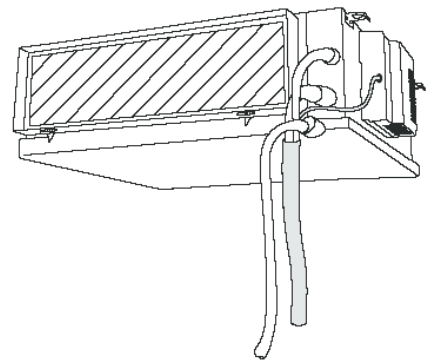


INSTALLATION MANUAL



MODELS

Duct type air conditioner

DSV 018

DSV 021 DSV 024

DSV 030 DSV 036

SAFETY PRECAUTIONS

- Read the following "SAFETY PRECAUTIONS" carefully before installation.
- Carry out test running to confirm that no abnormality occurs after the installation. Then, explain to user the operation, care and maintenance as stated in instructions. Please remind the customer to keep the operating instructions for future reference.



This indication shows the possibility of causing death or serious injury.



This indication shows the possibility of causing harm or damage the equipment.

WARNING

- 1) Use qualified installer and follow carefully this instructions. Otherwise it will cause electrical shock, water leakage, or esthetic problem.
- 2) Install at a strong and firm location which is able to withstand the set's weight. If the strength is not enough or installation is not properly done, the set will drop and cause injury.
- 3) For electrical work, follow the local national wiring standard, regulation and this installation instruction. An independent circuit and single outlet must be used. If electrical circuit capacity is not enough or defect found in electrical work, it will cause electrical shock or fire.
- 4) Use the specified cable and connect tightly for indoor connection. Connect tightly and clamp the cable so that no external force will be acted on the terminal. If connection or fixing is not perfect, it will cause heat-up or fire at the connection.
- 5) Wire routing must be properly arranged so that control board cover is fixed properly. If control board cover is not fixed perfectly, it will cause heat-up at connection point of terminal, fire or electrical shock.
- 6) When carrying out piping connection, take care not to let air substances other than the specified refrigerant go into refrigeration cycle. Otherwise, it will cause lower capacity, abnormal high pressure in the refrigeration cycle, explosion and injury.
- 7) Do not damage or use unspecified power supply cord. Otherwise, it will cause fire or electrical shock.
- 8) This equipment must be earthed. It may cause electrical shock if the grounding is not perfect.
- 9) Do not install the unit at place where leakage of flammable gas may occur. In case gas leaks and accumulates at surrounding of the unit, it may cause fire.
- 10) Please disconnect the power supply when install or maintenance or service this system.





CAUTION

- 1) Selection of the installation location.
Select a installation location which is rigid and strong enough to support or hold the unit, and select a location for easy maintenance.
- 2) Do not release refrigerant.
Do not release refrigerant during piping work for installation, reinstallation and during repairing a refrigeration parts. Take care of the liquid refrigerant. it may cause frostbite.
- 3) It may need two people to carry out the installation work.
- 4) Do not install this appliance in a laundry room or other location where water may drip from the ceiling, etc.
- 5) Carry out drainage pipes as mentioned in installation instructions. If drainage is not perfect, water may enter the room and damage the furniture.

Required tools for installation works

NO.	Tool	NO.	Tool	NO.	Tool
1	Screw driver	5	Pipe cutter	9	Torque wrench 18 Nm (1.8 kgf.m) 45 Nm (4.5 kgf.m) 65 Nm (6.5 kgf.m) 75 Nm (7.5 kgf.m)
2	Electric drill, hole core drill (60 mm)	6	Reamer		
3	Hexagonal wrench	7	Knife		
4	Spanner	8	Measuring tape		

Attached accessories

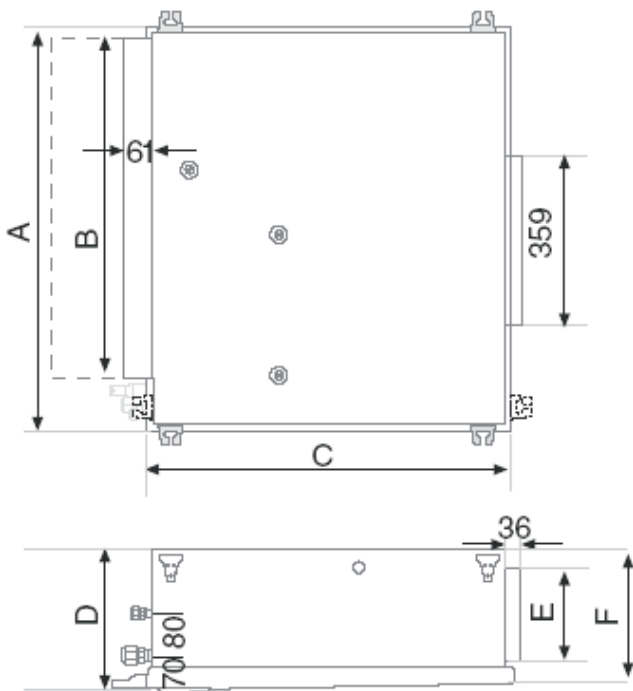
No.	Accessories part	Qty.	No.	Accessories part	Qty.
1	Central control display (optional) 	1	3	Screws washer dowels 	4
2	Tie-Waps 	6	4	Unit operation manual Installation manual 	2

1 SELECT THE BEST LOCATION

While selecting a place for the indoor unit

- Allow max. air flow to the desire space.
- Allow max return air flow.
- Ensure adequate drainage of condensed water.
- The distance between air-conditioner and obstacles should meets the requirments in below fig.
- Leave a minimum 250 mm free space in front of the filter.
- Allow a free service access to electrical box.
- Allow easy access to the base of the indoor unit while providing enough space from the ceiling.
- The installation height should over 2.3m.

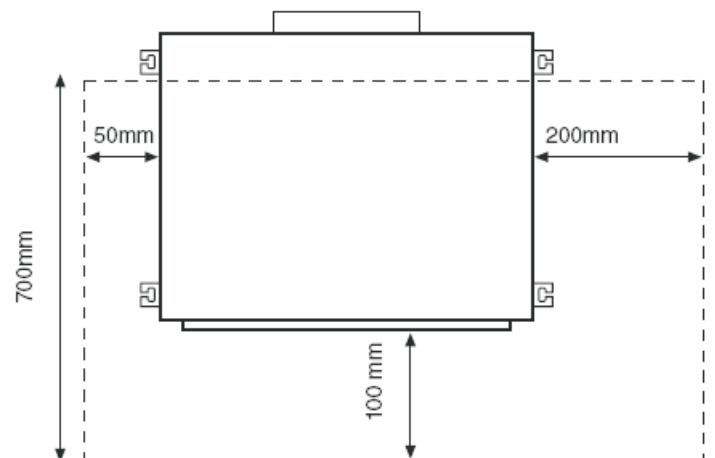
UNIT DIMENSIONS



Unit:mm

Model	A	B	C	D	E	F
DSV018-DSV024	790	653	749	256	162	242
DSV030-DNV036	854	715	816	300	193	282

ACCESS TO THE UNIT



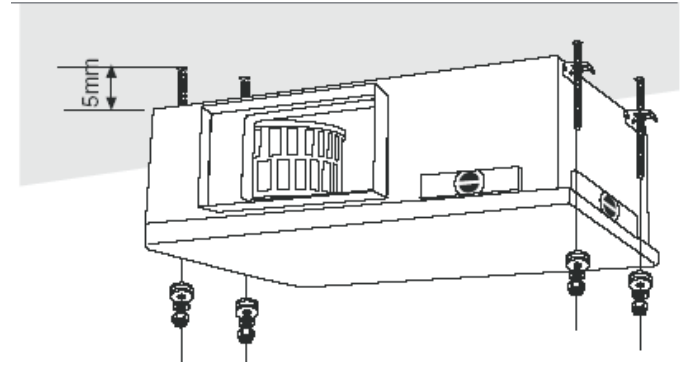
	Φ Liquid Pipe	Φ Gas Pipe
DSV 018	1/4"	1/2"
DSV 021	3/8"	5/8"
DSV 024	3/8"	5/8"
DSV 030	3/8"	5/8"
DSV 036	3/8"	5/8"

2 UNIT INSTALLATION

1. UNIT INSTALLATION

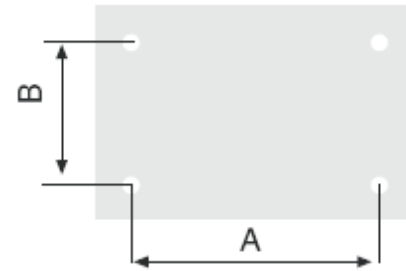
- Insert 4 M10 or 3/8 threads rods into the ceiling
- Introduce the rods through the slots of unit suspension brackets.
- Position the shock absorbers, add washers and screw the nuts until the unit is firmly supported.
- In case of a gap between the unit and the ceiling, put a rubber or a neoprene sheet.

IMPORTANT: The unit must be perfectly levelled.



2. HOLES DRILLING LOCATION ON THE CEILING FOR INDOOR UNIT

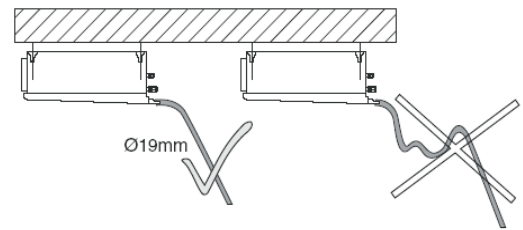
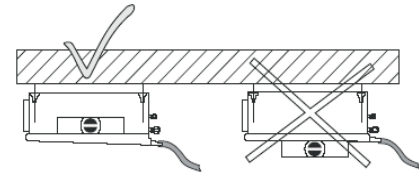
Model	Unit:mm	
	A	B
DSV018~DSV024	797	599
DSV030~DSV036	861	663



3. DRAINAGE INSTALLATION

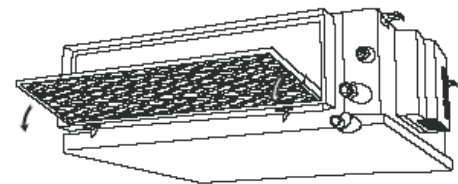
For an efficient functioning of the drainage system please take care of the following.

- Since the drainage basin bottom is sloppy. Always balance the unit by the suspension brackets and not by the drainage basin itself.
- Always lay the drain with downward inclination 2%. Prevent any upward flow or reverse flow in any part.
- Use 22 mm tube for drainage.



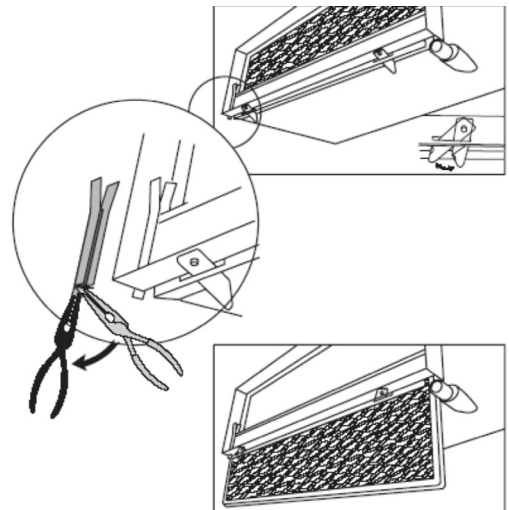
4. AIR FILTER ACCESS

Pull the eyelets in both sides of the filter till the filter is in horizontal position. Pull the air filter for further treatment.



5. ACCESS FROM BOTTOM OF UNIT

For first time we use: Straighten the shim as shown in figure. Release the locking clip. Pull down the air filter for further treatment.



6.CHECK The DRAINAGE

Pour water into the drain tray-styrofoam.

Ensure that water flows out from drain hose of the indoor unit.

7.LOCATION CRITERIA

It is recommended to install the Display Control Unit close to a ceiling in a central and neutral zone at typical conditions. In addition, the aesthetic aspect should be considered.The Display Control Unit is connected to the main control board on the air conditioner(the indoor unit) by a communication cable. The cable is connected to the Display Control Unit by a quick-connector.

8.INSTALLATION OF DISPLAY CONTROL UNIT ON WALL

Drill a 12 mm diameter hole on the wall, for routing the communication cable. Open the unit cover, drill 3 holes in the wall to match the holes in the Display Control Unit, install the inserts and fasten the unit to the wall with 3 screws.

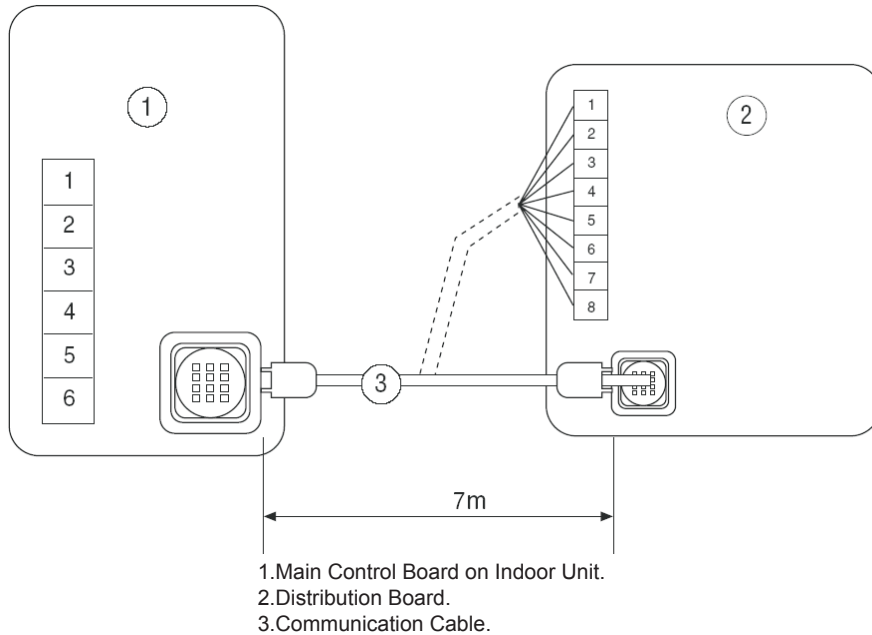
The Display Control Unit is provided of a special communication cable, 7 meters long, terminated by a plug, connected in the housing itself to a distribution box, which enables the control of the air conditioner from several different rooms, each one from its own Display Control Unit.

Connect the quick connector to the appropriate socket on the main control board in the indoor unit electrical box.

WARNING:

The plug should not be cut off the communication cable if the cable length is in sufficient. In such case, a 5-meter extension cable may be added.

- Locate the Remote Control Unit in such a way that when mounted on its support on the wall, it will be in line sight with the Display Control Unit (at less than 8 m)
- It is recommended to establish the final location of the Remote Control Unit only after the first operation, assuring proper transmission and reception between the Remote Control Unit and the Display Control Unit.

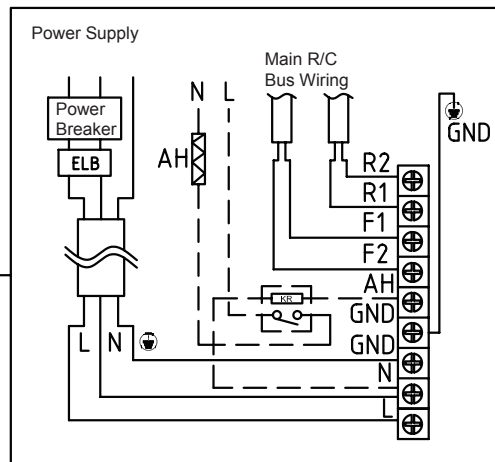
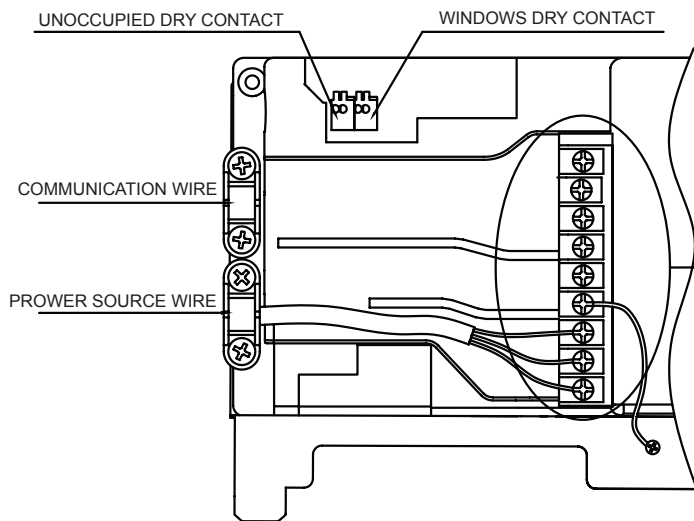


COLOR CHART			
Conn. Point	Wire Color	Conn. Point	Wire Color
1	Blue	5	Purple
2	Green	6	Yellow
3	Black	7	Orange
4	Brown	8	Red

2 UNIT INSTALLATION

1.POWER SUPPLY WIRING

- Unscrew and remove the electrical box.
- Connect the power supply wirings to the power supply terminal block.
- When doing this, press the power supply wiring under the wire clip.



ELB: Electricity Leakage Breaker
AH : Assistant heater.

2.MAIN BUS AND R/C COMMUNICTAION WIRING

- Unscrew and remove the electrical box.
- Connect the R/C wirings to R1R2 terminal block and the main bus wiring to F1, F2 terminal block.
- Press the wirings under the wire clip tightly.

3.TIGHTENING TORQUE FOR THE TERMINAL SCREWS

Use the correct screwdriver for tightening the terminal screws. If the blade of screwdriver is too small, the head of the screw might be damaged, And the screw will not be properly tightened.

If the terminal screws are tightened too hard, screws might be damaged.

Refer to the table below for the tightening torque of the terminal screws.

Terminal	Size	Tightening torque
terminal block(total 9 pins)	M4	1.2~1.5N.m

4.ELECTRICAL CHARACTERISTICS

Unit				Powersupply		Fan motor	
Model	Hz	Volts	Voltage range	MCA	MFA	KW	FLA
DSV018	50	220~240	Max.264 Min.198	1.23	16	0.22	0.7
DSV021				1.23	16	0.22	0.7
DSV024				1.23	16	0.22	0.7
DSV030				1.23	16	0.23	0.75
DSV036				1.23	16	0.23	0.75

MCA: Min. Circuit Amps (A)
MFA: Max. Fuse Amps(A)
kW : Fan Motor Rated output(kW)
FLA : Full Load Amps(A)

5.SPECIFICATIONS FOR FIELD SUPPLIED ELB AND WIRE

Model	Power supply wiring		Remote controller wiring Transmission wiring	
	Field ELB	Wire and Size	Wire	Size
DSV018	16A	Must comply withmaximum currentandlocal codes(0.75mm ²)	Twisted-pair wires	1.0mm ²
DSV021				
DSV024				
DSV030				
DSV036				

- All field supplied parts and materials and electricians works must conform to local codes.
- Use copper wire only.
- All wiring must be performed by an authorized electrician.
- Every indoor unit must have a sub circle breaker and the whole system must have a main circle breaker.
- Be sure to ground the air conditioner.
- The appliance shall be installed in accordance with national wiring regulations , and shall be provided to ensure all-pole disconnection from the supply mains, and distance between the poles shall be more than 3 mm .

6.HEIGHT COMPENSATION SETTING

The Compensation setting according to installation height can be done by using the dip switch 11 and 12 on controller PCB.

Installation Height	Height Code	DS11	DS12
2.3-2.7(m)	H0	OFF	OFF
2.7-3.1(m)	H1	OFF	ON
3.1-3.5(m)	H2	ON	OFF
3.5(m)	H3	ON	ON

Note: Please disconnect the power supply when you change this setting.

If you feel too noisy, please set DS11 and DS12 to lower height code level.

CHECK ITEMS

BEFORE POWER ON

- Is there any gas leakage at flare nut connections?
- Has the heat insulation been carried out at flare nut connection?
- Is the connecting cable being fixed to terminal board firmly?
- Is the connecting cable being clamped firmly?
- Is the drainage OK?
- Is the earth wire connection properly done?
- Is the indoor unit properly hooked to the installation plate?
- Is the power supply voltage complied with rated value?

AFTER POWER ON

- Is there any abnormal sound?
- Is the cooling operation normal?
- Is the thermostat operation normal?
- Is the remote control's LCD operation normal?