DAIKIN

EDMT391433

R-410A

Engineering Data

VRV

BS unit

Single BS unit
BSQ100-250AV1

Multi BS unit
BS4-16Q14AV1

Part 1 General Information

1

1. Model Names of BS Unit

Single BS Unit for Heat Recovery

Series		Model name			Power supply
Heat recovery	BSQ	100A	160A	250A	V1

Multi BS Unit for Heat Recovery

Series		Model name						Power supply
Heat recovery	BS	4Q14A	6Q14A	8Q14A	10Q14A	12Q14A	16Q14A	V1

2. External Appearance

2.1 BS unit

Single BS unit

BSQ100AV1
BSQ160AV1
BSQ250AV1

Multi BS unit

BS4Q14AV1

Multi BS unit

BS6Q14AV1

Multi BS unit

BS8Q14AV1

Multi BS unit

BS10Q14AV1

Multi BS unit

BS12Q14AV1

Multi BS unit

BS16Q14AV1

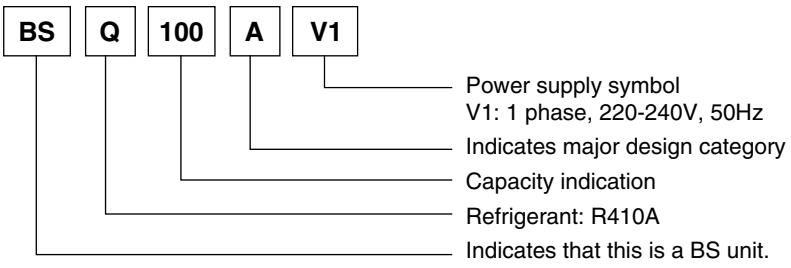
3. Interchangeability

Outdoor unit			BS unit	New BS unit		(Reference) Current BS unit
				Single BS unit	Multi BS unit	Single/Multi BS unit
				BSQ100AV1 BSQ160AV1 BSQ250AV1	BS4Q14AV1 BS6Q14AV1 BS8Q14AV1 BS10Q14AV1 BS12Q14AV1 BS16Q14AV1	BSV-PV1
VRV III	Heat Recovery	REYQ-PY1 REMQ-PY1		Not connectable	Not connectable	Connectable
VRV IV	Heat Recovery	REYQ-TY1		Connectable	Connectable	Not connectable
VRV-W III	Heat Recovery	RWEYQ-PY1		Connectable (*1)	Connectable (*1)	Connectable (*1)
VRV III-Q	Heat Recovery	RQCEQ-PY1		Connectable (*1)	Connectable (*1)	Connectable (*1)

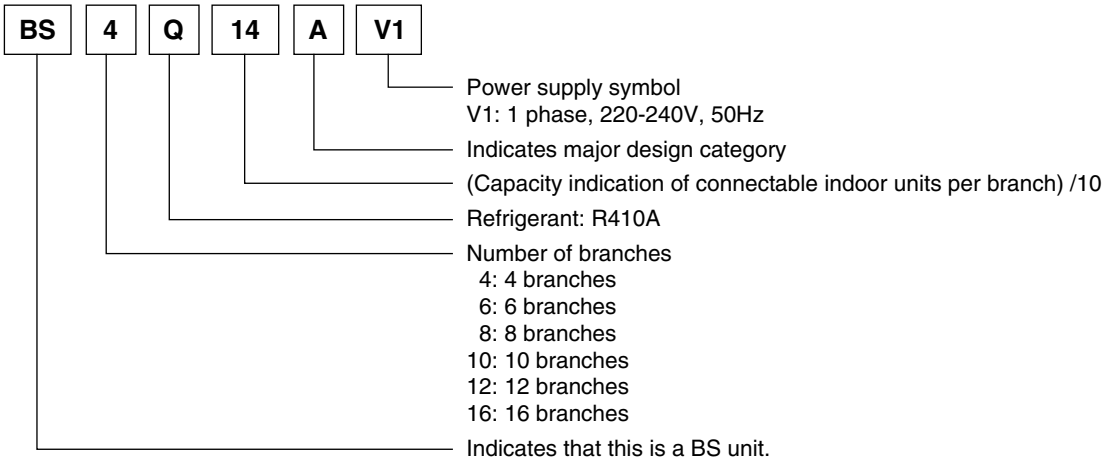
Note: *1 Mixed combination of the new BS unit and the current BS unit in one system is not allowed. It may cause malfunction.

4. Nomenclature

Single BS unit (Only necessary for Heat Recovery system)



Multi BS unit (Only necessary for Heat Recovery system)



5. Capacity Range

5.1 Limitation of capacity index for heat recovery

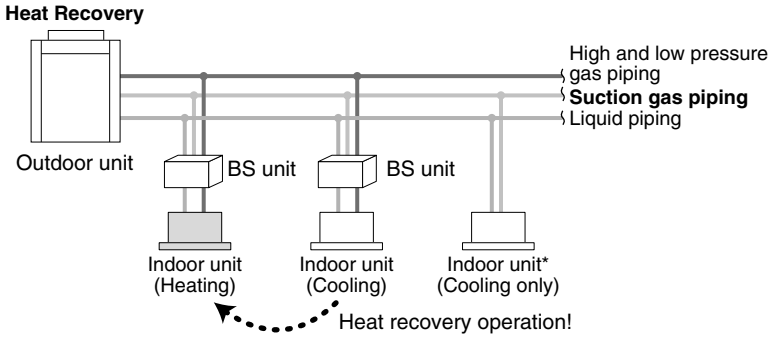
Single BS unit

Model	BSQ100AV1	BSQ160AV1	BSQ250AV1
Maximum number of connectable indoor units	5	8	8
Total capacity index of connectable indoor units	20 to 100	More than 100 but 160 or less	More than 160 but 250 or less

Multi BS unit

Model	BS4Q14AV1	BS6Q14AV1	BS8Q14AV1	BS10Q14AV1	BS12Q14AV1	BS16Q14AV1
Maximum number of connectable indoor units	20	30	40	50	60	64
Maximum number of connectable indoor units per branch	5	5	5	5	5	5
Number of branches	4	6	8	10	12	16
Maximum capacity index of connectable indoor units	400 or less	600 or less	750 or less	750 or less	750 or less	750 or less
Maximum capacity index of connectable indoor units per branch (*1)	140 or less	140 or less	140 or less	140 or less	140 or less	140 or less

Note: *1 When the total capacity of indoor units to be connected downstream is larger than 140 (Max. 250), use a junction pipe kit (KHRP26A250T, optional parts) to join two connections downstream from the BS unit.



★For indoor units used for cooling only (do not connect to BS unit when using for heat recovery), total capacity index must be 50% or less than the capacity index of the outdoor units.

Part 2
BS Unit

BSQ-AV1
Single BS unit

2

1. Specifications

Single BS unit

Model				BSQ100AV1	BSQ160AV1	BSQ250AV1
Power supply				1 phase, 220-240V, 50Hz	1 phase, 220-240V, 50Hz	1 phase, 220-240V, 50Hz
Maximum number of connectable indoor units				5	8	8
Total capacity index of connectable indoor units				20 to 100	More than 100 and 160 or less	More than 160 and 250 or less
Casing				Galvanized steel plate	Galvanized steel plate	Galvanized steel plate
Dimensions: (H×W×D)			mm	207×388×326	207×388×326	207×388×326
Sound absorbing thermal insulation material				Foamed polyurethane, Flame resistant needle felt	Foamed polyurethane, Flame resistant needle felt	Foamed polyurethane, Flame resistant needle felt
Piping connection	Indoor unit	Liquid pipes	mm	ϕ 9.5 C1220T (brazing connection) ★1	ϕ 9.5 C1220T (brazing connection)	ϕ 9.5 C1220T (brazing connection)
		Gas pipes	mm	ϕ 15.9 C1220T (brazing connection) ★1	ϕ 15.9 C1220T (brazing connection) ★2	ϕ 22.2 C1220T (brazing connection) ★3
	Outdoor unit	Liquid pipes	mm	ϕ 9.5 C1220T (brazing connection)	ϕ 9.5 C1220T (brazing connection)	ϕ 9.5 C1220T (brazing connection)
		Suction gas pipes	mm	ϕ 15.9 C1220T (brazing connection)	ϕ 15.9 C1220T (brazing connection) ★2	ϕ 22.2 C1220T (brazing connection) ★3
		HP / LP gas pipes	mm	ϕ 12.7 C1220T (brazing connection)	ϕ 12.7 C1220T (brazing connection) ★2	ϕ 19.1 C1220T (brazing connection) ★3
Mass			kg	11	11	14
★4 ★5 ★6 ★7 Sound level	Operating sound		dB(A)	35	41	41
	Max. sound		dB(A)	40	45	45
Standard accessories				Installation manual, Attached pipe, Insulation pipe cover, Clamps	Installation manual, Attached pipe, Insulation pipe cover, Clamps	Installation manual, Attached pipe, Insulation pipe cover, Clamps
Drawing No.	Specifications			C: 4D085547A	C: 4D085548A	C: 4D085549A
	Sound level			C: 4D088270B	C: 4D088271B	C: 4D088271B

Notes:

★1 In case of connecting with a 20 - 50 type indoor unit, match to the size of field pipe using the attached pipe.
(Connection between the attached pipe and the field pipe must be brazed.)

★2 In case of connecting with indoor unit capacity index 150 or more and 160 or less, match to the size of field pipe using the attached pipe.
(Connection between the attached pipe and the field pipe must be brazed.)

★3 In case of connecting with a 200 type indoor unit or indoor capacity index more than 160 and less than 200, match to the size of field pipe using the attached pipe.
(Connection between the attached pipe and the field pipe must be brazed.)

★4 The operating sound is measured in anechoic chamber.
If it is measured under the actual installation conditions, it is normally over the set value due to environmental noise and sound reflection.

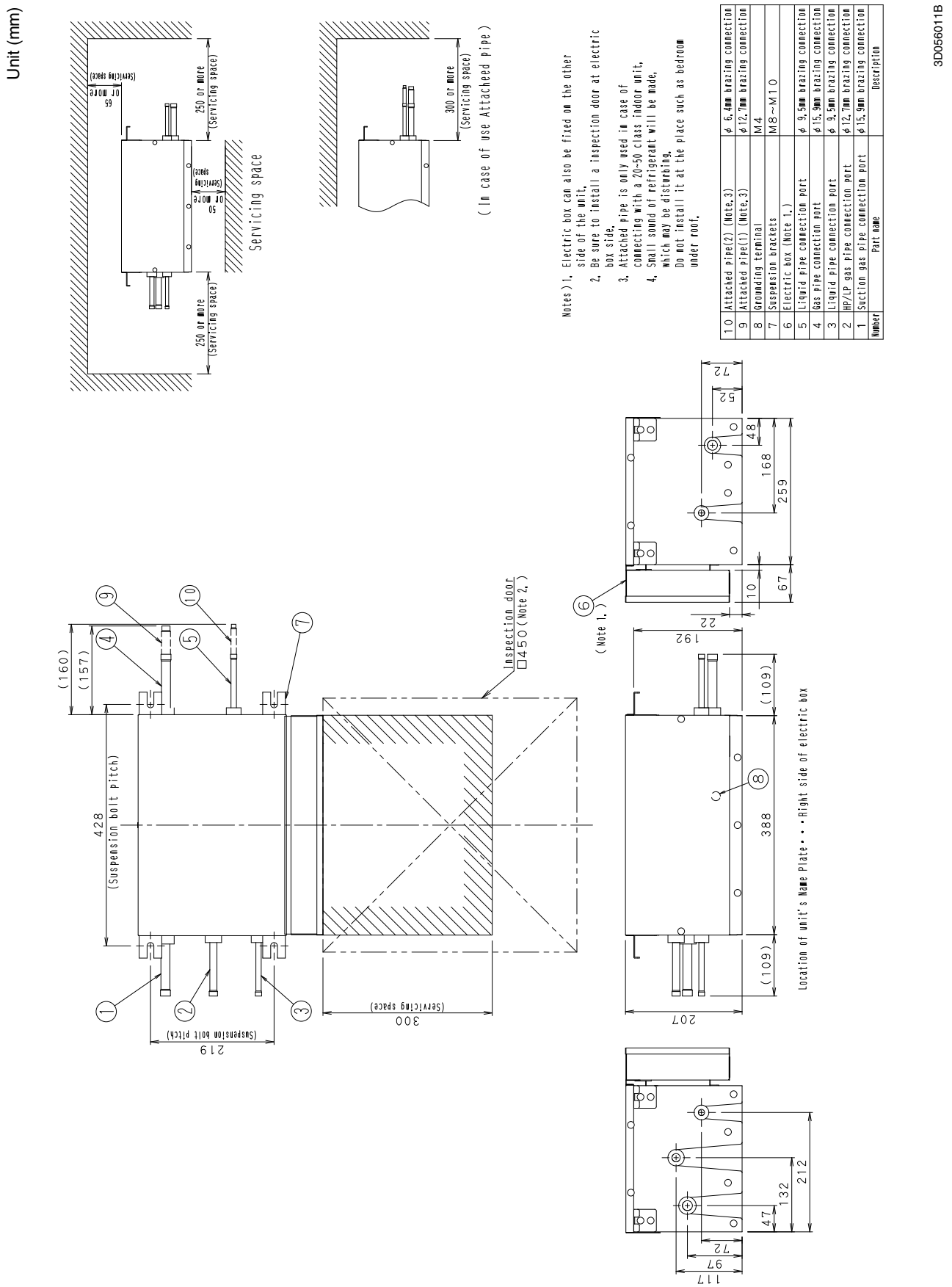
★5 Even if the indoor unit to be connected downstream of BS unit has stopped, when the system is operating, operating sound can be heard.

★6 A transient sound means the operated sound of the change of cooling and heating, or oil return, or defrost.

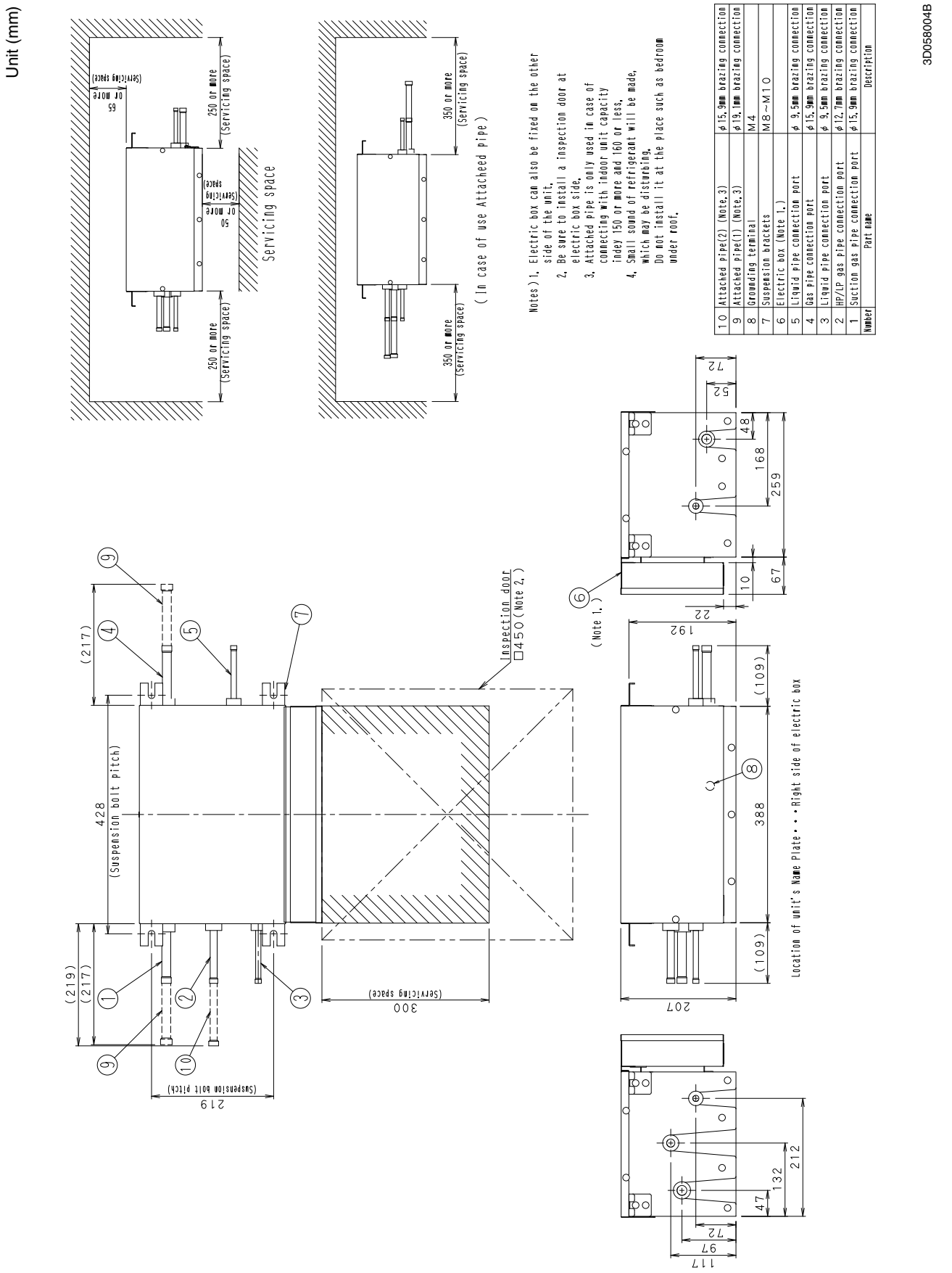
★7 The maximum sound is max value of transient sound (the change of cooling and heating).

2. Dimensions

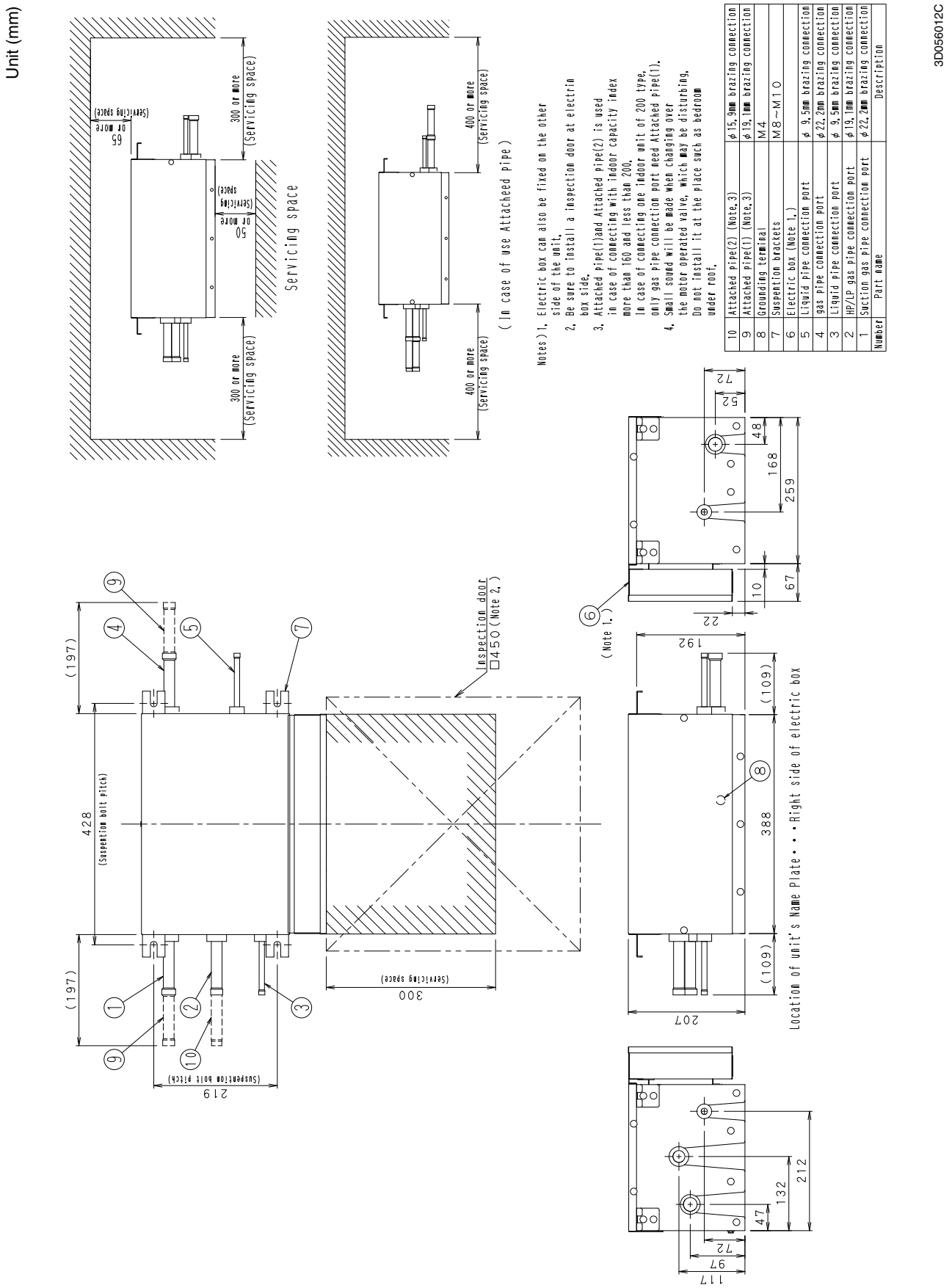
BSQ100AV1



BSQ160AV1

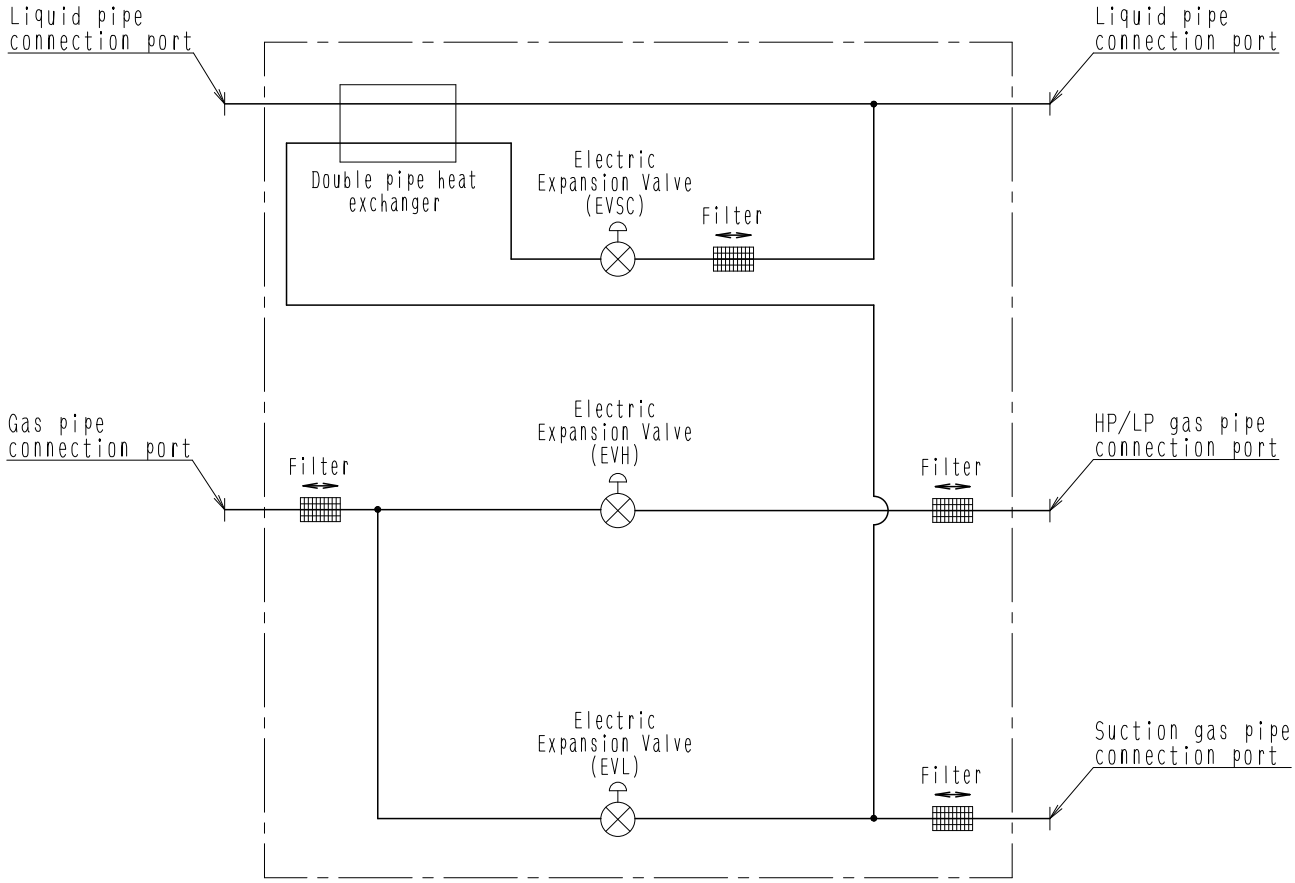

Unit (mm)
3D058004B
Servicing space
250 or more (Servicing space)
65 or more (Servicing space)
50 or more (Servicing space)
350 or more (Servicing space)
(In case of use Attacheed pipe)
Notes) 1. Electric box can also be fixed on the other side of the unit.
2. Be sure to install a inspection door at electric box side.
3. Attached pipe is only used in case of connecting with indoor unit capacity inde∀ 150 or more and 160 or less.
4. Small sound of refrigerant will be made, which may be disturbing. Do not install it at the place such as bedroom under roof.
10 Attached pipe(2) (Note.3) φ15.9mm brazing connection
9 Attached pipe(1) (Note.3) φ19.1mm brazing connection
8 Grounding terminal M4
7 Suspension brackets M8~M10
6 Electric box (Note 1.)
5 Liquid pipe connection port φ 9.5mm brazing connection
4 Gas pipe connection port φ15.9mm brazing connection
3 Liquid pipe connection port φ 9.5mm brazing connection
2 HP/LP gas pipe connection port φ12.7mm brazing connection
1 Suction gas pipe connection port φ15.9mm brazing connection
Number Part name Description
Inspection door □450 (Note 2.)
(Suspension bolt pitch) 428
(217)
(219)
(217)
(Suspension bolt pitch) 219
(Servicing space) 300
(Note 1.)
72
52
48
168
259
10
67
22
192
(109)
388
(109)
207
Location of unit's Name Plate • • • Right side of electric box
47
132
212
72
97
117

BSQ250AV1


Unit (mm)
3D056012C
Servicing space
300 or more (Servicing space)
50 or more (Servicing space)
65 or more (Servicing space)
400 or more (Servicing space)
(In case of use Attacheed pipe)
Notes) 1. Electric box can also be fixed on the other side of the unit.
2. Be sure to install a inspection door at electrin box side.
3. Attached pipe(1)and Attached pipe(2) is used in case of connecting with indoor capacity index more than 160 and less than 200.
In case of connecting one indoor unit of 200 type, only gas pipe connection port need Attached pipe(1).
4. SMall sound will be made when changing over the motor operated valve, which may be disturbing. Do not install it at the place such as bedroom under roof.
10 Attached pipe(2) (Note.3) φ15.9mm brazing connection
9 Attached pipe(1) (Note.3) φ19.1mm brazing connection
8 Grounding terminal M4
7 Suspention brackets M8~M10
6 Electric box (Note 1.)
5 Liquid pipe connection port φ 9.5mm brazing connection
4 gas pipe connection port φ22.2mm brazing connection
3 Liquid pipe connection port φ 9.5mm brazing connection
2 HP/LP gas pipe connection port φ19.1mm brazing connection
1 Suction gas pipe connection port φ22.2mm brazing connection
Number Part name Description
Inspection door □450(Note 2.)
(Servicing space)
300
(Suspention bolt pitch)
428
(197)
219
(Note 1.)
Location of unit's Name Plate・・・Right side of electric box
(109)
388
192
207
168
259
48
52
72
67
10
22
47
132
212
72
97
117

3. Piping diagrams

BSQ100AV1 / BSQ160AV1 / BSQ250AV1



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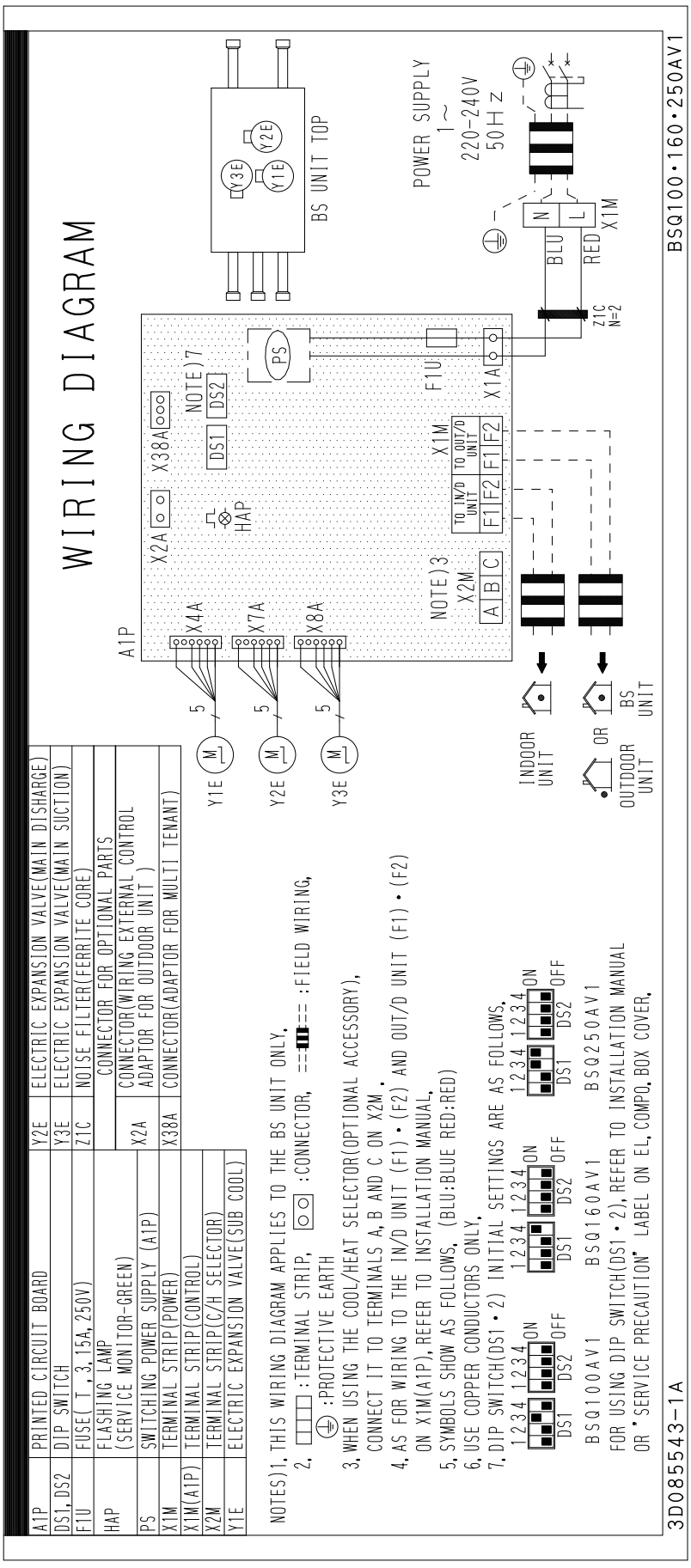
4. Wiring diagrams

BSQ100AV1 / BSQ160AV1 / BSQ250AV1



5. Electric characteristics

BSQ100AV1 / BSQ160AV1 / BSQ250AV1

Units				Power supply		IFM		Input(W)	
Model	Hz	Volts	Voltage range	MCA	MFA	KW	FLA	Cooling	Heating
BSQ100AV1	50	220-240	MAX. 264 Min. 198	0.1	15	——	——	5	5
BSQ160AV1				0.1	15	——	——	5	5
BSQ250AV1				0.1	15	——	——	5	5

Symbols:

MCA : Min. Circuit Amps (A)
MFA : Max. Fuse Amps (A) (See note 5)
KW : Fan Motor Rated Output(KW)
FLA : Full Load Amps(A)
IFM : Indoor Fan Motor

Note:

1. Voltage range

   Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limits.

2. Maximum allowable voltage unbalance between phases is 2%.

3. MCA/MFA

   MCA = 1.25 X FLA

   MFA ≦ 4 X FLA

   (Next lower standard fuse rating. Min. 15A)

4. Select wire size based on the MCA.

5. Instead of fuse, use Circuit Breaker.

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6. Safety devices setting

BSQ100AV1 / BSQ160AV1 / BSQ250AV1

MODEL	Safety devices
	PC board fuse
BSVQ100PV1	250V 3.15A
BSVQ160PV1	250V 3.15A
BSVQ250PV1	250V 3.15A
BSVQ36PVJU	250V 3.15A
BSVQ60PVJU	250V 3.15A
BSVQ96PVJU	250V 3.15A
BSQ100AV1	250V 3.15A
BSQ160AV1	250V 3.15A
BSQ250AV1	250V 3.15A
BSQ36TVJ	250V 3.15A
BSQ60TVJ	250V 3.15A
BSQ96TVJ	250V 3.15A

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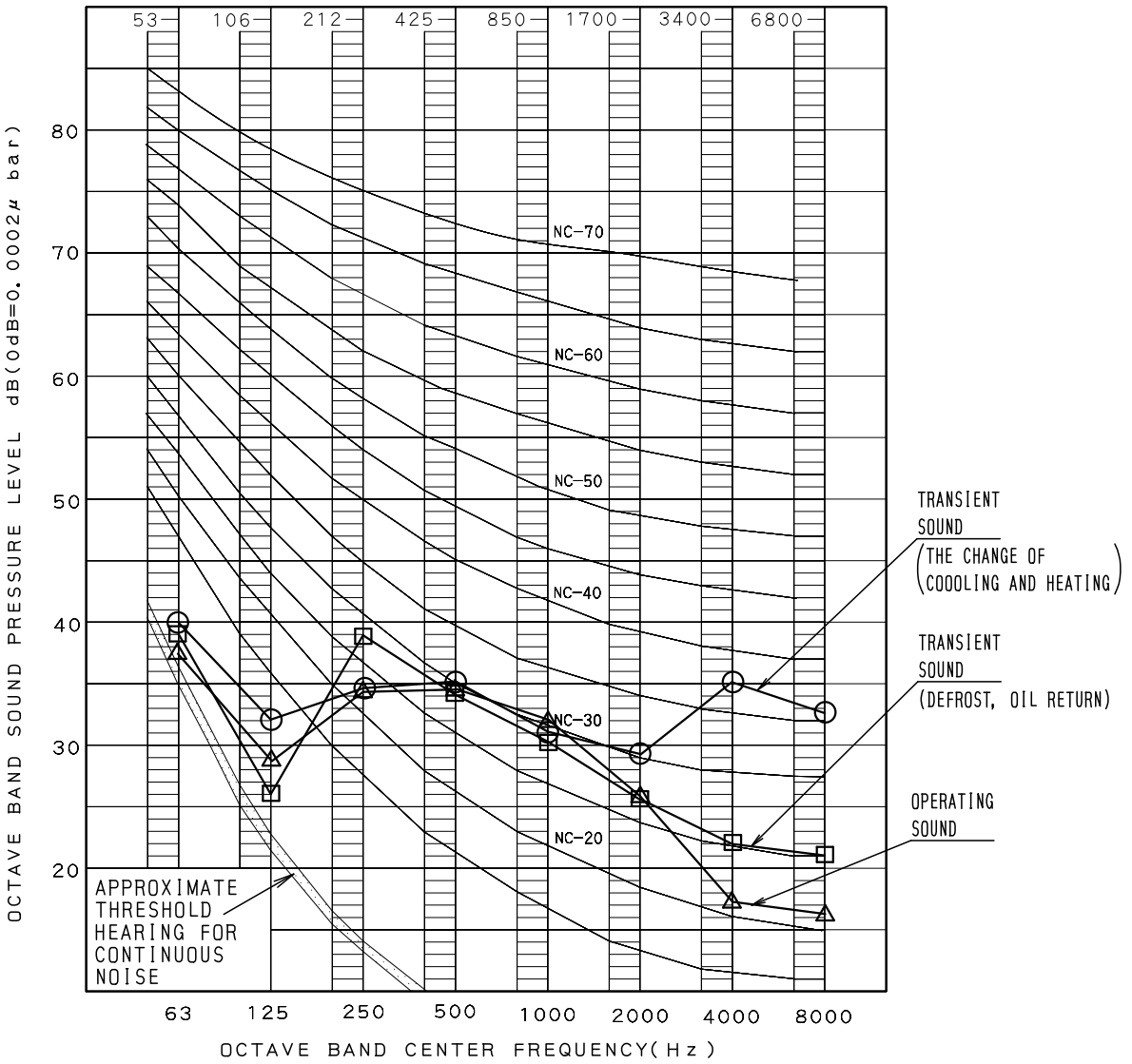
7. Sound levels

BSQ100AV1



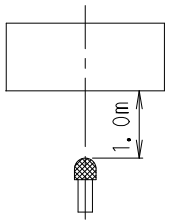
OVER ALL (dB)

SCALE	OPERATING SOUND	MAX SOUND
A	35	40
C	42	44

OPERATING CONDITIONS

POWER SOURCE 220-240V 50Hz

LOCATION OF MICROPHONE



MEASURING PLACE

ANECHOIC CHAMBER(CONVERSION VALUE)

Note)1. The operating sound is measured in anechoic chamber,
if it is measured under the actual installation conditions,
it is normally over the set value due to enviromental noise and sound reflection.
2. Even if the indoor unit to be connected downstream of BS unit has stopped, when the system is operating,
operating sound can be heard.
3. A transient sound means the operated sound of the change of cooling and heating, or oil return, or defrost.
4. The maximum sound is max value of transient sound (the change of cooling and heating).

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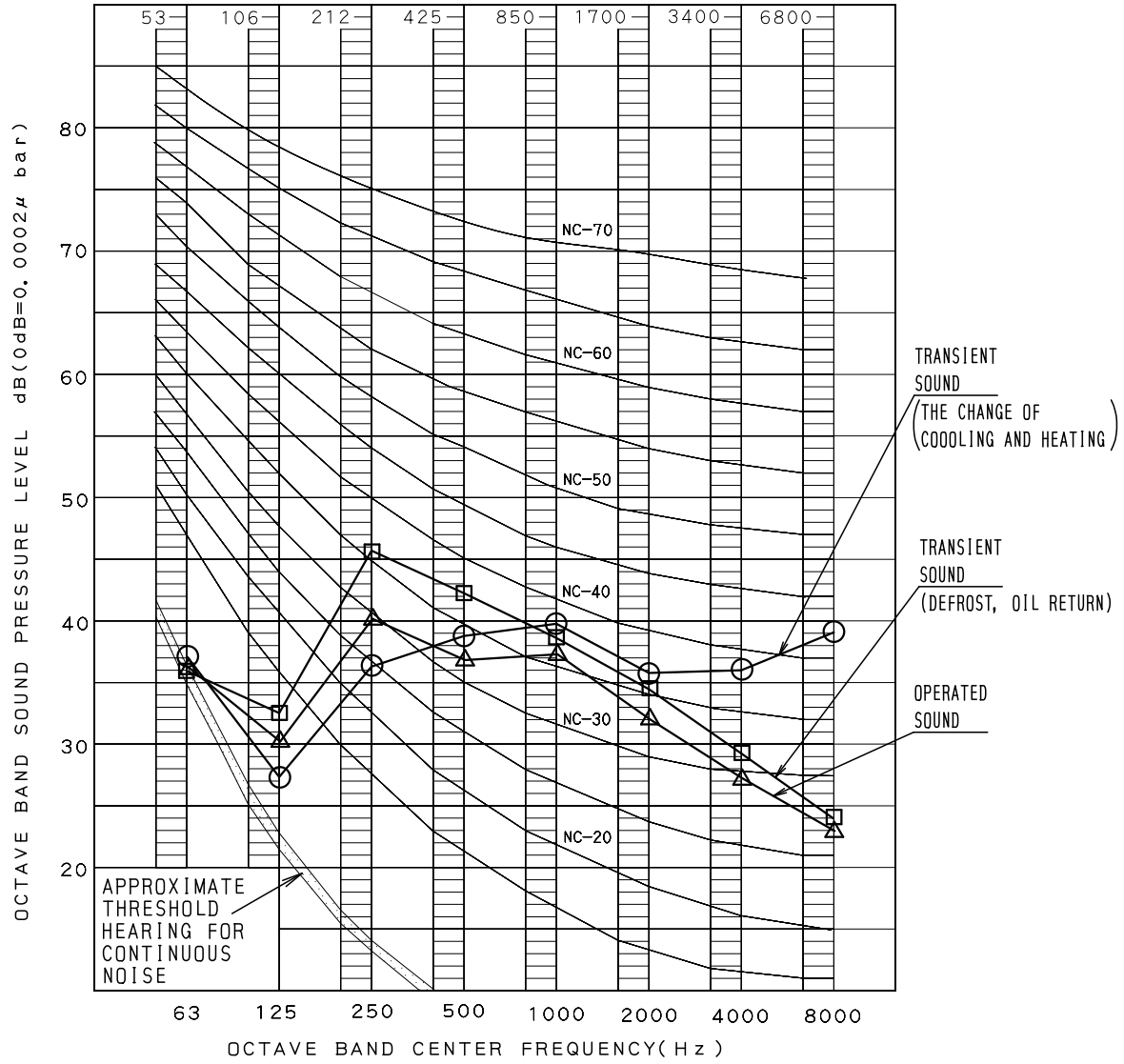
BSQ160AV1 / BSQ250AV1



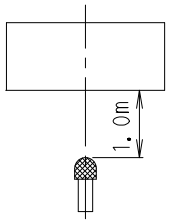
OVER ALL (dB)

SCALE	OPERATING SOUND	MAX SOUND
A	41	45
C	45	49

OPERATING CONDITIONS

POWER SOURCE 220-240V 50Hz

LOCATION OF MICROPHONE



MEASURING PLACE

ANECHOIC CHAMBER(CONVERSION VALUE)

Note)1. The operating sound is measured in anechoic chamber,
if it is measured under the actual installation conditions,
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2. Even if the indoor unit to be connected downstream of BS unit has stopped, when the system is operating,
operating sound can be heard.
3. A transient sound means the operated sound of the change of cooling and heating, or oil return, or defrost.
4. The maximum sound is max value of transient sound (the change of cooling and heating).

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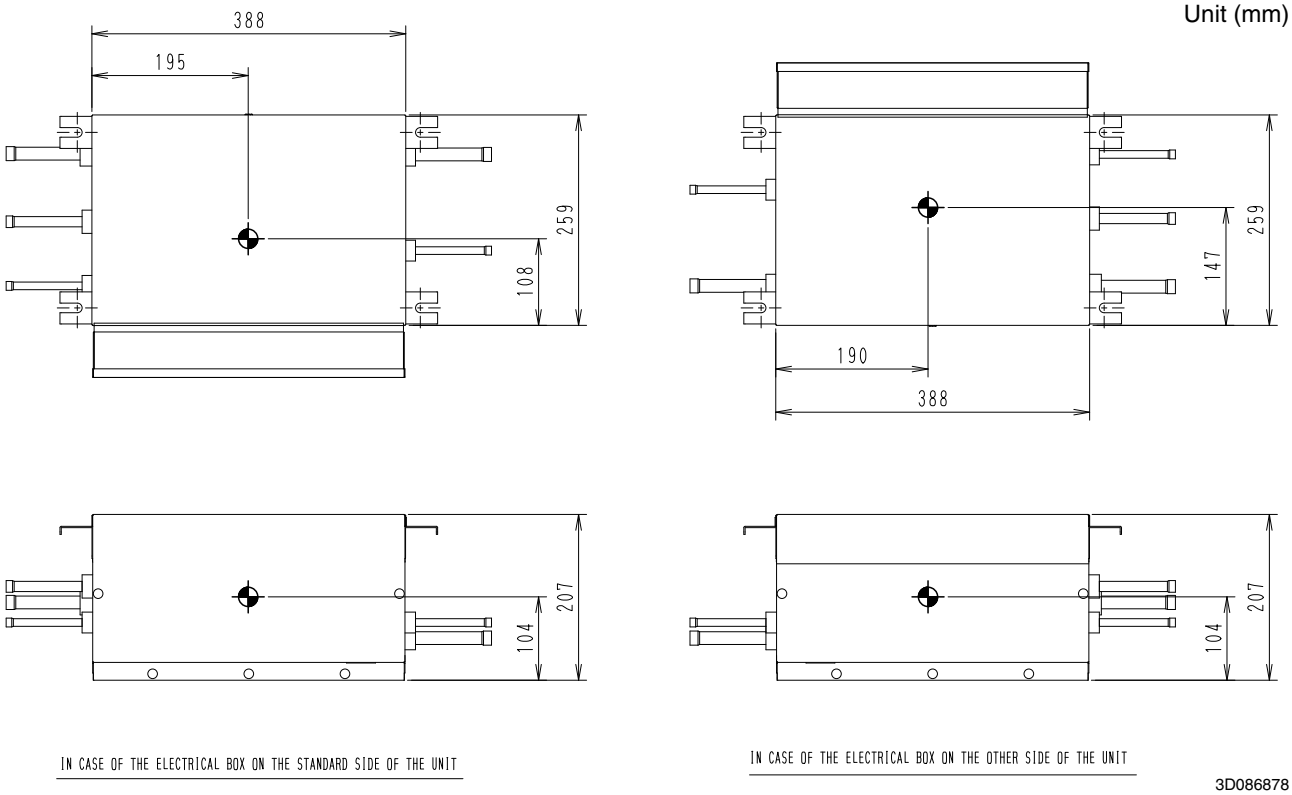
8. Centre of gravity

BSQ100AV1 / BSQ160AV1

Unit (mm)



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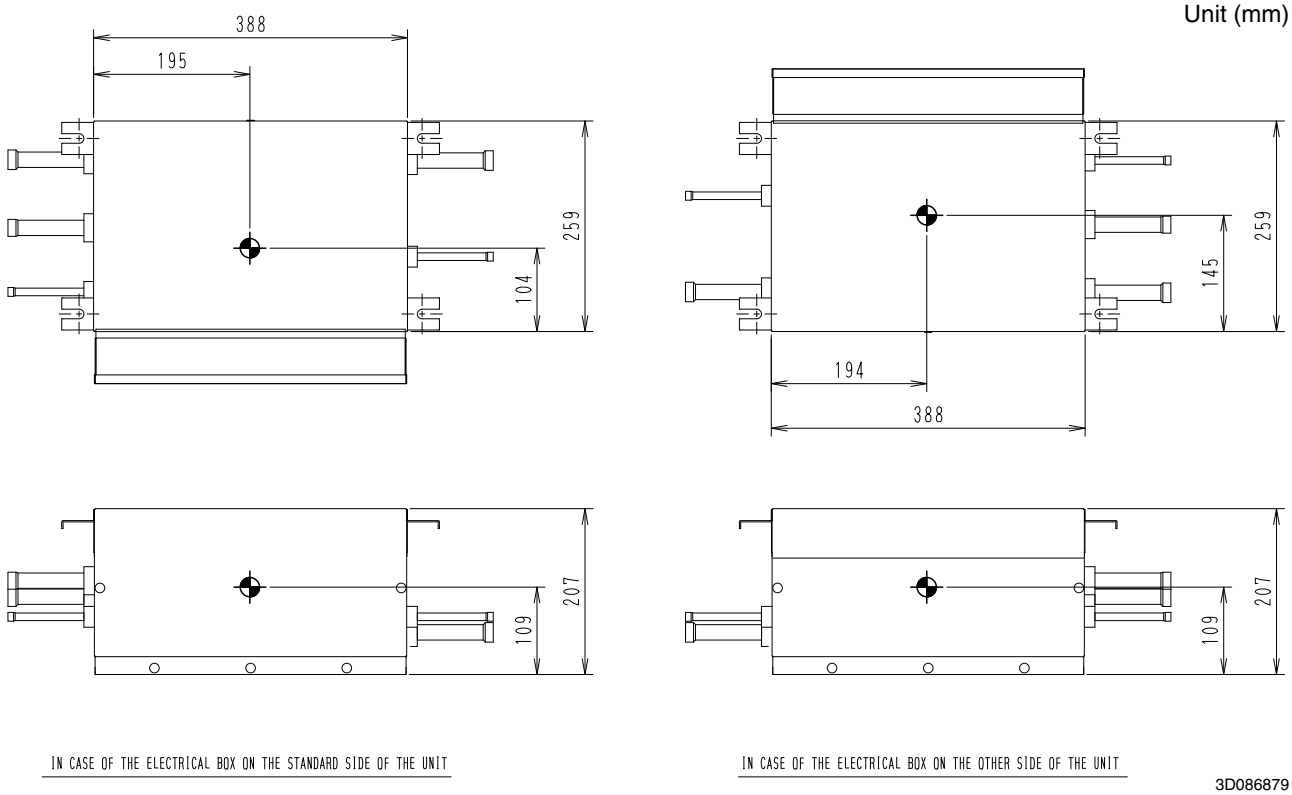
BSQ250AV1

Unit (mm)



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9. Installation Manual

9.1 BSQ100AV1 / BSQ160AV1 / BSQ250AV1

DAIKIN

BSQ100AV1
BSQ160AV1
BSQ250AV1

VRVIV SYSTEM Air Conditioners

Installation manual

CONTENTS

1. SAFETY PRECAUTIONS

Be sure to follow this “SAFETY PRECAUTIONS”.
This product comes under the term “appliances not accessible to the general public”.
This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

This manual classifies the precautions into WARNINGS and CAUTIONS.
Be sure to follow all the precautions below: They are all important for ensuring safety.

⚠ **WARNING** .....Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION** .....Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
It may also be used to alert against unsafe practices.

⚠ WARNING

- Ask your local dealer or qualified personnel to carry out installation work.
  Improper installation may result in water leakage, electric shocks or a fire.
- Perform installation work in accordance with this installation manual.
  Improper installation may result in water leakage, electric shocks or a fire.
- Consult your local dealer regarding what to do in case of refrigerant leakage.
  When the air conditioner is installed in a small room, it is necessary to take proper measures so that the amount of any leaked refrigerant does not exceed the concentration limit in the event of a leakage.
  Otherwise, this may lead to an accident due to oxygen deficiency.
- Be sure to use only the specified parts and accessories for installation work.
  Failure to use the specified parts may result in the air conditioner falling down, water leakage, electric shocks, a fire, etc.
- Install the air conditioner on a foundation that can withstand its mass.
  Insufficient strength may result in the air conditioner falling down and causing injury.
  In addition, it may lead to vibration of indoor units and cause unpleasant chattering noise.
- Carry out the specified installation work in consideration of strong winds, typhoons, or earthquakes.
  Improper installation may result in an accident such as air conditioner falling.

- Make certain that all electrical work is carried out by qualified personnel according to the applicable legislation (note 1) and this installation manual, using a separate circuit.
  In addition, even if the wiring is short, make sure to use a wiring that has sufficient length and never connect additional wiring to make the length sufficient.
  Insufficient capacity of the power supply circuit or improper electrical construction may lead to electric shocks or a fire.
  (note 1) applicable legislation means “All international, national and local directives, laws, regulations and/or codes which are relevant and applicable for a certain product or domain”.
- Earth the air conditioner.
  Do not connect the earth wiring to gas or water piping, lightning conductor or telephone earth wiring.
  Incomplete earthing may cause electric shocks or a fire.
  A high surge current from lightning or other sources may cause damage to the air conditioner.
- Be sure to install an earth leakage circuit breaker.
  Failure to do so may cause electric shocks and a fire.
- Disconnect the power supply before touching the electric components.
  If you touch the live part, you may get an electric shocks.
- Make sure that all wiring is secure, using the specified wiring and ensuring that external forces do not act on the terminal connections or wiring.
  Incomplete connection or fixing may cause an overheat or a fire.
- Wiring for power supply and between the indoor and outdoor units must be properly laid and formed, and the control box cover must be firmly fastened so that the wiring may not push up the structural parts such as the cover.
  If the cover is improperly fastened, it may cause electric shock or fire.
- If refrigerant gas leaks during installation work, ventilate the area immediately.
  Toxic gas may be produced if refrigerant gas comes into contact with a fire.
- After completing the installation work, check to make sure that there is no leakage of refrigerant gas.
  Toxic gas may be produced if refrigerant gas leaks into the room and comes into contact with a source of a fire, such as a fan heater, stove or cooker.
- Never directly touch any accidental leaking refrigerant. This could result in severe wounds caused by frostbite.

⚠ CAUTION

- Install drain piping according to this installation manual to ensure good drainage, and insulate the piping to prevent condensation.
  Improper drain piping may cause water leakage, make the furniture get wet.
- Install the BS units, power supply wiring, remote controller wiring and transmission wiring at least 1 m away from televisions or radios to prevent image interference or noise.
  (Depending on the radio waves, a distance of 1 m may not be sufficient to eliminate the noise.)
- Install the BS unit as far as possible from fluorescent lamps.
  If a wireless remote controller kit is installed, the transmission distance may be shorter in a room where an electronic lighting type (inverter or rapid start type) fluorescent lamp is installed.
- Make sure to provide for adequate measures in order to prevent that the outdoor unit be used as a shelter by small animals.
  Small animals making contact with electrical parts can cause malfunctions, smoke or fire. Please instruct the customer to keep the area around the unit clean.
- Do not install the air conditioner in places such as the following:
  1. The outside building, rain water permeates in BS unit and it becomes a cause of an electric shock.
  2. Where there is mist of oil, oil spray or vapour for example a kitchen.
     Resin parts may deteriorate, and cause them to fall out or water to leak.
  3. Where corrosive gas, such as sulfurous acid gas, is produced.
     Corrosion of copper pipings or brazed parts may cause the refrigerant to leak.
  4. Where there is machinery which emits electromagnetic waves.
     Electromagnetic waves may disturb the control system, and cause malfunction of the equipment.
  5. Where flammable gases may leak, where carbon fibre or ignitable dust is suspended in the air or where volatile flammables, such as thinner or gasoline, are handled.
     If the gas should leak and remained around the air conditioner, it may cause ignition.

6. Do not use in areas where the air is salty, such as along seacoasts, in factories or other areas with significant voltage fluctuations, or in automobiles and watercraft.
   Doing so could result in a malfunction.
7. Where a wind may flow, the surface of BS unit body dews, and it becomes a cause of a leak.

- The BS unit is not intended for use in a potentially explosive atmosphere.

2. BEFORE INSTALLATION

2-1 PRECAUTIONS

- Hold the unit by the Hanging brackets (4 points) when opening the box and moving it, and do not lift it holding on to any other part especially the refrigerant piping.
- About installation of outdoor and indoor unit, refer to the installation manual provided with the outdoor and the indoor unit.
- This unit, both indoor and outdoor, is suitable for installation in a commercial and light industrial environment. If installed as a household appliance it could cause electromagnetic interference.

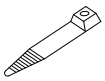
2-2 ACCESSORIES

Check the following accessories are included with your unit.

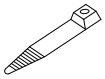
NOTE

- Do not throw away any of the accessories until installation is complete.

〈**BSQ100 · 160AV1**〉

Name	1) Accessory pipes (BSQ100 only)		1) Accessory pipes (BSQ160 only)		2) Clamp	3) Insulation tube		Explanation Document
Quantity	1 pc.	1 pc.	1 pc.	2 pcs.	16 pcs.	2 pcs.	3 pcs.	1 copy
Shape	1)-1  ϕ9.5	1)-2  ϕ15.9	1)-1  ϕ12.7	1)-2  ϕ15.9		3)-1  (Small)	3)-2  (Large)	Installation manual

〈**BSQ250AV1**〉

Name	1) Accessory pipes		2) Clamp	3) Insulation tube			Explanation Document
Quantity	1 pc.	2 pcs.	16 pcs.	2 pcs.	2 pcs.	1 pc.	1 copy
Shape	1)-1 	1)-2 		3)-1  (Small)	3)-2  (Medium)	3)-3  (Large)	Installation manual

2-3 COMBINATION

- This BS unit is only for systems for Models REYQ-T.
  It cannot be connected to systems for Models REYQ-P.
- For series of applicable indoor units, refer to the catalog or other literature.
- Select the BS unit to fit the total capacity (sum of unit's capacity) and max. number of the indoor units to be connected downstream. About indoor unit's capacity, refer to the **Table 2**.

Table 1

Model	Total capacity of all downstream indoor units	Max. number of all downstream indoor units
BSQ100AV1	A ≤ 100	5
BSQ160AV1	100 < A ≤ 160	8
BSQ250AV1	160 < A ≤ 250	8

Table 2

Capacity expressed as indoor unit's model No.	20	25	32	40	50	63	80	100	125	200	250
Indoor unit's capacity (for use in computation)	20	25	31.25	40	50	62.5	80	100	125	200	250

* About indoor unit's capacity for HRV type (VKM), refer to the Engineering data book.

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<Example>
In case of the BS unit with connect two FXCQ**32**M and two FXSQ**40**M.
Total capacity = **31.25**×2+**40**×2 = 142.5 → **Select BSQ160AV1**

2-4 CHECKLIST

- Exercise particular care concerning the following items during installation work and check again after installation is complete:

Post-installation checklist

Checklist	If defective	Check here.
Has the BS unit been installed securely?	The unit may fall, vibrate, or operate noisily.	
Did you conduct a gas leak inspection?	The unit may fail to heat or cool as designed.	
Was the unit fully insulated? (Refrigerant pipes and drain pipes)	The unit may leak water.	
Is the supply voltage the same as the voltage indicated on the label?	The unit may fail to operate or burn up.	
Are there any wiring mistakes or erroneous wiring or erroneous pipe connections?	The unit may fail to operate, burn up, or produce abnormal noise.	
Has the unit been earthed?	The unit may pose a hazard in the event of a short-circuit.	
Is the thickness of the electrical wiring the same as described in the specifications?	The unit may fail to operate or burn up.	

Delivery checklist

Checklist	Check here.
Has a cover been installed on the control box?	
Did you give the customer the installation manual?	

3. SELECTING INSTALLATION SITE

Select an installation site where the following conditions are satisfied and that meets with your customer's approval.

- Where is resistible against weight of BS unit.
- Locations where the wall is not significantly tilted.
- Where sufficient clearance for maintenance and service can be ensured. (**Refer to Fig. 1**)
- Locations where an inspection hole (**Refer to Fig. 2**) can be installed to the control box side (See Note).
- Where the total piping length involving indoor unit and outdoor unit is below the allowable piping length. (See installation manual attached to outdoor unit.)

Note: The control box mounting surface can be changed.
For information on how to change the mounting surface, refer to "**5. BS UNIT INSTALLATION**".

(mm)

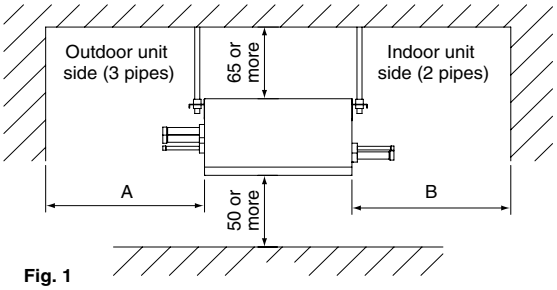


Fig. 1

(mm)

BS Unit Name	A	B
BSQ100AV1	250 or more	250 or more (*1)
BSQ160AV1	250 or more (*2)	250 or more (*2)
BSQ250AV1	300 or more (*3)	300 or more (*3)

(mm)

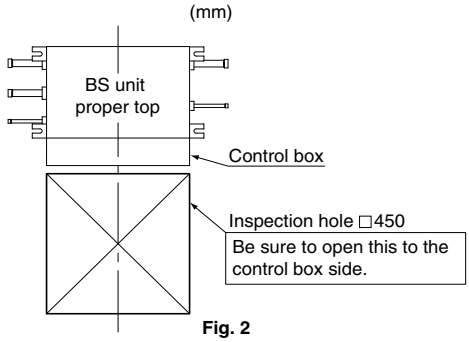


Fig. 2

(*1) When using accessory pipes 1)-1, 2 (Refer to 6-5 PIPING CONNECTION), provide a service space of at least 300 mm.
(*2) When using accessory pipes 1)-1, 2 (Refer to 6-5 PIPING CONNECTION), provide a service space of at least 350 mm.
(*3) When using accessory pipes 1)-1, 2 (Refer to 6-5 PIPING CONNECTION), provide a service space of at least 400 mm.

⚠ WARNING

Securely install the unit at a location that is capable of withstanding its weight.
Inadequate strength may cause the indoor unit to fall, resulting in bodily injury.

⚠ CAUTION

To prevent video and audio interference, install the BS unit as well as associated power wiring and signal transmission lines at least 1 m away from TVs and radios.
However, depending on the reception, interference may result even if a minimum distance of 1 m is maintained.

4. PREPARATIONS BEFORE INSTALLATION

Refer the **Fig. 3** and install the suspension bolts and hanging brackets.

〈**Suspension bolts: For supporting the product**〉
- Use M8-M10 suspension bolts.
- When holes are to be made anew, used embedded inserts and embedded foundation bolts. When holes are already provided, use hole-in-anchors or the like.
  Install the BS unit so that its weight can be withstood.

〈**Hanging bracket: For supporting the connection pipe**〉
- Be sure to support the connection piping around the unit using hanging brackets that are kept within 1 m of the body side surface. Hanging excessive weight on the BS unit hanging bracket could cause the unit to fall and injure someone.

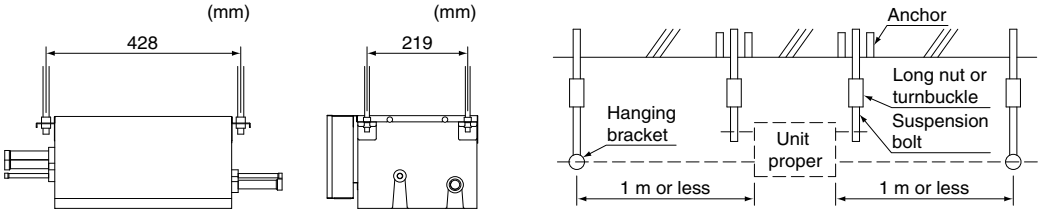


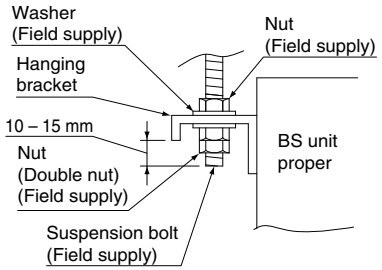
Fig. 3

5. BS UNIT INSTALLATION

Use only accessories and parts which are of the designated specification when installing.

(1) When necessary, use the following procedure to change the control box mounting surface.
(**Refer to Fig. 4**)
1) Remove the control box cover. (2 screws)
2) Remove the control box. (2 screws)
3) Remove the top panel. (4 screws)
4) Remove the coil cover. (1 screw)
5) Change the pull out direction of the wire (motorized valve coil) between the body and the control box.
6) Rotate the coil cover 180 degrees and attach it.
7) Turn the top panel around 180 degrees and attach it.
8) Attach the control box.
9) Attach the control box cover.

(2) Attach the hooks to the suspension bolts.
Be sure to use the nuts (M8 or M10: 3 pcs, 4 locations) and washers (For M8: Outside diameter dimension 24 to 28 mm, For M10: Outside diameter 30 to 34 mm: 2 pcs, 4 locations) (field supply) from both the top and bottom sides of the hanging bracket and make sure they are tightened correctly.



NOTES
- The BS unit has a top and a bottom, so install it so that the diagonal lines in the **Fig. 4** are where the top is.
(Failing to do so may prevent the unit from operating properly and increase the volume of the operating noise.)

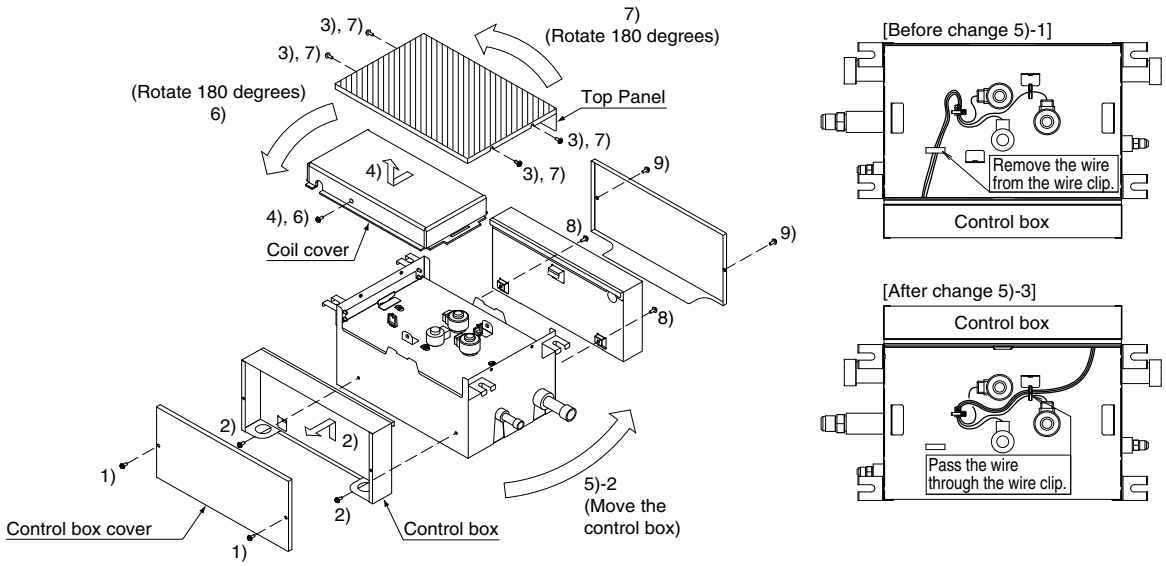


Fig. 4

6. REFRIGERANT PIPING WORK

- For instruction for installing piping between the outdoor unit and BS unit, selecting a refrigerant branch kit, and installing piping between the refrigerant branch kit and the indoor unit, refer to the installation manual and equipment design materials included with the outdoor unit.
- Before beginning the work, be sure to verify that the type of refrigerant used is R410A. (The unit will not operate correctly with a different type of refrigerant.)
- Insulate all of the piping, including the liquid pipes, HP/LP gas pipes, suction gas pipes, gas pipes, and the pipe connections for these.
Not insulating these pipes could result in water leaks or burns.
In particular, low-temperature gas flows in the HP/LP gas piping during full cooling operation, so the same amount of insulation as used for the suction gas pipes is required.
In addition, high-temperature gas flows in the HP/LP gas piping and gas piping, so use insulation that can withstand more than 120°C.
- Select insulation material as necessary for the installation environment.
For details, refer to the Engineering data book.
If you fail to do so, condensation could form on the surface of the insulation.

NOTES
- This product only uses the new refrigerant (R410A). Be sure to use the special pipe cutters for R410A, during installation.
- Make sure that nothing besides the specified refrigerant, such as air, gets into the refrigerant piping.
- If refrigerant gas leaks during the work, ventilate the area. (The outdoor units are filled with refrigerant.)

6-1 PIPING MATERIAL SELECTION

- Use only pipes which are clean inside and outside and which do not accumulate harmful sulfur, oxidants, dirt, cutting oils, moisture, or other contamination. (Foreign materials inside pipes including oils for fabrication must be 30mg/10m or less.)
- For information regarding the piping allowable maximum length, allowable height difference, and allowable length after a branch, refer to the installation manual that came with the outdoor unit or Engineering data book.
- The refrigerant branch kit (sold separately) is required for piping branches. For information on how to select a refrigerant branch kit, refer to the Installation Manual that came with the outdoor unit or Engineering data book.

6-2 PROTECTION AGAINST CONTAMINATION WHEN INSTALLING PIPES

Protect the piping to prevent moisture, dirt, dust, etc. from entering the piping.

Place	Installation period	Protection method
Outdoor	More than a month	Pinch the pipe
	Less than a month	Pinch or tape the pipe
Indoor	Regardless of the period	

NOTE

Exercise special caution to prevent dirt or dust when passing piping through holes in walls and when passing pipe edges to the exterior.

6-3 PIPING CONNECTION WORK PRECAUTIONS

- When brazing refrigerant piping, begin working after replacing the nitrogen (*1) or perform brazing while nitrogen is flowing in the refrigerant piping (*2) (**Refer to Fig. 5**), and at the end made the indoor unit and BS unit flare or flange connections.
  (*1) For details on nitrogen replacement, see the “VRV Installation Manual” (available at any Daikin dealer).
  (*2) The pressure regulator for the nitrogen released when doing the brazing should be set to about 0.02 MPa (Enough to feel a slight breeze on your cheek).

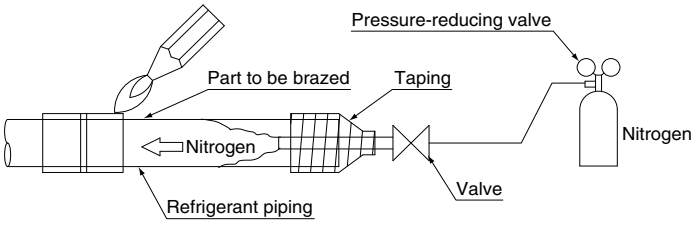


Fig. 5

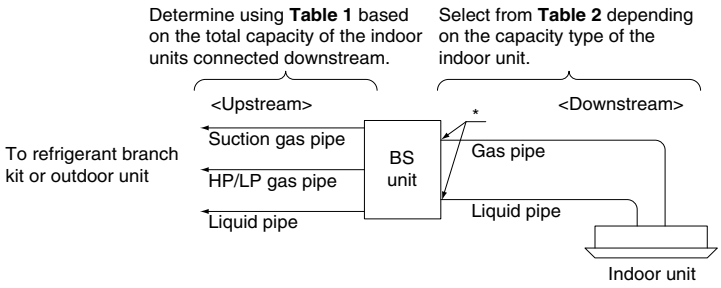
NOTES

- Do not use an anti-oxidizing agent when brazing the piping. Residual debris could clog the piping or cause parts to malfunction.
- Do not use a flux when brazing the refrigerant pipe joints.
  Using a chlorine flux may cause the pipes to corrode, and if it contains fluoride it may cause the refrigerant lubricant to deteriorate, adversely affecting the refrigerant piping system.
  Use phosphor copper brazing (BCuP-2: JIS Z 3264/B-Cu93P-710/795: ISO 3677) which does not require flux.

6-4 PIPING SIZE SELECTION

From **Example of connection 1** and **2** below and **Table 1**, **2**, select the piping size between the outdoor unit (refrigerant branch kit) and BS unit, and between the BS unit and the indoor unit (refrigerant branch kit).

Example of connection 1: When 1 indoor unit is connected downstream from the BS unit



Example of connection 2: When there is a branch downstream from the BS unit

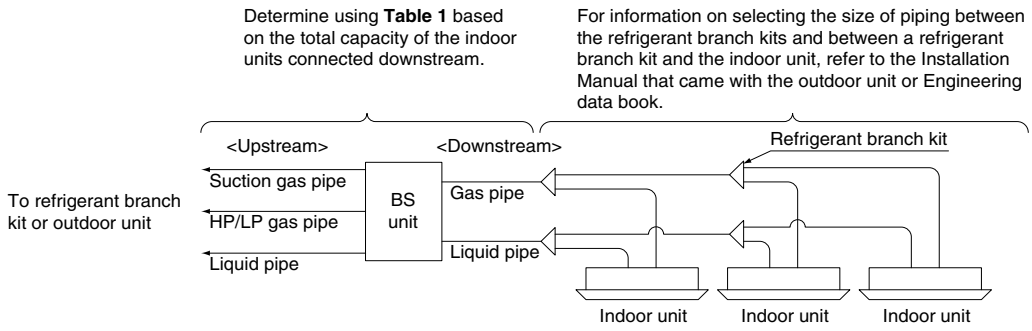


Table 1 Indoor unit total capacity and pipe size

(mm)

Total capacity of indoor units (Q)	Piping size (outer diameter × minimum thickness)				
	Upstream			Downstream	
	Suction gas pipe	HP/LP gas pipe	Liquid pipe	Gas pipe	Liquid pipe
Q < 150	ϕ15.9 × 1.0	ϕ12.7 × 0.8	ϕ9.5 × 0.8	ϕ15.9 × 1.0	ϕ9.5 × 0.80
150 ≤ Q < 200	ϕ19.1 × 1.0	ϕ15.9 × 1.0		ϕ19.1 × 1.0	
200 ≤ Q ≤ 250	ϕ22.2 × 1.0	ϕ19.1 × 1.0		ϕ22.2 × 1.0	

Table 2 Indoor unit connection pipe size

(mm)

Capacity type of indoor units	Piping size (outer diameter × minimum thickness)	
	Gas pipe	Liquid pipe
20, 25, 32, 40, 50	ϕ12.7 × 0.8	ϕ6.4 × 0.8
63, 80, 100, 125	ϕ15.9 × 1.0	ϕ9.5 × 0.8
200	ϕ19.1 × 1.0	
250	ϕ22.2 × 1.0	

* The BS unit downstream connection pipe sizes are shown below. If the pipe diameter differs from that of the indoor unit connection pipe size selected from **Table 2**, follow the instructions in "6-5 PIPING CONNECTION" and use the included pipe to make the connection.

Table 3 BS unit connection pipe size

(mm)

BS unit	Piping size (outer diameter)	
	Gas pipe	Liquid pipe
BSQ100AV1	ϕ15.9	ϕ9.5
BSQ160AV1		
BSQ250AV1	ϕ22.2	

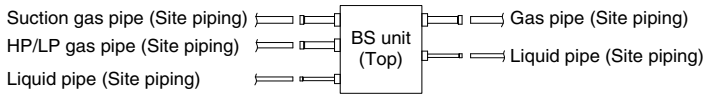
6-5 PIPING CONNECTION

Follow the connection example below and connect the site piping.

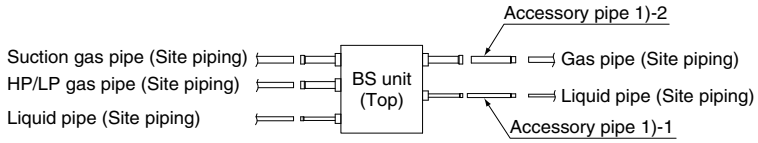
2

BSQ100AV1 type

When the downstream indoor unit total capacity is 100 or less and when one indoor unit with a capacity of 63 to 100 is connected downstream.

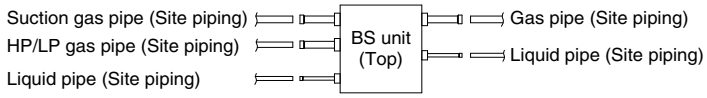


When one indoor unit with a capacity of 20 to 50 is connected downstream

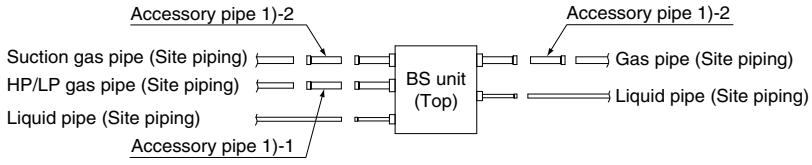


BSQ160AV1 type

When the downstream indoor unit total capacity is more than 100 but less than 150 and when one indoor unit with a capacity of 125 is connected downstream.

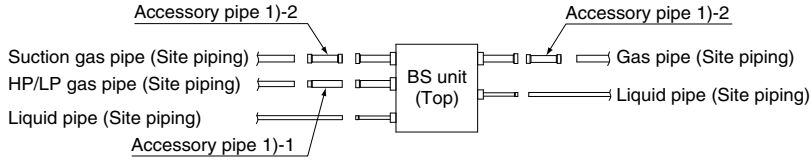


When the downstream indoor unit total capacity is 150 or more but 160 or less

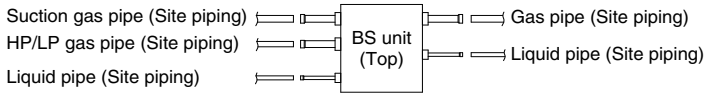


BSQ250AV1 type

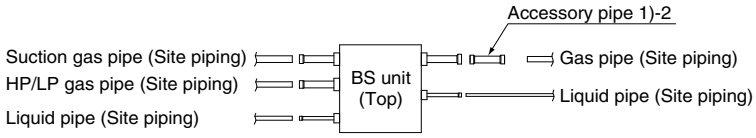
When the downstream indoor unit total capacity is more than 160 but less than 200



When the downstream indoor unit total capacity is 200 or more but 250 or less and when one indoor unit with a capacity of 250 is connected downstream.



When one indoor unit with a capacity of 200 is connected downstream

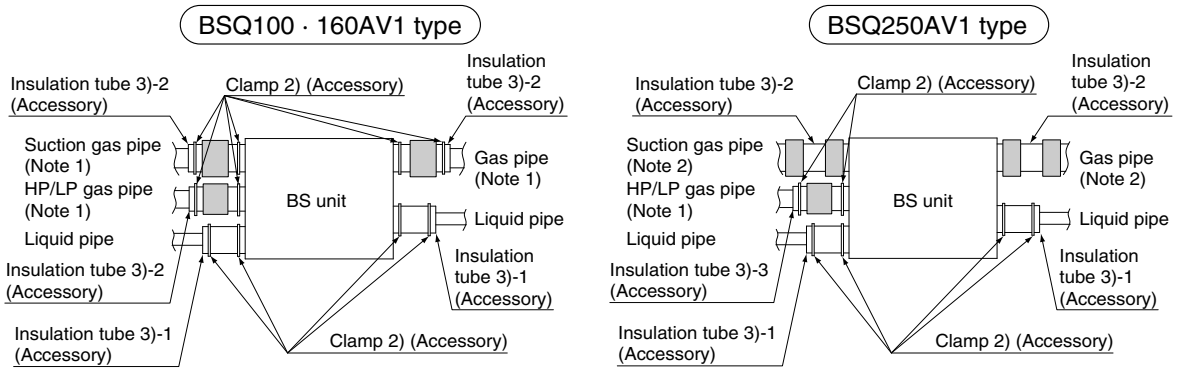


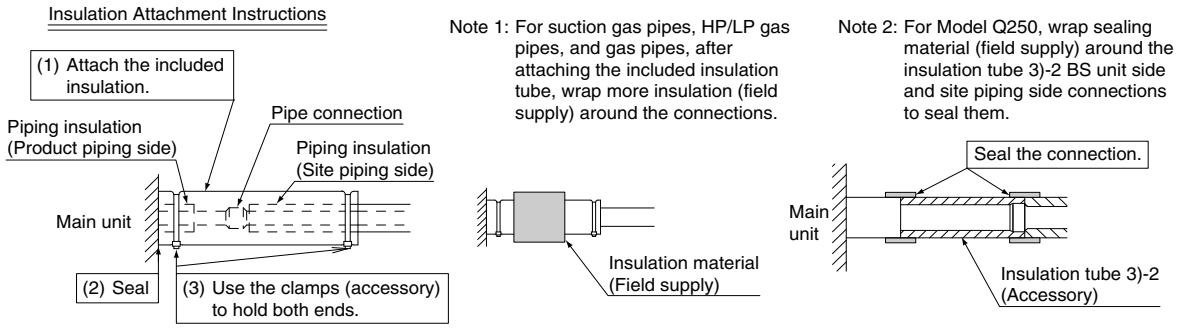
6-6 PIPING INSULATION

- After the gas leak inspection is completed, refer to the following figures and use the included insulation tube 3) and clamps 2) to apply the insulation.

⚠ CAUTION

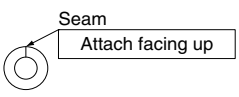
- Insulate all of the piping including the liquid pipes, HP/LP gas pipes, suction gas pipes, gas pipes, and the pipe connections for these.
  Not insulating these pipes could result in water leaks or burns.
  In particular, low-temperature gas flows in the HP/LP gas pipes during full cooling operation, so the same amount of insulation as used for the suction gas pipes is required.
  In addition, high-temperature gas flows in the HP/LP gas piping and gas piping, so use insulation that can withstand more than 120°C.
- When reinforcing the insulation material in accordance with the installation environment, also reinforce the insulation on the piping protruding from the unit.
  Insulation material required for reinforcement work should be supplied in the field.
  For more information, refer to the Engineering data book.





Insulation Installation Precautions

1. Seal so that air cannot be in and out of the end.
2. Do not over tighten the clamp so as to maintain the insulation thickness.
3. Be sure to attach the insulation (field supply) with the seams facing up. (See figure at right.)



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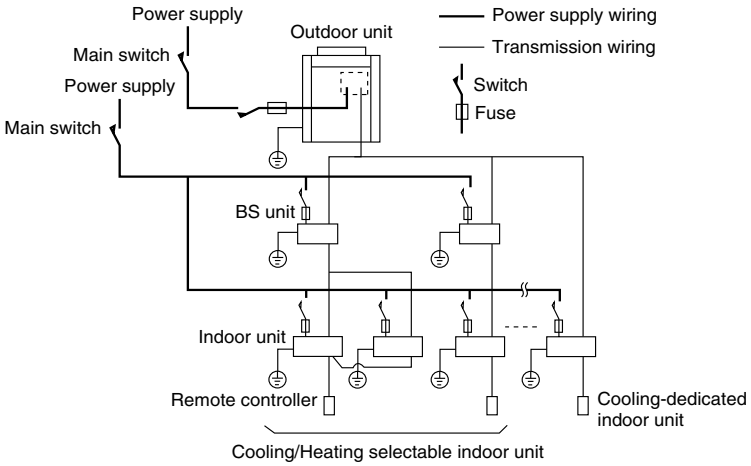
2

7. ELECTRIC WIRING WORK

7-1 GENERAL INSTRUCTIONS

- All wiring must be performed by an authorized electrician.
- All field supplied parts and materials, electric works must conform to local codes.
- Always ground wires. (In accordance with national regulations of the pertinent country.)
- Always turn off the power before performing the electric wire installation work.
- Follow the “WIRING DIAGRAM” attached to the unit body to wire the outdoor unit and indoor units.
- Properly connect wire of the specified wire type and copper thickness. Also use the included clamp to avoid applying excessive force to the terminal (field wire, ground wire).
- Do no let the ground wire should come in contact with gas pipes, water pipes, lighting rods, or telephone ground wires.
  - Gas pipes: gas leaks can cause explosions and fire.
  - Water pipes: cannot be grounded if hard vinyl pipes are used.
  - Telephone ground and lightning rods: the ground potential when struck by lightning gets extremely high.
- A circuit breaker capable of shutting down the power supply to the entire system must be installed.
- This system consists of multiple BS units. Mark each BS unit as unit A, unit B . . . , and be sure the terminal board wiring to the outdoor unit and indoor unit are properly matched. If wiring and piping between the outdoor unit, BS unit and an indoor unit are mismatched, the system may cause a malfunction.
- Do not turn on the power supply (branch switches, overload interrupters) until all other work is done.

7-2 EXAMPLE FOR THE WHOLE SYSTEM



7-3 POWER CIRCUIT, SAFETY DEVICE AND CABLE REQUIREMENTS

- A power circuit (**Refer to Table 3**) must be provided for connection of the unit. This circuit must be protected with the required safety devices, i.e. a main switch, a slow blow fuse on each phase and an earth leakage circuit breaker.
- When using residual current operated circuit breakers, be sure to use a high-speed type (0.1 second or less) 30mA rated residual operating current.
- Use copper conductors only.
- Use insulated wire for the power cord.
- Select the power supply cable type and size in accordance with relevant local and national regulations.
- Specifications for local wiring are in compliance with IEC60245.
- Use wire type H05VV-U3G for power supply wiring. And the size must comply with local codes.
- Use vinyl cord with sheath or cable (2-wire) of 0.75-1.25 mm^2 for transmission wiring.

Table 3

	Units					Power supply	
Model	Type	Hz	Voltage	Min.	Max.	MCA	MFA
BSQ100AV1 BSQ160AV1 BSQ250AV1	V1	50	220 230 240	198	264	0.1	15

MCA: Min. Circuit Amps (A); MFA: Max. Fuse Amps (A)

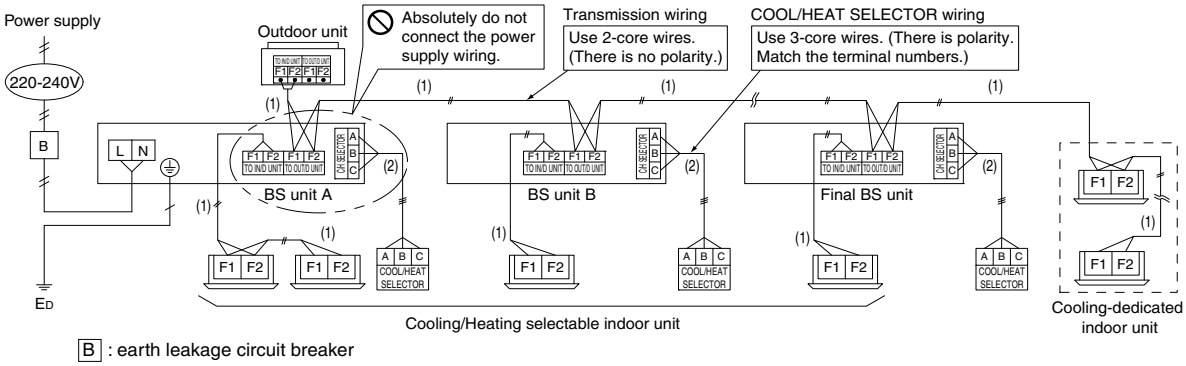
NOTES
- **Table 3** of Electrical Characteristics refers to one BS unit.
- See the Engineering data book for other details.

7-4 WIRING EXAMPLE

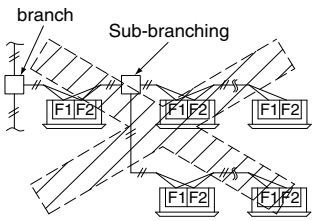
⚠ WARNING

Install an earth leakage circuit breaker.
Failure to install an earth leakage circuit breaker may result in electric shock or fire.

- Here is shown a wiring example for one system transmission wiring.
- Connect terminals F1 and F2 (TO IN/D UNIT) on the control Printed Circuit Board (A1P) in the outdoor unit control box and terminals F1 and F2 (TO OUT/D UNIT) of the control Printed Circuit Board (A1P) of the first BS unit A.



NOTES
1. Connect cooling-dedicated air conditioners to terminals F1 and F2 (TO OUT/D UNIT) of the final BS unit.
2. Use 2-core wire for the transmission wiring. Using a multi-core wire with 3 or more cores when two or more indoor units are used at once could cause abnormal stoppage. (Only use 3-core wire in the COOL/HEAT SELECTOR.)
3. Absolutely do not connect the power supply wiring to the transmission wiring terminal block. Doing so could damage the entire system.
4. For the transmission wiring, use wire that is within the following ranges. Exceeding these limits could cause a transmission error.
   (1) Between the BS unit and indoor units: Max. 1,000 m
   Between the BS unit and outdoor unit: Max. 1,000 m
   Between BS units: Max. 1,000 m
   Total wiring length: 2,000 m or less
   Branch point max: 16 branch points
   (2) Between a BS unit and COOL/HEAT SELECTOR
   Maximum wiring length: 500 m or less



5. When the shield wire is used, be sure to ground the one side of the shield wire.
   The total wiring length is 1500 m when shielded wire is used.

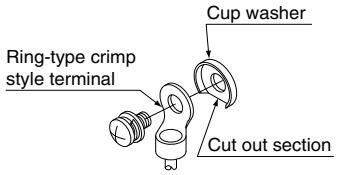
7-5 WIRING CONNECTIONS

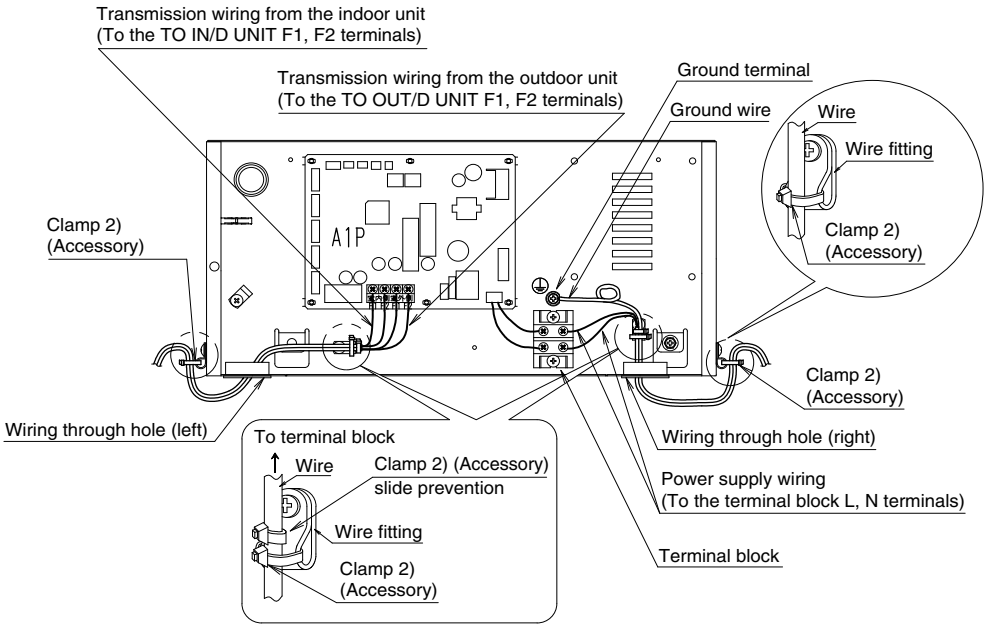
Remove the control box cover on the side and follow the directions to connect the wires.

〈**Transmission wiring**〉
Remove the control box cover and connect the wires to F1 and F2 (TO IN/D UNIT) and F1 and F2 (TO OUT/D UNIT) transmission wiring terminals (control Printed Circuit Board (A1P)).
At this time, pass the wiring into the unit through the wiring through hole (left) and use the included clamps 2) to securely hold the wires (in 2 places).

2

〈**Power supply wiring and ground wire**〉
Remove the control box cover and connect the power supply wiring to the power terminal block (X1M).
Also connect the ground wire to the ground wire terminal. Pass both the power supply wire and the ground wire together through the wire through hole (right) and into the control box and use the included clamps 2) to securely hold the wires (in 2 places).
Be sure to wire the ground wire so that comes out of the slit in the cup washer.
(Not doing so could cause insufficient ground wire contact and causing the wire not to function as a ground.)





NOTES

- Use ring-type crimp style terminal for connections to the power terminal block. (**Refer to Fig. 6**)
  Also, insulate the crimped area by attaching an insulation sleeve, etc.
- Use an appropriate screwdriver for tightening the terminal screw.
  Using a screwdriver that is too small could damage the screw head and prevent proper tightening.
- Over tightening the terminal screw could damage the screw.
  Refer to the **Table 4** for the terminal screw tightening torque.
- When fastening the wire, use the included clamp 2) so as not to apply tensile force to the wire connection and then securely fasten the wire. Also, after wiring is completed, organize the wiring so that the control box cover does not pop up and then properly replace the control box cover.
  Make sure no wires are pinched when replacing the control box cover.
  Always use the wire through hole to protect the wires.
- Do not pass the transmission wiring and power supply wiring through the same locations and outside of the unit keep them separated by at least 50 mm.
  Not doing so could cause the transmission wiring to pick up electric noise (external noise) and result in a malfunction or breakdown.
- After the wiring working is complete, use sealer (field supply) to seal closed the wire through hole.
  (Entry by small animals, etc., could cause a malfunction.)

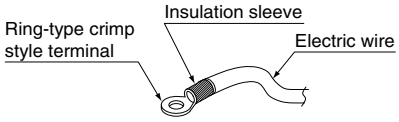


Fig. 6

Table 4

Terminal screw size	Tightening torque (N/m)
M3.5 (COOL/HEAT SELECTOR/transmission wiring terminal block (A1P))	0.88±0.08
M4 (Power supply terminal block)	1.31±0.13
M4 (Ground terminal)	1.69±0.17

8. INITIAL SETTING

⚠ WARNING

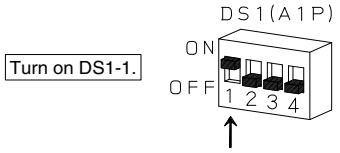
Electric shock hazard! Before performing work, be sure to disconnect any power source connected to the unit.

- When the refrigerant piping and wire installation work is completed, make the following settings as required.

1. Setting for when connecting the COOL/HEAT SELECTOR to the BS unit.

〈**Setting description**〉
Set the input signal from the COOL/HEAT SELECTOR (sold separately) to ON/OFF.

〈**Setting method**〉
Set the dip switches (DS1-1) on Printed Circuit Board (A1P) as shown below before turning on the power to the BS unit.



NOTES
This setting is read by the microcomputer when the BS unit power is turned on.
- Be sure to make the setting before turning on the power.
- Always close the control box cover after making the setting.

2. Setting when changing the "Automatic mode differential" in the Cooling/Heating Automatic Operation Mode.

〈**Setting description**〉
- The "Automatic mode differential" can be changed within the range of 0°C to 7°C (0°C at factory shipment).
- For details regarding the "Automatic mode differential" and indoor unit operation, refer to the "Engineering data book".

〈**Setting method**〉
The setting is made using the "Local Setting Mode" by the remote controller of indoor unit connected to the BS unit.
For information regarding the setting method, refer to "Engineering data book".
The following table gives a list of the "MODE NO.," "FIRST CODE NO.," and "SECOND CODE NO."

NOTES
This setting is operated by the operation remote controller while the indoor unit power is turned on.
- When the indoor unit, outdoor unit, and BS unit installation work is completed, confirm that it is safe even with the power turned on before proceeding with the work.

MODE NO.	FIRST CODE NO.	SECOND CODE NO.	Automatic mode differential (°C)	
12 (22)	4	1	0	← At factory shipment.
		2	1	
		3	2	
		4	3	
		5	4	
		6	5	
		7	6	
		8	7	

9. ADDING AN ADDITIONAL CHARGE OF REFRIGERANT

Follow the instructions in the installation manual that came with the outdoor unit to add an additional charge of refrigerant.

10. CHECK OPERATION AND TEST OPERATION

(1) Verify that the control box cover is closed.

(2) Refer to the installation manual included with the outdoor unit and conduct a check and a test run after all the work on the BS unit and outdoor and indoor units is completed and the operational safety of the units is confirmed.

- You will hear the motor operated valve operating sound for about 90 seconds as it is automatically initialized (closed) after power is turned on, but this is not a problem.
- System malfunctions can be verified by means of the following method:
  Indication on the indoor operation remote controller
  Overall system malfunctions, including of the BS unit, can be identified using the LCD malfunction display on the operation remote controller. For more information about the malfunction display and its significance, refer to the service precaution name plate affixed to the indoor unit and the user manual included with the outdoor unit.

10. Accessories

10.1 Optional Accessories (For Unit)

Item	BSQ100AV1	BSQ160AV1	BSQ250AV1
Quiet kit	KDDN26A1		

C: 3D087639B

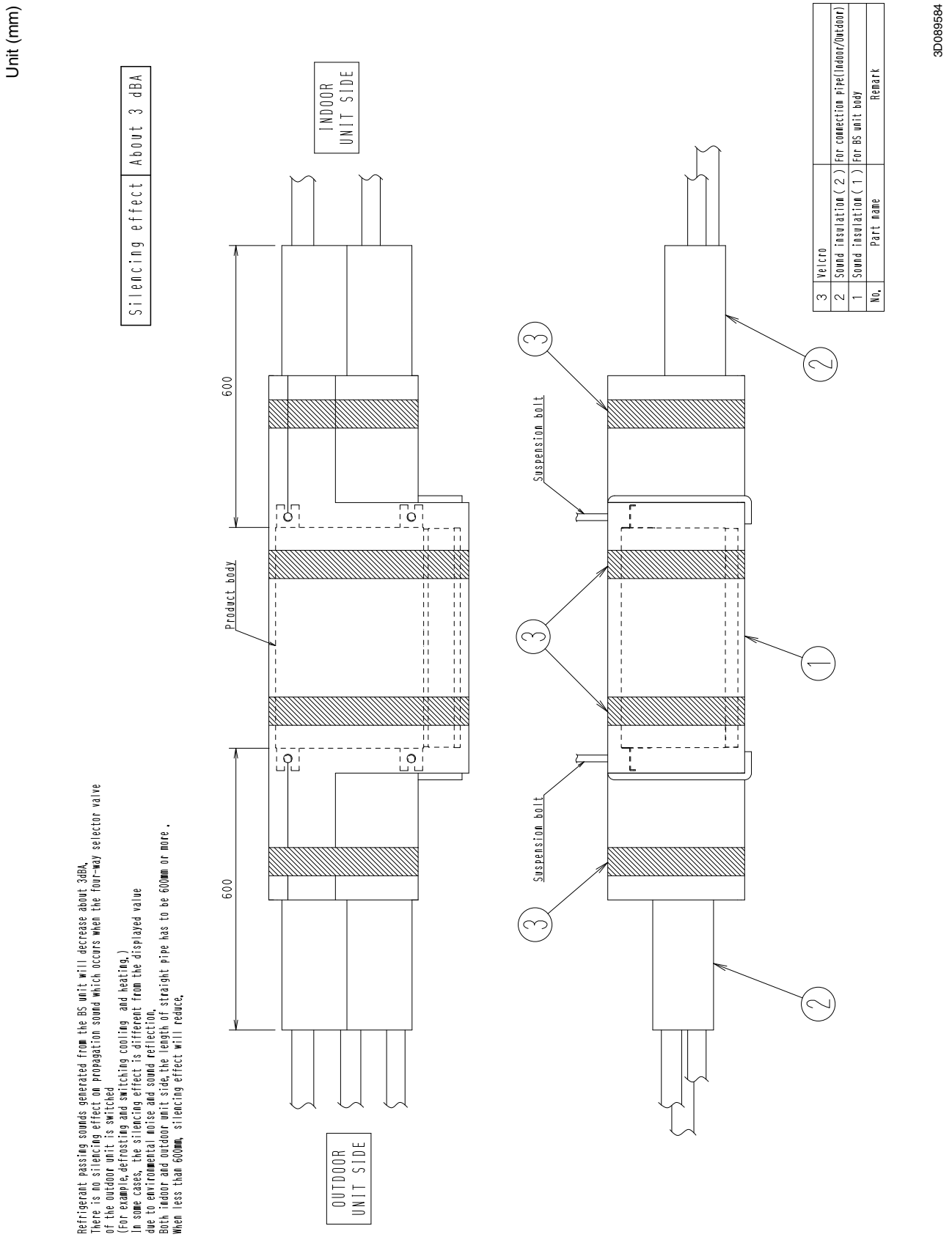
10.2 Optional Accessories (For Controls)

Item	BSQ100AV1	BSQ160AV1	BSQ250AV1
External control adaptor for outdoor unit	DTA104A61		
Adaptor for multi tenant	DTA114A61		

C: 3D087639B

11. Dimensions of Optional Accessories

BSQ100AV1 / BSQ160AV1 / BSQ250AV1 with KDDN26A1



BS-Q14AV1
Multi BS unit

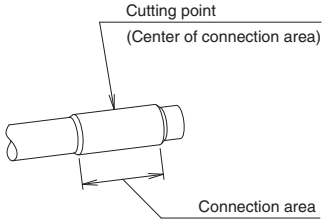
1. Specifications

Multi BS unit

Model				BS4Q14AV1	BS6Q14AV1
Power supply				1 phase, 220-240V, 50Hz	1 phase, 220-240V, 50Hz
Maximum number of connectable indoor units				20	30
Maximum number of connectable indoor units per branch				5	5
Number of branches				4	6
Maximum capacity index of connectable indoor units				400 or less	600 or less
Maximum capacity index of connectable indoor units per branch				140 or less	140 or less
Casing				Galvanized steel plate	Galvanized steel plate
Dimensions: (H×W×D)			mm	298×370×430	298×580×430
Sound absorbing thermal insulation material				Urethane foam, Polyethylene foam	Urethane foam, Polyethylene foam
Piping connection	Indoor unit	Liquid pipes	mm	ϕ6.4, ϕ9.5 C1220T (brazing connection) ★1	ϕ6.4, ϕ9.5 C1220T (brazing connection) ★1
		Gas pipes	mm	ϕ12.7, ϕ15.9 C1220T (brazing connection) ★1	ϕ12.7, ϕ15.9 C1220T (brazing connection) ★1
	Outdoor unit	Liquid pipes	mm	ϕ9.5 C1220T (brazing connection) ★2 ★3	ϕ12.7 C1220T (brazing connection) ★2 ★3
		Suction gas pipes	mm	ϕ22.2 (ϕ19.1) C1220T (brazing connection) ★2 ★3	ϕ28.6 (ϕ22.2) C1220T (brazing connection) ★2 ★3
		HP / LP gas pipes	mm	ϕ19.1 (ϕ15.9) C1220T (brazing connection) ★2 ★3	ϕ19.1 (ϕ22.2) C1220T (brazing connection) ★2 ★3
Drain pipe size			mm	I.D.20 / O.D.26(VP20)	I.D.20 / O.D.26(VP20)
Mass			kg	17	24
★4 ★5 ★6 Sound level	Operating sound		dB(A)	38	39
	Max. sound		dB(A)	45	47
Standard accessories				Accessory pipes, Clamps, Insulation tube, Drain hoses, Metal clamp, Sealing material	Accessory pipes, Clamps, Insulation tube, Drain hoses, Metal clamp, Sealing material, Stopper pipes, Insulation tube for stopper pipes
Drawing No.	Specifications			C: 4D086053A	C: 4D086054A
	Sound level			C: 4D087632A	C: 4D087633A

Notes:

★1 In case of connecting with a 20-50 type indoor unit, there is no need to cut and connect as it is.
In case of others, cut the outlet pipe and connect to the connecting pipe.



★2 ( ) is when using attached reducer.
In case of joint diameter does not suit on the triple piping side, need reducer (field supply).

★3 Insulators are necessary (field supply) for the triple piping side.

★4 The operating sound is measured in anechoic chamber.
If it is measured under the actual installation conditions, it is normally over the set value due to environmental noise and sound reflection.

★5 Even if the indoor unit to be connected downstream of BS unit has stopped, when the system is operating, operating sound can be heard.

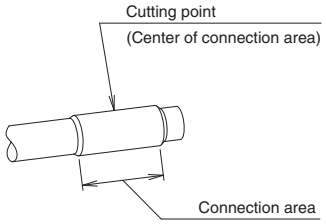
★6 The maximum sound is max value of transient sound, such as oil return, defrost, the change of cooling and heating.

Multi BS unit

Model				BS8Q14AV1	BS10Q14AV1
Power supply				1 phase, 220-240V, 50Hz	1 phase, 220-240V, 50Hz
Maximum number of connectable indoor units				40	50
Maximum number of connectable indoor units per branch				5	5
Number of branches				8	10
Maximum capacity index of connectable indoor units				750 or less	750 or less
Maximum capacity index of connectable indoor units per branch				140 or less	140 or less
Casing				Galvanized steel plate	Galvanized steel plate
Dimensions: (H×W×D)			mm	298×580×430	298×820×430
Sound absorbing thermal insulation material				Urethane foam, Polyethylene foam	Urethane foam, Polyethylene foam
Piping connection	Indoor unit	Liquid pipes	mm	ϕ6.4, ϕ9.5 C1220T (brazing connection) ★1	ϕ6.4, ϕ9.5 C1220T (brazing connection) ★1
		Gas pipes	mm	ϕ12.7, ϕ15.9 C1220T (brazing connection) ★1	ϕ12.7, ϕ15.9 C1220T (brazing connection) ★1
	Outdoor unit	Liquid pipes	mm	ϕ12.7 (ϕ15.9) C1220T (brazing connection) ★2 ★3	ϕ15.9 C1220T (brazing connection) ★2 ★3
		Suction gas pipes	mm	ϕ28.6 C1220T (brazing connection) ★2 ★3	ϕ28.6 (ϕ34.9) C1220T (brazing connection) ★2 ★3
		HP / LP gas pipes	mm	ϕ19.1 (ϕ22.2, ϕ28.6) C1220T (brazing connection) ★2 ★3	ϕ28.6 C1220T (brazing connection) ★2 ★3
Drain pipe size			mm	I.D.20 / O.D.26(VP20)	I.D.20 / O.D.26(VP20)
Mass			kg	26	35
★4 ★5 ★6 Sound level	Operating sound		dB(A)	39	40
	Max. sound		dB(A)	47	48
Standard accessories				Accessory pipes, Clamps, Insulation tube, Drain hoses, Metal clamp, Sealing material, Stopper pipes, Insulation tube for stopper pipes	Accessory pipes, Clamps, Insulation tube, Drain hoses, Metal clamp, Sealing material, Stopper pipes, Insulation tube for stopper pipes
Drawing No.	Specifications			C: 4D086055A	C: 4D086056A
	Sound level			C: 4D087633A	C: 4D087634A

Notes:

★1 In case of connecting with a 20-50 type indoor unit, there is no need to cut and connect as it is.
In case of others, cut the outlet pipe and connect to the connecting pipe.



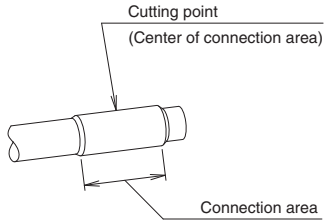
★2 ( ) is when using attached reducer.
In case of joint diameter does not suit on the triple piping side, need reducer (field supply).
★3 Insulators are necessary (field supply) for the triple piping side.
★4 The operating sound is measured in anechoic chamber.
If it is measured under the actual installation conditions, it is normally over the set value due to environmental noise and sound reflection.
★5 Even if the indoor unit to be connected downstream of BS unit has stopped, when the system is operating, operating sound can be heard.
★6 The maximum sound is max value of transient sound, such as oil return, defrost, the change of cooling and heating.

Multi BS unit

Model				BS12Q14AV1	BS16Q14AV1
Power supply				1 phase, 220-240V, 50Hz	1 phase, 220-240V, 50Hz
Maximum number of connectable indoor units				60	64
Maximum number of connectable indoor units per branch				5	5
Number of branches				12	16
Maximum capacity index of connectable indoor units				750 or less	750 or less
Maximum capacity index of connectable indoor units per branch				140 or less	140 or less
Casing				Galvanized steel plate	Galvanized steel plate
Dimensions: (H×W×D)			mm	298×820×430	298×1060×430
Sound absorbing thermal insulation material				Urethane foam, Polyethylene foam	Urethane foam, Polyethylene foam
Piping connection	Indoor unit	Liquid pipes	mm	ϕ6.4, ϕ9.5 C1220T (brazing connection) ★1	ϕ6.4, ϕ9.5 C1220T (brazing connection) ★1
		Gas pipes	mm	ϕ12.7, ϕ15.9 C1220T (brazing connection) ★1	ϕ12.7, ϕ15.9 C1220T (brazing connection) ★1
	Outdoor unit	Liquid pipes	mm	ϕ15.9 (ϕ19.1) C1220T (brazing connection) ★2 ★3	ϕ19.1 C1220T (brazing connection) ★2 ★3
		Suction gas pipes	mm	ϕ28.6 (ϕ34.9) C1220T (brazing connection) ★2 ★3	ϕ34.9 C1220T (brazing connection) ★2 ★3
		HP / LP gas pipes	mm	ϕ28.6 C1220T (brazing connection) ★2 ★3	ϕ28.6 C1220T (brazing connection) ★2 ★3
Drain pipe size			mm	I.D.20 / O.D.26(VP20)	I.D.20 / O.D.26(VP20)
Mass			kg	38	50
★4 ★5 ★6 Sound level	Operating sound		dB(A)	40	41
	Max. sound		dB(A)	48	49
Standard accessories				Accessory pipes, Clamps, Insulation tube, Drain hoses, Metal clamp, Sealing material, Stopper pipes, Insulation tube for stopper pipes	Accessory pipes, Clamps, Insulation tube, Drain hoses, Metal clamp, Sealing material, Stopper pipes, Insulation tube for stopper pipes
Drawing No.	Specifications			C: 4D086057A	C: 4D086058A
	Sound level			C: 4D087634A	C: 4D087635A

Notes:

★1 In case of connecting with a 20-50 type indoor unit, there is no need to cut and connect as it is.
In case of others, cut the outlet pipe and connect to the connecting pipe.



★2 ( ) is when using attached reducer.
In case of joint diameter does not suit on the triple piping side, need reducer (field supply).

★3 Insulators are necessary (field supply) for the triple piping side.

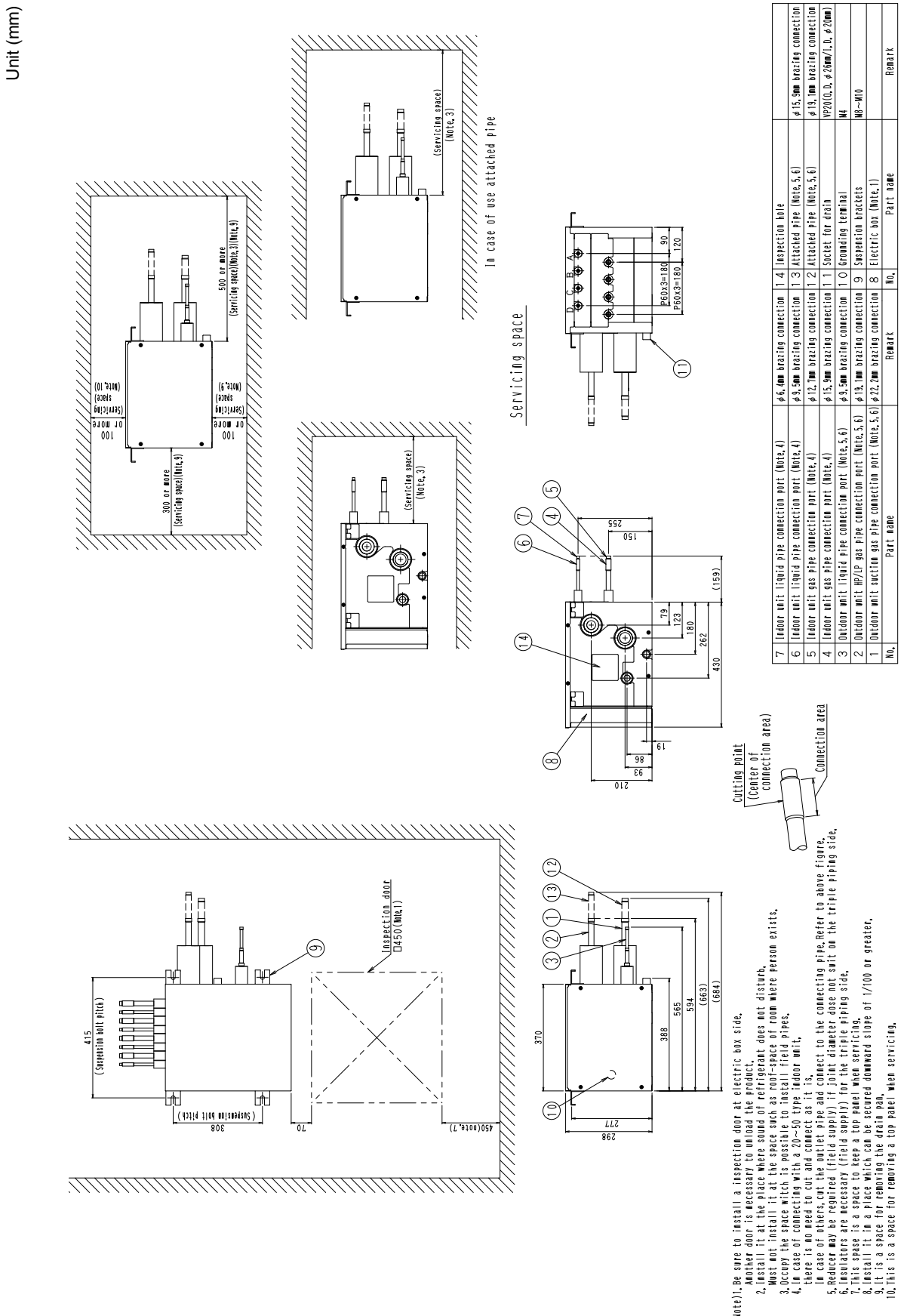
★4 The operating sound is measured in anechoic chamber.
If it is measured under the actual installation conditions, it is normally over the set value due to environmental noise and sound reflection.

★5 Even if the indoor unit to be connected downstream of BS unit has stopped, when the system is operating, operating sound can be heard.

★6 The maximum sound is max value of transient sound, such as oil return, defrost, the change of cooling and heating.

2. Dimensions

BS4Q14AV1



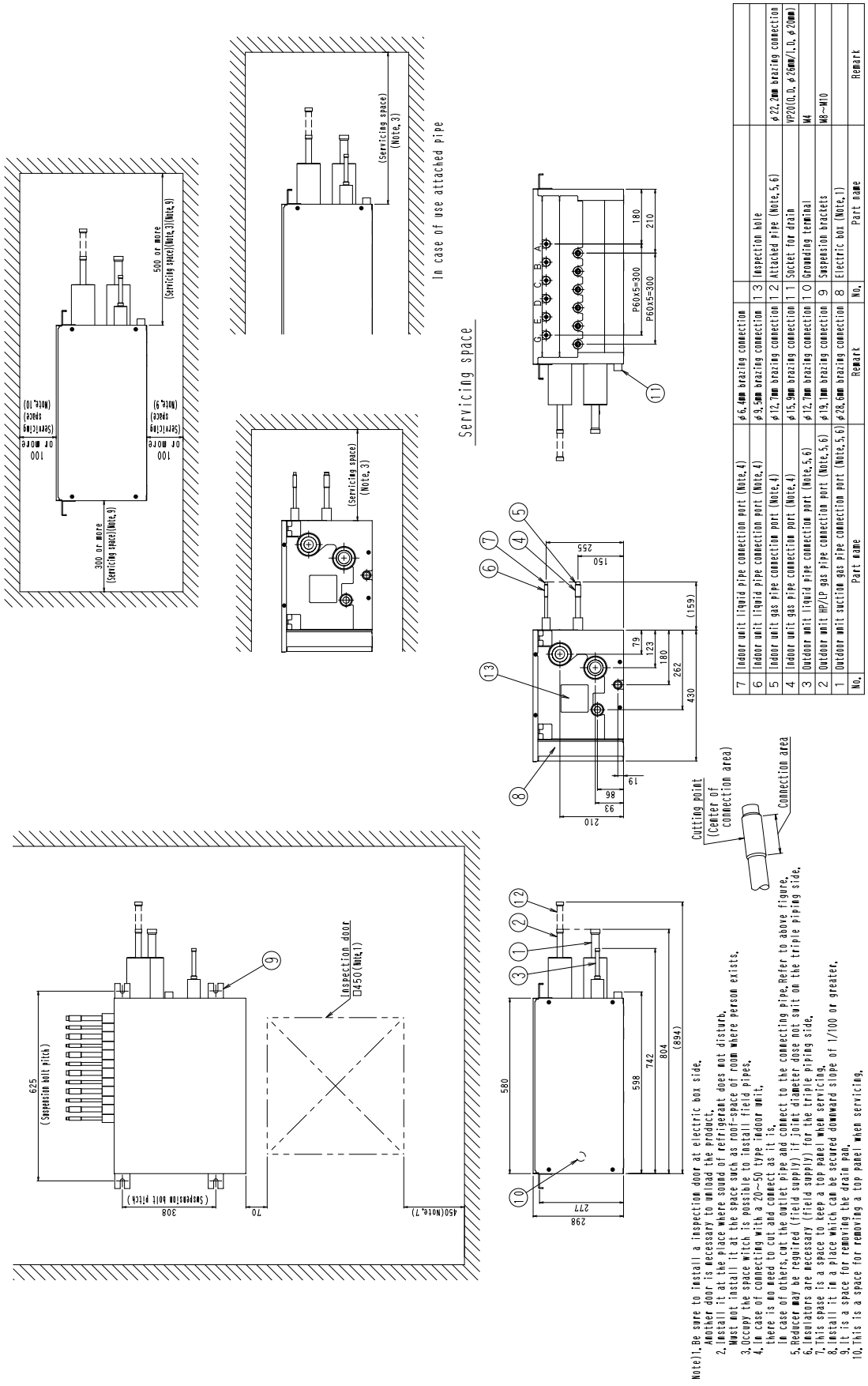
No.	Part name	Remark
7	Indoor unit liquid pipe connection port (Note.4)	φ6.4mm brazing connection
6	Indoor unit liquid pipe connection port (Note.4)	φ9.5mm brazing connection
5	Indoor unit gas pipe connection port (Note.4)	φ12.7mm brazing connection
4	Indoor unit gas pipe connection port (Note.4)	φ15.9mm brazing connection
3	Outdoor unit liquid pipe connection port (Note.5,6)	φ9.5mm brazing connection
2	Outdoor unit HP/LP gas pipe connection port (Note.5,6)	φ19.1mm brazing connection
1	Outdoor unit suction gas pipe connection port (Note.5,6)	φ22.2mm brazing connection

No.	Part name	Remark
14	Inspection hole	
13	Attached pipe (Note.5,6)	φ15.9mm brazing connection
12	Attached pipe (Note.5,6)	φ19.1mm brazing connection
11	Socket for drain	VP20(O.D. φ26mm/I.D. φ20mm)
10	Grounding terminal	M4
9	Suspension brackets	M8~M10
8	Electric box (Note.1)	

Note)1. Be sure to install a inspection door at electric box side.
Another door is necessary to unload the product.
2. Install it at the place where sound of refrigerant does not disturb.
Must not install it at the space such as roof-space of room where person exists.
3. Occupy the space which is possible to install field pipes.
4. In case of connecting with a 20~50 type indoor unit,
there is no need to cut and connect as it is.
In case of others, cut the outlet pipe and connect to the connecting pipe. Refer to above figure.
5. Reducer may be required (field supply) if joint diameter dose not suit on the triple piping side.
6. Insulators are necessary (field supply) for the triple piping side.
7. This space is a space to keep a top panel when servicing.
8. Install it in a place which can be secured downward slope of 1/100 or greater.
9. It is a space for removing the drain pan.
10. This is a space for removing a top panel when servicing.

BS6Q14AV1

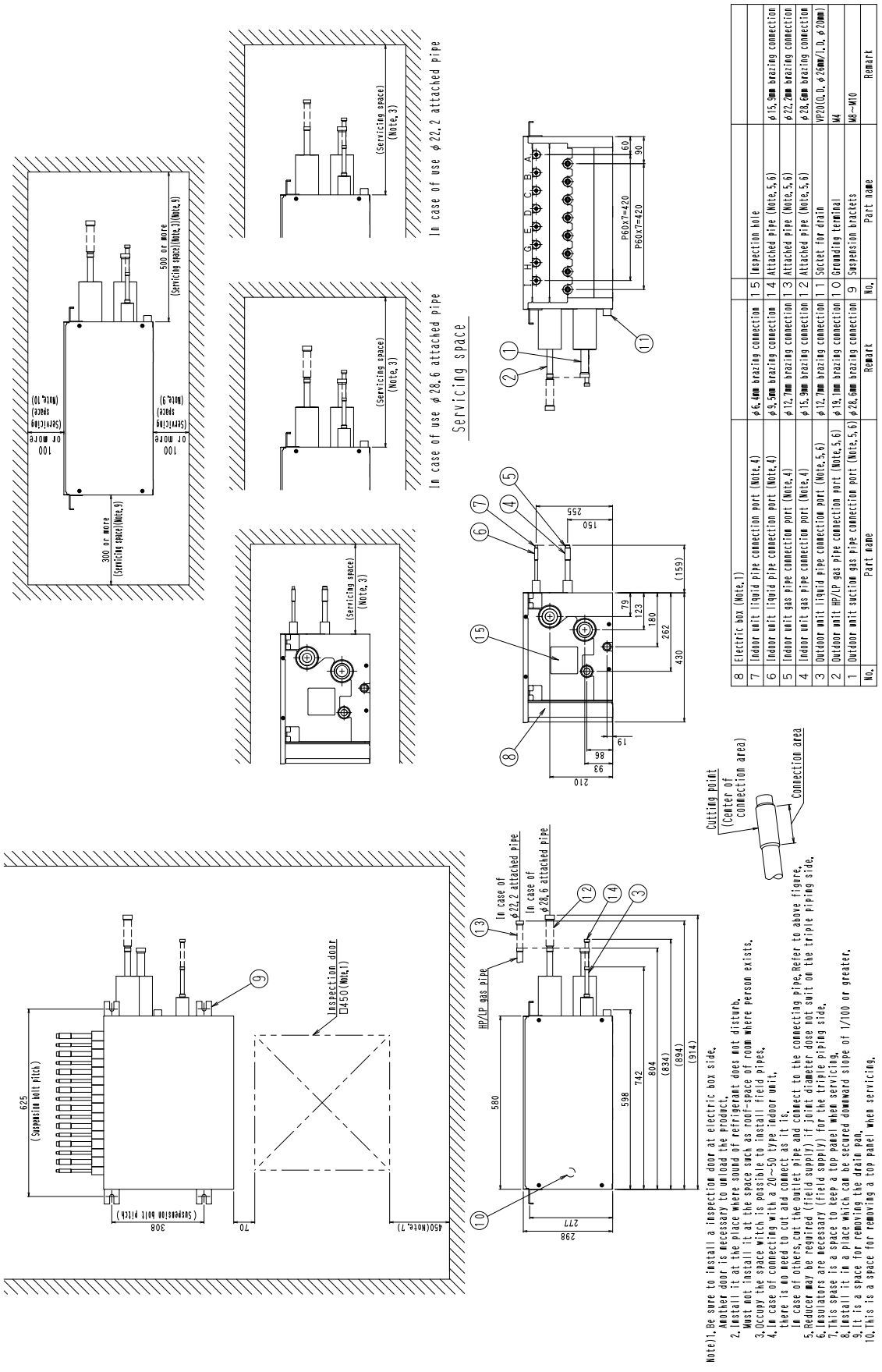
Unit (mm)



No.	Part name	Remark
7	Indoor unit liquid pipe connection port (Note. 4)	φ6.4mm brazing connection
6	Indoor unit liquid pipe connection port (Note. 4)	φ9.5mm brazing connection
5	Indoor unit gas pipe connection port (Note. 4)	φ12.7mm brazing connection
4	Indoor unit gas pipe connection port (Note. 4)	φ15.9mm brazing connection
3	Outdoor unit liquid pipe connection port (Note. 5, 6)	φ12.7mm brazing connection
2	Outdoor unit HP/LP gas pipe connection port (Note. 5, 6)	φ19.1mm brazing connection
1	Outdoor unit suction gas pipe connection port (Note. 5, 6)	φ28.6mm brazing connection
No.	Part name	Remark
13	Inspection hole	
12	Attached pipe (Note. 5, 6)	φ22.2mm brazing connection
11	Socket for drain	VP20(O.D. φ26mm/I.D. φ20mm)
10	Grounding terminal	M4
9	Suspension brackets	M8~M10
8	Electric box (Note. 1)	
No.	Part name	Remark

BS8Q14AV1

Unit (mm)

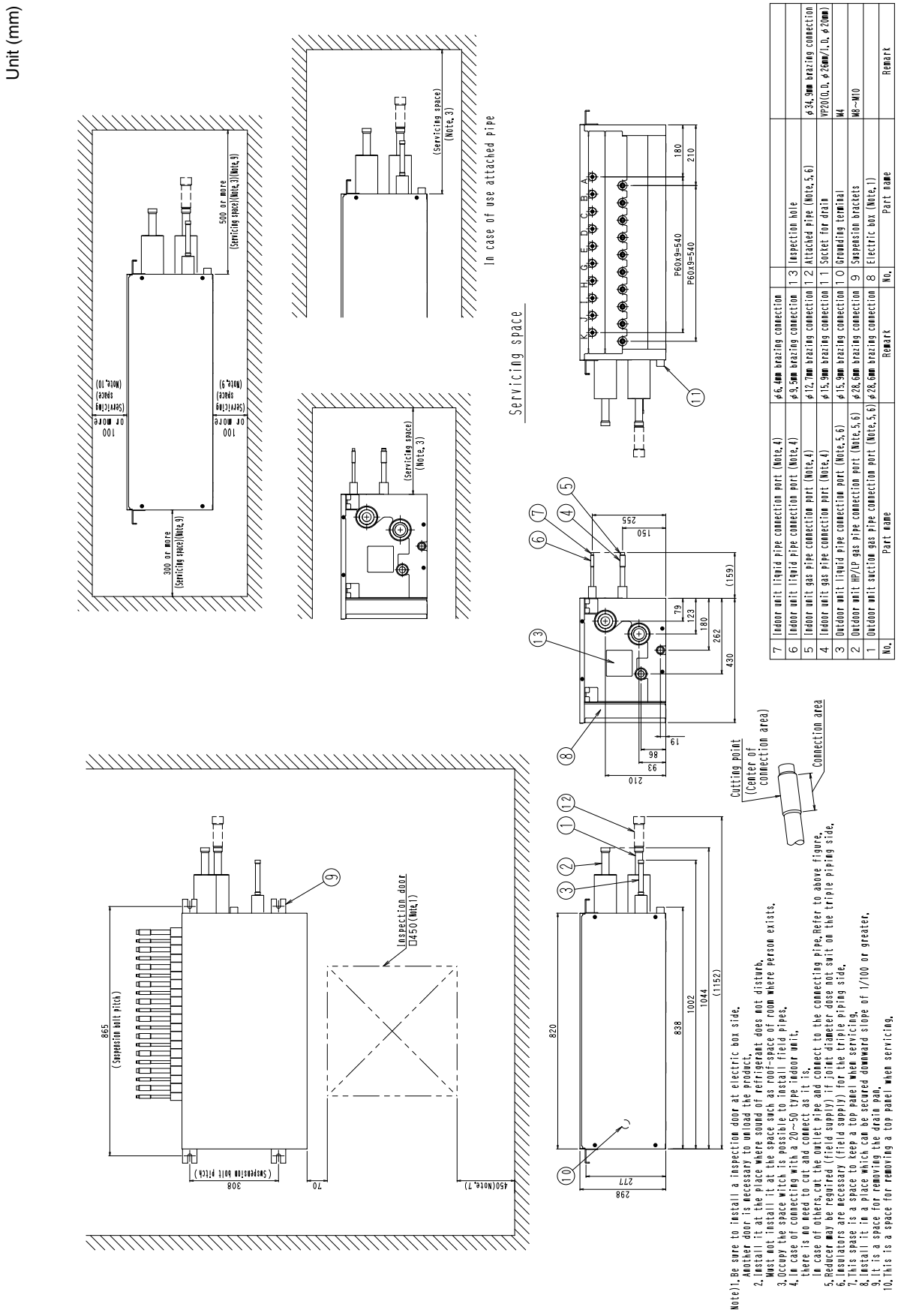


No.	Part name	Remark
8	Electric box (Note.1)	
7	Indoor unit liquid pipe connection port (Note.4)	φ6.4mm brazing connection
6	Indoor unit liquid pipe connection port (Note.4)	φ9.5mm brazing connection
5	Indoor unit gas pipe connection port (Note.4)	φ12.7mm brazing connection
4	Indoor unit gas pipe connection port (Note.4)	φ15.9mm brazing connection
3	Outdoor unit liquid pipe connection port (Note.5,6)	φ12.7mm brazing connection
2	Outdoor unit HP/LP gas pipe connection port (Note.5,6)	φ19.1mm brazing connection
1	Outdoor unit suction gas pipe connection port (Note.5,6)	φ28.6mm brazing connection

No.	Part name	Remark
15	Inspection hole	
14	Attached pipe (Note.5,6)	φ15.9mm brazing connection
13	Attached pipe (Note.5,6)	φ22.2mm brazing connection
12	Attached pipe (Note.5,6)	φ28.6mm brazing connection
11	Socket for drain	VP20(O.D. φ26mm/I.D. φ20mm)
10	Grounding terminal	M4
9	Suspension brackets	M8~M10

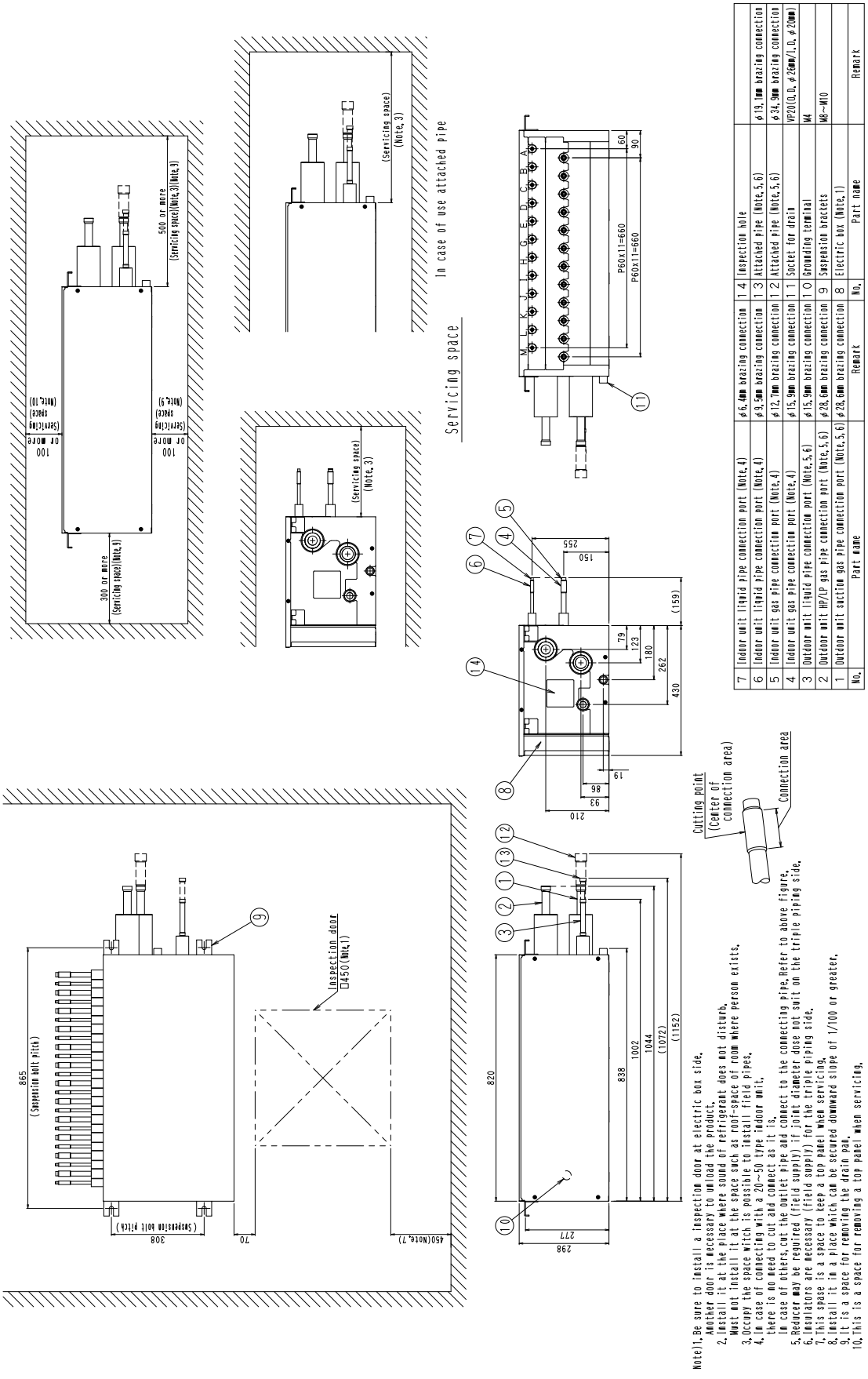
Note)1. Be sure to install a inspection door at electric box side.
Another door is necessary to unload the product.
2. Install it at the place where sound of refrigerant does not disturb.
Must not install it at the space such as roof-space of room where person exists.
3. Occupy the space which is possible to install field pipes.
4. In case of connecting with a 20~50 type indoor unit,
there is no need to cut and connect as it is.
In case of others, cut the outlet pipe and connect to the connecting pipe. Refer to above figure.
5. Reducer may be required (field supply) if joint diameter dose not suit on the triple piping side.
6. Insulators are necessary (field supply) for the triple piping side.
7. This space is a space to keep a top panel when servicing.
8. Install it in a place which can be secured downward slope of 1/100 or greater.
9. It is a space for removing the drain pan.
10. This is a space for removing a top panel when servicing.

BS10Q14AV1


Unit (mm)
3D086006
Servicing space
In case of use attached pipe
(Servicing space)
(Note. 3)
500 or more
(Servicing space)(Note. 3)(Note. 9)
300 or more
(Servicing space)(Note. 9)
100 or more
(Servicing space)
(Note. 9)
100 or more
(Servicing space)
(Note. 10)
P60x9=540
P60x9=540
180
210
255
150
(159)
79
123
180
262
430
19
86
93
210
820
838
1002
1044
(1152)
277
298
865
(Suspension bolt pitch)
308
(Suspension bolt pitch)
70
450(Note. 7)
Inspection door
□450(Note. 1)
Cutting point
(Center of
connection area)
Connection area
7 Indoor unit liquid pipe connection port (Note. 4) φ6.4mm brazing connection
6 Indoor unit liquid pipe connection port (Note. 4) φ9.5mm brazing connection 13 Inspection hole
5 Indoor unit gas pipe connection port (Note. 4) φ12.7mm brazing connection 12 Attached Pipe (Note. 5, 6) φ34.9mm brazing connection
4 Indoor unit gas pipe connection port (Note. 4) φ15.9mm brazing connection 11 Socket for drain VP20(O.D. φ26mm/I.D. φ20mm)
3 Outdoor unit liquid pipe connection port (Note. 5, 6) φ15.9mm brazing connection 10 Grounding terminal M4
2 Outdoor unit HP/LP gas pipe connection port (Note. 5, 6) φ28.6mm brazing connection 9 Suspension brackets M8~M10
1 Outdoor unit suction gas pipe connection port (Note. 5, 6) φ28.6mm brazing connection 8 Electric box (Note. 1)
No. Part name Remark No. Part name Remark
Note)1. Be sure to install a inspection door at electric box side.
Another door is necessary to unload the product.
2. Install it at the place where sound of refrigerant does not disturb.
Must not install it at the space such as roof-space of room where person exists.
3. Occupy the space which is possible to install field pipes.
4. In case of connecting with a 20~50 type indoor unit,
there is no need to cut and connect as it is.
In case of others, cut the outlet pipe and connect to the connecting pipe. Refer to above figure.
5. Reducer may be required (field supply) if joint diameter dose not suit on the triple piping side.
6. Insulators are necessary (field supply) for the triple piping side.
7. This space is a space to keep a top panel when servicing.
8. Install it in a place which can be secured downward slope of 1/100 or greater.
9. It is a space for removing the drain pan.
10. This is a space for removing a top panel when servicing.

BS12Q14AV1

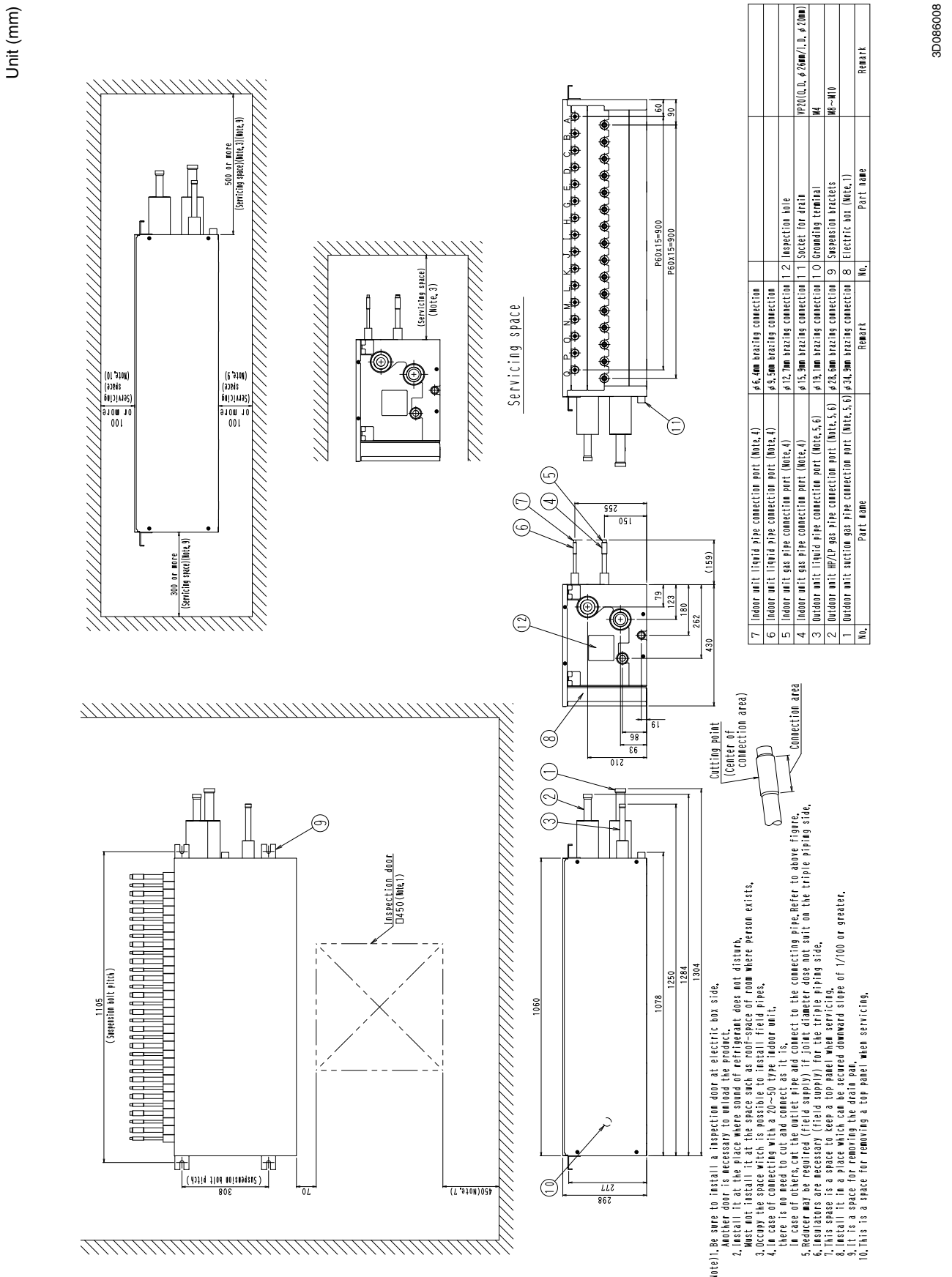
Unit (mm)



No.	Part name	Remark
7	Indoor unit liquid pipe connection port (Note.4)	φ6.4mm brazing connection
6	Indoor unit liquid pipe connection port (Note.4)	φ9.5mm brazing connection
5	Indoor unit gas pipe connection port (Note.4)	φ12.7mm brazing connection
4	Indoor unit gas pipe connection port (Note.4)	φ15.9mm brazing connection
3	Outdoor unit liquid pipe connection port (Note.5,6)	φ15.9mm brazing connection
2	Outdoor unit HP/LP gas pipe connection port (Note.5,6)	φ28.6mm brazing connection
1	Outdoor unit suction gas pipe connection port (Note.5,6)	φ28.6mm brazing connection

No.	Part name	Remark
14	Inspection hole	φ19.1mm brazing connection
13	Attached pipe (Note.5,6)	φ34.9mm brazing connection
12	Attached pipe (Note.5,6)	VP20(O.D. φ26mm/I.D. φ20mm)
11	Socket for drain	M4
10	Grounding terminal	M8~M10
9	Suspension brackets	
8	Electric box (Note.1)	

BS16Q14AV1



No.	Part name	Remark
7	Indoor unit liquid pipe connection port (Note.4)	φ6.4mm brazing connection
6	Indoor unit liquid pipe connection port (Note.4)	φ9.5mm brazing connection
5	Indoor unit gas pipe connection port (Note.4)	φ12.7mm brazing connection
4	Indoor unit gas pipe connection port (Note.4)	φ15.9mm brazing connection
3	Outdoor unit liquid pipe connection port (Note.5,6)	φ19.1mm brazing connection
2	Outdoor unit HP/LP gas pipe connection port (Note.5,6)	φ28.6mm brazing connection
1	Outdoor unit suction gas pipe connection port (Note.5,6)	φ34.9mm brazing connection

No.	Part name	Remark
12	Inspection hole	
11	Socket for drain	VP20(O.D. φ26mm/I.D. φ20mm)
10	Grounding terminal	M4
9	Suspension brackets	M8~M10
8	Electric box (Note.1)	

3. Piping diagrams

BS4Q14AV1

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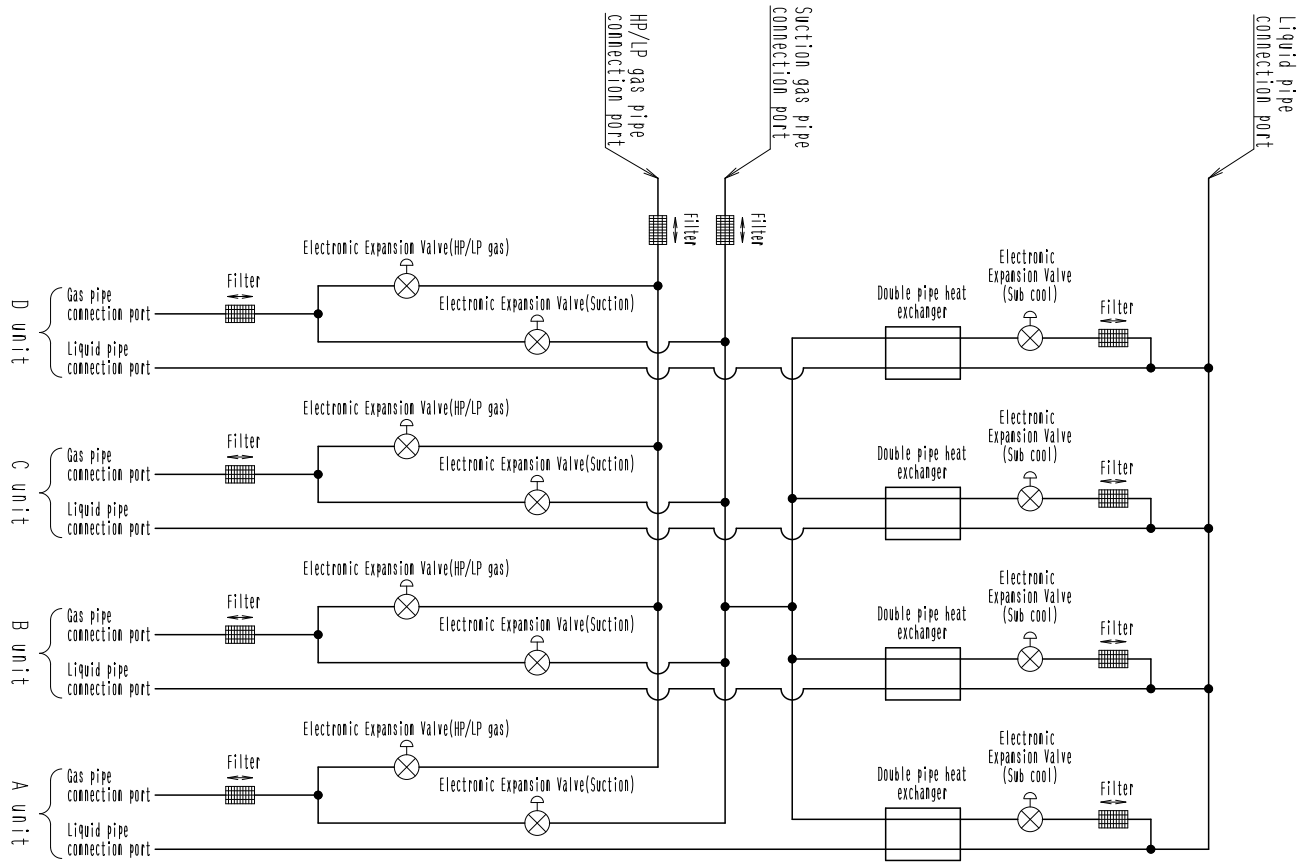
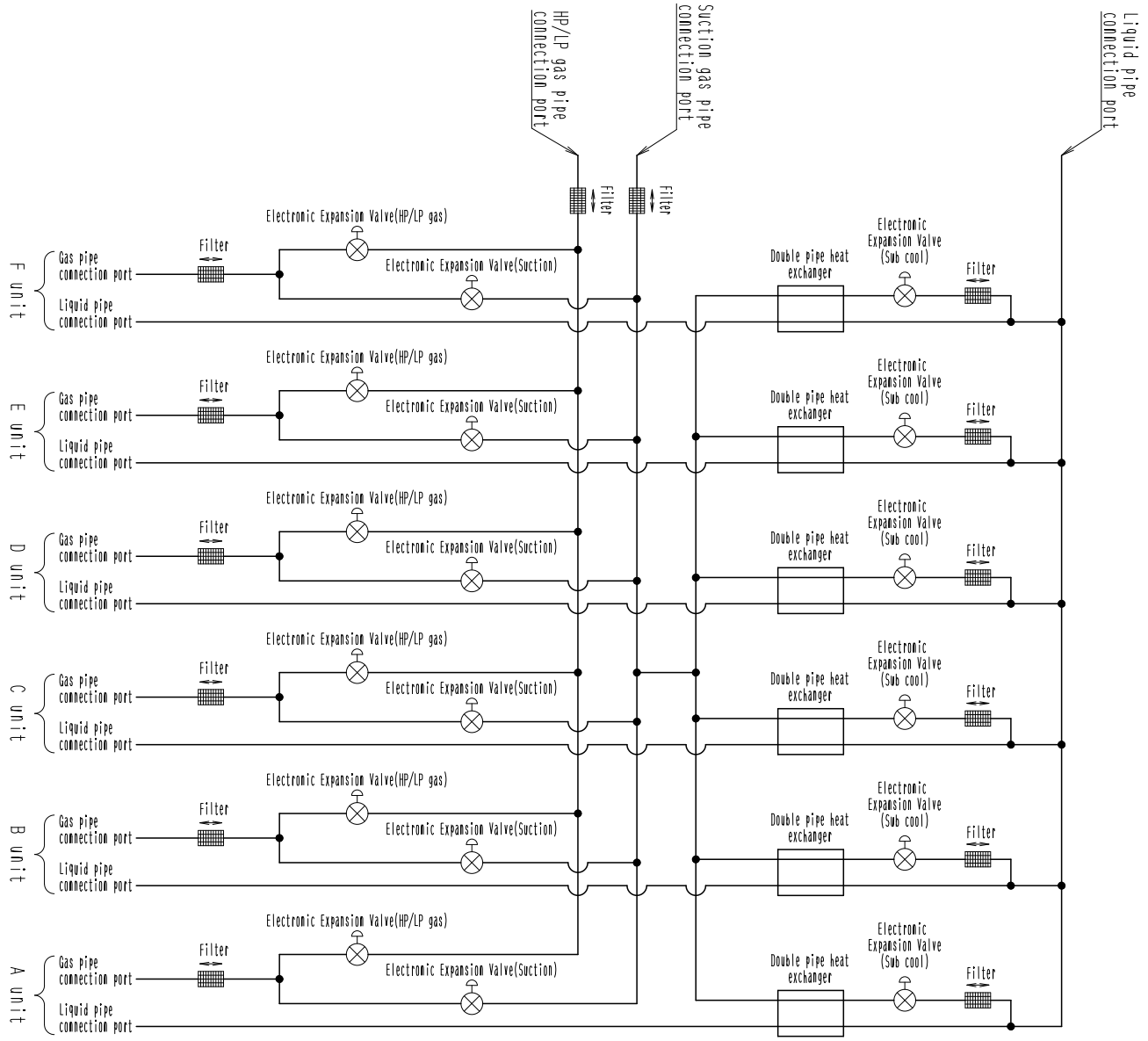
3

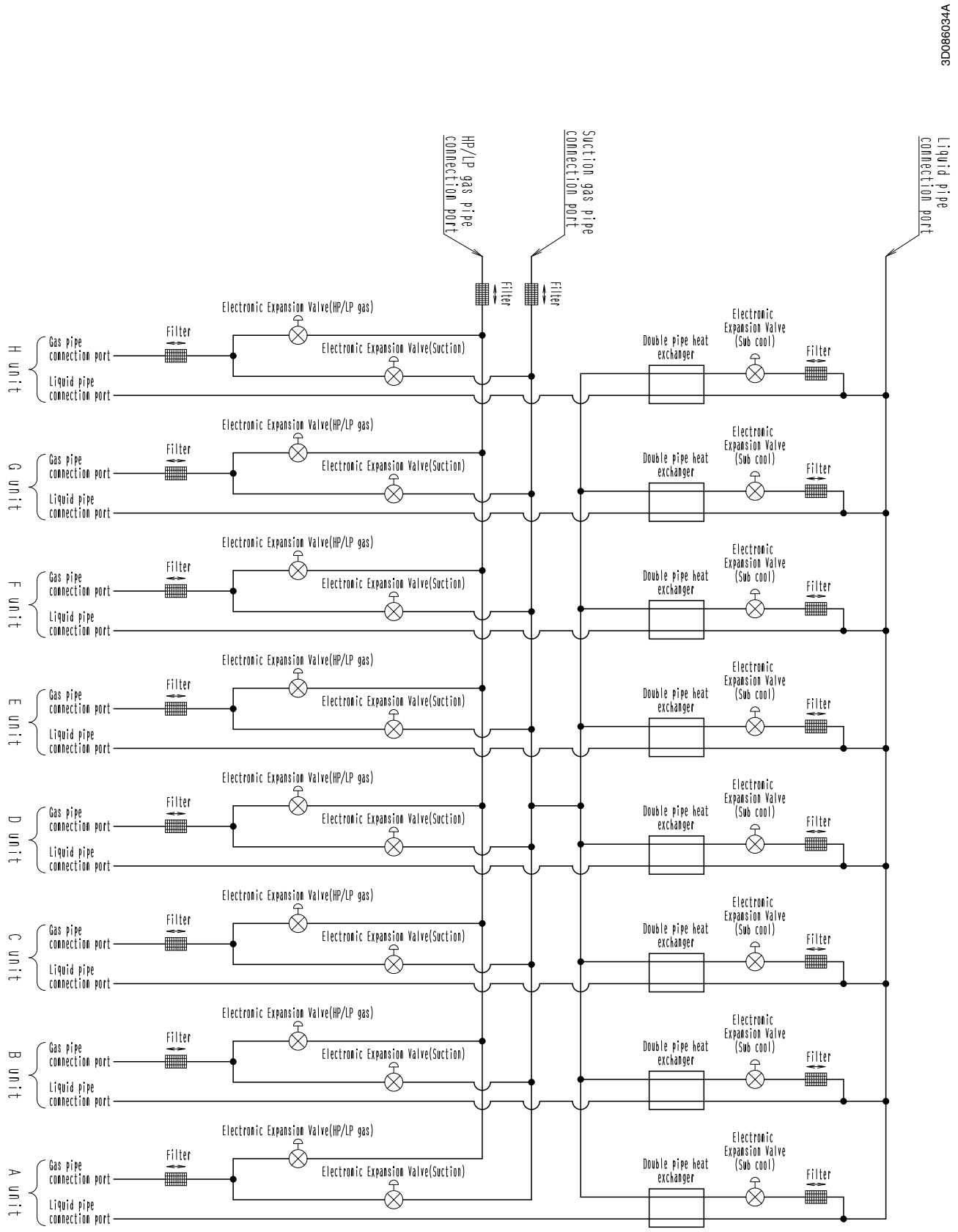


BS6Q14AV1

3D086033A



BS8Q14AV1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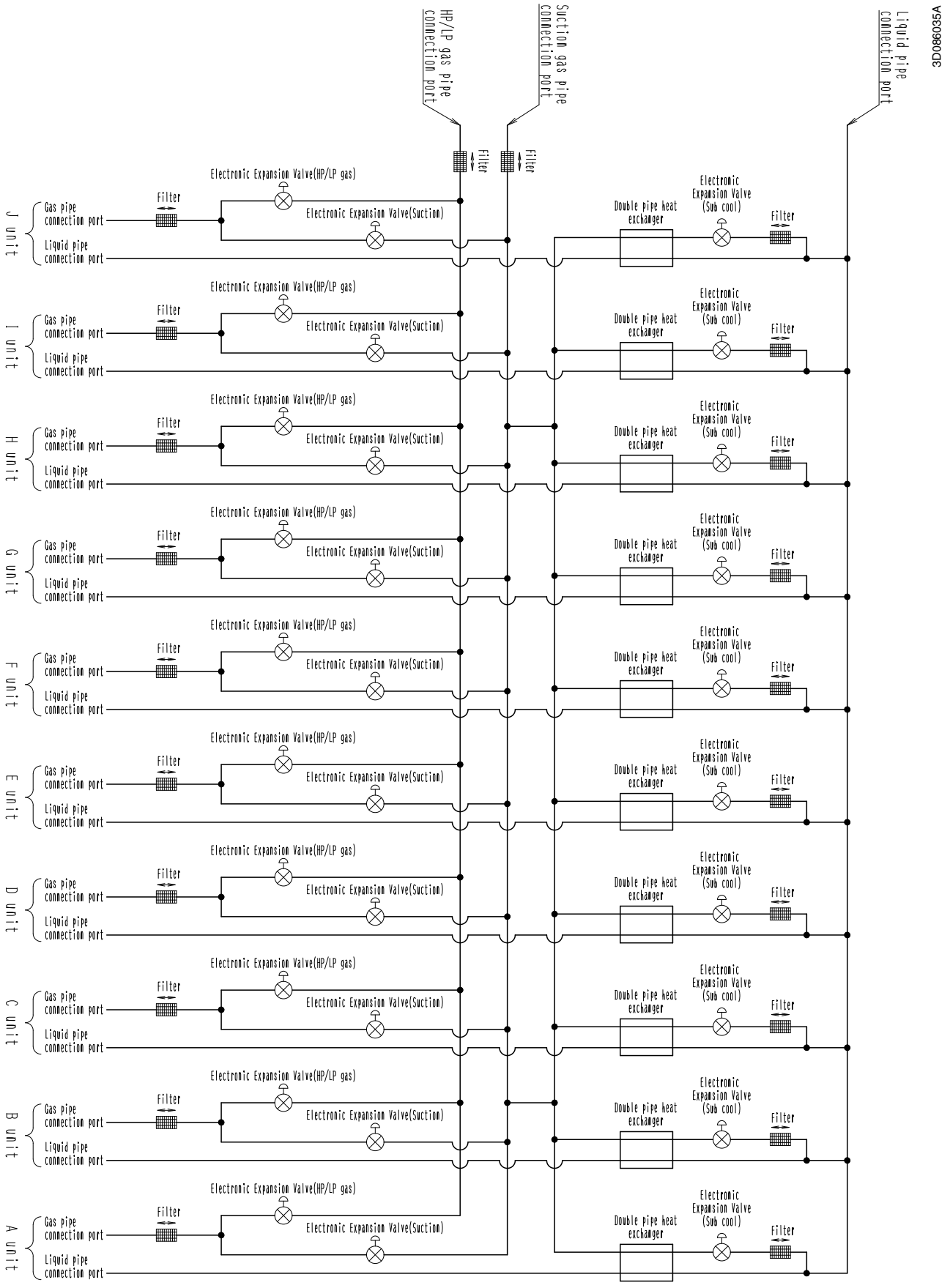
HP/LP gas pipe connection port
Suction gas pipe connection port
Liquid pipe connection port
Filter
Filter
H unit
G unit
F unit
E unit
D unit
C unit
B unit
A unit
Gas pipe connection port
Liquid pipe connection port
Filter
Electronic Expansion Valve(HP/LP gas)
Electronic Expansion Valve(Suction)
Double pipe heat exchanger
Electronic Expansion Valve (Sub cool)
Filter

BS10Q14AV1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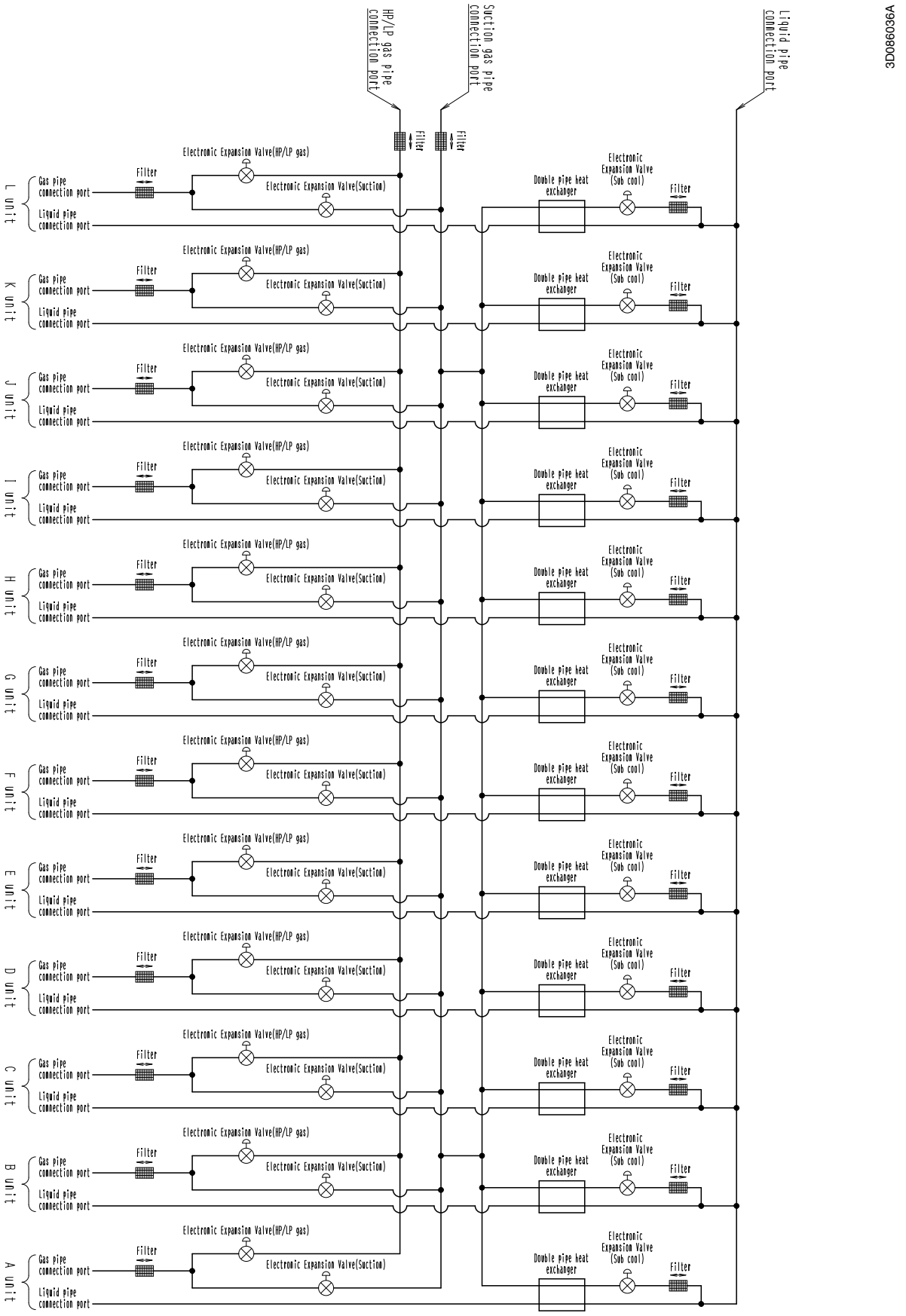
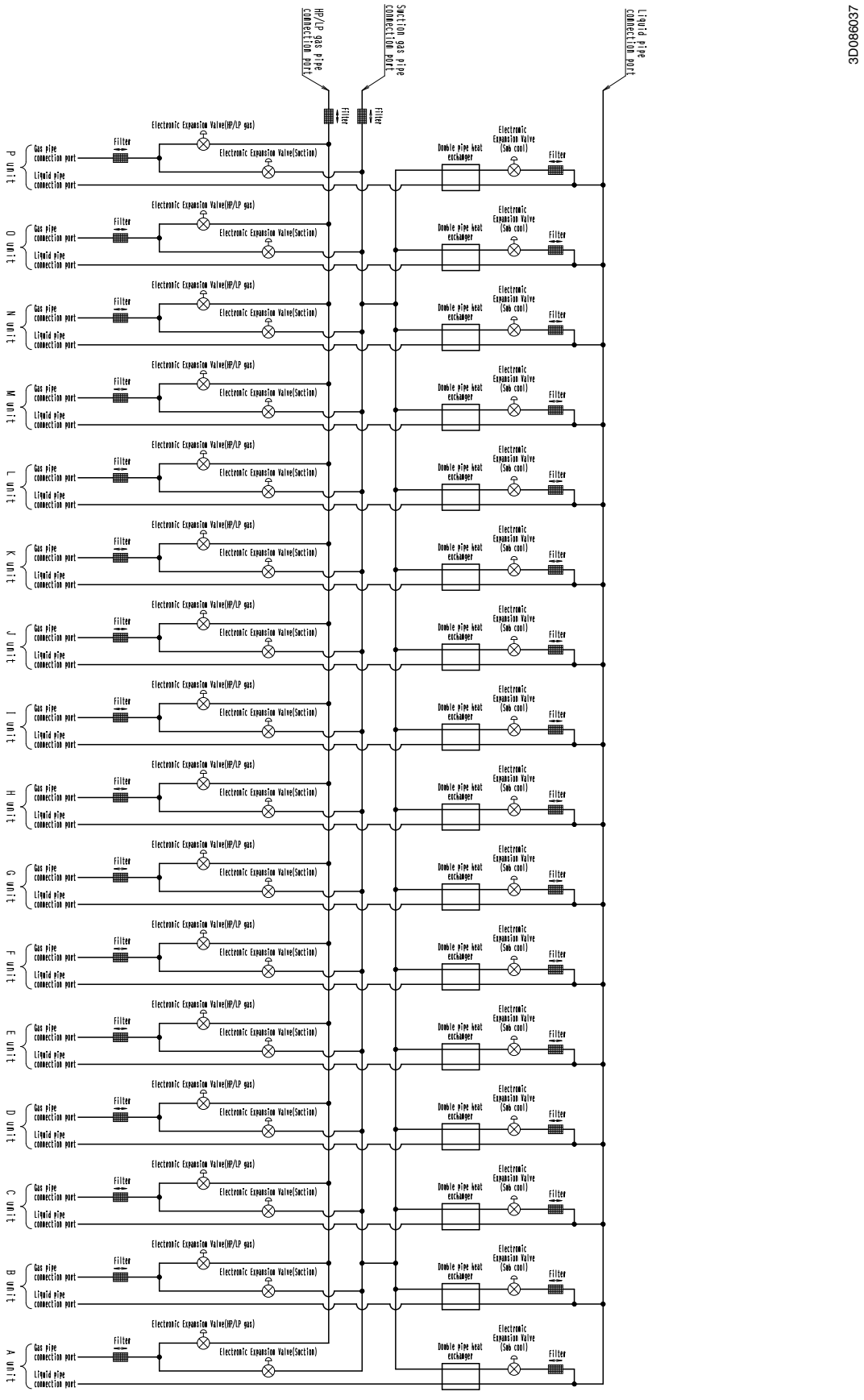
HP/LP gas pipe connection port
Suction gas pipe connection port
Liquid pipe connection port
Filter
Electronic Expansion Valve(HP/LP gas)
Electronic Expansion Valve(Suction)
Gas pipe connection port
Liquid pipe connection port
Double pipe heat exchanger
Electronic Expansion Valve (Sub cool)
J unit
I unit
H unit
G unit
F unit
E unit
D unit
C unit
B unit
A unit

BS12Q14AV1


3D086036A
HP/LP gas pipe connection port
Suction gas pipe connection port
Liquid pipe connection port
Filter
Electronic Expansion Valve(HP/LP gas)
Electronic Expansion Valve(Suction)
Double pipe heat exchanger
Electronic Expansion Valve (Sub cool)
Gas pipe connection port
Liquid pipe connection port
L unit
K unit
J unit
I unit
H unit
G unit
F unit
E unit
D unit
C unit
B unit
A unit

BS16Q14AV1


3D086037
HP/LP gas pipe connection port
Suction gas pipe connection port
Liquid pipe connection port
P unit
O unit
N unit
M unit
L unit
K unit
J unit
I unit
H unit
G unit
F unit
E unit
D unit
C unit
B unit
A unit
Gas pipe connection port
Liquid pipe connection port
Filter
Electronic Expansion Valve(HP/LP gas)
Electronic Expansion Valve(Suction)
Double pipe heat exchanger
Electronic Expansion Valve (Sub cool)

4. Wiring diagrams

BS4Q14AV1

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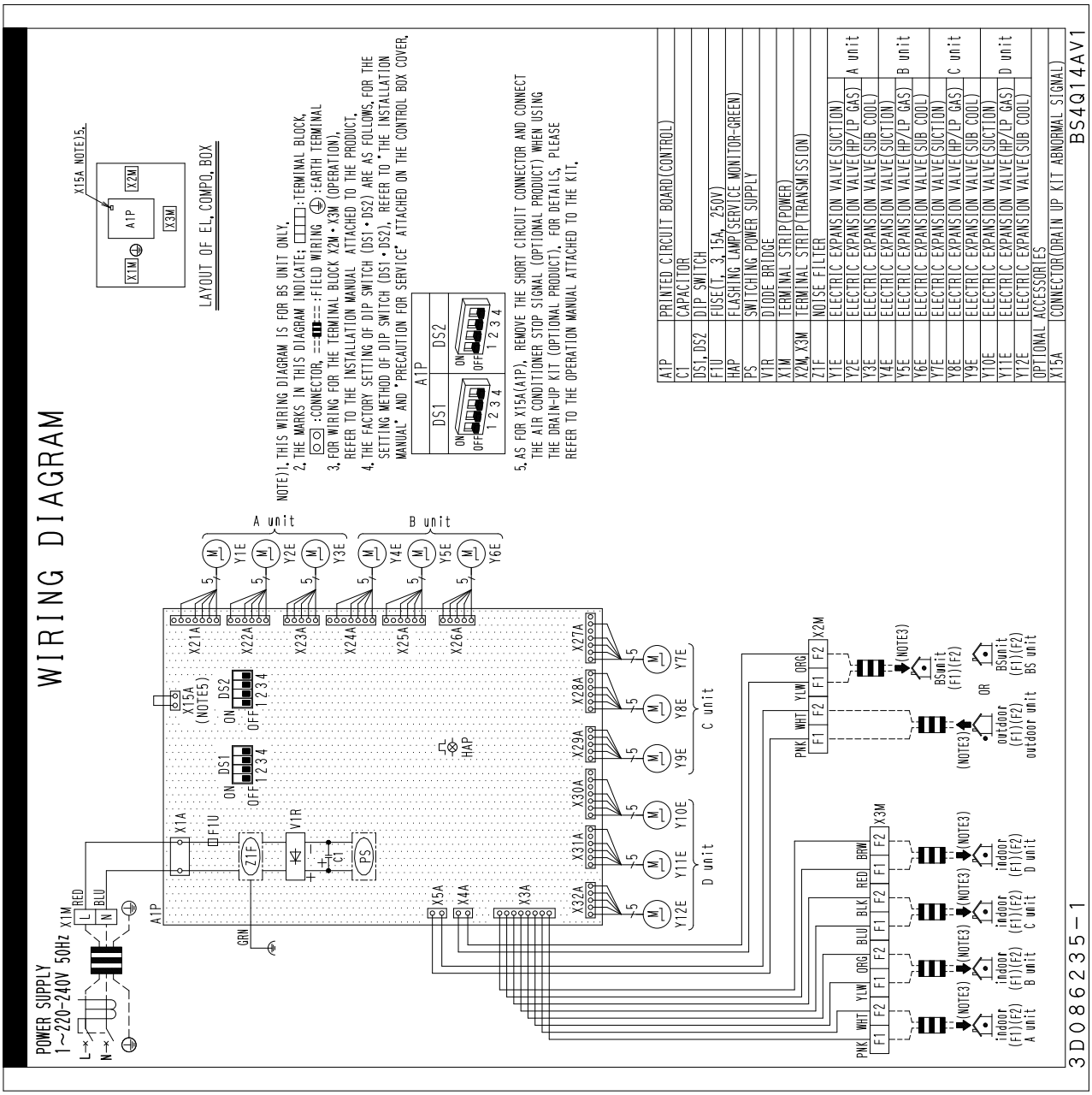
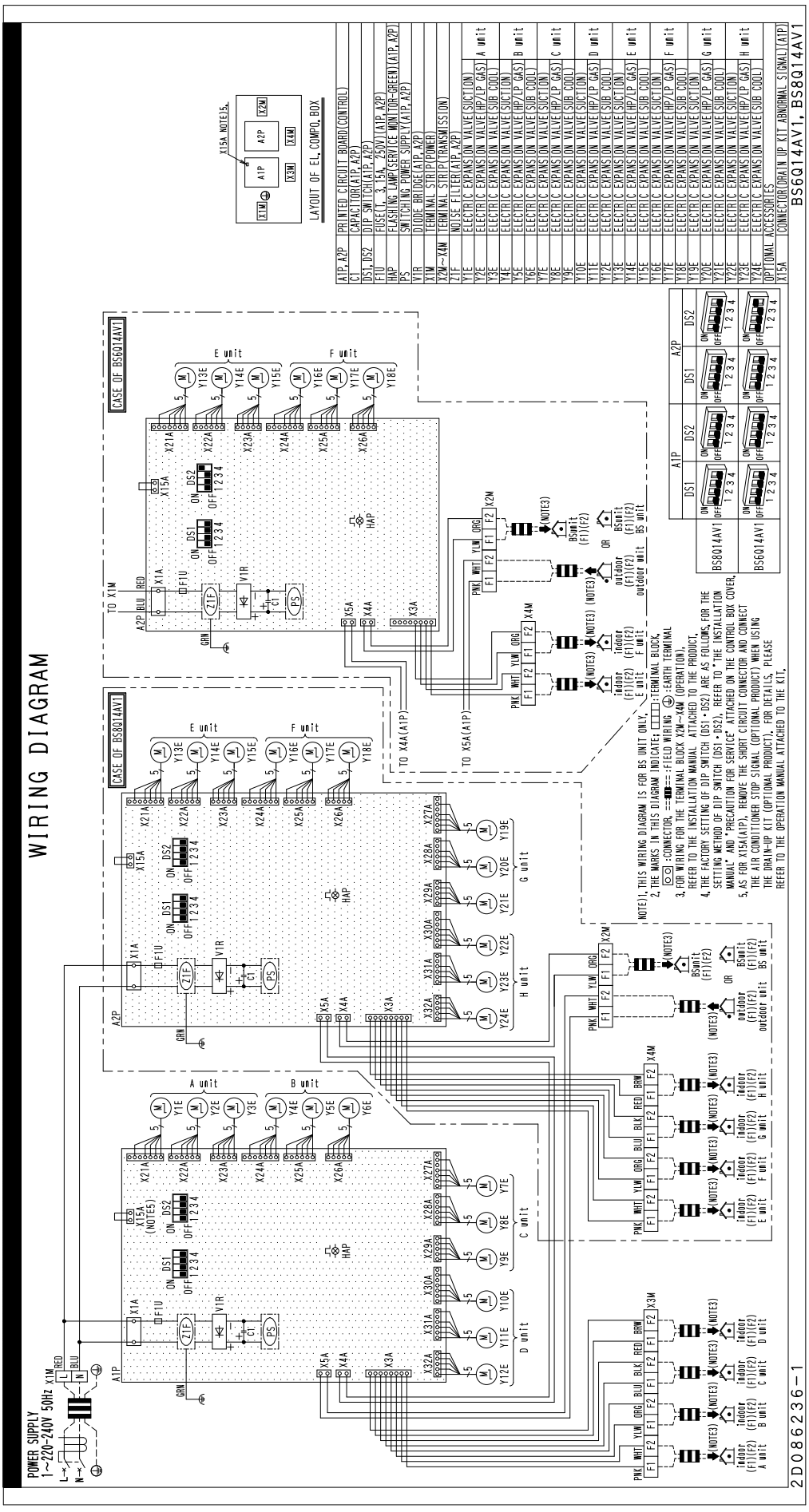
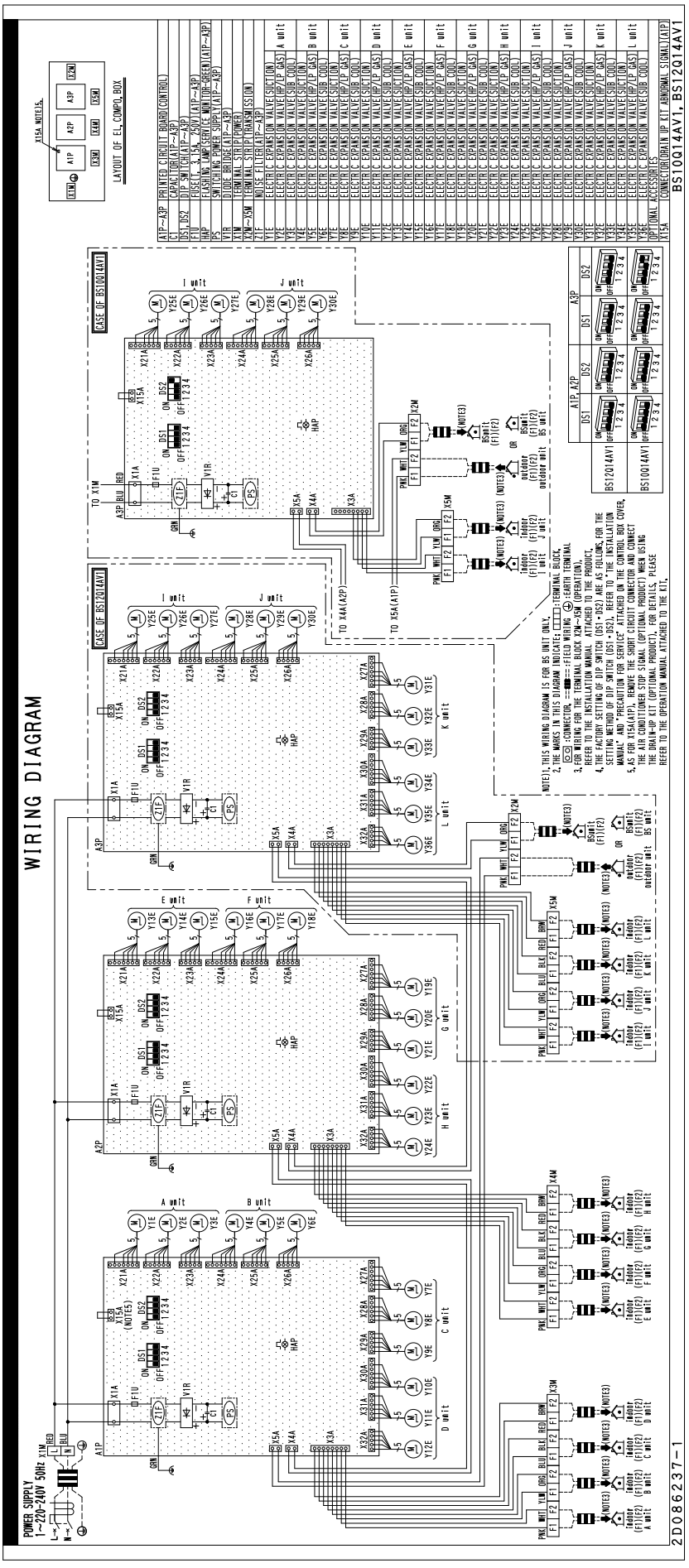


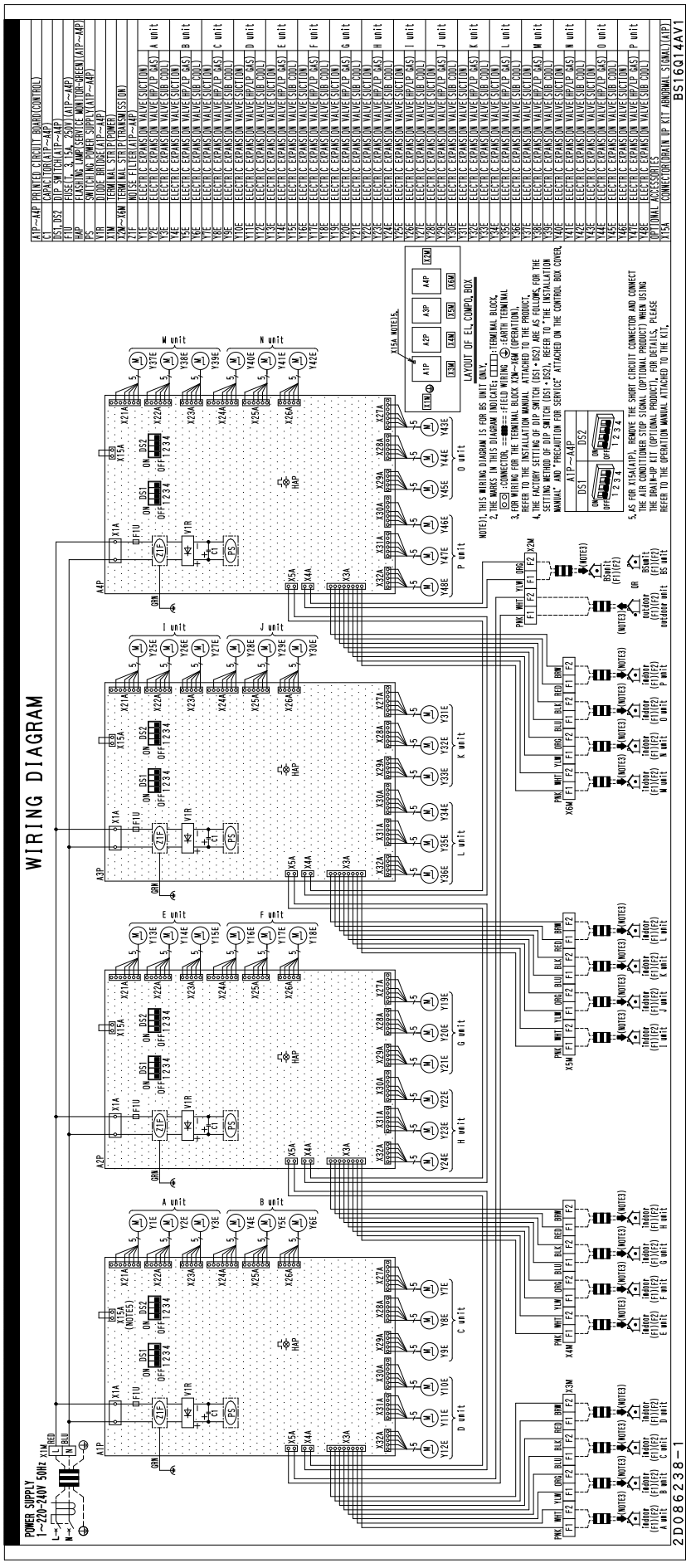
BS6Q14AV1 / BS8Q14AV1



BS10Q14AV1 / BS12Q14AV1



BS16Q14AV1



5. Electric characteristics

BS4Q14AV1 / BS6Q14AV1 / BS8Q14AV1 / BS10Q14AV1 / BS12Q14AV1 / BS16Q14AV1

Units				Power supply		IFM		Input(W)	
Model	Hz	Volts	Voltage range	MCA	MFA	KW	FLA	Cooling	Heating
BS4Q14AV1	50	220-240	MAX. 264 Min. 198	0.4	15	——	——	43	43
BS6Q14AV1				0.6		——	——	64	64
BS8Q14AV1				0.8		——	——	86	86
BS10Q14AV1				1.0		——	——	107	107
BS12Q14AV1				1.2		——	——	129	129
BS16Q14AV1				1.6		——	——	172	172

Symbols:

MCA : Min. Circuit Amps (A)
MFA : Max. Fuse Amps (A) (See note 5)
KW : Fan Motor Rated Output(KW)
FLA : Full Load Amps(A)
IFM : Indoor Fan Motor

Note:

1. Voltage range

   Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limits.

2. Maximum allowable voltage unbalance between phases is 2%.

3. MCA/MFA

   MCA = 1.25 X FLA

   MFA ≦ 4 X FLA

   (Next lower standard fuse rating. Min. 15A)

4. Select wire size based on the MCA.

5. Instead of fuse, use Circuit Breaker.

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6. Safety devices setting

BS4Q14AV1 / BS6Q14AV1 / BS8Q14AV1 / BS10Q14AV1 / BS12Q14AV1 / BS16Q14AV1

MODEL	Safety devices
	PC board fuse
BS4Q14AV1	250V 3.15A
BS6Q14AV1	250V 3.15A
BS8Q14AV1	250V 3.15A
BS10Q14AV1	250V 3.15A
BS12Q14AV1	250V 3.15A
BS16Q14AV1	250V 3.15A

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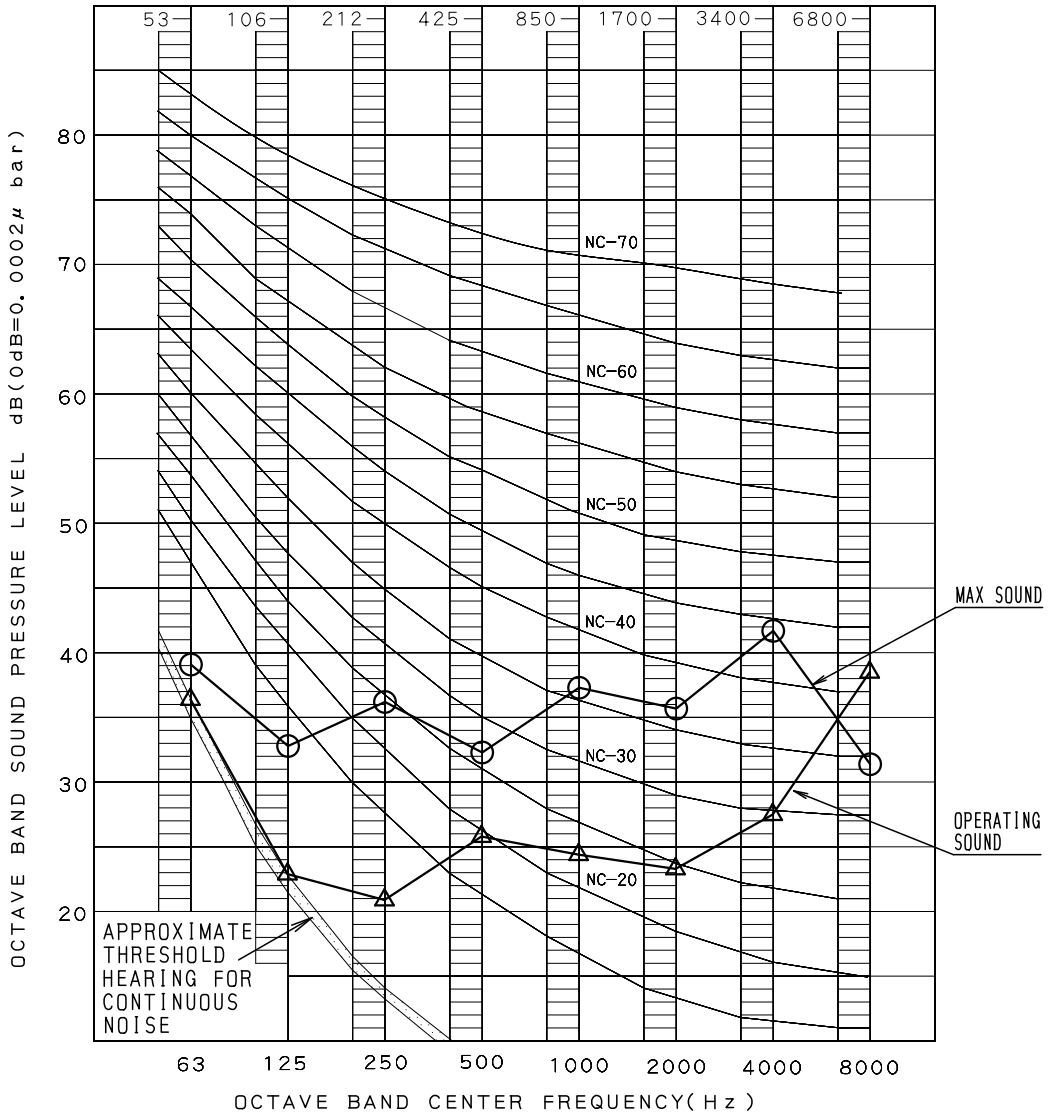
7. Sound levels

BS4Q14AV1



OVER ALL (dB)

SCALE	OPERATING SOUND	MAX SOUND
A	38	45
C	39	46

The operated sound is measured when the indoor units are connected to all the branches.

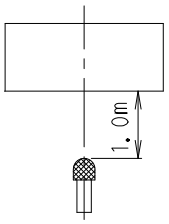
MEASURING PLACE

ANECHOIC CHAMBER(CONVERSION VALUE)

OPERATING CONDITIONS

POWER SOURCE 220-240V 50Hz

LOCATION OF MICROPHONE



Note)1. The operating sound is measured in anechoic chamber,
if it is measured under the actual installation conditions,
it is normally over the set value due to enviromental noise and sound reflection.
2. Even if the indoor unit to be connected downstream of BS unit has stopped, when the system is operating,
operating sound can be heard.
3. The maximum sound is max value of transient sound , such as oil return and defrost, the change of cooling and heating, etc.

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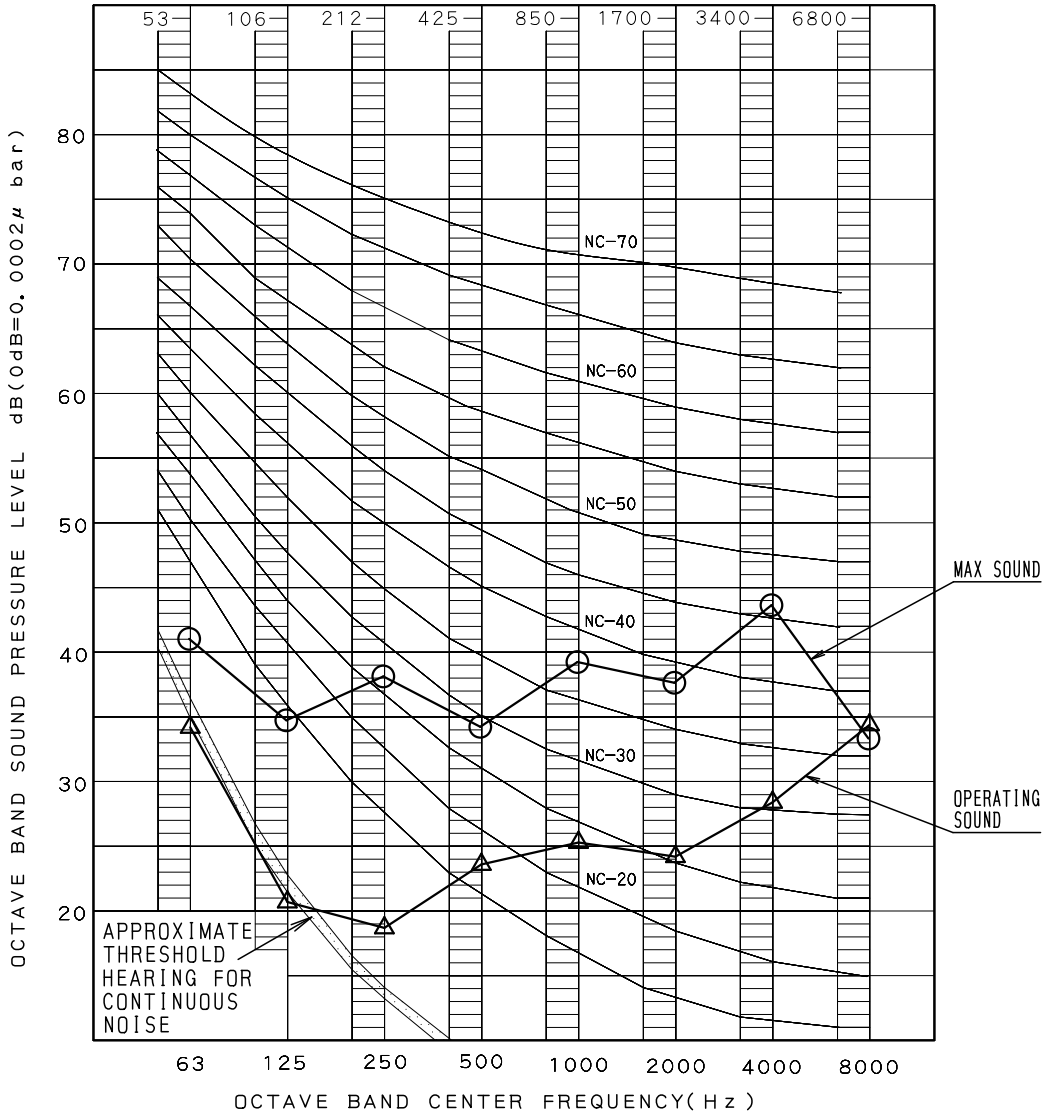
BS6Q14AV1 / BS8Q14AV1



OVER ALL (dB)

SCALE	OPERATING SOUND	MAX SOUND
A	39	47
C	39	48

The operated sound is measured when the indoor units are connected to all the branches.

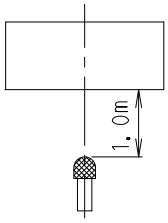
MEASURING PLACE

ANECHOIC CHAMBER(CONVERSION VALUE)

OPERATING CONDITIONS

POWER SOURCE 220-240V 50Hz

LOCATION OF MICROPHONE



Note)1. The operating sound is measured in anechoic chamber,
if it is measured under the actual installation conditions,
it is normally over the set value due to enviromental noise and sound reflection.
2. Even if the indoor unit to be connected downstream of BS unit has stopped, when the system is operating,
operating sound can be heard.
3. The maximum sound is max value of transient sound , such as oil return and defrost, the change of cooling and heating, etc.

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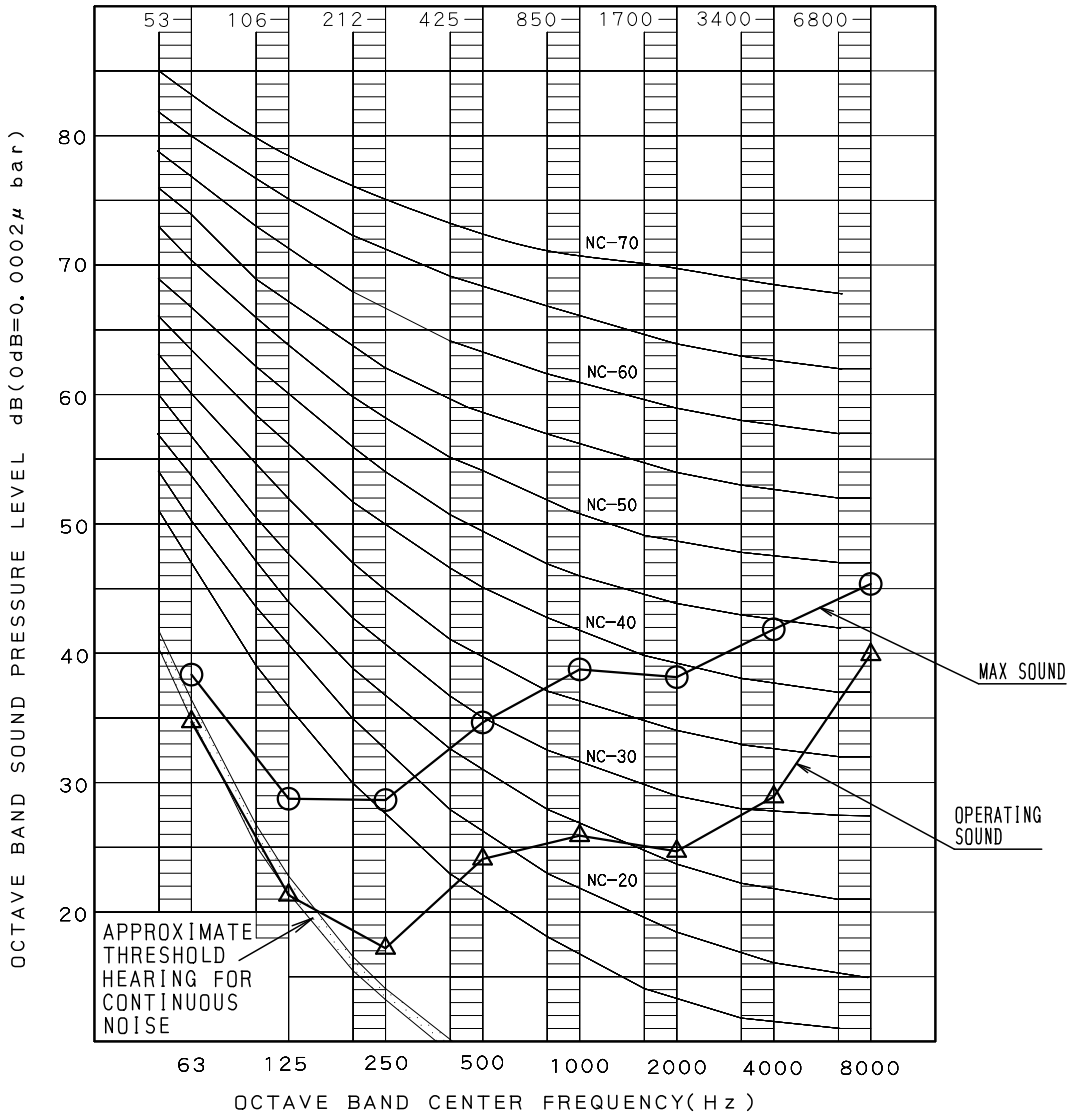
BS10Q14AV1 / BS12Q14AV1



OVER ALL (dB)

SCALE	OPERATING SOUND	MAX SOUND
A	40	48
C	40	48

The operated sound is measured when the indoor units are connected to all the branches.

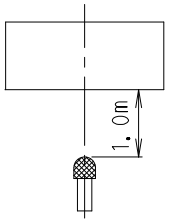
MEASURING PLACE

ANECHOIC CHAMBER(CONVERSION VALUE)

OPERATING CONDITIONS

POWER SOURCE 220-240V 50Hz

LOCATION OF MICROPHONE



Note)1. The operating sound is measured in anechoic chamber,
if it is measured under the actual installation conditions,
it is normally over the set value due to enviromental noise and sound reflection.
2. Even if the indoor unit to be connected downstream of BS unit has stopped, when the system is operating,
operating sound can be heard.
3. The maximum sound is max value of transient sound , such as oil return and defrost, the change of cooling and heating, etc.

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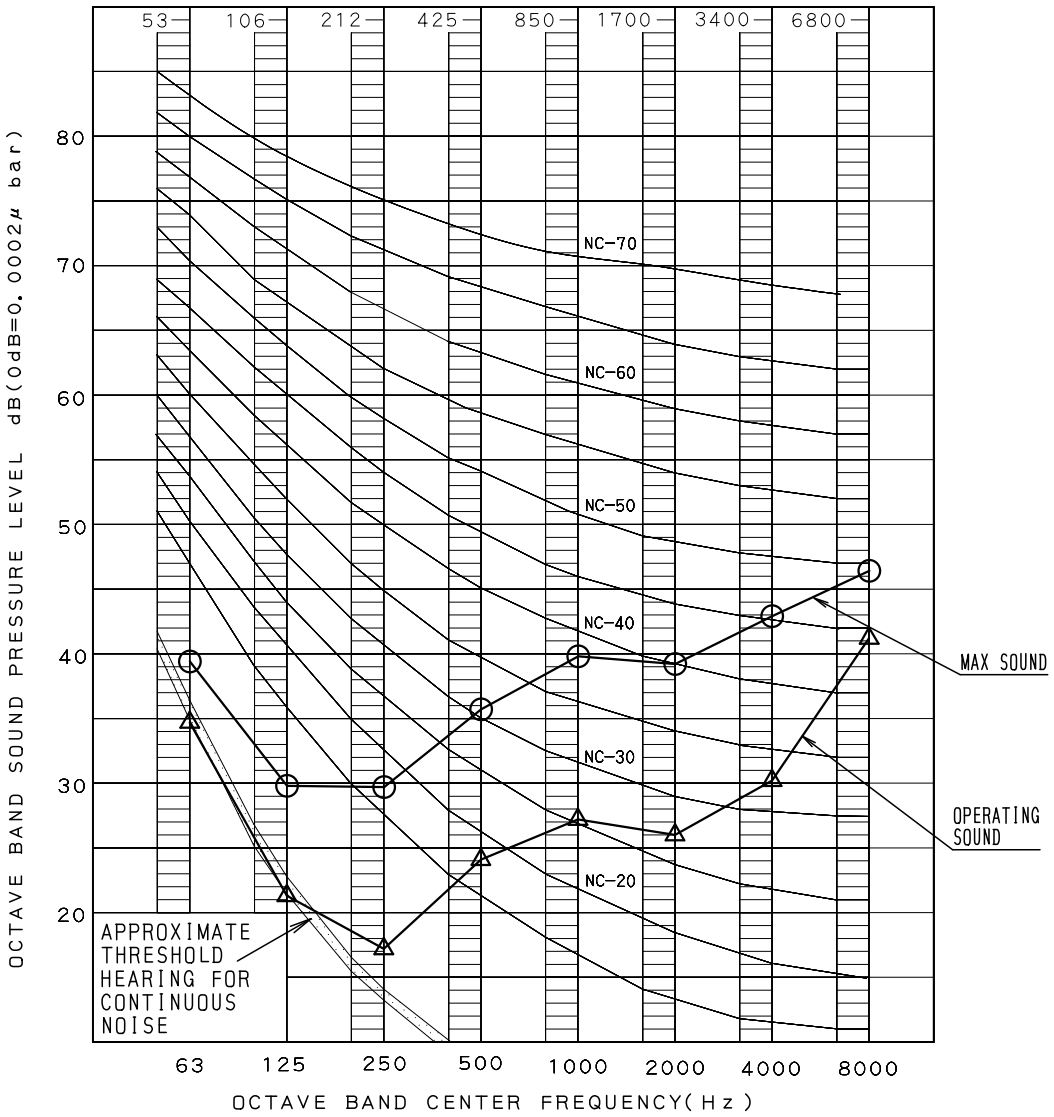
BS16Q14AV1



OVER ALL (dB)

SCALE	OPERATING SOUND	MAX SOUND
A	41	49
C	41	49

The operated sound is measured when the indoor units are connected to all the branches.

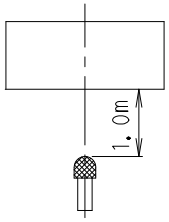
MEASURING PLACE

ANECHOIC CHAMBER(CONVERSION VALUE)

OPERATING CONDITIONS

POWER SOURCE 220-240V 50Hz

LOCATION OF MICROPHONE



Note)1. The operating sound is measured in anechoic chamber,
if it is measured under the actual installation conditions,
it is normally over the set value due to enviromental noise and sound reflection.
2. Even if the indoor unit to be connected downstream of BS unit has stopped, when the system is operating,
operating sound can be heard.
3. The maximum sound is max value of transient sound , such as oil return and defrost, the change of cooling and heating, etc.

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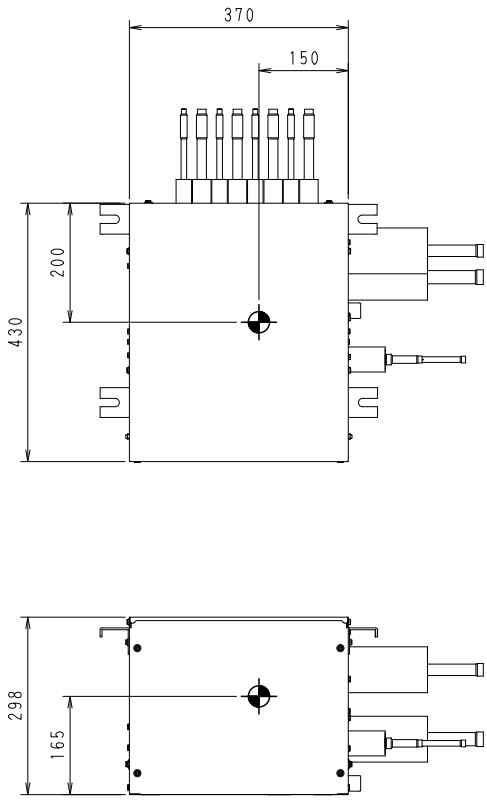
8. Centre of gravity

BS4Q14AV1

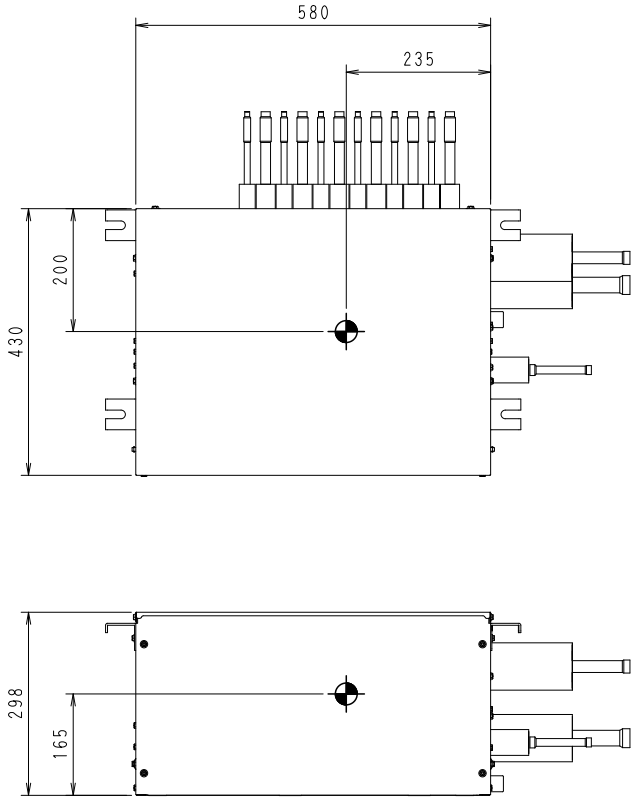
Unit (mm)



4D086046

BS6Q14AV1

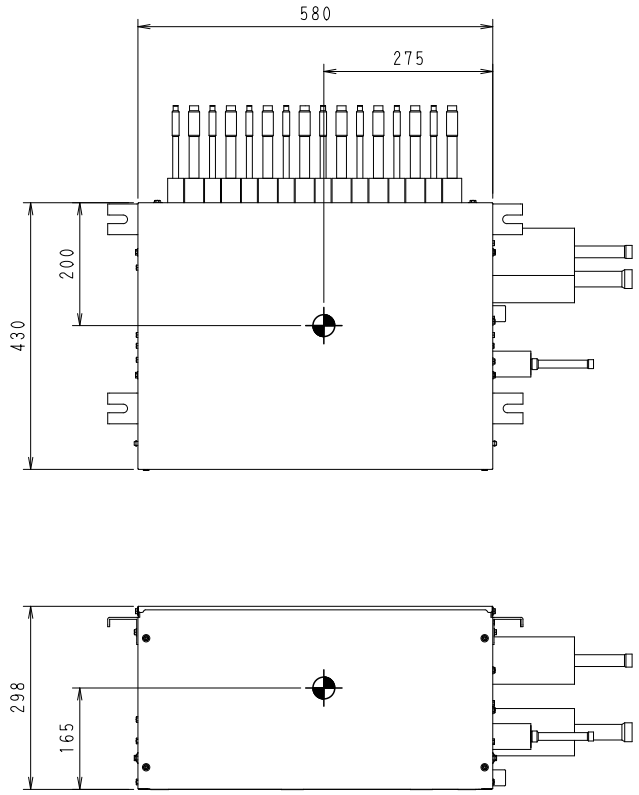
Unit (mm)



4D086047

BS8Q14AV1

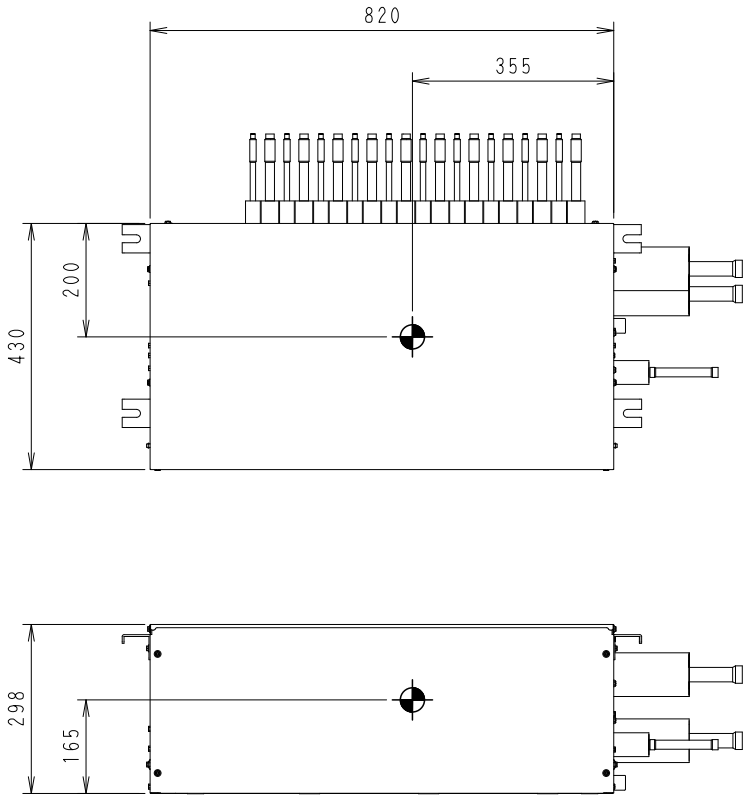
Unit (mm)



4D086048

BS10Q14AV1

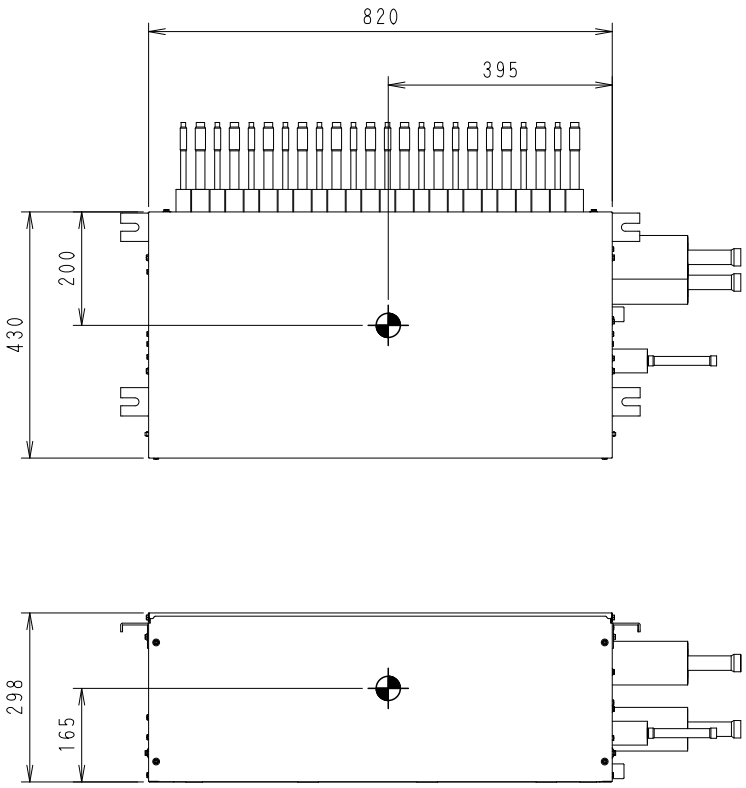
Unit (mm)



4D086049

BS12Q14AV1

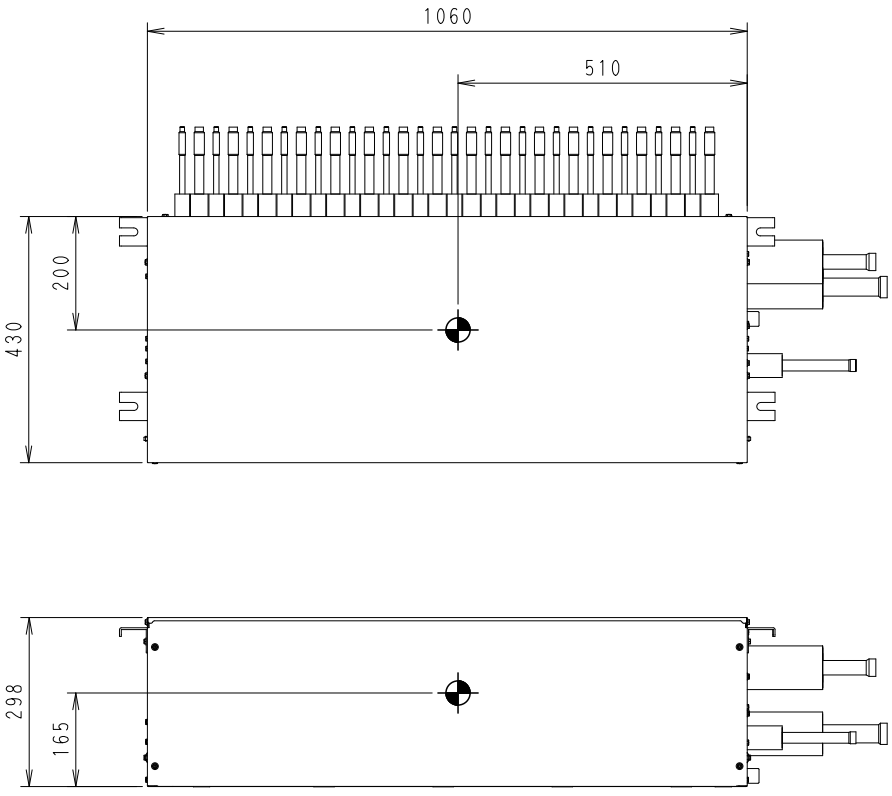
Unit (mm)



4D086050

BS16Q14AV1

Unit (mm)



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9. Installation Manual

BS4Q14AV1 / BS6Q14AV1 / BS8Q14AV1 / BS10Q14AV1 / BS12Q14AV1 / BS16Q14AV1

DAIKIN

BS4Q14AV1 BS6Q14AV1 BS8Q14AV1	BS10Q14AV1 BS12Q14AV1 BS16Q14AV1	VRVIV SYSTEM Air Conditioners	Installation manual

CONTENTS

The original instructions are written in English. All other languages are translations of the original instructions.

1. SAFETY PRECAUTIONS

Be sure to follow this “SAFETY PRECAUTIONS”.
This product comes under the term “appliances not accessible to the general public”.
This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

This manual classifies the precautions into WARNINGS and CAUTIONS.
Be sure to follow all the precautions below: They are all important for ensuring safety.

⚠ **WARNING** ..... Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION** ..... Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
It may also be used to alert against unsafe practices.

⚠ WARNING

- Ask your local dealer or qualified personnel to carry out installation work.
  Improper installation may result in water leakage, electric shocks or a fire.
- Perform installation work in accordance with this installation manual.
  Improper installation may result in water leakage, electric shocks or a fire.
- Consult your local dealer regarding what to do in case of refrigerant leakage.
  When the air conditioner is installed in a small room, it is necessary to take proper measures so that the amount of any leaked refrigerant does not exceed the concentration limit in the event of a leakage.
  Otherwise, this may lead to an accident due to oxygen deficiency.
- Be sure to use only the specified parts and accessories for installation work.
  Failure to use the specified parts may result in the air conditioner falling down, water leakage, electric shocks, a fire, etc.
- Install the air conditioner on a foundation that can withstand its mass.
  Insufficient strength may result in the air conditioner falling down and causing injury.
  In addition, it may lead to vibration of indoor units and cause unpleasant chattering noise.
- Carry out the specified installation work in consideration of strong winds, typhoons, or earthquakes.
  Improper installation may result in an accident such as air conditioner falling.

- Make certain that all electrical work is carried out by qualified personnel according to the applicable legislation (note 1) and this installation manual, using a separate circuit.
  In addition, even if the wiring is short, make sure to use a wiring that has sufficient length and never connect additional wiring to make the length sufficient.
  Insufficient capacity of the power supply circuit or improper electrical construction may lead to electric shocks or a fire.
  (note 1) applicable legislation means “All international, national and local directives, laws, regulations and/or codes which are relevant and applicable for a certain product or domain”.
- Earth the air conditioner.
  Do not connect the earth wiring to gas or water piping, lightning conductor or telephone earth wiring.
  Incomplete earthing may cause electric shocks or a fire.
  A high surge current from lightning or other sources may cause damage to the air conditioner.
- Be sure to install an earth leakage circuit breaker.
  Failure to do so may cause electric shocks and a fire.
- Disconnect the power supply before touching the electric components.
  If you touch the live part, you may get an electric shocks.
- Make sure that all wiring is secure, using the specified wiring and ensuring that external forces do not act on the terminal connections or wiring.
  Incomplete connection or fixing may cause an overheat or a fire.
- Wiring for power supply and between the indoor and outdoor units must be properly laid and formed, and the control box cover must be firmly fastened so that the wiring may not push up the structural parts such as the cover.
  If the cover is improperly fastened, it may cause electric shock or fire.
- If refrigerant gas leaks during installation work, ventilate the area immediately.
  Toxic gas may be produced if refrigerant gas comes into contact with a fire.
- After completing the installation work, check to make sure that there is no leakage of refrigerant gas.
  Toxic gas may be produced if refrigerant gas leaks into the room and comes into contact with a source of a fire, such as a fan heater, stove or cooker.
- Never directly touch any accidental leaking refrigerant. This could result in severe wounds caused by frostbite.

⚠ CAUTION

- Install drain piping according to this installation manual to ensure good drainage, and insulate the piping to prevent condensation.
  Improper drain piping may cause water leakage, make the furniture get wet.
- Install the BS units, power supply wiring, remote controller wiring and transmission wiring at least 1 m away from televisions or radios to prevent image interference or noise.
  (Depending on the radio waves, a distance of 1 m may not be sufficient to eliminate the noise.)
- Install the BS unit as far as possible from fluorescent lamps.
  If a wireless remote controller kit is installed, the transmission distance may be shorter in a room where an electronic lighting type (inverter or rapid start type) fluorescent lamp is installed.
- Make sure to provide for adequate measures in order to prevent that the outdoor unit be used as a shelter by small animals.
  Small animals making contact with electrical parts can cause malfunctions, smoke or fire. Please instruct the customer to keep the area around the unit clean.
- Do not install the air conditioner in places such as the following:
  1. The outside building, rain water permeates in BS unit and it becomes a cause of an electric shock.
  2. Where there is mist of oil, oil spray or vapour for example a kitchen.
     Resin parts may deteriorate, and cause them to fall out or water to leak.
  3. Where corrosive gas, such as sulfurous acid gas, is produced.
     Corrosion of copper pipings or brazed parts may cause the refrigerant to leak.
  4. Where there is machinery which emits electromagnetic waves.
     Electromagnetic waves may disturb the control system, and cause malfunction of the equipment.

5. Where flammable gases may leak, where carbon fibre or ignitable dust is suspended in the air or where volatile flammables, such as thinner or gasoline, are handled.
   If the gas should leak and remained around the air conditioner, it may cause ignition.
6. Do not use in areas where the air is salty, such as along seacoasts, in factories or other areas with significant voltage fluctuations, or in automobiles and watercraft.
   Doing so could result in a malfunction.
7. Where a wind may flow, the surface of BS unit body dews, and it becomes a cause of a leak.

• The BS unit is not intended for use in a potentially explosive atmosphere.

2. BEFORE INSTALLATION

2-1 Precautions

- Be sure to verify in advance that the refrigerant used in installation work is R410A.
  The unit will not operate correctly with a different type of refrigerant.
- When moving the unit during or after unpacking, hold it using the 4 hanging brackets and avoid subjecting other parts, particularly refrigerant pipes and the control box, to force.
- For more information about installation of outdoor and indoor units, refer to the installation manual that came with each unit.

2-2 Accessories

- Verify that the following accessories have been included in the packaging.

Important

Do not throw away any accessories that may be needed in installation work until installation is complete.

Name		Accessory pipes (1)			Clamps (2)	Insulation tube (3)		Drain hoses (4)
		Suction gas	HP/LP gas	Liquid				
Quantity	BS4Q14AV1	1 pc. (ϕ19.1)	1 pc. (ϕ15.9)		23 pcs.	4 pcs.	4 pcs.	1 pc.
	BS6Q14AV1		1 pc. (ϕ22.2)		32 pcs.	6 pcs.	6 pcs.	
	BS8Q14AV1		2 pc. (ϕ22.2, ϕ28.6)	1 pc. (ϕ15.9)	40 pcs.	8 pcs.	8 pcs.	
	BS10Q14AV1	1 pc. (ϕ34.9)			49 pcs.	10 pcs.	10 pcs.	
	BS12Q14AV1			1 pc. (ϕ19.1)	57 pcs.	12 pcs.	12 pcs.	
	BS16Q14AV1				74 pcs.	16 pcs.	16 pcs.	
Shape		(1)-1 	(1)-2 	(1)-3 	(2) 	(3)-1  (Thin)	(3)-2  (Thick)	

Name		Metal clamp (5)	Sealing material (6)	Stopper pipes (7)		Insulation tube for stopper pipes (8)		Documentation
Quantity	BS4Q14AV1	1 pc.	1 sheet					1 copy
	BS6Q14AV1							
	BS8Q14AV1			1 pc.	1 pc.	1 pc.	1 pc.	
	BS10Q14AV1							
	BS12Q14AV1							
	BS16Q14AV1			3 pcs.	3 pcs.	3 pcs.	3 pcs.	
Shape				(7)-1  ϕ9.5	(7)-2  ϕ15.9	(8)-1  (Thin)	(8)-2  (Thick)	Installation Manual

NOTES

- You will need a reducing joint (to be supplied in the field) if the diameter of the pipe on site as described in the outdoor unit's installation manual or equipment design materials does not match the diameter of the connection pipe on the outdoor side of the BS unit.
- Thermal insulation for connection pipes on the outdoor unit side must be supplied in the field.

2-3 Combination

- This BS unit is only for systems for Models REYQ-T.
  It cannot be connected to systems for Models REYQ-P.
- For series of applicable indoor units, refer to the catalog or other literature.
- Select the BS unit to fit the total capacity (sum of unit's capacity) of the indoor units to be connected downstream, refer to the Table 1. About indoor unit's capacity, refer to the Table 2.

Table 1

Model	Total capacity of all downstream indoor units
BS4Q14AV1	A ≤ 400 (*)
BS6Q14AV1	A ≤ 600 (*)
BS8Q14AV1 BS10Q14AV1 BS12Q14AV1 BS16Q14AV1	A ≤ 750 (*)

* The total capacity and number of indoor units connectable to each branch connector are up to 140 and 5, respectively.
* When the total capacity of indoor units to be connected downstream is larger than 140 (MAX. 250), use a junction pipe kit (KHRP26A250T, sold separately) to join two connections downstream from the BS unit.

Table 2

Capacity expressed as indoor unit's model No.	20	25	32	40	50	63	80	100	125
Indoor unit's capacity (for use in computation)	20	25	31.25	40	50	62.5	80	100	125

* About indoor unit's capacity for HRV type (VKM), refer to the Engineering data book.

<Example selection>
In case of the BS unit with connect a FXCQ**32**M and a FXSQ**40**M.
Total capacity = **31.25+40** = 71.25

2-4 Checklist

Exercise particular care concerning the following items during installation work and check again after installation is complete:

Post-installation checklist

Checklist	If defective	Check here.
Has the BS unit been installed securely?	The unit may fall, vibrate, or operate noisily.	
Did you conduct a gas leak inspection?	The unit may fail to heat or cool as designed.	
Was the unit fully insulated? (Refrigerant pipes and drain pipes)	The unit may leak water.	
Does water flow smoothly from the drain?	The unit may leak water.	
Is the supply voltage the same as the voltage indicated on the label?	The unit may fail to operate or burn up.	
Are there any wiring mistakes or erroneous wiring or erroneous pipe connections?	The unit may fail to operate, burn up, or produce abnormal noise.	
Has the unit been earthed?	The unit may pose a hazard in the event of a short-circuit.	
Is the thickness of the electrical wiring the same as described in the specifications?	The unit may fail to operate or burn up.	

Delivery checklist

Checklist	Check here.
Has a cover been installed on the control box?	
Did you give the customer the installation manual?	

3. SELECTING INSTALLATION SITE

Consider the following requirements when choosing the installation location and obtain the customer's consent:

- The location must be able to withstand the weight of the BS unit.
- The location must allow reliable draining.
- The location must allow inspection holes to be installed on the control box side. (A separate opening is necessary when lowering the product.)
- There must be adequate space in which to perform installation and service work (**Refer to Fig. 1**).
- The length of pipe to the indoor unit and outdoor unit must be less than or equal to the permissible pipe length (as listed in the installation manual that came with the outdoor unit).
- The sound of refrigerant being pumped through the pipes must not be a problem. (Never install above the ceiling of an occupied room.)

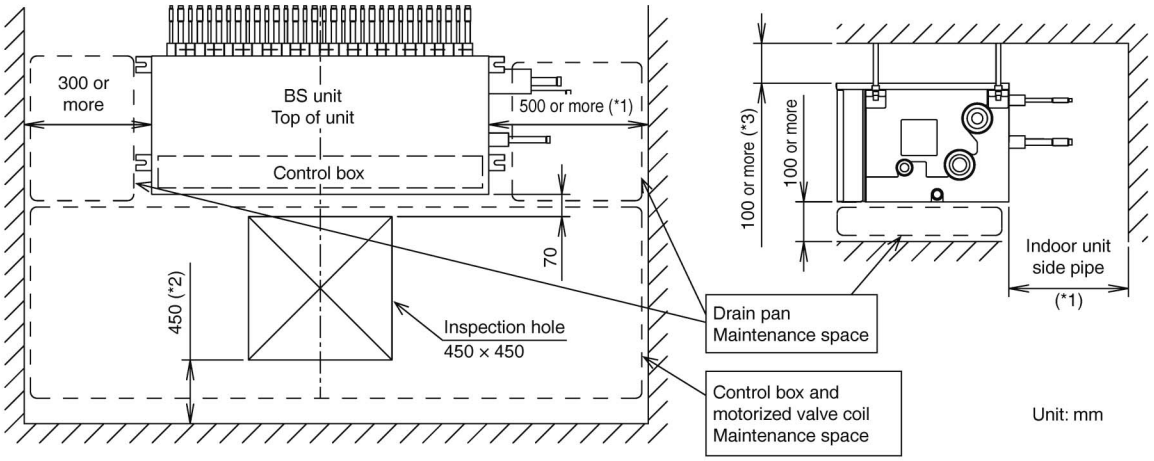


Fig. 1

(*1) Leave enough space to connect the site pipes.
(*2) This space is needed to place the top plate when performing service on the motor operated valve coil.
(*3) This space is needed to remove the top plate when performing service on the motor operated valve coil.

⚠ WARNING

Securely install the unit at a location that is capable of withstanding its weight.

Inadequate strength may cause the indoor unit to fall, resulting in bodily injury.

⚠ CAUTION

- Leave enough space to perform maintenance on the drain pan and control box.
- To prevent video and audio interference, install the BS unit as well as associated power wiring and signal transmission lines at least 1 m away from TVs and radios.
  However, depending on the reception, interference may result even if a minimum distance of 1 m is maintained.

4. PREPARATIONS BEFORE INSTALLATION

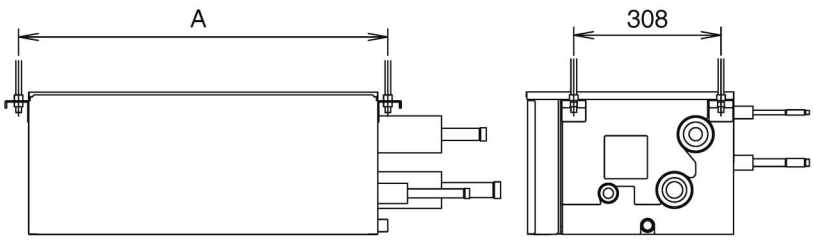
Install suspension bolts and hanging brackets as illustrated in the diagram below.

- Use a suspension bolt size of M8 to M10.
- Use mold-in inserts and embedded foundation bolts for new installations or hole-in anchor bolts or similar hardware for existing installations, taking care to install in a manner that can withstand the unit's weight.

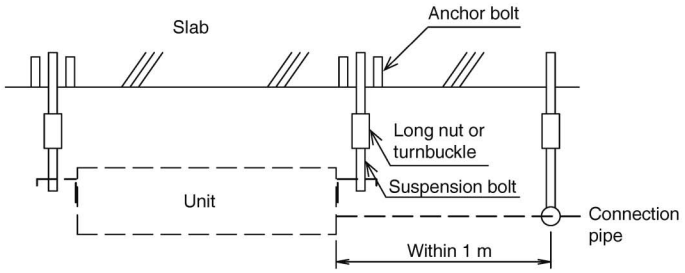
Unit: mm

BS unit	A
BS4Q14AV1	415
BS6Q14AV1	625
BS8Q14AV1	
BS10Q14AV1	865
BS12Q14AV1	
BS16Q14AV1	1105

<Suspension bolt spacing>



- Use the hanging brackets to support the connection pipes on both the front and back of the unit within 1 m of the unit's side.
  Placing an excessive amount of weight on the BS unit's hanging brackets may cause the unit to fall, resulting in bodily injury.

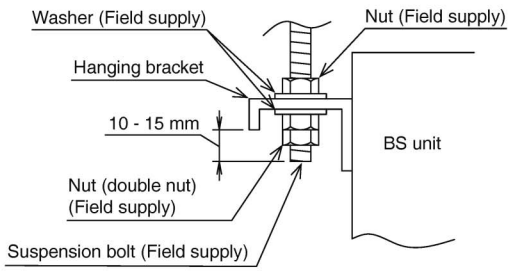


All the above parts must be supplied in the field
<Example installation>

5. BS UNIT INSTALLATION

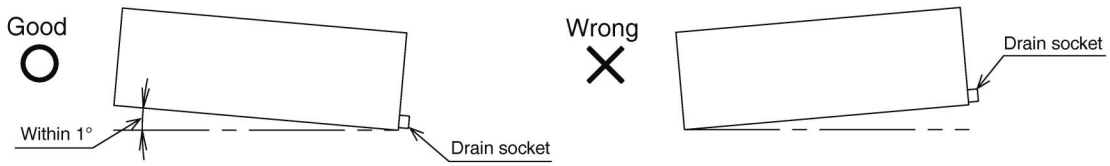
Use only accessories and parts that conform to the designated specifications when installing the unit.

1. Position the BS unit and secure it temporarily in place.
   Attach the hanging brackets to the suspension bolts as per the instructions in the figure to the right.
   Be sure to affix nuts (M8 or M10, 3 pieces in 4 locations) and washers (for M8, outside diameter of 24 to 28 mm or for M10, outside diameter of 30 to 34 mm: 2 pieces in 4 locations) (to be supplied in the field) from both the top and bottom of the hanging brackets on both sides of the unit to secure it in place.
2. Adjust the height of the unit as desired.
3. Using a level, verify that the unit has been installed in a level orientation.
   (The unit should be either level or within 1° of slope toward the drain socket.)



⚠ WARNING

- Install the BS unit in a level orientation.
  Installing the unit in an inclined orientation so that the drain pipe side is higher may result in water leakage.
- Attach nuts on both the top and bottom of the hanging brackets.
  Overtightening the lower nut without the upper nut in place may cause the hanging bracket and top plate to deform, causing the unit to produce abnormal noise.



<Unit as seen from the front of the control box>

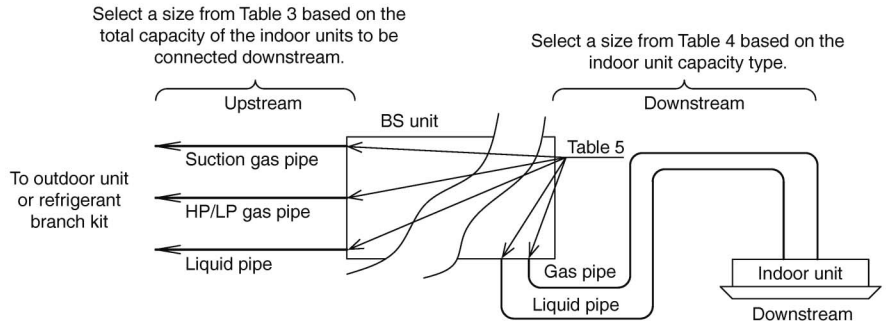
6. REFRIGERANT PIPING WORK

- For instructions for installing piping between the outdoor unit and the BS unit, selecting a refrigerant branch kit, and installing piping between the refrigerant branch kit and indoor units, refer to the installation manual and included with the outdoor unit.
- Before beginning the work, be sure to verify that the type of refrigerant used is R410A.
  (The unit will not operate correctly with a different type of refrigerant.)
- Insulate all of the piping, including the liquid pipes, HP/LP gas pipes, suction gas pipes, gas pipes, and the pipe connections for these.
  Not insulating these pipes could result in water leaks or burns.
  In particular, low-temperature gas flows in the HP/LP gas piping during full cooling operation, so the same amount of insulation as used for the suction gas pipes is required.
  In addition, high-temperature gas flows in the HP/LP gas piping and gas piping, so use insulation that can withstand more than 120°C.
- Select insulation material as necessary for the installation environment.
  For details, refer to the Engineering date book.
  If you fail to do so, condensation could form on the surface of the insulation.

6-1 Pipe size selection

Select the size of piping between the outdoor unit (refrigerant branch kit) and the BS unit and between the BS unit and indoor units (refrigerant branch kits) based on example connections 1 and 2 below and Tables 3 through 5.

Example connection 1 : When connecting 1 indoor unit downstream of the BS unit



Example connection 2 : When there is a branch downstream from the BS unit

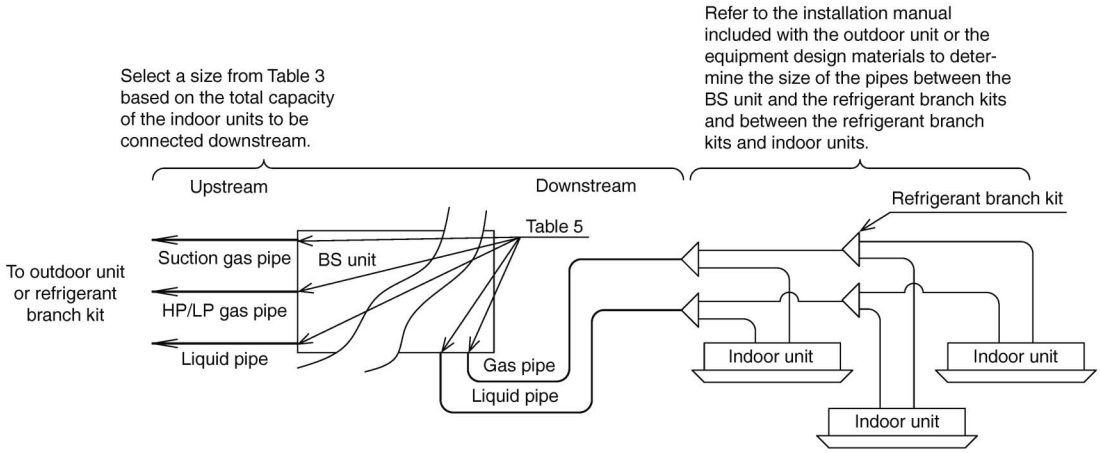


Table 3 Total indoor unit capacity and pipe size

Unit: mm

Total indoor unit capacity (Q)	Pipe size (outside diameter × minimum thickness)				
	Upstream			Downstream	
	Suction pipe	HP/LP gas pipe	Liquid pipe	Gas pipe	Liquid pipe
Q < 150	ϕ15.9 × 1.0	ϕ12.7 × 0.8	ϕ9.5 × 0.8	ϕ15.9 × 1.0	ϕ9.5 × 0.8
150 ≤ Q < 200	ϕ19.1 × 1.0	ϕ15.9 × 1.0		ϕ19.1 × 1.0	
200 ≤ Q < 290	ϕ22.2 × 1.0	ϕ19.1 × 1.0		ϕ22.2 × 1.0	
290 ≤ Q < 420	ϕ28.6 × 1.0		ϕ12.7 × 0.8		
420 ≤ Q < 640		ϕ28.6 × 1.0	ϕ15.9 × 1.0		
640 ≤ Q ≤ 750	ϕ34.9 × 1.2		ϕ19.1 × 1.0		

- In case of connection to the main pipe, refer to the installation manual included with the outdoor unit or the equipment design materials.

Table 4 Indoor unit connection pipe size

Unit: mm

Indoor unit capacity type	Pipe size (outside diameter × minimum thickness)	
	Gas pipe	Liquid pipe
20, 25, 32, 40, 50	ϕ12.7 × 0.80	ϕ6.4 × 0.80
63, 80, 100, 125	ϕ15.9× 1.0	ϕ9.5 × 0.80
200	ϕ19.1 × 1.0	
250	ϕ22.2 × 1.0	

• Table 5 lists BS unit connection pipe size.

Table 5 BS unit connection pipe size

Unit: mm

BS unit	Outdoor unit side (*1)			Indoor unit side (*2)	
	Suction pipe	HP/LP gas pipe	Liquid pipe	Gas pipe	Liquid pipe
BS4Q14AV1	ϕ22.2 (ϕ19.1)	ϕ19.1 (ϕ15.9)	ϕ9.5	ϕ12.7 (ϕ15.9)	ϕ6.4 (ϕ9.5)
BS6Q14AV1	ϕ28.6	ϕ19.1 (ϕ22.2)	ϕ12.7		
BS8Q14AV1		ϕ19.1 (ϕ22.2, ϕ28.6)	ϕ12.7 (ϕ15.9)		
BS10Q14AV1	ϕ28.6 (ϕ34.9)	ϕ28.6	ϕ15.9		
BS12Q14AV1			ϕ15.9 (ϕ19.1)		
BS16Q14AV1	ϕ34.9		ϕ19.1		

*1 Figures in parentheses indicate the size of the accessory pipes. If the pipe size differs from that of the size selected from Table 3, you will need a reducing joint (to be supplied in the field).

*2 The pipe diameter in parentheses can be used by cutting the pipes on the BS unit side with a pipe cutter. For details, refer to “6-3 Piping connection.”

NOTES

- If the number of indoor units to be connected is less than the number of branch ports (so that there are empty branch ports left, or if you plan to increase the number in the future), any of the branch ports can be left open.
- If you plan to add new indoor units in the future, select a pipe size based on the total indoor unit capacity before addition of new units.
- Be sure to use the stop valve kit for extension (KHFP26M224, sold separately) for pipe that you plan to expand in the future. Do not size pipe based on anticipated future expansion. Instead, reexamine the pipe size when you expand the system.
  Failure to use the stop valve kit for extension will force you to recover the refrigerant before connecting any new indoor units.
- For more information about how to install the stop valve kit for extension, refer to the installation manual included with the stop valve kit for extension.

6-2 Pipe connection work precautions

Connect the pipes.

- Braze (*2) refrigerant pipes after nitrogen replacement (replacing air and nitrogen while allowing nitrogen to flow inside the refrigerant pipe (*1). (**Refer to Fig. 2**))

  (*1) The pressure regulator for the nitrogen released when doing the brazing should be set to about 0.02 MPa (enough to feel a slight breeze on your cheek).

  (*2) Do not use flux when brazing the refrigerant pipe.
  Use phosphor copper (BCuP-2: JIS Z 3264/B-Cu93P-710/795: ISO 3677), which does not require flux, as the filler metal for brazing.
  (Using chlorine flux may cause the pipes to corrode, and if it contains fluoride it may cause the refrigerant lubricant to degrade, adversely affecting the refrigerant piping system.)

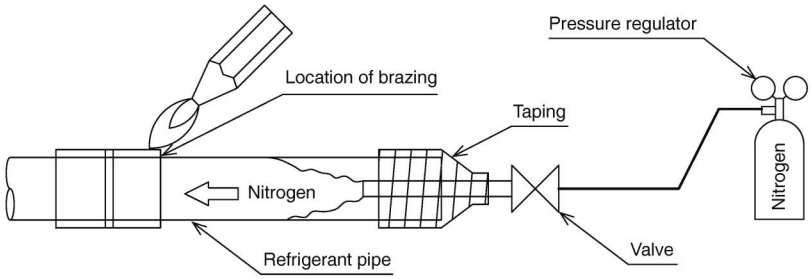


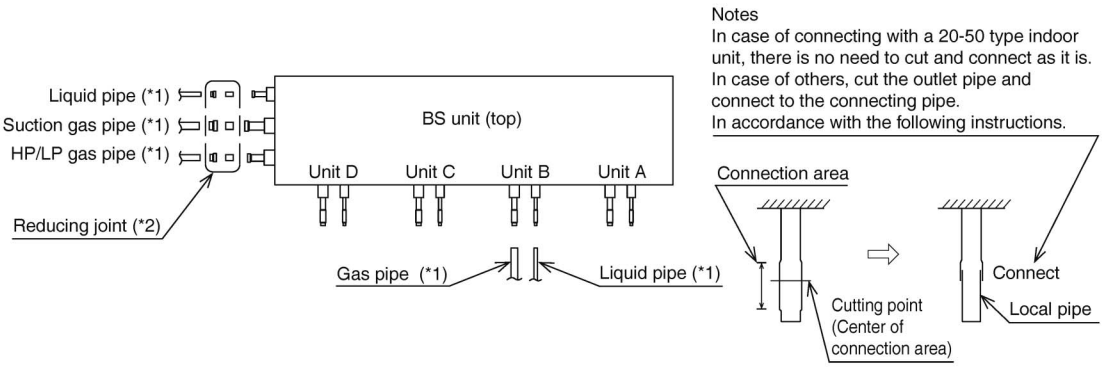
Fig. 2

⚠ CAUTION

- Do not use an anti-oxidizing agent when brazing the piping.
  (Residual debris could clog the piping or cause parts to malfunction.)

- For more information about outdoor unit refrigerant pipes, see the installation manual included with the outdoor unit or the Engineering Guide.
  (Failure to purge air from the pipes or fill additional refrigerant may result in an insufficient volume of refrigerant in the pipes or other problems, causing the equipment to malfunction [for example, to not cool or heat properly].)

6-3 Piping connection



(*1) Indicates local pipe.
(*2) Reducing joint may be required (field supply) if the local pipe size does not suit on the pipe size of the BS unit (Table 5).

If there are branch ports left unused (not connected to an indoor unit)

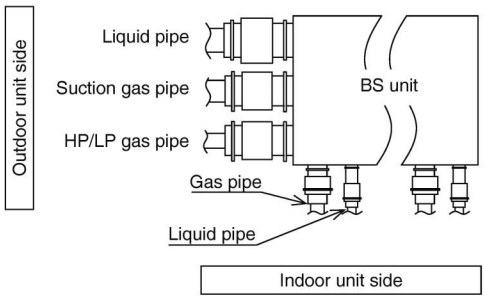
- If there are unused branch ports, use stopper pipe (7) (accessory).
  If there are numerous unused branch ports, be sure to use the stop pipe kit (KHFP26A100C).
  Be sure to use the stop valve kit for extension (KHFP26M224, sold separately), for branch ports that you plan to expand in the future.

6-4 Airtightness test and vacuum drying

- After completing refrigerant piping work for the indoor units, BS unit, and outdoor unit, conduct an air-tightness test and vacuum drying.
  For more information about the airtightness test pressure, refer to the outdoor unit's installation manual.

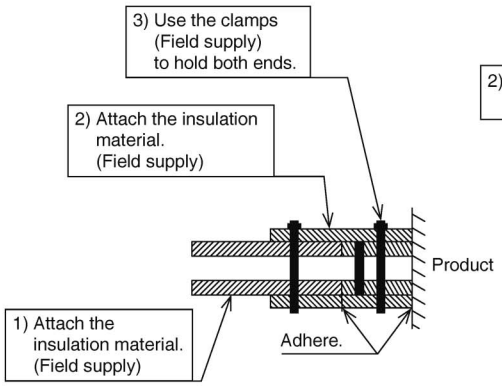
6-5 Piping insulation

- After the gas leak inspection is completed, refer to the following figures and use the included insulation tube (3) and clamps (2) to apply the insulation.

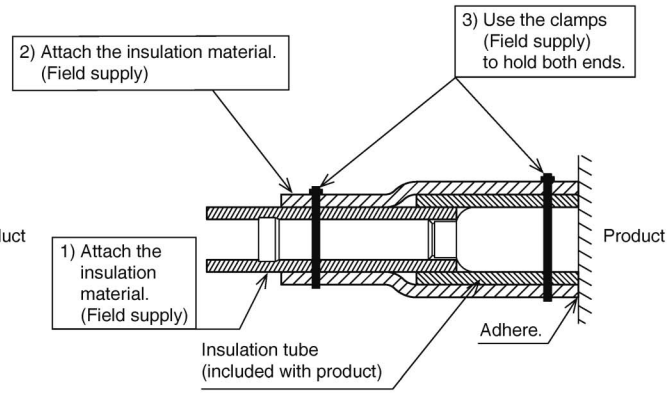


⚠ CAUTION

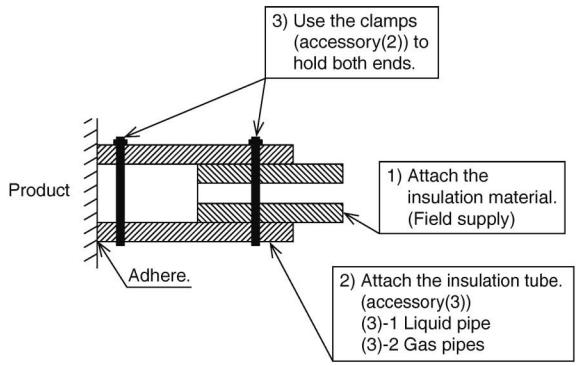
- Insulate all of the piping including the liquid pipes, HP/LP gas pipes, suction gas pipes, gas pipes, and the pipe connections for these.
  Not insulating these pipes could result in water leaks or burns.
  In particular, low-temperature gas flows in the HP/LP gas pipes during full cooling operation, so the same amount of insulation as used for the suction gas pipes is required.
  In addition, high-temperature gas flows in the HP/LP gas piping and gas piping, so use insulation that can withstand more than 120°C.
- When reinforcing the insulation material in accordance with the installation environment, also reinforce the insulation on the piping protruding from the unit.
  Insulation material required for reinforcement work should be supplied in the field.
  For more information, refer to the Engineering data book.



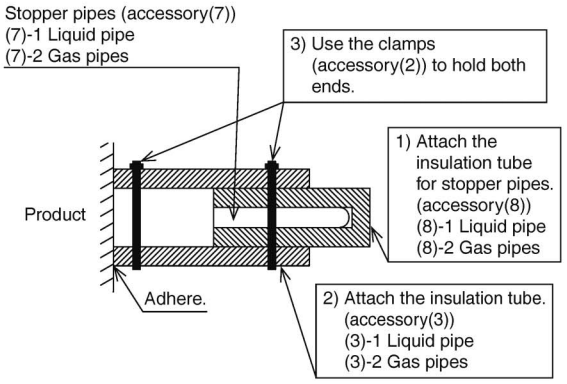
Insulation material installation instructions (outdoor unit side) (liquid pipes)



Insulation material installation instructions (outdoor unit side) (suction and HP/LP gas pipes)



Insulation tube installation instructions (indoor unit side) (gas and liquid pipes)



Insulation tube installation instructions for unused branch ports (indoor unit side) (gas and liquid pipes)

⚠ CAUTION

- Wrap insulation material with the seam facing up. (**Refer to Fig. 3**)

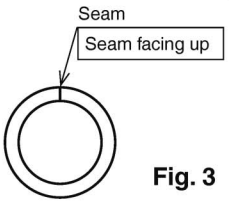


Fig. 3

7. DRAIN PIPING WORK

(1) Drain piping work

Install drain piping so that wastewater drains reliably.

- Use a pipe diameter that is the same as or greater than the connection pipe (PVC pipe, nominal diameter of 20 mm, outside diameter of 26 mm).
- Use a short length of pipe and route it at a downward slope of 1/100 or greater such that air does not collect in the pipe. (**Refer to Fig. 4 and 5.**)
- If unable to provide an adequate slope for the drain, use the drain up kit (sold separately).

<Example problem>
If water accumulates in the drain pipe, it may cause the drain to become clogged.

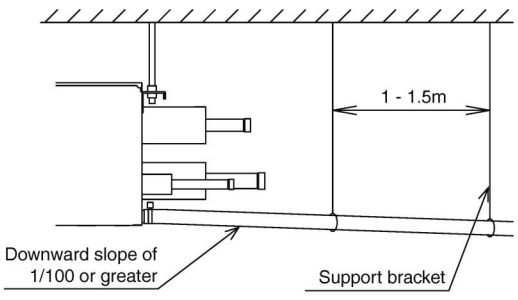
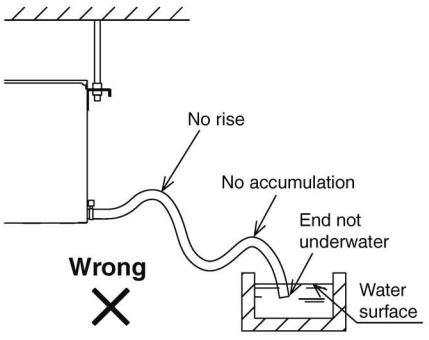


Fig. 4



Example of problems with drain piping work

Fig. 5

- Be sure to use the included drain hose (4) and metal clamp (5).
  In addition, insert the drain hose (4) all the way onto the drain socket, and tighten the metal clamp (5) in place at the base of the drain socket. (**Refer to Fig. 6 and 8.**)
  (Install the metal clamp (5) so that the tightener falls within about 45°, as shown in the figure.)
- Bend the tip of the metal clamp (5) so that the sealing material does not swell. (**Refer to Fig. 8.**)
- Apply the included sealing material (6) to the metal clamp (5) in the direction of the arrow starting at the base of the drain hose (4) to apply insulation. (**Refer to Fig. 6 and 8.**)
- Be sure to apply insulation to the drain pipe, which passes through the interior space, and the drain socket.
- Do not allow the drain hose (4) to droop inside the BS unit. (**Refer to Fig. 7.**)
  (Doing so may cause the drain to become clogged.)
- Install support brackets at an interval of 1 to 1.5 m so that the pipe does not droop. (**Refer to Fig. 4.**)

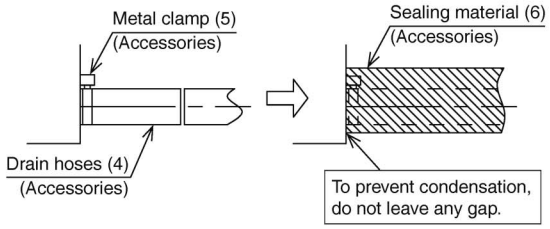


Fig. 6

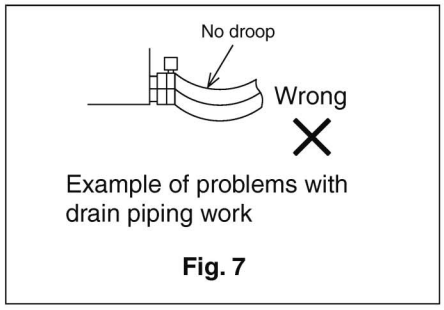


Fig. 7

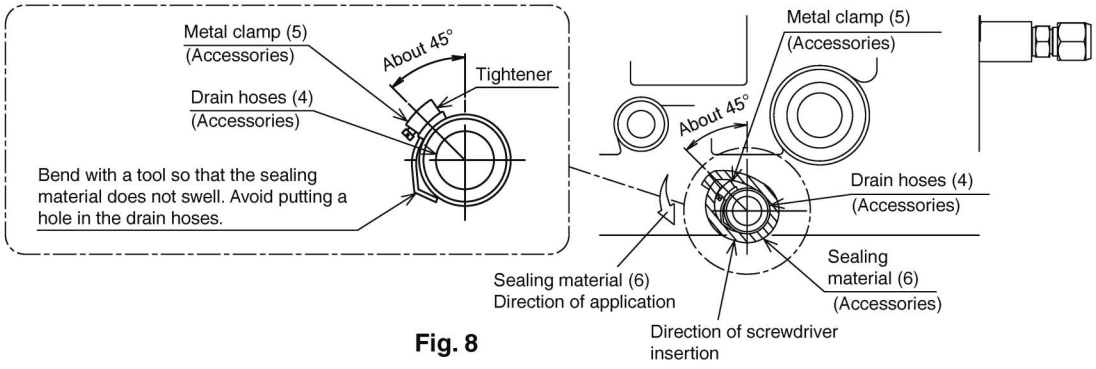


Fig. 8

To keep dust and other foreign matter out of the indoor unit, seal with putty, insulation material (to be supplied in the field), or other means so that there is no gap in the drain pipe.

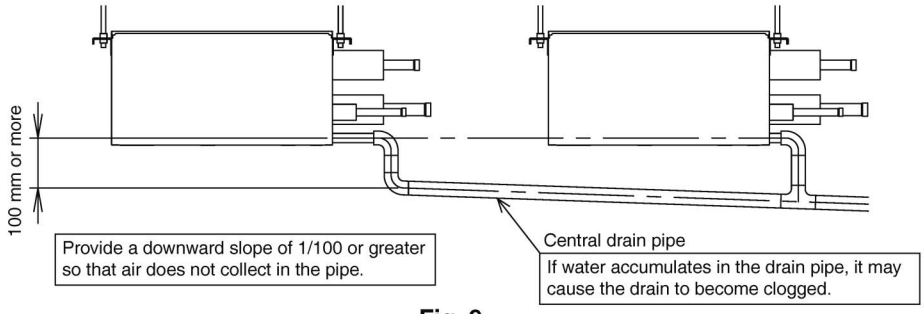


Fig. 9

⚠ CAUTION

- To avoid subjecting the included drain hose (4) to excessive force, do not bend or twist. (Doing so may result in a water leak.)
- When using a central drain pipe, follow the instructions in **Figure 9**.

(2) After the completion of piping work, verify that water flows smoothly through the drain.

- Gradually add water to the inspection hole to verify the flow of wastewater into the drain pan. (**Refer to Fig. 10.**)

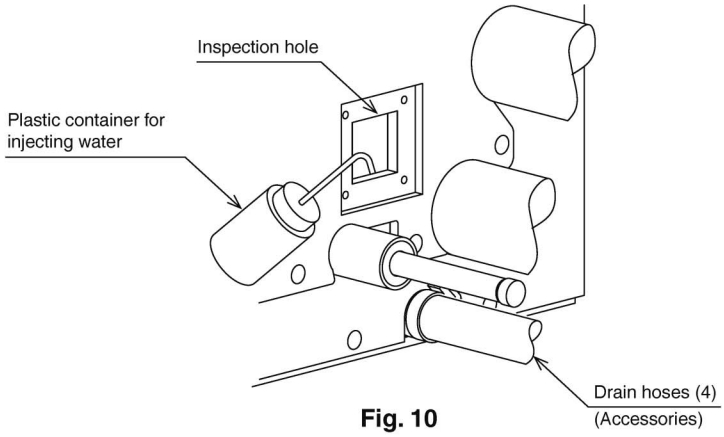


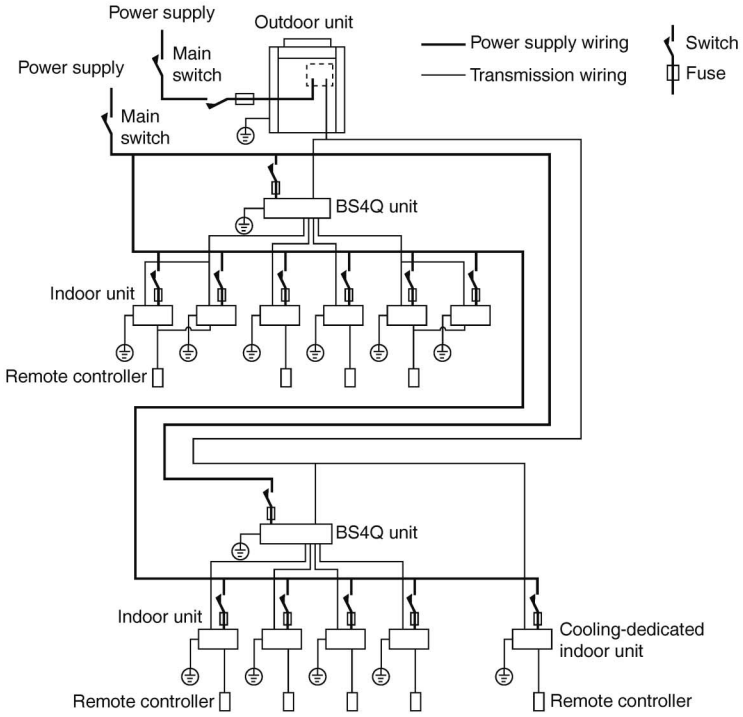
Fig. 10

8. ELECTRIC WIRING WORK

8-1 GENERAL INSTRUCTIONS

- All wiring must be performed by an authorized electrician.
- All field supplied parts and materials, electric works must conform to local codes.
- Always ground wires. (In accordance with national regulations of the pertinent country.)
- Always turn off the power before performing the electric wire installation work.
- Follow the “WIRING DIAGRAM” attached to the unit body to wire the outdoor unit and indoor units.
- Properly connect wire of the specified wire type and copper thickness. Also use the included clamp to avoid applying excessive force to the terminal (field wire, ground wire).
- Do not let the ground wire should come in contact with gas pipes, water pipes, lighting rods, or telephone ground wires.
  - Gas pipes: gas leaks can cause explosions and fire.
  - Water pipes: cannot be grounded if hard vinyl pipes are used.
  - Telephone ground and lightning rods: the ground potential when struck by lightning gets extremely high.
- A circuit breaker capable of shutting down the power supply to the entire system must be installed.
- This system consists of multiple BS units. Mark each BS unit as unit A, unit B . . . , and be sure the terminal board wiring to the outdoor unit and indoor unit are properly matched. If wiring and piping between the outdoor unit, BS unit and an indoor unit are mismatched, the system may cause a malfunction.
- Do not turn on the power supply (branch switches, overload interrupters) until all other work is done.

8-2 EXAMPLE FOR THE WHOLE SYSTEM



8-3 POWER CIRCUIT, SAFETY DEVICE AND CABLE REQUIREMENTS

- A power circuit (Refer to Table 6) must be provided for connection of the unit. This circuit must be protected with the required safety devices, i.e. a main switch, a slow blow fuse on each phase and an earth leakage circuit breaker.
- When using residual current operated circuit breakers, be sure to use a high-speed type (0.1 second or less) 30mA rated residual operating current.
- Use copper conductors only.
- Use insulated wire for the power cord.
- Select the power supply cable type and size in accordance with relevant local and national regulations.
- Specifications for local wiring are in compliance with IEC60245.
- Use wire type H05VV-U3G for power supply wiring. And the size must comply with local codes.
- Use vinyl cord with sheath or cable (2 wire) of 0.75-1.25mm^2 for transmission wiring.
- The transmission wire lengths are as follows:
  Between the BS unit and indoor units: Max. 1,000 m
  Between the BS unit and outdoor unit: Max. 1,000 m
  Between BS units: Max. 1,000 m
  Total wiring length: 2,000 m or less

Table 6

Model	Units					Power supply	
	Type	Hz	Voltage	Voltage range			
				Min.	Max.	MCA	MFA
BS4Q14AV1	V1	50	220-240	198	264	0.4	15
BS6Q14AV1						0.6	
BS8Q14AV1						0.8	
BS10Q14AV1						1.0	
BS12Q14AV1						1.2	
BS16Q14AV1						1.6	

MCA: Min. Circuit Amps (A); MFA: Max. Fuse Amps (A)

NOTES

- The above Table 6 of Electrical Characteristics refers to one BS unit.

8-4 Wiring example

Here is shown a wiring example for transmission wiring.

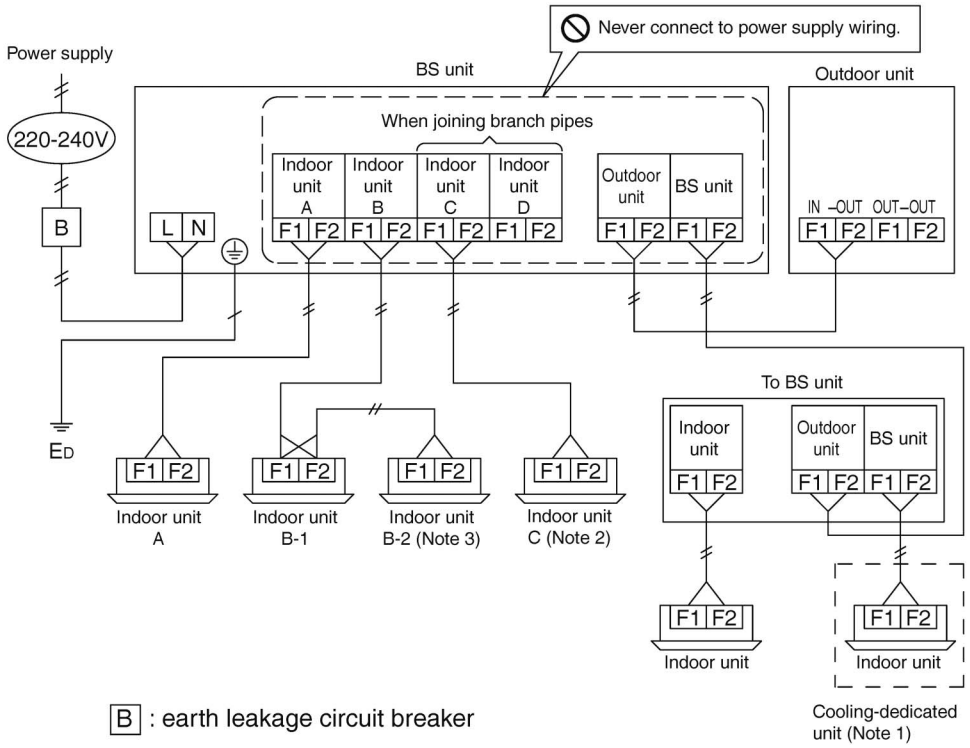
WARNING

Install an earth leakage circuit breaker.

Failure to install an earth leakage circuit breaker may result in electric shock or fire.

3

- Connect terminals F1 and F2 (IN/OUT) on the control Printed Circuit Board in the outdoor unit's control box to terminals F1 and F2 (outdoor unit) on the first BS unit.



B : earth leakage circuit breaker

NOTES

1. Connect the cooling-dedicated unit to the final BS unit's F1 and F2 terminals (outdoor side).
2. This wiring example applies when joining the C and D branches and connecting them to indoor units.
   The terminal block to which the transmission wiring is connected can be connected to either indoor unit C or indoor unit D.
   However, the DIP switches must be set appropriately.
   For more information about how to set DIP switches, refer to "**9. INITIAL SETTING**".
3. The maximum connection number of indoor units per branch is 5 sets.

⚠ CAUTION

- Use 2-core transmission wiring.
  Using the same wire with 3 or more cores to connect 2 or more indoor units may cause them to stop with an error.
- When the shield wire is used, be sure to ground the one side of the shield wire.
  The total wiring length is 1500m when shielded wire is used.
- Be sure to use ring type crimp style terminals with insulation sleeves to connect wires to the power supply terminal block. (**Refer to Fig. 11.**)
- Do not use with the power supply terminal block and earth terminal connected to wiring for another circuit.
- Do not pre-solder stranded wire.
- Connect wires securely so that the terminals will not be subjected to external force.
- Use an appropriately sized screwdriver to tighten the terminal screws.
  Use of a screwdriver that is too small could damage the screw head and prevent proper tightening.
- Overtightening the terminal screws could damage the screw.
  Refer to the table for the terminal screw tightening torque.

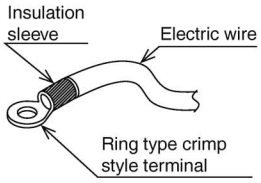


Fig. 11

Terminal screw size	Tightening torque (N·m)
M3.5 (transmission wire terminal block)	0.88 ± 0.08
M4 (power supply terminal block)	1.31 ± 0.13
M4 (earth terminal)	1.69 ± 0.17

- Never connect power supply wiring to the transmission wiring terminal block.
  Doing so may damage the entire system.
- Transmission wiring cannot be branched again after the initial branch.
  (**Refer to Fig. 12.**)

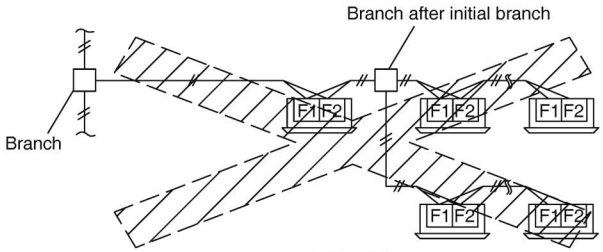
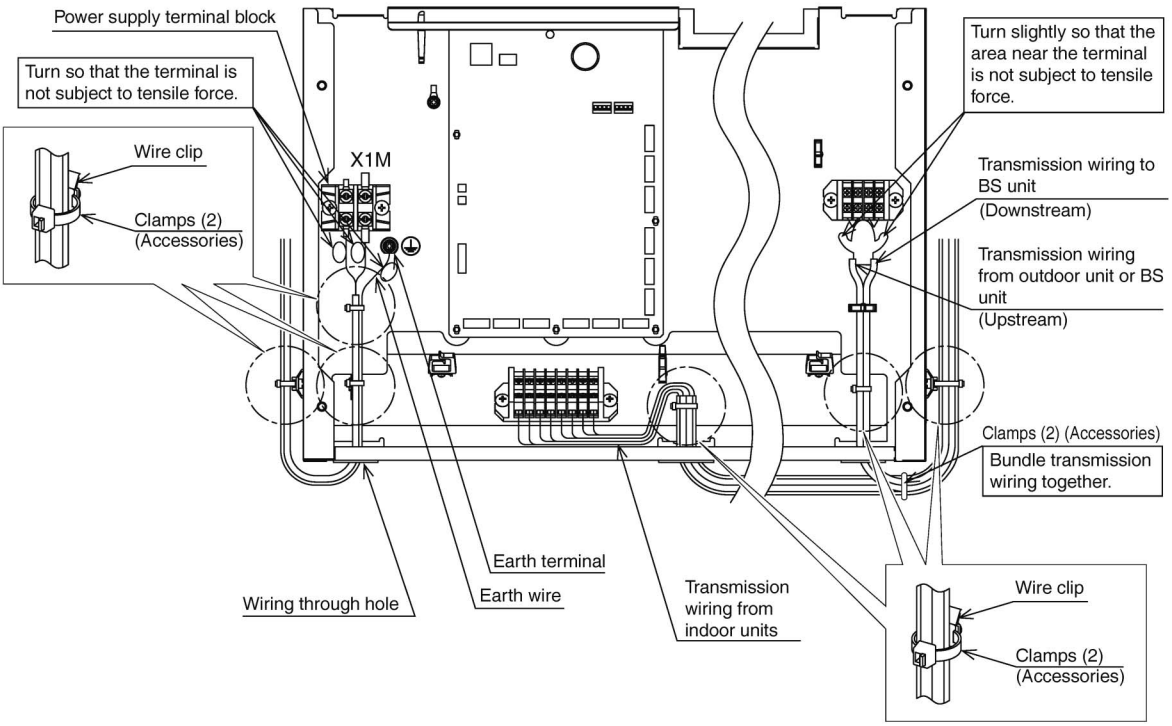


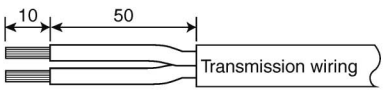
Fig. 12

8-5 Wiring connections

(Remove the control box cover and connect the wiring as shown in the figure below.)



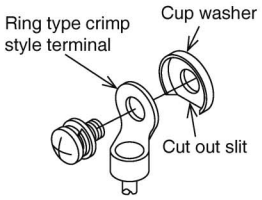
- Transmission wiring
  Remove the control box cover and connect the wires to the transmission wiring terminals (outdoor unit F1 and F2, BS unit F1 and F2, and each indoor unit (for example, for the BS16Q14AV1, indoor unit A through P) (F1 and F2)).
  At this time, pass the wiring into the unit through the wiring through hole and use the included clamps (2) to securely hold the wires. For more information about how much insulation to strip off transmission wiring, refer to the following figure.

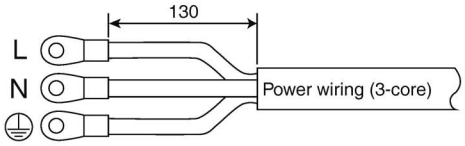


⚠ CAUTION

Verify that the piping line coincides with the transmission wiring.

- Power supply wiring and earth wires
  Remove the control box cover and connect the power supply wiring to the power terminal block (X1M).
  Also connect the earth wire to the earth wire terminal.
  Pass both the power supply wires and the earth wire together through the wire through hole (left) into the control box and use the included clamps (2) to securely hold the wires in place.
  Be sure to wire the earth wire so that it comes out of the cut out slit in the cup washer.
  (Not doing so could cause insufficient earth wire contact, causing the wire not to function as a earth.)
  For more information about how much insulation to strip off power wiring, refer to the following figure.



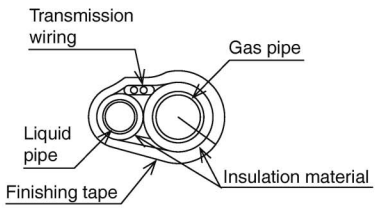


⚠ WARNING

Organize the wiring and securely reattach the control box cover.
Pinched wires or a loose control box cover could result in electric shock or fire.

⚠ CAUTION

- When fastening the wire, use the included clamp (2) so as not to apply tensile force to the wire connection and then securely fasten the wire.
  Also, after the wiring is completed, organize the wiring so that the control box cover does not pop up and then properly replace the control box cover.
  Make sure no wires are pinched when replacing the control box cover.
  Always use the wire through hole to protect wires.
- Do not pass the transmission wiring and power supply wiring through the same locations, and outside of the unit keep them separated by at least 50 mm.
  Not doing so could cause the transmission wiring to pick up electric noise (external noise) and result in a malfunction or breakdown.
- After the wiring work is complete, use sealer (to be supplied in the field) to seal closed the wire through hole.
  (Entry by small animals, etc., could cause a malfunction.)
- As shown in the figure to the right, wrap the transmission wiring between each BS unit and indoor unit with finishing tape (to be supplied in the field).



9. INITIAL SETTING

9-1 Settings in the field

Follow the instructions below to set the DIP switches as necessary.

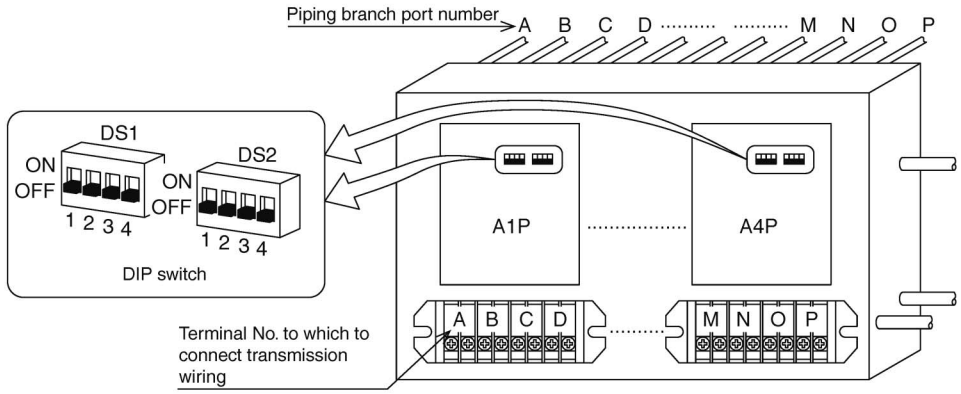
3

⚠ WARNING

Electric shock hazard! Before performing work, be sure to disconnect any power source connected to the unit.

Procedure

1. Disconnect the power source.
2. Set the DIP switches (DS1, DS2) for the corresponding branch ports based on the following table.
3. Once work is complete, be sure to close the cover on the control box.

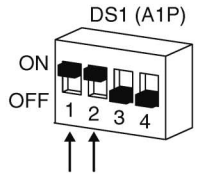


<Setting>

1. Setting for branch ports to which no indoor unit is connected

	Setting	Setting for branch ports to which no indoor unit is connected (Example 1)															
	DIP switch setting	ON (Not connected) OFF (Factory default)															
	DIP switch No.	DS1 (A1P)				DS1 (A2P)				DS1 (A3P)				DS1 (A4P)			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
BS4Q14AV1	Target branch port	Unit A	Unit B	Unit C	Unit D												
BS6Q14AV1						Unit E	Unit F	Unit G	Unit H								
BS8Q14AV1										Unit I	Unit J	Unit K	Unit L				
BS10Q14AV1														Unit M	Unit N	Unit O	Unit P
BS12Q14AV1																	
BS16Q14AV1																	

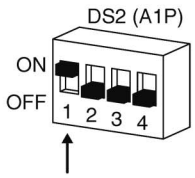
(Example 1)
When not connecting the indoor unit to the A and B branch circuits



2. Setting when joining branch ports

	Setting	Setting when joining branch ports (Example 2)							
	DIP switch setting	ON (Joined) OFF (Factory default)							
	DIP switch No.	DS2 (A1P)		DS2 (A2P)		DS2 (A3P)		DS2 (A4P)	
		1	2	1	2	1	2	1	2
BS4Q14AV1	Target branch port	A and B units joined	C and D units joined	E and F units joined	G and H units joined	I and J units joined	K and L units joined	M and N units joined	O and P units joined
BS6Q14AV1									
BS8Q14AV1									
BS10Q14AV1									
BS12Q14AV1									
BS16Q14AV1									

(Example 2)
When joining the A and B branches



When joining branches, only the branch port combinations shown in the above table can be used.
(For example, units B and C cannot be joined.)

10. ADDING AN ADDITIONAL CHARGE OF REFRIGERANT

Follow the instructions in the installation manual that came with the outdoor unit to add an additional charge of refrigerant.

11. CHECK OPERATION AND TEST OPERATION

1. Verify that the control box cover is closed.
2. Refer to the installation manual included with the outdoor unit and conduct a check and a test run after all the work on the BS unit and outdoor and indoor units is completed and the operational safety of the units is confirmed.
   - You will hear the motor operated valve operating for about 90 seconds as it is automatically initialized (closed) after power is turned on, but this is not a problem.
   - System malfunctions can be verified by means of the following methods:
     Indication on the indoor operation remote controller
     Overall system malfunctions, including of the BS unit, can be identified using the LCD malfunction display on the operation remote controller. For more information about the malfunction display and its significance, refer to the service precaution name plate affixed to the indoor unit and the user manual included with the outdoor unit.

10. Accessories

10.1 Optional Accessories (for Unit)

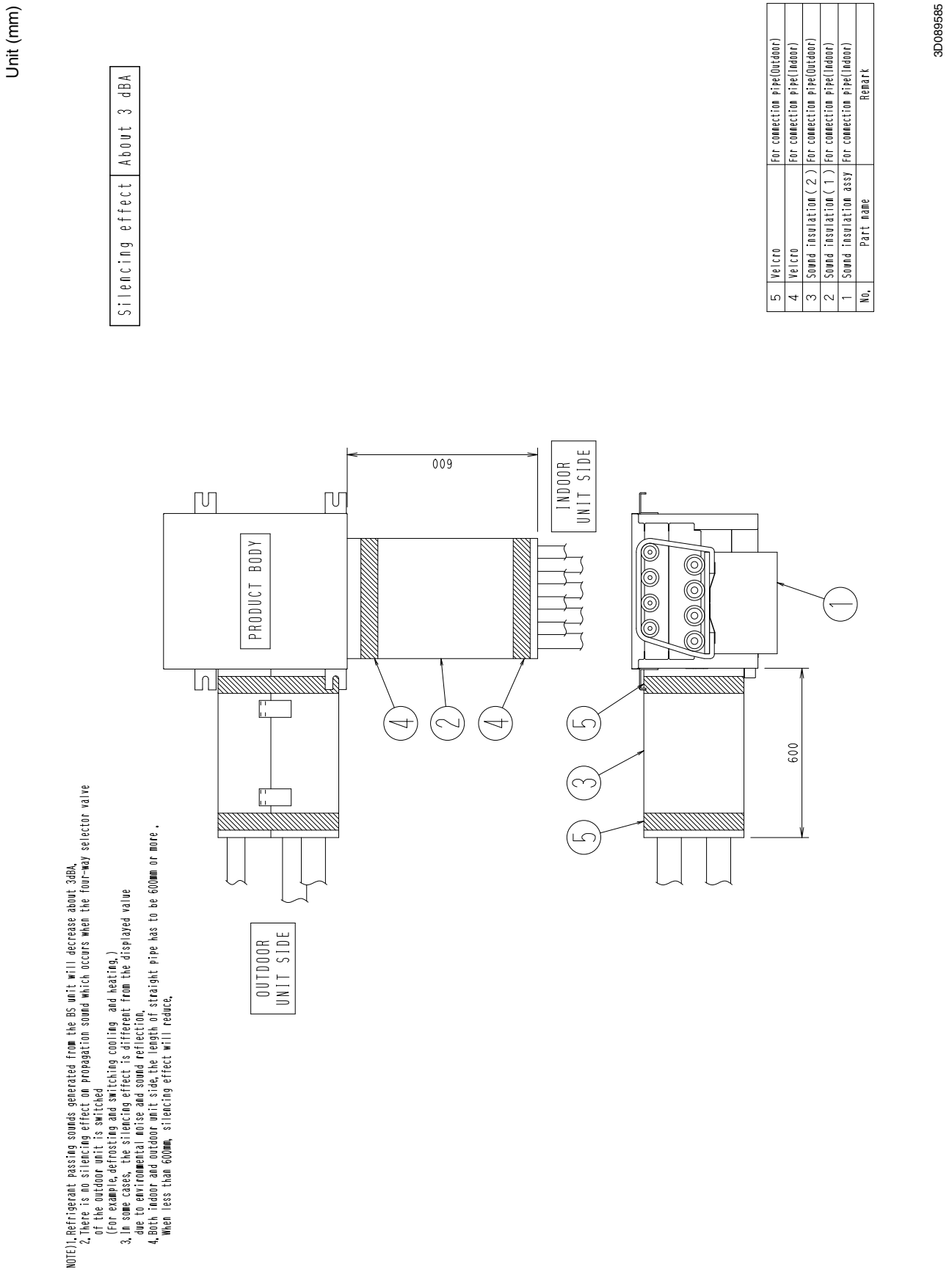
Item	BS4Q14AV1	BS6Q14AV1	BS8Q14AV1	BS10Q14AV1	BS12Q14AV1	BS16Q14AV1
Closed pipe kit	KHFP26A100C					
Joint kit	KHRP26A250T					
Quiet kit	KDDN26A4	KDDN26A8		KDDN26A12		KDDN26A16

Note: 1. Revision mark should be the latest.

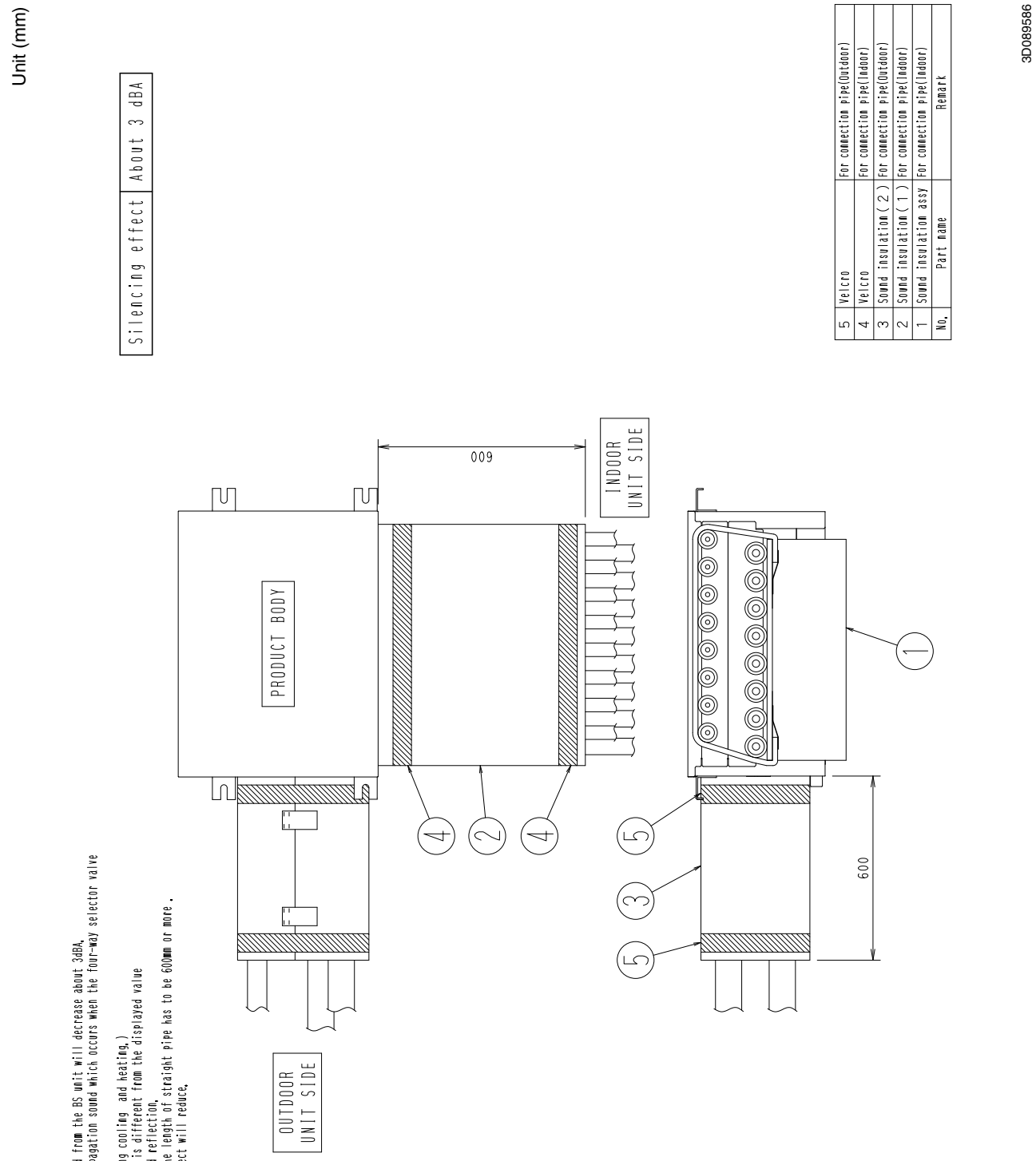
C: 3D087639B

11. Dimensions of Optional Accessories

BS4Q14AV1 with KDDN26A4

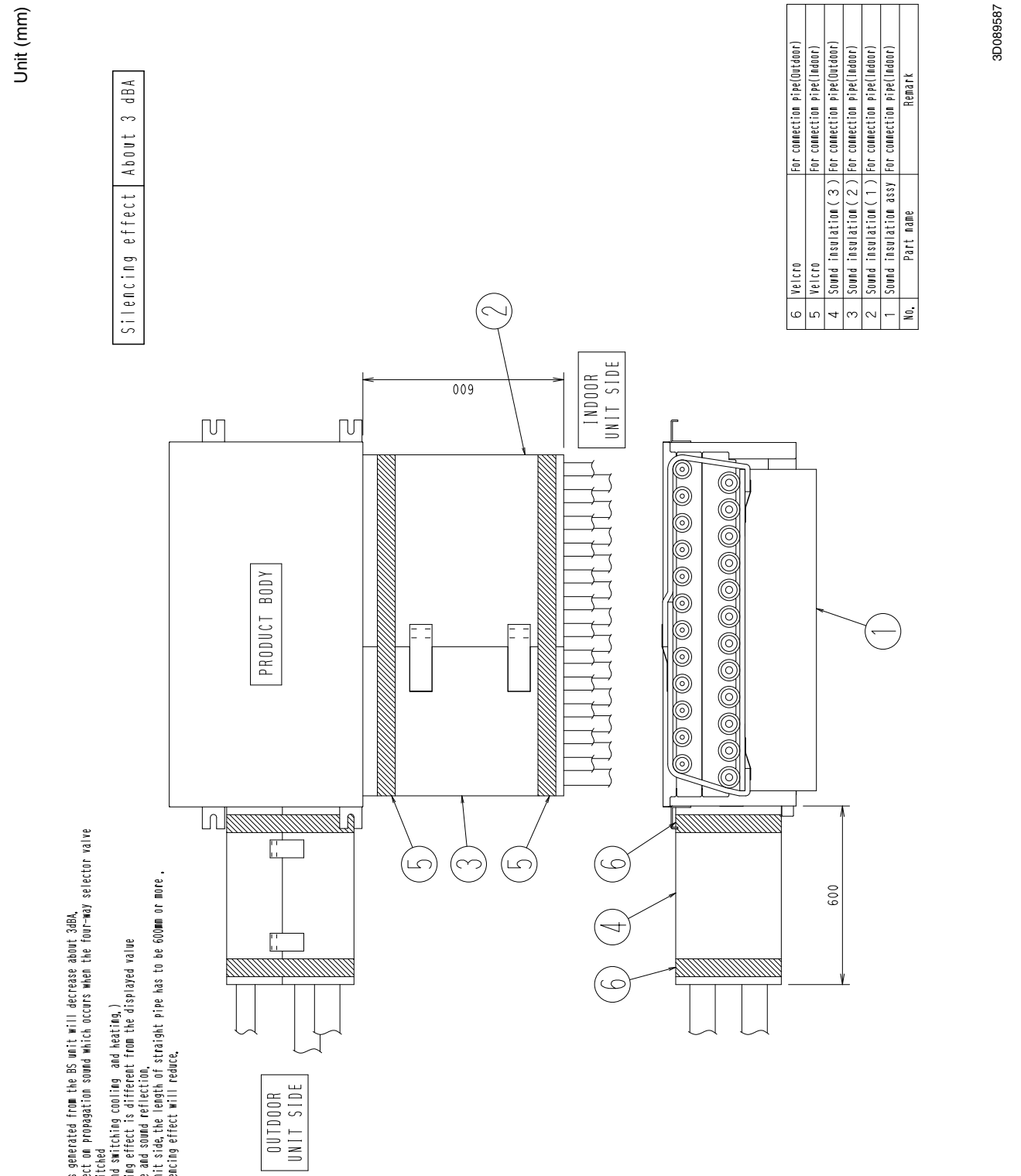


BS6Q14AV1 / BS8Q14AV1 with KDDN26A8



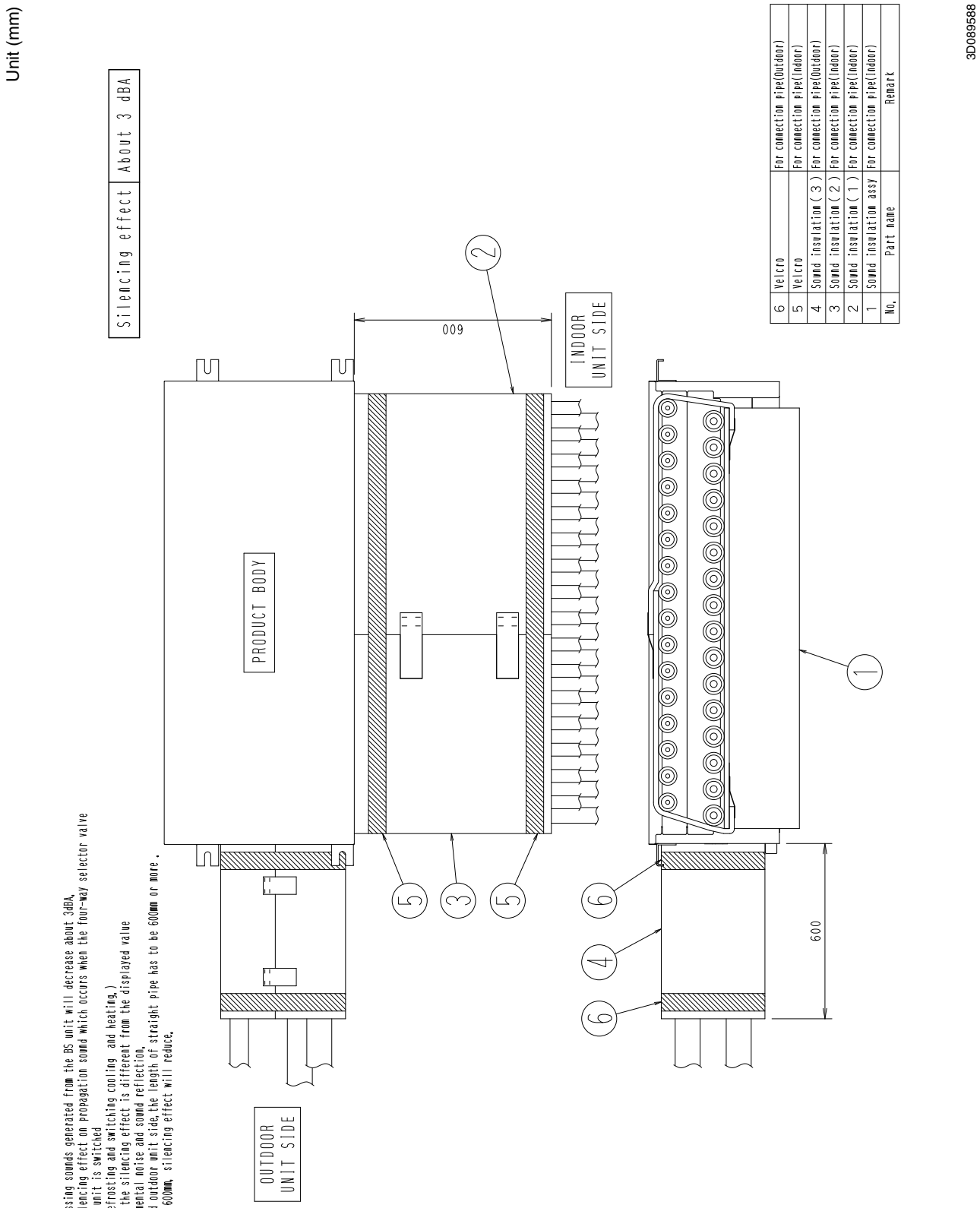
BS10Q14AV1 / BS12Q14AV1 with KDDN26A12

Unit (mm)



NOTE)1. Refrigerant passing sounds generated from the BS unit will decrease about 3dBA.
2. There is no silencing effect on propagation sound which occurs when the four-way selector valve of the outdoor unit is switched
(For example,defrosting and switching cooling and heating.)
3. In some cases, the silencing effect is different from the displayed value due to environmental noise and sound reflection.
4. Both indoor and outdoor unit side,the length of straight pipe has to be 600mm or more. When less than 600mm, silencing effect will reduce.

BS16Q14AV1 with KDDN26A16



Warning

- Ask a qualified installer or contractor to install this product. Do not try to install the product yourself. Improper installation can result in water or refrigerant leakage, electrical shock, fire or explosion.
- Use only those parts and accessories supplied or specified by Daikin. Ask a qualified installer or contractor to install those parts and accessories. Use of unauthorised parts and accessories or improper installation of parts and accessories can result in water or refrigerant leakage, electrical shock, fire or explosion.
- Read the user's manual carefully before using this product. The user's manual provides important safety instructions and warnings. Be sure to follow these instructions and warnings.

If you have any enquiries, please contact your local importer, distributor and/or retailer.

Cautions on product corrosion

1. Air conditioners should not be installed in areas where corrosive gases, such as acid gas or alkaline gas, are produced.
2. If the outdoor unit is to be installed close to the sea shore, direct exposure to the sea breeze should be avoided. If you need to install the outdoor unit close to the sea shore, contact your local distributor.

● Specifications, designs and other content appearing in this brochure are current as of March 2015 but subject to change without notice.