

SERVICE MANUAL

EdgeStar Portable Air Conditioner

MODELS COVERED:

AP12000S-1

Small Room 115V Portable Air Conditioner with
Dehumidifier

AP12000HS

Medium Room 115V Portable Single Hose Air Conditioner
with 12,000 BTU Heater

CAUTION: READ ALL SAFETY PRECAUTIONS IN THIS
MANUAL BEFORE SERVICING THE UNIT

CONTENTS

CONTENTS.....	1
SAFETY PRECAUTIONS.....	2
ELECTRICAL SAFETY.....	3
GENERAL SAFETY.....	4
1 SPECIFICATIONS.....	5
1.1 AP12000S-1.....	5
1.2 AP12000HS.....	6
2 EXPLODED VIEW AND PARTS LIST.....	7
2.1 AP12000S-1.....	7
2.2 AP12000HS.....	9
3 WIRING DIAGRAM.....	12
3.1 AP12000S-1.....	12
4 REFRIGERANT SYSTEM DIAGRAM.....	13
4.1 AP12000S-1.....	13
4.2 AP12000HS.....	13
5 MODES AND OPERATING CONDITIONS.....	14
5.1 TERMS AND DEFINITIONS.....	14
5.2 COOLING MODE.....	14
5.3 FAN ONLY MODE.....	14
5.4 DEHUMIDIFY MODE.....	15
5.5 HEAT MODE (AP12000HS ONLY).....	15
5.6 OVERFLOW PREVENTION.....	15
5.7 COMPRESSOR PROTECTION.....	15
6 TROUBLESHOOTING.....	16

SAFETY PRECAUTIONS

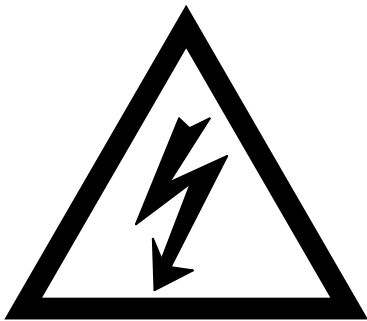
WARNING: This manual and the information contained herein is intended for use by certified technicians. The manufacturer or seller is not responsible for the interpretation or misuse of the information provided, nor does it assume any liability in connection with its use.

The safeguards and warnings indicated in this manual do not cover all possible conditions which may occur. Common sense, caution, and care must be exercised.

- To prevent electric shock, always unplug an appliance from the power supply before attempting any service.
- Disconnect the power cord by grasping the plug, not the cord.
- Do not bypass, cut, or remove the grounding plug.
- Prevent water from spilling onto electric elements or the machine parts.
- Always refer to the rating label on the appliance for rated current and voltage.
- Always check line voltage and amperage.
- Always use exact replacement parts.
- Any attempt to repair a major appliance may result in personal injury and property damage.

Electrical Safety

- Do not exceed the power outlet ratings.
- It is recommended that the unit be connected to its own circuit.
- A standard electrical supply that is properly grounded in accordance with the National Electrical Code and all state and local codes and ordinances is required.
- Do not use outlets that can be turned off by a switch or pull chain.
- Always turn the unit off and unplug it from the outlet when cleaning.
- Unplug the unit if it is not going to be used for an extended period of time.
- Do not operate the unit with a power plug missing the ground plug, a damaged cord, or a loose socket.
- Be sure the appliance is properly grounded.
- Do not bypass, cut, or remove the grounding plug.
- If the power cord is damaged, it must be replaced by the manufacturer or a qualified technician.
- Do not use extension cords or power strips with this unit. You may need to contact an electrician if it is necessary to use a longer cord or if you do not have a properly grounded outlet. Do not modify the power cord's length or share the outlet with other appliances.
- Do not start or stop the unit by switching the electrical circuit's power on and off.
- Immediately unplug the unit if it makes strange sounds, emits an odor or smoke and contact customer service.
- Do not remove any part of the casing unless instructed by an authorized technician.
- Before the appliance is removed from service or discarded, remove any doors and cut off the power cord.



General Safety

- Always unplug an appliance from the power supply before attempting any service. Disconnect the power cord by grasping the plug, not the cord.
- Do not allow children or pets to play on or in the appliance.
- This machine is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the machine by a person responsible for their safety.
- Do not install or store this appliance where it will be exposed to the weather.
- Disconnect from the power socket before cleaning or maintenance.
- If the plug (power cord) is damaged, it must be replaced by the manufacturer or an authorized service representative.
- This machine shall be repaired only by an authorized service representative. Only genuine replacement parts should be used.
- If connected to a circuit protected by fuses, use time-delay fuses with this appliance.
- Do not lean items against the glass door.
- Please do not close the door with excessive force. If it is found difficult to close the door, please check for obstruction.
- When you plan to dispose of this unit in the future, please comply with the local waste disposal regulations. Remove any doors so that children and pets will not be trapped in the unit.

1 Specifications

1.1 AP12000S-1

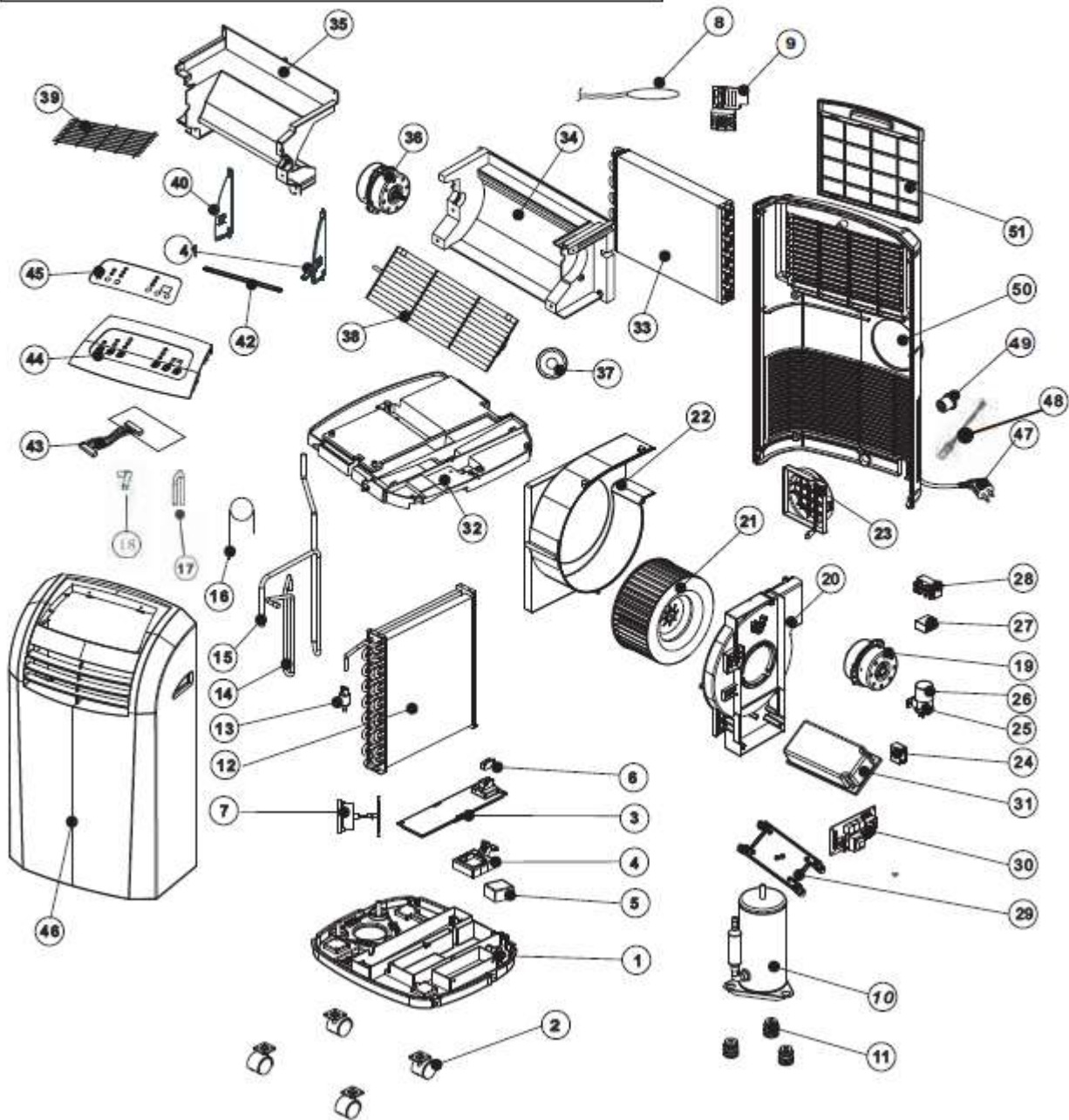
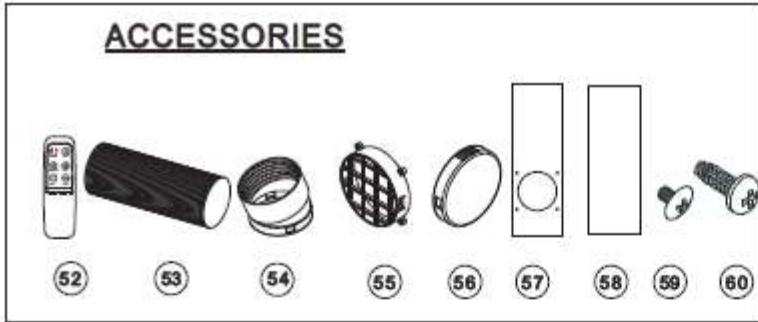
Description of product	Portable Air Conditioner
Model	AP12000S-1
Voltage / Frequency	AC 115V ~ 60Hz
Input Power	1000 W
Current	9.5A
Cooling Capacity (SACC)	5200 BTU
Cooling Capacity (ASHRAE)	12000 BTU
Color	Silver
Dehumidifying Capacity	90 pints / Day
Coolant	R-410A
Timer	24 Hour
Dimensions (W x H x D)	17.1" x 30.9" x 15"
Weight	68 lbs.

1.2 AP12000HS

Description of product	Portable Air Conditioner
Model	AP12000HS
Voltage / Frequency	AC 115V ~ 60Hz
Input Power	1000 W (Cooling) 1000 W (Heating)
Current	9.5 A (Cooling) 9.5 A (Heating)
Cooling Capacity (SACC)	4900 BTU
Cooling Capacity (ASHRAE)	12000 BTU
Color	Silver
Dehumidifying Capacity	90 pints / Day
Coolant	R-410A
Timer	24 Hour
Dimensions (W x H x D)	17.1" x 30.9" x 15"
Weight	69 lbs.

The above data is subject to change without notice. Please refer to the rating label on the unit.

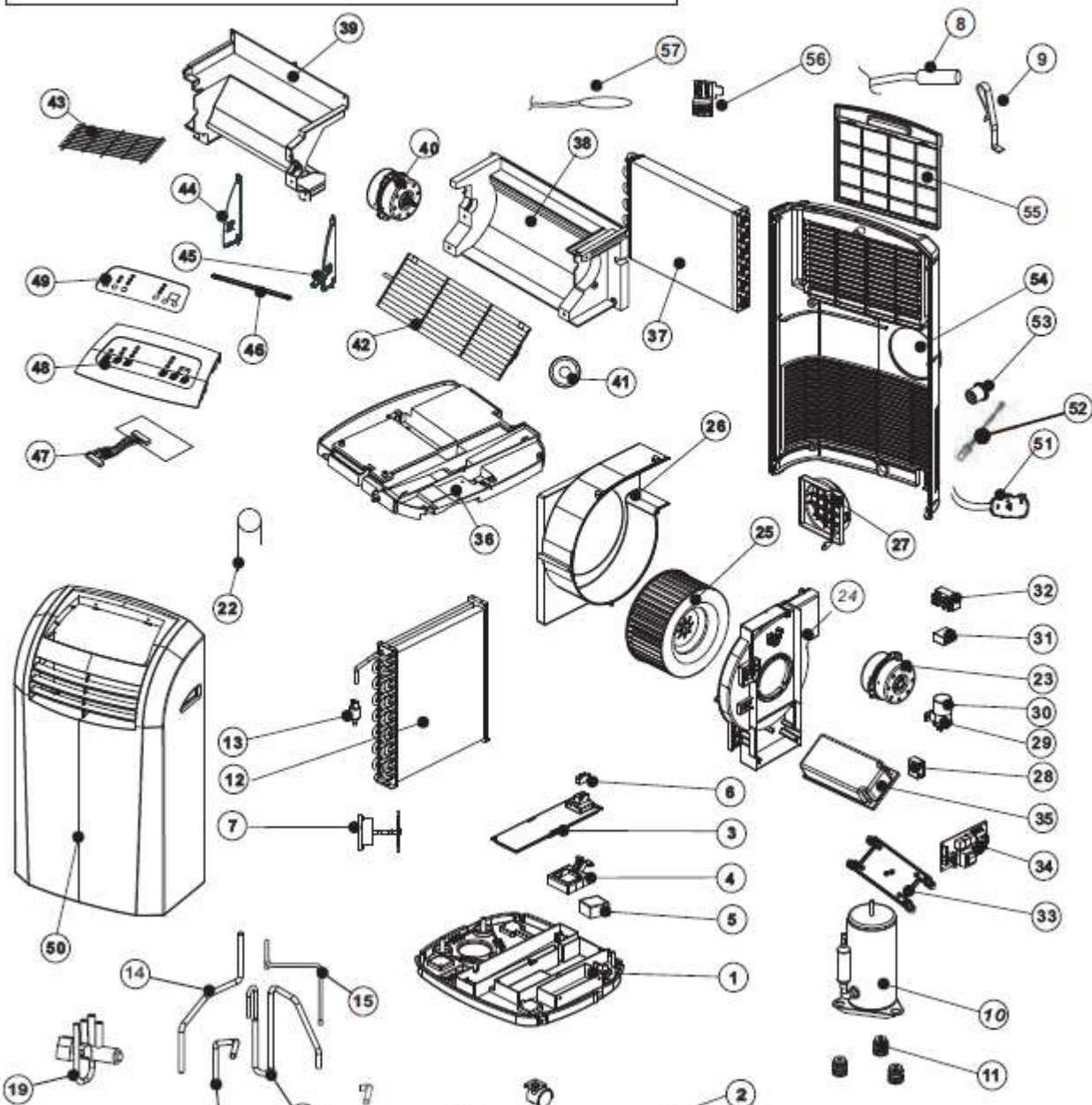
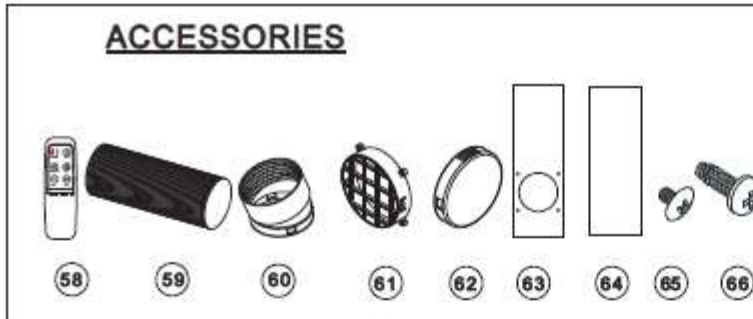
2 Exploded View and Parts List



NO.	PART NAME	NO.	PART NAME
1	BASE PLATE	31	PCB COVER
2	CASTOR	32	PLATE
3	DRAIN TANK COVER	33	EVAPORATOR
4	FLOAT BRACKET	34	FAN HOUSING
5	FLOAT	35	FAN HOUSING
6	FLOAT SWITCH	36	FAN MOTOR
7	WATER FLINGER MOTOR	37	BEARING
8	INDOOR AMBIENT SENSOR	38	CROSS FLOW FAN
9	BRACKET	39	SCREEN
10	COMPRESSOR	40	AIR DEFLECTOR-A
11	RUBBER FOOT	41	AIR DEFLEETOR-B
12	CONDENSER	42	BAR
13	Y TUBE	43	CONTROL PANEL PCB
14	DISCHARGE PIPE	44	CONTROL PLATE
15	SUCTION PIPE	45	CONTROL PANEL
16	CAPILARY TUBE	46	FRONT PANEL
17	CONNECTOR PIPE	47	POWER SUPPLY CORD
18	CONNECTOR PIPE	48	SOFT CAP
19	FAN MOTOR	49	PLUG
20	FAN HOUSING	50	REAR PANEL
21	BLOWER WHEEL	51	AIR FILTER
22	FAN HOUSING	52	REMOTE CONTROL
23	BRACKET	53	HEAT EXHAUST HOSE
24	CAPACITOR FOR FAN MOTOR	54	DUCT CONNECTOR
25	STRIKE	55	GRATED ADAPTOR
26	CAPACITOR FOR COMPRESSOR	56	EXHAUST CAP
27	CAPACITOR FOR FAN MOTOR	57	WINDOW PLATE W/ HOLE
28	TERMINAL BLOCK	58	WINDOW PLATE

NO.	PART NAME	NO.	PART NAME
29	BRACKET	59	SMALL SCREW
30	MAIN PCB	60	LARGE SCREW

2.2 AP1200HS

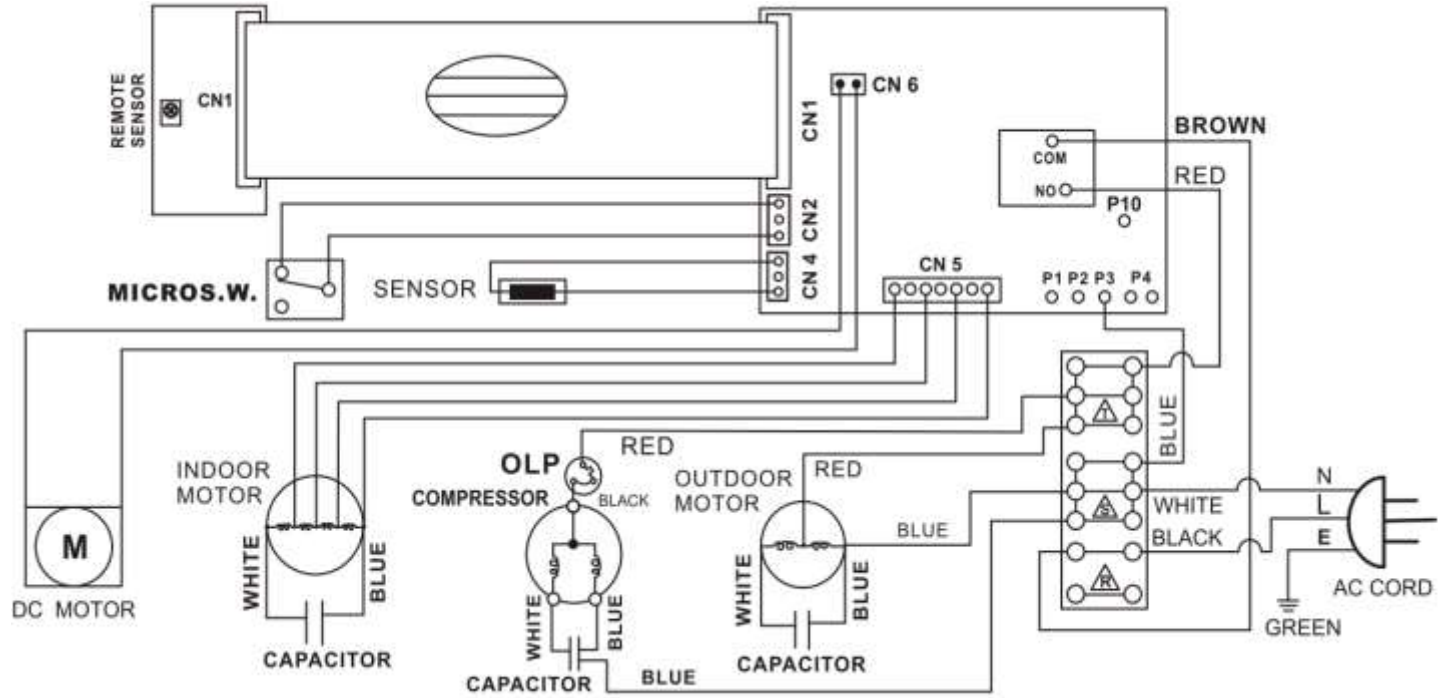


NO.	PART NAME	NO.	PART NAME
1	BASE PLATE	34	MAIN PCB
2	CASTOR	35	PCB COVER
3	DRAIN TANK COVER	36	PLATE
4	FLOAT BRACKET	37	EVAPORATOR
5	FLOAT	38	FAN HOUSING
6	FLOAT SWITCH	39	FAN HOUSING
7	FAN MOTOR	40	FAN MOTOR
8	INDOOR AMBIENT SENSOR	41	BEARING
9	BRACKET	42	CROSS FLOW FAN
10	COMPRESSOR	43	SCREEN
11	RUBBER FOOT	44	AIR DEFLECTOR-A
12	CONDENSER	45	AIR DEFLEETOR-B
13	Y TUBE	46	BAR
14	CONNECTOR PIPE	47	CONTROL PANEL PCB
15	DISCHARGE PIPE	48	CONTROL PLATE
16	SUCTION PIPE	49	CONTROL PANEL
17	CONNECTOR PIPE	50	FRONT PANEL
18	CONNECTOR PIPE	51	POWER SUPPLY CORD
19	4-WAY REVERSING VALVE	52	SOFT CAP
20	BRACKET	53	PLUG
21	PLUG	54	REAR PANEL
22	CAPILARY TUBE	55	AIR FILTER
23	FAN MOTOR	56	BRACKET
24	FAN HOUSING	57	SENSOR
25	BLOWER WHEEL	58	REMOTE CONTROL

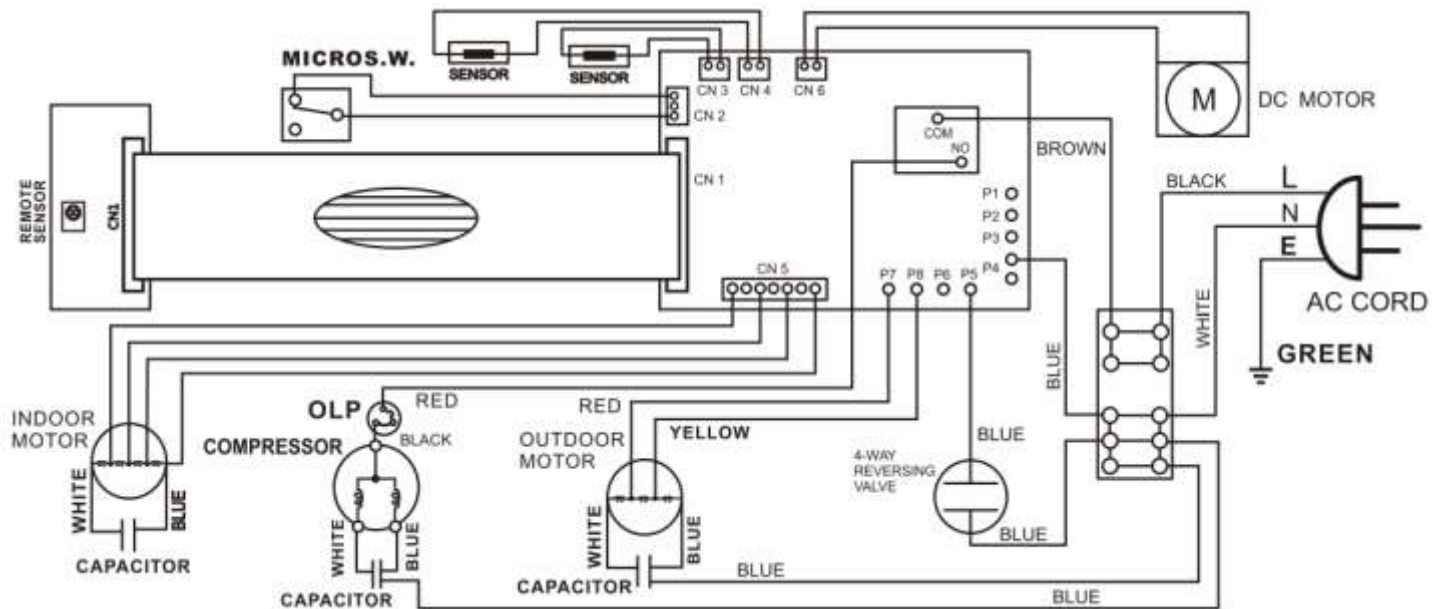
NO.	PART NAME	NO.	PART NAME
26	FAN HOUSING	59	HEAT EXHAUST HOSE
27	BRACKET	60	DUCT CONNECTOR
28	CAPACITOR FOR FAN MOTOR	61	GRATED ADAPTOR
29	STRIKE	62	EXHAUST CAP
30	CAPACITOR FOR COMPRESSOR	63	WINDOW PLATE W/ HOLE
31	CAPACITOR FOR FAN MOTOR	64	WINDOW PLATE
32	TERMINAL BLOCK	65	SMALL SCREW
33	BRACKET	66	LARGE SCREW

3 Wiring Diagram

3.1 AP1200S-1

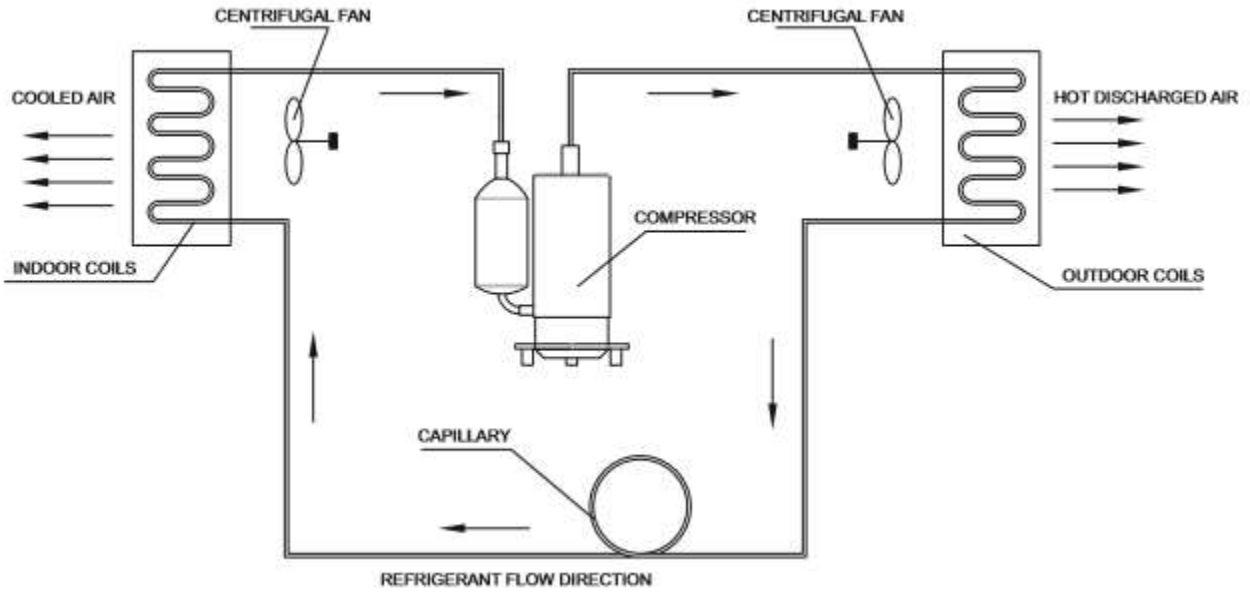


3.2 AP1200HS

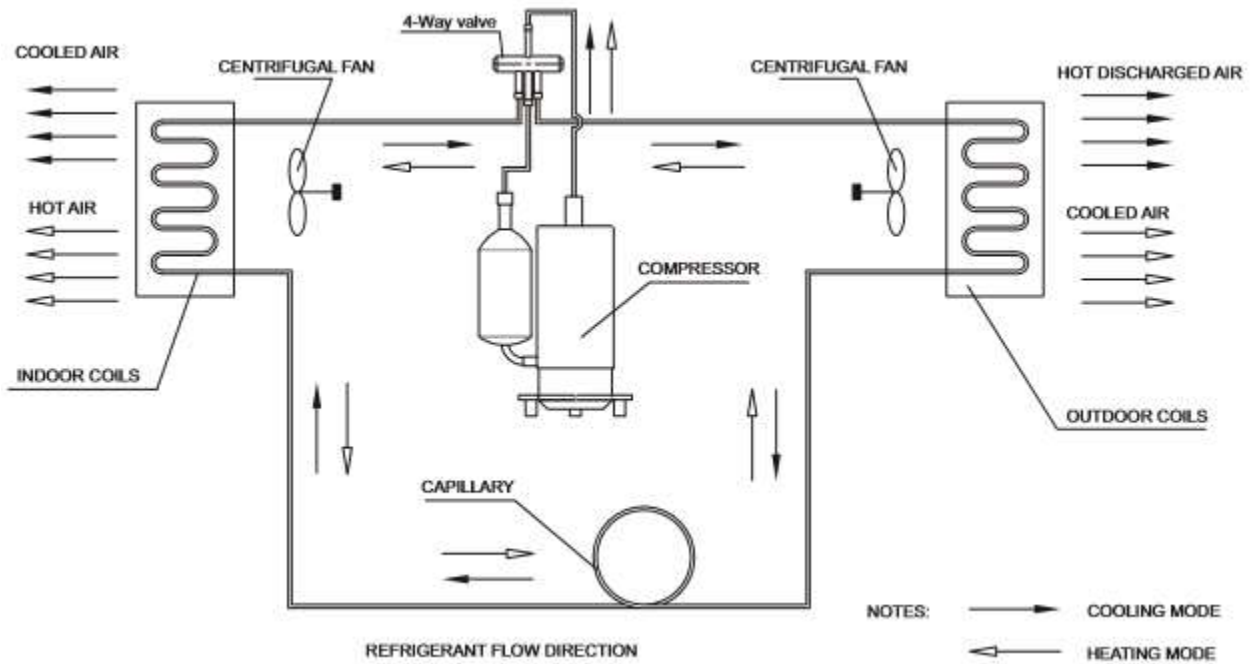


4 Refrigerant System Diagram

4.1 AP12000S-1



4.2 AP12000HS



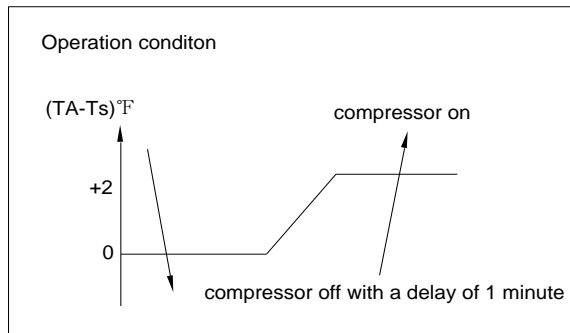
5 Modes and Operating Conditions

5.1 Terms and Definitions

- TA: Ambient indoor temperature.
- TS: Set temperature.

5.2 Cooling Mode

- The cooling temperature can be set from 61 to 89°F (16 to 32°C.)
- The timer function works in cooling mode.
- The compressor will run when the difference between the set temperature and the actual ambient room temperature conforms to the chart below:



- When $TA \leq TS$ (for 1 minute) the compressor turns off.
- When $TA > TS + 2^\circ\text{F}$ the compressor turns on.

5.3 Fan Only Mode

- If the temperature can't be controlled by the selected mode and the room ambient temperature is shown on the display the unit will default to fan only mode.
- The readout can only display a temperature of 32 to 99 °F (0 to 37°C.) If the temperature is out of that range the display will show LO or HI.
- The Timer function works in fan only mode.

5.4 Dehumidify Mode

- In this mode, the air conditioner will operate as a dehumidifier. Because the conditioned space is closed or sealed, some degree of cooling will continue to occur.
- If the room temperature is below 77°F, the fan will always run on low speed while in dehumidify mode.
- If you do not use the exhaust hose in Dehumidifying mode, you must manually drain the water from the unit. Additionally, the ambient temperature in the room will probably rise by a few degrees if you do not use the exhaust hose.
- You will be not be able to change the thermostat temperature or fan speed while in dehumidify mode.

5.5 Heat Mode (AP12000HS Only)

- Your air conditioner can work as a heat pump and provide supplementary heating.
- It must be vented so that it can expel the cold air out of the exhaust.
- Press the Mode button until the LED indicator next to “Fan” lights up red.

5.6 Overflow Prevention

- When water is detected in the reservoir for 3 seconds overflow prevention will occur.
- The water light turns on.

5.7 Compressor Protection

- If power is interrupted, the compressor will only restart after a 3 minute delay.

6 Troubleshooting

Problem	Possible Cause	Solution
Unit does not turn on.	Wall plug is disconnected.	Insert plug firmly into proper wall outlet.
	House fuse blown or circuit breaker tripped.	Replace fuse with time delay type or reset circuit breaker.
	Power cord is tripped.	Press the RESET button on the power cord. If power cord is damaged replace power cord.
	Unit is turned OFF.	Turn unit ON and set to desired setting.
	Ribbon cable to control panel is disconnected.	Remove outer shell and reconnect cable.
	Loose or disconnected wiring on main PCB.	Remove outer shell. Check all connections to the PCB and reconnect any loose or disconnected leads.
	Condensate water tray is full and/or water light is on.	Drain condensate water. Make sure water level switch is operating correctly and not stuck in "full" position or being interfered with.
Unit does not blow cold air.	Room temperature is below 61°F(16°C.)	Cooling will not occur until room temperature rises above 61°F(16°C.)
	Unit is not in cooling mode.	Set the unit to cooling mode – blue light is on.
	Set temperature is too high.	Set to a Lower temperature.
	Air filter is dirty.	Clean filter.
	Exhaust air duct is installed incorrectly or blocked.	Connect exhaust duct so it functions correctly. Clear blockage.
	Refrigerant leak.	Find leak and repair. Recharge with refrigerant.
	Evaporator is frosted.	The unit needs to defrost and will resume normal operation after it is finished.
Unit blows cold air but does not lower room temperature.	Fan speed is set too low.	Increase fan speed to improve air flow.
	Exhaust air duct is not installed, is installed incorrectly or blocked.	Connect exhaust duct so it functions correctly. Clear blockage.
	Room area is too large.	Reduce room size, add another unit or larger unit.
	Open windows or doors.	Close all open windows and doors.
	Ambient temperature is too high.	The unit may not work if the room temperature is above 90°F.
	Room has too many heat sources.	Remove or shut off additional heat sources. Close curtains or blinds to minimize the amount of direct sunlight entering the room.

	Filter is dirty.	Clean filter.
	The condenser coils are dirty.	Carefully vacuum the coils clean.
Unit continues to operate after water tray is full or water full protection occurs frequently.	Water level switch is open or short circuited.	Check water level switch connections or replace water level switch if defective.
	Water level switch is stuck in "empty" position.	Make sure water level switch is operating correctly and not stuck or being interfered with.
Unit leaks.	Drain plug is removed.	Attach the drain plug.
	Base plate is cracked.	Replace base plate.
Sounds or vibration.	When unit is turned on or off the outer shell "pops" or "clicks."	Normal sound. Outer shell is contracting or expanding and will stop after a few minutes.
	When unit is turned on or off "boiling" or "running water" is heard.	Normal sound. The cause is refrigerant flowing inside the system and will stop after a few minutes.
	Foreign objects inside the unit are interfering with fans or other moving parts.	Remove foreign objects.
	Unit is not level.	Make sure unit is on a level surface.
	Compressor vibration.	Tighten bolts holding compressor to chassis.
Room too cold.	Set temperature is too low.	Adjust the set temperature.

DATE	REVISION NOTES
04/11/2018	INITIAL DOCUMENT