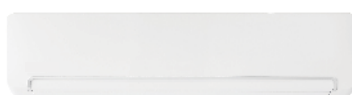


AIR CONDITIONER

Wall mounted type

SERVICE MANUAL

INDOOR

WHP09WMA21S
WHP12WMA21SWHP18WMA21S
WHP24WMA21S

OUTDOOR



WHP09SZA21S




WHP12SZA21S



WHP18SZA21S



WHP24SZA21S

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Notices:

- Product specifications and design are subject to change without notice for future improvement.
- For further details, please check with our authorized dealer.

Please Read Before Starting

This air conditioning system meets strict safety and operating standards. As the installer or service person, it is an important part of your job to install or service the system, so it operates safely and efficiently.

For safe installation and trouble-free operation, you must:

- Carefully read this instruction booklet before beginning.
- Follow each installation or repair step exactly as shown.
- Observe all local, state, and national electrical codes.
- Pay close attention to all warning and caution notices given in this manual.

**WARNING**

This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.

**CAUTION**

This symbol refers to a hazard or unsafe practice which can result in personal injury or product or property damage.

If Necessary, Get Help

These instructions are all you need for most installation sites and maintenance conditions. If you require help for a special problem, contact our sales/service outlet or your certified dealer for additional instructions.

In Case of Improper Installation

The manufacturer shall in no way be responsible for improper installation or maintenance service, including failure to follow the instructions in this document.

SPECIAL PRECAUTIONS**When Wiring****WARNING**

ELECTRICAL SHOCK CAN CAUSE SEVERE PERSONAL INJURY OR DEATH. ONLY A QUALIFIED, EXPERIENCED ELECTRICIAN SHOULD ATTEMPT TO WIRE THIS SYSTEM.

- Do not supply power to the unit until all wiring and tubing are completed or reconnected and checked.
- Highly dangerous electrical voltages are used in this system. Carefully refer to the wiring diagram and these instructions when wiring. Improper connections and inadequate grounding can cause accidental injury or death.
- Ground the unit following local electrical codes.
- Connect all wiring tightly. Loose wiring may cause overheating at connection points and a possible fire hazard.

When Transporting

Be careful when picking up and moving the indoor and outdoor units. Get a partner to help, and bend

your knees when lifting to reduce strain on your back. Sharp edges or thin aluminum fins on the air conditioner can cut your fingers.

When Installing

- **In a Ceiling or Wall**

Make sure the ceiling/wall is strong enough to hold the unit's weight. It may be necessary to construct a strong wood or metal frame to provide added support.

- **In a Room**

Properly insulate any tubing run inside a room to prevent "sweating" that can cause dripping and water damage to walls and floors.

- **In Moist or Uneven Locations**

Use a raised concrete pad or concrete blocks to provide a solid, level foundation for the outdoor unit. This prevents water damage and abnormal vibration.

- **In an Area with High Winds**

Securely anchor the outdoor unit down with bolts and a metal frame. Provide a suitable air baffle.

- **In a Snowy Area (for Heat Pump-type Systems)**

Install the outdoor unit on a raised platform that is higher than drifting snow. Provide snow vents.

When Connecting Refrigerant Tubing

△ Use the flare method for connecting tubing.

△ Apply refrigerant lubricant to the matching surfaces of the flare and union tubes before connecting them, then tighten the nut with a torque wrench for a leak free connection.

△ Check carefully for leaks before starting the test run.

When Servicing

△ Turn the power OFF at the main power box (mains) before opening the unit to check or repair electrical parts and wiring.

△ Keep your fingers and clothing away from any moving parts.

△ Clean up the site after you finish, remembering to check that no metal scraps or bits of wiring have been left inside the unit being serviced.

Others



△ Ventilate any enclosed areas when installing or testing the refrigeration system. Escaped refrigerant gas, on contact with fire or heat, can produce dangerously toxic gas.

△ Confirm upon completing installation that no refrigerant gas is leaking. If escaped gas comes in contact with a stove, gas water heater, electric room heater or other heat source, it can produce dangerously toxic gas.

NOTE:

The figure, size and parameter of the product may not be identical with the service manual, please take the actual product as the standard.

Specifications

Type				Wall mounted			
				Inverter heat pump			
Model name				WHP09WMA21S	WHP12WMA21S		
Power supply				208/230 V ~ 60 Hz			
Power supply intake				Outdoor unit			
Available voltage range				198—253 V			
Capacity	Cooling	Rated	kW	2.64	3.51		
			Btu/h	9,000	12,000		
		Min.—Max.	kW	1.06—2.93	1.17—3.96		
			Btu/h	3,600—10,000	4,000—13,500		
	Heating	Rated	kW	2.78	3.81		
			Btu/h	9,500	13,000		
		Min.—Max.	kW	1.05—3.07	1.17—4.10		
			Btu/h	3,600—10,500	4,000—14,000		
Input power	Cooling	Rated	kW	0.655	0.920		
		Min.—Max.		0.230—1.495	0.276—1.610		
	Heating	Rated		0.720	1.110		
		Min.—Max.		0.230—1.495	0.276—1.610		
Current	Cooling	Rated	A	2.9	4.3		
	Heating		2.9	5.0			
EER	Cooling		W/W	4.03	3.82		
			Btu/hW	13.74	13.04		
COP	Heating		W/W	3.87	3.43		
			Btu/hW	13.19	11.71		
SEER	Cooling		Btu/hW	22.5	22.0		
HSPF	Heating		Btu/hW	10.7	10.5		
Power factor	Cooling		%	98	96		
	Heating			98	97		
Moisture removal			pints/h (L/h)	1.9 (0.9)	2.5 (1.2)		
Maximum operating current*1		Cooling	A	6.5	7.0		
		Heating		6.5	7.0		
Fan	Airflow rate	Cooling	HIGHER	CFM (m³/h)	383 (650)	394 (670)	
			HIGH		341 (580)	365 (620)	
			MED		294 (500)	312 (530)	
			LOW		247 (420)	253 (430)	
			LOWER		224 (380)		
		Heating	HIGHER		383 (650)	394 (670)	
			HIGH		341 (580)	365 (620)	
			MED		294 (500)	312 (530)	
			LOW		247 (420)	253 (430)	
			LOWER		224 (380)		
	Type × Q'ty			Crossflow fan × 1			
	Motor output			W			
	Sound pressure level*2	Cooling		HIGHER	dB (A)	25	42
				HIGH		39	
MED				32			
LOW				29			
LOWER				26			
Heating			HIGHER	42			
			HIGH	39			
			MED	32			
			LOW	29			
			LOWER	26			
Heat exchanger type	Dimensions (H × W × D)		in (mm)	11-9/16 × 24-7/16 × 1-1/16 (294 × 620 × 27.2)			
	Fin pitch		FPI	18			
	Rows × Stages			2 × 14			
	Pipe type			Copper			
	Fin type			Aluminum			
Enclosure	Material			Polystyrene			
	Color			White			
Dimensions (H × W × D)	Net		in (mm)	10-5/8 × 33-7/16 × 8-7/16 (270 × 850 × 215)			
	Gross			13-3/16 × 37 × 10-7/16 (335 × 940 × 265)			
Weight	Net		lb (kg)	20 (9)			
	Gross			24 (11)	26 (12)		
Connection pipe	Size	Liquid	in (mm)	Ø 1/4 (Ø 6.35)			
		Gas		Ø 3/8 (Ø 9.52)			
	Method			Flare			
Drain hose	Material			PE/PVC			
	Tip diameter		in (mm)	Ø5/8 (Ø 15.4) (I.D.), Ø7/8 (Ø 23) (O.D.)			
Operation range	Cooling		°F (°C)	61 to 86 (16 to 30)			
			%RH	80 or less			
Remote controller type	Heating		°F (°C)	61 to 86 (16 to 30)			
					Wireless (Wired [option])		

NOTES:

- Specifications are based on the following conditions:
 - Cooling: Indoor temperature of 80 °FDB (26.67 °CDB) /67 °FWB (19.44 °CWB), and outdoor temperature of 95 °FDB (35 °CDB) / 75 °FWB (23.9 °CWB).
 - Heating: Indoor temperature of 70 °FDB (21.11 °CDB) /59 °FWB (15.56 °CWB), and outdoor temperature of 47 °FDB (8.33 °CDB) /43 °FWB (6.11 °CWB).
 - Pipe length: 25 ft (7.5 m), Height difference: 0 ft (0 m). (Between outdoor unit and indoor unit.)
- Protective function might work when using it outside the operation range.
- *1: Maximum current is maximum value when operated within the operation range.
- *2: Sound pressure level:
 - Measured values in manufacturer's anechoic chamber.
 - Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.

Type				Wall mounted			
				Inverter heat pump			
Model name				WHP18WMA21S	WHP24WMA21S		
Power supply				208/230 V ~ 60 Hz			
Power supply intake				Outdoor unit			
Available voltage range				198—253 V			
Capacity	Cooling	Rated	kW	5.28	6.86		
			Btu/h	18,000	23,400		
		Min.—Max.	kW	1.905—5.7153	2.345—7.767		
			Btu/h	6,500—19,500	8,000—26,500		
	Heating	Rated	kW	5.57	7.62		
			Btu/h	19,000	26,000		
Min.—Max.		kW	1.905—5.862	2.345—7.767			
		Btu/h	6,500—20,000	8,000—26,500			
Input power	Cooling	Rated	kW	1.385	1.870		
		Min.—Max.		0.345—2.760	0.414—2.990		
	Heating	Rated		1.638	2.500		
		Min.—Max.		0.345—2.760	0.414—2.990		
Current	Cooling	Rated	A	6.3	8.3		
	Heating		7.2	11.1			
EER	Cooling	W/W	3.81	3.67			
		Btu/hW	13.00	12.51			
COP	Heating	W/W	3.40	3.05			
		Btu/hW	11.60	10.40			
SEER	Cooling	Btu/hW	23.3	21.0			
HSPF	Heating	Btu/hW	11.6	10.5			
Power factor	Cooling	%	96	98			
	Heating		99	98			
Moisture removal			pints/h (L/h)	3.2 (1.5)	5.1 (2.4)		
Maximum operating current*2		Cooling	A	12.0	13.0		
		Heating		12.0	13.0		
Fan	Airflow rate	Cooling	HIGHER	647 (1,100)	706 (1,200)		
			HIGH	589 (1,000)	647 (1,100)		
			MED	483 (820)	559 (950)		
			LOW	459 (780)	441 (750)		
			LOWER	383 (650)	368 (625)		
		Heating	HIGHER	647 (1,100)	706 (1,200)		
			HIGH	589 (1,000)	647 (1,100)		
			MED	483 (820)	559 (950)		
			LOW	459 (780)	441 (750)		
			LOWER	383 (650)	368 (625)		
	Type × Q'ty			Crossflow fan × 1			
	Motor output			35			
	Sound pressure level*3	Cooling	HIGHER	dB (A)	48	50	
HIGH			45		47		
MED			41		42		
LOW			37		36		
LOWER			34		33		
HIGHER			48		50		
Heating		HIGH	45		47		
		MED	41		42		
		LOW	37		36		
		LOWER	34		33		
		Dimensions (H × W × D)			in (mm)	14-7/8 × 33-1/8 × 1-1/16 (378 × 842 × 27.2)	
		Fin pitch			FPI	18	
Rows × Stages			2 × 18				
Pipe type			Copper				
Fin type			Aluminum				
Enclosure	Material			Polystyrene			
	Color			White			
Dimensions (H × W × D)	Net		in (mm)	12-3/8 × 44-1/2 × 9-5/16 (315 × 1,130 × 237)			
	Gross			15-3/8 × 47-5/8 × 12-7/16 (390 × 1,210 × 316)			
Weight	Net		lb (kg)	32 (14.5)			
	Gross			37 (17)			
Connection pipe	Size	Liquid	in (mm)	Ø 1/4 (Ø 6.35)	Ø 3/8 (Ø 9.52)		
		Gas		Ø 1/2 (Ø 12.70)	Ø 5/8 (Ø 15.88)		
	Method				Flare		
Drain hose	Material			PE/PVC			
	Tip diameter		in (mm)	Ø5/8 (Ø 15.4) (I.D.), Ø7/8 (Ø 23) (O.D.)			
Operation range	Cooling		°F (°C)	61 to 86 (16 to 30)			
	Heating		%RH	80 or less			
			°F (°C)	61 to 86 (16 to 30)			
Remote controller type				Wireless (Wired [option])			
NOTES:							
<ul style="list-style-type: none">Specifications are based on the following conditions:<ul style="list-style-type: none">Cooling: Indoor temperature of 80 °FDB (26.67 °CDB) /67 °FWB (19.44 °CWB), and outdoor temperature of 95 °FDB (35 °CDB) / 75 °FWB (23.9 °CWB).Heating: Indoor temperature of 70 °FDB (21.11 °CDB) /59 °FWB (15.56 °CWB), and outdoor temperature of 47 °FDB (8.33 °CDB) /43 °FWB (6.11 °CWB).Pipe length: 25 ft (7.5 m), Height difference: 0 ft (0 m). (Between outdoor unit and indoor unit.)Protective function might work when using it outside the operation range.*1: Maximum current is maximum value when operated within the operation range.*2: Sound pressure level:<ul style="list-style-type: none">Measured values in manufacturer's anechoic chamber.Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.							

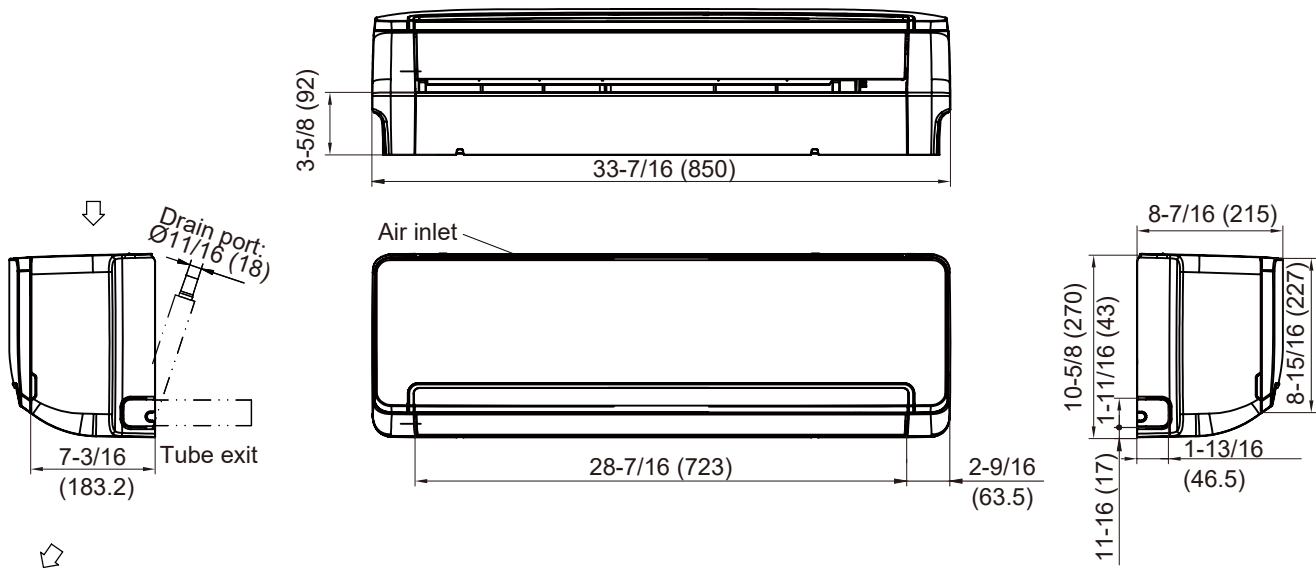
Type				Inverter heat pump	
Model name				WHP09SZA21S	WHP12SZA21S
Power supply				208/230 V ~ 60 Hz	
Available voltage range				198—253 V	
Fan	Airflow rate	CFM (m³/h)	971 (1,650)		1,177 (2,000)
	Type × Q'ty	Propeller fan × 1			
	Motor output	W	30		
Sound pressure level *1		dB (A)	53		
Heat exchanger type	Dimensions (H × W × D)	in (mm)	26-7/8 × 18-3/16 × 11/16 (683 × 462 × 18.2)		33-1/16 × 21-1/2 × 11/16 (840 × 546 × 18.19)
			25-3/4 × 18-3/16 × 11/16 (654 × 462 × 18.2)		33-1/16 × 21-1/2 × 11/16 (840 × 546 × 18.19)
	Fin pitch	FPI	18		
	Rows × Stages	2 × 22		2 × 26	
	Pipe type	Copper			
	Fin type	Type (Material)	Aluminum		
Compressor	Type	Surface treatment	Blue fin		
		Rotary			
Refrigerant	Type	R410A			
	Charge	lb oz	2 lb 2 oz		2 lb 9 oz
		g	950		1,160
Refrigerant oil	Type	68HES-H		VG74 (POE)	
Enclosure	Material		Steel sheet		
	Color		White		
Dimensions (H × W × D)	Net	in (mm)	19 × 28-1/8 × 9-7/16 (482 × 715 × 240)		23-1/16 × 31-7/8 × 11 (585 × 810 × 280)
	Gross		20-7/8 × 33-11/16 × 13-3/8 (530 × 830 × 340)		25-3/16 × 37 × 15-3/16 (640 × 940 × 385)
Weight	Net	lb (kg)	60 (27)		73 (33)
	Gross		65 (29.5)		79 (36)
Connection pipe	Size	Liquid	in (mm)	Ø 1/4 (Ø 6.35)	
		Gas		Ø 3/8 (Ø 9.52)	
	Method	Flare			
	Pre-charge length	ft (m)	24 (7.5)		
	Max. length		65 (20)		
	Max. height difference		Indoor unit higher than outdoor unit: 32 (10) Outdoor unit higher than indoor unit: 16 (5)		
Operation range	Cooling	°F (°C)	5 to 115 (-15 to 46)		
	Heating		-4 to 75 (-20 to 24)		
NOTES:					
<ul style="list-style-type: none">Specifications are based on the following conditions:<ul style="list-style-type: none">Cooling: Indoor temperature of 80 °FDB (26.67 °CDB) / 67 °FWB (19.44 °CWB), and outdoor temperature of 95 °FDB (35 °CDB) / 75 °FWB (23.9 °CWB).Heating: Indoor temperature of 70 °FDB (21.11 °CDB) / 59 °FWB (15 °CWB), and outdoor temperature of 47 °FDB (8.33 °CDB) / 43 °FWB (6.11 °CWB).Pipe length: 24 ft 6 in (7.5 m), Height difference: 0 ft (0 m). (Between outdoor unit and indoor unit.)Protective function might work when using it outside the operation range.*1: Sound pressure level<ul style="list-style-type: none">Measured values in manufacturer's anechoic chamber.Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.					

Type				Inverter heat pump	
Model name				WHP18SZA21S	WHP24SZA21S
Power supply				208/230 V ~ 60 Hz	
Available voltage range				198—253 V	
Fan	Airflow rate	CFM (m³/h)	1,648 (2,800)	2,354 (4,000)	
	Type × Q'ty	Propeller fan × 1			
	Motor output	W	60	70	
Sound pressure level *1		dB (A)	55	58	
Heat exchanger type	Dimensions (H × W × D)	in (mm)	35-1/4 × 24-13/16 × 11/16 (895 × 630 × 18.19)	35-1/4 × 24-13/16 × 11/16 (895 × 630 × 18.19)	
			34-1/8 × 24-13/16 × 11/16 (867 × 630 × 18.19)	34-1/8 × 24-13/16 × 11/16 (867 × 630 × 18.19)	
			19-11/16 × 24-13/16 × 11/16 (500 × 630 × 18.19)	19-11/16 × 24-13/16 × 11/16 (500 × 630 × 18.19)	
	Fin pitch	FPI	18		
	Rows × Stages	2 × 30		3 × 30	
	Pipe type	Copper			
Fin type	Type (Material)	Aluminum			
	Surface treatment	Blue fin			
Compressor	Type			Rotary	
Refrigerant	Type	R410A			
	Charge	lb oz	3 lb 7 oz	4 lb 12 oz	
		g	1,550	2,150	
Refrigerant oil	Type	VG74 (POE)			
Enclosure	Material	Steel sheet			
	Color	White			
Dimensions (H × W × D)	Net	in (mm)	25-9/16 × 33-7/8 × 12-3/16 (650 × 860 × 310)	31-5/16 × 34-13/16 × 14-7/16 (795 × 885 × 366)	
	Gross		28-3/8 × 39-3/16 × 16-9/16 (720 × 995 × 420)	35-1/16 × 41-5/16 × 19-11/16 (890 × 1,050 × 500)	
Weight	Net	lb (kg)	99 (45)	134 (61)	
	Gross		108 (49)	144 (65.5)	
Connection pipe	Size	Liquid	in (mm)	Ø 1/4 (Ø 6.35)	Ø 3/8 (Ø 9.52)
		Gas		Ø 1/2 (Ø 12.7)	Ø 5/8 (Ø 15.88)
	Method	Flare			
	Pre-charge length	ft (m)	24 (7.5)		
	Max. length		65 (20)		
	Max. height difference		Indoor unit higher than outdoor unit: 32 (10) Outdoor unit higher than indoor unit: 16 (5)		
Operation range	Cooling	°F (°C)	5 to 115 (-15 to 46)		
	Heating		-4 to 75 (-20 to 24)		
NOTES:					
<ul style="list-style-type: none">Specifications are based on the following conditions:<ul style="list-style-type: none">Cooling: Indoor temperature of 80 °FDB (26.67 °CDB) / 67 °FWB (19.44 °CWB), and outdoor temperature of 95 °FDB (35 °CDB) / 75 °FWB (23.9 °CWB).Heating: Indoor temperature of 70 °FDB (21.11 °CDB) / 59 °FWB (15 °CWB), and outdoor temperature of 47 °FDB (8.33 °CDB) / 43 °FWB (6.11 °CWB).Pipe length: 24 ft 6 in (7.5 m), Height difference: 0 ft (0 m). (Between outdoor unit and indoor unit.)Protective function might work when using it outside the operation range.*1: Sound pressure level<ul style="list-style-type: none">Measured values in manufacturer's anechoic chamber.Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.					

Dimensions

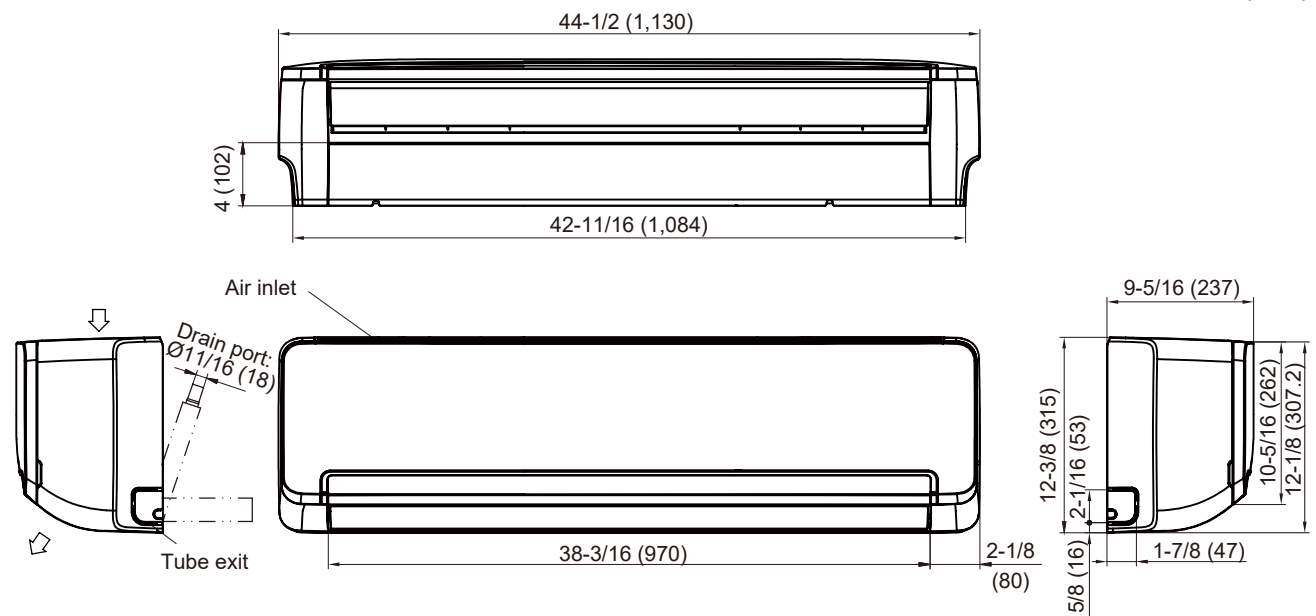
Models: WHP09WMA21S and WHP12WMA21S

Unit: in (mm)



Models: WHP18WMA21S and WHP24WMA21S

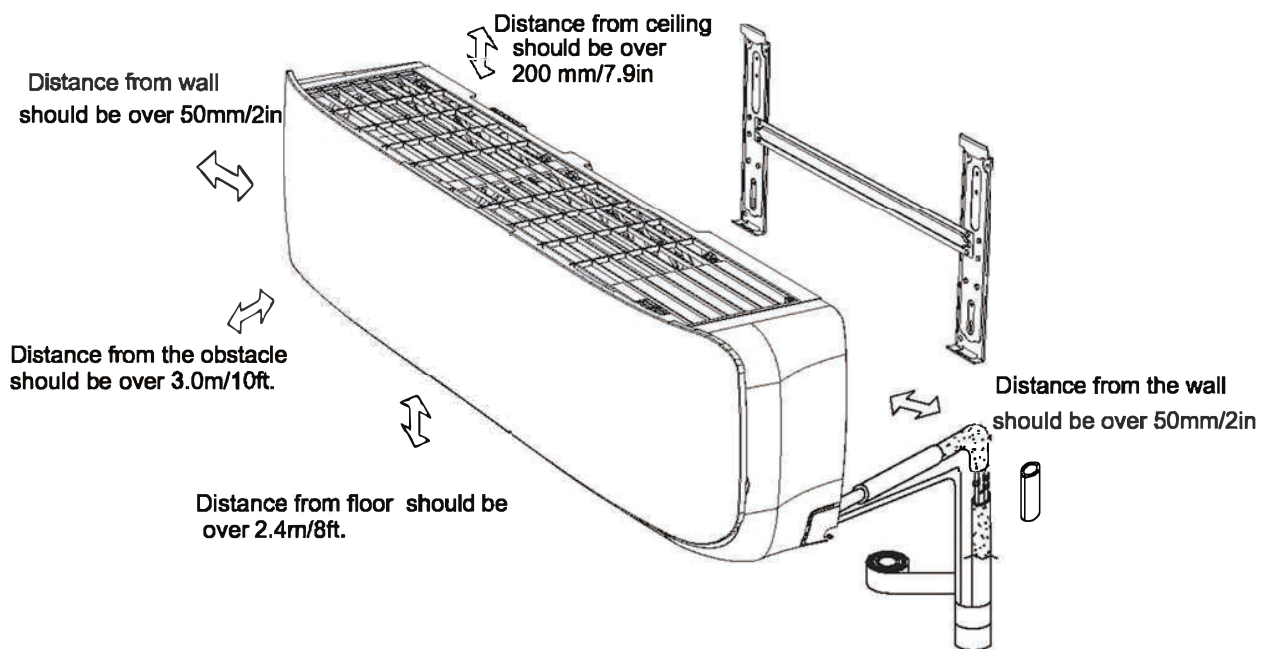
Unit: in (mm)



Installation space requirement

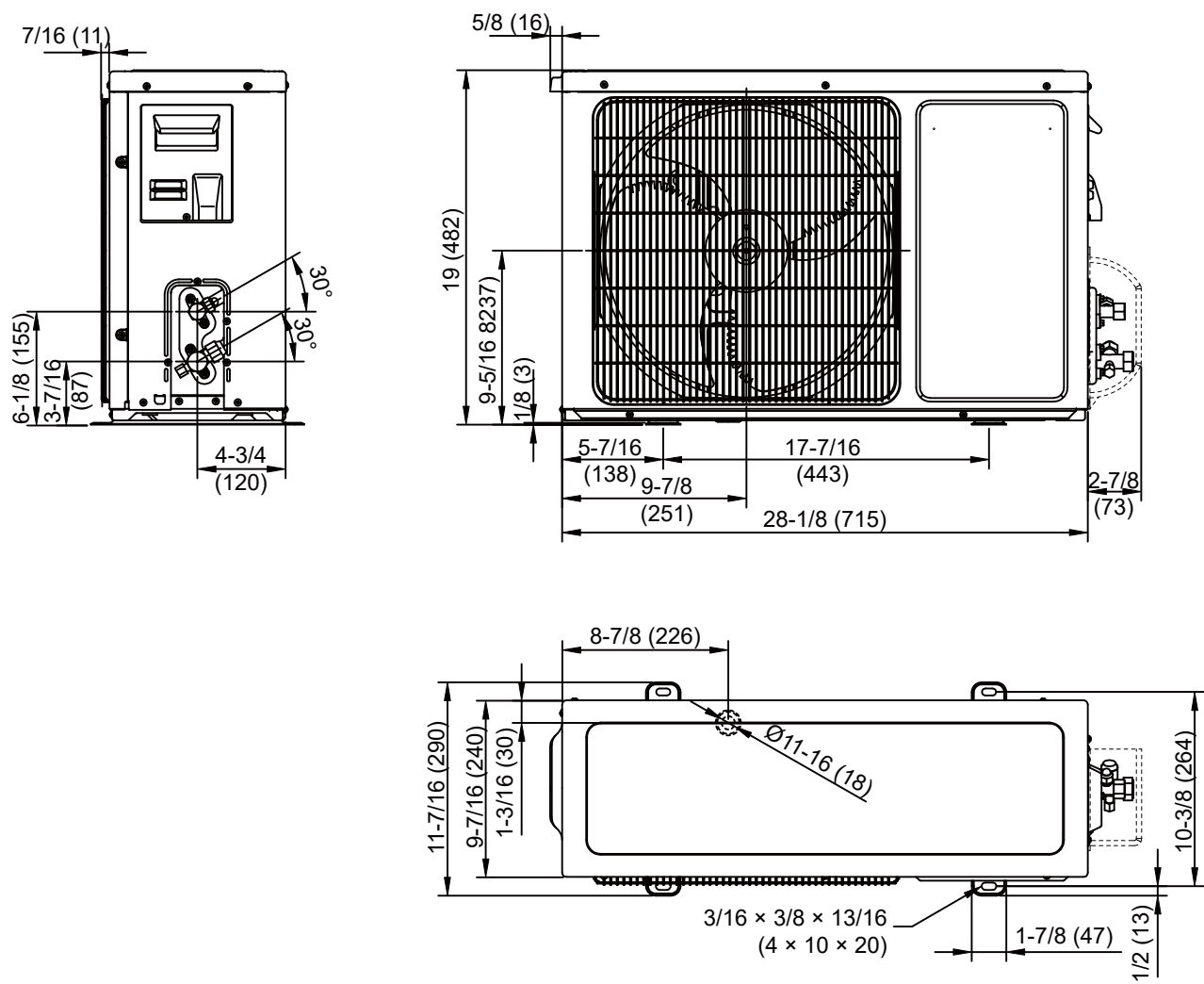
Provide sufficient installation space for product safety.

Unit: in (mm)



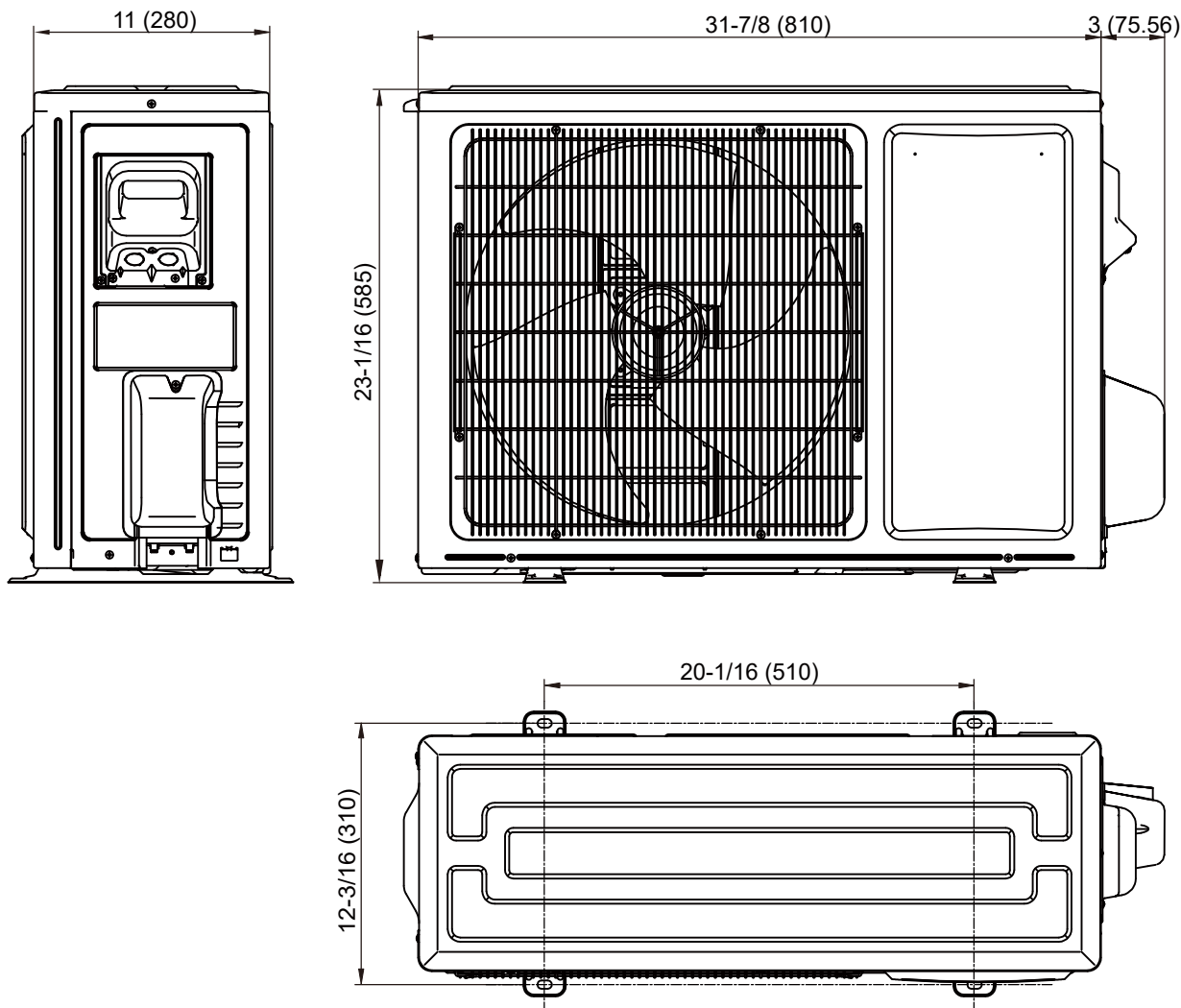
Model: WHP09SZA21S

Unit: in (mm)



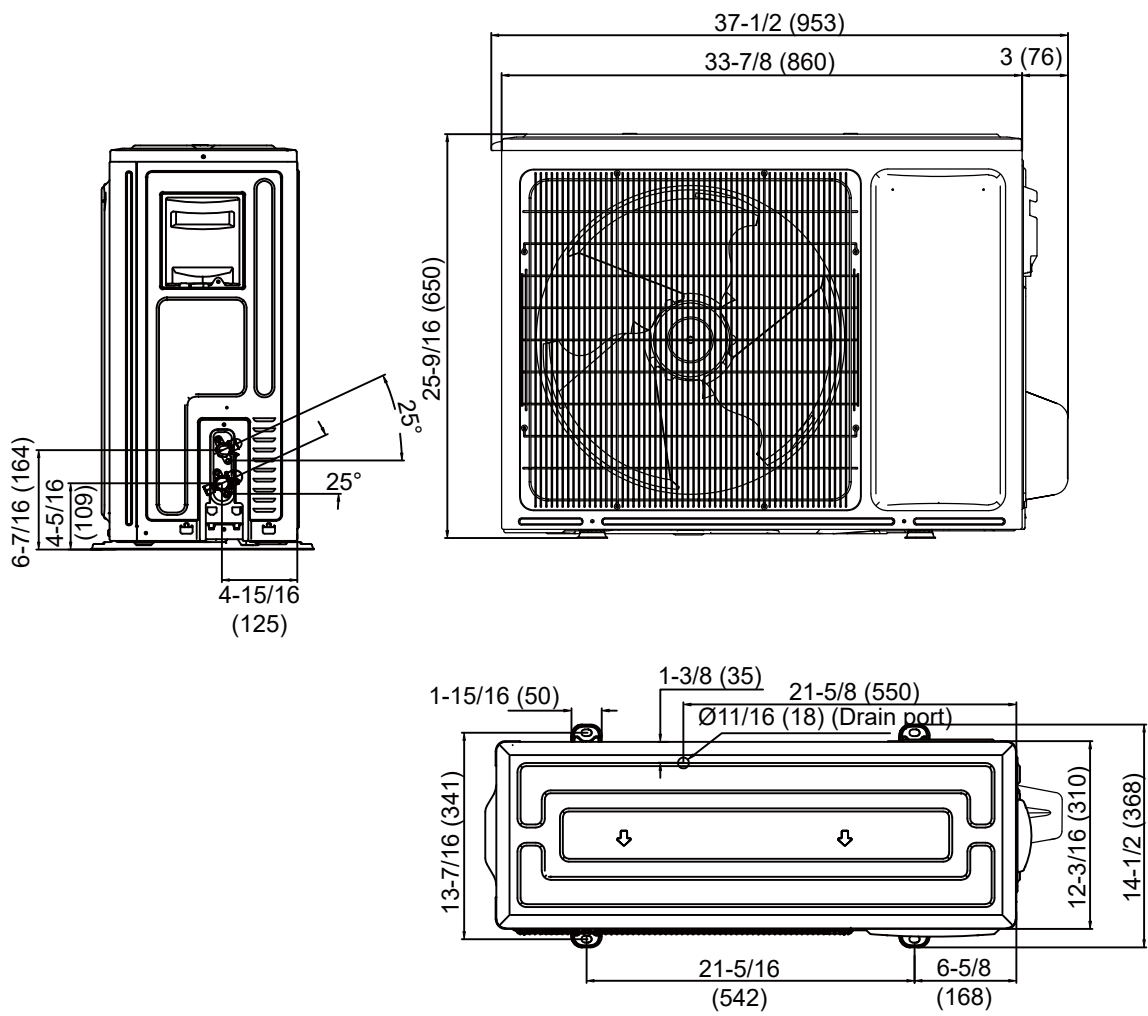
Model: WHP12SZA21S

Unit: in (mm)



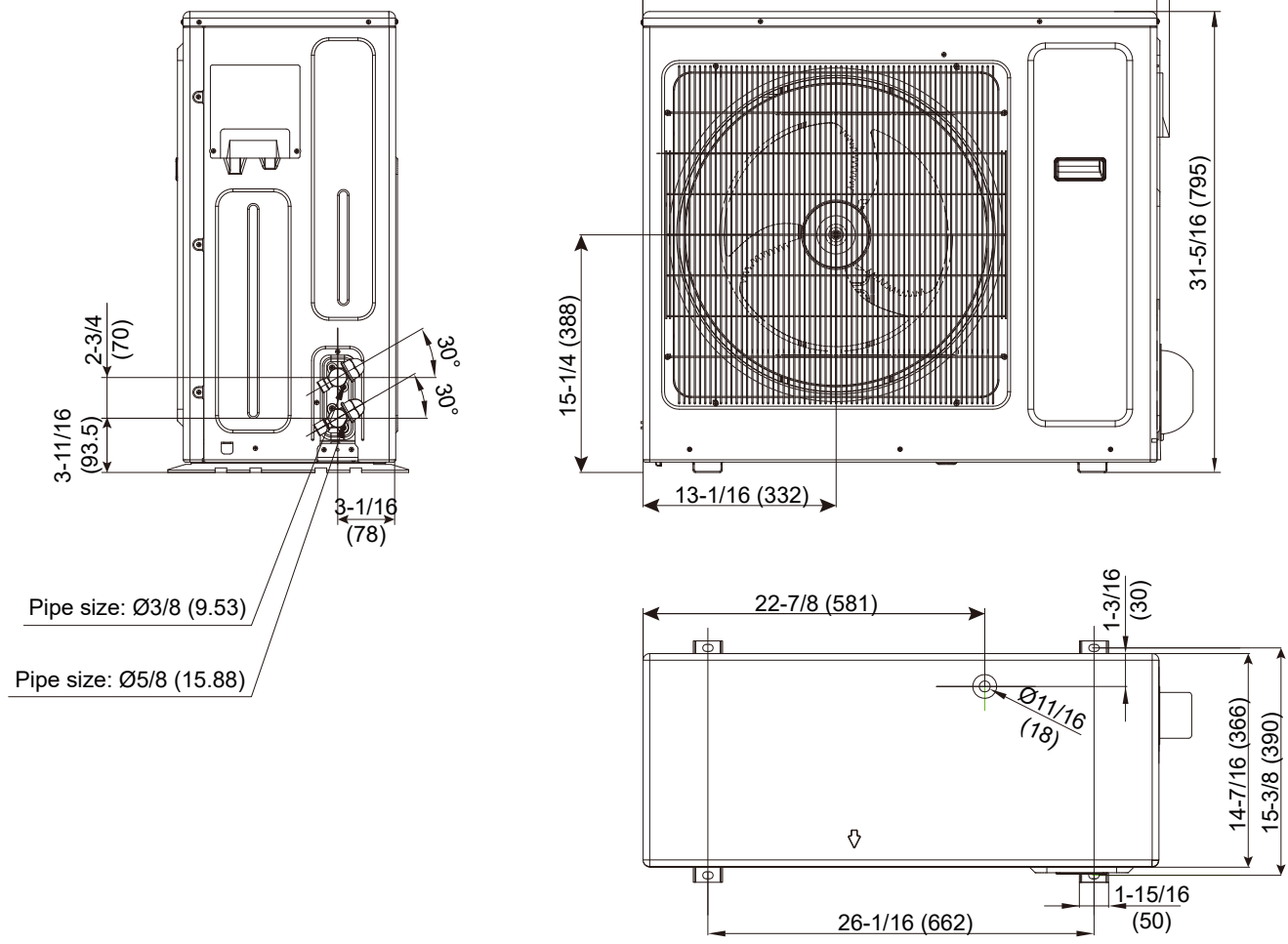
Model: WHP18SZA21S

Unit: in (mm)



Model: WHP24SZA21S

Unit: in (mm)



Installation space

Models: WHP09SZA21S, WHP12SZA21S, WHP18SZA21S, and WHP24SZA21S

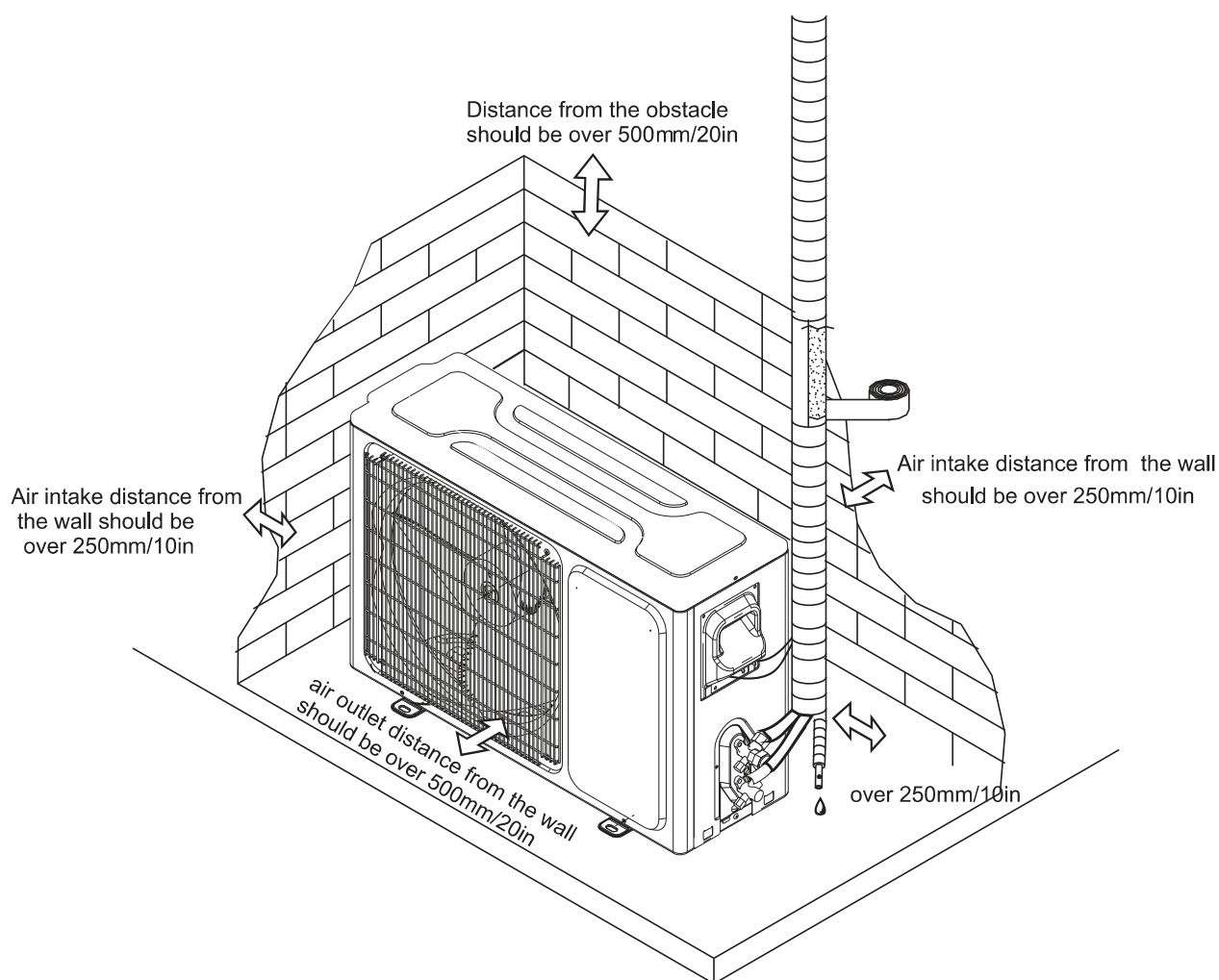
■ Space requirement

Provide sufficient installation space for product safety.

⚠ CAUTION

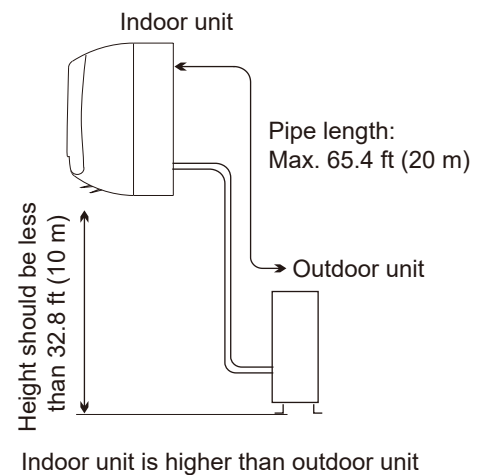
Keep the space shown in the installation examples.

If the installation is not performed accordingly, it could cause a short circuit and result in a lack of operating performance.



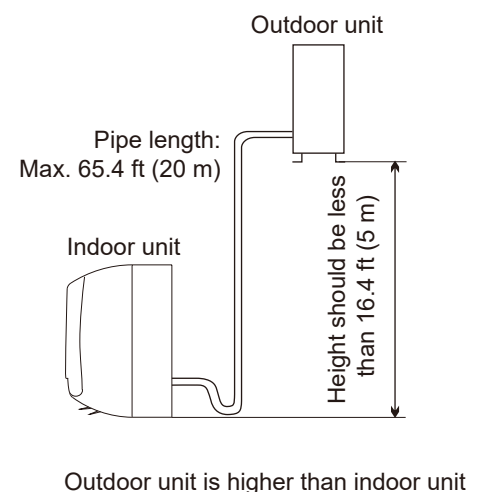
Site for installing the indoor unit

- Where there is no obstruction near the air outlet and air can be easily blown to every corner.
- Where piping and wall hole can be easily arranged.
- Keep the required space from the unit to the ceiling and wall according to the diagram on previous page.
- Where the air filter can be easily removed.
- Keep the unit and remote controller 3.28 ft (1 m) or more apart from television, radio etc.
- Keep as far as possible from fluorescent lamps.
- Do not put anything near the air inlet to obstruct it from air absorption.
- Install on a wall that is strong enough to bear the weight of the unit.
- Install in a place that will not increase operation noise and vibration.
- Keep away from direct sunlight and heating sources. Do not place flammable materials or combustion apparatuses on the top of the unit.



Site for installing the outdoor unit

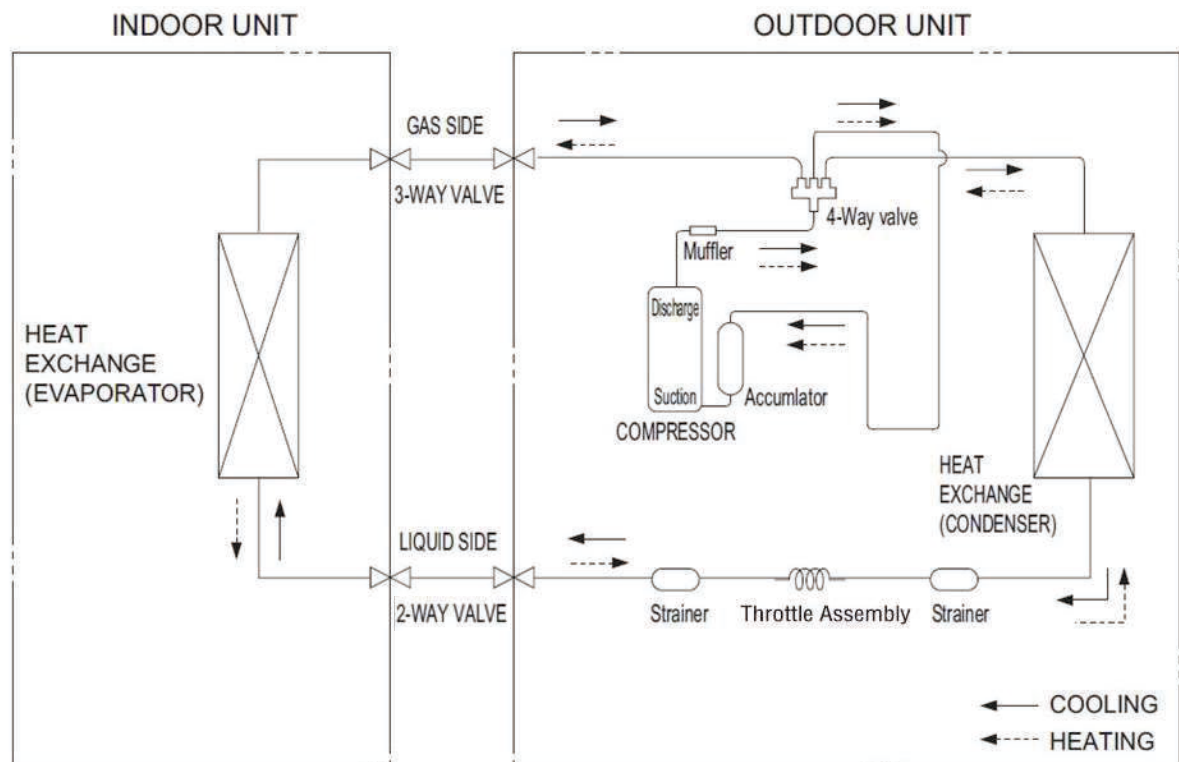
- Where it is convenient to install and well ventilated.
- Avoid installing it where flammable gas could leak.
- Keep the required distance apart from the wall.
- Keep the outdoor unit away from greasy dirt, vulcanization gas exit.
- Avoid installing it by the roadside where there is a risk of muddy water.
- A fixed base where it is not subject to increased operation noise.
- Where there is not any blockage of the air outlet.
- Avoid installing under direct sunlight, in an aisle or side-way, or near heat sources and ventilation fans. Keep away from flammable materials, thick oil fog, and wet or uneven places.
- In case the pipe length is more than 24.6 ft (7.5 m), the refrigerant should be charged additionally, according to the table below.



Model	Required amount of additional refrigerant (oz/ft)
WHP09SZA21S	0.215
WHP12SZA21S	
WHP18SZA21S	
WHP24SZA21S	0.323

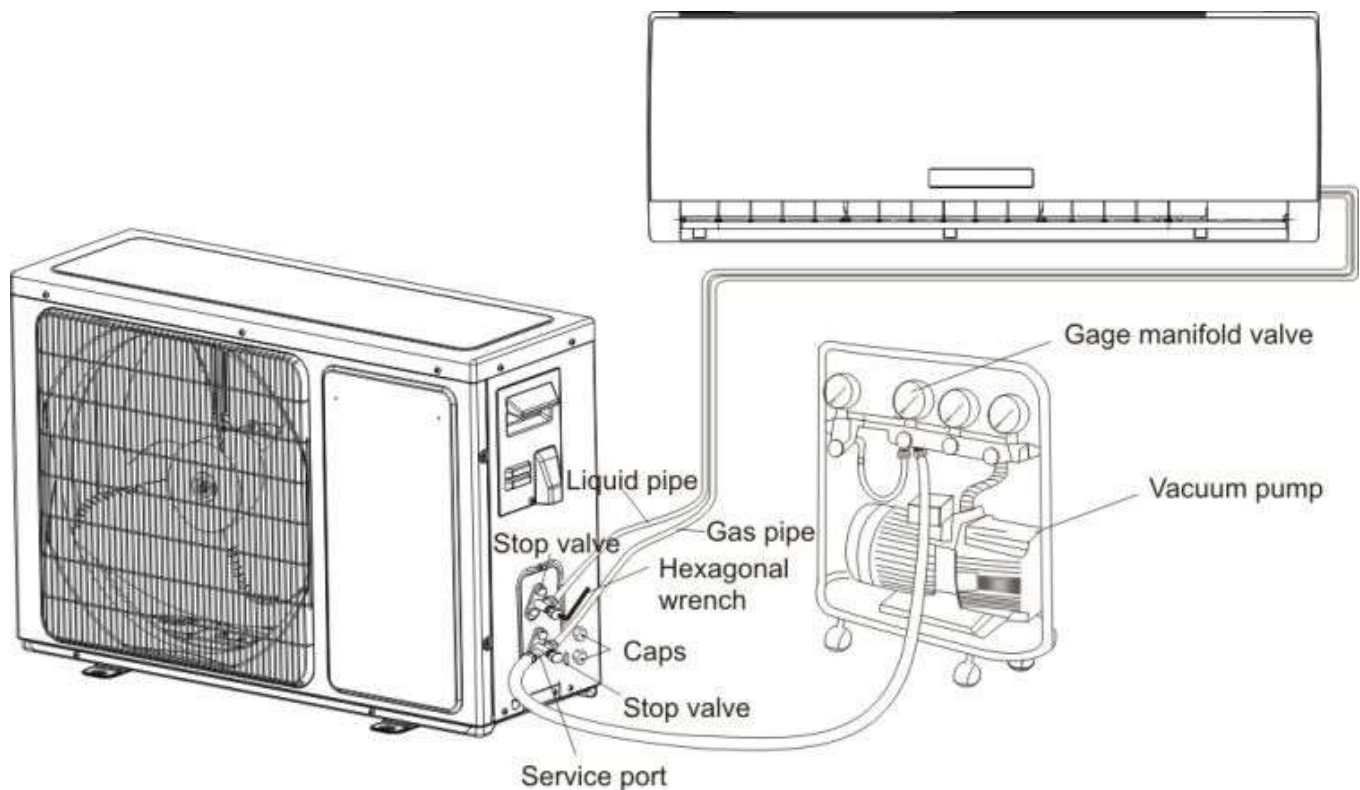
Refrigerant circuit

**Models: WHP09SZA21S, WHP12SZA21S, WHP18SZA21S,
and WHP24SZA21S**



Air Purging and Leakage Test

1. Connect charging hose of manifold valve to charge end of low pressure valve (both high/low pressure valves must be tightly shut).
 2. Connect joint of charging hose to vacuum pump.
 3. Fully open the handle of Lo manifold valve.
 4. Open the vacuum pump to evacuate. At the beginning, slightly loosen joint nut of low pressure valve to check if there is air coming inside. (If noise of vacuum pump has been changed, the reading of multimeter is 0) Then tighten the nut.
 5. Keep evacuating for more than 15mins and make sure the reading of multi-meter is -1.0×10^5 pa (-76cmHg).
 6. Check the vacuum with the gage manifold valve, then close the gage manifold valve, and stop the vacuum pump.
 7. Leave it for one or two minutes. Make sure the pointer of the gage manifold valve remains in the same position.
 8. Remove the gage manifold valve quickly from the service port of the stop valve.
- After refrigerant pipes are connected and evacuated, fully open all stop valves on gas and liquid pipe sides.
9. Opening without fully opening lowers the performance and cause dangerous.
 10. Tighten the cap to the service port to obtain the initial status.
 11. Retighten the cap
 12. Leak test



Test Running

△ Check after Installation

Items to be checked	Possible malfunction
Has it been fixed firmly?	The unit may drop, shake or emit noise.
Have you done the refrigerant leakage test?	It may cause insufficient cooling(heating)capacity
Is heat insulation sufficient?	It may cause condensation and dripping.
Is water drainage satisfactory?	It may cause condensation and dripping.
Is the voltage in accordance with the rated voltage marked on the nameplate?	It may cause electric malfunction or damage the product.
Is the electric wiring and piping connection installed correctly and securely?	It may cause electric malfunction or damage the part.
Has the unit been connected to a secure earth connection?	It may cause electrical leakage.
Is the power cord specified?	It may cause electric malfunction or damage the part.
Are the inlet and outlet openings blocked?	It may cause insufficient cooling(heating)capacity.
Is the length of connection pipes and refrigerant capacity been recorded?	The refrigerant capacity is not accurate.

△ Operation Test

1. Before Operation Test

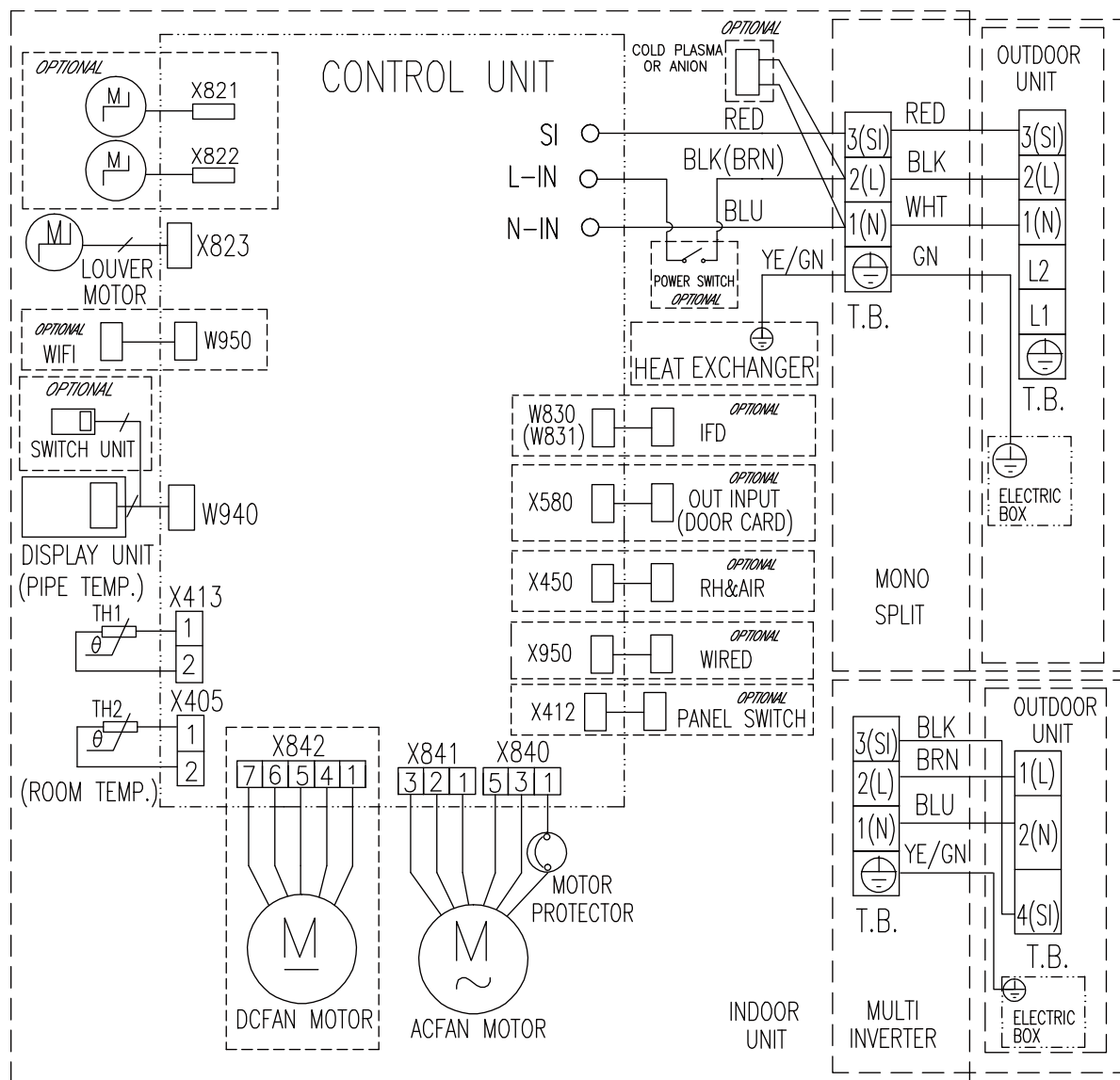
- (1) Do not switch on power before installation is finished completely.
- (2) Electric wiring must be connected correctly and securely.
- (3) Cut-off valves of the connection pipes should be opened.
- (4) All the impurities such as scraps and thrums must be cleared from the unit.

2. Operation Test Method

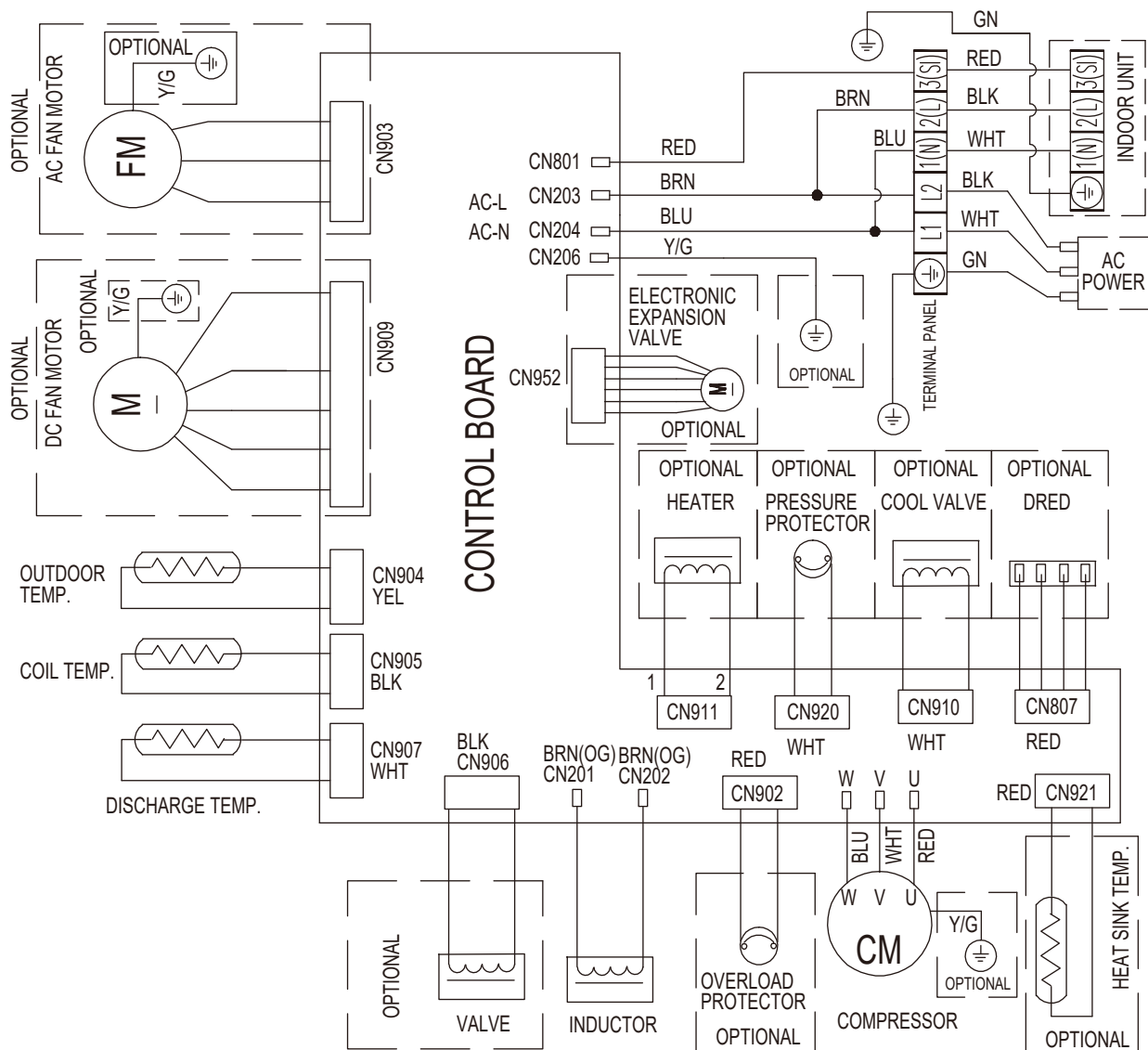
- (1) Switch on power and press "ON/OFF" button on the remote controller to start the operation.
- (2) Press MODE button to select the COOL, HEAT (Cooling only unit is not available), FAN to check whether the operation is normal or not.

Wiring diagrams

Models: WHP09WMA21S, WHP12WMA21S, WHP18WMA21S, and WHP24WMA21S



Models: WHP09SZA21S, WHP12SZA21S, WHP18SZA21S, and WHP24SZA21S



Troubleshooting

Error Code Table

1. Indication on the outdoor unit:

When the unit has the following trouble and the compressor stops running, The LED of outdoor control board will show the error sequence automatically:

NOTE: ★ : LIGHT O : FLASH × : OFF

Error code	Outdoor Failure Description	LED1	LED2	LED3	the root cause may be one of the following
Mark description: the lights flash every second for the following faults					
	Normal	×	×	×	
	Outdoor coil temperature sensor in trouble	★	×	★	a. The outdoor coil sensor connect loose; b. The outdoor coil temperature sensor is failure; c. The outdoor control board is failure
	Compressor exhaust temperature sensor in trouble	★	×	×	a. The compressor exhaust temperature sensor connect loose; b. The compressor exhaust temperature sensor is failure; c. The outdoor control board is failure
	Communication failure between the indoor unit and outdoor unit	×	×	O	a. The communication cable connect loose; b. The communication cable is failure; c. The connection between the filter board and the outdoor control board is incorrect or loose; d. The connection between the filter board and the terminal is incorrect or loose; e. The indoor control board is failure; f. The PFC board is failure; g. The power board is failure; h. the outdoor control board is failure.
	Current overload protection	★	O	×	a. The fan motor run abnormally; b. The condenser or and evaporator is dirty; c. The air inlet and outlet is abnormally
	Maximum current protection	★	O	★	a. The outdoor control board is short circuit; b. The drive board is short circuit; c. The other components is short circuit
	Communication trouble between outdoor unit and driver	×	★	★	a. The connection wires connect loose b. The outdoor board or drive board is failure;

	Outdoor EEPROM in trouble	★	★	★	a. The EEPROM chip is loose; b. The EEPROM chip inserted with opposite direction; c. The EEPROM chip is failure
	Compressor exhaust temperature too high protection	×	○	★	a. The compressor exhaust temperature sensor is failure; b. The refrigerant of the unit is not enough
	Outdoor ambient temperature sensor in trouble	★	★	×	a. The outdoor ambient temperature sensor connect loose; b. The outdoor ambient temperature sensor is failure; c. The outdoor control board is failure
	Compressor shell temperature too high protection	×	★	○	a. The compressor exhaust temperature sensor connect loose b. The refrigerant of the unit is not enough
	Anti-freeze protection with cooling or overload protection with heating in indoor unit	×	○	○	a. The indoor coil temperature sensor connect loose; b. The indoor coil temperature sensor is failure; c. The indoor control board is failure d. The refrigerant system is abnormal.
	Compressor drive in trouble	○	×	○	a. The outdoor drive board is failure; b. The compressor is failure c. The outdoor control board is failure
	Outdoor fan motor locked rotor protection	○	○	★	a. The connection of the outdoor fan motor is loose; b. There are something block the outdoor fan; c. The fan motor is failure; d. The outdoor control board is failure
	Outdoor coil anti-overload protection with cooling	×	★	×	a. The refrigerant is too much; b. The outdoor fan motor is failure; c. The outdoor fan is broken; d. The condenser is dirty; e. The air inlet and air outlet of the indoor unit and the outdoor unit is not normally

	IPM module protection	×	○	×	a. The IPM board is failure; b. The outdoor fan is broken; c. The outdoor fan motor is failure; d. The outdoor fan has been blocked ; e. The condenser is dirty; f. The outdoor unit has been installed without standard.
	PFC protection	○	×	×	a. The PFC is failure; b. The outdoor drive board is failure
	Compressor pre heating process	○	★	○	It is normal mode in cold weather
	Chip in outdoor board in trouble	★	×	○	a. Using the wrong drive board; b. Using the wrong compressor.
	AC voltage higher or lower protection	★	★	○	a. The supply voltage is higher or lower than normal; b. The inner supply voltage of the unit is higher or lower than normal
	DC compressor start failure	○	○	×	a. The outdoor drive board is failure; b. The compressor is failure
	Outdoor ambient temperature too low protection	★	○	○	a. Outdoor ambient temperature too low
Mark description: the lights flash every two seconds for the following faults					
	Protection against overheated outdoor radiator	○	×	×	a. Radiator sensors fail b. Detection circuit of the sensor on the control panel fails
	Protection of the system against too high pressure	○	○	×	a. The pressure switch fails b. The pressure detection switch on the control panel fails c. The measured value of the system pressure exceeds the limit

When the compressor is in operation:

Mark description: ★ : Light ○ : Flash × : Off; the flash cycle is 1S				
No.	LED1	LED2	LED3	Reasons for the current operating frequency of the compressor is limited
1	○	○	○	Normal frequency rising and decreasing, no limitation
2	×	×	★	Frequency decreasing or prohibition of frequency rising caused by over-current
3	×	★	★	Frequency decreasing or prohibition of frequency rising caused by anti-freezing of refrigeration or anti-oveload in heating

4	★	×	★	Frequency decreasing or prohibition of frequency rising caused by too high compressor discharge temperature
5				Limit to the max operating frequency caused by too low power voltage
6	★	★	★	Operation at fixed frequency (in the case of capability measuring or compulsory operation at fixed frequency)
7	○	×	×	Protective frequency decreasing against outdoor overload (overpower, over frequency conversion rate, over torque, detection of DC under-voltage)
8	★	×	×	Frequency decreasing caused by indoor and outdoor communication fault
9	×	★	○	Frequency decreasing or prohibition of frequency rising protection against overload of outdoor coiled pipe
10	×	★	×	Frequency decreasing or prohibition of frequency rising for power-saving when it is being used simultaneously with other appliances

2. Indication by the indoor unit:

2.1. The 7-segment tube of the indoor display board will show the error code automatically when the unit has the following trouble:

Error code	Power	Timer	Running	Sleep	Remark : ★Light	○ Flash	×	OFF
	1	2	3	4	Content	Remark	The root cause is may be one of the following	
EA					The error code will display when the communication between display board and control board have in trouble		a. The connection between the display board and control board is loose; b. The indoor control board is failure. c. The wiring of the display board is failure.	

2.2. When the unit has the following trouble and the compressor stops running, press the sleep button on the remote controller for 4 times in ten seconds and the 7-segment tube of the display board will show the error code as the following, if two malfunction happened at the same time, it need press the sleep button for 4 times again, the LED will show the other error code.

Refer to the remote controller which the sleep key can set into 4 different combination ways (Hisense's new design remote controller), when using to check the error codes only takes effect for pressing the sleep key 10 times in ten seconds instead of 4 times.

NOTE: If the troubleshooting inquiry display by 7-segment tube, then the error code will be displayed, otherwise only the LED of the display board can show.

Error code	Running	Timer	Sleep	Power	Remark : ★Light	○ Flash	×	OFF
	1	2	3	4	Content	Remark	The root cause is may be one of the following	

0					Normal		
1	x	O	x	x	The failure for temperature sensor of outdoor coil		a. The outdoor temperature sensor loose; b. The outdoor temperature sensor is failure; c. The indoor control board is failure
2	×	O	★	×	Compressor exhaust temperature sensor in trouble		a. The compressor exhaust temperature sensor connect loose; b. The compressor exhaust temperature sensor is failure; c. The outdoor control board is failure
5	★	O	×	×	IPM module protection		a. The IPM board is failure; b. The outdoor fan is broken; c. The outdoor fan motor is failure; d. The outdoor fan has been blocked ; e. The condenser is dirty; f. The outdoor unit has been installed without standard.
6	★	O	×	★	AC voltage higher or lower protection		a. The supply voltage is higher or lower than normal; b. The inner supply voltage of the unit is higher or lower than normal
7	★	O	★	×	Communication failure between the indoor unit and outdoor unit		a. The communication cable connect loose; b. The communication cable is failure; c. The connection between the filter board and the outdoor control board is incorrect or loose; d. The connection between the filter board and the terminal is incorrect or loose; e. The indoor control board is failure; f. The PFC board is failure; g. The power board is failure; h. The outdoor control board is failure.

8	★	O	★	★	Current overload protection		a. The fan motor run abnormally; b. The condenser and evaporator is dirty; c. The air inlet and outlet is abnormally
9	×	×	O	×	Maximum current protection		a. The outdoor control board is short circuit; b. The drive board is short circuit; c. The other components is short circuit
10	×	×	O	★	Communication trouble between outdoor unit and driver		a. the connection wires connect loose b. The outdoor board or drive board is failure;
11	×	★	O	×	Outdoor EEPROM in trouble		a. The EEPROM chip is loose; b. The EEPROM chip inserted with opposite direction; c. The EEPROM chip is failure
12	×	★	O	★	Outdoor ambient temperature too low protection		Outdoor ambient temperature too low
13	★	×	O	×	Compressor exhaust temperature too high protection		a. The compressor exhaust temperature sensor is failure; b. The refrigerant of the unit is not enough
14	★	×	O	★	Outdoor ambient temperature sensor in trouble		a. The outdoor ambient temperature sensor connect loose; b. The outdoor ambient temperature sensor is failure; c. The outdoor control board is failure
15	★	★	O	×	Compressor shell temperature too high protection		a. The compressor exhaust temperature sensor connect loose b. The refrigerant of the unit is not enough
16					Anti-freeze protection with cooling or overload protection with heating in		a. The indoor coil temperature sensor connect loose; b. The indoor coil temperature sensor is failure; c. The indoor control board is failure

							d. the refrigerant system is abnormal.
17					PFC protection		a. the PFC is failure; b. the outdoor drive board is failure
18					DC compressor start failure		a. the outdoor drive board is failure; b. the compressor is failure
19	×	×	×	O	Compressor drive in trouble		a. the outdoor drive board is failure; b. the compressor is failure c. the outdoor control board is failure
20	★	×	×	O	Outdoor fan motor locked rotor protection		a. the connection of the outdoor fan motor is loose; b. there are something block the outdoor fan; c. the fan motor is failure; d. the outdoor control board is failure
21					Outdoor coil anti-overload protection with cooling		a. the refrigerant is too much; b. the outdoor fan motor is failure; c. the outdoor fan is broken; d. the condenser is dirty; e. the air inlet and air outlet of the indoor unit and the outdoor unit is not normally
22					Compressor pre heating process		it is normal mode in cold weather
24					Chip in outdoor board in trouble		a. Using the wrong drive board; b. Using the wrong compressor.
26					Overheated outdoor radiator		a. Radiator sensor fails b. Detection circuit of the sensor on the control panel fails
27					Protection against too high system pressure		a. The pressure switch fails b. The pressure detection switch on the control panel fails c. The measured value of system pressure exceeds the limit

33	O	x	x	★	The failure for temperature sensor of indoor room		a. The indoor room temperature sensor loose; b. The indoor room temperature sensor is failure; c. The indoor control board is failure.
34	O	x	★	x	The failure for temperature sensor of indoor coil temperature		a. The indoor coil temperature sensor loose; b. The indoor coil temperature sensor is failure; c. The indoor control board is failure.
36	O	★	×	★	Communication failure between the indoor unit and outdoor unit		a. the communication cable connect loose; b. the communication cable is failure; c. the connection between the filter board and the outdoor control board is incorrect or loose; d. the connection between the filter board and the terminal is incorrect or loose; e. the indoor control board is failure; f. the PFC board is failure; g. the power board is failure; h. the outdoor control board is failure.
38	O	★	★	★	Indoor EEPROM failure		a. The EEPROM chip loose; b. The indoor control board is failure
39	O	x	★	★	Indoor fan motor run abnormally		a. There are something block the indoor fan motor; b. The fan motor cord connect loose; c. The fan motor is failure; d. The indoor control board is failure
41	★	★	O	★	The failure for Indoor grounding protective		The indoor control board is failure

2.2 LED display

Error code	Sleep	Timer	Running		Remark : ★Light O Flash x OFF		
	1	2	3		Content	Remark	The root cause is may be one of the following

0					Normal		
1	O	★	★		The failure for temperature sensor of outdoor coil		a. The outdoor temperature sensor loose; b. The outdoor temperature sensor is failure; c. The indoor control board is failure
2	O	★	x		Compressor exhaust temperature sensor in trouble		a. The compressor exhaust temperature sensor connect loose; b. The compressor exhaust temperature sensor is failure; c. The outdoor control board is failure
5	★	O	x		IPM module protection		a. The IPM board is failure; b. The outdoor fan is broken; c. The outdoor fan motor is failure; d. The outdoor fan has been blocked ; e. The condenser is dirty; f. The outdoor unit has been installed without standard.
6	x	O	x		AC voltage higher or lower protection		a. The supply voltage is higher or lower than normal; b. The inner supply voltage of the unit is higher or lower than normal
7	★	★	x		Communication failure between the indoor unit and outdoor unit		a. The communication cable connect loose; b. The communication cable is failure; c. The connection between the filter board and the outdoor control board is incorrect or loose; d. The connection between the filter board and the terminal is incorrect or loose; e. The indoor control board is failure; f. The PFC board is failure; g. The power board is failure; h. The outdoor control board is failure.
8					Current overload protection		a. The fan motor run abnormally; b. The condenser and evaporator is dirty; c. The air inlet and outlet is abnormally

9					Maximum current protection		a. The outdoor control board is short circuit; b. The drive board is short circuit; c. The other components is short circuit
10	★	x	x		Communication trouble between outdoor unit and driver		a. The connection wires connect loose b. The outdoor board or drive board is failure;
11	O	x	x		Outdoor EEPROM in trouble		a. The EEPROM chip is loose; b. The EEPROM chip inserted with opposite direction; c. The EEPROM chip is failure
12					Outdoor ambient temperature too low protection		Outdoor ambient temperature too low
13	O	x	★		Compressor exhaust temperature too high protection		a. The compressor exhaust temperature sensor is failure; b. The refrigerant of the unit is not enough
14	★	★	O		Outdoor ambient temperature sensor in trouble		a. The outdoor ambient temperature sensor connect loose; b. The outdoor ambient temperature sensor is failure; c. The outdoor control board is failure
15	x	O	★		Compressor shell temperature too high protection		a. The compressor exhaust temperature sensor connect loose b. The refrigerant of the unit is not enough
16	★	x	★		Anti-freeze protection with cooling or overload protection with heating in		a. The indoor coil temperature sensor connect loose; b. The indoor coil temperature sensor is failure; c. The indoor control board is failure d. The refrigerant system is abnormal.
17	x	★	x		PFC protection		a. The PFC is failure; b. The outdoor drive board is failure
18	x	★	★		DC compressor start failure		a. The outdoor drive board is failure; b. The compressor is failure

19	x	★	O		Compressor drive in trouble		a. The outdoor drive board is failure; b. The compressor is failure c. The outdoor control board is failure
20	★	x	O		Outdoor fan motor locked rotor protection		a. The connection of the outdoor fan motor is loose; b. There are something block the outdoor fan; c. The fan motor is failure; d. The outdoor control board is failure
21	x	x	O		Outdoor coil anti-overload protection with cooling		a. The refrigerant is too much; b. The outdoor fan motor is failure; c. The outdoor fan is broken; d. The condenser is dirty; e. The air inlet and air outlet of the indoor unit and the outdoor unit is not normally
22					Compressor pre heating process		It is normal mode in cold weather
24					Chip in outdoor board in trouble		a. Using the wrong drive board; b. Using the wrong compressor.
26					Overheated outdoor radiator		a. Radiator sensor fails b. Detection circuit of the sensor on the control panel fails
27					Protection against too high system pressure		a. The pressure switch fails b. The pressure detection switch on the control panel fails c. The measured value of system pressure exceeds the limit
33	★	O	O		The failure for temperature sensor of indoor room		d. The indoor room temperature sensor loose; e. The indoor room temperature sensor is failure; f. The indoor control board is failure.
34	x	O	O		The failure for temperature sensor of indoor coil temperature		d. The indoor coil temperature sensor loose; e. The indoor coil temperature sensor is failure; f. The indoor control board is failure.

36	O	★	O		Communication failure between the indoor unit and outdoor unit	a. The communication cable connect loose; b. The communication cable is failure; c. The connection between the filter board and the outdoor control board is incorrect or loose; d. The connection between the filter board and the terminal is incorrect or loose; e. The indoor control board is failure; f. The PFC board is failure; g. The power board is failure; h. The outdoor control board is failure.
38	O	O	x		Indoor EEPROM failure	c. The EEPROM chip loose; d. The indoor control board is failure
39	O	O	★		Indoor fan motor run abnormally	a. There are something block the indoor fan motor; b. The fan motor cord connect loose; c. The fan motor is failure; d. The indoor control board is failure
41	x	x	★		The failure for Indoor grounding protective	The indoor control board is failure

The failure is detected when the room temperature sensor broken or shorted over 5 sec.

The failure is detected when the temperature sensor of heater exchange broken or shorted over 5 sec.

The failure is detected when each setting data is not match after the EEPROM self-check two times.

The failure is occur when the grounding signal is not detected after the appliance power ON.

Test the jumper terminals

Note:

When the whole machine is powered up, if the external unit does not work, to rule out the communications failures, adopt screening method such as short circuit on the jumper terminals to see if the external unit can be started normally or similar method.



There are two blue terminals on the outdoor control panel, as shown above.

Application: Short out the terminals, and power up the outdoor unit, then the outdoor unit may run independently. It can be determined that there is no internal and external communication faults.

When the environment temperature is lower than 18°C, you can't run the unit under the cool mode, but if you need run the unit at this moment, such as add the gas or do more test, at this moment you can use this function,

Under this function, the outdoor motor and compressor will be forced to run until reaching a fixed frequency (general is 50~55Hz).

Trouble Diagnosis of Protection

Protection diagnosis of the complete machine (all types of protection during operation, i.e. under-voltage, over-voltage and overcurrent protection)

Note: List all types of protection that may occur to the complete machine and describe the conditions and signs of the start, course and end of such protection.

Voltage protection

Protection against AC input over-voltage/under-voltage

1. Conditions for protection against AC input over-voltage/under-voltage:

If the input AC voltage is greater than “protective over-voltage value” or less than “protective under-voltage value” for five seconds, over-voltage/under-voltage protection starts.

2. Protection actions against AC input over-voltage/under-voltage

The system stops operation.

3. Conditions for ending AC input over-voltage/under-voltage:

If the input AC voltage is lower than “the protective over-voltage value” -10V, or higher than “the protective under-voltage value” +10V, the over-voltage/under-voltage protection will be released.

Current protection:

1. Protection against over-current

Conditions for over-current protection: if the current is equal to or greater than “current value for starting the refrigeration current protection (E2 value)” for six seconds, over-current protection starts.

Protection actions against over-current: indoor display screen and outdoor indicator give indications, the

compressor and outdoor fan stop, but indoor fan runs normally.

Condition for ending over-current protection: when the current drops below “current value for releasing the refrigeration current protection (E2 value)”, over-current protection will be released.

2. Frequency decreasing for over-current

Conditions for over-current frequency decreasing : if the current is equal to or greater than “current value for starting the refrigeration current protective frequency decreasing (E2 value)”, over-current frequency decreasing starts.

Over-current frequency decreasing actions: the compressor will decrease frequency at rate of (E2 value)Hz/S. The indoor and outdoor fans run.

Conditions for ending over-current frequency decreasing : when the current drops below “current value for starting the refrigeration current protective prohibition of frequency rising (E2 value)”, over-current under-clocking will be released.

3. Prohibition of frequency increasing of compressor exhausting

Conditions for prohibition of frequency rising of compressor discharge

Condition 1: in the case of frequency decreasing of compressor discharge, the discharge temperature of the compressor drops below X4°C.

Condition 2: in normal operation, the discharge temperature of compressor reaches X5°C.

Either of the above two conditions is met, prohibition of frequency rising of compressor discharge begins.

Actions relates to prohibition of frequency rising of compressor discharge: the frequency of compressor maintains at the current level, which may decrease as the case requires while cannot rise. The indoor and outdoor fans run.

Condition for ending prohibition of frequency rising of compressor discharge: if the temperature of compressor discharge drops below X6°C, prohibition of frequency rising of compressor discharge will be released.

4. Prohibition of frequency for anti-overload of outdoor coiled pipe

Condition for anti-overload prohibition of frequency of outdoor coiled pipe: in the case of anti-overload frequency decreasing of outdoor coiled pipe, anti-overload prohibition of frequency of the unit begins when the temperature of outdoor coiled pipe drops below “the anti-overload frequency decreasing temperature of outdoor coiled pipe”.

Actions relates to anti-overload prohibition of frequency of outdoor coiled pipe: the frequency of compressor maintains at the current level, which may decrease as the case requires while cannot rise. The indoor and outdoor fans run.

Condition for ending anti-overload prohibition of frequency of outdoor coiled pipe: if the temperature of outdoor coiled pipe drops below “temperature to release the anti-overload state of outdoor coiled pipe”, anti-overload prohibition of frequency of outdoor coiled pipe will be released.

Trouble Diagnosis of Compressor

Judging the connecting terminals of inverter compressor:

It is impossible to identify terminals U, V and W of inverter compressor with multi-meter. Just connect the terminals in the same way as the original unit when replacing the compressor. A wrong connection will lead to reverse and loud noise of the compressor.

Resistance of compressor coil:

Measure the resistance between any two terminals, which are about a few Ohms, three phases having the same resistance.

Trouble Diagnosis of Electric Filter Board

Visual examination: as the circuit is simple, the connection may be checked visually to see whether any loose or poor connection.

Voltage test: the voltage at the input end shall be the same as the voltage at the output end.

Trouble Diagnosis of Electric Communication

Step one: to determine whether the connecting cables and tether cables of indoor/outdoor units are correctly wired. If not, change wiring order and test connection.

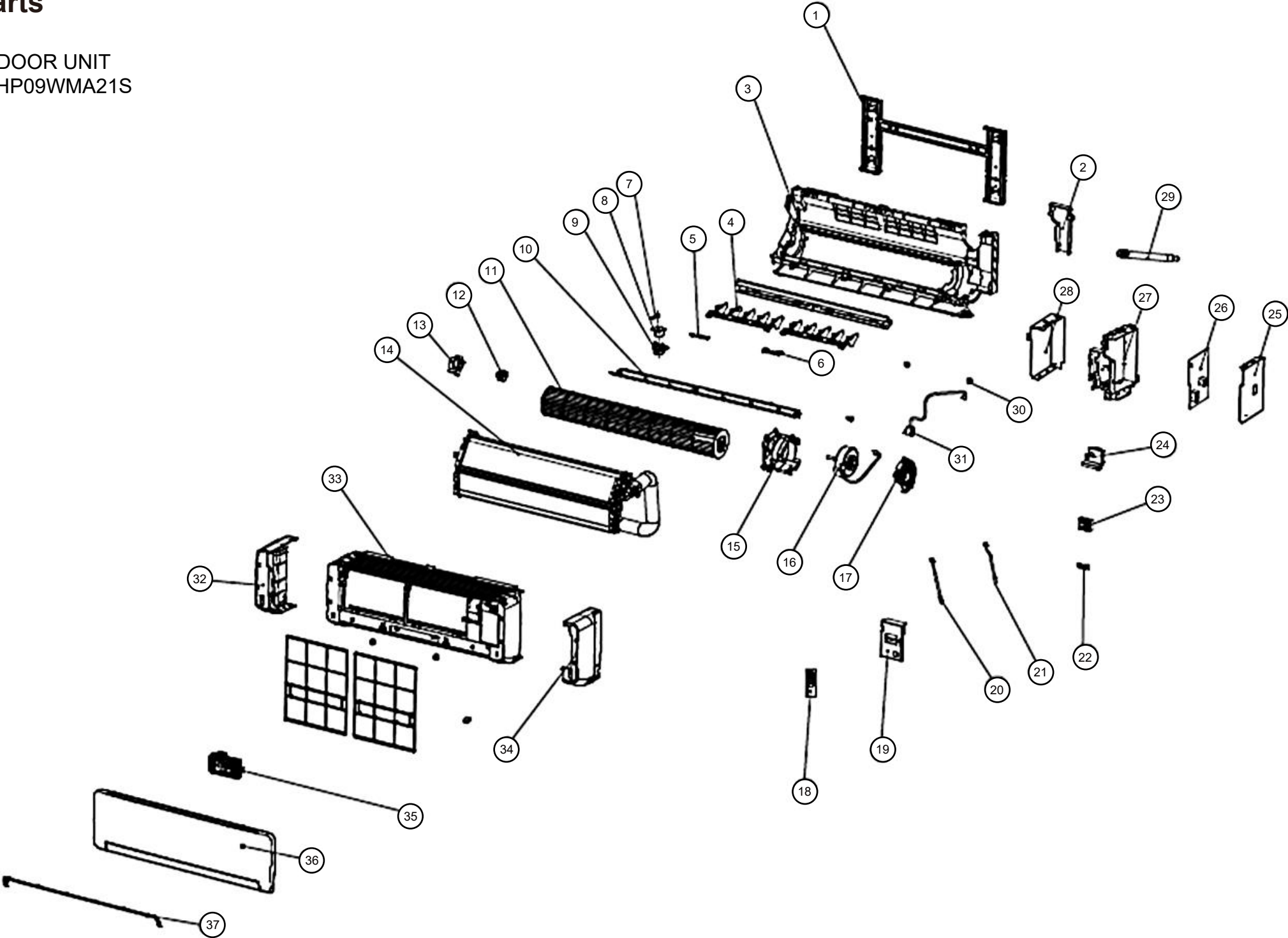
Step two: to determine whether there is loose connection.

Fasten the connection in the case of loose connection and then conduct verification.

Step three: measure the voltage between SI and N with multi-meter and see whether the voltage fluctuates between 0V and 24V. Please directly replace indoor and outdoor control boards if there are not voltage fluctuations.

Parts

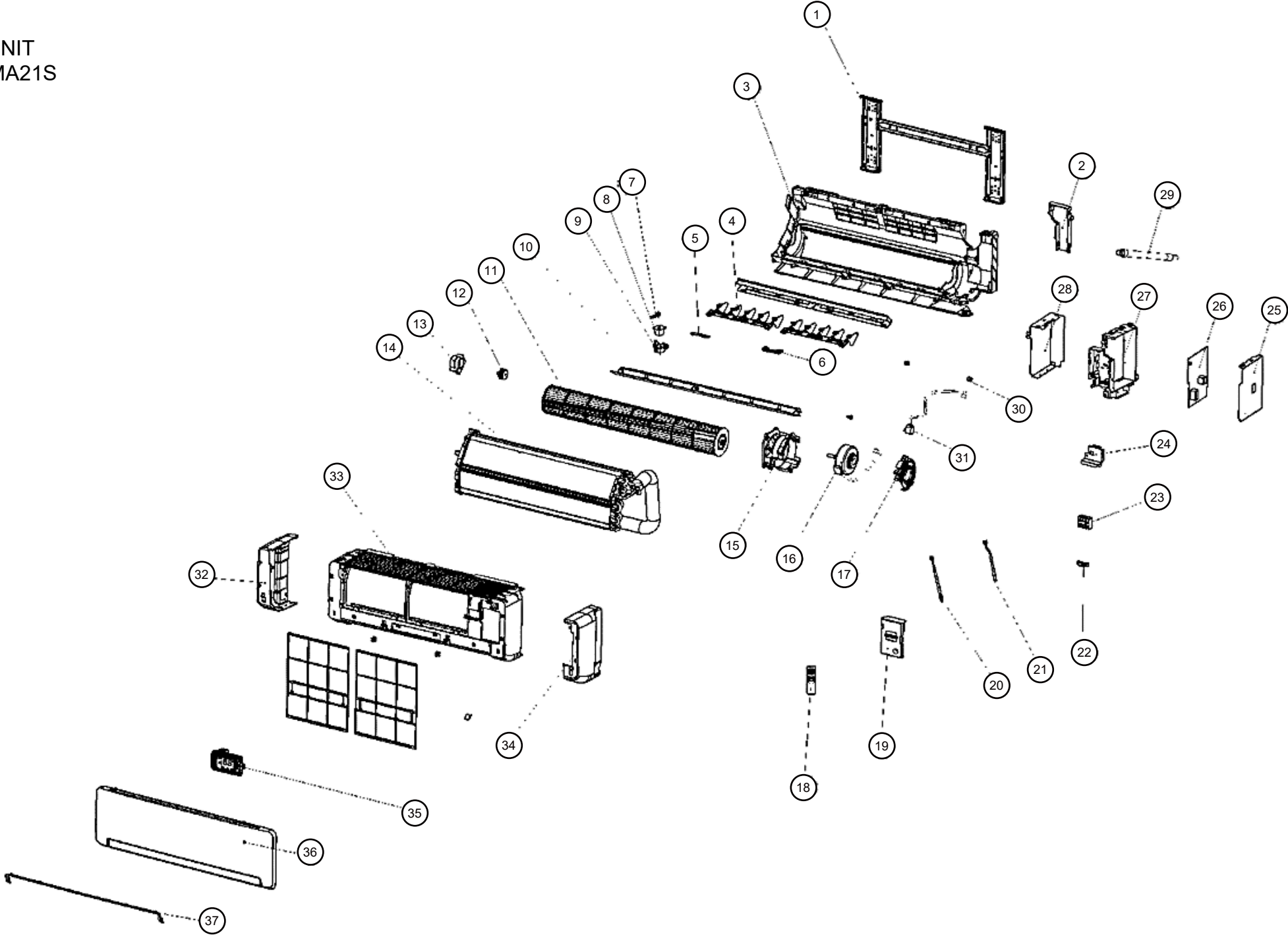
INDOOR UNIT
WHP09WMA21S



INDOOR UNIT
WHP09WMA21S

No.	Part number	Description
1	1906600	Installation plate assy
2	1984201	Baffle
3	1854439	Base holder part
4	1555378	Vertical level vane
5	1555381	Center staff
6	1555385	Center staff
7	1555387	Center staff
8	1260259	Step motor
9	1555386	Motor guard
10	1555374	Level vane
11	1466014	Cross-flow fan blade
12	1223739	Bearing
13	1465670	Baffle
14	1512275	Refrigeration system
15	2091423	Motor guard
16	1838324	DC motor
17	2091436	Motor cover
18	4151687	Remote controller
19	1840039	Electric box cover
20	1837499	Temperature sensor
21	1896665	Temperature sensor
22	1839902	Over clamp
23	1852126	Wire terminal board
24	1465763	Electric box cover
25	1465762	Elec joint box plate
26	1994823	Indoor main control board component
27	1868909	Electric box
28	1465761	Elec joint box plate
29	1470426	Water pipe parts
30	1222824	Axis sheath
31	1468408	Step motor
32	1555390	Ornamental part
33	2007198	Shell
34	1555391	Ornamental part
35	1874771	Display component
36	4151756	Panel
37	1826563	Ornamental part
	1506312	Filter net

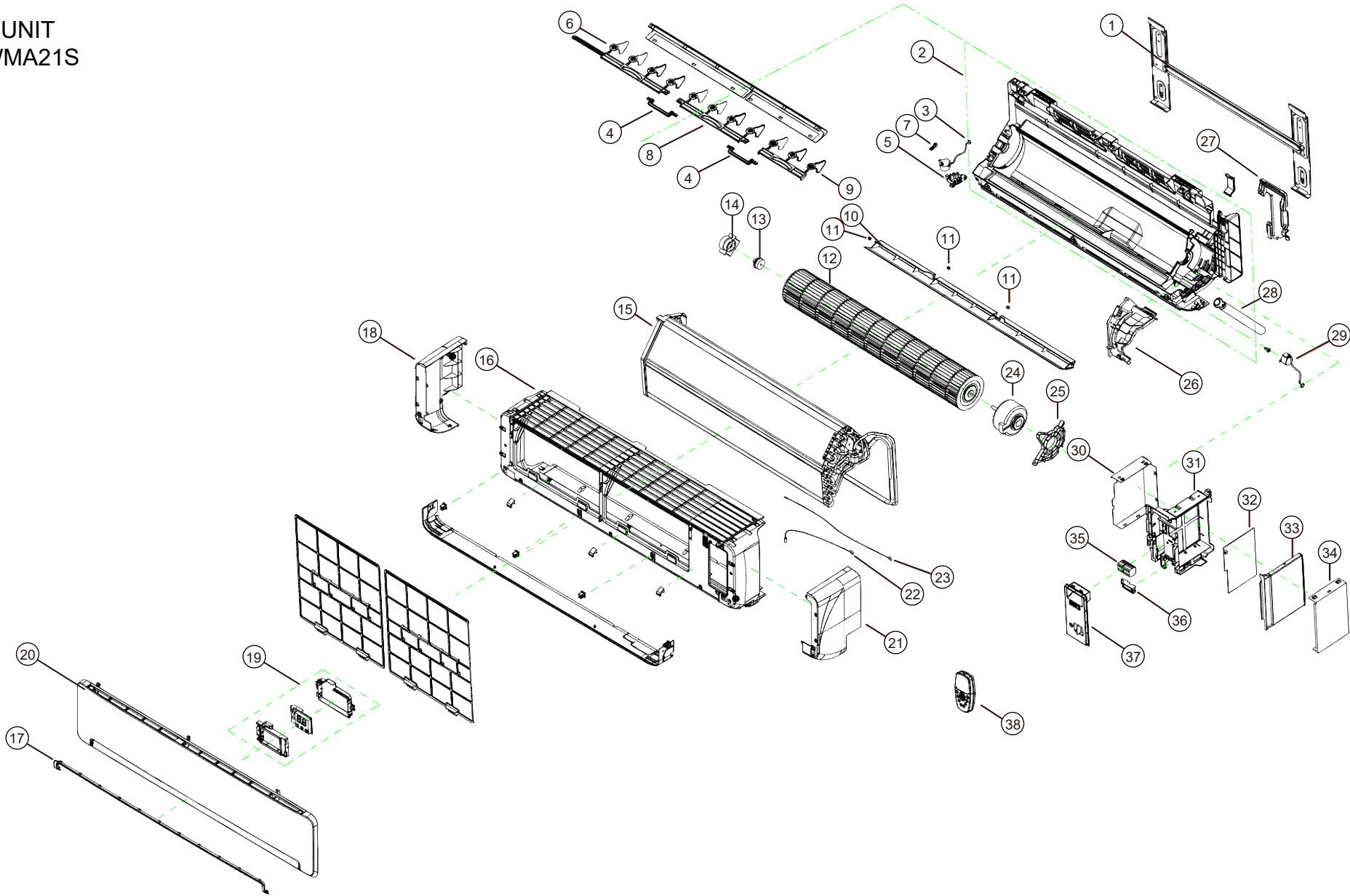
INDOOR UNIT
WHP12WMA21S



INDOOR UNIT
WHP12WMA21S

No.	Part number	Description
1	1906600	Installation plate assy
2	1984201	Baffle
3	1854439	Base holder part
4	1555378	Vertical Level Vane
5	1555381	Center staff
6	1555385	Center staff
7	1555387	Center staff
8	1260259	Step motor
9	1555386	Motor guard
10	1555374	Level vane
11	1466014	Cross-flow fan blade
12	1223739	Bearing
13	1465670	Baffle
14	1512275	Refrigeration system
15	2091423	Motor guard
16	1838324	DC motor
17	2091436	Motor cover
18	4151687	Remote controller
19	1840039	Electric box cover
20	1837499	Temperature sensor
21	1896665	Temperature sensor
22	1839902	Over clamp
23	1852126	Wire terminal board
24	1465763	Electric box cover
25	1465762	Elec joint box plate
26	1994827	Indoor main control board component
27	1868909	Electric box
28	1465761	Elec joint box plate
29	1470426	Water pipe parts
30	1222824	Axis sheath
31	1468408	Step motor
32	1555390	Ornamental part
33	2007198	Shell
34	1555391	Ornamental part
35	1874771	Display component
36	4151756	Panel
37	1826563	Ornamental part
	1506312	Filter net

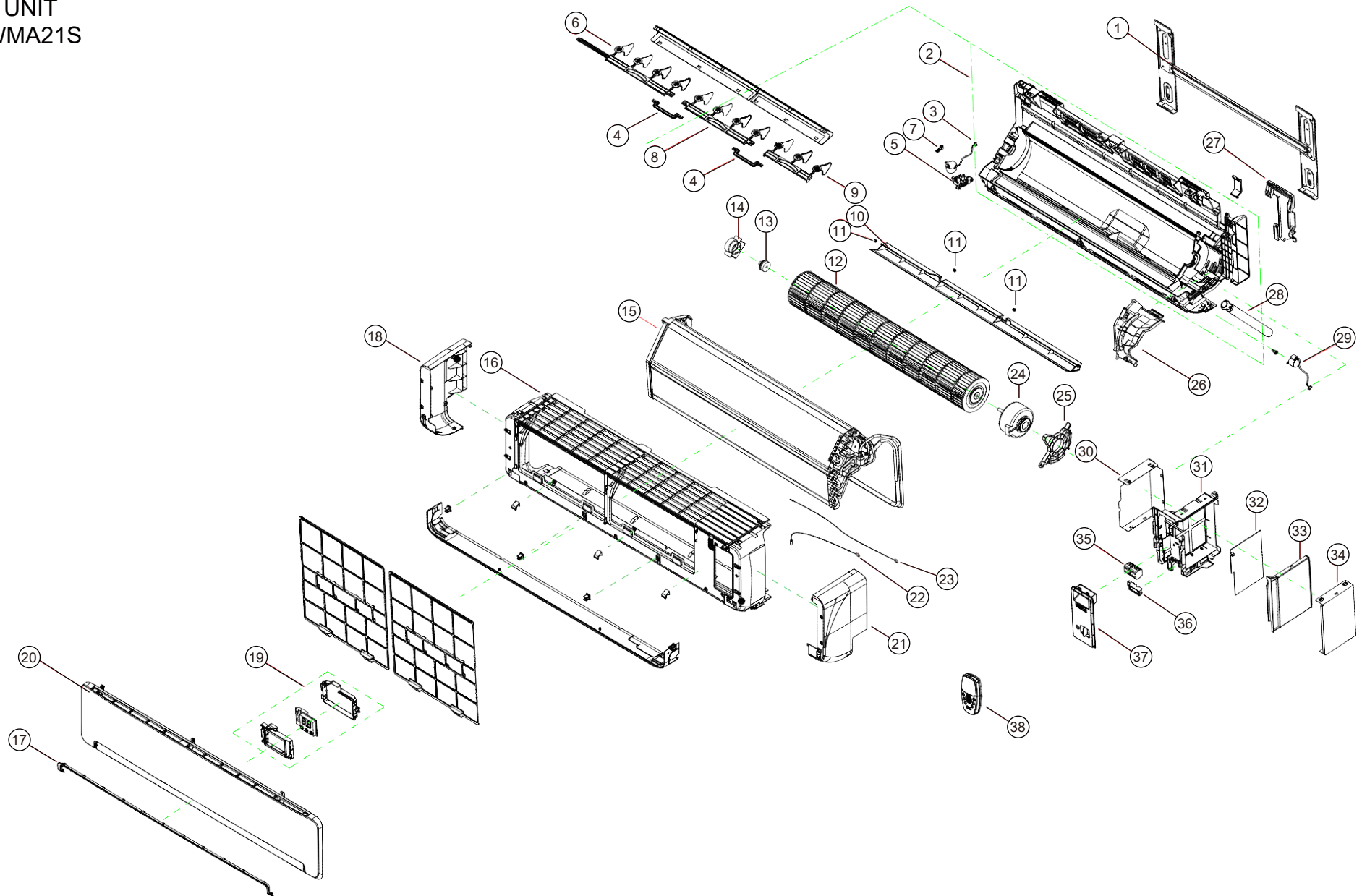
INDOOR UNIT
WHP18WMA21S



INDOOR UNIT
WHP18WMA21S

No.	Part number	Description
1	1907022	Installation plate assy
2	1954365	Base holder part
3	1260311	Step motor
4	1541366	Center staff
5	1541373	Motor guard
6	1541456	Vertical level vane
7	1541368	Center staff
8	1550291	Vertical level vane
9	1550300	Vertical level vane
10	1541363	Level vane
11	1222824	Axis sheath
12	1541633	Cross-flow fan blade
13	1223738	Bearing
14	1465670	Baffle
15	1838915	Refrigeration system
16	1541382	Shell
17	1826559	Ornamental part
18	1541388	Ornamental part
19	1824935	Display component
20	4151757	Panel
21	1541389	Ornamental part
22	1837499	Temperature sensor
23	1896665	Temperature sensor
24	1561456	DC motor
25	1541374	Motor cover
26	1541375	Motor guard
27	1541361	Baffle
28	1470426	Water pipe parts
29	1819726	Step motor
30	1541500	Elec joint box plate
31	1870720	Electric box
32	1989042	Indoor main control board component
33	1541507	Electric box cover
34	1837043	Electric box cover
35	1852126	Wire terminal board
36	1840141	Over clamp
37	1541379	Wiring distribution cover assy
38	4151687	Remote controller
	1541387	Filter net

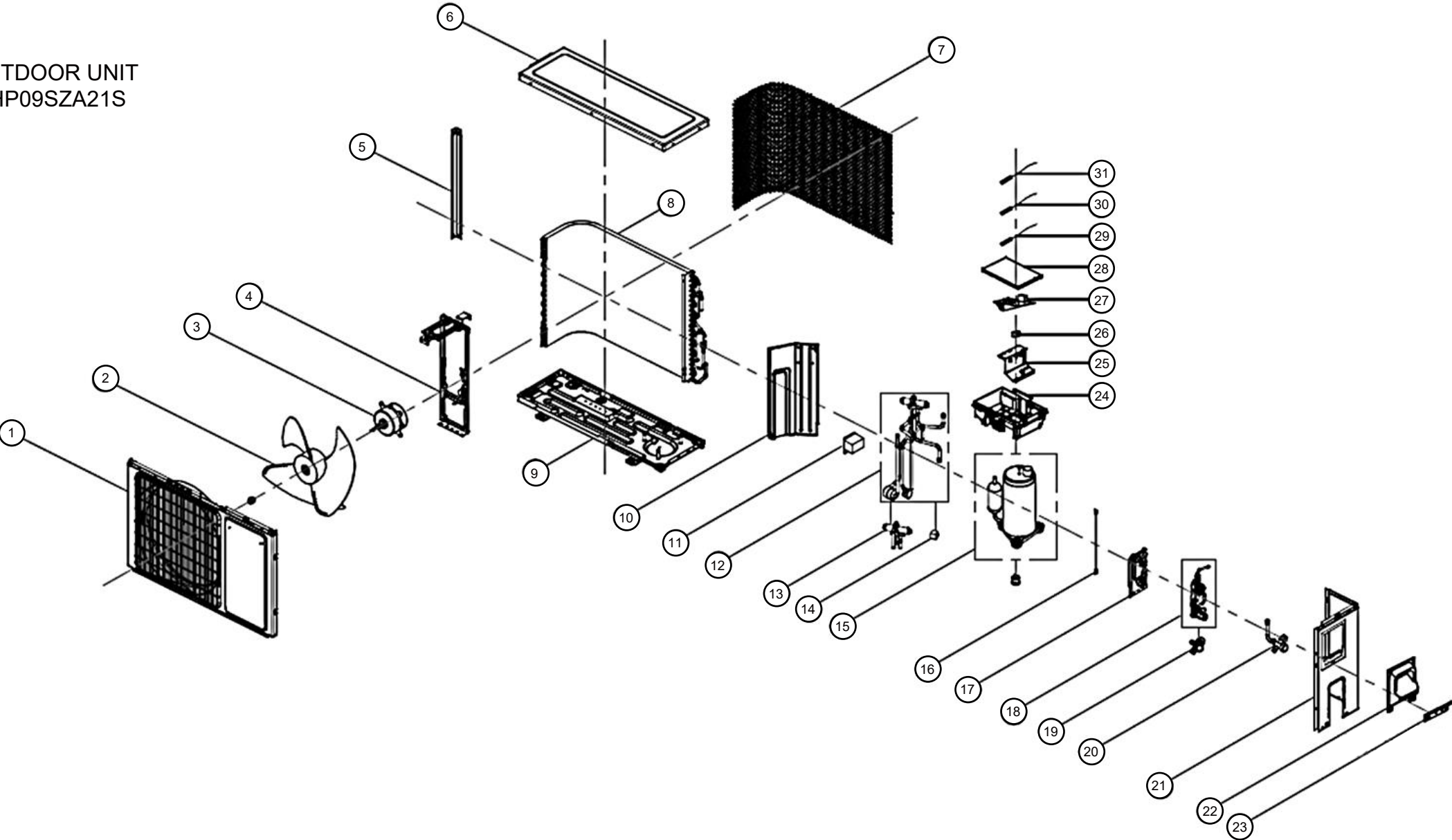
INDOOR UNIT
WHP24WMA21S



INDOOR UNIT
WHP24WMA21S

No.	Part number	Description
1	1907022	Installation plate assy
2	1954365	Base holder part
3	1260311	Step motor
4	1541366	Center staff
5	1541373	Motor guard
6	1541456	Vertical level vane
7	1541368	Center staff
8	1550291	Vertical level vane
9	1550300	Vertical level vane
10	1541363	Level vane
11	1222824	Axis sheath
12	1541633	Cross-flow fan blade
13	1223738	Bearing
14	1465670	Baffle
15	1556041	Refrigeration system
16	1541382	Shell
17	1826559	Ornamental part
18	1541388	Ornamental part
19	1824935	Display component
20	4151757	Panel
21	1541389	Ornamental part
22	1837499	Temperature sensor
23	1896665	Temperature sensor
24	1561456	DC motor
25	1541374	Motor cover
26	1541375	Motor guard
27	1541361	Baffle
28	1470426	Water pipe parts
29	1819726	Step motor
30	1541500	Elec joint box plate
31	1870720	Electric box
32	1997858	Indoor main control board component
33	1541507	Electric box cover
34	1837043	Electric box cover
35	1852126	Wire terminal board
36	1840141	Over clamp
37	1541379	Wiring distribution cover assy
38	4151687	Remote controller
	1541387	Filter net

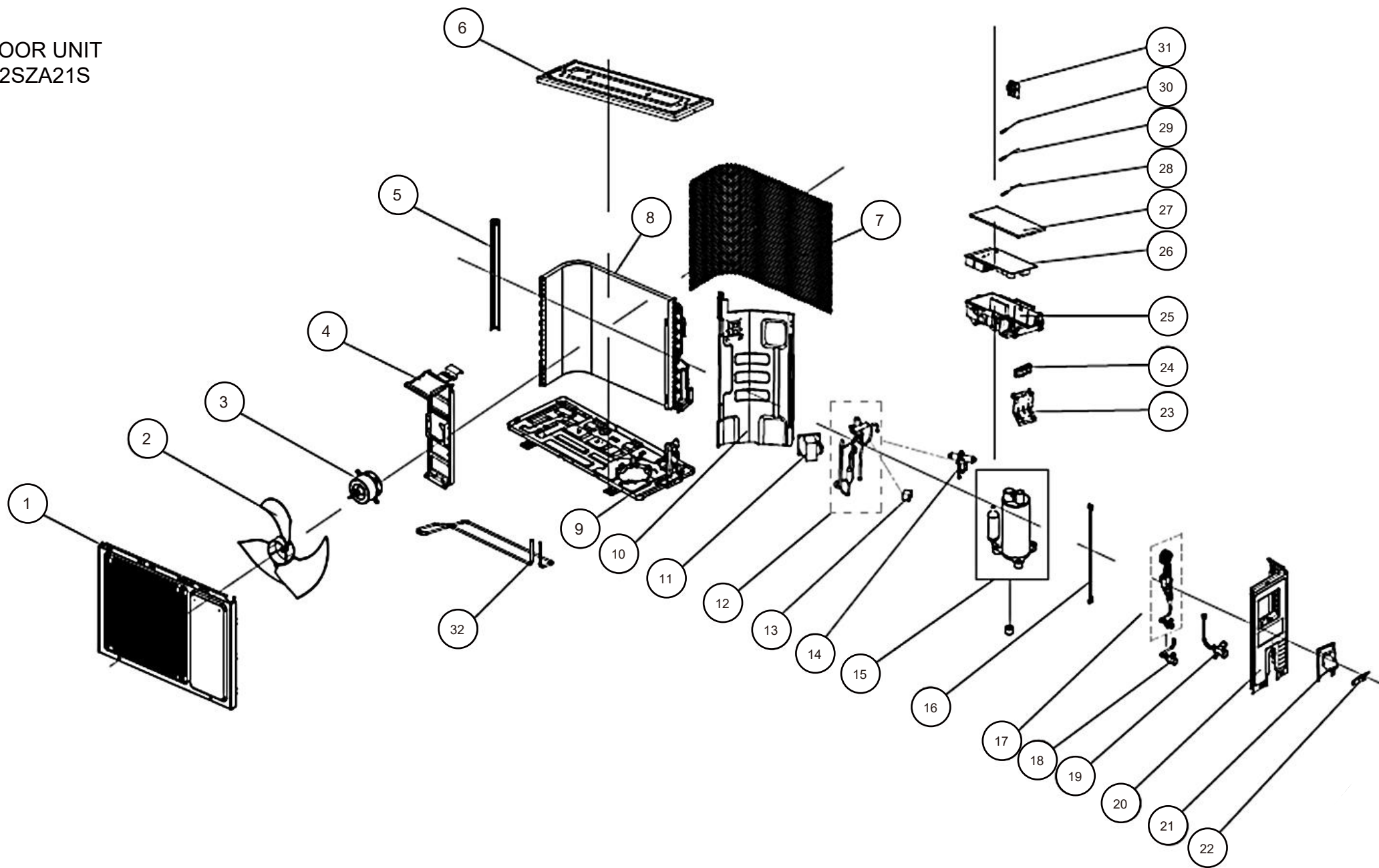
OUTDOOR UNIT
WHP09SZA21S



OUTDOOR UNIT
WHP09SZA21S

No.	Part number	Description
1	2135537	Panel parts
2	1405123	Propeller fan blade
3	1457759	DC motor
4	1824869	Motor supporter
5	1824871	Mounting plate
6	1824865	Upper board
7	1824902	Back guard
7	1824903	Left guard
8	1854202	Condenser assembly
9	1854218	Base holder part
10	1858994	Clapboard part
11	1829624	PFC inductance
12	1854176	4-way valve assembly
13	1258654	4-way valve
14	1511783	Four-way valve coil
15	1838380	Compressor
16	1822371	Compressor connect wire
17	1824870	Valve seat
18	1838379	Capillary assembly
19	1258653	1/4 2-way valve
20	1407169	3/8 3-way valve
21	1855206	Right side board
22	1854033	Wiring distribution cover assy
23	1854034	Fixed board
24	1894523	Electric box
25	1843011	Connecting board
26	1854383	Wire terminal board
27	1985606	Outdoor main control board component
28	1894526	Electric box cover
29	1472663	Temperature sensor
30	1472664	Temperature sensor
31	1831029	Temperature sensor
	1854709	Tube electric heater

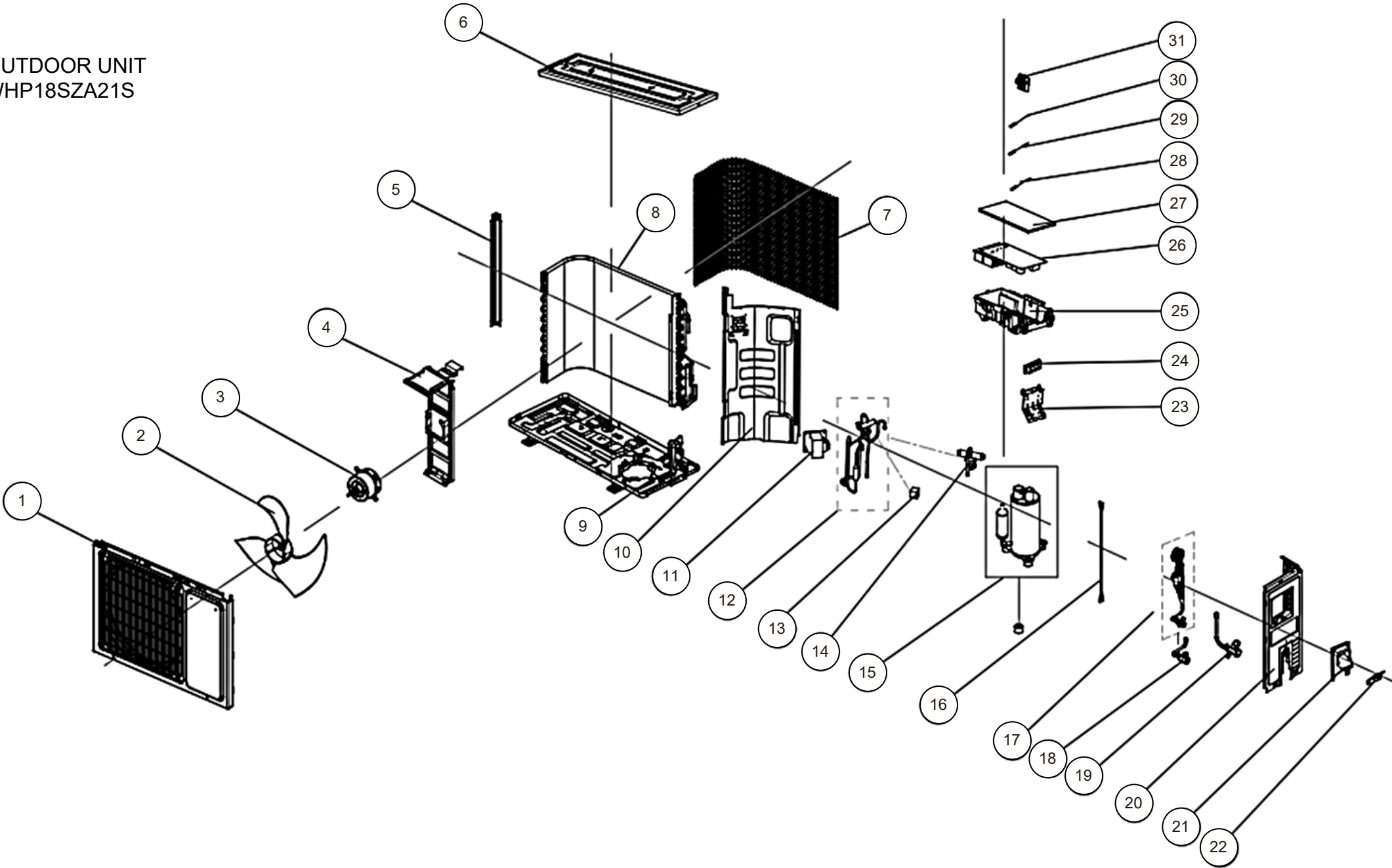
OUTDOOR UNIT
WHP12SZA21S



OUTDOOR UNIT
WHP12SZA21S

No.	Part number	Description
1	2138572	Panel parts
2	1556766	Propeller fan blade
3	1457759	DC motor
4	1849292	Motor supporter assy
5	1846086	Mounting plate
6	1846082	Upper board
7	1854579	Back guard
7	1854580	Back guard
8	1851339	Condenser assembly
9	1851356	Base holder part
10	1847982	Clapboard
11	1829624	PFC inductance
12	1923524	4-way valve assembly
13	1511783	Four-way valve coil
14	1258654	4-way valve
15	1821191	Compressor
16	1822371	Compressor connect wire
17	1854557	Capillary assembly
18	1844583	1/4 2-way valve
19	1335015	3/8 3-way valve
20	1846084	Right side board
21	1854040	Wiring distribution cover assy
22	1854034	Fixed board
23	1937153	Connecting board
24	1852124	Wire terminal board
25	1951957	Electric box
26	1985663	Outdoor main control board component
27	1894526	Electric box cover
28	1472663	Temperature sensor
29	1511780	Temperature sensor
30	1831029	Temperature sensor
31	1546721	Sensor mounting plate
32	1854766	Tube electric heater

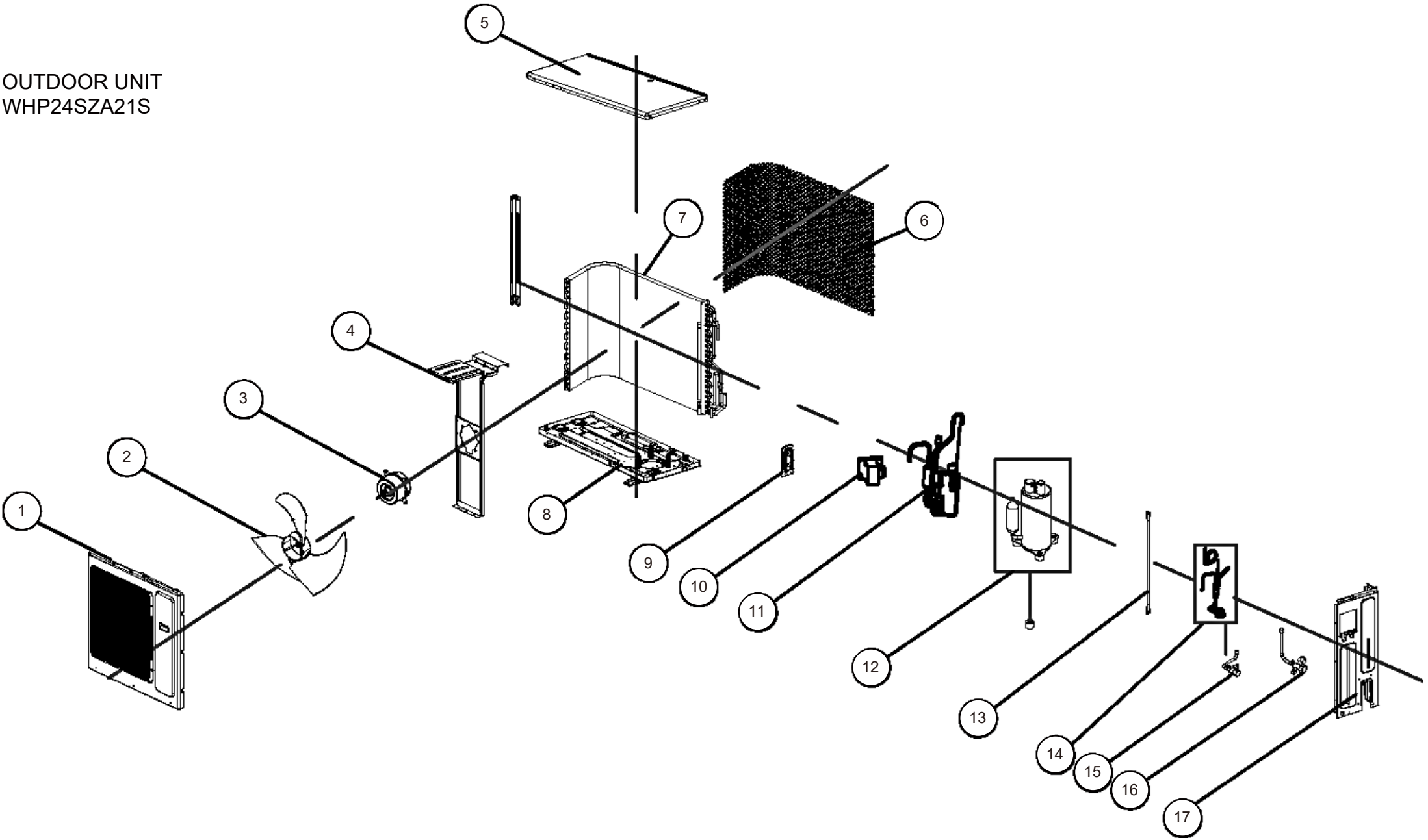
OUTDOOR UNIT
WHP18SZA21S



OUTDOOR UNIT
WHP18SZA21S

No.	Part number	Description
1	2138571	Panel parts
2	1841783	Propeller fan blade
3	1859837	DC motor
4	1841953	Motor supporter
5	1841772	Mounting plate
6	1841779	Upper board
7	1854661	Back guard
7	1871792	Back guard
8	1854747	Condenser assembly
9	1841349	Base holder part
10	1841986	Clapboard
11	1205797	PFC inductance
12	1888252	4-way valve assembly
13	1511783	Four-way valve coil
14	1408045	4-way valve
15	1850482	Inverter compressor
16	1847142	Strong electricity connect wire
17	1854774	Capillary assembly
18	1844583	1/4 2-way valve
19	1844499	1/2 3-way valve
20	1841776	Right side board
21	1854040	Wiring distribution cover assy
22	1854034	Fixed board
23	1842392	Connecting board
24	1852124	Wire terminal board
25	1841985	Electric box
26	1854367	Controller component
27	1546706	Electric box cover
28	1511780	Temperature sensor
29	1511782	Temperature sensor
30	1831029	Temperature sensor
31	1546721	Sensor mounting plate
	1854710	Tube electric heater

OUTDOOR UNIT
WHP24SZA21S



OUTDOOR UNIT
WHP24SZA21S

No.	Part number	Description
1	1542623	Panel parts
2	1542217	Propeller fan blade
3	1561964	DC motor
4	1561919	Motor supporter
5	1878885	Top plate part
6	1819106	Back guard
7	1854549	Condenser assembly
8	1814292	Base holder part
9	1534867	Valve seat
10	1205797	PFC inductance
11	2017922	4-way reversing valve assembly
12	1830018	Compressor
13	1847142	Strong electricity connect wire
14	1867906	Electronic expansion valve assembly
15	1536052	3/8 2-way valve
16	1456114	5/8 3-way valve
17	1866429	Right side board part
	2006156	Controller component
	1852124	Wire terminal board
	1822633	Temperature sensor
	1822634	Temperature sensor
	1852304	Temperature sensor
	1863482	Clapboard part
	1865713	Wiring distribution cover assy
	1854767	Tube electric heater

Accessories

Indoor unit

Part name	Q'ty	Part name	Q'ty
Remote controller instructions	1	Drain joint rubber seal	1
Use and installation instructions	1	Flare nuts	4
Remote controller	1	Bag of wall anchors and screws	1
Remote controller holder	1	Screw for installations	5
AAA battery	2	Screw cover	09/12 model: 1 18/24 model: 3
Foam insulation	09-18 model: 1 24 mode: 2	Warranty Card	1
Drain joint	1		

Outdoor unit

Part name	Q'ty	Part name	Q'ty
Use and installation instructions	1	Power wire	1
Bottom rubber for outdoor unit	4		

