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Multi Air Conditioner
SVC MANUAL(Exploded View)

CAUTION

Before Servicing the unit, read the safety precautions in General SVC manual.
Only for authorized service personnel.

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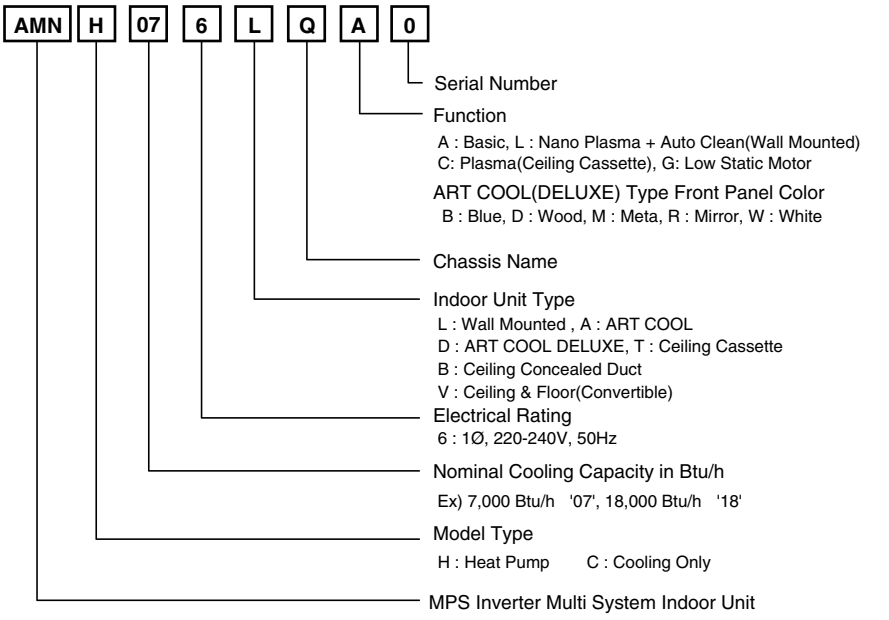
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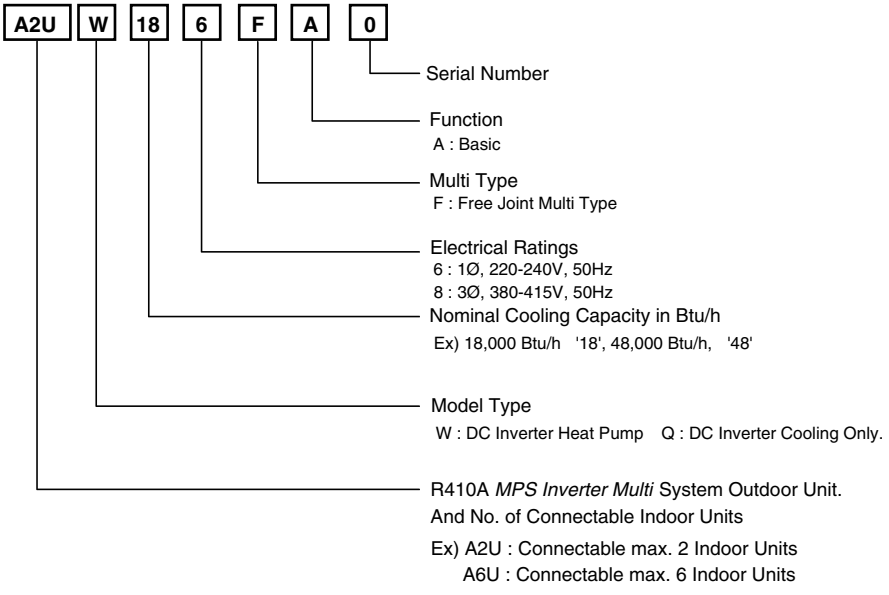
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Model Number Nomenclature

Indoor Unit



Outdoor Unit



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Panel (Cassette, Built in Duct)

Category	CHASSIS	PANEL NAME	PANEL P/NO.	SERIAL NO.	Remark
CST PANEL	TF	PT-CFA	3721A10072B	8435002992862	COOLING
		PT-CFC	3721A10072G	8435002992879	COOLING + PLASMA
		PT-HFA	3821A10072A	8435002992886	HEATING
		PT-HFC	3721A10072E	8435002992893	HEATING + PLASMA
	TC	PT-CCA	3721A10023Z	8435002994095	COOLING
		PT-CCC	3721A10023W	8435002994101	COOLING + PLASMA
		PT-HCA	3721A10023Y	8435002994118	HEATING
		PT-HCC	3721A10023V	8435002994125	HEATING + PLASMA
	TE(family look)	PT-HEA	3721A10105A	8435002992978	HEATING
		PT-HEC	3721A10105B	8435002992985	HEATING + PLASMA
		PT-CEA	3721A10105C	8435002992954	COOLING
		PT-CEC	3721A10105D	8435002992961	COOLING + PLASMA
	TD(family look)	PT-HAD	3721A10106A	8435002994057	HEATING
		PT-HDC	3721A10106B	8435002994064	HEATING + PLASMA
		PT-CDA	3721A10106C	8435002994071	COOLING
		PT-CDC	3721A10106D	8435002994088	COOLING + PLASMA
BUILT IN DUCT	BP	PB-HPA	3721A20168A		9K/12K
	BQ	PB-HQA	3721A20168B		18K/24K

P T - H E A

1	2	3	4	5	6

Number	Contents
1, 2	Panel for Cassette
3	-
4	Cooling/Heatpump
5	Chassis Name
6	Function

5. Chassis Name

Chassis	Abbrevation
TC	C
TB	B
TD	D
TE	E
TF	F
TH	H
TJ	J
BP	P
BQ	Q

6. Function

Function	
Basic	A
	B
Plasma Filter	C
	D
Elevation Grille	E
Elevation Grille + Plasma Filter	F
TE/TB/TD Before 2003 : Basic	0
TE/TD Before 2003 : Plasma Filter	1

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Indoor Units

Category	Type	Chasiss	Model Name						
			Capacity, kW(Btu/h)						
			2.1 (7000)	2.6 (9000)	3.5 (12000)	5.3 (18000)	7.0 (24000)	8.8 (30000)	10.6 (36000)
Wall Mounted	General	SQ	AMNH 076LQL0	AMNH 096LQL0	-	-	-	-	-
		SR	-	AMNH 096LRL0	AMNH 126LRL0	-	-	-	-
		ST	-	-	-	AMNH 186LTL0	AMNH 246LTC0	-	-
ART COOL	General	SP1	-	AMNN 096AP*1	AMNN 126AP*1	-	-	-	-
	Mirror	SZ	AMNH 076DZ*0	-	-	-	-	-	-
		SU	-	AMNH 096DU*0	AMNH 126DU*0	-	-	-	-
Ceiling Cassette	1Way	TC	-	AMNH/C 096TCC0	AMNH/C 126TCC0	-	-	-	-
	4Way	TE	-	-	AMNH/C 126TEC0	AMNH/C 186TEC0	-	-	-
		TF	-	-	-	-	AMNH/C 246TFC0	AMNH/C 306TFC0	-
		TD	-	-	-	-	-	-	AMNH/C 366TDC0
Ceiling Concealed Duct	High Static	BH	-	-	-	AMNH 186BHA0	AMNH 246BHA0	-	-
		BG	-	-	-	-	-	AMNH/C 306BGA0	AMNH 366BGA0
	Low Static	BT	-	AMNH 096BTG0	AMNH 126BTG0	AMNH 186BTG0	-	-	-
	Built in	BP	-	AMNH 096BPA0	AMNH 126BPA0	-	-	-	-
Ceiling & Floor	Convertible	VE	-	AMNH 096VEA0	AMNH 126VEA0	-	-	-	-
		VB	-	-	-	AMNH 186VBA0	AMNH/C 246VBA0	-	-

Outdoor Units

MPS Inverter Multi Series			Multi Piping Type						Distributor Type		
Heat Pump	Model Name		A2UW146FA0	A2UW186FA0	A3UW186FA0	A3UW246FA0	A4UW246FA0	A4UW306FA0	A6UW406FA0	A7UW486FA0	A8UW566FA0
Rated Capacity	Cooling	kW(Btu/h)	4.7(1600)	5.3(18000)	5.3(18000)	7.0(24000)	7.0(24000)	8.8(30000)	11.7(40000)	14.0(48000)	16.4(56000)
	Heating	kW(Btu/h)	5.3(1800)	6.3(21600)	6.3(21600)	8.2(28000)	8.2(28000)	10.1(34500)	13.5(46000)	16.2(55200)	18.9(64400)
Number of Indoor Units to be Connected			Max.2 Units	Max.2 Units	Max.3 Units	Max.3 Units	Max.4 Units	Max.4 Units	Max.6 Units	Max.7 Units	Max.8 Units
Indoor Units		kW	2.1~6.2	2.1~7.0	2.1~7.0	2.1~9.7	2.1~9.7	2.1~11.4	4.7~15.2	5.6~18.3	6.6~21.3
Connectable Capacity		Btu/h	7000~21000	7000~24000	7000~24000	7000~33000	7000~33000	7000~39000	16000~52000	19200~62400	22400~72800
Power Supply			1Ø, 220-240V, 50Hz								

Notes :
A2UW146FA0, A2UW186FA0 and A3UW186FA0 are not TPS inverter system but one inverter compressor system.

Symbols Used in this Manual



This symbol alerts you to the risk of electric shock.



This symbol alerts you to hazards that could cause harm to the air conditioner.

NOTICE **This symbol indicates special notes.**

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Safety Precautions

To prevent injury to the user or other people and property damage, the following instructions must be followed.

■ Incorrect operation due to ignoring instruction will cause harm or damage. The seriousness is classified by the following indications.

⚠WARNING	This symbol indicates the possibility of death or serious injury.
⚠CAUTION	This symbol indicates the possibility of injury or damage to properties only.

■ Meanings of symbols used in this manual are as shown below.

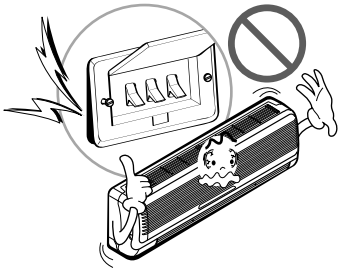
⃠	**Be sure not to do.**
❗	**Be sure to follow the instruction.**

⚠WARNING

■ Installation

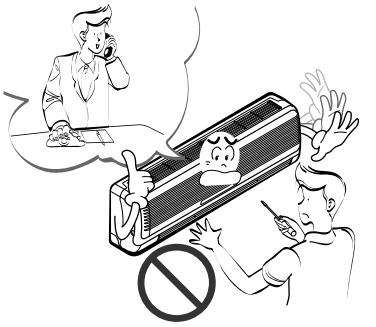
Do not use a defective or under-rated circuit breaker. Use this appliance on a dedicated circuit.

• There is risk of fire or electric shock.



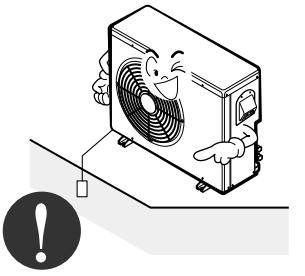
For electrical work, contact the dealer, seller, a qualified electrician, or an Authorized Service Center.

• Do not disassemble or repair the product. There is risk of fire or electric shock.



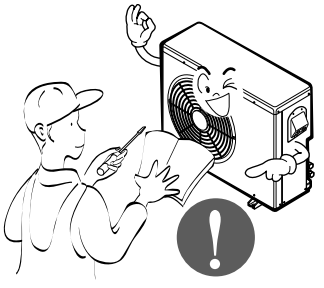
Always ground the product.

• There is risk of fire or electric shock.



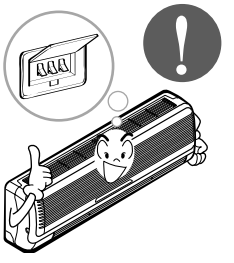
Install the panel and the cover of control box securely.

• There is risk of fire or electric shock.



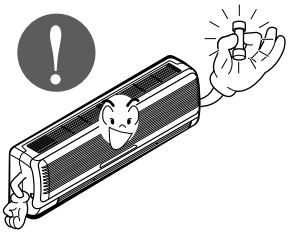
Always install a dedicated circuit and breaker.

• Improper wiring or installation may cause fire or electric shock



Use the correctly rated breaker or fuse.

• There is risk of fire or electric shock.

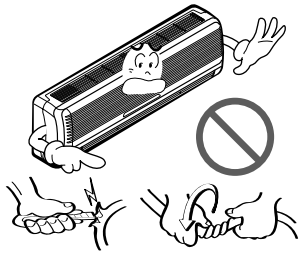


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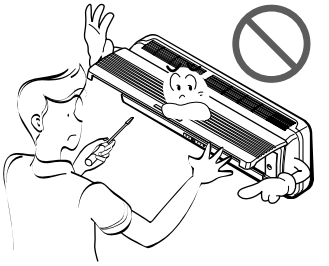
Do not modify or extend the power cable.

- There is risk of fire or electric shock.



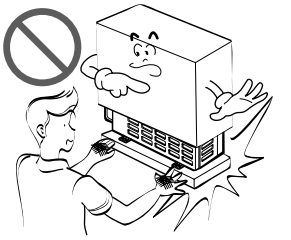
Do not install, remove, or re-install the unit by yourself (customer).

- There is risk of fire, electric shock, explosion, or injury.



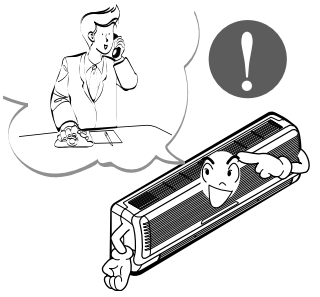
Be cautious when unpacking and installing the product.

- Sharp edges could cause injury. Be especially careful of the case edges and the fins on the condenser and evaporator.



For installation, always contact the dealer or an Authorized Service Center.

- There is risk of fire, electric shock, explosion, or injury.



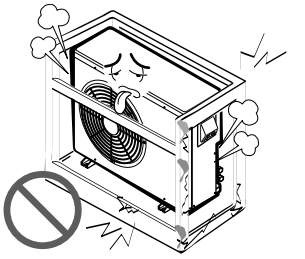
Do not install the product on a defective installation stand.

- It may cause injury, accident, or damage to the product.



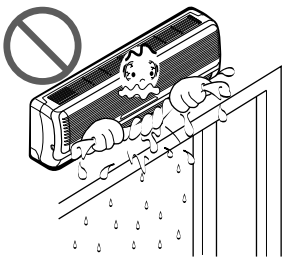
Be sure the installation area does not deteriorate with age.

- If the base collapses, the air conditioner could fall with it, causing property damage, product failure, and personal injury.



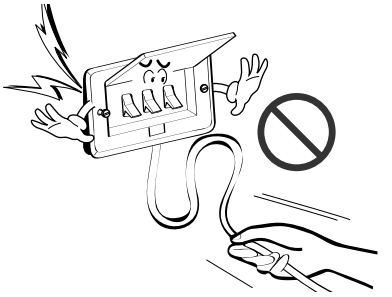
Do not let the air conditioner run for a long time when the humidity is very high and a door or a window is left open.

- Moisture may condense and wet or damage furniture.



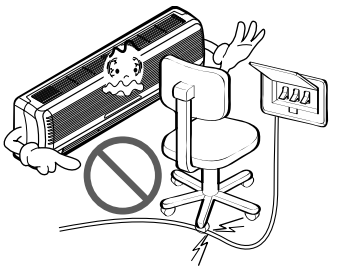
Take care to ensure that power cable could not be pulled out or damaged during operation.

- There is risk of fire or electric shock.



Do not place anything on the power cable.

- There is risk of fire or electric shock.

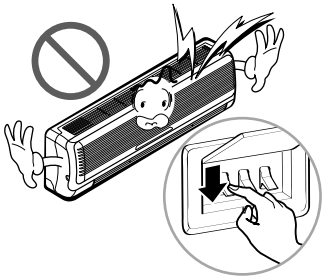


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Do not plug or unplug the power supply plug during operation.

- There is risk of fire or electric shock.



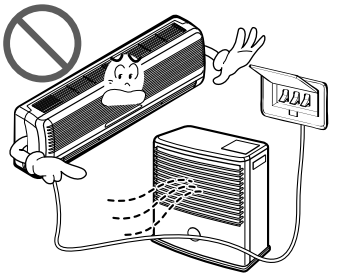
Do not touch(operate) the product with wet hands.

- There is risk of fire or electrical shock.



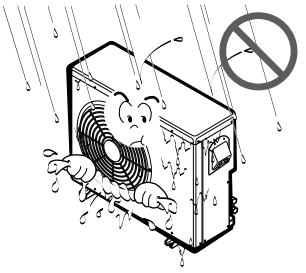
Do not place a heater or other appliances near the power cable.

- There is risk of fire and electric shock.



Do not allow water to run into electric parts.

- It may cause There is risk of fire, failure of the product, or electric shock.



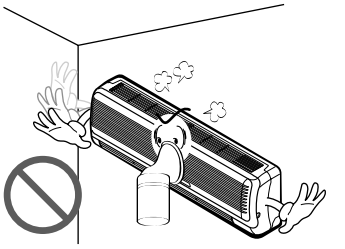
Do not store or use flammable gas or combustibles near the product.

- There is risk of fire or failure of product.



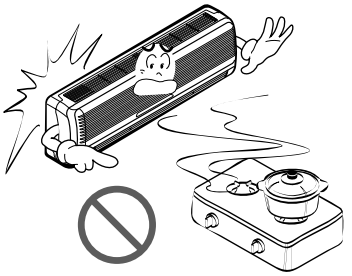
Do not use the product in a tightly closed space for a long time.

- Oxygen deficiency could occur.



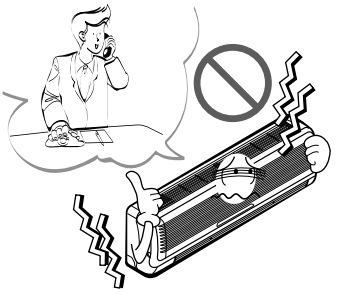
When flammable gas leaks, turn off the gas and open a window for ventilation before turn the product on.

- Do not use the telephone or turn switches on or off. There is risk of explosion or fire



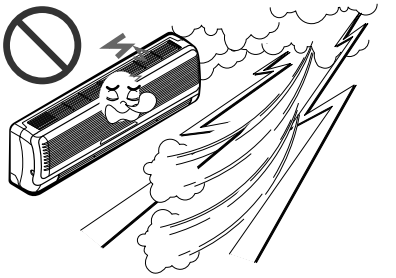
If strange sounds, or small or smoke comes from product. Turn the breaker off or disconnect the power supply cable.

- There is risk of electric shock or fire.



Stop operation and close the window in storm or hurricane. If possible, remove the product from the window before the hurricane arrives.

- There is risk of property damage, failure of product, or electric shock.

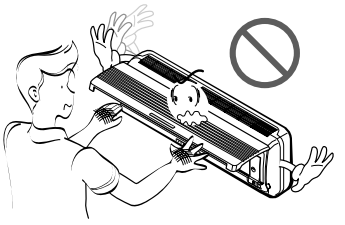


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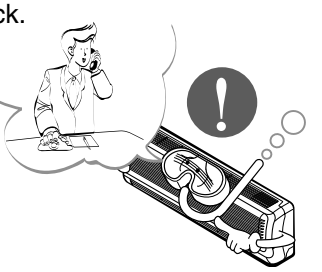
Do not open the inlet grill of the product during operation. (Do not touch the electrostatic filter, if the unit is so equipped.)

• There is risk of physical injury, electric shock, or product failure.



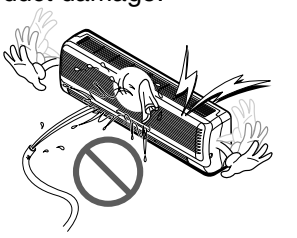
When the product is soaked (flooded or submerged), contact an Authorized Service Center.

• There is risk of fire or electric shock.



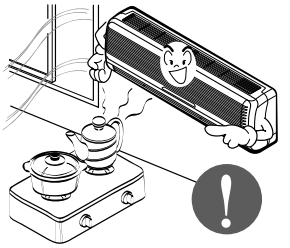
Be cautious that water could not enter the product.

• There is risk of fire, electric shock, or product damage.



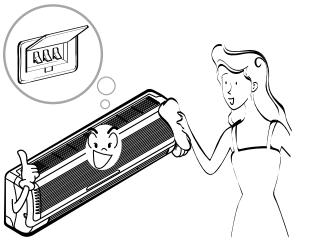
Ventilate the product from time to time when operating it together with a stove, etc.

• There is risk of fire or electric shock.



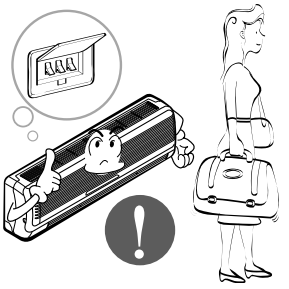
Turn the main power off when cleaning or maintaining the product.

• There is risk of electric shock.



When the product is not be used for a long time, disconnect the power supply plug or turn off the breaker.

• There is risk of product damage or failure, or unintended operation.



Take care to ensure that nobody could step on or fall onto the outdoor unit.

• This could result in personal injury and product damage.

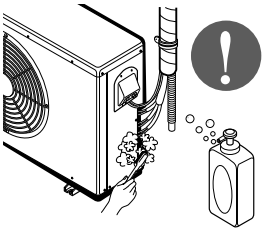


⚠CAUTION

■ Installation

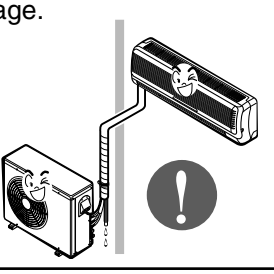
Always check for gas (refrigerant) leakage after installation or repair of product.

• Low refrigerant levels may cause failure of product.



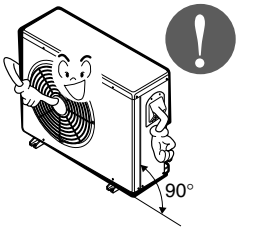
Install the drain hose to ensure that water is drained away properly.

• A bad connection may cause water leakage.



Keep level even when installing the product.

• To avoid vibration or water leakage.



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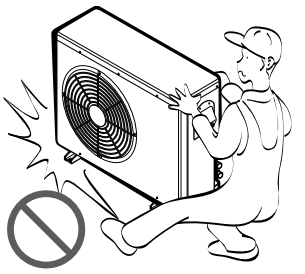
Do not install the product where the noise or hot air from the outdoor unit could damage the neighborhoods.

- It may cause a problem for your neighbors.



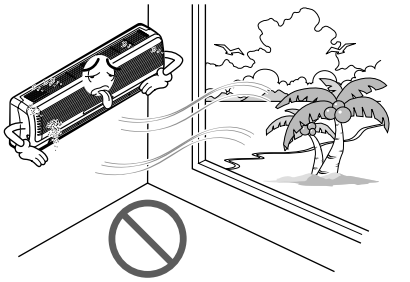
Use two or more people to lift and transport the product.

- Avoid personal injury.



Do not install the product where it will be exposed to sea wind (salt spray) directly.

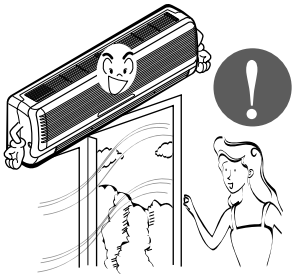
- It may cause corrosion on the product. Corrosion, particularly on the condenser and evaporator fins, could cause product malfunction or inefficient operation.



■ Operational

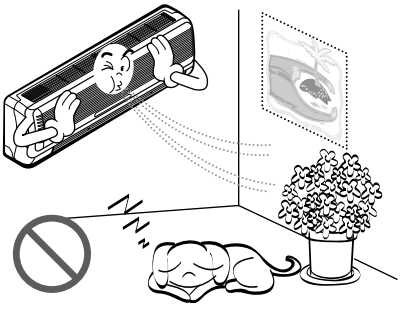
Do not expose the skin directly to cool air for long periods of time. (Don't sit in the draft.)

- This could harm to your health.



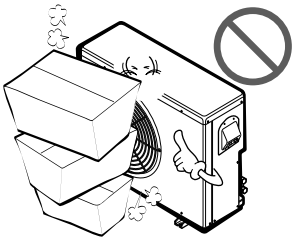
Do not use the product for special purposes, such as preserving foods, works of art, etc. It is a consumer air conditioner, not a precision refrigeration system.

- There is risk of damage or loss of property.



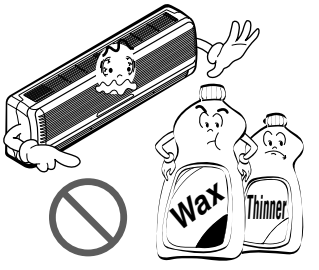
Do not block the inlet or outlet of air flow.

- It may cause product failure.



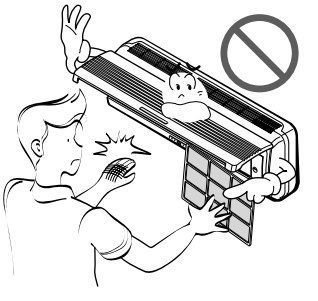
Use a soft cloth to clean. Do not use harsh detergents, solvents, etc.

- There is risk of fire, electric shock, or damage to the plastic parts of the product.



Do not touch the metal parts of the product when removing the air filter. They are very sharp!

- There is risk of personal injury.

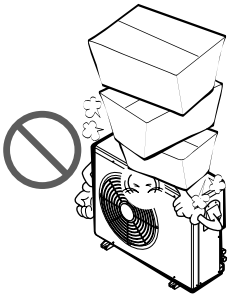


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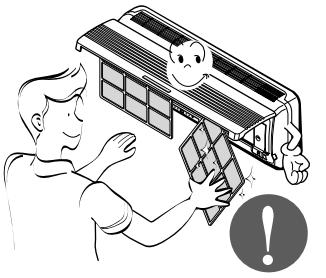
Do not step on or put anyting on the product. (outdoor units)

- There is risk of personal injury and failure of product.



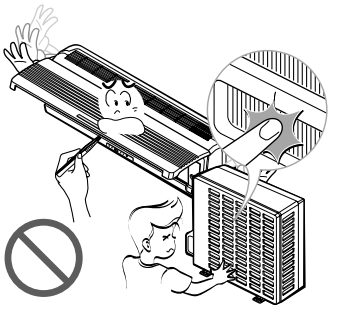
Always insert the filter securely. Clean the filter every two weeks or more often if necessary.

- A dirty filter reduces the efficiency of the air conditioner and could cause product malfunction or damage.



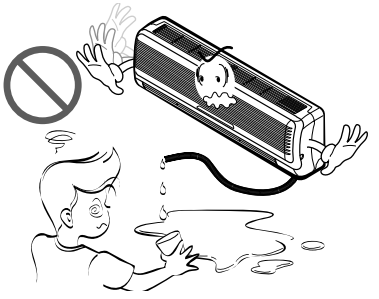
Do not insert hands or other objects through the air inlet or outlet while the product is operated.

- There are sharp and moving parts that could cause personal injury.



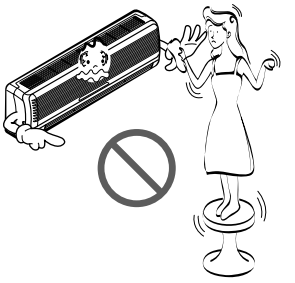
Do not drink the water drained from the product.

- It is not sanitary and could cause serious health issues.



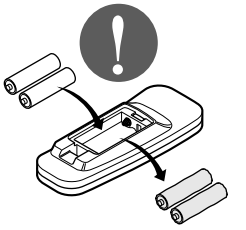
Use a firm stool or ladder when cleaning or maintaining the product.

- Be careful and avoid personal injury.



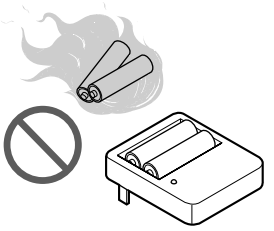
Replace the all batteries in the remote control with new ones of the same type. Do not mix old and new batteries or different types of batteries.

- There is risk of fire or explosion



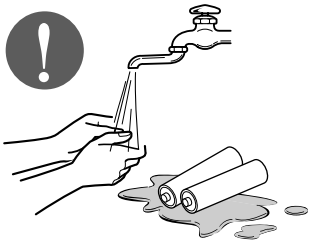
Do not recharge or disassemble the batteries. Do not dispose of batteries in a fire.

- They may burn or explode.



If the liquid from the batteries gets onto your skin or clothes, wash it well with clean water. Do not use the remote if the batteries have leaked.

- The chemicals in batteries could cause burns or other health hazards.



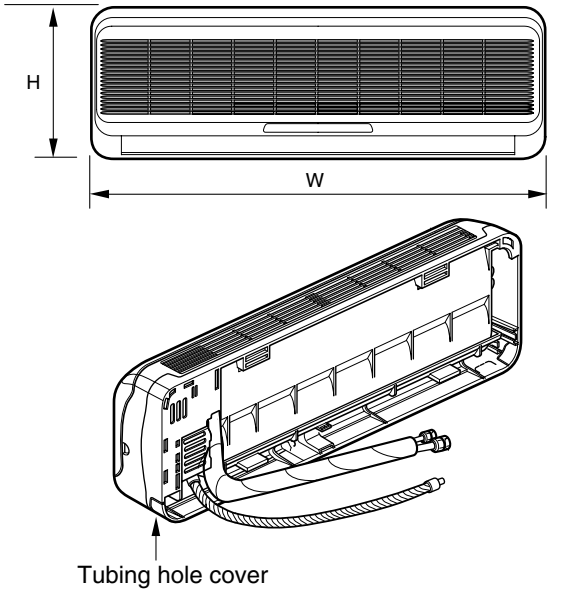
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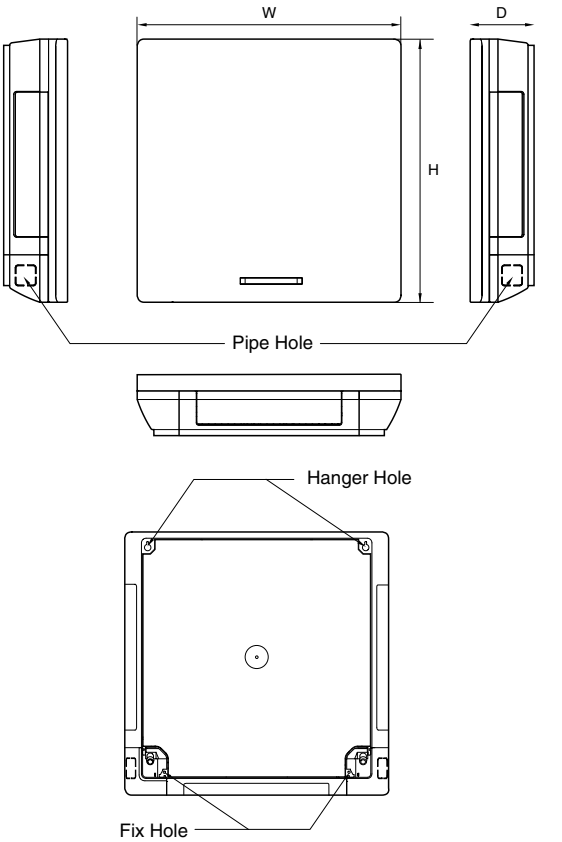
Dimensions

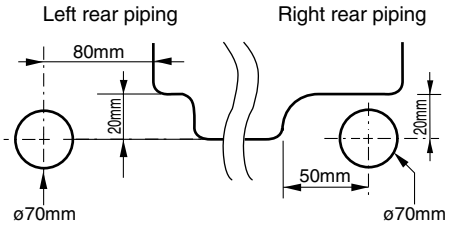
Indoor Unit

1. Split Type Indoor

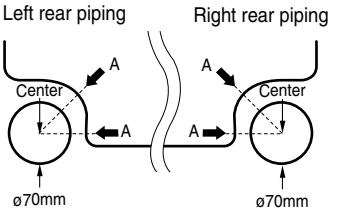


2. Art Cool Type Indoor Unit

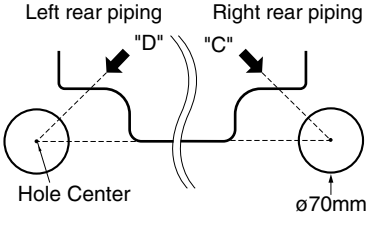




(7K, 9K)



(9K, 12K)



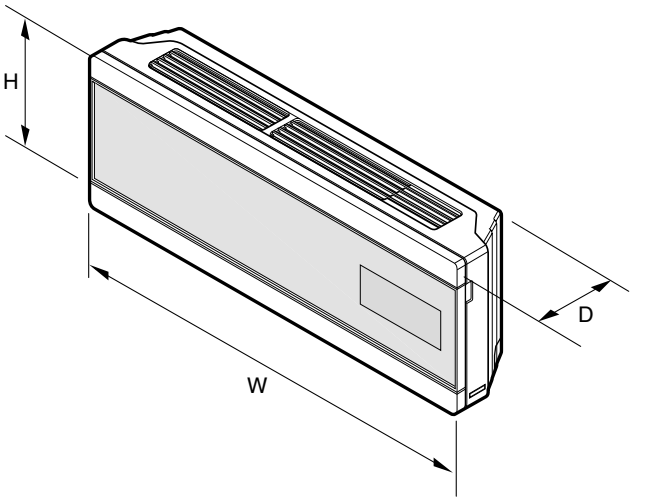
(18K, 24K)

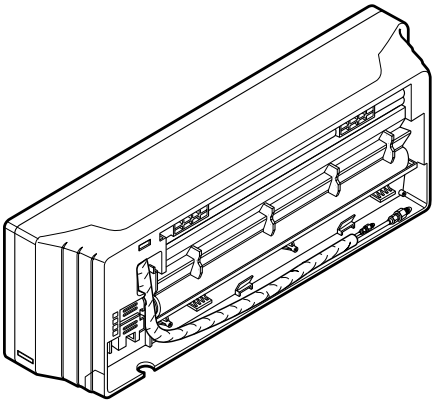
DIM \ MODEL		SQ 7K,9K	SR 9K, 12K	ST 18K, 24K
W	mm	824	900	1,080
H	mm	260	285	314
D	mm	155	156	172

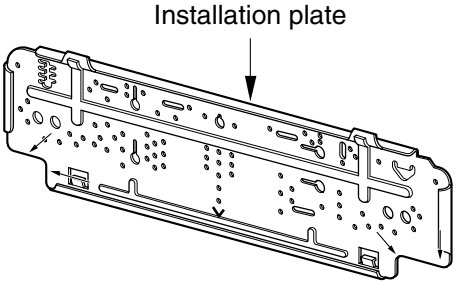
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3. Art Cool Deluxe Type





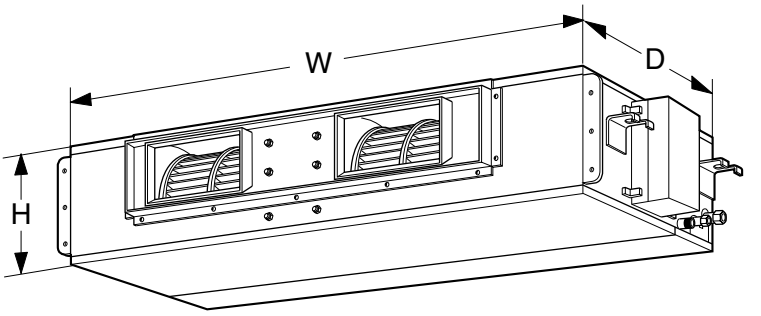


DIM \ MODEL	Unit	**SZ 7K**	**SU 9K, 12K**
W	mm	900	1030
H	mm	272	290
D	mm	135	153

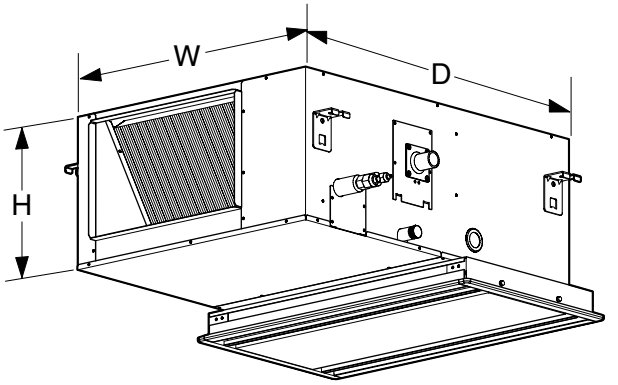
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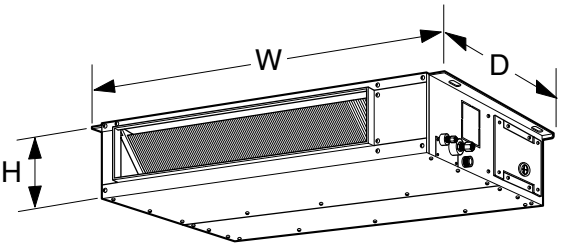
4. Duct Type



BH/BG



BP



BT/BT1

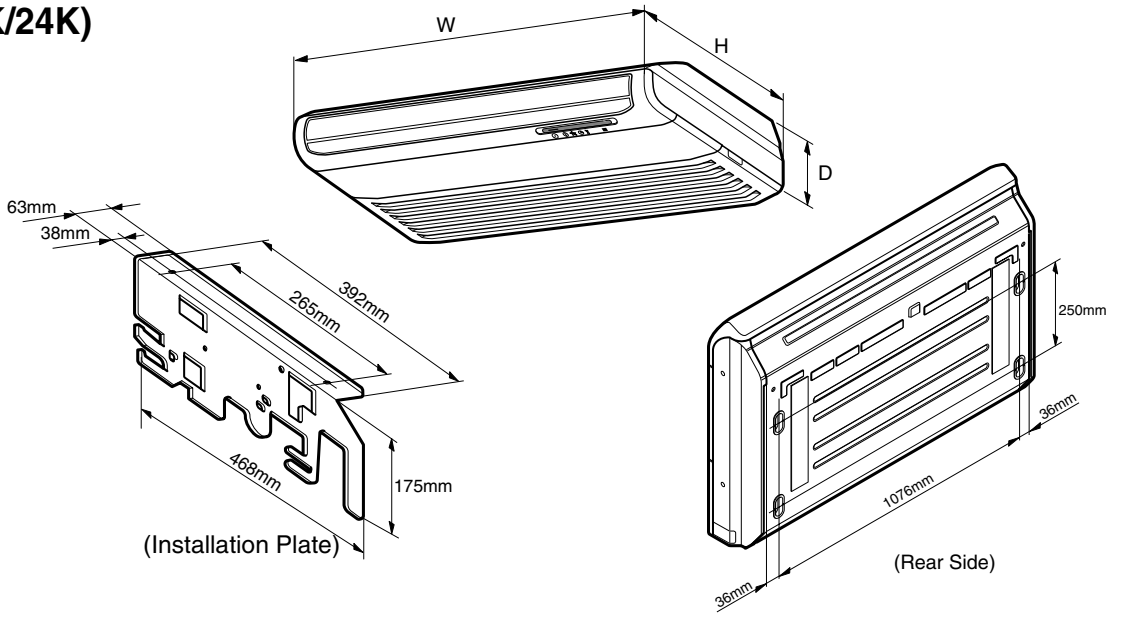
MODEL / DIM	**BT 9K/12K**	**BT1 18K**	**BH 18K/24K**	**BG 30K/36K**	**BP 9K/12K**
W(mm)	708	1060	880	1180	580
H(mm)	230	230	260	298	300
D(mm)	537	357	450	450	750

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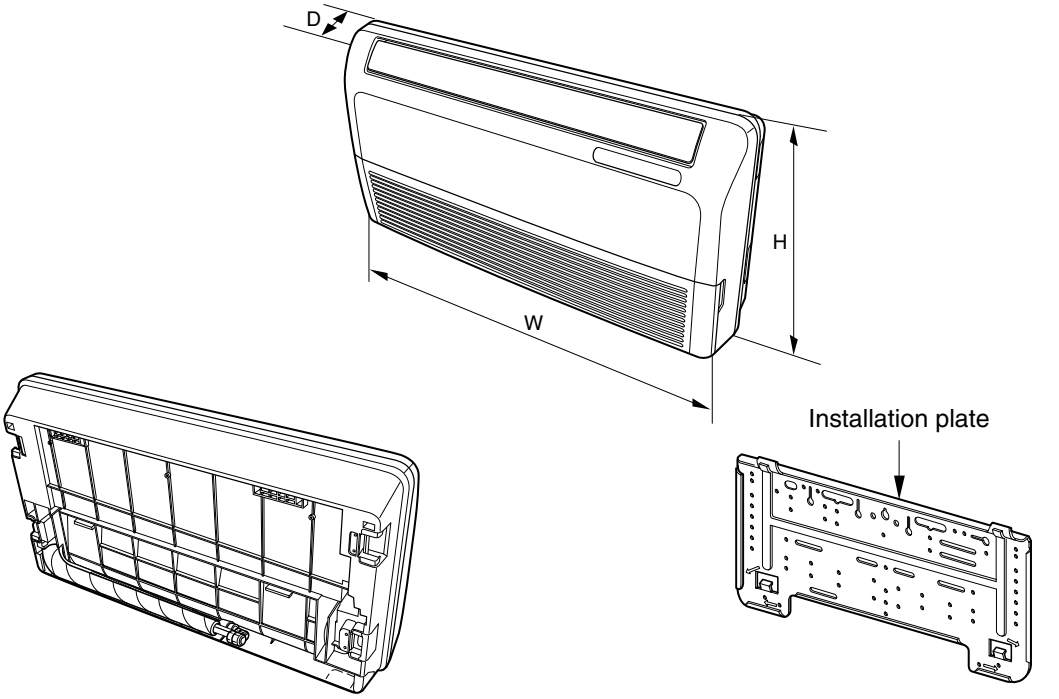
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5. CVT Type

VB(18K/24K)



VE(9K/12K)

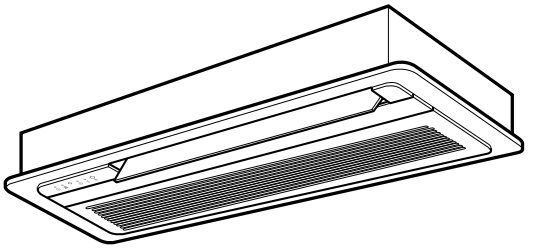


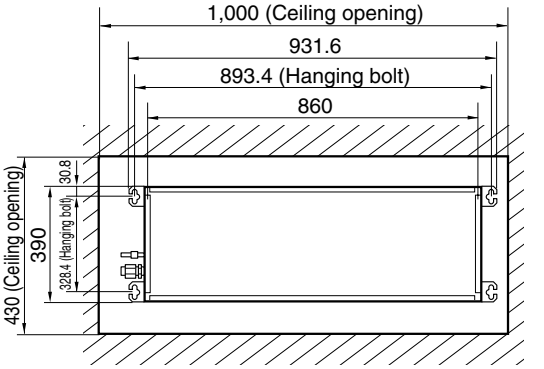
DIM \ MODEL / Unit		**VE 9K/12K**	**VB 18K/24K**
W	mm	900	1200
H	mm	285	615
D	mm	156	205

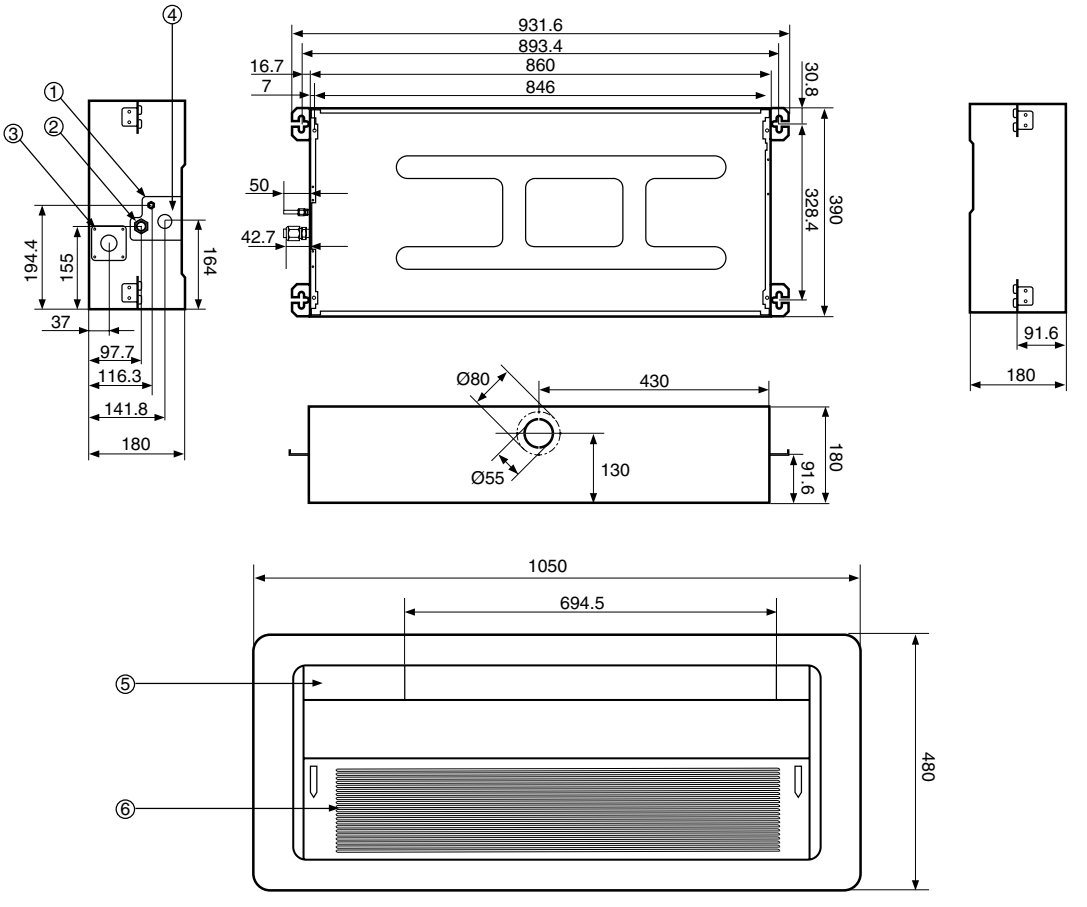
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6. CST Type - TC (9K/12K)







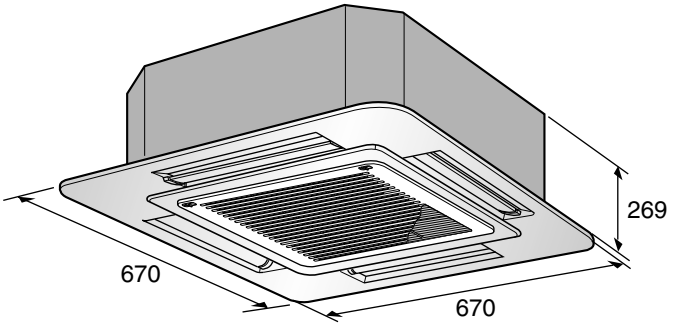
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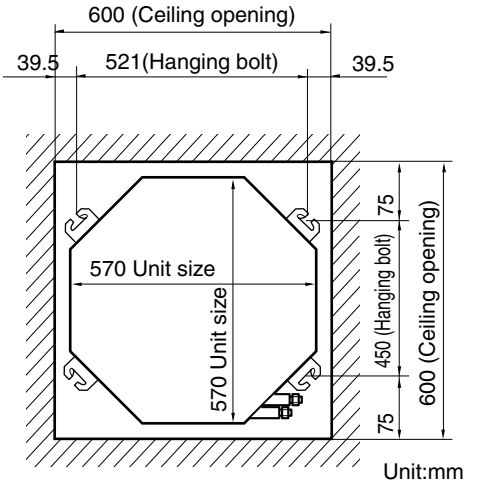
Number	Name	Descripition
1	Liquid pipe connection	ø6.35 flare
2	Gas pipe connection	ø9.52 flare
3	Drain pipe connection	
4	Power supply connection	
5	Air discharge grill	
6	Air suction grill	

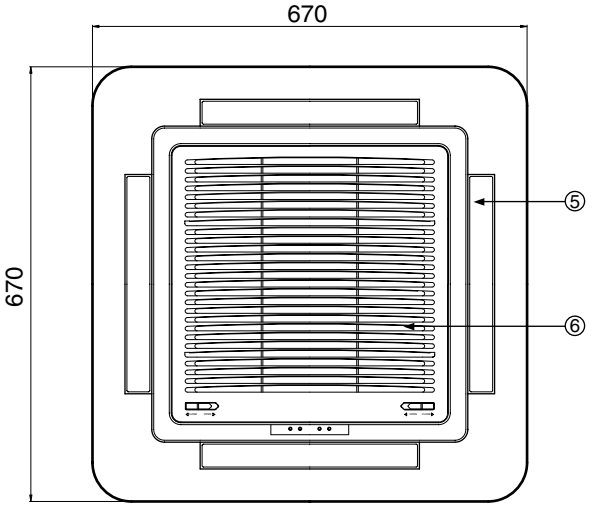
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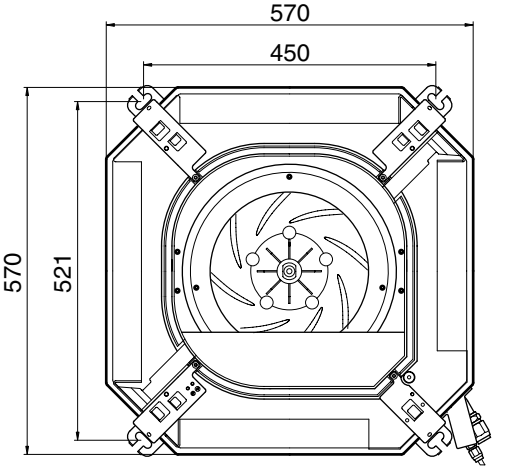
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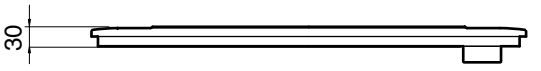
7. CST Type - TE (12K/18K)

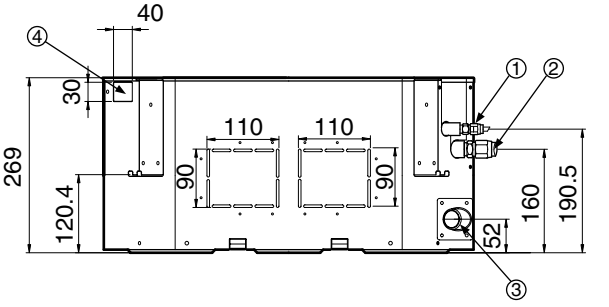












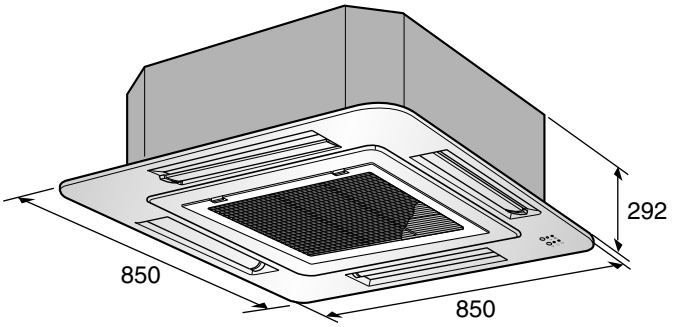
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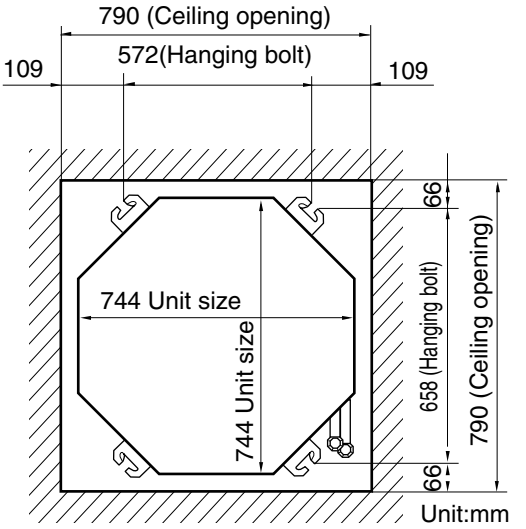
Number	Name	Descripition
1	Liquid pipe connection	ø6.35 flare
2	Gas pipe connection	12k: ø9.52, 18k: ø12.7 flare
3	Drain pipe connection	
4	Power supply connection	
5	Air discharge grill	
6	Air suction grill	

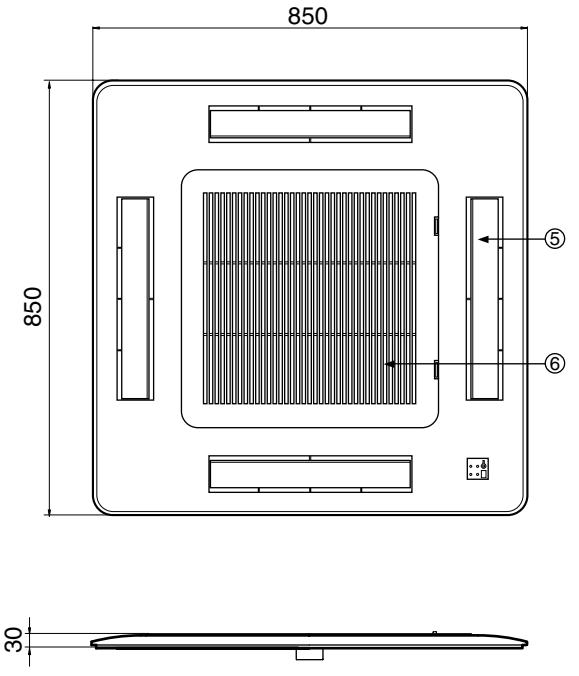
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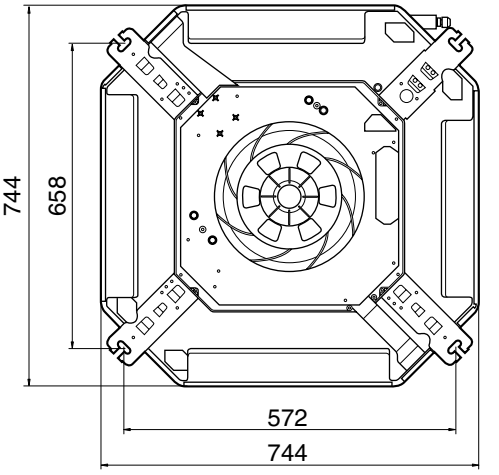
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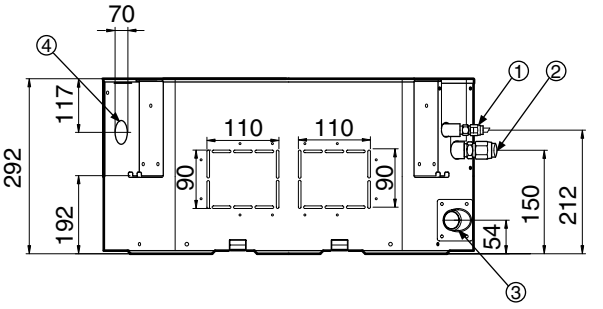
8. CST Type - TF (24K/30K)











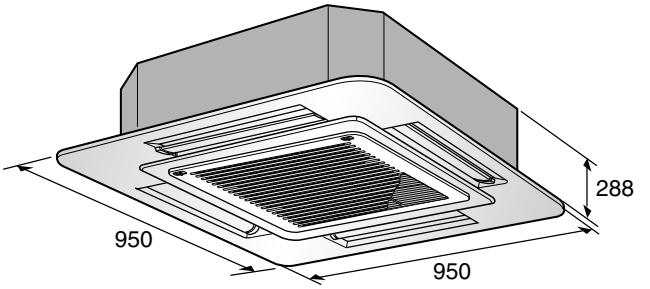
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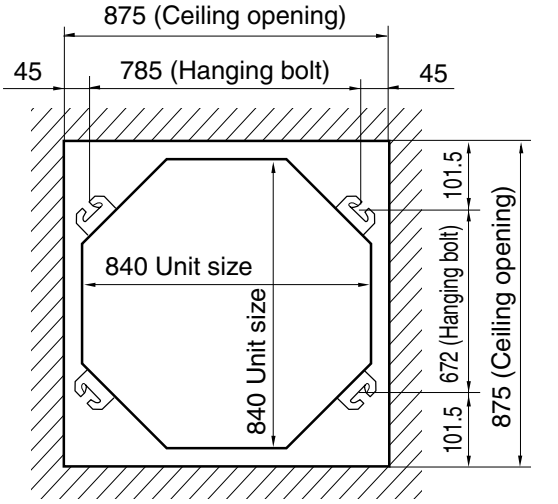
Number	Name	Descripition
1	Liquid pipe connection	ø6.35 flare
2	Gas pipe connection	ø12.7 flare-24K, ø15.88 flare-30K
3	Drain pipe connection	
4	Power supply connection	
5	Air discharge grill	
6	Air suction grill	

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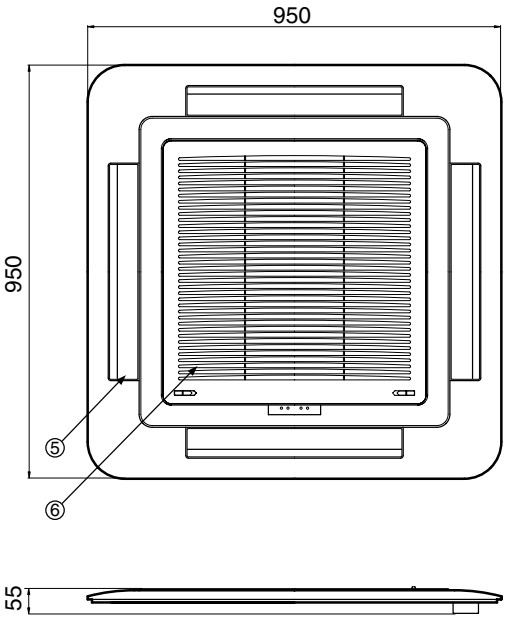
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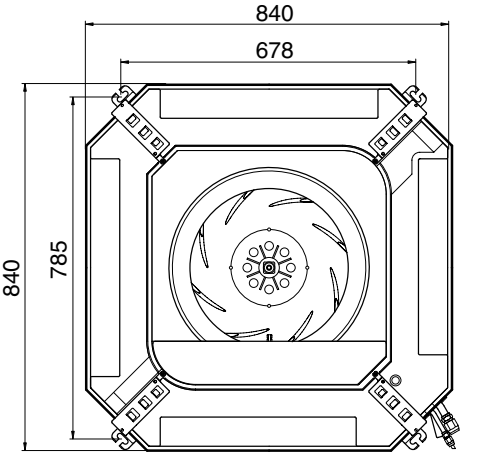
9. CST Type - TD(36K)

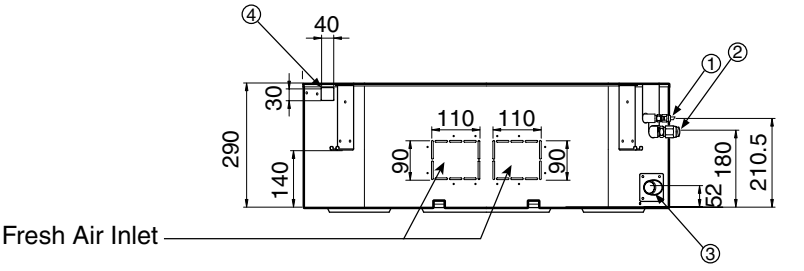




Unit:mm







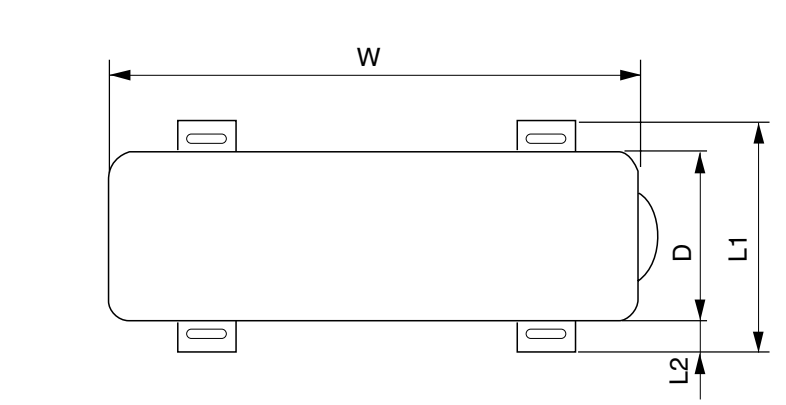
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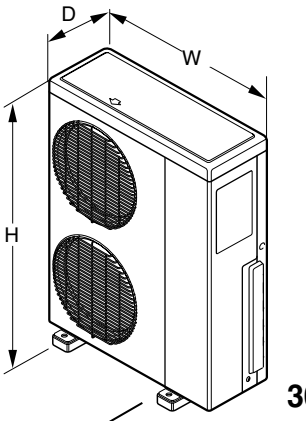
Number	Name	Descripition
1	Liquid pipe connection	ø6.35 flare
2	Gas pipe connection	ø15.88 flare
3	Drain pipe connection	
4	Power supply connection	
5	Air discharge grill	
6	Air suction grill	

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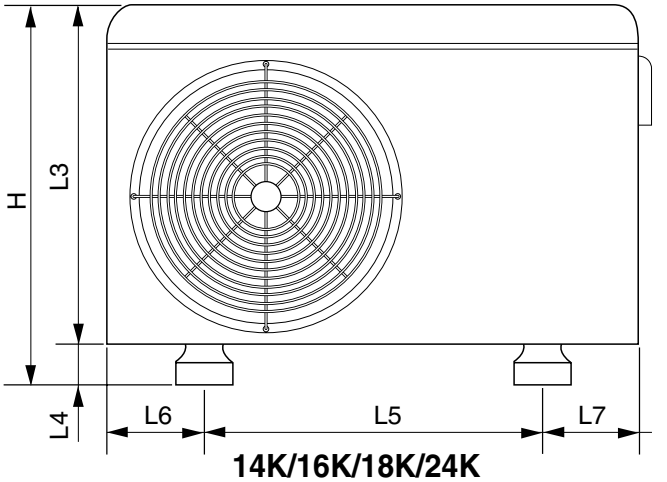
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Outdoor Unit

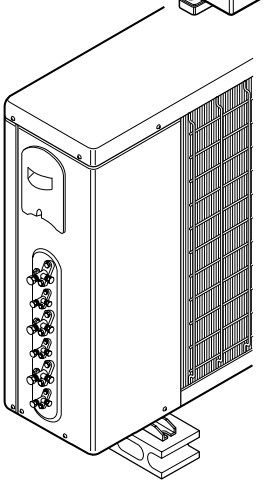




30K/40K



14K/16K/18K/24K

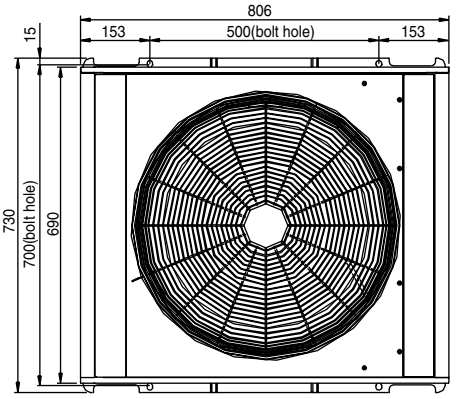


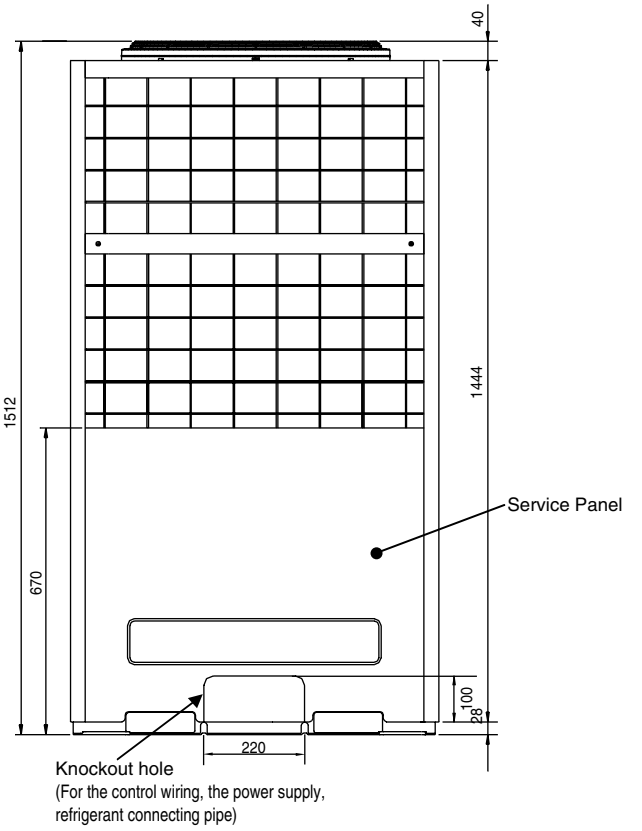
DIM \ MODEL		16K	14K,18K	24K	30K	40K
W	mm	800	870	870	870	900
H	mm	555	655	800	1060	1165
D	mm	262	320	320	320	370
L1	mm	340	370	370	360	460
L2	mm	37	25	25	20	45
L3	mm	544	775	775	1040	1135
L4	mm	11	25	25	20	30
L5	mm	590	546	546	550	550
L6	mm	105	160	160	160	175
L7	mm	105	160	160	165	175

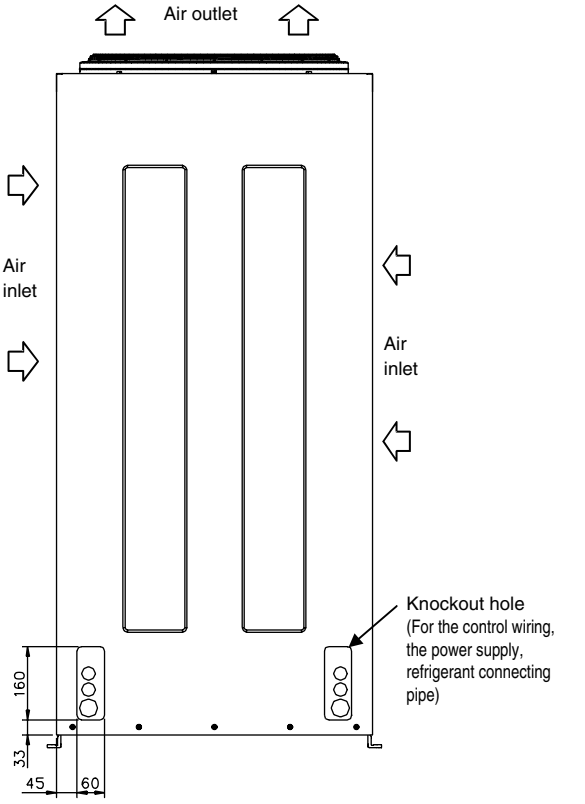
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A7UW486FA0/A8UW566FA0
A8UQ566FA0







(Unit : mm)

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Product Specifications

Indoor Unit

Indoor Unit Type			Wall Mounted					
Model			AMNH076LQL0	AMNH096LQL0	AMNH096LRL0	AMNH126LRL0	AMNH186LTL0	AMNH246LTL0
Rated Cooling Capacity ★		kcal/hr(W)	1764(2051)	2267(2638)	2267(2638)	3024(3515)	4536(5275)	5544(6446)
		Btu/hr	7000	9000	9000	12000	18000	22000
Rated Heating Capacity ★		kcal/hr(W)	2016(2343)	2520(2929)	2520(2929)	3326(3867)	4990(5803)	6099(7091)
		Btu/hr	8000	10000	10000	13200	19800	24200
Air Circulation	H/M/L	CMM(CFM)	5.5(194)	8.5(300)	8.5(300)	9.0(318)	13(459)	14(494)
Setting temperature range		°C	18~30 / 16~30	18~30 / 16~30	18~30 / 16~30	18~30 / 16~30	18~30 / 16~30	18~30 / 16~30
Fan motor	Output	W	8.4	8.4	14.4	14.4	22	29
	Model		IC-8415LG62A	IC-8415LG62A	IC-8420LG48A	IC-8420LG48A	AMR-023E2	AMR-023E5
	No. of Poles		4	4	4	4	4	6
	Input	W	25	25	37	37	54	59
	Running Current	A	0.11	0.11	0.16	0.16	0.21	0.21
	Capacitor	μF/Vac	0.9 / 400	0.9 / 400	0.9 / 400	0.9 / 400	2.0 / 370	2.0 / 370
Fan	Type		Cross Flow Fan	Cross Flow Fan	Cross Flow Fan	Cross Flow Fan	Cross Flow Fan	Cross Flow Fan
	No. Used / Diameter	EA/inch(mm)	1/3.43(87)	1/3.43(87)	1/3.43(87)	1/3.43(87)	1/3.74(95)	1/3.74(95)
Fan RPM	Cooling(H/M/L)	rpm	1080 / 970 / 880	1170 / 1100 / 1020	1200/1100/1000	1290 / 1200 / 1120	1140 / 1040 / 940	1260 / 1140 / 1000
	Heating(H/M/L)	rpm	1080 / 970 / 880	1170 / 1100 / 1020	1200/1100/1000	1290 / 1200 / 1120	1140 / 1040 / 940	1260 / 1140 / 1000
Noise Level(Sound Press,1m)	H/M/L	dBA	35 / 32 / 29	37 / 33 / 31	35 / 33 / 31	39 / 36 / 34	42 / 39 / 36	46 / 43 / 39
Temperature controller			Thermistor	Thermistor	Thermistor	Thermistor	Thermistor	Thermistor
Coil	Tube Size (OD)	inch(mm)	0.197(5.0)	0.197(5.0)	0.197(5.0)	0.197(5.0)	0.276(7.0)	0.276(7.0)
	Fins per inch		19	19	20	20	20	20
	No. of Rows & Column		2R,10C	2R,10C	2R,12C	2R,12C	2R,13C	2R,13C
Dehumidification Rate		l/h	1.0	1.2	1.4	1.8	2.0	2.5
Dimensions (W*H*D)		inch(mm)	32.4*10.2*6.1(824*260*155)	32.4*10.2*6.1(824*260*155)	35.4*11.2*6.1(900*285*156)	35.4*11.2*6.1(900*285*156)	42.9*12.4*6.8(1090*314*172)	42.9*12.4*6.8(1090*314*172)
Net Weight		kg(lbs)	7(15.4)	7(15.4)	8(17.6)	8(17.6)	12(26.5)	12(26.5)
Piping Connection	Liquid	inch(mm)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)
	Gas	inch(mm)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	1/2 (12.7)	1/2 (12.7)
	Drain hose (ID Ø)	mm	20	20	20	20	20	20
Packing Dimension (W*H*D)		inch(mm)	35.4*9.2*13.4(900*233*340)	35.4*9.2*13.4(900*233*340)	38.4*9.2*14.6(976*233*372)	38.4*9.2*14.6(976*233*372)	45.9*10.0*15.3(1165*255*388)	45.9*10.0*15.3(1165*255*388)
Stuffing Quantity	Without S/Parts	20/40ft	354/774 (360/780)	354/774 (360/780)	338/714 (340/720)	338/714 (340/720)	264/536 (270/540)	264/536 (270/540)
Front Panel Color	"★" Position		Morning Beige	Morning Beige	Morning Beige	Morning Beige	Morning Beige	Morning Beige

Indoor Unit Type			ART COOL DELUXE			ART COOL	
Model			AMNH076DZ*0	AMNH096DU*0	AMNH126DU*0	AMNH096AP*1	AMNH126AP*1
Rated Cooling Capacity ★		kcal/hr(W)	1764(2051)	2267(2638)	2772(3224)	2267(2638)	2772(3224)
		Btu/hr	7000	9000	12000	9000	12000
Rated Heating Capacity ★		kcal/hr(W)	1940(2257)	2495(2901)	3049(3546)	2520(2929)	3049(3546)
		Btu/hr	8000	10000	13200	10000	13200
Air Circulation	H/M/L	CMM(CFM)	5.5(194)	8.5(300)	9.0(318)	7.5(264)	8.5(300)
Setting temperature range		°C	18~30 / 16~30	18~30 / 16~30	18~30 / 16~30	18~30 / 16~30	18~30 / 16~30
Fan motor	Output	W	4.7	7.8	7.8	24	24
	Model		OBM-1547P2	OBM-1547P2	OBM-1547P2	SIC-39CV-D828-1	SIC-39CV-D828-1
	No. of Poles		4	4	4	8	8
	Input	W	27	40	40	18	18
	Running Current	A	0.12	0.18	0.18	0.08	0.08
	Capacitor	μF/Vac	0.9/400	0.9/400	0.9/400	-	-
Fan	Type		Cross Flow Fan	Cross Flow Fan	Cross Flow Fan	Turbo Fan	Turbo Fan
	No. Used / Diameter	EA/inch(mm)	1/3.43(87)	1/3.43(87)	1/3.43(87)	1/24.32(617.7)	1/24.32(617.7)
Fan RPM	Cooling(H/M/L)	rpm	1330/1230/1130	1320/1220/1120	1400/1300/1200	510/350/290	560/460/360
	Heating(H/M/L)	rpm	1330/1230/1130	1320/1220/1120	1400/1300/1200	510/350/290	560/460/360
Noise Level(Sound Press,1m)	H/M/L	dBA	35 / 32 / 29	37 / 33 / 31	39 / 36 / 34	38 / 35 /32	43 / 40 / 33
Temperature controller			Thermistor	Thermistor	Thermistor	Thermistor	Thermistor
Coil	Tube Size (OD)	inch(mm)	0.197(5.0)	0.197(5.0)	0.197(5.0)	0.197(5.0)	0.197(5.0)
	Fins per inch		19	19	19	20	20
	No. of Rows & Column		2R,12C	2R,12C	2R,12C	2R,20C	2R,20C
Dehumidification Rate		l/h	1.0	1.2	1.5	1	1.2
Dimensions (W*H*D)		inch(mm)	42.9*12.4*6.8(1090*314*172)	35.4*10.7*5.3(900*272*135)	40.6*11.4*6.0(1030*290*153)	22.4*22.4*5.4 (570*568*137)	22.4*22.4*5.4 (570*568*137)
Net Weight		kg(lbs)	8.1(17.9)	9.5(20.9)	9.5(20.9)	9(19.84)	9(19.84)
Piping Connection	Liquid	inch(mm)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)
	Gas	inch(mm)	3/8(9.52)	3/8(9.52)	3/8(9.52)	3/8 (9.52)	3/8(9.52)
	Drain hose (ID Ø)	mm	20	20	20	20	20
Packing Dimension (W*H*D)		inch(mm)	38.8*8.7*14.3(985*220*363)	44.0*8.9*14.8(1117*225*377)	44.0*8.9*14.8(1117*225*377)	25.7*25.2*8.5(653*641*216)	25.7*25.2*8.5(653*641*216)
Stuffing Quantity	Without S/Parts	20/40ft	340/720	324/684	324/684	239/539	239/539
Front Panel Color	"★" Position		R:Mirror, M:Metal, N:Walnut, W:White, B:Blue, C:Cherry			M:Metal, B:Blue, D:Wood	

Note : 1.★ See the page "Combination Table"

2. Due to our policy of innovation some specifications may be changed without notification.

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Indoor Unit

Indoor Unit Type			Ceiling Cassette - 1way		Ceiling Cassette - 4way				
Model			AMNH(C)096TCC0	AMNH(C)126TCC0	AMNH(C)126TEC0	AMNH(C)186TEC0	AMNH(C)246TFC0	AMNH(C)306TFC0	AMNH(C)366TDC0
Rated Cooling Capacity ★		kcal/hr(W)	2267(2638)	3024(3515)	3024(3515)	4536(5275)	6048(7033)	7056(8206)	9072(10551)
		Btu/hr	9000	12000	12000	18000	24000	28000	36000
Rated Heating Capacity ★		kcal/hr(W)	2520(2929)	3326(3867)	3326(3867)	4990(5803)	6653(7736)	7761(9027)	9979(11600)
		Btu/hr	10000	13200	13200	19800	26400	30800	39600
Air Circulation	H/M/L	CMM(CFM)	9(317)	10(353)	11(353)	13(459)	15/14/13(53/494/459)	18(636)	25/23/21(883/812/742)
External Static Pressure		mmAq	-	-	-	-	-	-	-
Setting temperature range		°C	18~30 / 16~30	18~30 / 16~30	18~30 / 16~30	18~30 / 16~30	18~30 / 16~30	18~30 / 16~30	18~30 / 16~30
Fan motor	Output	W	14	14	18.4	22.4	40.3	45	52.5
	Model		AMR-023E7	AMR-023E7	IC-9630LGAE	IC-9630LGAC	OBM-350292	OBM-401592	IC-1630LGPJ
	No. of Poles		4	4	6	6	6	6	6
	Input	W	50	50	75	90	121	146	175
	Running Current	A	0.56	0.56	0.35	0.75	0.53	0.67	0.8
	Capacitor	μF/Vac	0.9/400	0.9/400	2.5/440	2.5/440	4/440	4/440	4/450
Fan	Type		Cross Flow Fan	Cross Flow Fan	Turbo Fan	Turbo Fan	Turbo Fan	Turbo Fan	Turbo Fan
	No. Used / Diameter	EA/inch(mm)	1/4(102)	1/4(102)	1/13.0(330)	1/13.0(330)	1/15.0(382)	1/15.0(382)	1/15.0(382)
Fan RPM	Cooling(H/M/L)	rpm	900 / 800 / 700	1000 / 900 / 800	670 / 620 / 550	720 / 670 / 620	600/540480	660/590/530	550/510/470
	Heating(H/M/L)	rpm	900 / 800 / 700	1000 / 900 / 800	670 / 620 / 550	720 / 670 / 620	600/540480	660/590/530	550/510/470
Noise Level(Sound Press,1m)	H/M/L	dBA	35 /32 / 28	37 / 33 / 29	38 / 35 / 32	41 /39 / 37	43/41/39	44/41/39	40/38/36
Temperature controller			Thermistor	Thermistor	Thermistor	Thermistor	Thermistor	Thermistor	Thermistor
Coil	Tube Size (OD)	inch(mm)	0.275(7)	0.275(7)	0.275(7)	0.275(7)	0.275(7)	0.275(7)	0.275(7)
	Fins per inch		18	18	19	19	21	21	21
	No. of Rows & Column		2R11C	2R11C	2R11C	2R11C	2R12C	2R12C	2R12C
Dehumidification Rate		l/h	1.2	1.5	1.2	2.4	3	3.5	4
Dimensions (W*H*D)	Indoor	inch(mm)	33.8*15.3*7(860*390*190)	33.8*15.3*7(860*390*190)	22.4*10.5*22.4 (570*269*570)	22.4*10.5*22.4 (570*269*570)	29.3*11.5*29.4 (744*292*744)	29.3*11.5*29.4 (744*292*744)	33.0*33.0*11.3(840*840*288)
	Panel	inch(mm)	41.3*18.9*1.2(1050*480*30)	41.3*18.9*1.2(1050*480*30)	26.4*26.4*1.2(670*670*30)	26.4*26.4*1.2(670*670*30)	33.5*33.5*1.2(850*850*30)	33.5*33.5*1.2(850*850*30)	37.4*37.4*1.2(950*950*30)
Net Weight		kg(lbs)	22(48.5)	22(48.5)	19(41.9)	19(41.9)	24(52.9)	24(52.9)	32(70.5)
Piping Connection	Liquid	inch(mm)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)
	Gas	inch(mm)	3/8(9.52)	3/8(9.52)	3/8(9.52)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)
	Drain hose (ID Ø)	mm	32	32	32	32	32	32	32
Packing Dimension (W*H*D)		inch(mm)	38.6*10.0*18.1	38.6*10.0*18.1(980*255*460)	25.2*13.0*25.2(640*330*640)	25.2*13.0*25.2(640*330*640)	32.6*14.4*32.6 (828*365*828)	32.6*14.4*32.6 (828*365*828)	36.4*13.8*36.4(925*350*925)
Stuffing Quantity	Without S/Parts	20/40ft	263/539	263/539	189/378	189/378	84/168	84/168	30/64(36/72)

Indoor Unit Type			Ceiling Concealed Duct				
Model			AMNH096BTG0	AMNH126BTG0	AMNH186BTG0	AMNH096BPA0	AMNH126BPA0
Rated Cooling Capacity ★		kcal/hr(W)	2268(2637)	3024(3516)	4536(5274)	2268(2637)	3024(3516)
		Btu/hr	9000	12000	18000	9000	12000
Rated Heating Capacity ★		kcal/hr(W)	2520(2930)	3326(3868)	4990(5802)	2520(2930)	3326(3868)
		Btu/hr	10000	13000	19800	10000	13200
Air Circulation	H/M/L	CMM(CFM)	8/7/6(282/246/211)	10/9/8(352/317/282)	13.5/12/10(477/424/353)	11.5/10/8.5	11.5/10/8.5
External Static Pressure		mmAq	2	2	2	4	4
Setting temperature range		°C	18~30 / 16~30	18~30 / 16~30	18~30 / 16~30	18~30	18~30
Fan motor	Output	W	35	35	47	118	118
	Model		YDK110-35-4L	YDK110-35-4L	YSK110-70-4L	IC-13450LG31A	IC-13450LG31A
	No. of Poles		4	4	4	4	4
	Input	W	68	68	126	180	180
	Running Current	A	0.31	0.31	0.58	4.3	4.3
	Capacitor	μF/Vac	2.5/400	2.5/400	2.5/370	6/370	6/370
Fan	Type		Sirocco Fan	Sirocco Fan	Sirocco Fan	Sirocco Fan	Sirocco Fan
	No. Used / Diameter	EA/inch(mm)	1/7.8(197)	1/7.8(197)	2/7.8(197)	1/Ø177	1/Ø177
Fan RPM	Cooling(H/M/L)	rpm	930/840/810	950/850/780	1000/900/800	1125/990/870	1125/990/870
	Heating(H/M/L)	rpm	930/840/810	950/850/780	1000/900/800	1125/900/870	1125/990/870
Noise Level(Sound Press,1m)	H/M/L	dBA	34/32/30	37/34/31	38/36/34	38/36/34	38/36/34
Temperature controller			Thermistor	Thermistor	Thermistor	Thermistor	Thermistor
Coil	Tube Size (OD)	inch(mm)	0.276(7.0)	0.276(7.0)	0.276(7.0)	0.276(7.0)	0.276(7.0)
	Fins per inch		18	18	18	18	18
	No. of Rows & Column		2R,12C	3R,12C	2R, 12C	2R14C	3R14C
Dehumidification Rate		l/h	1	1.2	2	1.6	2
Dimensions (W*H*D)		inch(mm)	25.6*9.0*21.1(650*230*535)	25.6*9.0*21.1(650*230*535)	39.4*9.0*21.1(1000*230*535)	750*300*580(695*56.5*396)	750*300*580(695*56.5*396)
Net Weight		kg(lbs)	22(48.5)	22(48.5)	29(63.9)	30(6)	30(6)
Piping Connection	Liquid	inch(mm)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4(6.35)	1/4(6.35)
	Gas	inch(mm)	3/8 (9.52)	3/8 (9.52)	1/2 (12.7)	3/8(9.52)	3/8(9.52)
	Drain hose (ID Ø)	mm	25.4	25.4	25.4	25.4(OD)	25.4(OD)
Packing Dimension (W*H*D)		inch(mm)	29.9*24.6*11.8(760*625*300)	29.9*24.6*11.8(760*625*300)	29.9*24.6*11.8(760*625*300)	845*370*760(735*90*435)	845*370*760(735*90*435)
Stuffing Quantity	Without S/Parts	20/40ft	172/356	172/356	123/251	228/468	228/468
Front Panel Color	"*" Position		-	-	-	NOBEL WHITE	NOBEL WHITE

Note : 1.★ See the page "Combination Table"

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Indoor Unit

Indoor Unit Type			Ceiling Concealed Duct			
Model			AMNH186BHA0	AMNH(C)246BHA0	AMNH(C)306BGA0	AMNH(C)366BGA0
Rated Cooling Capacity ★		kcal/hr(W)	4536(5275)	6048(7034)	7560(8792)	9072(10551)
		Btu/hr	18000	24000	30000	36000
Rated Heating Capacity ★		kcal/hr(W)	4990(5803)	6653(7737)	8316(9671)	9979(11606)
		Btu/hr	19800	26400	33000	39600
Air Circulation	H/M/L	CMM(CFM)	16.5/14.5/13(583/512/459)	18/16.5/14(636/583/494)	28/25/23(989/883/812)	32/29/26.5(1130/1024/936)
External Static Pressure		mmAq	8	8	8	8
Setting temperature range		°C	18~30 / 16~30	18~30 / 16~30	18~30 / 16~30	18~30 / 16~30
Fan motor	Output	W	118	118	124	272
	Model		IC-13450LG13C	IC-13450LG13C	IC-13450LG13J	IC-13450LG13A
	No. of Poles		4	4	4	4
	Input	W	180	180	250	323
	Running Current	A	0.92	0.92	1.1	1.42
	Capacitor	μF/Vac	6/370	6/370	6/370	6/370
Fan	Type		Sirocco Fan	Sirocco Fan	Sirocco Fan	Sirocco Fan
	No. Used / Diameter	EA/inch(mm)	2/6.97(177)	2/6.97(177)	2/6.97(177)	2/6.97(177)
Fan RPM	Cooling(H/M/L)	rpm	1356/-/1270	1417/1350/1255	1415/1360/1290	1415/1360/1290
	Heating(H/M/L)	rpm	1356/-/1270	1417/1350/1255	1415/1360/1290	1415/1360/1290
Noise Level(Sound Press,1m)	H/M/L	dBA	36/34/32	37/35/33	40/38/36	42/40/38
Temperature controller			Thermistor	Thermistor	Thermistor	Thermistor
Coil	Tube Size (OD)	inch(mm)	0.275(7)	0.275(7)	0.275(7)	0.275(7)
	Fins per inch		21	21	21	21
	No. of Rows & Column		3R10C	3R10C	3R 12C	3R 12C
Dehumidification Rate		l/h	2.0	2.5	3	3.5
Dimensions (W*H*D)		inch(mm)	34.6*10.2*17.7 (880*260*450)	34.6*10.2*17.7 (880*260*450)	46.4*11.7*17.7(1180*298*450)	46.4*11.7*17.7(1180*298*450)
Net Weight		kg(lbs)	35(77.2)	35(77.2)	38(83.8)	38(83.8)
Piping Connection	Liquid	inch(mm)	1/4(6.35)	1/4(6.35)	1/4(6.35)	1/4(6.35)
	Gas	inch(mm)	1/2(12.7)	1/2(12.7)	5/8(15.88)	5/8(15.88)
	Drain hose (ID Ø)	mm	25.4(OD)	25.4(OD)	25.4(OD)	25.4(OD)
Packing Dimension (W*H*D)		inch(mm)	44.7*13.4*23.0(1135*340*585)	44.7*13.4*23.0(1135*340*585)	18.5*14.8*23.0(1435*375*585)	18.5*14.8*23.0(1435*375*585)
Stuffing Quantity	Without S/Parts	20/40ft	120/252	120/252	95/191	95/191

Indoor Unit Type			Ceiling & Floor(Convertible)			
Model			AMNH096VEA0	AMNH126VEA0	AMNH186VBA0	AMNH(C)246VBA0
Rated Cooling Capacity ★		kcal/hr(W)	2268(2637)	3024(3516)	4536(5274)	6048(7032)
		Btu/hr	9000	12000	18000	24000
Rated Heating Capacity ★		kcal/hr(W)	2520(2930)	3326(3867)	4990(5801)	6350(7384)
		Btu/hr	10000	132000	19800	25200
Air Circulation	H/M/L	CMM(CFM)	7.8/6.4/5.0(276/226/177)	10.0/8.3/6.5(353/293/230)	135./12/11(477/424/388)	15/13.5/12(530/477/424)
External Static Pressure		mmAq	-	-	-	-
Setting temperature range		°C	18-30/16-30	18-30/16-30	18~30 / 16~30	18~30 / 16~30
Fan motor	Output	W	14.5	17.5	30	35
	Model		IC-18422LG31B	IC-18422LG31A	IC-9430LGCM	IC-9430LGCM
	No. of Poles		4	4	4	4
	Input	W	35	43	53	63
	Running Current	A	0.18	0.23	0.23	0.27
	Capacitor	μF/Vac	1.5/370	1.5/370	1.5/370	1.5/370
Fan	Type		Cross Flow Fan	Cross Flow Fan	Cross Flow Fan	Cross Flow Fan
	No. Used / Diameter	EA/inch(mm)	1/3.7(95)	1/3.7(95)	1/3.1(80)	1/3.1(80)
Fan RPM	Cooling(H/M/L)	rpm	960/870/760	1240/1120/900	1090/990/890	1160/1060/960
	Heating(H/M/L)	rpm	960/870/760	1240/1120/900	1090/990/890	1160/1060/960
Noise Level(Sound Press,1m)	H/M/L	dBA	36/32/28	40/36/31	43 / 40 / 37	45 / 42 / 39
Temperature controller			Thermistor	Thermistor	Thermistor	Thermistor
Coil	Tube Size (OD)	inch(mm)	0.197(5)	0.197(5)	0.275(7)	0.275(7)
	Fins per inch		20	20	18	20
	No. of Rows & Column		2R 12C	2R 12C	2R 12C	2R 14C
Dehumidification Rate		l/h	1	1.2	2.3	3.2
Dimensions (W*H*D)		inch(mm)	35.4*7.9*19.3 (900*200*490)	35.4*7.9*19.3 (900*200*490)	47.24*24.21*8.07(1200*615*205)	47.24*24.21*8.07(1200*615*205)
Net Weight		kg(lbs)	12(26.5)	12(26.5)	30(66.1)	30(66.1)
Piping Connection	Liquid	inch(mm)	1/4 (6.35)	1/4 (6.35)	1/4(6.35)	1/4(6.35)
	Gas	inch(mm)	3/8 (9.52)	3/8 (9.52)	1/2(12.7)	1/2(12.7)
	Drain hose (ID Ø)	mm	20	20	20	20
Packing Dimension (W*H*D)		inch(mm)	38.2*11.2*22.2 (970*285*565)	38.2*11.2*22.2 (970*285*565)	50*10.9*27(1272*278*686)	50*10.9*27(1272*278*686)
Stuffing Quantity	Without S/Parts	20/40ft	189/383	189/383	102/219	102/219

Note : 1.★ See the page "Combination Table"

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Outdoor Unit - Multiple piping models

Model			A2UQ166FA0	A2UW146FA0	A2UW186FA0 A3UW186FA0	A3UQ186FA1	A3UW246FA0 A4UW246FA0	A4UW306FA0
Cooling Capacity ★		kcal/hr	1159~4410	1159~4031	1159~5443	1159~5443	1159~7257	1159~9072
		W	1348~5128	1348~4688	1348~6330	1348~6330	1348~8,440	1348~10549
		Btu/hr	4600~17500	4600~16000	4600~21600	4600~21600	4600~28800	4600~36000
Heating Capacity ★		kcal/hr	-	1210~4535	1210~6249	1210~6249	1210~8063	2116~10332
		W	-	1407~5274	1407~7268	1407~7268	1407~9376	2461~12014
		Btu/hr	-	4800~18000	4800~24800	4800~24800	4800~32000	8,400~41,000
Input ★	Cooling/Heating	W	380~1600	380~1450/450~1350	420~2400/480~2600	420~2400/480~2600	440~2970/560~2950	450~3580/620~3580
Running Current ★	Cooling/Heating	A	1.7~7.3	1.6~6.5/2.0~5.8	3.5~11.5/4~12	3.5~11.5/4~12	3.08~13.0/4.6~12.9	3.2~15.7/4.6~15.7
Starting Current	Cooling/Heating	A	8	1	1	1	28	28
Power Supply		Ø,V,Hz	1,220~240,50	1,220~240,50	1,220~240,50	1,220~240,50	1,220~240,50	1,220~240,50
Power Factor		%	94~98	94~98	94~98	94~98	94~98	95~98
Max. Number of Connectable Indoor Units		%	2	2	3	3	4	4
Compressor	Type		Twin Rotary	e-Scroll	e-Scroll	e-Scroll	e-Scroll	e-Scroll
(Invertor)	O.L.P Type(model name)		-	-	-	-	-	-
Compressor	Type		-	-	-	-	Rotary	Rotary
(Constant)	O.L.P Type(model name)		-	-	-	-	MRA99150-9090	INTERNAL
Refrigerant	Charge	g(oz), type	950(33.5) at 7.5m	1650(59.97) at 7.5m	1650(59.97) at 7.5m	1650(59.97) at 7.5m	1950(68.78) at 7.5m	2500(88.18) at 7.5m
	Type		R-410A	R-410A	R-410A	R-410A	R-410A	R-410A
	Control		L.E.V	L.E.V	L.E.V	L.E.V	L.E.V	L.E.V
Coil	Tube Size (OD)	inch(mm)	0.276(7.0)	0.276(7.0)	0.276(7.0)	0.276(7.0)	0.276(7.0)	0.276(7.0)
	Fins per inch		18	18	18	18	18	18
	No. of Rows & Column/No.		2R,24C	1R,28C	2R,28C	2R,28C	2R,36C	2R,48C
Fan Motor	Model	W	OBM-3018P2	IC28640LG28S	IC28640LG28S	IC28640LG28S	IC28640LG28J	IC9625LGSY
	Output		47	120	120	120	130	65 * 2
	Capacitor	µF/Vac	2.0/400	6/370	6/370	6/370	6/370	2.0/370
Fan	Type		Propeller	Propeller	Propeller	Propeller	Propeller	Propeller
	No. Used / Diameter	EA/inch(mm)	1/16.5(420)	1/18.1(460)	1/18.1(460)	1/18.1(460)	1/18.1(460)	2/16.5(420)
	Discharge	Side / Top	Side Discharge	Side Discharge	Side Discharge	Side Discharge	Side Discharge	Side Discharge
Air Circulation		CMM(CFM)	35(1236)	49(1730)	49(1730)	49(1730)	53(1872)	31(1094)*2
Noise Level(Sound Press,1m)		dBA	51	50/47	51/48	51/48	51/48	50/46
Defrosting			Invertion cycle	Invertion cycle	Invertion cycle	Invertion cycle	Invertion cycle	Invertion cycle
SVC Valve	Liquid	inch(mm)	1/4 (6.35)*2EA	1/4 (6.35)*2EA	1/4 (6.35)*3EA	1/4 (6.35)*3EA	1/4 (6.35)*4EA	1/4 (6.35)*4EA
	Gas	inch(mm)	3/8 (9.52)*2EA	3/8 (9.52)*2EA	3/8 (9.52)*3EA	3/8 (9.52)*3EA	3/8 (9.52)*4EA	3/8 (9.52)*4EA
Dimensions (W*H*D)		inch(mm)	30.3*21.3*10 (770*540*245)	34.3*31.5*12.6 (870*800*320)	34.3*31.5*12.6 (870*800*320)	34.3*31.5*12.6 (870*800*320)	34.3*31.5*12.6 (870*808*320)	34.3*31.5*12.6 (870*1038*320)
Net Weight		kg(lbs)	37(81.6)	52(115)	75(165)	75(165)	75(165)	84(185)
Power Supply Cable		No.* mm²	3*2.5	3*3.5	3*3.5	3*3.5	3*2.5	3*2.5
Interunit Cable		No.* mm²	4*0.75 (Includes earth)	4*0.75 (Includes earth)	4*0.75 (Includes earth)	4*0.75 (Includes earth)	4*0.75 (Includes earth)	4*0.75 (Includes earth)
Max. Interunit	Total of Each Room	m	30	40	40	40	50	70
Piping Length	For One Room	m	20	25	25	25	25	25
Max. Installation	Indoor Unit~Outdoor Unit	m	15	15	15	15	15	15
Height Difference	Indoor Unit~Indoor Unit	m	7.5	7.5	7.5	7.5	7.5	7.5
Packing Dimension (W*H*D)		inch(mm)	36.2*22.8*14.2(920*580*360)	34.2*25.8*12.6(870*655*320)	34.2*25.8*12.6(870*655*320)	34.2*25.8*12.6(870*655*320)	40.1*34.2*17.3 (1020*870*440)	40.1*34.2*17.3 (1045*1140*440)
Stuffing Quantity	Without S/Parts	20/40ft	144/312	81/171	81/171	81/171	54/114	51/111

Notes: 1. Capacities are based on the following conditions:

Cooling:
- Indoor Temperature 27°C(80.6°F) DB /19°C(66.2°F) WB
- Outdoor Temperature 35°C(95°F) DB /24°C(75.2°F) WB
- Interconnecting Piping Length 7.5m
- Level Difference of Zero.

Heating:
- Indoor Temperature 20°C(68°F) DB / 15°C(59°F) WB
- Outdoor Temperature 7°C(44.6°F) DB / 6°C(42.8°F) WB
- Interconnecting Piping Length 7.5 m
- Level Difference of Zero.

2. Capacities are Net Capacities.
3. ★ : See the page "Combination Table"
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Outdoor Unit - Distributor type models

Model			A6UW406FA0 A6UQ406FA0	A7UW486FA0 A7UQ486FA0	A8UW566FA0 A8UQ566FA0
Cooling Capacity★		kcal/hr	4032~12095	4032~14515	4032~16934
		W	4689~14067	4689~16878	4689~19691
		Btu/hr	16,000~48,000	16000~57600	16000~67250
Heating Capacity★		W(kcal/hr)	4838~13356	4838~16027	4848~19051
			5627~15533	5627~18636	5627~22152
		Btu/hr	19,200~53,000	19200~63600	19200~75600
Input★	Cooling/Heating	W	1695~4980/2343~4600	750~5810/1450~5830	750~6600/1550~6800
Running Current★	Cooling/Heating	A	7.9~22/10.5~20.6	3.4~26/6.6~24.3	3.4~29.6/7.1~30.5
Starting Current	Cooling/Heating	A	67	43	74
Power Supply		Ø,V,Hz	1,220~240,50	1,220~240,50	1,220~240,50
Power Factor		%	87.1~99.4	90~97	90~97
Max. Number of Connectable Indoor Units			6	7	8
Compresso	Type		e-Scroll	e-Scroll	e-Scroll
(Invertor)	O.L.P Type(model name)		Internal	Internal	Internal
Compressor	Type		Rotary	Rotary	Rotary
(Constant)	O.L.P Type(model name)		Internal	Internal	Internal
Refrigerant charge	Charge	g(oz)	4100(144.6) at 5m	7100(250.4) at 5m	7100(250.4) at 5m
	Type		R-410A	R-410A	R-410A
	Control		L.E.V	L.E.V	L.E.V
Coil	Tube Size (OD)	inch(mm)	0.276(7.0)	0.276(7.0)	0.276(7.0)
	Fins per inch		18	18	18
	No. of Rows & Column/No.		2R,52C		
Fan motor	Model		IC28640LG28J	ARE676E01	ARE676E01
	Output	W	120 * 2	270	270
	Capacitor	μF/Vac	6/370	10/370	10/370
Fan	Type		Propeller	Propeller	Propeller
	No. Used / Diameter	EA/inch(mm)	1/18.1(460)	1/20.7(526)	1/20.7(526)
	Discharge	Side / Top	Side Discharge	Top discharge	Top discharge
Air Circulation	Outdoor	CMM(CFM)	53(1872) *2	90(3179)	90(3179)
Noise Level	Sound Press,1m	dB(A)±1	60/-/57	59/56	59/56
Defrosting			Invertion cycle	Invertion cycle	Invertion cycle
SVC Valve	Liquid	inch(mm)	3/8 (9.52)	3/8(9.52)	3/8(9.52)
	Gas	inch(mm)	3/4 (19.05)	3/4 (19.05)	3/4 (19.05)
Dimensions	W*H*D	inch(mm)	35.4*45.8*14.5 (900*1,165*370)	31.7*59.5*28.7(806*1512*730)	31.7*59.5*28.7(806*1512*730)
Net Weight	Outdoor	kg(lbs)	110(242)	110(242)	120(264)
Power Supply Cable		No.* mm²	3*5.0	3*5.0	3*5.0
Interunit Cable			4*0.75 (Includes earth)	4*0.75 (Includes earth)	4*0.75 (Includes earth)
Max. Interunit	Total Piping	m	100	110	120
Piping Length	Total Main Piping	m	50	50	50
	Total Branch Piping	m	50	60	70
	For One Room	m	15	15	15
Max. Installation	Indoor Unit~Outdoor Unit	m	30	30	30
Height Difference	Indoor Unit~Indoor Unit	m	10	10	10
Packing Dimension	W*H*D	inch(mm)	40.6*47.7*17.1 (1032*1212*436)	33.9*61.0*28.7(860*1550*730)	33.9*61.0*28.7(860*1550*730)
Stuffing Quantity	With(Without) S/Parts	20/40ft	22/48		

Notes: 1. Capacities are based on the following conditions:

Cooling:
- Indoor Temperature 27°C(80.6°F) DB /19°C(66.2°F) WB
- Outdoor Temperature 35°C(95°F) DB /24°C(75.2°F) WB
- Interconnecting Piping Length 7.5m
- Level Difference of Zero.

Heating:
- Indoor Temperature 20°C(68°F) DB / 15°C(59°F) WB
- Outdoor Temperature 7°C(44.6°F) DB / 6°C(42.8°F) WB
- Interconnecting Piping Length 7.5 m
- Level Difference of Zero.

2. Capacities are Net Capacities.
3. ★ : See the page "Combination Table"
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LG Branch Distributor

Model			PMBD3640	PMBD3630	PMBD3620	PMBD7230
Connectable Indoor Units			1~4	1~3	1~2	1~3
Combination(Min~Max.)		Btu/h	7,000~24,000	7,000~24,000	7,000~24,000	7,000~36,000
Casing color			-	-	-	-
Powre Source			Ø1 , 50/60Hz ,220~240/220V	Ø1 , 50/60Hz ,220~240/220V	Ø1 , 50/60Hz ,220~240/220V	Ø1 , 50/60Hz ,220~240/220V
Power Consumption		W	10	10	10	10
Runing Current		A	0.05	0.05	0.05	0.05
Refrigerant	type		R410A	R410A	R410A	R410A
	charge	kg	-	-	-	-
Dimensions	W*H*D	mm	302*143*252	302*143*252	302*143*252	302*143*252
Packing Dimension	W*H*D	mm	422*202*300	422*202*300	422*202*300	422*202*300
Net Weight		kg	5	5	5	5
Connecting Cable	Direction Indoor Unit	No. * mm²	4*0.75 (Includes earth)	4*0.76 (Includes earth)	4*0.77 (Includes earth)	4*0.77 (Includes earth)
	Direction Outdoor Unit	No. * mm²	4*0.75 (Includes earth)	4*0.76 (Includes earth)	4*0.77 (Includes earth)	4*0.77 (Includes earth)
Piping Connection	Liquid	inch(mm)	3/4(19.05)	3/4(19.05)	3/4(19.05)	3/4(19.05)
(Main)	Gas		3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)
Piping Connection	Liquid	inch(mm)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)
(Indoor Unit)	Gas		3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)
Piping length	Total	m	100	100	100	100
(Max.)	Outdoor ↔ BD	m	40	40	40	40
	BD ↔ Indoor	m	20	20	20	20
Piping Elevation	Outdoor ↔ Indoor	m	30	30	30	30
(Max.)	Indoor ↔ Indoor	m	10	10	10	10
Drain hose			Not available			
Heat Insulation			Both Liquid and Gas pipes			
Accessories	Hanger	EA	4	4	4	4
	Screw	EA	8	8	8	8

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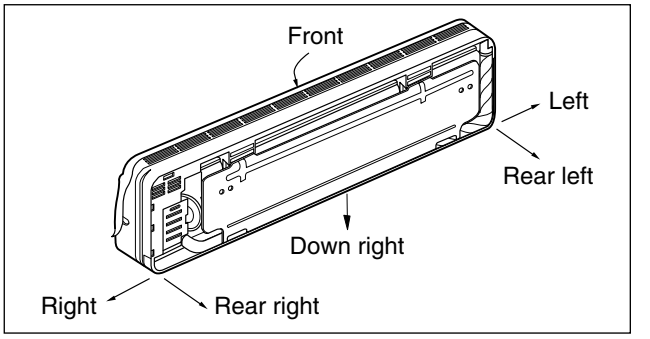
Installation

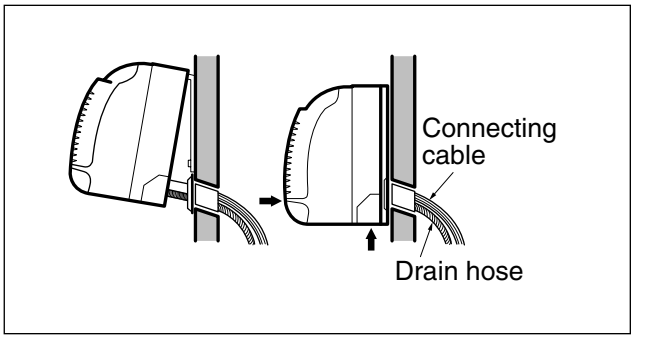
Read completely, then follow step by step.

Select the best location of indoor unit

1. Split Type Indoor Unit

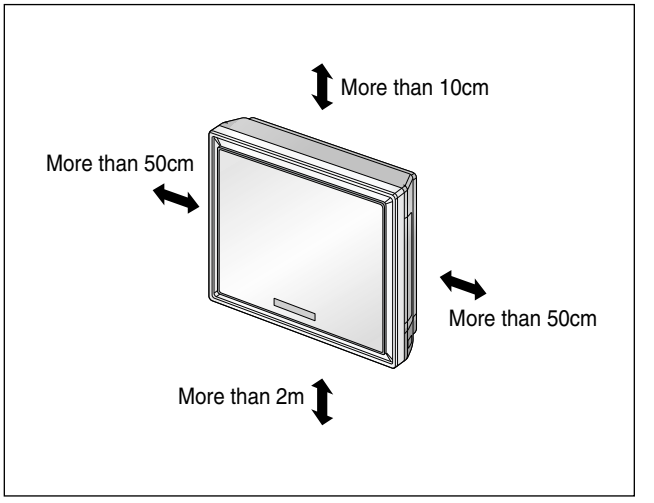
- There should not be any heat source or steam near the unit.
- There should not be any obstacles to prevent the air circulation.
- A place where air circulation in the room will be good.
- A place where drainage can be easily obtained.
- A place where noise prevention is taken into consideration.
- Do not install the unit near the door way.
- Ensure the spaces indicated by arrows from the wall, ceiling, fence, or other obstacles.





2. Art Cool Type Indoor Unit

- Do not have any heat or steam near the unit.
- Select a place where there are no obstacles in front of the unit.
- Make sure that condensation drainage can be conveniently routed away.
  Do not install near a doorway.
- Ensure that the space around the left and right of the unit is more than 50cm. The unit should be installed as high on the wall as possible, allowing a minimum of 10cm from ceiling.
- Use a stud finder to locate studs to prevent unnecessary damage to the wall.

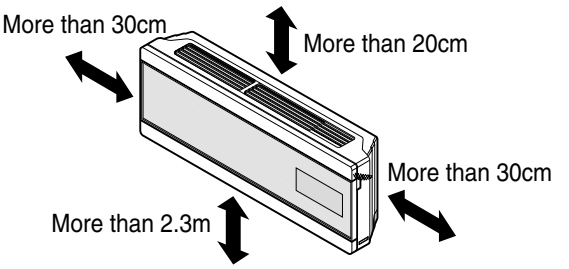


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3. Art Cool Deluxe Type Indoor unit

- Do not have any heat or steam near the unit.
- Select a place where there are no obstacles in front of the unit.
- Make sure that condensation drainage can be conveniently routed away.
  Do not install near a doorway.
- Ensure that the space around the left and right of the unit is more than 20cm. The unit should be installed as high on the wall as possible, allowing a minimum of 30cm from ceiling.
- Use a stud finder to locate studs to prevent unnecessary damage to the wall.



⚠ CAUTION

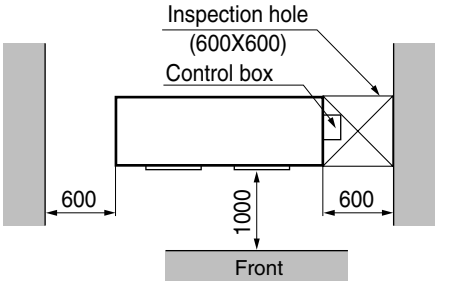
Install the indoor unit on the wall where the height from the floors more than 2.3 meters.

4. Duct Type Indoor Unit

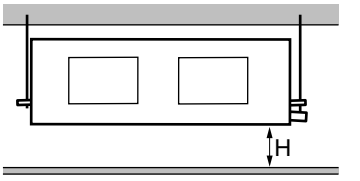
Install the air conditioner in the location that satisfies the following conditions.

- The place shall easily bear a load exceeding four times the indoor unit's weight.
- The place shall be able to inspect the unit as the figure.
- The place where the unit shall be leveled.
- The place shall allow easy water drainage.(Suitable dimension "H" is necessary to get a slope to drain as figure.)
- The place shall easily connect with the outdoor unit.
- The place where the unit is not affected by an electrical noise.
- The place where air circulation in the room will be good .
- There should not be any heat source or steam near the unit

Top view
(unit: mm)

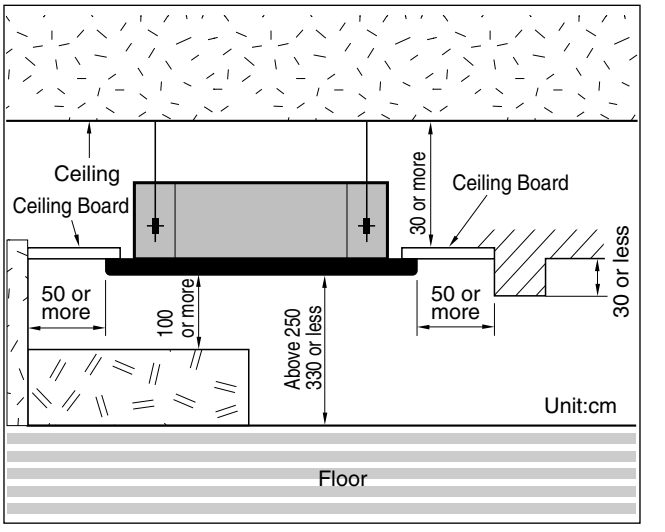


Front view



5. CST Type Indoor Unit

- There should not be any heat source or steam near the unit.
- There should not be any obstacles to the air circulation.
- A place where air circulation in the room will be good.
- A place where drainage can be easily obtained.
- A place where noise prevention is taken into consideration.
- Do not install the unit near the door way.
- Ensure the spaces indicated by arrows from the wall, ceiling, or other obstacles.
- The indoor unit must have the maintenance space around.

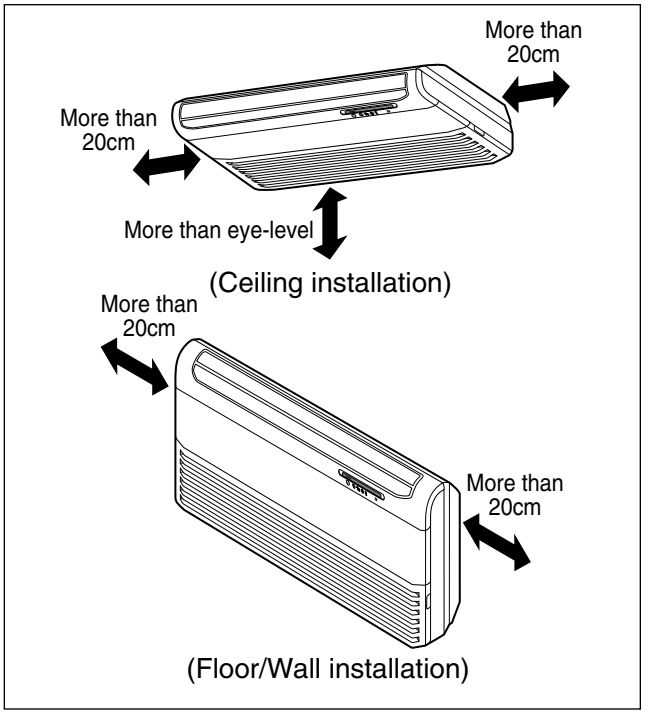


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6. CVT Type Indoor Unit

- There should not be any heat source or steam near the unit.
- There should not be any obstacles to prevent the air circulation.
- A place where air circulation in the room will be good.
- A place where drainage can be easily obtained.
- A place where noise prevention is taken into consideration.
- Do not install the unit near the door way.
- Ensure the spaces indicated by arrows from the wall, ceiling, or other obstacles.



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How to fix

1. Room Type Indoor Unit Installation

The mounting wall should be strong and solid enough to protect it from the vibration.

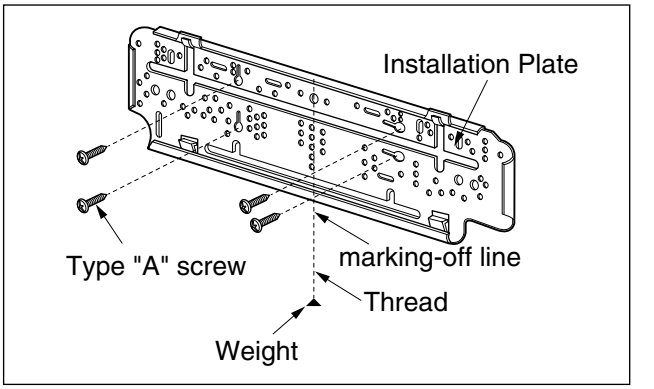
1) Mount the installation plate on the wall with four Type "A" screws.

(If mounting the unit on the concrete wall, consider using anchor bolts.)

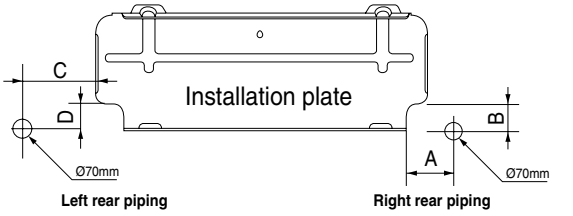
- Always mount the Installation plate horizontally by aligning the marking-off line by means of the thread and a level.

2) Drill the piping hole with 70mm dia. holecore drill.

- Line according to the arrows marked on lower the left and the rght side of the Installation Plate. The meeting point of the extended line is the center of the hole.
- Drill the piping hole at either the right or the left and the hole should be slightly slant to the outdoor side.



The lower left and the right side of Installation Plate



CHASSIS (Grade)	Distance(mm)			
	A	B	C	D
SQ(7/9k)	75	12	80	12
SR(9/12k)	0	40	20	40
ST(18/24k)	105	0	210	0

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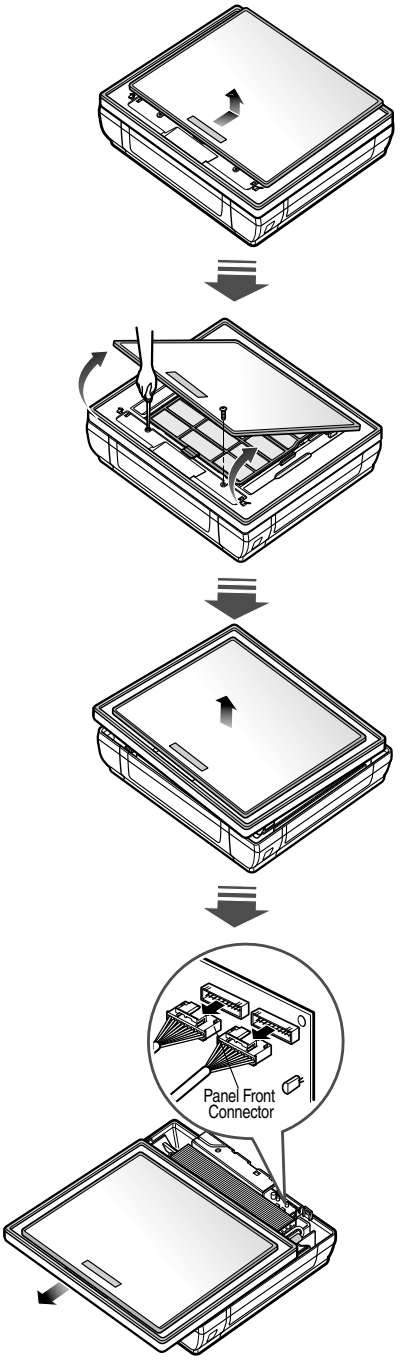
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2. Art Cool Type Indoor Unit

The wall you select should be strong and solid enough to prevent vibration

1) Open panel front

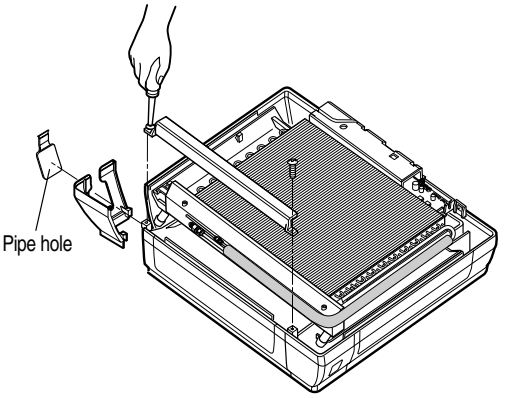
- First,Pull the grille bottom, then remove screws (2 pieces), and close grille bottom again.
- The moment of lifting the both lower parts of panel front, you can hear sound this panel came out, In this time panel front is separated
- After pull down this panel a bit, and separate connecting wire with product.



2) Cover pipe and cover side remove

- Remove two screws(for fixing cover pipe)
- Pull up the cover side of desired connecting direction, then cover side is separated.
- In case connecting direction is left or right, path through the hole of cover side.

CAUTION: After removing the pipe hole, cut the burr for safety.



NOTE: When connecting pipe path through rear wall, don't remove the hole.

3) Drain hose junction

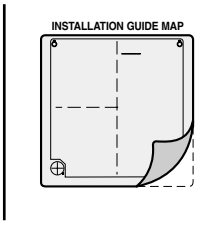
- Remove the rubber stopple of desired drain direction.
- As the following picture, Insert drain hose in the handle of drain pan, and join drain hose and connecting hose.

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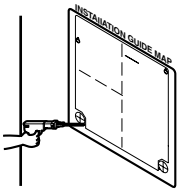
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■ Sticking the installation guide map and fixing Indoor unit

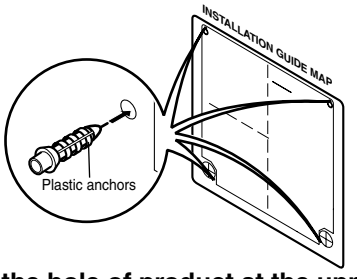
1. Put an Installation Guide Map on the desired surface.



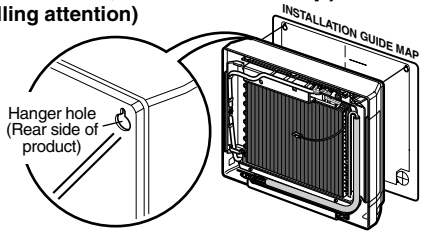
2. Make a hole with diameter of 6mm and depth of 30-35mm when piercing a screw point.



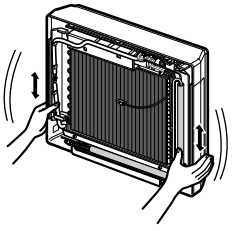
3. Drive the fore plastic anchors into drilled points.



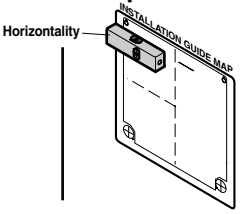
4. Hang the hole of product at the upper screws. (In this time, Remove the map)
(Falling attention)



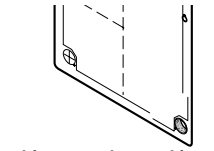
5. Check the fixed product with light power.



6. Look at suited horizon by horizontal meter on the horizontal setting line, and Fix lightly the map by adhesive tape.

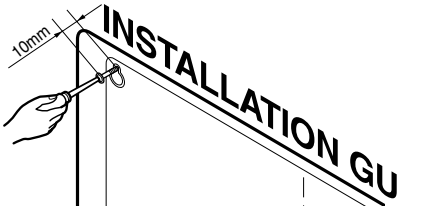


7. Drill the piercing part for connecting pipe as diameter 50mm. (In case of piercing rear surface)

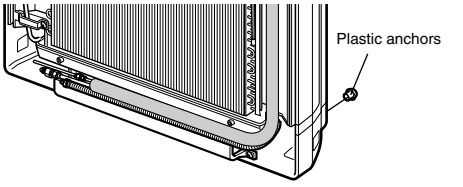


Refer to No. 5 on this page when making a hole in the wall.

8. First, Drive the two points of the upper parts by screws. (Leave 10mm for hanging product)



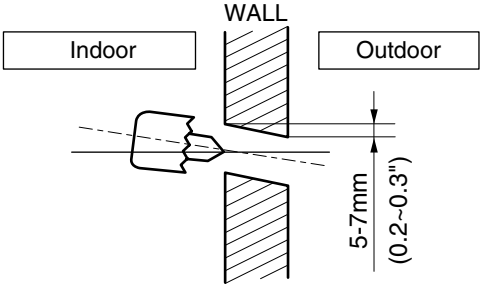
9. Drive the lower parts after facing the hole of product with plastic anchors, and fix completely the upper screws.



In case of nothing wrong in the matter, connect the pipe and the wire. (Installation manual reference)

■ Drill a hole in the wall

• Drill the piping hole with a ø50mm hole core drill. Drill the piping hole at either the right or the left with the hole slightly slanted to the outdoor side.



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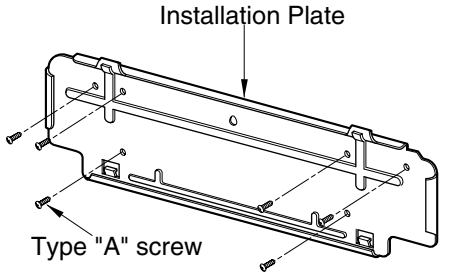
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3. Art Cool Deluxe Type Indoor Unit

The wall you select should be strong and solid enough to prevent vibration

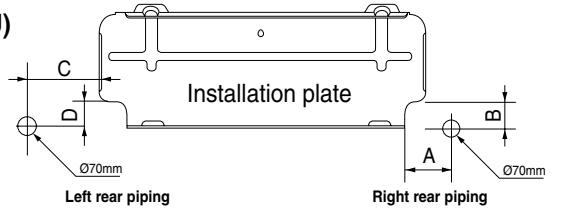
1) Mount the installation plate on the wall with four type A screws. If mounting the unit on a concrete wall, use anchor bolts.

- Mount the installation plate horizontally by aligning the centerline using a level.

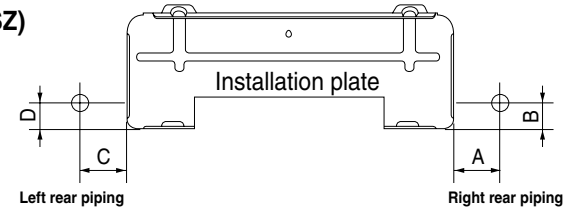


2) Measure the wall and mark the centerline. It is also important to use caution concerning the location of the installation plate-routing of the wiring to power outlets is through the walls typically. Drilling the hole through the wall for piping connections must be done safely.

(SU)



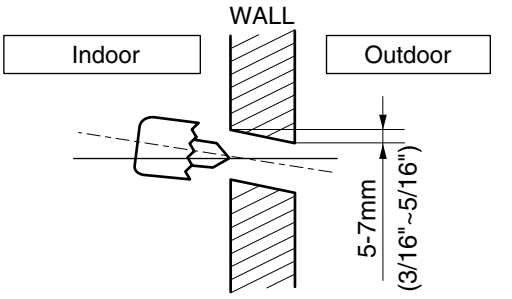
(SZ)



CHASSIS (Grade)	Distance (mm)			
	A	B	C	D
SU (9k, 12k)	92	44	67	44
SZ (7k)	35	33	156	33

3). Drill a hole in the wall

- Drill the piping hole with a ø70mm hole core drill. Drill the piping hole at either the right or the left with the hole slightly slanted to the outdoor side.



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4. Duct Type Indoor Unit

- BH/BG chassis

Install the unit above the ceiling correctly.

CASE 1

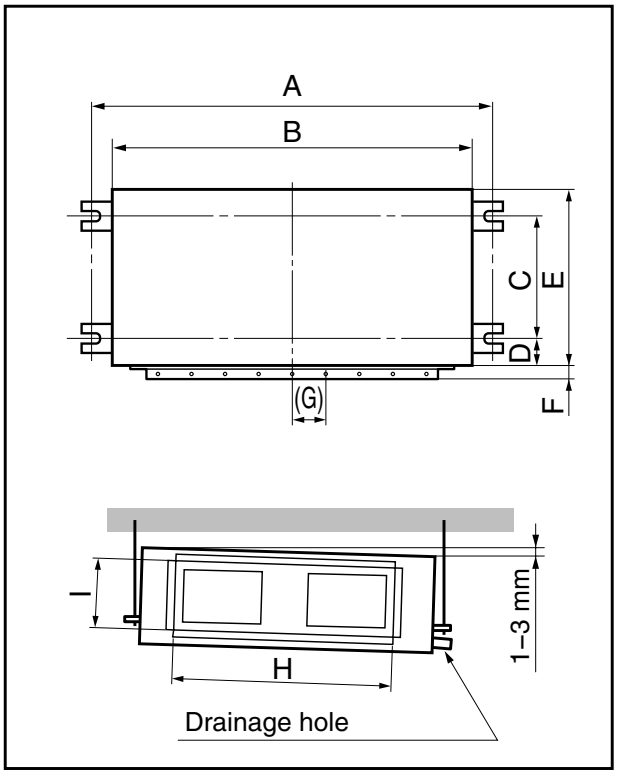
POSITION OF SUSPENSION BOLT

- Apply a joint-canvas between the unit and duct to absorb unnecessary vibration.
- Apply a filter Accessory at air return hole.

(Unit:mm)

Dimension / Capacity	A	B	C	D	E	F	(G)	H	I
18k, 24k	932	880	355	45.5	450	30	87	750	163
30k, 36k	1232	1180	355	45.5	450	30	87	830	186

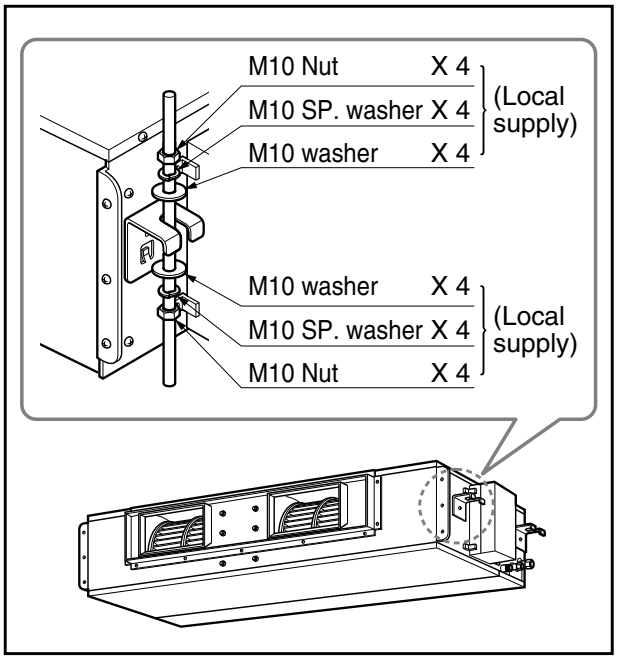
- Install the unit leaning to a drainage hole side as a figure for easy water drainage.



CASE 2

POSITION OF CONSOLE BOLT

- A place where the unit will be leveled and that can support the weight of the unit.
- A place where the unit can withstand its vibration.
- A place where service can be easily performed.



NOTE:

• Throughly study the following installation locations:

1. In such places as restaurants and kitchens, considerable amount of oil steam and flour adhere to the fan, the fin of the heat exchanger, resulting in heat exchange reduction, spraying, dispersing of water drops, etc.
In these cases, take the following actions:
• Make sure that the ventilation fan for smoke-collecting hood on a cooking table has sufficient capacity so that it draws oily steam which should not flow into the suction of the air conditioner.
• Make enough distance from a cooking room to install the air conditioner in such a place where it may not suck in oil steam.

2. Avoid installing air conditioner in such circumstances where cutting oil mist or iron powder is in suspension in factories, etc.

3. Avoid places where inflammable gas is generated, flows in, is stored or vented.

4. Avoid places where sulfurous acid gas or corrosive gas is generated.

5. Avoid places near high frequency generators.

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- BT chassis

Install the unit above the ceiling correctly.

CASE 1

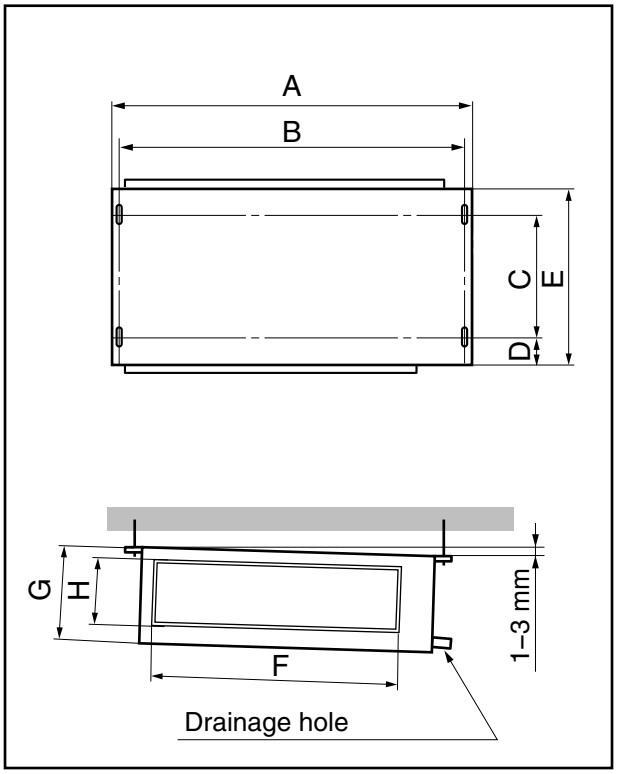
POSITION OF SUSPENSION BOLT

- Apply a joint-canvas between the unit and duct to absorb unnecessary vibration.
- Apply a filter Accessory at air return hole.

(Unit:mm)

Dimension / Capacity	A	B	C	D	E	F	G	H
9/12K	708	678	434	51	537	455	230	172
18K	1060	1030	434	51	535	805	230	175

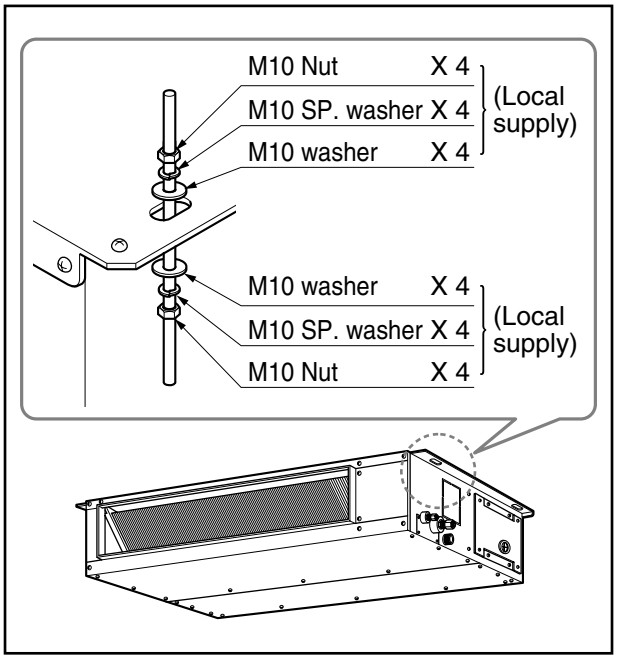
- Install the unit leaning to a drainage hole side as a figure for easy water drainage.



CASE 2

POSITION OF CONSOLE BOLT

- A place where the unit will be leveled and that can support the weight of the unit.
- A place where the unit can withstand its vibration.
- A place where service can be easily performed.



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- BP chassis

Install the unit above the ceiling correctly.

CASE 1

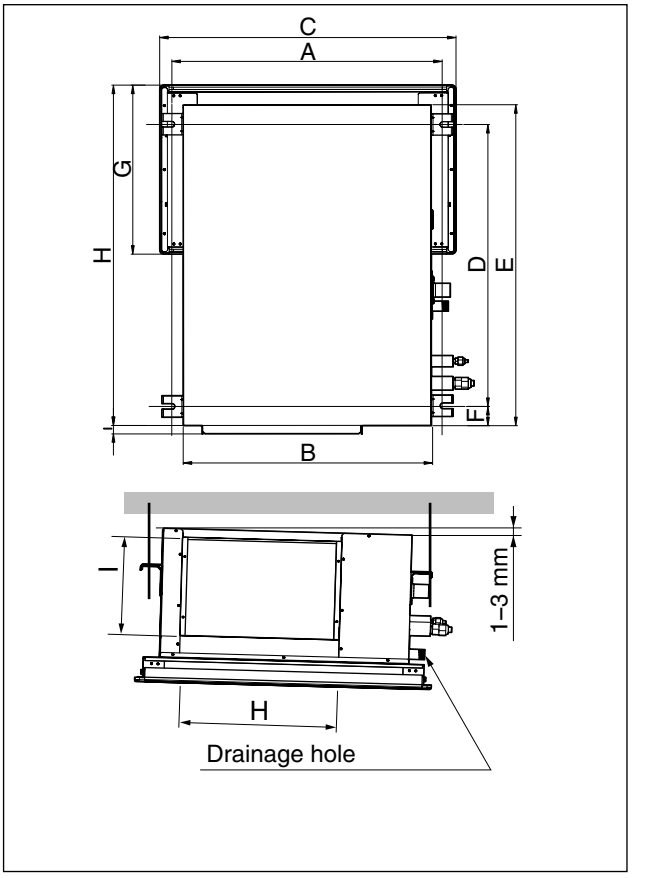
POSITION OF SUSPENSION BOLT

- Apply a joint-canvas between the unit and duct to absorb unnecessary vibration.
- Apply a filter Accessory at air return hole.

(Unit:mm)

Dimension / Capacity	A	B	C	D	E	F	G	H	I	J	K
9k/12k BTU/h	633	580	695	660	750	45	369	797	20	232	372

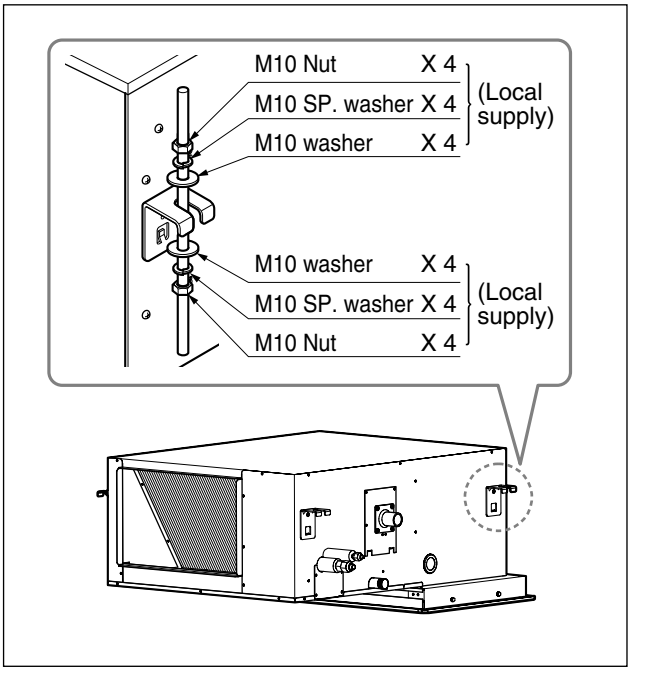
- Install the unit leaning to a drainage hole side as a figure for easy water drainage.



CASE 2

POSITION OF CONSOLE BOLT

- A place where the unit will be leveled and that can support the weight of the unit.
- A place where the unit can withstand its vibration.
- A place where service can be easily performed.



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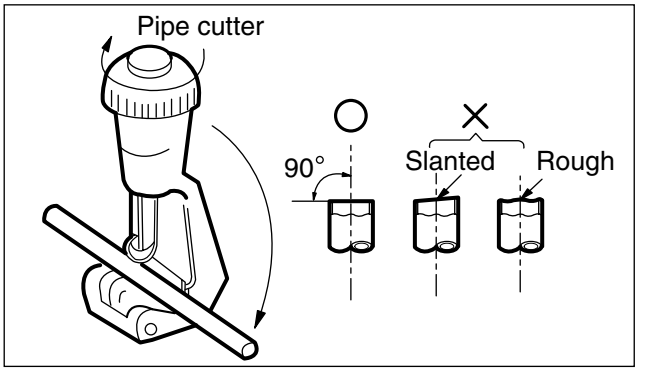
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Piping and Drainage of Indoor Unit

1. Preparation of pipings

1) Cut the pipes and the cable.

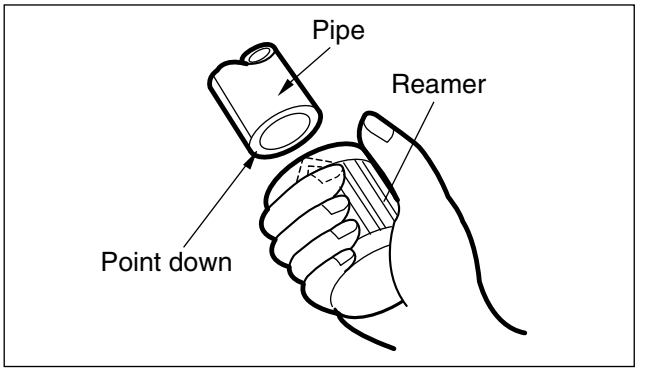
- Use the accessory piping kit or the pipes purchased locally.
- Measure the distance between the indoor and the outdoor unit.
- Cut the pipes a little longer than the measured distance.
- Cut the cable 1.5m longer than the length of the pipe.



2) Remove burrs.

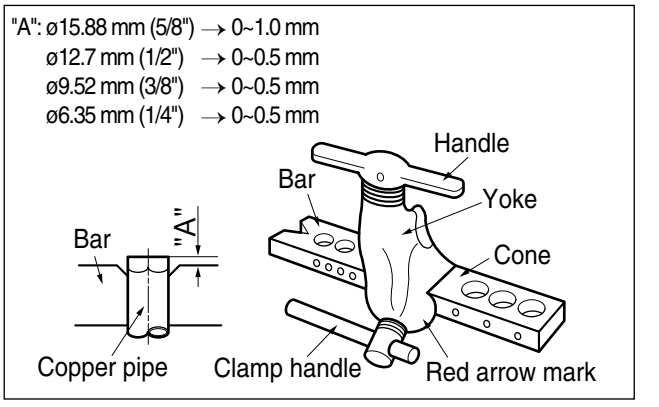
- Remove burrs from cut edges of pipes.
- Turn the pipe end toward down to avoid the metal powder entering the pipe.

CAUTION: If burrs are not removed, they may cause a gas leakage.

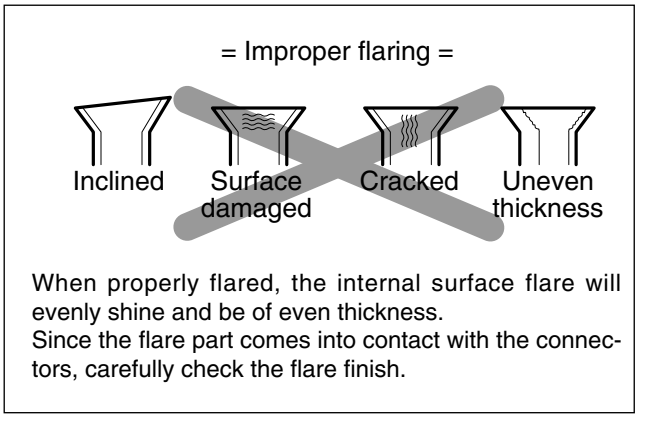


3) Flaring the pipes.

- Insert the flare nuts, mounted on the connection ports of both indoor and outdoor unit, onto the copper pipes. Some refrgerant gas may leak, when the flare nuts are removed from the indoor unit, as some gas is charged to prevent the inside of the pipe from rusting.
- Fit the copper pipe end into the Bar of flare tool about 0~0.5mm higher. (See illustration)
- Flare the pipe ends.



4) Tape the flaring portion to protect it from the dust or damages.



When properly flared, the internal surface flare will evenly shine and be of even thickness.
Since the flare part comes into contact with the connectors, carefully check the flare finish.

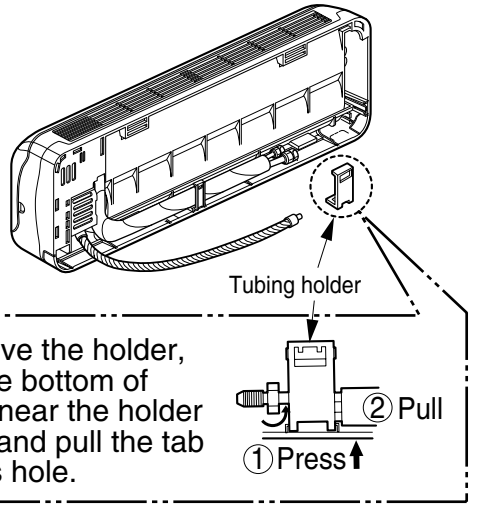
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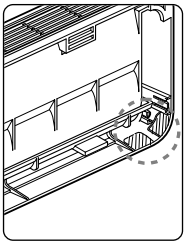
Connection of indoor unit piping

1. Split Type Indoor Unit

- Preparing the indoor unit's piping and drain hose for installation through the wall.
- Remove the plastic tubing retainer(see illustration below) and pull the tubing and drain hose away from chassis.
- Replace the plastic tubing holder in the original position.

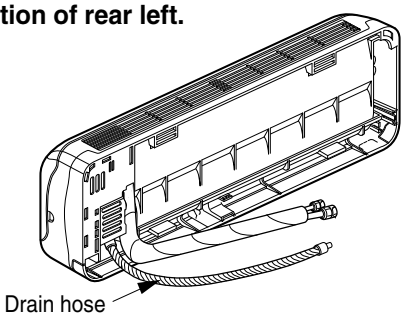


CAUTION
When install, make sure that the remaining parts must be removed clearly so as not to damage the piping and drain hose, especially power cord and connecting cable.



For left rear piping

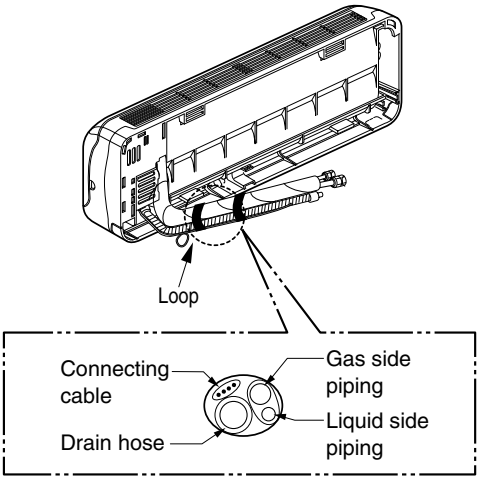
1. Route the indoor tubing and the drain hose in the direction of rear left.



2. Insert the connecting cable into the indoor unit from the outdoor unit through the piping hole.

- Do not connect the cable to the indoor unit.
- Make a small loop with the cable for easy connection later.

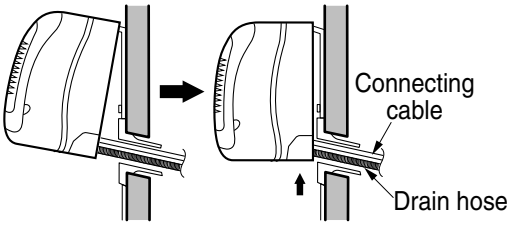
3. Tape the tubing, drain hose and the connecting cable. Be sure that the drain hose is located at the lowest side of the bundle. Locating at the upper side can cause drain pan to overflow inside the unit.



NOTE: If the drain hose is routed inside the room, insulate the hose with an insulation material* so that dripping from "sweating"(condensation) will not damage furniture or floors.
*Foamed polyethylene or equivalent is recommended.

4. Indoor unit installation

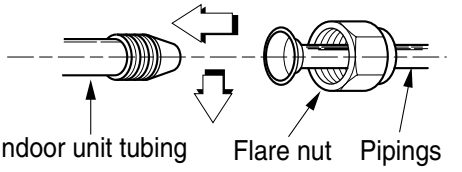
- Hook the indoor unit onto the upper portion of the installation plate.(Engage the two hooks of the rear top of the indoor unit with the upper edge of the installation plate.) Ensure that the hooks are properly seated on the installation plate by moving it left and right.



Press the lower left and right sides of the unit against the installation plate until the hooks engage into their slots(clicking sound).

5. Connecting the pipings to the indoor unit and drain hose to drain pipe.

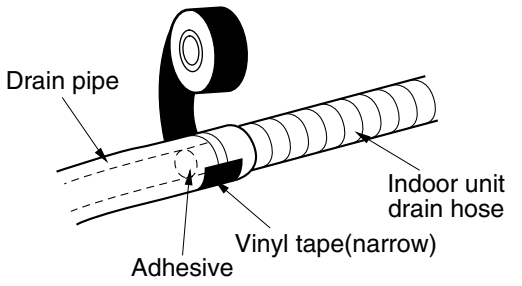
- Align the center of the pipings and sufficiently tighten the flare nut by hand.



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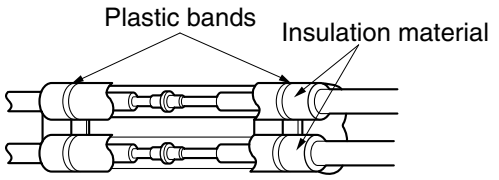
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• When extending the drain hose at the indoor unit, install the drain pipe.

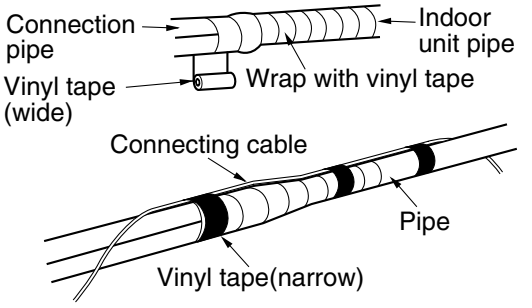


6. Wrap the insulation material around the connecting portion.

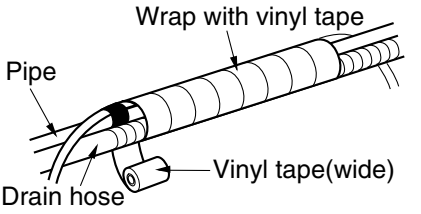
• Overlap the connection pipe insulation material and the indoor unit pipe insulation material. Bind them together with vinyl tape so that there is no gap.



• Wrap the area which accommodates the rear piping housing section with vinyl tape.

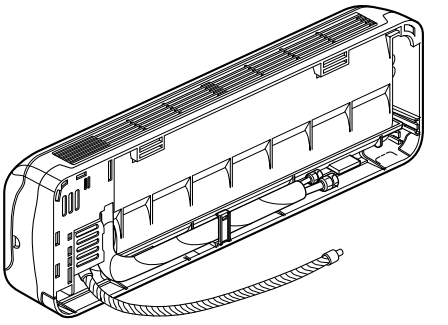


• Bundle the piping and drain hose together by wrapping them with vinyl tape over the range within which they fit into the rear piping housing section.

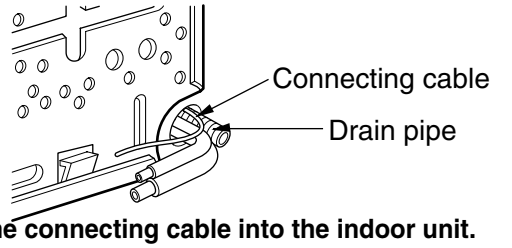


For right rear piping

1. Route the indoor tubing and the drain hose to the required piping hole position.



2. Insert the piping, drain hose and the connecting cable into the piping hole.



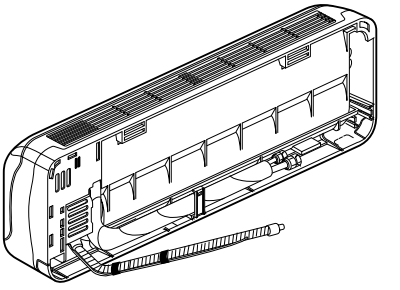
3. Insert the connecting cable into the indoor unit.

• Don't connect the cable to the indoor unit.

• Make a small loop with the cable for easy connection later.

4. Tape the drain hose and the connecting cable.

• Connecting cable



5. Indoor unit installation

• Hang the indoor unit from the hooks at the top of the installation plate.

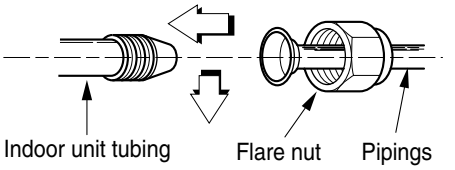
• Insert the spacer etc. between the indoor unit and the installation plate and separate the bottom of the indoor unit from the wall.

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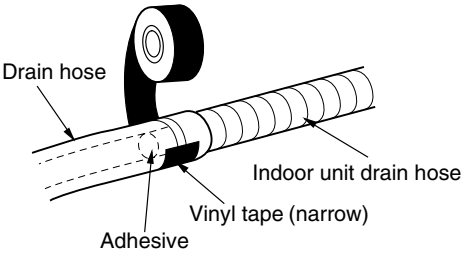
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6) Connecting the pipings to the indoor unit and the drain hose to drain pipe.

- Align the center of the pipings and sufficiently tighten the flare nut by hand.

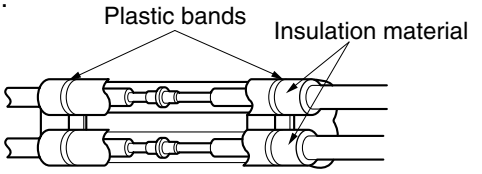


- When extending the drain hose at the indoor unit, install the drain pipe.

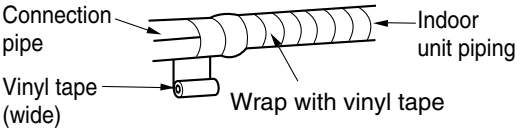


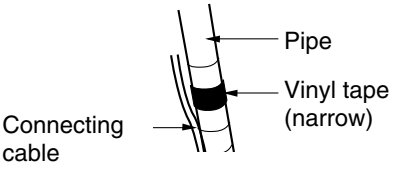
7) Wrap the insulation material around the connecting portion.

- Overlap the connection pipe heat insulation and the indoor unit pipe heat insulation material. Bind them together with vinyl tape so that there is no gap.

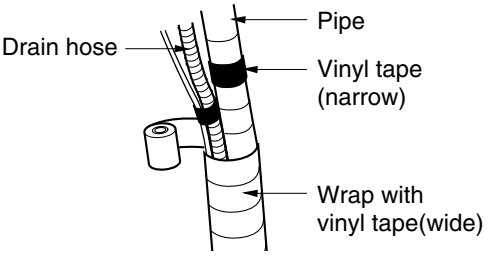


- Wrap the area which accommodates the rear piping housing section with vinyl tape.

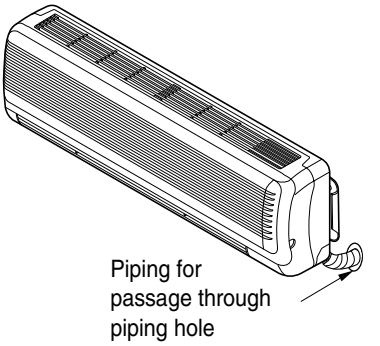




- Bundle the piping and drain hose together by wrapping them with cloth tape over the range within which they fit into the rear piping housing section.

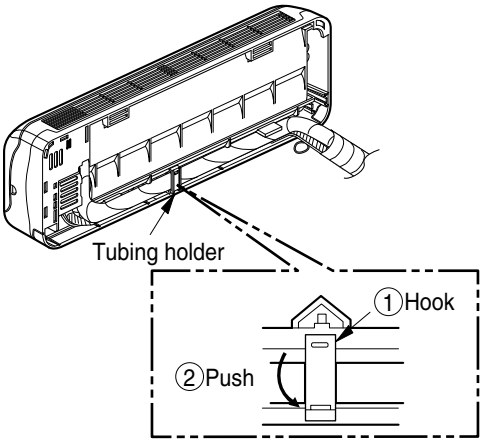


8) Reroute the pipings and the drain hose across the back of the chassis.



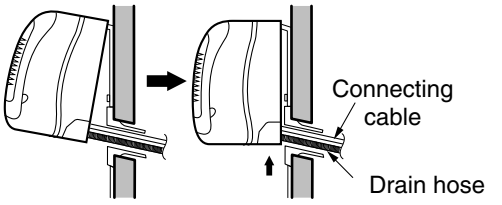
9) Set the pipings and the drain hose to the back of the chassis with the tubing holder.

- Hook the edge of tubing holder to tap on chassis and push the bottom of tubing holder to be engaged at the bottom of chassis.



10) Indoor unit installation

- Remove the spacer.
- Ensure that the hooks are properly seated on the installation plate by moving it left and right.



Press the lower left and right sides of the unit against the installation plate until the hooks engage into their slots(clicking sound).

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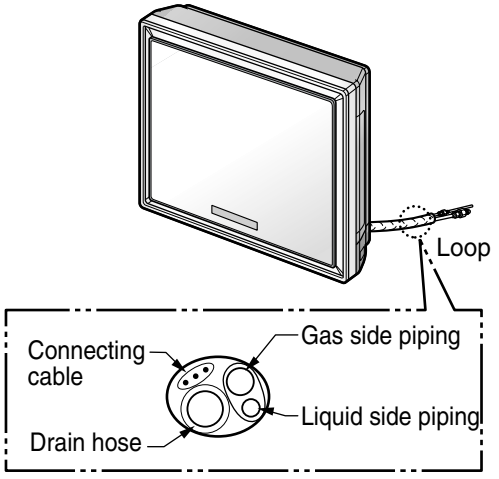
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2. Art Cool Type Indoor Unit

• Preparing the indoor unit's piping and drain hose for installation through the wall.

1) Route the indoor tubing and the drain hose in the direction of rear left or right.

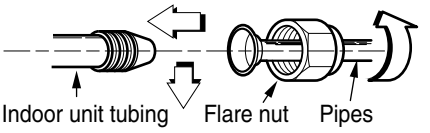
2) Tape the tubing, drain hose, and the connecting cable. Be sure that the drain hose is located at the lowest side of the bundle. Locating at the upper side can cause drain pan to overflow inside the unit.



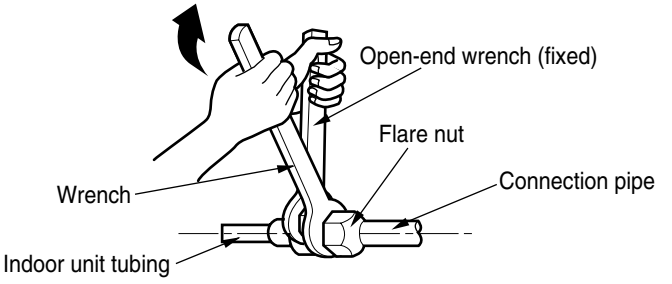
NOTE: If the drain hose is routed inside the room, insulate the hose with an insulation material* so that dripping from "sweating"(condensation) will not damage furniture or floors.
*Foamed polyethylene or equivalent is recommended.

3) Connecting the pipings to the indoor unit and drain hose to drain pipe.

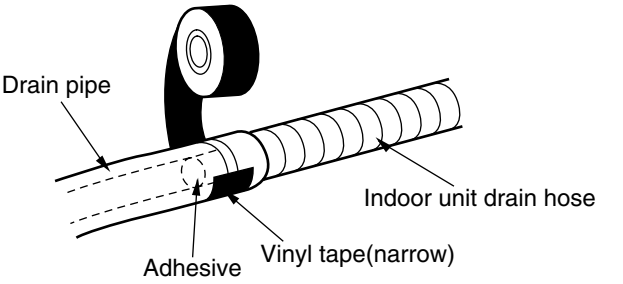
• Align the center of the pipes and sufficiently tighten the flare nut by hand.



• Tighten the flare nut with a wrench.

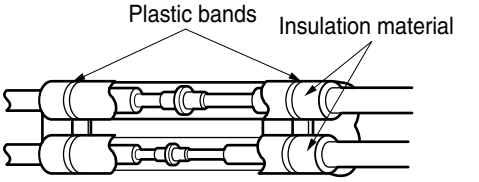


• When extending the drain hose at the indoor unit, install the drain pipe.

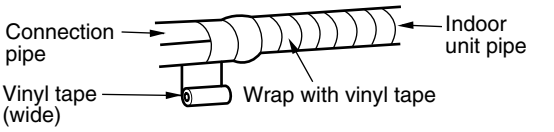


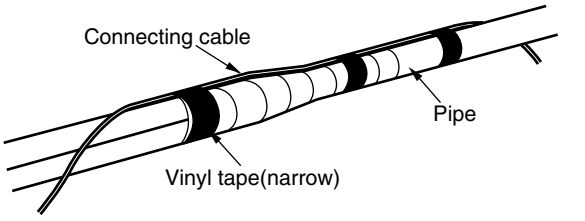
4) Wrap the insulation material around the connecting portion.

• Overlap the connection pipe insulation material and the indoor unit pipe insulation material. Bind them together with vinyl tape so that there is no gap.

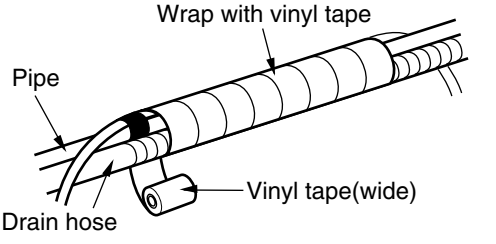


• Wrap the area which accommodates the rear piping housing section with vinyl tape.





• Bundle the piping and drain hose together by wrapping them with vinyl tape for enough to cover where they fit into the rear piping housing section.

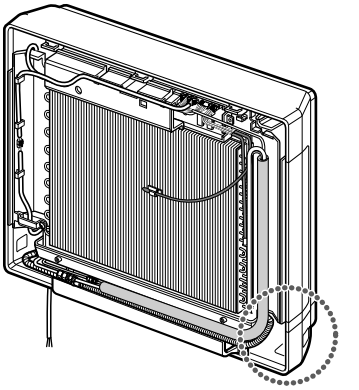


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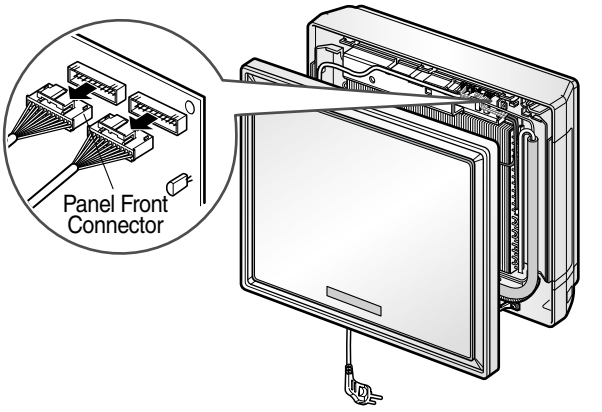
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■ Panel Assembly

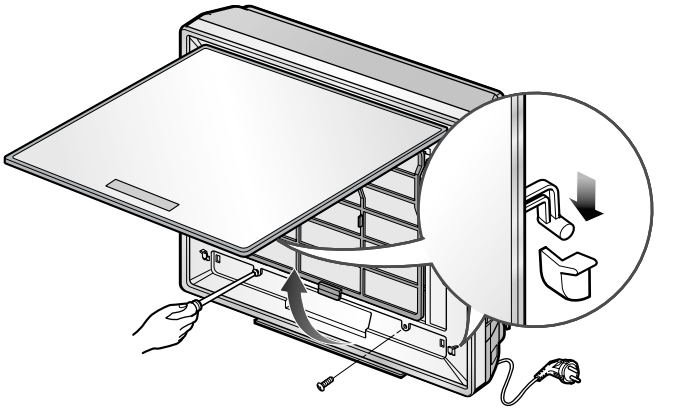
1. **First, Check the side cover assembly exactly, Fix power cord in the bottom groove of cover side left.**



2. **Assemble connecting lead wire with controller and first fix the upper part of panel front, then match the lower part of panel front**



3. **Drive two screws.**



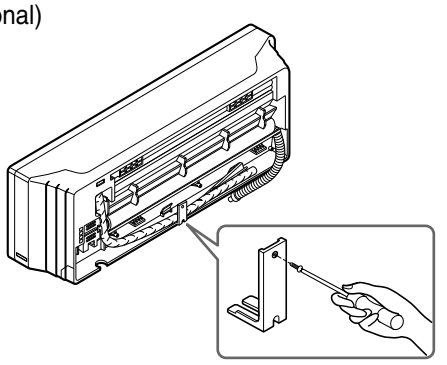
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3. Art Cool Deluxe Type Indoor Unit

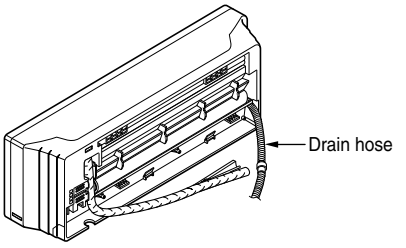
Connection of piping Indoor

- Preparing the indoor unit's piping and drain hose for installation through the wall.
- Remove the plastic tubing retainer(see illustration below) and pull the tubing and drain hose away from chassis.
- Replace the plastic tubing holder in the original position. (Optional)



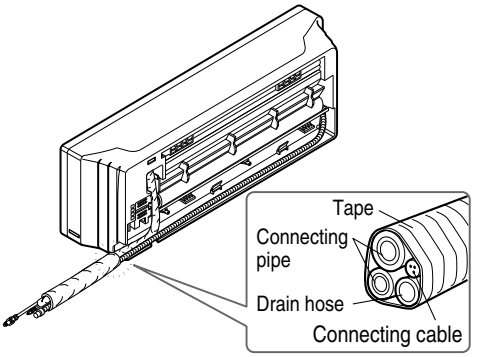
For right rear piping

1. Route the indoor tubing and the drain hose in the direction of rear right.



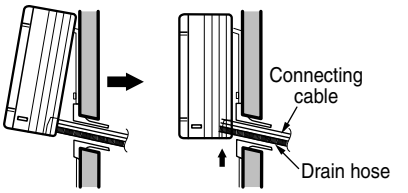
2. Insert the connecting cable into the indoor unit from the outdoor unit through the piping hole.
- Do not connect the cable to the indoor unit.
- Make a small loop with the cable for easy connection later.

3. Tape the tubing, drain hose, and the connecting cable. Be sure that the drain hose is located at the lowest side of the bundle. Locating at the upper side can cause drain pan to overflow inside the unit.



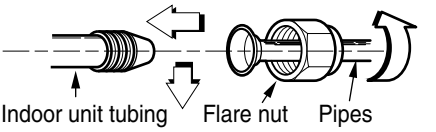
NOTE: If the drain hose is routed inside the room, insulate the hose with an insulation material* so that dripping from "sweating"(condensation) will not damage furniture or floors.
*Foamed polyethylene or equivalent is recommended.

4. Indoor unit installation
- Hook the indoor unit onto the upper portion of the installation plate.(Engage the two hooks of the rear top of the indoor unit with the upper edge of the installation plate.) Ensure that the hooks are properly seated on the installation plate by moving it left and right.

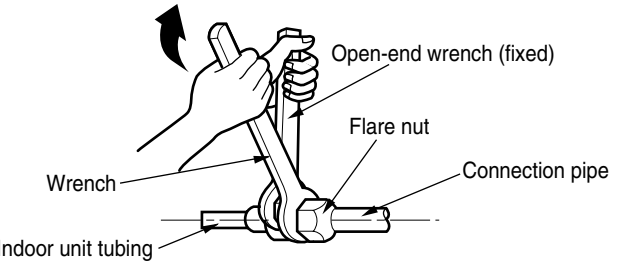


Press the lower left and right sides of the unit against the installation plate until the hooks engage into their slots(clicking sound).

4. Connecting the pipings to the indoor unit and drain hose to drain pipe.
- Align the center of the pipes and sufficiently tighten the flare nut by hand.



- Tighten the flare nut with a wrench.



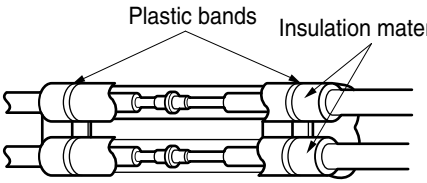
- When extending the drain hose at the indoor unit, install the drain pipe.

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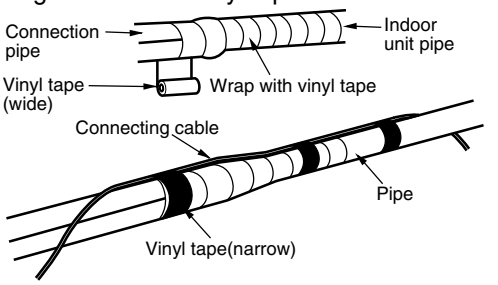
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5. Wrap the insulation material around the connecting portion.

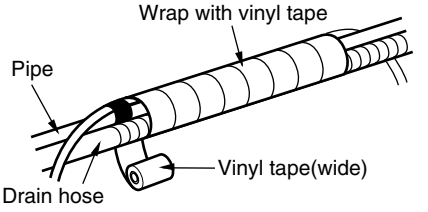
• Overlap the connection pipe insulation material and the indoor unit pipe insulation material. Bind them together with vinyl tape so that there is no gap.



• Wrap the area which accommodates the rear piping housing section with vinyl tape.

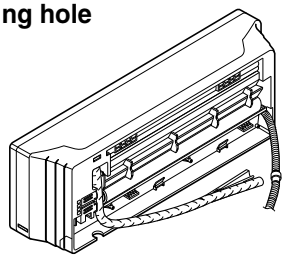


• Bundle the piping and drain hose together by wrapping them with vinyl tape for enough to cover where they fit into the rear piping housing section.

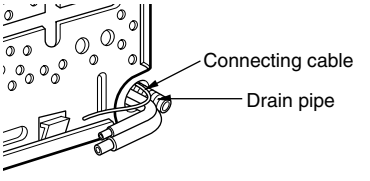


For left rear piping

1. Route the indoor tubing and the drain hose to the required piping hole position.



2. Insert the piping, drain hose, and the connecting cable into the piping hole.



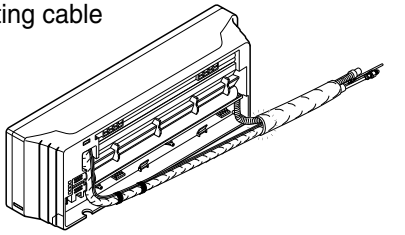
3. Insert the connecting cable into the indoor unit.

• Don't connect the cable to the indoor unit.

• Make a small loop with the cable for easy connection later.

4. Tape the drain hose and the connecting cable.

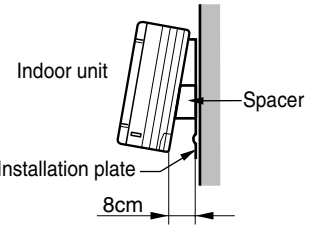
• Connecting cable



5. Indoor unit installation

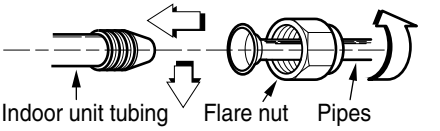
• Hang the indoor unit from the hooks at the top of the installation plate.

• Insert the spacer etc. between the indoor unit and the installation plate and separate the bottom of the indoor unit from the wall.

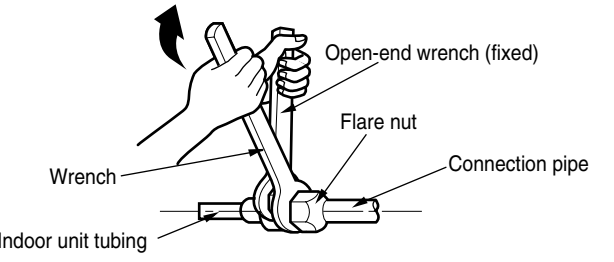


6. Connecting the pipings to the indoor unit and the drain hose to drain pipe.

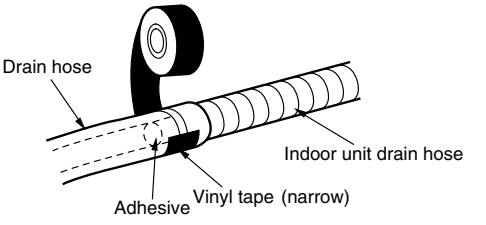
• Align the center of the pipes and sufficiently tighten the flare nut by hand.



• Tighten the flare nut with a wrench.



• When extending the drain hose at the indoor unit, install the drain pipe.

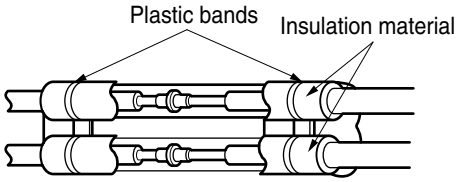


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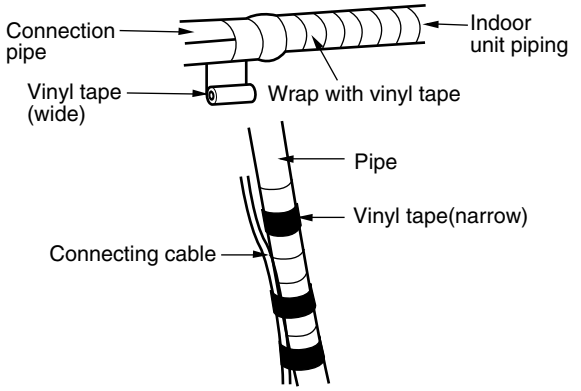
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7. Wrap the insulation material around the connecting portion.

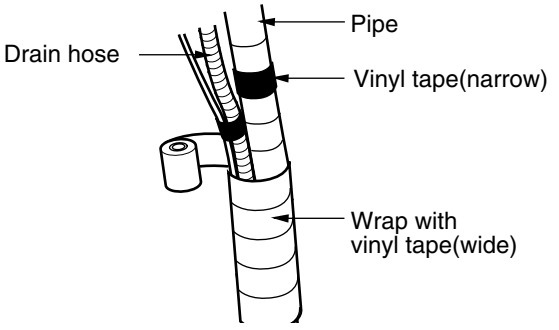
• Overlap the connection pipe heat insulation and the indoor unit pipe heat insulation material. Bind them together with vinyl tape so that there is no gap.



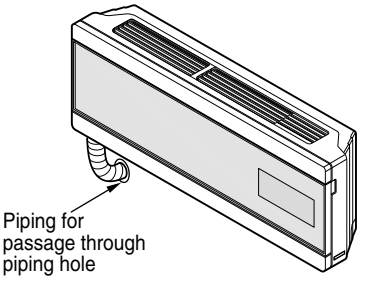
• Wrap the area which accommodates the rear piping housing section with vinyl tape.



• Bundle the piping and drain hose together by wrapping them with cloth tape over the range within which they fit into the rear piping housing section.

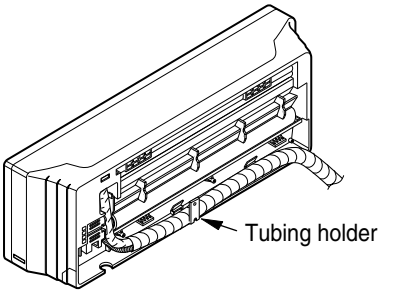


8. Reroute the pipings and the drain hose across the back of the chassis.



9. Set the pipings and the drain hose to the back of the chassis with the tubing holder.

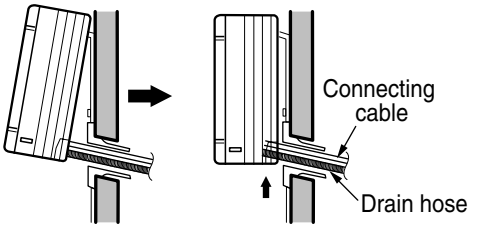
• Hook the edge of tubing holder to tap on chassis and push the bottom of tubing holder to be engaged at the bottom of chassis.



10. Indoor unit installation

• Remove the spacer.

• Ensure that the hooks are properly seated on the installation plate by moving it left and right.



Press the lower left and right sides of the unit against the installation plate until the hooks engage into their slots(clicking sound).

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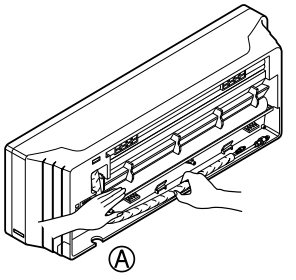
CAUTION

Installation Information (For left piping)

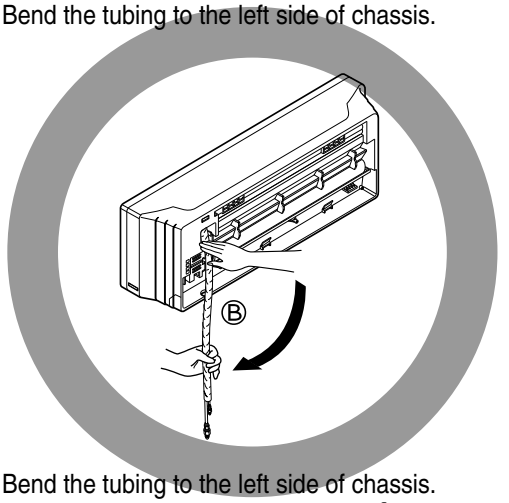
• Good case

For left piping. Follow the instruction below.

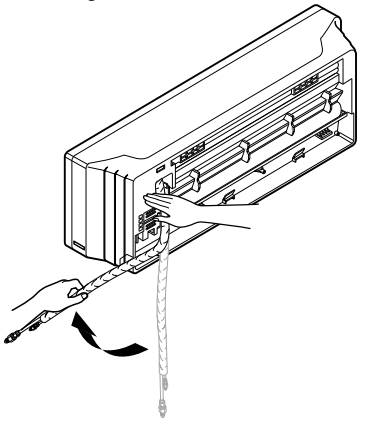
• Press on the upper side of clamp. (Ⓐ)



• Bend the tubing to the left side of chassis.

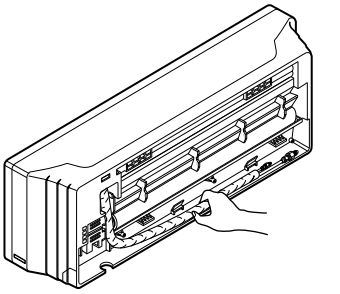


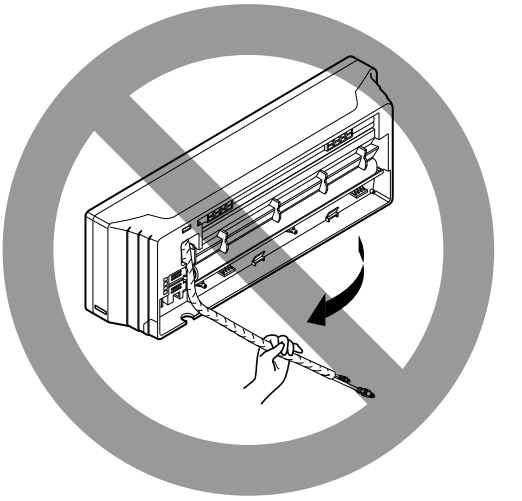
• Bend the tubing to the left side of chassis.

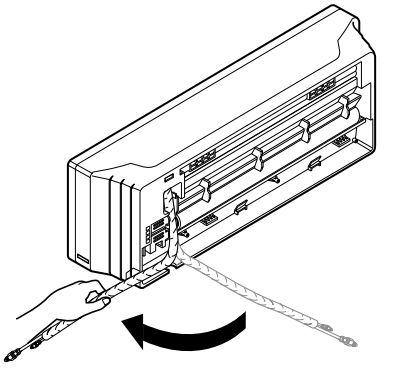


• Bad case

■ Following bending type from right to left could cause problem of pipe damage.







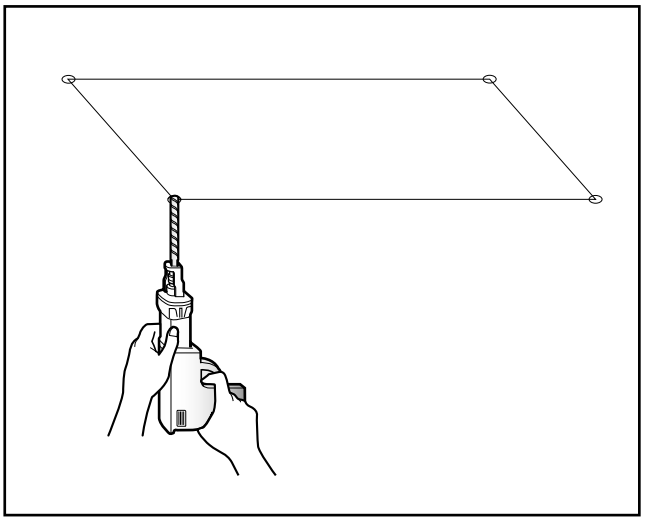
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4. Duct Type Indoor Unit

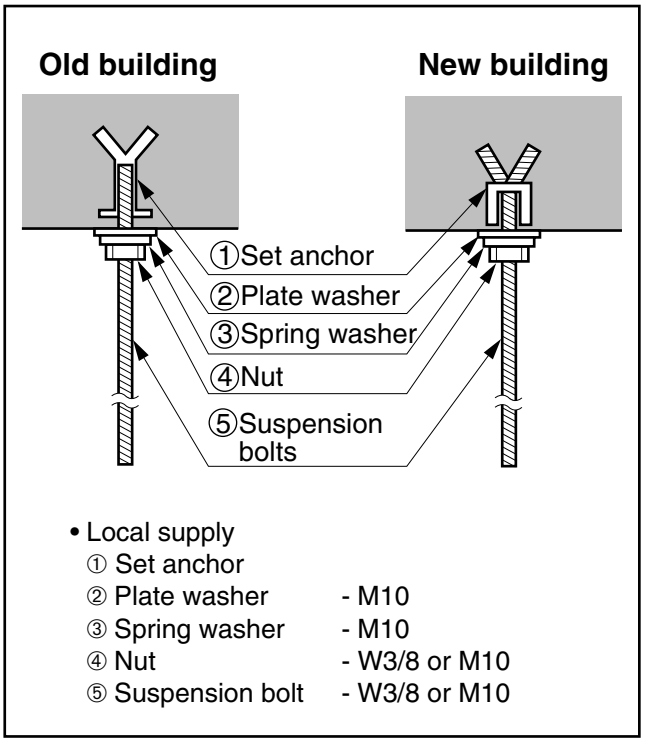
1) Indoor Unit Installation

- Select and mark the position for fixing bolts.
- Drill the hole for set anchor on the face of ceiling.



- Insert the set anchor and washer onto the suspension bolts for locking the suspension bolts on the ceiling.
- Mount the suspension bolts to the set anchor firmly.
- Secure the installation plates onto the suspension bolts (adjust level roughly) using nuts, washers and spring washers.

CAUTION: Tighten the nut and bolt to prevent unit falling.



- Local supply
  - ① Set anchor
  - ② Plate washer - M10
  - ③ Spring washer - M10
  - ④ Nut - W3/8 or M10
  - ⑤ Suspension bolt - W3/8 or M10

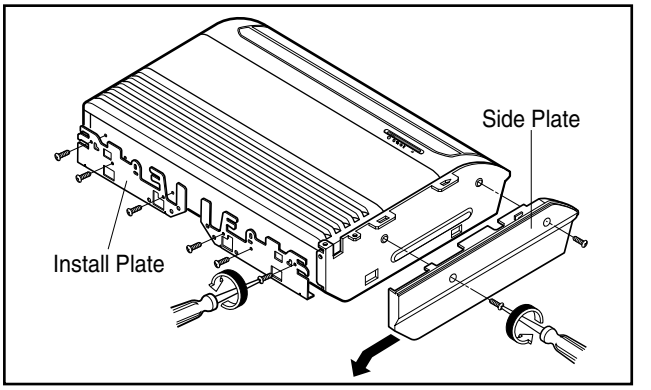
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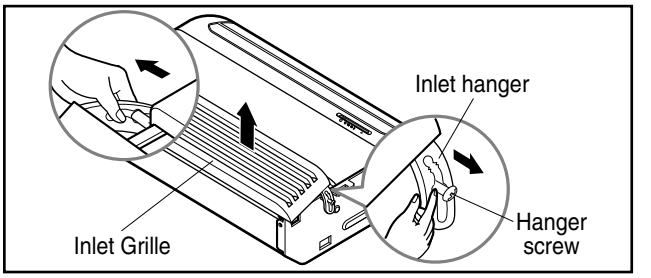
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5. CVT Type Indoor Unit - VB chassis

■ **Before Installing, prepare Installation Plates**

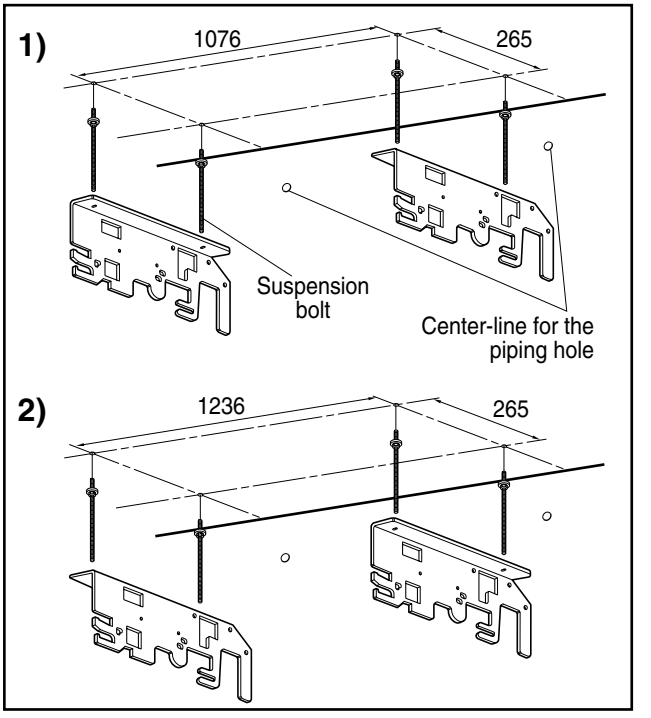
- 'Installation Plates' are attached at the bottom of indoor unit.
  Detach them by removing each 3 screws at both sides.
- Detach 'Side Plate (R,L)' by removing each 2 screws on both sides.
- Pull the upper right and left side of 'Inlet Grille' to the front, and it will stop at slightly tilted position.
- Unhook the 'Inlet hanger' from the 'Hanger screw' on the both left and right side.
- Detach the 'Inlet Grille' from the Indoor Unit.





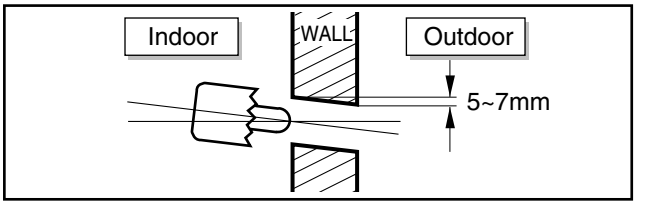
1) Installation on the ceiling

- Measure and mark the position for the Suspension bolts and the piping hole.
- Drill the hole for anchor nut on the ceiling.



※ **Before secure the Installation Plates, select the bent direction of the Installion Plate to the inside or the outside according to the installation circumstances.**

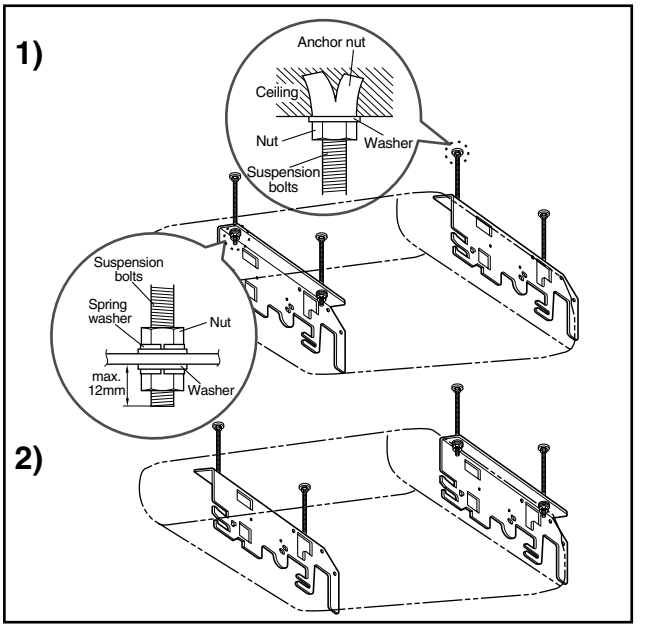
- Drill the piping hole on the wall slightly tilted to the outdoor side using a ø70 hole-core drill.



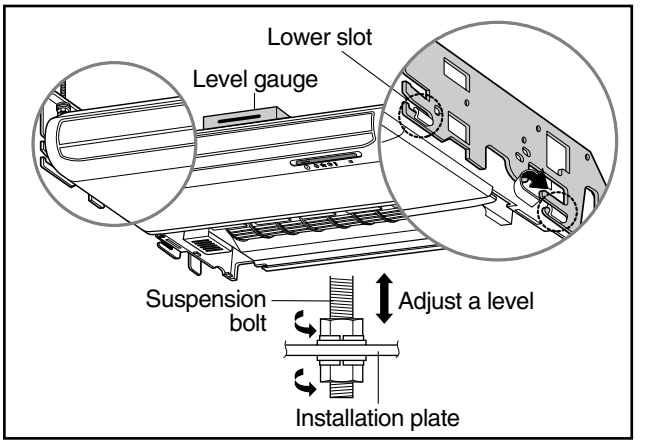
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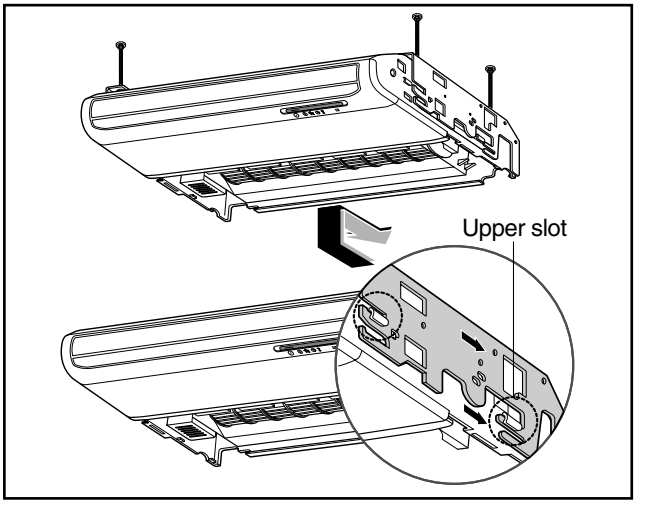
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- Insert the nuts and washer onto the suspension bolts for locking the suspension bolts on the ceiling.
- Mount the suspension bolts to the anchor-nuts firmly.
- Secure the Installation plates onto the Suspension bolts (adjust level roughly.) using nuts, washers and spring washers.



- Engage 2 hooks on the both left and right side of the unit to the lower slot of Installation Plates.
- Adjust a level with a level gauge on the direction of left-right, back-forth by adjusting suspension bolts.
- Move the hooks on the unit to the upper slot of Installation Plates. Then the unit will be declined to the bottomside so as to drain well.





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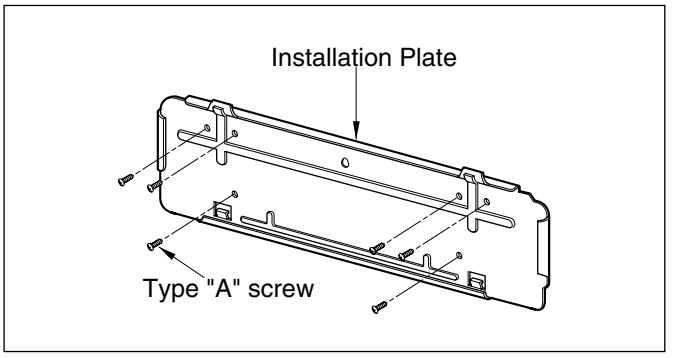
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- VE chassis

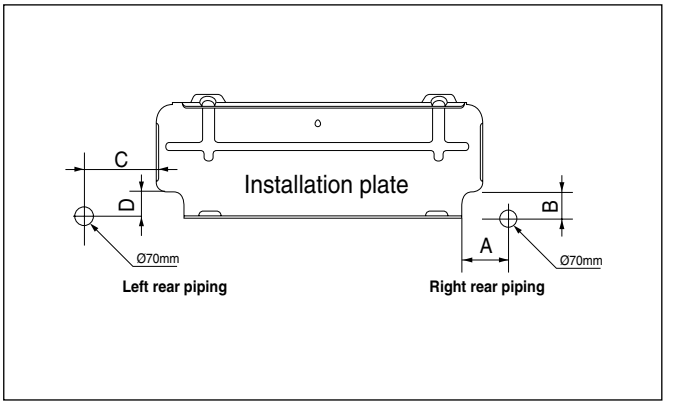
The wall you select should be strong and solid enough to prevent vibration

1. Mount the installation plate on the wall with type "A" screws. If mounting the unit on a concrete wall, use anchor bolts.

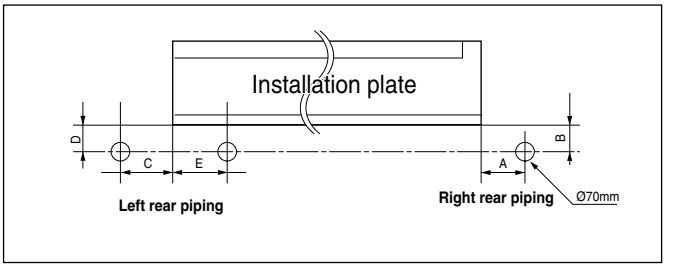
• Mount the installation plate horizontally by aligning the centerline using a level.



2. Measure the wall and mark the centerline. It is also important to use caution concerning the location of the installation plate-routing of the wiring to power outlets is through the walls typically. Drilling the hole through the wall for piping connections must be done safely.



CHASSIS (Grade)	Distance (mm)				
	A	B	C	D	E
VE	180	115	-	115	50



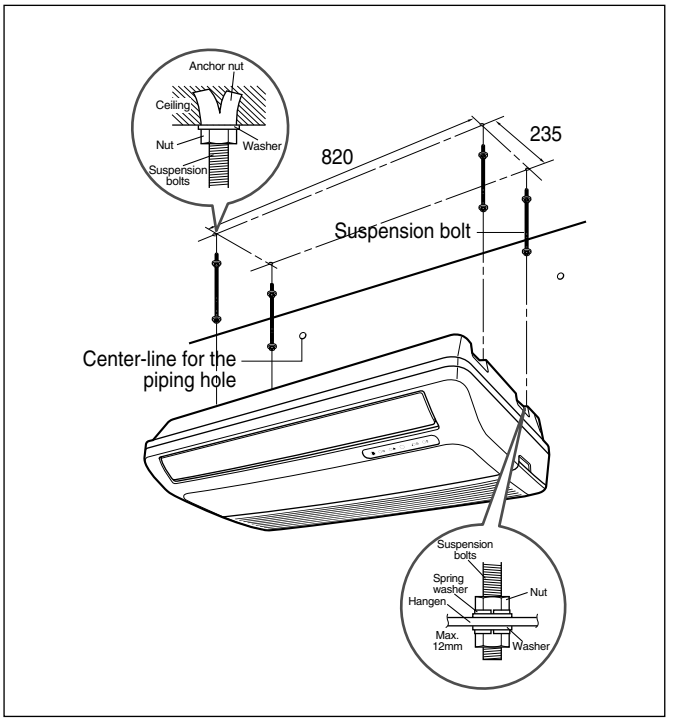
Mounting the anchor Nut & Bolt (Ceiling Mounting)

- Prepare 4 suspension bolts (Each bolts length should be same.)
- Measure and mark the position for the Suspension bolts and the piping hole.
- Insert the nuts and washer onto the suspension bolts for locking the suspension bolts on the ceiling.
- Mount the suspension bolts to the anchor-nuts firmly.

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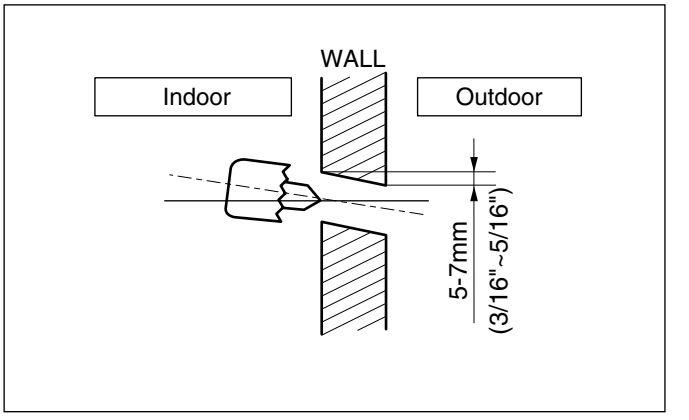
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- Secure the Installation plates onto the Suspension bolts (adjust level roughly.) using nuts, washers and spring washers.
- Engage 2 hooks on the both left and right side of the unit to the lower slot of Installation Plates.
- Adjust a level with a level gauge on the direction of left-right, back-forth by adjusting suspension bolts.
- Move the hooks on the unit to the upper slot of Installation Plates. Then the unit will be declined to the bottomside so as to drain well.



Drill a Hole in the Wall

- Drill the piping hole with a ø70mm hole core drill. Drill the piping hole at either the right or the left with the hole slightly slanted to the outdoor side.



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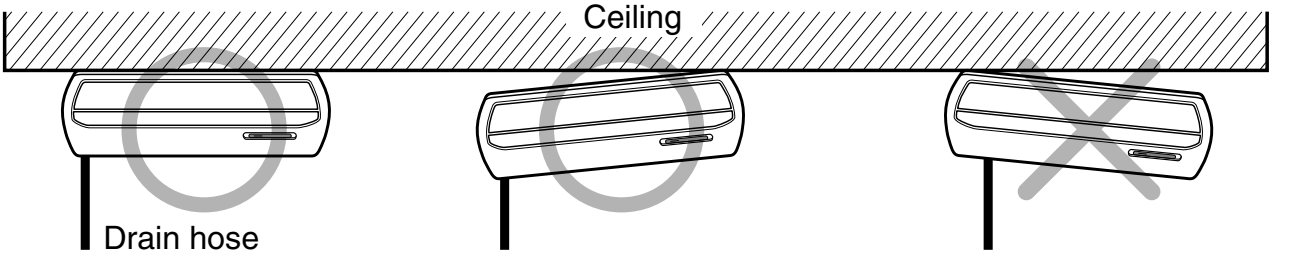
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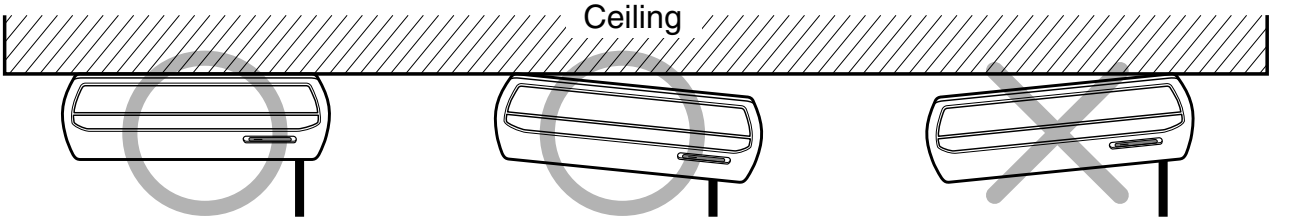
CAUTION: Installation Information For Declination

1. **Install declination** of the indoor unit is very **important for the drain** of the convertible type air conditioner.
2. Minimum thickness of the insulation for the connecting pipe shall be 7mm.
3. If the Installation Plates are fixed to horizontal line, the indoor unit after installing will be declined to the bottomside.

Front of view

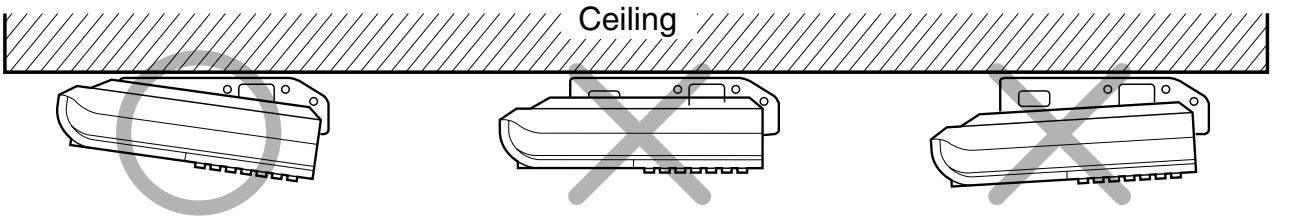
• The unit must be horizontal or declined to the drain hose connected when finished installation.





Side of view

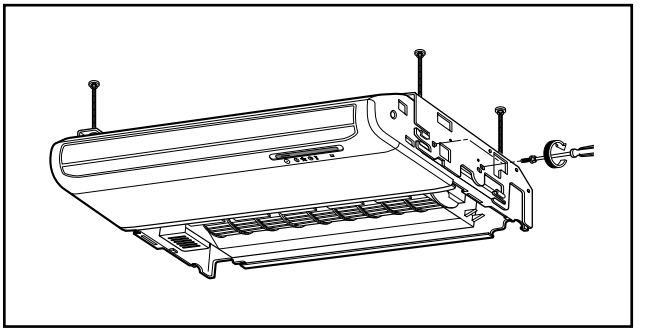
• The unit must be declined to the bottomside of the unit when finished installation.



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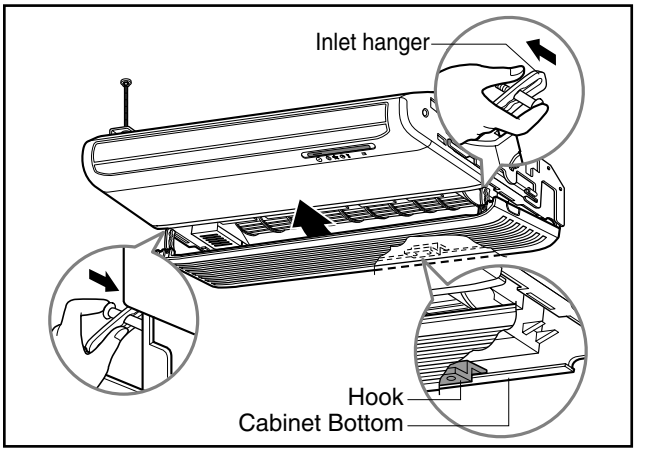
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• Secure the unit to the Installation Plates with four M8 bolts and washers.

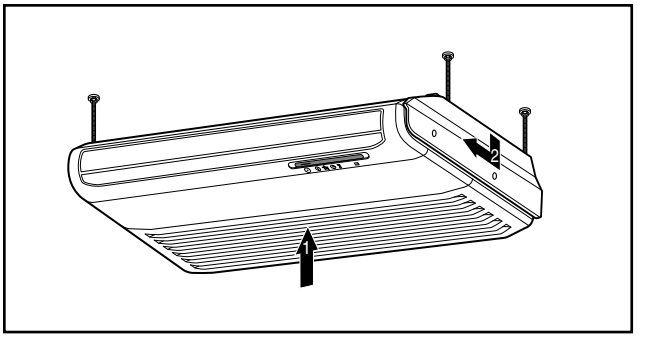


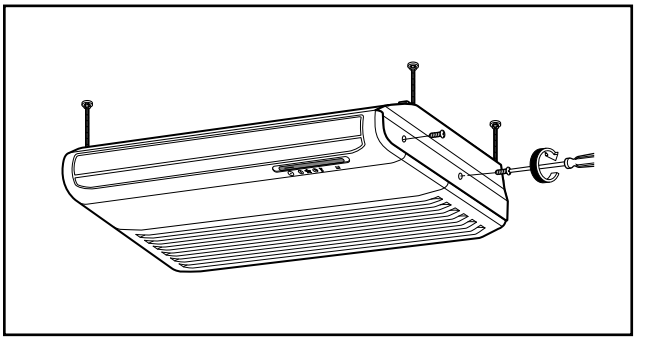
• Before working, refer to "Connecting pipe and cable to Indoor Unit".

• Hook up the Inlet Grille Hook to the cabinet.
• Hang the Inlet Hanger to the screw.



• Fit the projection hooks of the side plates to the 'Side Panel' and the 'Front Panel' by lifting it.
• Fasten the screws.



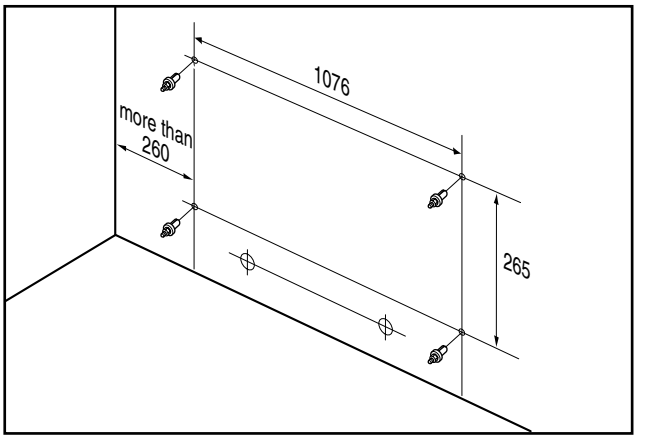


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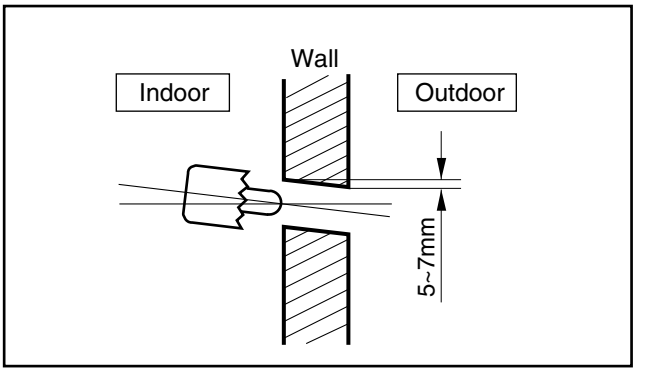
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2) Installation on the Wall

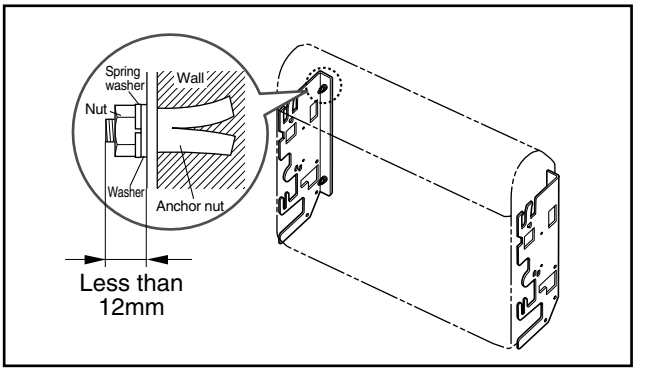
- Select and mark the position for fixing bolts and piping hole.
  Decide the position for fixing bolts slightly tilted to the drain direction after considering the direction of drain hose.
- Drill the hole for anchor nut on the wall.



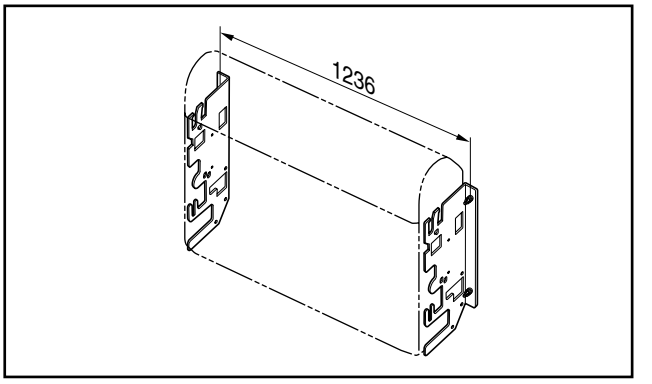
- Drill the piping hole on the wall slightly tilted to the outdoor side using a ø70 hole-core drill.



- Secure the 'Install Plate' onto the wall with four anchor bolts, washers and spring washers.



※ Before secure the Install Plates, select the bent direction of the 'Install Plate' to the inside or outside according to the installation circumstances.

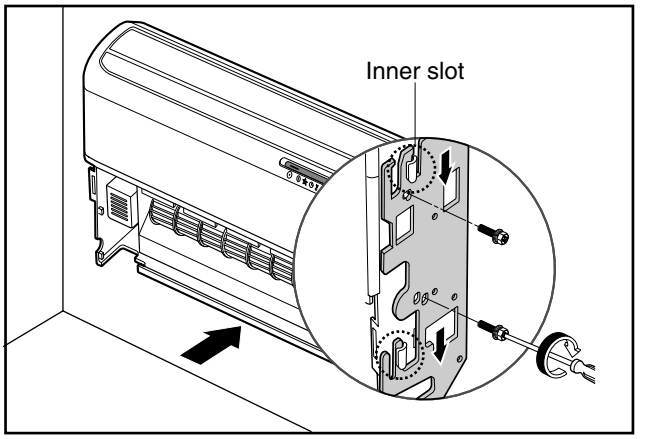


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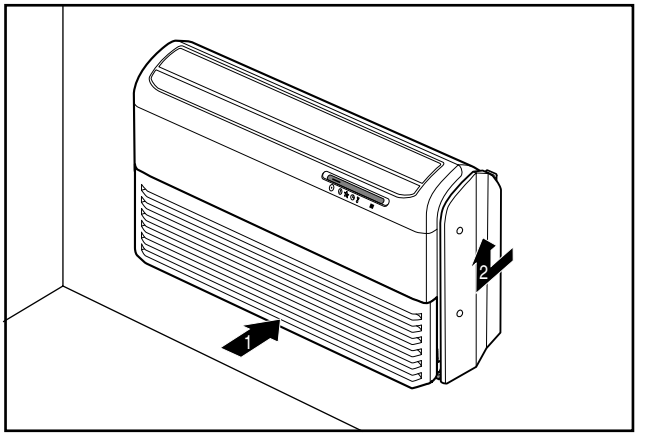
Install the Indoor unit onto Installation Plate.

- Insert 2 hooks on the both left and right side of the unit to the inner slot (wall side) of the Installation Plate.
- Secure the unit to the Installation Plate with four M8 bolts and washers.

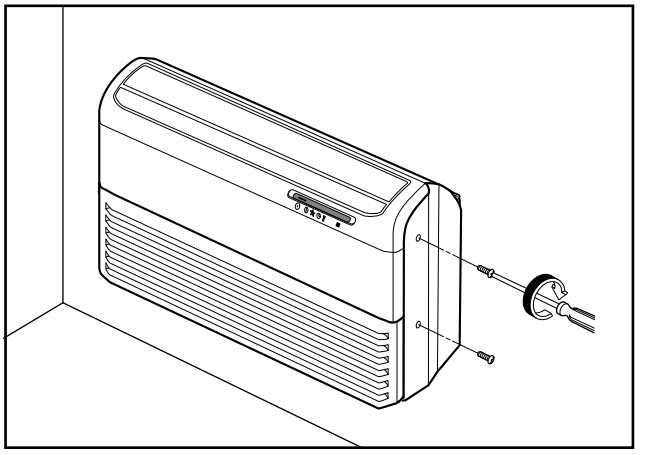


- **Before working, refer to "Connecting pipe and cable to Indoor Unit".**

- Hook up the Inlet Grille Hook to the cabinet.
- Hang the Inlet Hanger to the screw.



- Fit the projection hooks of the side plates to the 'Side Panel' and the 'Front Panel' by lifting it.
- Fasten the screws.



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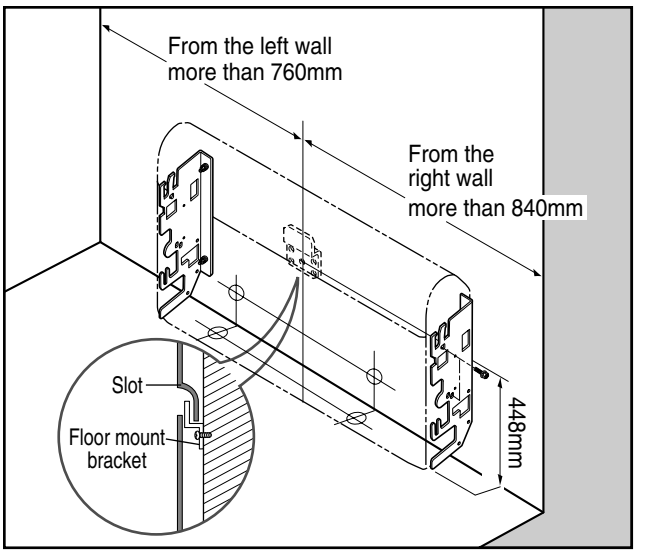
3) Installation on the floor

Installation of Mount Bracket.

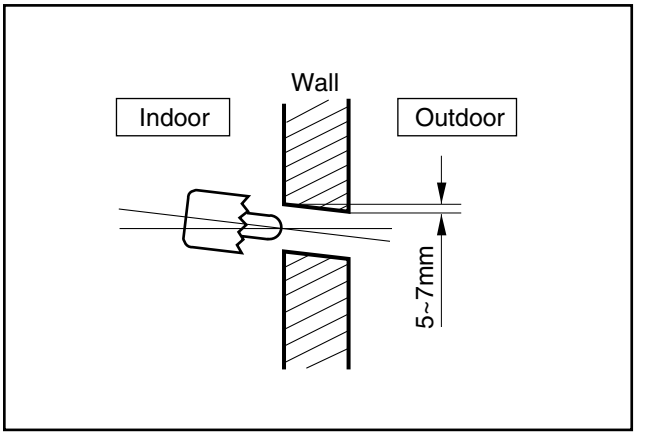
- Select and mark the position for Mount Brackets and the piping hole.
- Drill the hole for the anchor nut on the wall.
- Drill the piping hole using a ø70 hole-core drill.
- Secure the Mount Brackets on the wall with four M4 screws.

Install the indoor unit onto the Mount Brackets.

- Engage the slot at the back of the unit with Mount Bracket.

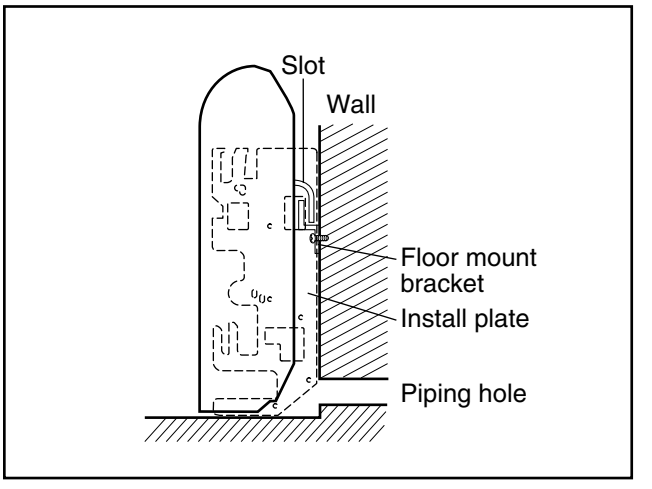


- Drill the piping hole with 70mm dia, hole core drill.
- Piping hole should be slightly slant to the outdoor side.



After Installing, reassemble detached parts.

- Hang the 'Inlet Grille' and hook the 'Inlet Hanger' to the Hanger Screw.
- Assemble the 'Side Plates(R,L)' with 2 screws on both left and right side.



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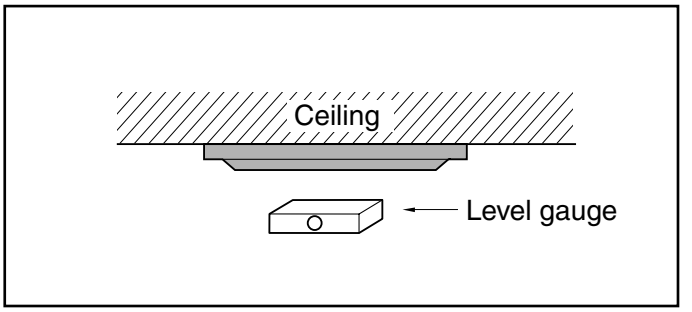
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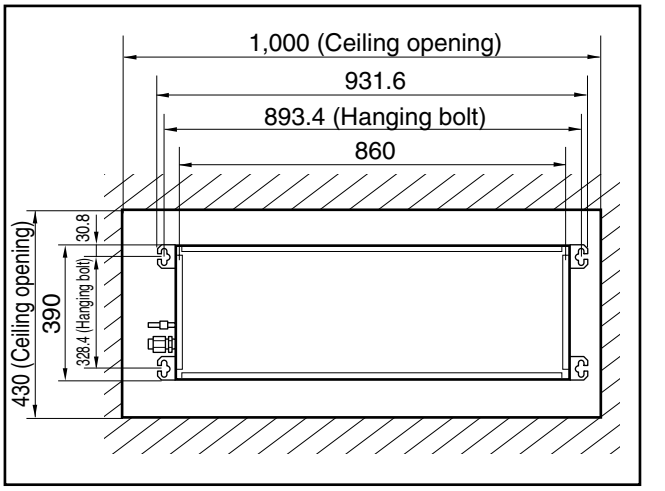
6. Ceiling Cassette Type Indoor Unit

- TC chassis

1) Ceiling opening dimensions and hanging bolt location

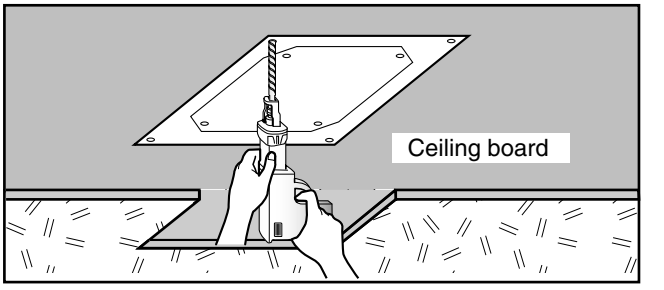
• The dimensions of the paper model for installing are the same as those of the ceiling opening dimensions.





⚠ CAUTION

- This air-conditioner uses a drain pump.
- Install the unit horizontally using a level gauge.
- During the installation, care should be taken not to damage electric wires.

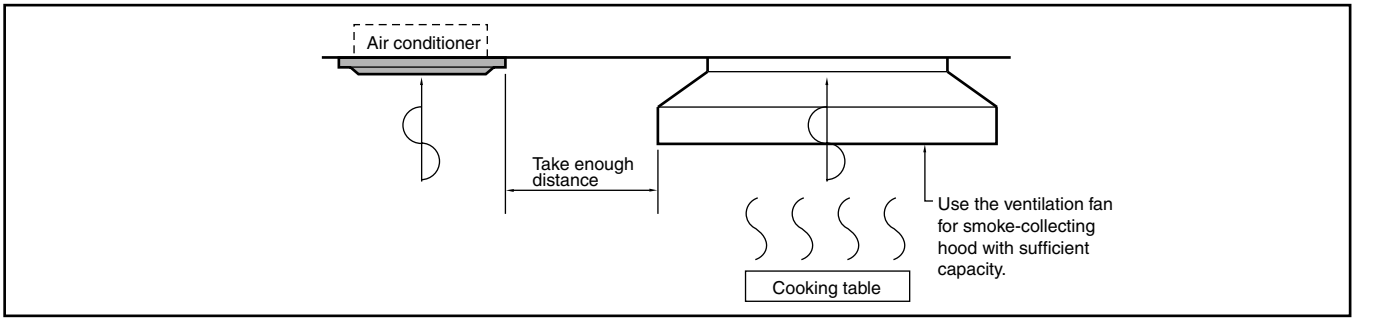


- Select and mark the position for fixing bolts and piping hole.
- Decide the position for fixing bolts slightly tilted to the drain direction after considering the direction of drain hose.
- Drill the hole for anchor bolt on the wall.

NOTE:

• Avoid the following installation location.

1. Such places as restaurants and kitchen where considerable amount of oil steam and flour is generated.
   These may cause heat exchange efficiency reduction, or water drops, drain pump mal-function.
   In these cases, take the following actions;
   - Make sure that ventilation fan is enough to cover all noxious gases from this place.
   - Ensure enough distance from the cooking room to install the air conditioner in such a place where it may not suck oily steam.

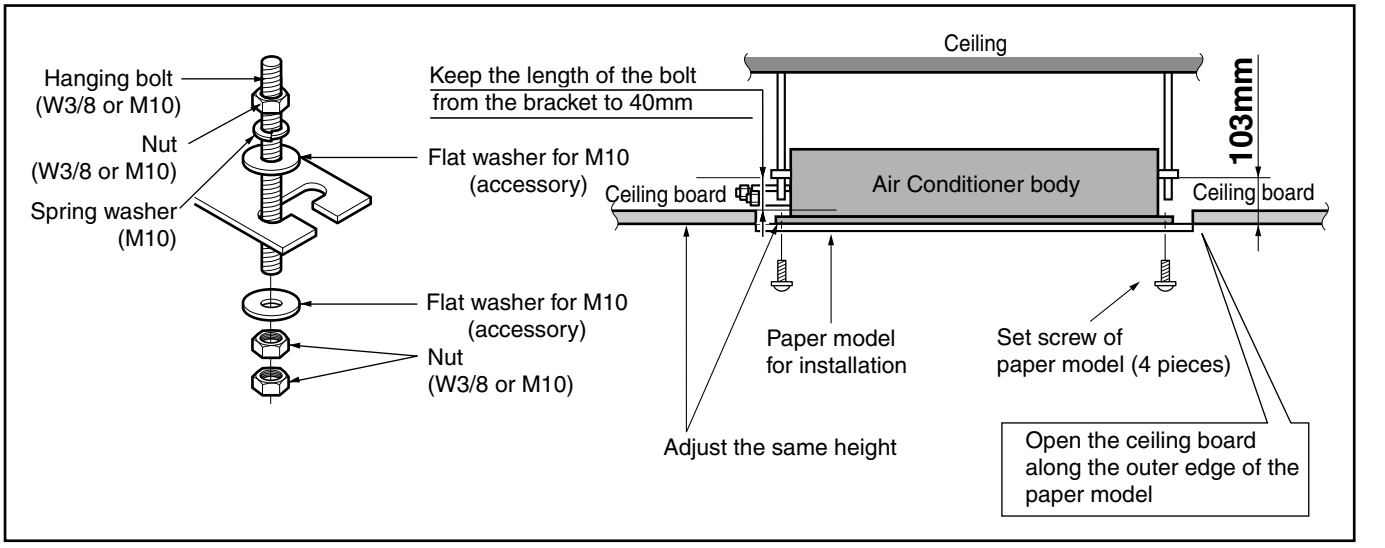


2. Avoid installng air conditioner in such places where cooking oil or iron powder is generated.
3. Avoid places where inflammable gas is generated.
4. Avoid place where noxious gas is generated.
5. Avoid places near high frequency generators.

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2) Indoor Unit Installation



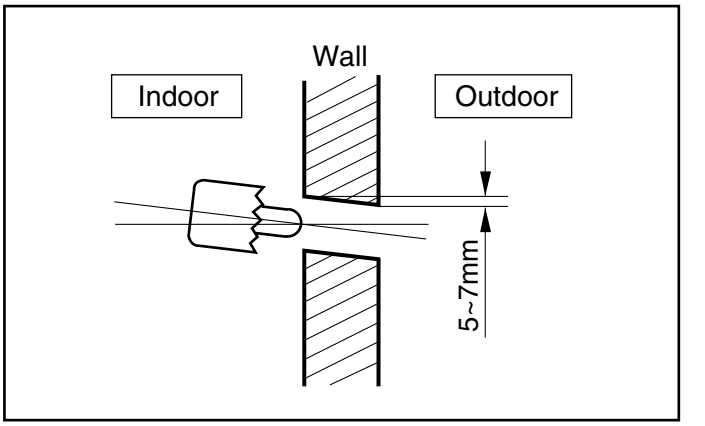
• The following parts are local purchasing.

① Hanging Bolt - W 3/8 or M10
② Nut - W 3/8 or M10
③ Spring Washer - M10
④ Plate Washer - M10

⚠ CAUTION

• Tighten the nut and bolt to prevent unit from falling off.

• Drill the piping hole on the wall slightly tilted to the outdoor side using a Ø 70 hole-core drill.

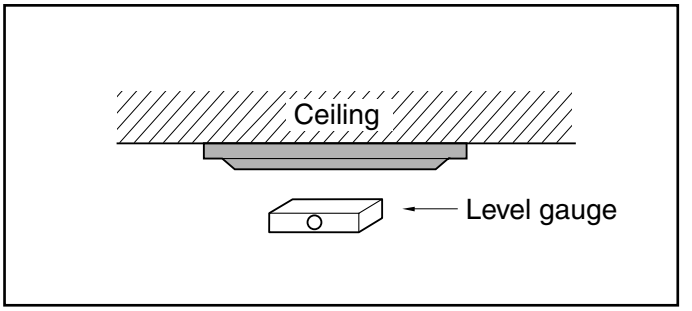


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7. Ceiling Cassette Type Indoor Unit
- TE/TF/TD chassis
1) Ceiling opening dimensions and hanging bolt location

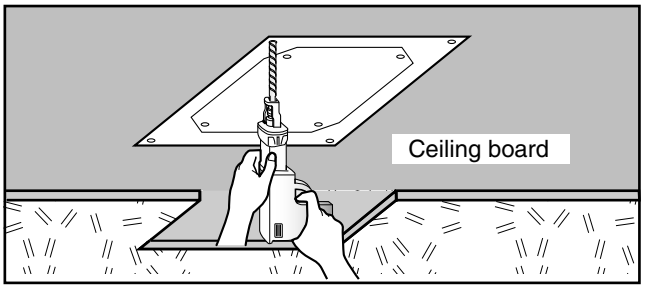
• The dimensions of cardboard for installing are the same as those of the ceiling opening dimensions.

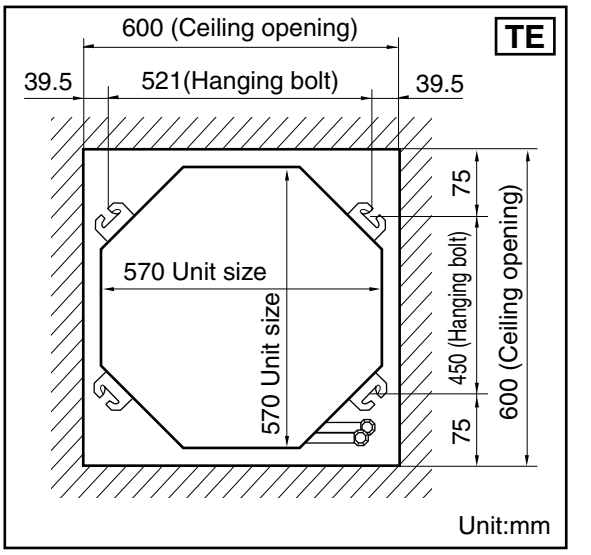


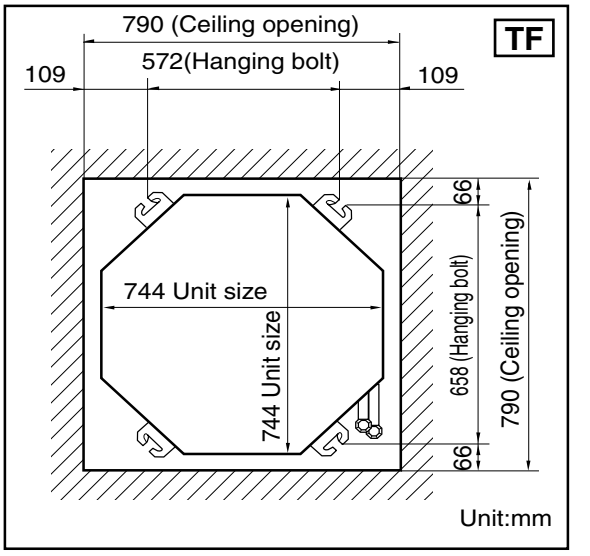
⚠ CAUTION

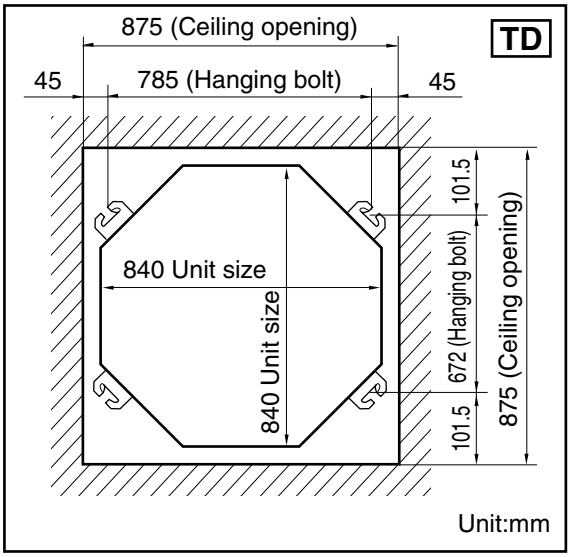
- This air-conditioner uses a drain pump.
- Install the unit horizontally using a level gauge.
- During the installation, be careful not to damage electric wires.

- Select and mark the position for fixing bolts and piping hole.
- Decide the position for fixing bolts slightly tilted to the drain direction after considering the direction of drain hose.
- Drill the hole for anchor bolt on the wall.









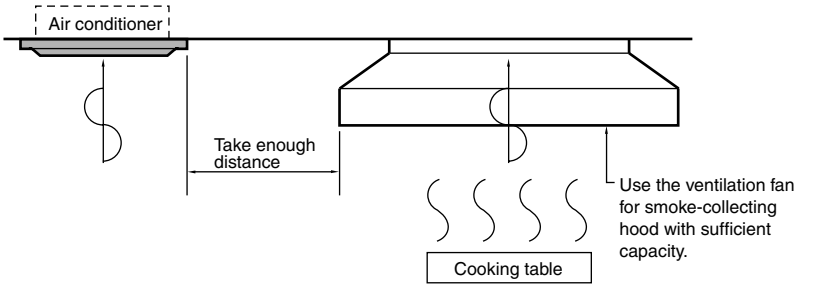
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NOTE:

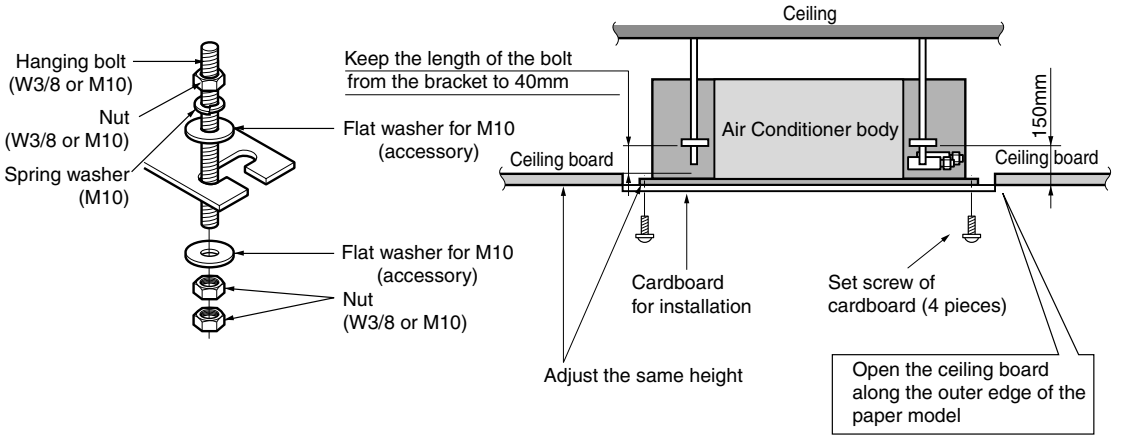
• Avoid the following installation location.

1. Such places as restaurants and kitchen where considerable amount of oil steam and flour is generated.
   These may cause heat exchange efficiency reduction, or water drops, drain pump mal-function.
   In these cases, take the following actions;
   • Make sure that ventilation fan is enough to cover all noxious gases from this place.
   • Ensure enough distance from the cooking room to install the air conditioner in such a place where it may not suck oily steam.



2. Avoid installng air conditioner in such places where cooking oil or iron powder is generated.
3. Avoid places where inflammable gas is generated.
4. Avoid place where noxious gas is generated.
5. Avoid places near high frequency generators.

2) The Indoor Unit Installation

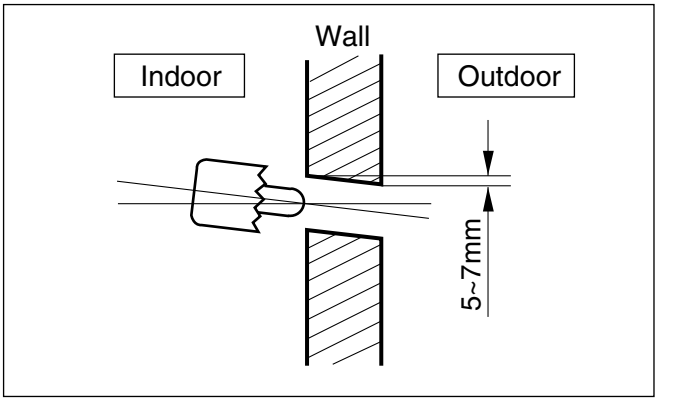


• The following parts are local purchasing.
① Hanging Bolt - W 3/8 or M10
② Nut - W 3/8 or M10
③ Spring Washer - M10
④ Plate Washer - M10

⚠ CAUTION

• Tighten the nut and bolt to prevent the unit from falling off.

• Drill the piping hole on the wall slightly tilted to the outdoor side using a Ø 70 hole-core drill.



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Remote Controller Installation

- **Although the room temperature sensor is in the indoor unit, the remote controller should be installed in such places away from direct sunlight and high humidity.**

Installation of the remote controller

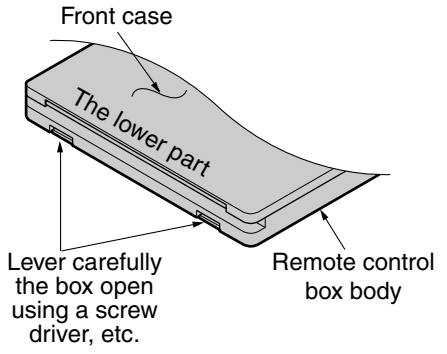
- Select places that are not splashed with water.
- Select control position after receiving customer approval.
- The room temperature sensor is built in the indoor unit.
- This remote controller equipped with liquid crystal display. If this position is higher or lower, display is difficult to see.(The standard height is 1.2 ~ 1.5m high)

Routing of the remote controller cord

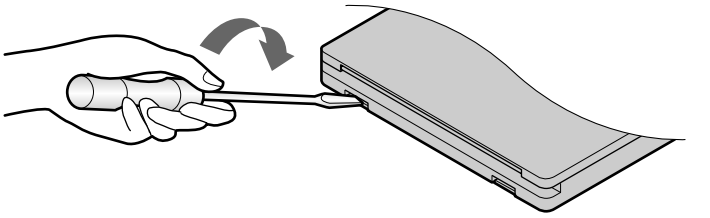
- Keep the remote controller cord away from the refrigerant piping and the drain piping.
- To protect the remote controller cord from electrical noise, place the cord at least 5cm away from other power cables (audio equipment, television set, etc.)
- If the remote controller cord is secured to the wall, provide a trap at the top of the cord to prevent water droplets from running.

WIRED REMOTE CONTROL INSTALLATION

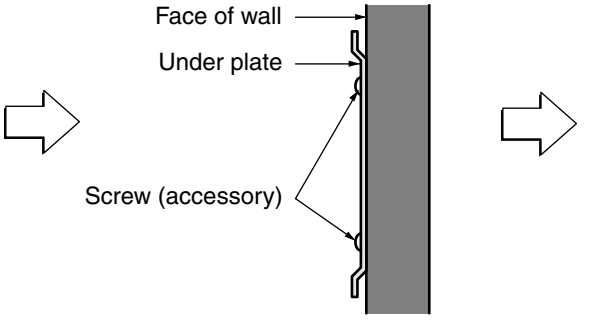
DISASSEMBLING



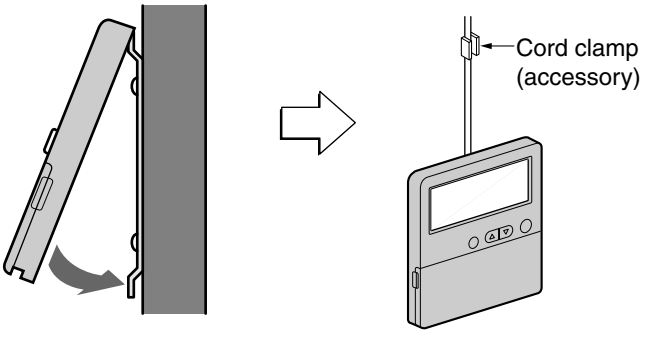
- Separate the under plate from Remote control box.



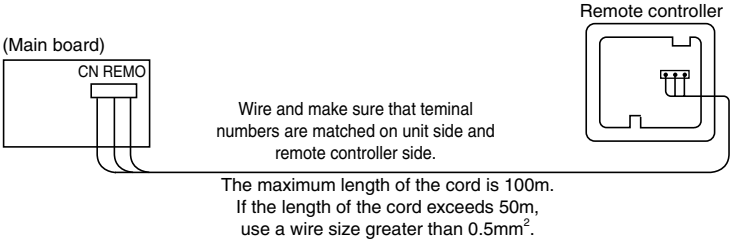
- Fix the under plate on the wall



- Fix the cord clamps on the wall by ø 3 tapping screws (accessory).
- Fix the remote control cord.



ELECTRICAL WIRING

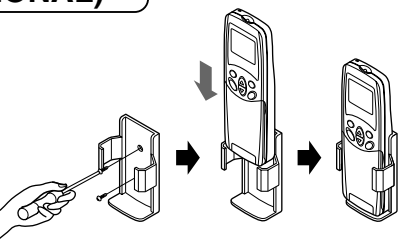


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REMOTE CONTROL PREPARATION(OPTIONAL)

HOW TO MOUNT ONTO A WALL



HOW TO INSERT BATTERIES

1. Remove the battery cover from the remote controller.
   • Slide the cover according to the arrow direction.
2. Insert the two batteries.
   • Be sure that the (+) and (-) directions are correct.
   • Be sure that both batteries are new.
3. Re-attach the cover.
   • Slide it back into position.



- Do not use rechargeable batteries, such batteries differ from standard dry cells in shape, dimensions, and performance.
- Romove the batteries from the remote controller if the air conditioner is not going to be used for some long time.

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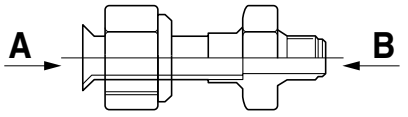
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Connecting Pipings and the cable to Outdoor unit

1. Connecting the pipings to the Outdoor unit

1) When piping installation work you must be used the connector.

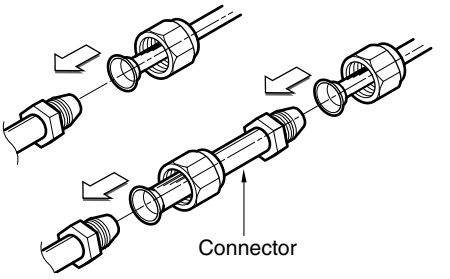
Indoor Units	Gas	Liquid
	A → B	
18K/24K	Ø9.52→Ø12.7	Not available
30K/36K	Ø9.52 →Ø15.88	Not available



***Connecting pipe size**

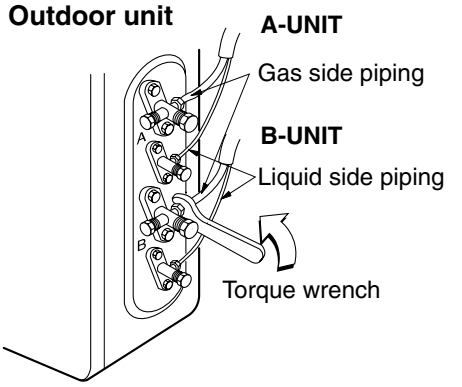
Indoor Units	Gas side	Liquid side
7K/9K/12K	Ø9.52(3/8)	Ø6.35(1/4)
18K/24K	Ø12.7(1/2)	Ø6.35(1/4)
30K/36K	Ø15.88(5/8)	Ø6.35(1/4)

2) Align the center of the pipings and sufficiently tighten the flare nut by hand



3) Finally, tighten the flare nut with torque wrench until the wrench clicks.

■ When tightening the flare nut with torque wrench, ensure the direction for tightening follows the arrow on the wrench.



CAUTION: After the confirmation of the above conditions, prepare the wiring as follows:

1) Never fail to have an individual power specialized for the air conditioner. As for the method of wiring, be guided by the circuit diagram pasted on the inside of control box cover.

2) The means for disconnection from a power supply shall be incorporated in the fixed wiring and have an air gap contact separation of at least 3mm in each active(phase) conductors.

3) The screw which fasten the wiring in the casing of electrical fittings are liable to come loose from vibrations to which the unit is subjected during the course of transportation. Check them and make sure that they are all tightly fastened. (If they are loose, it could give rise to burn-out of the wires.)

4) Specification of power source.

5) Confirm that electrical capacity is sufficient.

6) See to that the starting voltage is maintained at more than 90 percent of the rated voltage marked on the name plate.

7) Confirm that the cable thickness is as specified in the power sources specification. (Particularly note the relation between cable length and thickness.)

8) Never fail to equip a leakage breaker where it is wet or moist.

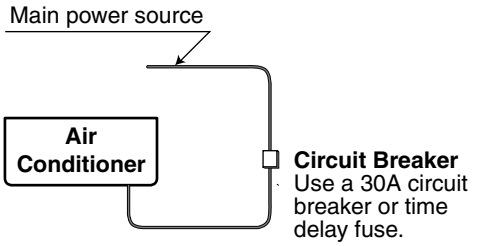
9) The following troubles would be caused by voltage drop-down.

- Vibration of a magnetic switch, damage on the contact point there of, fuse breaking, disturbance to the normal function of a overload protection device.
- Proper starting power is not given to the compressor.

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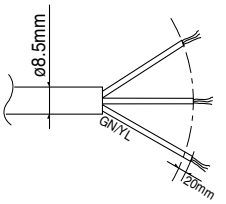
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CAUTION: If a power plug is not to be used, provide a circuit breaker between power source and the unit as shown below.



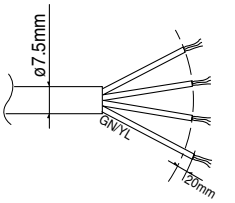
CAUTION

The power cord connected to the outdoor unit should be complied with the following specifications (Rubber insulation, type H05RN-F approved by HAR or SAA).



NORMAL CROSS SECTIONAL AREA
3.5mm² (18k~30k Btu)
5.0mm² (31k~56k Btu)

The connecting cable connected to the indoor and outdoor unit should be complied with the following specifications (Rubber insulation, type H07RN-F approved by HAR or SAA).



NORMAL CROSS-SECTIONAL AREA
0.75mm²

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2. Electric characteristics

Unit					Power		Compressor		OFM	
Model	Type	Hz	Voltage	Voltage range	MCA	MOP	MSC	RLA	KW	FLA
A2UW146FA0 [FM14AH UE0] A2UW146FA1 [FM15AH UE1] A2UW146FA2 [FM15AH UL2]	Inverter	50	220~240	MIN.:198 MAX.:264	7.25	13.05	8	6	0.067	0.68
A2UW166FA0 [FM17AH UL0] A2UW166FA1 [FM17AH UL1]					8.00	14.40	8	6	0.067	0.68
A2UW186FA0 [FM18AH UE0]					9.75	17.55	14	7	0.067	0.68
A3UW186FA0 [FM19AH UE0]					9.75	17.55	14	7	0.067	0.68
A3UW246FA0 [FM24AH UE0]	MPS Inverter				13.50	24.30	23.1/14.0	6.1/7.0	0.041	0.73
A4UW246FA0 [FM25AH UE0]					13.50	24.30	23.1/14.0	6.1/7.0	0.041	0.73
A4UW306FA0 [FM30AH UE0]					15.25	27.45	26.0/14.0	8.1/7.0	0.041*2	0.73*2
A6UW406FA0 [FM40AH UH0]	MPS inverter				22.6	39.5	14/63	7.0/14.0	0.12x2	0.73x2
A7UW486FA0 [FM48AH UY0]					29.3	50.8	14/35/35	7.0/8.0/8.0	0.43	2.43
A8UW566FA0 [FM56AH UY0]					32.7	56.9	14/35/63	7.0/8.0/14.0	0.43	2.43

Notes :

1. Voltage range
   Voltage supplied to the unit terminals should be within the minimum and maximum range
2. Maximum allowable voltage unbalance between phase is 2 %
3. MCA / MOP
   MCA = (1.25 x Load1) + Load2 + Load3
   MOP = (2.25 x Load1) + Load2 + Load3
   - Load1 : Rated running current of largest motor (compressor or other motor)
   - Load2 : sum of current for all other motors
   - Load3 : any other load rated 1.0A or more
4. Select wire spec. based on the MCA
5. Select proper circuit breaker as given below
   MCA < Circuit breaker MOP
6. Recommended circuit breaker is ELCB (Earth Leakage circuit breaker)
7. MSC & RLA are measured as the compressor only test condition.
8. MSC values
   23.1/14.0 : MSC of (inv. comp.) / (const. comp.)
9. RLA is measured during each individual compressor test condition.
   Ex) *6.1/7.0* : RLA of (inv. comp.) / (const. comp.)
10. OFM is measured as the outdoor unit test condition

(Example) Selection of proper circuit breaker

① Model : A2UW146FA0 [FM14AH UE0]
- Rated running current : 5.8 A (refer to spec. sheet)

② MCA = (1.25 x Load1) + Load2 + Load3
= (1.25 x 5.8) + 0 + 0 = 7.25 A

③ MOP = (2.25 x Load1) + Load2 + Load3
= (2.25 x 5.8) + 0 + 0 = 13.05 A
Finally select circuit breaker 15A

MCA : Minimum Circuit Amperes (A)
MOP : Maximum rating over current protective device
MSC : Maximum Starting Current
RLA : Rated Load Amperes (A)
OFM : Outdoor Fan Motor
kW : Fan Motor rated output (kW)
FLA : Full Load Amperes (A)

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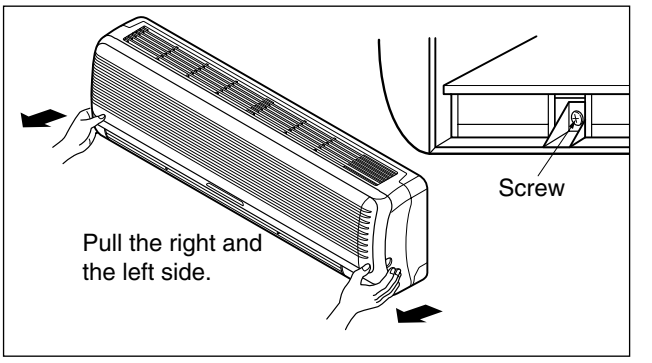
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Checking the Drainage and Pipe forming

1. Split Type Indoor Unit

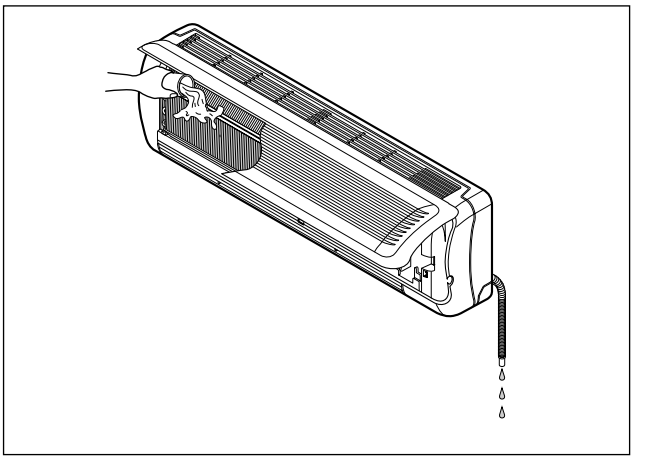
1) Remove the Grille from the cabinet

- Set the up-and-down air direction louver to open position(horizontally) by finger pressure.
- Remove the securing screws.
- To remove the Grille, pull lower the left and right side of the grille toward you (slightly tilted) and lift it straight upward.



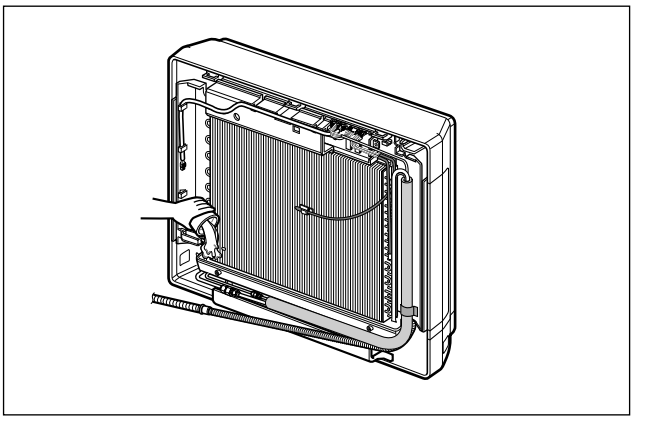
2) Check the drainage

- Pour a glass of water on the evaporator.
- Ensure if water flows drain hose of indoor unit without any leakage.



2. Art Cool Type Indoor Unit

- Pour a glass of water on the evaporator.
- Ensure the water flows through the drain hose of the indoor unit without any leakage and goes out the drain exit.



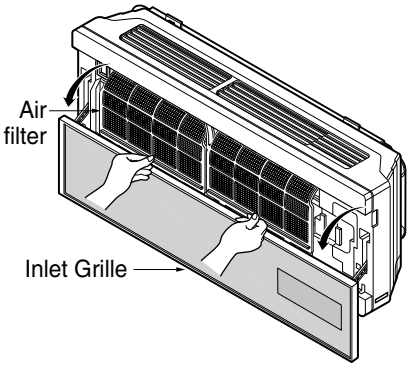
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3. Art Cool Deluxe Type Indoor Unit

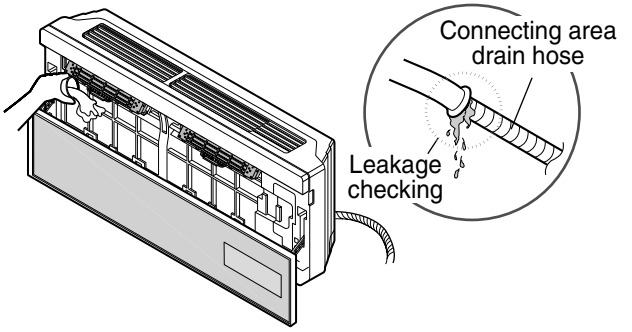
1) To remove the front panel from the indoor unit.

- Set the air direction louvers up-and-down to the position(horizontally) by hand.
- Remove the securing screws that retain the front panel. Pull the lower left and right sides of the grille toward you and lift it off.



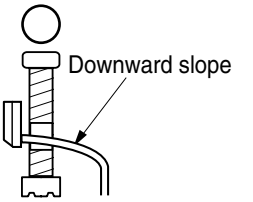
2) To check the drainage.

- Pour a glass of water on the evaporator.
- Ensure the water flows through the drain hose of the indoor unit without any leakage and goes out the drain exit.

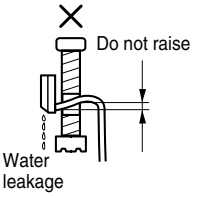


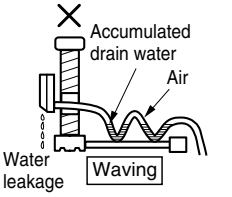
3) Drain piping

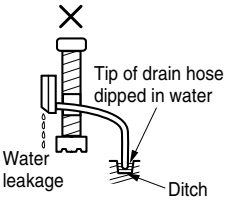
- The drain hose should point downward for easy drain flow.

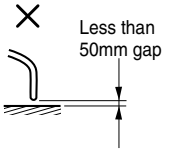


- Do not make drain piping.







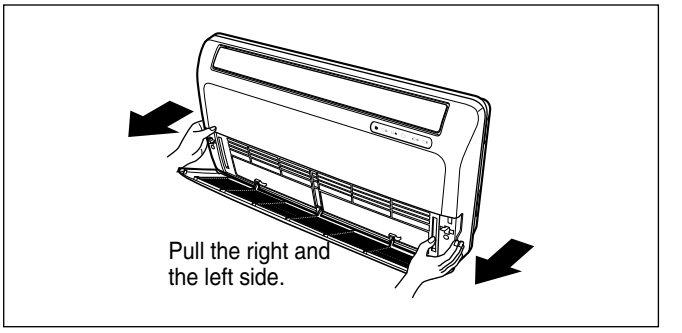


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4. Convertible Type Indoor Unit

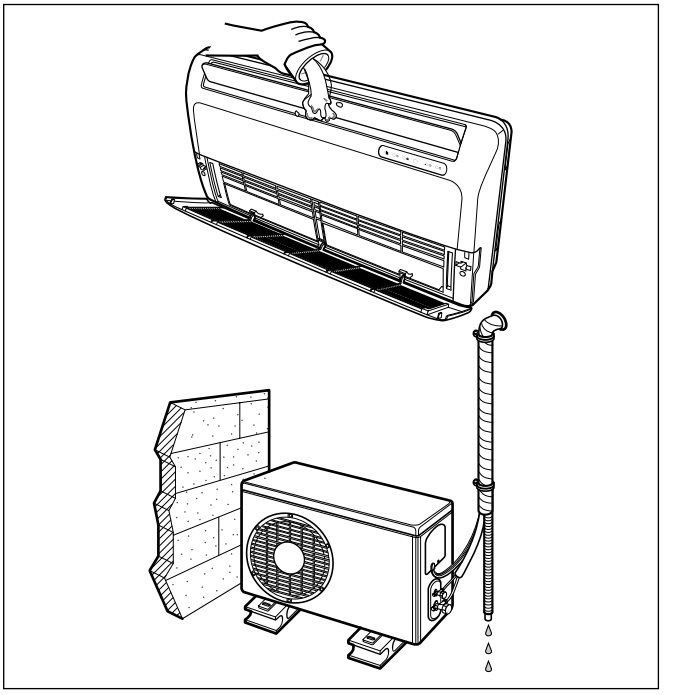
To remove the front panel from the indoor unit.

1. Set the air direction louvers up-and-down to the position(horizontally) by hand.
2. Remove the securing screws that retain the front panel. Pull the lower left and right sides of the grille toward you and lift it off.



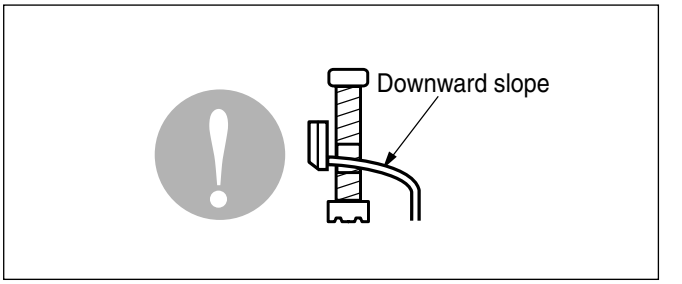
To check the drainage.

1. Pour a glass of water on the evaporator.
2. Ensure the water flows through the drain hose of the indoor unit without any leakage and goes out the drain exit.

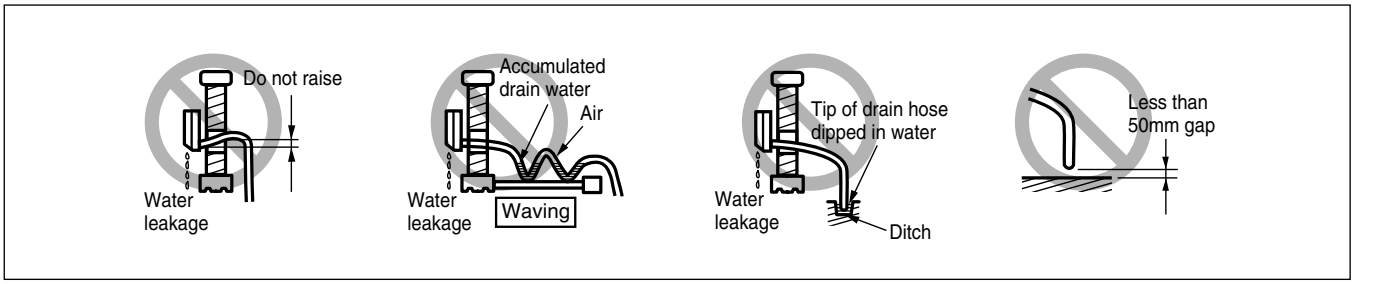


Drain piping

1. The drain hose should point downward for easy drain flow.



2. Do not make drain piping like the following.



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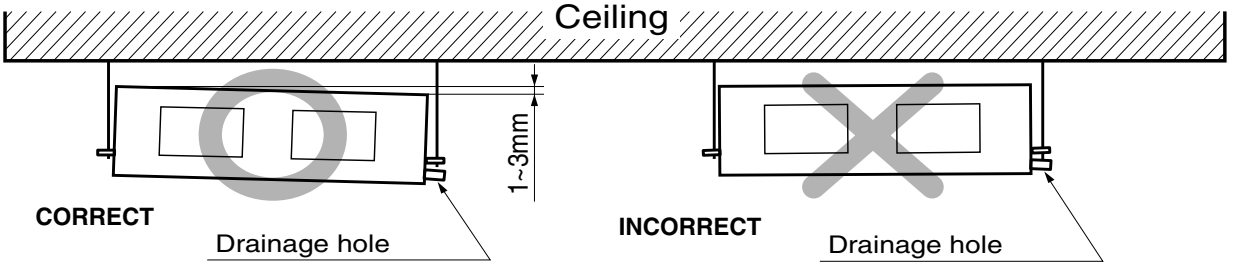
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5. Duct Type Indoor Unit

1. **Install declination** of the indoor unit is very **important for the drain** of the duct type air conditioner.
2. Minimum thickness of the insulation for the connecting pipe shall be 5mm.

Front of view

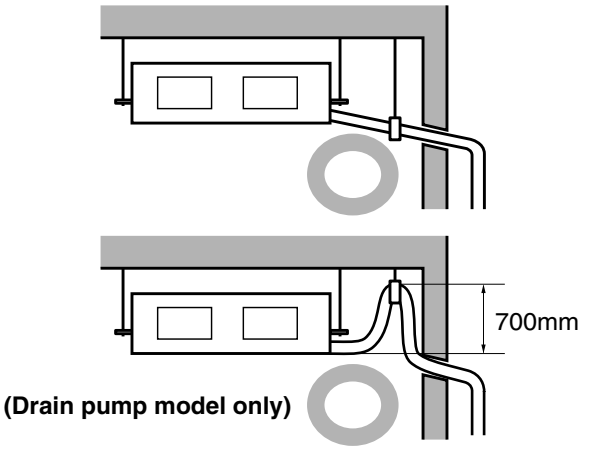
• The unit must be horizontal or declined to the drain hose connected when finished installation.



CAUTION FOR GRADIENT OF UNIT AND DRAIN PIPING

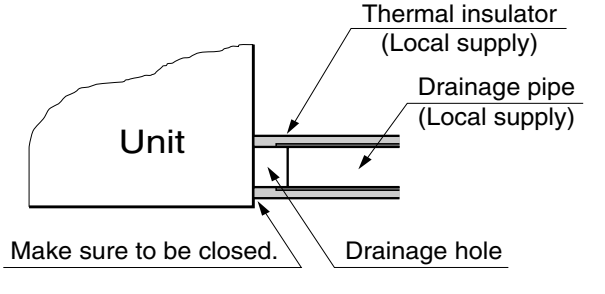
Lay the drain hose with a downware inclination so water will drain out.

• Always lay the drain with downward inclination (1/50 to 1/100).
Prevent any upward flow or reverse flow in any part.
• 5mm or thicker formed thermal insulator shall always be provided for the drain pipe.

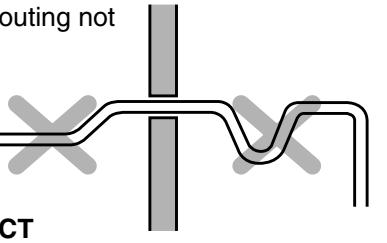


(Drain pump model only)

CORRECT



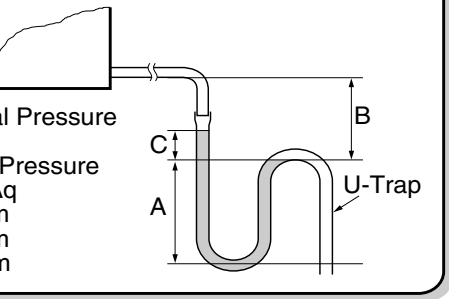
• Upward routing not allowed



INCORRECT

Applied U-Trap Dimension

A ≥ 70mm
B ≥ 2C
C ≥ 2 x SP
SP = External Pressure (mmAq)
Ex) External Pressure = 10mmAq
A ≥ 70mm
B ≥ 40mm
C ≥ 20mm



• Install the P-Trap (or U-Trap) to prevent a water leakage caused by the blocking of intake air filter.

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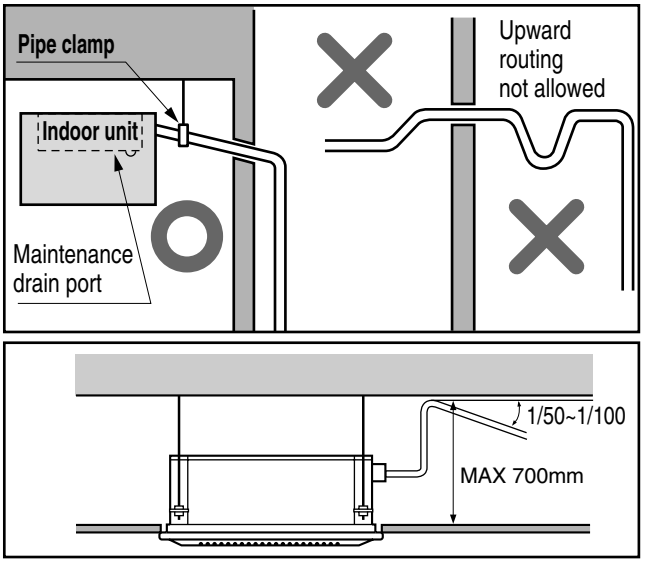
6. CST Type Indoor Unit

- Drain piping must have down-slope (1/50 to 1/100): be sure not to provide up-and-down slope to prevent reversal flow.
  - During drain piping connection, be careful not to exert extra force on the drain port on the indoor unit.
  - The outside diameter of the drain connection on the indoor unit is 32mm.

Piping material: Polyvinyl chloride pipe VP-25 and pipe fittings

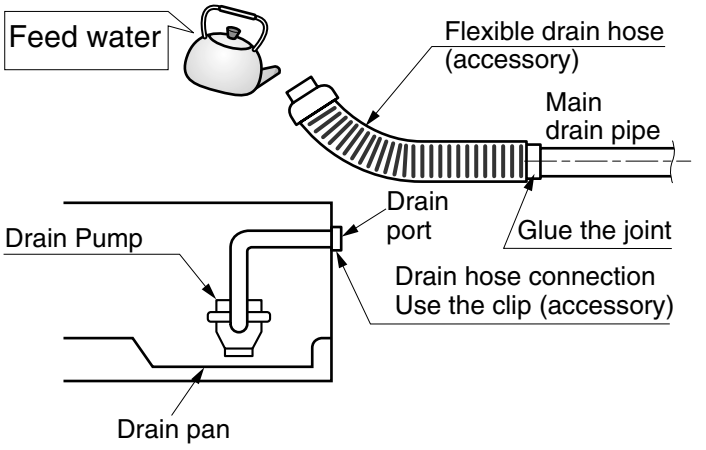
- Be sure to install heat insulation on the drain piping.

Heat insulation material: Polyethylene foam with thickness more than 8 mm.



Drain test

The air conditioner uses a drain pump to drain water.
Use the following procedure to test the drain pump operation:



- Connect the main drain pipe to the exterior and leave it provisionally until the test comes to an end.
- Feed water to the flexible drain hose and check the piping for leakage.
- Be sure to check the drain pump for normal operating and noise when electrical wiring is finished.
- When the test is completed, connect the flexible drain hose to the drain port on the indoor unit.

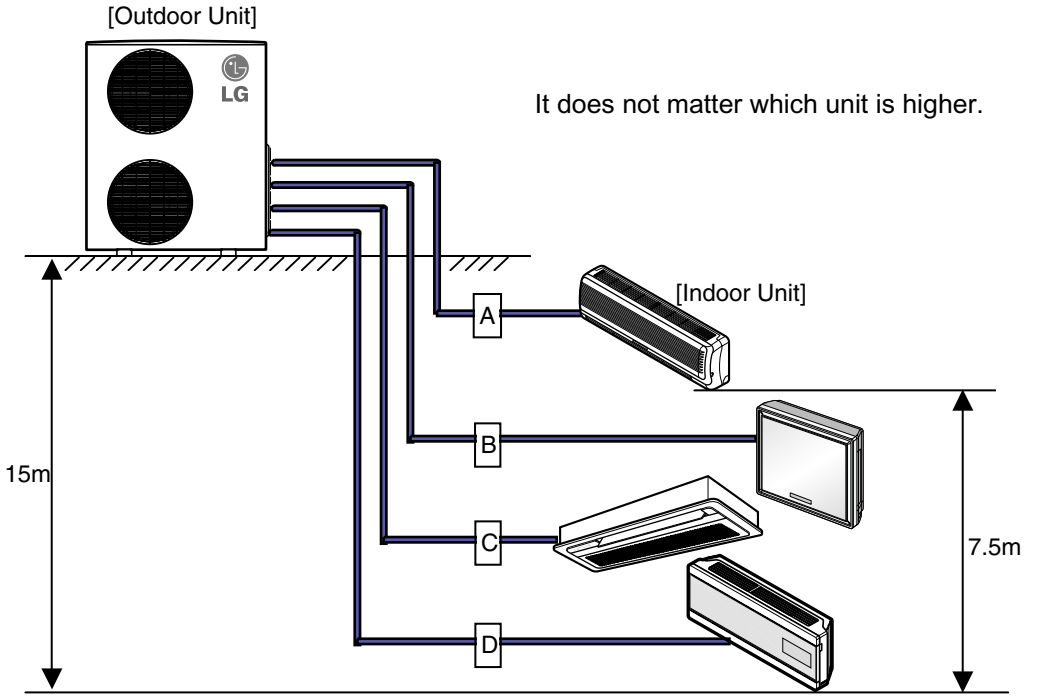
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Maximum Length of Pipe and Extra Charge of Refrigerant Charge

1. TPS Inverter Multi -Multi Piping Type

1.1 The maximun allowable level and piping length



Model [Outdoor Unit]	Standard Length	Max piping length each indoor unit				Max total piping length
	A,B,C,D	A	B	C	D	
A2UW146FA0 A2UW186FA0 A3UW186FA0	7.5m	25m	25m	-	-	40m(A+B)
A3UW246FA0 A4UW246FA0	7.5m	25m	25m	25m	-	50m(A+B+C)
A4UW306FA0	7.5m	25m	25m	25m	25m	70m(A+B+C+D)

1.2 Refrigerant Charge

Indoor Unit Capacity (Btu/h)	Pipe Size		Rated Length	Max Length	Additional Refrigerant
	Gas	Liquid			
7k, 9k, 12k	3/8"(9.52mm)	1/4"(6.35mm)	7.5m	25m	25g/m
18k, 24k	1/2"(12.7mm)	1/4"(6.35mm)	7.5m	25m	35g/m

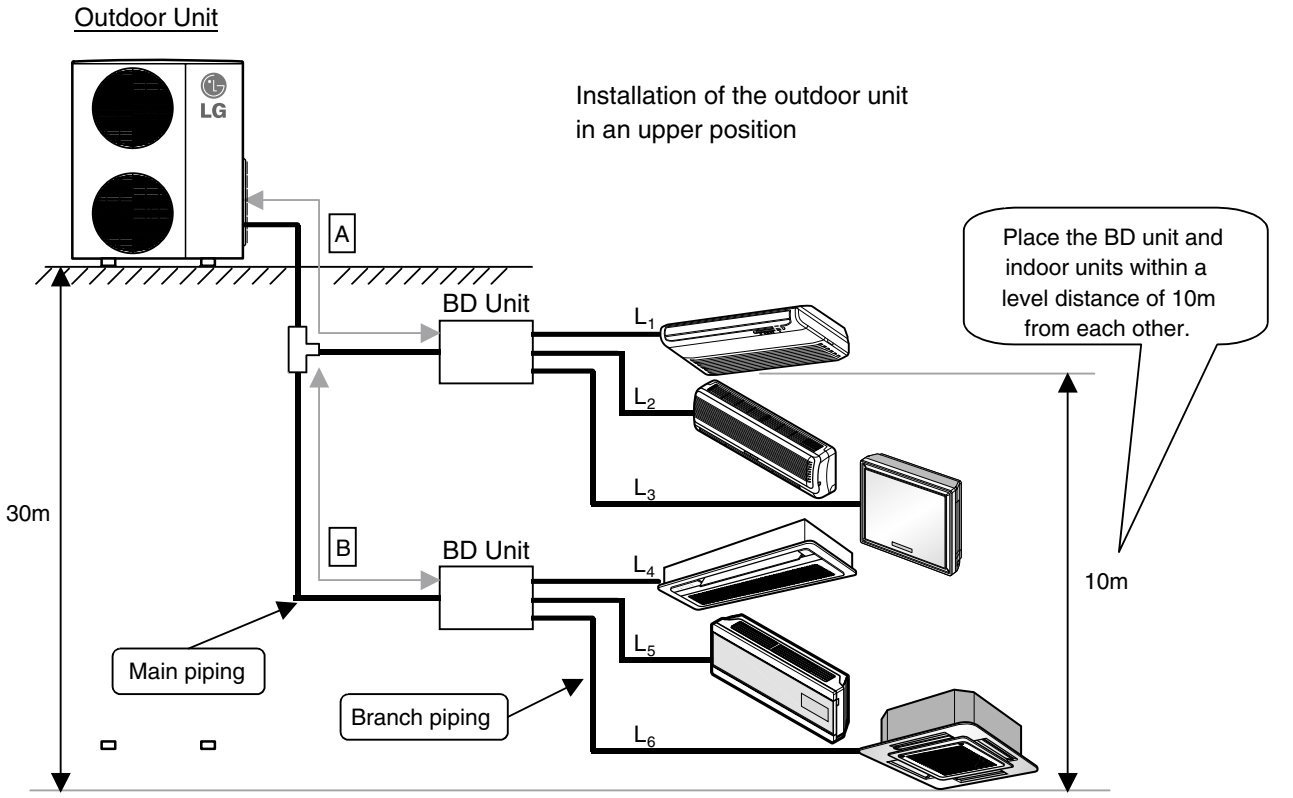
❊ Extra refrigerant = (Extended length - Rated length) x Additional refrigerant

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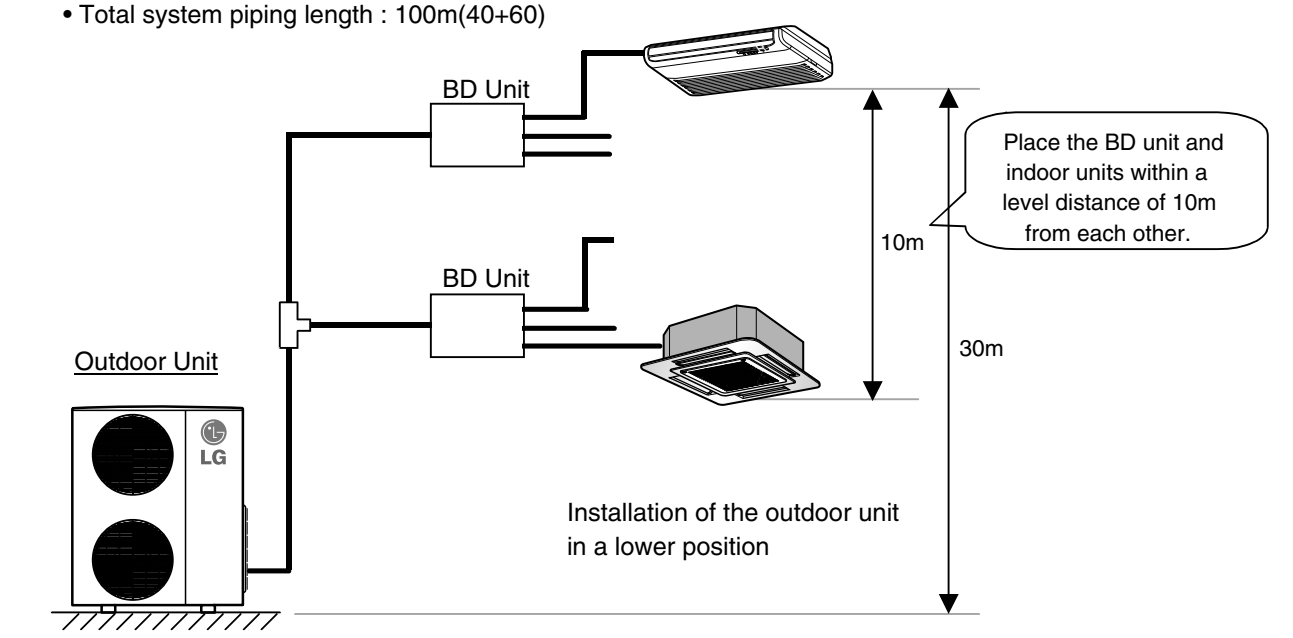
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2. TPS Inverter Multi - Distributor Type

2.1 The maximum allowable level and piping length



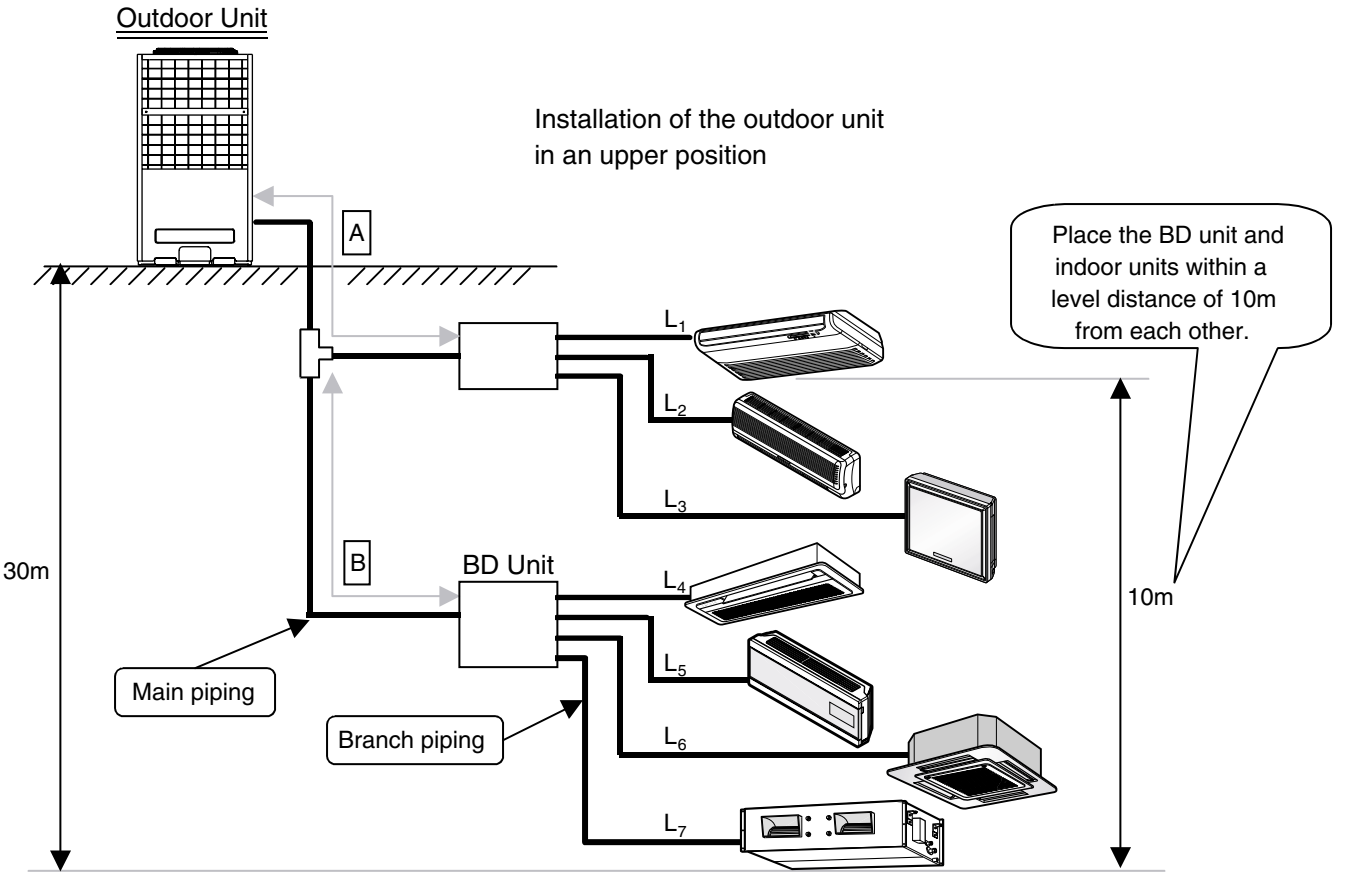
- Total main piping length : 50m(A + B)
- Total branch piping length : 50m(L_1+L_2+ L_3+L_4+L_5+L_6)
- Each branch piping length : 15m(L_1,L_2,L_3,L_4,L_5,L_6)
- Total system piping length : 100m(40+60)



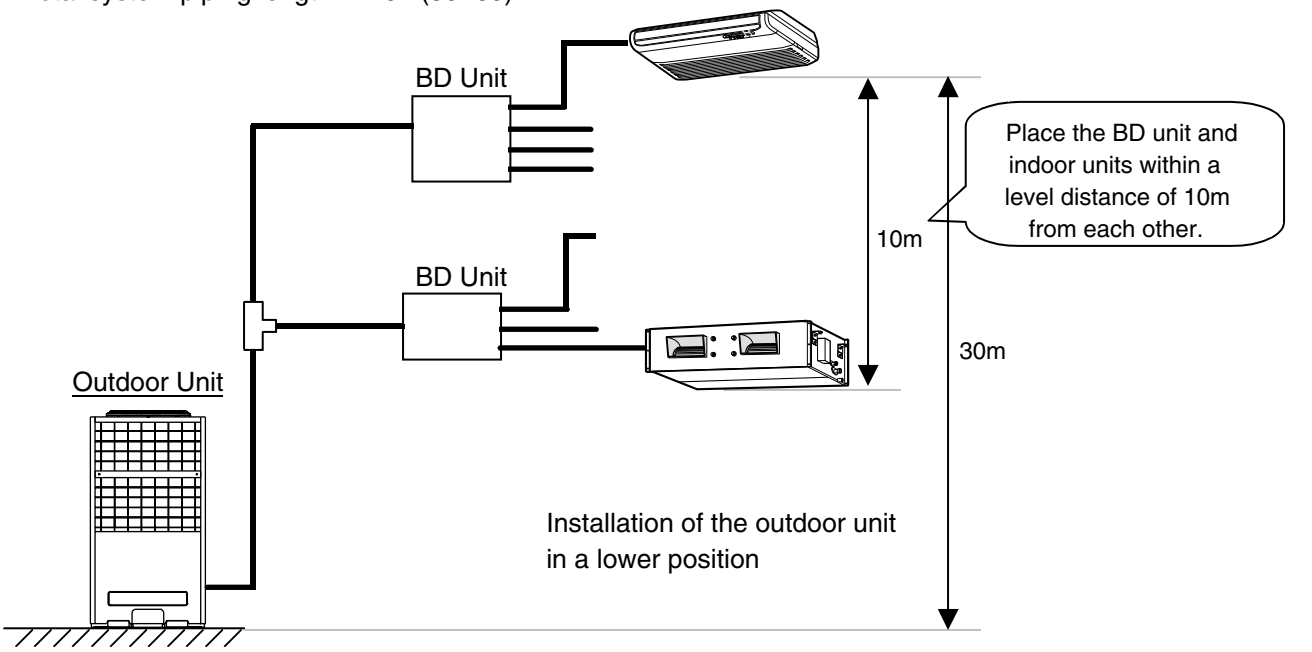
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• **A7UW486FA0**



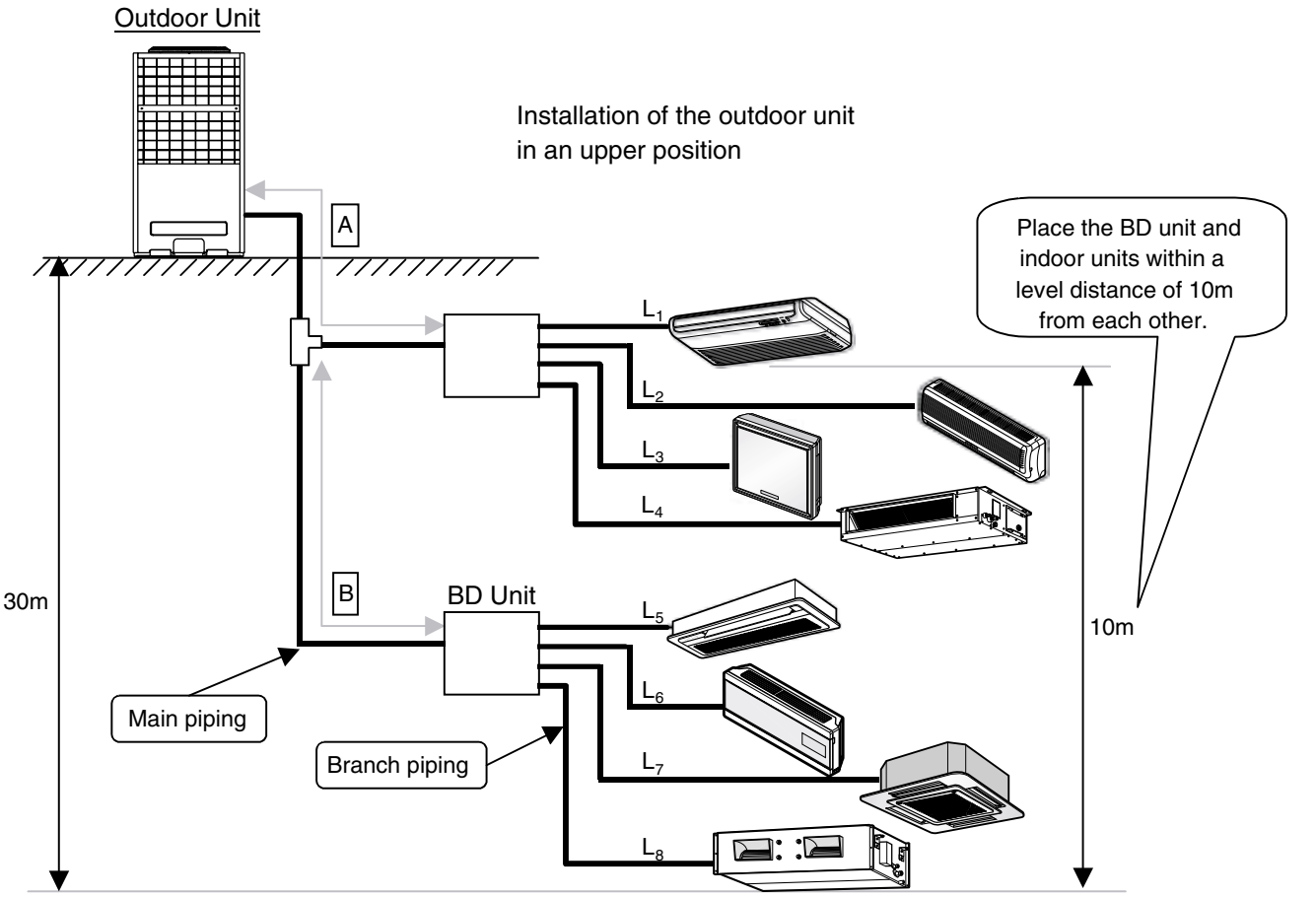
• Total main piping length : 50m(A+B)
• Total branch piping length : 60m(L_1+L_2+ L_3+L_4+L_5+L_6 +L_7)
• Each branch piping length : 15m(L_1,L_2,L_3,L_4,L_5,L_6 ,L_7)
• Total system piping length : 110m(50+60)



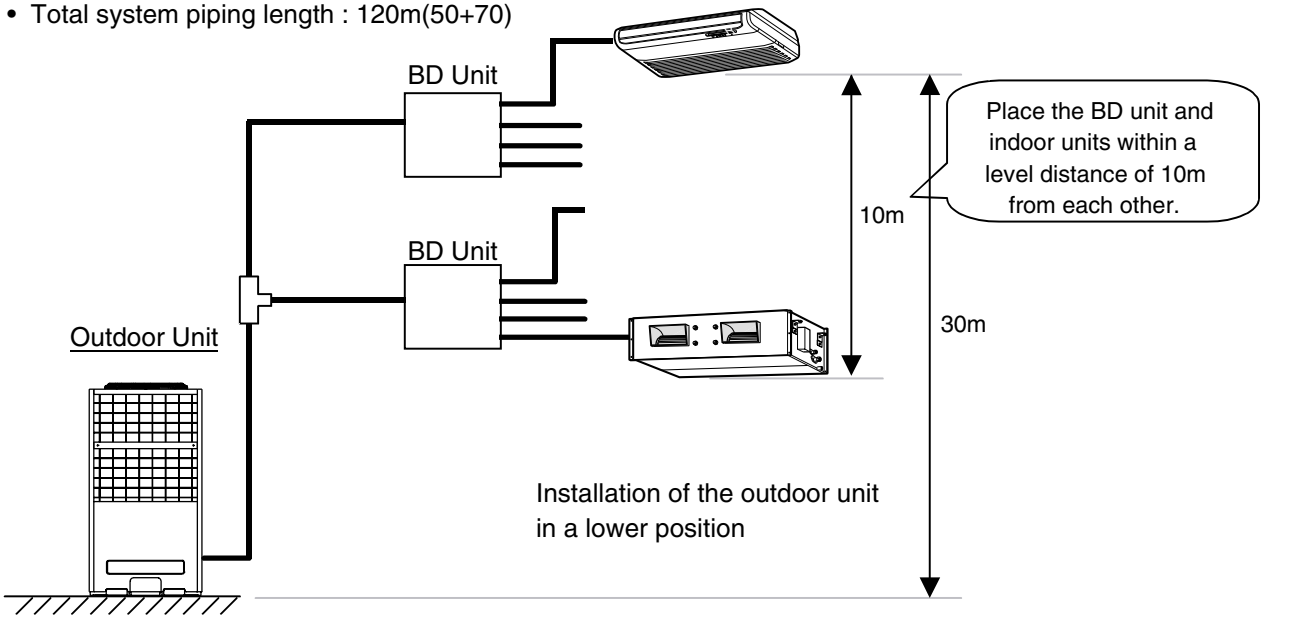
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• **A8UW486FA0**



- Total main piping length : 50m(A+B)
- Total branch piping length : 70m(L_1+L_2+ L_3+L_4+L_5+L_6 +L_7 +L_8)
- Each branch piping length : 15m(L_1,L_2,L_3,L_4,L_5,L_6 ,L_7 ,L_8)
- Total system piping length : 120m(50+70)



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2.2 Refrigerant charge

The calculation of the additional charge should be taken in account for the length of pipe.

Ⓐ A6UW406FA0 charge = 4100g

Ⓑ Additional charge (g)

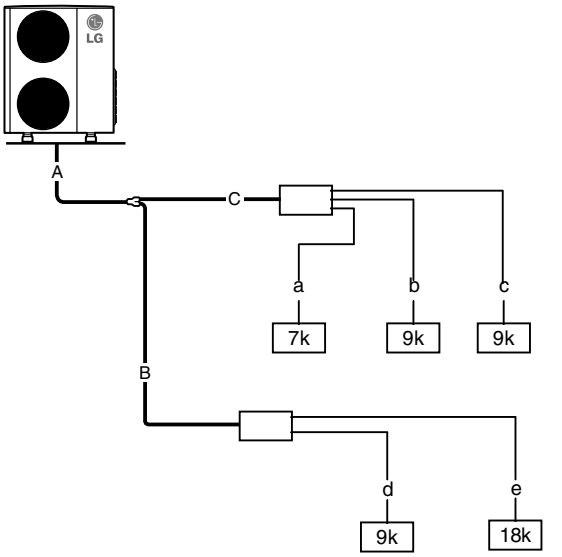
= Total Main pipe length - rated length x 50g/m

+ 7,9,12 k Branch pipe length - rated length x 20g/m

+ 18,24 k Branch pipe length - rated length x 30g/m

(※ Rated length = 5m)

Total Amount (g) = Ⓐ + Ⓑ



- Total main pipe(A+B+C) = 30m
- Each branch pipe(a, b, c, d, e) = 10m
- Additional Charge = (30-5) x 50
  + (10-5) x 20 x 4
  + (10-5) x 30
  = 1800g

Caution

▶ Regulation for refrigerant leakage(in Europe)
: the amount of refrigerant leakage should satisfy the following equation for human safety.

$$\frac{\text{Total amount of refrigerant in the system}}{\text{Volume of the room at which indoor unit of the least capacity is installed}} \leq 0.3 \ (\text{kg} / \text{m}^3)$$

❒ **If the above equation can not be satisfied, then follow the following steps.**

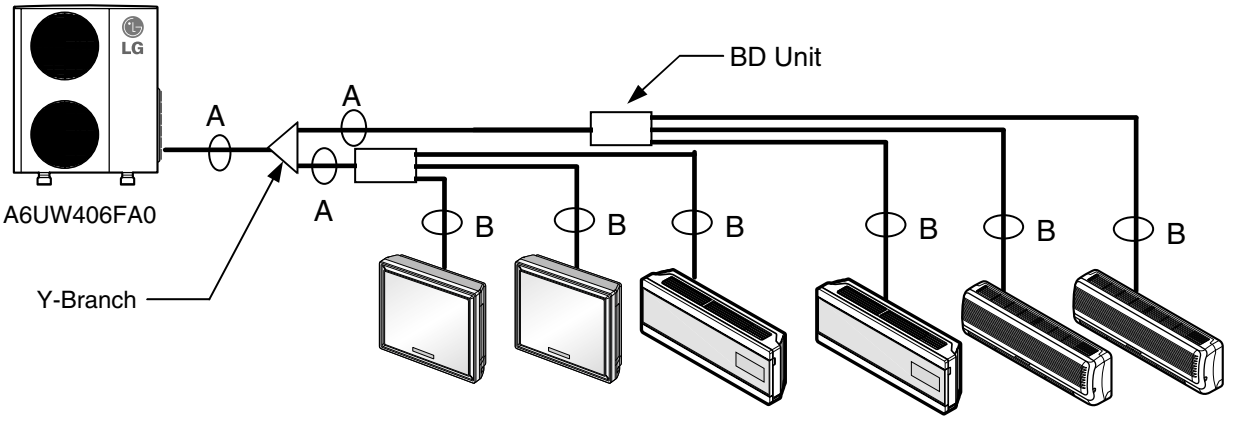
- Selection of air conditioning system: select one of the next
  1. Effective opening part Installation
  2. Reconfirmation of outdoor unit capacity and piping length
  3. Reduction of the amount of refrigerant
  4. 2 or more security device installation of alarm for gas leakage
- Change indoor unit type
  : installation position should be over 2m from the floor (Wall mounted type → Cassette type)
- Adoption of ventilation system
  : choose ordinary ventilation system or building ventilation system
- Limitation in piping work
  : design for earthquake-proof and prevention against thermal stress

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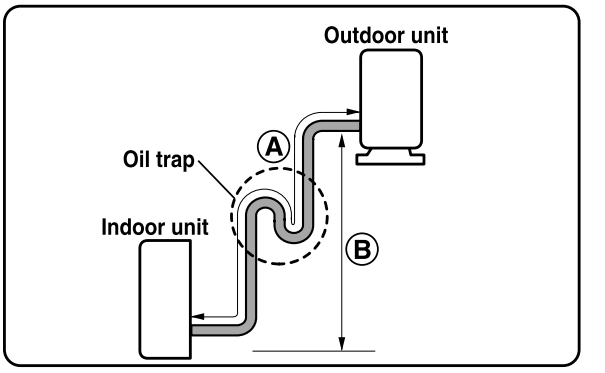
2.3 Piping connection size

		A	B
Liquid	mm	Ø 9.52	Adjust to indoor unit piping size
Gas	mm	Ø19.05	



2.4 Necessity of a trap

Since there is fear of the oil held inside the riser piping flowing back into the compressor when stopped and causing liquid compression phenomenon, or cases of deterioration of oil return, it will be necessary to provide a trap at an appropriate place in the riser gas piping.



In case more then 5m

CAUTION

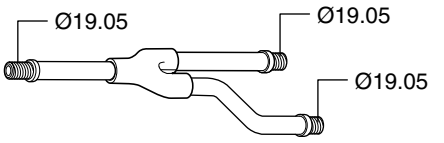
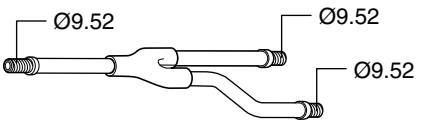
- **Capacity is based on standard length and maximum allowance length is on the basis of reliability.**
- **Oil trap should be installed every 5~7 meters.**

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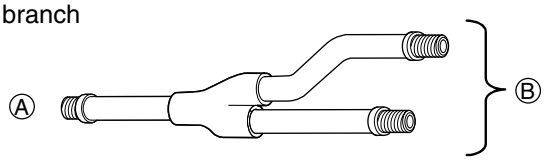
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2.5 Y-Branch(Standard accessory)

[unit:mm]

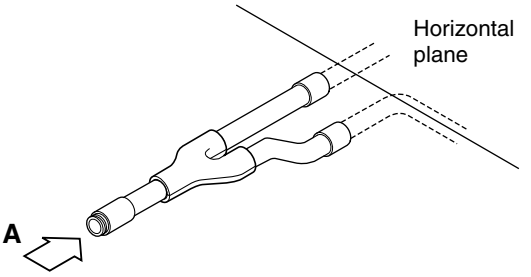
Gas Pipe	Liquid Pipe
	

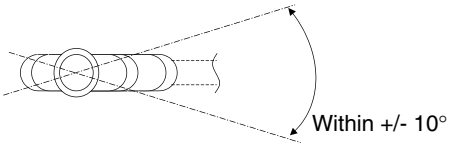
■ Y branch



Ⓐ To Outdoor Unit
Ⓑ To BD Unit

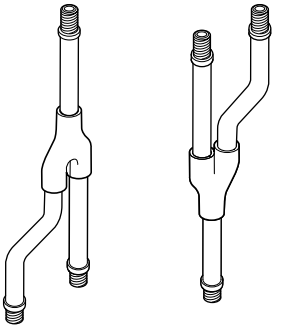
• Ensure that the branch pipes are attached horizontally or vertically (see the diagram below.)





Viewed from point A
in direction of arrow

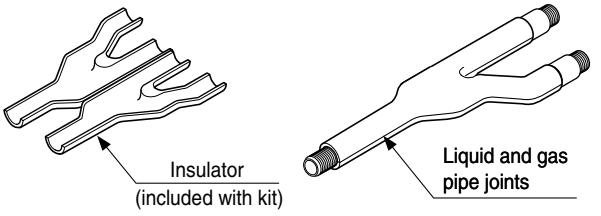
Facing upwards

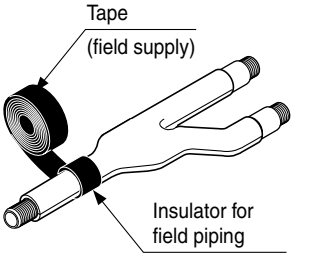


• There is no limitation on the joint mounting configuration.

• If the diameter of the refrigerant piping selected by the procedures described is different from the size of the joint, the connecting section should be cut with a pipe cutter.

• Branch pipe should be insulated with the insulator in each kit.





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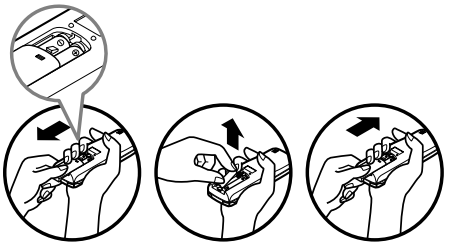
Test Running

SPLIT, ART cool, ART cool deluxe Type

1. Check that all tubing and wiring have been properly connected.
2. Check that the gas and liquid side service valves are fully open.

1) Prepare remote controller

❶ Remove the battery cover by pulling it according to the arrow direction.
❷ Insert new batteries making sure that the (+) and (–) of battery are installed correctly.
❸ Reattach the cover by pushing it back into position.



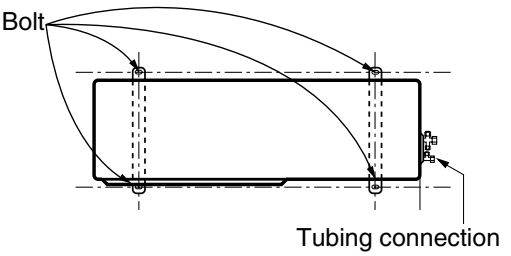
NOTE:
- Use 2 AAA(1.5volt) batteries. Do not use rechargeable batteries.
- Remove the batteries from the remote controller if the system is not going to be used for a long time.

2) Precautions in test run

■ The initial power supply must provide at least 90% of the rated voltage.
Otherwise, the air conditioner should not be operated.
■ For test run, carry out the cooling operation firstly even during heating season. If heating operation is carried out firstly, it leads to the trouble of compressor. Then attention must be paid.
■ Carry out the test run more than 5 minutes without fail. (Test run will be cancelled 18 minutes later automatically)
■ The forced operation is started by pressing button for 2 seconds. (Cassette Type)
The test run is started by pressing button for 5 seconds. (Cassette Type)
The test run is started by pressing timer cancel button five times continuously. (Room type)
■ To cancel the test run, press any button.

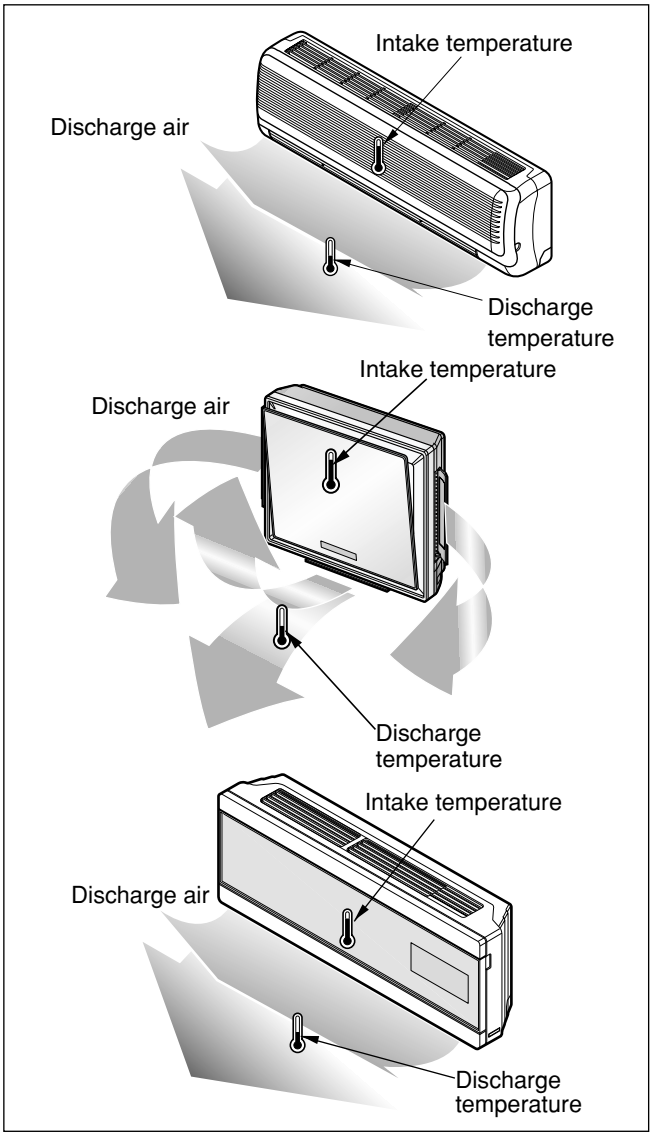
3) Settlement of outdoor unit

■ Anchor the outdoor unit with a bolt and nut(ø10mm) tightly and horizontally on a concrete or rigid mount.
■ When installing on the wall, roof or rooftop, anchor the mounting base securely with a nail or wire assuming the influence of wind and earthquake.
■ In the case when the vibration of the unit is conveyed to the hose, secure the unit with an anti-vibration rubber.



4) Evaluation of the performance

Operate unit for 15~20 minutes, then check the system refrigerant charge:
1. Measure the pressure of the gas side service valve.
2. Measure the temperature of the intake and discharge of air.
3. Ensure the difference between the intake temperature and the discharge is more than 8°C (Cooling) or reversely (Heating).



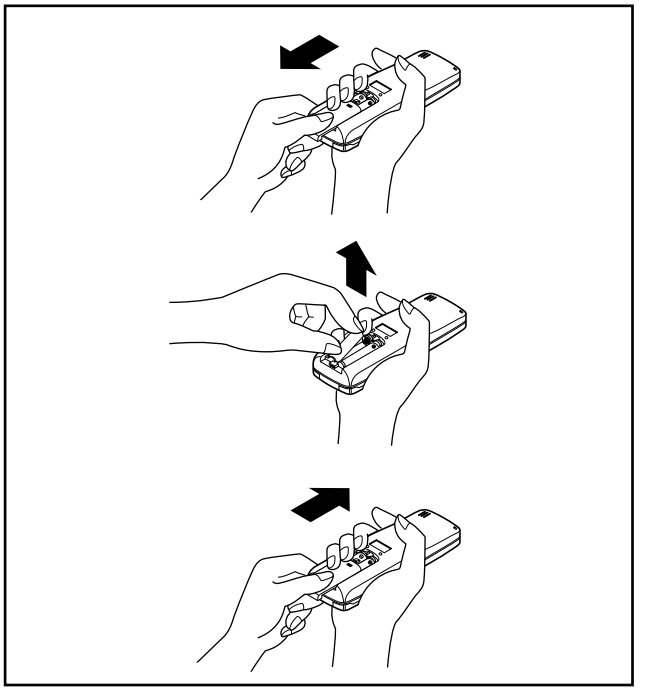
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CVT Type

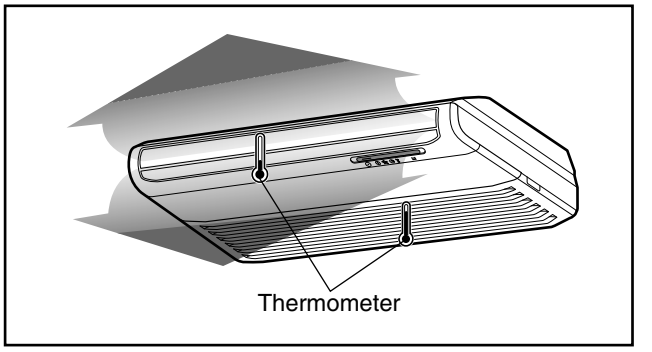
1) Connection of power supply

1. **Connect the power supply cord to the independent power supply.**
   • Circuit breaker is required.
2. **Prepare the remote control.**
   • Insert two batteries provided.
   Remove the battery cover from the remote controller.
   • Slide the cover according to the arrow direction.
   Insert the two batteries.
   (Two "R03" or "AAA" dry-cell batteries or equivalent.)
   • Be sure that the (+) and (-) directions are correct.
   • Be sure that both batteries are new.
   Re-attach the cover.
   • Slide it back into position.
3. **Operate the unit for fifteen minutes or more.**



2) Evaluation of the performance

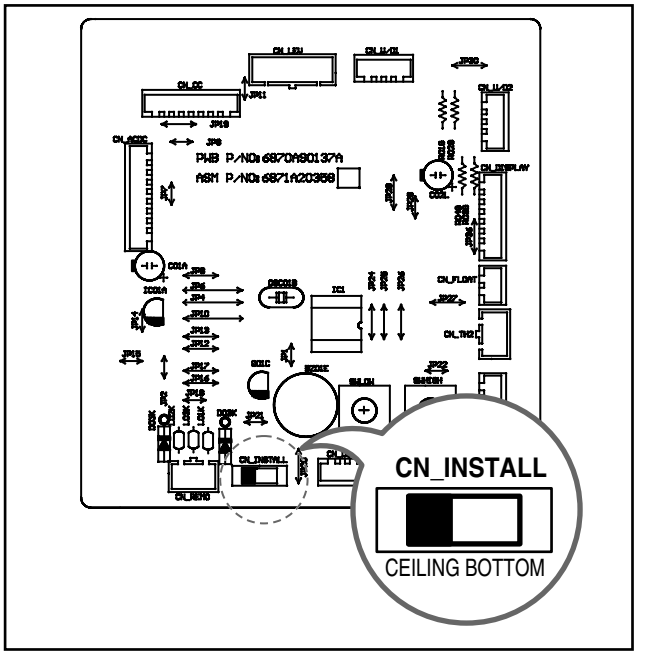
1. Measure the temperature of the intake and discharge air.
2. Ensure the difference between the intake temperature and the discharge one is more than 8°C (Cooling) or reversely (Heating).



3) Selection of the slide switch according to installation method

1. In case the indoor unit is installed on the floor, please change the side switch which is on the Main PCB Assembly to the 'BOTTOM' state.
2. In case the indoor unit is installed under the ceiling, please change the slide switch which is on the Main PCB Assembly to the ' CEILING' state.

※ **The initial state of the slide switch is set for the bottom installation.**



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Ceiling Cassette Type

1) PRECAUTIONS IN TEST RUN

- The initial power supply must provide at least 90% of the rated voltage. Otherwise, the air conditioner should not be operated.

Caution

① For test run, carry out the cooling operation first even during winter season. If heating operation is carried out first, it leads to the trouble of compressor.

② Carry out the test run more than 5 minutes without stopping. (Test run will be cancelled 18 minutes later automatically)

- The test run is started by pressing the room temperature checking button and down timer button for 3 seconds at the same time.
- To cancel the test run, press any button.

CHECK THE FOLLOWING ITEMS WHEN INSTALLATION IS COMPLETE

- After completing work, be sure to measure and record trial run properties, and store measured data, etc.
- Measuring data are room temperature, outside temperature, suction temperature, blow out temperature, air velocity, air volume, voltage, current, presence of abnormal vibration and noise, operating pressure, piping temperature.
- As to the structure and appearance, check following items.

❏ Is the circulation of air adequate?
❏ Is the drainage OK?
❏ Is the heat insulation complete (refrigerant and drain piping)?
❏ Is there any leakage of refrigerant?
❏ Does the romote controller works properly?
❏ Is there any error on wiring?
❏ Aren't terminal screws loosened?

M4.....118N.cm{12kgf.cm} M5.....196N.cm{20kgf.cm}
M6.....245N.cm{25kgf.cm} M8.....588N.cm{60kgf.cm}

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5. Branch Distributor

PRECAUTIONS FOR SELECTING THE LOCATION

The BD unit is for indoor use. Install in a location such as above a ceiling or behind a wall in accordance with the following conditions:

- That the unit is fully supported, and is in a location with little or no vibration.
- That the refrigerant pipes for the indoor and outdoor units can be repaired with ease, and that the units are placed well within the distance from each other allowed by the pipe length.
- That there is nothing nearby that produces heat or steam(gas).
- When installing, that there is enough carity for servicing the unit.
- Do not install in location that is hot or humid for long periods of time.
- A well-ventilated area.
- Do not install near bedrooms. The sound of refrigerant flowing through the piping may sometimes be audible. For restrictions on installation, refer to "INSTALLATION".

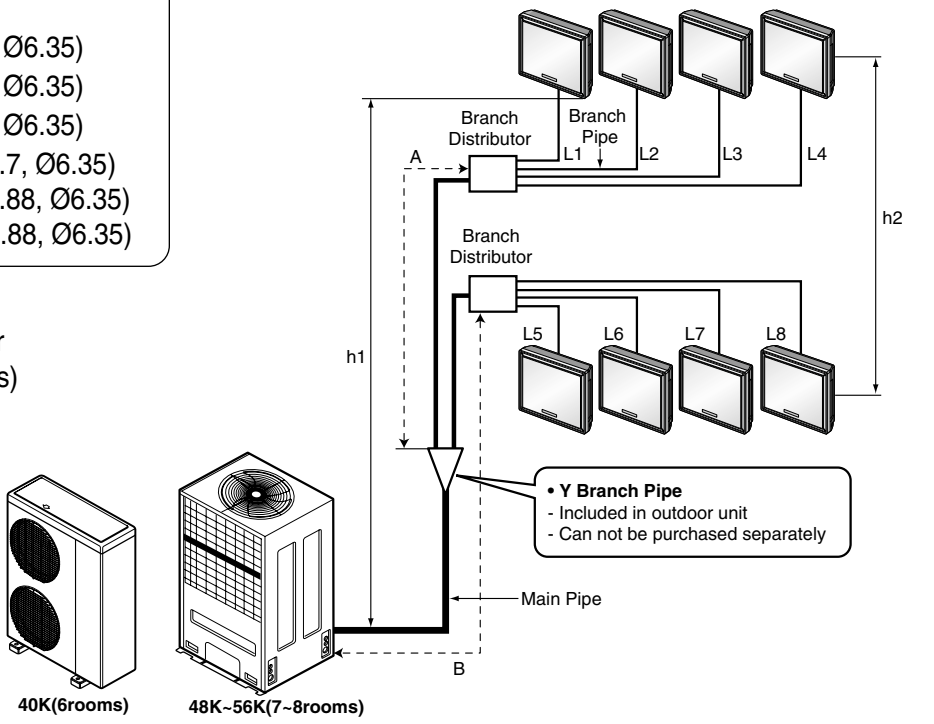
System Layout and Piping Length

For installation of the indoor units. Follow the instructions in the installation manual for each unit.

System Layout

Distributor Unit
For 2 rooms : PMBD3620 (Ø9.52, Ø6.35)
For 3 rooms : PMBD3630 (Ø9.52, Ø6.35)
For 4 rooms : PMBD3640 (Ø9.52, Ø6.35)
For 3 rooms : PMBD7230 (A: Ø12.7, Ø6.35)
(B: Ø15.88, Ø6.35)
(C: Ø15.88, Ø6.35)

Do not connect more than 8 indoor units together choose the distributor unit type (2rooms,3rooms or 4rooms) according to the installation pattern



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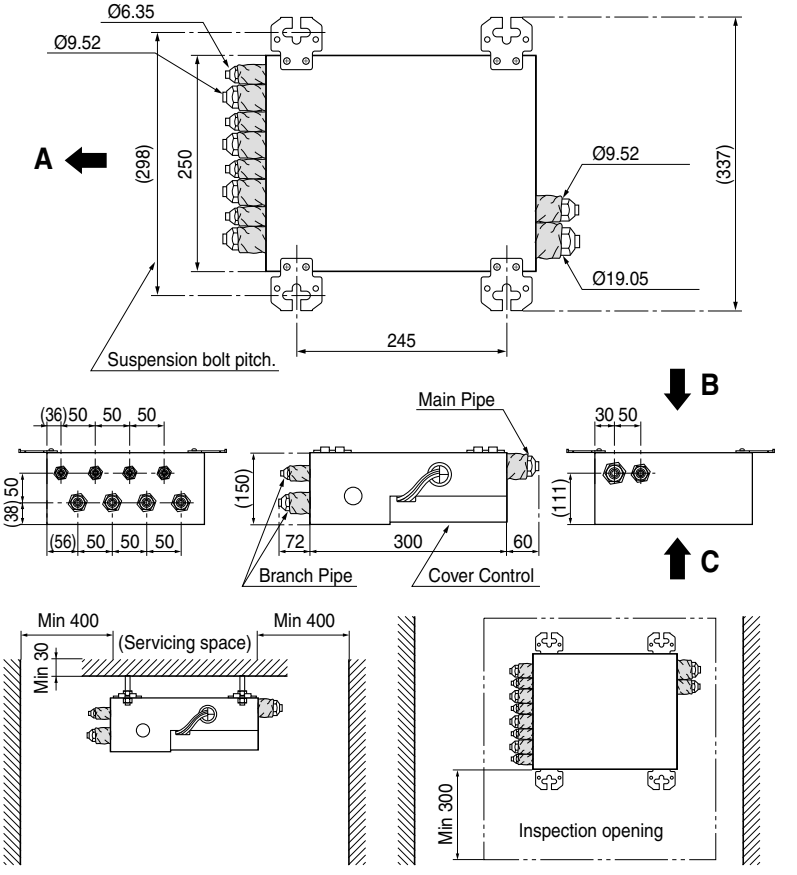
Piping length and elevation

(m)

No.	Length		6 room	7 room	8 room
(1)	Total main piping length	A+B	50	50	50
(2)	Total branch piping length	L1+L2+L3+L4+L5+L6+(L7)+(L8)	50	60	60
(3)	Max. each branch piping length	L1, L2, L3, L4, L5, L6, L7,L8	15	15	15
(4)	Total system piping length	(Total main) + (Tatal branch)	100	110	120
(5)	Maxium Level in - out	h1	30	30	30
(6)	Maxium Level in - in	h2	10	10	10

Installation

- This unit may be installed suspended from the ceiling or mounted on the wall.
- This unit may only be installed horizontally , as shown in the diagram below.(Side B is facing up) However, it may be freely installed in any direction forward or back, and to the sides.
- Be sure to leave a 600mm square opening for service and inspection as shown in the diagram below, for both ceiling - suspended installation and wall-mounted installation.
- This unit "does not require drain treatment" as it uses internal foam treatment as low-pressure piping insulation.
- Service direction is the side B and C
- The piping for the indoor unit may be led around in direction A
- The inclination of side B must be within ±5°C degrees forward or back or to the sides.



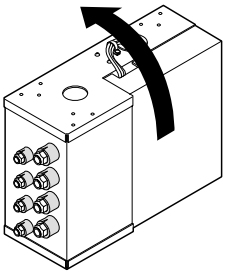
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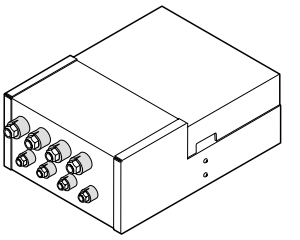
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Installation of The Main Unit

NOTICE :

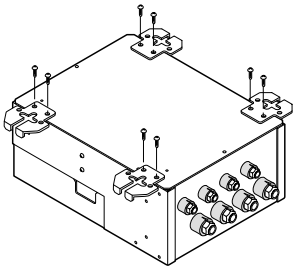
- This unit has two different installation types:
  (1) Ceiling-suspended type and (2) wall-mounted type.
- Choose the proper installation pattern according to the location of installation.
- The installation location for printed wiring board can be changed.
  Follow the procedure specified in the "CONNECTING THE WIRING" section to change the location.

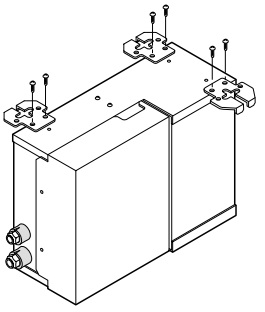




(1) Ceiling-suspended type **(2) Wall-mountde type**

(1) Ceiling-suspended type





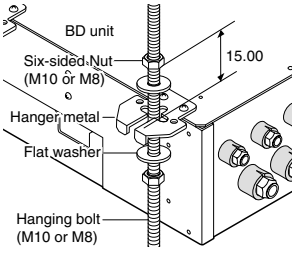
Procedure

(1) Fix the fumished hanger metal with two screws.(4 locations in total).

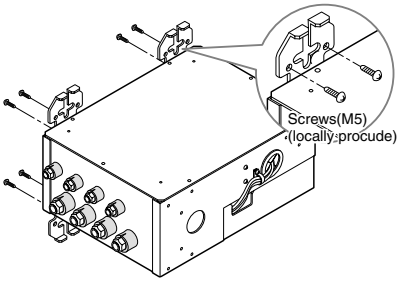
(2) Using an insert-hole-in- anchor, hang the hanging bolt.

(3) Install a hexagon nut and a flat washer (locally-procured)to the hanging bolt as shown in the figure in the left, and ift the main unit to hang on the hanger metal.

(4) After checking with a level that the unit is level, tighten the hexagon nut.
* The tilt of the unit should be within ±5° in front/back and left/right.



(2) Wall-mounted type



Procedure

(1) Fix the fumished hanger metal with two screws.
(3 locations in total).

(2) After checking with a level that the unit is level, fix the unit with the furnished wood screws.
* The tilt of the unit should be within ±5° in front/back and left/right.

CAUTIONS

- **Once a screw-hole on the main unit has had a screw hammered in, make sure to either hammer it again or cover it with alumium tape.(This is to prevent condensation)**
- **Be sure to install the unit with the ceiling-sie up.**
- **Do not install near bedrooms. the sound of refrigerant flowing through the piping may sometimes be audible.**

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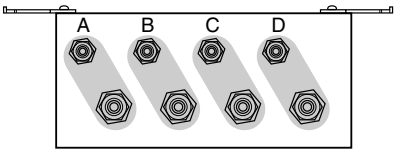
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Connection of Piping

• When connecting indoor units, make sure to connect refrigerant pipes and connection wires to the appropriate connection ports maked with matching alphabets. (A, B, C, D)

NOTICE :

• Be sure to mark all the local refrigerant piping(liquid pipes, gas pipes, etc.) for each indoor unit designating clearly which room it belongs in.(A, B, C, D)

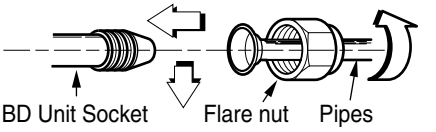


NOTICE :

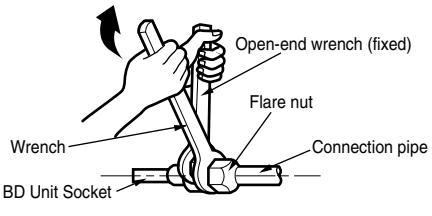
For flaring work the piping, follow the instructions in the installation manual to each unit.

Connecting the pipings to the indoor unit and drain hose to drain pipe

1. Align the center of the pipings and sufficiently tighten the flare nut by hand.
2. Tighten the flare nut with a wrench.

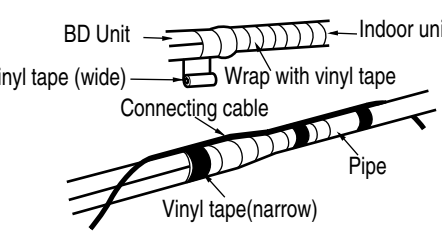


Outside diameter		Torque
mm	inch	kg·m
Ø6.35	1/4	1.8
Ø9.52	3/8	4.2
Ø12.7	1/2	5.5
Ø15.88	5/8	6.6
Ø19.05	3/4	6.6



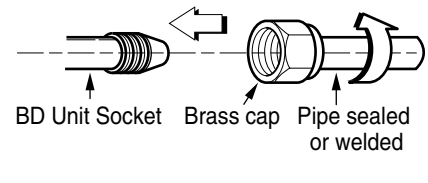
Wrap the insulation material around the connecting portion.

1. Overlap the connection pipe insulation material and the indoor unit pipe insulation material. Bind them together with vinyl tape so that there is no gap.
2. Wrap the area which accommodates the rear piping housing section with vinyl tape.



Close up a socket for unoccupied room with a brass cap.

1. Align the center of the piping and sufficiently tighten the brass cap by hand.
2. Tighten the brass cap with a wrench.
3. Wrap the joint part with insulation.



CAUTIONS
- **Never use the plastic cap for sealing.**
- **Make sure to use brass cap with the end of pipe sealed or welded tightly.**

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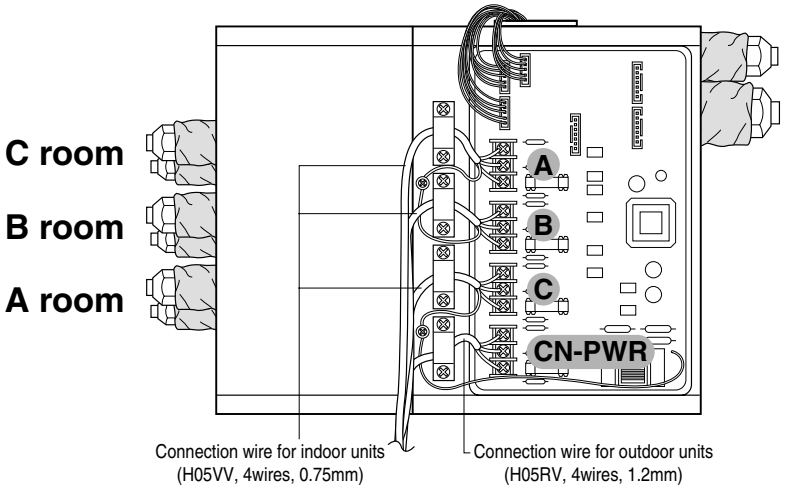
Connection of Wiring

- Connect refrigerant pipes and connection wires to the appropriate ports maked with matching alphabets (A, B and C) on this unit.
- Follow the instructions on the wiring nameplate to connect the connection wires of indoor/outdoor units to terminal board numbers.(1, 2 and 3) Always fix each ground wire separately with a ground screw.(See the figure below.)
- After completing the wiring, fix the outer coating of wires securely with wire clamps. The wire clamp on indoor unit side is furnished. Follow the procedure below to install.
- Refer to the circuit diagram on the control cover inside outdoor unit.

NOTICE :

The terminal board numbers are arranged from top to bottom in order of 1, 2 and 3.

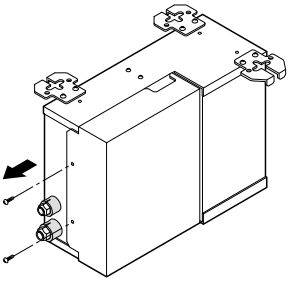
In Case of 3 rooms

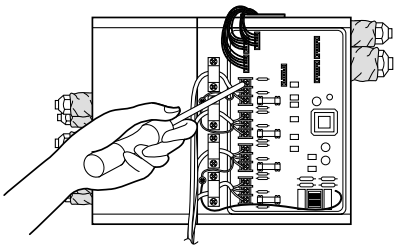


Warning

Do not use tapped wires, stand wires, extensioncords, or starbust connections, as they may cause overtheating, electrical shock, or fire.

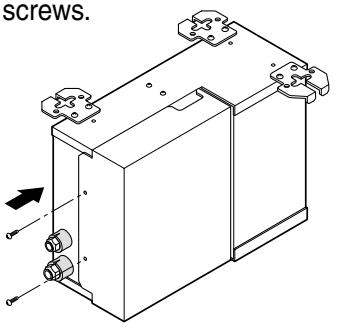
(1) Remove the control cover. Loosen the two screws, and slide the cover in the direction of the arrow.





(2) Perform wiring with reference the wiring diagram on a control cover of outdoor unit. Allow 300 mm for the pulling-out section of harness. Fix the wires completely with wire clamps(4 locations).

(3) Put in the cover in the direction of the arrow then tighten the screws.



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Operation

Function of control

1. MAIN UNIT FUNCTION

• DISPLAY

Operation Indicator

- On while in appliance operation, off while in appliance pause
- Flashing while in disconnection or short in Thermistor (3 sec off / 0.5 sec on)

Sleep Timer Indicator

- On while in sleep timer mode, off when sleep timer cancel or appliance operation pause

Timer Indicator

- On while in timer mode (on/off), off when timer mode is completed or canceled

Defrost Indicator

- Off except when hot start during heating mode operation or while in defrost control

■ Cooling Mode Operation

- When the intake air temperature reaches 0.5°C below the setting temp, the compressor and the outdoor fan stop.
- When it reaches 0.5°C above the setting temp, they start to operate again.
  Compressor ON Temp ➲ Setting Temp+0.5°C
  Compressor OFF Temp ➲ Setting Temp-0.5°C
- While in compressor running, operating with the airflow speed set by the remote control. While compressor is off fan operates at low speed regardless of the setting.

■ Soft Dry Operation Mode

- When the dehumidification operation input by the remote control is received, the intake air temperature is detected and the setting temp is automatically set according to the intake air temperature.
  26°C ≤ Intake Air Temp ➲ 25°C
  24°C ≤ Intake Intake Air Temp<26°C ➲ Intake Air Temp-1°C
  18°C ≤ Intake Intake Air Temp<24°C ➲ Intake Air Temp-0.5°C
  Intake Air Temp<18°C ➲ 18°C
- While compressor off, the indoor fan repeats low airflow speed and stop.
- While the intake air temp is between compressor on temp. and compressor off temp., 10-min dehumidification operation and 4-min compressor off repeat.
  Compressor ON Temp. ➲ Setting Temp+0.5°C
  Compressor OFF Temp. ➲ Setting Temp-0.5°C
- In 10-min dehumidification operation, the indoor fan operates with the low airflow speed.

■ Heating Mode Operation

- When the intake air temp reaches +3°…above the setting temp, the compressor is turned off. When below the setting temp, the compressor is turned on.
  Compressor ON Temp. ➲ Setting Temp.
  Compressor OFF Temp. ➲ Setting Temp.+3°C
- While compressor on, the indoor fan is off when the indoor pipe temp. is below 20°C, when above 27°C , it

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operates with the low or setting speed. When the indoor pipe temp is between 20°C and 27°C, it operates with Super-Low(while in sleep mode, with the medium airflow speed).

- While compressor off, the indoor fan is off when the indoor pipe temp is below 33°C, when above 35°C , it operates with the low airflow speed.
- While in defrost control, the indoor is outdoor fans are turned off.

■ Defrost Control(Heating)

- Defrost operation is controlled by timer and sensing temperature of outdoor pipe.
- The first defrost starts only when the outdoor pipe temperature falls below -6°C after 35 minutes passed from starting of heating operation and more than 4 minutes operation of compressor.
- Defrost ends after 12 minutes passed from starting of defrost operation when the outdoor pipe temperature rises over 15°C even before 12 minutes.
- The second defrost starts only when the outdoor pipe temperature falls below -6°C after 35 minutes passed from ending of the first defrost and more than 4 minutes operation of compressor.

■ Fuzzy Operation

- When any of operation mode is not selected like the moment of the power on or when 3 hrs has passed since the operation off, the operation mode is selected.
- When determining the operation mode, the compressor, the outdoor fan, and the 4 way valve are off and only the indoor fan is operated for 15 seconds. Then an operation mode is selected according to the intake air temp at that moment as follows.

  24°C ≤ Inatake Air Temp ➲ Fuzzy Operation for Cooling
  21°C ≤ Inatake Air Temp<24°C ➲ Fuzzy Operation for Dehumidification
  Inatake Air Temp<21°C ➲ Fuzzy Operation for Heating
- If any of the operation modes among cooling / dehumidification / heating mode operations is carried out for 10 sec or longer before Fuzzy operation, the mode before Fuzzy operation is operated.

1) Fuzzy Operation for Cooling

- According to the setting temperature selected by Fuzzy rule, when the intake air temp is 0.5°C or more below the setting temp, the compressor is turned off. When 0.5°C or more above the setting temp, the compressor is turned on.

  Compressor ON Temp ➲ Setting Temp +0.5°C
  Compressor OFF Temp ➲ Setting Temp + 0.5°C
- At the beginning of Fuzzy mode operation, the setting temperature is automatically selected according to the intake air temp at that time.

  26°C≤ Intake Air Temp ➲ 25°C
  24°C≤ Intake Air Temp<26°C ➲ Intake Air Temp + 1°C
  22°C≤ Intake Air Temp<24°C ➲ Intake Air Temp + 0.5°C
  18°C≤ Intake Air Temp<22°C ➲ Intake Air Temp
  Intake Air Temp<18°C ➲ 18°C
- When the Fuzzy key (Temperature Control key) is input after the initial setting temperature is selected, the Fuzzy key value and the intake air temperature at that time are compared to select the setting temperature automatically according to the Fuzzy rule.
- While in Fuzzy operation, the airflow speed of the indoor fan is automatically selected according to the temperature.

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2) Fuzzy Operation for Dehumidification

- According to the setting temperature selected by Fuzzy rule, when the intake air temp is 0.5°C or more below the setting temp, the compressor is turned off. When 0.5°C or more above the setting temp, the compressor is turned on.
  Compressor ON Temp ➲ Setting Temp + 0.5°C
  Compressor OFF Temp ➲ Setting Temp+0.5°C
- At the beginning of Fuzzy mode operation, the setting temperature is automatically selected according to the intake air temp at that time.
  26°C ≤ Intake Air Temp ➲ 25°C
  24°C ≤ Intake Air Temp<26°C ➲ Intake Air Temp+1°C
  22°C ≤ Intake Air Temp<24°C ➲ Intake Air Temp+0.5°C
  18°C ≤ Intake Air Temp<22°C ➲ Intake Air Temp
  Intake Air Temp<18°C ➲ 18°C
- When the Fuzzy key (Temperature Control key) is input after the initial setting temperature is selected, the Fuzzy key value and the intake air temperature at that time are compared to select the setting temperature automatically according to the Fuzzy rule.
- While in Fuzzy operation, the airflow speed of the indoor fan repeats the low airflow speed or pause as in dehumidification operation.

3) Fuzzy Operation for Heating

- According to the setting temperature selected by Fuzzy rule, when the intake air temp is 3°C or more above the setting temp, the compressor is turned off. When below the setting temp, the compressor is turned on.
  Compressor ON Temp ➲ Setting Temp
  Compressor OFF Temp ➲ Setting Temp + 3°C
- At the beginning of Fuzzy mode operation, the setting temperature is automatically selected according to the intake air temp at that time.
  20°C≤Intake Air Temp ➲ Intake Air Temp + 0.5°C
  Intake Air Temp<20°C ➲ 20°C
- When the Fuzzy key (Temperature Control key) is input after the initial setting temperature is selected, the Fuzzy key value and the intake air temperature at that time are compared to select the setting temperature automatically according to the Fuzzy rule.
- While in Fuzzy operation, the airflow speed of the indoor fan is set to the high or the medium according to the intake air temperature and the setting temperature.

■ Airflow Speed Selection

- The airflow speed of the indoor fan is set to high, medium, low, or power (auto) by the input of the airflow speed selection key on the remote control.

■ On-Timer Operation

- When the set time is reached after the time is input by the remote control, the appliance starts to operate.
- The timer LED is on when the on-timer is input. It is off when the time set by the timer is reached.
- If the appliance is operating at the time set by the timer, the operation continues.

While in Fuzzy operation, the airflow speed of the indoor fan is automatically selected according to the temperature.

■ Off-Timer Operation

- When the set time is reached after the time is input by the remote control, the appliance stops operating.
- The timer LED is on when the off-timer is input. It is off when the time set by the timer is reached.
- If the appliance is on pause at the time set by the timer, the pause continues.

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■ Off-Timer <=> On-Timer Operation

• When the set time is reached after the on/off time is input by the remote control, the on/off-timer operation is carried out according to the set time.

■ Sleep Timer Operation

• When the sleep time is reached after <1,2,3,4,5,6,7,0(cancel) hr> is input by the remote control while in appliance operation, the operation of the appliance stops.
• While the appliance is on pause, the sleep timer mode cannot be input.
• While in cooling mode operation, 30 min later since the start of the sleep timer, the setting temperature increases by 1°C. After another 30 min elapse, it increases by 1°C again.
• When the sleep timer mode is input while in cooling cycle mode, the airflow speed of the indoor fan is set to the low.
• When the sleep timer mode is input while in heating cycle mode, the airflow speed of the indoor fan is set to the medium.

■ Chaos Swing Mode

• By the Chaos Swing key input, the upper/lower vane automatically operates with the Chaos Swing or they are fixed to the desired direction.
• While in Chaos Swing mode, the angles of cooling and heating cycle operations are different.

■ Chaos Natural Wind Mode

• When the Chaos Natural Wind mode is selected and then operated, the high, medium, or low speed of the airflow mode is operated for 2~15 sec. randomly by the Chaos Simulation.

■ Jet Cool Mode Operation

• While in heating mode or Fuzzy operation, the Jet Cool key cannot be input. When it is input while in the other mode operation (cooling, dehumidification, ventilation), the Jet Cool mode is operated.
• In the Jet Cool mode, the indoor fan is operated at super-high speed for 30 min at cooling mode operation.
• In the Jet Cool mode operation, the room temperature is controlled to the setting temperature, 18°C.
• When the sleep timer mode is input while in the Jet Cool mode operation, the Jet Cool mode has the priority.
• When the Jet Cool key is input, the upper/lower vanes are reset to those of the initial cooling mode and then operated in order that the air outflow could reach further.

■ Auto Restarting Operation

• When the power is restored after a sudden power failure while in appliance operation, the mode before the power failure is kept on the memory and the appliance automatically operates in the mode on the memory.

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■ Forced Operation

- To operate the appliance by force in case that the remote control is lost, the forced operation selection switch is on the main unit of the appliance to operate the appliance in the standard conditions.
- When the power is supplied while the slide switch is on the forced operation position, or when the slide switch position is switched to the Auto Restarting (or test operation) position or switched from the remote control position to the forced operation position while the power is on, the forced operation is carried out.
- When the slide switch position is switched from the forced operation position to the Auto Restarting position or the remote control position, the forced operation is canceled and the appliance stops operating.
- In the forced operation mode, the indoor fan is operated at low speed for around 15 sec and then the operation condition is set according to the intake air temperature as follows.

  24°C≤Intake Air Temp ➲ Cooling Mode Operation, 22°C, High Speed
  21°C≤Intake Air Temp<24°C ➲ Dehumidification Operation, 23°C, High Speed
  Intake Air Temp<21°C ➲ Heating Mode Operation, 24°C, High Speed

■ Buzzer Sounding Operation

- When the appliance-operation key is input by the remote control, the short "beep-beep-" sounds.
- When the appliance-pause key is input by the remote control, the long "beep—" sounds.

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Function of Indoor Unit

Split Type Indoor Unit

Operation ON/OFF by Remote controller

Sensing the Room Temperature

- Room temperature sensor. (THERMISTOR)

Room temperature control

- Maintains the room temperature in accordance with the Setting Temp.

Starting Current Control

- Indoor fan is delayed for 5 seconds at the starting.

Time Delay Safety Control

- Restarting is delayed for approx. 3 minutes.

Indoor Fan Speed Control

- High, Med, Low, Chaos

Operation indication Lamps (LED)

⏻ --- Lights up in operation

☆ --- Lights up in Sleep Mode

◷ --- Lights up in Timer Mode

✶ --- Lights up in Deice Mode

Soft Dry Operation Mode

- Intermittent operation of fan at low speed.

Sleep Mode Auto Control

- The fan is switched to low(Cooling), med(Heating) speed.
- The unit will be stopped after 1, 2, 3, 4, 5, 6, 7 hours.

Natural Air Control by CHAOS Logic

- The fan is switched to intermittent or irregular operation
- The fan speed is automatically switched from high to low speed.

*** Airflow Direction Control**

- The louver can be set at the desired position or swing up and down automatically.(Model base)

Deice (defrost) control (Heating)

- Both the indoor and outdoor fan stops during deicing.
- Hot start after deice ends.

Hot-start Control (Heating)

- The indoor fan stops until the evaporator piping temperature will be reached at 27°C.

"Wall Mounted Type is standard"

* Functions is dependent on model type.

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Art Cool Type Indoor Unit

Operation ON/OFF by Remote controller

Sensing the Room Temperature

- Room temperature sensor. (THERMISTOR)

Room temperature control

- Maintains the room temperature in accordance with the Setting Temp.

Starting Current Control

- Indoor fan is delayed for 5 sec at the starting.

Time Delay Safety Control

- Restarting is inhibited for approx. 3 minutes.

Indoor Fan Speed Control

- High, Med, Low, CHAOS, JET COOL

Operation indication Lamps (LED)

 --- Lights up in operation

 --- Lights up in Sleep Mode

 --- Lights up in Timer Mode

 --- Lights up in Defrost Mode (for Heating Model)

OUTDOOR--- Lights up in compressor operation (for Cooling Model)

Soft Dry Operation Mode

- Intermittent operation of fan at low speed.

Sleep Mode Auto Control

- The fan is switched to low(Cooling), med(Heating) speed.
- The unit will be stopped after 1, 2, 3, 4, 5, 6, 7 hours.

Natural Air Control by CHAOS Logic

- The fan is switched to intermittent or irregular operation
- The fan speed is automatically switched from high to low speed.

Airflow Direction Control

- The louver can be set at the desired position or swing up and down automatically.

PLASMA

- The function will be operated while in any operation mode with selecting the function.
- The function is to be stopped while it is operating with selecting the function.

Defrost(Deice) control (Heating)

- Both the indoor and outdoor fan stops during defrosting.

Hot-start Control (Heating)

- The indoor fan stops until the evaporator pipe temperature will be reached at 28°C.

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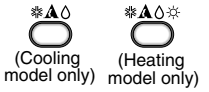
LGE Internal Use Only

Art Cool Deluxe Type Remote Controller

Operation ON/OFF



Operation Mode Selection



Cooling Operation Mode.(❄) Auto Operation Mode.(A)
Healthy Dehumidification Operation Mode.(♢) Heating Operation Mode.(☼)

Fan Speed Selection

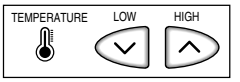


Room, Temperature Checking



: (High:39°C ◄——► Low:11°C)

Temperature Setting



Cooling — Down to 18°C / Up to 30°C
Heating — Down to 16°C / Up to 30°C

JET COOL



Setting the Time or Timer



Timer Selection



: OFF, ON, OFF◄——►ON

Timer Setting



Timer Cancel



: Cancel Sleep Mode, Timer ON or Timer OFF

Sleep Operation



: 1, 2, 3, 4, 5, 6, 7, Off Timer

Airflow Direction Control



Air Circulation



: Fan Operates without cooling or heating.

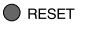
Horizontal Airflow Direction Control Button(Optional)



2nd F



Reset



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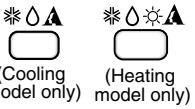
LGE Internal Use Only

Duct Type Remote Controller

Operation ON/OFF



Operation Mode Selection



Cooling Operation Mode (❄)
Heating Operation Mode (☼)
Soft Dry Operation Mode (💧)
Auto Operation Mode (A)

Fan Speed Selection



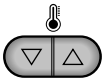
LO (Low) **MED** (Med) **HI** (High)

Room Temperature Display



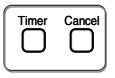
: High:39°C ↔ LOW:11°C

Temperature Setting

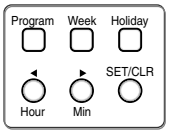


Cooling [Down to 18°C / Up to 30°C]
Heating [Down to 16°C / Up to 30°C]

Setting the Timer



Weekly Program

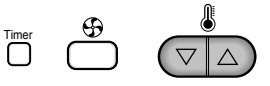


Fan Operation Mode

: Fan Operates without cooling & heating



Phase Control Setting



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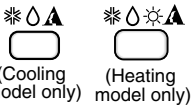
LGE Internal Use Only

CST Type Remote Controller

Operation ON/OFF



Operation Mode Selection



Cooling Operation Mode (❄)
Heating Operation Mode (☼)
Soft Dry Operation Mode (💧)
Auto Operation Mode (A)

Fan Speed Selection



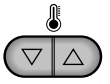
LO (Low) **MED** (Med) **HI** (High) **JET** **AUTO**

Room Temperature Display



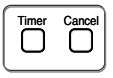
: High:39°C ↔ LOW:11°C

Temperature Setting

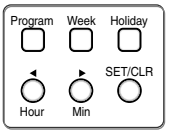


Cooling [Down to 18°C / Up to 30°C]
Heating [Down to 16°C / Up to 30°C]

Setting the Timer



Weekly Program



: Fan Operates without cooling & heating

Fan Operation Mode



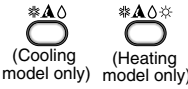
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Convertible Type Remote Control

Operation ON/OFF

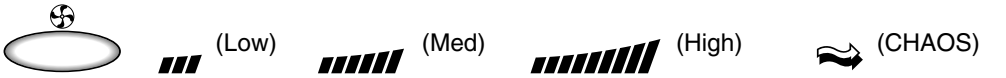


Operation Mode Selection



Cooling Operation Mode.(❄) Auto Operation Mode.(A)
Healthy Dehumidification Operation Mode.(♢) Heating Operation Mode.(☼)

Fan Speed Selection

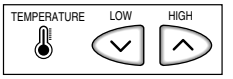


Room, Temperature Checking



: (High:39°C ◄——► Low:11°C)

Temperature Setting



Cooling — Down to 18°C / Up to 30°C
Heating — Down to 16°C / Up to 30°C

JET COOL



PLASMA(Optional)



Setting the Time or Timer



Timer Selection



: OFF, ON, OFF◄——►ON

Timer Setting



Timer Cancel



: Cancel Sleep Mode, Timer ON or Timer OFF

Sleep Operation



: 1, 2, 3, 4, 5, 6, 7, Off Timer

Airflow Direction Control



Air Circulation



: Fan Operates without cooling or heating.

Horizontal Airflow Direction Control Button(Optional)



2nd F



Reset



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Function of Outdoor Unit

Outdoor Unit

Two Comp algorithm

• Inverter Comp is first priority and then Constant Comp is turning on responding to load condtion.

Operating Frequency

• Inverter Frequency varies considering condition such as room temp,outdoor temp, operating room number,Temp gap between room temp and set temp and so on.

LEV Control

• LEV pulse is modulated to keep constant superheat or subcooling.

Out door Fan Control

• Outdoor fan operates at High/Low or Off to respond to the load condition.

R/Valve Control

• Convert R/Valve to change cooling to heating, heating to cooling.

Comp Pre-Heat Logic

• Checking outdoor temp, D-Pipe temp,Heat Sink Temp, operate compressor at low frequency upto 5min to preheat oil.

Defrost Function

• After 35 min heating operation, check the defrost condition and if outdoor pipe temp is below -6°C and released from deice operation in case outdoor pipe temp is over 15°C or 7 min cooing mode.
• To deice outdoor heat exchanger in low temp condtion, convert operating mode from heating to cooling, in this case, indoor and outdoor fan is off.

Oil Return System

• In heating operation, every 3 hours, changes from heating to cooling for 5 min to return the oil in piping to compressor.

IPM Over Heat Protection

• To protect IPM overheat, down comp Hz.

Comp Overload Protection

• To protect comp from being overload, down comp Hz.

Low Pressure Protection

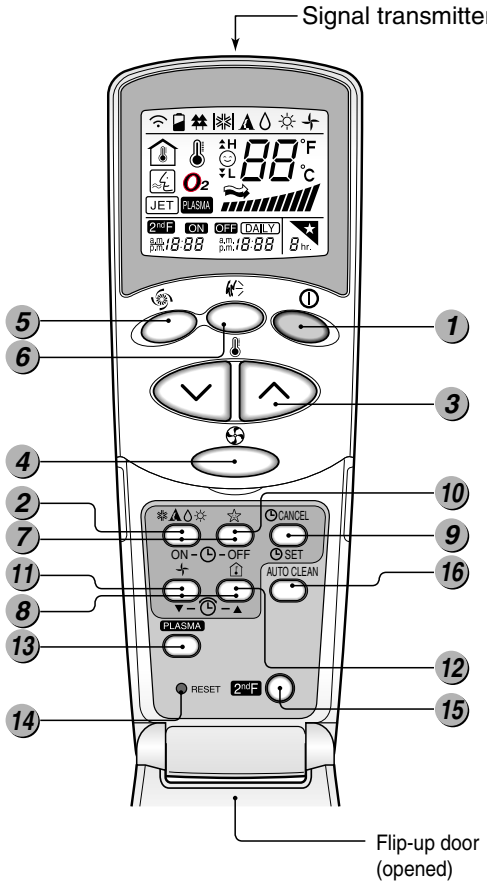
• If cylce pressure is low (around 0.3kgf/cm2), turn off comp and outdoor fan.

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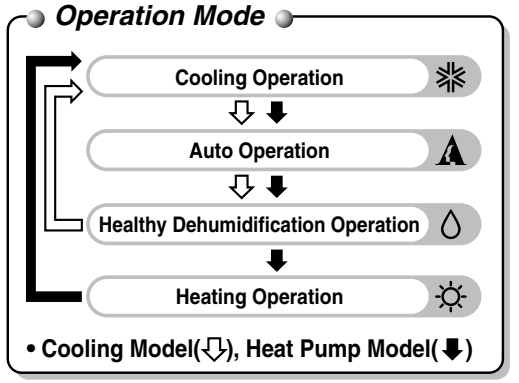
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Remote Control Operation

The Remote Controller transmits the signals to the system.



Operation Mode

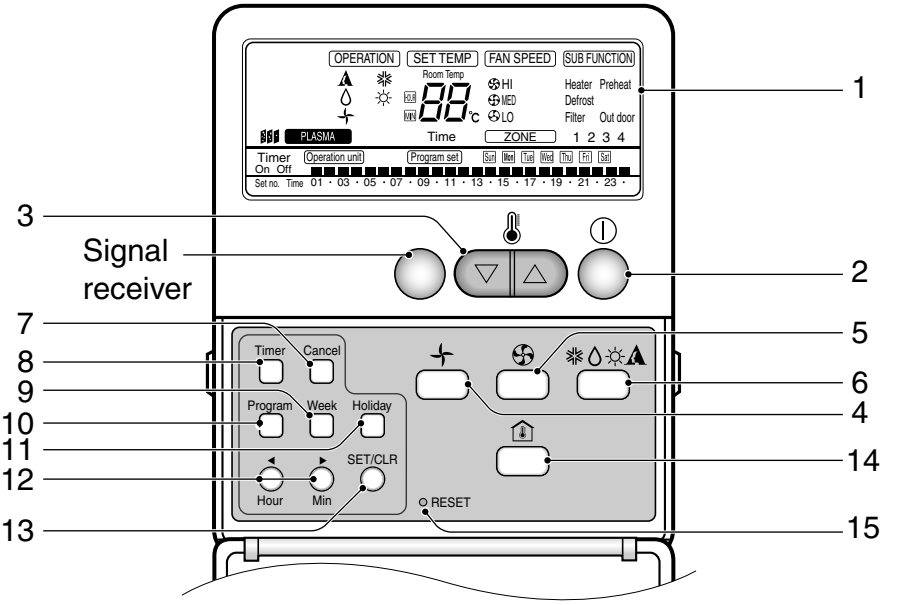


1. **START/STOP BUTTON**
   Operation starts when this button is pressed and stops when the button is pressed again.
2. **OPERATION MODE SELECTION BUTTON**
   Used to select the operation mode.
3. **ROOM TEMPERATURE SETTING BUTTONS**
   Used to select the room temperature.
4. **INDOOR FAN SPEED SELECTOR**
   Used to select fan speed in four steps low, medium, high and CHAOS.
5. **JET COOL**
   Used to start or stop the speed cooling/heating. (Speed cooling/heating operates super high fan speed.)
6. **CHAOS SWING BUTTON**
   Used to stop or start louver movement and set the desired up/down airflow direction.
7. **ON/OFF TIMER BUTTONS**
   Used to set the time of starting and stopping operation.
8. **TIME SETTING BUTTONS**
   Used to adjust the time.
9. **TIMER SET/CANCEL BUTTON**
   Used to set the timer when the desired time is obtained and to cancel the Timer operation.
10. **SLEEP MODE AUTO BUTTON**
    Used to set Sleep Mode Auto operation.
11. **AIR CIRCULATION BUTTON**
    Used to circulate the room air without cooling or heating.
12. **ROOM TEMPERATURE CHECKING BUTTON**
    Used to check the room temperature.
13. **PLASMA(OPTIONAL)**
    Used to start or stop the plasma-purification function.
14. **RESET BUTTON**
    Initialize remote controller.
15. **2nd F Button**
    Used prior to using modes printed in blue at the bottom of buttons.
16. **AUTO CLEAN (Model Base)**
    Used to set Auto Clean mode.

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Duct Type Remote Controller



1 Operation display
Displays the operation conditions.

2 On/Off Button
Operation starts when this button is pressed, and stops when the button is pressed again.

3 Set Temperature Button
Used to set the temperature when the desired temperature is obtained.

4 FAN Operation Button
Used to circulate room air without cooling or heating.

5 Fan Speed Button
Used to set desired fan speed.

6 Operation Mode Selection Button
Used to select the operation mode.
- Auto Operation Mode.
- Cooling Operation Mode.
- Soft Dry Operation Mode.
- Heating Operation Mode.(except cooling model)

7 Timer Cancel Button
Used to cancel the timer.

8 Timer Set Button
Used to set the timer when the desired time is obtained.

9 Week Button
Used to set a day of the week.

10 Program Button
Used to set the weekly timer.

11 Holiday Button
Used to set a holiday of the week.

12 Time Set Button
Used to set the time of the day and change the time in the weekly timer Function.

13 Set and Clear Button
Used to set and clear the weekly timer.

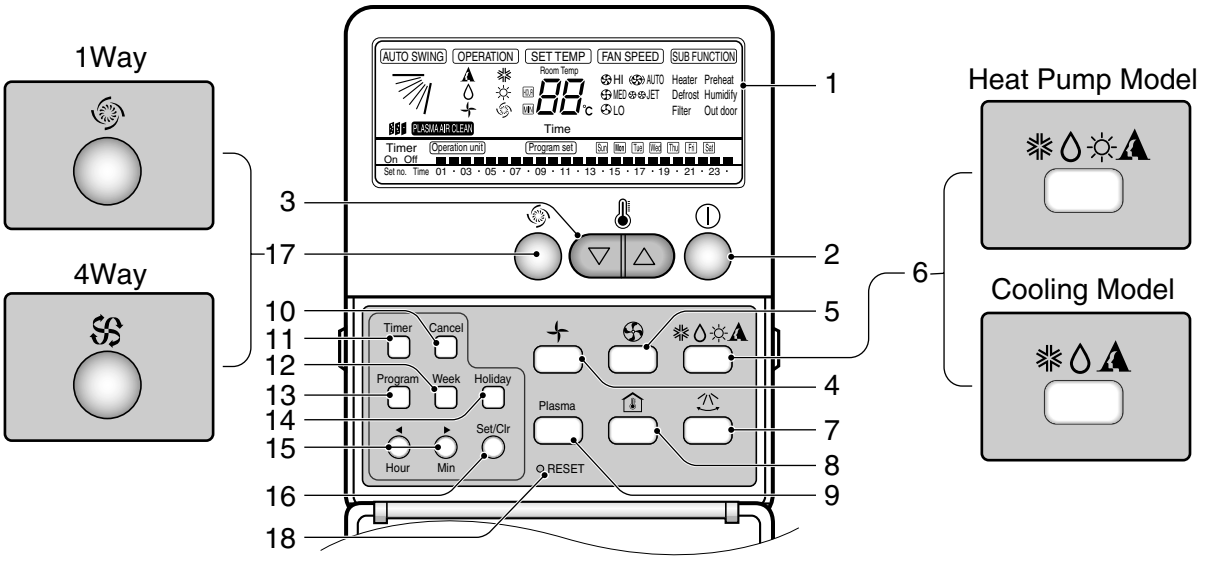
14 Room Temperature Checking Button
Used to check the room temperature.

15 Reset Button
Used to set the current time and clear the setting time.

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CST Type Remote Controller



1 Operation display
Displays the operation conditions.

2 On/Off Button
Operation starts when this button is pressed, and stops when the button is pressed again.

3 Set Temperature Button
Used to set the temperature when the desired temperature is obtained.

4 FAN Operation Button
Used to circulate room air without cooling or heating.

5 Fan Speed (Jet Cool Button: 4 way)
Used to set the desired fan speed or select Jet cool mode.

6 Operation Mode Selection Button
Used to select the operation mode.
- Auto Operation Mode
- Cooling Operation Mode
- Soft Dry Operation Mode
- Heating Operation Mode(except cooling model)

7 Auto Swing Button
Used to swing up and down.

8 Room Temperature Checking Button
Used to check the room temperature.

9 Plasma Air Clean Button (optional)

10 Timer Cancel Button
Used to cancel the timer.

11 Timer Set Button
Used to set the timer when the desired time is obtained.

12 Week Button
Used to set a day of the week.

13 Program Button
Used to set the weekly timer.

14 Holiday Button
Used to set a holiday of the week.

15 Time Set Button
Used to set the time of the day and change the time in the weekly timer Function.

16 Set and Clear Button
Used to set and clear the weekly timer.

17 Swirl Button (4 way)
Used to select swirl mode.
Jet Cool Button (1 way)

18 Reset Button
Used to set the current time and clear the setting time.

※ Display temperature can be different from actual room temperature if the remote controller is installed at the place where sun-rays are falling directly or the place nearby heat source.

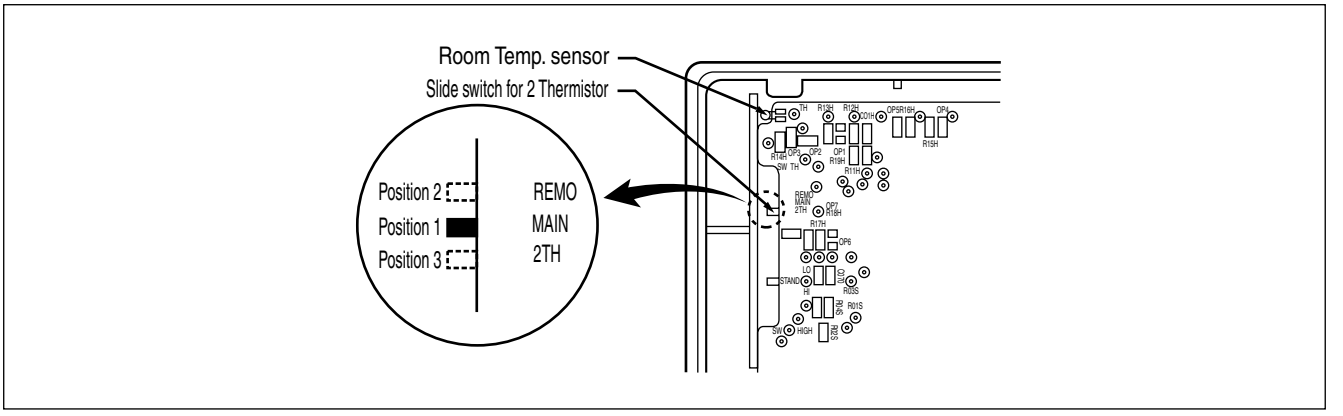
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1) Two Thermistor System

(1) Open the rear cover of the wired remote-controller to set the mode.
(2) Select one of three selectable modes as follows.
- Position 1:
  The room temperature is controlled by the thermistor of the main body.
- Position 2:
  The room themperature is controlled by the thermistor of the wired remote-controller, control the temperature according to the position of wired remote-controller.
- Position 3:
  The room temperature is controlled by lower temperature between the temperature of main body and of remote-controller sensor.

(3) Move the slide switch to set position.



(4) Close the rear cover and check if it works normally.

CAUTION:
- **Select the position after counselling with a customer.**
- **In case of cooling mode, room temperature is controlled by the main body sensor.**
- **To control the room temperature by a wired remote controller, install controller(room temp. sensor) to sense the temperature more accurately.**
- **Maunfactured in the position 1.**

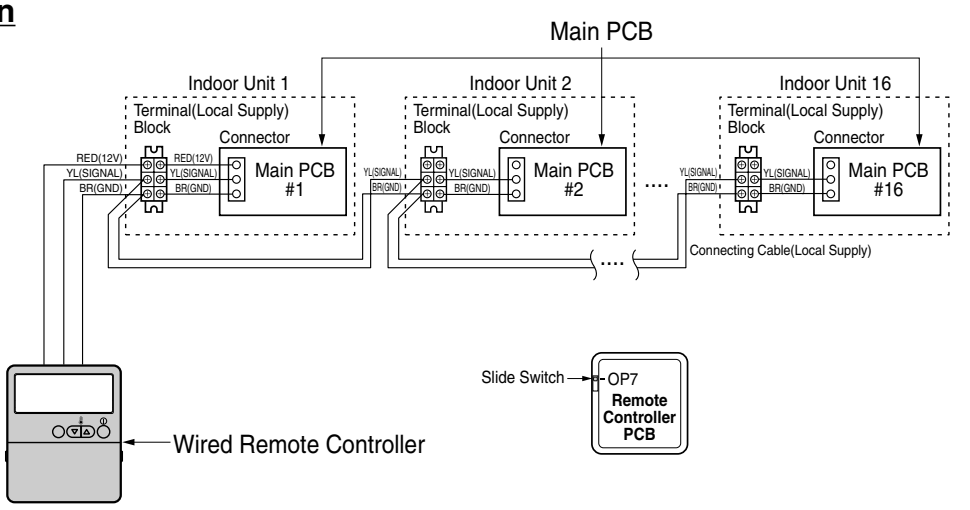
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2) Group Control(Optional Wiring)

- You can use a group control operation after connecting the brown and yellow wire of each air-conditioner.
- Remove the resistor "OP 7" in remote controller.
- It operates maximum 16 Units by only one Wired Remote Controller, and each Unit starts sequentially to prevent overcurrent.

Wiring design



Features

- Use Only One Wired Remote Controller with several air conditioners(max. 16 Units)
- Random starting to prevent overcurrent.

CAUTION: • Be careful not to exchange the color of wires.
• The maximum length of connecting wire should be below 200m(25Ω) on connecting each units.
• Use a wire more than 0.5mm2

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3) E.S.P.(External Static Pressure) Setting

(1) Open the rear cover of the wired remote-controller to set the mode.
(2) Select one of three selectable modes as follows.

■ Without Zone System

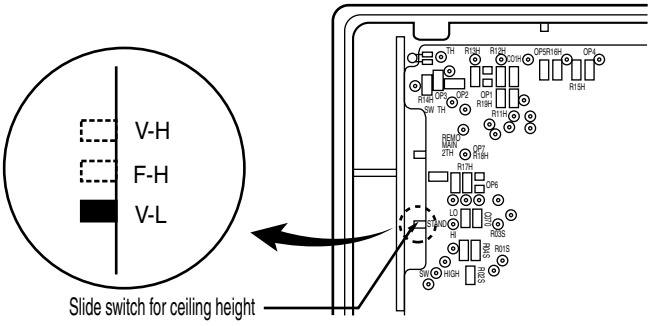
1. Position V-H, F-H:
   • This position sets the maximum E.S.P as a default set.
2. Position V-L:
   • This position sets the minimum E.S.P as a default set.

■ With Zone System

1. Position V-H:
   • Maximum E.S.P setting & Fan speed is varied according to the state of dampers by micom.
2. Position F-H:
   • Maximum E.S.P setting & Fan speed doesn't vary according to the opening & Closing of dampers.
3. Position V-L:
   • Minimum E.S.P setting & Fan speed is varied according to the state of dampers by micom.

* Maximum : 8mmAq
  Minimum : 0mmAq

(3) Move the slide switch to set position.



(4) Close the rear cover and check if it works normally.

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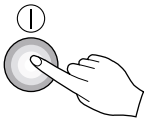
4) How to Set E.S.P?

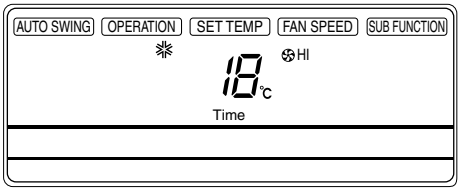
Procedure of RPM change:

Ex) External Static pressure is 4mmAq for Model 36K.

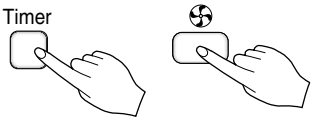
• To protect the unit, compressor is designed to be off during E.S.P. setting.

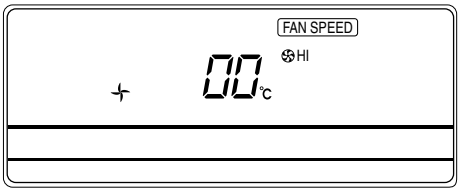
1 Push the"On/Off"button.
The unit will start.



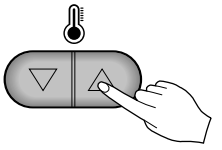


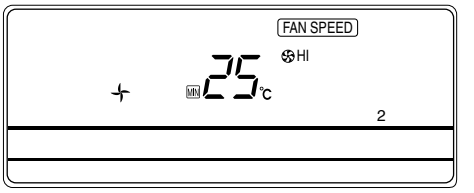
2 Push the "Timer" and "Wind" button simultaneously for more then 3 seconds.





3 Push the "Up" of "Down" button for E.S.P adjustment.
And, adjust the number which you want.(In this example, the number is "225". Refer to the table 1 on the next page.)



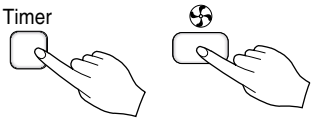


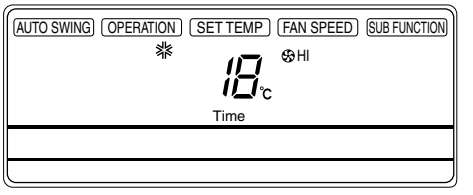
Note: The range of selection is from 1~254. Since, the display is two Digit only.
If the range selection is above 100 then the third digit will appear in the screen as shown.

4 Shift the fan speed mode by pressing the fan speed button.
And then, Adjust numbers of next steps by repeating the stage 3.
(In this example, the numbers are "237" and "243" respectly)



5 Push the "Timer" and "Wind" button simultaneously for more than 3 seconds.
Then, Wind Data is memorized by the EEPROM of the main PCB.





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Duct ESP control table

Chassis	Static Pressure(mmAq)		0	1	2
BT	Ca(Btu/h)	Step(Hi/Med/Lo)	Setting Value		
	9K	8 CMM	220	215	210
		7 CMM	240	235	230
		6 CMM	255	250	245
	12K	10 CMM	175	170	150
		9 CMM	200	190	185
		8 CMM	220	215	210
	18K	14 CMM	170	150	130
		13 CMM	185	165	145
		12 CMM	220	180	160

Chassis	Static Pressure(mmAq)		0	2	4
BP	Ca(Btu/h)	Step(Hi/Med/Lo)	Setting Value		
	9K	10.5 CMM	225	220	210
		9 CMM	245	240	230
		8.5 CMM	254	253	250
	12K	11.5 CMM	210	200	100
		10 CMM	235	230	220
		8.5 CMM	254	215	245

Chassis	Static Pressure(mmAq)		0	2	4	6	8	10
BH	Ca(Btu/h)	Step(Hi/Med/Lo)	Setting Value					
	18K	16.5 CMM	235	230	225	215	180	
		14.5 CMM	245	238	235	230	215	
		13 CMM	254	252	248	245	240	
	24K	18 CMM	220	205	190	170	1	
		16.5 CMM	235	230	220	200	100	
		14 CMM	250	240	235	230	210	

Chassis	Static Pressure(mmAq)		0	2	4	6	8	10
BG	Ca(Btu/h)	Step(Hi/Med/Lo)	Setting Value					
	30K	26.5 CMM	153	150	150	148	130	1
		23 CMM	173	173	175	175	170	155
		20 CMM	195	195	193	193	190	190
	36K	32 CMM	230	230	225	220	150	1
		29 CMM	240	238	237	235	230	220
		26.5 CMM	245	245	243	243	240	240

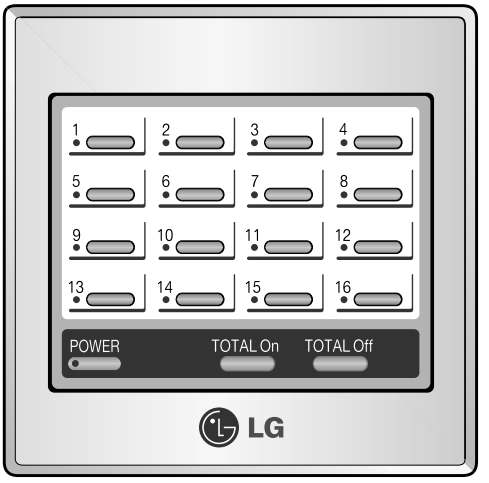
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Control Devices and Function

Simple Central Control

Features

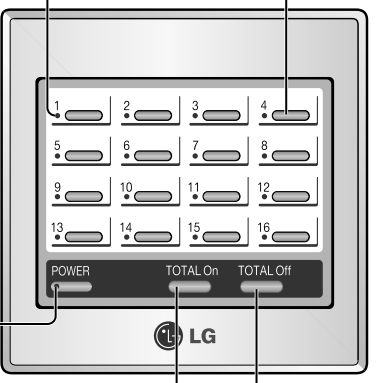


- Easy operation button.
- Independent operation for 16 indoor units each.
- Simultaneous turn ON/OFF for all of indoor units connected.
- Easy change operation mode to cooling or heating
- Set and clear lock-mode for each indoor unit
- Simultaneously set and clear lock-mode for all of indoor units connected.
- Display function for all of indoor units connected.

Term of Each part and Function

On/Off display LED (TOTAL 16EA)
- On pressing individual on/off button, display the present operation state.
  -Operation : green.
  -Stop : off
  -Error mode : blinking

Individual On/Off button
- Control ON/OFF of a unit.



Power display LED
- Indicate the state of DC Power supply in central control unit.
  - On : red(Heating), green(Cooling)
  - Off : no signal
  - Error mode : blinking with red color

TOTAL Off button
- Stop all linked units sequentially.

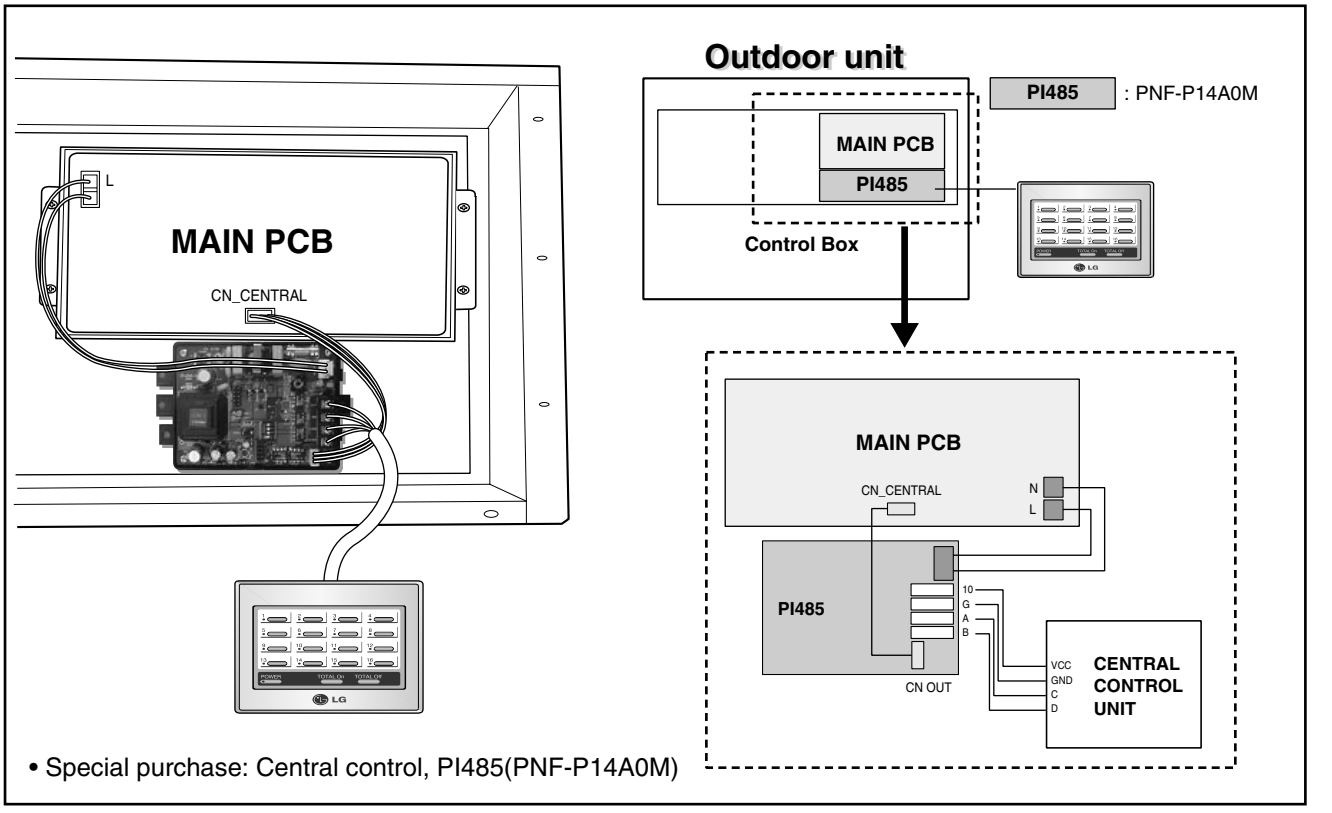
TOTAL On button
- Operate all linked units sequentially.

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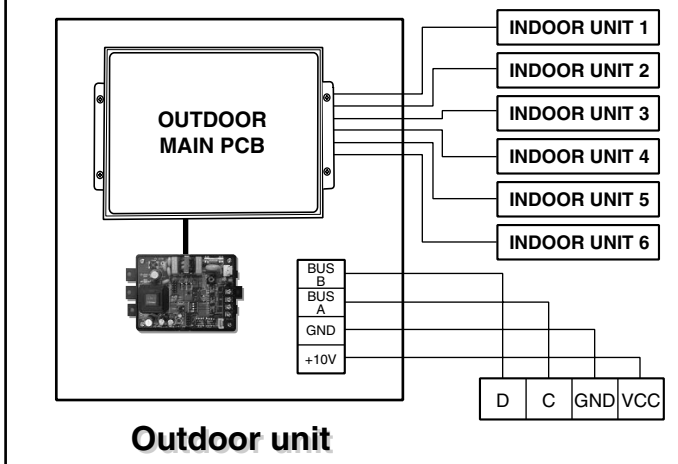
Electrical wiring

■ PICTORIAL VIEW OF THE CONNECTION



• Special purchase: Central control, PI485(PNF-P14A0M)

■ ONE SIMPLE CENTRAL CONTROL CONNECTION

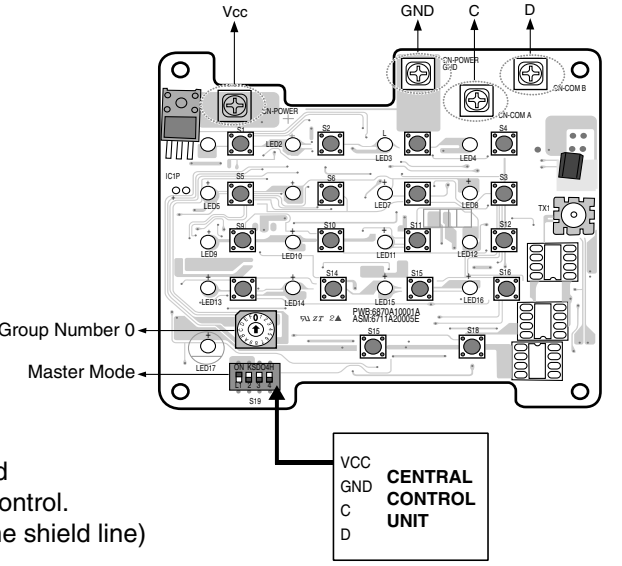


INDOOR UNIT

• SET The Address(Group No. & Indoor No.)

* Refer to The Following sheet

(1.3.5 Indoor unit Address setting method)

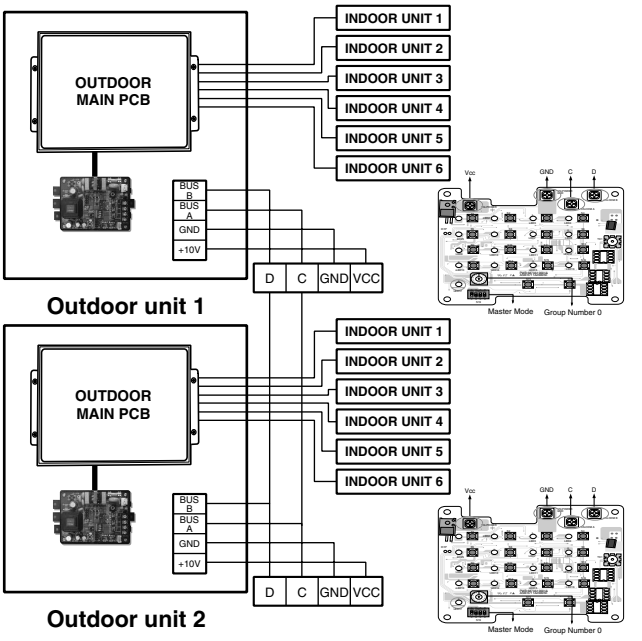


All the connections are to be done as shown above.
A and B are the communication lines for the indoor and
C and D are the communication lines for the Central Control.
➡Use two shield lines for C/D connecting line.(Earth the shield line)

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■ 2 OR MORE SIMPLE CENTRAL CONTROL CONNECTION



<Group Number 0>

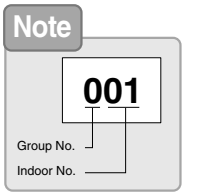
Master DIP SWITCH

1. Adhere the PI485 Module(For connecting central control) to the Control Box.
2. Connect the PI485 Module to central control.
3. In the case of connecting two more than central control, set the Master/Slave mode and then connect each communication lines(C,D) <Refer to above fig>.

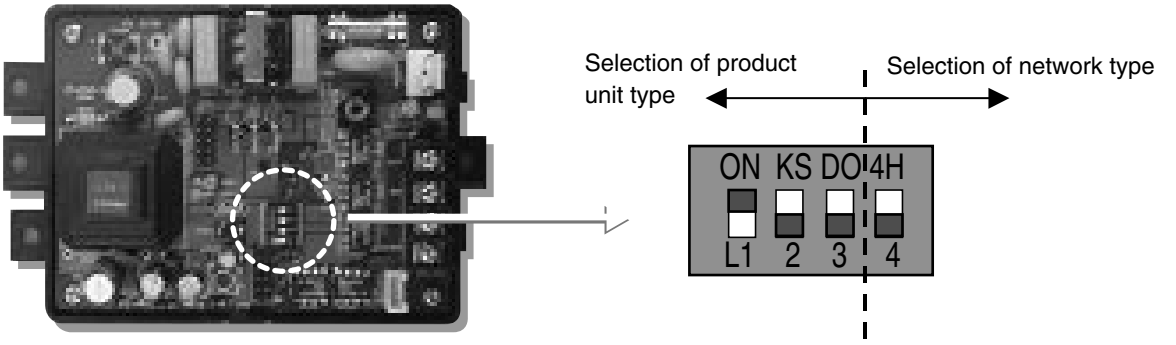
*Special purcharse: Central control(P/No.:4995A20105F),
PI485 Module(PNF-P14A0M)
* It can be added to 15 Central controls for the slave control.

<Group Number 1>

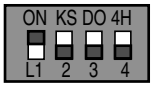
Slave DIP SWITCH



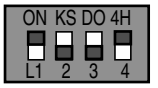
PI485 setting method(LG Aircon Network unit)



■ Settings method of TPS Inverter Multi Type



→ 1 ON + All OFF : Connection of "TPS Inverter Multi Connection + General Central Controller" Case.



→ 1,4 ON + All OFF : Connection of "TPS Inverter Multi Connection + Central Controller applied 「LGAP」" Case.

* LGAP : LG Air conditioners Protocol

• Function of LG Network

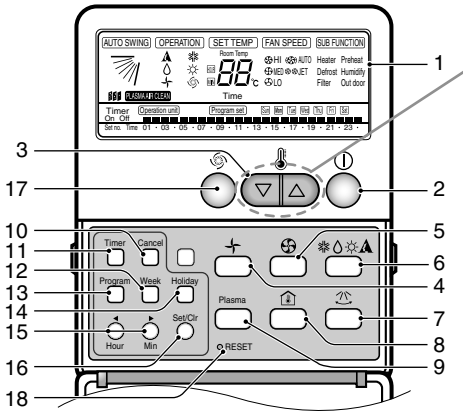
- It is possible to connect the network of LG air conditioners and to connect various contents of the network system, which is simple, deluxe and PC central control.
- Please refer to "LG Control System Manual" about the detail functions and the products possible to network.
- As the Interface for networking, PNF-P14A0M/R/C is applied.

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Indoor Unit Address setting Method

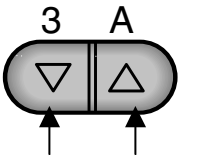
Using Wired Remocon



Heat Pump Model

1. Press 13(program) and 16(set and clear) key more than 3 second then "Address Setting Mode" starts.
2. Set the address of indoor unit by using "Temperature setting" key.
   ■ Range of address : 00 ~ FF

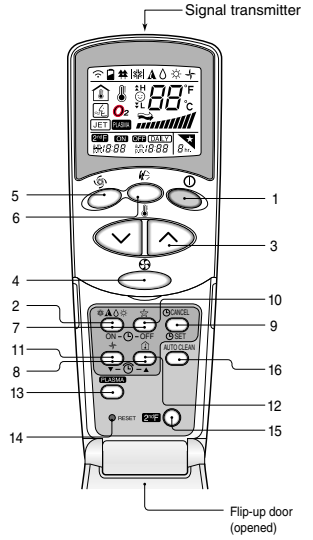
Ex)



Group No. Room(Indoor Unit) No.

3. After setting address, press 13(program) and 16(set and clear) key more than 3 second then "Address Setting Mode" is finished.

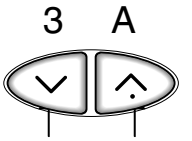
Using Wireless Remocon



1. Address setting Method

1) Press 5(Jet Cool) & 13(Reset) key at the same time more than 3 seconds then "Address Setting Mode" starts.
2) Set the address of indoor unit by using "Temperature setting" key.
   ■ Range of address : 00 ~ FF

Ex)



Group No. Room(Indoor Unit) No.

3) After address setting, pressing 1(On/Off) key, address setting is finished. The address that is set is displayed on a display window of indoor unit.
* notice : The mothod of display and time is different according to indoor unit type.
4) If the remote control is reset, normal mode starts.

2. Address Monitoring

1) Press 6(Chaos Swing) & 13(Reset) key at the same time then "Address Monitoring Mode" starts.
2) At the address monitoring mode, pressing 1(On/Off) key, The address that is set is displayed on a display window of indoor unit.
   * notice : The mothod of display and time is different according to indoor unit type.
3) If the remote control is reset, normal mode starts.

* Notice : Confirm that wired and wireless remote control are able to select the address or not.

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Test run method

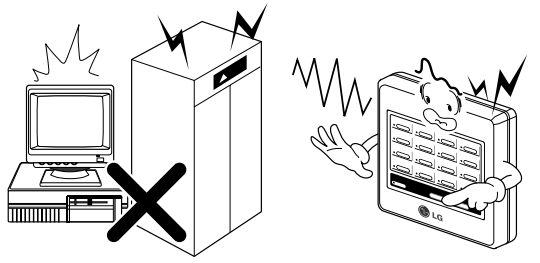
1. Set the wiring of system and indoor unit.
2. Apply power to the setting.
3. Do auto addressing to the outdoor unit.
4. After addressing, initialize the central controller(Manual initialize: Total on + total off + 16 key).
   • Cooling: Setting basically(Total On + Total Off + 4 key)
   • Heating: Total On + Total Off + 8 key ➡ Red power lamp 'On'
6. Check up On/Off with a related indoor key pressing.

Installation

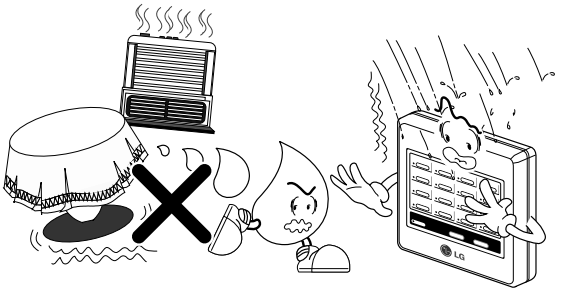
■ CAUTIONS

Do not install in this area

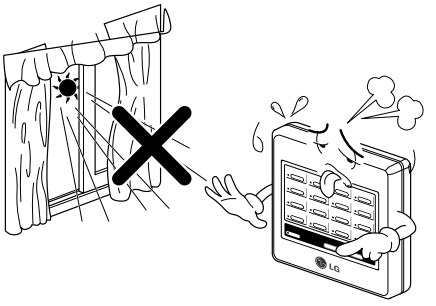
• Don't install near elevator, computer, automatic door. (High noise area).



• Don't install near high moisture & high oscillation area.

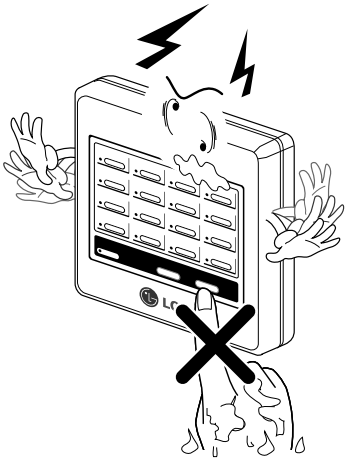


• Don't install near direct sunlight or heat source.

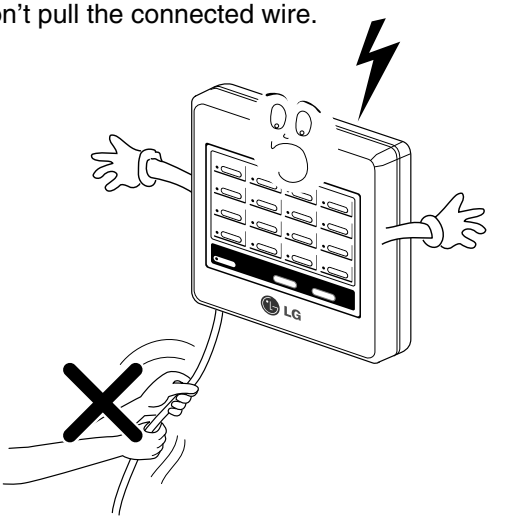


Keep in mind

• Don't operate with wet hands.



• Don't pull the connected wire.

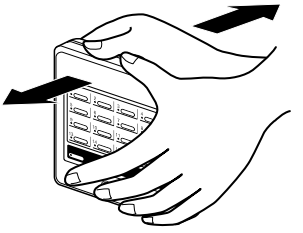


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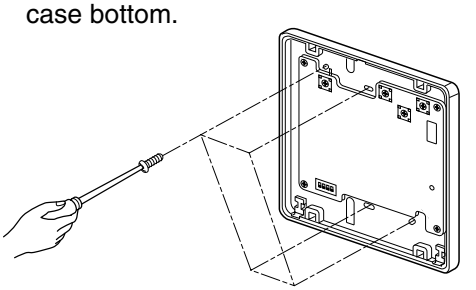
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■ INSTALLATION ORDER

1. Remove upper & lower case.



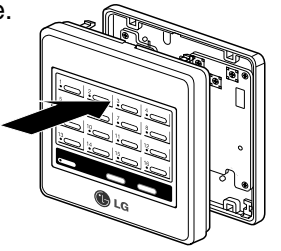
2. Fixate screw in the holes of the case bottom.



3. For Dip switch, and Rotary switch setting, refer to the page “How to Install”.

4. For wiring connection, refer page “Installation Procedure”

5. Adjust the upper case in accordance with back case while assembling as shown in the figure.



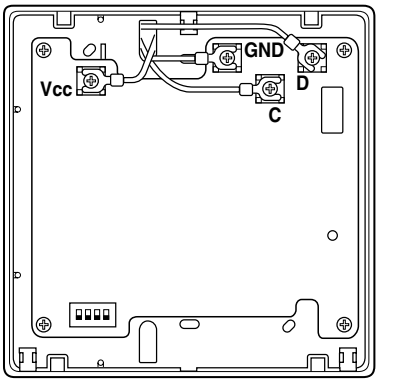
6. Check the operation by supplying the power.

■ LINK OF CONNECTING WIRE

1. First, separate the front case from rear case of controller, connect terminal C, D,Vcc, GND on PCB referring to the following table.

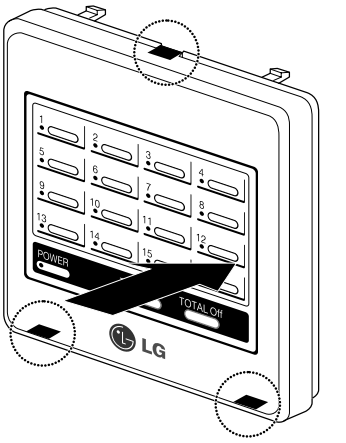
Maximum length of connecting wire

- Between controller and outdoor unit : 220m(25Ω)
- Between controllers : 220m(25Ω)



Out door unit Terminal Block	Wire Color	Central Control Terminal
GND	← BLUE →	GND
Vcc	← Red →	Vcc
C	← Brown →	C
D	← Yellow →	D

2. After attaching the supplied wire to terminal, link the connecting wire. If necessary, Cut the indicated part of front case to draw the lead wire.

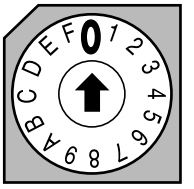


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■. ROTARY SWITCH SETTING(INSTALLATION FOR 2 OR MORE SIMPLE CENTRAL CONTROL)

The setting of Group Number in the Central Control is done by the rotary switch as shown in the figure below.

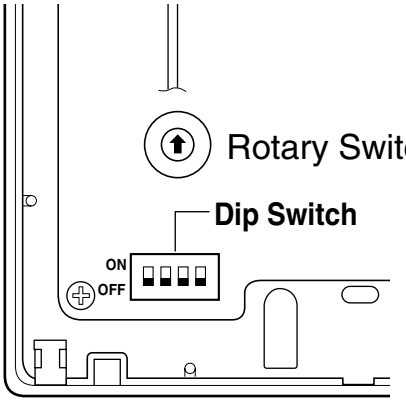


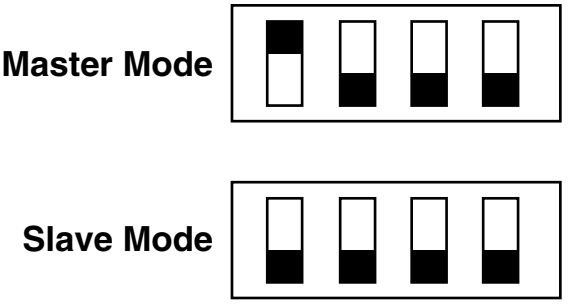
It is possible to set 0~15 Group(Total 16 Groups). All the numbers on the rotary switch represent the different Group Numbers. By changing the knob we can set rotary switch to the group number we want to control. The above fig. Shows the control of group number “0”. Similarly we can control all the 16 Groups.

■. DIP SWITCH SETTING(INSTALLATION FOR 2 OR MORE SIMPLE CENTRAL CONTROL)

CAUTION

- Dip switch is now used only for the setting of master or slave mode.(In the case of two more than central controls.)
- Set one to Master, the others to slave.

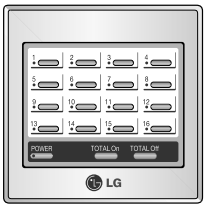




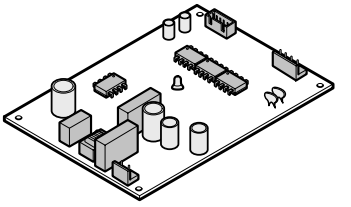
■. ACCEASSORY PARTS

Central control and sub PI485(with wire ass'y) should be purchased as optional.

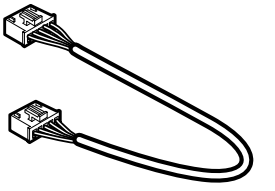
Central Control(1EA)



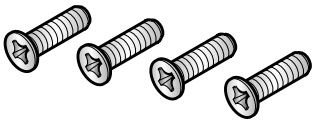
PI485(PQNFP14A0M)



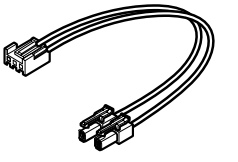
Wire Assembly 1



Screw(4EA)



Wire Assembly 2



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Deluxe Central Control

2.1.1 Summary

Deluxe Central control is a product available for individual and integrated monitoring and control of maximum 256 of TPS Inverter Multi air conditioner systems. Specially, operation status of the individual air conditioner can be particularly checked. Individual or simultaneous operation of the air conditioner, operation mode, wind quantity, user locking and temperature setup are also available.

Specially for this system, installation is simple and user's environment is excellent. Central control is available by a simple manipulation. In addition, this system have the self-battery built-in and can stably operate in spite of outside disturbance such as temporary power failure. This system has no need of additional peripheral equipment like UPS (Undisturbed Power System) and AVR to be purchased for stability when composing the existing PC central control system, and has so attractive advantage in installation costs.

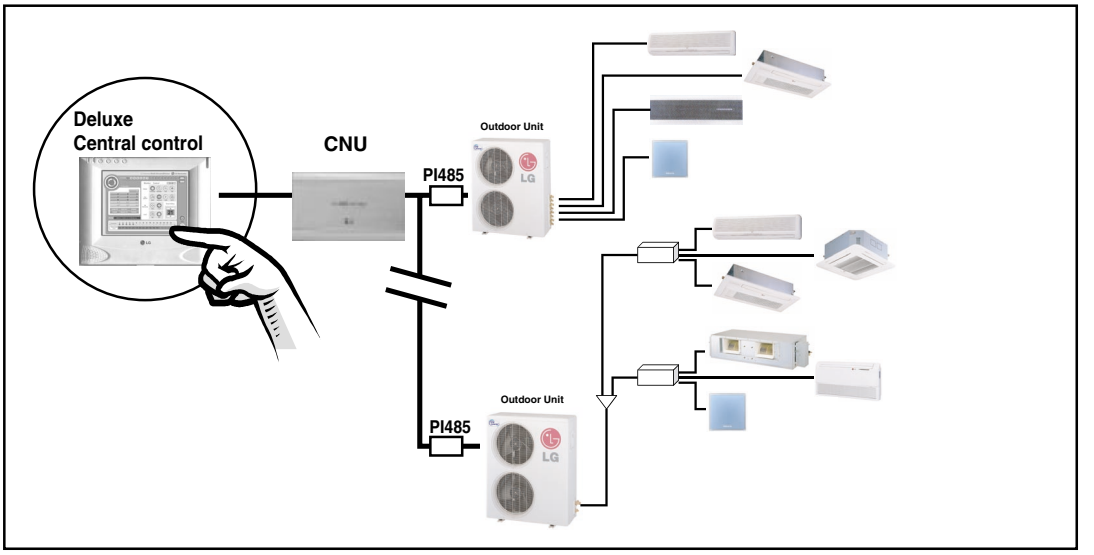
Using the Deluxe Central control enables the management room to setup lock of each air conditioner and prevent indoor control of the individual air conditioner and restrain the necessary use. In case of releasing the lock, you may control the system by using the wire/wireless remote control at the place where the individual air conditioner is installed.

Setup of a weekly schedule is available and detailed schedule of the individual air conditioner can be easily setup through the GUI. Details of schedule setup can be immediately checked with a graph. This system is a product to meet energy saving and convenience at the same time at a place like a school by using this schedule function.

Depending on installation environment, location and conditions of use, you can setup groups. With this setup, more efficient operation at the center is available. Setup without requiring other equipment is available by using the GUI and change by the consumer is also available after installation.

You can reduce development time to configure special system upon the request by the consumer and conveniently this system by using the touch panel.

Where needs from a new customer occur or where purchase of additional air conditioner is done, the Deluxe Central control can be smoothly installed.



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Major Characteristics



Figure 2) Deluxe Central control

1. Individual/Integrated Operation/Monitoring

■ You can identify operation status of the air conditioner, operation mode, wind quantity, wind direction, locking, temperature setting and error, etc by selecting the installed air conditioner through individual selection, group selection or all selection. Individual setup and operation of the detailed functions are available. Therefore, managing with Deluxe Central control installed at the control room at a building where a number of air conditioners are installed, is a convenient way.

2. Group Management

■ Group management for the installed air conditioners is available. Group can be seperated by their nature, location and size of each air conditioner which enables convenient use. In addition, allotment of respective name to the setup group allows further intuitive management.

3. Self-diagnosis Function

■ The air conditioner installed can self-diagnosed its error status and then transmits the result to the central control. Therefore, a rapid countermeasure against failure of the air conditioner allows easy management and increases the usage life of air conditioner.

4. Semi-permanent Life / Convenient Maintenance

■ Since the Deluxe Central control is designed for the semi-permanent use, this system can be used semi-permanently after installation, different from the existing PC or a large central control system requiring a continuous management due to the life of peripheral and other PC.

5. Management Costs Down

■ In absence of the Central Control System, the manager controls a number of air conditioners. In addition, even if management was done at the center, there is only function of on/off management at best and thus 2 or 3 building managers were actually required. However, manipulation of all functions can be now done at a control room for the Deluxe Central control and so a manager can easily control all air conditioners. Automatic operation is also allowed without a manager, by using schedule function.

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6. Convenient GUI / Touch Screen

■ Not requires special education for using the Deluxe Central control, conveniently used only by pressing the buttons on the screen, and its function can be understood with intuitive pictogram. Especially schedule setting is done by simply by dragging, different from the existing system requiring to press the button by more than average 30 times to enter a schedule.

7. Schedule Automatic Operation Management / Energy Saving

■ For the Schedule Automatic Operation, weekly setting is available. Enlisting of the schedule exception processing schedule (national holiday) is done for a year prevents the air conditioner from an unnecessary operation of air conditioner, allowing the system to be controlled at the center so that it can be only used for a necessary case and enabling to obtain excellent energy saving effect. Fixed schedule places like elementary school, middle school, high school and college or university will get its excellent working effect.

8. Power Failure Backup Function / Powerful Stability

■ For the existing Central Control System, additional purchase of expensive UPS equipment in provision for a temporary power failure must be done in the past but for the Deluxe Central control, since the self-power failure compensation battery is built-in, power is automatically converted by maximum 2 hours. Therefore, there is almost no malfunction due to a temporary power failure because stable operation is available.

9. Mobility

■ A wireless radio system may be installed at the Deluxe Central control, it will control the Airconditioners directly while going around the building with the wireless radio system and its self-battery function (100 m where there is no obstacle).

10. Convenient Installation

■ This system can be freely fixed to the wall surface because of its small size, light weight and thin thickness. It can also stood up on the desk by using, its dedicated cradle. It is not subjected to spatial restriction in installation space and location since this system communicates on the basis of the I-GW and the Ethernet.

11. Stable Date Storage/Backup

■ Setup information is saved as it is, even if no power is supplied then also all data is saved in the built-in flash memory.

12. Scalability

■ Scalability of the system is easy in case of additionally purchasing equipment since scalable slot such as USB, Serial (RS-232c), PCMCIA, CF Type is prepared. This system is designed considering sufficient scalability in provision for special request by the customer.

13. Upgrade

■ Additional installation of a new program is available via the CF memory card and the existing program can be upgraded to a new program. Using such upgrade function always enables to construct a modern type of Central Control System.

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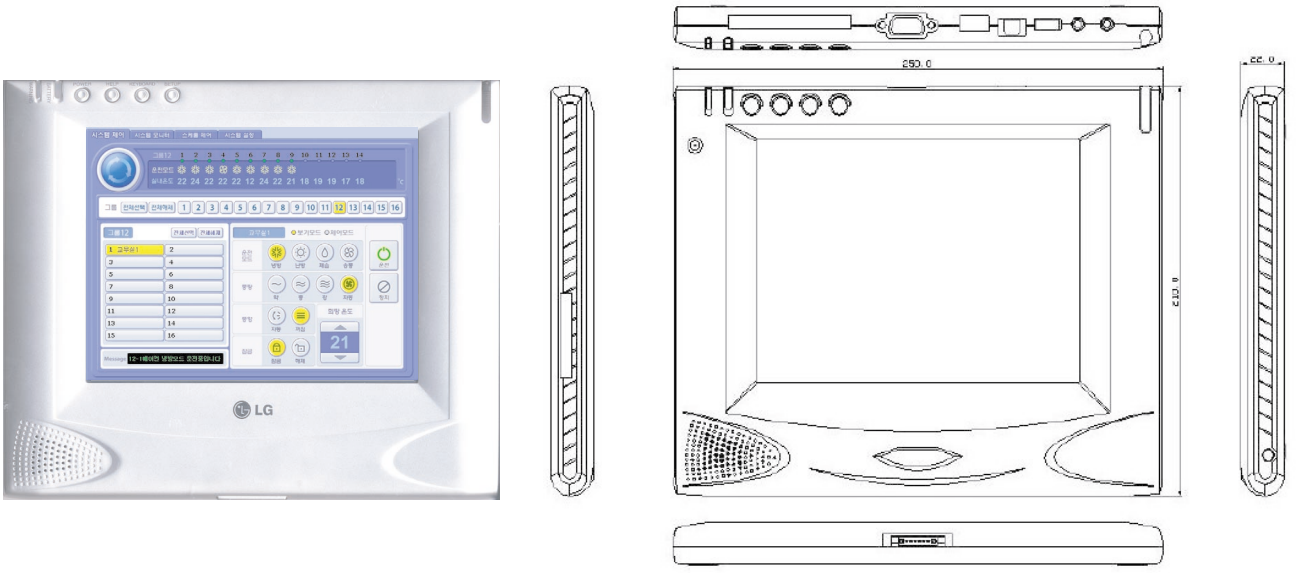


Figure 3) Deluxe Central control

Table 1) Comparison Between Central control Characteristics

	Internet Central control	PC Central control	Deluxe Central control
Dedicate PC	Non-required	Required	Non-required
Configuration	User S/W	User S/W, Engine S/W	Main Body of Web Pad Deluxe Central control
Position of program	Download to i-GW	Installation	Built-in
Max. installation set numbers	256sets (Less than 128 sets recommended)	256sets[1)]	256sets
Remote control	Available	-	-
Control & monitoring	Available	Available	Available
Schedule management	-	Available	Available
System setup	Available(Configure file modification)	Available	Available
System monitoring(overview)	-	Available	Available
Users lock	Available	Available	Available
Upgrade	Available	Available	Available
Touch screen	-	-	Built-in
Built-in Flash DB (backup)	-	-	Built-in
Wireless LAN (movable)	-	-	Available (option)
Non-interruption device	-	Separately add	Built-in
Requirements	Browser supporting JAVA	JVM (provided by MS)	-
Life	Semi-permanent	Peripheral devices & PC life	Semi-permanent

1) For the PC central control, installation set numbers may respond up to 1024 sets upon user's request.
2) JVM (Java Virtual Machine) is basically installed at the Windows but some versions of Window XP may be manually installed.

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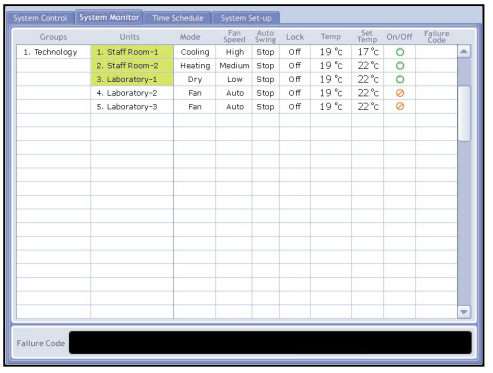
Major Function of Deluxe Central Control



[System Control]

To check general monitor function of the air con central control system such as selection of group and air conditioner, air conditioner control monitor function etc.

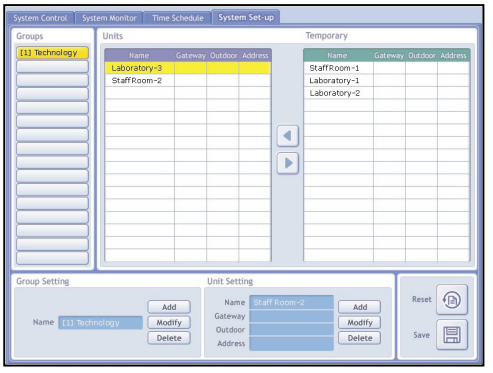
PQCSW501A0, PQCSW502A0



[System Monitor]

To check the ctual time status of all air conditioners.

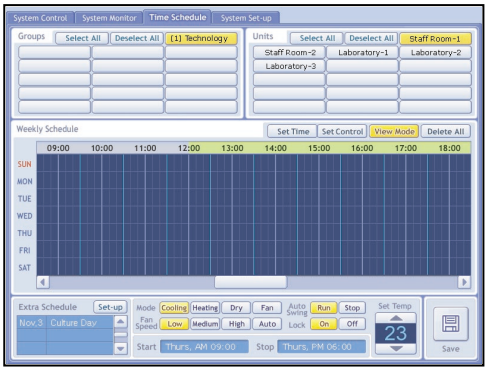
PQCSW501A0, PQCSW502A0



[System Set-up]

To manage the air conditioner through grouping and record setup of group and installation position, etc.

PQCSW501A0, PQCSW502A0



[Time Schedule]

Setup of a weekly schedule for all, group and individual air conditioner enabled operation of the system. Processing through enlist of extra schedule for a year is available.

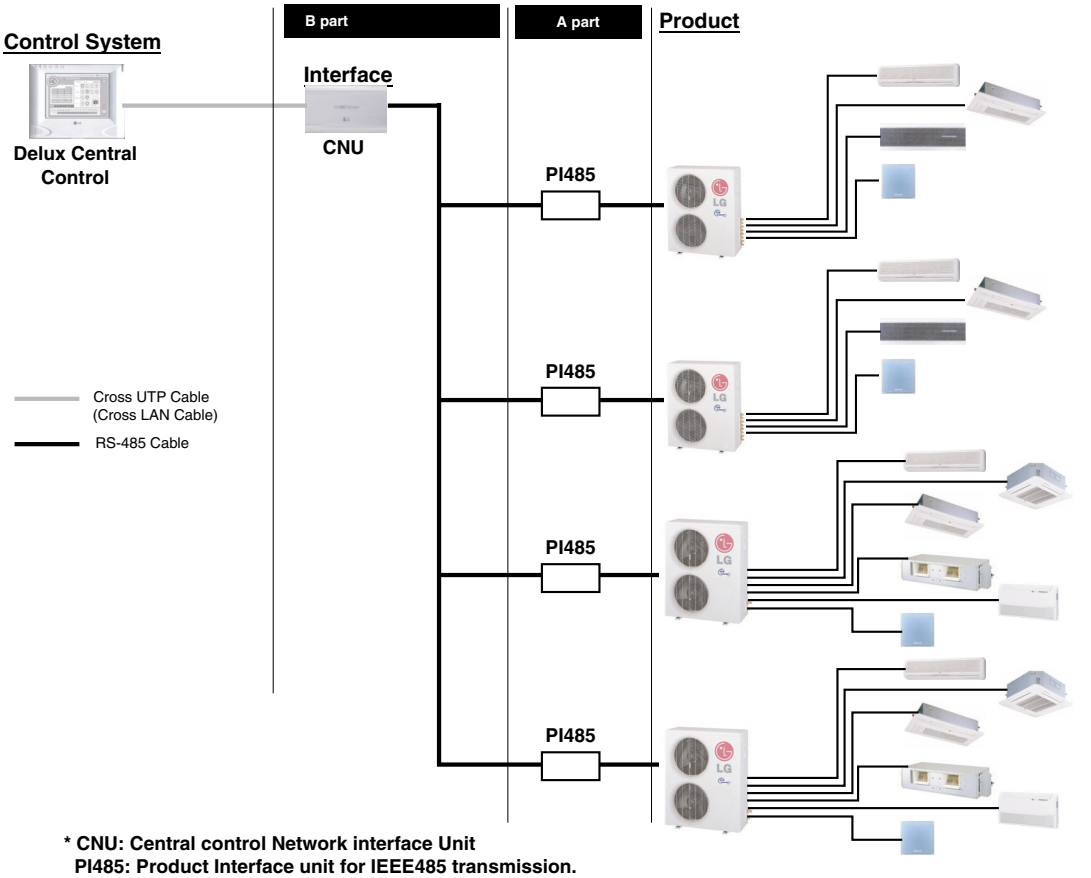
PQCSW502A0

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System Configuration

Scenario 1 : In case of not using Internet access function



*** CNU: Central control Network interface Unit**
PI485: Product Interface unit for IEEE485 transmission.

Main Specifications

1. Control System

- Centralized control of maximum 256 indoor units
- Simple Touch PAD method
- GUI setting considering convenience of use
- Power failure compensation with independent Battery Built-in (Max. 2 hours)

2. CNU

- Combination of maximum 8 outdoor units
- 485 to Ethernet Converter Built-in

3. PI485

- 1 pcs per outdoor units

***Note:* - GUI(Graphic User Interface) may be changed without any notice, for improvement or options.**

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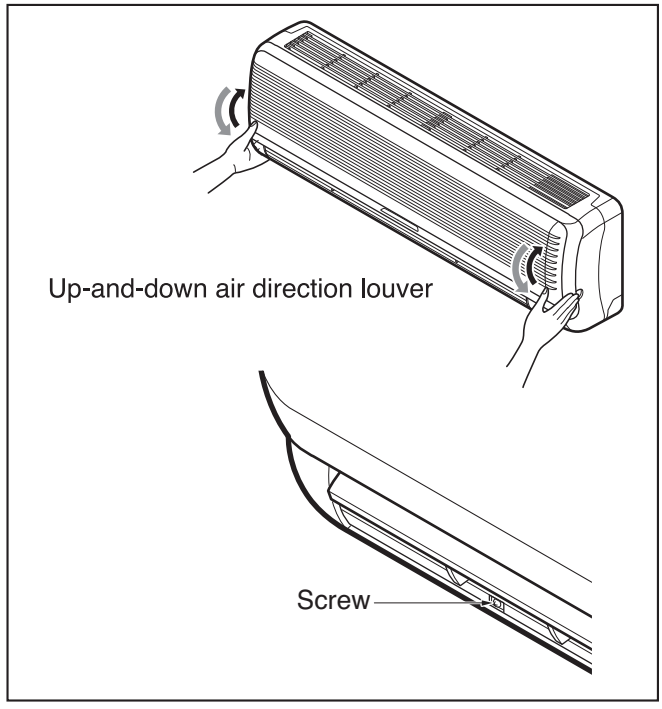
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Disassembly of the parts (Indoor unit)

Indoor unit

1. Split Type Indoor unit

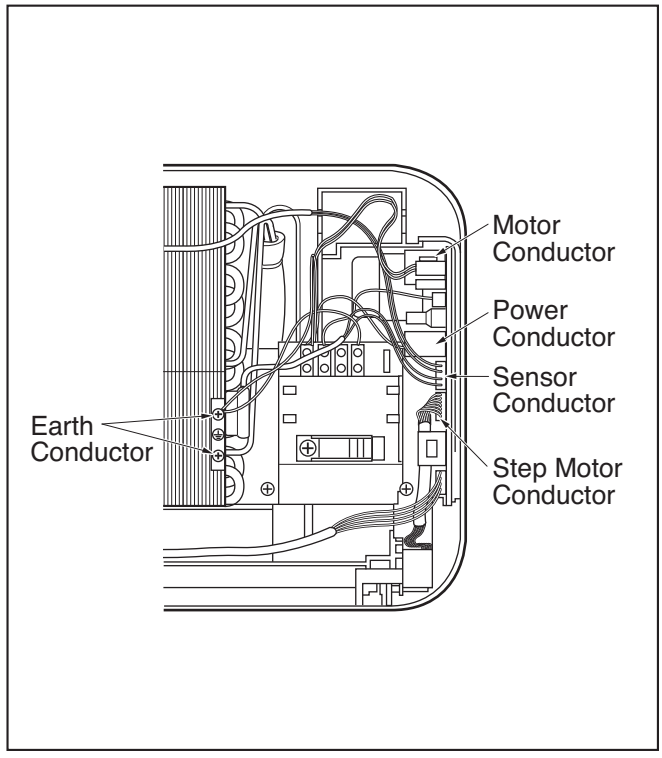
CAUTION: Disconnect the unit from power supply before making any checks.
Be sure the power switch is set to "OFF".



To remove the Grille from the Chassis.

- Set the up-and-down air discharge louver to open position (horizontally) by finger pressure.
- Remove the securing screws
- To remove the Grille, pull the lower left and right side of the grille toward you (slightly tilted) and lift it straight upward.

1) To remove the sensor, housing connect, earth conductor & step motor conductor with sensor holder, Motor, Evaporator & P.C.B.

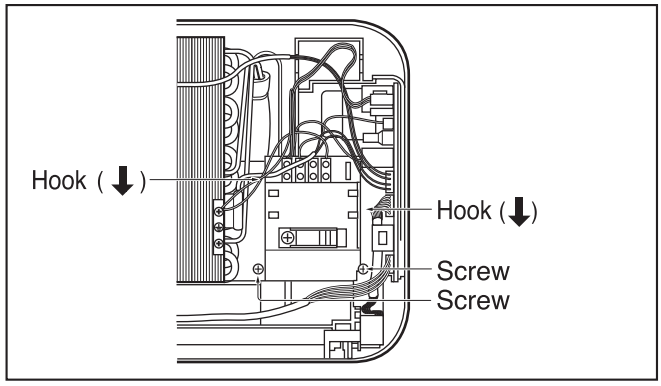


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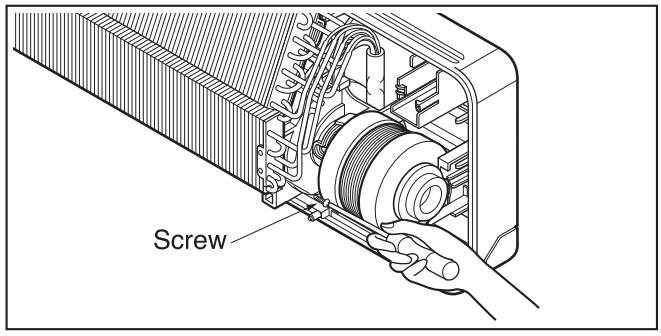
2) To remove the Control Box.

- Remove securing screws.
- Pull the control box out from the chassis carefully.



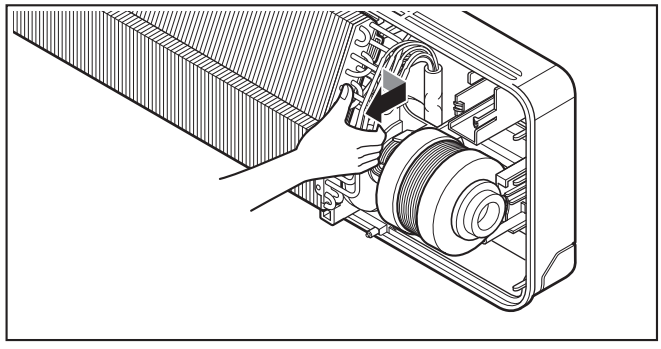
3) To remove the Discharge Grille.

- Pull the discharge grille out from the chassis carefully.



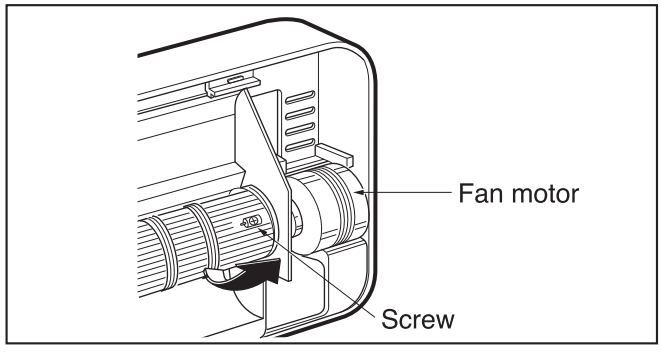
4) To remove the Evaporator.

- Remove screws securing the evaporator and the holder eva.
- Unhook the tab on the right inside of the chassis at the same time, slightly pull the evaporator toward you until the tab is clear of the slot.

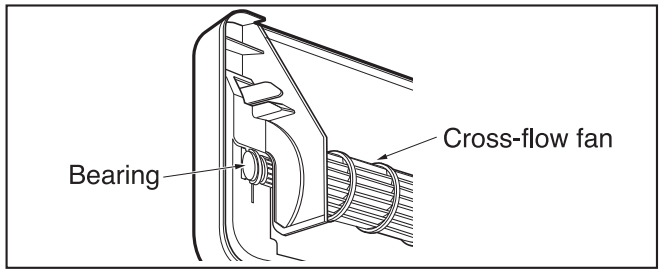


5) To remove the Cross-Flow Fan

- Loosen the screw securing the cross-flow fan to the fan motor (do not remove).
- Lift up the right side of the cross-flow fan and the fan motor, separate the fan motor from the cross-flow fan.



- Remove the left end of the cross-flow fan from the self-aligning bearing.

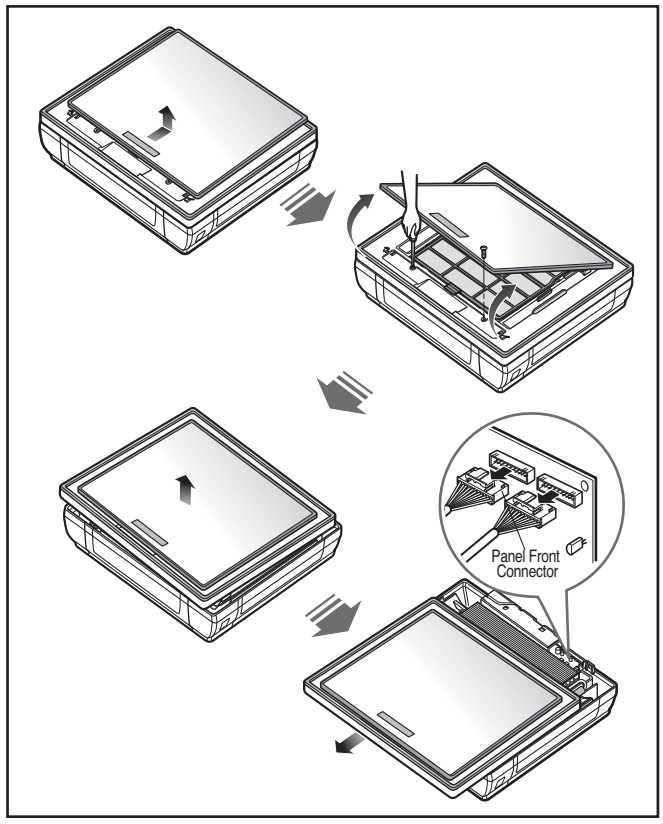


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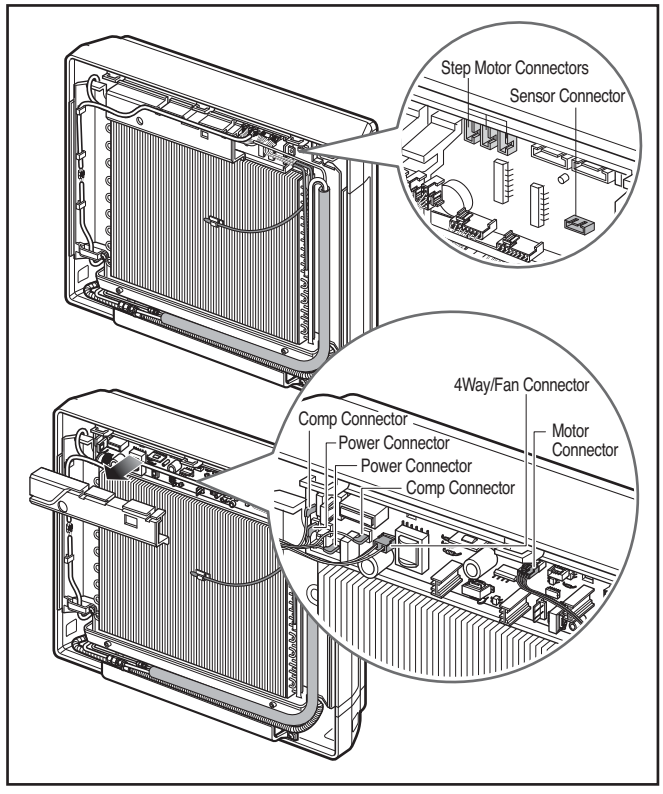
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2. Art Cool Type Indoor Unit

CAUTION: Disconnect the unit from power supply before making any checks.
Be sure the power switch is set to "OFF".



1. To remove the Grille from the Chassis.
- Pull the grille bottom, the remove 2 securing screws.
- Lift the both lower parts of panel front.
- After pull down this panel a bit, separate connecting wire with product.

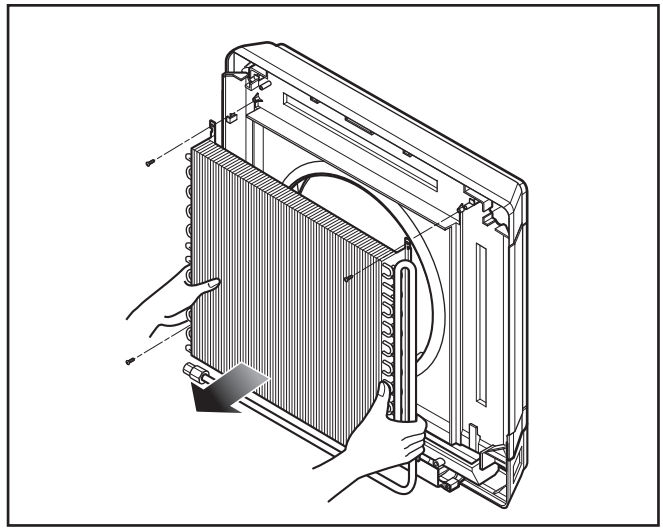


2. To remove the Control Box.
- Before removing the control box, be sure to disconnect the wires from PWB.
- Pull the cover control out from the control box and disconnect other wires.
- Remove securing screws.
- Pull the control box out from the chassis carefully.

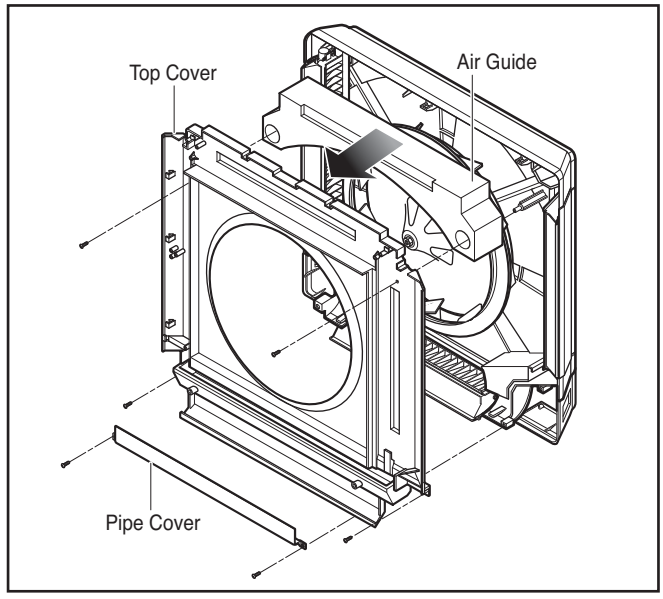
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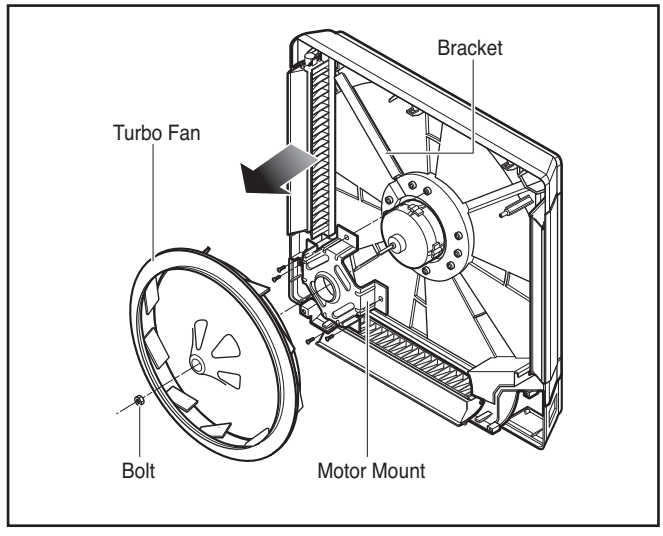
3) To remove the Evaporator.
- Remove 4 screws securing the evaporator.
- Pull the evaporator out from the chassis carefully.



4) Before removing the Turbo Fan.
- Remove the securing screws from the chassis.
- Pull the pipe cover, top cover and the air guide.



5) To remove the Motor.
- Remove the securing bolt from the motor shaft.
- Pull the fan out from the motor shaft.
- Remove 4 screws securing motor mount from the chassis and lift up the motor mount and the bracket.

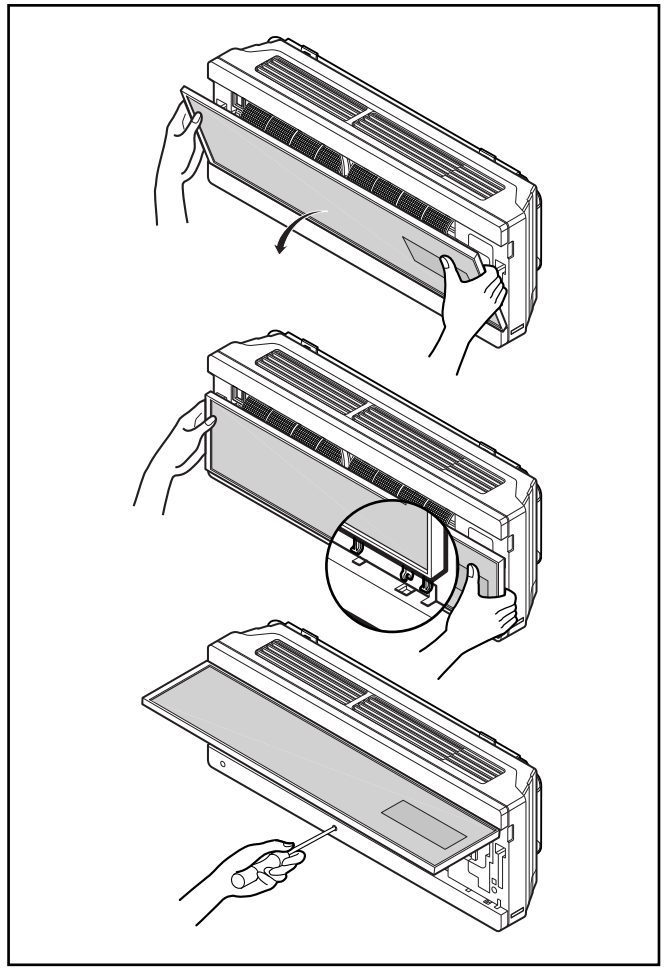


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3. Art Cool Deluxe Type Indoor Unit

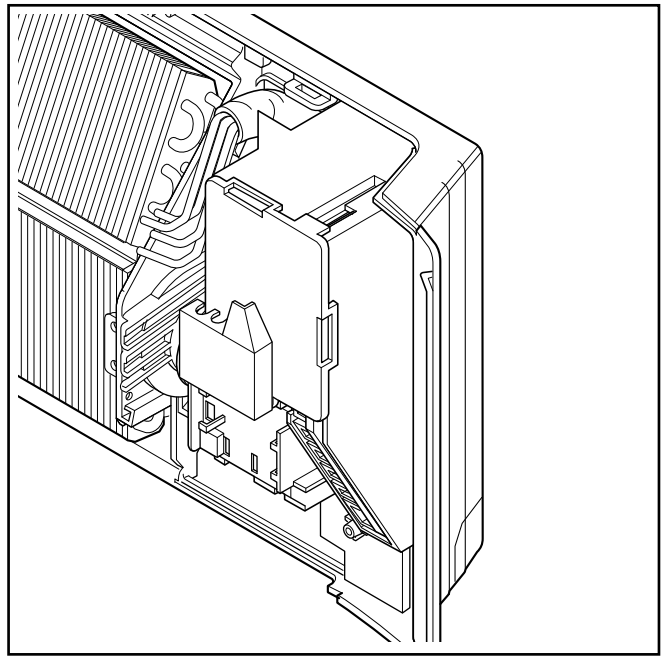
CAUTION: Disconnect the unit from power supply before making any checks.
Be sure the power switch is set to "OFF".



To remove the Grille from the Chassis.

- Hold up Inlet Grille Horizentally.
- To remove the Grille, pull the lower left and right side of the grille toward you (slightly tilted) and lift it straight upward.
- To seperate connecter assembly and than to remove Inlet Grille assembly.

1) Before removing the control box, be sure to take out the wire screwed at the other end.

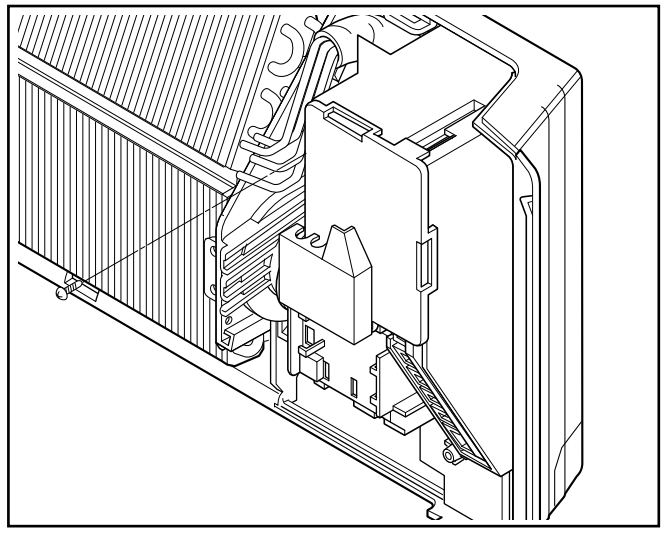


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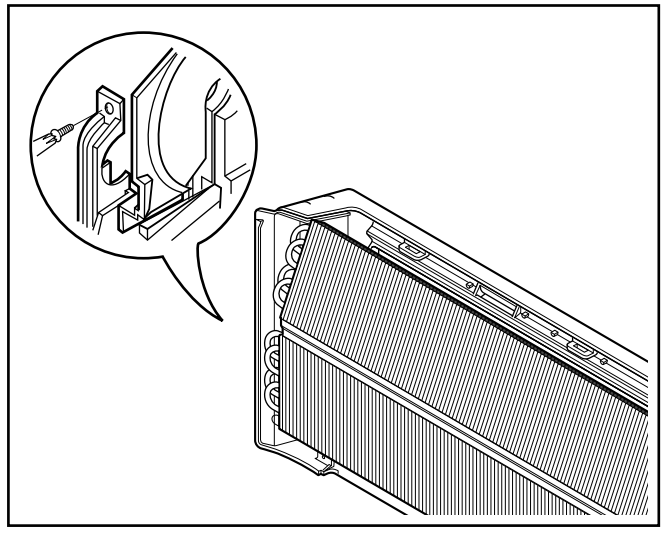
2) To remove the Control Box.

- Remove securing screws.
- Pull the control box out from the chassis carefully.



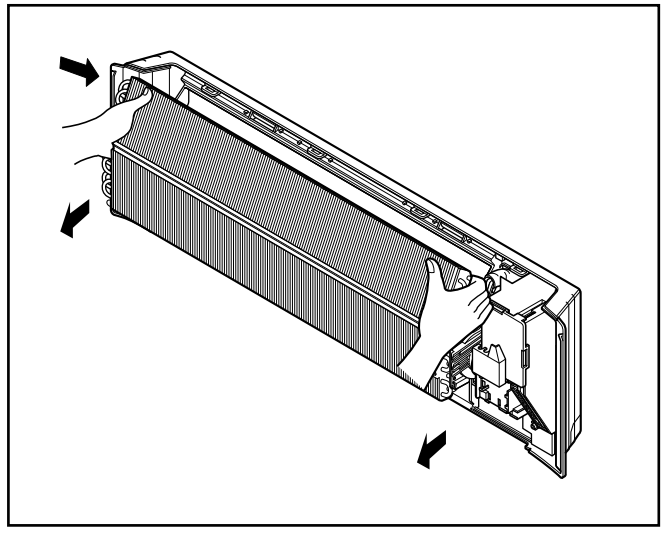
3) To remove the Discharge Grille.

- Unhook the discharge grille and pull the discharge grille out from the chassis carefully.



4) To remove the Evaporator.

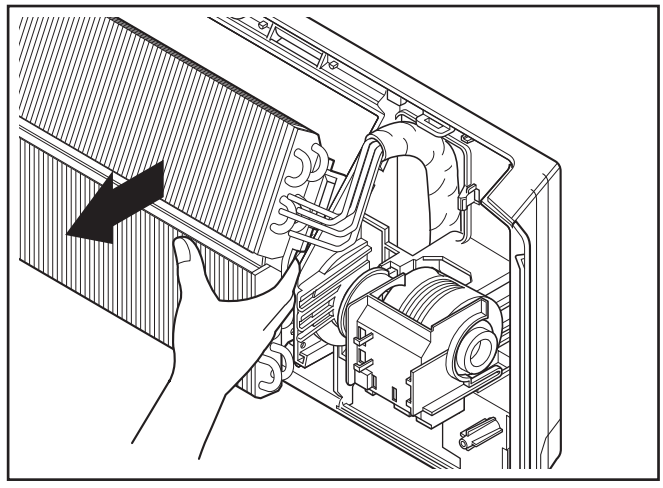
- Remove 3 screws securing the evaporator(at the left 2EA in the Eva Holder, at the right 1EA).



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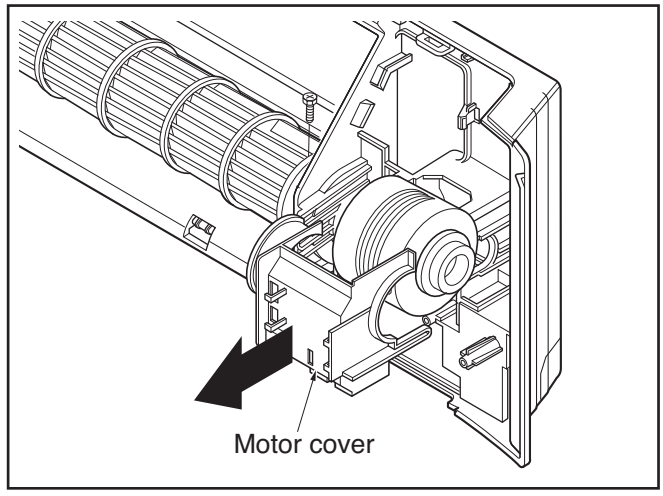
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- Unhook the tab on the right inside of the chassis at the same time, slightly pull the evaporator toward you until the tab is clear of the slot.



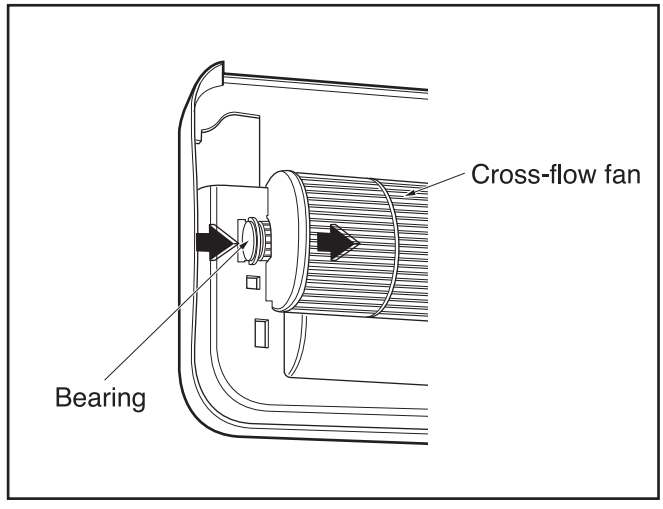
5) To remove the Motor Cover

- Remove 2 securing screw.
- Pull the motor cover out from the chassis carefully.



6) To remove the Cross-Flow Fan

- Loosen the screw securing the cross-flow fan to the fan motor (do not remove).
- Lift up the right side of the cross-flow fan and the fan motor, separate the fan motor from the cross-flow fan.



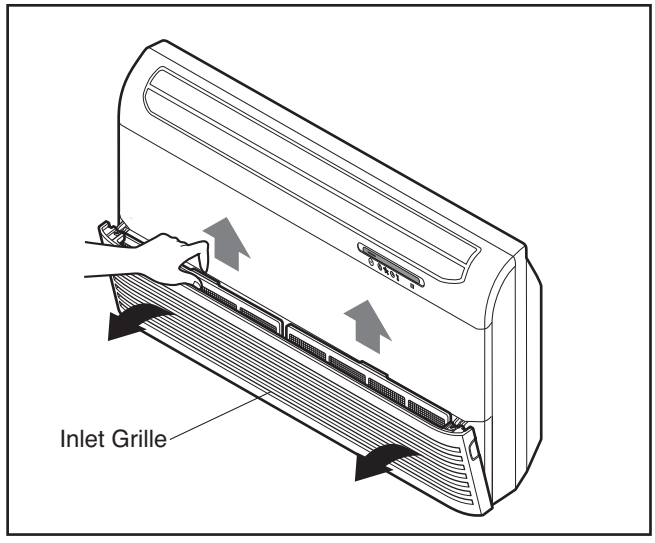
- Remove the left end of the cross-flow fan from the self-aligning bearing.

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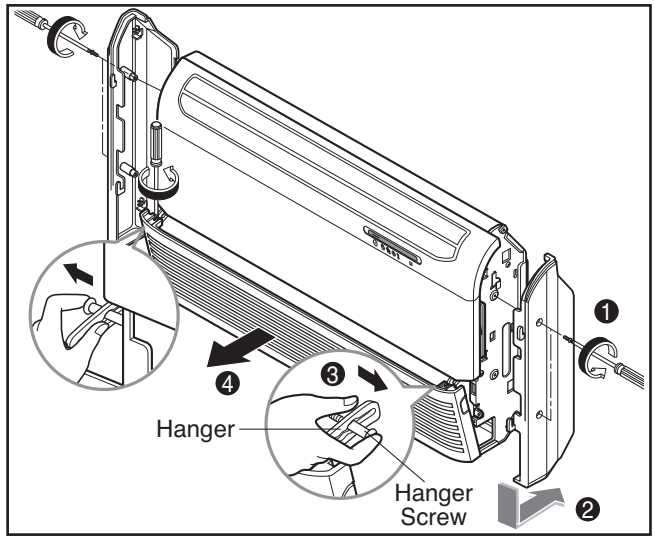
3. CVT Type - VB chassis

Warning : Disconnect the unit from power supply before making any checks.
Be sure the power switch is set to "OFF".



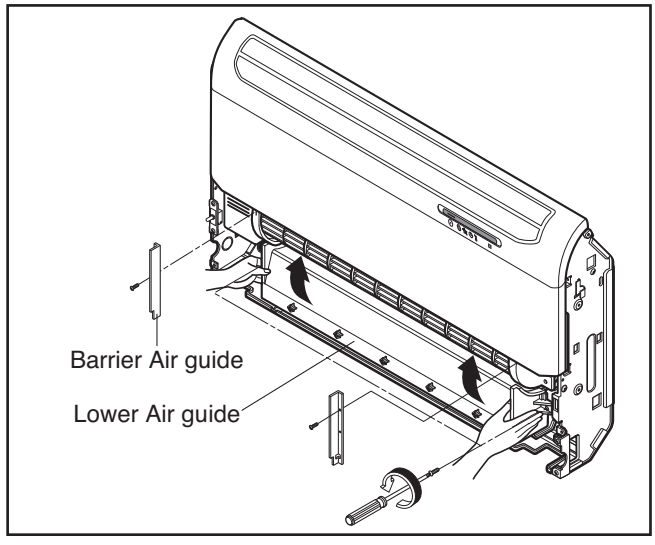
1. Remove the air filter.

- Pull the inlet grille slightly toward you.
- Pull out the air filter. (2 pieces)



2. Remove the girlle from chassis

- Remove the screws securing the side plate and push to the bottom-side.
- Unhook the hanger from the hanger screw at the left and the right side.
- Pick out the inlet grille.



3. Remove the lower air guide

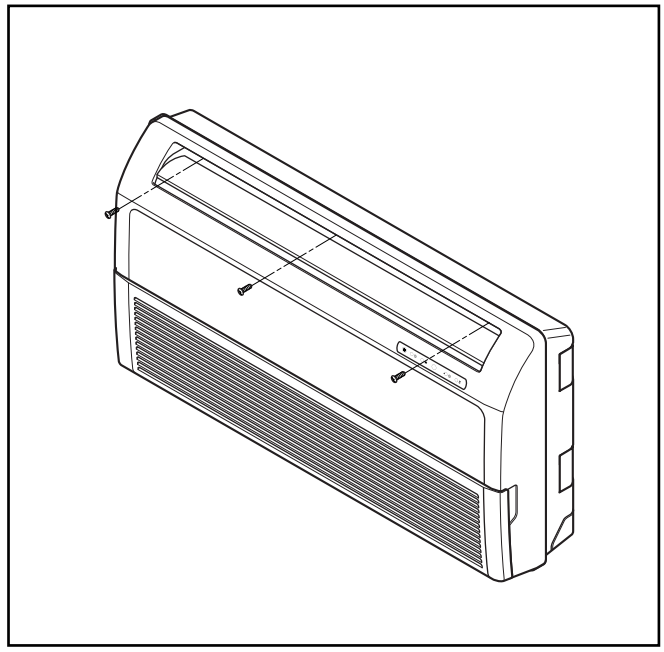
- Remove a screw of both side fixing "barrier air-guide".
- Remove the screws of both sides of the lower air-guide.
- Remove the lower air-guide toward "arrow mark" by turning upwards as shown in figure.

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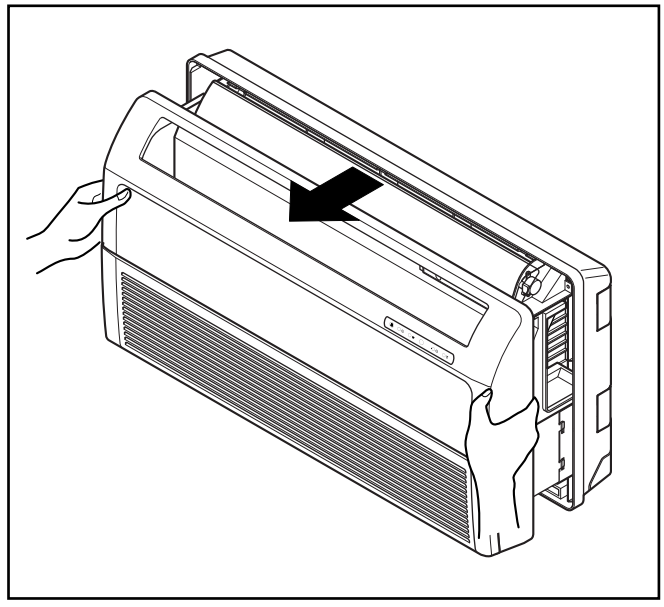
VE chassis

Warning :
Disconnect the unit from power supply before making any checks.
Be sure the power switch is set to “OFF”.



To remove the Grille from the Chassis.

- Set the up-and-down air discharge louver to open position (horizontally) by finger pressure.
- Remove the securing screws.
- To remove the Grille, pull the lower left and right side of the grille toward you (slightly tilted) and lift it straight upward.



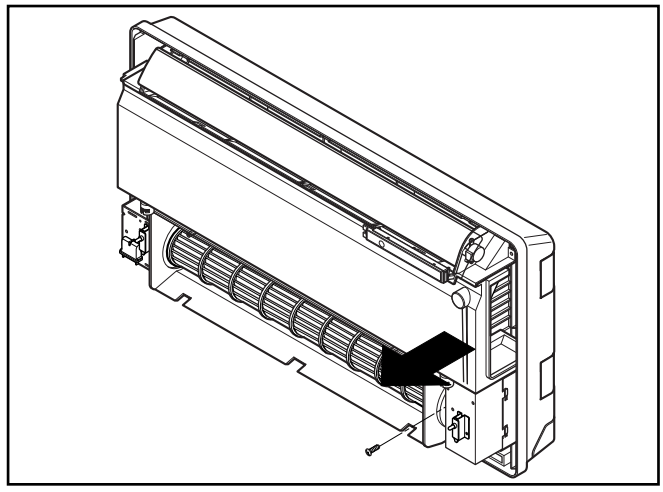
1. Before removing the control box, be sure to take out the wire screwed at the other end.

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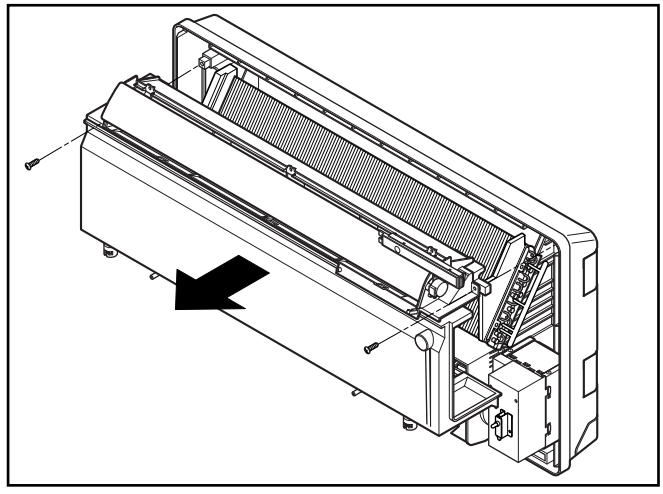
2. To remove the Control Box.

- Remove securing screws.
- Pull the control box out from the chassis carefully.



3. To remove the Discharge Grille.

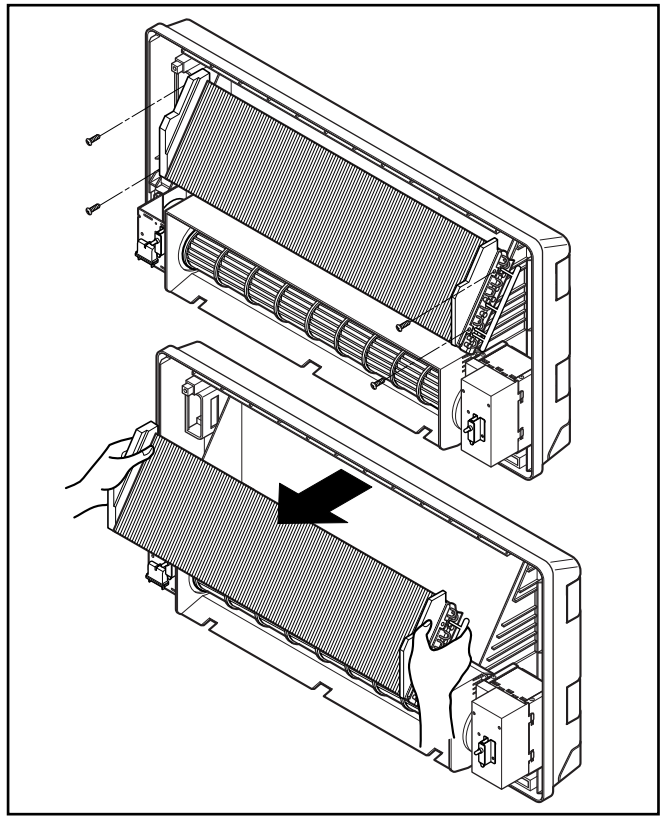
- Unhook the discharge grille and pull the discharge grille out from the chassis carefully.



4. To remove the Evaporator.

- Remove 3 screws securing the evaporator(at the left 2EA in the Eva Holder, at the right 1EA).

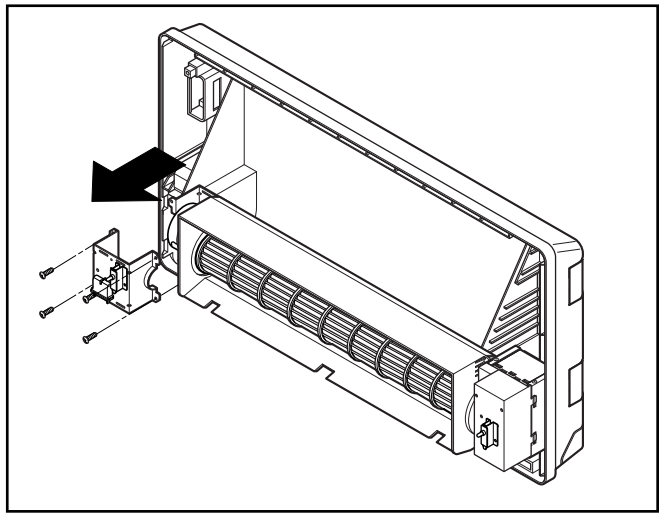
Caution label
When repair, do not damage the Caution label.



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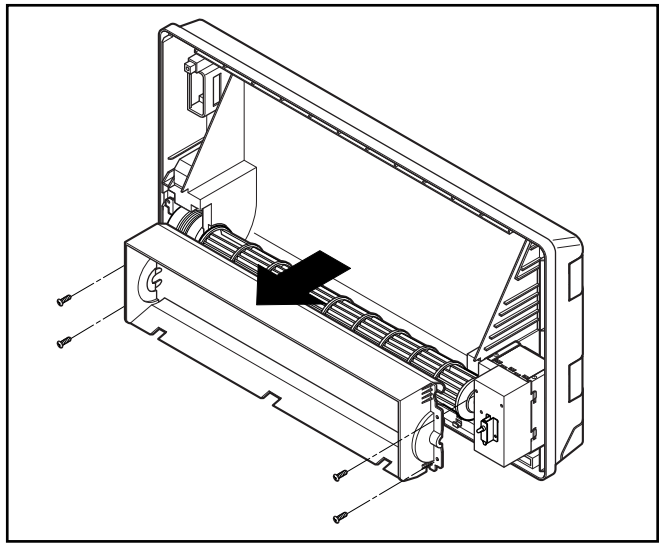
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- Unhook the tab on the right inside of the chassis at the same time, slightly pull the evaporator toward you until the tab is clear of the slot.



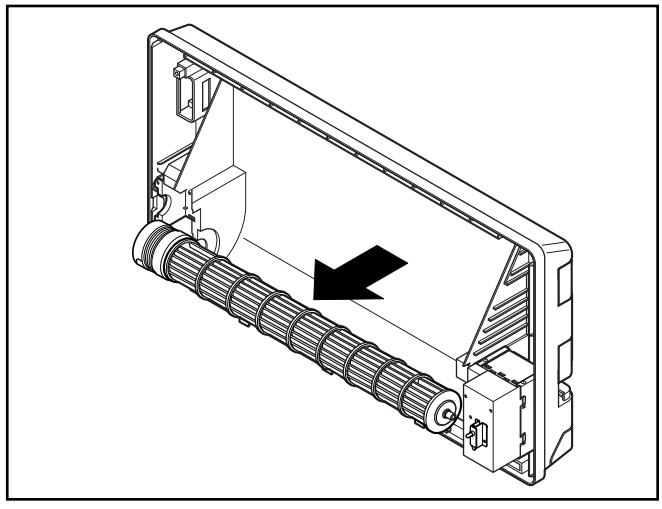
5. To remove the Motor Cover

- Remove 2 securing screw.
- Pull the motor cover out from the chassis carefully.



6. To remove the Cross-Flow Fan

- Loosen the screw securing the cross-flow fan to the fan motor (do not remove).
- Lift up the right side of the cross-flow fan and the fan motor, separate the fan motor from the cross-flow fan.



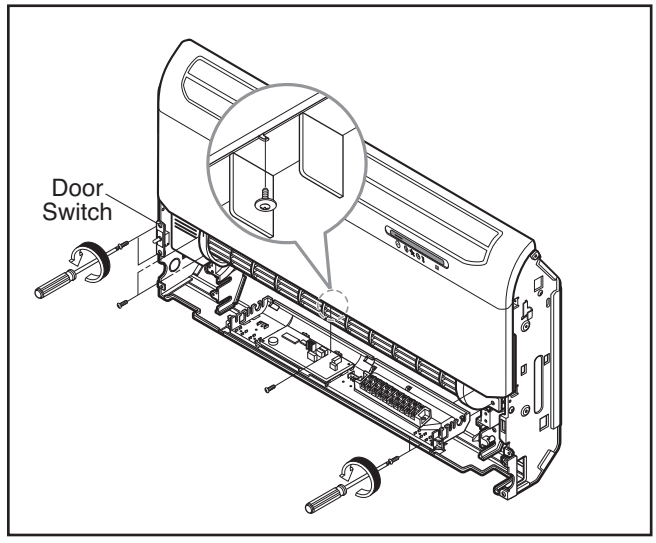
- Remove the left end of the cross-flow fan from the self-aligning bearing.

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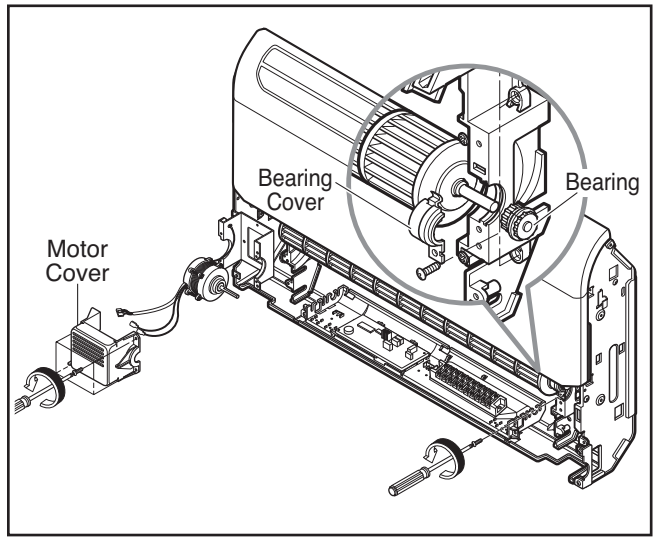
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4. Remove air guide upper, crossflow fan and motor.

- Remove the screws of both sides and center securing the upper air-guide.
- Remove 2 screws fastening the bracket of door switch.

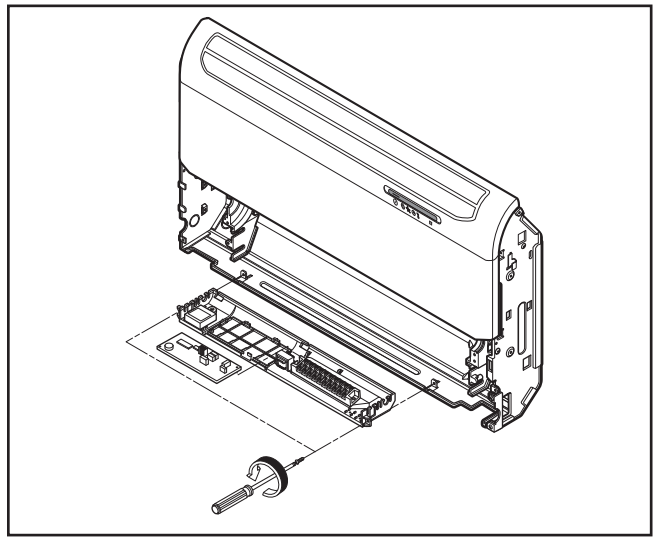


- Remove a bearing assembly by removing a screw and the bearing cover.
- Remove 4 screws securing the motor cover.
- Loosen the screw securing the crossflow fan to the fan motor shaft. (do not remove)
- Remove the crossflow fan by sliding it out from the shaft of fan motor.



5. Remove the control box Assembly.

- Disconnect the step motor connector, fan motor connector, display PCB connector, thermistor connector and door switch connector from the main PCB.
- If necessary, disconnect power supply cord and connecting cable from the terminal block and remove the cord clamp screw.
- Remove 2 screws securing the control box and pick out the control box carefully.

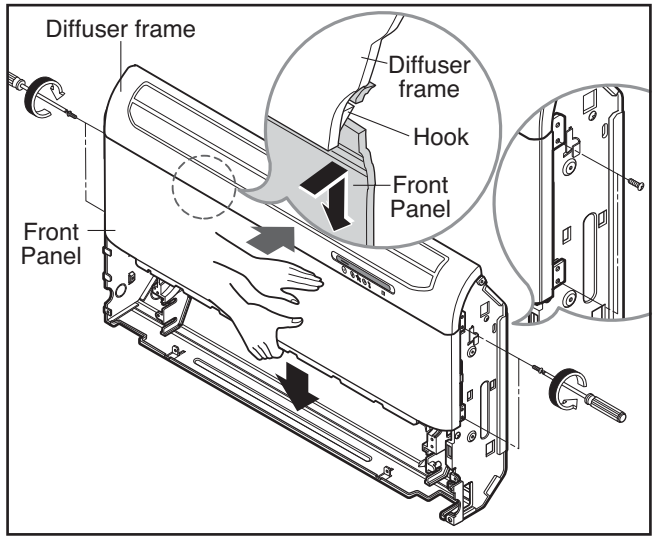


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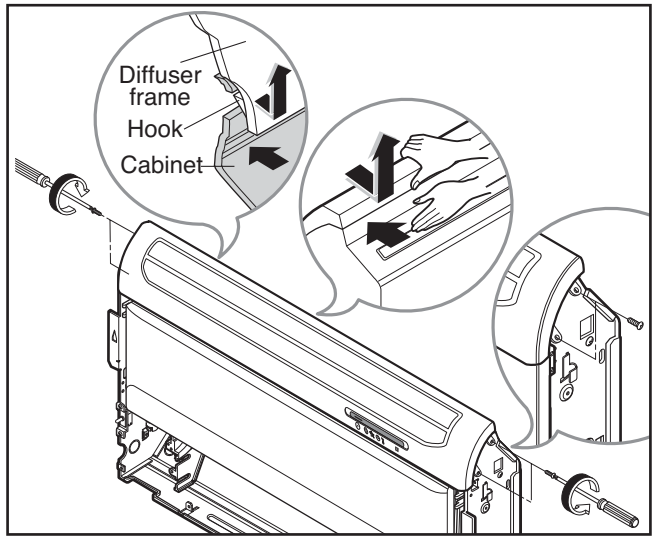
6. Remove the front panel.

- Remove the screws of both sides fixing the front panel.
- Push the upper side of front panel strongly to pull out the front panel from the inner hook of diffuser frame.
- Pull down the front panel carefully not so as to harm the display PCB wires and thermistor wires.



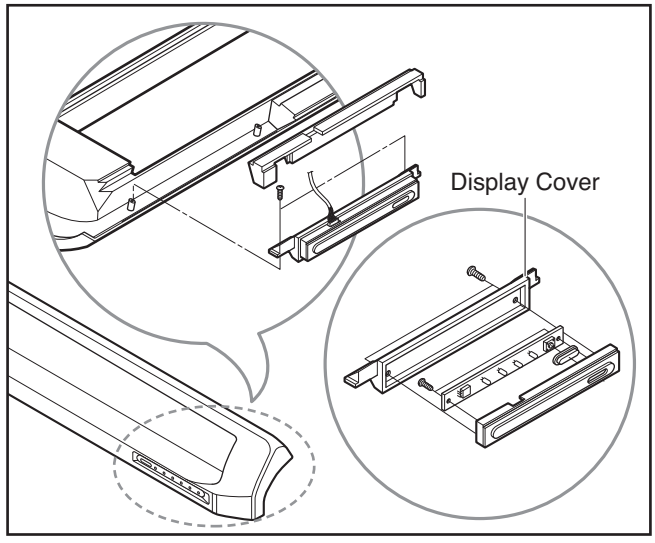
7. Remove the diffuser assembly.

- Remove the screws of both side of diffuser assembly. (4 pieces)
- Push the upper side of cabinet strongly to pull out the inner hook of diffuser frame from the cabinet hole.
- Take up the diffuser frame carefully not so as to harm the display PCB wires and the step motor wires.



8. Remove display PCB assembly.

- Remove the screws at the both side of display cover.
- If necessary, disconnect the display PCB connector from PCB assembly.
- Remove 2 screws of PCB assembly.

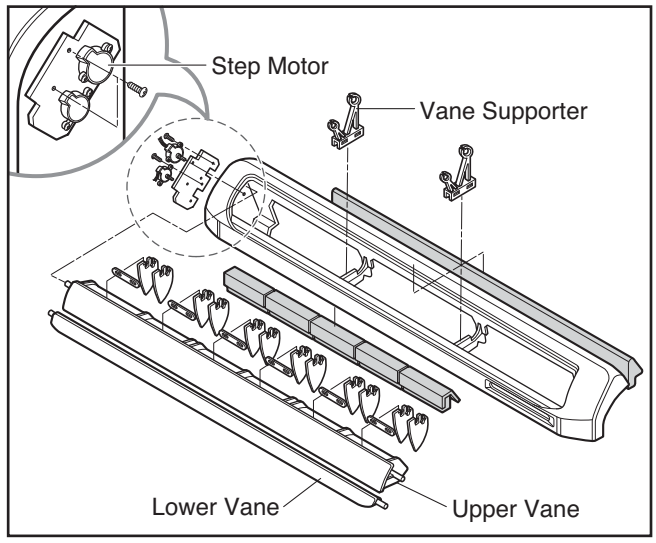


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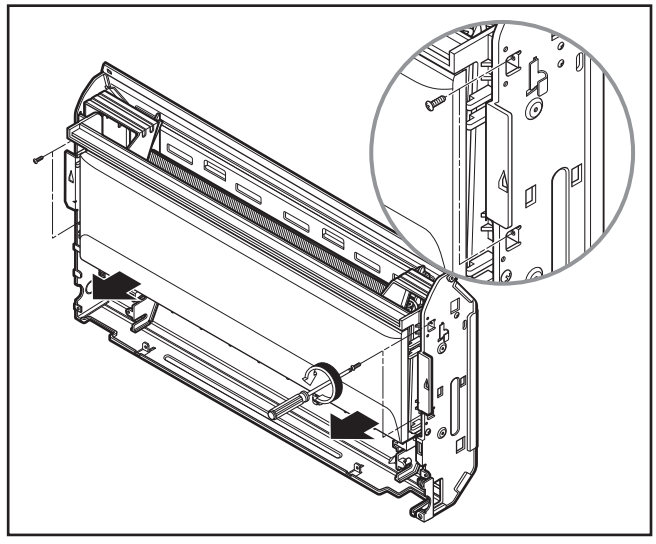
9. Remove the vane-upper, vane-lower and step motor.

- Remove 2 screws securing the step motor assembly and pull it out from the vanes carefully.
- Unhook the vanes from the vane supporter and remove the upper vane and lower vane by pulling the center of vanes with care.



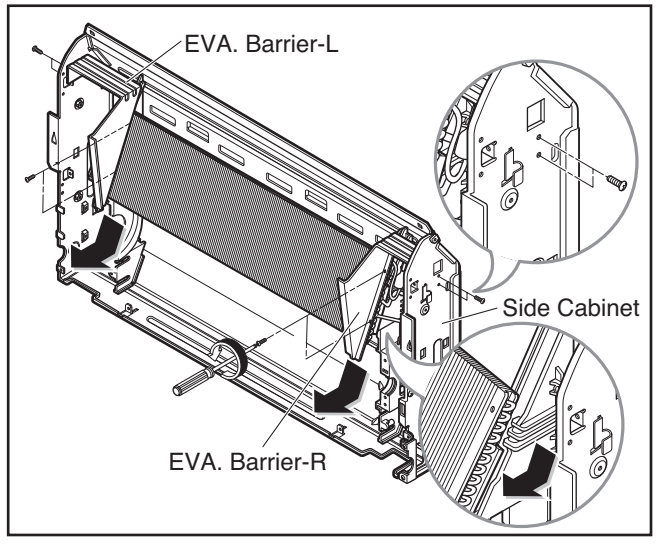
10. Remove the drain pan assembly.

- Remove the both side of screws. (4 pieces)
- Pull out the drain pan assembly.
- Be careful not to harm to the EPS packing of drain pan and the tubings of evaporator.



11. Remove the evaporator.

- Remove the screws of both sides securing the EVA barrier-R/L on the side cabinet.
- Remove the screws which fasten the barrier on the evaporator and take out the barrier assembly.
- Remove the evaporator assembly by sliding toward arrow mark. (As shown in figure)



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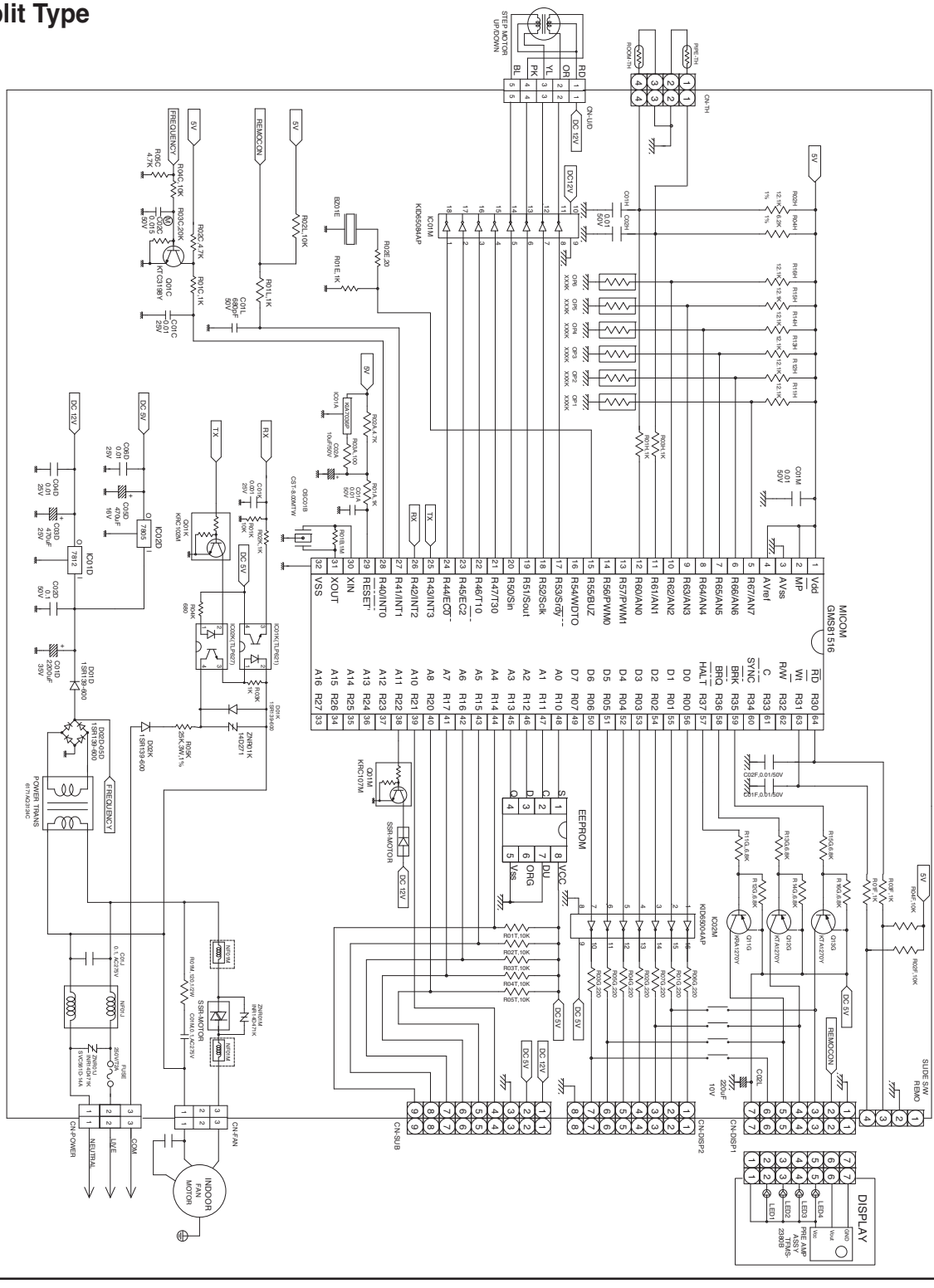
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Schematic Diagram

Electronic Control Device

1. Indoor Unit

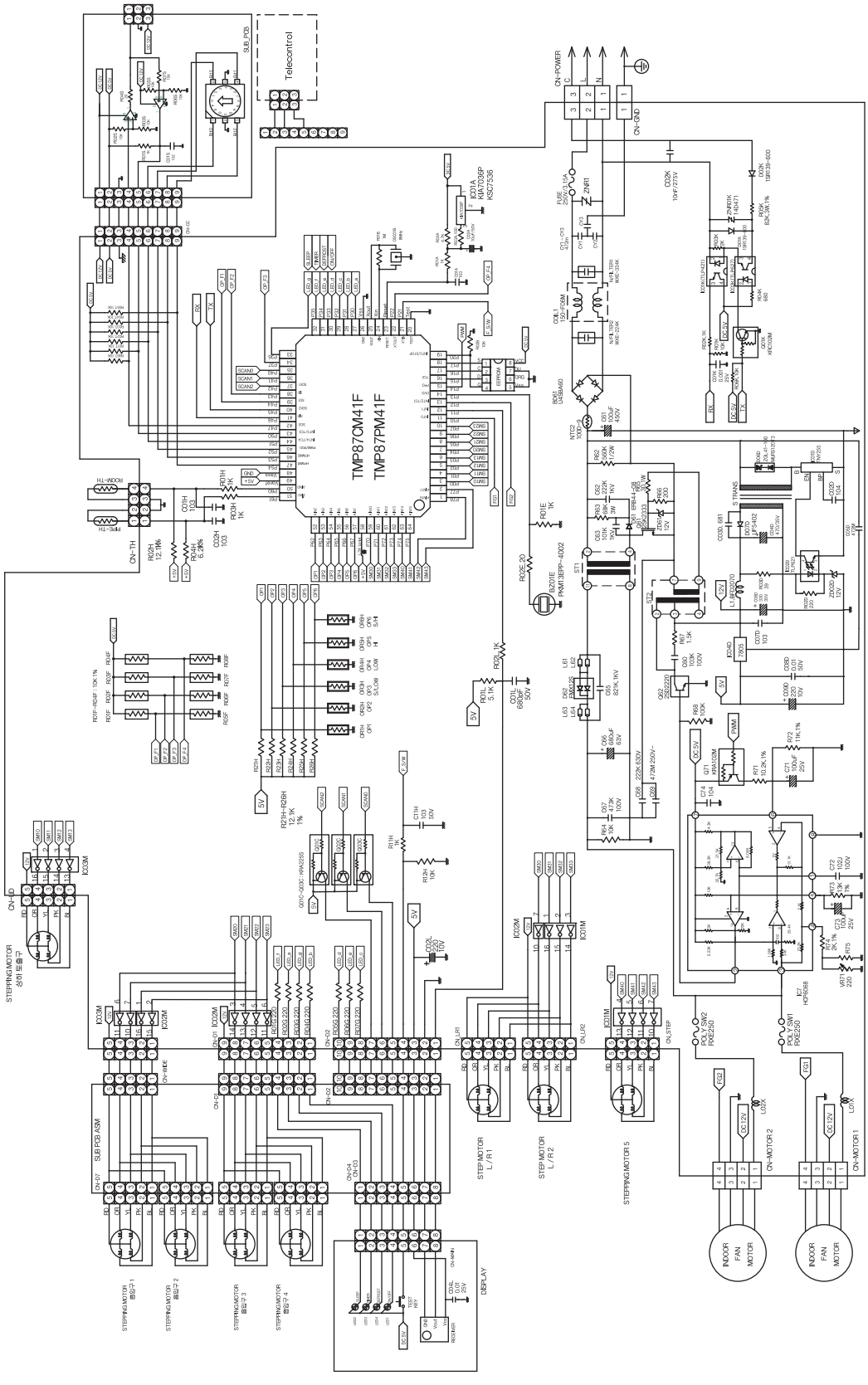
1) Split Type



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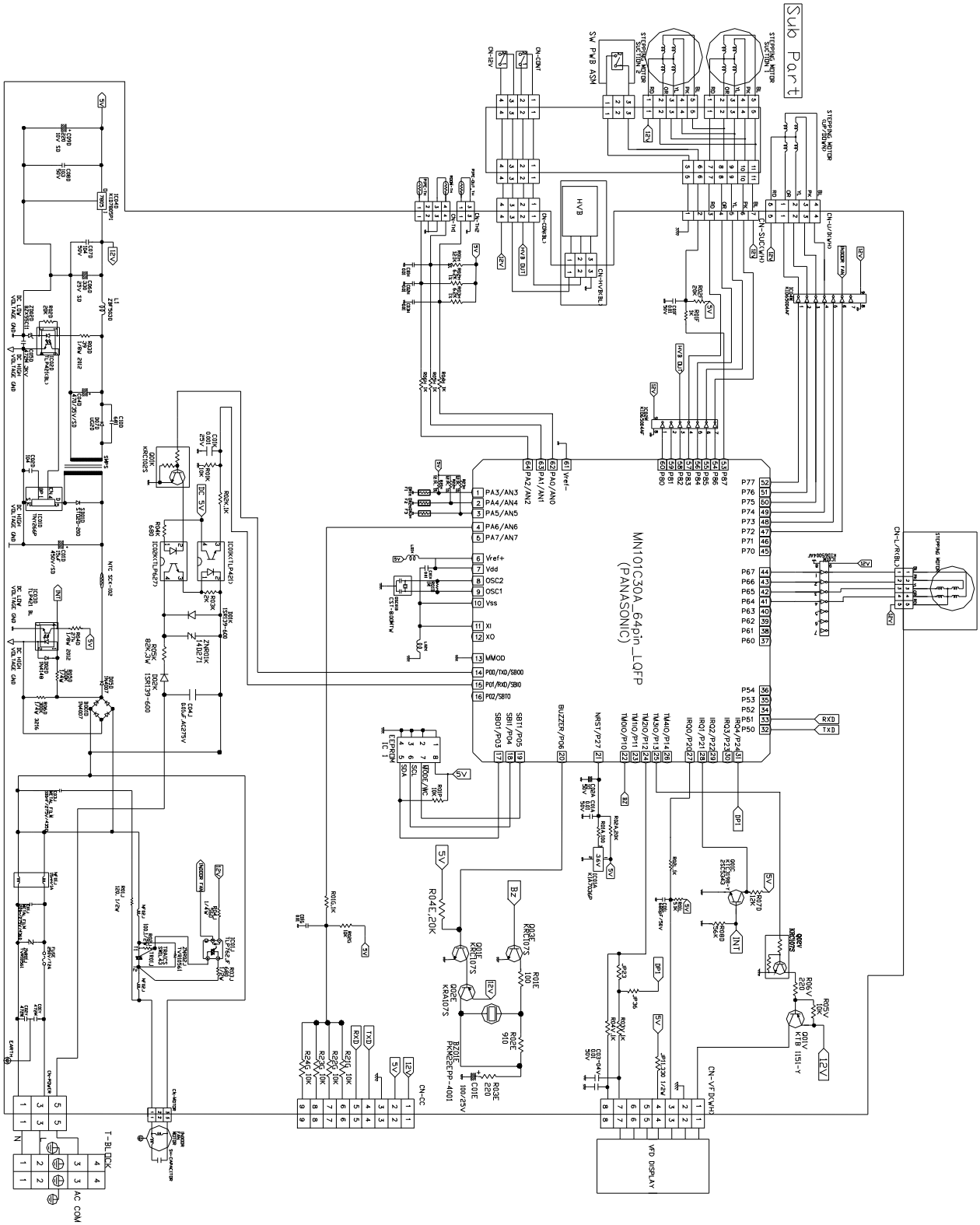
2) Art Cool Type



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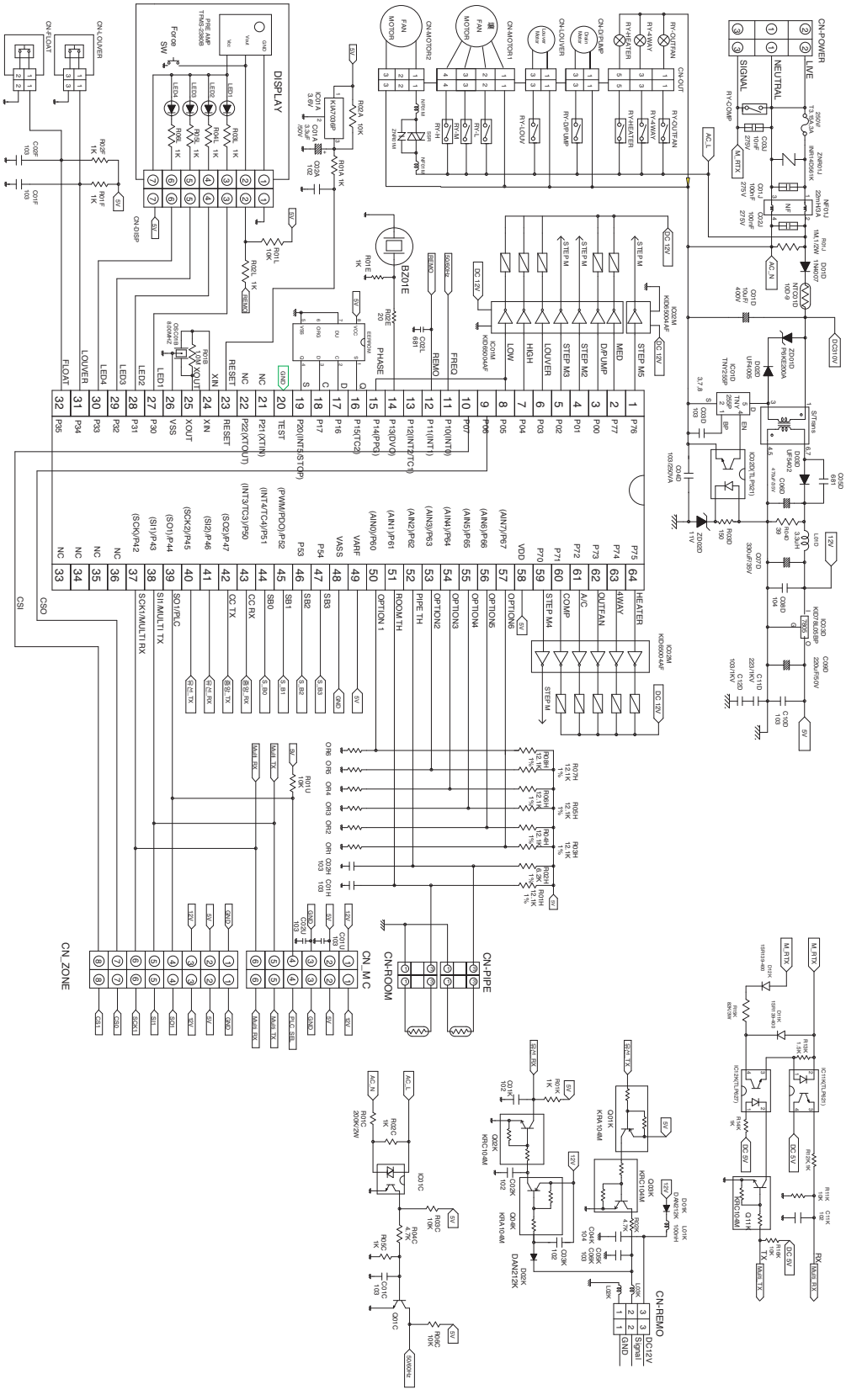
3) Art Cool Deluxe Type



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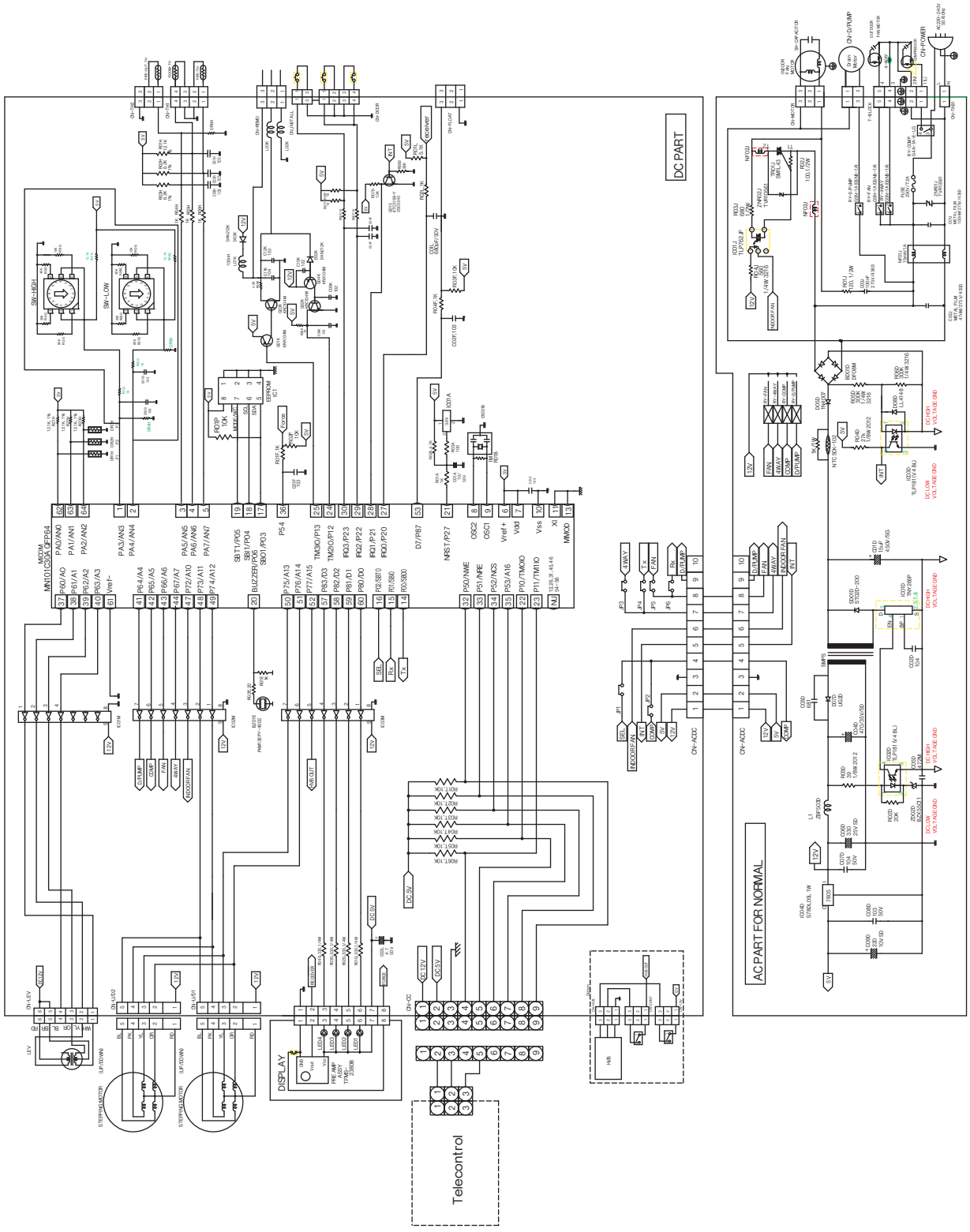
4) Duct Type



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5) Convertible Type

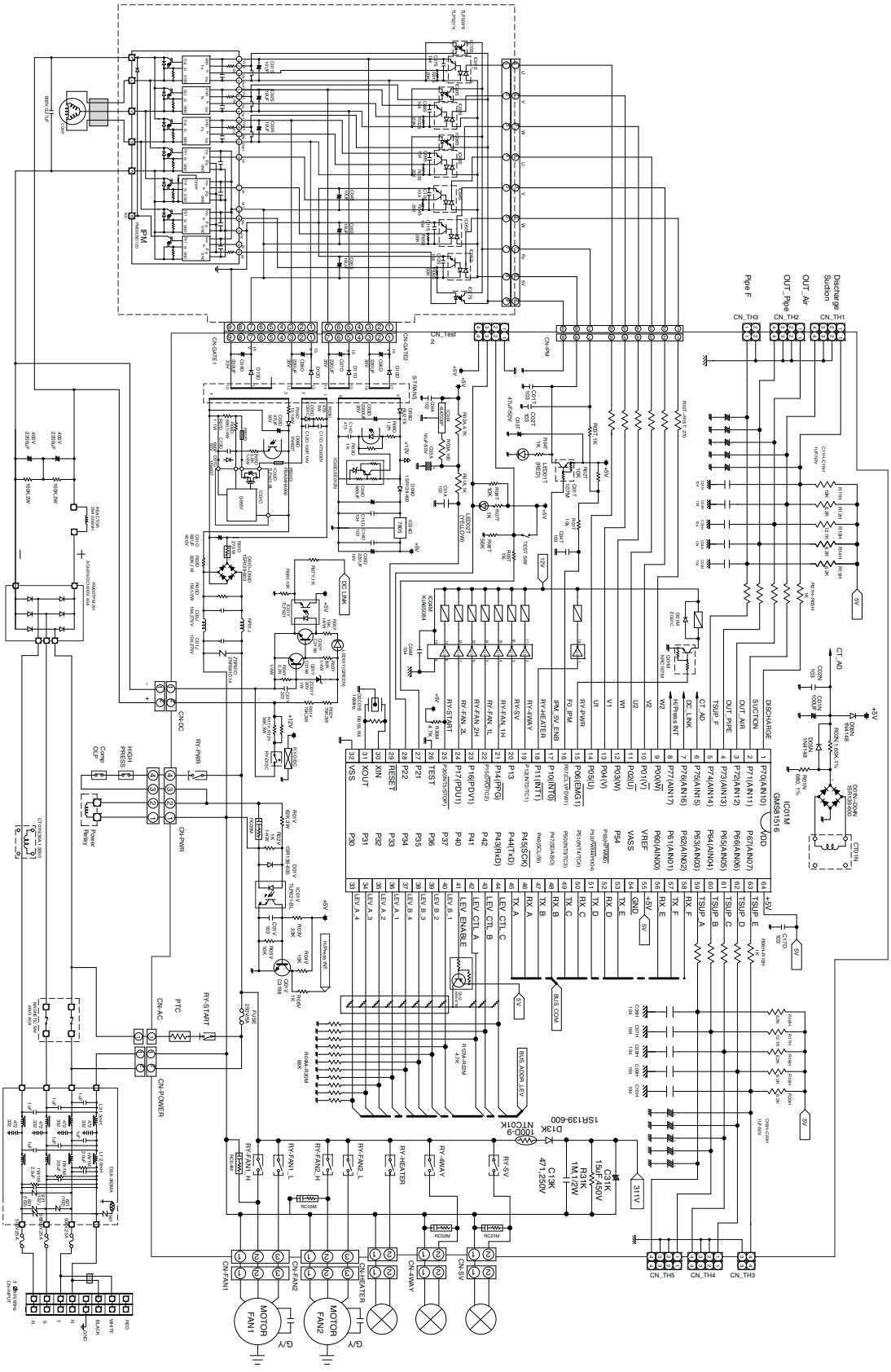


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2. Outdoor Unit

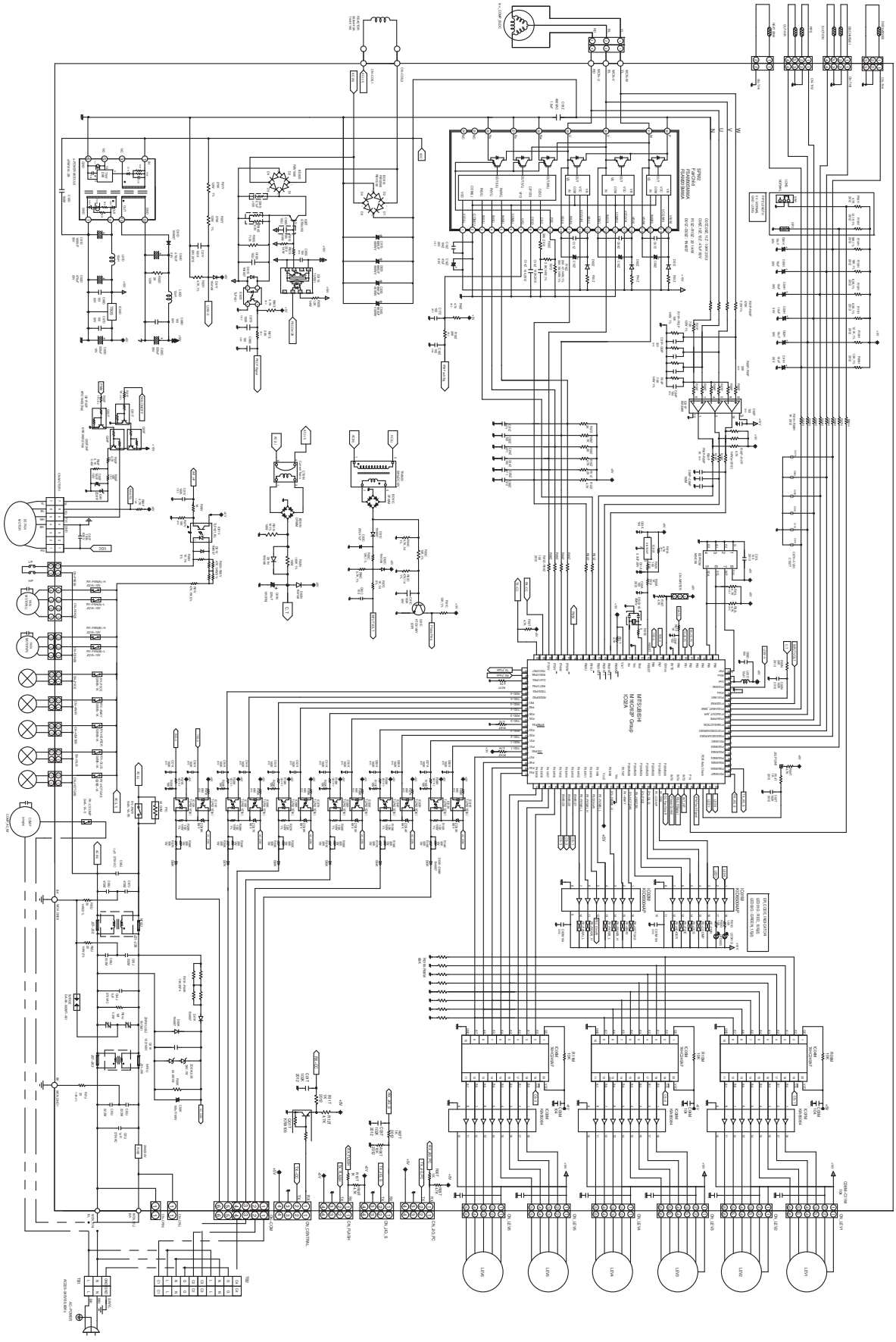
1) A2UW186FA0, A3UW246FA0, A4UW306FA0, A2UW146FA0, A3UW186FA0, A4UW146FA0



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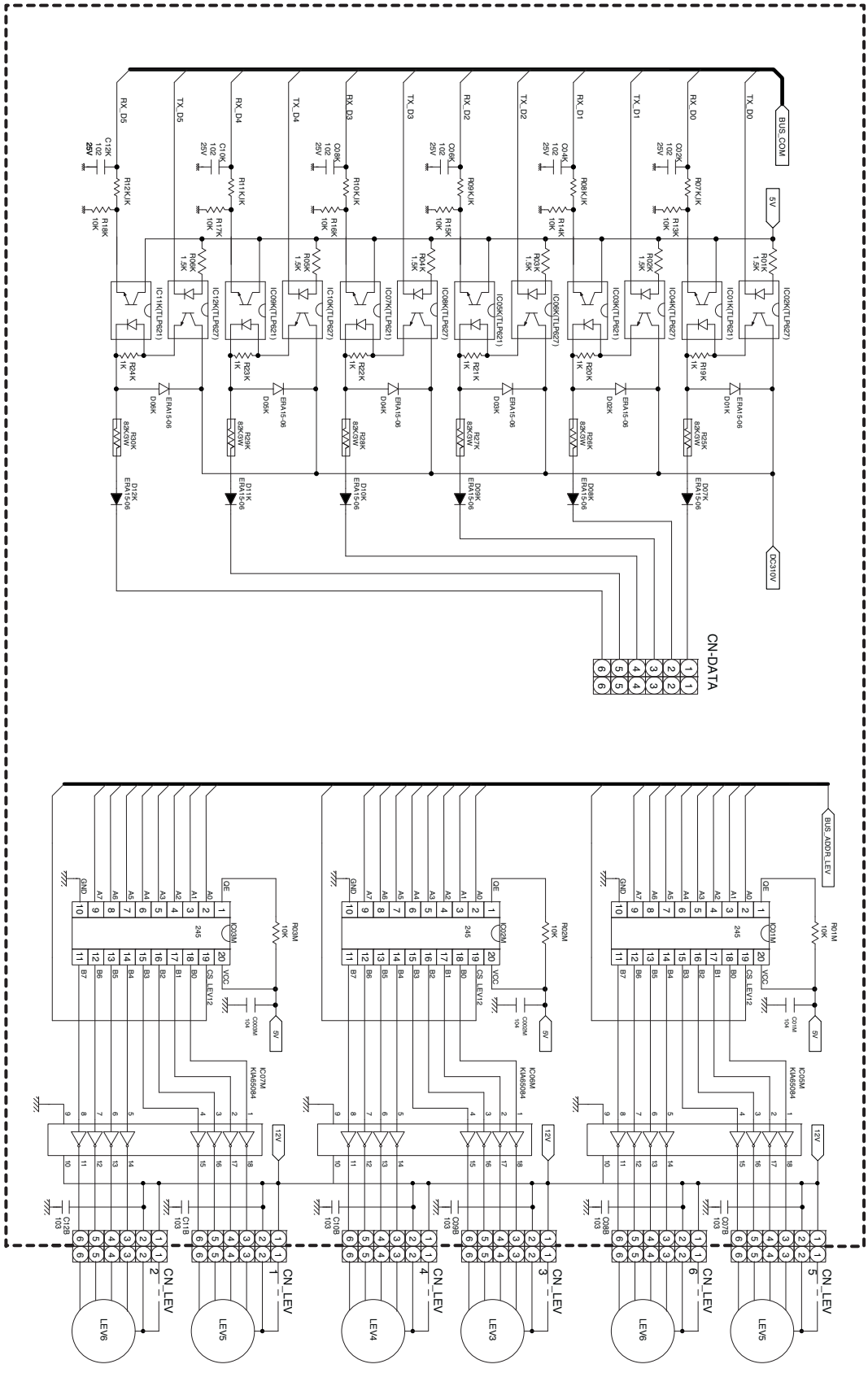
LGE Internal Use Only

2) A6UW406FA0/A7UW486FA0/A8UW566FA0



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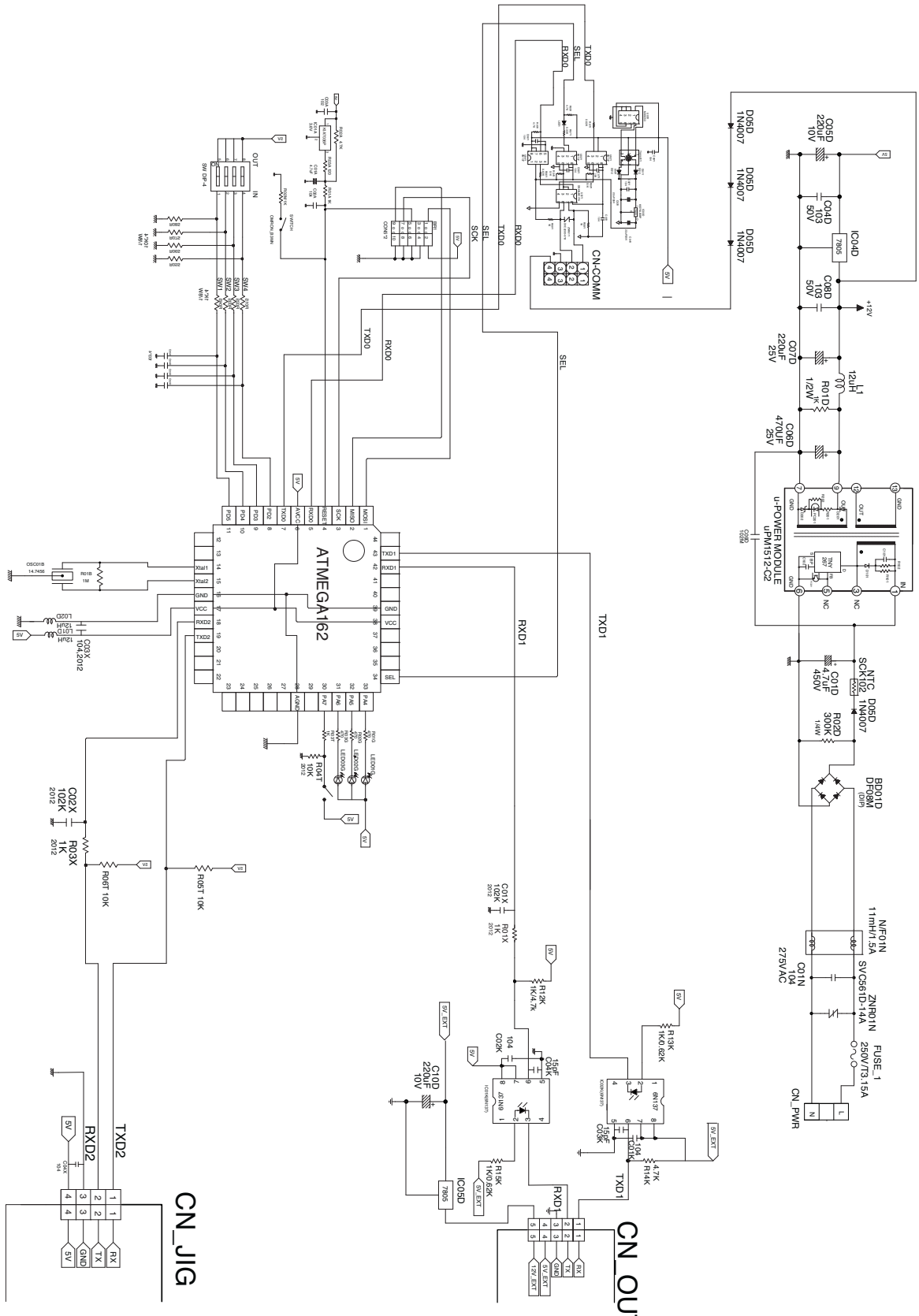
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3. Central control unit Schematic diagram

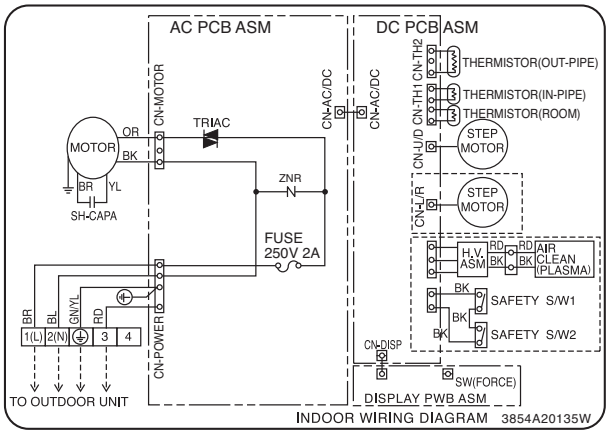


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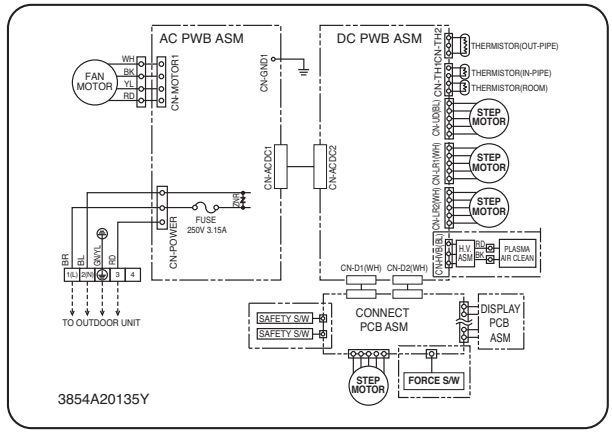
LGE Internal Use Only

Wiring Diagram

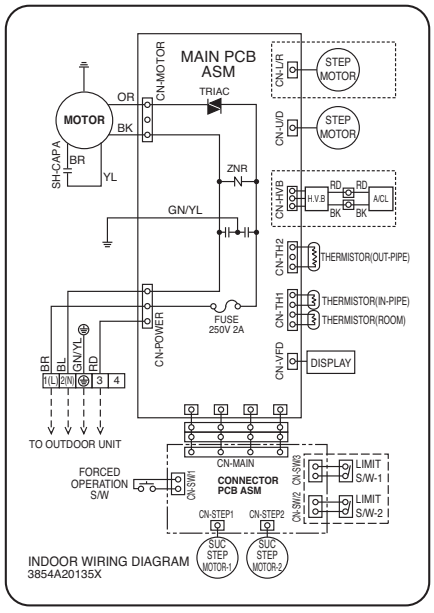
1. Room Type Indoor Unit



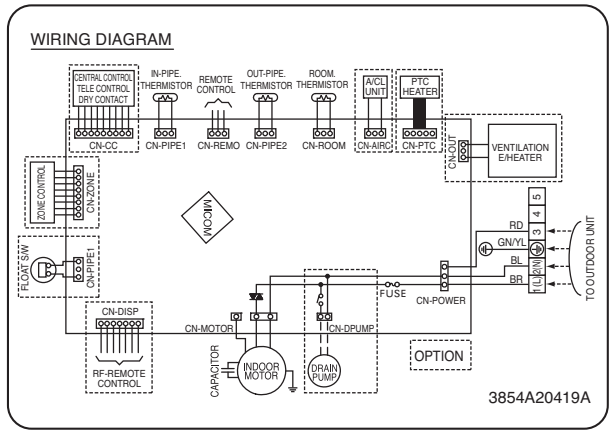
2. Art Cool Type Indoor Unit



3. Art Cool Deluxe Type Indoor Unit



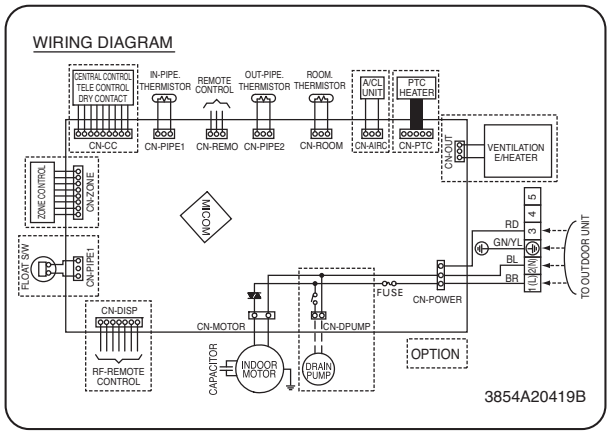
4. Duct Type Indoor Unit - BG/BT chassis



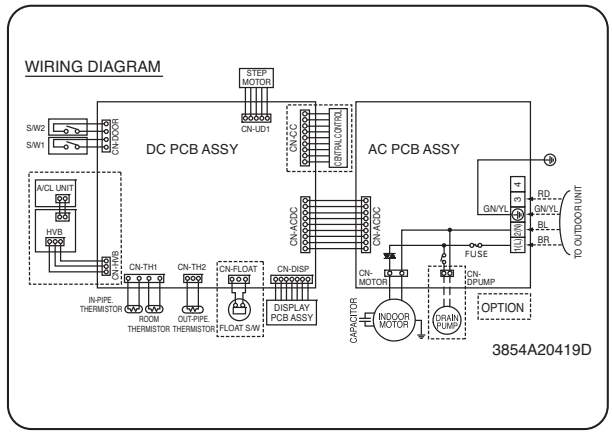
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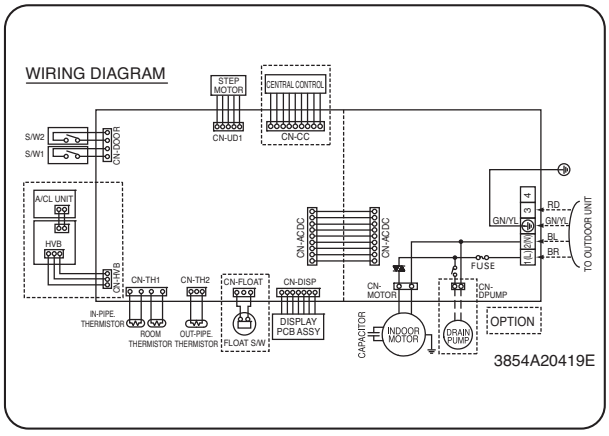
5. Duct Type Indoor Unit - BH/BP chassis



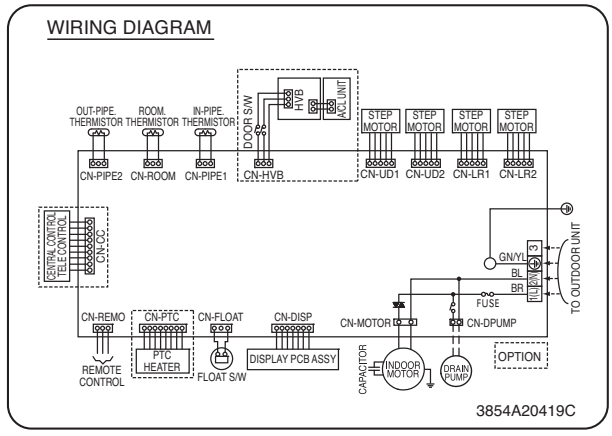
6. CVT Type Indoor Unit - VE chassis



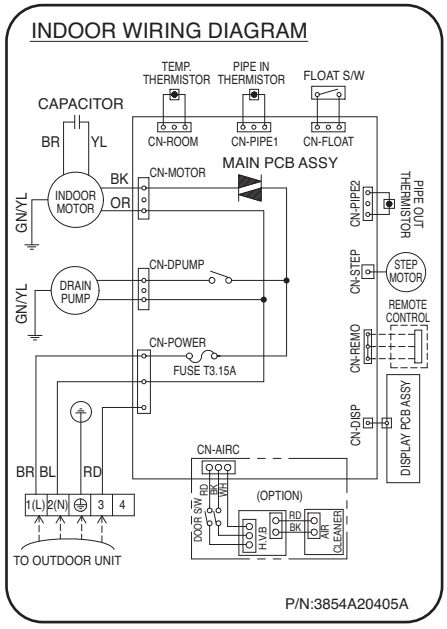
7. CVT Type Indoor Unit - VB chassis



8. CST Type Indoor Unit - TE/TF/TD chassis



9. CST Type Indoor Unit - TC chassis

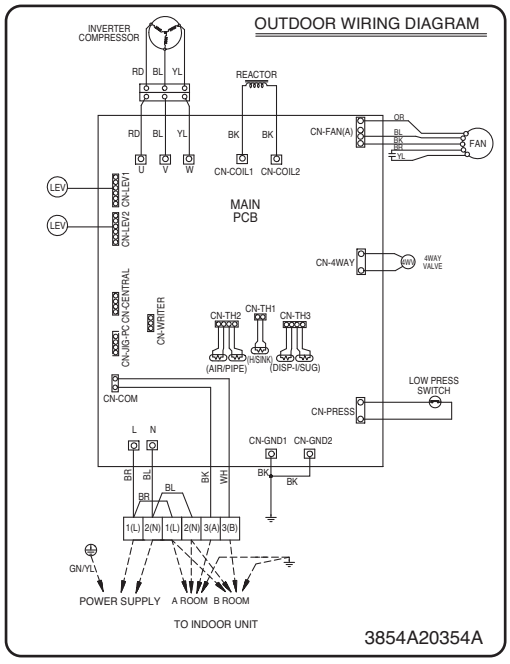


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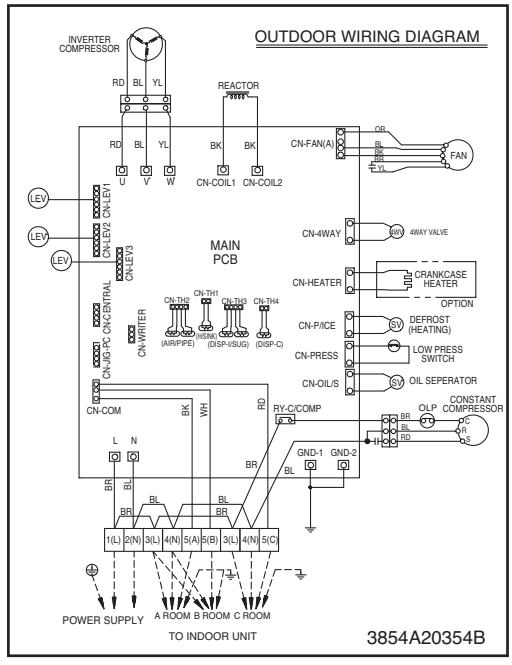
LGE Internal Use Only

5. Outdoor Unit

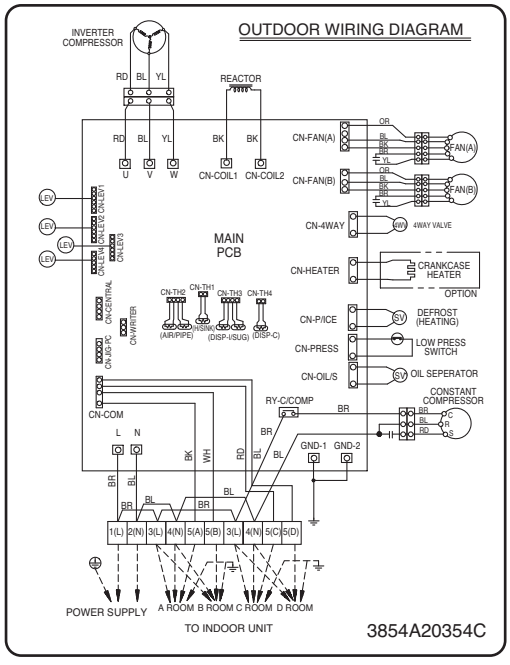
1. A2UW186FA0



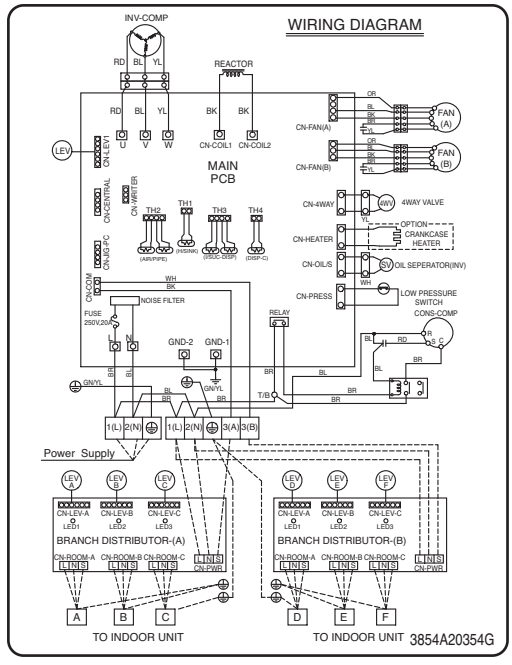
2. A3UW246FA0



3. A4UW306FA0



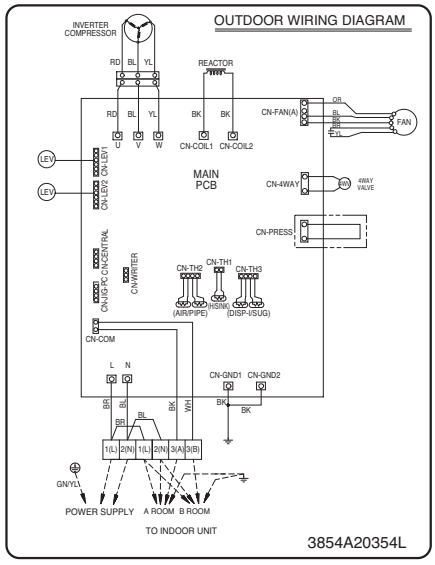
4. A6UW406FA0



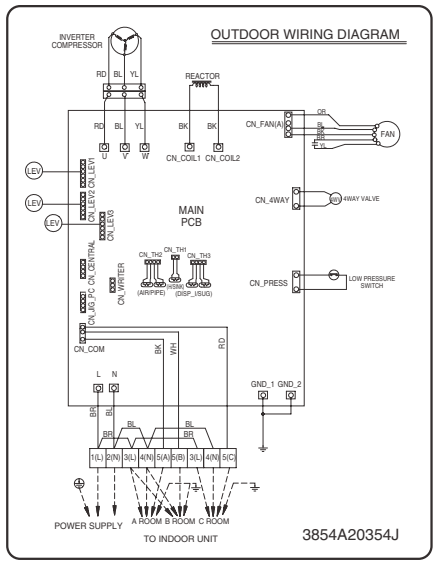
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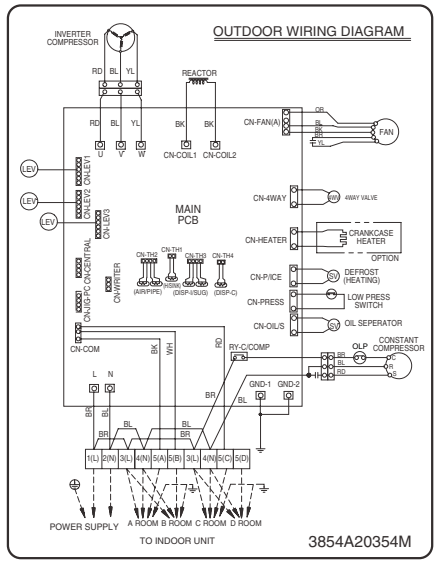
5. A2UW146FA0



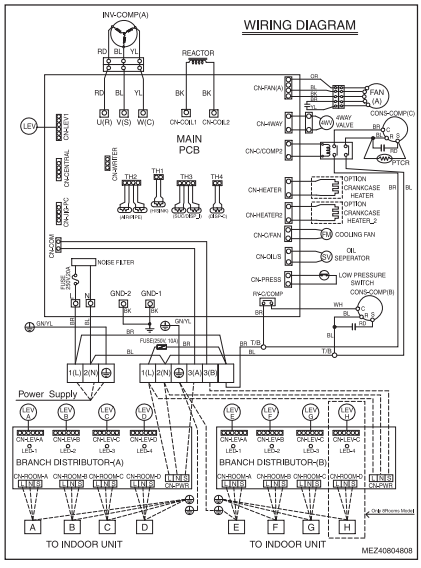
6. A3UW186FA0



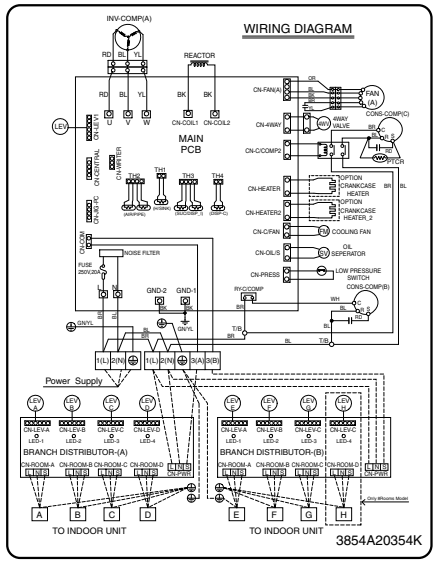
7. A4UW246FA0



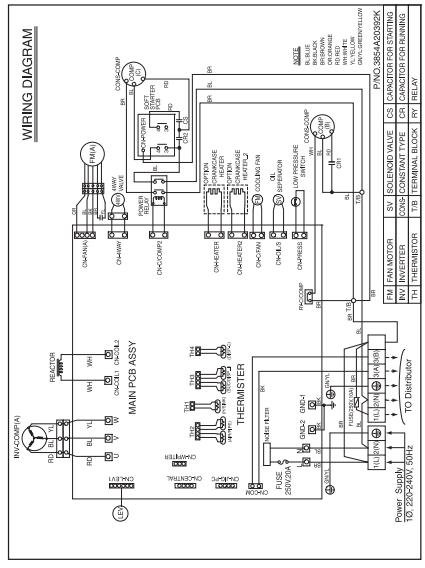
8. A7UW486FA0



9. A8UW566FA0



10. A8UW566FA0(Only Model for Australia)



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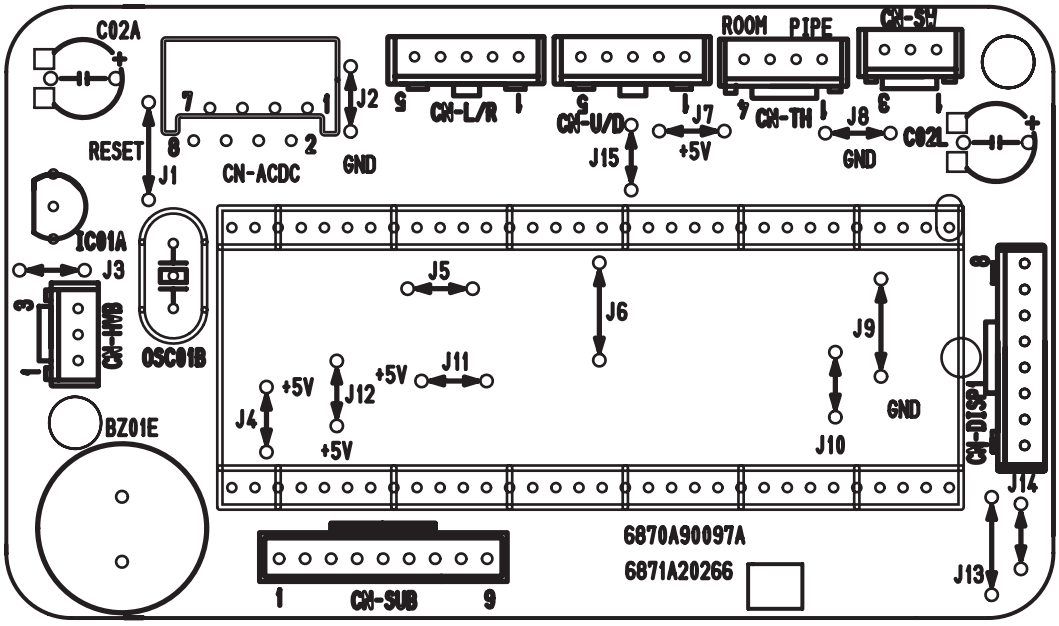
Components Locations

1. Indoor Unit

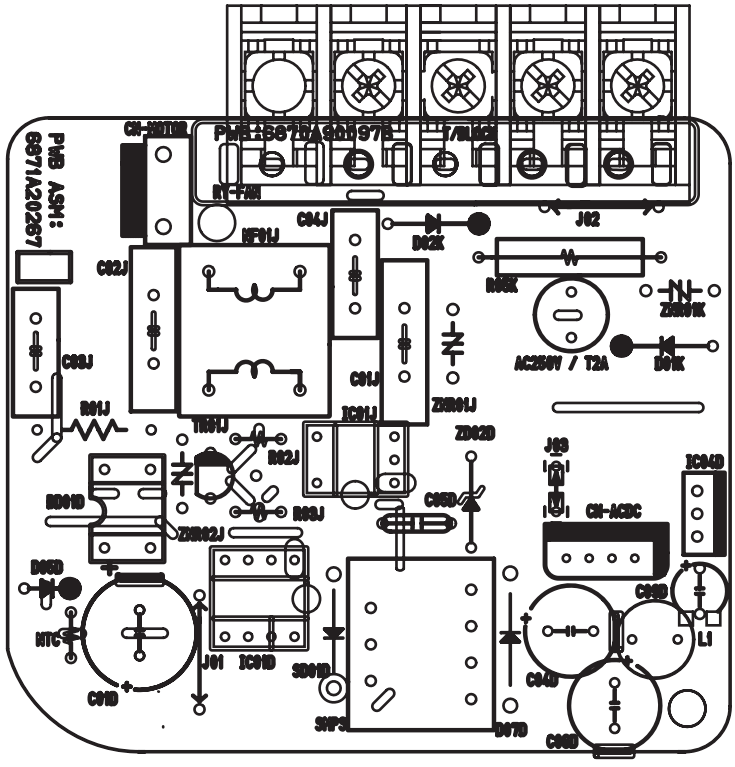
MAIN P.C.B ASM

1) Split Type

・DC part



・AC part

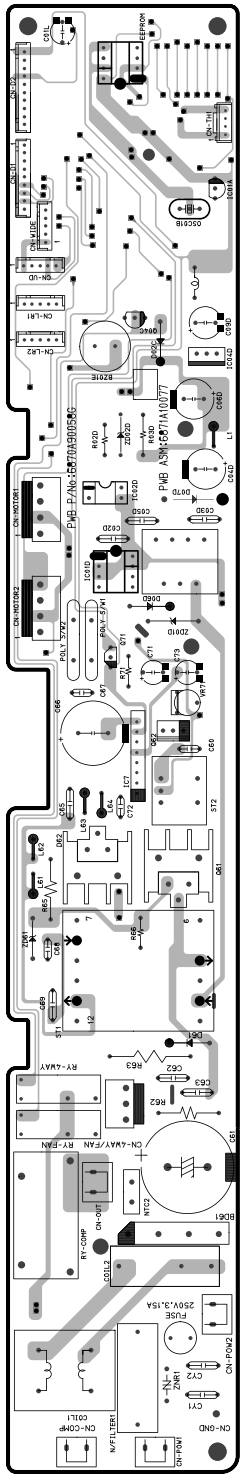


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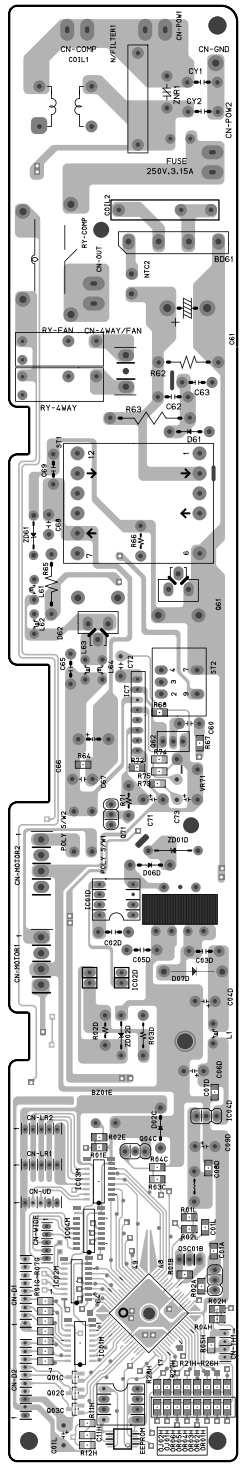
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2) Art Cool Type

TOP VIEW



BOTTOM VIEW

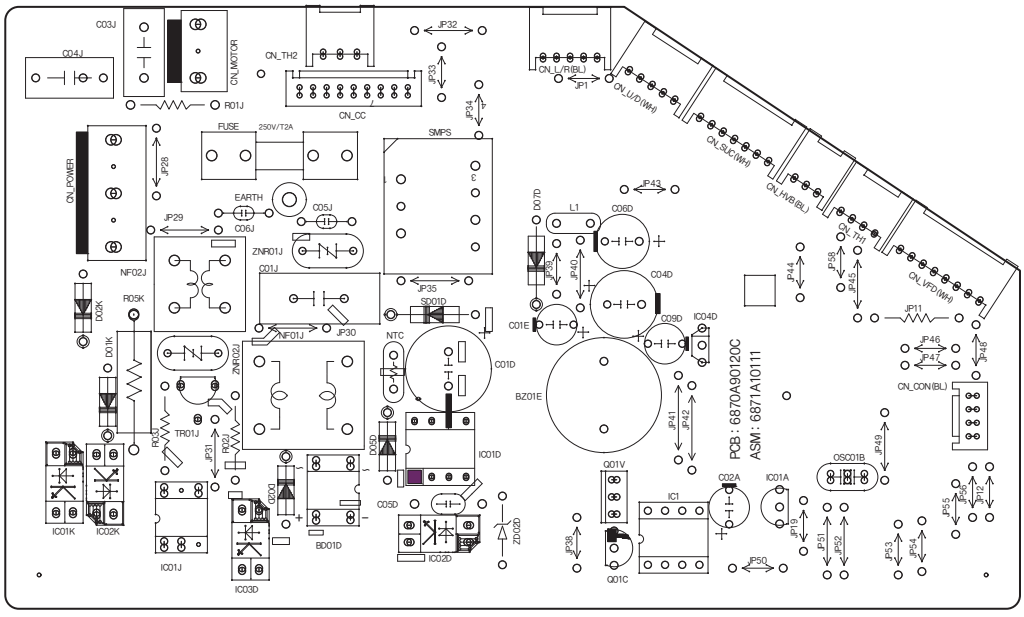


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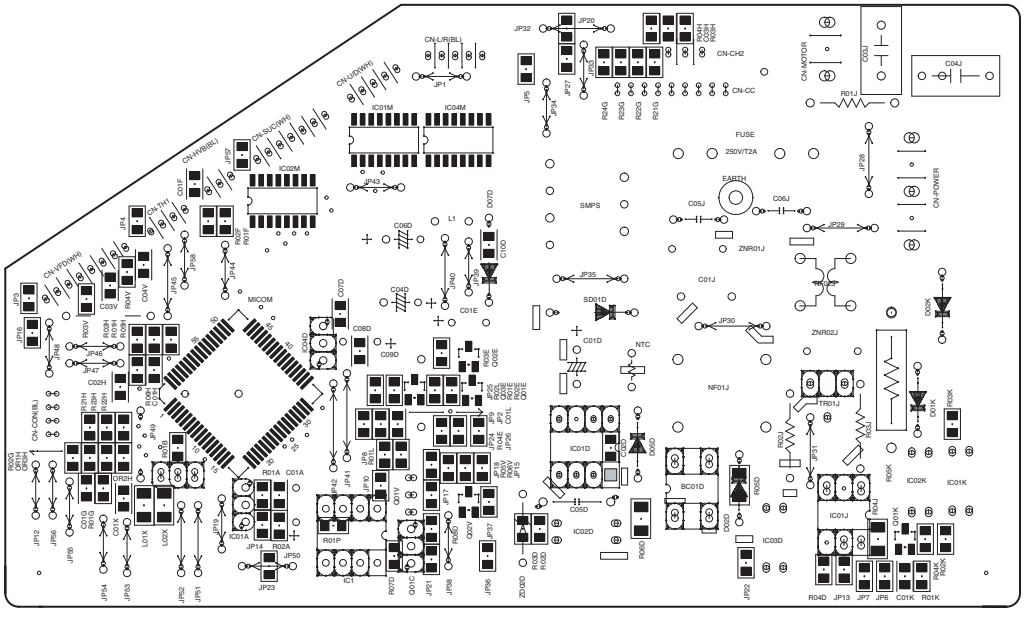
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3) Art Cool Deluxe Type

TOP VIEW



BOTTOM VIEW

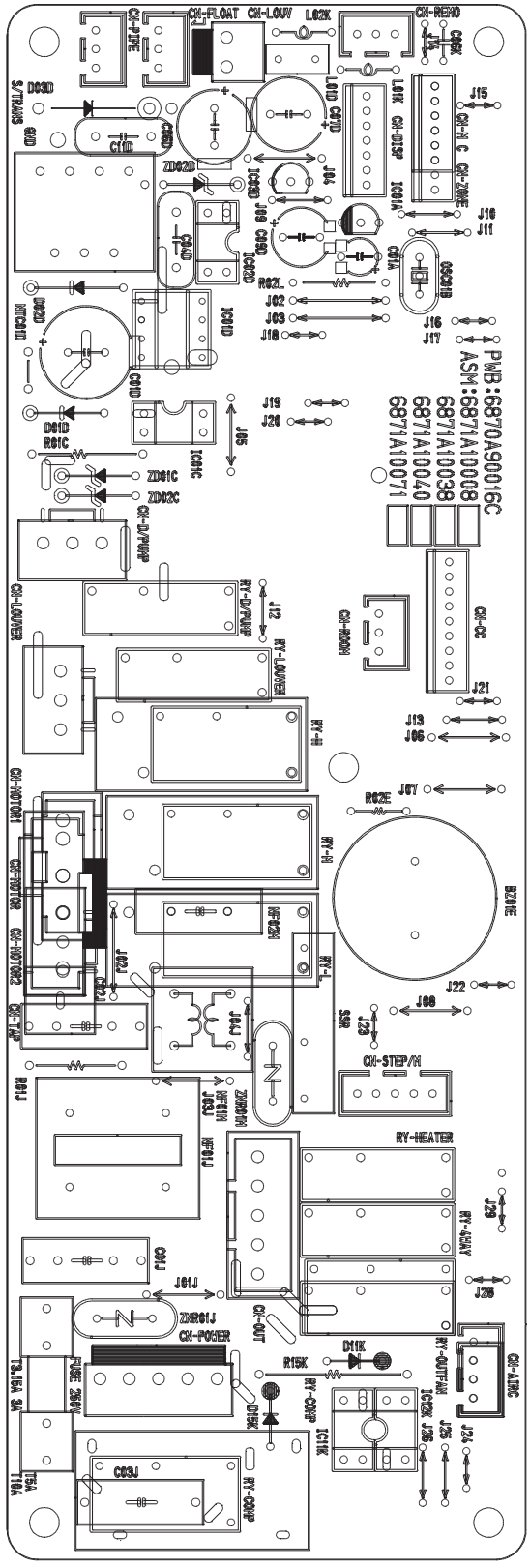


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4) Duct Type

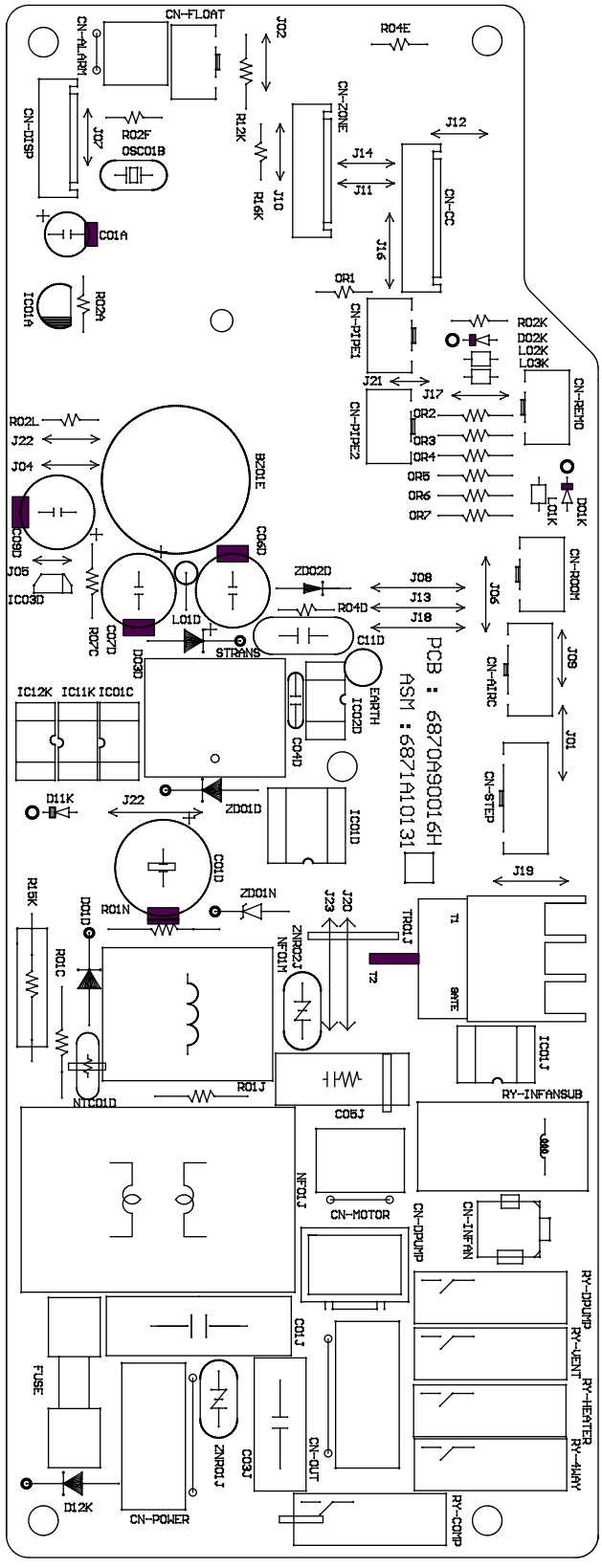
- **High static (BH/BG chassis)**
- **Built in type (BP chassis)**



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• **Low static (BT, BT1 chassis)**

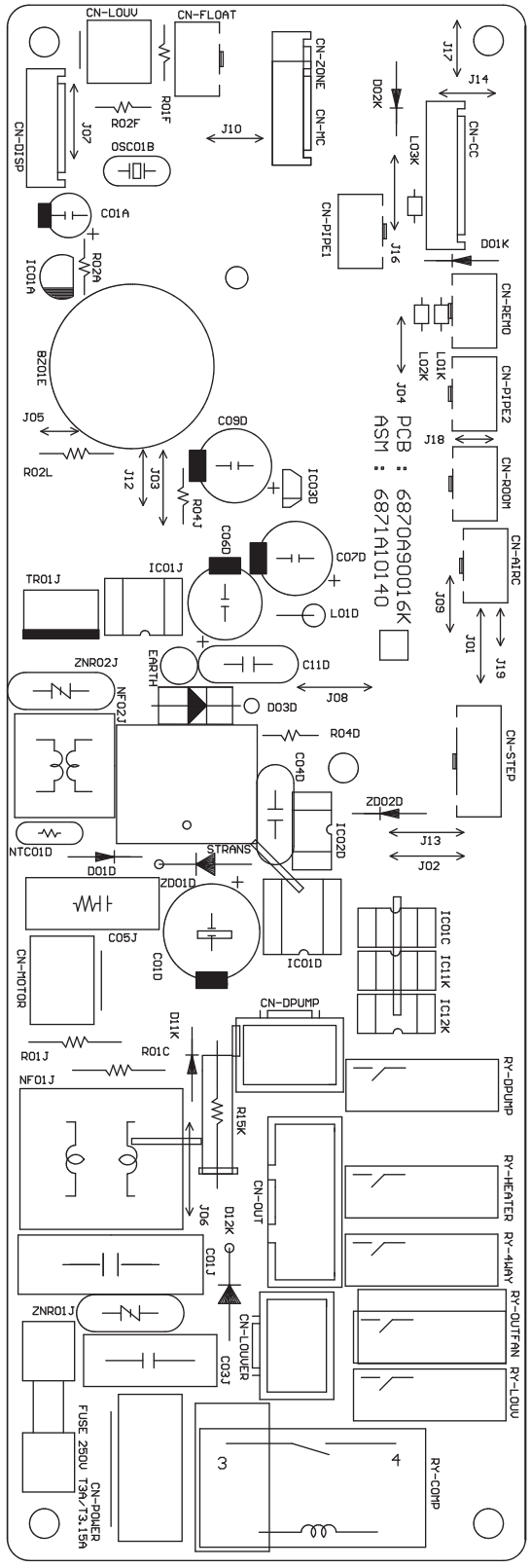


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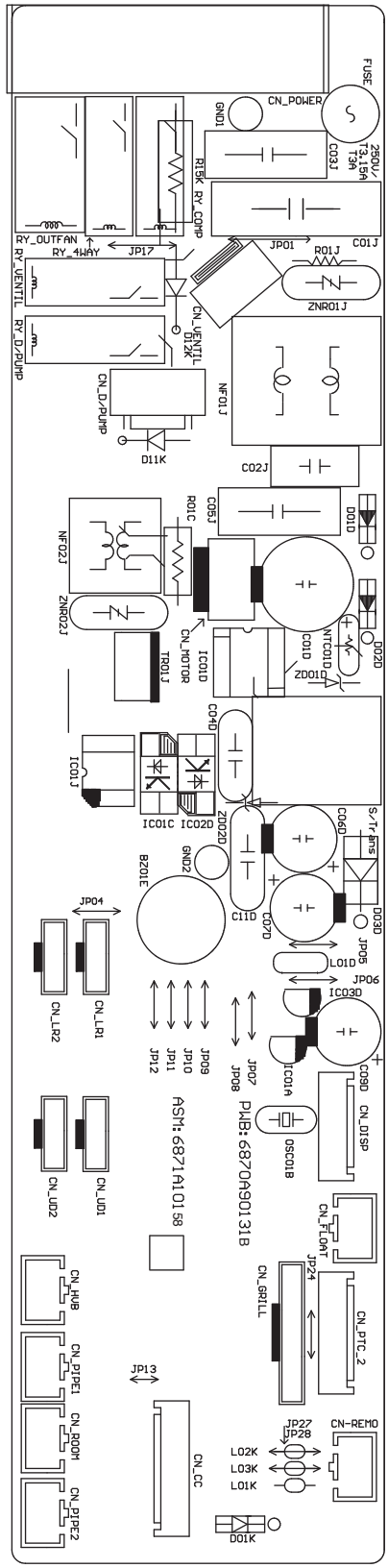
5) Casset Type

• 1 way(TC chasis)



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• **4 way(TE, TF, TD chasis)**



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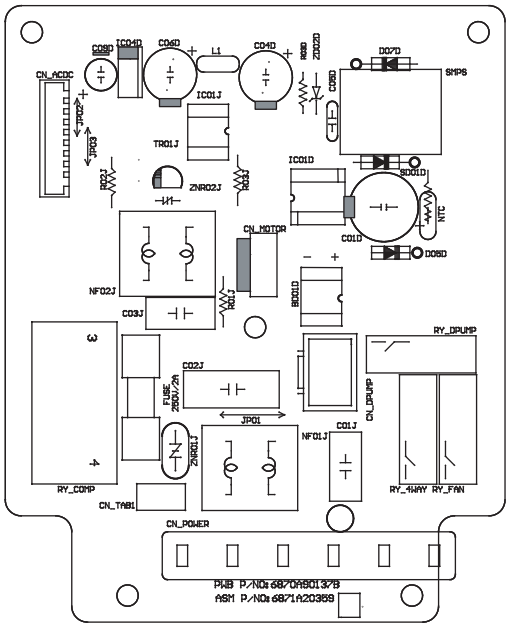
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6) Convertible type

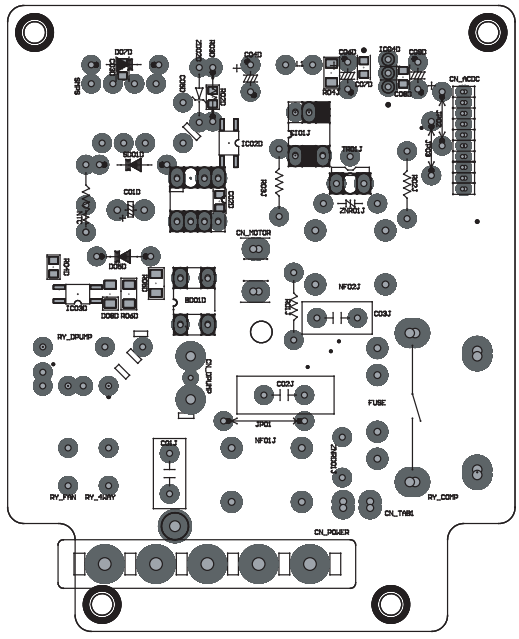
- **VE chassis**

AC part

TOP VIEW

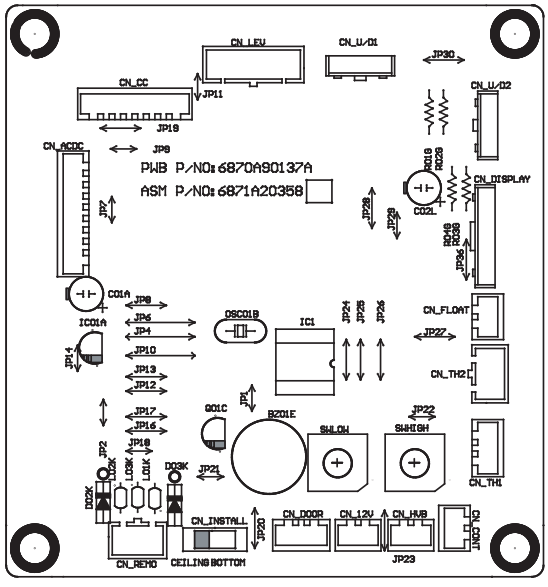


BOTTOM VIEW

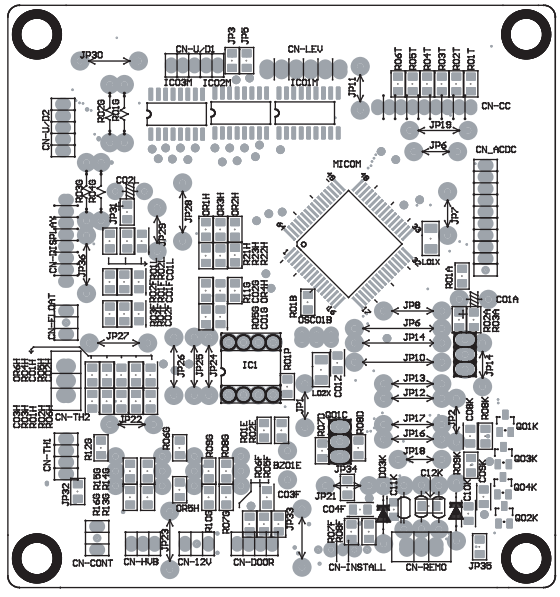


DC part

TOP VIEW



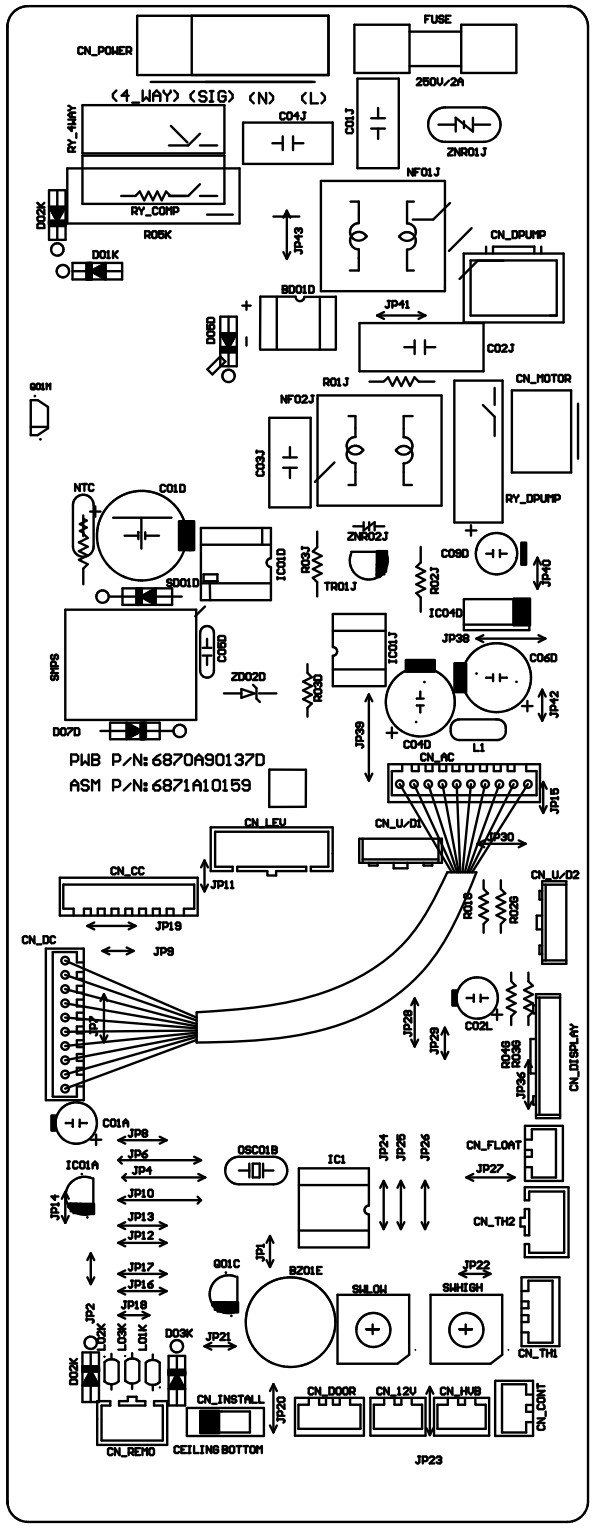
BOTTOM VIEW



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• **VB chassis**

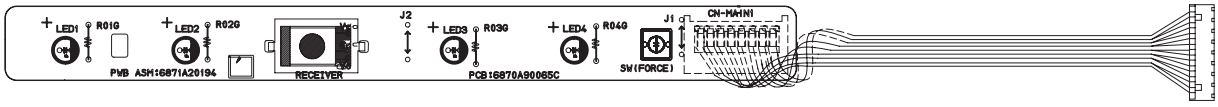


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2. Display ASSEMBLY

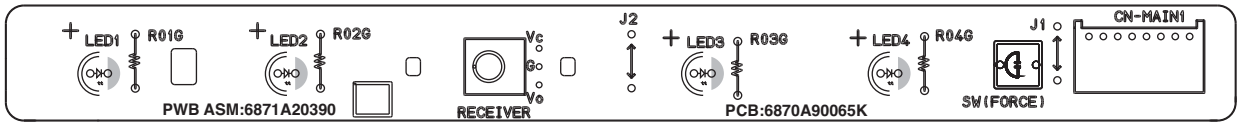
1) Split Type



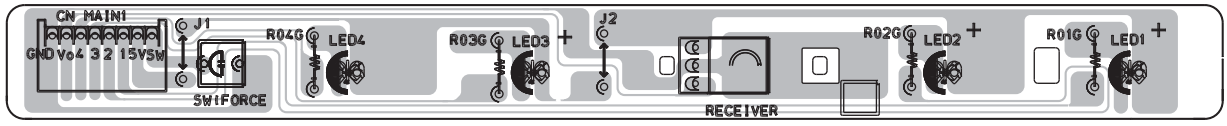
2) Convertible Type

VE chassis

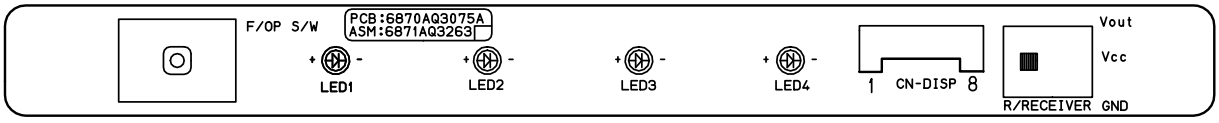
TOP VIEW



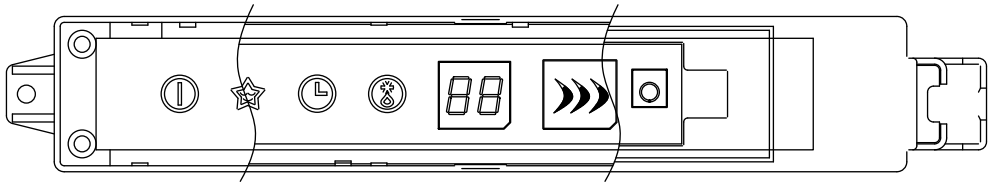
BOTTOM VIEW



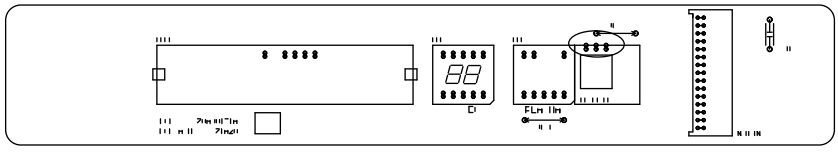
VB chassis



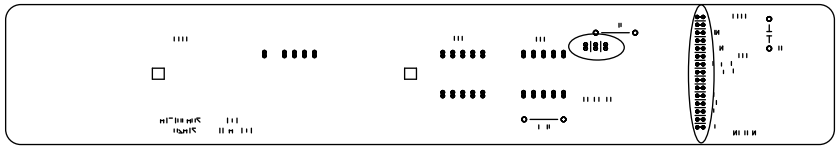
3) Art Cool Type



TOP VIEW



BOTTOM VIEW

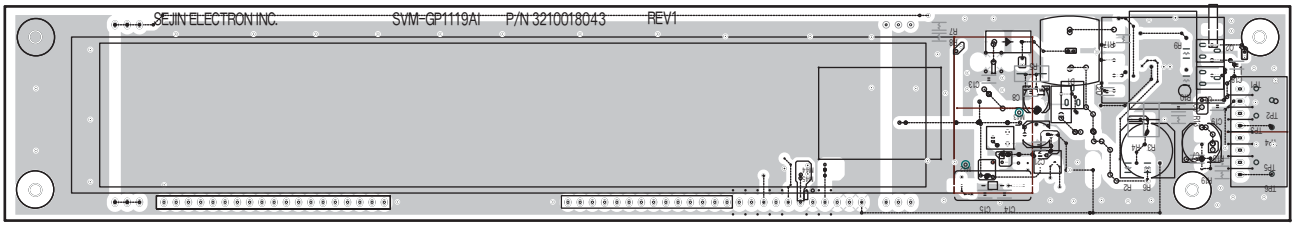


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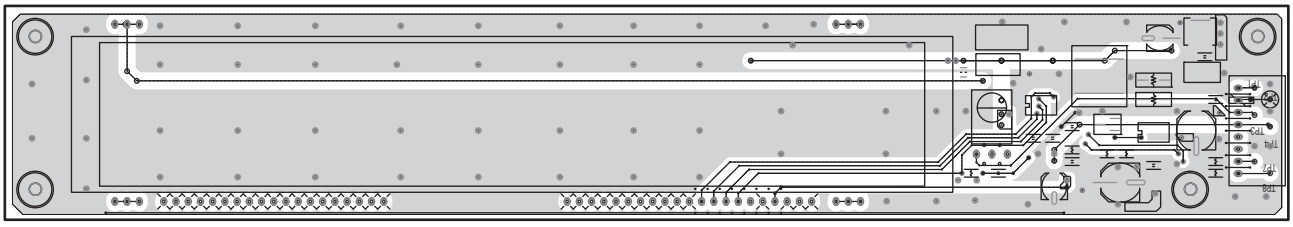
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4) Art Cool Deluxe Type

TOP VIEW



BOTTOM VIEW

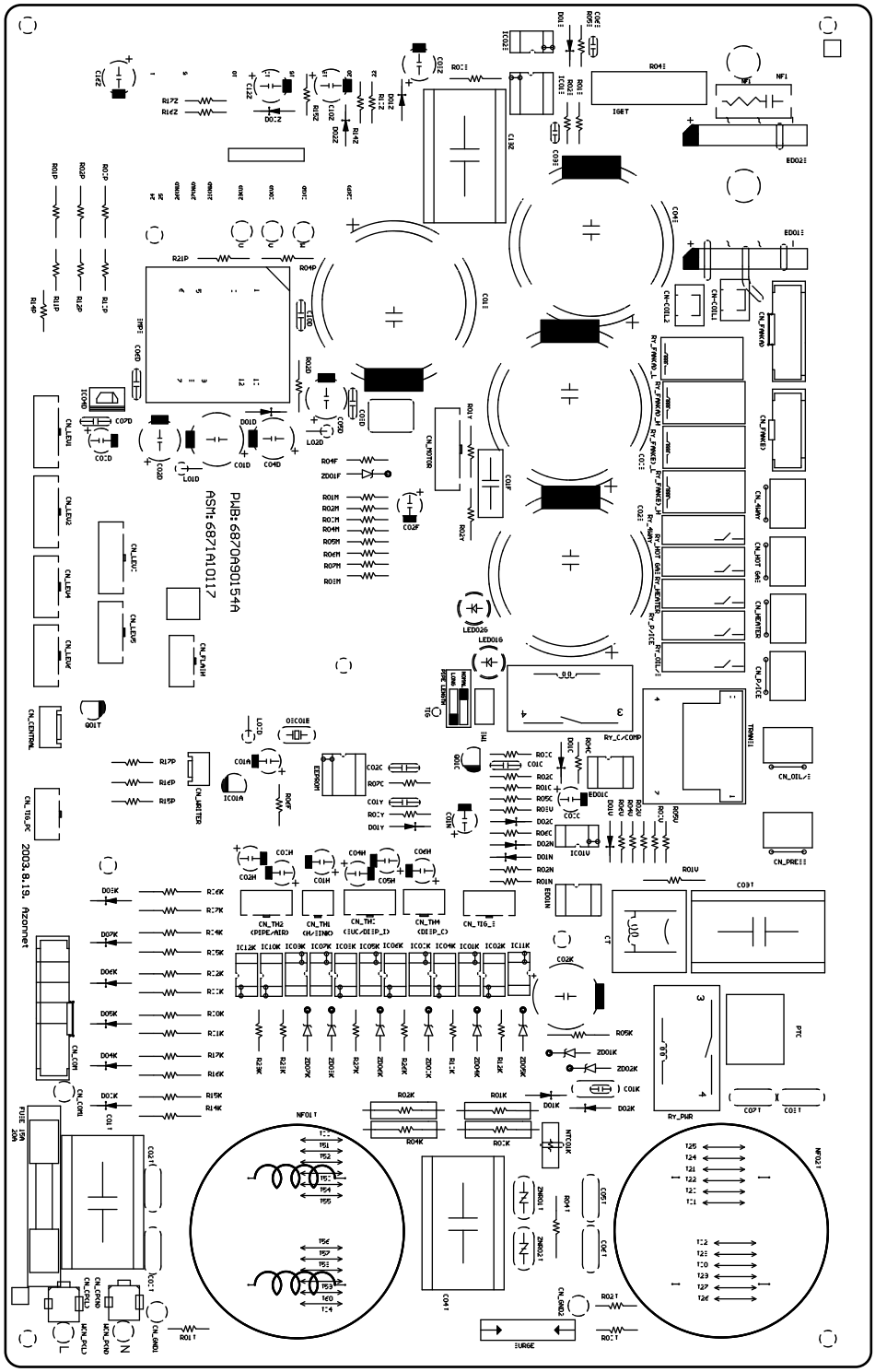


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3. Outdoor Unit

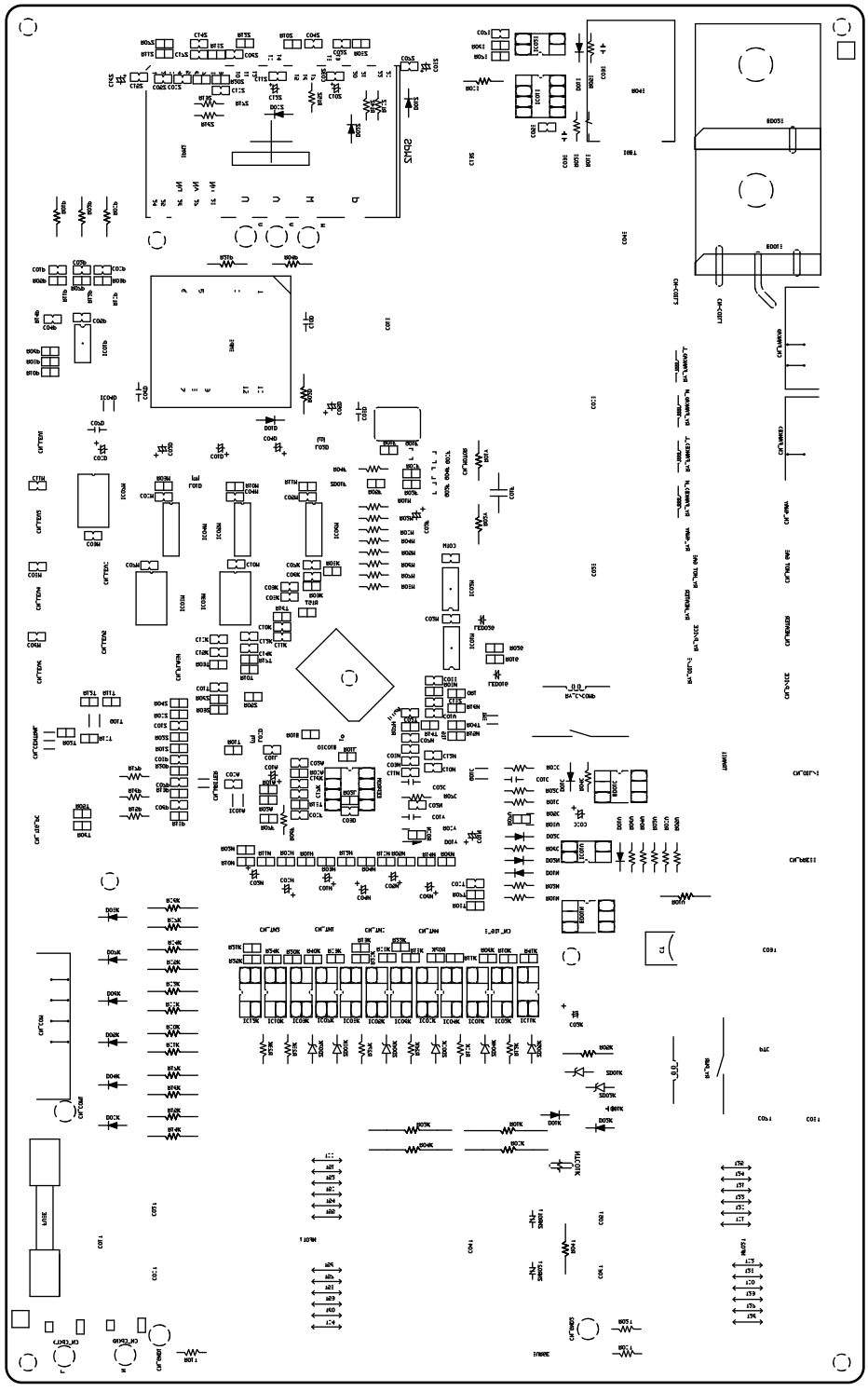
1) Component side



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2) Solder side

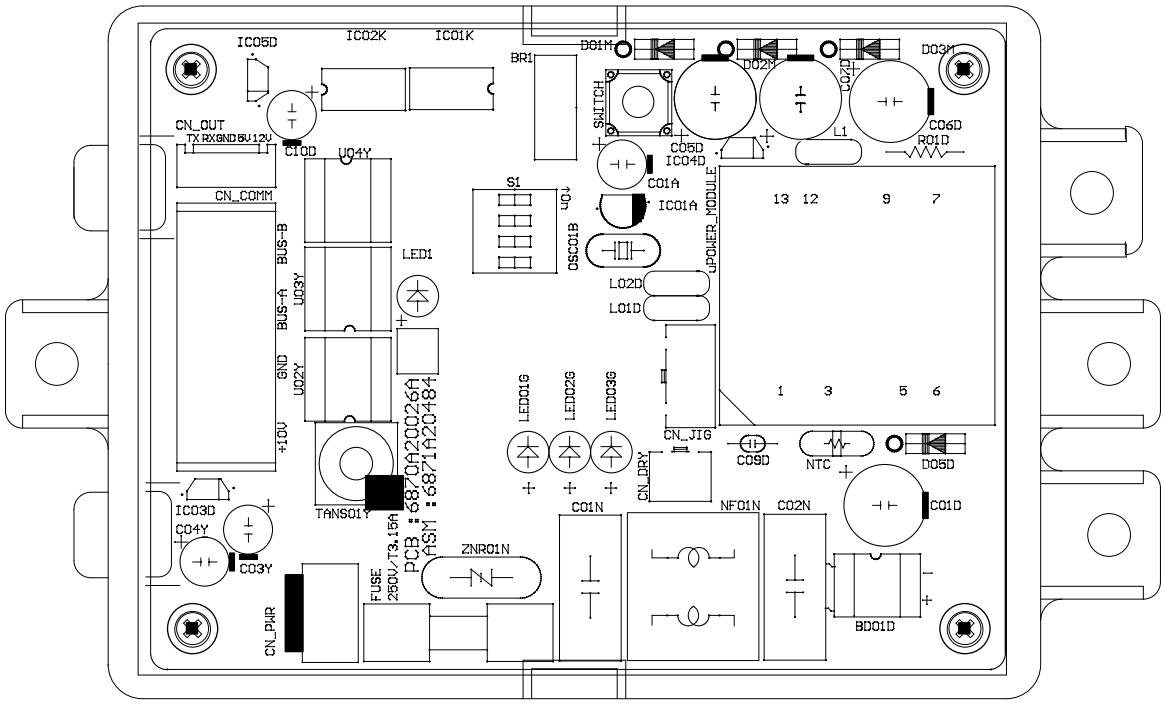


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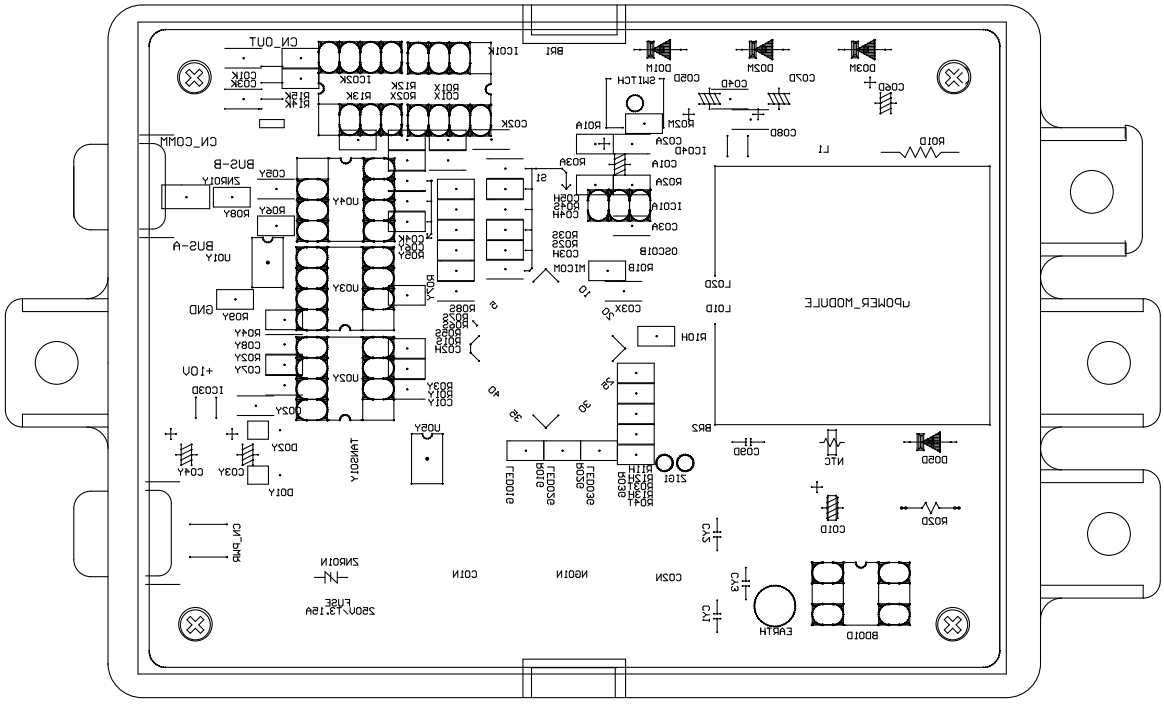
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3) Central control PCB

1) Top View



2) Bottom View



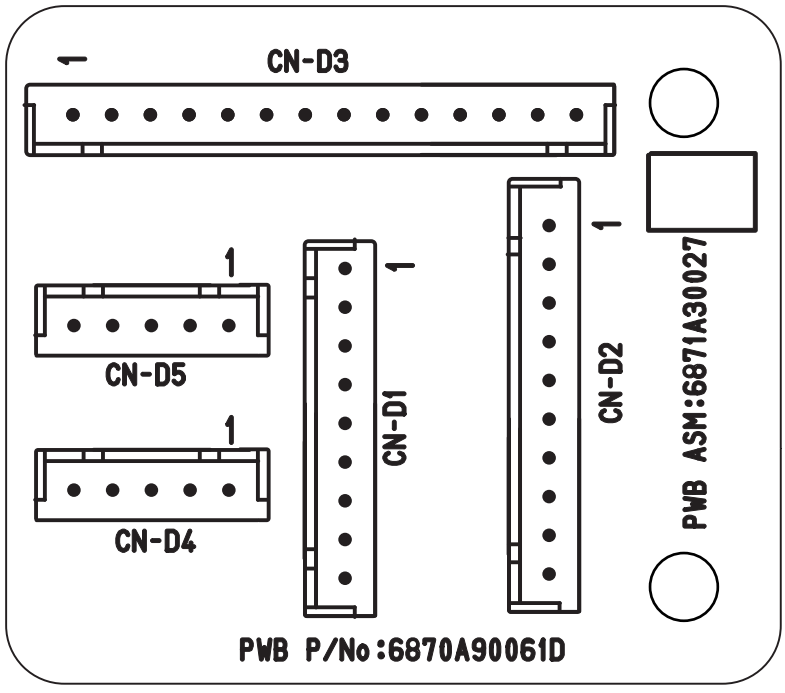
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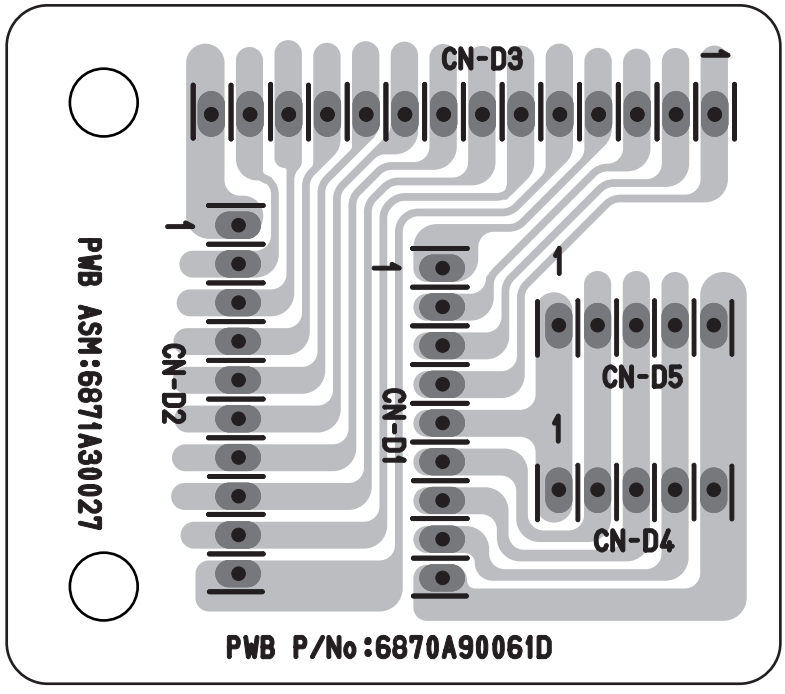
4. SUB P.W.B ASSEMBLY

1) Art Cool Type

TOP VIEW



BOTTOM VIEW



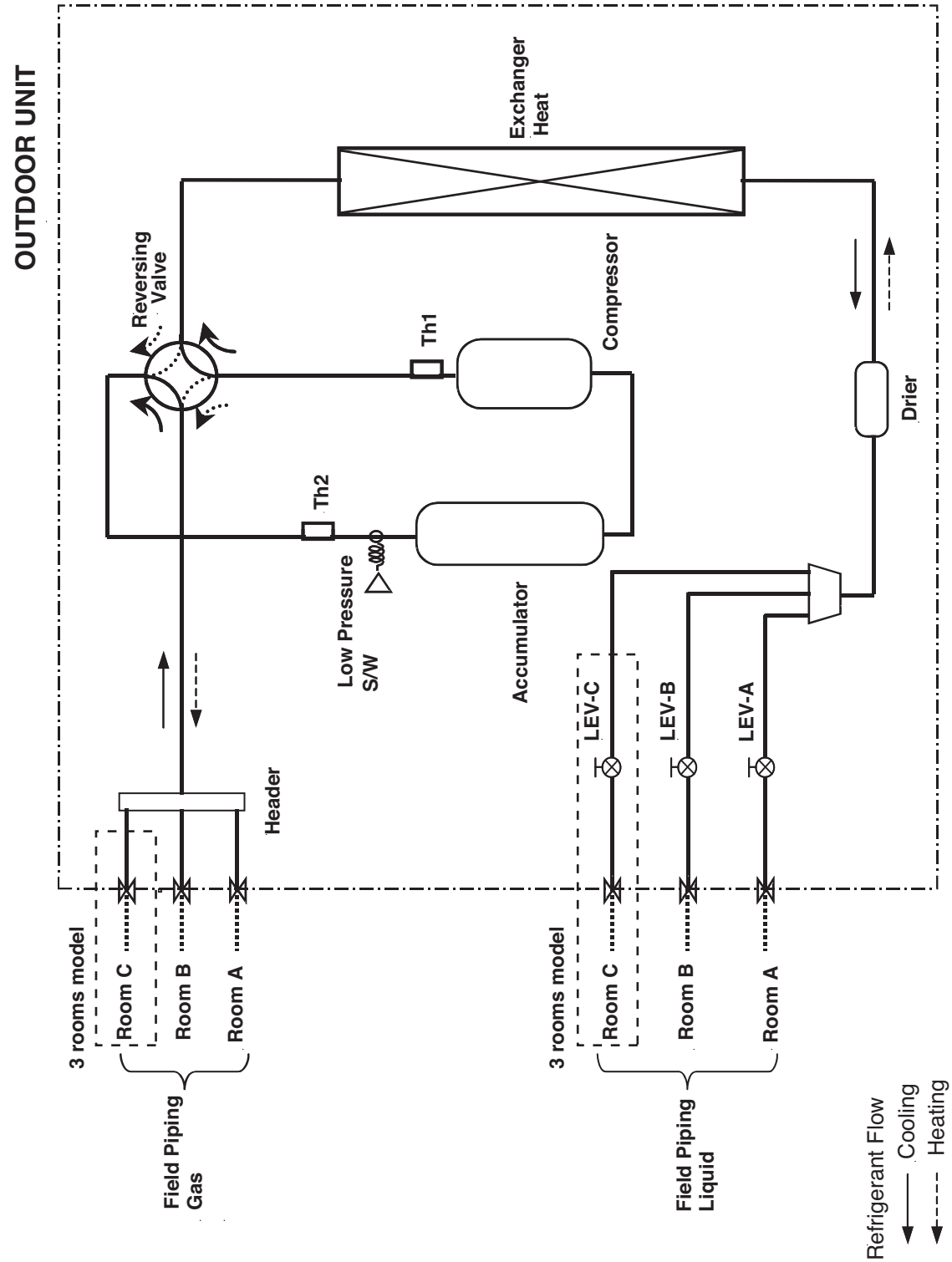
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Troubleshooting Guide

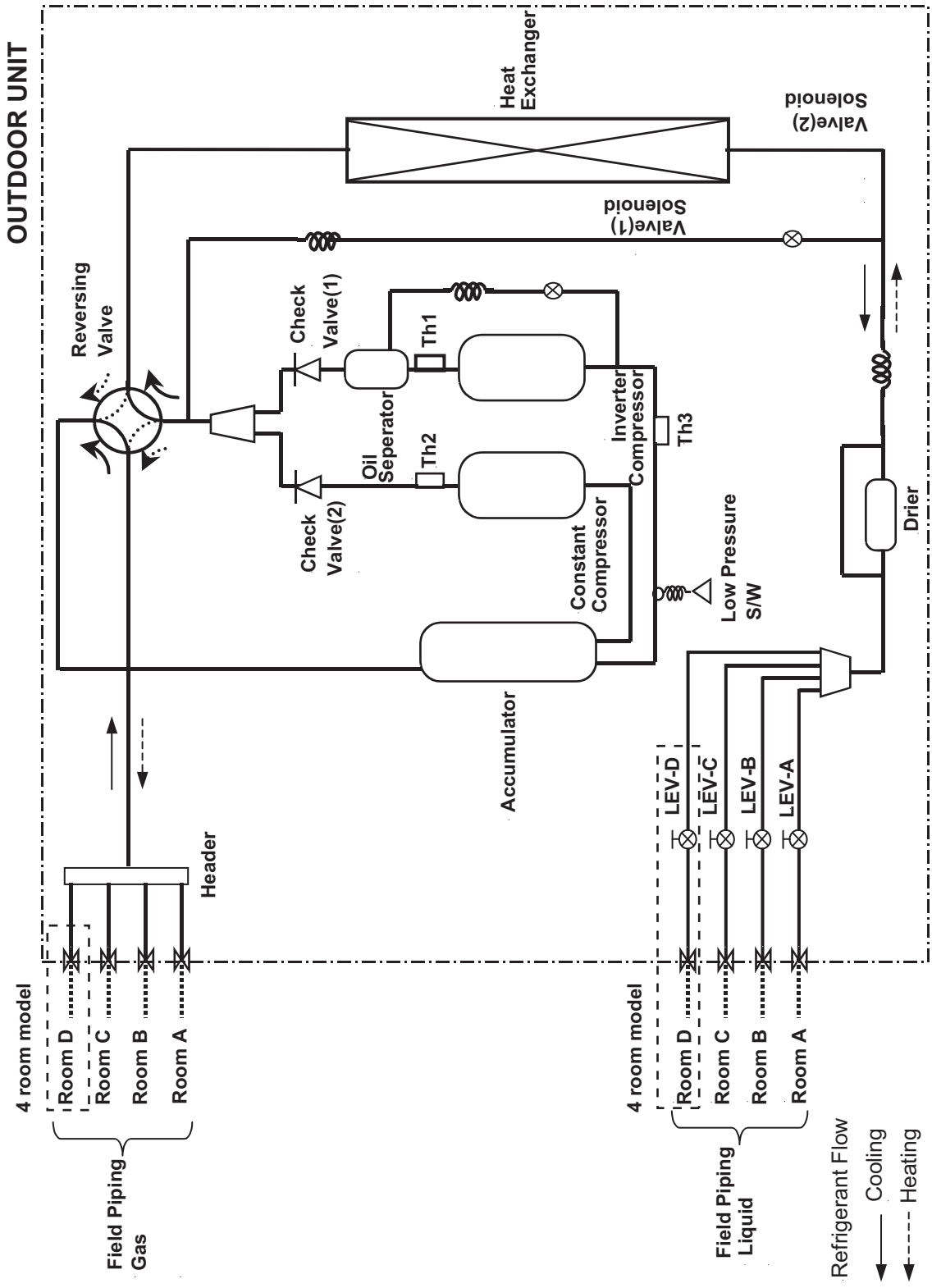
Refrigeration Cycle Diagram

1. A2UW186FA0, A2UW146FA0, A3UW186FA0



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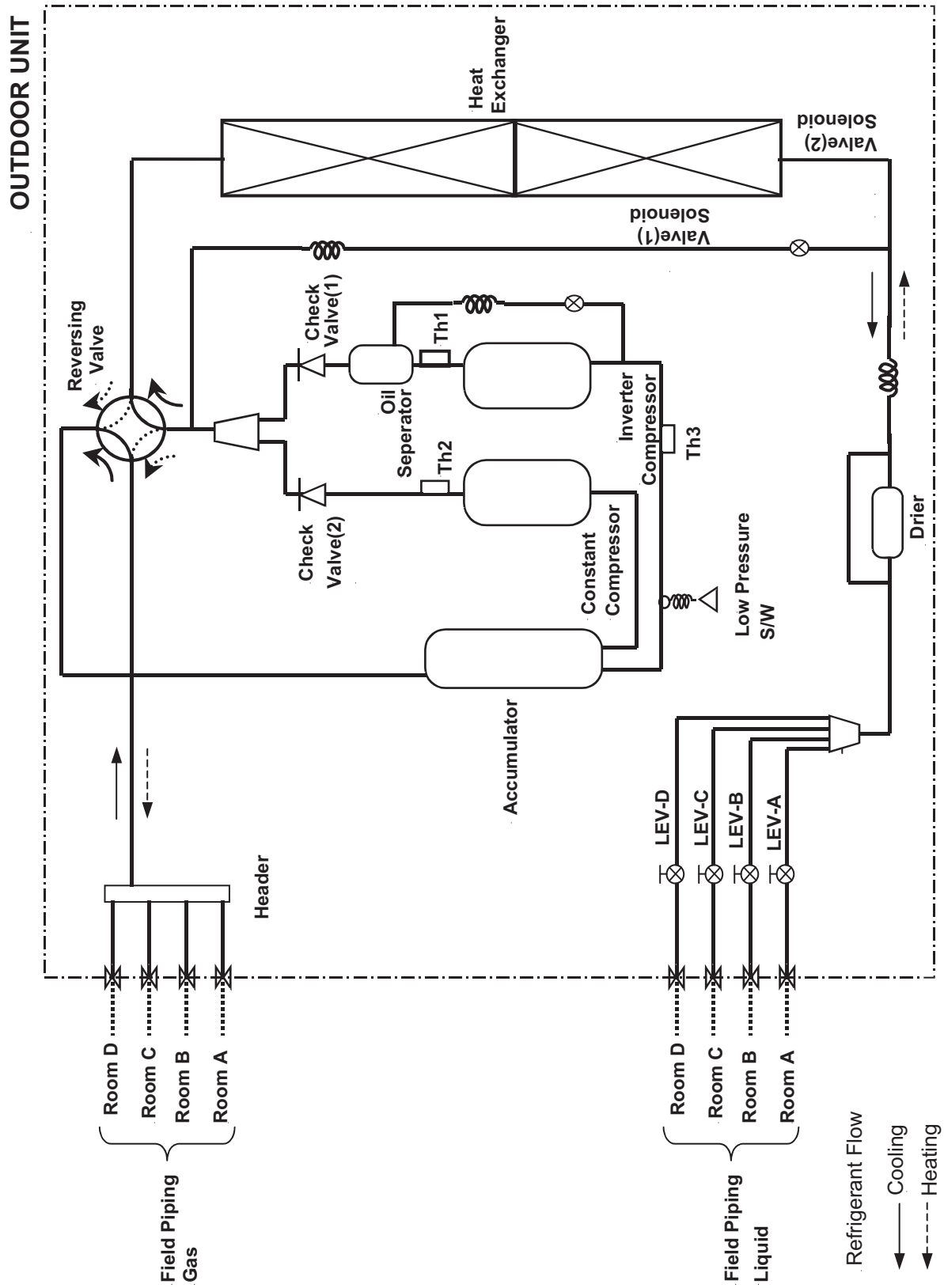
2. A3UW246FA0, A4UW246FA0



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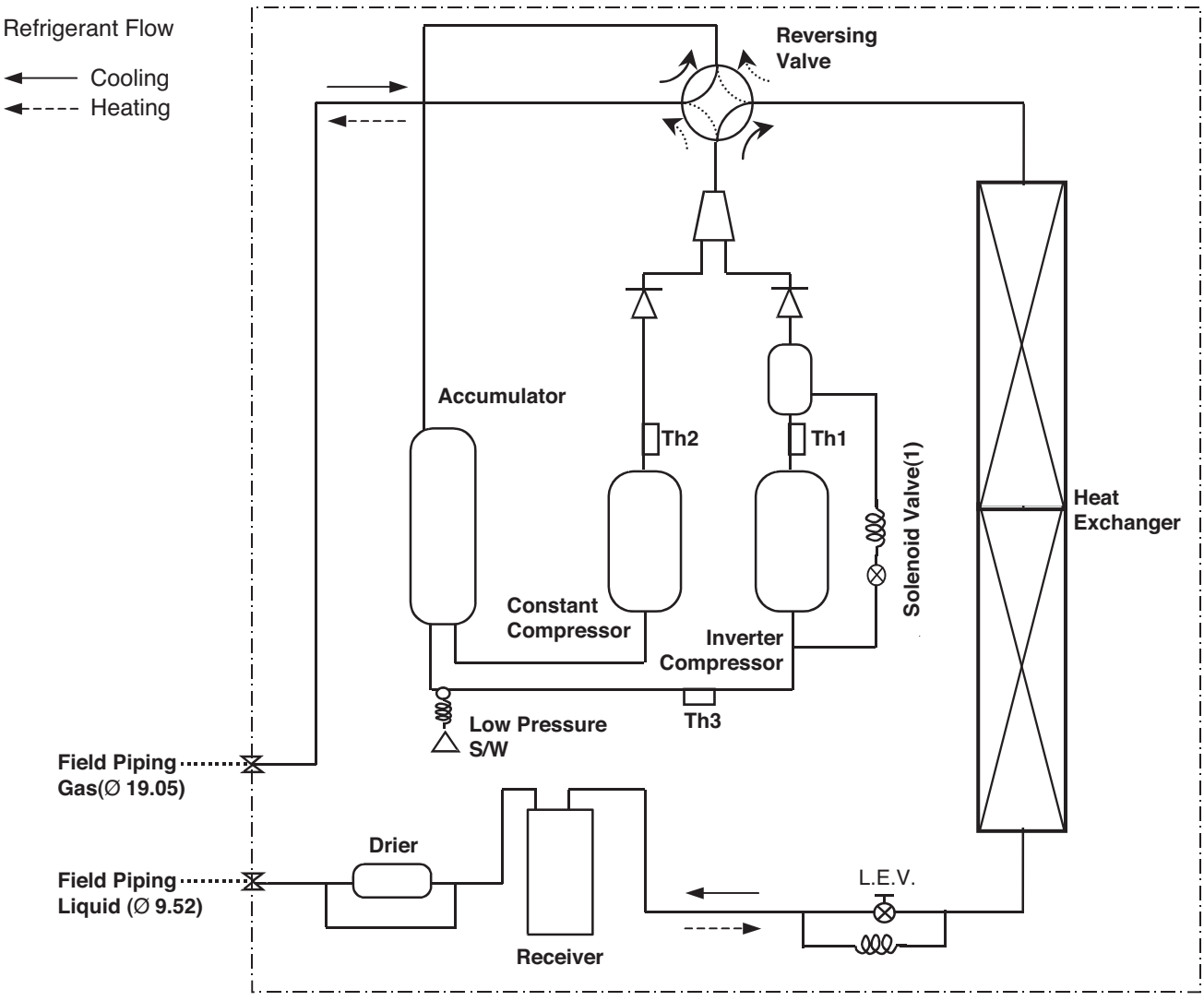
3. A4UW306FA0



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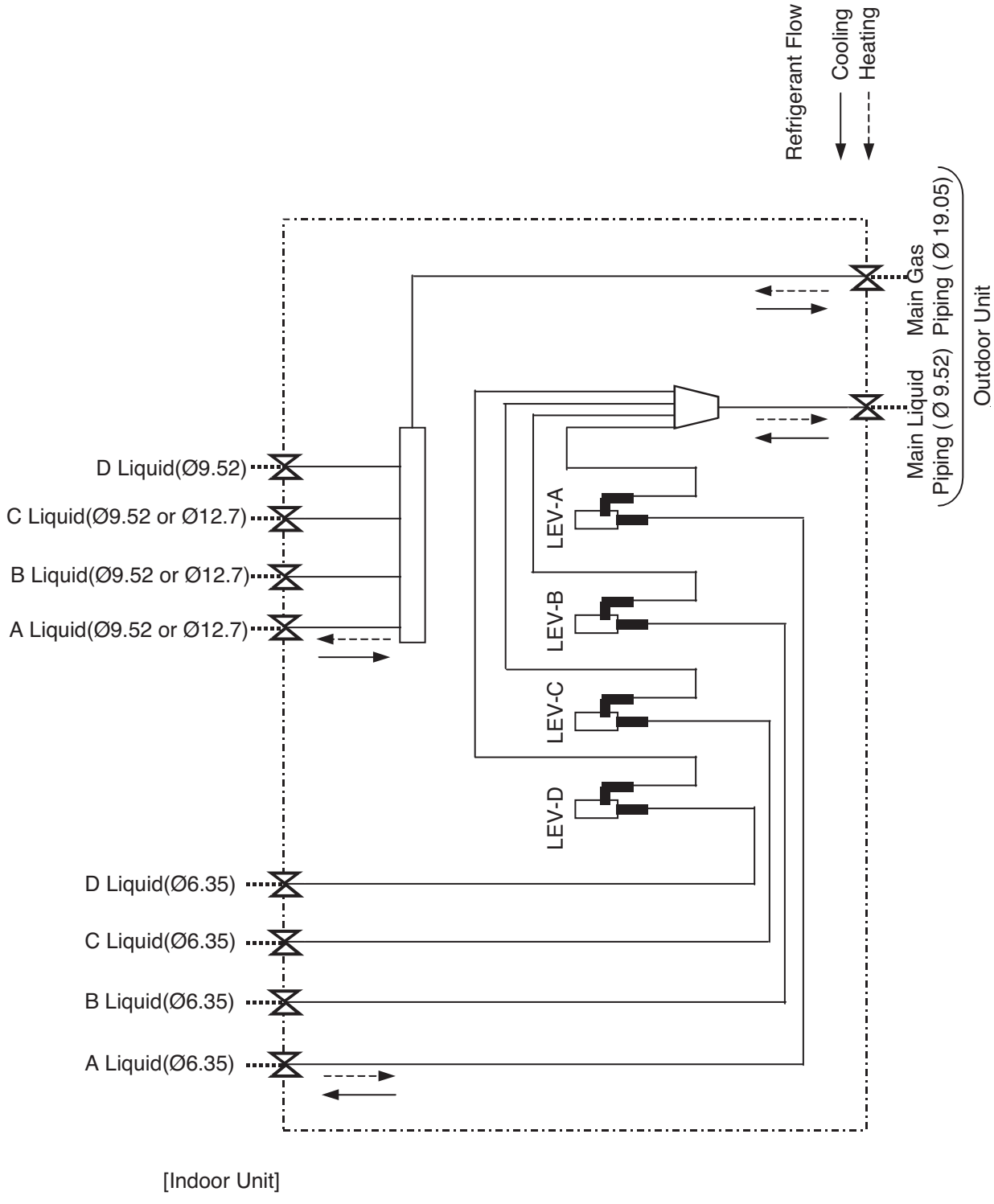
OUTDOOR UNIT



Notes:
- Th: Thermistor
- L.E.V: Linear Expansion Valve

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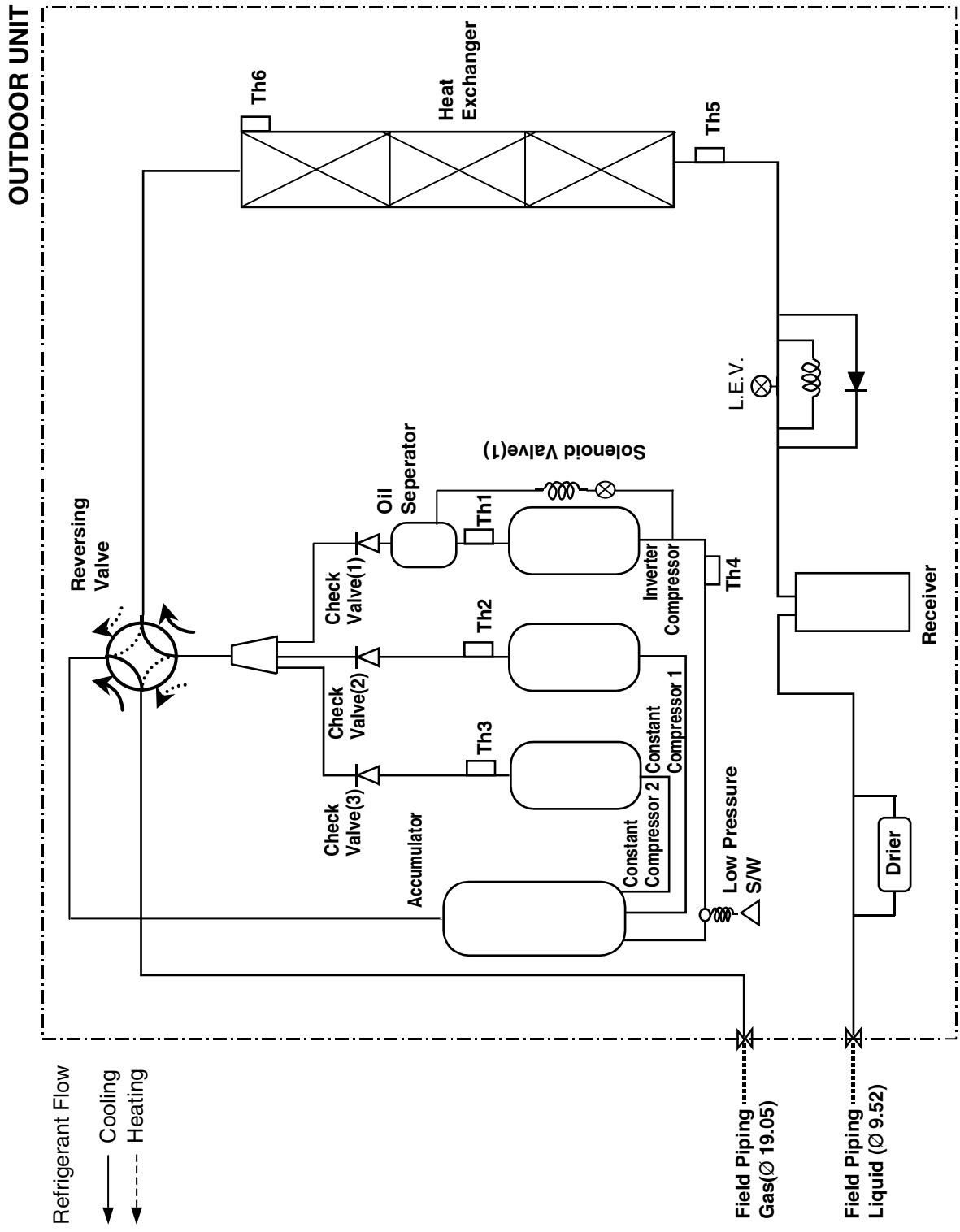
5. BD Unit



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6. A7UW486FA0, A8UW566FA0



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Self-diagnosis Function

■ **Error Indicator**

• The function is to self-diagnoisis airconditioner and express the troubles identifically if there is any trouble.
• Error mark is ON/OFF for the operation LED of evaporator body in the same manner as the following table.
• If more than two troubles occur simultaneously, primarily the highest trouble fo error code is expressed.
• After error occurrence, if error is released, error LED is also released simultaneously.
• To operate again on the occurrence of error code, be sure to turn off the power and then turn on.
• Having or not of error code is different from Model.

Indoor Error

Error code	Description	INV TPS	LED 1 (Red)	LED 2 (Green)	Indoor Status
00	No Error	●			ON
01	Indoor Room themistor error	●		1time ◑	OFF
02	Indoor in-piping sensor error	●		2times ◑	OFF
03	Remote controller error	●		3times ◑	OFF
04	Drain Pump error	●		4times ◑	OFF
05	Communcation error between in and out	●		5times ◑	OFF
06	Indoor Out-Piping sensor error	●		6times ◑	OFF
07	Differnt mode operation	●		7times ◑	OFF

Outdoor Error

Error Code	Description	INV TPS	LED 1 (Red)	LED 2 (Green)	Indoor Status
21	DC Peak (IPM Fault)	●	2times ◑	1time ◑	OFF
22	CT 2(Max CT)	●	2times ◑	2times ◑	OFF
23	DC Link Low Volt.	●	2times ◑	3times ◑	OFF
24	L_P/Heater Sink	●	2times ◑	4times ◑	OFF
25	Low voltage / Over voltage	●	2times ◑	5times ◑	OFF
26	DC Comp Position Error	●	2times ◑	6times ◑	OFF
27	PSC Fault Error	●	2times ◑	7times ◑	OFF
28	DC Link High Volt	●	2times ◑	8times ◑	OFF
32	D-Pipe High (INV)	●	3times ◑	2times ◑	OFF
33	D-Pipe High (Normal)	●	3times ◑	3times ◑	OFF
40	CT Sensor (Open/Short)	●	4times ◑	O	OFF
41	INV. D-PipeTh Error(Open/Short)	●	4times ◑	1time ◑	OFF
44	Outdoor air Th Error(Open/Short)	●	4times ◑	4times ◑	OFF
45	Cond. Pipe Th Error(Open/Short)	●	4times ◑	5times ◑	OFF
46	Suction Pipe Error(Open/Short)	●	4times ◑	6times ◑	OFF
47	Const D-pipe Th Error(Open/Short)	●	4times ◑	7times ◑	OFF
51	Capacity over	●	5times ◑	1time ◑	OFF
53	Signal error (Indoor ↔ Outdoor)	●	5times ◑	3times ◑	OFF
60	EEPROM Check Sum Error	●	6times ◑	O	OFF
61	Cond. Pipe High	●	6times ◑	1time ◑	OFF
62	Heatsink High	●	6times ◑	2times ◑	OFF
63	Cond. Pipe Low	●	6times ◑	3times ◑	OFF
65	Heatsoml Th error (Open/Short)	●	6times ◑	5times ◑	OFF

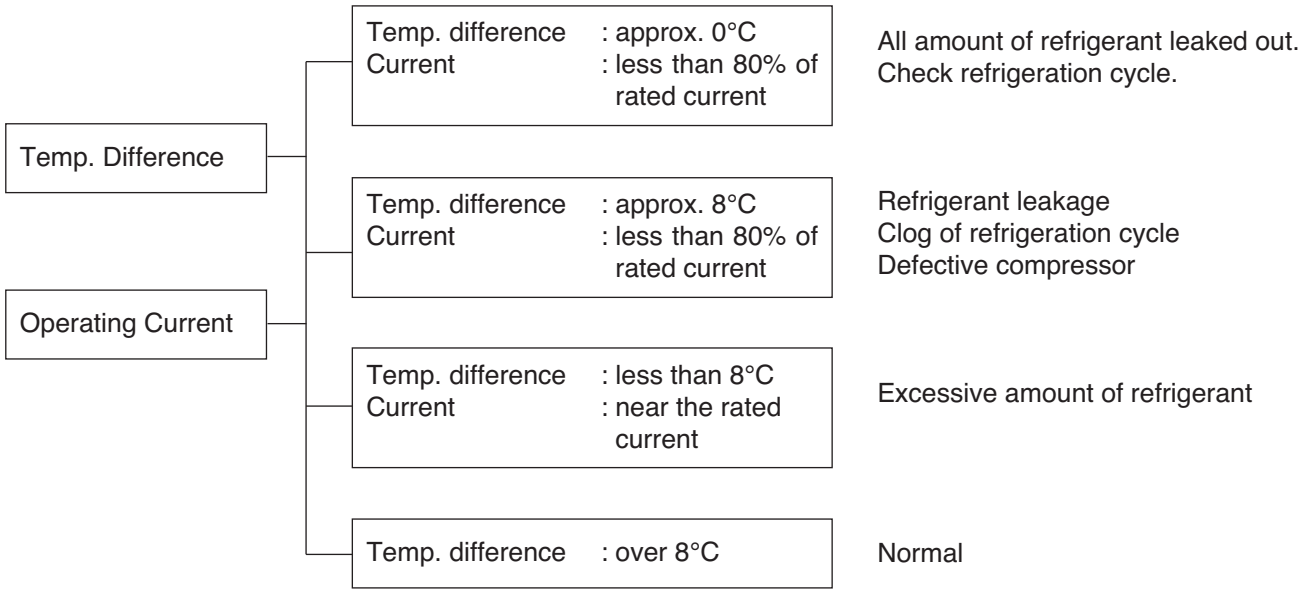
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Cycle Troubleshooting Guide

Trouble analysis

1. Check temperature difference between intake and discharge air, and operating current.



Notice:
Temperature difference between intake and discharge air depends on room air humidity. When the room air humidity is relatively higher, temperature difference is smaller. When the room air humidity is relatively lower temperature difference is larger.

2. Check temperature and pressure of refrigeration cycle.

Suction pressure (Compared with the normal value)	Temperature (Compared with the normal value)	Cause of Trouble	Description
Higher	High	Defective compressor	Current is low.
	Normal	Excessive amount of refrigerant	High pressure does not quickly rise at the beginning of operation.
Lower	Higher	Insufficient amount of refrigerant(Leakage) Clogging	Current is low.

Notice:
1. The suction pressure is usually 4.5~6.0 kg/cm^{2}G at normal condition.
2. The temperature can be measured by attaching the thermometer to the low pressure tubing and wrap it with putty.

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Electronic Parts Troubleshooting Guide

1. A2UW186FA0, A2UW146FA0, A3UW186FA0

✳ Refer to electronic contorol device drawing & schematic diagram.

Trouble 1 The Product doesn't operate at all.

Turn off the main power and wait until LED on outdoor PCB is off.

↓

Turn on the main power again.

↓

Does "Beeping" sound is made from the indoor unit?

NO

Check the voltage of power(AC220V/AC240V, 50Hz).

- The voltage of main power.
- The voltage applied to the unit.
- The connecting method of Indoor/Outdoor connecting cable (each color)
- The P.W.B. Ass'y

(Fuse, Noise Filter, Power Transformer, IC01D, IC02D, etc.)

YES

- Primarily, the operating condition of Micom is O.K.

↓

- Check CN-DISP1

The operation check of the P.C.B. Ass'y

Procedure	Specification	Remedy
1) The input voltage of power transformer.	1) AC230V ± 30V : Check the rated voltage	1) Replace power transfomer.
2) The output voltage of power transformer.	2) 14V ± 3V	2) Replace power transfomer.
3) IC01D(7812)	3) DC12V	3) Replace IC01D.
4) IC02D(7805)	4) DC5V	4) Replace IC02D.
5) IC01A(KIA7036)	5) The voltage of micom pin 29 : DC4.5V↑	5) Replace IC01A.

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Trouble 2 Product doesn't operate with the remote controller.

Turn on main power.

While the compressor has been stopped, the compressor does not operate owing to the delaying function for 3 minutes after stopped.

When the compressor stopped Indoor Fan is driven by a low speed.
At this point the wind speed is not controlled by the remote controller.
(When operated in the Sleeping Mode, the wind speed is set to the low speed as force.)

Caused by the remote controller.

When the mark () is displayed in LCD screen, replace battery.

When the detect switch (double key) inside the remote controller door is fault, it is impossible to operate temperature regulating(▲ / ▼) and wind speed selecting.

Check the Display PWB Ass'y

Caused by other parts except the remote controller

Check the contact of CN-DISP 1 connector

Check DISP PWB Ass'y
-Voltage between CN1 ① - ⑦ : DC +5V

• Check receiver ass'y

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Trouble 3 The Compressor/Outdoor Fan don't operate

Turn on the main power.

Operate Cooling Mode by setting the disired temperature of the remote controller is less than one of the Indoor temperature by 1°C at least.

When in air circulation mode, compressor/outdoor fan is stopped.

Check the sensor for Indoor temperature is attatched as close as to be effected by the themperature of Heat Exchange (EVA.)

When the sensor circuit for Indoor temperature and connector are in bad connection or are not engaged, Compressor/Outdoor fan is stopped.

- Check the related circuit of R02H(12.1K), R01H(1K), R04H(6.2K), R03H(1K), C01H(102), C02H(102), Micom(pin No. ⑪, ⑫).
- Check the Indoor temperature sensor is disconnected or not (about 10K at 25°C).

Check the Relay(RY-PWR, RY-START) for driving Compressor.

- Check the voltage between brown and blue cable of terminal to connect the Outdoor (About AC220V / 240V).
- Check the related circuit of relay in Outdoor PCB Ass'y.

Check Point	Comp. ON	Comp. OFF
Between Micom(No. 19) and GND	DC 5V	DC 0V
Between IC01M(No. 10) and GND	DC 1V↓	DC 12V

Turn off main power.

Check the electrical wiring diagram of Outdoor side.
Check the open or short of connecting wires between Indoor and Outdoor.

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Trouble 4 When indoor Fan does not operate.

Turn off main power.

↓

Check the connection of CN-FAN.

↓

Check the Fan Motor.

↓

Check the Fuse(AC250V, T2A).

↓

Check the related circuit of indoor Fan Motor.

- The pin No. ㊳ of micom and the part for driving SSR.(Q01M)
- Check the related pattern.
- Check the SSR.
  - SSR Open: Indoor Fan Motor never operate.
  - SSR short: Indoor Fan Motor always operates in case of ON or OFF.

↓

Turn on the main power

↓

Check the SSR high speed operation by remote control.
(the Indoor Fan Motor is connected)

The voltage of Pin No 1(orange) and 3(black) of CN-FAN.

↓

About AC 160V over	About AC 50V over
↓	↓
SSR is not damaged	Check SSR

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Trouble 5 When the louver does not operate.

• Confirm that the vertical louver is normally geared with the shaft of Stepping Motor.
• If the regular torque is detected when rotating the vertical louver with hands ⇒ Normal



• Check the connecting condition of CN-U/D or CN0L/R Connector
• Check the soldering condition(on PCB) of CN-U/D or CN0L/R Connector



Check the operating circuit of the vertical louver

• Confirm that there is DC +12V between pin ① of CN-U/D, CN0L/R and GND.
• Confirm that there is a soldering short at following terminals.
  - Between ①, ②, ③ and ④ of MICOM
  - Between ⑰, ⑱, ⑲ and ⑳ of MICOM
  - Between ④, ⑤, ⑥ and ⑦ of IC01M
  - Between ⑤, ⑥, ⑦ and ⑧ of IC01M



If there are no problems after above checks.

• Confirm the assembly condition that are catching and interfering parts in the link of the vertical louver

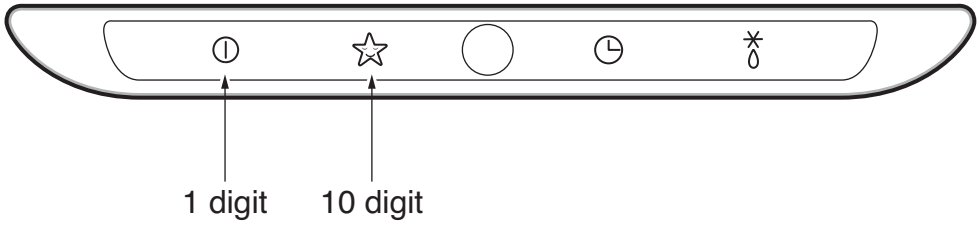
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General Information

■ **Error Indicator (Indoor)**

- The function is to self-diagnosis air conditioner and express the troubles if there is any trouble.
- Error mark is displayed on display window of indoor units and wired-remote controller, and LED of outdoor unit control board.
- If more than two troubles occur simultaneously, lower number of error code is first displayed.
- After error occurs, if error is released, error LED is also released simultaneously.



■ **Indoor Error**

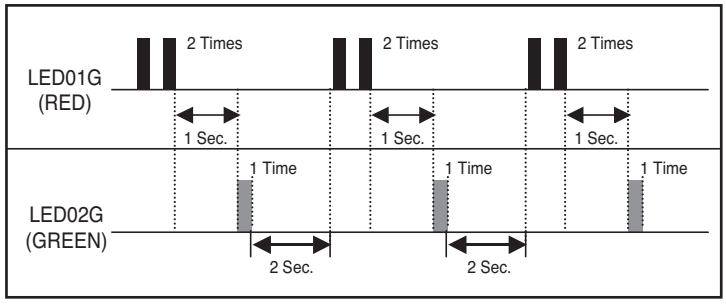
Error code	Contents	Case of error	Indoor Status
01	Air sensor (open/short)	Open / Short	Off
02	Inlet pipe sensor	Open / Short	Off
03	Communication(Indoor ÷ Wired R/Control)	Communication Poorly	Off
04	Drain pump/ Float switch	Float switch Open	Off
05	Communication(Indoor ÷ Outdoor)	Communication Poorly	Off
06	Outlet pipe sensor	Open / Short	Off
07	Different operation mode	Different operation mode	Off

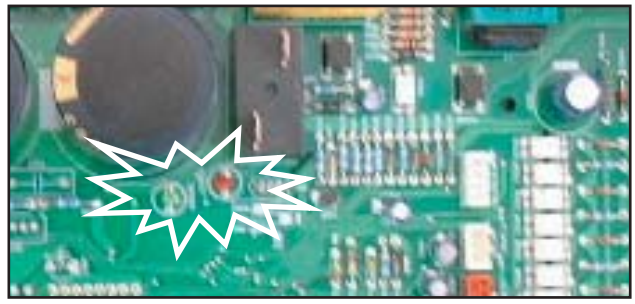
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■ Error Indicator (Outdoor)

Outdoor Error
Ex) Error 21 (DC Peack)





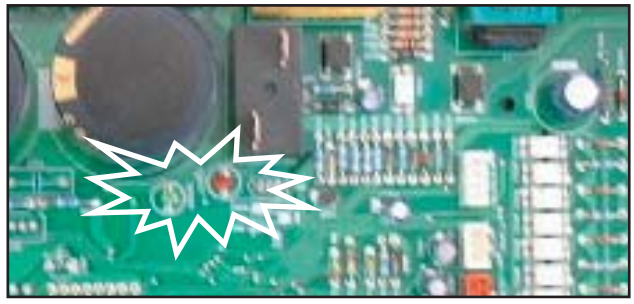
Error code	Contents	LED01G (Red)	LED02G (Green)	Case of error	Outdoor Status
21	IPM Fault (Compressor Over current)	2 times ◑	1 time ◑	Compressor malfunction,IPM Fault	Off
22	CT 2(Max. Current)	2 times ◑	2 times ◑	Current is 14A ↑	Off
23	DC Link Low Volt.	2 times ◑	3 times ◑	DC Link volt. Is 140V ↓	Off
24	Low / High press	2 times ◑	4 times ◑	Low / High press switch OPEN	Off
25	AC Low / AC High Volt.	2 times ◑	5 times ◑	Abnormal AC volt. Input.	Off
26	DC Compressor Position	2 times ◑	6 times ◑		Off
27	PSC Fault	2 times ◑	7 times ◑		Off
28	DC Link High Volt	2 times ◑	8 times ◑	Off	Off
32	Discharge Pipe Temp. High (INV)	3 times ◑	2 times ◑	Off	Off
33	Discharge Pipe Temp. High (Cons.)	3 times ◑	3 times ◑	Off	Off

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■ **Error Indicator (Outdoor)**

Outdoor Error



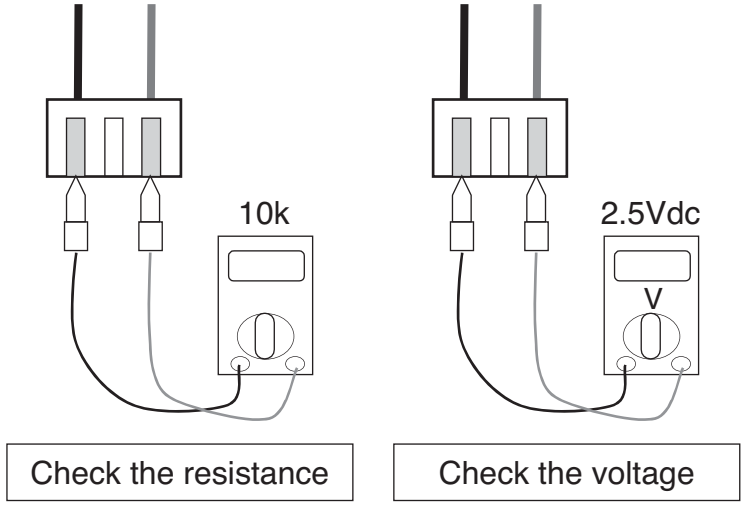
Error code	Contents	LED01G (Red)	LED02G (Green)	Case of error	Outdoor Status
40	CT Circuit	4 times ◑	○	CT Circuit malfunction	Off
41	D-pipe sensor INV. (open/ short)	4 times ◑	1 time ◑	Open / Short	Off
44	Air sensor (open/ short)	4 times ◑	4 times ◑	Open / Short	Off
45	Cond. Pipe sensor (open/ short)	4 times ◑	5 times ◑	Open / Short	Off
46	Suction pipe sensor (open/ short)	4 times ◑	6 times ◑	Open / Short	Off
47	D-pipe sensor Cons. (open/ short)	4 times ◑	7 times ◑	Open / Short	Off
51	Over capacity	5 times ◑	1 time ◑	Over load combination	Off
53	Communication (Indoor ↔ Outdoor)	5 times ◑	3 times ◑	Communication Poorly	Off
60	EEPROM check sum	6 times ◑	○	Check sum mismatching	Off
61	Cond. Pipe sensor temp. high	6 times ◑	1 time ◑	Cond. Temp. high	Off
62	Heat sink sensor temp. high	6 times ◑	2 times ◑	Heat sink temp. high	Off
65	Heat sink sensor (open/ short)	6 times ◑	5 times ◑	Open / Short	Off

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1) Troubleshooting CH01, CH02, CH06

Display code	Title	Cause of error	Check point & Normal condition
01	Indoor air sensor	• Open / Short • Soldered poorly • Internal circuit error	Normal resistor : 10KΩ/ at 25°C (Unplugged) Normal voltage : 2.5Vdc / at 25°C (plugged)
02	Indoor inlet pipe sensor	• Open / Short • Soldered poorly • Internal circuit error	Normal resistor : 5KΩ/ at 25°C (Unplugged) Normal voltage : 2.5Vdc / at 25°C (plugged)
06	Indoor outlet pipe sensor	• Open / Short • Soldered poorly • Internal circuit error	Normal resistor : 5KΩ/ at 25°C (Unplugged) Normal voltage : 2.5Vdc / at 25°C (plugged)



Check Point

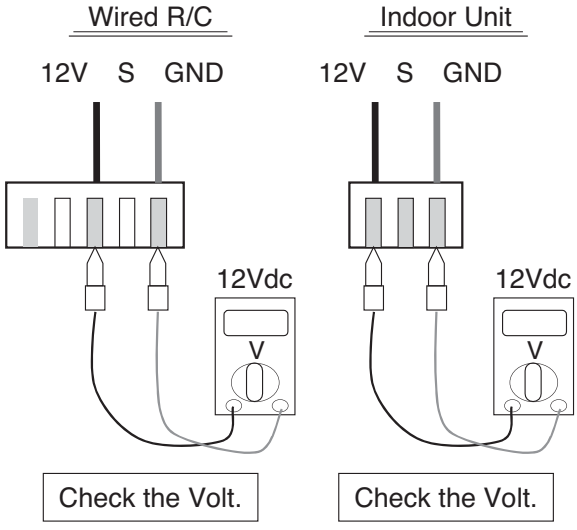
1. Unplug the sensor on Indoor unit PCB.
2. Estimate the resistance of each sensor.
3. If the resistance of the sensor is 10KΩ/ 5KΩ at 25°C, then sensor is normal.
4. If the resistance of the sensor is 0 KΩ or ∞, then sensor is abnormal. → Change the sensor.
5. Plug the sensor on Indoor unit PCB and Power ON.
6. Estimate the voltage of each sensor.
7. If the voltage of the sensor is 2.5Vdc at 25°C, then sensor is normal.
8. If the resistance of the sensor is 0 or 5Vdc, then sensor is abnormal. → Repair or Change the PCB.

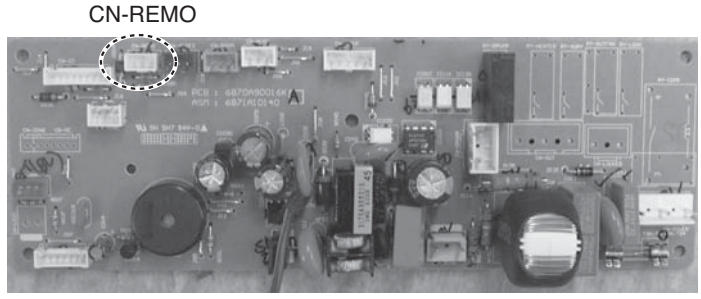
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2) Troubleshooting CH03

Display code	Title	Cause of error	Check point & Normal condition
03	Communication Wired R/C	• Open / Short • Wrong connection	• Connection of wire • Main PCB Volt. DC12V • Noise interference





Check Point

1. Check the wire connection. (Open / Short) → Repair the connection
2. Check the soldering state of connector. (Soldered poorly) → Repair or Change the PCB.
3. Check the volt. Of main PCB power source. (DC 12V, DC 5V) → Repair or Change the main PCB.
4. Check the installation of wired remote controller. (Noise interference) → Adjust the state of installation

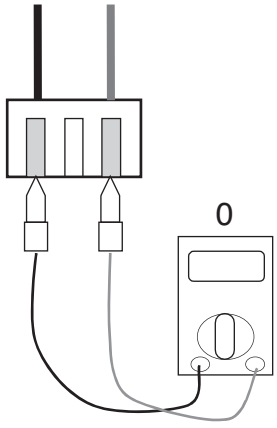
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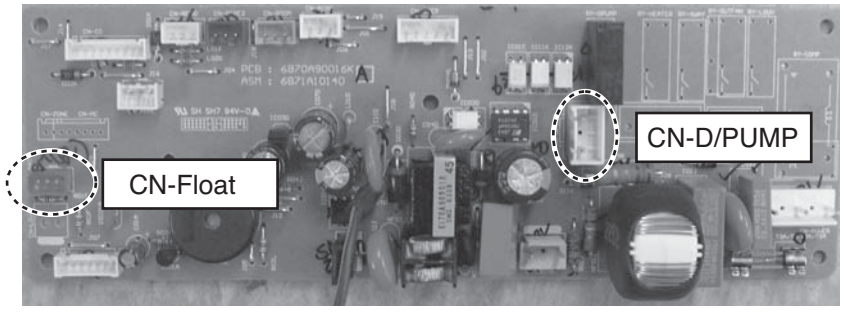
3) Troubleshooting CH04

Display code	Title	Cause of error	Check point & Normal condition
04	Drain pump / Float switch	• Float switch Open. (Normal : short)	• The connection of wire(Drain pump/ Float switch) • Drain pump power input. (220V) • Drain tube installation. • Indoor unit installation. (Inclination)

CN Float



Check the resistance



Check Point

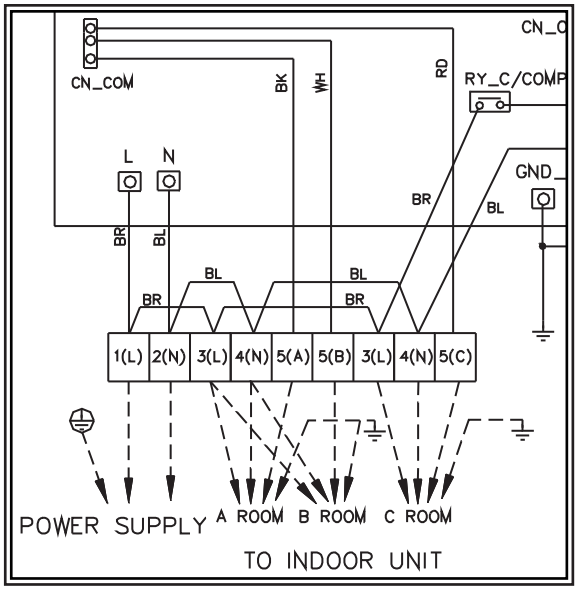
1. Check the wire connection. (Open, Soldered poorly) → Repair the connection or change the PCB.
2. Check the resistance of float switch (Abnormal : Open, Normal : short) → Check the float switch.
3. Check the level of water
4. Check the volt. Of Drain pump power supply. (AC 230V) → Repair or Change the main PCB.

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4) Troubleshooting CH05, CH53

Display code	Title	Cause of error	Check point & Normal condition
04 / 53	Communication (Indoor → Outdoor)	• Communication poorly	• Power input AC 220V. (Outdoor, Indoor) • The connector for transmission is disconnected. • The connecting wires are misconnected. • The GND1,2 is not connected at main GND. • The communication line is shorted at GND. • Transmission circuit of outdoor PCB is abnormal. • Transmission circuit of indoor PCB is abnormal.



Check Point

1. Check the input power AC230V. (Outdoor, Indoor unit)
2. Check the communication wires are correctly connected.
   → Adjust the connection of wire
   → Confirm the wire of "Live", "Neutral"
3. Check the resistance between communication line and GND. (Normal : Over 2MΩ)
4. Check the connector for communication is correctly connected.
5. Check the connection of GND1, GND2, and main GND.
6. If one indoor unit is operated normally, outdoor PCB is no problem.
   → Check the another indoor unit.

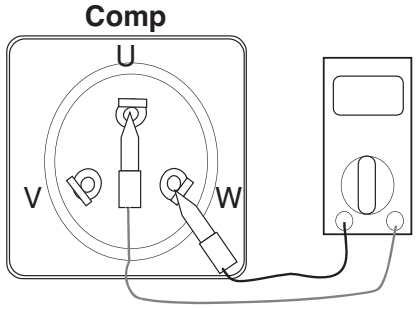
* CH05 is displayed at indoor unit, CH53 is displayed at outdoor unit.

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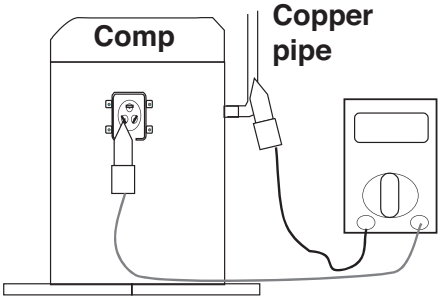
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5) Troubleshooting CH21

Display code	Title	Cause of error	Check point & Normal condition
21	DC Peak	• Instant over current • Over Rated current • Poor insulation of IPM	• An instant over current in the U,V,W phase - Comp lock - The abnormal connection of U,V,W • Over load condition - Overcharging of refrigerant - Pipe length. • Poor insulation of compressor



Resistance() at 20°C		
Terminal	Inverter comp.	Constant comp.
U–V	0.64	0.8
V–W	0.64	0.8
W–U	0.64	0.8



Resistance() at 20C		
Terminal	Inverter comp.	Constant comp.
U-GND	2M	2M
V-GND	2M	2M
W-GND	2M	2M

Check Point

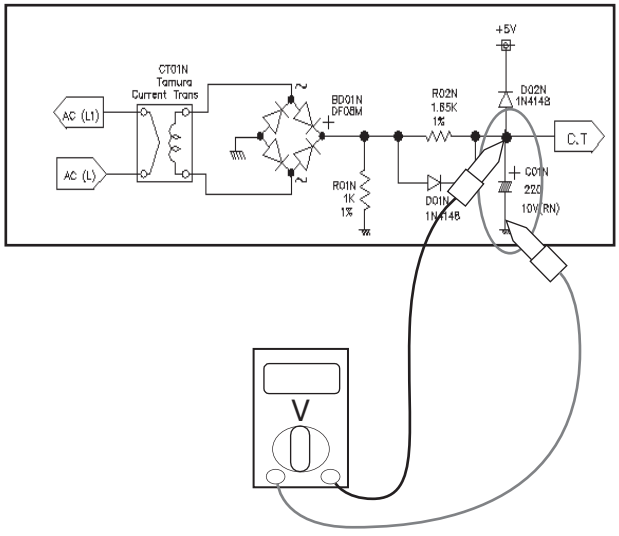
1. Check the wire connection. (U,V,W)
2. Check the load condition. (Refrigerant, Pipe length, …) → Adjust the load condition
3. Check the electricity leakage of the compressor. → Normal : Over 2MΩ.
4. Check the resistance of compressor. → Normal : 0.65Ω(INV), 0.8Ω(Cons.) → No difference at each terminal.
5. Check the insulation from water at IPM part. → Check the trace of water.
6. Check the IPM circuit.

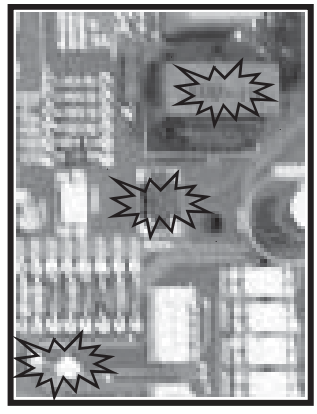
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6) Troubleshooting CH22

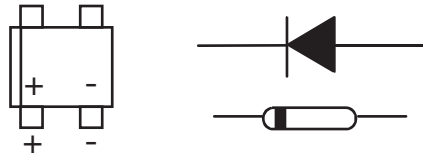
Display code	Title	Cause of error	Check point & Normal condition
21	Max. C/T	Over current (14A ↑)	Malfunction of compressor Blocking of pipe Low voltage input Refrigerant, pipe length, blocked, …
22	C/T Internal circuit	Initial current error	Malfunction of current detection circuit. (Open / Short) The voltage of “C01N” Is 4.0Vdc(25A) ↑ .





Check Point

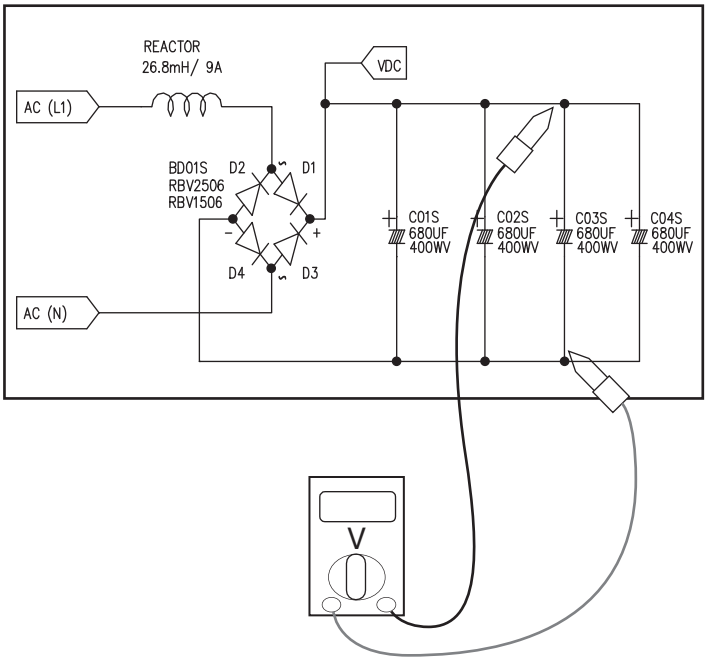
1. Check the power source.
2. Check the fan operation is right.
3. Check the current.
4. Check the install condition.
5. Check the internal circuit. (C/T, Diode, Resistor)



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7) Troubleshooting CH23, CH28

Display code	Title	Cause of error	Check point & Normal condition
23	DC Link Low voltage.	• DC link volt. is 140Vdc ↓ .	• Check the power source. • Check the components.
28	DC Link High voltage	• DC link volt. is 420Vdc ↑ .	• Check the power source. • Check the components.



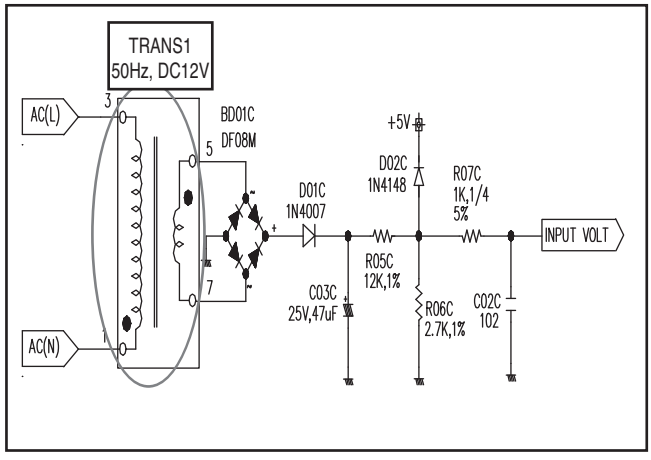
Check Point

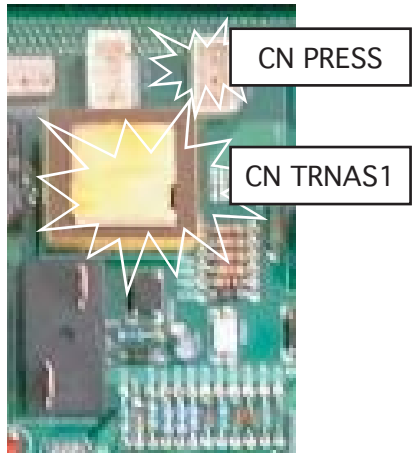
1. Check the power source.
2. Check the components
   (B/Diode, Reactor, PSC Parts)

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8) Troubleshooting CH24, CH25

Display code	Title	Cause of error	Check point & Normal condition
24	Press S/W Open	• Low / High press S/W open.	• Check the connection of “CN_Press”. • Check the components.
25	Input voltage	• Abnormal Input voltage (140Vac ↓ , 300Vac ↑ .	• Check the power source. • Check the components.





Check Point

• CH 24

1. Check the connection of “CN_PRESS”
2. Check the install condition for over load.
3. Check the SVC V/V open.
4. Check the leakage of refrigerant.

• CH 25

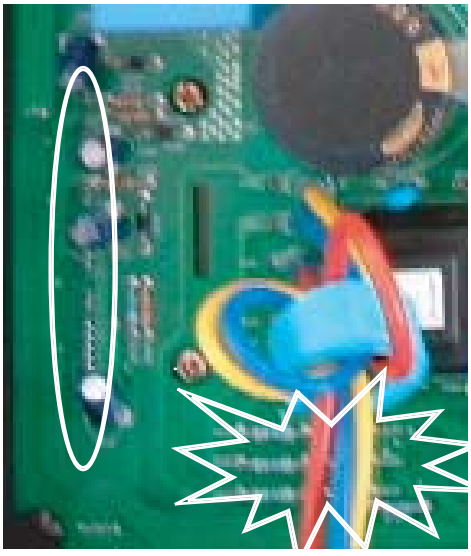
1. Check the power source.
2. Check the components
   (Trans1, B/Diode, Diode, Resistance)

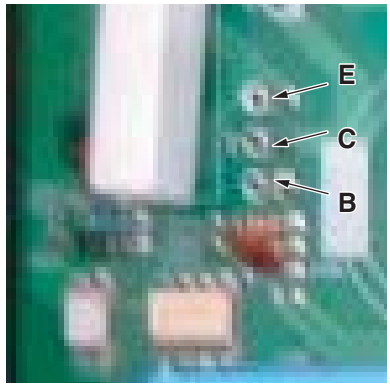
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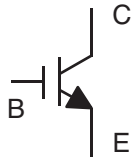
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9) Troubleshooting CH26, CH27

Display code	Title	Cause of error	Check point & Normal condition
26	DC Compressor Position	• Compressor position detect error	• Check the connection of comp wire “U,V,W” • Malfunction of compressor • Check the component of “IPM”, detection parts.
27	PSC Fault	• Over current at “IGBT”	• Check the component of “IGBT” . • Check the components.







Check Point

• CH 26

1. Check the connection of “U,V,W”
2. Check the insulation of IPM part.
3. Check the compressor. (same with CH21)

• CH 27

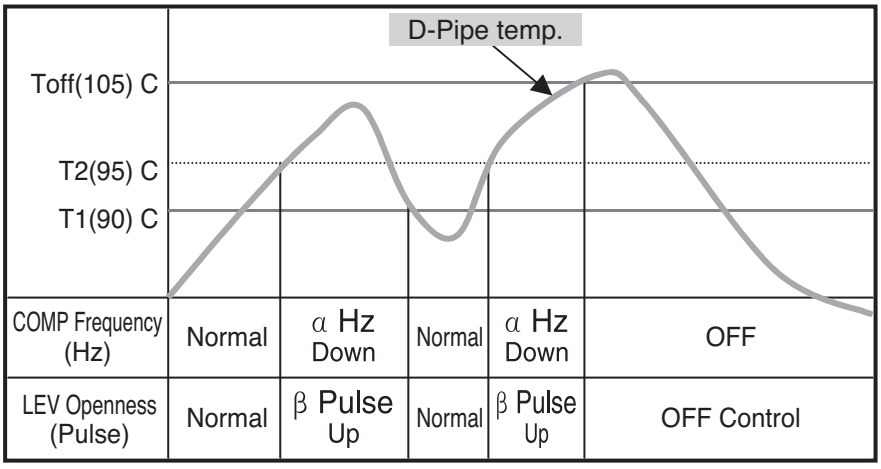
1. Check the component of “IGBT”
2. Check the components (IGBT, R04S, NF1, BD02S)

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10) Troubleshooting CH32, CH33

Display code	Title	Cause of error	Check point & Normal condition
32	D-pipe (Inverter) temp. high (105°C ↑)	• Discharge sensor (Inverter) temp. high	• Check the discharge pipe sensor for INV. • Check the install condition for over load. • Check the leakage of refrigerant. • Check the SVC V/V open.
33	D-pipe (Constant) temp. high (105°C ↑)	• Discharge sensor (Cons.) temp. high	• Check the discharge pipe sensor for Cons. • Check the install condition for over load. • Check the leakage of refrigerant. • Check the SVC V/V open.



Check Point

• CH 32

1. Check the install condition for over load.
2. Check the SVC V/V open.
3. Check the leakage of refrigerant.

• CH 33

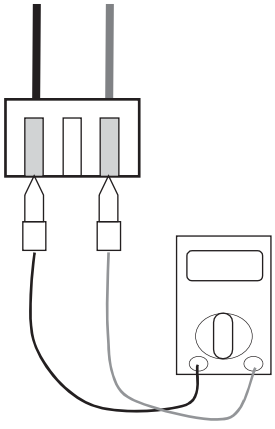
1. Check the install condition for over load.
2. Check the SVC V/V open.
3. Check the leakage of refrigerant.
4. Check the constant compressor. (same with CH21)

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11) Troubleshooting CH41, CH44, CH45, CH46, CH47, CH65

Display code	Title	Cause of error	Check point & Normal condition
41	D-pipe sensor (Inverter)	• Open / Short • Soldered poorly • Internal circuit error	• Normal resistor : 200KΩ / at 25°C (Unplugged) • Normal voltage : 4.5Vdc / at 25°C (plugged)
44	Air sensor	• Open / Short • Soldered poorly • Internal circuit error	• Normal resistor : 10KΩ / at 25°C (Unplugged) • Normal voltage : 2.5Vdc / at 25°C (plugged)
45	Condenser Pipe sensor	• Open / Short • Soldered poorly • Internal circuit error	• Normal resistor : 5KΩ / at 25°C (Unplugged) • Normal voltage : 2.5Vdc / at 25°C (plugged)
46	Suction Pipe sensor	• Open / Short • Soldered poorly • Internal circuit error	• Normal resistor : 5KΩ / at 25°C (Unplugged) • Normal voltage : 2.5Vdc / at 25°C (plugged)
47	D-pipe sensor (Constant)	• Open / Short • Soldered poorly • Internal circuit error	• Normal resistor : 200KΩ / at 25°C (Unplugged) • Normal voltage : 4.5Vdc / at 25°C (plugged)
65	Heat sink sensor	• Open / Short • Soldered poorly • Internal circuit error	• Normal resistor : 10KΩ / at 25°C (Unplugged) • Normal voltage : 2.5Vdc / at 25°C (plugged)



Check Point

1. Estimate the resistance of each sensor.(Unplugged)
2. Estimate the voltage of each sensor.(Plugged)
3. If the resistance of the sensor is 0 kΩ or ∞, then sensor is abnormal.
   If the voltage of the sensor is 0 V or 5Vdc, then sensor is abnormal.

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12) Troubleshooting CH51, CH60

Display code	Title	Cause of error	Check point & Normal condition
51	Over capacity	• Over capacity Combination	• Check the indoor unit capacity. • Check the combination table.
60	EEPROM Check sum	• Check sum error	• Check the PCB ASM P/No. • Check the poor soldering.

Model	Gross max. capacity	Max. single indoor unit capacity
A2UW146FA0	21k	12k
A2UW186FA0 A3UW186FA0	24k	12K
A3UW246FA0 A4UW246FA0	33k	18K
A4UW306FA0	39k	18K
A6UW406FA0	52k	24K

Check Point

• CH 51

1. Check the indoor unit capacity.

• CH 60

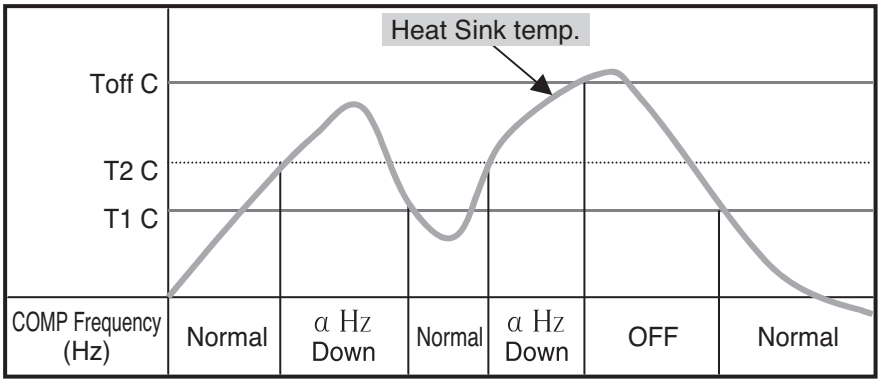
1. Check the insertion condition of EEPROM.
2. Check the poor soldering

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13) Troubleshooting CH61, CH62

Display code	Title	Cause of error	Check point & Normal condition
61	Condenser pipe sensor temp. high	• Condenser pipe sensor detected high temp.(65°C)	• Check the load condition. • Check the sensor of Condenser pipe sensor.
62	Heat sink sensor temp. high	• Heat sink sensor detected high temp.(85°C)	• Check the fan is locked. • Check the sensor of heat sink.



Check Point

• CH 61

1. Check the install condition for over load.
   (Refrigerant, Pipe length, Blocked, …)

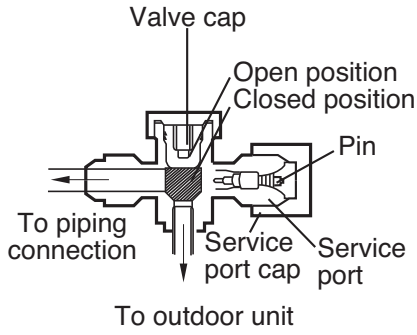
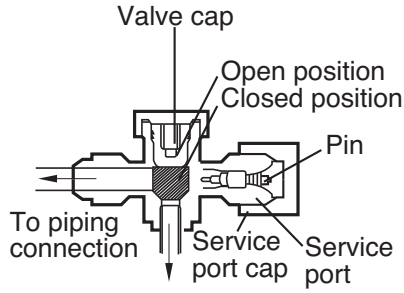
• CH 62

1. Check the fan is locked.
2. Check the Outdoor temp. is very high.

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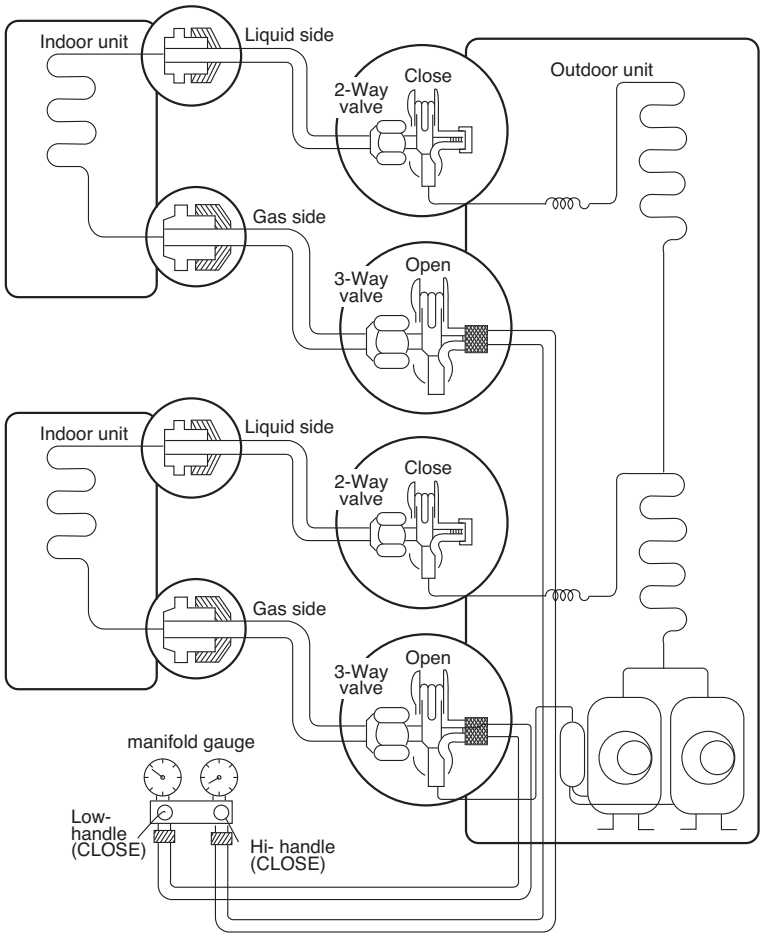
(3-way) Valve

		3-way Valve (Liguid Side)		3-way Valve (Gas Side)	
		 To outdoor unit		 To outdoor unit	
Works		Shaft position	Service port	Shaft position	Service port
Shipping		Closed (with valve cap)	Closed (with cap)	Closed (with valve cap)	Closed (with cap)
1.	Air purging (Installation)	Open (counter-clockwise)	Open (push-pin or with vacuum pump)	Closed (clockwise)	Open (push-pin or with vacuum pump)
Operation		Open (with valve cap)	Closed (with cap)	Open (with valve cap)	Closed (with cap)
2.	Pumping down (Transfering)	Closed (clockwise)	Closed (with cap)	Open (counter-clockwise)	Open (connected manifold gauge)
3.	Evacuation (Servicing)	Open	Open (connected manifold gauge)	Open	Open (connected manifold gauge)
4.	Gas charging (Servicing)	Open	Closed (with cap)	Open	Open (with charging cylinder)
5.	Pressure check (Servicing)	Open	Open (connected manifold gauge)	Open	Open (connected manifold gauge)
6.	Gas releasing (Servicing)	Open	Open (connected manifold gauge)	Open	Open (connected manifold gauge)

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(1) Pumping down



· Procedure

1. **Confirm that both the gas side and liquid side valves are set to the open position.**
   - Remove the valve stem caps and confirm that the valve stems are in the raised position.
   - Be sure to use a hexagonal wrench to operate the valve stems.
2. **Operate the unit for 10 to 15 minutes.**
3. **Stop operation and wait for 3 minutes, then connect the manifold gauge to the service port of the gas side valve.**
   - Connect the hose of the gauge with the push pin to the service port.
4. **Air purging of the charge hose.**
   - Open the Low-handle valve on the gauge slightly to air purge from the hose.
5. **Set the liquid side valve to the closed position.**
6. **Operate the air conditioner at the cooling cycle and stop it when the gauge indicates 1kg/cm²g.**
7. **Immediately set the gas side valve to the closed position.**
   - Do this quickly so that the gauge ends up indicating 1kg/cm²g.
8. **Disconnect the charge set, and mount the liquid side and gas side valve caps and the service port nut.**
   - Use torque wrench to tighten the service port nut to a torque of 1.8kg.m.(4.2kg.m/5.5kg.m)
   - Be sure to check for gas leakage.

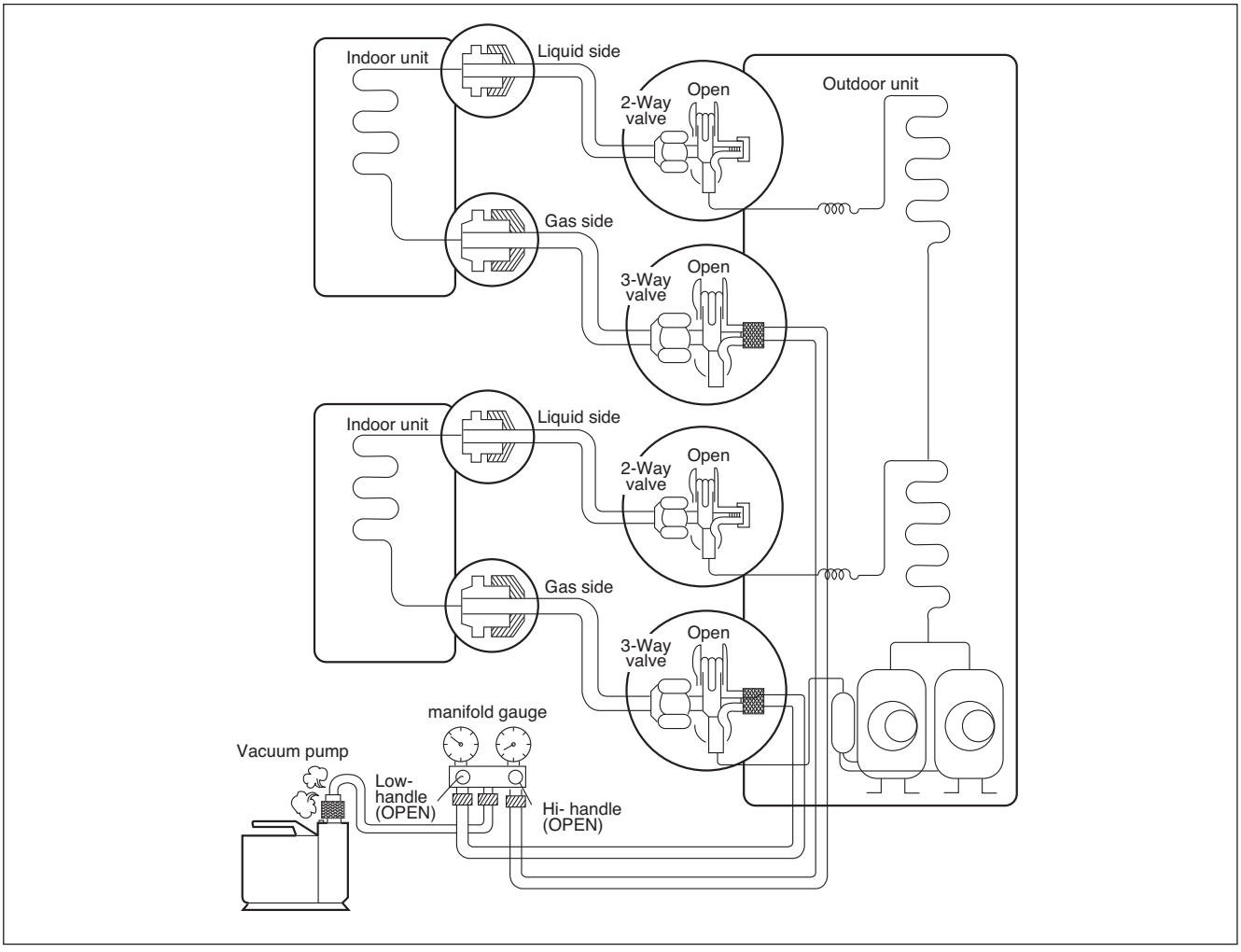
• Be sure to short pressure S/W. otherwise Low pressure S/W detect low pressure skete and stops the compressor.

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(2) Evacuation

(All amount of refrigerant leaked)



• Procedure

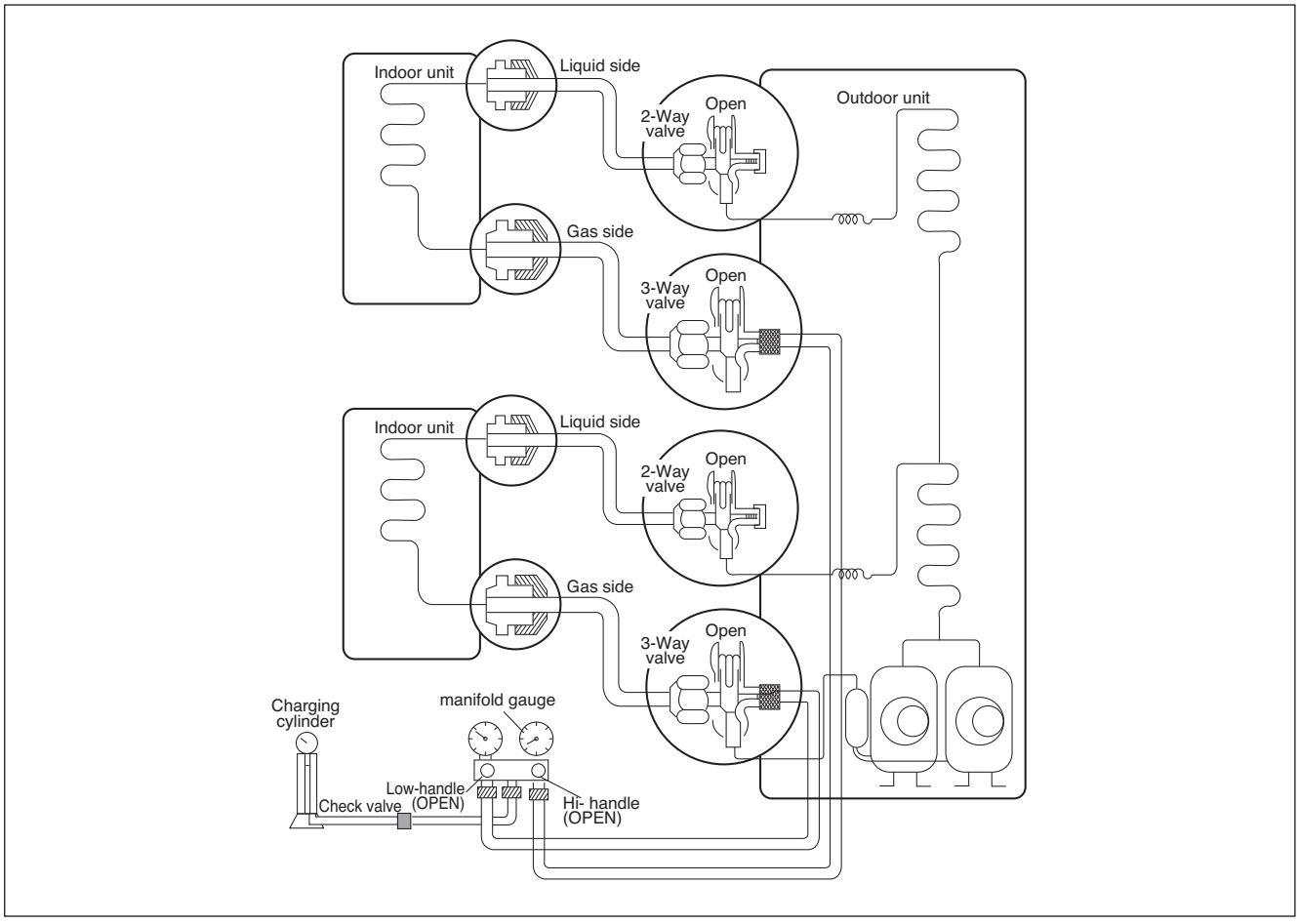
1. **Confirm that both the liguid side valve and gas side valve are set to the opened position.**
2. **Connect the vaccum pump to the center hose of the manifold gauge.**
3. **Connect the service port of the gas side valve to the low side of the gauge.**
4. **Evacuation for approximately one hour.**
   - Confirm that the gauge needle has moved toward-76 cmHg (vacuum of 4 mmHg or less).
5. **Close the Low handle of the gauge turn off the vacuum pump, and confirm that the gauge needle does not move(approximately 5 minutes after turning off the vacuum pump).**
6. **Disconnect the charge hose from the vacuum pump.**
   - Vacuum pump oil.
     If the vacuum pump oil becomes dirty or depleted,replenish as needed.
7. **Mount the valve caps and the service port caps.**

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(3) Gas Charging

(After Evacuation)



• Procedure

1. Connect the gauge to the charging cylinder.
- Connect the charge hose which you disconnected from the vacuum pump to the valve at the bottom of the cylinder.
- If you are using a gas cylinder, also use a scale and reverse the cylinder so that the system can be charged with liquid.

2. Purge the air from the charge hose.
- Open the valve at the bottom of the cylinder and press the check valve on the charge set to purge the air. (Be careful of the liquid refrigerant). The procedure is the same if using a gas cylinder.

3. Open the low handle on the gauge and charge the system with liquid refrigerant.
- If the system can not be charged with the specified amount of refrigerant, it can be charged with a little at a time (approximately 150g each time) while operating the air conditioner in the cooling cycle; however, one time is not sufficient, wait approximately 1 minute and then repeat the procedure(pumping down-pin).

4. Immediately disconnect the charge hose from the gas side valve's service port.

This is different from previous procedures.
Because you are charging with liquid refrigerant from the gas side, absolutely do not attempt to charge with larger amounts of liquid refrigerant while operating the air conditioner.

- Stopping partway will allow the gas to be discharged.
- If the system has been charged with liquid refrigerant while operating the air conditioner turn off the air conditioner before disconnecting the hose.

5. Mount the valve stem nuts and the service port nut.
- Use torque wrench to tighten the service port nut to a torque of 1.8 kg.m.(4.2kg.m/5.5kg.m.)
- Be sure to check for gas leakage.

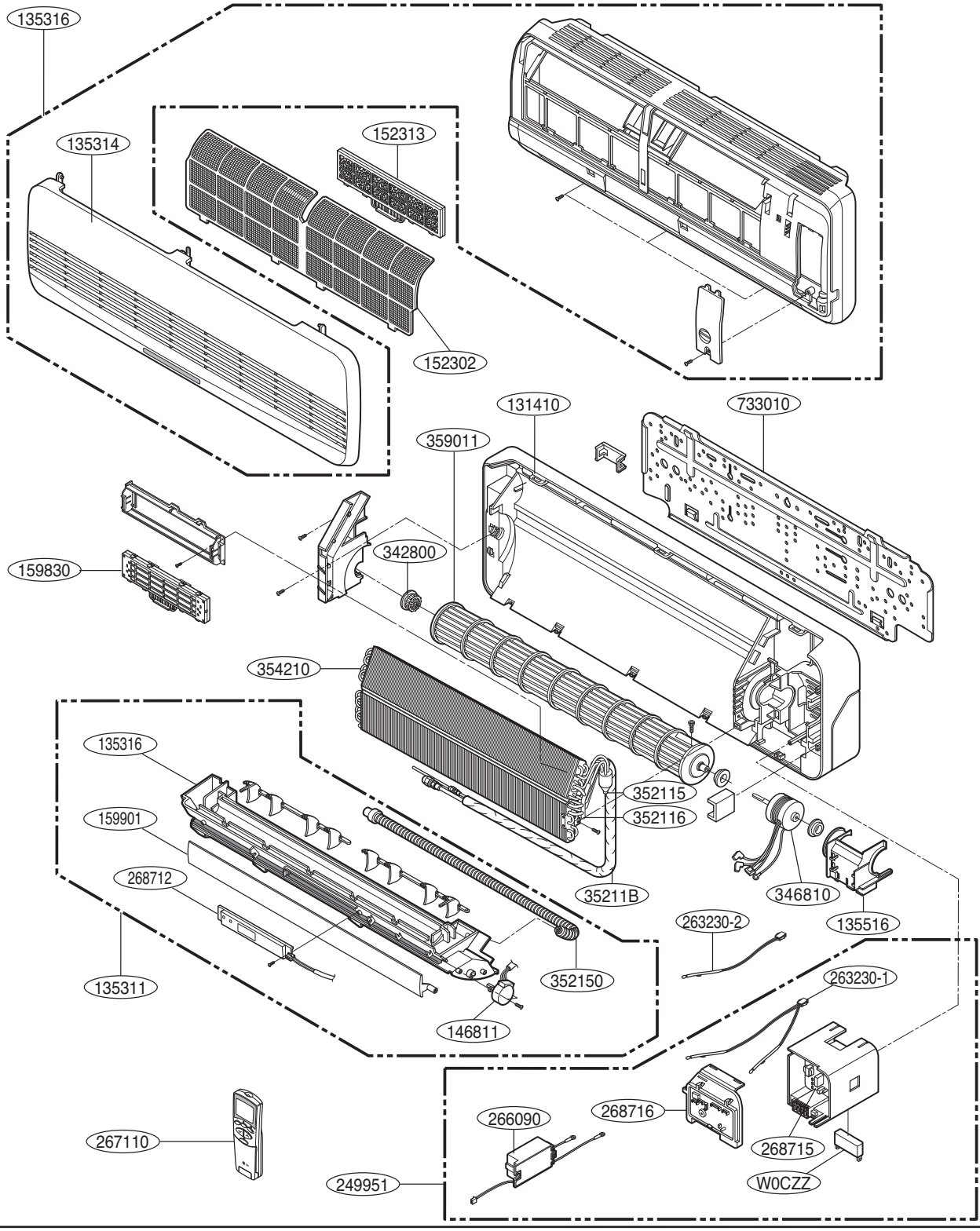
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Exploded View

Indoor Unit

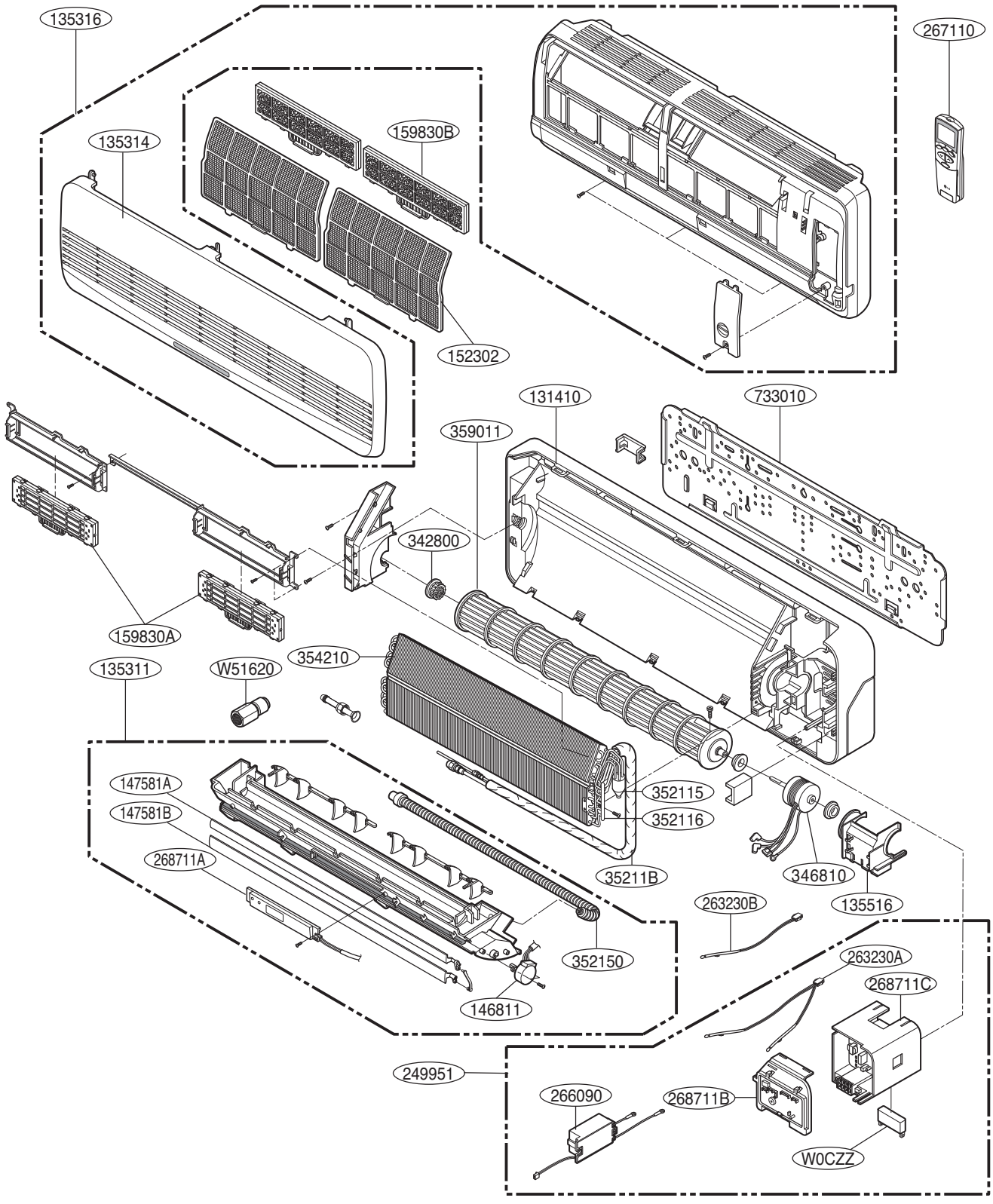
SQ/SR chassis



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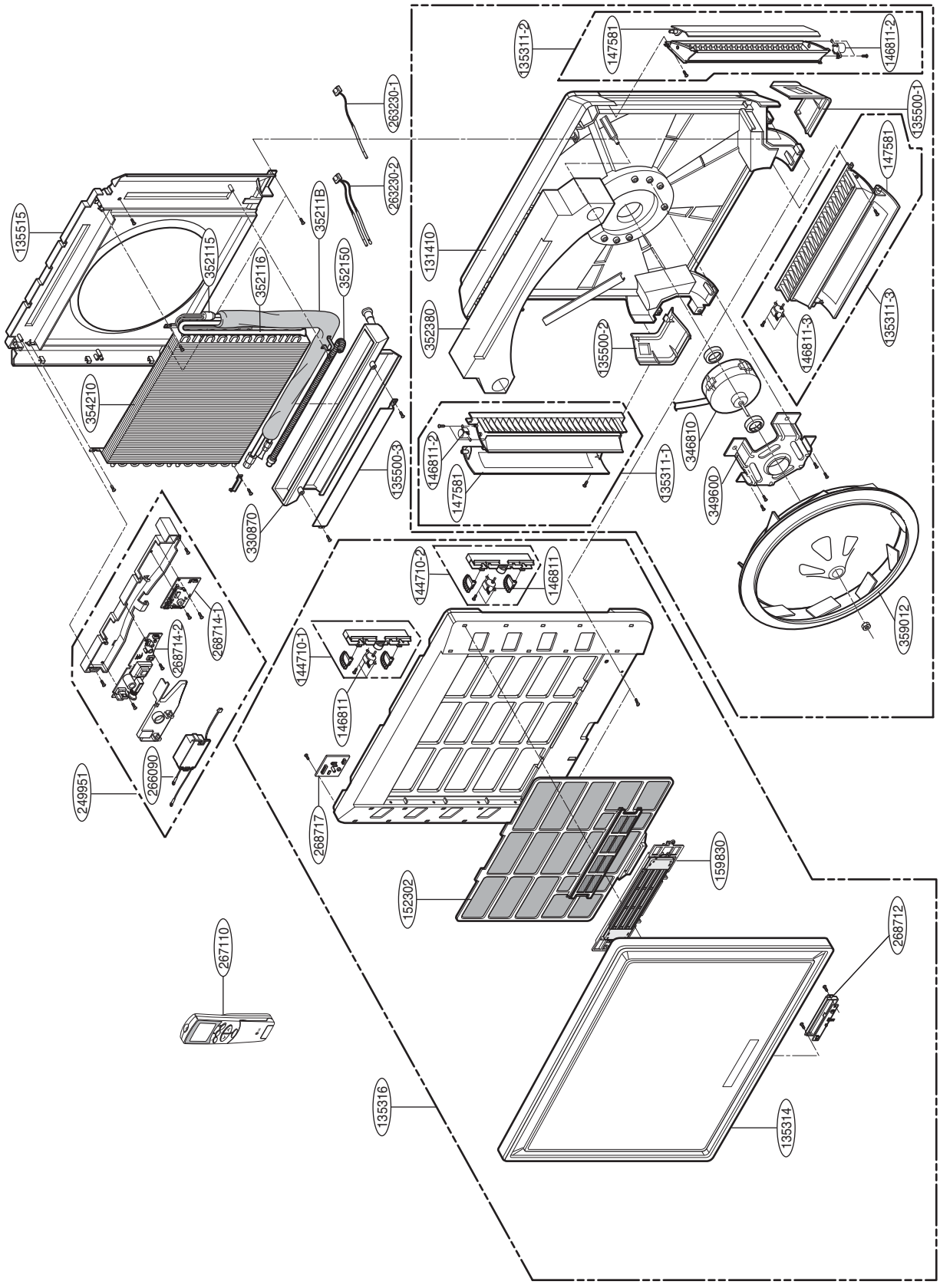
ST chassis



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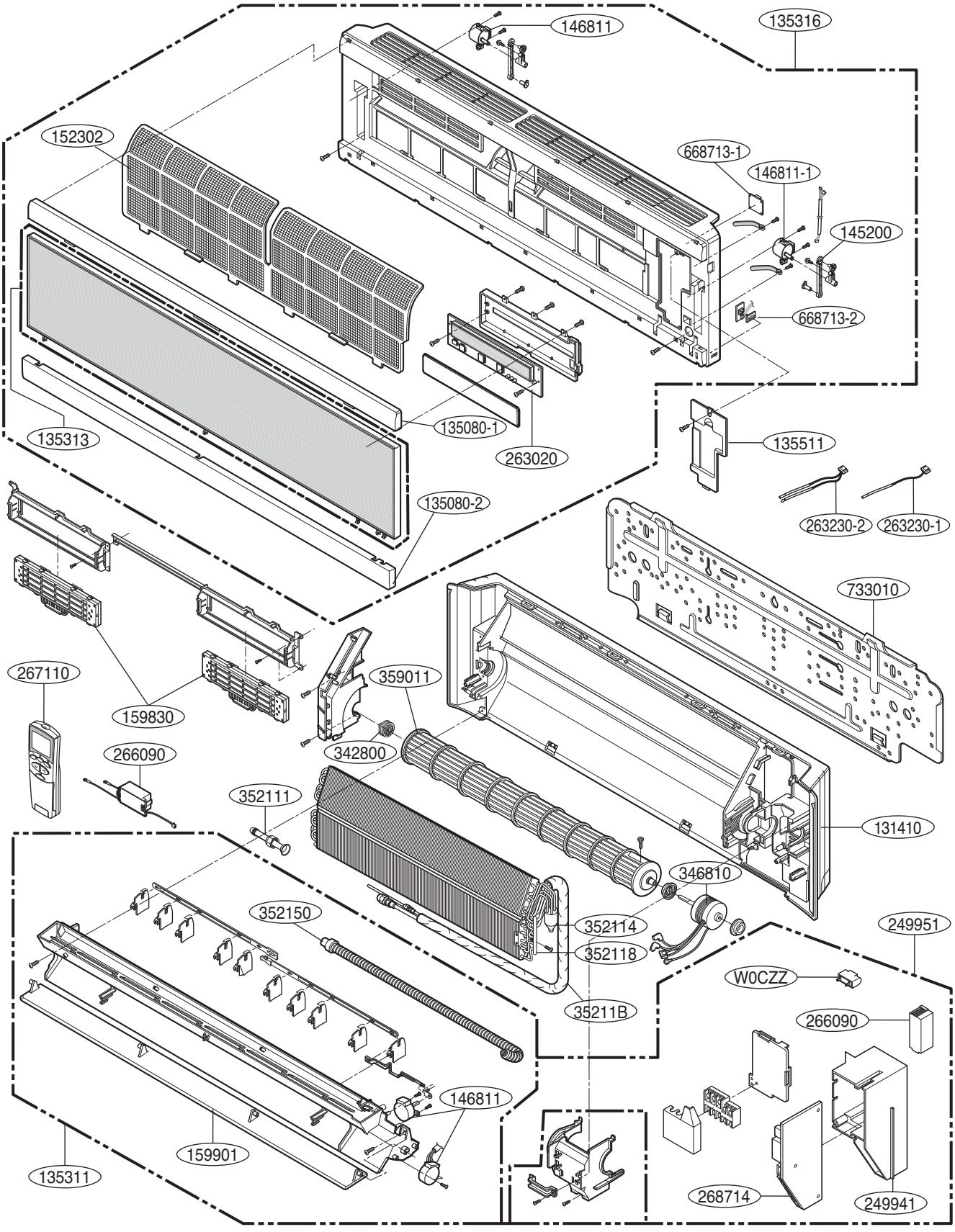
SP1 chassis(Art cool type)



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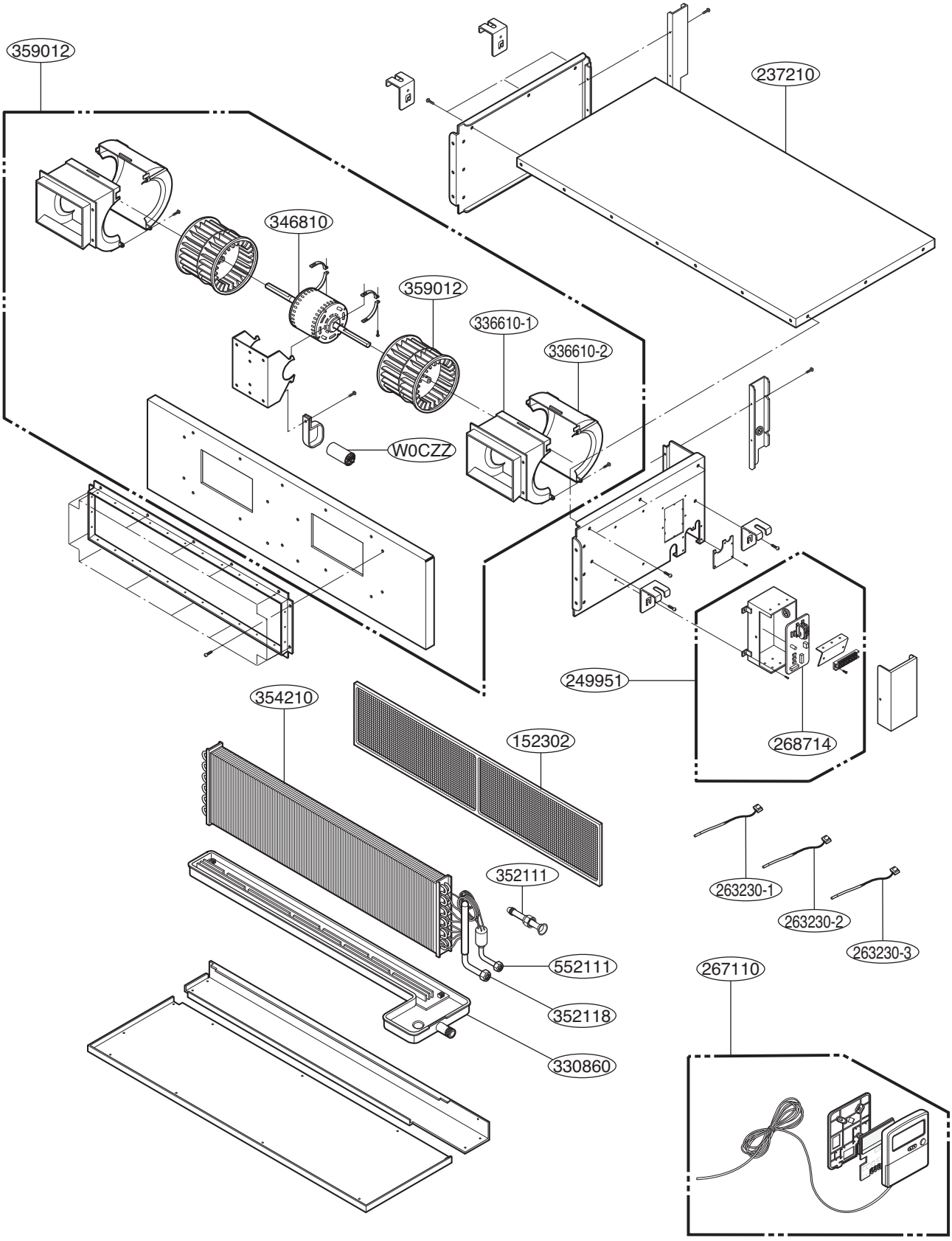
Art Cool Deluxe Type(SU, SZ chassis)



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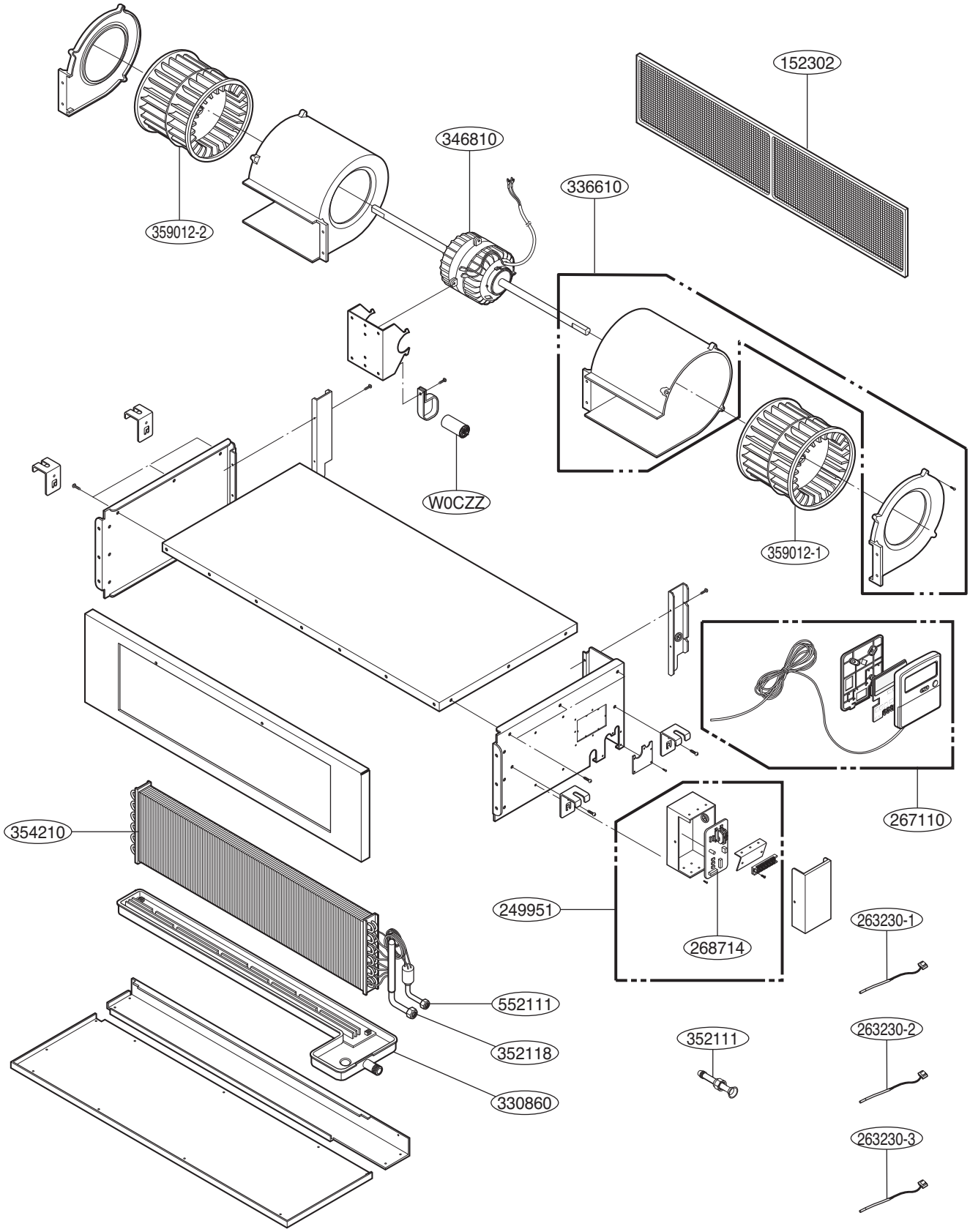
Duct Type - High Static(BH, BG chassis)



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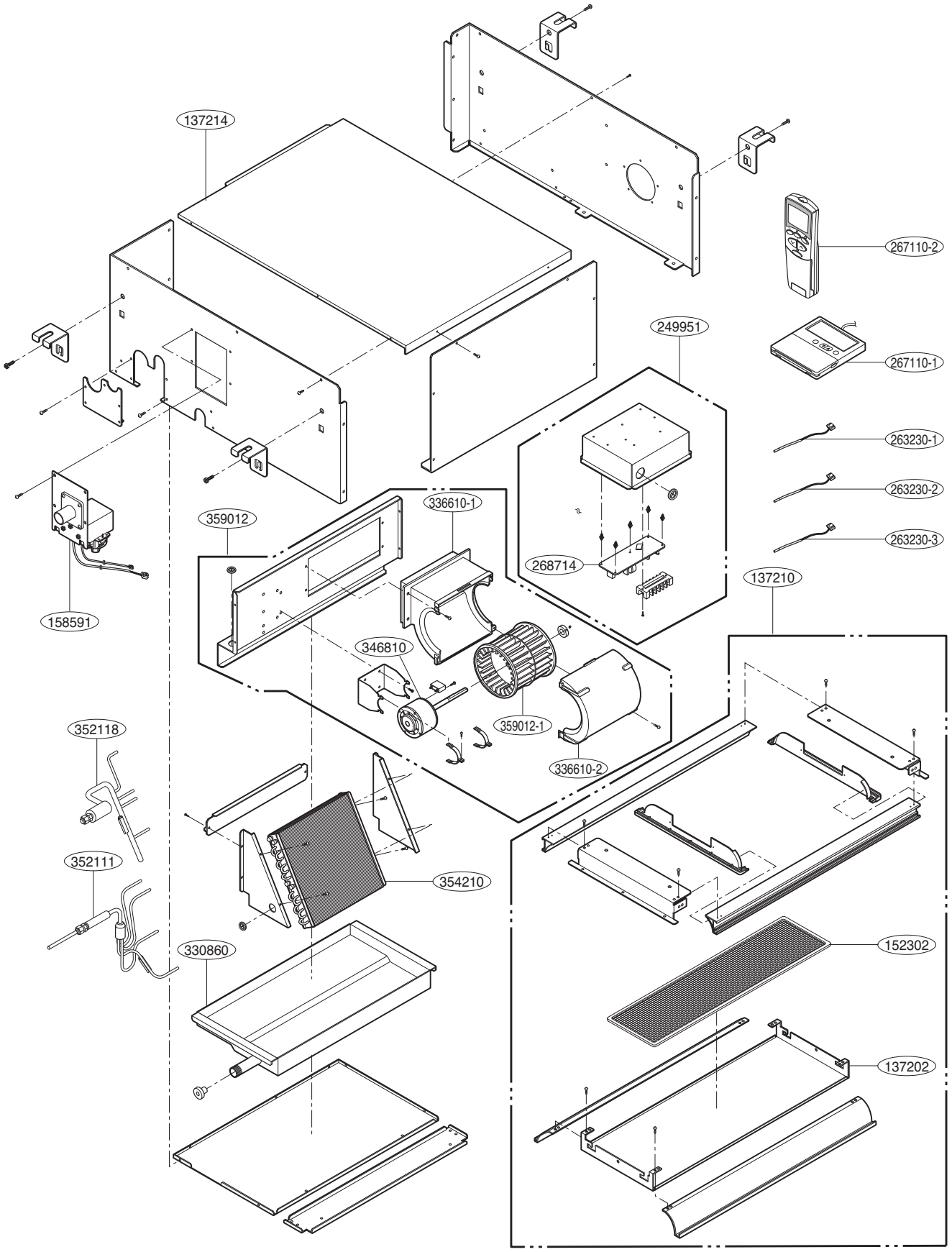
Duct Type - Low Static (BT, BT1 chassis)



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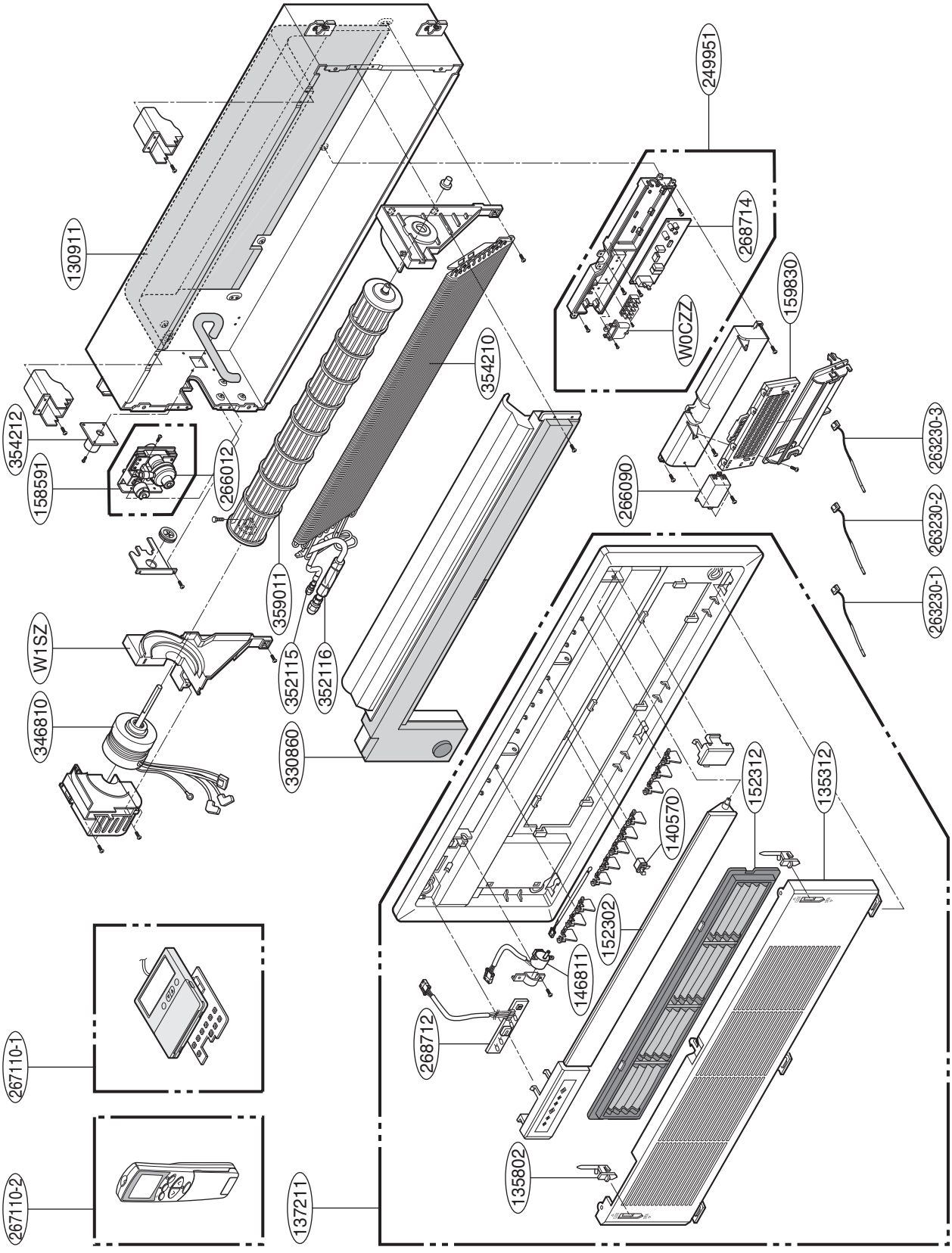
Built in Duct type (BP chassis)



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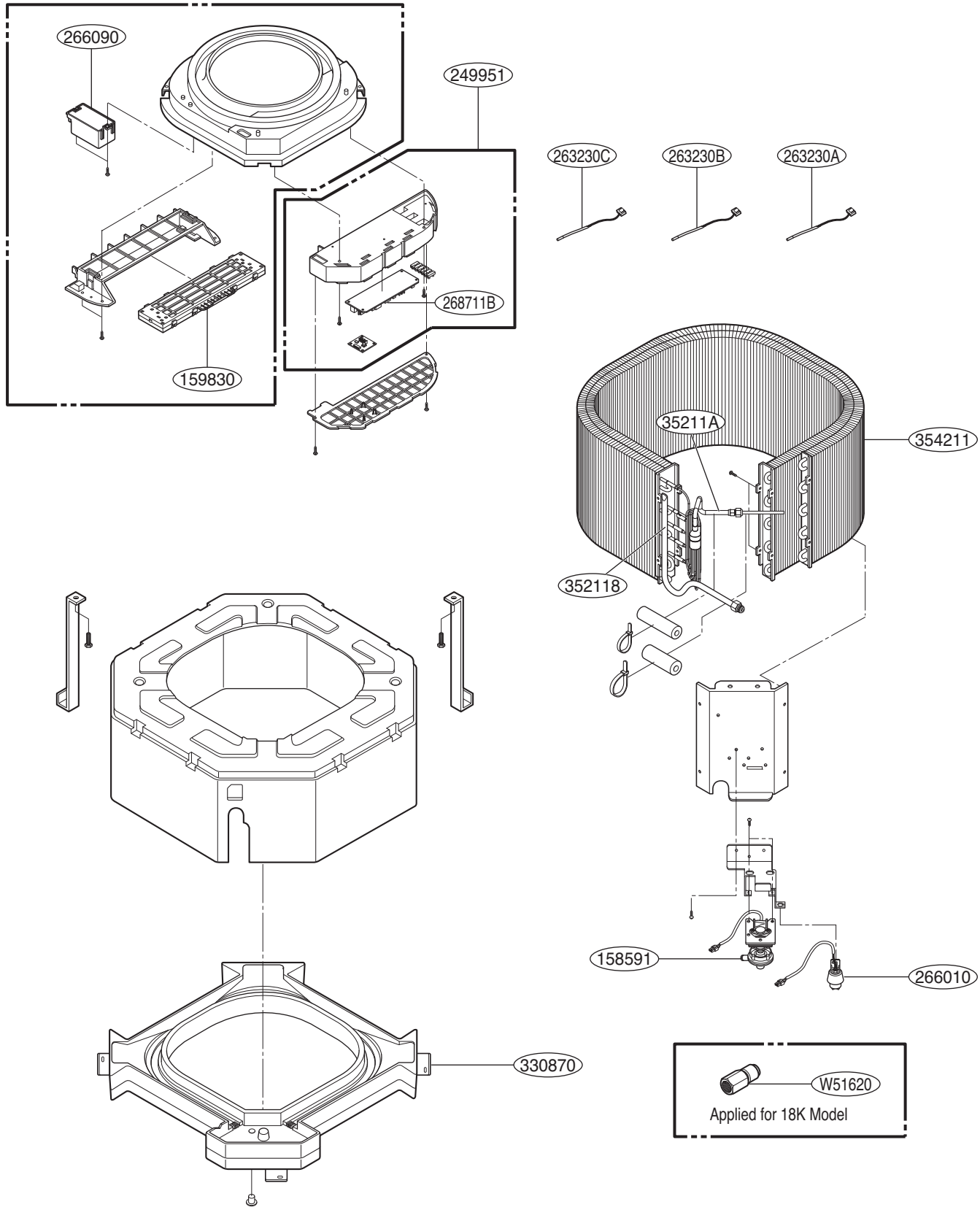
Cassette Type - 1 way (TC chassis)



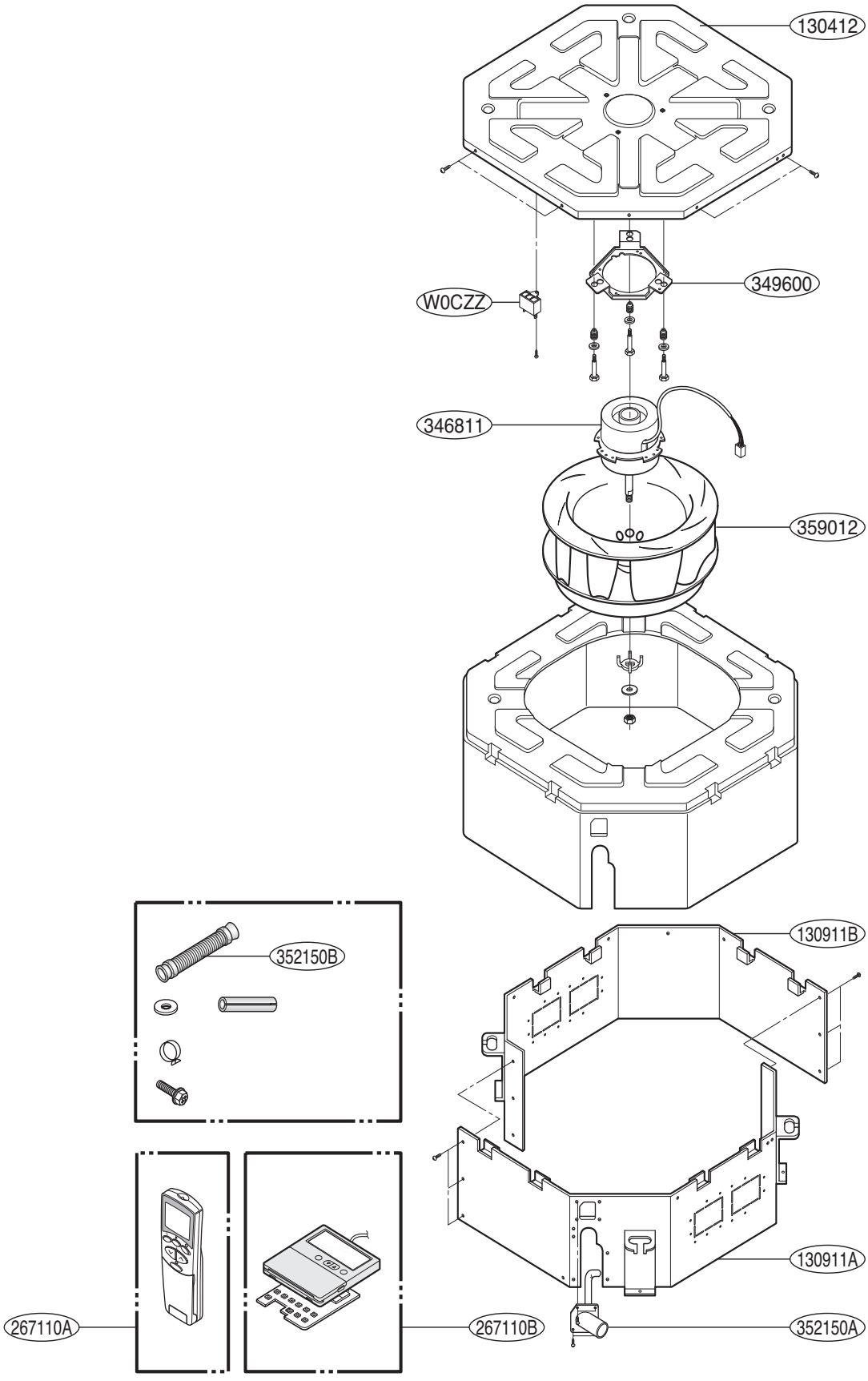
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Cassette Type - 4 way(TE chassis)



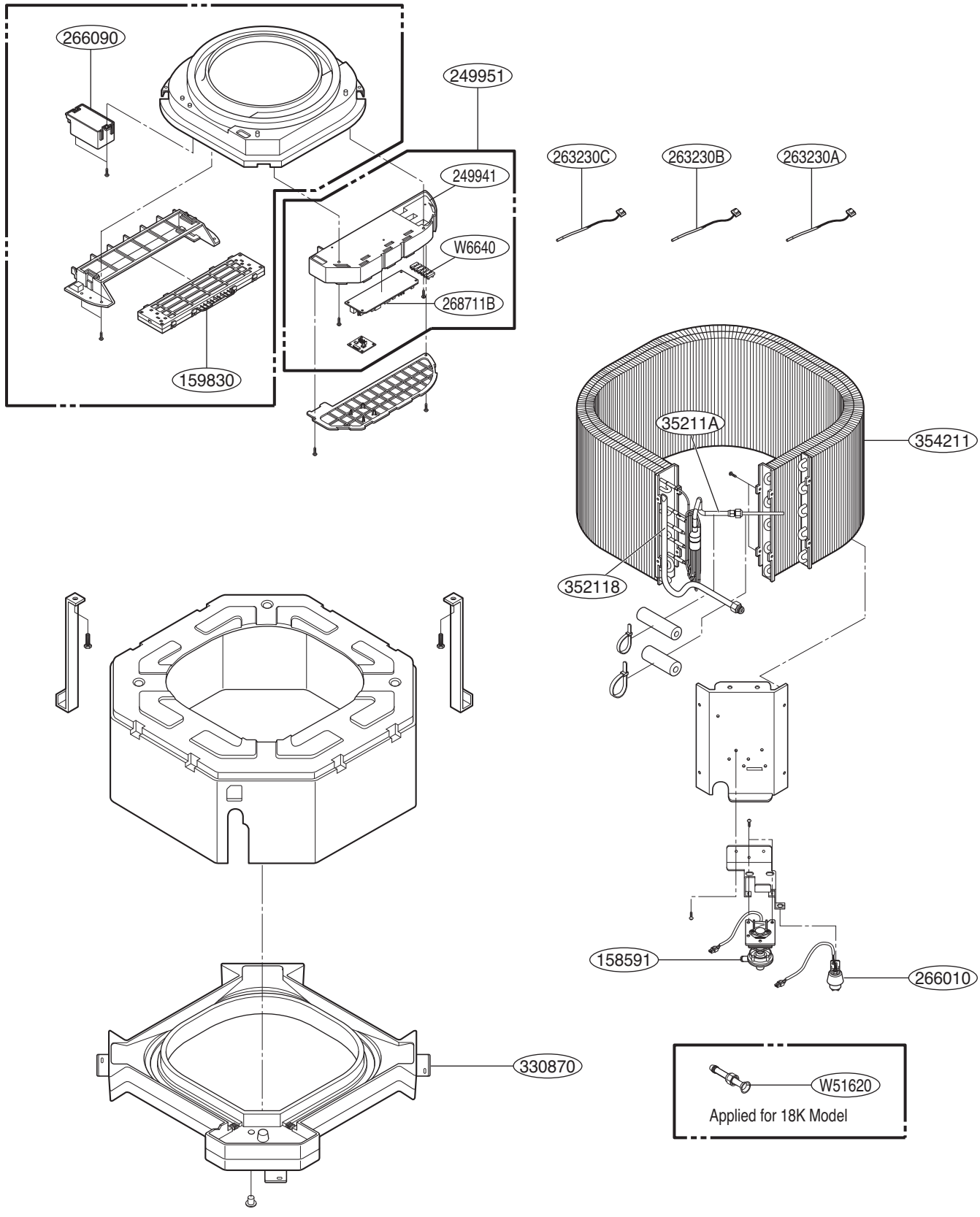
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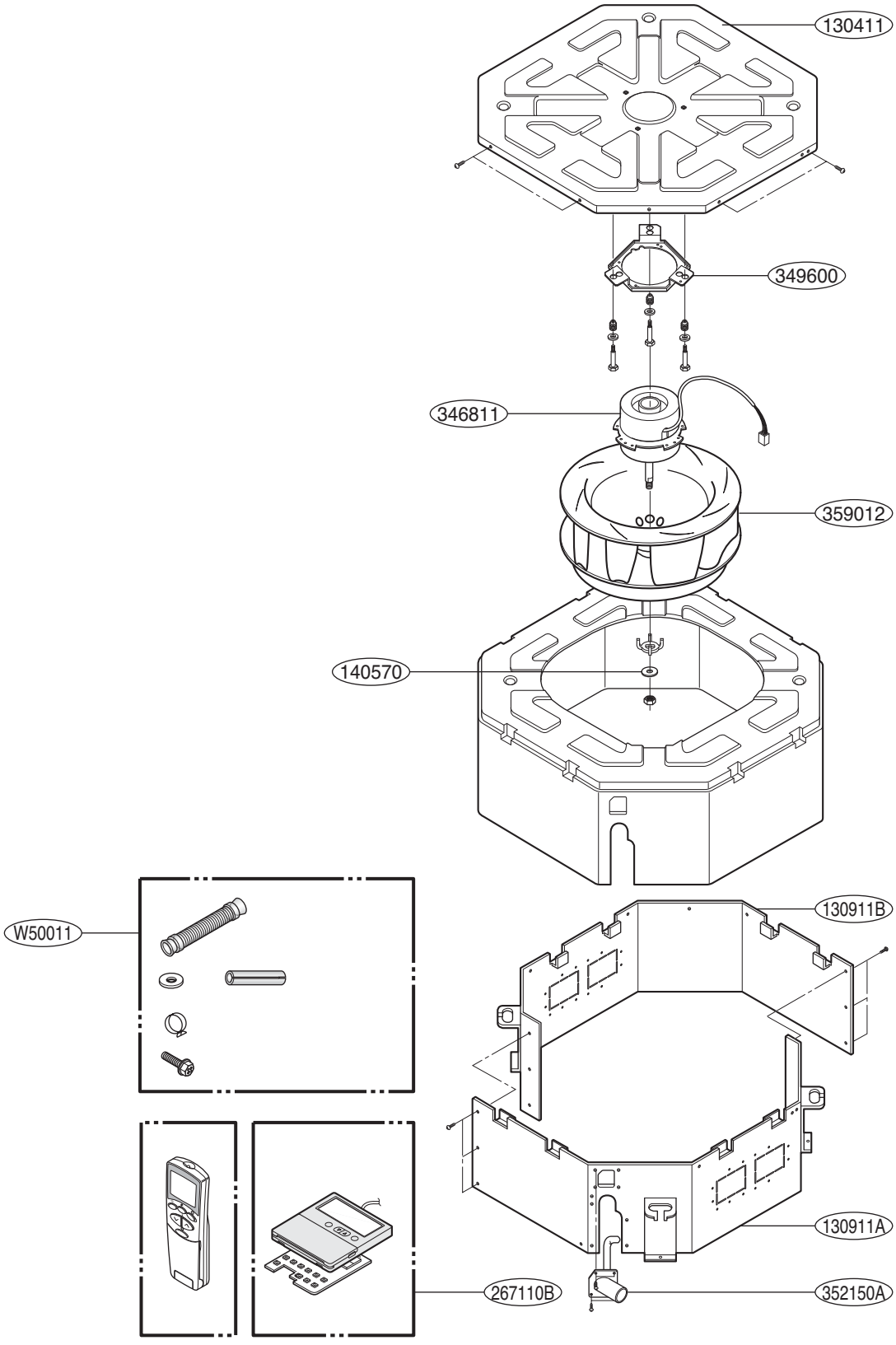
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Cassette Type - 4 way(TE1 chassis)



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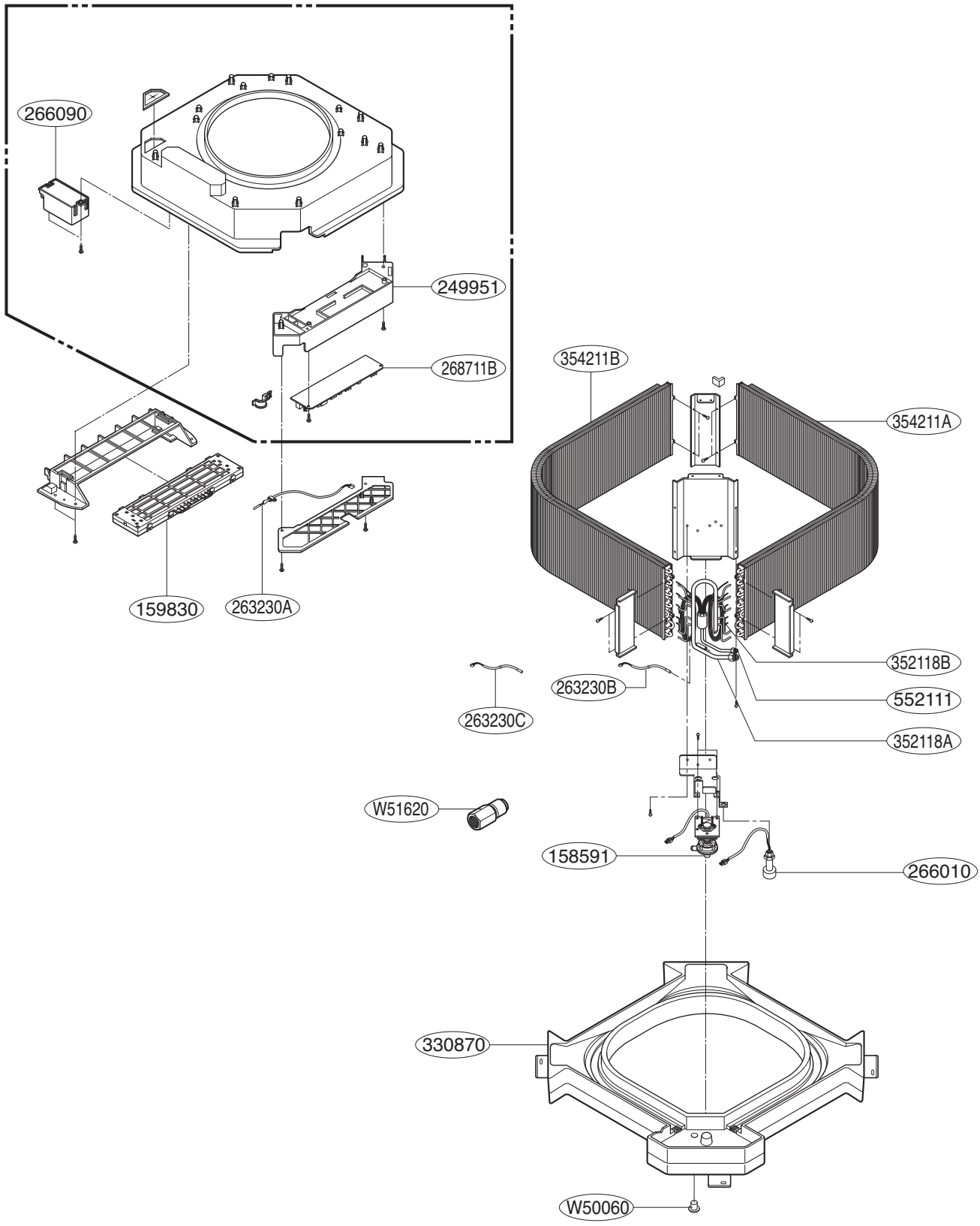
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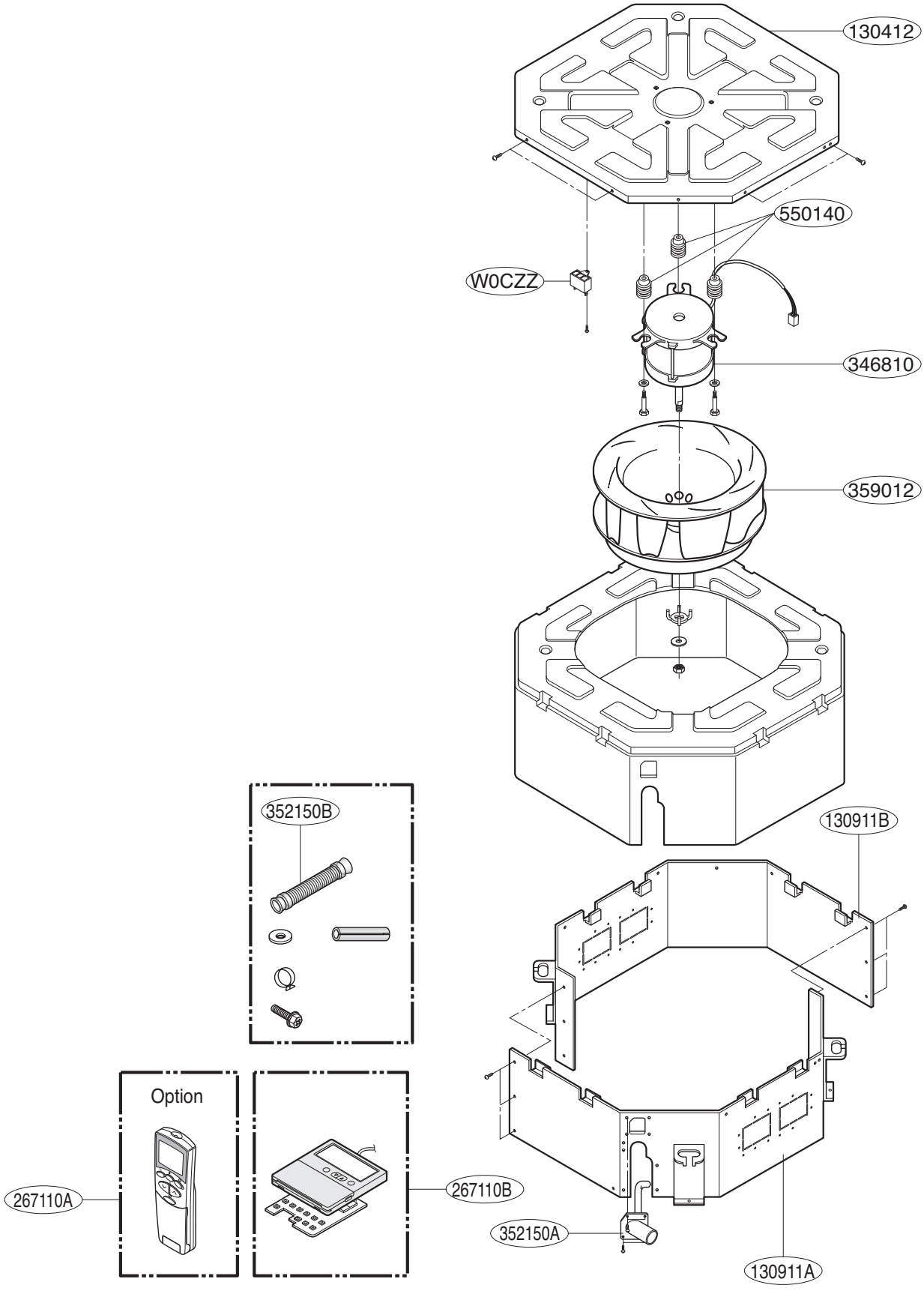
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Cassette Type - 4 way(TF chassis)



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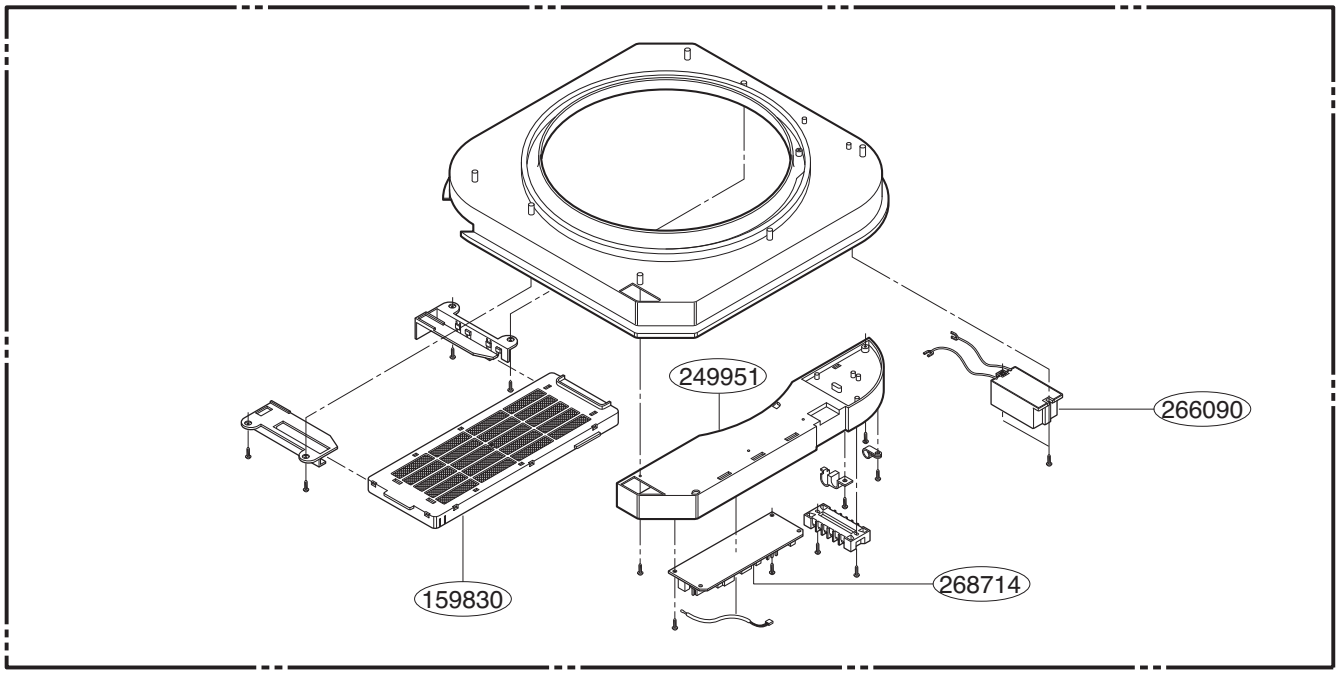
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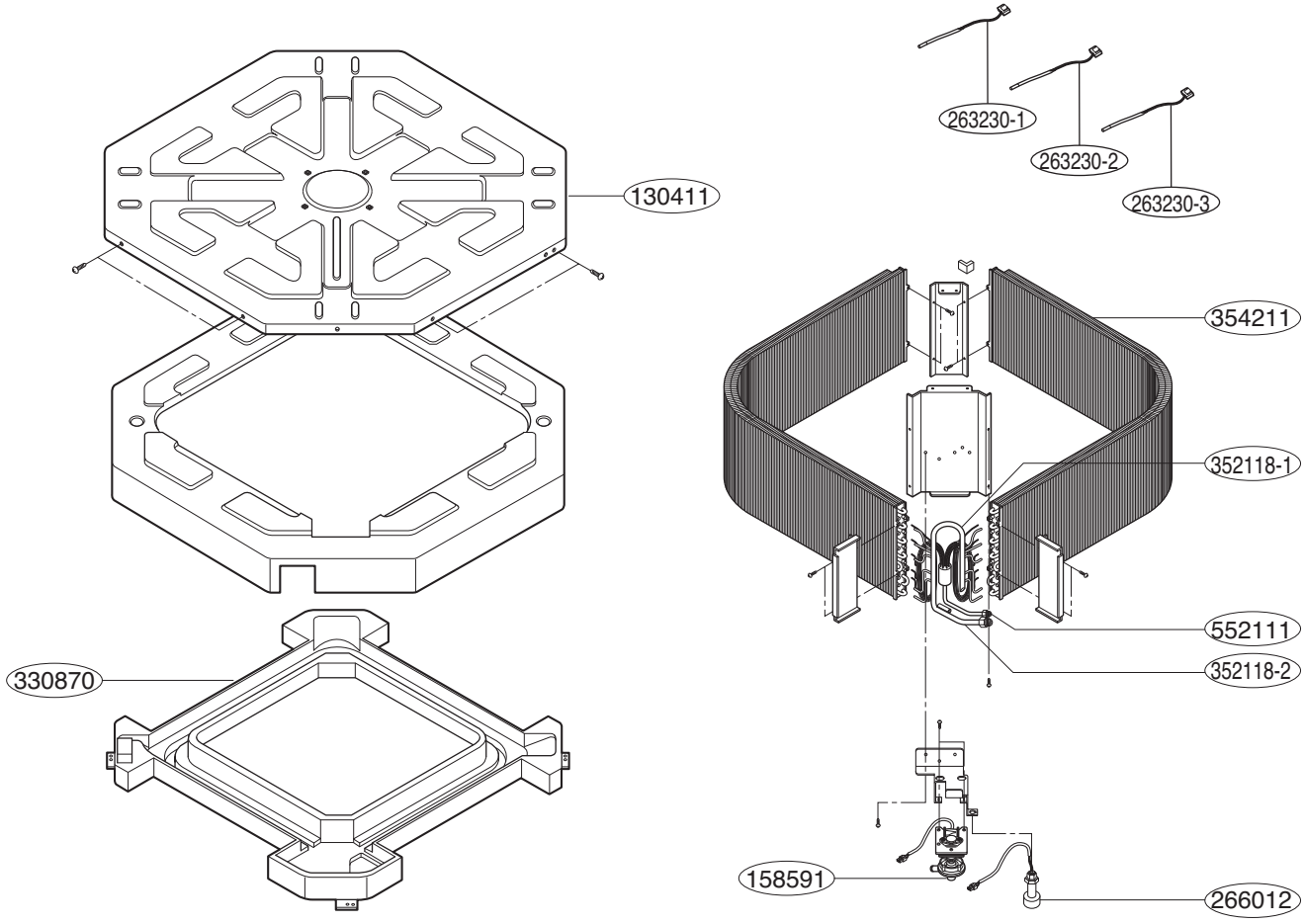


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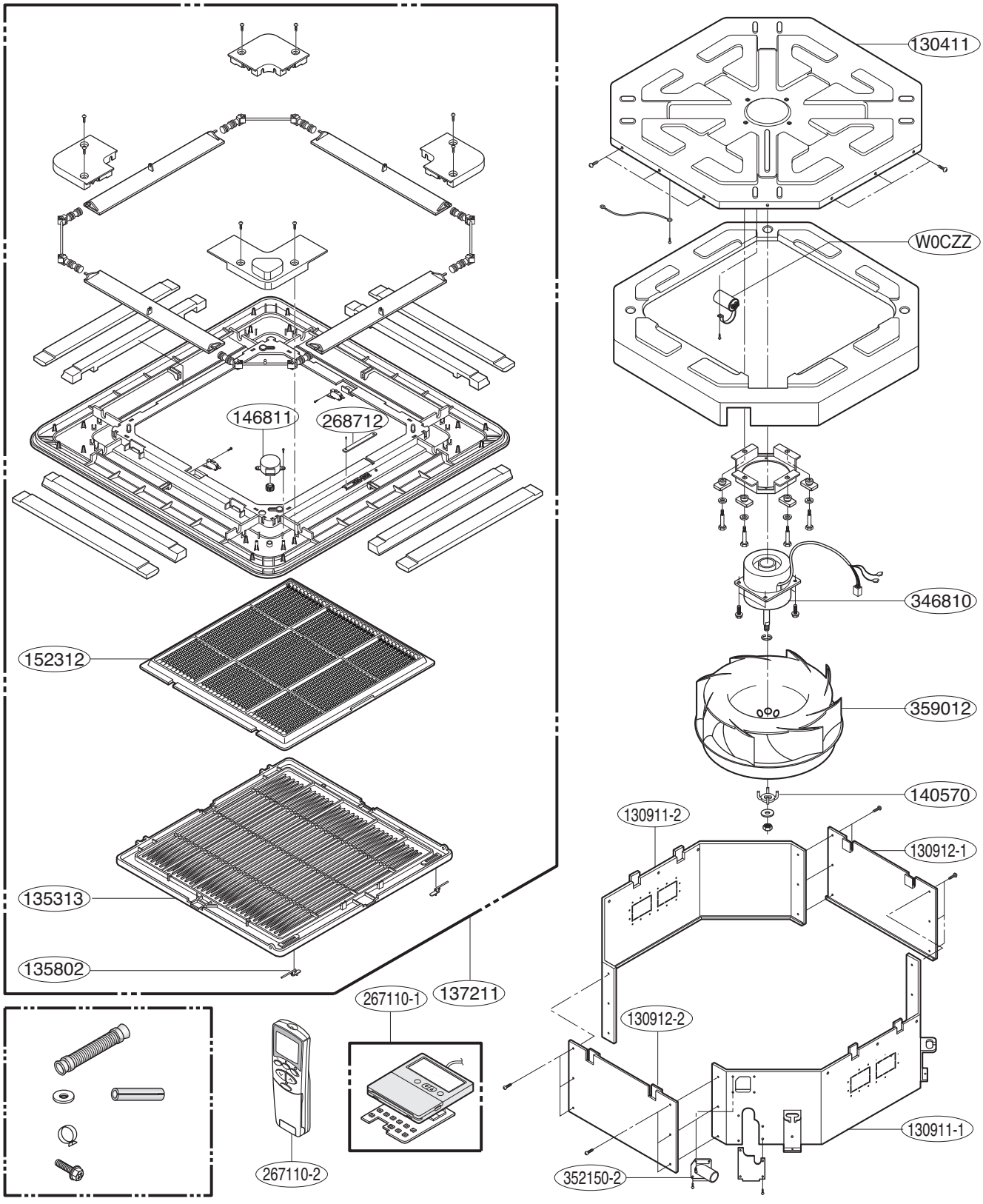
Cassette Type - 4 way(TD chassis)





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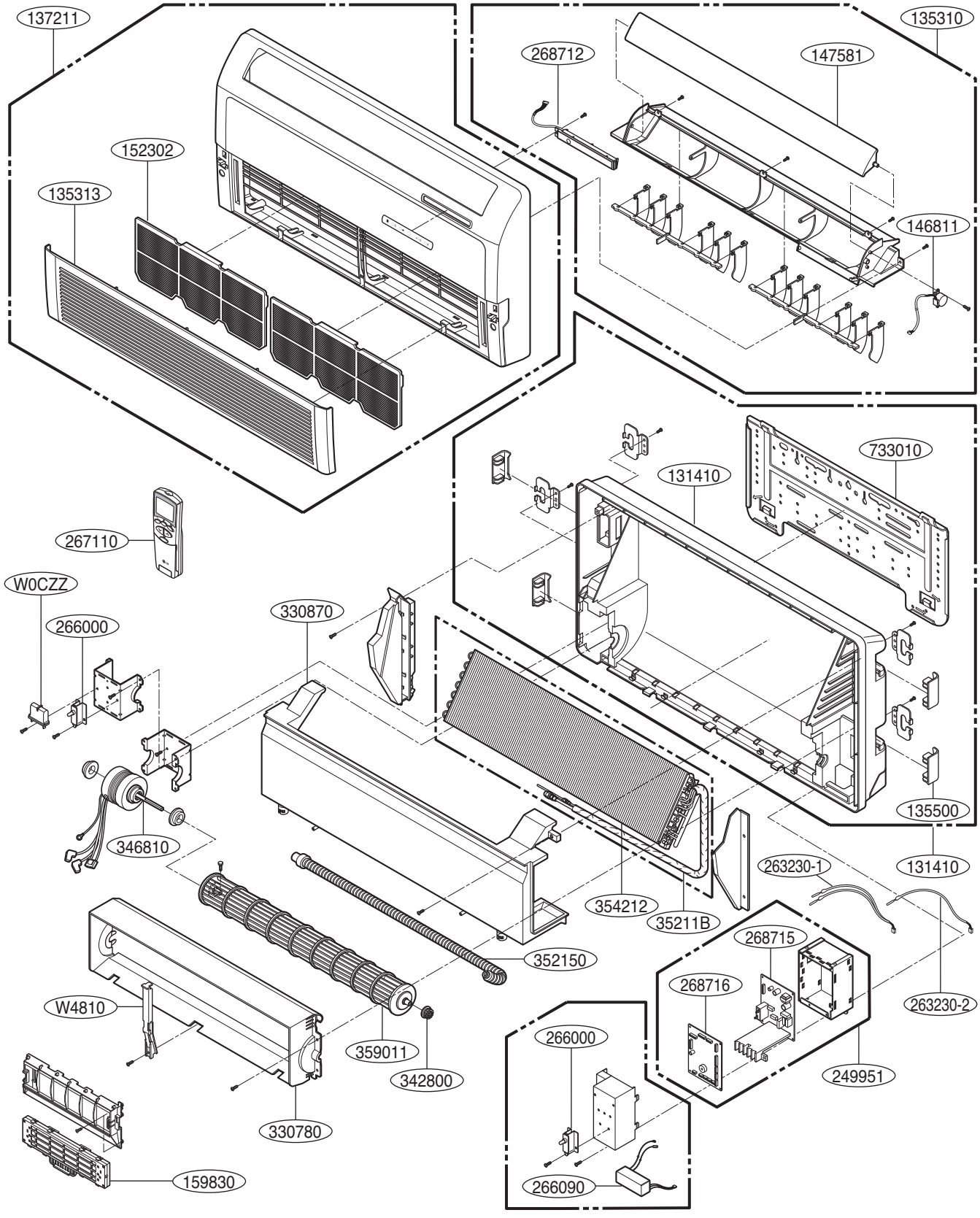
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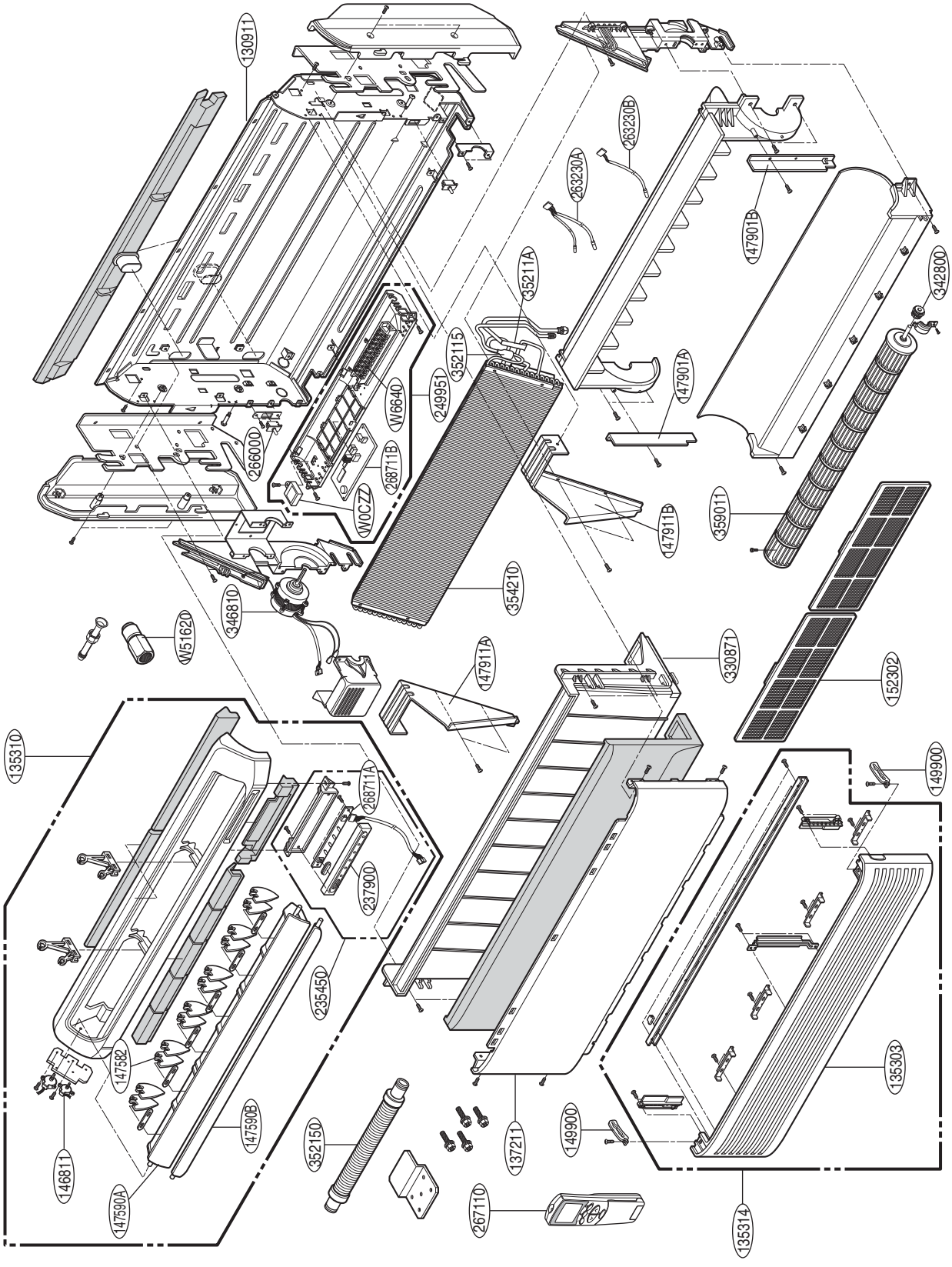
Convertible Type (VE chassis)



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Convertible Type (VB chassis)

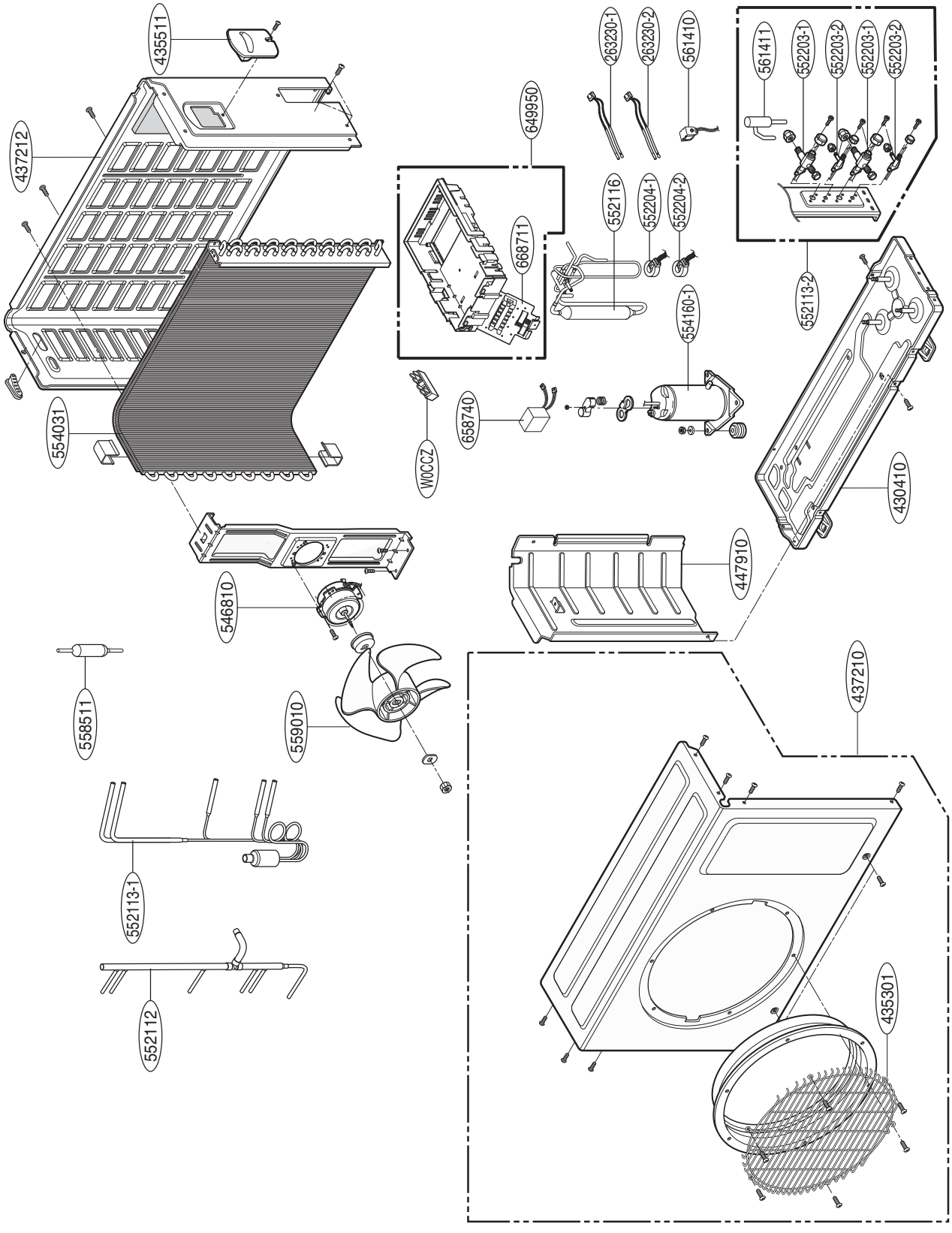


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Outdoor Unit

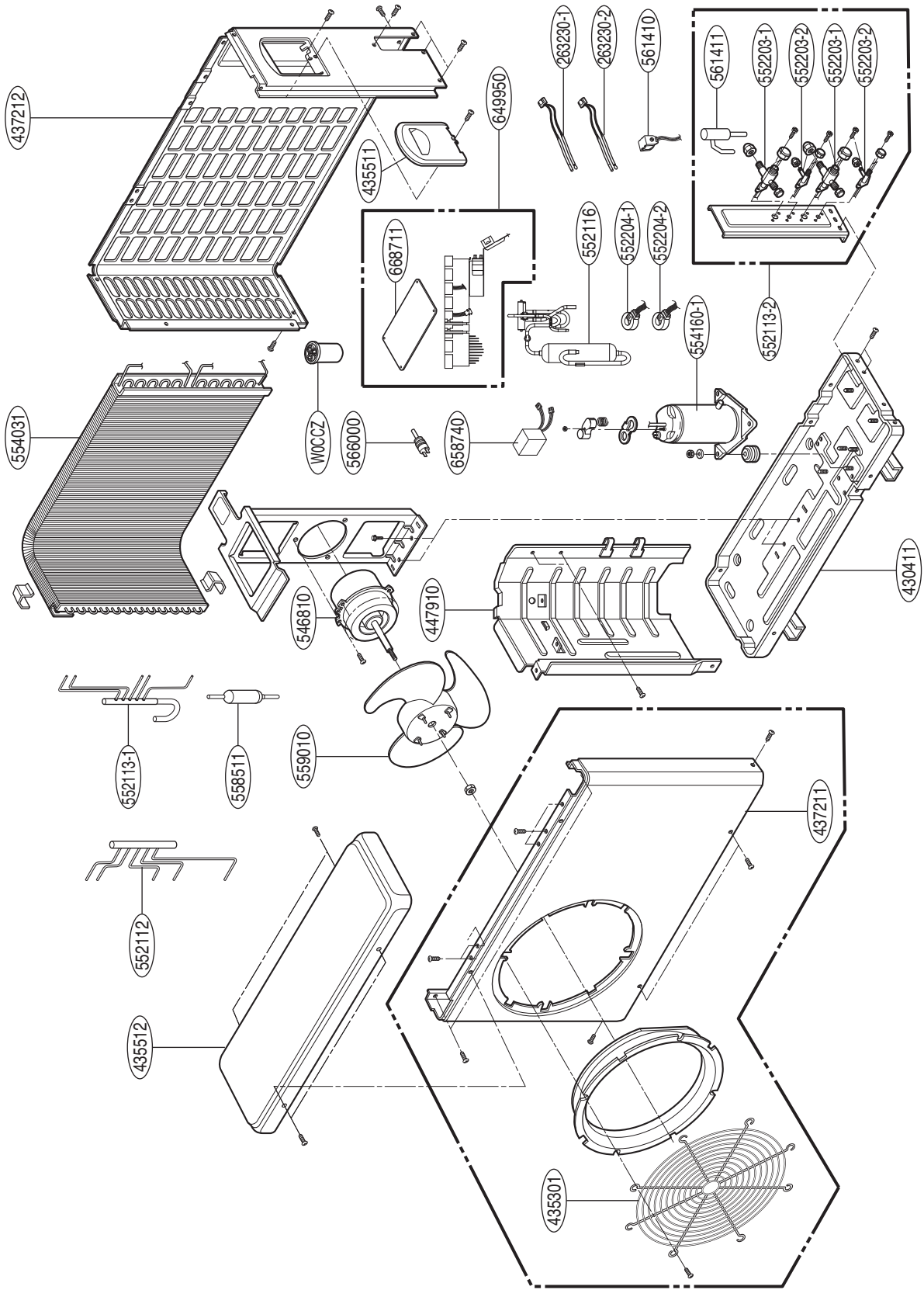
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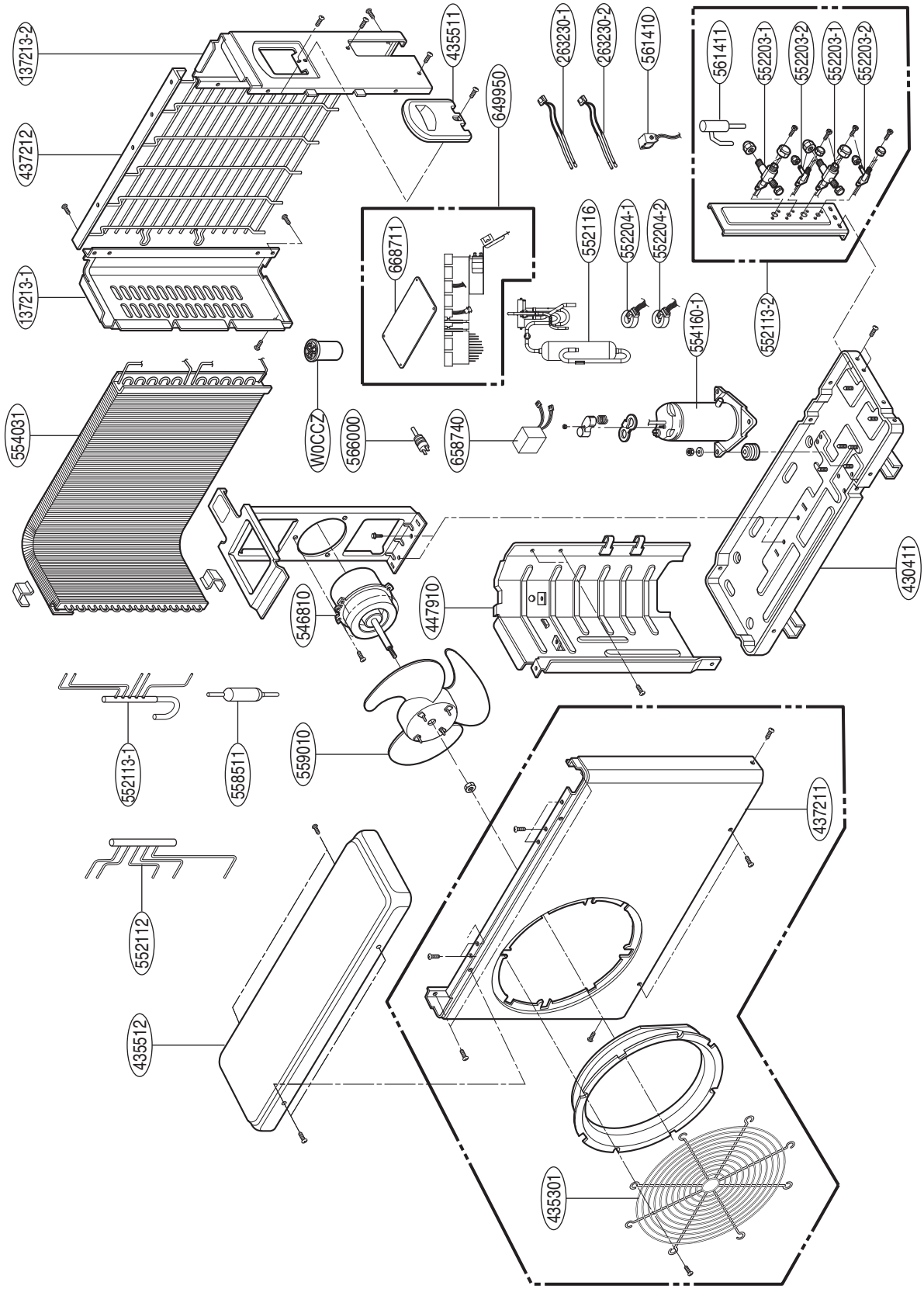
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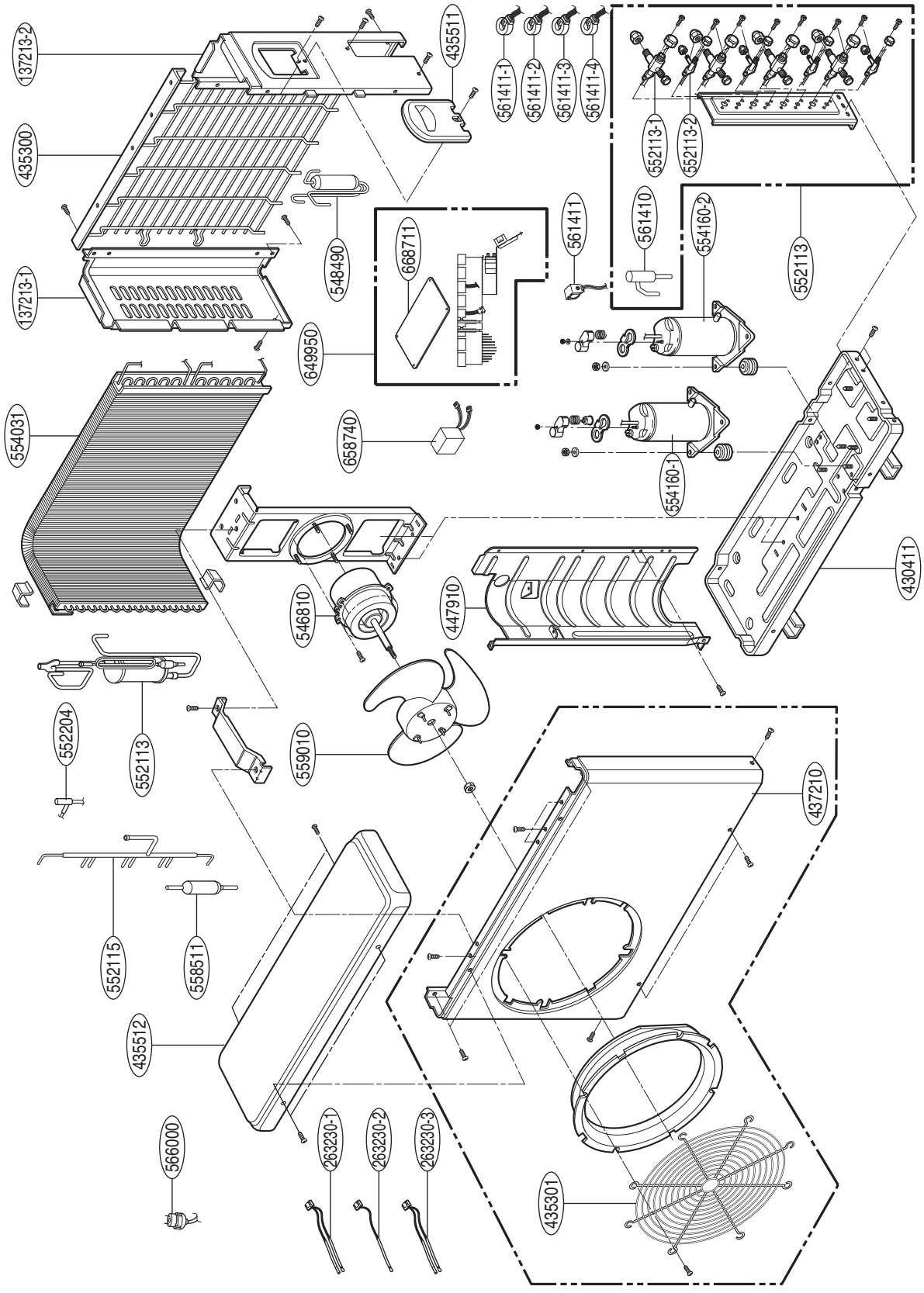
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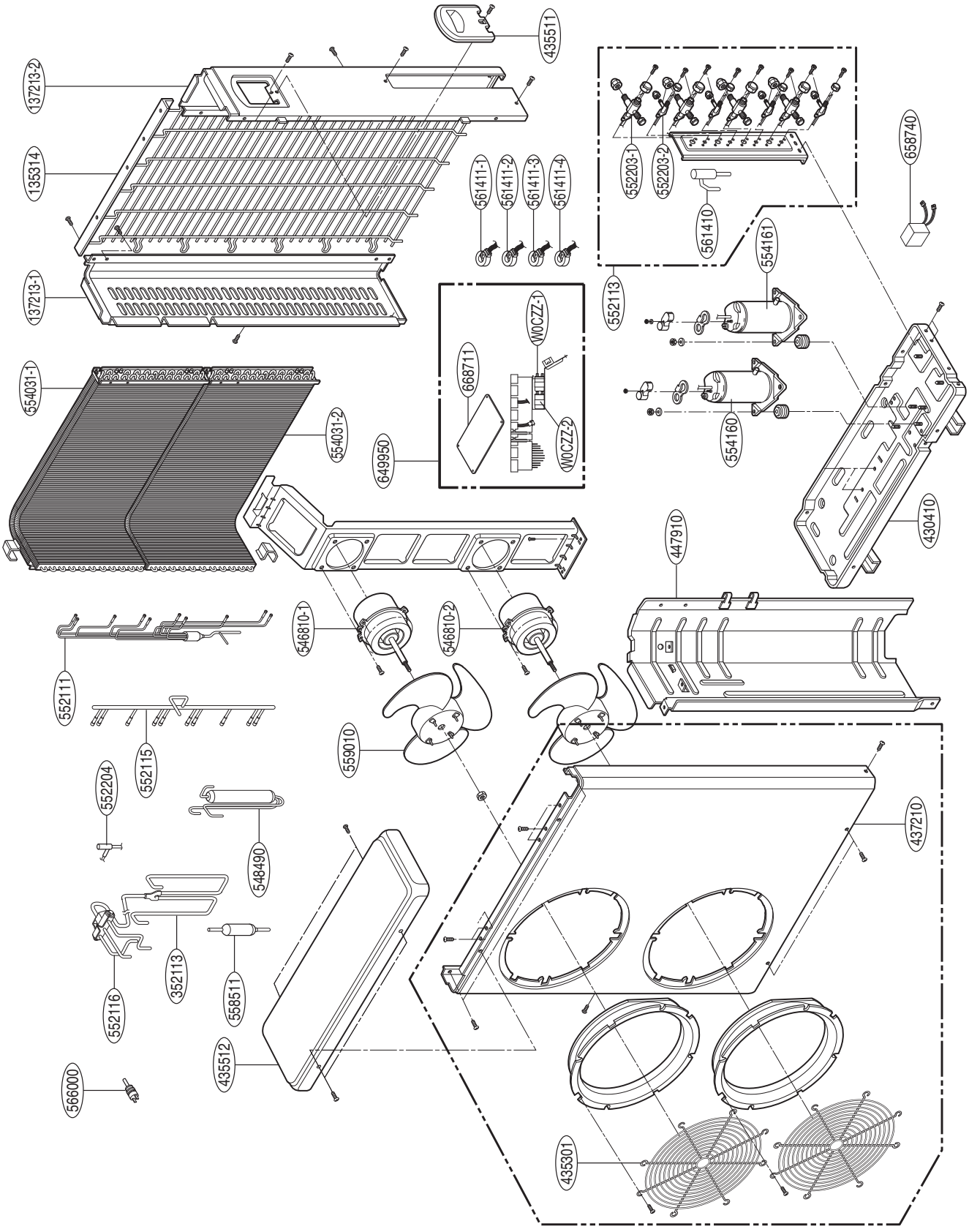
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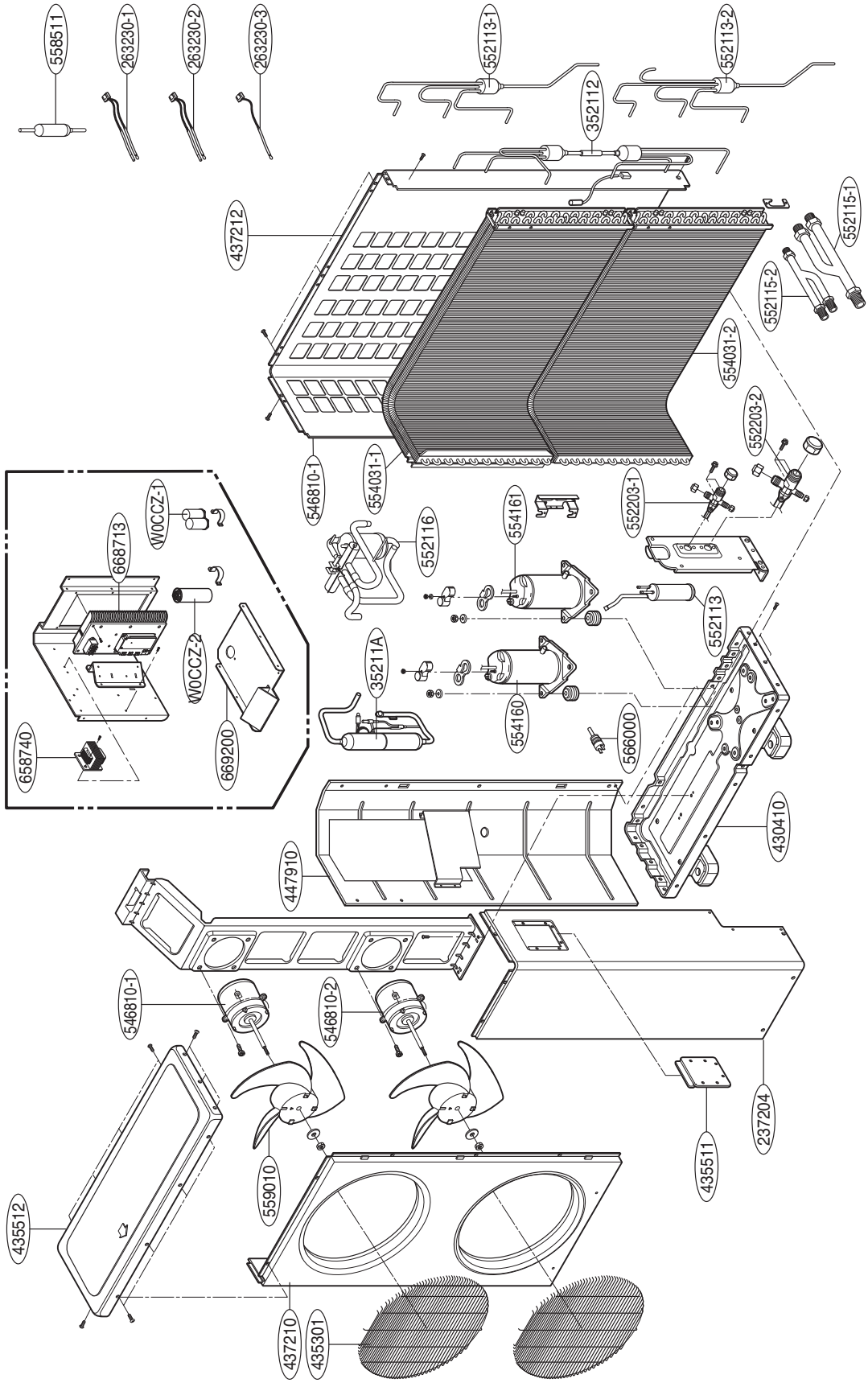
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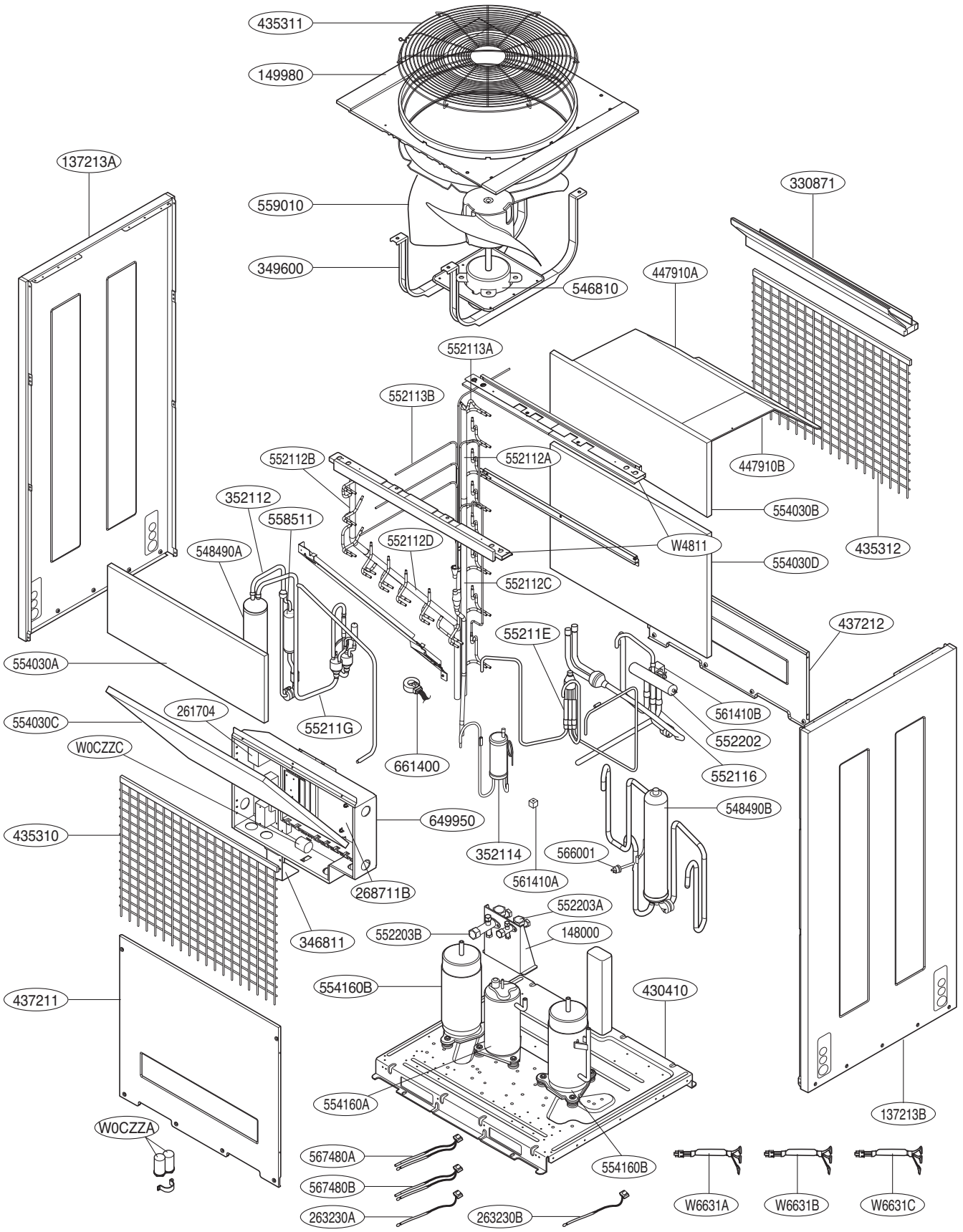
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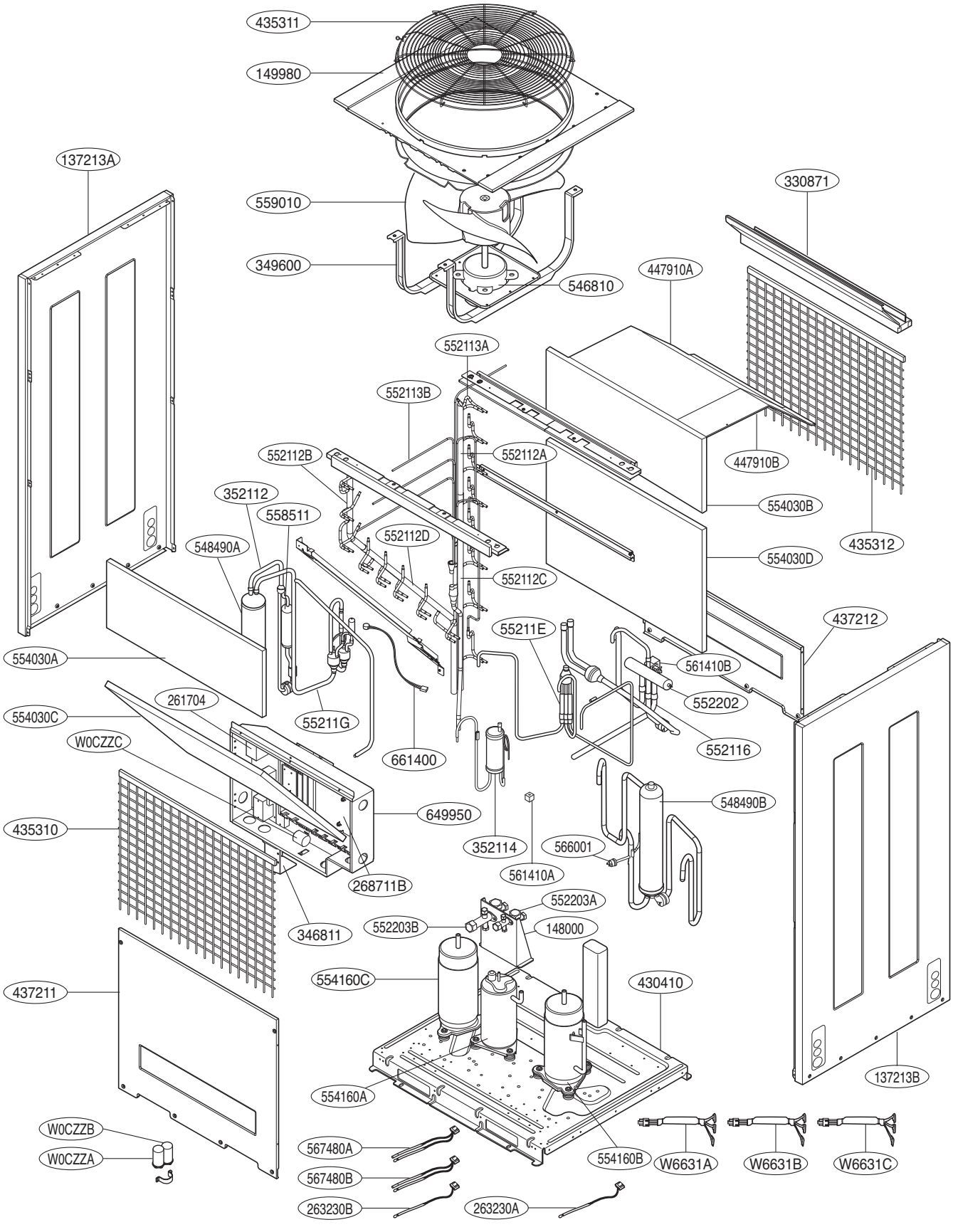
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