Service Manual
Manuel de Service

WPSN-29D21.ET
R600a

Updated on: 19 APR 22

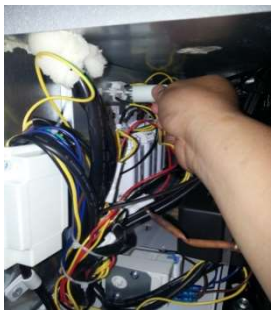
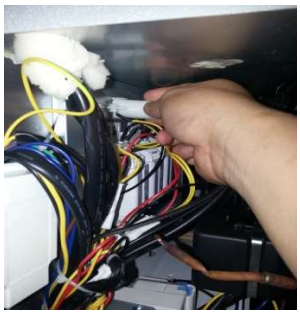
Maintenance Manual for Single Door Model

1. Common faults and solutions

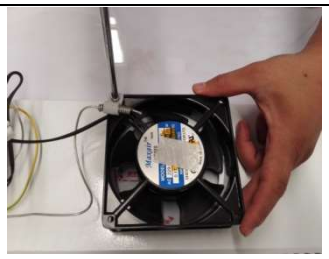
Common faults and solutions		
Fault	Cause	Resolution
1. Temperature indicator disfunction/flicker	a. Open traverse or bad contact b.indicator fault	a.Check wires to ensure good contact b. change indicator
2. unlighted fluorescent tube	a.Open traverse or bad contact b.tube fault c.starter fault d. ballast fault	a.Check wires to ensure good contact b.change tube c.change starter d.change ballast
3. Draught fan Off work	a.Open traverse or bad contact b.draught fan fault c. blades interfering with other parts	a.Check wires to ensure good contact b.change draught fan c. adjust positions of interfered parts
4. No cooling/poor cooling	a. Open traverse or bad contact b.insufficient power voltage c. temperature controller at "0" d.compressor not started -Compressor locked (current increases sharply when connecting power, the function of protector) -Starter fault -Protector fault e. leakage in cooling system f. Poor heat dissipation due to tightly closing to wall	a.Check wires to ensure good contact b.Operate cooler at rated voltage, adjust temperature controller to right gear c.Change compressor -Cut power---shake compressor---- connect power, repeat for 2-3 times, change compressor if to no effect. -change starter -change portector d.Find the point of leakage and weld, vacuumize and pour into refrigerant

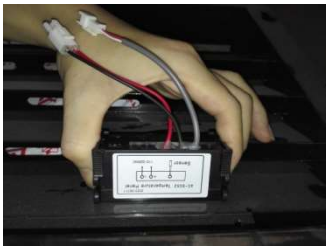
		f. relocate cooler to ensure normal heat dissipation.
5. Nonstop	a. Distorted/damaged doorseal resulting in loss of refrigeration capacity b. Temperature controller at the maximum gear	a. Repair (see Fault 7) or change doorseal b.Operate cooler at rated voltage, adjust temperature controller to right gear
6. Abnormal noise	a. Resonance caused by uneven location b. blades encounter barriers c. Loosed screws of condenser or drainage sink	a. Relocate cooler to ensure its four trundles on a same surface b. remove barriers c. tighten screws
7.Poor doorseal	a.Doorseal distorted	a. Blow sunk position with hair drier until doorseal reshapes
8.Inclined door	a. Door hinge screws loosed	a. Adjust the position upper and lower door hinges, tighten screw

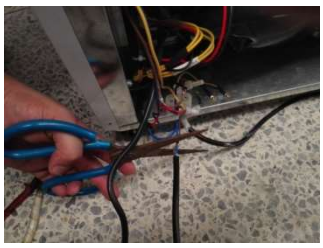
Parts replacing methods and procedures

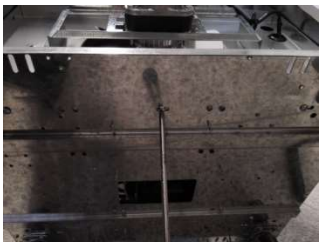
Parts replacing methods and procedures	
Methods and procedures	Picture
1.Change starter a. Remove back shell, catch the faulted starter with thumb, forefinger and middle finger, press slightly and rotate counterclockwise until the starter can be taken out b. Insert both feet of new starter into two mounting holes on the base, press slightly and rotate clockwise until the starter is fully installed.	 
2.Change ballast a. Disconnect wires of faulted ballast with outgoing lines, remove screws and take out mounting plate b. Put mounting plate on working bench, use flathead screwdriver to remove crimping clip, take out all wires. c. Remove screws and take out the faulted ballast, install a new ballast and insert wires into connections ports	  

3.Change fluorescent tube a.Change inner tubes -Open cooler gate, remove screws and take out tube cover -Catch the both sides of tube, counterclockwise rotate by 90 degree and take out. -Be the same way as above, clockwise install a new tube on tube holder, put on tube cover and tighten screws	  
b.Change outside tubes Remove screws and take out left end cap from light box Catch the left side of end cap and pull out slowly, make outside tube in sight. Changing of outside tube is same to inner tube, then insert the right side of end cap into upper and lower guide rails of light box, push slowly to the slot of right end cap, install left end cap and tighten screws.	  
4. Change draught fan a. Open the door,remove screws and put down fan board slowly, disconnect quick-connect wire terminals; b.	 

Turn over fan board and put it on heel blocks face up, remove screws and take out the fan cover c. Turn over the fan board, back-out the screws of the sensor, take out the sensor and the fixed clip d. Put a new motor on heel blocks, adjust motor, fan board and fan cover to superpose 4 holes, tighten screws and turn over fan board again to connect motor wires, and fixed the sensor clip e. Hold up fan board slowly to connect fan wires, collect wire units and tighten fan board.	  
5.Change temperature controller (mechanical) a； Take out fan board and put on heel blocks face down by the same way as above, remove screws on clamp of probe, dismantle wires b. Turn over fan board and put on heel blocks face up, fix fan board with left hand, catch rotary knob with thumb, forefinger and middle finger, rotate rotary knob clockwise and pull it out, remove screws on holder of temperature controller with screwdriver. c.Take out temperature controller from fan board,	   

remove hold-down nuts from holder with wrench d. Install new temperature controller in holder and tighten nuts, put adjustment levers into corresponding holes and install rotary knob, check installation direction and then tighten holder with screws e. Put fan board face down, connect wires of temperature controller and fix probe, install fan board.	
6. Change temperature displayer a. Loosen hold-down nuts and take out shutter, disconnect wires of probe and power lines; b. Put shutter face down, press raised jump ring on the both sides of temperature controller with right thumb and forefinger, push backwards and take out jump ring, then take out temperature controller from shutter c. Install new controller on shutter, put on jump ring, connecting wires and splashboard, install and tighten shutter;	  

7.Change compressor a. Move cooler to a well-ventilated place, open back shell, cut process pipelines to release refrigerant; b. Remove terminal box lid and take out protector and starter together with their wires from compressor; c. when refrigerant is totally released, remove insulated cotton from low pressure pipe, then remove high and low pressure pipes with welding gun; d. Remove 4 nuts with small wrench and take out compressor; e. Install and tighten new compressor with all accessories, put on terminal box lid and weld high and low pressure tubes, install process pipelines and quick terminals, check if there is leakage and vacuumize, pour into refrigerant and seal the porthole.	    
8.Change condenser motor a. Remove shutter, disconnect wires of temperature controller, remove back shell and untie wire harness, select and disconnect wires of condenser motor ; b.	 

Take out motor wires from wiring hole on fan board, dismantle faulted motor and its holder from fan board, disconnect motor wires; c. Put motor and its holder in right way (blades facing up and motor facing down), remove screws and take out blades, use small wrench or hexagon air screwdriver to remove nuts and take out motor from its holder; d. Install new motor on holder, tighten hold-down nuts and put blades on motor (pay attention to direction), tighten screws; e. Install motor and holder on fan board, collect motor wires into wiring hole, put on shutter and connect wires to circuitry, collate wiring hardness and put on back shell.	  
9.Change condenser a. Release refrigerant in the same way as above, cut inlet and outlet pipes of faulted condenser from system pipelines by welding gun; b. Remove shutter and lay down it., remove screws (3pcs) and take out fan board from compressor case; c. Remove screws and take out condenser from the front;	   

d. Install and tighten new condenser in compressor case, weld condenser pipes together with system pipelines, erect the cooler and change process pipes, check if there is leakage and vacuumize, pour into refrigerant, seal process pipes, install fan board and shutter.	

Testing methods for other parts

Testing methods for electric parts	
Method	Picture
1、 Test motor Method Rotate multimeter knob to BUZZ, use probe to touch two motor leads, observe the swing of multimeter pointer; Results If pointer deflects and multimeter rings, the motor functions well, and vice-versa. Notes: Fault judgment can be also made by connecting motor leads directly to power supply to check if motor runs.	

2、Test temperature controller Method Rotate multimeter knob to BUZZ, use probe to touch plug-in pieces of temperature controller, adjust temperature controller to “0”, observe the swing of multimeter pointer; Results: If multimeter pointer dose not deflect on “0” gear but deflects on other gears, the temperature controller is good; if multimeter pointer dose not deflect on all gears, there is fault.	 
3、Test protector Method Rotate multimeter knob to BUZZ, use probe to touch plug-in pieces and holes of protector, observe the swing of multimeter pointer; Results: If pointer deflects and multimeter rings, the protector functions well, and vice-versa.	 
4、Method Rotate multimeter knob to BUZZ, insert probe into holes that connect lead feet of compressor , observe the swing of multimeter pointer; Results: If pointer deflects and multimeter rings, the	 

starter functions well, and vice-versa.	
5Test compressor Method Rotate multimeter knob to resistance grade, use probe to touch three feet (S, C, M) of compressor, measure and record resistance of R(C-M), R(C-S) and R(S-M). Results: If R(C-M) plus R(C-S) equals R(S-M), the compressor functions well, and vice-versa.	 
6、Test ballast Method Rotate multimeter knob to BUZZ, use probe to touch wiring terminals of ballast, observe the swing of multimeter pointer; Results: If pointer deflects and multimeter rings, the ballast functions well, and vice-versa.	

TOOLS

					
Electric driver	110mm Cross screwdriver	7x65mm Hexagon socket bit	8x65mm Hexagon socket bit	10x65mm Hexagon socket bit	3x50mm slotted screwdriver
					
14mm spanner	Crimping pliers	8 inch pincer pliers	6 inch side cutter plier	3×200 cable ties	multiple-use meter
					
Heat gun	Oxyacetylene welding equipment	Vacuum pump	piezometer	Refrigerant electronic scale	nitrogen