AVV Installation Instructions

English AVV - 5130-2614532

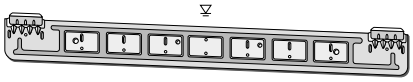
50Hz			1104
Cooling Only - Constant Velocity			

General

These instructions are intended as general guidelines. The air conditioner must be installed by trained and authorized personnel.

- Use the following size copper tubing for connecting the outdoor and indoor units:
  Models **AVV 25, 50**: 3/8" and 5/8".
- Installation must be performed in accordance with the manufacturer's specifications, using only approved tubing, original electrical cables and accessories.

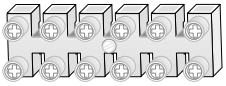
Standard Accessories



Installation Bracket

Long Screws

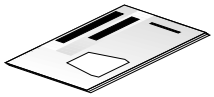
Wall Plugs



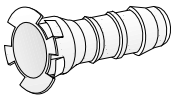
Electrical terminal block 6 station

Absorption cushions

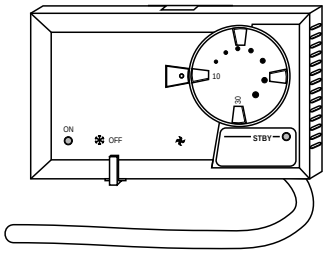
Insulation for fittings



User's Manual



Drain hose adapter



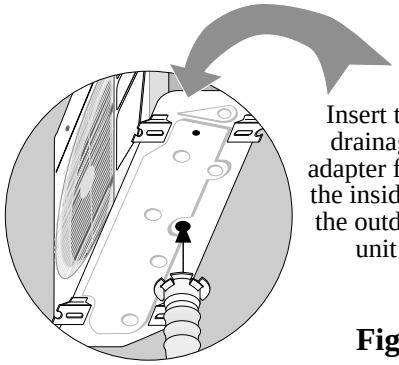
Room Thermostat Unit

Screws and Wall Plug

Electrical Requirements

- The air conditioner must be directly connected to an appropriate power source.
- Use only Type "G" or "C" fuses, as appears below:
  AVV 25 : 20A
  AVV 50 : 25A
- Use a single-length power cable, without extensions.
- For 1 Phase connection, use 4 wire inter-unit cable.
- Use special Socket - CEE.

Warning!
To avoid any risk, if the power cable is damaged, it should be replaced by an authorized technician.



Insert the drainage adapter from the inside of the outdoor unit

Fig. 1

Indoor and Outdoor Unit Location

The indoor and outdoor units should be installed as close to each other as possible. Do not exceed the tubing lengths and height differences which appear in the accompanying table:

Model	Maximum tubing length meters (ft)	Maximum height difference between units in meters (ft)
AVV 25, 50	18 (59')	25 (81.5')

Outdoor Unit

- Make sure to leave sufficient space around the unit. See Fig. 2 for minimum required distances between the unit and nearby walls.
- Install the unit in a location with convenient access for service and maintenance purposes.
- Protect the unit from any heat source such as direct sun rays.
- Prevent from any dust or strong wind installation sites.
- Position the unit to minimize motor noise which reaches the customer and neighbors.
- In heating mode, water can form in the condenser. A drainage hose may be attached to the unit. Use the adapter shown Fig. 1.

DIMENSIONS mm (")	AVV 25	AVV 50
a	320	320
b	641	641
c	900	1100

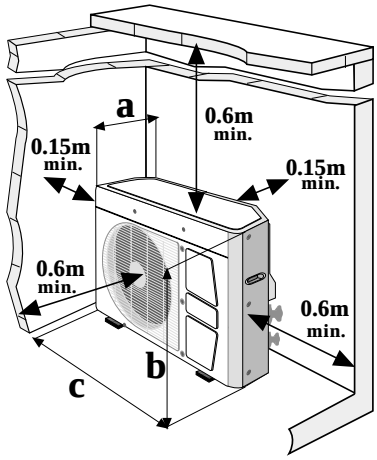


Fig. 2

Installing the Indoor Unit

When installing the indoor unit, please take care to:

- Allow free access to the service doors, air filter and control box.
- Carefully plan the drainage tube path at a minimum downward slope of 2%, avoiding sharp bends or oil traps.

Location

- The indoor unit may be installed either hanging from the ceiling or resting on a hard surface (concrete or other). Refer to Fig. 7 for the dimensions of the indoor unit.

Note: Avoid indoor/outdoor unit installation above valuable things, Communications, Electricity or any aparature that is sensitive to water or wetness. If any Installation is not performed according to the Company instructions the Company will not be responsible for any kind of damages that will occur by water drops.

Note! The air intake grill is mounted on the bottom of the unit. If necessary and also possible according to the installation location, it is easy to change the position of the inlet grill to the front bottom of the unit.

Refrigerant Line Routing

- The refrigerant lines may be routed in either of the two directions shown in Figure 3

Installing the Mounting Bracket

- Position the pattern supplied with the unit.
- Position the mounting bracket on the wall and level it using a spirit
  level. Dimensions as they appear in Figure 3.

Installing the Indoor Unit

- Mount the indoor unit on the mounting bracket.
- Remove the four screws which appear in Fig. 6 and remove the front bottom panel.
- Attache the bottom of the unit using two screws to the wall. (See Fig. 4).
- Open the Diaphragm using knife, pass the drainage tube through the opening (See Fig 6).
- Connect the refrigerant pipe to the indoor unit.
- Take out the power supply cable, inter unit cable and room thermostat cable through the passage cover as shown in Fig. 6).
- Use the rubber rings on the cable exit from the cover.
- Close the bottom front cover of the indoor unit.

Drilling A Hole In the Wall For Drainage and Inter-Unit Connections

- To make the connections between the indoor and outdoor units, a 70 mm (3") hole should be drilled for the refrigerant lines, drainage hose and electric cables the wall, as shown in Figure 5.
- Mark the center of the hole to be drilled according to the refrigerant line routing used.
- Make sure to drill outwards and downwards, so that the opening in the outside wall is at least 10 mm lower than the opening on the inside.
- Make sure the drainage hose is at the bottom side of the hole (see Figure 5).
- Fill the remaining wall hole gap with an appropriate sealant material.

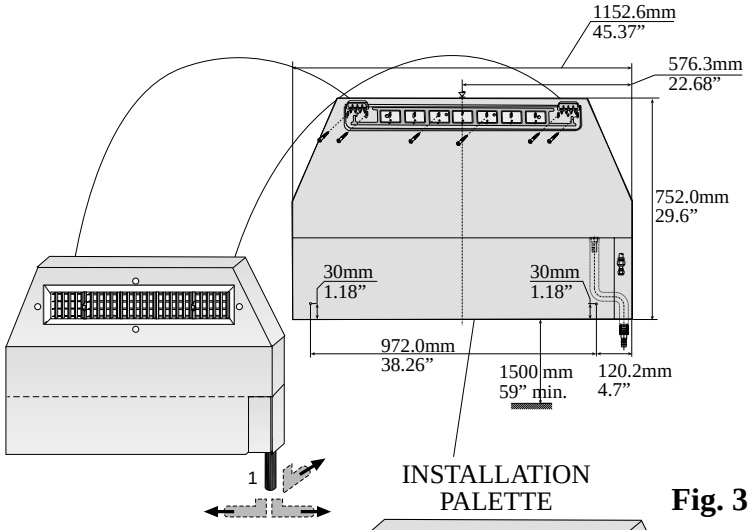
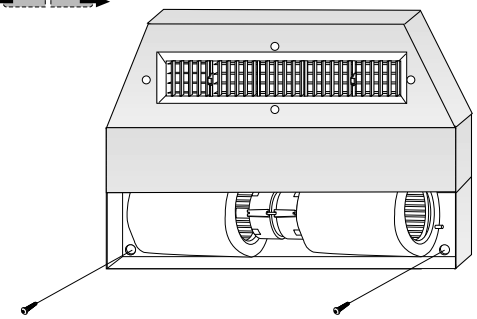


Fig. 3



FRONT VIEW: Two screws at the bottom of the unit, must be used in attaching it to the wall.

Fig. 4

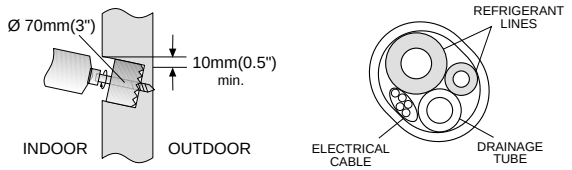


Fig. 5

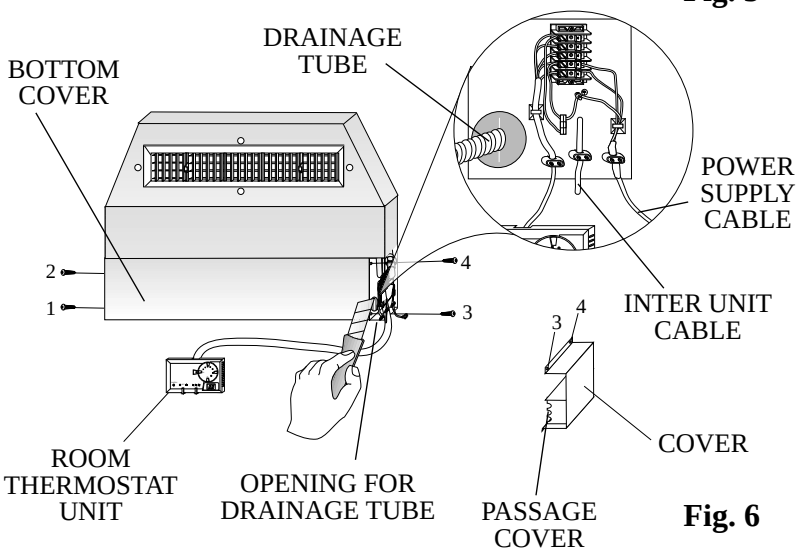


Fig. 6

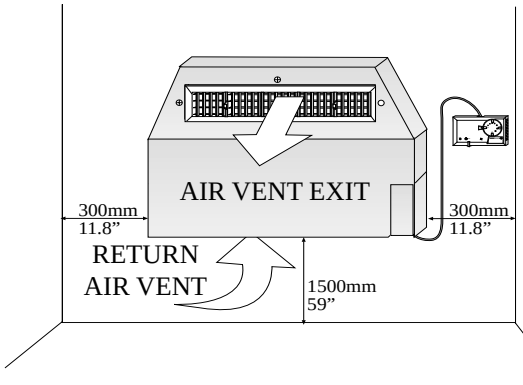


Fig. 7

Positioning the Room Thermostat Unit

- Position the Room Thermostat Unit on a wall where it will be most convenient for the customer.
- Gently pull out the temperature knob and the ON/OFF handle.
- Open the screw on the bottom of the Room Thermostat Unit. (See Fig. 8).
- Pull the cover of the Room Thermostat Unit and drill the appropriate holes in the wall.
- After positioning the Room Thermostat unit on the wall, replace the cover gently and ensure that the locking pins are in the correct position. .
- When positioning the Thermostatic Room on the wall, remember that the connecting cable between the Room Thermostat unit and the indoor unit is only three meters long.

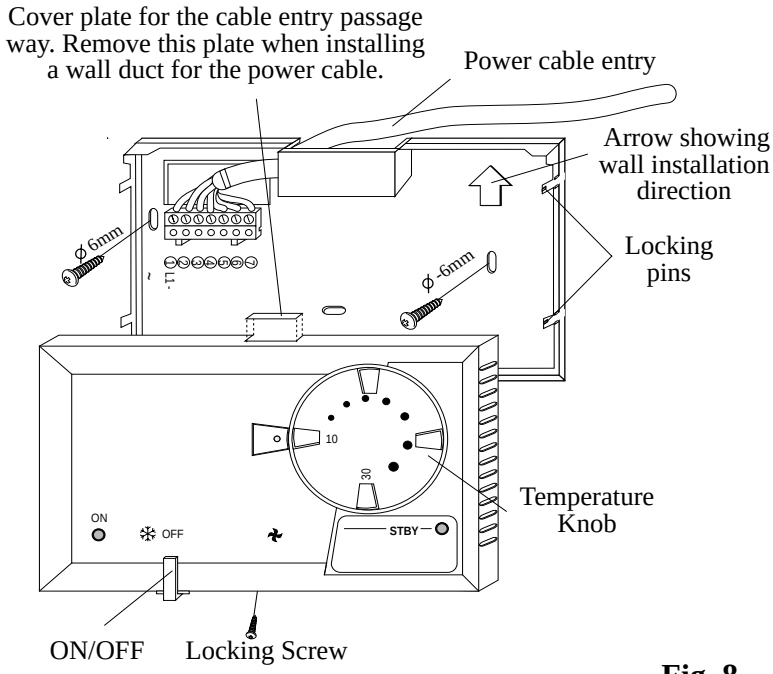


Fig. 8

Indoor Unit Electrical Connections (Fig. 9)

Installing the Outdoor Unit Installation and location

- The outdoor unit must be installed a least 5 cm (2") above a solid surface.
- Make sure that the unit is horizontal leveled.
- Fasten the outdoor unit supports to the base, as shown in Fig. 10. Place the rubber absorption cushions (supplied) under the unit's legs to prevent vibrations.

Wiring the outdoor unit

- Remove the outdoor unit plastic side cover.
- Attach the inter-unit electric cable with mating connectors, using the electrical terminals supplied with the air-conditioner.
- Connect the wires in accordance with the color coding which appears in Fig. 11.
- Secure the inter-unit electric cable to the outdoor unit using the clamp shown in Fig. 10.
- Reassemble the plastic side cover.

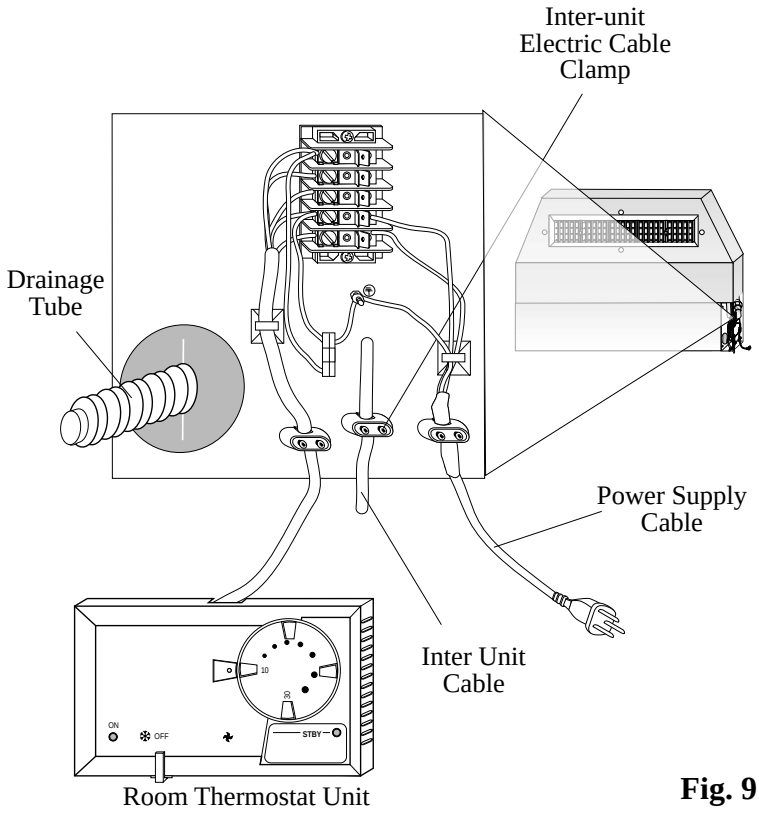


Fig. 9

Notes:

- A drainage tube can be connected to the outdoor unit to remove condensation formed during heating mode operation.
- When possible, lead the indoor unit drainage tube to the outdoor unit.
- Make sure that the inter-unit electric cable is properly connected to the outdoor unit, in accordance with the color coding in the wiring diagram attached to the air conditioner.
- Make sure that all screws and wires are properly fastened. Loose wires or connections can cause damage and present a fire hazard!

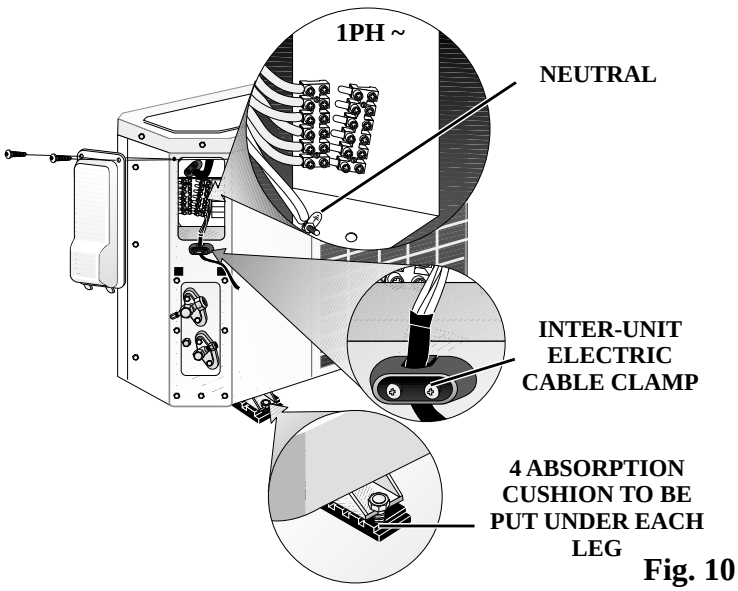


Fig. 10

Indoor Power Supply 1-Phase Electrical Diagram

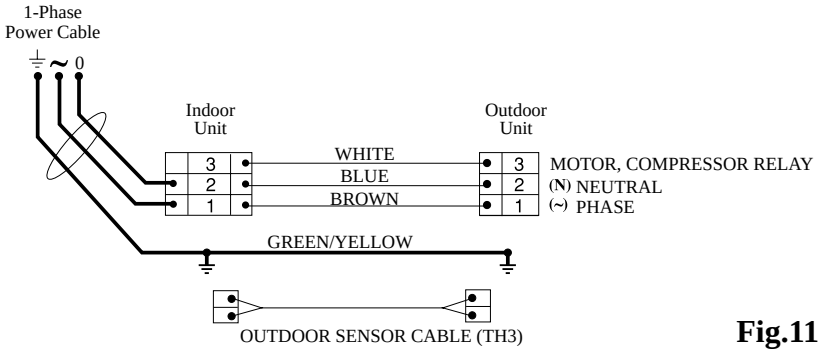


Fig.11

Connecting the Refrigerant Lines

- To connect the refrigerant lines use "L" type sealed, or equivalent.
- Do not open service valves or remove protective caps from tubing ends until all the connections are made.
- Take care to avoid kinks or flattening of the tubing.
- Bend tubing with special bending tools to avoid the formation of sharp bends.
- Keep the tubing free of dirt, sand, moisture and other contaminants to avoid damaging the refrigerant system.
- Avoid sags in the suction line to prevent the formation of oil traps.
- Insulate the tubing with 3/8"- walled thermal pipe insulation. You can save time and improve insulation by inserting the tubing into the insulation before making the connections.

Flaring and Connecting

- Remove the protective cap from the flare fitting.
- Remove the protective cap from the tubing and cut to the required length. Make sure that the cut is perpendicular and clean, without burrs.
- Slip the flare nut on the tubing and flare the tube end, using standard flaring tools.
- Tighten the nut until resistance is met. Mark the nut and the fitting. Using a suitable wrench, tighten an additional 1/4 turn. Use the following specified torque, according to connection size:
- The valves on the outdoor unit must remain closed until all four connections have been made.

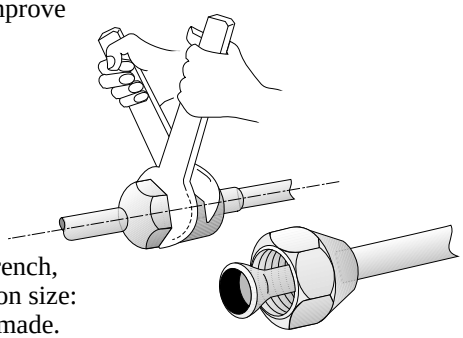


Fig. 12

Air Vacuum and Refrigerant Charge

When all the fittings are connected, air must be expelled, as follows:

- Open the service valve protection cap on the suction line valve (large valve).
- Connect the vacuum pump to the service port via the pressure gauge and operate the pump for 15 minutes.
- Make sure that full vacuum is present and disconnect the vacuum pump.
- Open the liquid line valve (small valve) with an Allen wrench.
- Open the suction line valve (large valve) with an Allen wrench.
- The outdoor unit is supplied with sufficient refrigerant for eight meters (26 feet) of tubing. Add refrigerant and oil according to the table for each additional meter of tubing used. If the tubing is shorter than 8 meters, release gas from the system through the service valve into a recycling device.
- Close the service valve protection cap of the suction line.
- Make sure that the valves are properly opened. Be careful not to open them more than required, as this may damage the thread.
- Replace the stem cap. Oil the valve protection cap and hand tighten the cap, until resistance is met. Use a suitable wrench to tighten the cap by an additional 1/6 turn.
- Check the system for refrigerant leakage using a leak detector.

Valve Type	Tubing Line (")	Torque kg m	Torque lb ft
Liquid Small	1/4"	1.7	12.3
	3/8"	4	29
Suction Large	3/8"	4	29
	1/2"	5	36
	5/8"	6.5	47
	3/4"	10	72

Tubing Line	Add refrigerant and oil if tubing is longer than 8m (26'3"), for each additioinal 1 meter (3'33") add:			
(")	Refrigerant gr. / Oz		Oil gr. / Oz	
3/8"-5/8"	30	1.05	10	0.35

Finishing the job

- Hide the tubing where possible.
- Make sure that the drainage tube slopes downwards along its entire length.
- Insulate tubing connections with the insulation sleeves supplied.
- Fasten tubes to the outside wall.
- Seal the hole through which the cables and tubing pass.
- Connect the air conditioner to the power source and turn it on.
- Check all air conditioner operating modes. Consult the User Manual.

Indoor unit

- Do all the remote controller buttons function properly?
- Do the Room Thermostat unit lights work properly?
- Does the drainage work?

Outdoor unit

- Are there unusual noises or vibrations during operation?
- Is noise, drain water or air flow from the unit likely to disturb the neighbors?
- Are there any gas leakages?

Explain the following items to the customer, with the aid of the User Manual:

- How to turn the air conditioner on and off.

Warning! Before any maintenance, disconnect the power supply cable from the unit.

- How to remove and clean the air filter and adjust the air deflectors.
- Provide the User's Manual and this installation sheet to the customer.