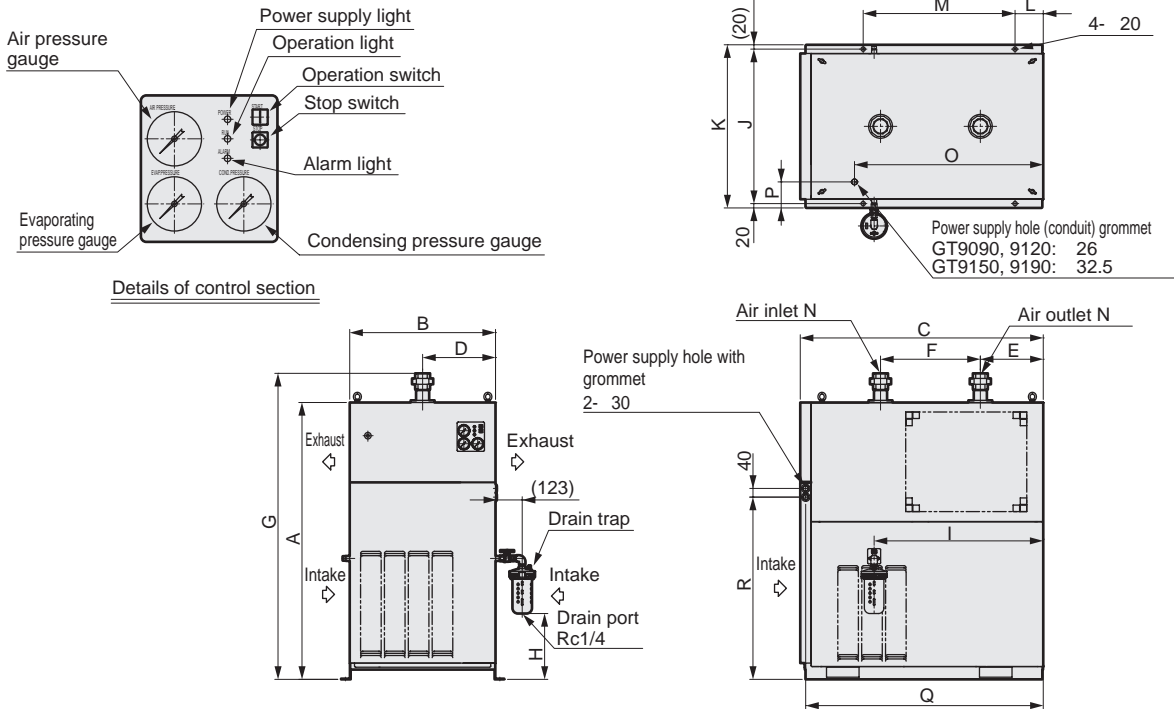
If the working air rate is less than this value, select that model.

Note 1: Select a model in which the product of each coefficient does not exceed 1.3.

Note 2: For pressure dew point less than 10°C consult with CKD.

Dimensions

● GT9090 to GT9190



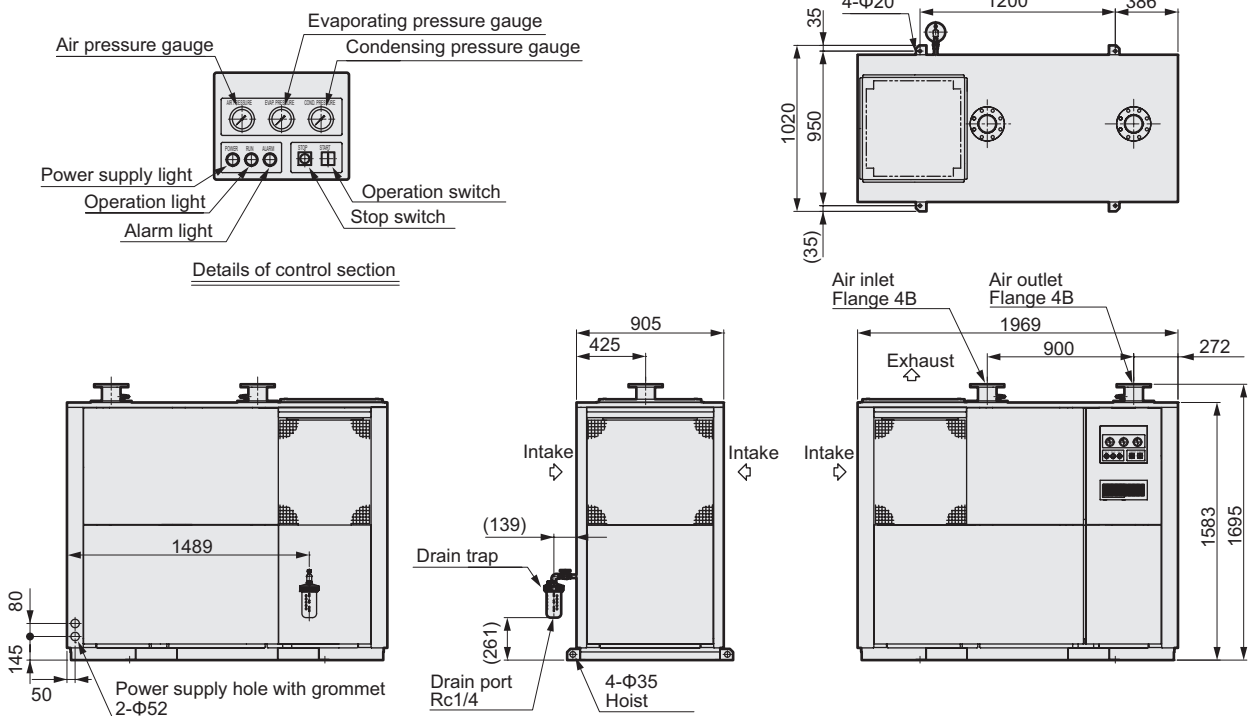
Note 1: Exhaust port position can be selected from left or right.

Note 2: The drain trap can be installed on either left or right. The installation position will be symmetrical.

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

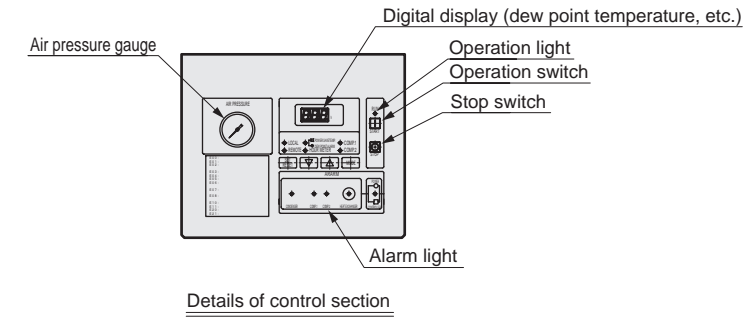
Model no.	L	M	N	O	P	Q	R
GT9090	130	700	Union Rc2	870	120	1095	840
GT9120	214	935	Flange 2 1/2 B	1010	120	1235	840
GT9150	245	935	Flange 3 B	990	116	1265	896
GT9190	245	935	Flange 3 B	990	116	1265	896

● GT9240

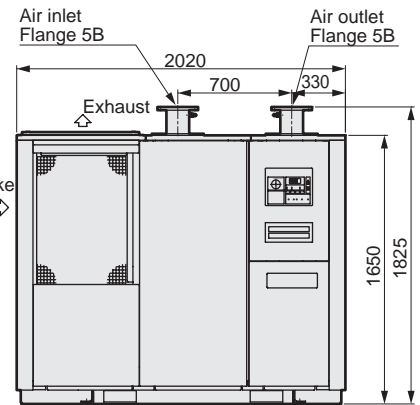
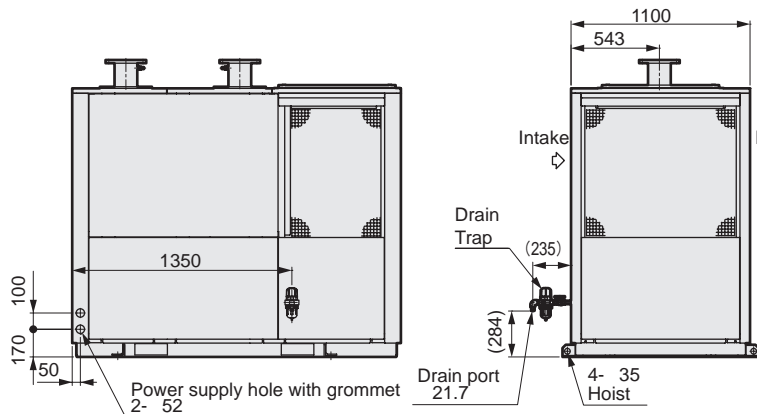
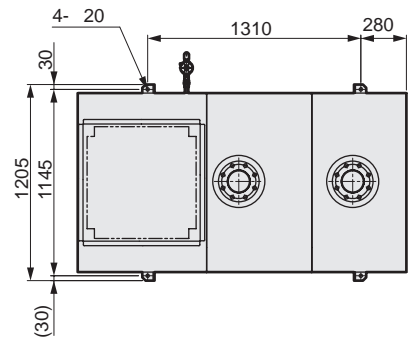


Dimensions

● GT9300, GT9380

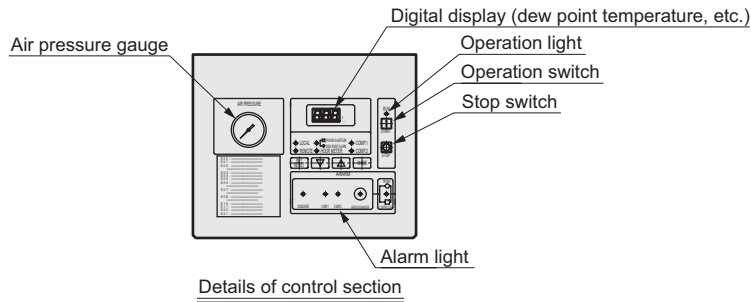


Details of control section

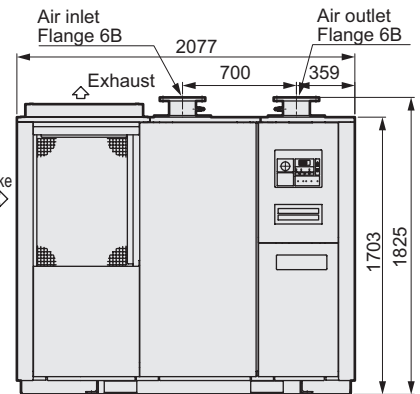
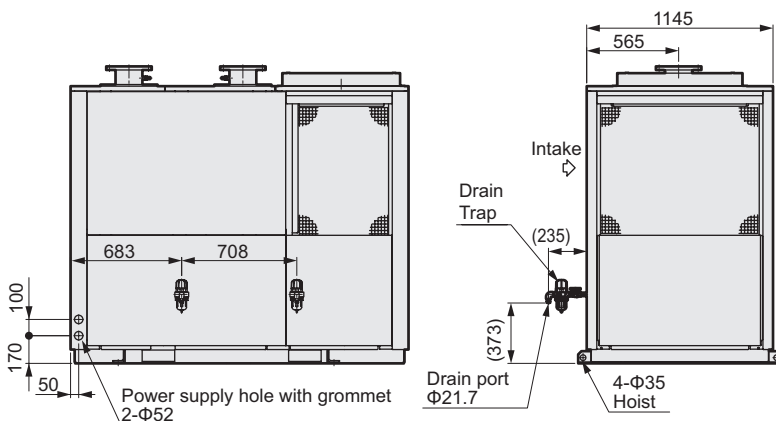
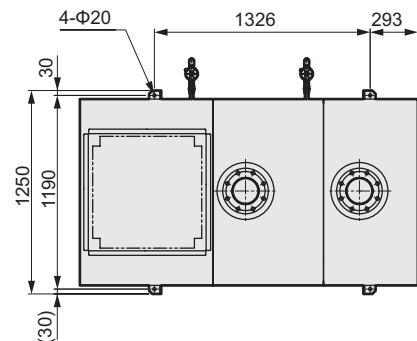


Note 1: The dew point display value is only for reference and not the actual dew point. Measure the secondary air with a dew cell to determine the actual dew point.

● GT9450



Details of control section



Note 1: The dew point display value is only for reference and not the actual dew point. Measure the secondary air with a dew cell to determine the actual dew point.



Refrigerated type dryer water cooling type

GT9000W Series

Standard inlet air type for air compressor directly connected

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	Treating flow rate m ³ /min(ANR) 50/60Hz (Note 2)	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
	Treating flow rate m ³ /min (Compressor intake 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 m ³ /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 AC200/200, 220V 50/60Hz							
Electrical specifications	Power consumption kW 50/60Hz (Note 5)	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)		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: This is an equivalent value of intake condition of air compressor at 32°C at atmospheric pressure and relative humidity of 75%.

Note 4: Contact CKD for performance guarantee of dew point.

Note 5: Power consumption and operating current are only reference values under rated conditions. These are not guaranteed values.

Note 6: The flange is a 10K flange.

How to order (water cooling type)

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

A Capacity code

B Option
Note 1

C Voltage
Note 2

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 packing
N1	Copper tube rust proof coating
C Voltage	
	200VAC
	220 VAC (only 60Hz standard)
	230VAC
	240VAC
	380VAC
	400VAC
	415VAC
	440VAC
	480VAC



Cautions for model No. selection

Note 1: Indicate options in alphabetical order.

Note 2: Always specify voltage for standard products in **C** as well e.g.) GT9090W-200VAC

Note 3: Option H3 is plywood packaging.

Note 4: Instruction manual and name plate are both in Japanese and English. However, withstanding pressure certificate (GT9240W and over) is only available in Japanese. Consult with CKD if it is required in English.

Note 5: Consult with CKD if product photo is required.

Note 6: Contact CKD for custom body panel color.

Selection guide

(1) Temperature correction 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 correction 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

When selecting using rated air capacity of each model.

Rated air capacity x (1) temperature correction coefficient x (2) inlet air pressure correction coefficient = Max. treating air flow rate

Conditions	Operating Conditions	Selecting conditions	Coefficient
Inlet air temperature	30 to 3°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

Calculate the treating air flow when using GT9150W by substituting the conditions above into the formula above.

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

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

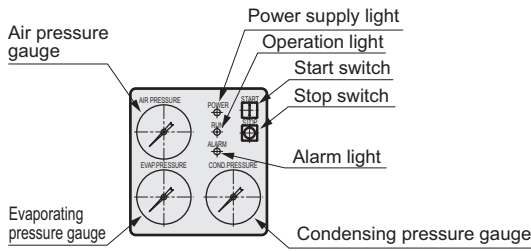
Note 1: Select a model in which the product of each coefficient does not exceed 1.3.

Note 2: Later for below pressure dew point 10°C consult with CKD.

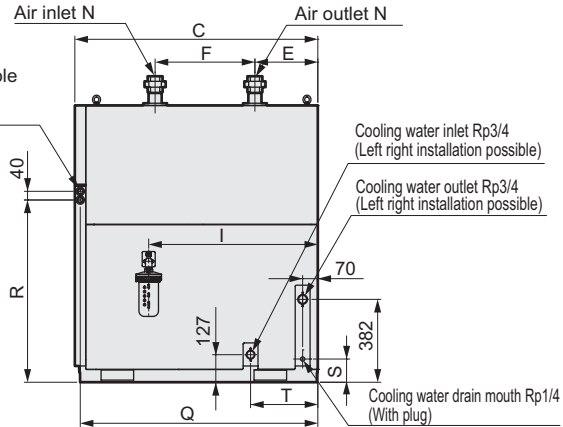
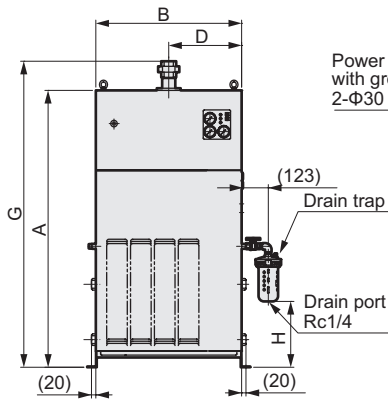
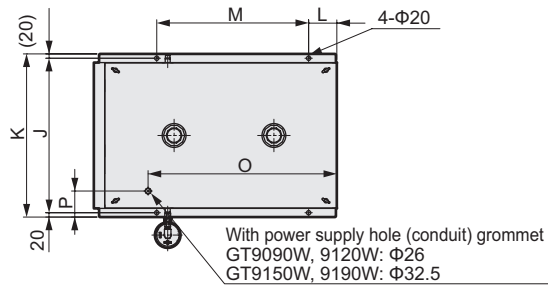
GT9000W Series

Dimensions

● GT9090W to GT9190W



Details of control section

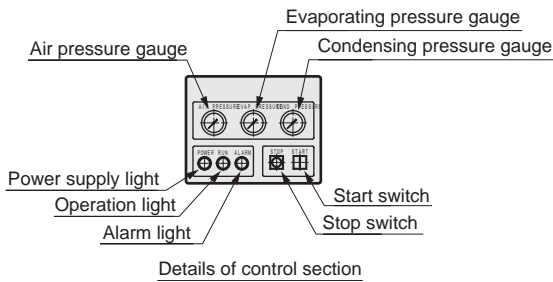


Note 1: Cooling water piping installation position can be chosen from left or right.
 Note 2: Drain trap can be installed either on the right or the left.

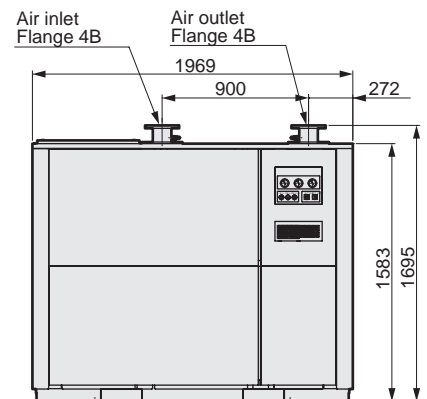
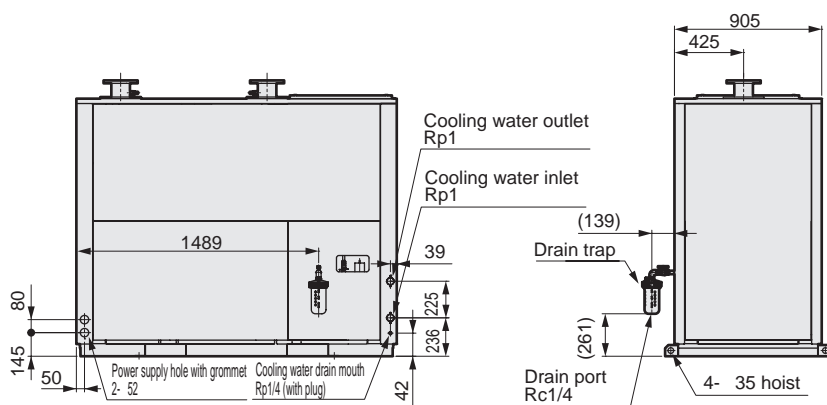
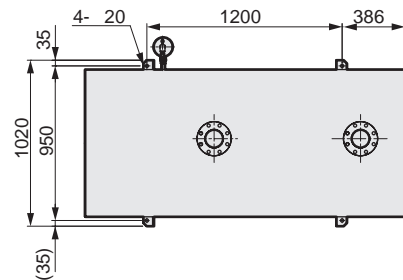
Model no.	A	B	C	D	E	F	G	H	I	J	K
GT9090W	1276	672	1120	336	290	460	1411	(303)	780	712	752
GT9120W	1276	672	1260	336	403	655	1375	(221)	295	712	752
GT9150W	1332	950	1290	475	296	720	1432	(221)	260	990	1030
GT9190W	1332	950	1290	475	226	860	1432	(221)	260	990	1030

Model no.	L	M	N	O	P	Q	R	S	T
GT9090W	130	700	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

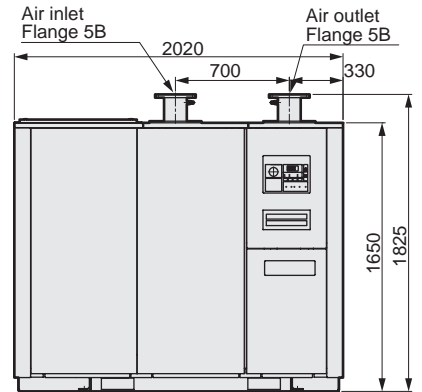
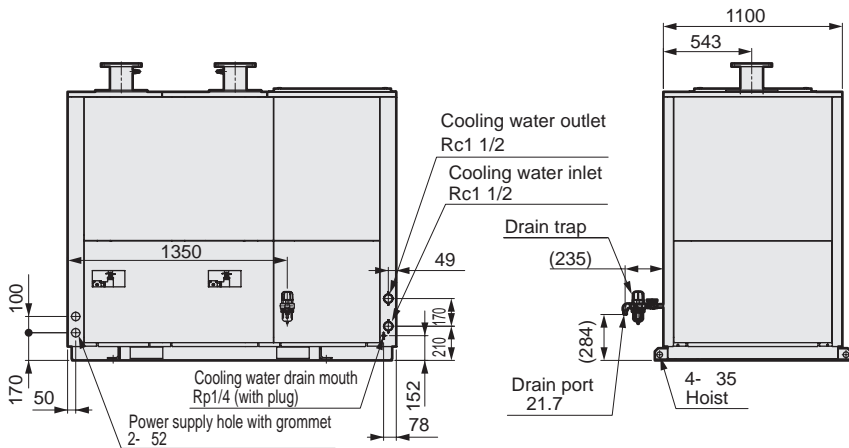
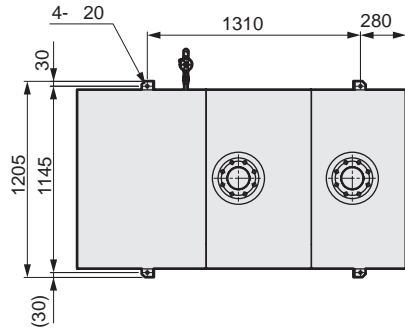
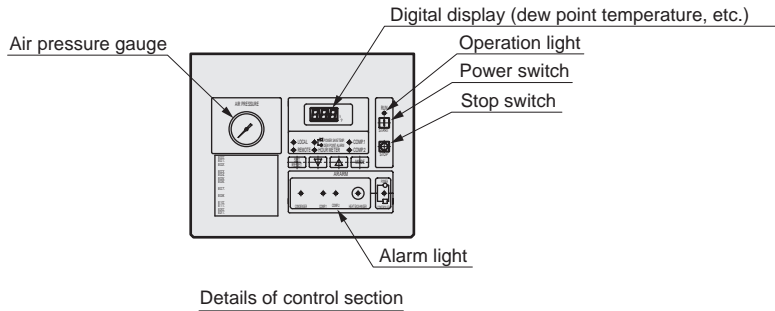


Details of control section



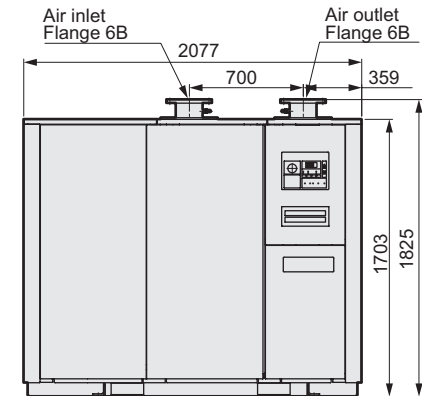
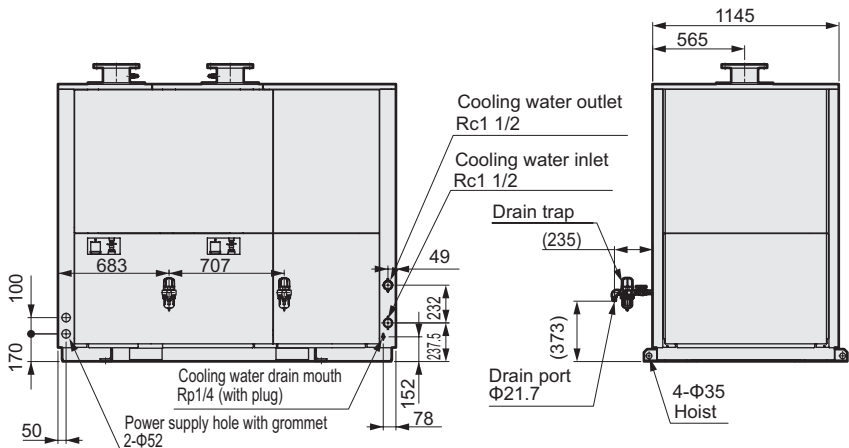
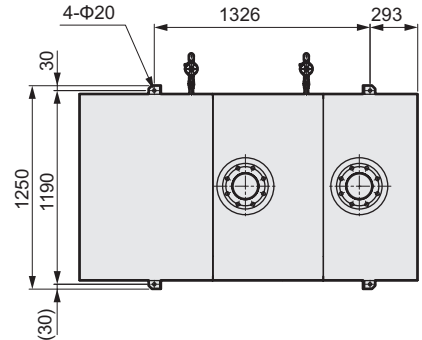
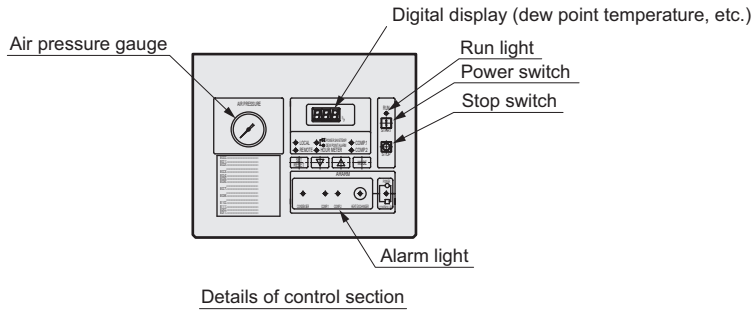
Dimensions

● GT9300W, GT9380W



Note 1: The dew point display value is only for reference and not the actual dew point. Measure the secondary air with a dew cell to determine the actual dew point.

● GT9450W



Note 1: The dew point display value is only for reference and not the actual dew point. Measure the secondary air with a dew cell to determine the actual dew point.



Refrigerated type dryer inverter control water cooling type

GT9000WV Series

Standard inlet air type for direct connection to the compressor

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	Treating flow rate m ³ /min(ANR) 50/60Hz (Note 2)	139.1	184.2
	Treating flow rate m ³ /min (Compressor intake 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 switching range °C	10 to 18 (with manual setting/outdoor air temperature interlock switching)		
Power supply		Three phase AC200/200, 220V 50/60Hz (Note 5)	
Electrical 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: This is an equivalent value of intake condition of air compressor at 32°C at atmospheric pressure and relative humidity of 75%.

Note 4: Contact CKD for performance guarantee of dew point.

Note 5: Maintain the interphase imbalance of the power voltage within ±2%.

Note 6: Power consumption and operating current are only reference values under rated conditions. These are not guaranteed values.

Note 7: The flange is a 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 packing
N1	Copper tube rust proof coating
C Voltage	
200VAC	
220VAC (only 60Hz standard)	
230VAC	
240VAC	
380VAC	
400VAC	
415VAC	
440VAC	
480VAC	



Cautions for model No. selection

- Note 1: Indicate options in alphabetical order.
 Note 2: Always indicate the voltage in section **C** even for standard models.
 e.g. GT9710WV-AC200V
 Note 3: Option H3 is plywood packaging.
 Note 4: Instruction manual and name plate are written in both Japanese and English. Withstanding pressure certificate is available only in Japanese.
 Contact CKD if required in English.
 Note 5: Consult with CKD if product photo is required.
 Note 6: Contact CKD for custom body panel color

Selection guide

(1) Temperature correction 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 correction 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

If applicable models are asked from rated air capacity in each model.

Rated air capacity x (1) temperature correction coefficient x (2) inlet air pressure correction coefficient = max. treating air flow rate

Conditions	Operating 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 conditions above into the formula above to obtain the treating air rate when using GT9710WV.

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

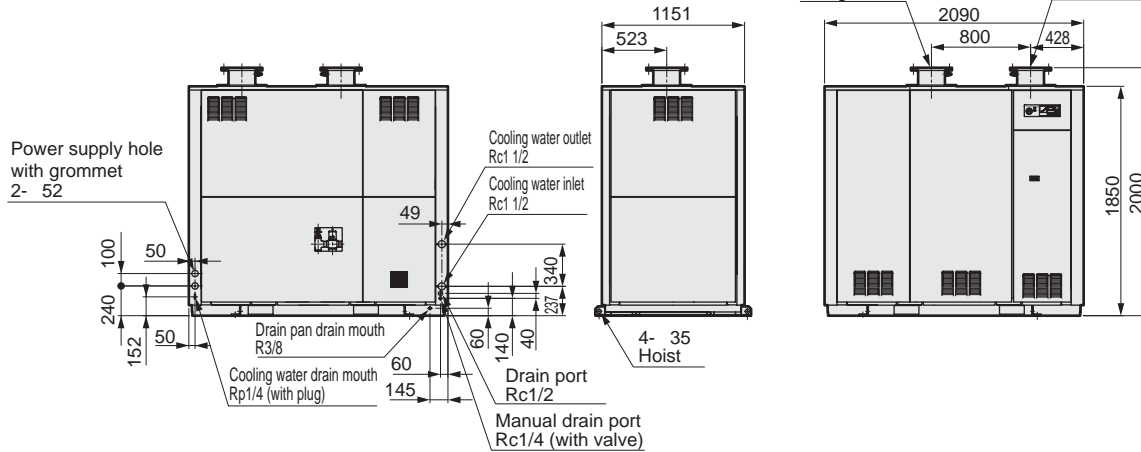
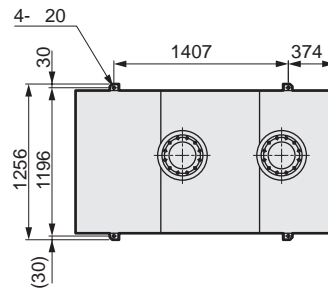
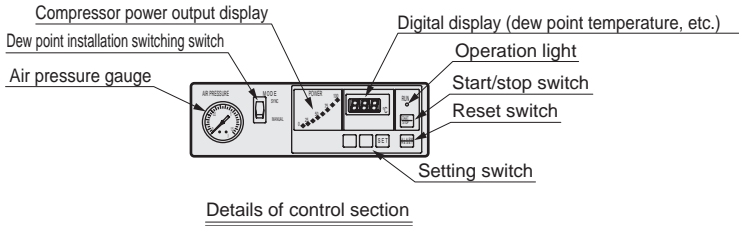
If the working air rate is less than this value, select that model.

Note: The product of each coefficient should not exceed 1.3 in the selection.

GT9000WV Series

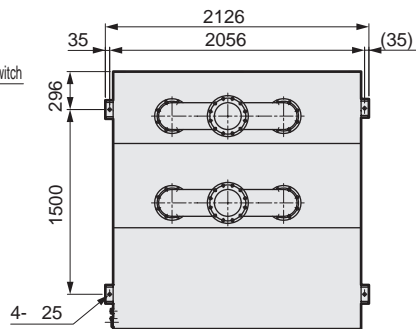
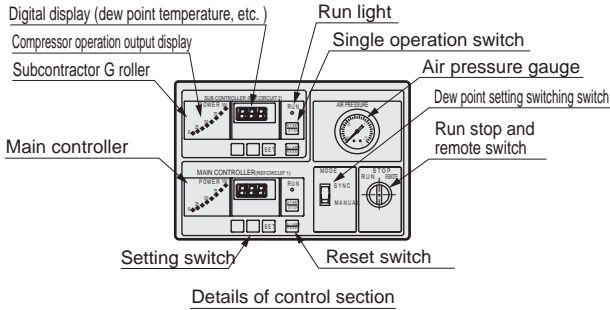
Dimensions

● GT9710WV

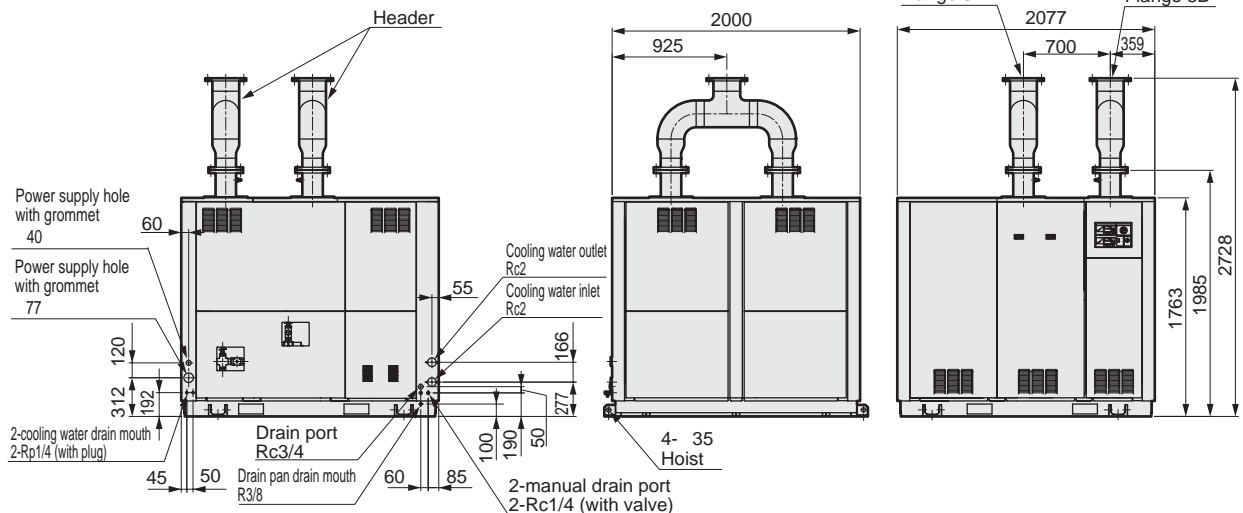


Note 1: The dew point display value is only for reference and not the actual dew point. Measure the secondary air with a dew cell to determine the actual dew point.

● GT9960WV



Note 1: The indications on the main controller and sub-controller are the same.

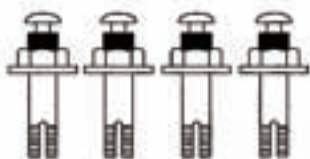


Note 2: Header, gasket and mounting bolts, nuts are not preinstalled.

Note 3: The dew point temperature displayed value is not selected actual dew point with reference. Measure the secondary air with a dew cell to determine the actual dew point.

Accessories (optional)

■ Anchor bolt



Anchor bolt: SUS 4 pc. per set

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

■ Companion flange

Inserting welding flange, hexagon head 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 / ₂ B	Flange 3B	Flange 4B	Flange 5B	Flange 6B
GT9120	GT9120W		○					
GT9150	GT9150W			○				
GT9190	GT9190W			○				
GT9240	GT9240W				○			
GT9300	GT9300W					○		
GT9380	GT9380W					○		
GT9450	GT9450W						○	
		GT9710WV						○
		GT9960WV						○



Safety precautions

Always read this section before starting use.

When designing and manufacturing a device using CKD products, the manufacturer is obligated to check that device safety mechanism, pneumatic control circuit, or water control circuit and the system operated by electrical control that controls the devices are secured. It is important to select, use, handle, and maintain the product appropriately to ensure that the CKD product is used safely. Be sure to observe the description given under DANGER, WARNING and CAUTION to assure safety of the equipment. Check that device safety is ensured, and manufacture a safe device.




WARNING

- 1** This product is designed and manufactured as a general industrial machine part. It must be handled by an operator having sufficient knowledge and experience in handling.
 - 2** Use this product in accordance of specifications.

This product must be used within its stated specifications. It must not be modified or machined. This product is intended for use as a general-purpose industrial device or part. It is not intended for use outdoors or for use under the following conditions or environment.
(Note that this product can be used when CKD is consulted prior to use and the customer consents to CKD product specifications. The customer must provide safety measures to avoid risks in the event of problems.)

 - ① Use for special applications including nuclear energy, rail way, aircraft, marine vessel, vehicle, medicinal devices, devices or applications coming into contact with beverages or foodstuffs, amusement devices, emergency cutoff circuits, press machines, brake circuits or safety devices or applications.
 - ② Use for application where life or assets could be adversely affected, and special safety measures are required.
 - 3** Observe corporate standards, regulations, etc., related to the safety of device design and control, etc.

ISO 4414, JIS B 8370 (pneumatic system rules)
Principles for pneumatic cylinder selection and use
Including High Pressure Gas Maintenance Law, Occupational Safety and Sanitation Laws, other safety rules, body standards and regulations, etc.
 - 4** Do not handle, pipe, or remove devices before confirming safety.
 - ① Inspect and service the machine and devices after confirming safety of the entire system related to this product.
 - ② Note that there may be hot or charged sections even after operation is stopped.
 - ③ When inspecting or servicing the device, turn off the energy source (air supply or water supply), and turn off power to the facility.
 - ④ When starting or restarting a machine or device that incorporates pneumatic components, make sure that system safety such as pop-out prevention measures are secured.
 - 5** Observe warnings and cautions on the pages below to prevent accidents.
- The safety cautions are ranked as "DANGER", "WARNING" and "CAUTION" in this section.

-  **DANGER:** When a dangerous situation may occur if handling is mistaken leading to fatal or serious injuries, or when there is a high degree of emergency to a warning.
-  **WARNING:** When a dangerous situation may occur if handling is mistaken leading to fatal or serious injuries.
-  **CAUTION:** When a dangerous situation may occur if handling is mistaken leading to minor injuries or physical damage.

Even items described under CAUTION may cause serious results.
In any case, important information that must be observed is explained.

Disclaimer

- 1** Term of warranty
"Warranty Period" is one (1) year from the first delivery to the customer.
- 2** Scope of warranty
In case any defect attributable to CKD is found during the Warranty Period, CKD shall, at its own discretion, repair the defect or replace the relevant product in whole or in part, according to its own judgement. In no event CKD shall never be liable for the costs in relation to and the damages resulting from the (un)installation of the product.
This Limited Warranty will not apply to:
 - (1) Product abuse/misuse contrary to conditions/environment recommended in its catalogs/specifications
 - (2) Failure caused by other than the delivered product
 - (3) Use other than original design purposes.
 - (4) Third-party repair/modification
 - (5) Failure caused by reason that is unforeseeable with technology put into practical use at the time of delivery
 - (6) Failure attributable to force majeure.In no event shall CKD be liable for business interruptions, loss of profits, personal injury, costs of delay or for any other special, indirect, incidental or consequential losses, costs or damages.
- 3** Compatibility confirmation
In no event shall CKD be liable for merchantability or fitness for a particular purpose, notwithstanding any disclosure to CKD of the use to which the product is to be put.



Safety precautions

Always read this section before starting use.
Refer to a 13 page for general precautions.

CKD refrigerated 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 repair of the product using nonstandard parts.

General matters

⚠ DANGER

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

⚠ CAUTION

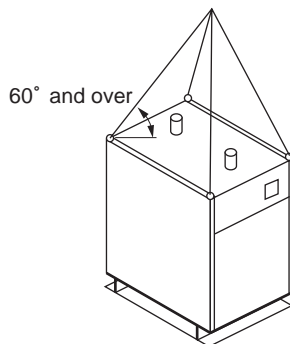
- This product must not be used for medical devices for caisson shields or breathing devices.
 - Failure to observe this could result in personnel injury.
- Do not use incorporated to transportation component such as a vehicle and a ship.
 - Vibration, etc., causes internal component damage by a cause.

Transportation

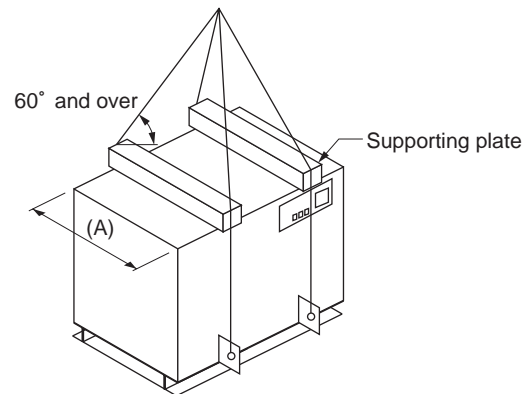
⚠ WARNING

- This product is filled with refrigerant (R-407C) (1kg or more for GT9960WV, 12kg or less for others)
Always follow respective laws and ordinances when transporting this product (by land, sea or air).
- During transport, this product shall not be laid on its side, and vibration and impact shall not be applied.
- Transport using a forklift or a crane.
- When suspending the product, use suspension hooks and rope, etc.

- Model no. : GT9090 to 9190
GT9090W to 9190W



- Model no. : GT9240 to 9450
GT9240W to 9450W
GT9710WV, GT9960WV



Supporting plate
The supporting plate (B) must be 100mm 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 in a location where it exceeds the max.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 in a confined space.

Location

⚠ CAUTION

- Install indoors.
- Install the product in a well-ventilated place free of dirt and dust.
- Do not install where it will be exposed to rain
- 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 18 page.)

Floor surface

⚠ CAUTION

- Install the product on a vibration-free floor.
- Install on a flat floor.
- Strengthen the foundation if it 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

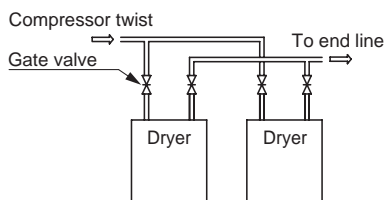
- Ensure the following space to provide good ventilation and make maintenance and inspection easier.
 - Model no.:GT9090 to 9190, GT9090W to 9190W
Front and either left or right plane: each 1000mm or over
 - Model no.: GT9240 to 9450, GT9240W to 9450W, GT9710WV, 9960WV
Front, rear and left plane: each 600mm or over

Piping

Air pipe method

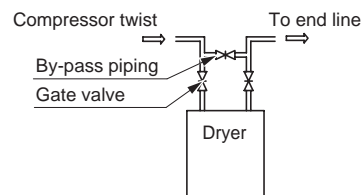
⚠ CAUTION

- Attach the two headers included with GT9960WC on the air intake and outlet using the enclosed gasket, bolt and nut.
- Pipe the air dryer as the the following diagram.
For 24 hour operation:
A parallel installation for emergencies is recommended.
Use a unit for normal operation and the other as a spare.



For intermittent operation:

Install the bypass piping for maintenance.



- Stainless steel or galvanized steel pipes (white pipes) are recommended for pipe materials. Flush pipes before connecting.
- Place a P type main line filter before the dryer when there is a significant risk of foreign particle entry, such as when using pipes already laid out, when using non-zinc plated carbon steel pipes and use of ordinary piping or when using an oil free air compressor

■ If the drain slopes upward or if piping is too long, drainage may not be discharged. Pipe with a downward slope so that drainage flows naturally.

■ 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

■ When connecting to the drain trap using a tube, the tube inner diameter must be 6mm or more and the length must be less than 5mm. Avoid piping sloping upwards and release the discharge end into the atmosphere.
(Series: GT9090 to 9240, GT9090W to 9240W)

■ Drain trap will be installed externally on the dryer. The default drain discharge interval is 25 to 37/30 sec(0.59MPa) but it should be adjusted to prevent the bowl from being filled with water coming from the needle valve of the drain trap. Also, the drain must be discharged after atmospheric release.
(Series: GT9300 to 9450, GT9300W to 9450W)

■ Drainage is periodically discharged using air pressure. Securely fix the tube so that it does not sway during drain discharge. Rising slope in the drain tube and or tubes that are too long may generate back pressure preventing the drain from being discharged. Place the tube so that the drain will flow naturally.
(Series: 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 inlet and outlet of the cooling water to pipe.

■ Provide a water discharge outlet or stop valve for maintenance.

■ Design piping so that pipe weight is not applied to the product.

■ Use piping that sufficiently withstands working pressure. Check that water does not leak from connections.

■ Stainless steel or galvanized steel pipes (white pipes) are recommended for pipe materials. Flush pipes before connecting.

■ Provide insulation if ambient temperature drops below 2°C when stopped during winter.

■ Cooling and replenishment water quality must comply with "Refrigerating and Air Conditioning Device Water Quality Guidelines" of the Japan Refrigeration and Air Conditioning Industry Association (JRA-GL-02). Refer to page 18 for weight.

■ Install a strainer around 20 mesh on the cooling water inlet.

■ Wash the condenser once or twice a year.

Wiring

⚠ CAUTION

■ Use withing the specified voltage.

■ Install an overload protection and earth leakage breaker onto the main power supply.

■ Energize 12 hours prior to operation to turn on the crank case heater that protects the compressor.

■ Connect the power cable, signal cable, control

cable and ground wire. 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 18)

Filter

⚠ CAUTION

- Refer to Intro 4 as a reference to select the filters used in the periphery of this dryer.

Air temperature

⚠ CAUTION

- Do not use this product beyond its maximum inlet air temperature and max. working pressure.
- 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

- Clean the condensor or air filter(standard on GT9240 to 9450) of the air cooling type once a month using air blow or a vacuum cleaner. Items such as compressors and fan motors may be damaged if not cleaned.
- Remove, disassemble and clean the drain trap once every week. If its parts become dirty, it will begin to malfunction causing drain to flow out to the secondary side.
(Series: GT9090 to 9450, GT9090W to 9450W)

- Press the test button once a day and check if the solenoid valve for drain trap operates properly.
(Series: GT9710WV, GT9960WV)
- Adhesion of dirt to the water cooling compressor may result not only in lower performance but failure of water type dryers. Check the condensor at least once every two years and clean it accordingly)
Connecting piping for washing is recommended when connecting cooling water piping.
Failure to clean the water-cooling compressor will make it difficult to clean the capacitor, and cause the compressor, etc., to fail.

Repair parts

⚠ CAUTION

- To ensure long use, regularly inspect wear and replace parts. See the instruction manual enclosed with the product for details.

Maintenance parts

⚠ CAUTION

- To ensure long use, regularly inspect maintenance parts and replace them based on the standard replacement cycle.
See the instruction manual enclosed with the product for details.

Other

⚠ WARNING

- This product is subject to the "Laws Related to the Collection and Destruction of Freon in Specific Products (Freon Collection and Destruction Laws)". Collect 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. This certificate must be kept in safekeeping while this system is in used.
(Model no.:GT9240 to 9450, GT9240W to 9450W, GT9710WV, 9960WV)
(Report to the labor standard administration office is no longer required.)

⚠ Cooling water of water cooling type air dryer

Observe the following precautions for cooling water for the water-cooled condenser in the refrigerating compressor. If the following water quality standards are not satisfied, performance may drop and condenser life could be reduced significantly.

- 1 Cooling water quality must comply with Refrigerating and Air Conditioning Device Water Quality Guidelines set forth by the Japan Society of Refrigerating and Air Conditioning Engineers.

Japan Refrigeration and Air Conditioning Industry Association

Descriptions	Chemical formula	Unit	CKD	Japan Refrigeration and Air Conditioning Industry Association
			Water cooling type Dryer Cooling water	Refrigeration air-conditioning component Quality the guidelines of water Cooling water system-Rotation type-rotation water (JRA-GL-02-1994)
			Water quality standard	Water quality standard
Vapor	-	pH(25°C)	6.5 to 8.2	6.5 to 8.2
Electric conductivity	-	mS/m(2°C) [μS/cm(2°C)]	0.2 to 80{2 to 800}	80 or less {800 or less }
Chloride ion	Cl-	mg/ ℓ (ppm)	200 or less	200 or less
Sulfate ion	SO4--	mg/ ℓ (ppm)	100 or less	200 or less
Acid consumption (pH4.8)	CaCO3	mg/ ℓ (ppm)	100 or less	100 or less
All hardness	CaCO3	mg/ ℓ (ppm)	200 or less	200 or less
Calcium hardness	CaCO3	mg/ ℓ (ppm)	150 or less	150 or less
Ionic silica	SiO2	mg/ ℓ (ppm)	50 or less	50 or less
Iron	Fe	mg/ ℓ (ppm)	0.5 or less	1.0 or less
Copper	Cu	mg/ ℓ (ppm)	0.3 or less	0.3 or less
Sulfide ion	S--	mg/ ℓ (ppm)	Not detected	Not detected
Ammonium ion	NH4+	mg/ ℓ (ppm)	1.0 or less	1.0 or less
Residual chloride	Cl	mg/ ℓ (ppm)	0.3 or less	0.3 or less
Free carbon	CO2	mg/ ℓ (ppm)	4.0 or less	4.0 or less
Stability index	-		6.0 to 7.0	6.0 to 7.0
Matson rate	HCO3-/SO4--		1.0 and over	
Hydrogen carbonate ion	HCO3-	mg/ ℓ (ppm)	-	
Oxygen volume		mg/ ℓ (ppm)	0.1 or less	
Aluminum	Al	mg/ ℓ (ppm)	0.2 or less	
Mangan	Mn	mg/ ℓ (ppm)	0.1 or less	
Nitric acid ion	NO3-	mg/ ℓ (ppm)	100 or less	
Sodium ion	Na+	mg/ ℓ (ppm)	20 or less	
	PO4---	mg/ ℓ (ppm)	2.0 or less	
	NH3	mg/ ℓ (ppm)	0.5 or less	
	Mn++	mg/ ℓ (ppm)	10 or less	
	H2S	mg/ ℓ (ppm)	0.05 or less	
Evaporation residue		mg/ ℓ (ppm)	50 or less	
Trubidity			2 degree or less	

- Do not use cooling water containing elements that could accumulate or sediment in the condenser or coolant containing corrosive elements.
 - Soften hard water before using.
- 2 Install the strainer of 20 mesh degree for cooling water inlet.
 - 3 Wash regularly.

⚠ Installation environment and air quality

Refrigerated type air dryer uses deoxidised phosphorous copper pipe for refrigerant and heat exchanger and if this copper corrodes it may result in leaks of refrigerant, failure and water coming out the compressed air outlet. There is a risk of injuries and other damage if copper used for wiring corrodes.

Condensation and drying taking place within the copper tube of the heat exchanger will concentrate the corrosive content withn the air on the surface of the copper tubing, exposing it to higher risk of corrosion if the air conntains corrosive materials. Please verify that the air taken in by the compressor is safe in addition to the condition the air dryer is placed. Damage caused by corrosion is not covered by the warranty.

There is a risk of corrosive gas such as NOx, SOx and CO2 being contained in factory exhaust so dryers and compressors needs to be places where it is not affected by it. Also, chemicals such as chlorene organic solvent, aldehyde and alcohol enters the dryer and becomes hydrolized, it may result in corrosion of the copper pipe.

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