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CKD

OWNER/OPERATOR MANUAL

REFRIGERATED (COMPRESSED) AIR DRYER
Xeroaqua G-Series

GT7055W
GT7075W
GT7095W
GT7120W
GT7150W
GT7200W
GT7250W
GT7300W
GT7400W
GT7480W
GT7710W
GT7960W

- Be sure to read this manual before operating your dryer.
- Keep this manual within the reach of an operator all the time.

C K D Corporation

'06-08 4th edition SM-12390-A

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Safety instructions

This dryer must be operated by a person who has basic knowledge of electric, compressed air,liquid, piping, refrigerant, etc. We are not responsible for any accidents caused when a person who does not have the basic knowledge or who is not well trained installation, operation, repair, etc.
Improper operation may cause poor performance of the dryer or may cause accidents.
We applied a variety of safety measures to our dryers, but improper handling of dryers could cause accidents. Thus, be sure to read and fully understand this manual before using them.
"Keep this manual together with the dryer".

Caution for safety

Cautions at operation are indicated in the following two ways.

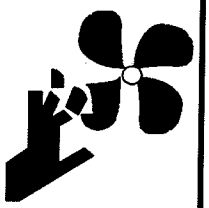
WARNING **CAUTION**

WARNING used when improper handling could kill or seriously harm operators

CAUTION used when improper handling could harm operators or damage objects

WARNING: ROTATION

★The fan may start rotating suddenly and may be harmful.
Do not put your hands or objects into the fan area.
●Be sure to turn off the power before inspection.



WARNING: ELECTRICAL SHOCK

★Power supply terminal box, switches, etc. may cause you electrical shock.
●Be sure to turn off the power before inspection. Do not operate the dryer with your wet hands.

CAUTION: HIGH TEMPERATURE

★The dryer is hot for a while after shut down the dryer.
●Be sure to turn off the power and to confirm that dryer becomes cool before inspection.

CAUTION: FOOT HOLD

★You could fall if you climb on the panel.
●Do not climb on the panel.

EARTH CONNECTION

★Be sure to connect earth to prevent electrical shock.

This dryer is industrials. Be sure to fully attend to using the dryer.

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Table of Contents

1. Introduction

Thank you very much for purchasing our refrigerated air dryer, Xeroaqua G Series.

This manual explains basic points of operation to have our dryer performs at their best.

Be sure to read this manual before using your dryer.

Keep this manual together with the dryer.

2. Warranty

Assure next contents.

(1) **Warranty period**

One year from the date of purchase (date on delivery or invoice date).

(2) **Repair free of charge (Note: applied dryers to use in Japan)**

a. We will repair your dryer free of charge during the warranty period if it breaks down and is used properly as indicated in this manual and labels on your dryer.

b. We will charge you repair service fee even during our warranty period if the following apply.

* breakdown or damage due to improper operation, repair, or remodeling.
* breakdown or damage due to relocation after installation, drop, or transportation damage.
* breakdown or damage due to transportation by automobile, ship, etc.
* breakdown or damage due to fire, earthquake, flood, thunder, other natural disaster, pollution, salt hazard, gas hazard, abnormal voltage, abnormal water pressure or quality, congelation, or other external causes.
* breakdown or damage not caused by your dryer.
* travel expense

Warranty valid is only in Japan.

(3) **After warranty expiration**

Repair costs are needed for you.

(4) **Periodical inspection (charge)**

Ask us for this service.

(5) **No second compensations**

Our warranty policy is covered only for our products. We do not compensate for other equipments, products or compensation for business what are caused by this machine's accidents or failures. Please protect second compensations by your warning systems or nonlife insurances.

3. Cautions

1) Please use the dryer in the specification of operation range.
   *Operation may stop or the product's life time shorten.
2) Turn on the power supply 4 hours before operation.(GT7150W,7200W,7250W,7300W,7400W,7480W)
   *A crank case heater is built in the dryer to protect the refrigeration compressor.
3) Before operation, check pressures by these refrigerant pressure gauges.
   If the temperature transrated from refrigerant pressure gages are almost same as ambient temperature, it is determined.
   *If these indications are lower than ambient temperature, it is possible to leak refrigerant gas.
   Thus, turn off the power supply and referring to trouble shooting.
4) Check the indicator of dew point during operation.
   *If the green lamp of the indicator turns on, operation will be stopped.
5) Do not turn on and turn off the dryer frequently more than 6 times an hour.
   Keep it running 5 minutes or more before turning it off and hold restarting it on 5 minutes or longer.
   *Break-down or shorter life time of the product may result.
6) This dryer has a security function for momentary power failure what is produced by lighting ETC. Reactivate the dryer immediately after power recovery, if instantaneous power failure is less than 0.5 seconds. Also, reactivate the dryer 3 minutes later after power recovery, if instantaneous power failure is less than 2 seconds.
   Do not operate with 5 minutes after stop this dryer, because the restart prevention circuit is operated.
7) Remote start terminal D1-D2 is alternate non-voltage input.
   (GT7055W,7075W,7095W,7120W,7150W,7200W,7250W)
   Remote start terminal D1-D2 and remote stop terminal D3-D4 are momentary non-voltage input.(GT7300W,7400W,7480W,7710W,7960W)
8) Do not touch any parts, wires, terminals or piping in side of the dryer.
   *Causes of an electric shock or a fire.
9) Do not remodel this dryer.
   *Break-down or shorter life time of the product may result. If you did, the warranty is expired.
10) If emergency stop occurs during operation, remove the cause of abnormal conditions referring to the trouble shooting.
    *If the emergency stop occurs repeatedly, this may cause the dryer to malfunction.
11) Discharge drain and sludge accumulated in the heat exchangers and drain pipes when you turn off the dryer.
    Thus, turn on the manual drain switch 10 second or longer and open the manual drain valve 10 second or longer.
12) Please open the manual drain valve once or twice of about ten seconds a week, because contaminant that is accumulated in the pressure vessel need to be exhausted.
13) Please do not operate a local-remote change switch during operation.
    *It becomes the cause of failure or a life fall.
14) Do not install any water cut relay on the cooling water inlet or outlet lines which puts the dryer in the emergency stop state using the water cut signal.
    If installed, the water control valve in the dryer may be opened fully depending on the operating conditions.
    *If the emergency stop by water cut signal.
15) Use coolant to prevent cooling water for untifreezing during winter.
    *This could cause break-down.
16) Please install a strainer in a cooling water inlet.
17) Please be sure to wash a condenser twice in 1 time per year.
18) Follow the standards of water quality established by next page for coolant water and the supply.
19) Do not use the dryer for pneumatic caisson shield or respiratory medical equipment.
    *It could cause an accident includes injury.
20) Do not use the dryer for transportation devices such as automobile, ship etc.
    *Vibration could be a cause of break down of the internal components.

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Water quality standard

Parameter	Chemical formula	Unit	Water quality standard
pH	—	pH(25℃)	6.5 to 8.2
Specific electric conductivity	—	mS/m(25℃){μS/cm(25℃)}	0.2 to 80{2 to 800}
Chloride ions	Cl−	mg/ℓ (ppm)	200 or less
Sulphate ion	SO4−−	mg/ℓ (ppm)	100 or less
Alkalinity (pH4.8)	CaCO3	mg/ℓ (ppm)	100 or less
Total hardness	CaCO3	mg/ℓ (ppm)	200 or less
Calcium hardness	CaCO3	mg/ℓ (ppm)	150 or less
Silica	SiO2	mg/ℓ (ppm)	50 or less
Iron	Fe	mg/ℓ (ppm)	0.5 or less
Copper	Cu	mg/ℓ (ppm)	0.3 or less
Sulfid ion	S−−	mg/ℓ (ppm)	No detecting
Ammonium ion	NH4+	mg/ℓ (ppm)	1.0 or less
Residual chlorine	Cl	mg/ℓ (ppm)	0.3 or less
Free carbon	CO2	mg/ℓ (ppm)	4.0 or less
Stability index	—		6.0 to 7.0
Mattoson ratio	HCO3−/SO4−−		1.0 or more
Hydro carbon ion	HCO3−	mg/ℓ (ppm)	—
Oxygen content		mg/ℓ (ppm)	0.1 or less
Aluminum	Al	mg/ℓ (ppm)	0.2 or less
Manganese	Mn	mg/ℓ (ppm)	0.1 or less
Nitrate ion	N03−	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
Residue on evaporation		mg/ℓ (ppm)	50 or less
Turbidity			2 degrees or less

- Do not use the cooling water containing the ingredient which may deposit in a condenser or cooling-water piping, and may precipitate, or an ingredient with corrosive.
- Use hard water after performing soft water-ized processing.

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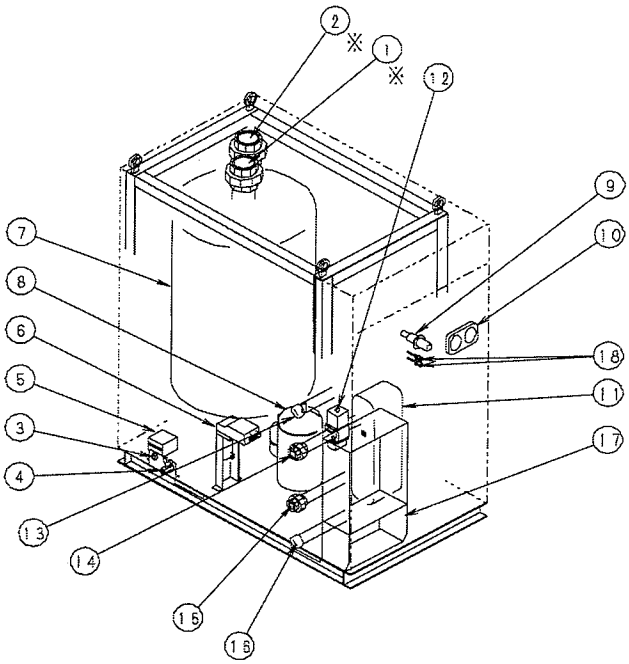
4. Component locations

4.1 Structure

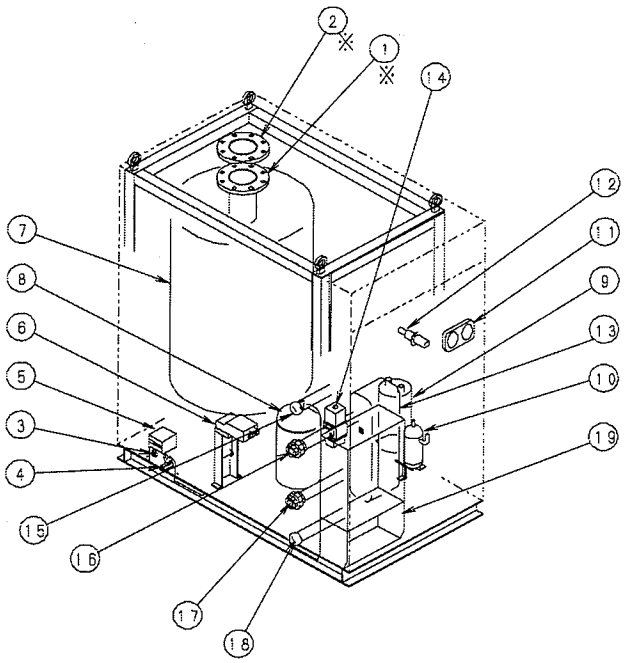
4.1.1 GT7055W,7075W,7095W,7120W



No.	PARTS	Q'TY	REMARK
18	SERVICE VALVE	2	
17	CONTROL BOX	1	
16	OUTLET FOR WASHING PORT	1	WITH CAP
15	COOLING WATER INLET	1	WITH UNION
14	COOLING WATER OUTLET	1	WITH UNION
13	INLET FOR WASHING PORT	1	WITH CAP
12	WATER REGULATING VALVE	1	
11	CONDENSER	1	
10	REFRIGERANT PRESSURE GAUGE	1	
9	CAPACITY CONTROL VALVE	1	
8	COMPRESSOR	1	
7	HEAT EXCHANGER	1	
6	DRAIN SENSOR	1	
5	SOLENOID VALVE	1	
4	MANUAL DRAIN OUTLET	1	WITH STOP VALVE
3	DRAIN OUTLET	1	
2	AIR OUTLET	1	
1	AIR INLET	1	

※ Air inlet and outlet
GT7055W,7075W : Rc2(Union)
GT7095W,7120W : $2^{1}/_{2}$B 10K Flange

4.1.2 GT7150W,7200W,7250W



No.	PARTS	Q'TY	REMARK
19	CONTROL BOX	1	
18	OUTLET FOR WASHING PORT	1	
17	COOLING WATER INLET	1	
16	COOLING WATER OUTLET	1	WITH CAP
15	INLET FOR WASHING PORT	1	WITH UNION
14	WATER REGULATING VALVE	1	WITH UNION
13	CONDENSER	1	WITH CAP
12	REFRIGERANT PRESSURE GAUGE	1	
11	CAPACITY CONTROL VALVE	1	
10	OIL SEPARATOR	1	
9	ACCUMULATOR	1	
8	COMPRESSOR	1	
7	HEAT EXCHANGER	1	
6	DRAIN SENSOR	1	
5	SOLENOID VALVE	1	
4	MANUAL DRAIN OUTLET	1	WITH STOP VALVE
3	DRAIN OUTLET	1	
2	AIR OUTLET	1	
1	AIR INLET	1	

※ Air inlet and outlet
GT7150W,7200W : 3B 10K Flange
GT7250W : 4B 10K Flange

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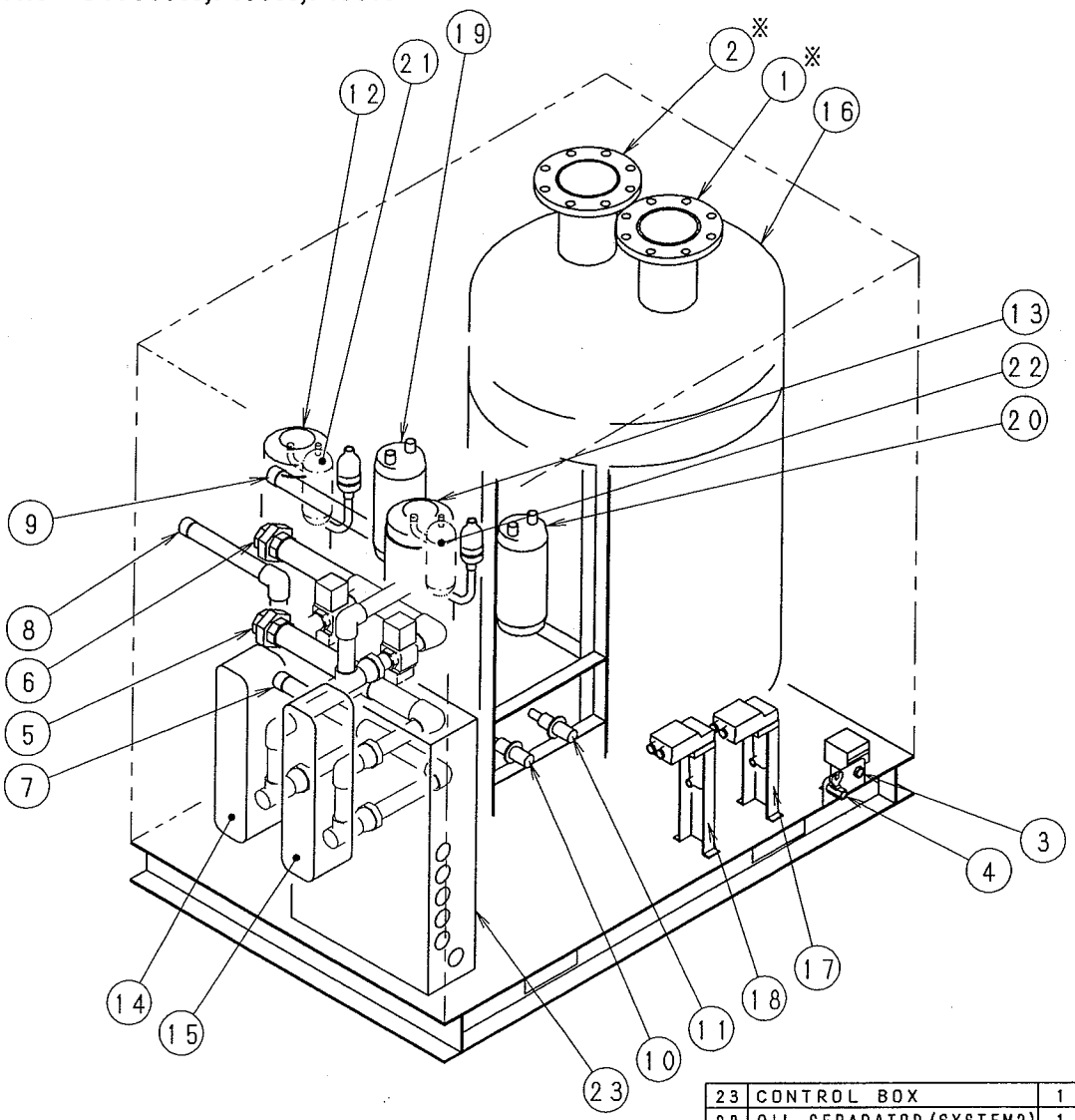
4.1.3 GT7300W,7400W,7480W



No.	PARTS	Q'TY	REMARK
23	CONTROL BOX	1	
22	OIL SEPARATOR (SYSTEM2)	1	
21	OIL SEPARATOR (SYSTEM1)	1	
20	ACCUMULATOR (SYSTEM2)	1	
19	ACCUMULATOR (SYSTEM1)	1	
18	WATER LEVEL SENSOR	1	OVERFLOW
17	WATER LEVEL SENSOR	1	DRAIN OUTLET
16	HEAT EXCHANGER	1	
15	CONDENSER (SYSTEM2)	1	
14	CONDENSER (SYSTEM1)	1	
13	COMPRESSOR (SYSTEM2)	1	
12	COMPRESSOR (SYSTEM1)	1	
11	CAPACITY COTROL VALVE (SYSTEM2)	1	
10	CAPACITY COTROL VALVE (SYSTEM1)	1	
9	INLET FOR WASHING PORT (SYSTEM2)	1	
8	INLET FOR WASHING PORT (SYSTEM1)	1	
7	OUTLET FOR WASHING PORT	1	
6	COOLING WATER OUTLET	1	
5	COOLING WATER INLET	1	
4	MANUAL DRAIN OUTLET	1	Rc1/2
3	DRAIN OUTLET	1	Rc1/2
2	AIR OUTLET	1	
1	AIR INLET	1	

※Air inlet and outlet

GT7300W	: 4B	10K Flange
GT7400W,7480W	: 6B	10K Flange

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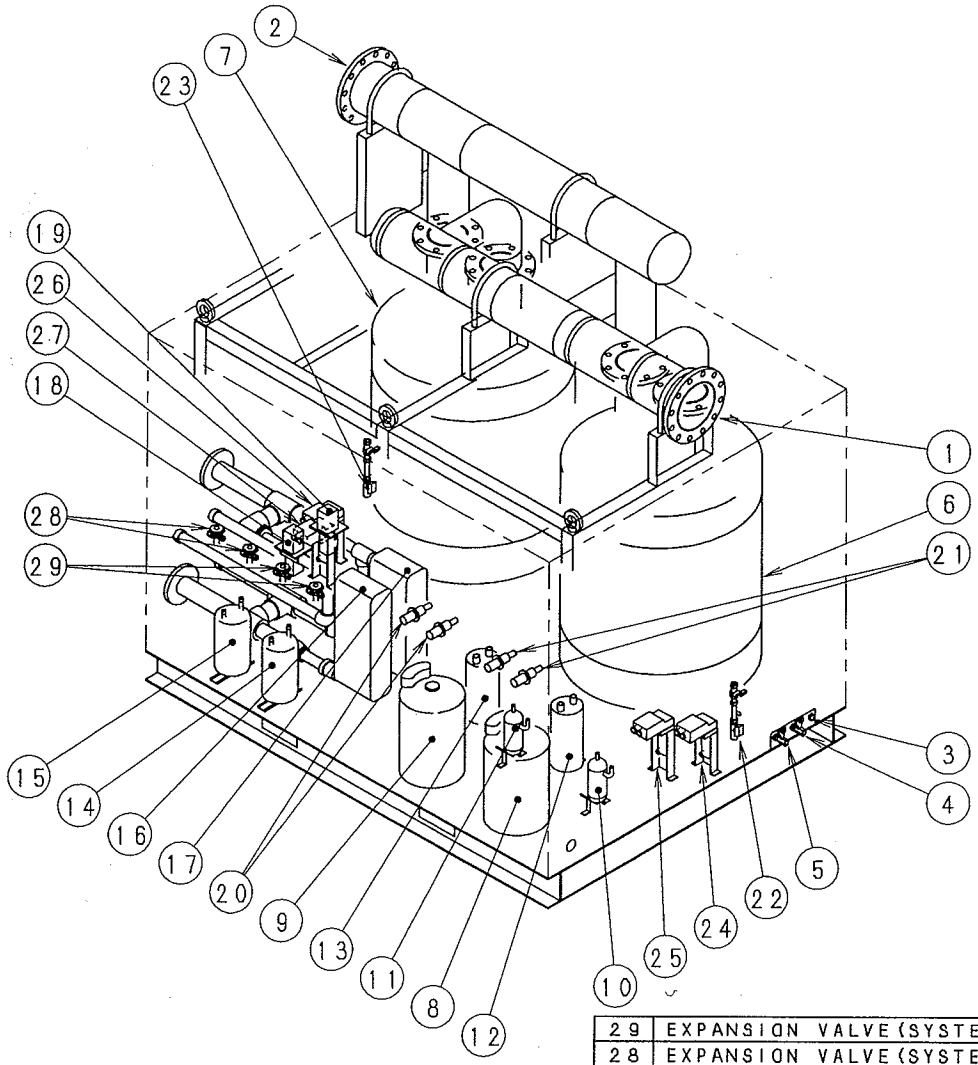
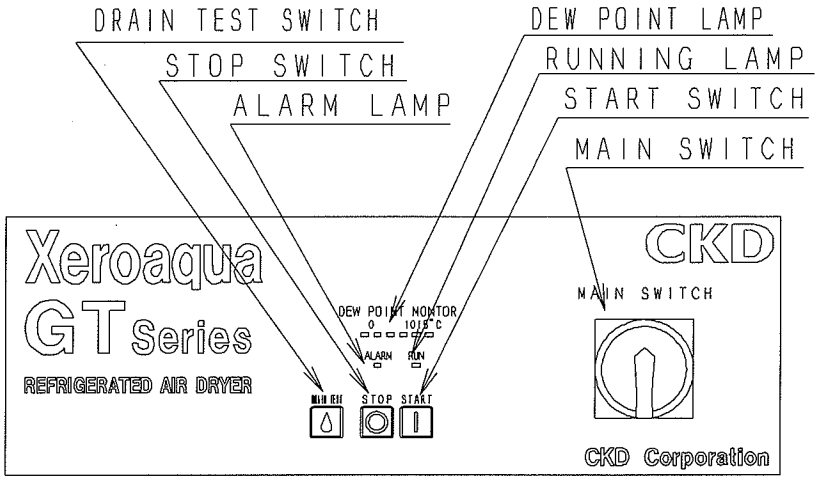
4.1.4 GT7710W,7960W



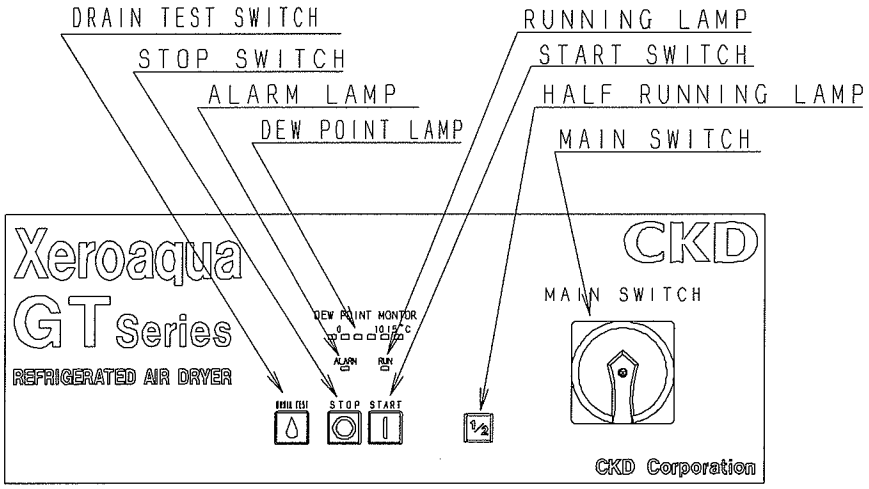
No.	PARTS	Q'TY	REMARK
29	EXPANSION VALVE (SYSTEM2)	2	
28	EXPANSION VALVE (SYSTEM1)	2	
27	WATER LEVEL SENSOR	1	OVERFLOW S002
26	WATER LEVEL SENSOR	1	DRAIN OUTLET S001
25	WATER LEVEL SENSOR	1	OVERFLOW S004
24	WATER LEVEL SENSOR	1	DRAIN OUTLET S003
23	SOLENOID VALVE	1	DRAIN OUTLET YV01
22	SOLENOID VALVE	1	DRAIN OUTLET YV02
21	CAPACITY CONTROL VALVE (SYSTEM2)	2	
20	CAPACITY CONTROL VALVE (SYSTEM1)	2	
19	WATER REGULATING VALVE (SYSTEM2)	1	
18	WATER REGULATING VALVE (SYSTEM1)	1	
17	CONDENSER (SYSTEM2)	1	
16	CONDENSER (SYSTEM1)	1	
15	RECEIVER (SYSTEM2)	1	
14	RECEIVER (SYSTEM1)	1	
13	ACCUMULATOR (SYSTEM1)	1	
12	ACCUMULATOR (SYSTEM2)	1	
11	OIL SEPARATOR (SYSTEM1)	1	
10	OIL SEPARATOR (SYSTEM2)	1	
9	COMPRESSOR (SYSTEM1)	1	M01
8	COMPRESSOR (SYSTEM2)	1	M02
7	HEAT EXCHANGER (SYSTEM1)	1	
6	HEAT EXCHANGER (SYSTEM2)	1	
5	MANUAL DRAIN OUTLET (SYSTEM2)	1	Rc1/2
4	MANUAL DRAIN OUTLET (SYSTEM1)	1	Rc1/2
3	DRAIN OUTLET	1	Rc1/2
2	AIR OUTLET	1	BB 10K FLANGE
1	AIR INLET	1	BB 10K FLANGE

4.2 Operation panel

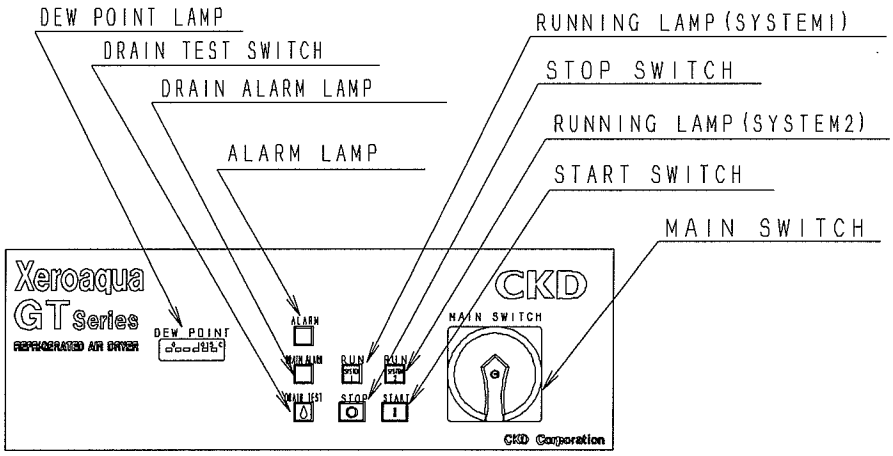
4.2.1 GT7055W,7075W,7095W,7120W



4.2.2 GT7150W,7200W,7250W

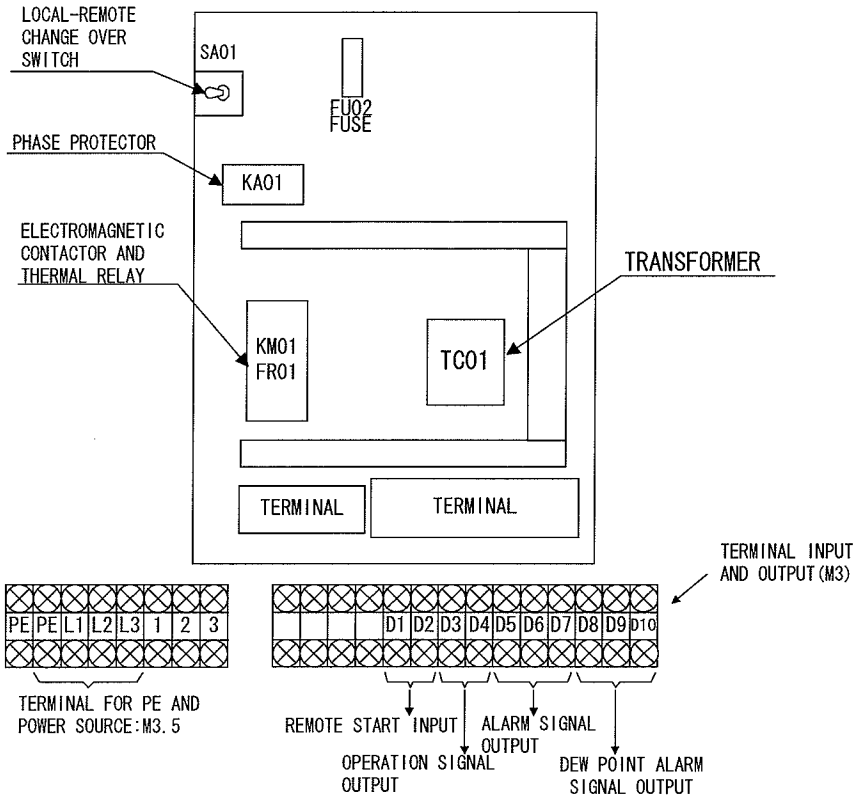


4.2.3 GT7300W,7400W,7480W,7710W,7960W

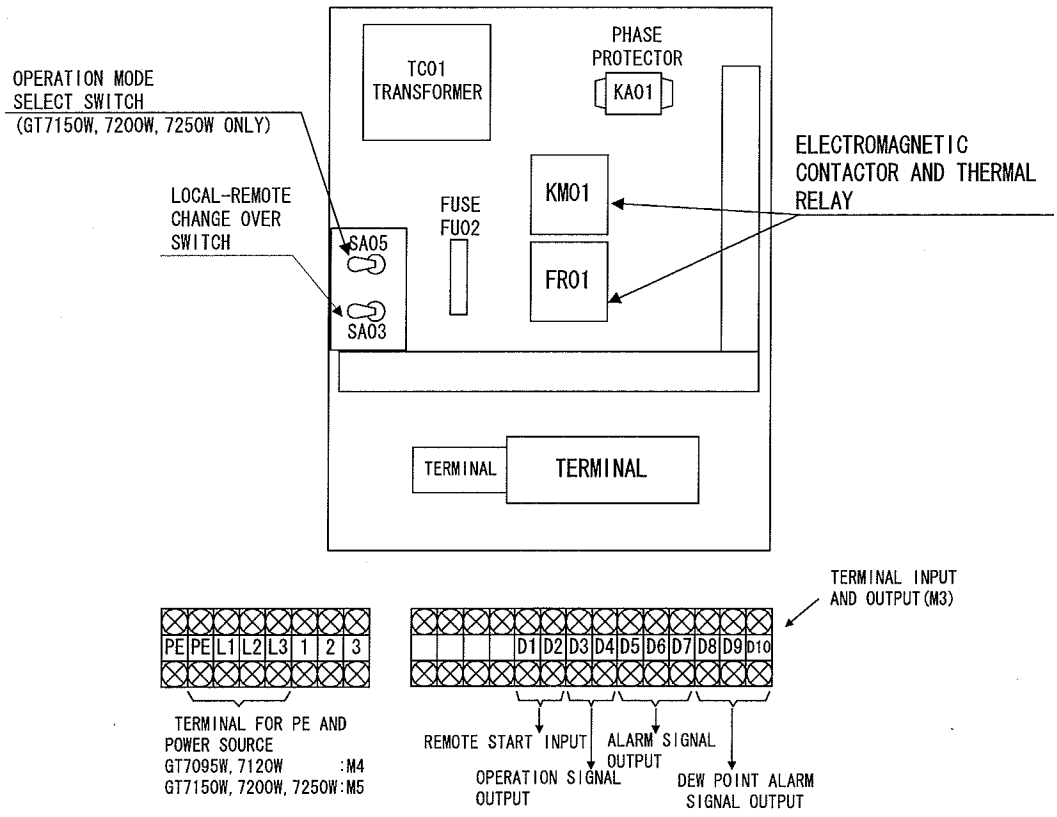


4.3 Electric box

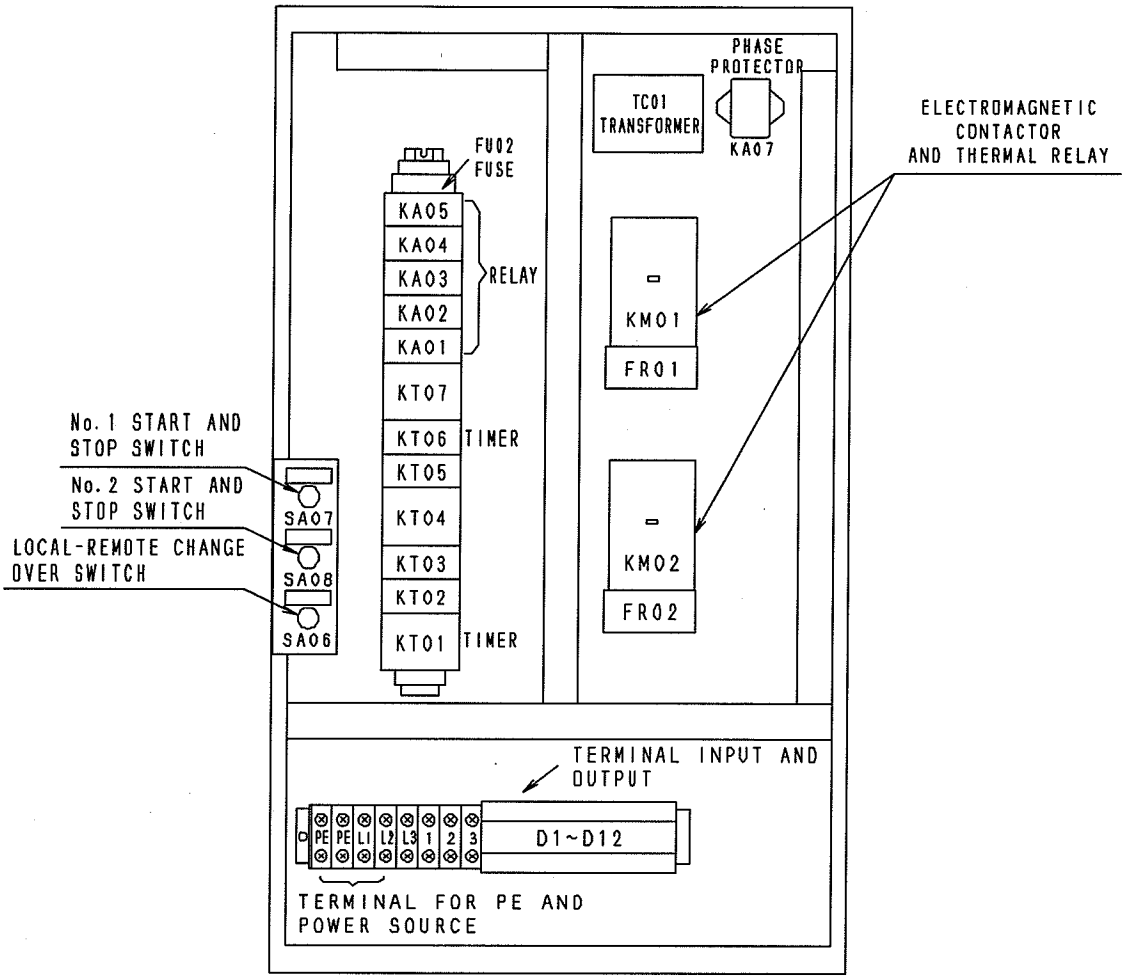
4.3.1 GT7055W,7075W



4.3.2 GT7095W,7120W,7150W,7200W,7250W



4.3.3 GT7300W,7400W,7480W



4.3.4 GT7710W,7960W

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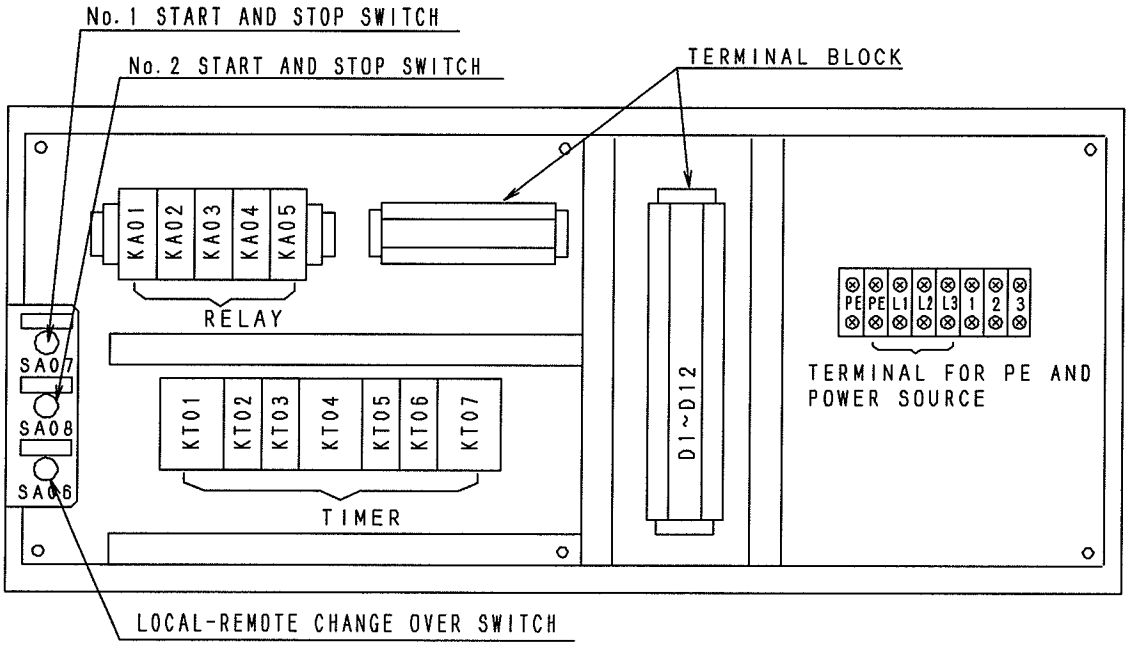
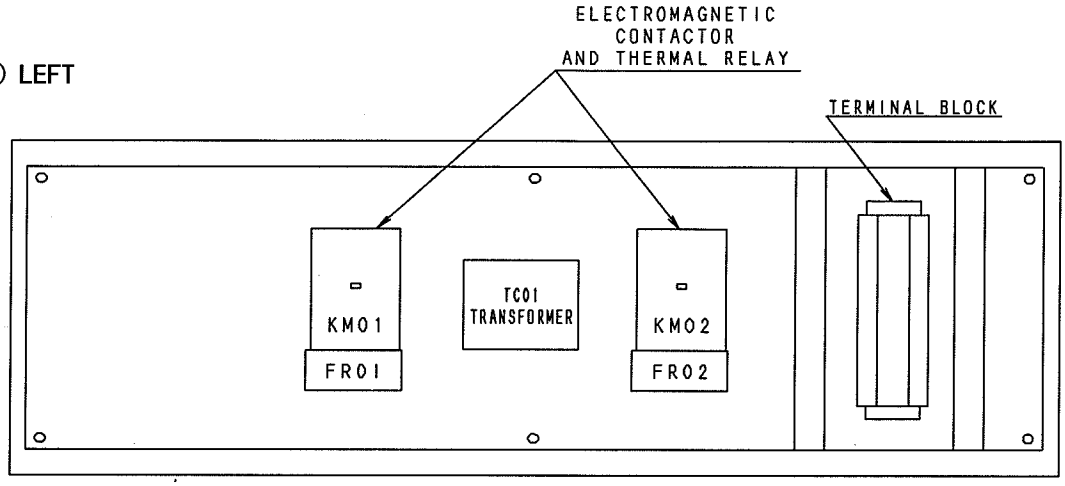


② LEFT



5. Description

1) Air circuit

There is a precooler, an evaporator and a reheater in this heat exchanger. After warm and moisturized compressed air is cooled in the precooler, it goes into the evaporator.

In the evaporator, the compressed air is cooled to the dew point temperature by heat exchanging with cold fleon gas.

Cooled and dehumidified compressed air goes into the reheater, then it so warmed and dried by the reheater and is changed to warm and dry air.

2) Refrigerant circuit

High-temperature and high-pressure fleon gas produced by the compressor are cooled and condensed in the condenser to make high pressure refrigerant liquid. This refrigerant liquid is decompressed in a capillary tube or expansion valve to be low-temperature and low pressure liquid.

This refrigerant liquid exchange heat with warm and wet compressed air in the evaporater. Then, that liquid cooles compressed air by vapourization heat of refrigerant evaporating, refrigerant gas returns to the refrigerant compressor again.

3) Drain circuit

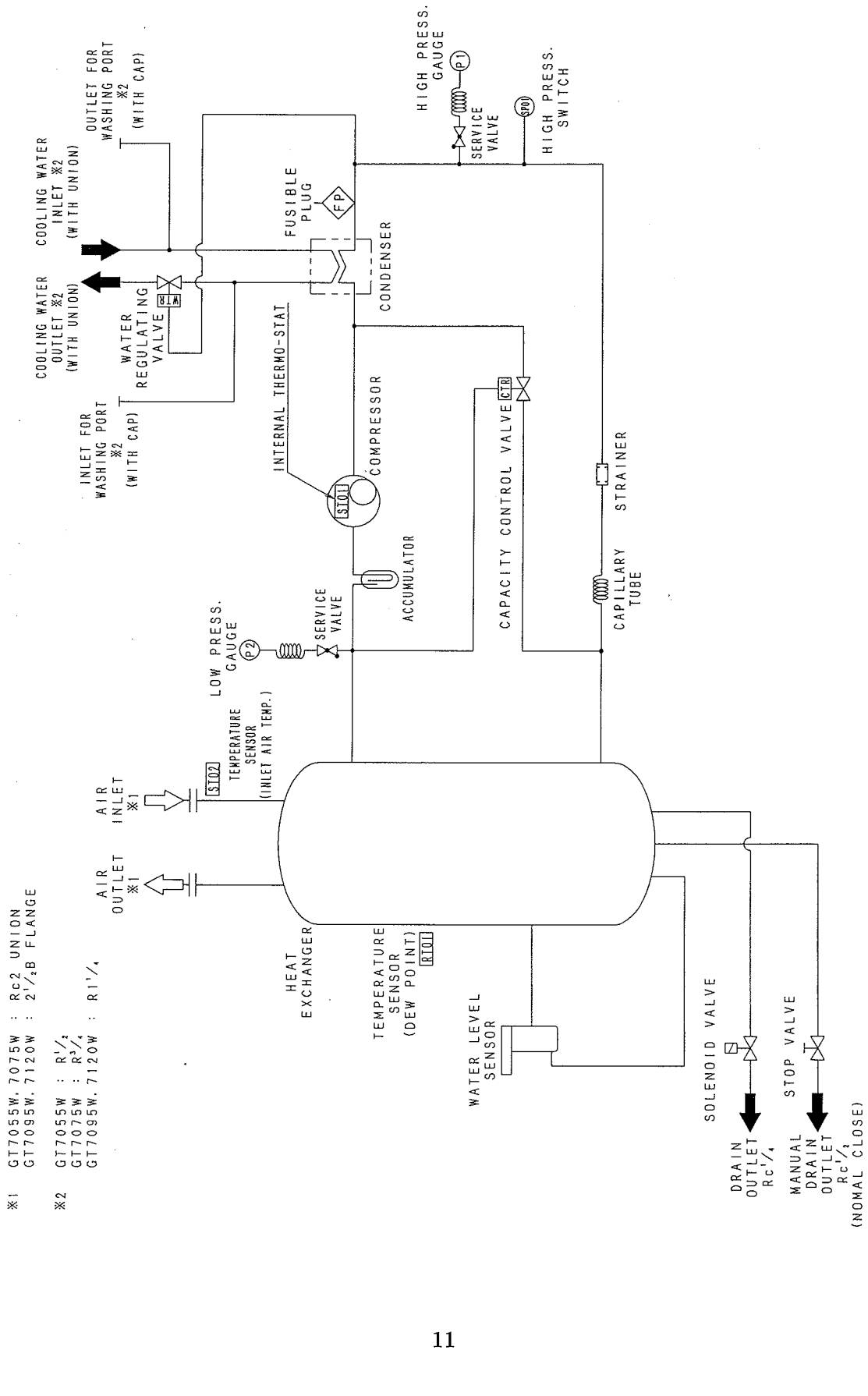
Drain becomes water vapor in compressed air that is cooled in the evaporator. Drain is accumulated at the lower portion of the heat exchanger.

Drain accumulated in the heat exchanger is regularly discharged compulsorily by air pressure when the solenoid valve is on.

Also, this dryer has manual drain valve attached.

5.1 System diagram

5.1.1 GT7055W,7075,7095W,7120W



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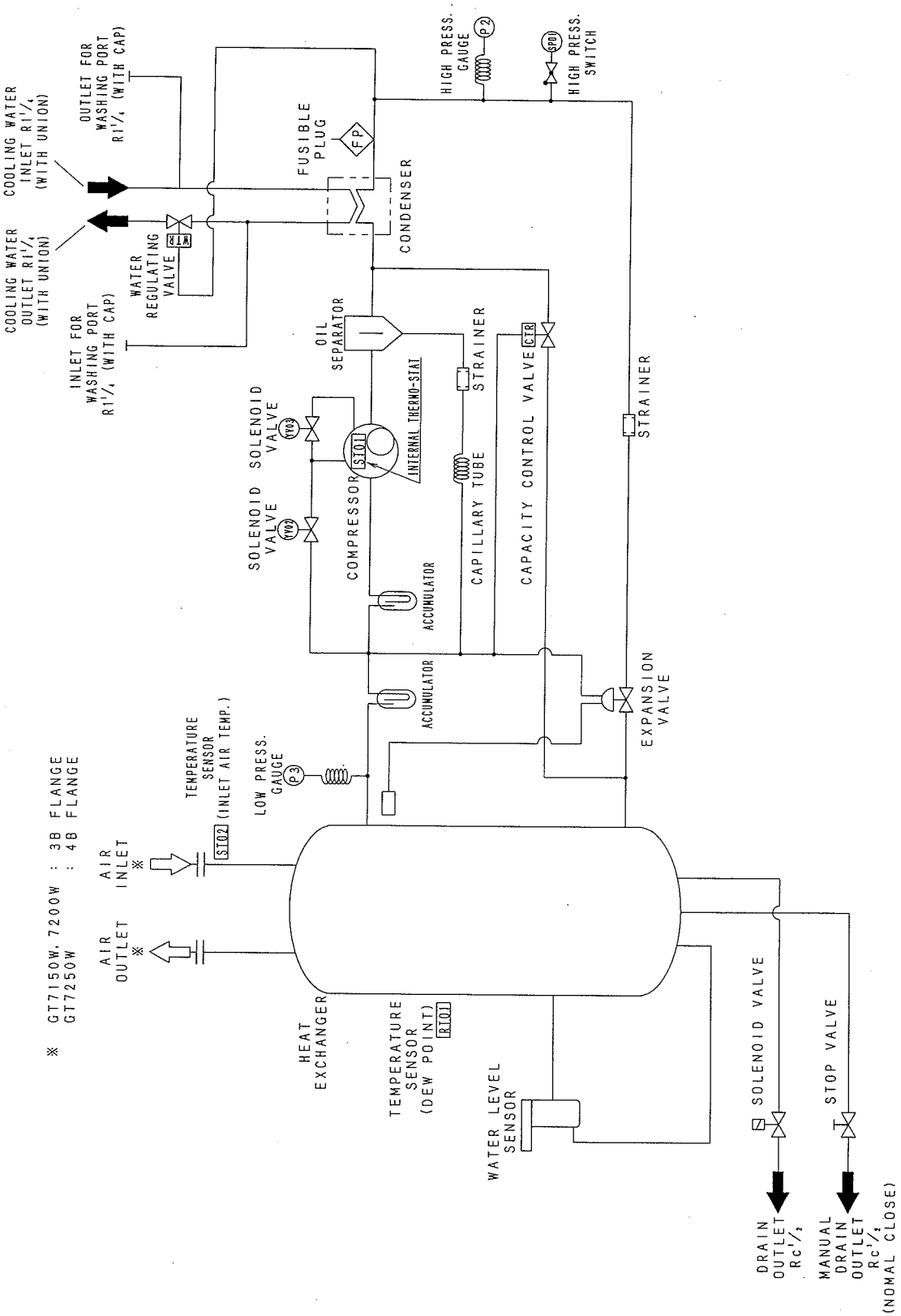
5.1.2 GT7150W,7200W,7250W



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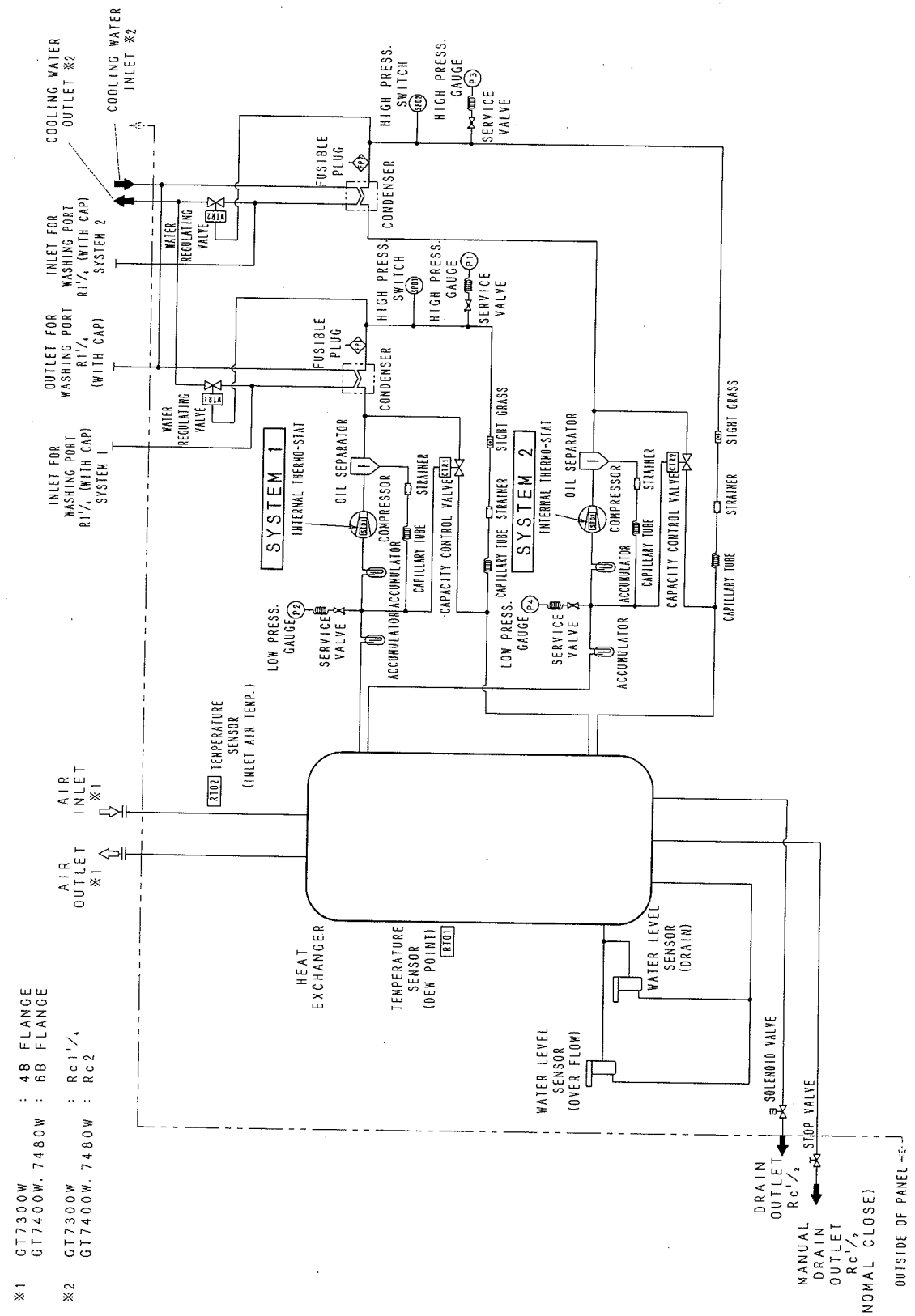
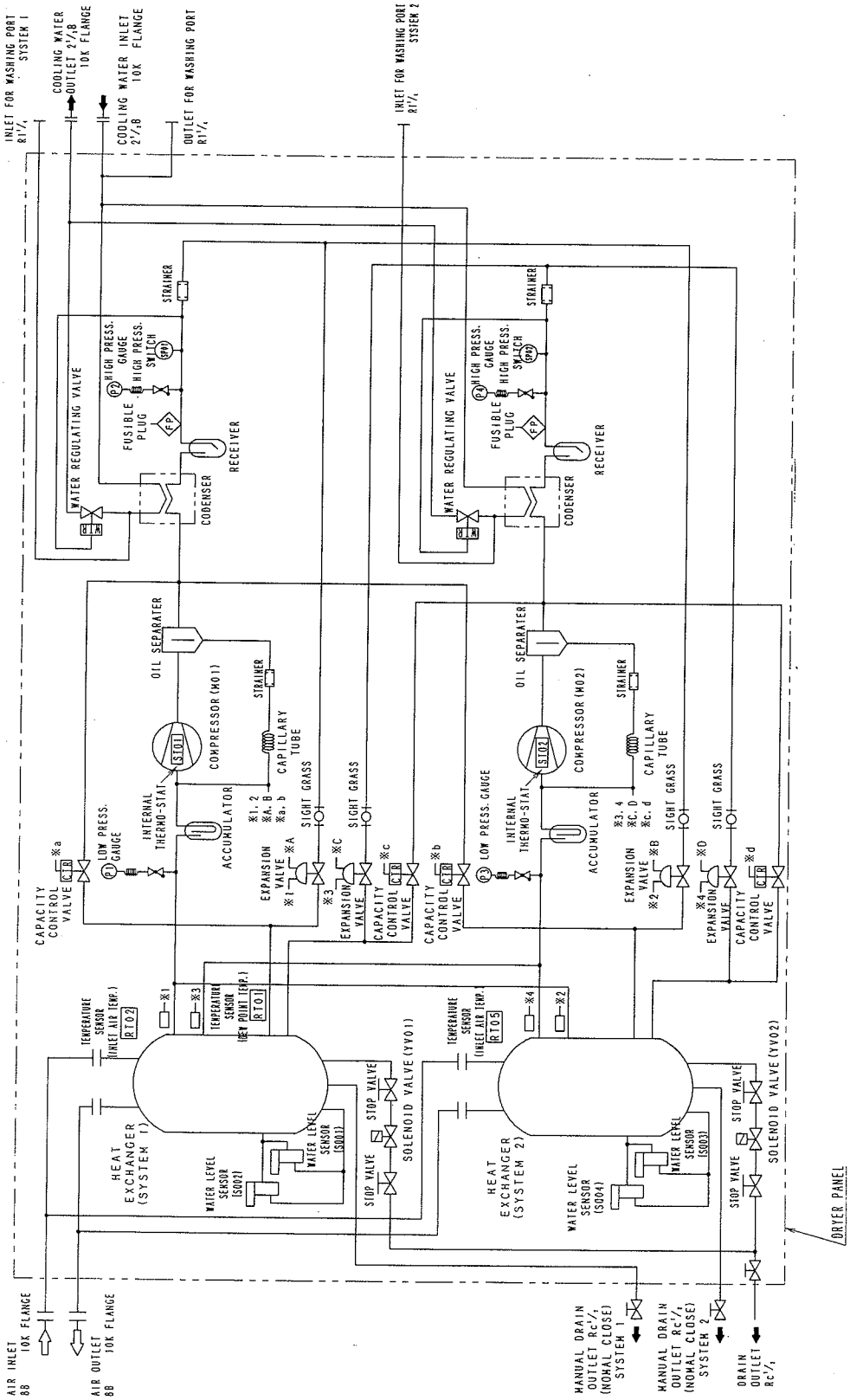
5.1.3 GT7300W,7400W,7480W



5.1.4 GT7710W,7960W



6. Startup and operation

6.1 Startup

1) Confirm air piping, drain piping, cooling water piping and electrical wiring those are properly connected.
2) Confirm gate valves across the dryer are opened and the gate valve of by-pass piping those are closed. Confirm supply air pressure in the pipes that is zero.
3) Confirm the stop valves for cooling water piping across the dryer those are opened and the stop valves for maintenance and the water outlet valve are closed.
4) Confirm the stop valve for manual drain outlet that is closed.
5) Turn on the main switch and turn on the power supply. (GT7055W,7075W,7095W,7120W)
   Turn on the main switch and turn on the power supply 4 hours before operation.
   (GT7150W,7200W,7250W,7300W,7400W,7480W,7710W,7960W)
   "DEW POINT" lamp on the operation panel turns on.
   At this moment, the lamp indicates ambient temperature.
6) Supply the cooling water.
7) To operate the dryer remotely using external signals, change the Local/Remote selector switch to remote.
8) GT7150W,7200W,7250W
   If the dryer is operated for less than 50% load. Further, the dryer is wanted to operate by the energy saving mode, operation mode switch (SA05) set at "HALF"
   GT7300W,7400W,7480W,7710W,7960W
   If the dryer is operated for less than 50% load. Further, the dryer is wanted to operate by the energy saving mode, turn off #1 or #2 refrigerant circuit "OPERATE / STOP" switch what are numbered "SA07" or "SA08".

6.2 Operation

1) Start up the dryer
   Push "START" button on the operation panel.
   In the remote control mode, close between terminal number D1 and D2.

GT7055W,7075W,7095W,7120W,7150W,7200W,7250W	:	Non-voltage contact, Hold input
GT7300W,7400W,7480W,7710W,7960W	:	Non-voltage contact, Pulse input, Min. 0.5sec.

2) Starting of operation
   "RUN" lamp turns on, and the dryer operates.
   System1 and system2 compressors operate one by one with 5 seconds time lag.(GT7300W,7400W, 7480W,7710W,7960W) Please open supply air valve 5 minutes after dryer had been started.
   * If the compressed air is flown into the dryer at the same time of the operation is started, moisturized air enters the outlet piping of the dryer, causing drain to occur.
3) During operation
   After a while, dew point mater is working that should be within the green area.
   The drain removed by the dryer is regularly discharged compulsorily by air pressure when solenoid valve is on.
   You can check discharge of drain by pushing the "TEST" switch on the operation panel. When starting the dryer, discharge drain.
   Reactivate the dryer immediately after power recovery, if instantaneous power failure is less than 0.5 seconds. Also, reactivate the dryer 3 minutes later after power recovery, if instant -aneous power failure is less than 2 seconds.

6.3 Shutdown the dryer

1) Push "STOP" button on the operation panel.
   If you are using remote control mode, open between terminal number D1 and D2.
   (GT7055W,7075W,7095W,7120W,7150W,7200W,7250W : Non-voltage contact, open input)
   If you are using remote control mode, open between terminal number D3 and D4.
   (GT7300W,7400W,7480W,7710W,7960W : Non-voltage contact, Input pulse more than 0.5 second.)
2) "RUN" lamp will be turned off, then the dryer stops operation.
   Keep it running 5 minutes or more before turning it off and hold restarting it on 5 minutes or Longer. Do not operate while 3 minutes after stop this dryer, because the restart prevention circuit is operated.
3) Finally shut the water cooling line.

6.4 Safety device activation

6.4.1 Safety devices

6.4.1.1 GT7055W,7075W,7095W,7120W

1) Thermo switch ; When the refrigeration compressor become hot, thermo switch ST01 will be working, then the dryer stops operation.
2) Over current relay; When the refrigeration compressor has over current, over current relay FR01 will be working, then the dryer stops operation.
3) High pressure switch; When the refrigerant high pressure exceeds the specified level, the high pressure switch SP01 will be working, then the dryer stops operation.
4) Dew point alarm; When the dryer has an abnormal dew point, DEW POINT mater shows a yellow lamp with output signal. (D8-D10) However, the dryer operation is still continuing. When the pressure dew point become correct, the alarm condition is automatically reset.
5) Other safety devices; This machine has some fuse for control circuit.
6) Alarm indication; When those safety devices (except for fuses) are working and the dryer stop operation, the alarm lamp "HL08" and switch the warning signal "D5-D7".

7) Set points of safety devices.

Mark	Model	Parts name	Application	Set point	How to reset
ST01	GT7055W	Thermo switch	External temp for refrig. comp.	135℃ OFF 113℃ ON	Auto reset
	GT7075W		Coil temp. for refrig. comp.	115℃ OFF 85℃ ON	
	GT7095W		External temp for refrig. comp.	115℃ OFF 85℃ ON	
	GT7120W		External temp for refrig. comp.	115℃ OFF 85℃ ON	
FR01	GT7055W	Over current relay	Operating current for refrig. compressor	9A OFF	Manual reset
	GT7075W			12A OFF	
	GT7095W			14A OFF	
	GT7120W				
SP01	GT7055W	High pressure switch	Refrig. circuit	2.06MPa OFF 1.67MPa ON	Auto reset
	GT7075W				
	GT7095W				
	GT7120W				
SA01	GT7055W	Dew point alarm output	Cooling air temp.	23.5℃or over and −0.9℃ or less	Auto reset
	GT7075W				
	GT7095W				
	GT7120W				
FU01	GT7055W	Thermo fuse		128℃	Repare the parts (TC01)
	GT7075W				
	GT7095W				
	GT7120W				
FU02	GT7055W	Fuse		1A	Repare the parts (FU02)
	GT7075W				
	GT7095W				
	GT7120W				
FU03	GT7055W	Fuse		0.5A	Repare the parts (FU03)
	GT7075W				
	GT7095W				
	GT7120W				
FU04	GT7055W	Thermo fuse		131℃	Repare the parts (TC02)
	GT7075W				
	GT7095W				
	GT7120W				

6.4.1.2 GT7150W,7200W,7250W

1) Internal thermostat ; When the refrigeration compressor become hot, thermo switch ST01 will be working, then the dryer stops operation.
2) Over current relay; When the refrigeration compressor has over current, over current relay FR01 will be working, then the dryer stops operation.
3) High pressure switch; When the refrigerant high pressure exceeds the specified level, the high pressure switch SP01 will be working, then the dryer stops operation.
4) Dew point alarm; When the dryer has an abnormal dew point, DEW POINT mater shows a yellow lamp with output signal. (D8-D10) However, the dryer operation is still continuing. When the pressure dew point become correct, the alarm condition is automatically reset.
5) Other safety devices; This machine has some fuse for control circuit.
6) Alarm indication; When those safety devices (except for fuses) are working and the dryer stops operation, the alarm lamp "HL08" and switch the warning signal "D5-D7".
7) Set points of safety devices.

Mark	Model	Parts name	Application	Set point	How to reset
ST01	GT7150W GT7200W GT7250W	Thermo switch	Coil temp. for refrig. comp.	120℃ OFF 98℃ ON	Auto reset
FR01	GT7150W	Over current relay	Operating current for refrig. compressor	22A OFF	Manual reset
	GT7200W			27.5A OFF	
	GT7250W			34A OFF	
SP01	GT7150W GT7200W GT7250W	High pressure switch	Refrig. circuit	2.06MPa OFF 1.67MPa ON	Auto reset
SA01	GT7150W GT7200W GT7250W	Dew point alarm output	Cooling air temp.	23.5℃ or over and -0.9℃ or less	Auto reset
FU01	GT7150W GT7200W GT7250W	Thermo fuse		128℃	Repare the parts (TC01)
FU02	GT7150W GT7200W GT7250W	Fuse		1A	Repare the parts (FU02)
FU03	GT7150W GT7200W GT7250W	Fuse		0.5A	Repare the parts (FU03)
FU04	GT7150W GT7200W GT7250W	Thermo fuse		131℃	Repare the parts (TC02)

6.4.1.3 GT7300W,7400W,7480W,7710W,7960W

1) Internal thermostat ; When the refrigeration compressor become hot, thermo switch (ST01,02) will be working, then the dryer stops operation.
2) Over current relay; When the refrigeration compressor has over current, over current relay FR01,02 will be working, then the dryer stops operation.
3) Over current relay; When the fan motor has over current, over current relay FR03,04 will be working, then the dryer stops operation.
4) High pressure switch; When the refrigerant high pressure exceeds the specified level, the high pressure switch SP01,02 will be working, then the dryer stops operation.
5) Dew point alarm; When the dryer has an abnormal dew point, DEW POINT mater shows a yellow lamp with output signal. (D9-D10) However, the dryer operation is still continuing.
   When the pressure dew point become correct, the alarm condition is automatically reset.
6) If drain level is exceeded over set point, light the drain alarm lamp"HL09"and switch the warning signal "D11-D12".However the dryer do not stop on those conditions.
7) Other safety devices; This machine has some fuse for control circuit.
8) Alarm indication; When those safety devices (except for fuses) are working and the dryer stops operation, the alarm lamp "HL10" and switch the warning signal "D7-D8".

8) Set points of safety devices.

Mark	Model	Parts name	Application	Set point	How to reset
ST01 ST02	GT7300W GT7400W GT7480W GT7710W GT7960W	Internal thermo stat	Internal coil temp. for refrig compressor	120℃ OFF 98℃ ON 105℃ OFF 83℃ ON	Auto reset
FR01 FR02	GT7300W GT7400W GT7480W GT7710W GT7960W	Over current relay	Operating current for refrig. compressor	22A OFF 27.5A OFF 34A OFF 46A OFF 62A OFF	Manual reset
SP01 SP02	GT7300W GT7400W GT7480W GT7710W GT7960W	High pressure switch	Refrig. circuit	2.06MPa OFF 1.67MPa OFF	Auto reset
SA01	GT7300W GT7400W GT7480W GT7710W GT7960W	Dew point alarm output	Cooling air temp.	23.5℃ or over and -0.9℃ or less	Auto reset
FU01	GT7300W GT7400W GT7480W GT7710W GT7960W	Thermo fuse		131℃	Repare the parts (TC01)
FU02	GT7300W GT7400W GT7480W GT7710W GT7960W	Fuse		2A	Repare the parts (FU02)
FU03	GT7300W GT7400W GT7480W GT7710W GT7960W	Fuse		0.5A	Repare the parts (FU03)
FU04	GT7300W GT7400W GT7480W GT7710W GT7960W	Thermo fuse		131℃	Repare the parts (TC02)
FU05	GT7300W GT7400W GT7480W GT7710W GT7960W	Fuse		0.5A	Repare the parts (FU05)
FU06	GT7300W GT7400W GT7480W GT7710W GT7960W	Thermo fuse		131℃	Repare the parts (TC03)

6.4.2 Rest for the alarm

1) Turn off the power supply and main switch for "ALARM" lamp turning off.
2) Remove causes that stopped the dryer abnormally.
   (Refer to "Trouble shooting" on pg.21-22.)
3) Turn on the power supply.

CAUTION : · Be sure to turns off the power supply when remove causes of problems.
· If thermal type safety devices had been working, the dryer can not restart until 10 to 15 minutes after power on, because of cooling time. You may restart after then.

7. Trouble shooting

Condition		Causes		Measures
"DEW POINT" lamp does not turn on		Power supply did not turn on.		Turn on the power supply.
		Main switch did not turn on.		Turn on the main switch.
		Fuse was failed	FU01	Replace the transformer(TC01).
			FU02	Replace the fuse.
			FU03	Replace the fuse.
			FU04	Replace the transformer(TC02).
		Different power supply phase pattern.		Adjust the phase
		Main control boad (SA01) was failed.		Replace the main control boad.
"RUN" lamp does not turn on when the push "START" button.		GT7055W,7075W,7095W,7120W,7150W,7200W,7250W		
		Local-Remote change over switch (SA05) was set at "REMOTE".		Set "LOCAL" on the Local-Remote change over switch.
		Main control boad(SA01) was failed.		Replace the main control boad.
		Start switch(SB01) was failed.		Replace the main control boad.
		GT7300W,7400W,7480W,7710W,7960W		
		Local-Remote change over switch (SA06) was set at "REMOTE".		Set "LOCAL" on the Local-Remote change over switch.
		Start switch (SA07,08) was set at "OFF".		Set "ON" on the start switch.
		Run lamp (HL07,08) bulb was failed.		Replace the run lamp bulb.
		Start switch (SB01) was failed.		Replace the start switch.
Dew point is abnormal	Yellow lamp (High temp. side of "DEW POINT" lamp) is turned on.	Refer to "*" mark in water comes out when the dryer is running.		
		Dew point sensor(RT01) was short-circuited.		Replace the dew point sensor.
	Yellow lamp (Low temp. side of "DEW POINT" lamp) is turned on.	Ambient temp. was low.		Adjust the temp.(2℃or higher)
		Inlet air temp. was low.		Adjust the temp.(5℃or higher)
		Dew point sensor(RT01) was burned out.		Replace the dew point sensor.
Water comes out when the dryer is running	Dew point is normal, but water comes out to the end of piping	The pipe temp. coming out from the dryer was lower than the dew point.		Insurate the pipe from ambient temp.
		By-pass circuit is open.		Close the by-pass circuit.
		Too much flow rate.		Reduce the flow (Less than rated condition.)
		Low inlet air pressure.		Increase the air pressure.
		Solenoid valve(YV01) for drain discharge was failed.	Open the manual drain valve	Replace the solenoid valve.
		Drain piping is clogged.		Take apart and clean the drain pipe.
		Too much drain capacity.		Watch drain do not flow in the dryer.
		Drain sensor (SQ01) is broke down.		Replace the drain sensor.
	"DEW POINT" lamp is on, and water comes out to the end of piping.(*)	Over spec the load. ·High inlet cooling water temp. ·Low inlet cooling water flow rate. ·Low inlet cooling water press. ·High inlet air temp. ·Low inlet air press. ·Too much flow rate.		·Reduce the inlet cooling water temp. ·Increase the inlet cooling water flow rate. ·Reduce the inlet air temp. ·Reduce the inlet air temp. ·Increase the air press. ·Reduce the flow.
		Low or high power supply voltage.		Adjust the voltage.
		GT7150W,7200W,7250W		
		Operation mode select switch (SA05) was set at "HALF".		Set "FULL" on the operation mode select switch.
		GT7300W,7400W,7480W,7710W,7960W		
		Start switch (SA07,08) was set at "OFF".		Set "ON" on the start switch.

Condition		Causes		Measures
The dryer suddenly stops.	"ALARM" lamp turns on.	Some safety devices were turning on. ·Refrigerant gas leakage. ·Over spec the load.		Remove causes of problems and reset · Repair the parts leaking gas and refill refrigerant. ·Refer the P15 ＊ mark.
	All the lamps turn off, and the dryer stops.	Power supply was turned off.		Turn on the power supply.
		Low or high power supply voltage.		Adjust the voltage.
		Fuse was failed	FU01	Replace the transformer.(TC01)
			FU02	Replace the fuse.
			FU03,FU05	Replace the fuse.
			FU04,FU06	Replace the tranceformer (TC02).
	"RUN" lamp is turns on when the dryer stops.	Momentary power failure.		Wait until the dryer is restarted by automatically. (Reactivate the dryer immediately after power recovery, if instantaneous power failure is less than 0.5 seconds. Also, reactivate the dryer 3 minutes later after power recovery, if instantaneous power failure is less than 2 seconds.)
	"RUN" lamp is turns off, and the dryer stops.	Power failure is occurred more than two seconds.		Please restart after three minutes or more. (Do not operate while 5 minutes after stop this dryre, because the restart prevention circuit is operated.)
Pressure drop before/after the dryer is too large.		Stopper valves before/after the dryer is closed.		Fully open the valves.
		Treated flow rate is too large.		Lower the flow rate.
		Congelation in the dryer.		·Increase ambient temp. ·Increase the inlet air temp.
Drain on pressurized air is exhausted continuously from the drain solenoid valve.		Solenoid valve for drain discharge was failed.		Take apart for clean or replace the solenoid valve.
		Inlet air temp. sensor was burned out.		Replace the inlet air temp. senser.
"DRAIN ALARM" lamp(HL09) is turns on, and "DRAIN OVER-FLOW" signal is output.		GT7300W,7400W,7480W,7710W,7960W		
		Drain discharge circuit was failed or drain pipe is choked up.	Open the manual drain valve	Take apart for clean or replace the solenoid valve.
		Inlet air temp. sensor was short-circuited.		Exchange the inlet air temp. senser.

Discontinue

Discontinue

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