

USER'S MANUAL

SDV4

OUTDOOR NON-COMBINABLE UNITS
(53,0;56,0kW)



Original instructions

Thank you very much for purchasing our air conditioner,
Before using your air conditioner , please read this manual carefully and keep it for future reference.

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1. IMPORTANT SAFETY INFORMATION

To prevent injury to the user or other people and property damage, the following instructions must be followed. Incorrect operation due to ignoring of instructions may cause harm or damage.

The safety precautions listed here are divided into two categories. In either case, important safety information is listed which must be read carefully.



WARNING

Failure to observe a warning may result in death.



CAUTION

Failure to observe a caution may result in injury or damage to the equipment.



WARNING

- **Ask your dealer for installation of the air conditioner.**
Incomplete installation performed by yourself may result in a water leakage, electric shock, and fire.
- **Ask your dealer for improvement, repair, and maintenance.**
Incomplete improvement, repair, and maintenance may result in a water leakage, electric shock, and fire.
- **In order to avoid electric shock, fire or injury, or if you detect any abnormality such as smell of fire, turn off the power supply and call your dealer for instructions.**
- **Never replace a fuse with that of wrong rated current or other wires when a fuse blows out.**
Use of wire or copper wire may cause the unit to break down or cause a fire.
- **Do not insert fingers, rods or other objects into the air inlet or outlet.**
When the fan is rotating at high speed, it will cause injury.
- **Never use a flammable spray such as hair spray, lacquer or paint near the unit.**
It may cause a fire.
- **Never touch the air outlet or the horizontal blades while the swing flap is in operation.**
Fingers may become caught or the unit may break down.

- **Never inspect or service the unit by yourself.**
Ask a qualified service person to perform this work.
- **Do not dispose this product as unsorted municipal waste. Collection of such waste separately for special treatment is necessary.**
- **Keep far away from high-frequency equipment.**
- **Keep away from the following places:**
a place where it is full of oil gas; places where salty air surrounding (near the coast); a place where is caustic gas (the sulfide in hot spring). Location in the following places may cause malfunction or shorten the life span of the machine.
- **In the case of extremely strong wind, please prevent the air from flowing backwards into the outdoor unit.**
- **Snow canopy is necessary in snowfall places on the outdoor unit. Please consult the local dealer for details.**
- **In the frequent thunderstruck place, lightningproof actions should be taken.**
- **To prevent refrigerant leak, contact your dealer.**
When the system is installed and run in a small room, it is required to keep the concentration of the refrigerant, if by any chance coming out, below the limit. Otherwise, oxygen in the room may be affected, resulting in a serious accident.
- **The refrigerant in the air conditioner is safe and normally does not leak.**
If the refrigerant leaks in the room, contact with a fire of a burner, a heater or a cooker may result in a harmful gas.
- **Turn off any combustible heating devices, ventilate the room, and contact the dealer where you purchased the unit.**
Do not use the air conditioner until a service person confirms that the position where the refrigerant leaks is repaired.



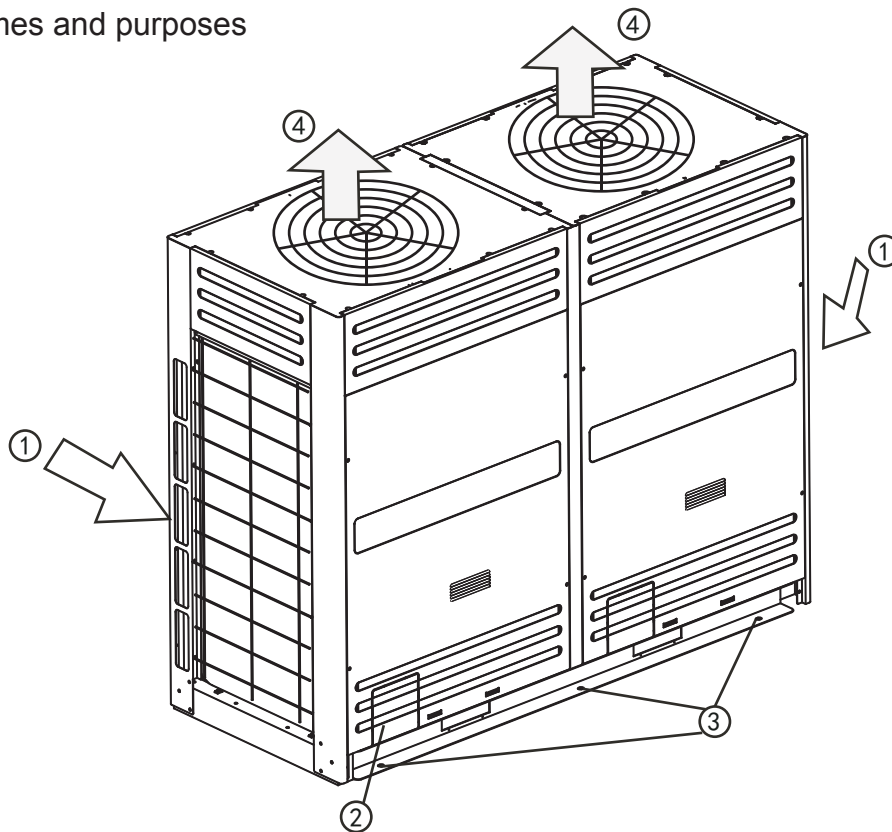
CAUTION

- **Do not use the air conditioner for other purposes.**
In order to avoid any quality deterioration, do not use the unit for cooling precision instruments, food, plants, animals or works of art.
- **Before cleaning, be sure to stop the operation, turn the breaker off or pull out the supply cord.**
Otherwise, an electric shock and injury may result.
- **In order to avoid electric shock or fire, make sure that an earth leak detector is installed.**
- **Be sure the air conditioner is grounded.**
In order to avoid electric shock, make sure that the unit is grounded and that the earth wire is not connected to gas or water pipe, lightning conductor or telephone earth wire.
- **In order to avoid injury, do not remove the fan guard of the outdoor unit.**
- **Do not operate the air conditioner with a wet hand.**
An electric shock may happen.
- **Do not touch the heat exchanger fins.**
These fins are sharp and could result in cutting injuries.

- **After a long use, check the unit stand and fitting for damage.**
If damaged, the unit may fall and result in injury.
- **To avoid oxygen deficiency, ventilate the room sufficiently if equipment with burner is used together with the air conditioner.**
- **Arrange the drain hose to ensure smooth drainage.**
Incomplete drainage may cause wetting of the building, furniture etc.
- **Never expose children, plants or animals directly to the air flow.**
Adverse influence to little children, animals and plants may result.
- **Notice to avoid places where operation noise may easily be spread away or be enhanced.**
- **Noise can be amplified by anything blocking the air outlet of the outdoor unit.**
- **Choose a proper place that the noise and hot or cold wind blown out of the outdoor unit will not bring inconvenience to your neighbors and not affect the growth of animals or plants.**
- **Do not allow a child to mount on the outdoor unit and avoid placing any object on it.**
Falling or tumbling may result in injury.
- **Do not operate the air conditioner when using a room fumigation - type insecticide.**
Failure to observe could cause the chemicals to become deposited in the unit, which could endanger the health of those who are hypersensitive to chemicals.
- **Do not place appliances which produce open fire in places exposed to the air flow from the unit or under the indoor unit.**
It may cause incomplete combustion or deformation of the unit due to the heat.
- **Do not install the air conditioner at any place where flammable gas may leak out.**
If the gas leaks out and stays around the air conditioner, a fire may break out.
- **The appliance is not intended for use by young children or infirm persons without supervision.**
- **Young children should be supervised to ensure that they do not play with the appliance.**

2. PARTS NAMES

Parts names and purposes



①	Air inlet(at the sides and rear of the unit)	③	Fixed feet
②	Refrigerant pipe's connective vent, cable outlet	④	Air outlet(when cooling operation, it will blow heat air out; vice versa when heating operation)

All the picture in this manual are for explanation purpose only, the appearance and function may different from the one you have. Please take actual model in prevail.



NOTE

- Please preheat the air conditioner for at least 12 hours before operation. Do not switch off the power if you need to stop the unit for 24hrs or shorter time. (This is to heat the crank case heater to avoid the compulsive start of compressor.)
- Make sure the air inlet and outlet are not blocked, or it may degrade the performance of air conditioner or start up protector which will stop the unit from running.

3. OPERATION AND PERFORMANCE

- **Three-minute protection feature**
A protection feature prevents the air conditioner from being activated for approximately 3 minutes when it restarts immediately after operation.
- **Cooling and heating operation**
In the same system, indoor units for this air conditioner can be controlled individually, and run cooling and heating at the same time.
- When the Cooling and Heating operation confront with each other, the indoor units which are running on Cooling Mode will stop and there will be Standby or No Priority displayed in the control panel. Those indoor units which are running on Heating Mode will run continuously.
- If the air conditioner centralized controller has set running mode, then the air conditioner can not run on mode other than the pre-setted. Standby or No Priority will be displayed in the Control Panel.
- **Features of heating operation**
 - Warm air will not be blown out immediately at the beginning of the heating operation, 3~5 minutes later (depends on the indoor and outdoor temperature), until the indoor heat exchanger become hot, then blows out warm air.
 - During operation, the fan motor in the outdoor unit may stop running under high temperature.
 - During Fan operation, if other indoor Units are running on heating mode, the fan may stop in order to prevent sending heat wind.
- **Defrost in the heating operation**
 - During heating operation, outdoor unit sometimes will frost. To increase efficiency, the unit will start defrosting automatically (about 2~10 minutes), and then water will be drained out from outdoor unit.
 - During defrosting, both the fan motors in the outdoor unit and indoor unit will stop running.
- **Operation conditions**
For proper performance, run the air conditioner under the following temperature conditions:

Table.3-1

Temperature Mode	Outdoor temperature	Indoor temperature	Room relative humidity
Cooling mode	10°C ~ 48°C	17°C ~ 32°C	below 80%
Heating mode	-15°C ~ 25°C	15°C~30°C	



NOTE

- Room relative humidity should be less than 80%. If higher than 80%, the surface of indoor unit may be condensed or the condensate will be blown from air outlet.
- Protection device may start if running the unit outside the above condition, which will prevent the unit from operation.

■ Protection Device

This protection device will stop the unit automatically in case the air conditioner is on forced running mode. When protection device is activated, running indicator light is lightened and query light flashes. Protection device may start under the following circumstances:

• Cooling operation:

The air inlet or air outlet of outdoor unit is blocked.

Strong wind is continuously blowing to the air outlet of the outdoor unit.

• Heating operation:

Too much dust and rubbish adheres to the dust filter in the indoor unit.

The air outlet of indoor unit is blocked.

■ About power cut

- If power is cut during operation, stop all the operation immediately.
- Power comes again. The operation indicator on the wire controller flashes.
- Push the ON/OFF button again if you want to restart the unit.
- Mishandling in operation. If mishandling happens because of lightning or mobile wireless, please shut off the manual power switch, and turn on again, then push the ON/OFF button.

■ Heating capacity

- The heating process is just like a heat-pump which absorbs the heat from outdoors and release to indoors. Once the outdoor temperature decreases, the heating capacity will also decrease.
- It is suggested to use the unit together with other heating equipment when the outdoor Temp. is too low.
- In the areas where the outdoor Temp. is extremely low, such as cold upland, using the terminal equipped with auxiliary heater can reach better effect. (Refer to indoor unit owner's manual for details.)



NOTE

- Please switch off the power when protection device starts. Do not restart until the problems are solved.

4. TROUBLES AND CAUSES

Please read the following illustration(before apply for servicing)

Table.4-1

	Troubles	Causes
Non malfunction	Outdoor unit <ul style="list-style-type: none"> • White mist or water • The sound of "hiss" 	<ul style="list-style-type: none"> • FAN function stop automatically to defrost. It is the start and stop sound of the solenoid valve • At the beginning and the end of the running process, sounds like water flow in valve occurs, which will be amplified in 3~15 minutes, this is caused by dehumidifying process of refrigerant current. • Slight hiss is caused by heat exchanger as temperature changes. • Pieces of the wall, carpet, furniture, cloth, cigarette, cosmetics are adhere to the unit. • Switch off the power after the power cut. • Other equipment preheating process stops cooling operation. • The operator sets an opposite mode against the fixed cooling and heating mode. • FAN mode stops to avoid cold air blown out.
	Indoor unit <ul style="list-style-type: none"> • Bad odor • Operation lamp flashes • No priority of Standby on panel is lightened 	
Check it again	<ul style="list-style-type: none"> • Start or stop operation automatically 	<ul style="list-style-type: none"> • Wrong operation on timer.
Check it again	<ul style="list-style-type: none"> • No operation 	<ul style="list-style-type: none"> • Whether the power is cut. • Whether manual power switch is turned on. • Whether the fuse is melted. • Whether the protection device works. (operation lamp is lightened) • Whether it is the time set.
	<ul style="list-style-type: none"> • Insufficient cooling • Insufficient heating 	<ul style="list-style-type: none"> • Whether the inlet and outlet of outdoor unit is blocked. • Whether the door and window are open. • Whether the air filter is blocked by dust. • Whether the air deflector is in the right place • Whether fan speed is slight or whether it is in FAN mode. • Whether the temperature is set properly. • Whether setting COOL and HEAT simultaneously. (Indicator light Standby or No Priority on panel is lightened)



NOTE

In case of following malfunctions, please switch off the power and contact the local dealer.

1. Incorrect ON/OFF operation.
2. Fuse or leakage protector is frequently broken.
3. Foreign matter or water falls in the unit.

5. MALFUNCTION

Malfunction display of outdoor unit's DSP1

Table.5-1

ERROR CODE	ERROR OR PROTECTION	NOTE
E0	Outdoor unit communication error	Display in auxiliary unit only
E1	Phase sequence error	
E2	Communication error between indoor unit and main unit	
E3	Reserve	
E4	Pipe temp. sensor sensing the ambient temp. error	
E5	Reserve	
E6	Reserve	
E7	Reserve	
E8	Outdoor unit address error	
E9	Voltage error	
H0	The communication error between DSP and 780034	
H1	The communication error between 0537 and 780034	
H2	The outdoor unit qty. decrease error	Display in main unit only
H3	The outdoor unit qty. increase error	Display in main unit only
H4	Three P6 error	
H5	P2 protection occur 3 times within 30 minutes	Must be re-powered on for the recovery
H6	P4 protection occur 3 times within 100 minutes	Must be re-powered on for the recovery
H7	Indoor unit decreases	
H8	Pcs0.3MPa	
P0	Inverter top temp. protection	
P1	Hi-pressure protection	
P2	Lo-pressure protection	
P3	Inverter overcurrent protection	
P4	Excess Air exhaust temp. protection	
P5	High pipe temp. protection	
P6	Module protection	
P7	Fixed frequency 1 current protection	
P8	Fixed frequency 2 current protection	
P9	Fixed frequency 3 current protection	
L0	Module error	Display during spot inspecting
L1	DC busbar low pressure protection	Display during spot inspecting
L2	DC busbar high pressure protection	Display during spot inspecting
L3	Reserve	Display during spot inspecting
L4	MCE error/ synchronize/ closed loop	Display during spot inspecting
L5	Zero velocity protection	Display during spot inspecting
L6	Reserve	Display during spot inspecting
L7	Phase sequence error protection	Display during spot inspecting
L8	The speed difference between the previous time and the following time > 15Hz protection	Display during spot inspecting
L9	The speed difference between the setting speed and actual speed>15Hz protection	Display during spot inspecting

6. CONSTRAINT COOLING AND QUERY

■ Constraint Cooling

Once pressing the constraint cooling button(see the chart on the right), all the indoor unit will be on forced cooling mode and the wind speed is HIGH.

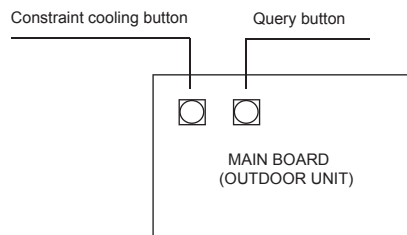


Fig.6-1

■ Spot inspection

Table.6-1

Normal display	Display content	Note
1	Outdoor unit address	0, 1, 2, 3, 4
2	The capacity of the indoor unit	18, 20
3	Qty. of modular outdoor unit	Effective in the main unit
4	Outdoor unit total capacity	Capacity requirement
5	Indoor unit total capacity requirement	Effective in the main unit
6	Total capacity requirement after modified	Effective in the main unit
7	Operation mode	0, 1, 2, 3, 4
8	The actual capacity of this unit	Capacity requirement
9	Fan speed status	0, 1, 2, 3, 4, 5, 6
10	T2 average value	Actual value
11	T3 pipe temperature	Actual value
12	Reserved	
13	T4 ambient temperature	Actual value
14	Inverter air exhaust temp.	Actual value
15	Fixed frequency 1 air exhaust temp.	Actual value
16	Fixed frequency 2 air exhaust temp.	Actual value
17	Fixed frequency 3 air exhaust temp.	Actual value
18	Inverter current	Actual value
19	Fixed frequency 1 current	Actual value
20	Fixed frequency 2 current	Actual value
21	Fixed frequency 3 current	Actual value
22	Air discharge pressure Pc	Actual value
23	TXV A opening angle	Actual value×8
24	TXV B opening angle	Actual value×8
25	Indoor unit qty.	Actual value
26	The lastly error or protection code	No protection or error will display "00"
27	— —	Spot inspection has finished

Display contents' definitions as following:

1. Normal display: During the standby status, the screen displays the quantity of the indoor unit; we receive the capacity requirement, the screen will show the compressor operation frequency (The indoor unit quantity represents the total units which could communication with outdoor unit.)

2. Operation mode: OFF 0; Air supply 1; Cooling 2; heating 3; Supper cooling 4.

3. Operation speed: OFF or left and right in shut down 0; Left in OFF, Right in LOW 1; Left in OFF, Right in HIGH 2; Left in LOW right in OFF 3; Left in HIGH right in OFF 4; Left in LOW and right in LOW 5; Left in HIGH and right in HIGH 6.

4. PMV opening angle: pulse count= display value×8

5. S2, S3: The setting switch of network address

6. ENC1: Outdoor unit capacity setting address; ENC2: outdoor unit address setting switch.

7. SW1 forced cooling key; SW2: spot inspection key.



NOTE

- T2 average: average temp inside evaporator of running indoor unit
T3 pipe temp: outlet temp of condenser of outdoor unit
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Take-back of electrical waste
Information for Users to Disposal of electrical and electronic equipment
(private households)

Icon on the product or in the accompanying documentation means that used electric or electronic products must not be disposed together with domestic waste. For the correct disposal of the product hand it over to a place for take-back, where it is collected free of charge. By correct disposal of the product you can help to preserve valuable natural resources and help in preventing potential negative impacts to environment and human health, which could be consequence of incorrect disposal of waste. Ask for more details from local authorities, nearest collection point, in Waste Acts of respective country, in the Czech Republic in Act no. 185/2001 Coll., in the wording of later regulations. In case of incorrect disposal of this waste, a fine can be imposed according to national regulations.



Manufacturer:
Sinclair Corporation Ltd.
1-4 Argyll Street
London W1F 7LD
United Kingdom

Supplier and technical support:
Nepa, spol.s.r.o.
Purkyňova 45
612 00 Brno
Czech Republic
www.nepa.cz

Toll-free info line:
+420 800 100 285

