

# **NANO**

Refrigerant dryer



**DXR360W-A, DXR450W-A, DXR510W-A, DXR600W-A, DXR750W-A  
DXR1000W-A, DXR1260W-A, DXR1500W-A, DXR1980W-A  
DXR360-A, DXR450-A, DXR510-A**





# **NANO**

## **Refrigerant dryer**

DXR360W-A, DXR450W-A, DXR510W-A, DXR600W-A,  
DXR750W-A, DXR1000W-A, DXR1260W-A, DXR1500W-A,  
DXR1980W-A  
DXR360-A, DXR450-A, DXR510-A

### **Instruction book**

Original instructions

### **COPYRIGHT NOTICE**

Any unauthorized use or copying of the contents or any part thereof is prohibited.

This applies in particular to trademarks, model denominations, part numbers and drawings.

This instruction book is valid for CE as well as non-CE labelled machines. It meets the requirements for instructions specified by the applicable European directives as identified in the Declaration of Conformity.

## Table of Contents

<b>1</b>	<b>Safety Precautions and Measures .....</b>	<b>4</b>
1.1	SAFETY SYMBOLS .....	4
1.2	GENERAL SAFETY PRECAUTIONS .....	4
1.3	SAFETY PRECAUTIONS DURING INSTALLATION .....	5
1.4	SAFETY PRECAUTIONS AND MEASURES DURING OPERATION .....	6
1.5	SAFETY PRECAUTIONS DURING MAINTENANCE AND REPAIR .....	6
<b>2</b>	<b>General instructions .....</b>	<b>8</b>
2.1	INTRODUCTION .....	8
2.2	PROCESS .....	10
2.3	AIR SYSTEM .....	12
	<b>Installation .....</b>	<b>13</b>
3.1	DRAWINGS SHOWING DIMENSIONS .....	13
3.2	INSTALLATION RECOMMENDATIONS .....	15
3.3.	ELECTRIC CABLE SIZE AND SETTING OF MOTOR CIRCUIT BREAKER .....	19
3.4	SYMBOLS .....	20
3.5	COOLING WATER REQUIREMENTS .....	21
<b>4</b>	<b>Operating instructions .....</b>	<b>25</b>
4.1	CONTROL PANEL .....	25
4.2	STARTING .....	27
4.3	DURING OPERATION .....	28
4.4	STOPPING .....	28
<b>5</b>	<b>Maintenance .....</b>	<b>29</b>
<b>6</b>	<b>Controller .....</b>	<b>31</b>
6.1	STANDARD CONTROLLERS .....	31
6.2	PANEL OPERATION .....	31

6.3 BUZZER ALARM SILENCE ..... 32

6.4 ALARM OUTPUT ..... 32

6.5 WIRING DIAGRAM (CONTROLLER) ..... 32

**7 Troubleshooting .....33**

7.1. PROBLEM SOLVING ..... 33




**8 Technical data (corresponding to standard operating conditions) .....35**

**9 Service Diagram .....39**

## 1 Safety Precautions and Measures

### 1.1 Safety symbols

#### Description

	Hazard to life
	Warning
	Notes and explanations

### 1.2 General safety precautions

#### Conventional Precautions and Measures

1. The operator must employ safe working practices and observe all related work safety requirements and regulations.
2. If any of the following statements does not comply with the applicable legislation, the stricter of the two shall apply.
3. Installation, operation, maintenance and repair work must only be performed by authorized, trained, specialized personnel.
4. The compressor is not considered capable of producing air of breathing quality. For air of breathing quality, the compressed air must be adequately purified according to the applicable legislation and standards.
5. Before any maintenance, repair work, adjustment or any other non-routine checks:
  - Stop the compressor
  - Press the emergency stop button
  - Switch the power off
  - Depressurize the compressor
  - Lock Out - Tag Out (LOTO):
    - Open the power isolating switch and lock it with a personal lock
    - Tag the power isolating switch with the name of the service technician.
  - For frequency conversion power equipment, wait 10 minutes before performing electrical maintenance.
  - Never rely on indicator lamps or electrical door locks before maintenance work, always disconnect and check with measuring device.
6. Never play with compressed air. Do not apply the air to your skin or direct an air stream at people. Never use the air to clean dirt from your clothes. When using the air to clean equipment, do so with extreme caution and wear eye protection.
7. The owner is responsible for maintaining the unit in safe operating condition. Parts and accessories shall be replaced if unsuitable for safe operation.
8. It is not allowed to walk or stand on the roof of the compressor canopy.
9. Before replacing any parts of the cooling system, any coolant must be released from the high and low pressure ends. Serious harm can arise if this is not performed. System pressure can be monitored using a pressure gauge to ensure that it is in the range of atmospheric pressure.

## 1.3 Safety precautions during installation




All responsibility for any damage or injury resulting from neglecting these precautions, or non-observance of the normal caution and care required for installation, operation, maintenance and repair, even if not expressly stated, will be disclaimed by the manufacturer.

### Precautions during installation

1. The machine must only be lifted using suitable equipment in accordance with the applicable safety regulations. Loose or pivoting parts must be securely fastened before lifting. It is strictly forbidden to dwell or stay in the risk zone under a lifted load. Lifting acceleration and deceleration must be kept within safe limits. Wear a safety helmet when working in the area of overhead or lifting equipment.
2. Install the compressor where the air is as cool and clean as possible. If necessary, install a suction duct. Never obstruct the air inlet. Care must be taken to minimize the entry of humidity in the inlet air.
3. Any blanking flanges, plugs, caps and desiccant bags must be removed before connecting the pipes.
4. Air hoses must be of the correct size and be suitable for the working pressure. Never use frayed, damaged or worn hoses. Distribution pipes and connections must be of the correct size and be suitable for the working pressure.
5. The aspirated air must be free of flammable fumes, vapours and particles, e.g. paint solvents, that can lead to internal fire or explosion.
6. Arrange the air intake so that loose clothing worn by people cannot be sucked in.
7. Ensure that the discharge pipe from the dryer to the air net is free to expand under heat and that it is not in contact with or close to flammable materials.
8. No external force may be exerted on the air outlet valve; the connected pipe must be free of strain.
9. If remote control is installed, the machine must bear a clear sign stating: DANGER: This machine is remotely controlled and may start without warning.  
The operator has to make sure that the machine is stopped and that the isolating switch is open and locked before any maintenance or repair. As a further safeguard, persons switching remotely controlled machines shall take adequate precautions to ensure that there is no one checking or working on the machine. To this end, a suitable notice shall be affixed to the starting equipment.
10. The electrical connections must be made in accordance with the applicable codes. The machines must be earthed and protected against short circuits by fuses in all phases. A lockable power isolating switch must be installed near the dryer.
11. On machines with automatic start-stop system or if the automatic restart function after voltage failure is activated, a sign stating "This machine may start without warning" must be affixed near the instrument panel.
12. Never remove or tamper with the safety devices, guards or insulation fitted on the machine. Every pressure vessel or auxiliary installed outside the machine to contain air above atmospheric pressure must be protected by a pressure-relieving device or devices as required.
13. Pipework or other parts with a temperature in excess of 80 °C (176 °F) and which may be accidentally touched by personnel in normal operation must be guarded or insulated.
14. If the ground is not levelled or can be subject to variable inclination, consult the manufacturer.
15. For water cooled dryer, safety device must be installed and settled according to the maximum cooling water inlet pressure, to protect the cooling water system.




	<p>Also consult following safety precautions: <b>Error! Reference source not found.</b> and <b>Error! Reference source not found.</b></p> <p>These precautions apply to machinery processing or consuming air or inert gas. Processing of any other gas requires additional safety precautions typical to the application, which are not included herein.</p> <p>Some precautions are general and cover several machine types and equipment; hence some statements may not apply to your machine.</p>
---	---

## 1.4 Safety precautions and measures during operation

### Precautions during operation

1. Never touch any piping or components of the compressor during operation.
2. Use only the correct type and size of hose end fittings and connections. When blowing through a hose or air line, ensure that the open end is held securely. A free end will whip and may cause injury. Make sure that a hose is fully depressurized before disconnecting it.
3. People switching on remotely controlled machines shall take adequate precautions to ensure that there is no one checking or working on the machine.  
To this end, a suitable notice shall be affixed to the remote start equipment.
4. Never operate the machine below or in excess of its limit ratings.
5. Keep all bodywork doors shut during operation. The doors may be opened for short periods only, e.g. to carry out routine checks. Wear ear protectors when opening a door.
6. Personnel staying in environments or rooms where the sound pressure level reaches or exceeds 90 dB(A) must wear ear protectors.
7. Periodically check that:
  - All guards are in place and securely fastened.
  - All hoses and/or pipes inside the machine are in good condition, secure and not rubbing
  - There are no leaks
  - All fasteners are tight
  - All electrical leads are secured and in good order
  - Safety valves and other pressure relief devices are not obstructed by dirt or paint
  - Air outlet valve and air net, i.e. pipes, couplings, manifolds, valves, hoses, etc. are in good repair, free of wear or abuse
8. Do not remove any of, or tamper with, the sound-dampening material.
9. Never remove or tamper with the safety devices, guards or insulation fitted on the machine. Every pressure vessel or auxiliary installed outside the machine to contain air above atmospheric pressure shall be protected by a pressure-relieving device or devices as required

	<p>Also consult the following safety precautions: <b>Error! Reference source not found.</b> and <b>Error! Reference source not found.</b></p> <p>These precautions apply to machinery processing or consuming air or inert gas. Processing of any other gas requires additional safety precautions specific to the application, which are not included here.</p> <p>Some precautions are general and cover several machine types and equipment; hence some statements may not apply to your machine.</p>
---	--

## 1.5 Safety precautions during maintenance and repair

### Precautions during maintenance or repair

1. Always use the correct safety equipment (such as safety glasses, gloves, safety shoes, etc.).
2. Use only the correct tools for maintenance and repair work.
3. Use only genuine spare parts.

4. All maintenance work shall only be undertaken when the machine has cooled down.
5. A warning sign bearing a legend such as "work in progress; do not start" shall be attached to the starting equipment.
6. Persons switching on remotely controlled machines shall take adequate precautions to ensure that there is no one checking or working on the machine. To this end, a suitable notice shall be affixed to the remote start equipment.
7. Close the dryer air outlet valve before connecting or disconnecting a pipe.
8. Before removing any pressurized component, effectively isolate the machine from all sources of pressure and relieve the entire system of pressure.
9. Never use flammable solvents or carbon tetrachloride for cleaning parts. Take safety precautions against toxic vapours of cleaning liquids.
10. Scrupulously observe cleanliness during maintenance and repair. Keep dirt away by covering the parts and exposed openings with a clean cloth, paper or tape.
11. Never weld or perform any operation involving heat near the oil system. Oil tanks must be completely purged; e.g. by steam-cleaning, before carrying out such operations. Never weld on, or in any way modify, pressure vessels.
12. Whenever there is an indication or any suspicion that an internal part of a machine is overheated, the machine shall be stopped but no inspection covers shall be opened before sufficient cooling time has elapsed; this to avoid the risk of spontaneous ignition of the oil vapor when air is admitted.
13. Never use a light source with open flame for inspecting the interior of a machine, pressure vessel, etc.
14. Make sure that no tools, loose parts or rags are left in or on the machine.
15. All regulating and safety devices shall be maintained with due care to ensure that they function properly. They may not be put out of action.
16. Before clearing the machine for use after maintenance or overhaul, check that operating pressures, temperatures and time settings are correct. Check that all control and shut-down devices are fitted and that they function correctly. If removed, check that the coupling guard of the dryer drive shaft has been reinstalled.
17. Protect the motor, air filter, electrical and regulating components, etc. to prevent moisture from entering them, e.g. when steam-cleaning.
18. Make sure that all sound-damping material and vibration dampers, e.g. damping material on the bodywork, is in good condition. If damaged, replace it by genuine material from the manufacturer to prevent the sound pressure level from increasing.
19. Never use caustic solvents which can damage materials of the air net, e.g. polycarbonate bowls.
20. The following safety precautions are stressed when handling refrigerant:
  - Never inhale refrigerant vapours. Check that the working area is adequately ventilated; if required, use breathing protection.
  - Always wear special gloves. In case of refrigerant contact with the skin, rinse the skin with water. If liquid refrigerant contacts the skin through clothing, never tear off or remove the latter; flush abundantly with fresh water over the clothing until all refrigerant is flushed away; then seek medical first aid.



Also consult following safety precautions: **Error! Reference source not found.** and **Error! Reference source not found.**

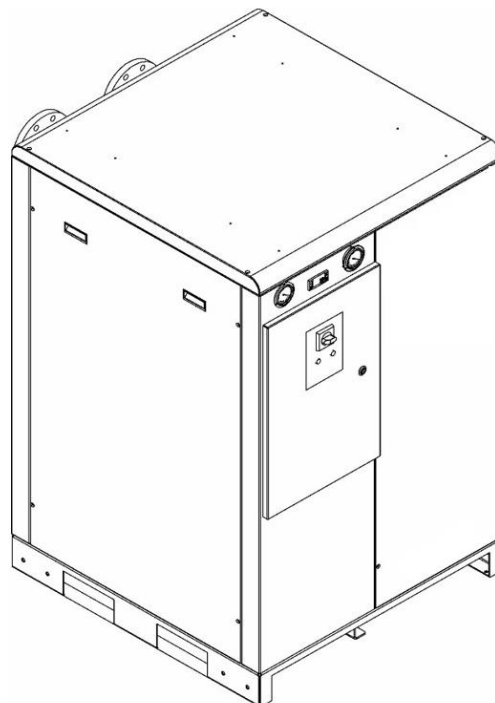
These precautions apply to machinery processing or consuming air or inert gas. Processing of any other gas requires additional safety precautions typical to the application, which are not included herein.

Some precautions are general and cover several machine types and equipment; hence some statements may not apply to your machine.

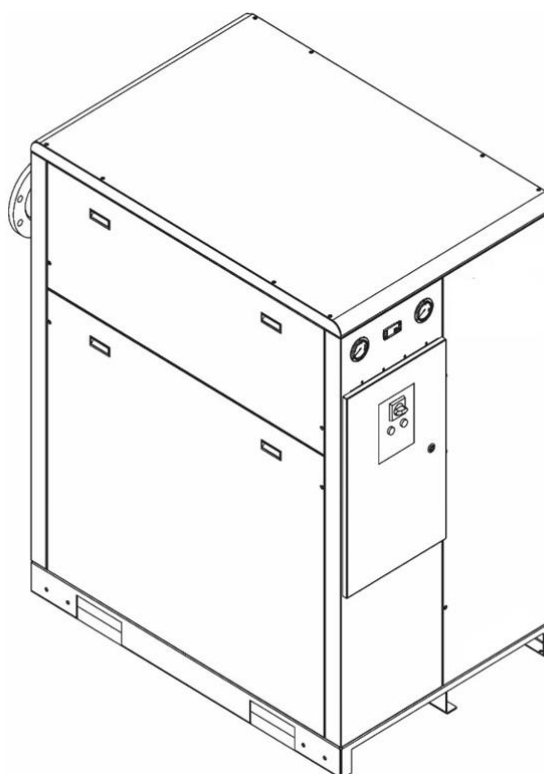
## 2 General instructions

### 2.1 Introduction

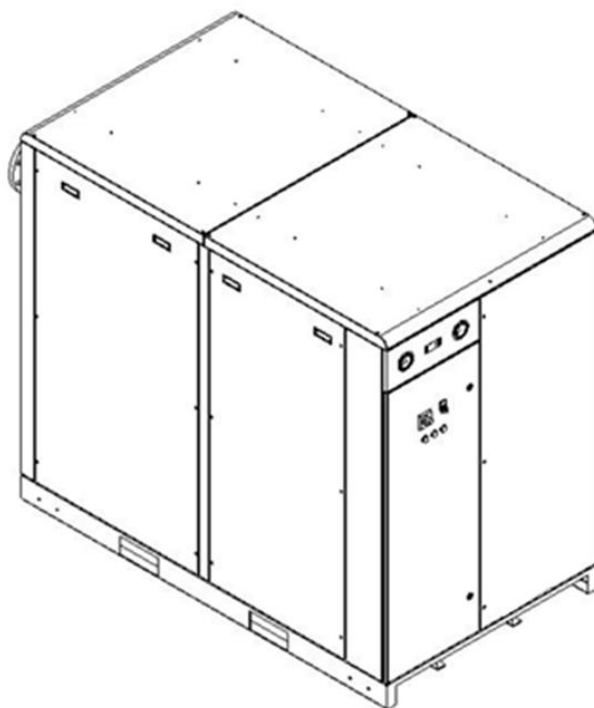
#### Machine profiles



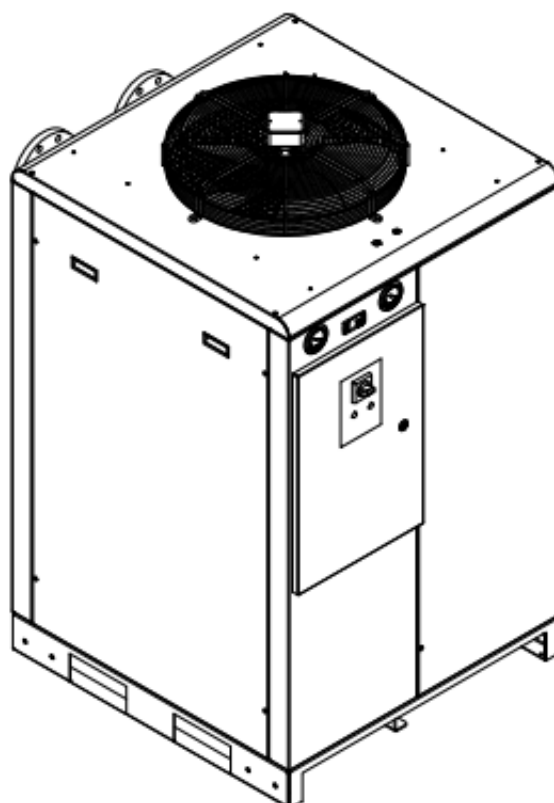
*DXR360W-A ~~DXR510W-A*



*DXR600W-A ~~ DXR750W-A*



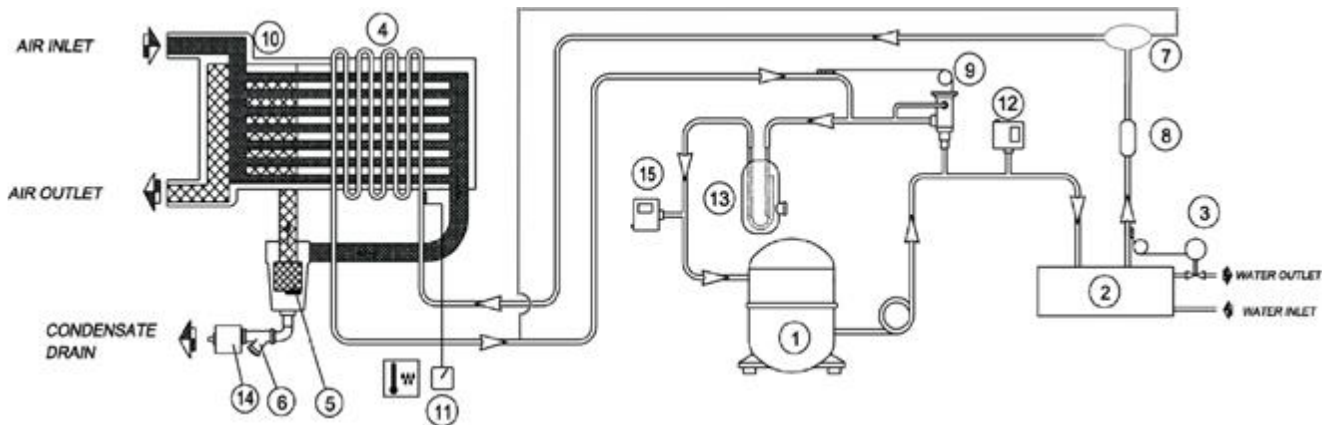
*DXR1000W-A ~ DXR1980W-A*



*DXR360-A, DXR450-A, DXR510-A*

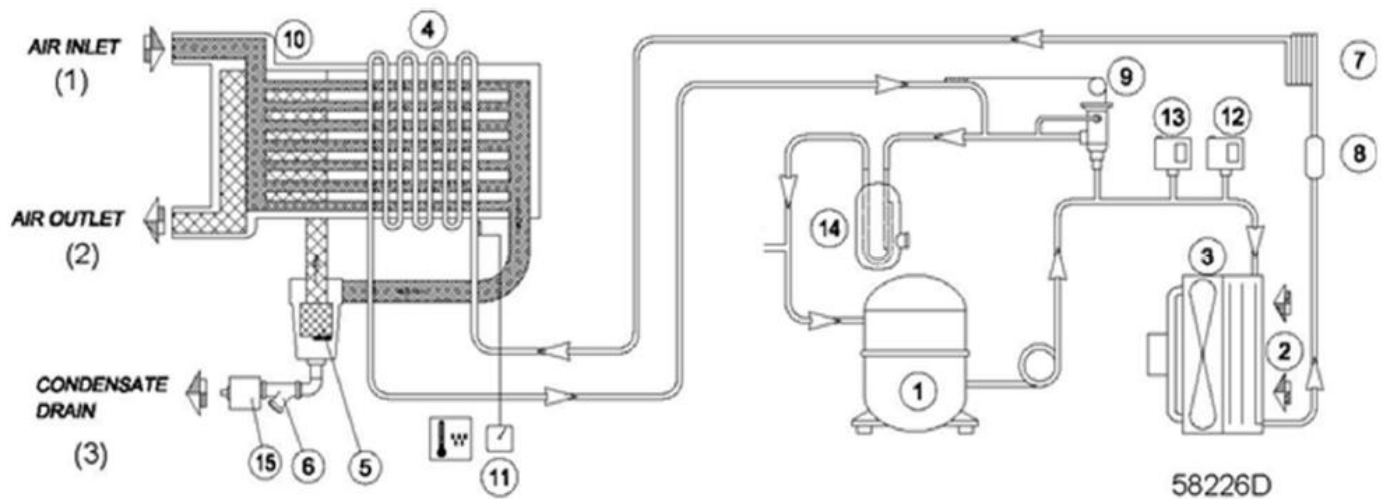
## 2.2 Process

### 2.2.1 Diagram of process



*Water-cooled*

Reference	Name
1	Refrigeration compressor
2	Water-cooled condenser
3	Water-flow regulating valve DXR360W-A ~ ~ DXR1980W-A
4	Evaporator (air-refrigerant heat exchange core)
5	Water separator
6	Impurity collector (Y-filter)
7	Expansion valve DXR360W-A ~ ~ DXR1980W-A
8	Filter dryer
9	Hot gas bypass valve
10	Evaporator (hot and cold air exchange core)
11	Dew point indicator
12	High pressure switch
13	Refrigerant gas-liquid separator
14	Drain valve Timed electronic drain valve DXR360W-A ~ ~ DXR750W-A Electronic float drain valve DXR1000W-A ~ ~ DXR1980W-A
15	Minimum pressure switch



*Air-cooled*

Reference	Name
1	Refrigeration compressor
2	Air-cooled condenser
3	Cooling fan
4	Evaporator (air-refrigerant heat exchange core)
5	Water separator
6	Impurity collector (Y-filter)
7	Expansion valve
8	Filter dryer
9	Hot gas bypass valve (Mechanical bypass valve)
10	Evaporator (hot and cold air exchange core)
11	Dew point indicator
12	High pressure switch
13	Fan pressure switch
14	Refrigerant gas-liquid separator
15	Drain valve (Timed electronic drain valve)

## 2.3 Air system

Compressed air enters (10) and is cooled by the discharged dry cold air. The water in the air entering begins to condense. The air then flows through the heat exchanger/evaporator (4), and the refrigerator evaporates, causing the air to be further cooled, approaching the evaporation temperature of the refrigerant. The water in the air begins to condense. The cooled air flows through the separator (5), and all condensate is separated from the air. The condensate is automatically discharged through the drain valve.

The dried cold air flows through (10) and is heated by the inlet air to a temperature of about 5-10°C lower than that of the inlet air.

Unless the air is cooled below the pressurized dew point indicated by the dew point indicator light (11), there will be no condensed water in the pipe network.

### 2.3.1 Cooling system

The refrigeration compressor (1) drives the high-temperature and high-pressure refrigerant gas, and this flows through the water-cooled condenser/air-cooled condenser (2) where there is a large amount of liquid refrigerant, and transforms into a medium-temperature, high-pressure liquid refrigerant. The liquid refrigerant passes through the dry filter (8) and expansion valve (7). The refrigerant passes through its (7) throttling device to become a low-temperature, low-pressure mixed gas-liquid refrigerant. The refrigerant enters the evaporator (4) and further evaporates. At the same time, it absorbs the heat from the compressed air. After the gas-liquid separation is carried out in the gas-liquid separator (13), the gaseous refrigerant is sucked in to the refrigeration compressor (1).

### 2.3.2 Regulation system

The condenser pressure must be kept as stable as possible so to allow stable operation.

If the evaporator pressure drops below a certain level under partial- or no-load conditions, the hot gas bypass valve (9) will open and high-pressure hot air will be sent to the evaporator circuit so as to prevent the evaporator pressure from continuing to drop.

### 2.3.3 Protection system

For air-cooled dryers, when the condenser pressure reaches the set upper limit of the switch, the fan control switch starts the fan motor; and, when the condenser pressure falls below the set lower limit, the fan motor is stopped.

After the refrigerant circuit pressure reaches the set upper limit of the high-pressure switch, the pressure is disconnected and the compressor motor is shut down.

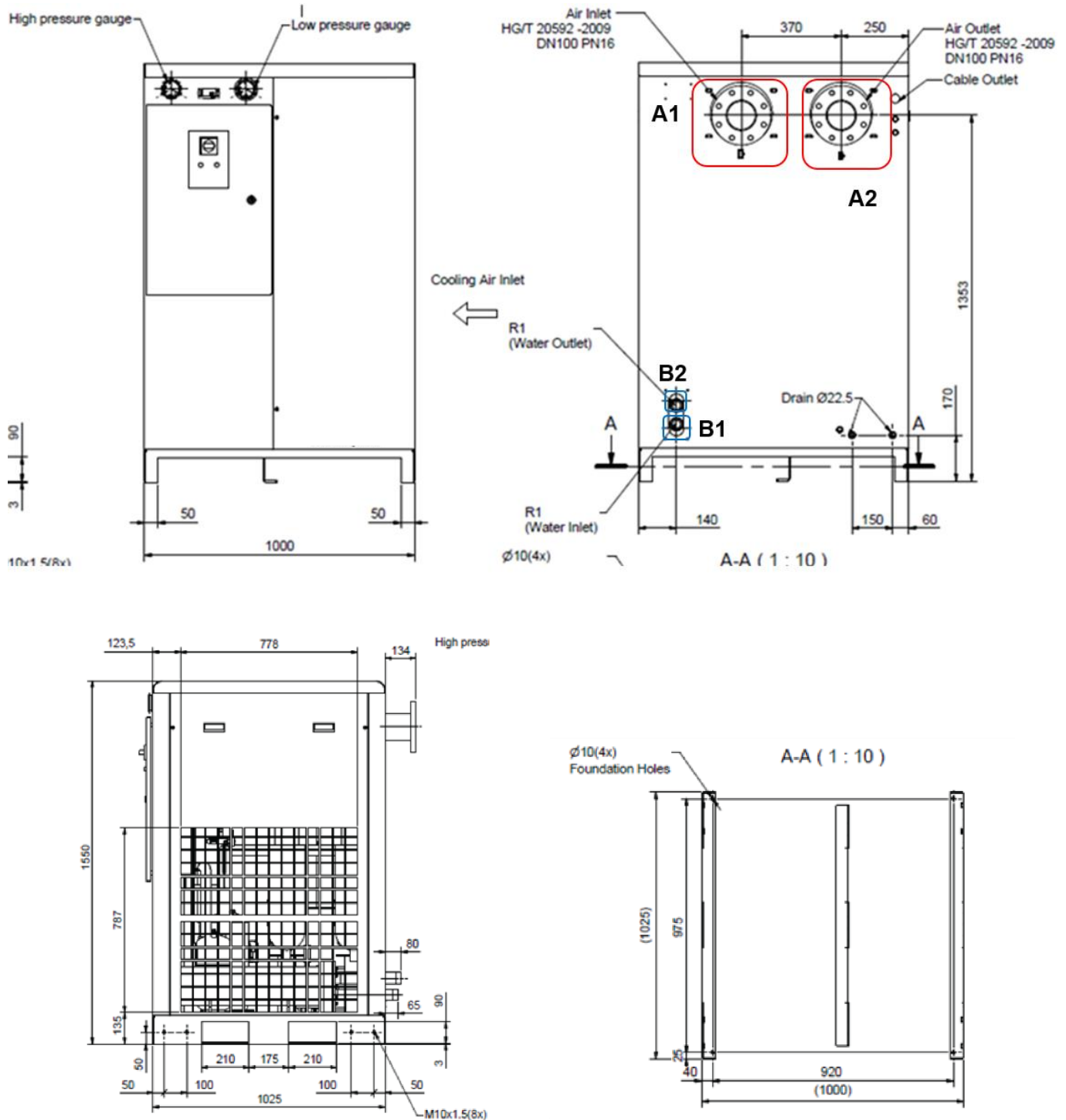
After the refrigerant circuit pressure is lower than the set point of the switch, the low- and high-pressure switches are disconnected and the compressor motor is stopped. (In some models, there is no low-pressure switch; instead the refrigeration compressor discharge temperature switch is used to realize low-pressure protection functionality; see the controller instructions for details).

## Installation

### 3.1 Drawings showing dimensions

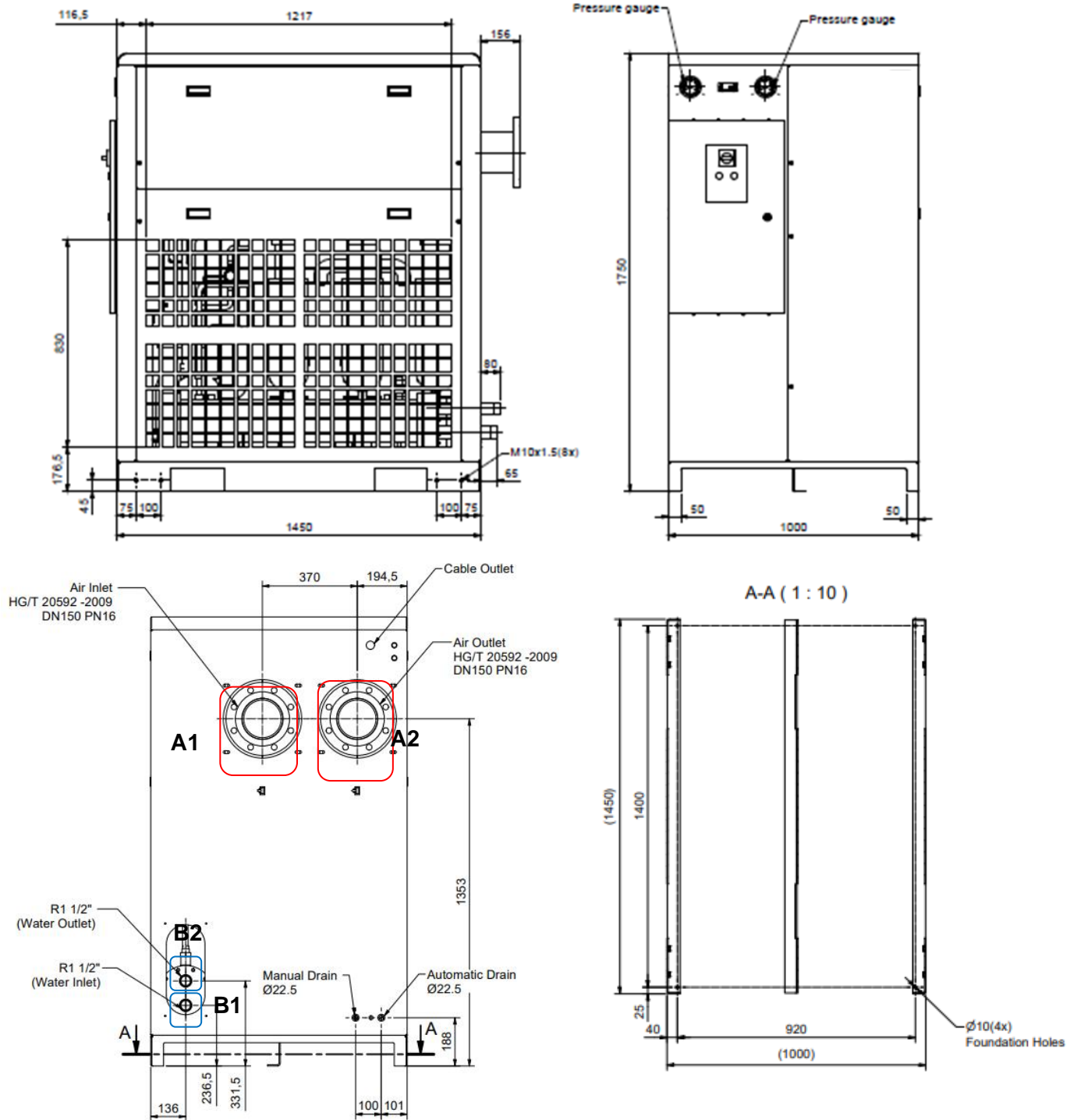
- A1: Compressed air inlet
- A2: Compressed air outlet
- B1: Cooling water inlet
- B2: Cooling water outlet

#### DXR360W-A ~DXR510W-A

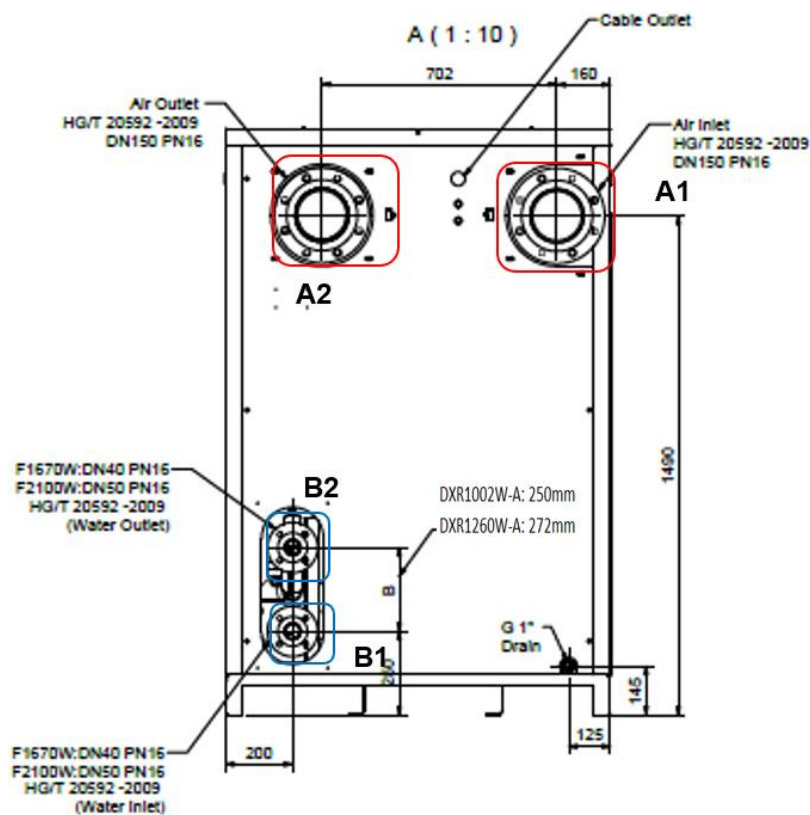
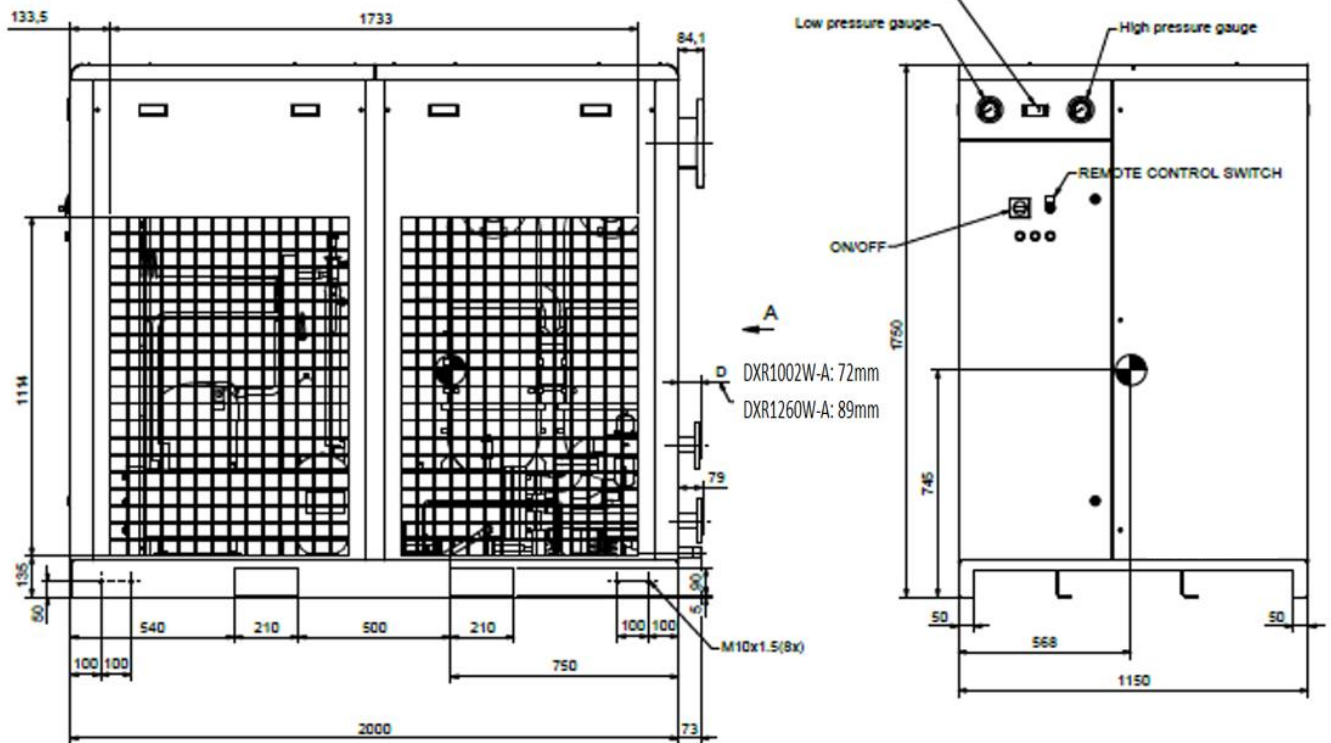




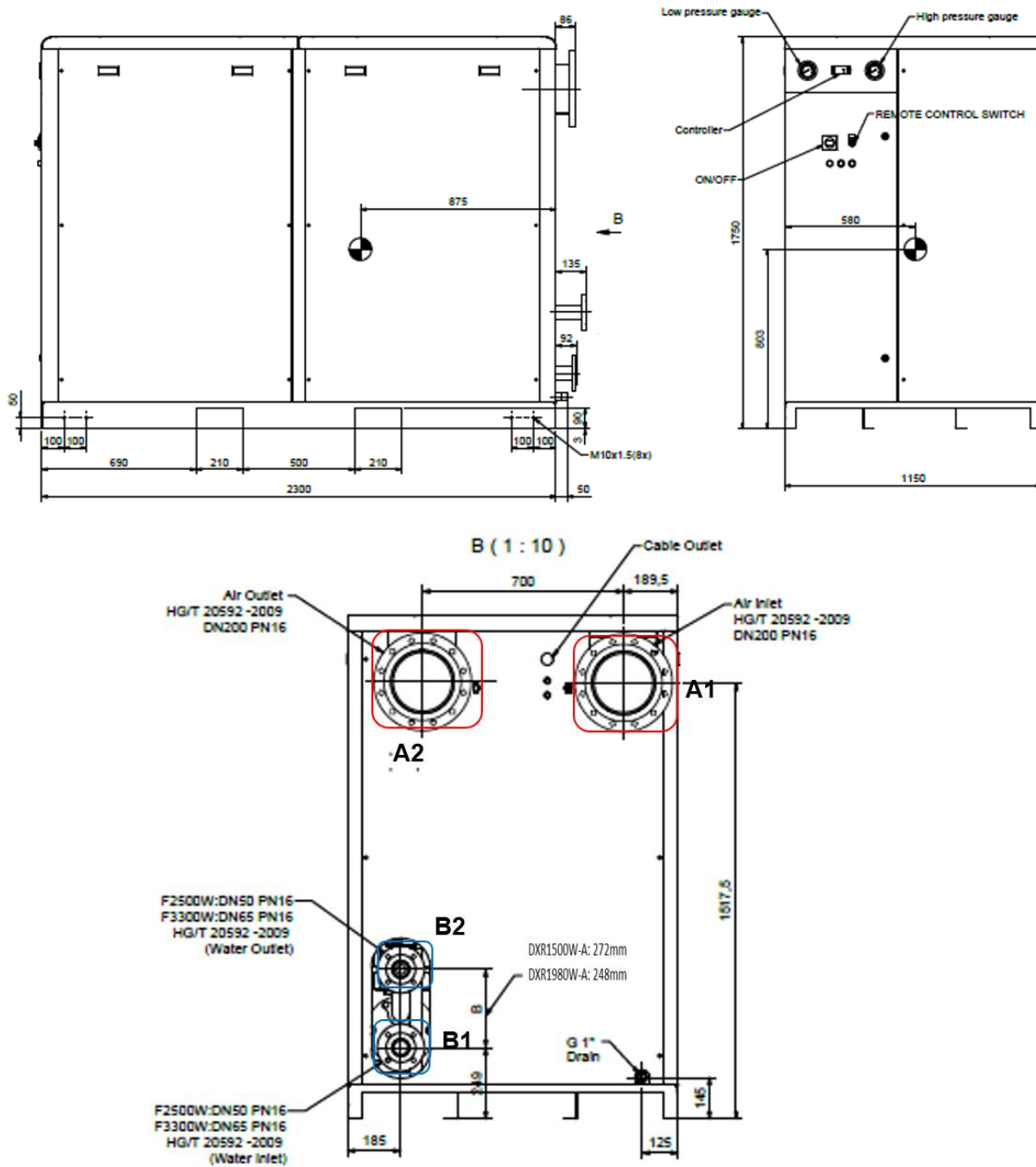
DXR600W-A ~ DXR750W-A



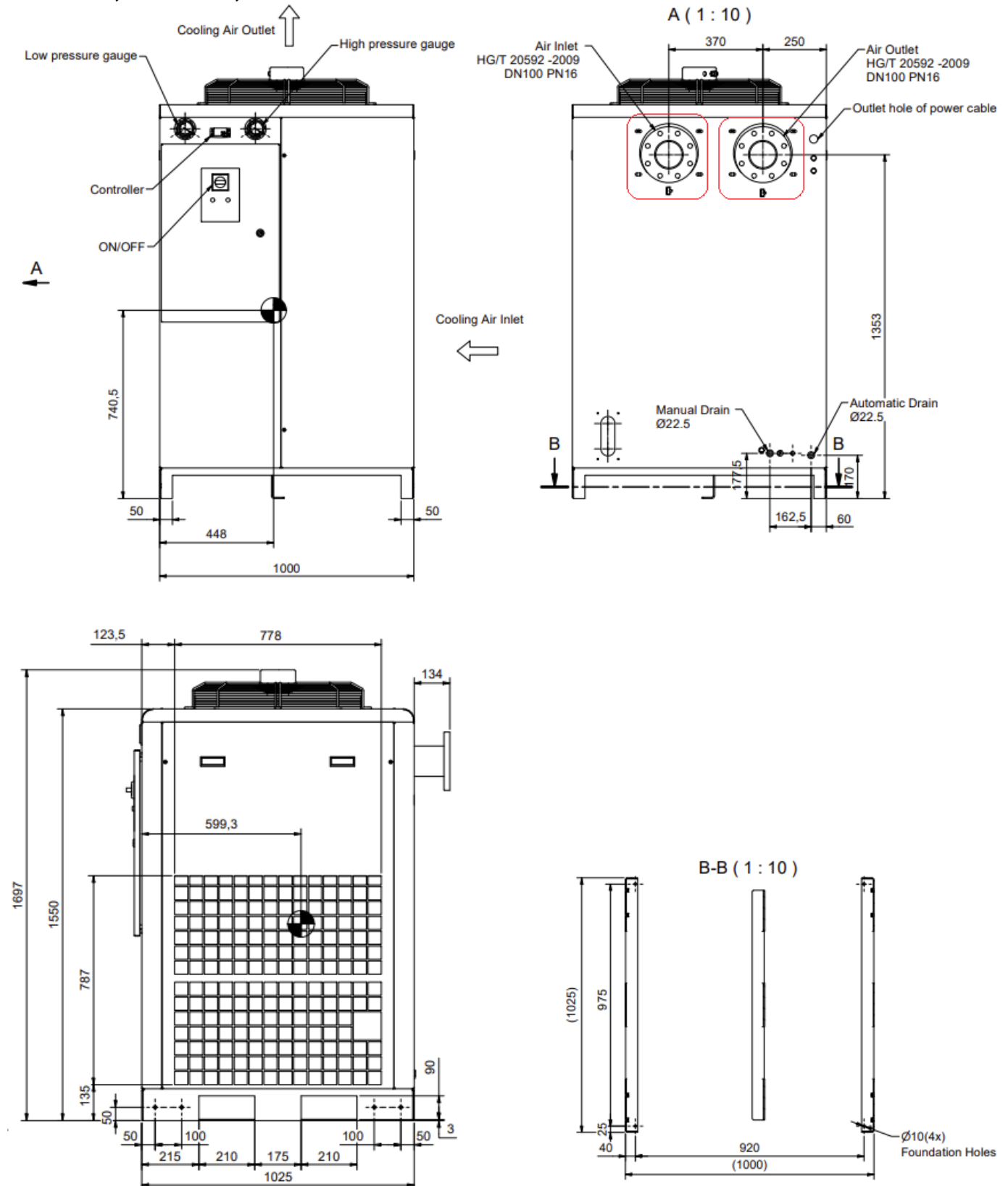
# DXR1000W-A ~~ DXR1260W-A



## DXR1500W-A ~ DXR1980W-A



# DXR360-A, DXR450-A, DXR510-A

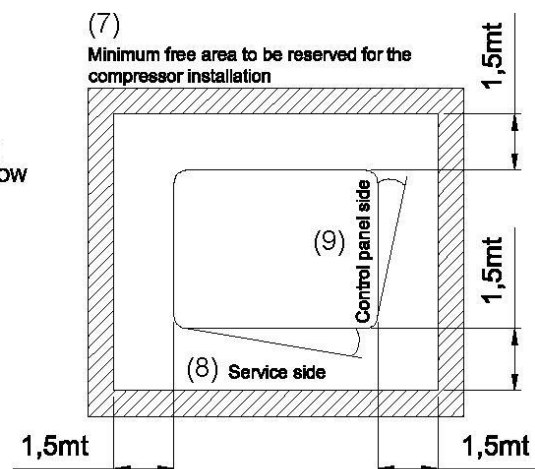
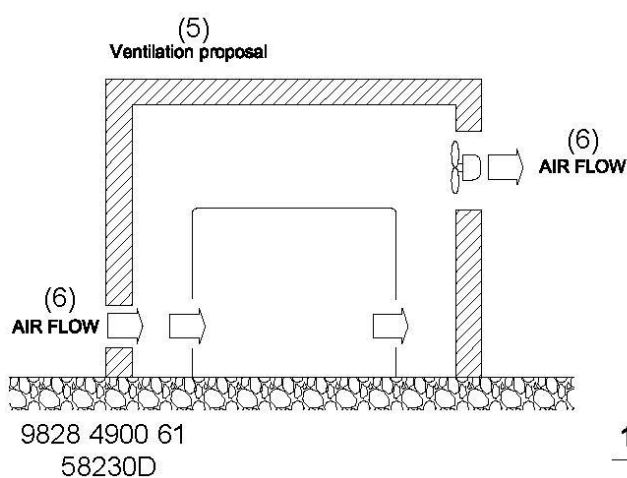
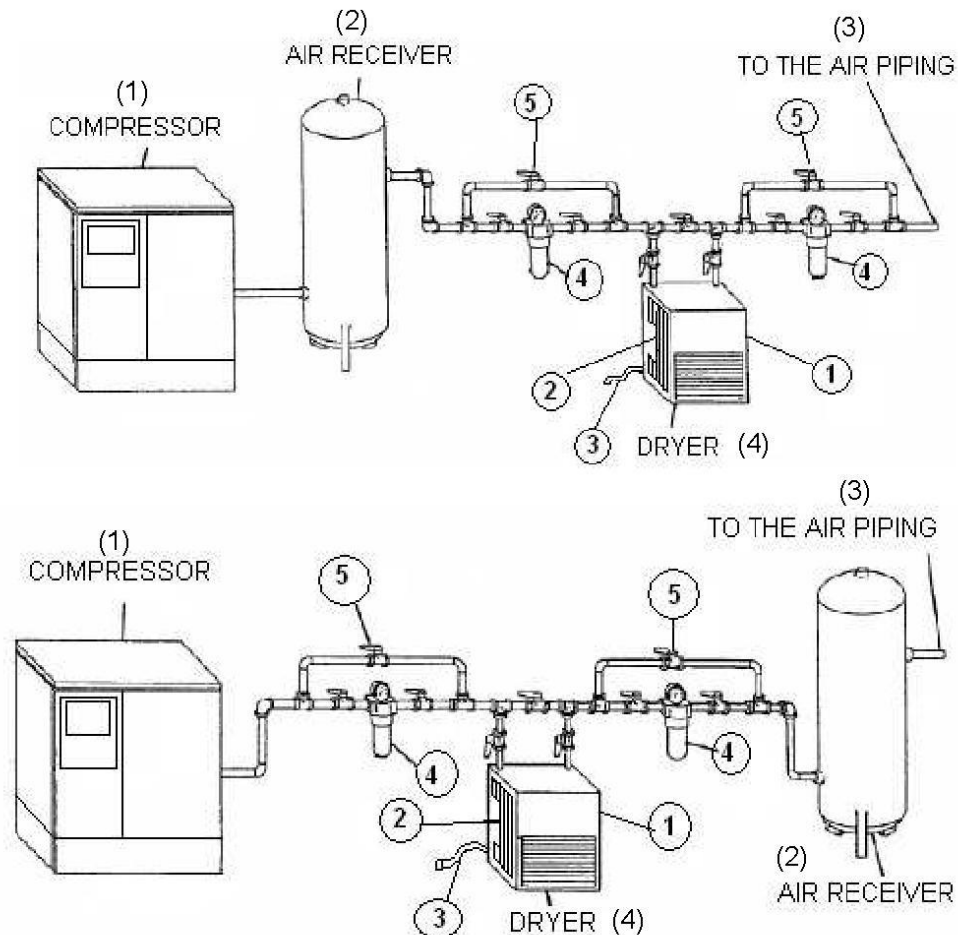


## 3.2 Installation recommendations



- To move the dryer use a fork lift truck.
- Do not use metal cables for lifting.
- Move the dryer gently.

### Example of compressor room




Reference	Designations
(1)	Compressors
(2)	Air receiver
(3)	To air line
(4)	Dryer
(5)	Ventilation proposal
(6)	Air Flow
(7)	Minimum free area to be reserved for the dryer installation
(8)	Service side
(9)	Control panel side

- **Air treatment with dryer downstream of the air receiver:** this can be used when the compressor runs constantly, and the cooling capacity of the dryer is equal to the air delivery of the compressor. Under this condition the load of the dryer is constant.
- **Air treatment with dryer upstream of the air receiver:** this can be used when the air demand is variable. For short periods the air demand is higher than the air delivery of the compressor; the air receiver must be large enough to meet the instant air demand recommended.

Reference	Designation
1	The refrigerant air dryer should be installed on a level floor suitable for taking the weight of the dryer.
2	Ventilation: the inlet grids and ventilation fan should be installed in such way that any recirculation of cooling air to the dryer is avoided. The maximum air velocity to the grids has to be limited to 5 m/s. The maximum allowable pressure drop over the cooling air ducts is 30 Pa. When 30 Pa is exceeded, a ventilation fan is needed at the outlet of the cooling air ducts. The condensate drain pipes must not dip into the condensate. Do not allow untreated condensate to enter the draining system.
3	Power supply cable to be sized and installed by a qualified electrician.
4	Optionally DD and PD filters can be provided. Filter, type DD for general purpose (optional). The filter traps solid particles down to 1 micron with a max. oil carry-over of 0.5 mg/m <sup>3</sup> . A high-efficiency filter, type PD (optional), may be installed downstream of a DD filter. This filter traps solid particles down to 0.01 micron with a max. oil carry-over of 0.01 mg/m <sup>3</sup> . If oil vapours and doors are undesirable, a QD type filter should be installed downstream of the PD filter.
5	It is recommended to install by-pass pipes over each filter and dryer together with ball valves in order to isolate the filters and/or dryer during service operations, without disturbing the compressed air delivery.

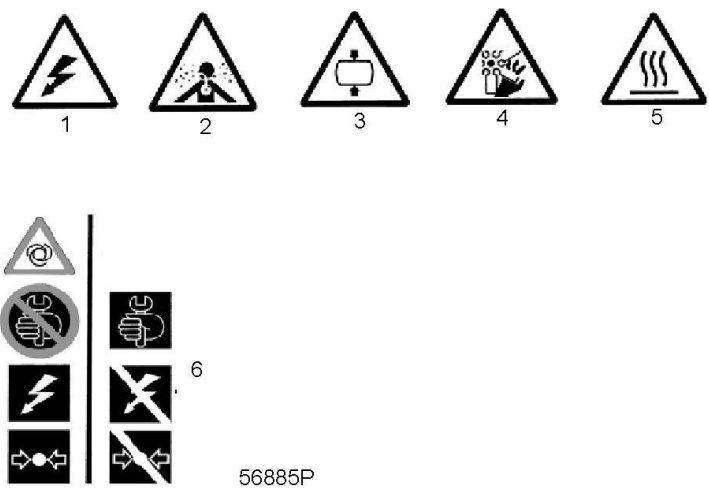
### 3.3. Electric cable size and setting of motor circuit breaker

	Local regulations remain applicable if they are stricter than the values proposed. For 50 Hz dryers, the cable size is valid for cable PVC 70°C (158°F) at and ambient temperature of 40°C (104°F).
---	--

#### Electrical data for 50-Hz dryers

Refer to section **Error! Reference source not found.** [Error! Reference source not found.](#) for details.

3.4 Symbols



Reference	Designations
1	Warning, voltage
2	Warning, air not suitable for breathing
3	Warning, high pressure
4	Warning, rotating fan
5	Warning, hot surface
6	Before beginning maintenance or repair work, disconnect the power supply and depressurize the dryer

### 3.5 Cooling water requirements

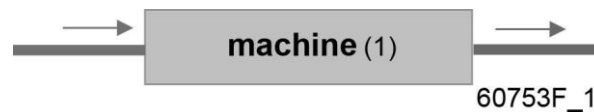
#### General

The cooling water must meet the requirements to avoid scaling, fouling, corrosion or bacterial growth. No general recommendation can cover all the effects of all combinations of different compounds, solids and gases (these substances are usually present in cooling water and will interact with different materials). Therefore, the recommendations given in our cooling water specifications are general guidelines for acceptable quality. However, where strict restrictions exist, descriptions are included.

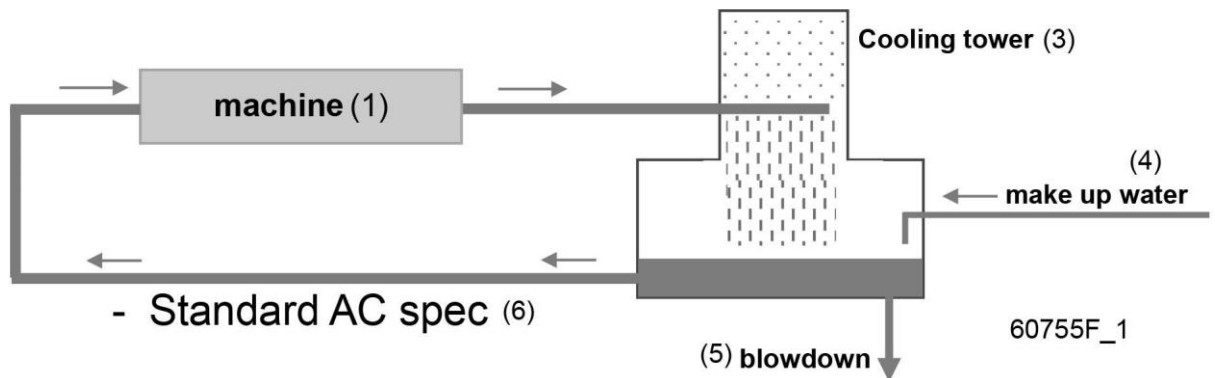
The requirements for water refers to water which has not been treated. Certain parameters change when water is treated. Water treatment should be performed by professional water treatment companies. These companies should be responsible for ensuring the performance of the treated cooling water and its compatibility with materials in the cooling circuit. This includes not only the selection of the appropriate additives, but also correct application, concentration and attribute monitoring, as well as the prevention of sludge formation and system maintenance. The above content is also applicable to treatment with any anti-icing products. When performing the above treatments, the appropriate stabilizers and inhibitors should be provided.

At the same time, the specifications are also determined by the following conditions:

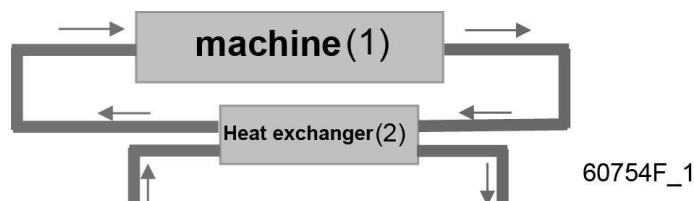
- Cooling circuit type:
  - Open
    - Single pass



- Recirculating tower



- Closed





Reference	Description
(1)	Machine
(2)	Heat exchanger
(3)	Cooling tower
(4)	Supplemental water
(5)	Water drain
(6)	Standard specifications

- Application:
  - Standard (maximum water temperature at the outlet 65°C/149°F)
  - Energy recovery (water temperature up to 95°C/203°F)

Factory can provide complete instructions on processing cold water data.

If the water specification does not match the recommended value or if you have any questions, please consult factory.

### Technical specifications

	Parameter	Unit	Single pass (65°C/149°F)	Single pass (95°C/203°F)	Recirculation (65°C/149°F)	Closed system (65°C/149°F)	Closed system (95°C/203°F)
1	pH		6.8 – 9.3	6.8 – 9.3	6.8 – 9.3	7.5 – 9.3	7.5 – 9.3
2	Conductivity	µS / cm	< 1500	< 600	< 4000	< 1500	50 - 600
3	Total dissolved solids	mg/L	It is necessary to measure the total dissolved solids to calculate the RSI.				
4	Calcium hardness	ppm CaCO <sub>3</sub>	< 500	< 2	< 500	< 1000	< 50
5	Total alkalinity	ppm CaCO <sub>3</sub>	Limits are not indicated. It is necessary to measure this to calculate the RSI.				
6	Ryznar Stability Index (RSI)		5.6 - 7.5	—	5.6 - 7.5	5.6 - 7.5	5.6 - 7.5
7	Chloride	ppm	< 0.5	—	< 0.5	—	—
8	Chloride	ppm	< 500 (*)	< 100	< 500 (*)	< 500 (*)	< 100
9	Nitrate	ppm	Limits are not indicated. It is necessary to measure this to calculate the RSI.				
10	Sulphates	ppm	< 1000	< 200	< 1000	< 400	< 200
11	Chemical corrosion index		< 5	< 1	< 5	< 1	< 1
12	Iron	ppm	< 1	< 0.2	< 1	< 1	< 0.2
13	Manganese	ppm	< 0.2	< 0.05	< 0.2	< 0.2	< 0.05
14	Copper	ppm	< 1	< 0.2	< 1	< 1	< 0.2
15	Ammonia	ppm	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
16	Particulates (maximum 10µ)	ppm	< 10	< 1	< 10	< 10	< 1
17	Oil or grease	ppm	< 1	< 1	< 1	< 1	< 1
18	Biological	CFU / mL	< 10 <sub>5</sub>	< 10 <sub>3</sub>	< 10 <sub>5</sub>	< 10 <sub>3</sub>	< 10 <sub>3</sub>

Points to note regarding technical specifications

	Parameter	Points to note:
1	pH	For stainless steel systems that do not contain other materials, the pH may be as low as 6. For closed loop systems, the pH may be higher
2	Conductivity	Conductivity and total dissolved solids can be calculated by conversion factors (theoretical factors can be used, but it is recommended to perform at least one actual measurement)
6	Ryznar Stability Index (RSI)	Recommendation: refer to the RSI table
7	Chloride	Or shock treatment, daily treatment time is up to 30 minutes; the free chlorine content maximum is 2 ppm
8	Chloride	*) When RSI <5.6 or RSI > 7.5, the limit of 200 ppm is appropriate or use
10	Sulphates	Scrap when <2000 ppm. It is necessary to measure this to calculate the RSI.
11	Chemical corrosion index	Index = (chloride + sulphate + nitrate)/(M alkalinity) (units are meq/l)
15	Ammonia	For copper-free systems, this limit does not apply
16	Suspended particles (maximum 10 µ)	Particles > 10 µ are not permitted. (Do not consider particles < 0.5 µ).
18	Biological	Anaerobic organisms are absolutely never allowed in a closed system.

### Ryznar Stability Index (RSI)

The Ryznar Stability Index (RSI) is a parameter used to predict the tendency of calcium carbonate to precipitate or dissolve in water. The adhesion of scale and its effect vary with different substances, but the balance of water (scaling or corrosion) is only determined by its actual pH value and saturation pH value (pH<sub>s</sub>).

The saturation pH value is determined by the relationship between calcium hardness, total alkalinity, total solids concentration and temperature. The Ryznar Stability Index can be calculated by the following formula:

$$RSI = 2 \cdot pH_s - pH$$

Symbol	Description
pH	The measured pH of the water sample (at room temperature)
pH <sub>s</sub>	Saturated pH

pH<sub>s</sub> may be calculated with the following formula:

$$pH_s = (9.3 + A + B) - (C + D)$$

Symbol	Calculation
A	$(\log_{10} (TDS) - 1) / 10$
B	$13.12 \times \log_{10} (°C + 273) + 34.55$
C	$\log_{10} (Ca_{2+}) - 0.4 (Ca_{2+} \text{ CaCO}_3 \text{ represented in ppm})$
D	$\log_{10} (M \text{ alkalinity}) (M\text{-alkalinity represented as ppm CaCO}_3)$

## RSI and chloride limits

Single pass system

RSI	Chloride limit value	Water condition	Maximum temperature 65°C/ 149°F	Maximum temperature 95°C/203°F
RSI<3.9	200 ppm	Extremely severe scaling	Water cannot be used.	NA
4.0 < RSI < 5.5	200 ppm	Severe scaling	Requires regular control of scaling and scale removal Not recommended for baffle heat exchangers.	NA
5.6 < RSI < 6.2	350 ppm	Mild scaling	No water treatment required. Periodic inspections are recommended.	NA
6.3 < RSI < 6.8	500 ppm	Neutral water	No water treatment required. Periodic inspections are recommended	No water treatment required. Periodic inspections are recommended
6.9 < RSI < 7.5	350 ppm	Slightly corrosive	No water treatment required. Periodic inspections are recommended	No water treatment required. Periodic inspections are recommended
7.6 < RSI < 9.0	200 ppm	Rather corrosive	Requires regular control to avoid interruption of operation.	Requires regular control to avoid interruption of operation.
9.1 < RSI < 11	200 ppm	Extremely severely corrosive	Requires regular control to avoid interruption of operation.	Requires regular control to avoid interruption of operation.
RSI>11	200 ppm	Extremely severely corrosive	Requires regular control to avoid interruption of operation.	Requires regular control to avoid interruption of operation.

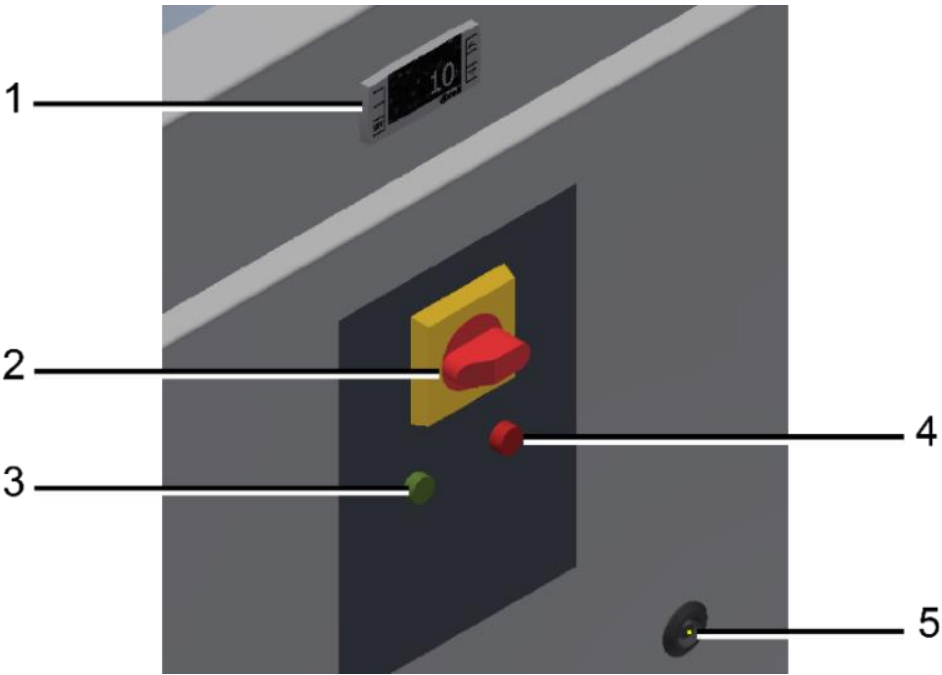
## Recirculation system, equipped with cooling tower

RSI	Chloride limit value	Water condition	Maximum temperature 65°C/149°F
RSI<3.9	200 ppm	Extremely severe scaling	Water cannot be used.
4.0 < RSI < 5.5	200 ppm	Severe scaling	Requires regular control of scaling and scale removal Not recommended for baffle heat exchangers.
5.6 < RSI < 6.2	350 ppm	Mild scaling	No water treatment required. Periodic inspections are recommended.
6.3 < RSI < 6.8	500 ppm	Neutral water	No water treatment required. Periodic inspections are recommended.
6.9 < RSI < 7.5	350 ppm	Slightly corrosive	No water treatment required. Periodic inspections are recommended.
7.6 < RSI < 9.0	200 ppm	Rather corrosive	Requires regular control Corrosion inhibitors are recommended.
9.1 < RSI < 11	200 ppm	Extremely severely corrosive	Requires regular control Corrosion inhibitors are recommended.
RSI>11	200 ppm	Extremely severely corrosive	Water cannot be used.

## 4     Operating instructions

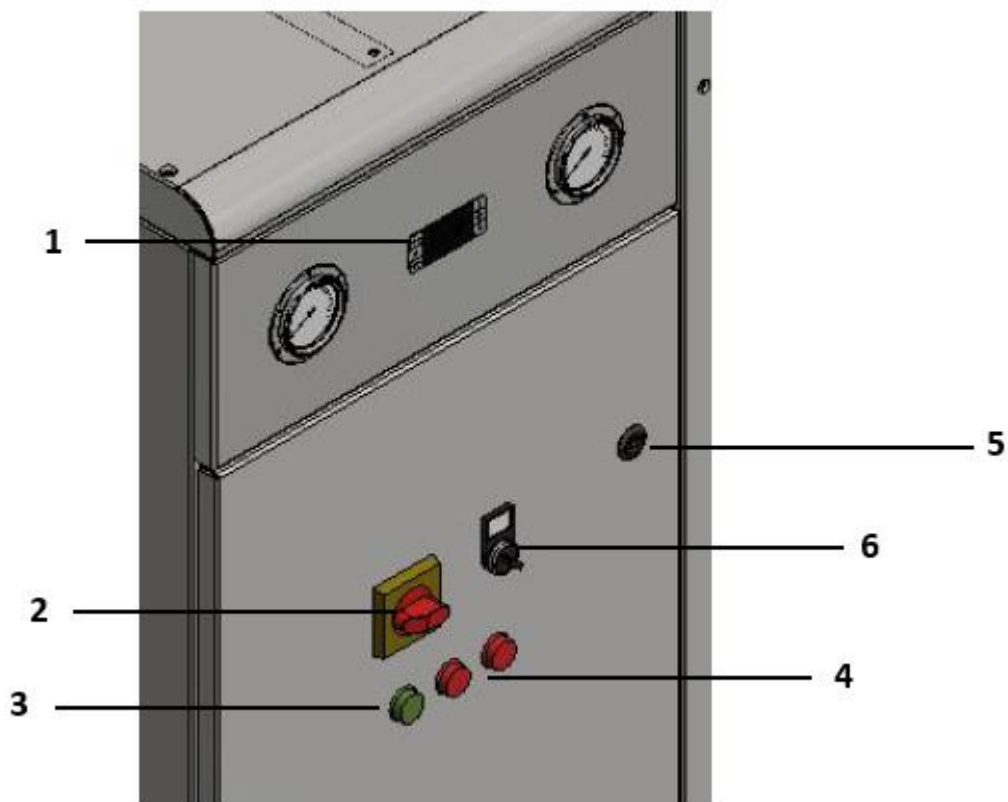
### 4.1    Control panel

Description



DXR360W-A/DXR450W-A/DXR510W-A/DXR600W-A/DXR750W-A  
DXR360-A/DXR450-A/DXR510-A

Reference	Name
1	Display
2	Dryer switch
3	Green running lamp
4	Red failure lamp
5	Door lock





DXR1000W-A/DXR1260W-A/DXR1500W-A/DXR1980W-A

Reference	Name
1	Display
2	Dryer switch
3	Green running lamp
4	Red failure lamp
5	Door lock
6	Local / remote control switch

## 4.2 Starting

### Attention

	To ensure optimum operational efficiency, do not use dryer on/off switch (S1) repeatedly within a short time period. Wait at least 5 minutes to start the dryer again after stopping to allow pressure equalization.
	To keep the compressed air net free of condensate, start the dryer before starting the compressor and stop the compressor before stopping the dryer.

### Process

#### Checks/preparation for starting

- The cold-drying machine room is well ventilated, and the maximum/minimum temperature of the room do not exceed the limits of the machine (refer to the technical parameters for details).
- Do not operate the machine under conditions outside the limits. (Placed in the technical parameters).
  - Air cooling - inlet temperature  $\geq 20^{\circ}\text{C}$ ; ambient temperature  $\geq 5^{\circ}\text{C}$ .
  - Water cooling - intake air temperature  $\geq 20^{\circ}\text{C}$ ; water temperature  $\geq 5^{\circ}\text{C}$ .
  - High load limits/working conditions.
    - Air cooling - air intake / ambient temperature / reference technical parameters.
    - Water cooling - intake air temperature/reference technical parameters; water temperature  $\leq 35^{\circ}\text{C}$ .
- Any operating conditions exceeding the above may cause equipment damage or personal injury.
- Note: Please keep the box plate of air-cooled models intact and free of any damage during operation, so as to avoid abnormal operation of the machine due to the incomplete/open box plate.
- The cooling water pressure/temperature meets the requirements; the water pressure is 3-5.5 bar; the water temperature is below 35 degrees, and the flow meets the requirements (water-cooled unit).
- Install stop valves and pressure gauges on the cooling water inlet and outlet pipelines (water-cooled units).
- Install an inlet filter on the cooling water inlet pipeline (water-cooled units).
- The connections of the air inlet and outlet pipes of refrigeration dryers must be not create stress for the system.
- The connections of the water inlet and outlet pipes of refrigeration dryers must not create stress for the system (water-cooled units).
- The pipe diameter of external pipes connected to the refrigeration dryer must not have less than the standard interface pipe diameter of the refrigeration dryer.
- Are the external pipes connected to the dryer clean (no dust, oil, liquid water).
- The upstream and downstream pipelines of the refrigeration dryer need to be installed with dust/oil filters (refer to the manual).
- The condensate drain must discharge without any pressure. It is recommended to make an open drainage ditch (to ensure smooth drainage and so that it is easy to observe).
- In order to prevent liquid water from entering the refrigerated dryer, a WSD or gas storage tank must be installed between the compressor and the refrigerated dryer; if a gas storage tank is installed, it must be equipped with a drain valve at the bottom.
- It is recommended to install a bypass pipeline for the air duct of refrigeration dryers; a pipeline filter is also recommended for the by-pass pipeline.
- If multiple air compressors are arranged in a parallel for general pipelines for multiple refrigeration dryers, measures to ensure uniform flow distribution should be considered (uneven air flow distribution can cause the performance of the refrigeration dryer to decrease).

17. The customer must have a power supply that allows the operation of the refrigerated dryer (the voltage fluctuation range shall not exceed 5% of the nominal voltage); the electrical configuration must meet the national standard specifications, and the customer's grounding terminal must be connected to the grounding system of the refrigerated dryer.
18. Layout of air compressor station (3.2 is recommended).
19. Are all pipe inlets and outlets of the air compressor and dryer properly connected, as well as water inlets and outlets.

## 4.3 During Operation



### Procedure

#### Regular check

- The pressure dewpoint indicator on the control panel. The pressure dew point will deviate from nominal if the air inlet conditions or volume flow differ from nominal.
- That condensate is discharged via condensate outlet. The amount depends on the operating conditions.

## 4.4 Stopping

### CAUTION

	To ensure optimum operational efficiency, do not use dryer on/off switch (S1) repeatedly within a short time period. Wait at least 5 minutes to start the dryer again after stopping to allow pressure equalization.
	To keep the compressed air net free of condensate, start the dryer before starting the compressor and stop the compressor before stopping the dryer.

### Procedure

Step	What to do
1	Close the dryer inlet and outlet valve (customer's installation).
2	Switch off the dryer.
3	If provided, open the dryer by-pass valve.

## 5 Maintenance

### Maintenance instructions

#### CAUTION

DXR cooling dryers contain a Hydro-Fluorocarbon (HFC) refrigerant, R410A & R407C.

#### Safety Precautions

**When handling refrigerant R410A & R407C, all applicable safety precautions must be observed. Please be aware of the following points:**

- Contact of refrigerant with the skin will cause freezing. Special gloves must be worn. In case of contact with the skin, the skin should be rinsed with water. On no account may clothing be removed.
- Fluid refrigerant will also cause freezing of the eyes; safety glasses must hence be worn.
- Refrigerant R410A & R407C is poisonous. Do not inhale refrigerant vapors. Check that the working area is adequately ventilated.
- When removing the side panels of the dryer, be aware that internal elements such as the pipes can reach a temperature of 110°C (230°F). Therefore, wait until the dryer has cooled down before removing the side panels.
- Before starting any maintenance or repair work, switch off the voltage and close the air inlet and outlet valves.

#### Local legislation

##### Local legislation may stipulate that:

- Work on the refrigerant circuit of the cooling dryer or on any equipment which influences its function must be undertaken by an authorized control body.
- The installation should be checked once a year by an authorized control body.

#### General:

##### The following precautions must be taken:

- Keep the dryer clean.
- Inspect and clean the filter of the steam trap daily.
- Brush or blow off the finned surface of the condenser monthly



## Instructions for routine maintenance

High and Low Pressure Settings		
Refrigerant types	Low Pressure Range of Refrigerant（unit Mpa）	
R407C	0.39-0.5(Standard working condition)	
R410A	0.7-0.8(Standard working condition)	
High and Low Voltage Protection Value		
Refrigerant types	Low Pressure Protection Value of Refrigerant(Automatic reset unit Mpa)	High Pressure Protection Value of Refrigerant(Manual reset unit Mpa)
R407C	0.37（Open） 0.55（Close）	2.90（Air cooling） 2.20（water cooling)
R410A	N/A	4.30（Air cooling） 3.30（water cooling)
Contents		
Startup debugging	Make sure that all the pressures are within the set values in the table above (the cooling water inlet pressure of water-cooled units is not less than 0.3 Mpa, the temperature of outlet water is not higher than 32 ℃ and the temperature of inlet water is not higher than 5 ℃).	
Maintenance	Good maintenance of chiller is the guarantee of long-term stable operation of unit, and also reduces wear and prolongation of parts.	
	The premise of machine life, so please do the following maintenance on time:	
	Daily: Press manual test key of drainage valve to confirm normal drainage	
	Weekly: Clean drain valve filter ring	
	Monthly: Use compressed air to blow the fins from the motor direction (do not rinse with water)	
Leakage and replacement of spare parts	1. If the leakage causes the high-pressure protection of the machine or the high-temperature protection of the compressor, it is necessary to confirm whether the compressor oil stinks or deteriorates.	
	2. Any lack of refrigerant needs to check the leakage of the machine, find the leakage point and repair it. Make sure there is no pressure in the system before welding.	
	3. Replacement of spare parts (if any)	
	4. Pressure holding with refrigerant or helium after welding the leak point. Pressure holding time is not less than 4H.	
	5. Vacuum the machine after pressure holding. Vacuum time is not less than 4H for more than 20 cubic meters and 2H for less than 20 cubic meters.	
	6. Refrigerant filling (type, weight see nameplate)	
	7. Debugging machines according to high and low voltage setting table	

## 6 Controller

### 6.1 Standard controllers

Adjustment and safety equipment is tested at the factory for the ideal performance of the dryer. Do not modify the settings of any device. Please refer to 5.1 - General for any adjustments





### 6.2 Panel operation




The panel displays three numbers, two status indicators (key lock, refrigeration (snow)), and a verbal parameter description (off tem).

In normal running state, none of the verbal parameter descriptions are lit; when entering the menu setting state, the corresponding parameter descriptions will be lit. In normal operation, if there is an output, the "on" character is will be lit; if the machine is being shutdown, the "off" character will be lit.

#### 6.2.1 Description of work indicator statuses

Name	Symbol	Status	Meaning
Lock symbol		Off	Not locked
		On	Locked
Output symbol	Start-up	Off	Compressor output stopped
		On	Compressor output working
Refrigeration symbol		Off	Compressor stopped
		Flashing	Compressor delay
		On	Compressor working

#### 6.2.2 Button descriptions

Function button descriptions	Icon	Note
Unlock key/OK		
Reset key	Reset	
Up key		
Down key		
Shutdown temperature key		Blank
Reset key		Blank

Remarks: There are only four keys that need to be marked: up key/down key/unlock key/reset key; the others do not need signs

### 6.3 Buzzer alarm silence

Press any key to eliminate this buzzer alarm sound; the alarm indicator will not disappear until the alarm is removed.

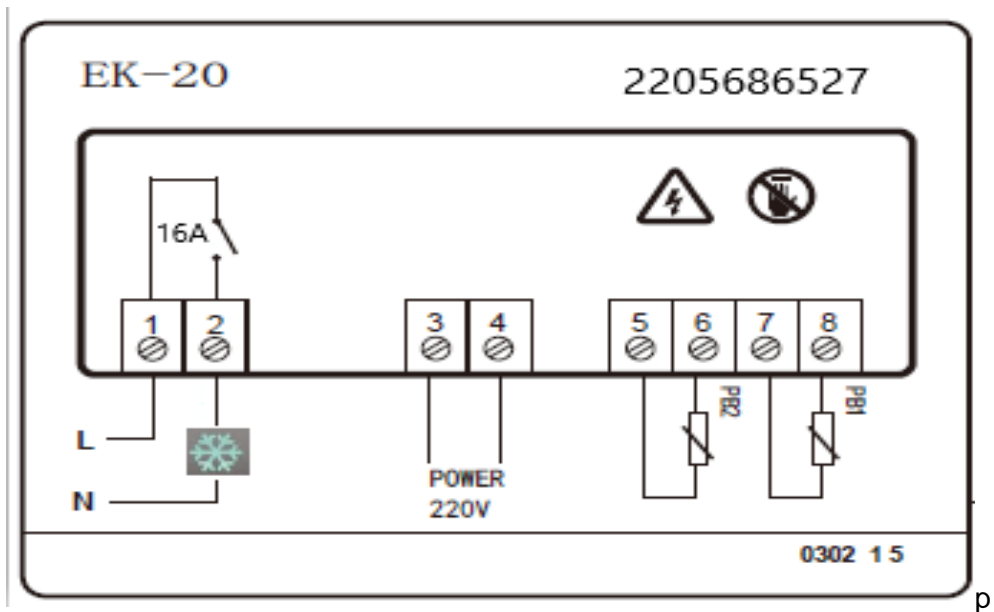
### 6.4 Alarm output

The controller has a buzzer alarm output. When running, the buzzer will sound when the following situations occur.

When the PB1 probe fails, the temperature display window displays the fault code E1;

When the PB2 probe fails, the temperature display window displays the fault code E2.


### 6.5 Wiring diagram (Controller)



## 7 Troubleshooting

### 7.1. Problem Solving

#### CAUTION

	Use only authorized parts. Any damage or malfunction caused by the use of unauthorized parts is not covered by Warranty or Product Liability. Apply all relevant Safety precautions during maintenance or repair
	Before carrying out any maintenance or repair work on the dryer: <ul style="list-style-type: none"> <li>• Close air inlet and outlet valve of the dryer.</li> <li>• Press the test button on the electronic condensate drain.</li> <li>• Move dryer on/off switch to position 0.</li> <li>• Switch off the voltage. See section 4.4 <b>Error! Reference source not found.</b></li> <li>• Open the isolating switch to prevent an accidental start</li> </ul>
	<b>The air inlet and outlet valve can be locked during maintenance or repair work as follows:</b> <ul style="list-style-type: none"> <li>• Close the valve.</li> <li>• Using a wrench, remove the screw fixing the handle.</li> <li>• Lift the handle and turn it until the slot of the handle fits over the blocking edge on the Valve body.</li> <li>• Fit the screw</li> </ul>

#### Faults and remedies

	Condition	Fault	Remedy
1	Pressure dew-point too high	Air inlet temperature too high	Check and correct; if necessary, install a pre-cooler.
		Ambient temperature too high	Check and correct; if necessary, draw cooling air via a duct from a cooler place or relocate the dryer.
		Air inlet pressure too low	Increasing the inlet pressure Adjust the pressure switch.
		Dryer capacity exceeded	Reduce air flow.
		Shortage of refrigerant	Have circuit checked for leaks and recharged.
		Refrigerant compressor does not run	<ul style="list-style-type: none"> <li>• Check the current (refrigerant compressor stops or shuts down).</li> <li>• Refrigerant compressor blows out.</li> </ul>
		Evaporator pressure too high	<ul style="list-style-type: none"> <li>• Check that the LAT sensor is in the correct position.</li> <li>• Bad conditions of customer.</li> <li>• HGB valve need close a bit.</li> <li>• Check low pressure, if lower than specifications, need charge more Freon.</li> </ul>
		Condenser pressure too high	<ul style="list-style-type: none"> <li>• Check if, Ambient Temperature is higher than</li> </ul>

	Condition	Fault	Remedy
			specifications <ul style="list-style-type: none"> <li>• Check if Fan does not operate</li> <li>• Check high pressure, if higher than specifications, need charge more Freon</li> </ul>
2	Condenser pressure too high or too low	Fan or fan motor out of order	Check fan/fan motor
		Ambient temperature too high	Check and correct; if necessary, draw cooling air via a duct from a cooler room or relocate the dryer
		Condenser externally clogged	Clean the condenser
3	Compressor stops or does not start	Electric power supply to compressor is interrupted	Check and correct as necessary
		Thermic protection of refrigerant compressor motor has tripped	Reset thermostatic protection
		Restart of the dryer has been too fast, not enough time for pressure balancing	Wait a few minutes and restart
		High-pressure switch that can be manually reset is activated	Reset switch
4	The Condensate drain remains inoperative	Drain system clogged	Have system checked
		Filter upstream of the solenoid valve clogged	Check filter
		Timer or solenoid exhaust valve out of order	Check timer and solenoid valve
5	Evaporator pressure is too high or too low at unload	Hot-gas by-pass valve incorrectly set or out of order	Have hot gas by-pass valve adjusted
		Condenser pressure too high or too low	<ul style="list-style-type: none"> <li>• Check Ambient Temperature, if higher or lower than specifications.</li> <li>• Check if Fan is not operating or running all the time</li> <li>• Check the pressure</li> </ul>
		Shortage of refrigerant	Have circuit checked for leaks and recharged

## 8 Technical data (corresponding to standard operating conditions)

Specification	Unit	Value		
		DXR360-A	DXR450-A	DXR510-A
Compressed air inlet pressure	bar	7	7	7
Ambient air temperature	°C	25	25	25
Compressed air inlet temperature	°C	35	35	35
Pressure dew point	°C	7	7	7

Specification	Unit	Value				
		DXR360W-A	DXR450W-A	DXR510W-A	DXR600W-A	DXR750W-A
Compressed air inlet pressure	bar	7	7	7	7	7
Ambient air temperature	°C	25	25	25	25	25
Compressed air inlet temperature	°C	35	35	35	35	35
Cooling water inlet temperature	°C	32	32	32	32	32
Pressure dew point	°C	7	7	7	7	7
Cooling water flow	(L/Min)	50	63.3	75	83.3	108.3

Specification	Unit	Value			
		DXR1000W-A	DXR1260W-A	DXR1500W-A	DXR1980W-A
Compressed air inlet pressure	bar	7	7	7	7
Ambient air temperature	°C	40	40	40	40
Compressed air inlet temperature	°C	40	40	40	40
Cooling water inlet temperature	°C	32	32	32	32
Pressure dew point	°C	10	10	10	10
Cooling water flow	(L/Min)	141.7	175	208.3	275

## Operating limit

Specification	Unit	Value
		DXR360W-A to DXR1980W-A & DXR360-A/DXR450-A/DXR510-A
Maximum compressed air inlet pressure	bar(e)	10
Maximum ambient temperature	°C	45
Minimum water inlet temperature	°C	5
Maximum water inlet temperature	°C	35
Minimum ambient temperature	°C	5
Maximum compressed air inlet temperature	°C	55

## Performance Data\*

Specification		Unit	Value		
			DXR360-A	DXR450-A	DXR510-A
Volumetric flow through dryer inlet		l/s	600	750	850
		m3/min	36.0	45.0	51.0
Refrigerant type	Model		R410A	R410A	R410A
	Total	gr	4000	5000	5000
Weight (net weight)		kg	400	410	425
Exterior dimensions	Length	mm	1133	1133	1133
	Width	mm	1000	1000	1000
	Height	mm	1700	1700	1700

Specification		Unit	Value				
			DXR360W-A	DXR450W-A	DXR510W-A	DXR600W-A	DXR750W-A
Volumetric flow through dryer inlet		l/s	600	750	850	1000	1250
		m3/min	36.0	45.0	51.0	60.0	75.0
Noise (decibels)		dB(A)	65	65	65	65	65
Refrigerant type			R410A	R410A	R410A	R410A	R410A
	Total	gr	4000	5000	5000	6000	7500
Weight (net weight)		kg	425	430	445	610	620
Exterior dimensions	Length	mm	1133	1133	1133	1644	1644
	Width	mm	1000	1000	1000	1000	1000
	Height	mm	1550	1550	1550	1750	1750

\*Under reference conditions.

\*\*Noise measured according to PNEUROP PN8NTC2: Tolerance  $\pm 3$  dB(A)

Specification		Unit	Value			
			DXR1000W-A	DXR1260W-A	DXR1500W-A	DXR1980W-A
Volumetric flow through dryer inlet		l/s	1670	2100	2500	3300
		m <sup>3</sup> /min	100.2	126.0	150.0	198.0
Refrigerant type			R407C	R407C	R407C	R407C
	Total	gr	12500	13500	16000	20000
Weight (net weight)		kg	890	1040	1225	1465
Exterior dimensions	Length	mm	2100	2100	2,400	2,400
	Width	mm	1150	1150	1150	1150
	Height	mm	1750	1750	1750	1750

### Electrical data

Specification	Unit	Value		
		DXR360-A	DXR450-A	DXR510-A
Voltage - phase - frequency	V/Ph/Hz	380/3/50	380/3/50	380/3/50
Maximum power (ambient temperature 45°C; inlet temperature 55°C)	W	7080	7727	9891
Maximum current	amps	12.75	24.7	24
Rated power (ambient temperature 25°C; inlet temperature 35°C)	W	4860	5626	6293
Rated current	amps	9.4	19.25	16.3
Fan motor protection	IP	54	54	54

Specification	Unit	Value				
		DXR360W-A	DXR450W-A	DXR510W-A	DXR600W-A	DXR750W-A
Voltage - phase - frequency	V/Ph/Hz	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50
Maximum power (ambient temperature 45°C; inlet temperature 55°C)	W	6220	6867	9100	11855	13295
Maximum current	amps	11.1	23.1	22.2	29.3	30.4
Rated power (ambient temperature 25°C; inlet temperature 35°C)	W	4000	4766	5433	7871	8769
Rated current	amps	7.5	13.5	14.5	21	21.5



Specification	Unit	Value			
		DXR1000W-A	DXR1260W-A	DXR1500W-A	DXR1980W-A
Voltage - phase - frequency	V/Ph/Hz	380/3/50	380/3/50	380/3/50	380/3/50
Maximum power (ambient temperature 45°C; inlet temperature 55°C)	W	14070	17329	23525	28584
Maximum current	amps	24	30	38	47
Rated power (ambient temperature 25°C; inlet temperature 35°C)	W	7936	9866	13697	16517
Rated current	amps	16	20	25	31

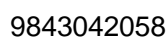
## Pipe connections

Specification	Value		
	DXR360-A	DXR450-A	DXR510-A
Gas connections	DN100 flange	DN100 flange	DN100 flange

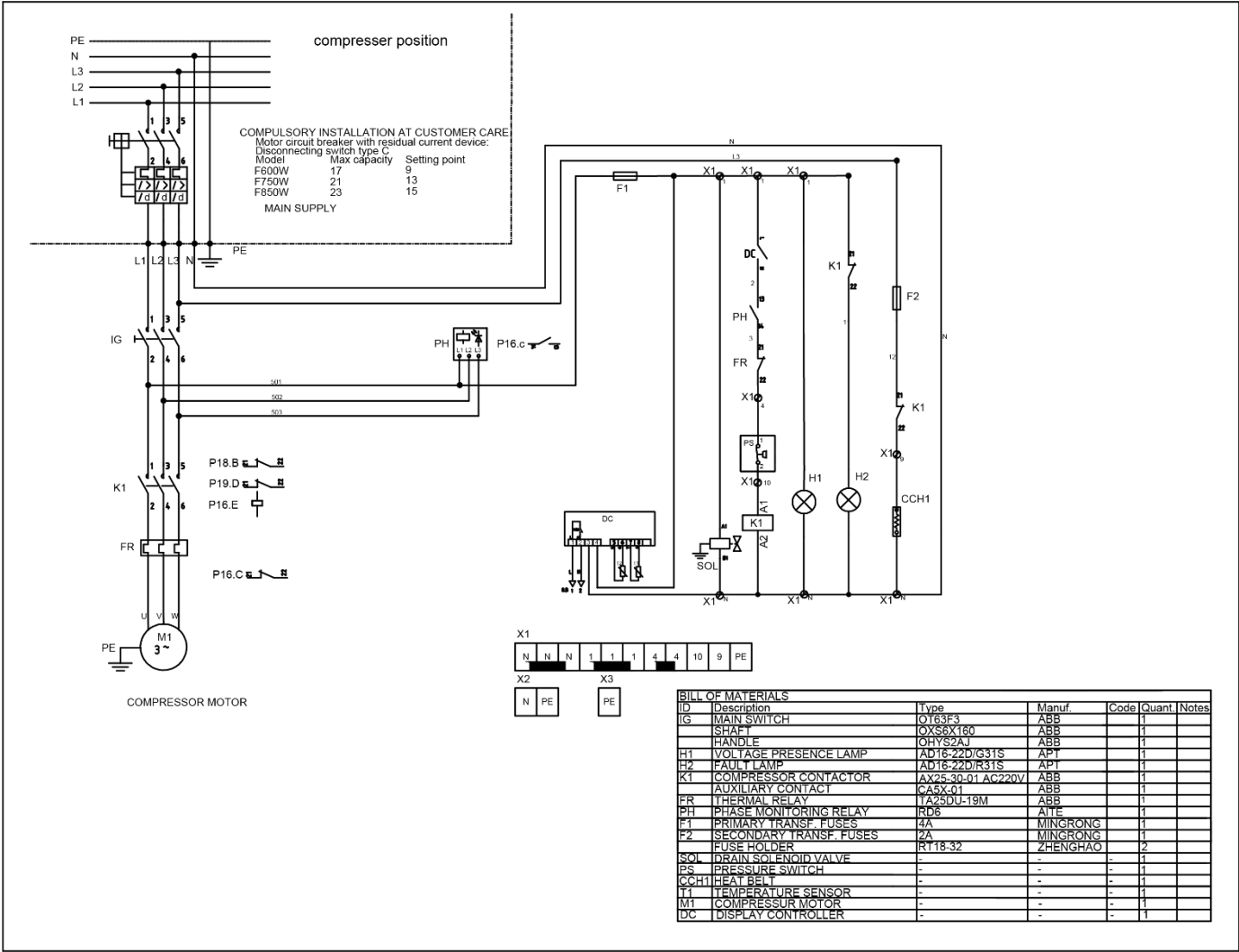
Specification	Value				
	DXR360W-A	DXR450W-A	DXR510W-A	DXR600W-A	DXR750W-A
Gas connections	DN100 flange	DN100 flange	DN100 flange	DN150 flange	DN150 flange
Cooling water connection	G1"	G1"	G1"	G1.5"	G1.5"

Specification	Value			
	DXR1000W-A	DXR1260W-A	DXR1500W-A	DXR1980W-A
Gas connections	DN150 flange	DN150 flange	sDN200 flange	DN200 flange
Cooling water connection	DN40 flange	DN50 flange	DN50 flange	DN65 flange

## DXR360-A, DXR450-A and DXR510-A



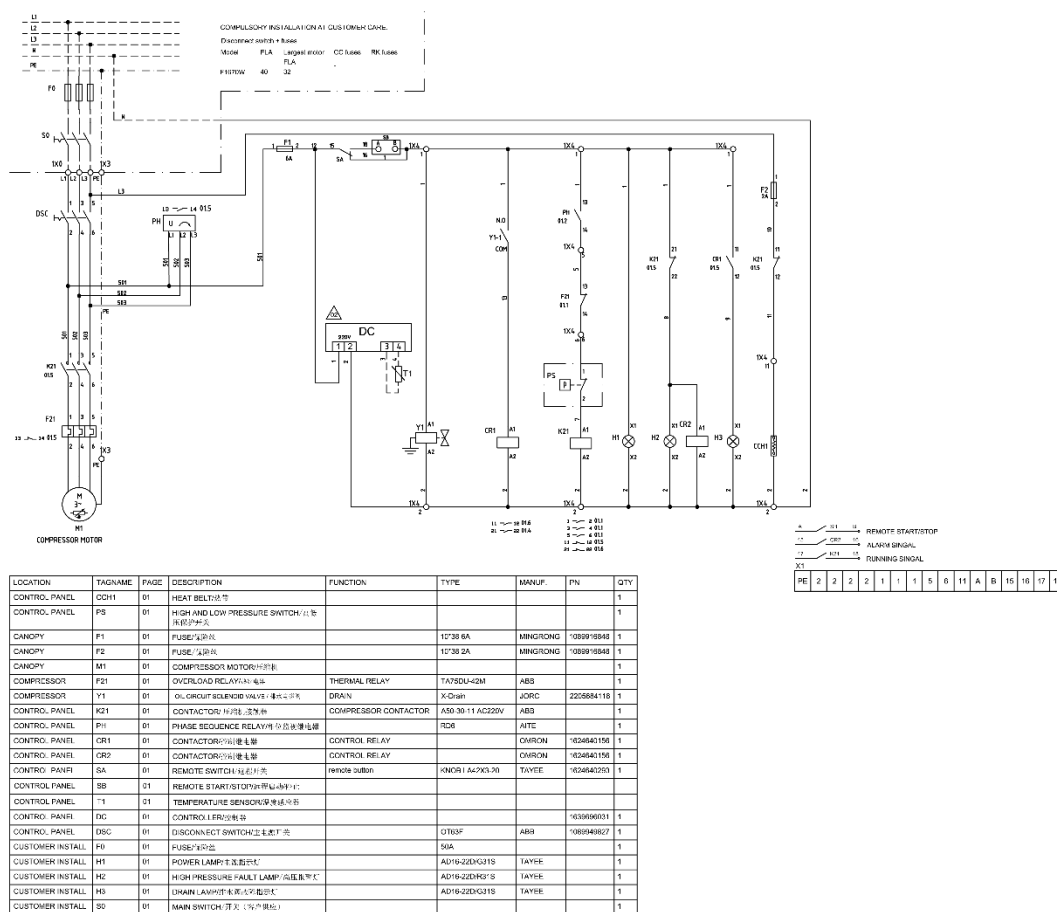
DXR360W-A, DXR450W-A and DXR510W-A



9843042058

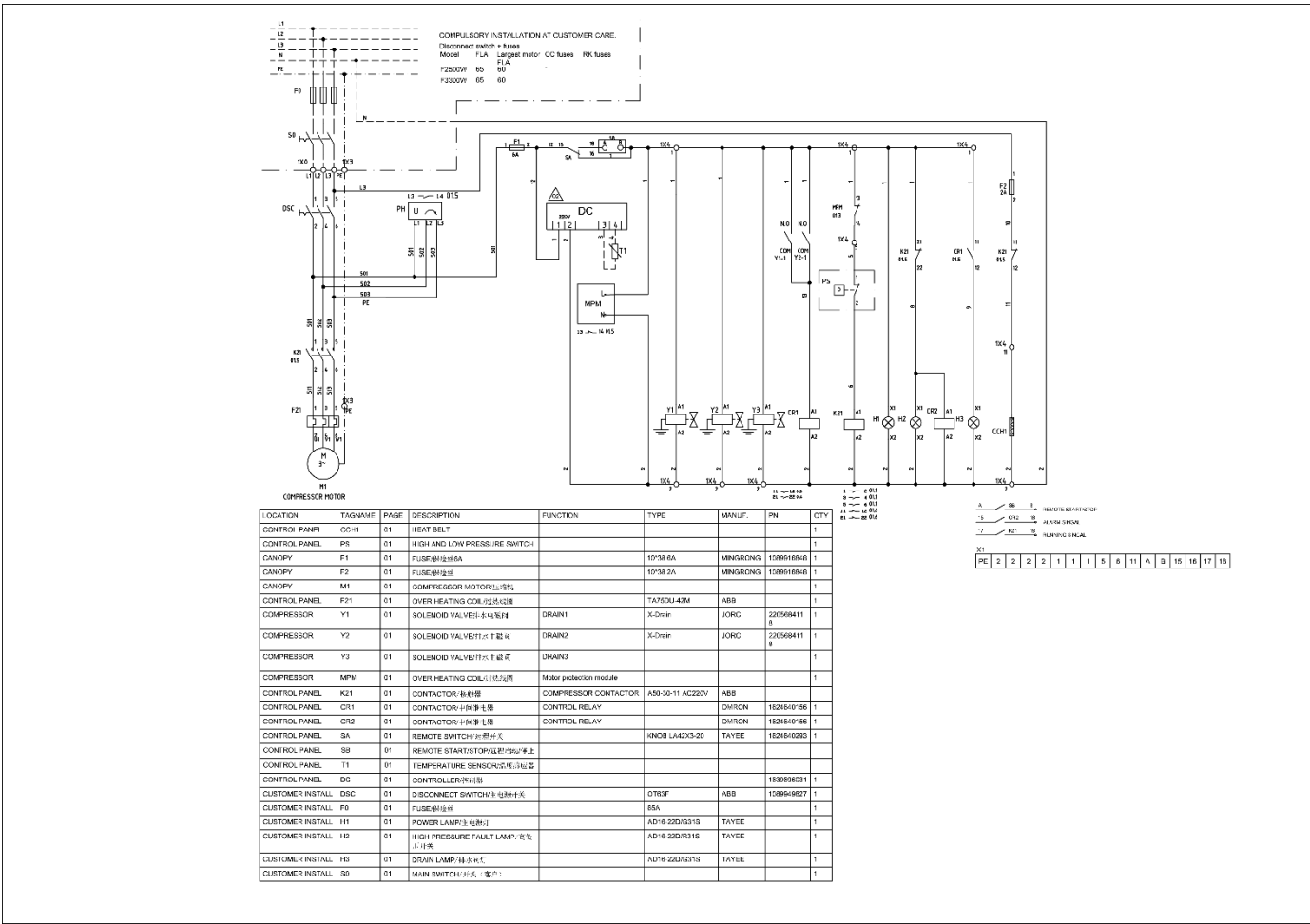


## DXR1000W-A and DXR1260W-A



LOCATION	TAGNAME	PAGE	DESCRIPTION	FUNCTION	TYPE	MANUF.	PN	QTY
CONTROL, PANEL	COH1	01	HEAT BELT 加热器					1
CONTROL, PANEL	PS	01	HIGH AND LOW PRESSURE SWITCH 高低压开关					1
CANOPY	F1	01	FUSE 熔断器		12" 38 BA	MININGCO	0899-15848	1
CANOPY	F2	01	FUSE 熔断器		12" 38 2A	MININGCO	0899-15848	1
CANOPY	M1	01	COMPRESSOR MOTOR 压缩机					1
COMPRESSOR	F21	01	OVERLOAD RELAY 过载继电器	THERMAL RELAY	77SDU-42M	ABS		1
COMPRESSOR	Y1	01	ON/OFF SEQUENCE VALVE 启/停电磁阀	DRAIN	X-Orain	JORC	225848118	1
CONTROL, PANEL	K21	01	CONTACTOR 接触器	COMPRESSOR CONTROL	A30 39 11 AC220V	ABB		1
CONTROL, PANEL	P11	01	PHASE SEQUENCE RELAY 相序继电器		RDI	ATE		1
CONTROL, PANEL	CR1	01	CONTACTOR 接触器	CONTROL RELAY		DAVON	436460156	1
CONTROL, PANEL	CR2	01	CONTACTOR 接触器	CONTROL RELAY		CARRON	436460156	1
CONTROL, PANEL	SA	01	REMOTE SWITCH 远程控制开关	remote button	4NOR1 A29X31	TAIYUE	436460320	1
CONTROL, PANEL	SB	01	REMOTE START/STOP 远程控制启动/停止					1
CONTROL, PANEL	T1	01	TEMPERATURE SENSOR 温度传感器				4369566031	1
CONTROL, PANEL	DC	01	CONTROL LFC 变频器					1
CONTROL, PANEL	DISC	01	DISCONNECT SWITCH 主电源开关		UT63F	ABB	089949827	1
CUSTOMER INSTALL	H1	01	POWER CABLE 电源线		SMA			1
CUSTOMER INSTALL	HS	01	FUSE/LAMP 保险丝/灯		AD19-22DC13	TAIYUE		1
CUSTOMER INSTALL	HC	01	HIGH PRESSURE LAMP 高压灯		AD19-22DC13	TAIYUE		1
CUSTOMER INSTALL	HS	01	SHAIN LAMP 安全灯		AD19-22DC13	TAIYUE		1
CUSTOMER INSTALL	DO	01	MAIN SWITCH 总开关					1

DXR1500W-A and DXR1980W-A



This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.





Experience. Customer. Service