

# **AIR DRYERS**

## **Instructions**

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## Tracking card

To ensure your rights and benefits, please fill this card after purchasing. And please keep the content of the two cards consistent and submit it through service network of our company to ensure quick service for you.

Customer Name: \_\_\_\_\_

Date Purchased: \_\_\_\_\_

Installation Place: \_\_\_\_\_

Model Type: \_\_\_\_\_

Serial Number: \_\_\_\_\_

## Purchased from

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

Agent: \_\_\_\_\_

## Preface

The device has been strictly tested by our QC before leaving factory. While to ensure the security and safe running of the device, please read the instruction carefully. This instruction mainly aims to inform you the process, installation, operation, usage, maintenance, equipment wiring function, trouble-shooting and others of this type of refrigerated compressed air dryer. Before you use the dryer, please pay attention to the operation conditions mentioned in the technical documents and learn the function of every component as well as the conditions of the whole system. So that you could have judges during the operation and maintenance of the dryer and could ensure a smooth operation.

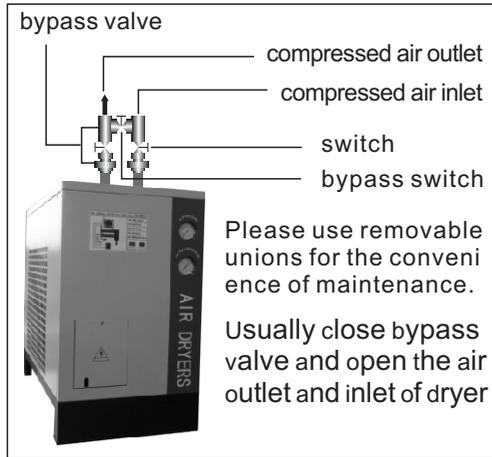
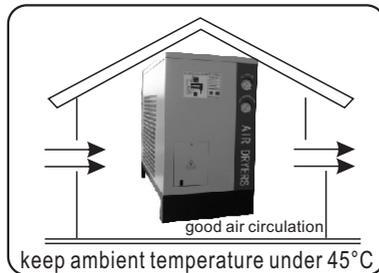
If you need our services or you have any inquiries, please feel free to contact us!

## Attention

- ✘ No rough handling, crash or shake when transport and hoist the dryer.
- ✘ Please strictly follow the requirements on environment and temperature of the instruction to use the device.
- ✘ Please inspect and maintain the device regularly. Long term operation under improper conditions may shorten the longevity of the device.
- ✘ Regular inspect and maintain could extend service life of the dryer. Please have professional people to manage the device.

# Attention To The Installation Environment

- Please place the device on smooth and stable ground. Avoid vibrated, uneven place or place that could not natural water flow.
- Install the device at the places that have good air circulation. The environment needs adequate ventilation. And please keep ambient temperature under 45°C.
- Do not install the device outdoors, or places that would be reached by rain and wind or with heavy moisture, much powder or easy to cause corrosion.
- Keep the space between two or more than two dryers. Keep the heat of the dryers from each other.



Please use removable unions for the convenience of maintenance.

Usually close bypass valve and open the air outlet and inlet of dryer

Please use removable union between Air Inlet and Air Outlet.

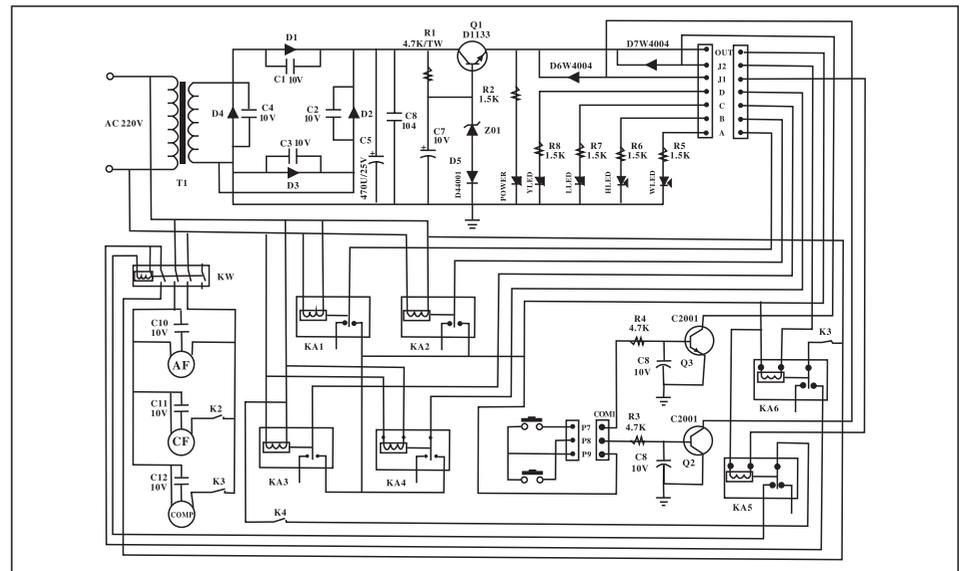
Be sure to install bypass valve, because it's a certain equipment for maintenance.

Mind the weight of the valve. No too heavy and not too firm when install the valve.

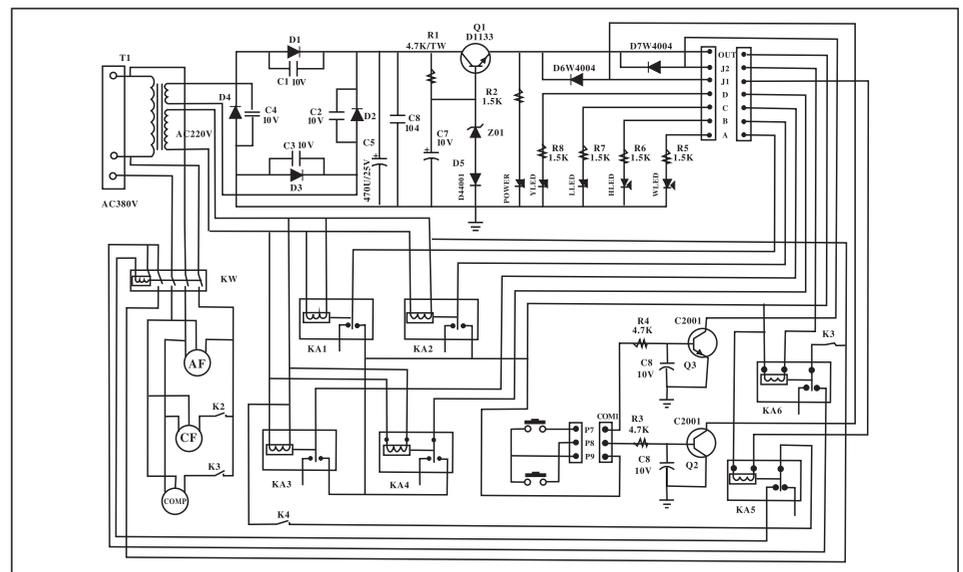
To block dust and other particles, please install the valve after fully inflated. Please specially note that the vibration of air compressor should not pass to the dryer.

# Equipment wiring Diagram

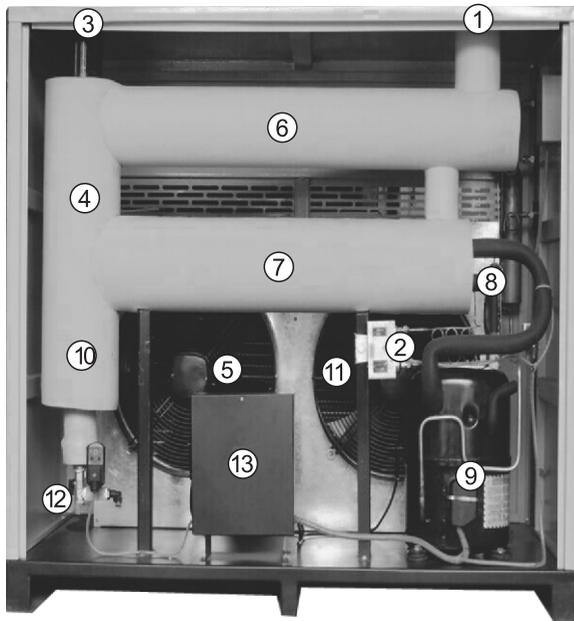
## 8~50HP.SCH Equipment wiring Diagram



## 5~500HP.SCH Equipment wiring Diagram

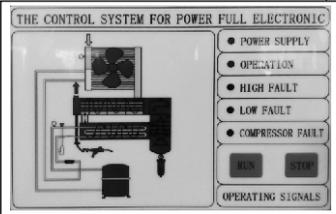


# Components



1. Air Outlet
2. high/low pressure control switch
3. Air Inlet
4. Pre-cooler
5. Blower Cooler
6. Rear-mounted Cooler
7. Cooling Medium Evaporator
8. Relief Valve
9. Compressor
10. Cyclone Type Water Separator
11. condenser fan
12. Electronic Drainer
13. Distribution Box

Touch Screen-based Control Panel and Meter



Cooling Medium Compressor



Filter



# Operation Method

Start the device only after checking the device has been correctly installed. Press RUN button to start.

After press RUN, green light on. Wind cooling coolant motor operates or stops according to the environment temperature of compressed air. If wind cooling coolant motor keeps operating and the needle of evaporation pressure meter goes to or over the green area, it may excess load.

Re-start the device at least 3 minutes after stopping.

# Trouble-shootings

## No running at all

Faults	Cause Analysis	Corrective Measures
no power	fuse burning or switch tripping	check if the power supply has short circuit problem check fuse or infusible fuse switch
	fault line	find out the fault line place and fix it
start failure with proper power supply	abnormal voltage or the electrics are too small (voltage drop)	refer to the voltage instructions on the panel
	poor switch	replae switch
	poor contactor	replae contactor
	overload relay	replace
	poor capacitor	replace capacitor
	poor startup relay	replace startup relay
	poor pressure switch	replace pressure swith
	poor temperature switch	replace temperature swith
start failure with proper switch	compressor fault	replace compressor
	high&low voltage switch disconnected without recovery	find out the cause of tripping and RESET
	electromagnetic switch 0.L without recovery	find out the cause and RESET
	high voltage switch without recovery	find out the cause and RESET
	temperature switch setting error	reset or replace temperature switch
	compressor fault	replace compressor

## bad running after startup

Faults	Cause Analysis	Corrective Measures
too low indication value of evaporating temperature	poor evaporating temperature meter (low tension voltage meter)	replace evaporating temperature meter (low tension voltage meter)
	expansion valve blockage	replace expansion valve
	low valve set of temperature switch or pressure switch	reset
too high indication value of evaporating temperature	cooling medium leakage	decide the leakage, fix the leakage and refill cooling medium
	high environment temperature	improve environment conditions, find a place with good ventilation
	fault of heated air bypass valve	adjust or replace heated air bypass valve
	condenser blockage	clean
	air processing too much	redesign matching problem
	cooling medium compressor exhaust valve warn out	replace compressor

# Trouble-shootings

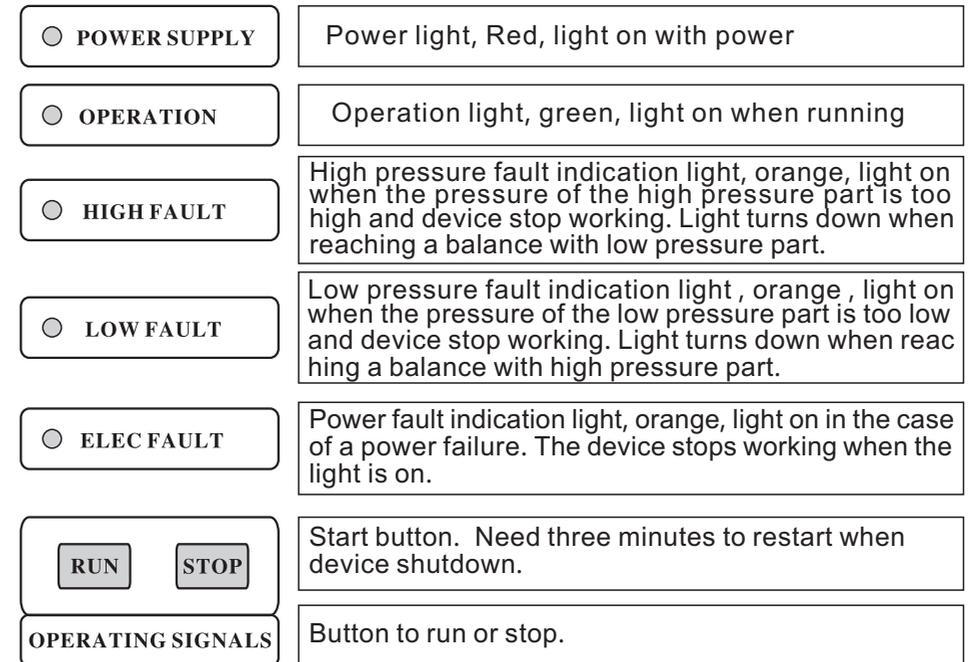
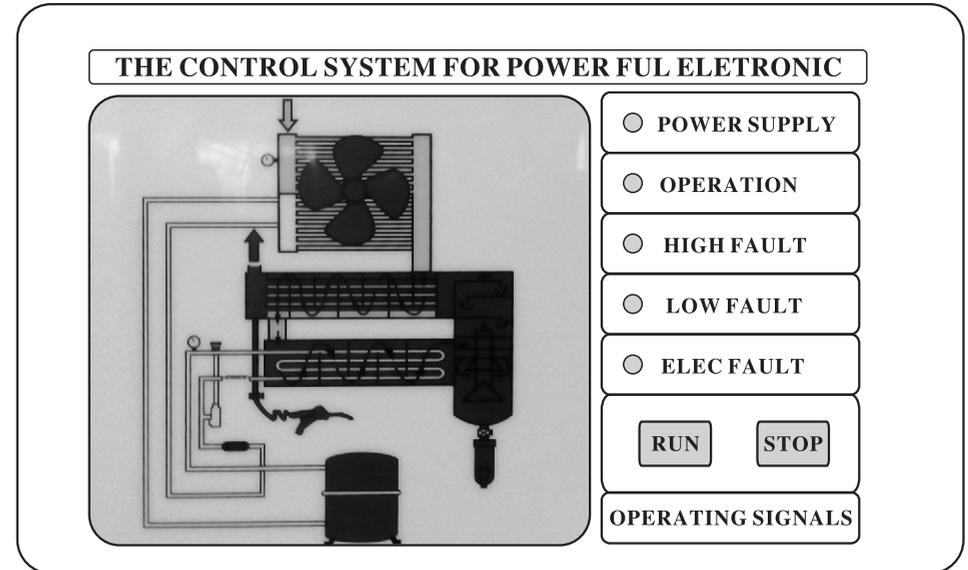
## poor performance after startup

Faults	Cause Analysis	Corrective Measures
high tension tripping recovered but still unable to startup	after startup, wire short circuit with burn smell	adjust the circuit of control and reset switch
	poor contact of pressure switch	replace pressure switch
	poor fan	replace fan motor
	overload tripping	find out the cause or check circuit
	condenser scaling	clean the condenser regularly
	too many cooling medium	reduce cooling medium
	high environment temperature	improve environment conditions, find a place with good ventilation
	expansion valve	replace expansion valve
	drying filter blockage	replace filter
tripping of relay	poor startup battery	replace startup battery
	poor capacitor	replace capacitor
	poor contact of pressure switch	replace pressure switch
	compressor overload	reduce the air process flow
	high environment temperature	improve environment conditions, find a place with good ventilation
	Too low preset values of relay	set the value again
	battery disconnected	fix or replace with a new one
	bettery lacking phrase	find out the reason
poor contact	fix or replace with a new one	

## Poor drainer system

Faults	Cause Analysis	Corrective Measures
Poor drain	automatic water drainer with working pressure is lower than 1.5kg/cm <sup>2</sup>	proper working pressure is within 2-10kg/cm <sup>2</sup>
	damage of valve of drainer	replace valve of drainer
	loped or damaged water drainer	horizontalize or replace drainer
	filter blockage in water drainer	refer to the standard pressure of automatic drainer
	over pressure when use	clean
	drain blockage	clean

# Equipment wiring Diagram



# Trouble-shootings

## air pressure drop increase

Faults	Cause Analysis	Corrective Measures
too large air pressure difference between the environment and the air compressor	the pipe system valve is not open fully	fully open the valve
	too small diameters of pipes	enlarge the diameters of pipes
	too long pipe length or too many elbows or joins	redesign the piping system
	too many leakage in pipe system	check elbows and joins
	filter blockage in pipe system	clean or replace filter medium
air compressor too small	the flew exceeds the limitation of the air compressor	replace larger air compressor
	flew naturally reduce	reduce air flow
water frozen inside evaporator	temperature switch fault	replace temperature switch
	expansion valve blockage	replace expansion valve

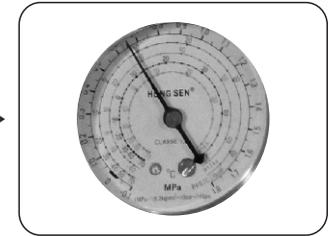
## poor drainage

Faults	Cause Analysis	Corrective Measures
environment moisture	the air bypass valve is not close fully	fully close bypass valve
	the air doesn't pass through the dryer	fully open inlet and outlet valves of the dryer
	air flew is too big	redesign the air compressing system
	poor water drainer	clean or replace
	drainage pipe is higher than automatic drainage	re-install the drainage pipe system
	air compressor is too large and the dryer is too small. They are not match.	redesign the matching
improper indication value of evaporating temperature	too high evaporating temperature	check the load of the air compressor
	poor environment and ventilation	choose a proper place and improve ventilation
	expansion valve blockage	replace expansion valve
	cooling medium leakage	decide the leakage, fix the leakage and refill cooling medium
	meters damage	replace meters

# Pressure Meter

Evaporation pressure meter. The evaporation temperature meter stands for the low pressure of cooling medium. When under normal load, the needle refers to the blue area. When under no load, the pressure would be slightly lower. When under full load, the pressure would be slightly higher.

Evaporation pressure meter



Safe pressure meter stands for the pressure of compressed air near the outlet of air compressor.

Safe pressure meter

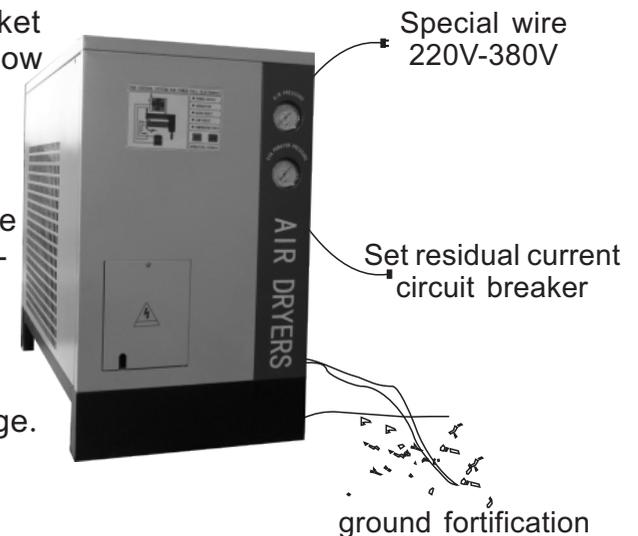


# Power Installation

Please use special socket with 220V or 380V for power er plug.

Please install creepage switch for the power supply.

Ground wire must be connected before usage.



# Attention to Maintenance

- Uninstall and clean automatic water drainer every month
  - When uninstall water drainer, please first open bypass valve, close inset and outset valves and make sure the pressure in the automatic water drainer drops to 0.
  - Screw off the bottom of pipe with pipe tong.
  - Pour out water with neutral detergent inside and clean. Never use impregnant.
  - Screw on the clamping ring according to the original installation. Turn off the bypass valve and open inlet and outlet valve.
- Use vacuum cleaner, brush or air blowgun to clean the surface of heat transpiration mesh every week.
- Only use blowgun to clean distribution cabinet and circuit board of the device.

## Wind Cooling Type Dryer Technical Parameters

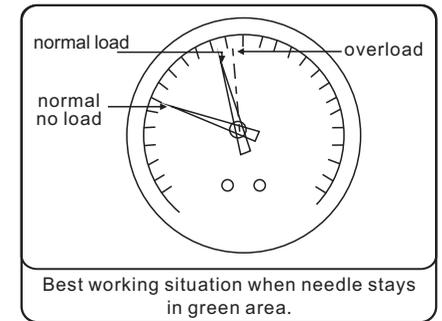
### Technological Specifications of wind cooling type dryer

MODELS	ND-7.5	ND-10	ND-15	ND-20	ND-30	ND-50	ND-75	ND-100	ND-150	ND-200	
Processing wing volume m <sup>3</sup> /min	0.8	1.2	1.7	2.5	3.8	6.5	8.8	13.5	16	21	
The maximum conditions for use	A. inlet temperature 80°C    B. environment temperature 45°C C. air pressure 10Kg/cm <sup>2</sup> (accept special customer order when over air pressure)										
Pressure dew-point	the pressure dew-point equals to -20°C										
Refrigerant	R12					R22    R-404					
Compressor	1/4HP	1/3HP	1/2HP	3/4HP	1HP	1-1/2HP	2HP	3HP	4HP	5HP	
Power supply	Ac1∅ 200V    50/60Hz					Ac3∅ 380V    50/60Hz					
Air Tubing entry Exit Diametres	3/4"	1"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	3"	4"	
Dimensions mm	Height	665	730	730	780	800	850	1150	1200	1250	1300
	Width	380	430	430	430	450	500	620	620	620	650
	Lenght	600	750	750	750	950	1030	1200	1200	1300	1320
	Weight	51	68	68	90	120	123	198	238	340	400

# Notes

## 1.Note

- When needle of evaporation pressure gauge reach out of the blue area, it maybe on full load. Please check the following situations of full load.



## 2.Overload situation

- The device will be overload under following situations or it will keep working with the light of protection device on and will stop when it turn to yellow.

- Over temperature of the compressed air
- Over flow of the compressed air
- The environment temperature exceed 45°C
- The power voltage is low. 220V drops to below 198V. 380V drops to below 340V.
- The intake is blocked by wall or dirt.



## 3.Note

The automatic drainage may not work because of the quality of compressed air. Please check everyday if there is water drainage at the exhaust. The working pressure of drainage is low that 1.5kg/cm<sup>2</sup>. If the pressure is higher, the valve would not close. Before the pressure increase, the air may flow from exhaust. So the air compressor with low air flow may cause to the pressure unable to increase, please have a notice.

 Please use air compressor with air flow higher than 300/MIN.