



TECHNICAL MANUAL

INVERTER WALL MOUNTED TYPE RESIDENTIAL AIR-CONDITIONERS (Split system, air to air heat pump type)

SRK20ZSPR-S

25ZSPR-S

35ZSPR-S

45ZSPR-S

63ZSPR-S

71ZSPR-S

80ZSPR-S

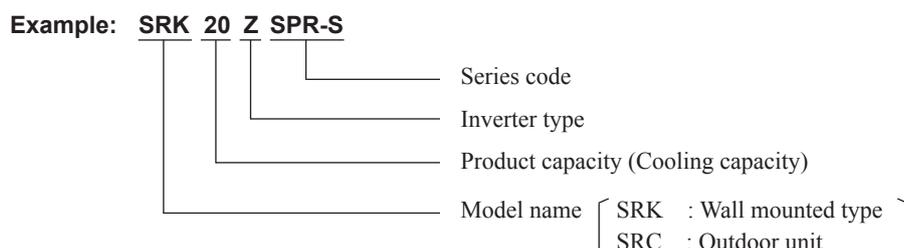
MITSUBISHI HEAVY INDUSTRIES THERMAL SYSTEMS, LTD.

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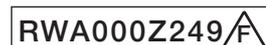
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■ How to read the model name



1. SPECIFICATIONS

Item		Model	SRK20ZSPR-S			
			Indoor unit SRK20ZSPR-S	Outdoor unit SRC20ZSPR-S		
Power source			1 Phase, 220 - 240V, 50Hz / 220V, 60Hz			
Operation data	Nominal cooling capacity (range)	kW	2.0 (0.9 (Min.) - 2.8 (Max.))			
	Nominal heating capacity (range)	kW	2.7 (0.8 (Min.) - 3.9 (Max.))			
	Power consumption	Cooling	kW	0.545 (0.25 - 1.01)		
		Heating		0.710 (0.20 - 1.43)		
	Max power consumption		1.61			
	Running current	Cooling	A	3.1 / 3.0 / 2.9 (220/ 230/ 240 V)		
		Heating		3.7 / 3.5 / 3.4 (220/ 230/ 240 V)		
	Inrush current, max current			3.7 / 3.5 / 3.4 (220/ 230/ 240 V)	Max. 9	
	Power factor	Cooling	%	79		
		Heating		88		
	EER	Cooling		3.67		
	COP	Heating		3.80		
Sound power level	Cooling	dB(A)	59			
	Heating		55			
Sound pressure level	Cooling	dB(A)	Hi: 45 Me: 34 Lo: 23			
	Heating		Hi: 43 Me: 34 Lo: 26			
Silent mode sound pressure level			—			
Exterior dimensions (Height x Width x Depth)		mm	262 x 769 x 210			
Exterior appearance (Munsell color)			Fine snow (8.0Y 9.3/0.1) near equivalent			
			Stucco white (4.2Y 7.5/1.1) near equivalent			
Net weight		kg	6.9			
Compressor type & Q'ty			—			
Compressor motor (Starting method)		kW	—			
Refrigerant oil (Amount, type)		ℓ	—			
Refrigerant (Type, amount, pre-charge length)		kg	R410A 0.655 in outdoor unit (incl. the amount for the piping of 10m)			
Heat exchanger			Louver fins & inner grooved tubing	M fins & inner grooved tubing		
Refrigerant control			Capillary tubes + Electronic expansion valve			
Fan type & Q'ty			Tangential fan x 1	Propeller fan x 1		
Fan motor (Stating method)		W	23 x1 (Direct drive)			
Air flow	Cooling	m³/min	Hi: 10.1 Me: 7.3 Lo: 4.2			
	Heating		Hi: 9.5 Me: 7.3 Lo: 5.2			
Available external static pressure		Pa	0			
Outside air intake			Not possible			
Air filter, Quality / Quantity			Polypropylene net (washable)			
Shock & vibration absorber			Rubber sleeve (for fan motor)	Rubber sleeve (for fan motor & compressor)		
Electric heater			—			
Operation control	Remote control		Wireless remote control			
	Room temperature control		Microcomputer thermostat			
	Operation display		RUN: Green , TIMER: Yellow			
Safety equipments			Compressor overheat protection, Overcurrent protection, Frost protection, Serial signal error protection, Indoor fan motor error protection, Heating overload protection(High pressure control), Cooling overload protection			
Installation data	Refrigerant piping size (O.D)	mm	Liquid line: ϕ 6.35 (1/4") Gas line: ϕ 9.52 (3/8")			
	Connecting method		Flare connection			
	Attached length of piping	m	Liquid line : 0.39 / Gas line : 0.32			
	Insulation for piping		Necessary (Both sides), independent			
	Refrigerant line (one way) length	m	Max.15			
	Vertical height diff. between O.U. and I.U	m	Max.10 (Outdoor unit is higher) / Max.10 (Outdoor unit is lower)			
Drain hose		Hose connectable (VP 16)		Holes ϕ 20 x 2 pcs		
Drain pump, max lift height		mm	—			
Recommended breaker size		A	16			
L.R.A. (Locked rotor ampere)		A	3.7 / 3.5 / 3.4 (220/ 230/ 240 V)			
Interconnecting wires		Size x Core number	1.5mm² x 4 cores (Including earth cable) / Terminal block (Screw fixing type)			
IP number			IPX0	IPX4		
Standard accessories			Mounting kit			
Option parts			—			
Notes (1) The data are measured at the following conditions			The pipe length is 5.0m.			
Operation	Item	Indoor air temperature		Outdoor air temperature		Standards
		DB	WB	DB	WB	
	Cooling	27°C	19°C	35°C	24°C	
Heating	20°C	—	7°C	6°C		
(2) This air-conditioner is manufactured and tested in conformity with the ISO. (3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions. (4) Select the breaker size according to the own national standard. (5) The refrigerant quantity to be charged includes the refrigerant in 10 m connecting piping. (Purging is not required even for the short piping.) If the piping length is longer, when it is 10 to 15 m , add 20 g refrigerant per meter.						



Item		Model	SRK25ZSPR-S		
			Indoor unit SRK25ZSPR-S	Outdoor unit SRC25ZSPR-S	
Power source			1 Phase, 220 - 240V, 50Hz / 220V, 60Hz		
Operation data	Nominal cooling capacity (range)		kW		
	Nominal heating capacity (range)		kW		
	Power consumption	Cooling	0.780 (0.25 - 1.01)		
		Heating	0.755 (0.20 - 1.43)		
	Max power consumption		1.65		
	Running current	Cooling	3.9 / 3.8 / 3.6 (220 / 230 / 240 V)		
		Heating	3.8 / 3.7 / 3.5 (220 / 230 / 240 V)		
	Inrush current, max current		3.9 / 3.8 / 3.6 (220 / 230 / 240 V) Max. 9		
	Power factor	Cooling	90		
		Heating	89		
	EER	Cooling	3.21		
	COP	Heating	3.71		
	Sound power level	Cooling	59	60	
		Heating	58	59	
Sound pressure level	Cooling	Hi: 45 Me: 34 Lo: 23	47		
	Heating	Hi: 43 Me: 34 Lo: 26	45		
Silent mode sound pressure level		-		-	
Exterior dimensions (Height x Width x Depth)		mm	262 x 769 x 210	540 x 645(+57) x 275	
Exterior appearance (Munsell color)			Fine snow (8.0Y 9.3/0.1) near equivalent	Stucco white (4.2Y 7.5/1.1) near equivalent	
Net weight		kg	6.9	25	
Compressor type & Q'ty			-	RM-B5077MDE5(Rotary type) x 1	
Compressor motor (Starting method)		kW	-	0.75 (Inverter driven)	
Refrigerant oil (Amount, type)		ℓ	-	0.3 (DIAMOND FREEZE MA68)	
Refrigerant (Type, amount, pre-charge length)		kg	R410A 0.655 in outdoor unit (incl. the amount for the piping of 10m)		
Heat exchanger			Louver fins & inner grooved tubing	M fins & inner grooved tubing	
Refrigerant control			Capillary tubes + Electronic expansion valve		
Fan type & Q'ty			Tangential fan x 1	Propeller fan x 1	
Fan motor (Stating method)		W	30 x1 (Direct drive)	24 x1 (Direct drive)	
Air flow	Cooling	m³/min	Hi: 10.1 Me: 7.3 Lo: 4.2	26.0	
	Heating		Hi: 9.5 Me: 7.3 Lo: 5.2	19.7	
Available external static pressure		Pa	0	0	
Outside air intake			Not possible		
Air filter, Quality / Quantity			Polypropylene net (washable) x 1		
Shock & vibration absorber			Rubber sleeve (for fan motor)	Rubber sleeve (for fan motor & compressor)	
Electric heater			-		
Operation control	Remote control		Wireless remote control		
	Room temperature control		Microcomputer thermostat		
	Operation display		RUN: Green, TIMER: Yellow		
Safety equipments			Compressor overheat protection, Overcurrent protection, Frost protection, Serial signal error protection, Indoor fan motor error protection, Heating overload protection (High pressure control), Cooling overload protection		
Installation data	Refrigerant piping size (O.D)		mm		
	Connecting method		Liquid line : φ 6.35 (1/4") Gas line : φ 9.52 (3/8")		
	Attached length of piping		m		
	Insulation for piping		Necessary (Both sides), independent		
	Refrigerant line (one way) length		m		
	Vertical height diff. between O.U. and I.U.		m		
Drain hose			Hose connectable (VP 16)	Holes φ 20 x 2 pcs	
Drain pump, max lift height		mm	-		
Recommended breaker size		A	16		
L.R.A. (Locked rotor ampere)		A	3.9 / 3.8 / 3.6 (220 / 230 / 240 V)		
Interconnecting wires		Size x Core number	1.5mm² x 4 cores (Including earth cable) / Terminal block (Screw fixing type)		
IP number			IPX0	IPX4	
Standard accessories			Mounting kit		
Option parts			-		

Notes (1) The data are measured at the following conditions.

The pipe length is 5.0m.

operation \ item	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27°C	19°C	35°C	24°C	ISO5151-T1
Heating	20°C	-	7°C	6°C	

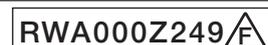
(2) This air-conditioner is manufactured and tested in conformity with the ISO.

(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

(4) Select the breaker size according to the own national standard.

(5) The refrigerant quantity to be charged includes the refrigerant in 10 m connecting piping. (purging is not required even for the short piping.)

If the piping length is longer, when it is 10 to 15 m, add 20 g refrigerant per meter.

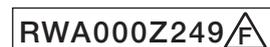


Item		Model	SRK35ZSPR-S	
			Indoor unit SRK35ZSPR-S	Outdoor unit SRC35ZSPR-S
Power source			1 Phase, 220 - 240V, 50Hz / 220V, 60Hz	
Operation data	Nominal cooling capacity (range)		kW	
	Nominal heating capacity (range)		kW	
	Power consumption	Cooling	0.995 (0.23 - 1.32)	
		Heating	0.995 (0.19 - 1.31)	
	Max power consumption		1.65	
	Running current	Cooling	4.9 / 4.7 / 4.5 (220 / 230 / 240 V)	
		Heating	4.9 / 4.7 / 4.5 (220 / 230 / 240 V)	
	Inrush current, max current		4.9 / 4.7 / 4.5 (220 / 230 / 240 V) Max. 9	
	Power factor	Cooling	93	
		Heating	93	
	EER	Cooling	3.22	
	COP	Heating	3.62	
	Sound power level	Cooling	60	
		Heating	58	
Sound pressure level	Cooling	Hi: 47 Me: 36 Lo: 23		
	Heating	Hi: 44 Me: 36 Lo: 28		
Silent mode sound pressure level		—		
Exterior dimensions (Height x Width x Depth)		mm	262 x 769 x 210	
Exterior appearance (Munsell color)			Fine snow (8.0Y 9.3/0.1) near equivalent	
Net weight		kg	7.2	
Compressor type & Q'ty			—	
Compressor motor (Starting method)		kW	—	
Refrigerant oil (Amount, type)		ℓ	—	
Refrigerant (Type, amount, pre-charge length)		kg	R410A 0.81 in outdoor unit (incl. the amount for the piping of 15m)	
Heat exchanger			Louver fins & inner grooved tubing	
Refrigerant control			Capillary tubes + Electronic expansion valve	
Fan type & Q'ty			Tangential fan x 1	
Fan motor (Stating method)		W	30 x1 (Direct drive)	
Air flow	Cooling	m³/min	Hi: 9.5 Me: 6.8 Lo: 4.2	
	Heating		Hi: 9.6 Me: 7.4 Lo: 5.5	
Available external static pressure		Pa	0	
Outside air intake			Not possible	
Air filter, Quality / Quantity			Polypropylene net (washable) x 1	
Shock & vibration absorber			Rubber sleeve (for fan motor)	
Electric heater			—	
Operation control	Remote control		Wireless remote control	
	Room temperature control		Microcomputer thermostat	
	Operation display		RUN: Green, TIMER: Yellow	
Safety equipments			Compressor overheat protection, Overcurrent protection, Frost protection, Serial signal error protection, Indoor fan motor error protection, Heating overload protection (High pressure control), Cooling overload protection	
Installation data	Refrigerant piping size (O.D)		mm	
	Connecting method		Liquid line : φ 6.35 (1/4") Gas line : φ 9.52 (3/8")	
	Attached length of piping		m	
	Insulation for piping		Necessary (Both sides), independent	
	Refrigerant line (one way) length		m	
	Vertical height diff. between O.U. and I.U.		m	
Drain hose			Hose connectable (VP 16)	
Drain pump, max lift height		mm	—	
Recommended breaker size		A	16	
L.R.A. (Locked rotor ampere)		A	4.9 / 4.7 / 4.5 (220 / 230 / 240 V)	
Interconnecting wires		Size x Core number	1.5mm² x 4 cores (Including earth cable) / Terminal block (Screw fixing type)	
IP number			IPX0	
Standard accessories			Mounting kit	
Option parts			—	

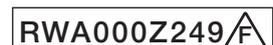
Notes (1) The data are measured at the following conditions. The pipe length is 5.0m.

operation \ item	Indoor air temperature		Outdoor air temperature		Standards
	DB	WB	DB	WB	
Cooling	27°C	19°C	35°C	24°C	ISO5151-T1
Heating	20°C	—	7°C	6°C	

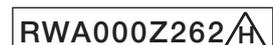
- (2) This air-conditioner is manufactured and tested in conformity with the ISO.
- (3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
- (4) Select the breaker size according to the own national standard.
- (5) The refrigerant quantity to be charged includes the refrigerant in 15 m connecting piping. (purging is not required even for the short piping.)



Item		Model	SRK45ZSPR-S			
			Indoor unit SRK45ZSPR-S	Outdoor unit SRC45ZSPR-S		
Power source			1 Phase, 220 - 240V, 50Hz / 220V, 60Hz			
Operation data	Nominal cooling capacity (range)	kW	4.5 (0.9 (Min.) - 4.8 (Max.))			
	Nominal heating capacity (range)	kW	5.0 (0.8 (Min.) - 5.8 (Max.))			
	Power consumption	Cooling	kW	1.495 (0.22-1.98)		
		Heating		1.385 (0.20-1.86)		
	Max power consumption			2.68		
	Running current	Cooling	A	7.0 / 6.7 / 6.4 (220 / 230 / 240 V)		
		Heating		6.5 / 6.2 / 6.0 (220 / 230 / 240 V)		
	Inrush current, max current			7.0 / 6.7 / 6.4 (220 / 230 / 240 V) Max.14		
	Power factor	Cooling	%	97		
		Heating		97		
	EER	Cooling		3.01		
	COP	Heating		3.61		
	Sound power level	Cooling	dB(A)	60	65	
Heating		64		65		
Sound pressure level	Cooling		Hi : 46 Me : 40 Lo : 25	52		
	Heating		Hi : 48 Me : 43 Lo : 32	53		
Silent mode sound pressure level			-			
Exterior dimensions (Height x Width x Depth)		mm	262 x 769 x 210			
Exterior appearance (Munsell color)			Fine snow (8.0Y 9.3/0.1) near equivalent			
Net weight		kg	7.6			
Compressor type & Q'ty			-			
Compressor motor (Starting method)		kW	1.10 (Inverter driven)			
Refrigerant oil (Amount, type)		ℓ	-			
Refrigerant (Type, amount, pre-charge length)		kg	R410A 1.20 in outdoor unit (incl. the amount for the piping of 15m)			
Heat exchanger			Louver fins & inner grooved tubing			
Refrigerant control			Capillary tubes + Electronic expansion valve			
Fan type & Q'ty			Tangential fan x 1			
Fan motor (Stating method)		W	30 x1 (Direct drive)			
Air flow	Cooling	m³/min	Hi : 9.0 Me : 7.2 Lo : 3.8			
	Heating		Hi : 12.0 Me : 9.2 Lo : 6.2			
Available external static pressure		Pa	0			
Outside air intake			Not possible			
Air filter, Quality / Quantity			Polypropylene net (washable) x 1			
Shock & vibration absorber			Rubber sleeve (for fan motor)			
Electric heater			-			
Operation control	Remote control		Wireless remote control			
	Room temperature control		Microcomputer thermostat			
	Operation display		RUN: Green, TIMER: Yellow			
Safety equipments			Compressor overheat protection, Overcurrent protection, Frost protection, Serial signal error protection, Indoor fan motor error protection, Heating overload protection (High pressure control), Cooling overload protection			
Installation data	Refrigerant piping size (O.D)	mm	Liquid line : ϕ 6.35 (1/4") Gas line : ϕ 12.7 (1/2")			
	Connecting method		Flare connection			
	Attached length of piping	m	Liquid line : 0.39 / Gas line : 0.32			
	Insulation for piping		Necessary (Both sides), independent			
	Refrigerant line (one way) length	m	Max. 25			
	Vertical height diff. between O.U. and I.U.	m	Max. 15 (Outdoor unit is higher) / Max. 15 (Outdoor unit is lower)			
Drain hose			Hose connectable (VP 16)			
Drain pump, max lift height		mm	-			
Recommended breaker size		A	16			
L.R.A. (Locked rotor ampere)		A	7.0 / 6.7 / 6.4 (220 / 230 / 240 V)			
Interconnecting wires		Size x Core number	1.5mm² x 4 cores (Including earth cable) / Terminal block (Screw fixing type)			
IP number			IPX0			
Standard accessories			Mounting kit			
Option parts			-			
Notes (1) The data are measured at the following conditions. The pipe length is 5.0m.						
operation	item	Indoor air temperature		Outdoor air temperature		Standards
		DB	WB	DB	WB	
	Cooling	27°C	19°C	35°C	24°C	
Heating	20°C	-	7°C	6°C		
(2) This air-conditioner is manufactured and tested in conformity with the ISO.						
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.						
(4) Select the breaker size according to the own national standard.						
(5) The refrigerant quantity to be charged includes the refrigerant in 15 m connecting piping. (purging is not required even for the short piping.)						
If the piping length is longer, when it is 15 to 25 m, add 20 g refrigerant per meter.						



Model		SRK71ZSPR-S				
Item		Indoor unit	SRK71ZSPR-S	Outdoor unit	SRC71ZSPR-S	
Power source		1 Phase, 220 - 240V, 50Hz / 220V, 60Hz				
Operation data	Nominal cooling capacity (range)	kW	7.1 (2.3 (Min.) - 7.7 (Max.))			
	Nominal heating capacity (range)	kW	8.0 (2.0 (Min.) - 10.0 (Max.))			
	Heating capacity (H2)	kW	-			
	Power consumption	Cooling	kW	2.05 (0.5 - 2.7)		
		Heating		2.06 (0.4 - 3.4)		
		Heating (H2)		-		
	Max power consumption		3.65			
	Running current	Cooling	A	9.5 / 9.1 / 8.7 (220/ 230/ 240 V)		
		Heating		9.6 / 9.1 / 8.8 (220/ 230/ 240 V)		
	Inrush current, max current		9.6 / 9.1 / 8.8 (220/ 230/ 240 V) Max. 17			
	Power factor	Cooling	%	98		
		Heating		98		
	EER	Cooling		3.46		
	COP	Heating		3.88		
		Heating (H2)		-		
Sound power level	Cooling	dB(A)	58		65	
	Heating		60		63	
Sound pressure level	Cooling	dB(A)	Hi: 44 Me: 41 Lo: 37 ULo: 25		53	
	Heating		Hi: 46 Me: 39 Lo: 35 ULo: 28		51	
Silent mode sound pressure level			- Cooling:45 / Heating:41			
Exterior dimensions (Height x Width x Depth)	mm	339 x 1197 x 262		750 x 880(+88) x 340		
Exterior appearance (Munsell color)		Fine snow (8.0Y 9.3/0.1) near equivalent		Stucco white (4.2Y 7.5/1.1) near equivalent		
Net weight	kg	15.5		57		
Compressor type & Q'ty		-		RMT5118MDE2 (Twin rotary type) x 1		
Compressor motor (Starting method)	kW	-		1.40 (Inverter driven)		
Refrigerant oil (Amount, type)	ℓ	-		0.675 (DIAMOND FREEZE MA68)		
Refrigerant (Type, amount, pre-charge length)	kg	R410A 1.8 in outdoor unit (incl. the amount for the piping of 15m)				
Heat exchanger		Louver fins & inner grooved tubing		M fins & inner grooved tubing		
Refrigerant control		Capillary tubes + Electronic expansion valve				
Fan type & Q'ty		Tangential fan x 1		Propeller fan x 1		
Fan motor (Starting method)	W	56 x1 (Direct drive)		86 x1 (Direct drive)		
Air flow	Cooling	m ³ /min	Hi: 20.5 Me: 18.6 Lo: 16.2 ULo: 10.4		55	
	Heating		Hi: 25.5 Me: 19.8 Lo: 17.3 ULo: 13.3		43.5	
Available external static pressure	Pa	0		0		
Outside air intake		Not possible				
Air filter, Quality / Quantity		Polypropylene net (washable) x 2				
Shock & vibration absorber		Rubber sleeve (for fan motor)		Rubber sleeve (for fan motor & compressor)		
Electric heater		-				
Operation control	Remote control	Wireless remote control				
	Room temperature control	Microcomputer thermostat				
	Operation display	RUN: Green , TIMER: Yellow , HI POWER: Green ,3D AUTO: Green				
Safety equipments		Compressor overheat protection, Overcurrent protection, Frost protection, Serial signal error protection, Indoor fan motor error protection, Heating overload protection(High pressure control) , Cooling overload protection				
Installation data	Refrigerant piping size (O.D)	mm	Liquid line: ϕ 6.35 (1/4")		Gas line: ϕ 15.88 (5/8")	
	Connecting method		Flare connection		Flare connection	
	Attached length of piping	m	Liquid line : 0.78 / Gas line : 0.72		-	
	Insulation for piping		Necessary (Both sides), independent			
	Refrigerant line (one way) length	m	Max.30			
	Vertical height diff. between O.U. and I.U.	m	Max.20 (Outdoor unit is higher) / Max.20 (Outdoor unit is lower)			
Drain hose		Hose connectable (VP 16)		Holes ϕ 20 x 3 pcs		
Drain pump, max lift height	mm	-				
Recommended breaker size	A	20				
L.R.A. (Locked rotor ampere)	A	9.6 / 9.1 / 8.8 (220/ 230/ 240 V)				
Interconnecting wires	Size x Core number	1.5mm ² x 4 cores (Including earth cable) / Terminal block (Screw fixing type)				
IP number		IPX0		IPX4		
Standard accessories		Mounting kit, Clean filter (Allergen clear filter x 1, Photocatalytic washable deodorizing filter x 1)				
Option parts		Interface kit (SC-BIKN-E)				
Notes (1) The data are measured at the following conditions. The pipe length is 5.0m.						
	Item	Indoor air temperature		Outdoor air temperature		
		DB	WB	DB	WB	
Operation						Standards
	Cooling	27°C	19°C	35°C	24°C	ISO5151-T1
	Heating	20°C	-	7°C	6°C	ISO5151-H1
	Heating (H2)	20°C	-	2°C	1°C	ISO5151-H2
(2) This air-conditioner is manufactured and tested in conformity with the ISO.						
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.						
(4) Select the breaker size according to the own national standard.						



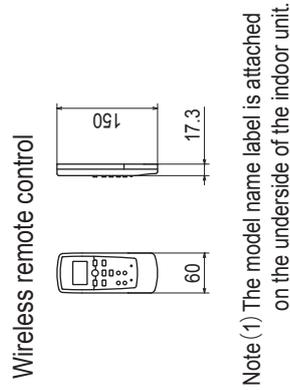
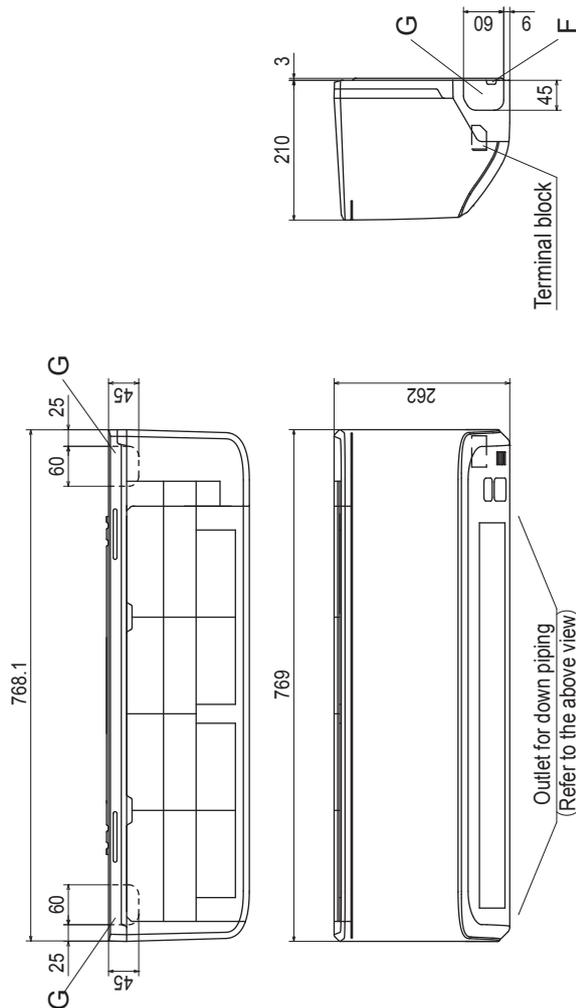
Model			SRK80ZSPR-S				
Item			Indoor unit	SRK80ZSPR-S	Outdoor unit	SRC80ZSPR-S	
Power source			1 Phase, 220 - 240V, 50Hz / 220V, 60Hz				
Operation data	Nominal cooling capacity (range)	kW	8.0 (2.3 (Min.) - 9.0 (Max.))				
	Nominal heating capacity (range)	kW	9.0 (2.1 (Min.) - 10.5 (Max.))				
	Heating capacity (H2)	kW	-				
	Power consumption	Cooling	kW	2.35 (0.5 - 3.2)			
		Heating		2.40 (0.4 - 3.5)			
		Heating (H2)		-			
	Max power consumption		3.65				
	Running current	Cooling	A	10.9 / 10.4 / 10.0 (220/ 230/ 240 V)			
		Heating		11.1 / 10.6 / 10.2 (220/ 230/ 240 V)			
	Inrush current, max current			11.1 / 10.6 / 10.2 (220/ 230/ 240 V)			Max. 17
	Power factor	Cooling	%	98			
		Heating		98			
	EER	Cooling		3.40			
	COP	Heating		3.75			
		Heating (H2)		-			
Sound power level	Cooling	dB(A)	62			68	
	Heating		62			67	
Sound pressure level	Cooling	dB(A)	Hi: 47 Me: 44 Lo: 39 ULo: 26			56	
	Heating		Hi: 47 Me: 41 Lo: 36 ULo: 29			55	
Silent mode sound pressure level			-				
Exterior dimensions (Height x Width x Depth)	mm		339 x 1197 x 262		750 x 880(+88) x 340		
Exterior appearance (Munsell color)			Fine snow (8.0Y 9.3/0.1) near equivalent		Stucco white (4.2Y 7.5/1.1) near equivalent		
Net weight	kg		16.5		58.5		
Compressor type & Q'ty			-		RMT5118MDE2 (Twin rotary type) x 1		
Compressor motor (Starting method)	kW		-		1.40 (Inverter driven)		
Refrigerant oil (Amount, type)	ℓ		-		0.675 (DIAMOND FREEZE MA68)		
Refrigerant (Type, amount, pre-charge length)	kg		R410A 1.9 in outdoor unit (incl. the amount for the piping of 15m)				
Heat exchanger			Louver fins & inner grooved tubing		M fins & inner grooved tubing		
Refrigerant control			Capillary tubes + Electronic expansion valve				
Fan type & Q'ty			Tangential fan x 1		Propeller fan x 1		
Fan motor (Starting method)	W		56 x1 (Direct drive)		86 x1 (Direct drive)		
Air flow	Cooling	m ³ /min	Hi: 23.5 Me: 20.2 Lo: 17.5 ULo: 10.4			63	
	Heating		Hi: 26.5 Me: 21.3 Lo: 18.4 ULo: 13.5			49.5	
Available external static pressure	Pa		0		0		
Outside air intake			Not possible				
Air filter, Quality / Quantity			Polypropylene net (washable) x 2				
Shock & vibration absorber			Rubber sleeve (for fan motor)		Rubber sleeve (for fan motor & compressor)		
Electric heater			-		-		
Operation control	Remote control		Wireless remote control				
	Room temperature control		Microcomputer thermostat				
	Operation display		RUN: Green , TIMER: Yellow , HI POWER: Green ,3D AUTO: Green				
Safety equipments			Compressor overheat protection, Overcurrent protection, Frost protection, Serial signal error protection, Indoor fan motor error protection, Heating overload protection(High pressure control), Cooling overload protection				
Installation data	Refrigerant piping size (O.D)	mm	Liquid line: ϕ 6.35 (1/4")		Gas line: ϕ 15.88 (5/8")		
	Connecting method		Flare connection		Flare connection		
	Attached length of piping	m	Liquid line : 0.78 / Gas line : 0.72		-		
	Insulation for piping		Necessary (Both sides), independent				
	Refrigerant line (one way) length	m	Max.30				
	Vertical height diff. between O.U. and I.U.	m	Max.20 (Outdoor unit is higher) / Max.20 (Outdoor unit is lower)				
Drain hose			Hose connectable (VP 16)		Holes ϕ 20 x 3 pcs		
Drain pump, max lift height	mm		-		-		
Recommended breaker size	A		20				
L.R.A. (Locked rotor ampere)	A		11.1 / 10.6 / 10.2 (220/ 230/ 240 V)				
Interconnecting wires	Size x Core number		1.5mm ² x 4 cores (Including earth cable) / Terminal block (Screw fixing type)				
IP number			IPX0		IPX4		
Standard accessories			Mounting kit, Clean filter (Allergen clear filter x 1, Photocatalytic washable deodorizing filter x 1)				
Option parts			Interface kit (SC-BIKN-E)				
Notes (1) The data are measured at the following conditions. The pipe length is 5.0m.							
Operation	Item	Indoor air temperature		Outdoor air temperature		Standards	
		DB	WB	DB	WB		
	Cooling	27°C	19°C	35°C	24°C	ISO5151-T1	
	Heating	20°C	-	7°C	6°C	ISO5151-H1	
Heating (H2)	20°C	-	2°C	1°C	ISO5151-H2		
(2) This air-conditioner is manufactured and tested in conformity with the ISO.							
(3) Sound level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.							
(4) Select the breaker size according to the own national standard.							

2. EXTERIOR DIMENSIONS

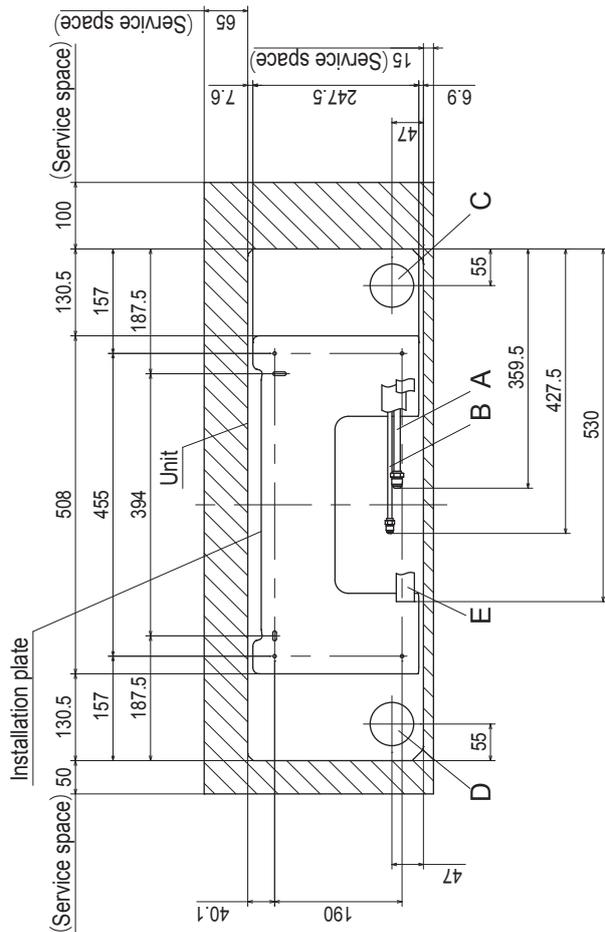
(1) Indoor units

Model SRK20ZSPR-S

Symbol	Content
A	Gas piping φ9.52 (3/8") (Flare)
B	Liquid piping φ6.35 (1/4") (Flare)
C	Hole on wall for right rear piping (φ65)
D	Hole on wall for left rear piping (φ65)
E	Drain hose VP16
F	Outlet for wiring
G	Outlet for piping (on both side)



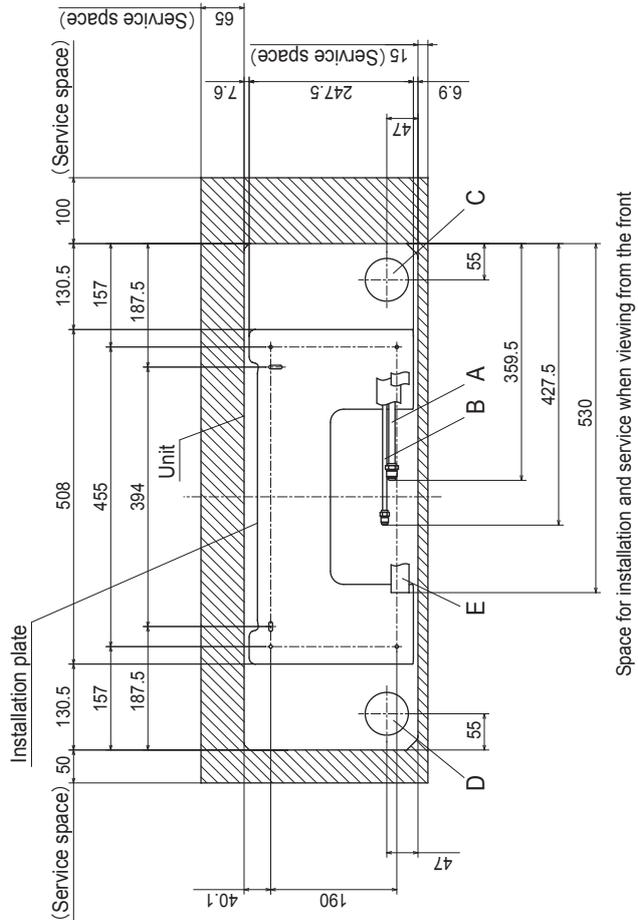
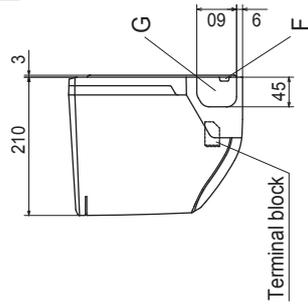
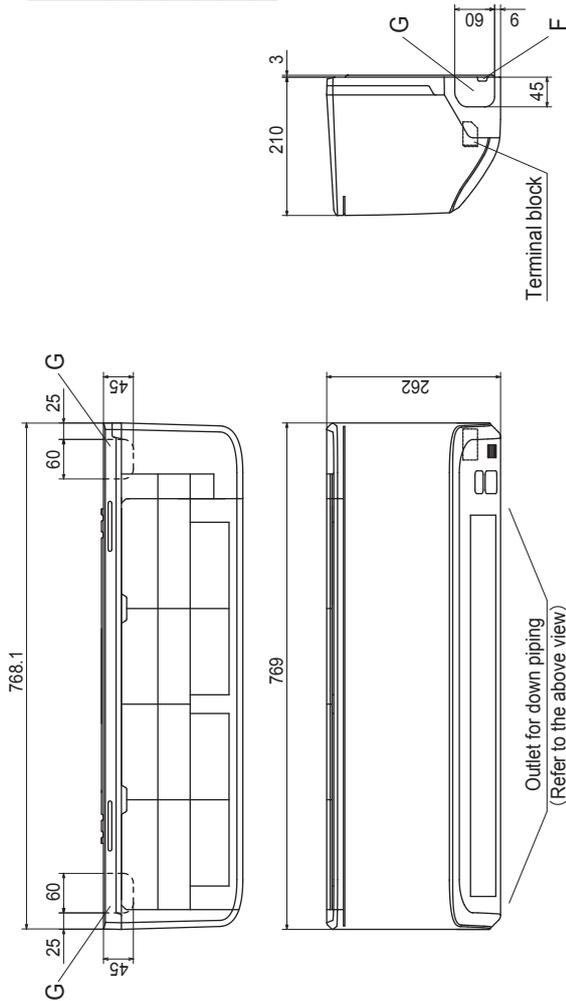
Unit:mm



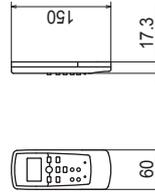
Space for installation and service when viewing from the front

Models SRK25ZSPR-S, 35ZSPR-S, 45ZSPR-S

Symbol	Content
A	Gas piping Model 25.35 ϕ 9.52 (3/8") (Flare) Model 45 ϕ 12.7 (1/2") (Flare)
B	Liquid piping ϕ 6.35 (1/4") (Flare)
C	Hole on wall for right rear piping (ϕ 65)
D	Hole on wall for left rear piping (ϕ 65)
E	Drain hose VP16
F	Outlet for wiring
G	Outlet for piping (on both side)



Wireless remote control



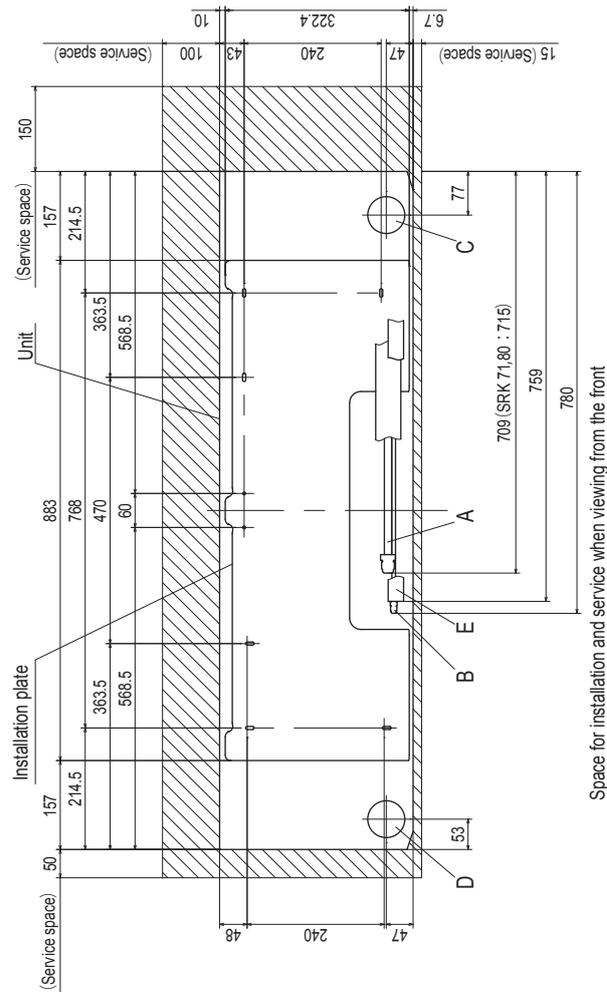
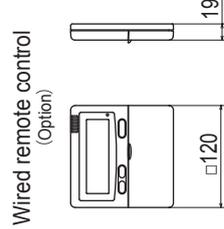
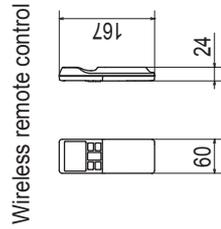
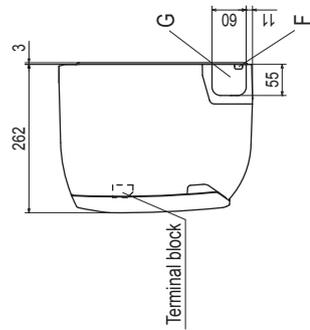
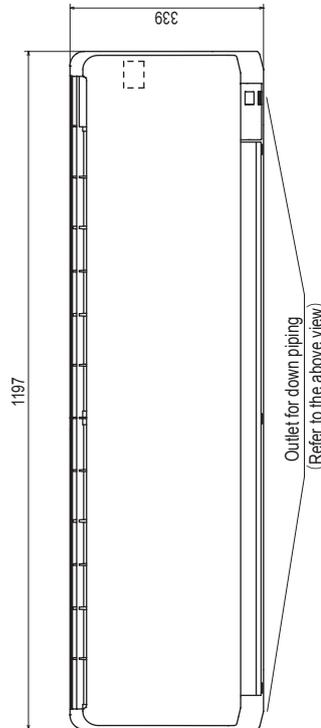
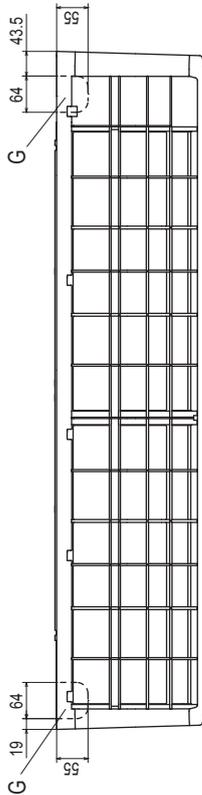
Note (1) The model name label is attached on the underside of the indoor unit.

Unit:mm

Space for installation and service when viewing from the front

Models SRK63ZSPR-S, 71ZSPR-S, 80ZSPR-S

Symbol	Content
A	Gas piping SRK63 $\phi 12.7 (1/2")$ (Flare) SRK71,80 $\phi 15.88 (5/8")$ (Flare)
B	Liquid piping $\phi 6.35 (1/4")$ (Flare)
C	Hole on wall for right rear piping ($\phi 65$)
D	Hole on wall for left rear piping ($\phi 65$)
E	Drain hose VP-16
F	Outlet for wiring (on both side)
G	Outlet for piping (on both side)



Space for installation and service when viewing from the front

Note (1) The model name label is attached on the underside of the indoor unit.

Unit:mm



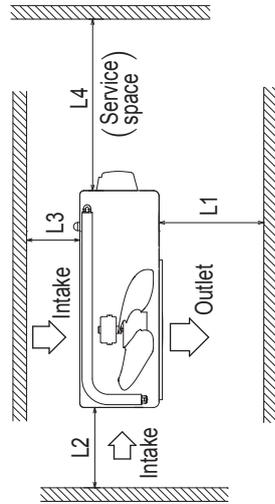
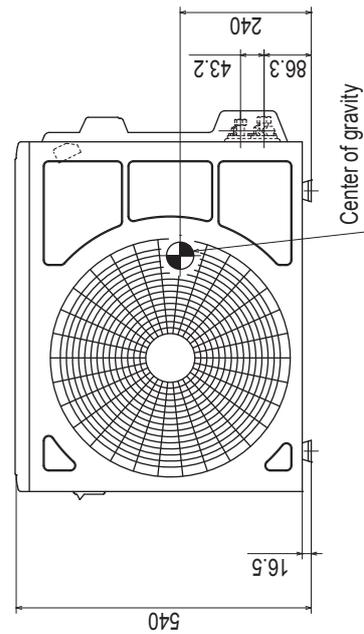
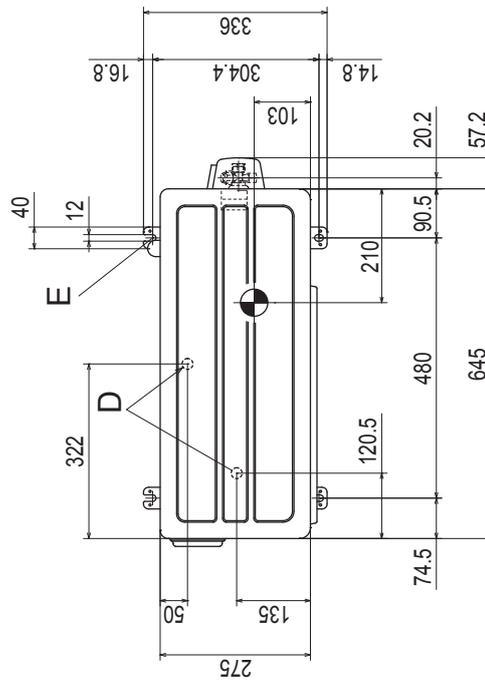
(2) Outdoor units

Model SRC20ZSPR-S

Notes

- (1) It must not be surrounded by walls on the four sides.
- (2) The unit must be fixed with anchor bolts. An anchor bolt must not protrude more than 15mm.
- (3) Where the unit is subject to strong winds, lay it in such a direction that the blower outlet faces perpendicularly to the dominant wind direction.
- (4) Leave 1m or more space above the unit.
- (5) A wall in front of the blower outlet must not exceed the units height.
- (6) The model name label is attached on the right side of the unit.

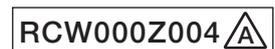
Symbol	Content
A	Service valve connection (gas side) ϕ 9.52 (3/8") (Flare)
B	Service valve connection (liquid side) ϕ 6.35 (1/4") (Flare)
C	Pipe/cable draw-out hole
D	Drain discharge hole ϕ 20x2places
E	Anchor bolt hole M10x4places



Minimum installation space

Examples of installation	I	II	III	IV
Dimensions	Open	280	280	180
L1	Open	280	280	180
L2	100	100	Open	Open
L3	100	80	80	80
L4	250	Open	250	Open

Unit:mm

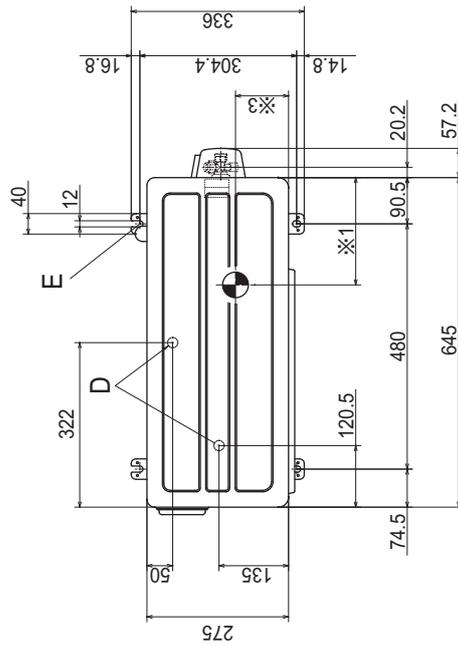


Models SRC25ZSPR-S, 35ZSPR-S

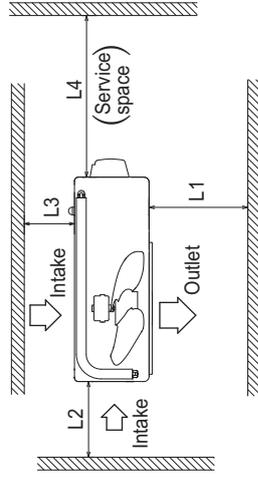
Symbol	Content
A	Service valve connection (gas side) ϕ 9.52 (3/8") (Flare)
B	Service valve connection (liquid side) ϕ 6.35 (1/4") (Flare)
C	Pipe./cable draw-out hole
D	Drain discharge hole ϕ 20 x 2places
E	Anchor bolt hole M10 x 4places

Notes

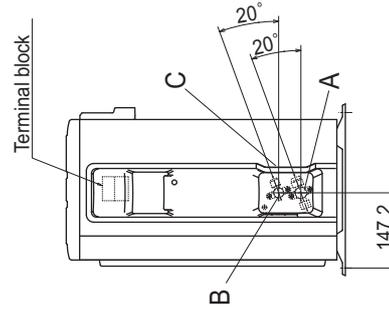
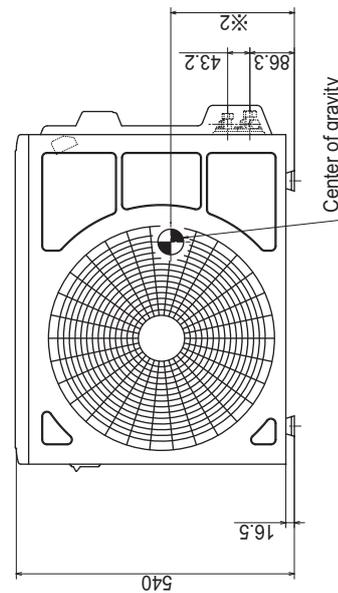
- (1) It must not be surrounded by walls on the four sides.
- (2) The unit must be fixed with anchor bolts. An anchor bolt must not protrude more than 15mm.
- (3) Where the unit is subject to strong winds, lay it in such a direction that the blower outlet faces perpendicularly to the dominant wind direction.
- (4) Leave 1m or more space above the unit.
- (5) A wall in front of the blower outlet must not exceed the units height.
- (6) The model name label is attached on the right side of the unit.



Dimensions	※1	※2	※3
MODEL			
SRC25ZSPR-S	210	240	103
SRC35ZSPR-S	220	240	108



Minimum installation space



Examples of installation	I	II	III	IV
Dimensions				
L1	Open	280	280	180
L2	100	100	Open	Open
L3	100	80	80	80
L4	250	Open	250	Open

Unit:mmr

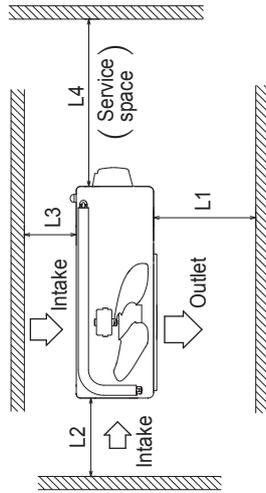
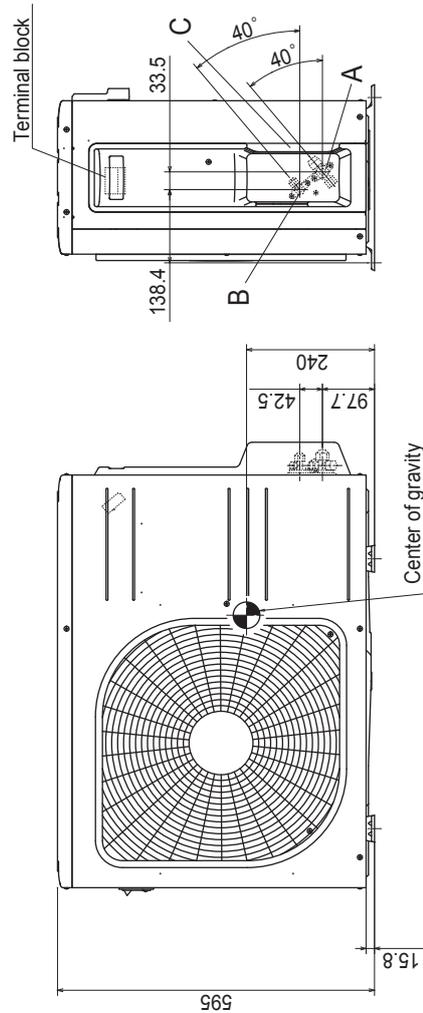
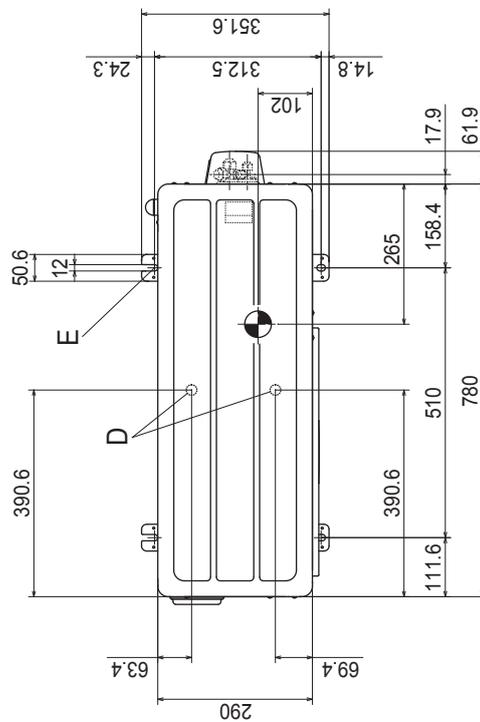


Model SRC45ZSPR-S

Notes

- (1) It must not be surrounded by walls on the four sides.
- (2) The unit must be fixed with anchor bolts. An anchor bolt must not protrude more than 15mm.
- (3) Where the unit is subject to strong winds, lay it in such a direction that the blower outlet faces perpendicularly to the dominant wind direction.
- (4) Leave 1m or more space above the unit.
- (5) A wall in front of the blower outlet must not exceed the units height.
- (6) The model name label is attached on the lower right corner of the front panel.

Symbol	Content
A	Service valve connection (gas side) ϕ 12.7 (1/2") (Flare)
B	Service valve connection (liquid side) ϕ 6.35 (1/4") (Flare)
C	Pipe/cable draw-out hole
D	Drain discharge hole ϕ 20 x 2places
E	Anchor bolt hole M10 x 4places



Minimum installation space

Examples of installation Dimensions	I	II	III	IV
L1	Open	280	280	180
L2	100	100	Open	Open
L3	100	80	80	80
L4	250	Open	250	Open

Unit:mm

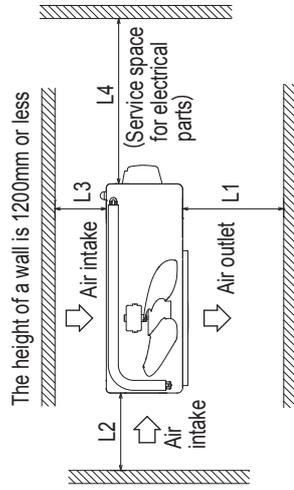
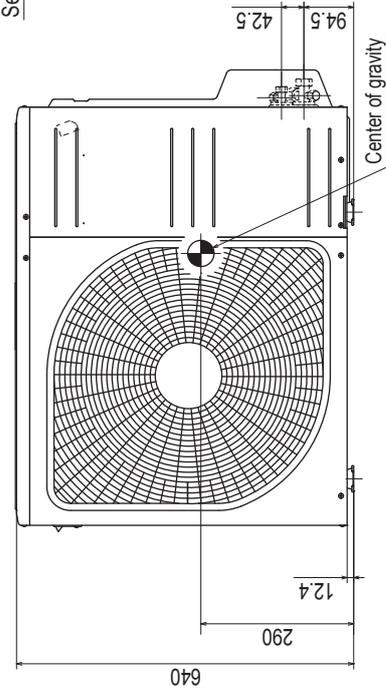
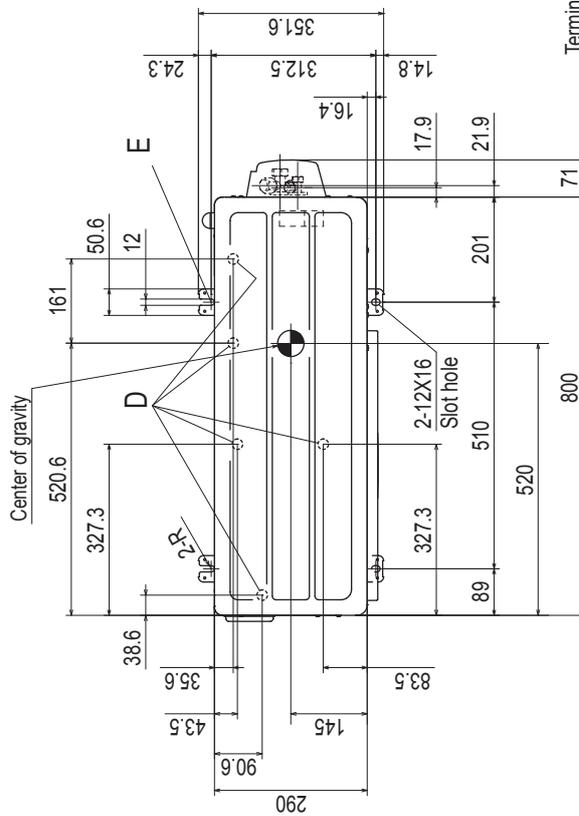
RCV000Z016

Model SRC63ZSPR-S

Symbol	Content
A	Service valve connection (gas side) $\phi 12.7 (1/2")$ (Flare)
B	Service valve connection (liquid side) $\phi 6.35 (1/4")$ (Flare)
C	Pipe / cable draw-out hole
D	Drain discharge hole
E	Anchor bolt hole

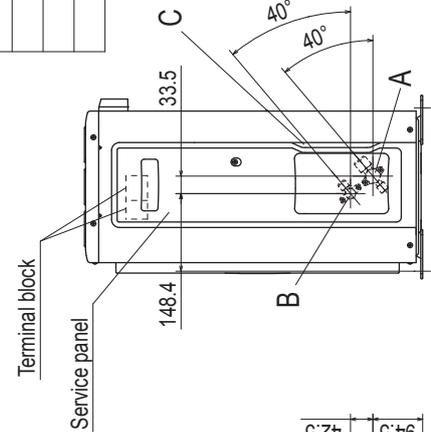
Notes

- (1) It must not be surrounded by walls on four sides.
- (2) The unit must be fixed with anchor bolts. An anchor bolt must not protrude more than 15mm.
- (3) Where the unit is subjected to strong winds, lay it in such a direction that the blower outlet face is perpendicular to the dominant wind direction.
- (4) Leave 1m or more space above the unit.
- (5) A wall in front of the blower outlet must not exceed the unit's height.
- (6) The model name label is attached on the service panel.



Minimum installation space

Examples of installation Dimensions	I	II	III	VI
L1	Open	280	280	180
L2	100	75	Open	Open
L3	100	80	80	80
L4	250	Open	250	Open



Unit:mm

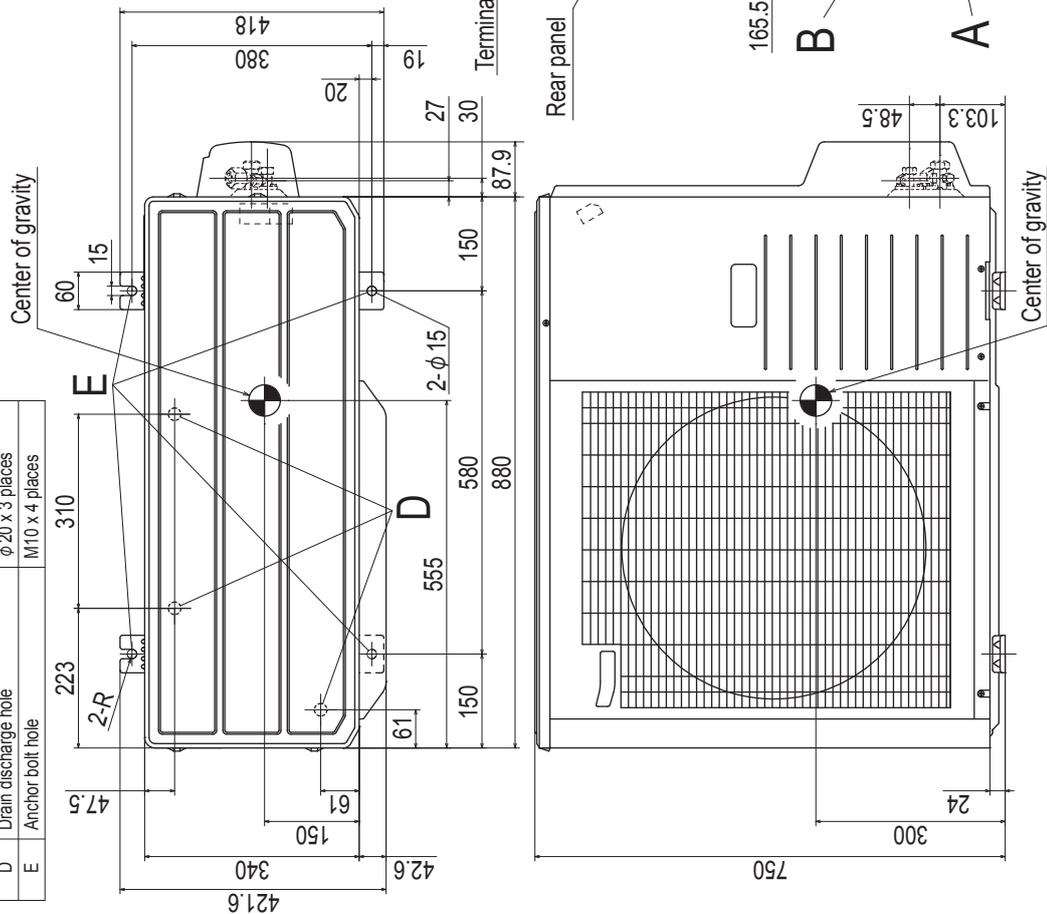
RCT000Z016

Model SRC71ZSPR-S

Notes

- (1) It must not be surrounded by walls on four sides.
- (2) The unit must be fixed with anchor bolts. An anchor bolt must not protrude more than 15mm.
- (3) Where the unit is subjected to strong winds, lay it in such a direction that the blower outlet face is perpendicular to the dominant wind direction.
- (4) Leave 1m or more space above the unit.
- (5) A wall in front of the blower outlet must not exceed the unit's height.
- (6) The model name label is attached on the rear panel.

Symbol	Content
A	Service valve connection (gas side) $\phi 15.88 (5/8")$ (Flare)
B	Service valve connection (liquid side) $\phi 6.35 (1/4")$ (Flare)
C	Pipe / cable draw-out hole
D	Drain discharge hole $\phi 20 \times 3$ places
E	Anchor bolt hole M10 x 4 places



Minimum installation space

Examples of installation	I	II	III
L1	Open	Open	500
L2	300	250	Open
L3	100	150	100
L4	250	250	250

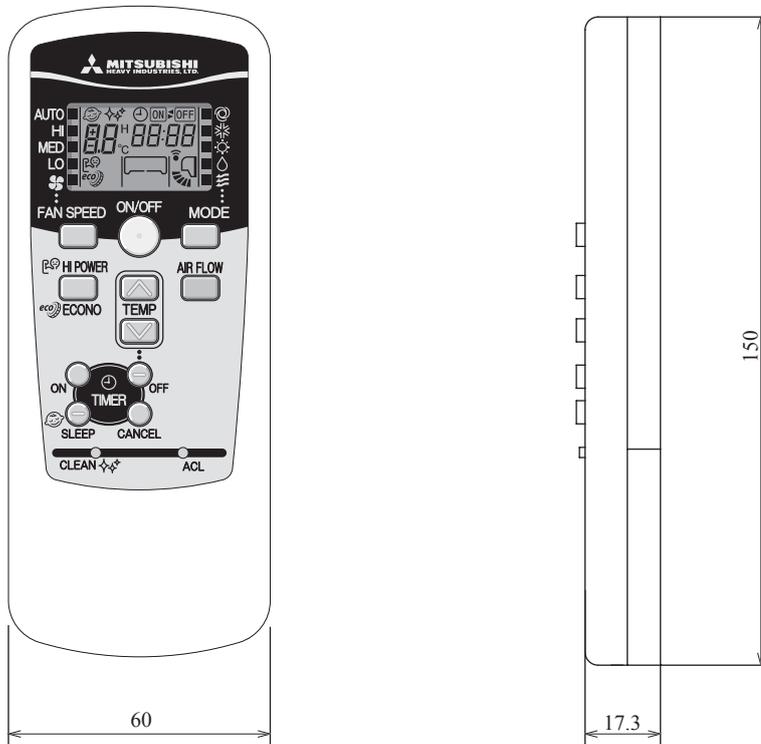
Unit:mm



(3) Remote control

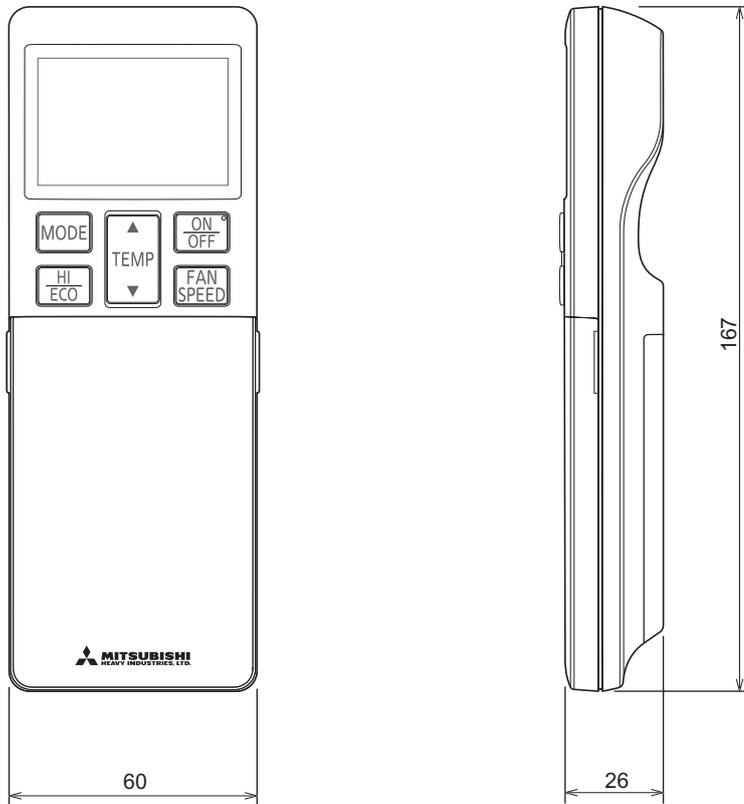
(a) Wireless remote control (for SRK20, 25, 35, 45ZSPR-S)

Unit: mm



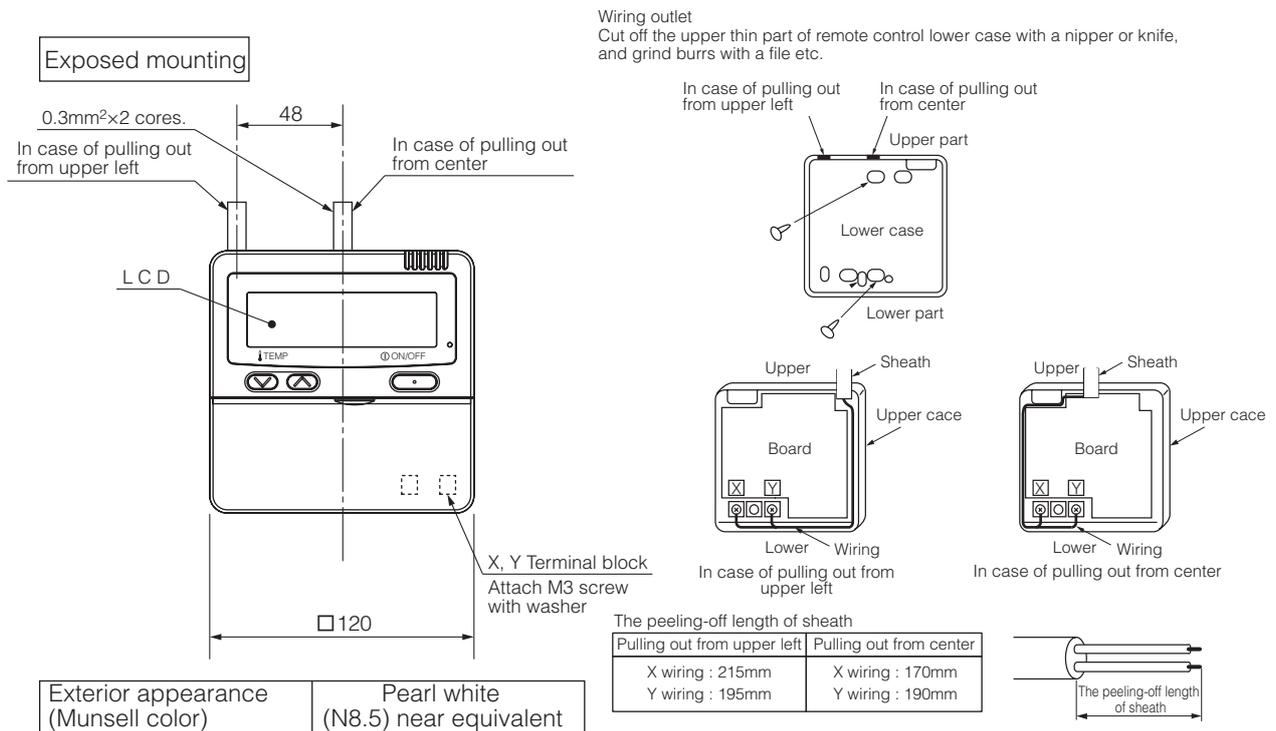
(b) Wireless remote control (for SRK63, 71, 80ZSPR-S)

Unit : mm

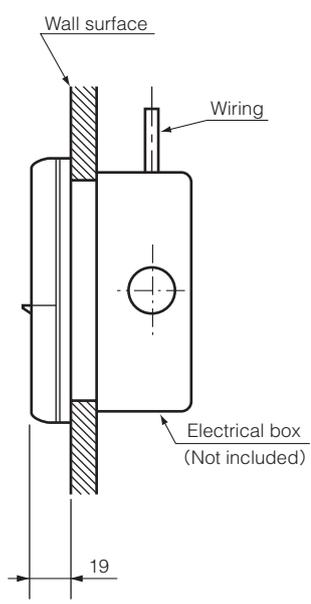


(c) Wired remote control (option parts)

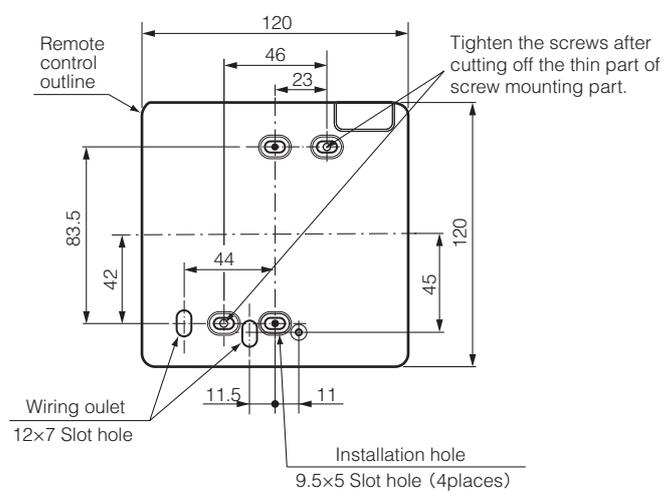
Interface kit (SC-BIKN-E) is required to use the wired remote control.



Embedded mounting



Remote control installation dimensions



(1) Installation screw for remote control
M4 screw (2 pieces)

Unit:mm

Wiring specifications

(1) If the prolongation is over 100m, change to the size below.
But, wiring in the remote control case should be under 0.5mm². Change the wire size outside of the case according to wire connecting. Waterproof treatment is necessary at the wire connecting section. Be careful about contact failure.

Length	Wiring thickness
100 to 200m	0.5mm ² ×2 cores
Under 300m	0.75mm ² ×2 cores
Under 400m	1.25mm ² ×2 cores
Under 600m	2.0mm ² ×2 cores

PJZ000Z295

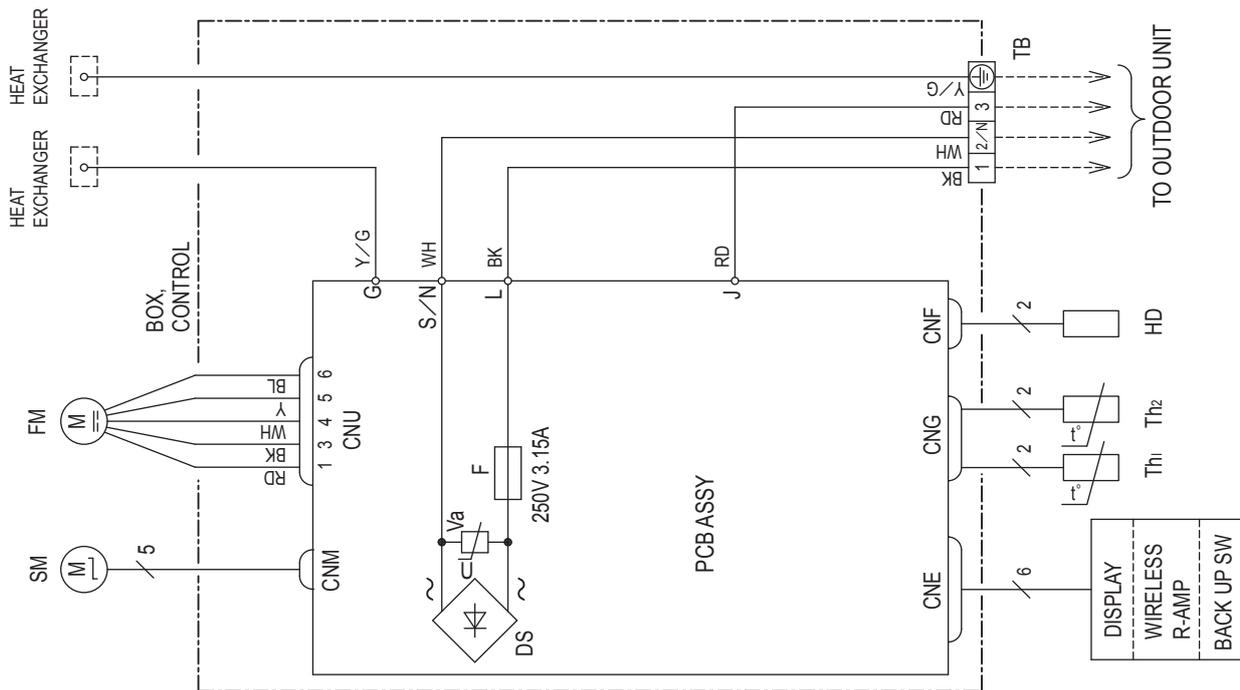
3. ELECTRICAL WIRING

(1) Indoor units

Model SRK20ZSPR-S

Item	Description
CNE	Connector
CNF	
CNG	
CNM	
CNU	
FM	Fan motor
SM	Flap motor
HD	Humidity sensor
Th1	Room temp. sensor
Th2	Heat exchanger sensor
DS	Diode stack
F	Fuse
TB	Terminal block
Va	Variistor

Mark	Color
BK	Black
BL	Blue
RD	Red
WH	White
Y	Yellow
Y/G	Yellow/Green

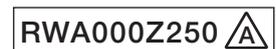
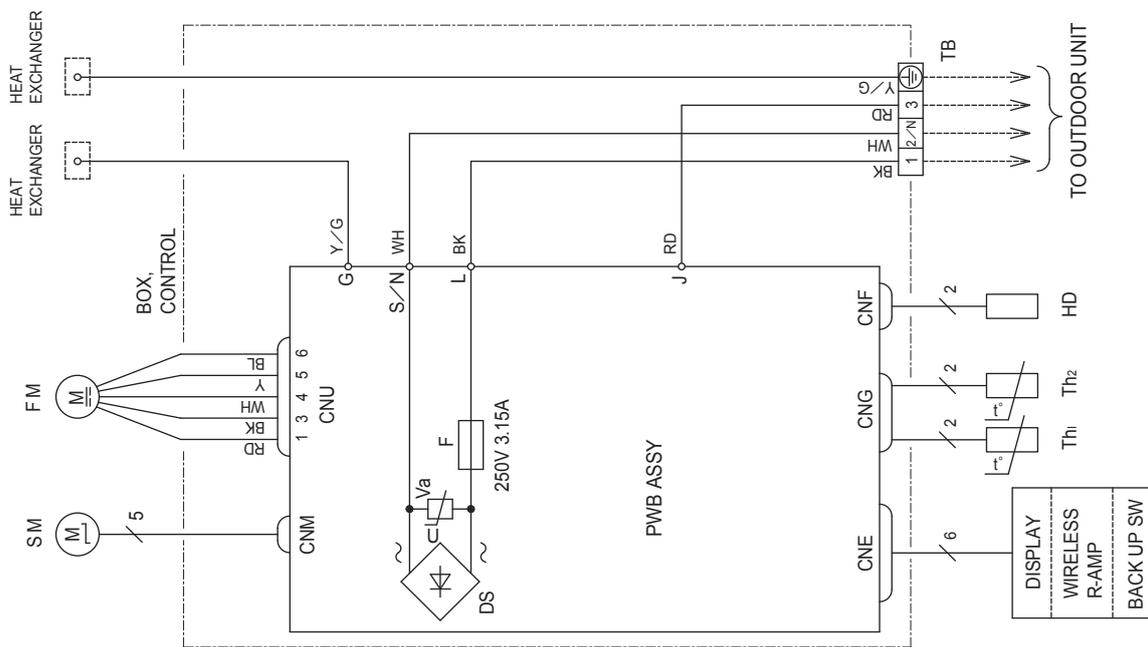


RWA000Z264

Models SRK25ZSPR-S, 35ZSPR-S, 45ZSPR-S

Item	Description
CNE	Connector
CNF	
CNG	
CNM	
CNU	
FM	Fan motor
SM	Flap motor
HD	Humidity sensor
Th1	Room temp. sensor
Th2	Heat exch. sensor
DS	Diode stack
F	Fuse
TB	Terminal block
Va	Varistor

Mark	Color
BK	Black
BL	Blue
RD	Red
WH	White
Y	Yellow
Y/G	Yellow/Green

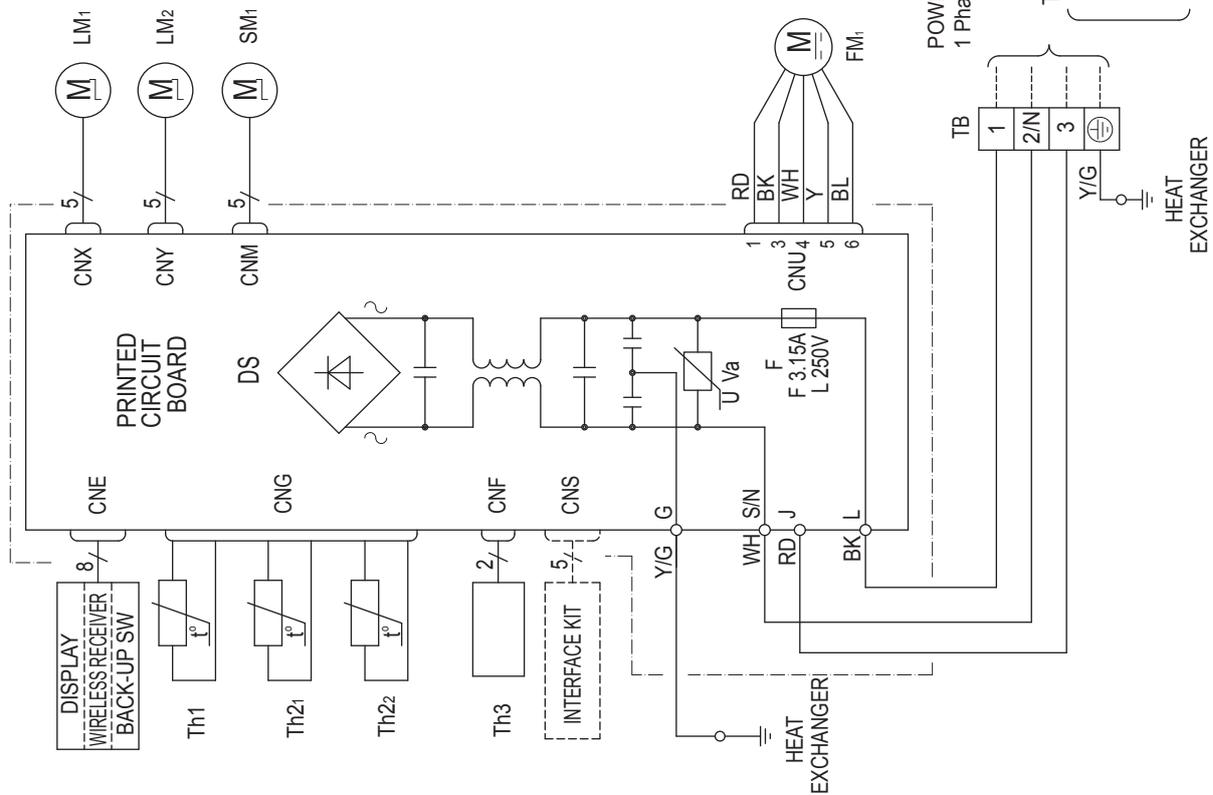


Models SRK63ZSPR-S, 71ZSPR-S, 80ZSPR-S

Item	Description
CNE	Connector
CNF	
CNG	
CNM	
CNS	
CNU	
CNX	
CNY	
FM _i	Fan motor
SM ₁	Flap motor
LM _{1,2}	Louver motor
Th ₁	Room temp. sensor
Th _{2,1,2}	Heat exchanger sensor
Th ₃	Humidity sensor
DS	Diode stack
F	Fuse
TB	Terminal block
Va	Varistor

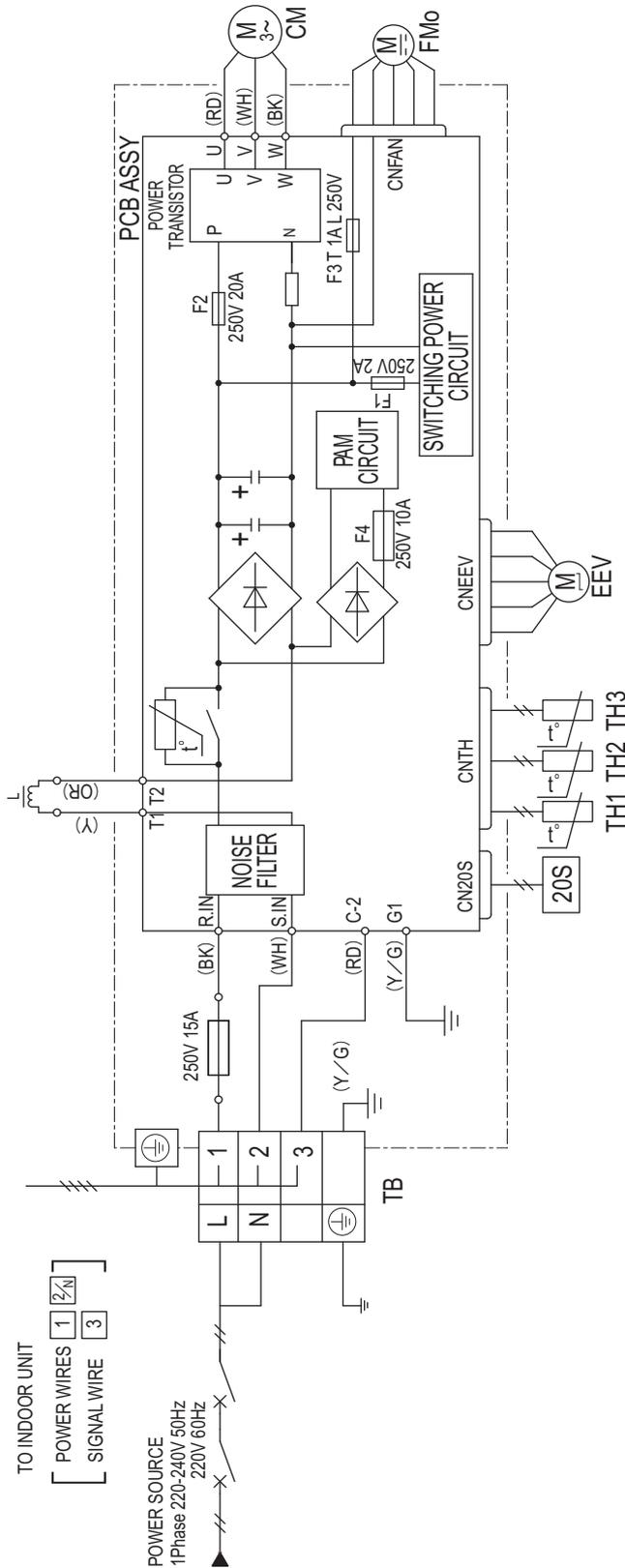
Color Marks

Mark	Color
BK	Black
BL	Blue
RD	Red
WH	White
Y	Yellow
Y/G	Yellow/Green



RWA000Z406

(2) Outdoor units
Model SRC20ZSPR-S



Power cable, indoor-outdoor connecting wires

MAX running current (A)	Power cable size (mm ²)	Power cable length (m)	Indoor-outdoor wire size x number	Earth wire size (mm ²)
9	2.0	32	1.5mm ² x 4	1.5

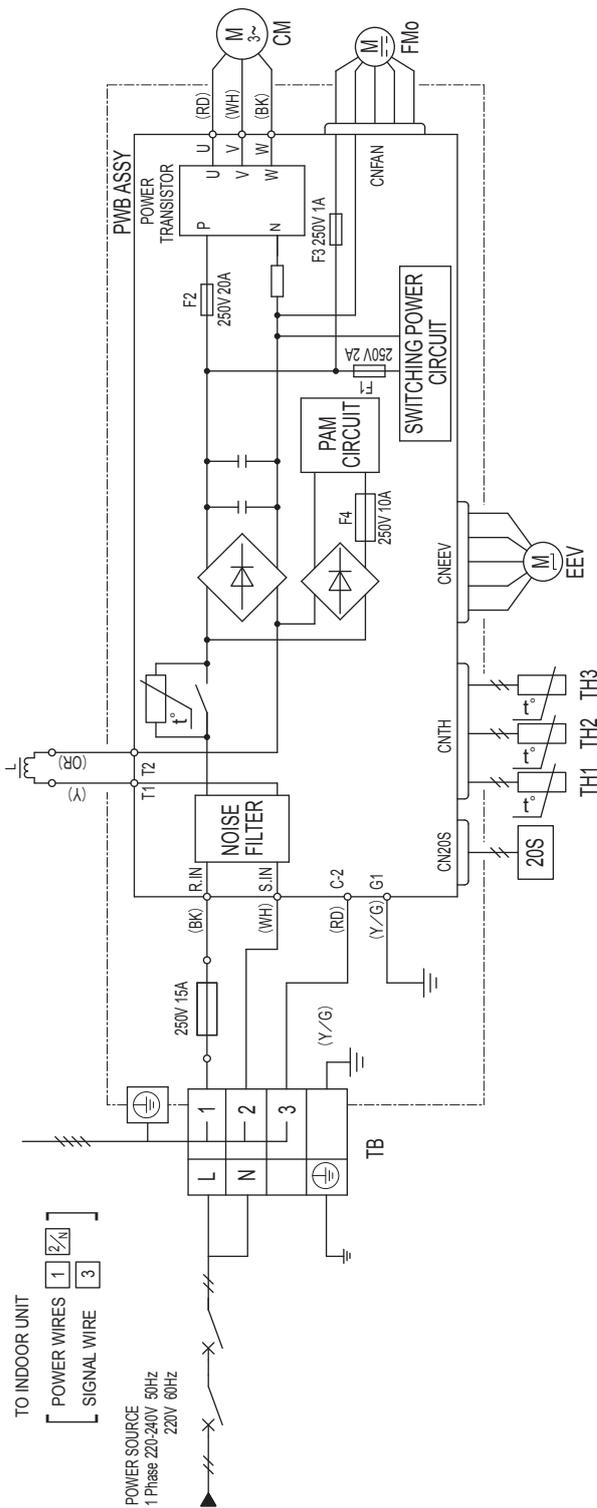
- The specifications shown in the above table are for units without heaters. For units with heaters, refer to the installation instructions or the construction instructions of the indoor unit.
- Switchgear of Circuit breaker capacity which is calculated from MAX. over current should be chosen along the regulations in each country.
- The cable specifications are based on the assumption that a metal or plastic conduit is used with no more than three cables contained in a conduit and a voltage drop is 2%. For an installation falling outside of these conditions, please follow the internal cabling regulations. Adapt it to the regulation in effect in each country.

Item	Description
CM	Compressor motor
CN20S	Connector
CNEEV	Electric expansion valve (coil)
CNFAN	Fan motor
CNTH	Terminal block
EEV	Heat exchanger sensor (outdoor unit)
FMo	Outdoor air temp. sensor
L	Discharge pipe temp. sensor
TB	Solenoid coil for 4 way valve
TH1	
TH2	
TH3	
20S	

Mark	Color
BK	Black
OR	Orange
RD	Red
WH	White
Y	Yellow
Y/G	Yellow / Green

RWC000Z286

Models SRC25ZSPR-S, 35ZSPR-S, 45ZSPR-S



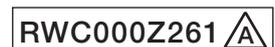
Power cable, indoor-outdoor connecting wires

Model	MAX running current (A)	Power cable size (mm ²)	Power cable length (m)	indoor-outdoor wire size x number	Earth wire size (mm ²)
SRC25ZSPR-S	9	2.0	32	1.5mm ² x 4	1.5
SRC35ZSPR-S	14	2.0	18	1.5mm ² x 4	1.5

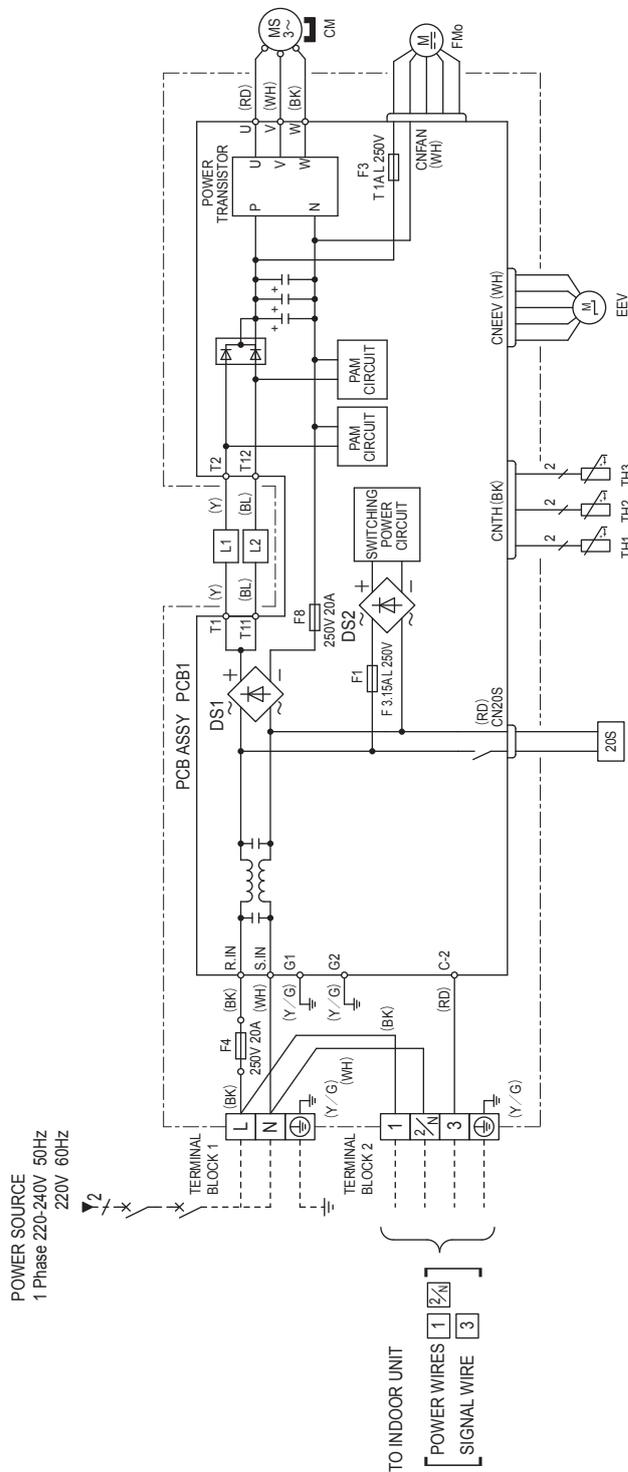
- The specifications shown in the above table are for units without heaters. For units with heaters, refer to the installation instructions or the construction instructions of the indoor unit.
- Switchgear of Circuit breaker capacity which is calculated from MAX. over current should be chosen along the regulations in each country.
- The cable specifications are based on the assumption that a metal or plastic conduit is used with no more than three cables contained in a conduit and a voltage drop is 2%. For an installation falling outside of these conditions, please follow the internal cabling regulations. Adapt it to the regulation in effect in each country.

Item	Description
CM	Compressor motor
CN20S	Connector
CNEEV	Electric expansion valve (coil)
CNFAN	Fan motor
CNTH	Reactor
EEV	Terminal block
FMo	Heat exchanger sensor (outdoor unit)
L	Outdoor air temp. sensor
TB	Discharge pipe temp. sensor
TH1	Solenoid coil for 4 way valve
TH2	
TH3	
20S	

Mark	Color
BK	Black
OR	Orange
RD	Red
WH	White
Y	Yellow
Y/G	Yellow/Green



Models SRC63ZSPR-S, 71ZSPR-S, 80ZSPR-S



Power cable, indoor-outdoor connecting wires

Model	MAX running current (A)	Power cable size (mm ²)	Power cable length (m)	Indoor-outdoor wire size x number	Earth wire size (mm ²)
SRC63ZSPR-S	14.5	2.0	14	1.5mm ² x 4	2.5
SRC71ZSPR-S	17.0	2.5	15		
SRC80ZSPR-S	17.0	2.5	15		

- The specifications shown in the above table are for units without heaters. For units with heaters, refer to the installation instructions or the construction instructions of the indoor unit.
- Switchgear of Circuit breaker capacity which is calculated from MAX. over current should be chosen along the regulations in each country.
- The cable specifications are based on the assumption that a metal or plastic conduit is used with no more than three cables contained in a conduit and a voltage drop is 2%. For an installation falling outside of these conditions, please follow the internal cabling regulations. Adapt it to the regulation in effect in each country.

Item	Description
20S	Solenoid coil for 4 way valve
CN20S	Connector
CNEEV	Compressor motor
CNFAN	Diode stack
CNTH	Electric expansion valve (coil)
CM	Fan motor
DS1,2	Reactor
EEV	Heat exchanger sensor
FMO	Outdoor air temp. sensor
L1,2	Discharge pipe temp. sensor
TH1	
TH2	
TH3	

Mark	Color
BK	Black
BL	Blue
RD	Red
WH	White
Y	Yellow
Y/G	Yellow / Green

RCR000Z030

4. NOISE LEVEL

Model SRK20ZSPR-S

(Indoor Unit)

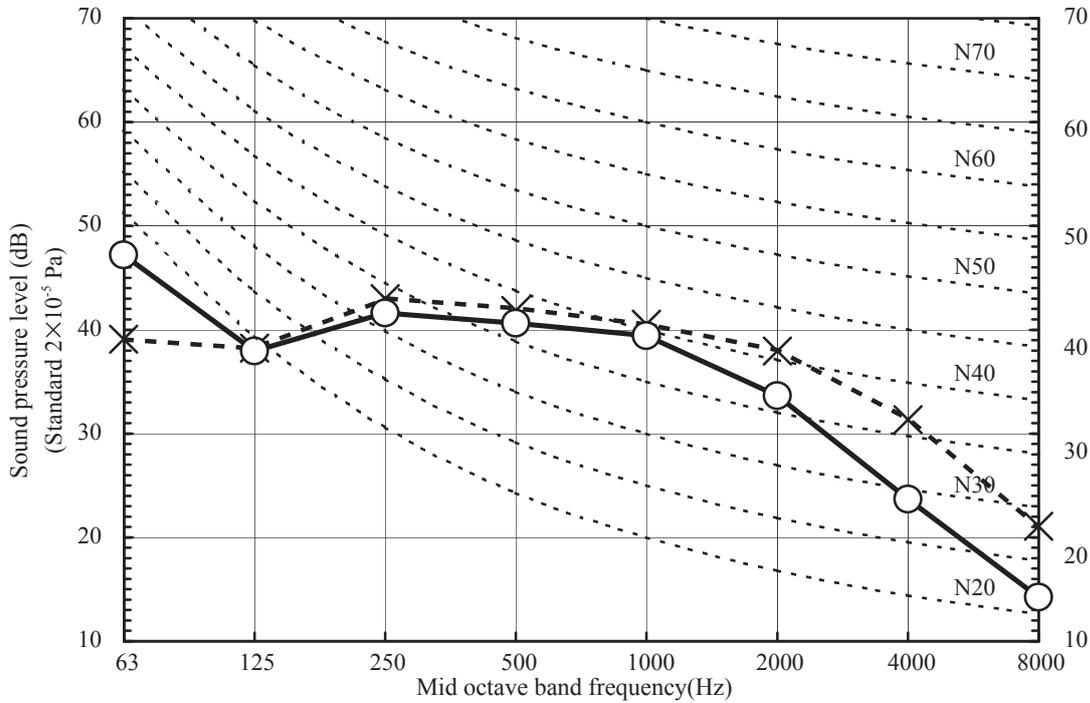
Model	SRK20ZSPR-S	
Noise Level	Cooling	45 dB(A)
	Heating	43 dB(A)

Condition ISO-T1, JIS C 9612

● Mike position



x Cooling ○ — Heating

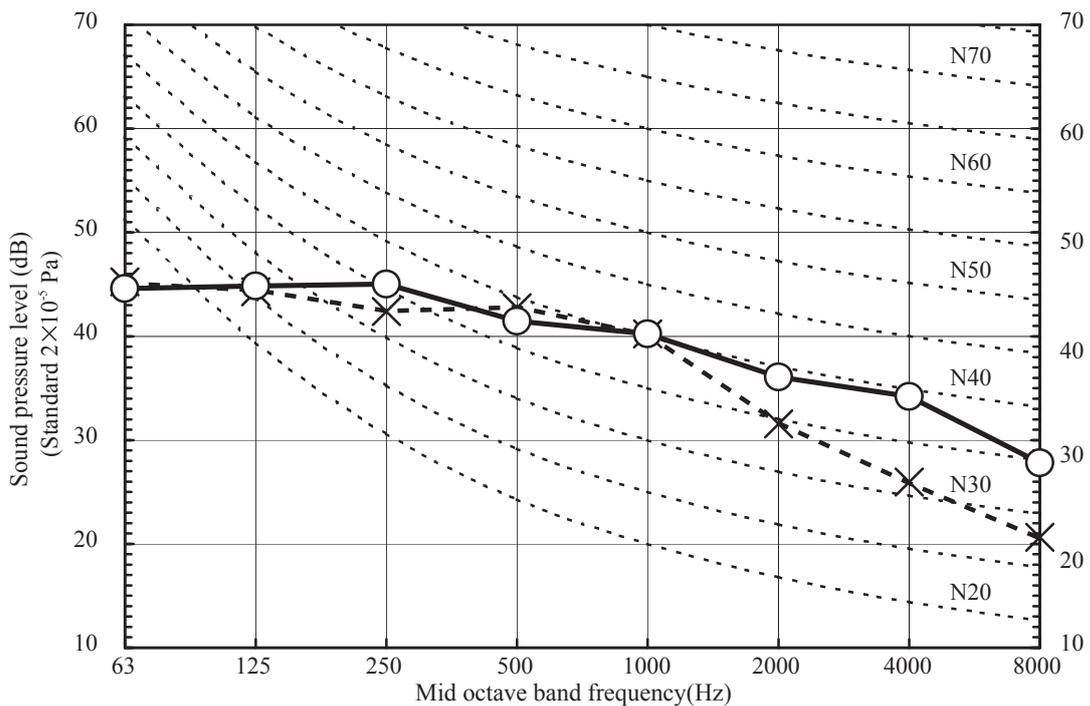


(Outdoor Unit)

Model	SRC20ZSPR-S	
Noise Level	Cooling	44 dB(A)
	Heating	45 dB(A)

● Mike position: at highest noise level in position as mentioned below
Distance from front side 1m

x Cooling ○ — Heating



Model SRK25ZSPR-S

Condition	ISO-T1, JIS C 9612
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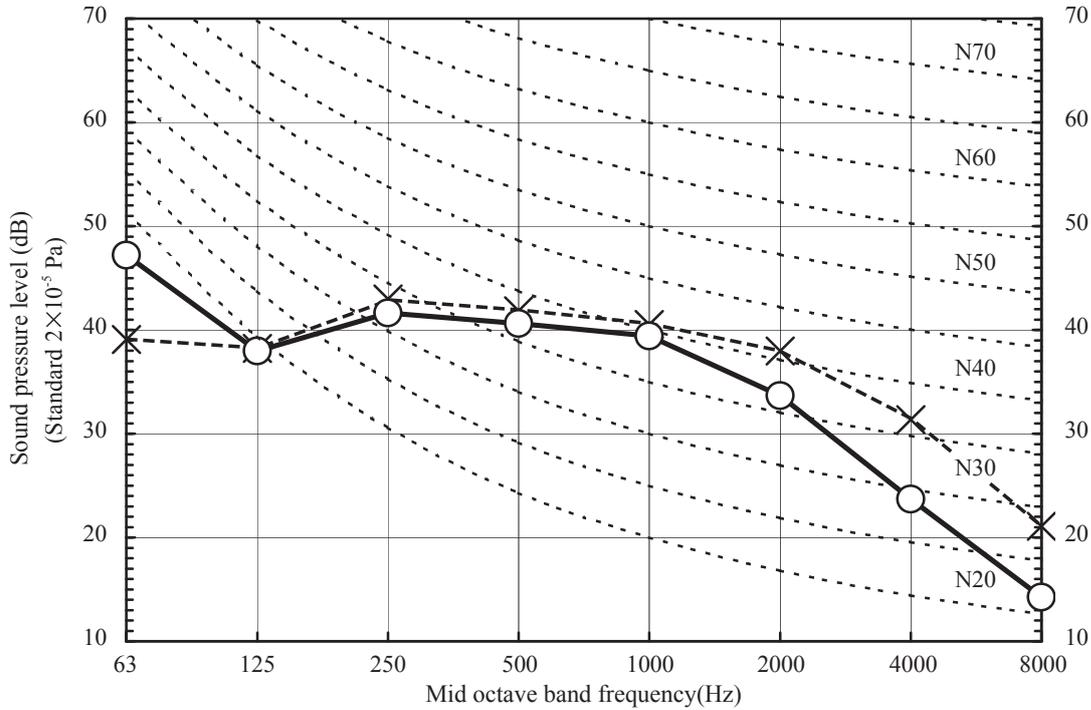
(Indoor Unit)

Model	SRK25ZSPR-S	
Noise Level	Cooling	45 dB(A)
	Heating	43 dB(A)

● Mike position



× Cooling ○ — Heating

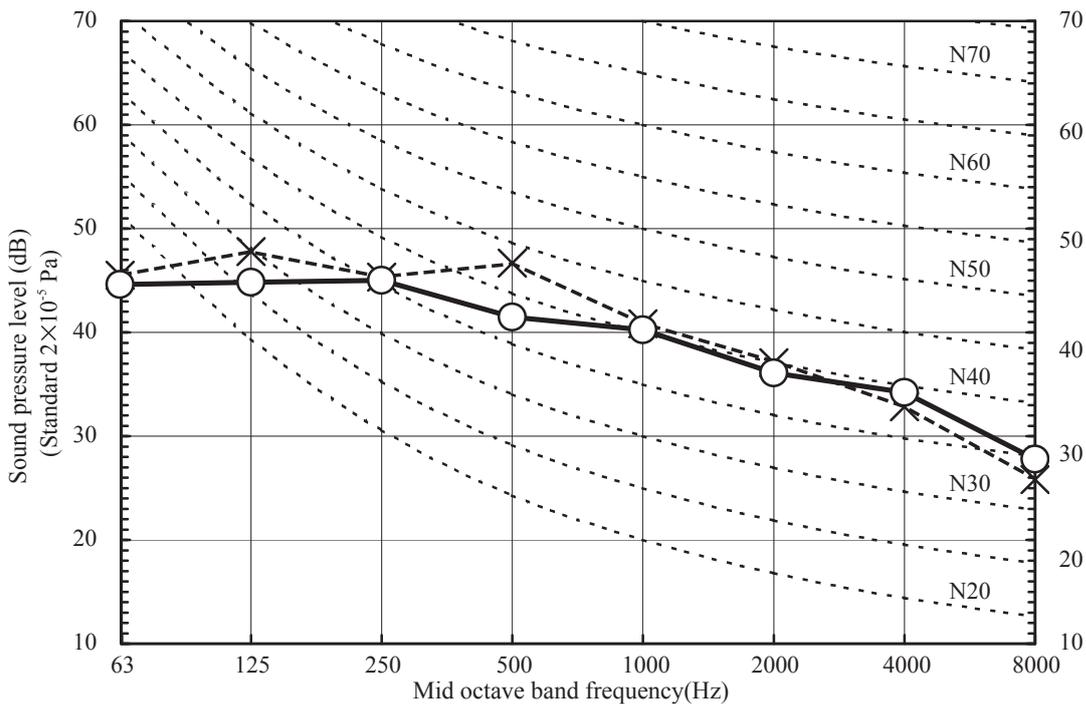


(Outdoor Unit)

Model	SRC25ZSPR-S	
Noise Level	Cooling	47 dB(A)
	Heating	45 dB(A)

● Mike position: at highest noise level in position as mentioned below
Distance from front side 1m

× Cooling ○ — Heating



Model SRK35ZSPR-S

Condition ISO-T1, JIS C 9612

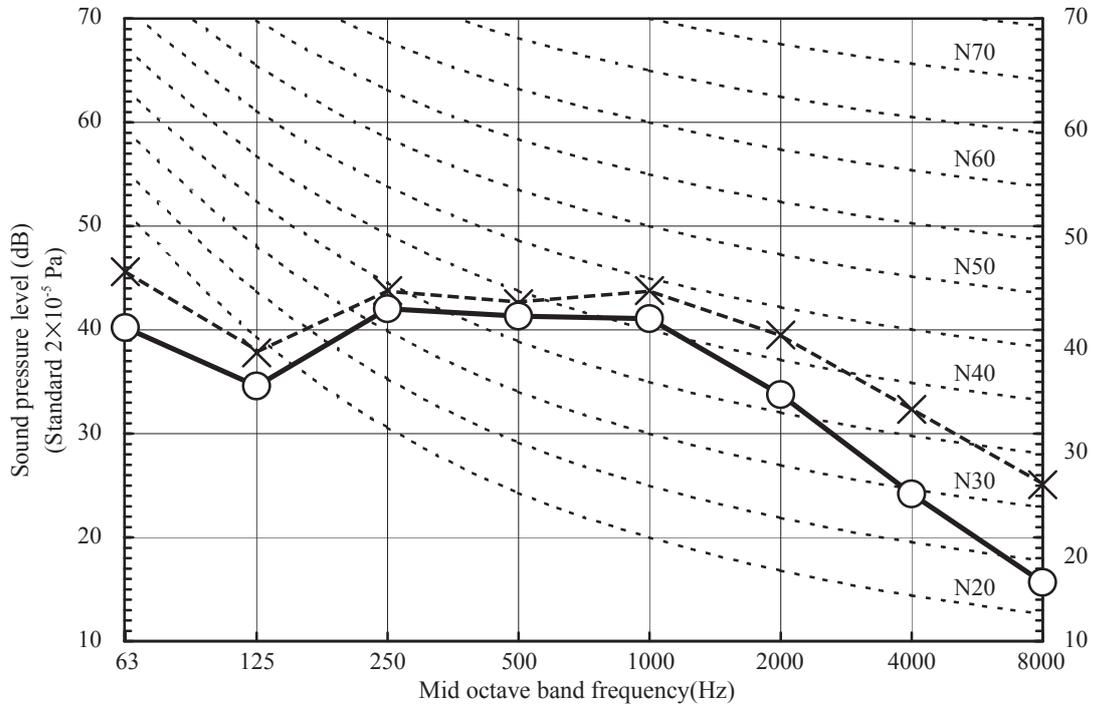
(Indoor Unit)

Model	SRK35ZSPR-S	
Noise Level	Cooling	47 dB(A)
	Heating	44 dB(A)

● Mike position



× Cooling ○ — Heating

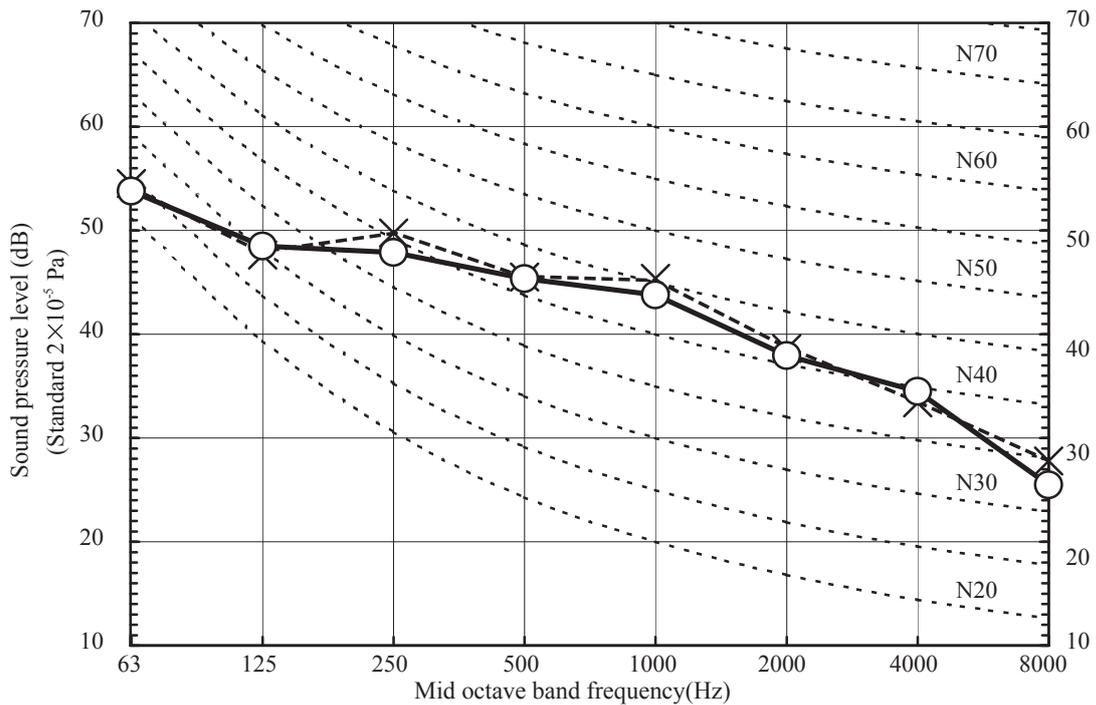


(Outdoor Unit)

Model	SRC35ZSPR-S	
Noise Level	Cooling	49 dB(A)
	Heating	48 dB(A)

● Mike position: at highest noise level in position as mentioned below
Distance from front side 1m

× Cooling ○ — Heating



Model SRK45ZSPR-S

Condition	ISO-T1, JIS C 9612
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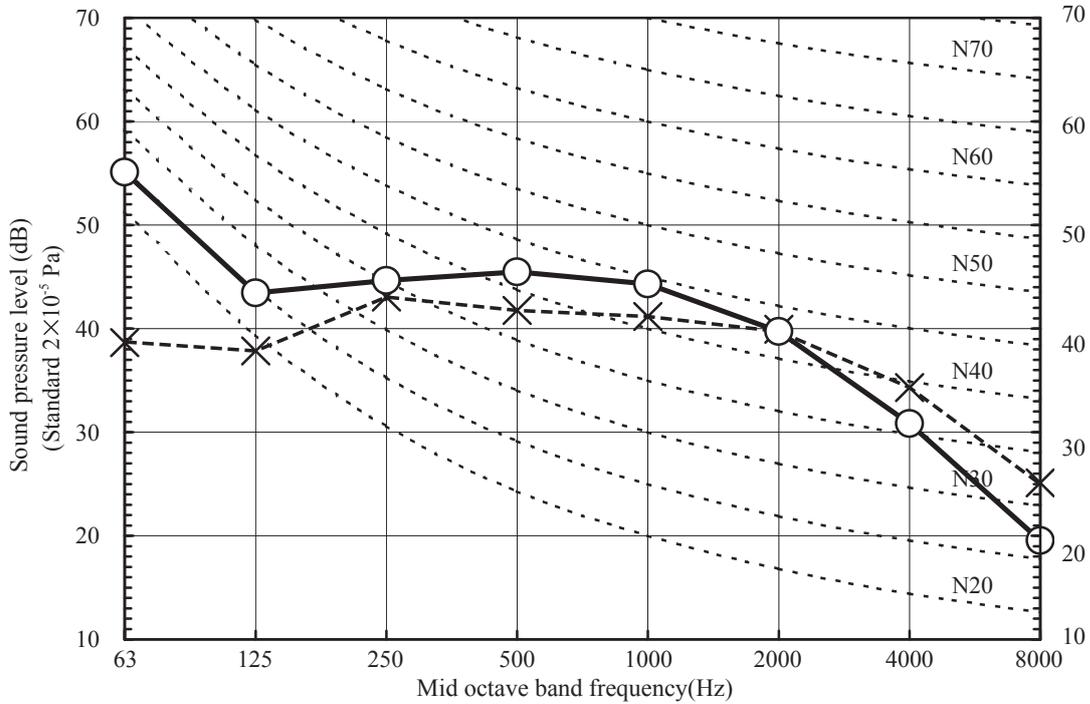
(Indoor Unit)

Model	SRK45ZSPR-S	
Noise Level	Cooling	46 dB(A)
	Heating	48 dB(A)

● Mike position



× Cooling ○ — Heating

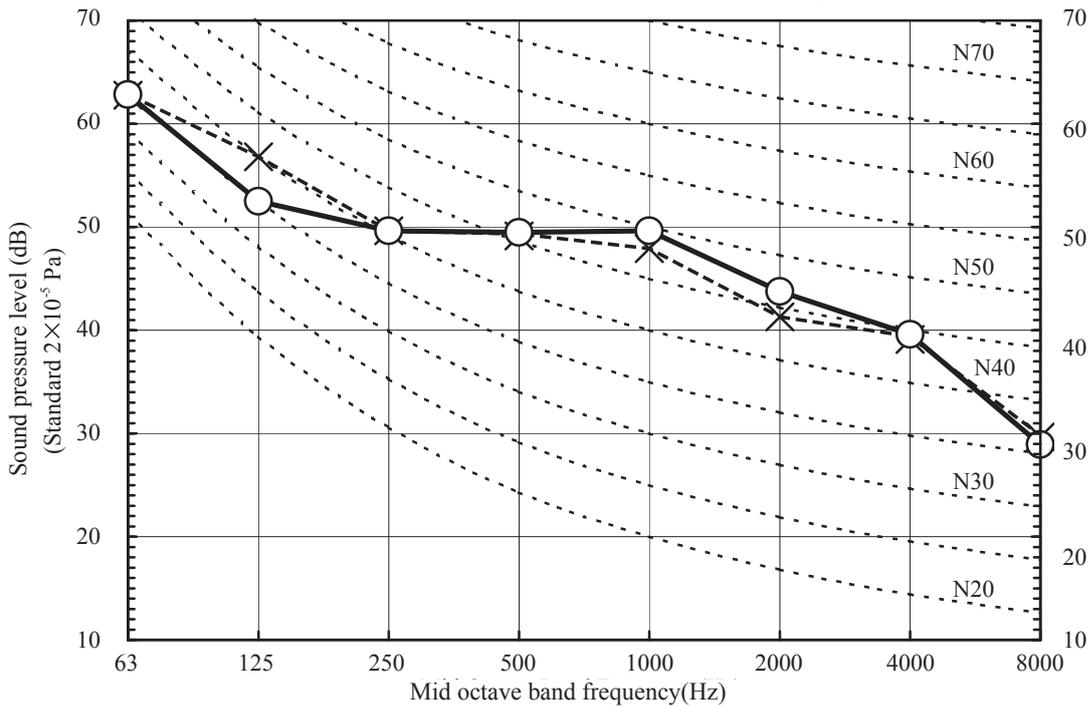


(Outdoor Unit)

Model	SRC45ZSPR-S	
Noise Level	Cooling	52 dB(A)
	Heating	53 dB(A)

● Mike position: at highest noise level in position as mentioned below
Distance from front side 1m

× Cooling ○ — Heating



Model SRK63ZSPR-S

Condition	ISO5151 T1
MODE	Rated capacity value

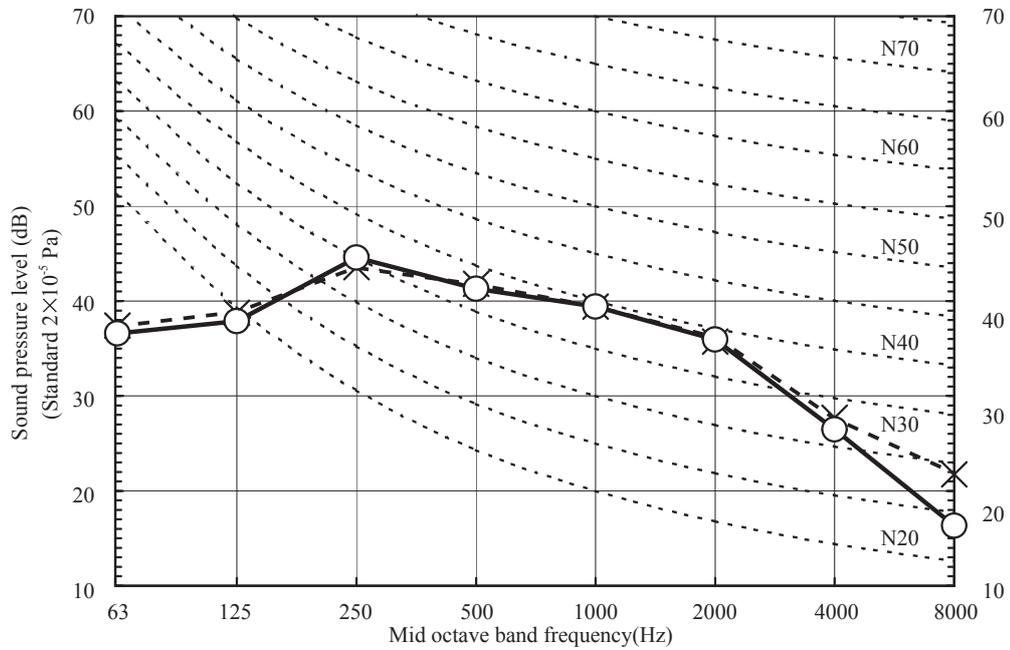
(Indoor Unit)

Model	SRK63ZSPR-S	
Noise Level	Cooling	44 dB(A)
	Heating	44 dB(A)

● Mike position



x Cooling ○ — Heating

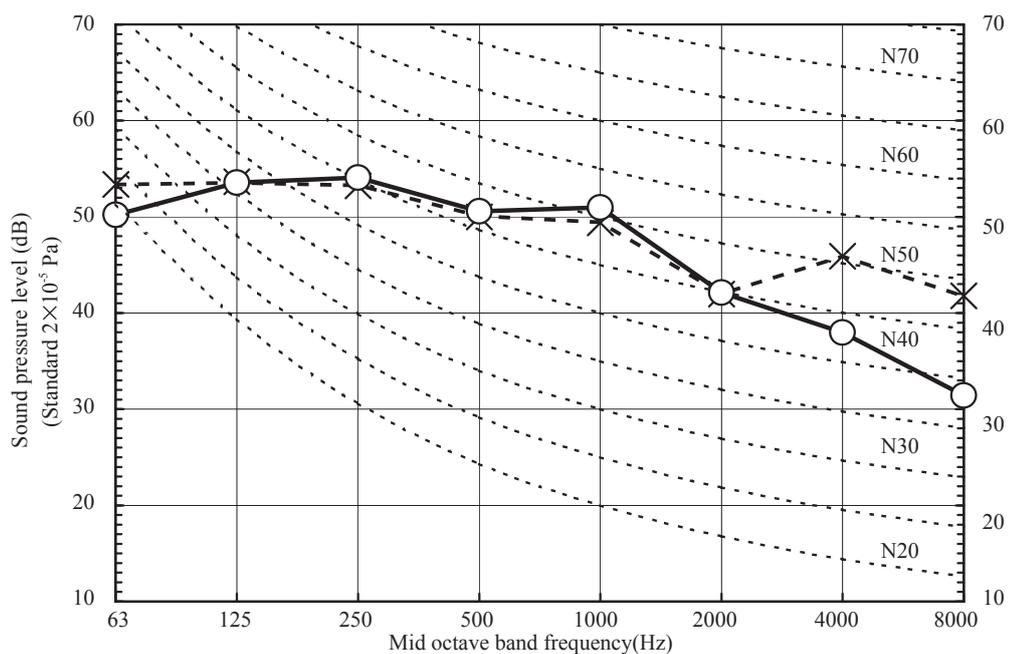


(Outdoor Unit)

Model	SRC63ZSPR-S	
Noise Level	Cooling	54 dB(A)
	Heating	54 dB(A)

● Mike position: at highest noise level in position as mentioned below
Distance from front side 1m

x Cooling ○ — Heating



Model SRK71ZSPR-S

Condition	ISO5151 T1
MODE	Rated capacity value

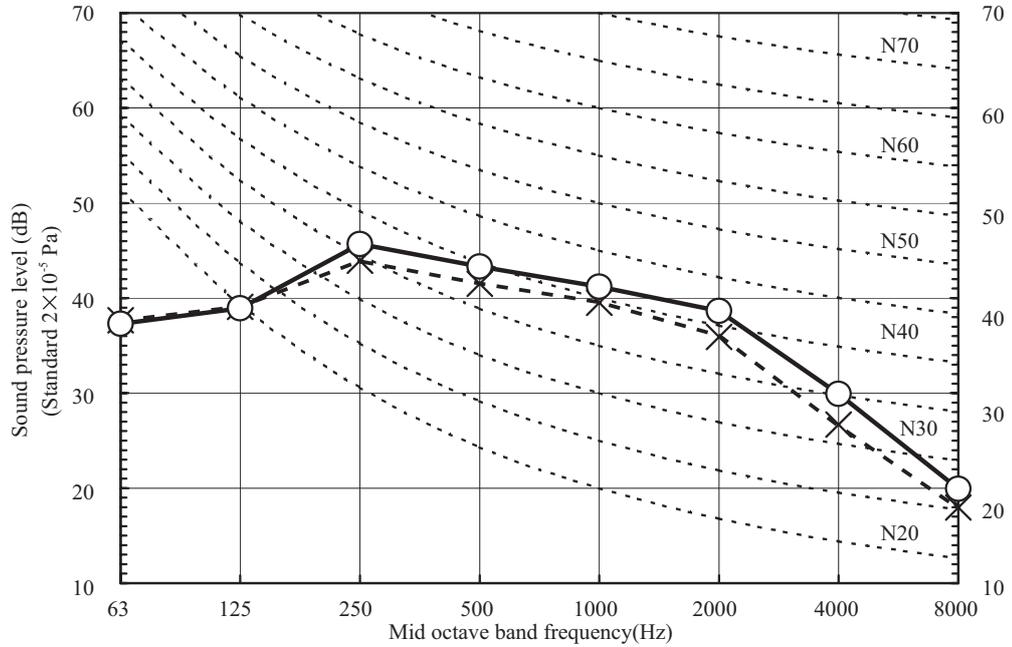
(Indoor Unit)

Model	SRK71ZSPR-S	
Noise Level	Cooling	44 dB(A)
	Heating	46 dB(A)

● Mike position



x Cooling ○ — Heating

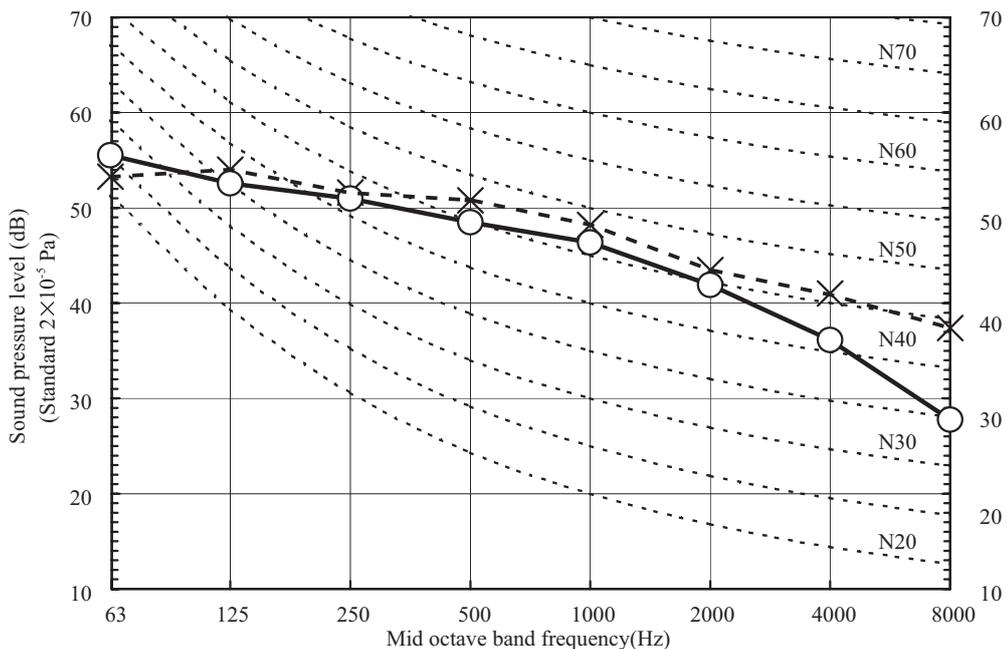


(Outdoor Unit)

Model	SRC71ZSPR-S	
Noise Level	Cooling	53 dB(A)
	Heating	51 dB(A)

● Mike position: at highest noise level in position as mentioned below
Distance from front side 1m

x Cooling ○ — Heating



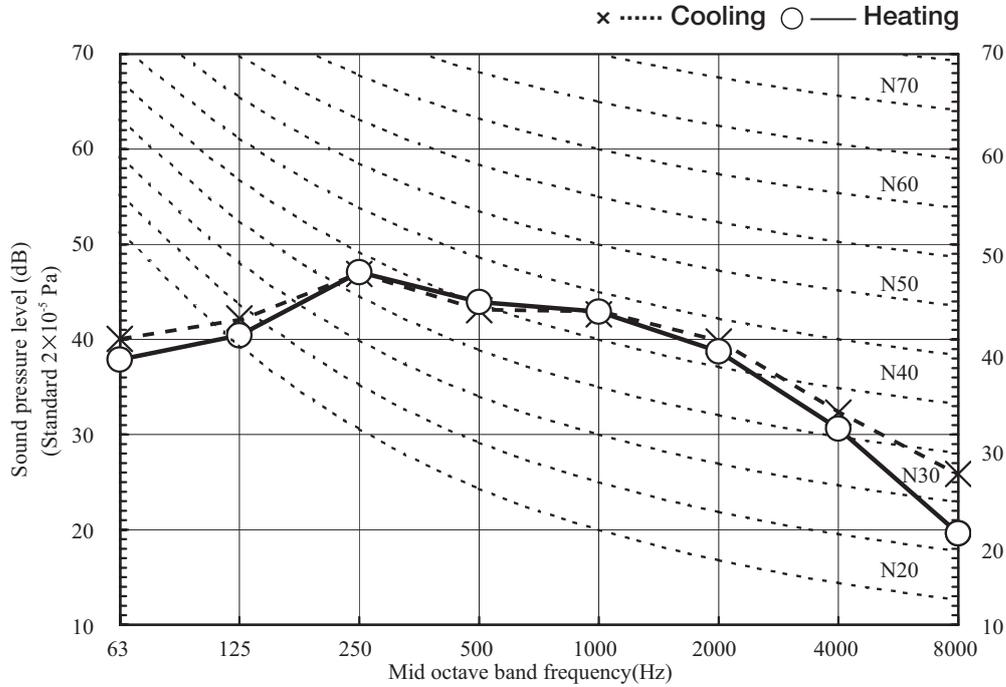
Model SRK80ZSPR-S

Condition	ISO5151 T1
MODE	Rated capacity value

(Indoor Unit)

Model	SRK80ZSPR-S	
Noise Level	Cooling	47 dB(A)
	Heating	47 dB(A)

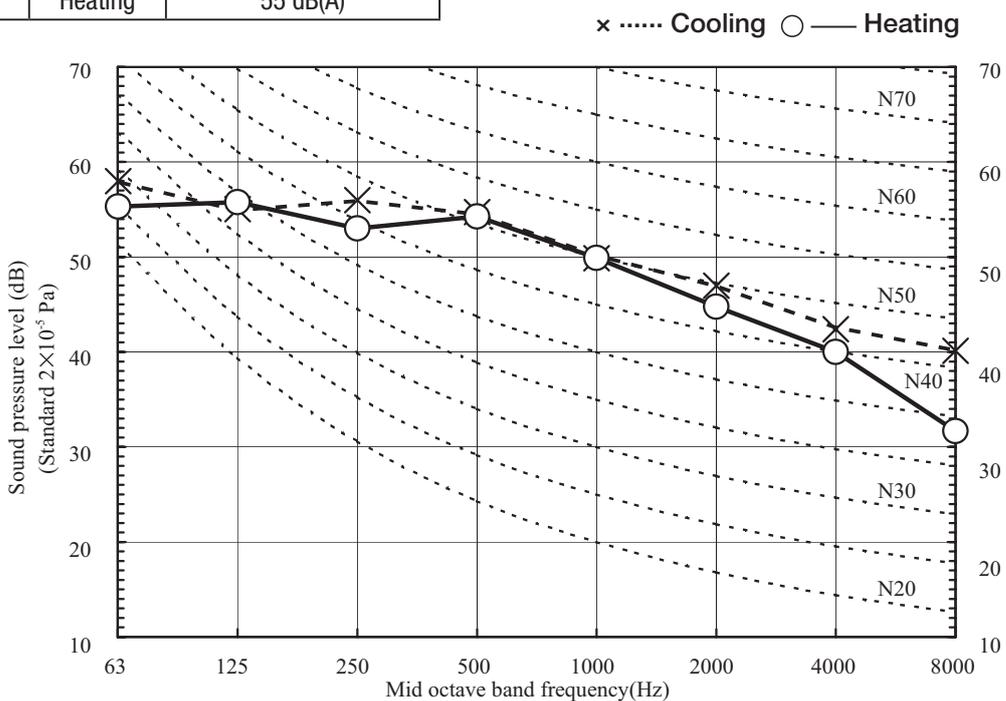
● Mike position



(Outdoor Unit)

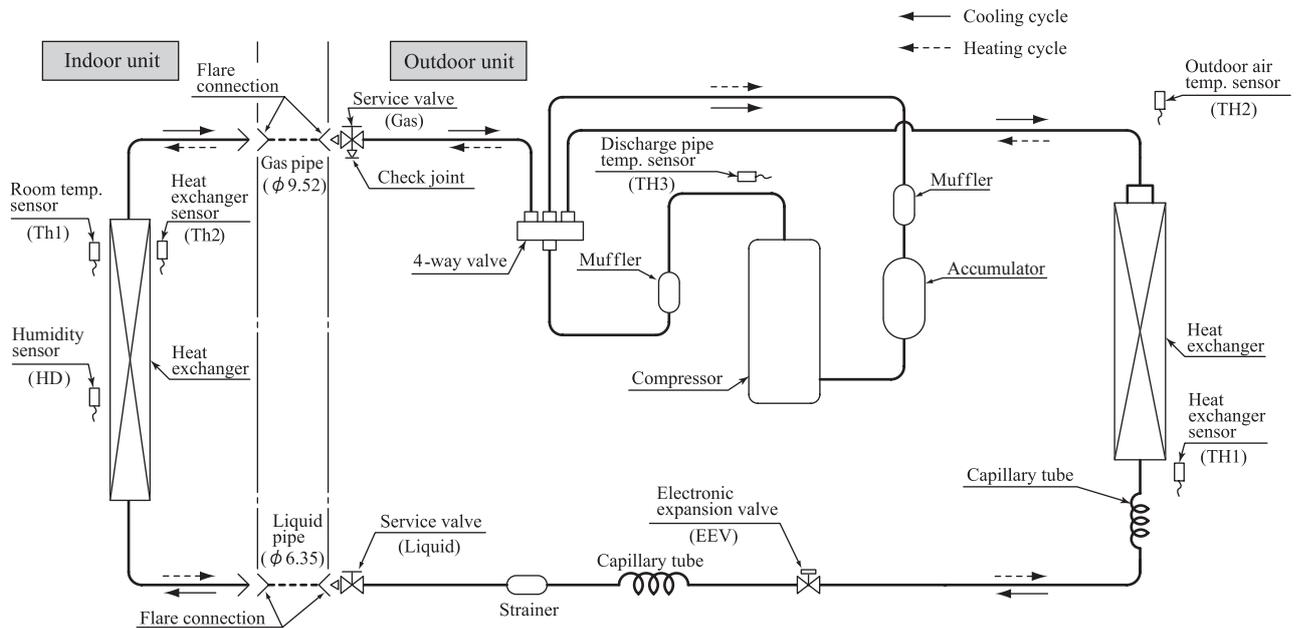
Model	SRC80ZSPR-S	
Noise Level	Cooling	56 dB(A)
	Heating	55 dB(A)

● Mike position: at highest noise level in position as mentioned below
Distance from front side 1m

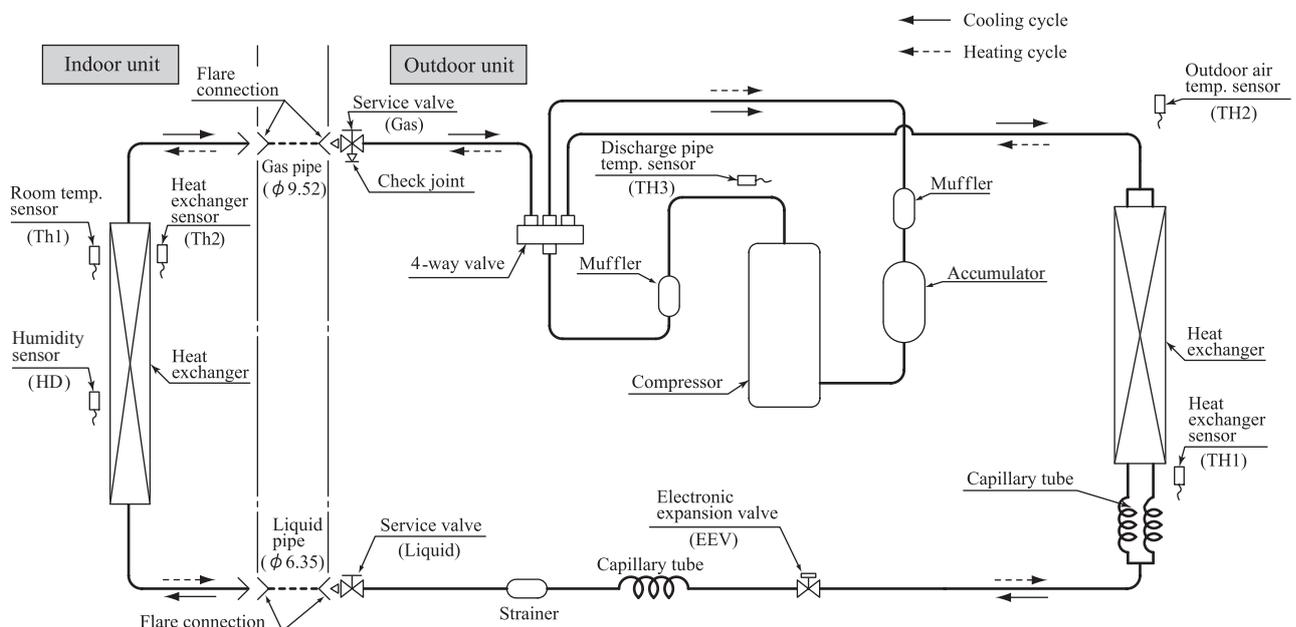


5. PIPING SYSTEM

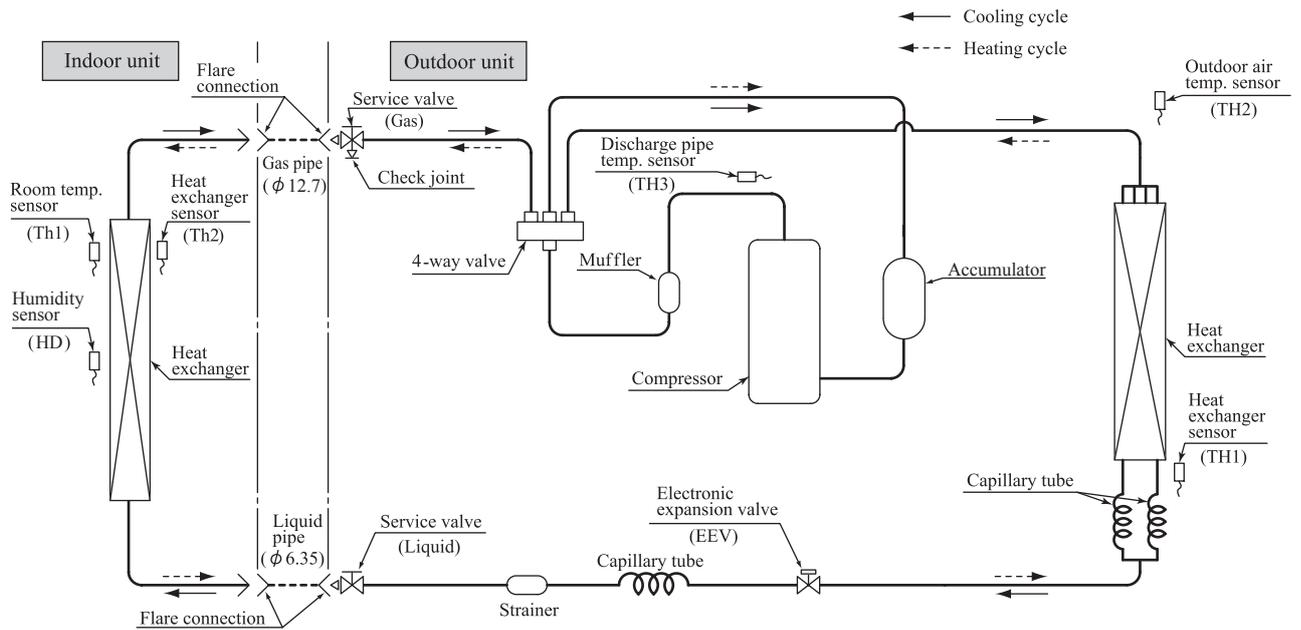
Models SRK20ZSPR-S, 25ZSPR-S



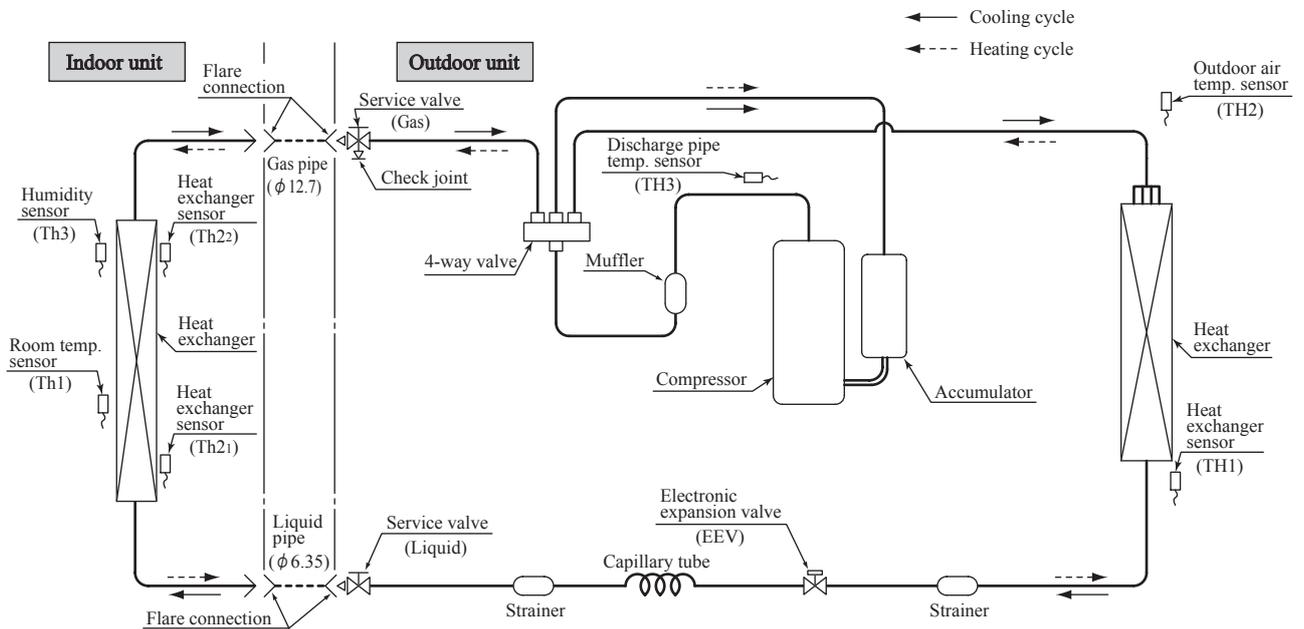
Model SRK35ZSPR-S



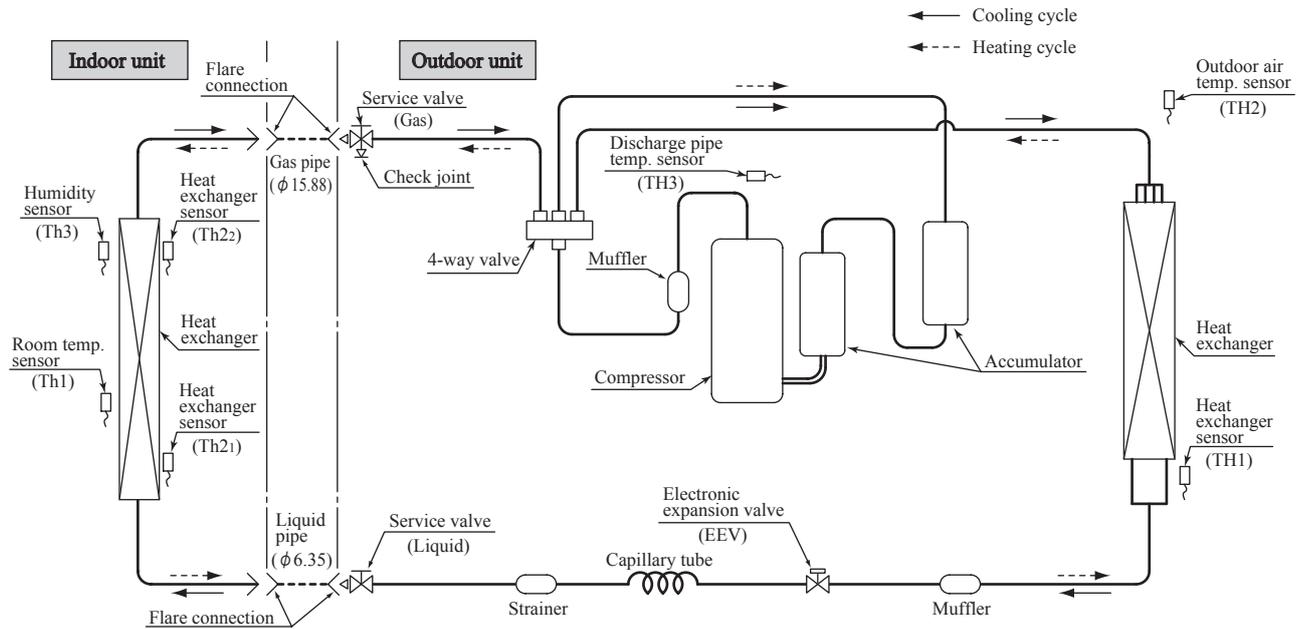
Model SRK45ZSPR-S



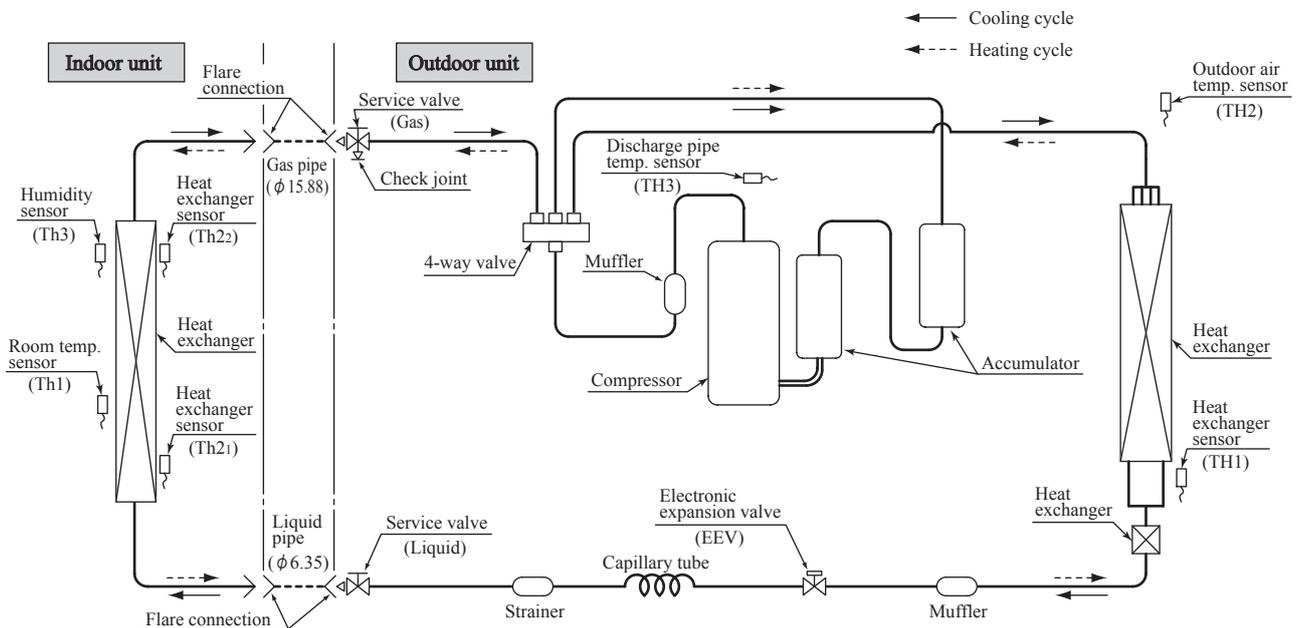
Model SRK63ZSPR-S



Model SRK71ZSPR-S



Model SRK80ZSPR-S



6. RANGE OF USAGE & LIMITATIONS

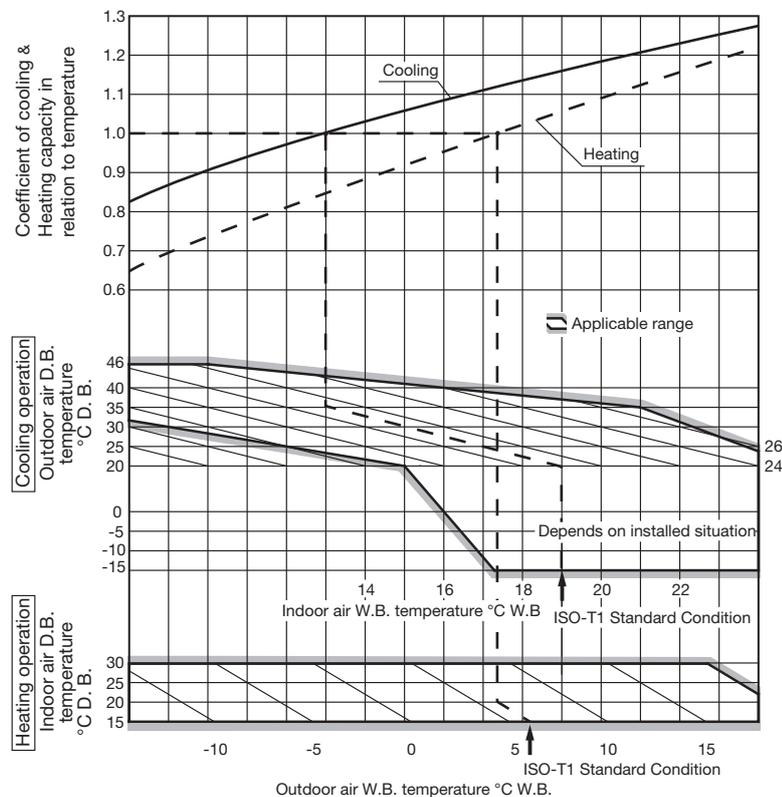
Model	SRK20ZSPR-S SRK25ZSPR-S SRK35ZSPR-S	SRK45ZSPR-S	SRK63ZSPR-S SRK71ZSPR-S SRK80ZSPR-S
Item			
Indoor return air temperature (Upper, lower limits)	Cooling operation : Approximately 18 to 32°C D.B. Heating operation : Approximately 15 to 30°C D.B. (Refer to the selection chart)		
Outdoor air temperature (Upper, lower limits)	Cooling operation : Approximately -15 to 46°C D.B. Heating operation : Approximately -15 to 24°C D.B. (Refer to the selection chart)		
Refrigerant line (one way) length	Max. 15m	Max. 25m	Max. 30m
Vertical height difference between outdoor unit and indoor unit	Max. 10m (Outdoor unit is higher) Max. 10m (Outdoor unit is lower)	Max. 15m (Outdoor unit is higher) Max. 15m (Outdoor unit is lower)	Max. 20m (Outdoor unit is higher) Max. 20m (Outdoor unit is lower)
Power source voltage	Rating ±10%		
Voltage at starting	Min. 85% of rating		
Frequency of ON-OFF cycle	Max. 4 times/h (Inching prevention 10 minutes)	Max. 7 times/h (Inching prevention 5 minutes)	Max. 7 times/h (Inching prevention 5-9 minutes)
ON and OFF interval	Min. 3 minutes		

Selection chart

Correct the cooling and heating capacity in accordance with the conditions as follows. The net cooling and heating capacity can be obtained in the following way.

Net capacity = Capacity shown on specification × Correction factors as follows.

(1) Coefficient of cooling and heating capacity in relation to temperatures



(2) Correction of cooling and heating capacity in relation to one way length of refrigerant piping

It is necessary to correct the cooling and heating capacity in relation to the one way piping length between the indoor and outdoor units.

Piping length [m]	7	10	15	20	25	30
Cooling	1.0	0.99	0.975	0.965	0.95	0.935
Heating	1.0	1.0	1.0	1.0	1.0	1.0

(3) Correction relative to frosting on outdoor heat exchanger during heating

In additions to the foregoing corrections (1), (2) the heating capacity needs to be adjusted also with respect to the frosting on the outdoor heat exchanger.

Air inlet temperature of outdoor unit in °CWB	-15	-10	-9	-7	-5	-3	-1	1	3	5 or more
Adjustment coefficient	0.95	0.95	0.94	0.93	0.91	0.88	0.86	0.87	0.92	1.00

How to obtain the cooling and heating capacity

Example : The net cooling capacity of the model SRK35ZSPR-S with the piping length of 15m, indoor wet-bulb temperature at 19.0°C and outdoor dry-bulb temperature 35°C is

$$\text{Net cooling capacity} = \underset{\substack{\uparrow \\ \text{SRK35ZSPR-S}}}{3.2} \times \underset{\substack{\uparrow \\ \text{Length 15m}}}{0.975} \times \underset{\substack{\uparrow \\ \text{Factor by air temperatures}}}{1.0} \doteq 3.1\text{kW}$$

7. CAPACITY TABLES

Model SRK20ZSPR-S Cooling Mode (kW)

Air flow	Outdoor air temp. °CDB	Indoor air temp.													
		21 °CDB		23 °CDB		26 °CDB		27 °CDB		28 °CDB		31 °CDB		33 °CDB	
		14 °CWB	16 °CWB	18 °CWB	19 °CWB	20 °CWB	22 °CWB	24 °CWB	TC	SHC	TC	SHC	TC	SHC	TC
Hi 10.1 (m³/min)	10	2.25	2.13	2.36	2.10	2.45	2.22	2.49	2.19	2.53	2.17	2.60	2.28	2.67	2.22
	12	2.21	2.11	2.32	2.08	2.41	2.20	2.45	2.18	2.50	2.16	2.58	2.27	2.65	2.21
	14	2.17	2.06	2.28	2.05	2.38	2.19	2.42	2.17	2.47	2.15	2.55	2.25	2.62	2.21
	16	2.13	2.02	2.24	2.03	2.34	2.17	2.39	2.15	2.43	2.13	2.52	2.25	2.59	2.20
	18	2.08	1.98	2.19	2.02	2.30	2.15	2.35	2.14	2.40	2.12	2.49	2.24	2.56	2.19
	20	2.04	1.94	2.15	2.00	2.26	2.14	2.31	2.12	2.36	2.11	2.45	2.23	2.53	2.18
	22	1.99	1.89	2.10	1.98	2.22	2.11	2.28	2.11	2.32	2.09	2.42	2.22	2.50	2.17
	24	1.94	1.85	2.05	1.95	2.18	2.07	2.24	2.10	2.28	2.08	2.38	2.20	2.47	2.16
	26	1.90	1.80	2.01	1.91	2.14	2.03	2.20	2.07	2.24	2.05	2.35	2.19	2.43	2.15
	28	1.85	1.75	1.96	1.86	2.09	1.99	2.15	2.05	2.20	2.04	2.31	2.18	2.40	2.14
	30	1.79	1.70	1.90	1.81	2.05	1.94	2.11	2.01	2.16	2.02	2.27	2.17	2.36	2.13
	32	1.74	1.65	1.85	1.76	2.00	1.90	2.07	1.96	2.12	2.01	2.23	2.12	2.32	2.12
	34	1.69	1.60	1.80	1.71	1.95	1.85	2.02	1.92	2.07	1.97	2.19	2.08	2.28	2.10
	35	1.66	1.58	1.77	1.68	1.93	1.83	2.00	1.90	2.05	1.94	2.17	2.06	2.26	2.10
	36	1.63	1.55	1.74	1.65	1.90	1.81	1.98	1.88	2.02	1.92	2.15	2.04	2.24	2.09
	38	1.58	1.50	1.68	1.60	1.85	1.76	1.93	1.83	1.98	1.88	2.11	2.00	2.20	2.08
	39	1.55	1.47	1.66	1.57	1.83	1.74	1.91	1.81	1.95	1.85	2.08	1.98	2.18	2.06

Heating Mode(HC) (kW)

Air flow	Outdoor air temp. °CWB	Indoor air temp.				
		16°C DB	18°C DB	20°C DB	22°C DB	24°C DB
		Hi 9.5 (m³/min)	-15	1.66	1.63	1.59
-10	1.88		1.85	1.82	1.78	1.74
-5	2.04		2.01	1.97	1.94	1.91
0	2.13		2.10	2.07	2.04	2.01
5	2.72		2.69	2.67	2.62	2.58
6	2.76		2.73	2.70	2.67	2.63
10	2.94		2.91	2.89	2.85	2.82
15	3.20		3.17	3.14	3.11	3.08
20	3.43		3.41	3.39	3.35	3.32

Model SRK25ZSPR-S Cooling Mode (kW)

Air flow	Outdoor air temp. °CDB	Indoor air temp.													
		21°CDB		23°CDB		26°CDB		27°CDB		28°CDB		31°CDB		33°CDB	
		14°CWB	16°CWB	18°CWB	19°CWB	20°CWB	22°CWB	24°CWB	TC	SHC	TC	SHC	TC	SHC	TC
Hi 10.1 (m³/min)	10	2.82	2.36	2.95	2.32	3.06	2.42	3.11	2.39	3.16	2.36	3.26	2.46	3.34	2.39
	12	2.77	2.34	2.90	2.30	3.01	2.40	3.07	2.37	3.12	2.35	3.22	2.45	3.31	2.38
	14	2.71	2.31	2.85	2.27	2.97	2.39	3.03	2.36	3.08	2.33	3.18	2.43	3.28	2.37
	16	2.66	2.28	2.80	2.25	2.92	2.37	2.98	2.35	3.04	2.32	3.15	2.42	3.24	2.36
	18	2.60	2.26	2.74	2.23	2.88	2.35	2.94	2.33	2.99	2.31	3.11	2.41	3.20	2.35
	20	2.55	2.23	2.68	2.21	2.83	2.33	2.89	2.31	2.95	2.29	3.07	2.39	3.17	2.34
	22	2.49	2.20	2.63	2.18	2.78	2.31	2.84	2.29	2.90	2.27	3.02	2.38	3.13	2.32
	24	2.43	2.18	2.57	2.15	2.72	2.29	2.80	2.27	2.85	2.25	2.98	2.36	3.08	2.31
	26	2.37	2.14	2.51	2.13	2.67	2.27	2.74	2.25	2.80	2.23	2.93	2.35	3.04	2.29
	28	2.31	2.12	2.44	2.10	2.61	2.24	2.69	2.23	2.75	2.21	2.89	2.33	3.00	2.28
	30	2.24	2.09	2.38	2.07	2.56	2.22	2.64	2.21	2.70	2.19	2.84	2.31	2.95	2.27
	32	2.18	2.06	2.31	2.04	2.50	2.20	2.58	2.19	2.64	2.17	2.79	2.30	2.90	2.25
	34	2.11	2.03	2.25	2.01	2.44	2.18	2.53	2.17	2.59	2.15	2.74	2.28	2.85	2.24
	35	2.08	2.01	2.21	2.00	2.41	2.16	2.50	2.16	2.56	2.14	2.71	2.27	2.83	2.23
	36	2.04	1.99	2.18	1.98	2.38	2.15	2.47	2.14	2.53	2.13	2.69	2.26	2.80	2.22
	38	1.97	1.97	2.11	1.95	2.32	2.12	2.41	2.12	2.47	2.11	2.63	2.24	2.75	2.20
	39	1.94	1.94	2.07	1.94	2.28	2.11	2.38	2.11	2.44	2.10	2.61	2.23	2.72	2.20

Heating Mode(HC) (kW)

Air flow	Outdoor air temp. °CWB	Indoor air temp.				
		16°CDB	18°CDB	20°CDB	22°CDB	24°CDB
		Hi 9.5 (m³/min)	-15	1.72	1.69	1.65
-10	1.95		1.91	1.89	1.84	1.80
-5	2.11		2.08	2.04	2.02	1.98
0	2.21		2.18	2.14	2.12	2.09
5	2.82		2.79	2.77	2.72	2.68
6	2.87		2.83	2.80	2.76	2.73
10	3.04		3.02	3.00	2.96	2.93
15	3.31		3.28	3.26	3.23	3.20
20	3.56		3.53	3.52	3.48	3.45

Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.

(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7m
Level difference of Zero.

(3) Symbols are as follows.
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

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Model SRK35ZSPR-S

Cooling Mode

(kW)

Air flow	Outdoor air temp. °CDB	Indoor air temp													
		21°CDB		23°CDB		26°CDB		27°CDB		28°CDB		31°CDB		33°CDB	
		14°CWB	16°CWB	18°CWB	19°CWB	20°CWB	22°CWB	24°CWB	TC	SHC	TC	SHC	TC	SHC	TC
Hi 9.5 (m³/min)	10	3.61	2.75	3.77	2.70	3.91	2.80	3.98	2.76	4.05	2.72	4.17	2.79	4.28	2.70
	12	3.54	2.72	3.71	2.67	3.86	2.77	3.93	2.73	4.00	2.70	4.12	2.77	4.24	2.68
	14	3.47	2.69	3.65	2.64	3.80	2.74	3.87	2.71	3.94	2.67	4.08	2.75	4.19	2.67
	16	3.40	2.65	3.58	2.61	3.74	2.72	3.82	2.68	3.89	2.64	4.03	2.74	4.15	2.65
	18	3.33	2.61	3.51	2.57	3.68	2.68	3.76	2.66	3.83	2.62	3.98	2.71	4.10	2.64
	20	3.26	2.58	3.44	2.54	3.62	2.66	3.70	2.63	3.78	2.60	3.92	2.69	4.05	2.61
	22	3.19	2.54	3.36	2.51	3.55	2.63	3.64	2.61	3.71	2.58	3.87	2.68	4.00	2.59
	24	3.11	2.50	3.29	2.47	3.49	2.60	3.58	2.58	3.65	2.56	3.81	2.64	3.95	2.58
	26	3.03	2.46	3.21	2.43	3.42	2.57	3.51	2.55	3.59	2.53	3.76	2.62	3.89	2.56
	28	2.95	2.42	3.13	2.39	3.35	2.54	3.45	2.53	3.52	2.50	3.70	2.61	3.84	2.55
	30	2.87	2.38	3.05	2.35	3.27	2.51	3.38	2.50	3.45	2.47	3.64	2.59	3.78	2.52
	32	2.79	2.34	2.96	2.32	3.20	2.48	3.31	2.47	3.38	2.45	3.57	2.56	3.72	2.51
	34	2.70	2.30	2.88	2.28	3.12	2.45	3.24	2.44	3.31	2.42	3.51	2.54	3.65	2.48
	35	2.66	2.27	2.83	2.26	3.08	2.43	3.20	2.43	3.28	2.40	3.47	2.52	3.62	2.47
	36	2.61	2.25	2.79	2.24	3.04	2.41	3.16	2.41	3.24	2.39	3.44	2.51	3.59	2.46
	38	2.52	2.21	2.70	2.20	2.96	2.38	3.09	2.38	3.16	2.36	3.37	2.49	3.52	2.44
	39	2.48	2.19	2.65	2.18	2.92	2.36	3.05	2.36	3.12	2.34	3.34	2.48	3.49	2.43

Heating Mode(HC)

(kW)

Air flow	Outdoor air temp. °CWB	Indoor air temp				
		16°CDB	18°CDB	20°CDB	22°CDB	24°CDB
		Hi 9.6 (m³/min)	-15	2.21	2.17	2.12
-10	2.51		2.46	2.43	2.37	2.32
-5	2.71		2.68	2.62	2.59	2.55
0	2.85		2.80	2.76	2.72	2.68
5	3.63		3.58	3.56	3.49	3.44
6	3.68		3.64	3.60	3.55	3.51
10	3.91		3.88	3.85	3.80	3.76
15	4.26		4.22	4.19	4.15	4.11
20	4.58		4.54	4.52	4.47	4.43

Model SRK45ZSPR-S

Cooling Mode

(kW)

Air flow	Outdoor air temp. °CDB	Indoor air temp													
		21 °CDB		23 °CDB		26 °CDB		27 °CDB		28 °CDB		31 °CDB		33 °CDB	
		14 °CWB	16 °CWB	18 °CWB	19 °CWB	20 °CWB	22 °CWB	24 °CWB	TC	SHC	TC	SHC	TC	SHC	TC
Hi 9.0 (m³/min)	10	5.07	3.57	5.31	3.52	5.50	3.58	5.59	3.53	5.69	3.47	5.86	3.50	6.02	3.36
	12	4.98	3.52	5.22	3.47	5.42	3.54	5.52	3.49	5.62	3.43	5.80	3.47	5.96	3.34
	14	4.88	3.47	5.13	3.42	5.34	3.50	5.45	3.45	5.55	3.40	5.73	3.43	5.90	3.31
	16	4.79	3.41	5.03	3.37	5.26	3.45	5.37	3.41	5.47	3.36	5.66	3.41	5.83	3.29
	18	4.69	3.35	4.93	3.31	5.18	3.41	5.29	3.37	5.39	3.32	5.59	3.38	5.77	3.26
	20	4.59	3.30	4.83	3.26	5.09	3.36	5.20	3.32	5.31	3.28	5.52	3.34	5.70	3.23
	22	4.48	3.23	4.73	3.20	5.00	3.31	5.12	3.28	5.22	3.24	5.44	3.31	5.63	3.20
	24	4.37	3.18	4.62	3.14	4.90	3.27	5.03	3.24	5.14	3.20	5.36	3.27	5.55	3.17
	26	4.26	3.11	4.51	3.08	4.80	3.22	4.94	3.20	5.05	3.16	5.28	3.24	5.48	3.14
	28	4.15	3.05	4.40	3.02	4.70	3.17	4.85	3.15	4.95	3.12	5.20	3.20	5.40	3.10
	30	4.04	2.98	4.28	2.96	4.60	3.12	4.75	3.11	4.86	3.07	5.11	3.16	5.31	3.08
	32	3.92	2.92	4.16	2.90	4.50	3.06	4.65	3.06	4.76	3.02	5.02	3.13	5.23	3.04
	34	3.80	2.85	4.04	2.84	4.39	3.02	4.55	3.01	4.66	2.98	4.93	3.09	5.14	3.01
	35	3.74	2.82	3.98	2.80	4.34	2.99	4.50	2.99	4.61	2.96	4.88	3.07	5.09	3.00
	36	3.67	2.79	3.92	2.78	4.28	2.96	4.45	2.96	4.55	2.93	4.84	3.05	5.05	2.98
	38	3.55	2.72	3.79	2.71	4.17	2.91	4.34	2.92	4.45	2.89	4.74	3.01	4.95	2.94
	39	3.48	2.69	3.73	2.68	4.11	2.88	4.29	2.89	4.39	2.86	4.69	2.99	4.90	2.92

Heating Mode(HC)

(kW)

Air flow	Outdoor air temp. °CWB	Indoor air temp				
		16°C DB	18°C DB	20°C DB	22°C DB	24°C DB
		Hi 12.0 (m³/min)	-15	3.08	3.01	2.94
-10	3.48		3.42	3.37	3.29	3.22
-5	3.77		3.72	3.64	3.60	3.54
0	3.95		3.89	3.83	3.78	3.73
5	5.04		4.98	4.95	4.85	4.78
6	5.12		5.06	5.00	4.94	4.88
10	5.44		5.38	5.35	5.28	5.23
15	5.92		5.87	5.82	5.76	5.71
20	6.36		6.31	6.28	6.21	6.16

- Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.
- (2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7m
Level difference of Zero.
- (3) Symbols are as follows.
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

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Air flow		Cooling Mode (kW)															
		Outdoor air temp. °CDB		Indoor air temp.													
				21 °CDB		23 °CDB		26 °CDB		27 °CDB		28 °CDB		31 °CDB		33 °CDB	
				14 °CWB		16 °CWB		18 °CWB		19 °CWB		20 °CWB		22 °CWB		24 °CWB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC		
Hi 20.5 (m³/min)	10	7.10	5.84	7.43	5.74	7.70	5.98	7.83	5.91	7.97	5.84	8.20	6.05	8.42	5.87		
	12	6.97	5.77	7.30	5.69	7.59	5.94	7.73	5.87	7.87	5.80	8.11	6.02	8.34	5.85		
	14	6.84	5.71	7.18	5.62	7.48	5.88	7.62	5.82	7.77	5.75	8.02	5.98	8.26	5.82		
	16	6.70	5.64	7.04	5.56	7.37	5.84	7.52	5.78	7.66	5.71	7.93	5.94	8.17	5.79		
	18	6.56	5.58	6.91	5.50	7.25	5.79	7.40	5.73	7.55	5.67	7.83	5.91	8.08	5.77		
	20	6.42	5.50	6.77	5.44	7.12	5.74	7.29	5.69	7.43	5.63	7.73	5.88	7.98	5.74		
	22	6.28	5.43	6.62	5.37	6.99	5.69	7.17	5.64	7.31	5.58	7.62	5.84	7.88	5.67		
	24	6.12	5.36	6.47	5.30	6.86	5.62	7.04	5.60	7.19	5.54	7.51	5.80	7.77	5.63		
	26	5.97	5.29	6.32	5.24	6.73	5.57	6.92	5.54	7.06	5.48	7.40	5.73	7.67	5.60		
	28	5.81	5.21	6.16	5.17	6.59	5.52	6.79	5.49	6.93	5.44	7.28	5.69	7.55	5.57		
	30	5.65	5.14	6.00	5.09	6.44	5.46	6.65	5.44	6.80	5.39	7.16	5.65	7.44	5.53		
	32	5.49	5.06	5.83	5.02	6.30	5.40	6.51	5.38	6.66	5.34	7.03	5.61	7.32	5.50		
	34	5.32	4.99	5.66	4.95	6.15	5.33	6.37	5.33	6.52	5.29	6.90	5.57	7.19	5.46		
	35	5.23	4.95	5.57	4.92	6.07	5.30	6.30	5.29	6.45	5.26	6.84	5.55	7.13	5.44		
	36	5.14	4.90	5.49	4.88	5.99	5.27	6.23	5.27	6.38	5.22	6.77	5.52	7.06	5.42		
	38	4.97	4.82	5.31	4.80	5.83	5.21	6.08	5.21	6.23	5.17	6.64	5.48	6.93	5.38		
	39	4.88	4.78	5.22	4.76	5.75	5.18	6.00	5.18	6.15	5.14	6.57	5.46	6.87	5.36		

Air flow		Heating Mode (HC) (kW)					
		Outdoor air temp. °CWB		Indoor air temp.			
				16°C DB	18°C DB	20°C DB	22°C DB
Hi 23.5 (m³/min)	-15	4.37	4.27	4.17	4.09	4.00	
	-10	4.94	4.86	4.79	4.67	4.57	
	-5	5.35	5.28	5.17	5.11	5.03	
	0	5.61	5.53	5.43	5.37	5.29	
	5	7.15	7.07	7.03	6.89	6.79	
	6	7.27	7.18	7.10	7.01	6.93	
	10	7.72	7.65	7.60	7.50	7.42	
	15	8.40	8.33	8.27	8.18	8.10	
	20	9.03	8.96	8.92	8.81	8.74	

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Air flow		Cooling Mode (kW)															
		Outdoor air temp. °CDB		Indoor air temp.													
				21 °CDB		23 °CDB		26 °CDB		27 °CDB		28 °CDB		31 °CDB		33 °CDB	
				14 °CWB		16 °CWB		18 °CWB		19 °CWB		20 °CWB		22 °CWB		24 °CWB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC		
Hi 20.5 (m³/min)	10	8.00	6.34	8.37	6.23	8.68	6.46	8.83	6.38	8.98	6.30	9.24	6.48	9.49	6.29		
	12	7.86	6.26	8.23	6.17	8.56	6.41	8.71	6.33	8.87	6.25	9.15	6.45	9.40	6.26		
	14	7.71	6.19	8.09	6.09	8.43	6.36	8.59	6.28	8.75	6.21	9.04	6.41	9.31	6.23		
	16	7.55	6.11	7.94	6.02	8.30	6.29	8.47	6.23	8.63	6.15	8.93	6.37	9.21	6.20		
	18	7.40	6.04	7.78	5.95	8.17	6.24	8.34	6.17	8.51	6.10	8.82	6.33	9.10	6.17		
	20	7.24	5.96	7.62	5.88	8.03	6.18	8.21	6.12	8.38	6.05	8.71	6.29	8.99	6.13		
	22	7.07	5.87	7.46	5.81	7.88	6.12	8.08	6.07	8.24	6.00	8.59	6.25	8.88	6.09		
	24	6.90	5.79	7.29	5.72	7.73	6.06	7.94	6.01	8.10	5.95	8.46	6.21	8.76	6.06		
	26	6.73	5.71	7.12	5.65	7.58	5.99	7.79	5.96	7.96	5.89	8.33	6.16	8.64	6.02		
	28	6.55	5.62	6.94	5.57	7.42	5.92	7.65	5.89	7.81	5.83	8.20	6.12	8.51	5.98		
	30	6.37	5.54	6.76	5.49	7.26	5.85	7.50	5.83	7.66	5.77	8.07	6.06	8.38	5.92		
	32	6.18	5.44	6.57	5.40	7.10	5.79	7.34	5.77	7.51	5.71	7.92	6.01	8.25	5.88		
	34	5.99	5.35	6.38	5.31	6.93	5.72	7.18	5.70	7.35	5.65	7.78	5.96	8.11	5.84		
	35	5.90	5.31	6.28	5.27	6.84	5.68	7.10	5.67	7.27	5.62	7.71	5.93	8.03	5.81		
	36	5.80	5.26	6.18	5.23	6.75	5.65	7.02	5.64	7.19	5.59	7.63	5.91	7.96	5.79		
	38	5.60	5.17	5.98	5.14	6.58	5.57	6.85	5.58	7.02	5.53	7.48	5.86	7.81	5.75		
	39	5.50	5.13	5.88	5.10	6.48	5.53	6.76	5.54	6.93	5.50	7.40	5.83	7.74	5.72		

Air flow		Heating Mode (HC) (kW)					
		Outdoor air temp. °CWB		Indoor air temp.			
				16°C DB	18°C DB	20°C DB	22°C DB
Hi 25.5 (m³/min)	-15	4.92	4.82	4.70	4.61	4.50	
	-10	5.57	5.47	5.40	5.26	5.15	
	-5	6.03	5.94	5.82	5.76	5.67	
	0	6.32	6.23	6.12	6.05	5.96	
	5	8.06	7.96	7.92	7.76	7.65	
	6	8.19	8.09	8.00	7.90	7.80	
	10	8.70	8.62	8.56	8.45	8.36	
	15	9.47	9.38	9.32	9.21	9.13	
	20	10.17	10.09	10.05	9.93	9.85	

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Air flow		Cooling Mode (kW)															
		Outdoor air temp. °CDB		Indoor air temp.													
				21 °CDB		23 °CDB		26 °CDB		27 °CDB		28 °CDB		31 °CDB		33 °CDB	
				14 °CWB		16 °CWB		18 °CWB		19 °CWB		20 °CWB		22 °CWB		24 °CWB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC		
Hi 26.5 (m³/min)	10	9.01	7.27	9.43	7.15	9.78	7.44	9.95	7.34	10.12	7.25	10.42	7.49	10.70	7.28		
	12	8.85	7.18	9.28	7.08	9.64	7.38	9.82	7.29	9.99	7.20	10.30	7.45	10.59	7.25		
	14	8.68	7.10	9.11	7.00	9.50	7.31	9.68	7.23	9.86	7.14	10.19	7.40	10.49	7.20		
	16	8.51	7.02	8.94	6.92	9.35	7.25	9.54	7.17	9.72	7.09	10.07	7.36	10.37	7.16		
	18	8.34	6.93	8.77	6.85	9.20	7.19	9.40	7.12	9.58	7.04	9.94	7.31	10.25	7.12		
	20	8.15	6.84	8.59	6.76	9.04	7.12	9.25	7.06	9.44	6.98	9.81	7.27	10.13	7.08		
	22	7.97	6.75	8.41	6.67	8.88	7.05	9.10	7.00	9.29	6.92	9.68	7.22	10.00	7.04		
	24	7.78	6.66	8.22	6.58	8.71	6.98	8.94	6.93	9.13	6.86	9.54	7.17	9.87	7.00		
	26	7.58	6.57	8.02	6.50	8.54	6.91	8.78	6.87	8.97	6.80	9.39	7.12	9.73	6.90		
	28	7.38	6.47	7.82	6.41	8.36	6.84	8.62	6.80	8.81	6.73	9.24	7.06	9.59	6.90		
	30	7.18	6.37	7.62	6.32	8.18	6.76	8.45	6.73	8.64	6.67	9.09	7.01	9.44	6.86		
	32	6.97	6.28	7.40	6.23	8.00	6.69	8.27	6.66	8.46	6.60	8.93	6.96	9.29	6.81		
	34	6.75	6.18	7.19	6.13	7.81	6.61	8.09	6.59	8.28	6.54	8.77	6.90	9.13	6.76		
	35	6.64	6.13	7.08	6.08	7.71	6.57	8.00	6.56	8.19	6.50	8.68	6.87	9.05	6.73		
	36	6.53	6.08	6.97	6.04	7.61	6.53	7.91	6.52	8.10	6.47	8.60	6.84	8.97	6.71		
	38	6.31	5.97	6.74	5.94	7.41	6.45	7.72	6.45	7.91	6.40	8.43	6.78	8.80	6.65		
	39	6.20	5.92	6.62	5.89	7.31	6.41	7.62	6.41	7.81	6.36	8.34	6.75	8.72	6.63		

Air flow		Heating Mode (HC) (kW)					
		Outdoor air temp. °CWB		Indoor air temp.			
				16°C DB	18°C DB	20°C DB	22°C DB
Hi 26.5 (m³/min)	-15	5.54	5.42	5.29	5.18	5.06	
	-10	6.27	6.15	6.07	5.92	5.79	
	-5	6.79	6.69	6.55	6.48	6.37	
	0	7.12	7.01	6.89	6.81	6.71	
	5	9.06	8.96	8.91	8.73	8.61	
	6	9.21	9.10	9.00	8.89	8.78	
	10	9.79	9.69	9.63	9.50	9.41	
	15	10.65	10.56	10.48	10.37	10.27	
	20	11.45	11.35	11.30	11.17	11.08	

Note(1) These data show average statuses.
Depending on the system control, there may be ranges where the operation is not conducted continuously.
These data show the case where the operation frequency of a compressor is fixed.

(2) Capacities are based on the following conditions.
Corresponding refrigerant piping length :7m
Level difference of Zero.

(3) Symbols are as follows.
TC : Total cooling capacity (kW)
SHC : Sensible heat capacity (kW)
HC : Heating capacity (kW)

ISC15023

8. APPLICATION DATA

(1) Models SRK20ZSPR-S, 25ZSPR-S, 35ZSPR-S, 45ZSPR-S

- While install the unit, be sure to check the selection of installation place, power source specifications, usage limitation (piping length, height differences between indoor and outdoor units, power source voltage etc.) and installation spaces.

RLC012A011

WALL TYPE AIR-CONDITIONER
R410A REFRIGERANT USED

SAFETY PRECAUTIONS

- Before installation, read the "SAFETY PRECAUTIONS" carefully and strictly follow it during the installation work in order to protect yourself.
- The precautionary items mentioned below are distinguished into two levels, **WARNING** and **CAUTION**.
- WARNING** : Wrong installation would cause serious consequences such as injuries or death.
- CAUTION** : Wrong installation might cause serious consequences depending on circumstances.
- Both mention the important items to protect your health and safety so strictly follow them by any means.
- Be sure to confirm no anomaly on the equipment by commissioning after completing installation and explain the operating methods as well as the maintenance methods of this equipment to the user according to the owner's manual.
- Keep the installation manual together with owner's manual at a place where any user can read at any time.

Never do it under any circumstances.

Always do it according to the instruction.

WARNING

<p> Installation must be carried out by the qualified installer. If you install the system by yourself, it may cause serious trouble such as water leaks, electric shocks, fire and personal injury, as a result of a system malfunction. Do not carry out the installation and maintenance work except the by qualified installer.</p> <p>• Install the system in full accordance with the installation manual. Incorrect installation may cause bursts, personal injury, water leaks, electric shocks and fire.</p> <p>• Be sure to use only for household and residence. If this appliance is installed in inferior environment such as machine shop etc., it can cause malfunction.</p> <p>• Use the original accessories and the specified components for installation. If parts other than those prescribed by us are used, it may cause water leaks, electric shocks, fire and personal injury.</p> <p>• Install the unit in a location with good support. Unsuitable installation locations can cause the unit to fall resulting in material damage and personal injury.</p> <p>• Ensure the unit is stable when installed, so that it can withstand earthquakes and strong winds. Unsuitable installation locations can cause the unit to fall and cause material damage and personal injury.</p> <p>• Ventilate the working area well in the event of refrigerant leakage during installation. If the density of refrigerant exceeds the limit, consult the dealer and install the ventilation system, otherwise lack of oxygen can occur, which can cause serious accident.</p> <p>• When installing in small rooms, take prevention measures not to exceed the density limit of refrigerant in the event of leakage, referred by the formula (accordance with ISO5149). If the density of refrigerant exceeds the limit, consult the dealer and install the ventilation system, otherwise lack of oxygen can occur, which can cause serious accident.</p>	<p>3mm.</p> <ul style="list-style-type: none"> • When plugging this appliance, a plug conforming to the norm IEC60884-1 must be used. • Use the prescribed cables for electrical connection, tighten the cables securely in terminal block and relieve the cables correctly to prevent overloading the terminal blocks. <p>Loose connections or cable mountings can cause anomalous heat production or fire.</p> <ul style="list-style-type: none"> • Arrange the wiring in the control box so that it cannot be pushed up further into the box. Install the service panel correctly. <p>Incorrect installation may result in overheating and fire.</p> <ul style="list-style-type: none"> • Be sure to fix up the service panels. <p>Incorrect fixing can cause electric shocks or fire due to intrusion of dust or water.</p> <ul style="list-style-type: none"> • Be sure to switch off the power source in the event of installation, inspection or servicing. <p>If the power source is not shut off, there is a risk of electric shocks, unit failure or personal injury due to the unexpected start of fan.</p> <ul style="list-style-type: none"> • Stop the compressor before removing the pipe after shutting the service valve on pump down work. <p>air would be mixed in the refrigeration circuit and it could cause explosion and injuries due to abnormal high pressure in the cooling cycle.</p> <ul style="list-style-type: none"> • Only use prescribed option parts. The installation must be carried out by the qualified installer. <p>If you install the system by yourself, it can cause serious trouble such as water leaks, electric shocks, fire.</p> <ul style="list-style-type: none"> • Be sure to wear protective goggles and gloves while at work. • Earth leakage breaker must be installed. <p>If the earth leakage breaker is not installed, it can cause electric shocks.</p>	<p>• After completing installation, check that no refrigerant leaks from the system. If refrigerant leaks into the room and comes into contact with an oven or other hot surface, poisonous gas is produced.</p> <ul style="list-style-type: none"> • Use the prescribed pipes, flare nuts and tools for R410A. <p>Using existing parts (for R22 or R407C) can cause the unit failure and serious accidents due to burst of the refrigerant circuit.</p> <ul style="list-style-type: none"> • Tighten the flare nuts by torque wrench with specified method. If the flare nut were tightened with excess torque, this may cause burst and refrigerant leakage after a long period. • Do not open the service valves for liquid line and gas line until completed refrigerant piping work, air tightness test and evacuation. <p>If the compressor is operated in state of opening service valves before completing connection of refrigerant piping work, air can be sucked into refrigerant circuit, which can cause burst or personal injury due to anomalously high pressure in the refrigerant.</p> <ul style="list-style-type: none"> • The electrical installation must be carried out by the qualified electrician in accordance with "the norm for electrical work" and "national wiring regulation", and the system must be connected to the dedicated circuit. <p>Power source with insufficient capacity and incorrect function done by improper work can cause electric shocks and fire.</p> <ul style="list-style-type: none"> • Be sure to shut off the power before starting electrical work. <p>Failure to shut off the power can cause electric shocks, unit failure or incorrect function of equipment.</p> <ul style="list-style-type: none"> • Be sure to use the cables conformed to safety standard and cable ampacity for power distribution work. <p>Unconformable cables can cause electric leak, anomalous heat production or fire.</p> <ul style="list-style-type: none"> • This appliance must be connected to main power source by means of a circuit breaker or switch (fuse:16A) with a contact separation of at least high, which can cause burst and personal injury. <ul style="list-style-type: none"> • Do not process or splice the power cord, or share the socket with other power plugs. <p>This may cause fire or electric shock due to defecting contact, defecting insulation and over-current etc.</p> <ul style="list-style-type: none"> • Do not bundle or wind or process the power cord. Do not deform the power cord by treading it. <p>This may cause fire or heating.</p>
<p> Do not put the drainage pipe directly into drainage channels where poisonous gases such as sulphide gas can occur. Poisonous gases will flow into the room through drainage pipe and seriously affect the user's health and safety. This can also cause the corrosion of the indoor unit and a resultant unit failure or refrigerant leak.</p> <ul style="list-style-type: none"> • Ensure that no air enters in the refrigerant circuit when the unit is installed and removed. <p>If air enters in the refrigerant circuit, the pressure in the refrigerant circuit becomes too</p>	<p>• Do not vent R410A into the atmosphere : R410A is a fluorinated greenhouse gas, covered by the Kyoto Protocol with Global Warming Potential (GWP)=1975.</p> <ul style="list-style-type: none"> • Do not run the unit with removed panels or protections. <p>Touching rotating equipments, hot surfaces or high voltage parts can cause personal injury due to entrapment, burn or electric shocks.</p> <ul style="list-style-type: none"> • Do not perform any change of protective device itself or its setup condition. <p>The forced operation by short-circuiting protective device of pressure switch and temperature control or the use of non specified component can cause fire or burst</p>	<p>• Do not vent R410A into the atmosphere : R410A is a fluorinated greenhouse gas, covered by the Kyoto Protocol with Global Warming Potential (GWP)=1975.</p> <ul style="list-style-type: none"> • Do not run the unit with removed panels or protections. <p>Touching rotating equipments, hot surfaces or high voltage parts can cause personal injury due to entrapment, burn or electric shocks.</p> <ul style="list-style-type: none"> • Do not perform any change of protective device itself or its setup condition. <p>The forced operation by short-circuiting protective device of pressure switch and temperature control or the use of non specified component can cause fire or burst</p>

⚠ CAUTION

	<p>• Carry out the electrical work for ground lead with care. Do not connect the ground lead to the gas line, water line, lightning conductor or telephone line's ground lead. Incorrect grounding can cause unit faults such as electric shocks due to short-circuiting.</p>	<p>inspection and maintenance.</p> <ul style="list-style-type: none"> • After maintenance, all wiring, wiring ties and the like, should be returned to their original state and wiring route, and the necessary clearance from all metal parts should be secured. • Secure a space for installation, inspection and maintenance specified in the manual. • Take care when carrying the unit by hand. If the unit weighs more than 20kg, it must be carried by two or more persons. Do not carry by the plastic straps, always use the carry handle when carrying the unit by hand. Use gloves to minimize the risk of cuts by the aluminum fins. • Dispose of any packing materials correctly. Any remaining packing materials can cause personal injury as it contains nails and wood. And to avoid danger of suffocation, be sure to keep the plastic wrapper away from children and to dispose after tear it up. • For installation work, be careful not to get injured with the heat exchanger, 	<p>pipng flare portion or screws etc.</p> <ul style="list-style-type: none"> • Be sure to insulate the refrigerant pipes so as not to condense the ambient air moisture on them. Insufficient insulation can cause condensation, which can lead to moisture damage on the ceiling, floor, furniture and any other valuables. • When perform the air-conditioner operation (cooling or dehumidifying operation) in which ventilator is installed in the room. In this case, using the air-conditioner in parallel with the ventilator, there is the possibility that drain water may backflow in accordance with the room lapse into the negative pressure status. • Therefore, set up the opening port such as incorporate the air into the room that may appropriate to ventilation (For example; Open the door a little), in addition, just as above, so set up the opening port if the room lapse into negative pressure status due to register of the wind for the high rise apartment etc. • Be sure to perform air tightness test by pressurizing with nitrogen gas after completed refrigerant piping work. If the density of refrigerant exceeds the limit in the event of refrigerant leakage in the small room, lack of oxygen can occur, which can cause serious accidents.
	<ul style="list-style-type: none"> • Do not install the unit in the locations listed below. • Locations where carbon fiber, metal powder or any powder is floating. • Locations where any substances that can affect the unit such as sulphide gas, chloride gas, acid and alkaline can occur. • Vehicles and ships. • Locations where cosmetic or special sprays are often used. • Locations with direct exposure of oil mist and steam such as kitchen and machine plant. • Locations where any machines which generate high frequency harmonics are used. • Locations with salty atmospheres such as coastlines. • Locations with heavy snow (if installed, be sure to provide base frame and snow hood mentioned in the manual). • Locations where the unit is exposed to chimney smoke. • Locations at high altitude (more than 1000m high). • Locations with ammoniac atmospheres (e.g. organic fertilizer). • Locations with calcium chloride (e.g. snow melting agent). • Locations where heat radiation from other heat source can affect the unit. • Locations without good air circulation. • Locations where short circuit of air can occur (in case of multiple units installation). • Locations where strong air blows against the air outlet of outdoor unit. • Locations where something located above the unit could fall. • Locations where heat radiation from other heat source can affect the unit. • Locations with any obstacles which can prevent inlet and outlet air of the unit. • Locations where strong air blows against the air outlet of outdoor unit. • Locations where something located above the unit could fall. • Locations where heat radiation from other heat source can affect the unit. • Locations with any obstacles which can prevent inlet and outlet air of the unit. • Locations where vibration can be amplified due to insufficient strength of structure. • Locations where the infrared receiver is exposed to the direct sunlight or the strong light beam (in case of the infrared specification unit). • Locations where an equipment affected by high harmonics is placed (TV set or radio receiver is placed within 1m). 	<ul style="list-style-type: none"> • Locations where drainage cannot run off safely. It can affect performance or function and etc. • Do not install the outdoor unit in the locations listed below. • Locations where discharged hot air or operating sound of the outdoor unit can bother neighborhood. • Locations where outlet air of the outdoor unit blows directly to plants. The outlet air can affect adversely to the plant etc. • Locations where vibration can be amplified and transmitted due to insufficient strength of structure. • Locations where vibration and operation sound generated by the outdoor unit can affect seriously (on the wall or at the place near bed room). • Locations where an equipment affected by high harmonics is placed (TV set or radio receiver is placed within 1m). • Locations where drainage cannot run off safely. It can affect surrounding environment and cause a claim. • Do not install the unit near the location where leakage of combustible gases can occur. If leaked gases accumulate around the unit, it can cause fire. • Do not install the unit where corrosive gas (such as sulfurous acid gas etc.) or combustible gas (such as thinner and petroleum gases) can accumulate or collect, or where volatile combustible substances are handled. Corrosive gas can cause corrosion of heat exchanger, breakage of plastic parts and etc. And combustible gas can cause fire. • Do not use the indoor unit at the place where water splashes may occur such as in laundries. Since the indoor unit is not waterproof, it can cause electric shocks and fire. • Do not install nor use the system close to the equipment that generates electromagnetic fields or high frequency harmonics. Equipment such as inverters, standby generators, medical high frequency equipments and telecommunication equipments can affect the system, and cause malfunctions and breakdowns. The system can also affect medical equipment and telecommunication equipment, and obstruct its function or cause jamming. 	<ul style="list-style-type: none"> • Do not place any variables which will be damaged by getting wet under the indoor unit. When the relative humidity is higher than 80% or drainage pipe is clogged, condensation or drainage water can drop and it can cause the damage of valuables. • Do not install the remote control at the direct sunlight. It can cause malfunction or deformation of the remote control. • Do not use the unit for special purposes such as storing foods, cooling precision instruments and preservation of animals, plants or art. It can cause the damage of the items. • Do not install the outdoor unit in a location where insects and small animals can inhabit. Insects and small animals can enter the electric parts and cause damage or fire. Instruct the user to keep the surroundings clean. • Do not use the base frame for outdoor unit which is corroded or damaged due to long periods of operation. Using an old and damaged base frame can cause the unit falling down and cause personal injury. • Do not use any materials other than a fuse with the correct rating in the location where fuses are to be used. Connecting the circuit with copper wire or other metal thread can cause unit failure and fire. • Do not touch any buttons with wet hands. This may cause electric shocks. • Do not touch any refrigerant pipes with your hands when the system is in operation. During operation the refrigerant pipes become extremely hot or extremely cold depending the operating condition, and it can cause burn injury or frost injury. • Do not touch the suction or aluminum fin on the outdoor unit. This may cause injury. • Do not put anything on the outdoor unit and operating unit. This may cause damage the objects or injury due to falling to the object. • Do not wash the inside of the air-conditioner. Water leakage and permanent damage may result. Electrical hazard exists.
	<ul style="list-style-type: none"> • Do not install the unit in the locations listed below. • Locations where carbon fiber, metal powder or any powder is floating. • Locations where any substances that can affect the unit such as sulphide gas, chloride gas, acid and alkaline can occur. • Vehicles and ships. • Locations where cosmetic or special sprays are often used. • Locations with direct exposure of oil mist and steam such as kitchen and machine plant. • Locations where any machines which generate high frequency harmonics are used. • Locations with salty atmospheres such as coastlines. • Locations with heavy snow (if installed, be sure to provide base frame and snow hood mentioned in the manual). • Locations where the unit is exposed to chimney smoke. • Locations at high altitude (more than 1000m high). • Locations with ammoniac atmospheres (e.g. organic fertilizer). • Locations with calcium chloride (e.g. snow melting agent). • Locations where heat radiation from other heat source can affect the unit. • Locations without good air circulation. • Locations where short circuit of air can occur (in case of multiple units installation). • Locations where strong air blows against the air outlet of outdoor unit. • Locations where something located above the unit could fall. • Locations where heat radiation from other heat source can affect the unit. • Locations with any obstacles which can prevent inlet and outlet air of the unit. • Locations where strong air blows against the air outlet of outdoor unit. • Locations where something located above the unit could fall. • Locations where heat radiation from other heat source can affect the unit. • Locations with any obstacles which can prevent inlet and outlet air of the unit. • Locations where vibration can be amplified due to insufficient strength of structure. • Locations where the infrared receiver is exposed to the direct sunlight or the strong light beam (in case of the infrared specification unit). • Locations where an equipment affected by high harmonics is placed (TV set or radio receiver is placed within 1m). 	<ul style="list-style-type: none"> • Locations where drainage cannot run off safely. 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Instruct the user to keep the surroundings clean. • Do not use the base frame for outdoor unit which is corroded or damaged due to long periods of operation. Using an old and damaged base frame can cause the unit falling down and cause personal injury. • Do not use any materials other than a fuse with the correct rating in the location where fuses are to be used. Connecting the circuit with copper wire or other metal thread can cause unit failure and fire. • Do not touch any buttons with wet hands. This may cause electric shocks. • Do not touch any refrigerant pipes with your hands when the system is in operation. During operation the refrigerant pipes become extremely hot or extremely cold depending the operating condition, and it can cause burn injury or frost injury. • Do not touch the suction or aluminum fin on the outdoor unit. This may cause injury. • Do not put anything on the outdoor unit and operating unit. This may cause damage the objects or injury due to falling to the object. • Do not wash the inside of the air-conditioner. Water leakage and permanent damage may result. Electrical hazard exists.

Check before installation work

• Model name and power source • Refrigerant piping length • Piping, wiring and miscellaneous small parts

Standard accessories for indoor unit		Qty
① Installation board (Attached to the rear of the indoor unit)	1	
② Wireless remote control	1	
③ Remote control holder	1	
④ Tapping screws (for installation board 64 X 25mm)	5	

Accessories for outdoor unit		Qty
⑤ Wood screws (for remote control holder ø3.5 X 16mm)	2	
⑥ Battery [R03 (AAA, Micro) 1.5V]	2	
Accessories for outdoor unit		Qty
⑦ Grommet	1	
⑧ Drain elbow (Heat pump type only)	1	

Necessary tools for the installation work

No	Tool	Qty
1	Plus headed driver	1
2	Knife	1
3	Saw	1
4	Tape measure	1
5	Hammer	1
6	Spanner wrench	1
7	Torque wrench	1
8	Hole core drill (14.0-62.0N·m (1.4-6.2kgf·m))	1
9	Wrench key (Hexagon) [4m/1m]	1
10	Vacuum pump	1
11	Vacuum pump adapter (Anti-reverse flow type) (Designed specifically for R410A)	1
12	Gas gauge manifold (Designed specifically for R410A)	1
13	Charge hose (Designed specifically for R410A)	1
14	Flaring tool set (Designed specifically for R410A)	1
15	Gas leak detector (Designed specifically for R410A)	1
16	Gauge for projection adjustment (Used when flare is made by using conventional flare tool)	1
17	Pipe bender	1

Locally procured parts		Qty
④ Sealing plate	1	
⑥ Sleeve	1	
⑦ Inclination plate	1	
⑧ Pulley	1	
⑨ Drain hose (extension hose)	1	
⑩ Piping cover (for insulation of connection piping)	1	

SELECTION OF INSTALLATION LOCATION

(Install at location that meets the following conditions, after getting approval from the customer)

Indoor unit

- Where there is no obstructions to the air flow and where the cooled and heated air can be evenly distributed.
- A solid place where the unit or the wall will not vibrate.
- A place where there will be enough space for servicing. (Where space mentioned right can be secured)
- Where wiring and the piping work will be easy to conduct.
- The place where receiving part is not exposed to the direct rays of the sun or the strong rays of the street lighting.
- A place where it can be easily drained.
- A place separated at least 1m away from the TV or the radio. (To prevent interference to images and sounds.)
- Places where this unit is not affected by the high frequency equipment or electric equipment.
- Avoid installing this unit in place where there is much oil mist.
- Places where there is no electric equipment or household under the installing unit.
- Install the indoor unit on the wall where the height from the floor to the bottom of the unit is more than 1.8m.

Wireless remote control

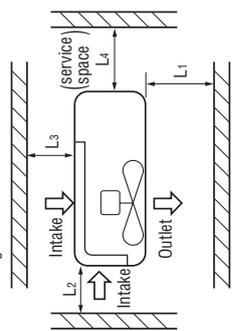
- A place where the air-conditioner can be received the signal surely during operating the wireless remote control.
- Places where there is no affected by the TV and radio etc.
- Do not place where exposed to direct sunlight or near heat devices such as a stove.

Outdoor unit

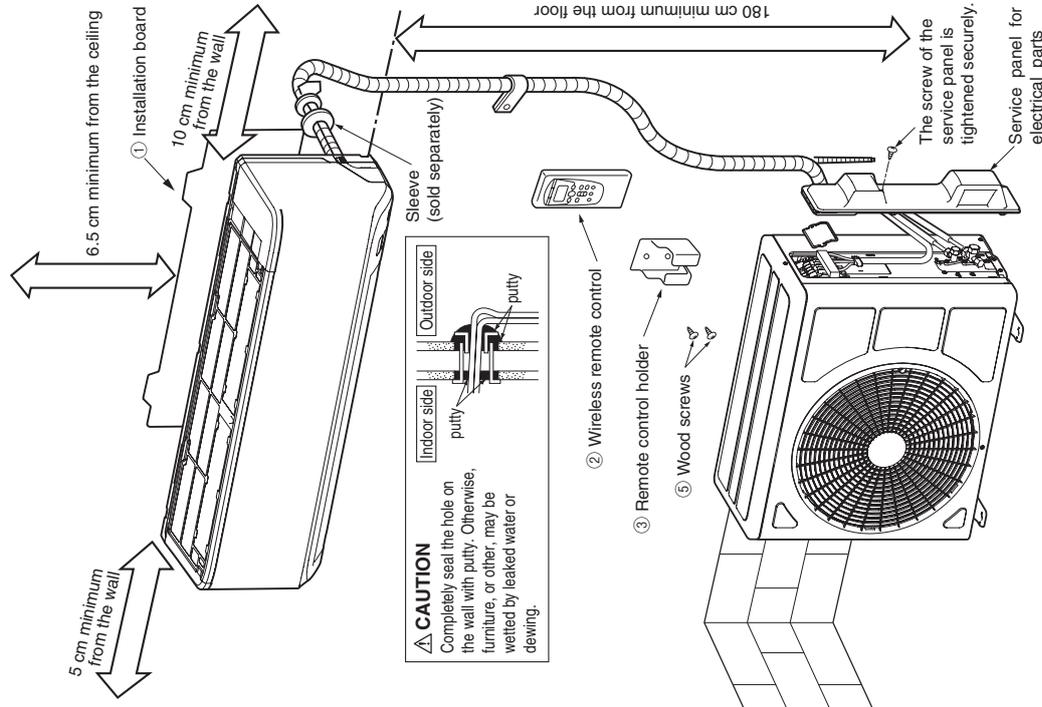
- Where air is not trapped.
- Where the installation fittings can be firmly installed.
- Where wind does not hinder the intake and outlet pipes.
- Out of the heat range of other heat sources.
- A place where stringent regulation of electric noises is not applicable.
- Where it is safe for the drain water to be discharged.
- Where noise and hot air will not bother neighboring residents.
- Where snow will not accumulate.
- Where strong winds will not blow against the outlet pipe.
- When the unit is installed, the space of the following dimension and above shall be secured.
(In case the barrier is 1.2m or above in height, or is overhead, the sufficient space between the unit and wall shall be secured.)

Do not install the unit in places which exposed to sea breeze (e.g. coastal area) or calcium chloride (e.g. snow melting agent), exposed to ammonia substance (e.g. organic fertilizer).

The height of a wall is 1200mm or less.



Size	Example installation				IV
	I	II	III	IV	
L1	Open	280	280	180	Open
L2	100	100	Open	Open	Open
L3	100	80	80	80	80
L4	250	Open	250	Open	Open

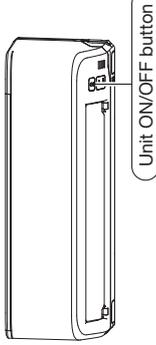


Limitation of the piping length

Model	SRK17-25, DXK05-09	SRK35, DXK12	SRK45, DXK15
Total one way length	MAX. 15m	MAX. 15m	MAX. 25m
Vertical height difference	MAX. 10m	MAX. 10m	MAX. 15m
Additional refrigerant	Less than 10m : Not required More than 10m : 20g/m	Not required	Less than 15m : Not required More than 15m : 20g/m

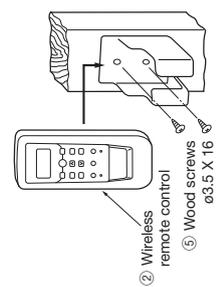
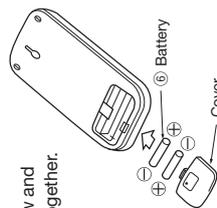
HOW TO RELOCATE OR DISPOSE OF THE UNIT

- In order to protect the environment, be sure to pump down (recovery of refrigerant).
- Pump down is the method of recovering refrigerant from the indoor unit to the outdoor unit when the pipes are removed from the unit.
- How to pump down>
 - ① Connect charge hose to check joint.
 - ② Liquid side : Close the liquid valve with hexagon wrench key.
Gas side : Fully open the gas valve.
Carry out cooling operation. (If indoor temperature is low, operate forced cooling operation.)
 - ③ After low pressure gauge become 0.01MPa, stop cooling operation and close the gas valve.
- Forced cooling operation
Turn off power source. Turn on power source again after a while. Then, press the ON/OFF button continuously for at least 5 seconds. (The operation will start.)



INSTALLATION OF WIRELESS REMOTE CONTROL

- Mounting method of battery
 - Do not use new and old batteries together.
- Fixing to pillar or wall
 - Conventionally, operate the wireless remote control by holding in your hand.
 - Avoid installing it on a clay wall etc.

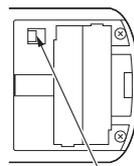


INSTALLING TWO AIR-CONDITIONERS IN THE SAME ROOM

When two air-conditioners are installed in the same room, use this setting when the two air-conditioners are not operated with one wireless remote control. Set the remote control and indoor unit.

Setting the wireless remote control

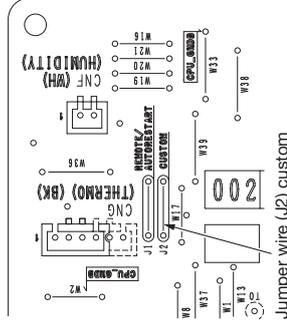
- ① Pull out the cover and take out batteries.
- ② Disconnect the switching line next to the battery with wire cutters.



- ③ Insert batteries. Close the cover.

Setting an indoor unit

- ① Remove the air inlet panel, lid and front panel.
- ② Remove the control cover. (Remove the screw.)
- ③ Cut jumper wire J2 (marked CUSTOM on the PCB) on the indoor control board. Do not allow the cut wires to contact any other wiring.
- ④ Install the control box, lid and front panel.

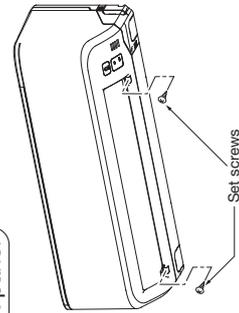


EARTHING WORK

- Earth work shall be carried out without fail in order to prevent electric shock and noise generation.
- The connection of the earth cable to the following substances causes dangerous failures, therefore it shall never be done. City water pipe, Town gas pipe, TV antenna, lightning conductor, telephone line, etc.

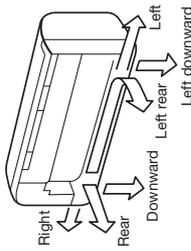
How to remove and install the front panel

- Removing
 - ① Remove the 2 set screws.
 - ② Remove the 3 latches in the upper section. And take off the front panel.
- Installing
 - ① Cover the body with the front panel. And lock the latches (on the base).
 - ② Tighten the 2 set screws.
 - ③ Carry out in the above order.



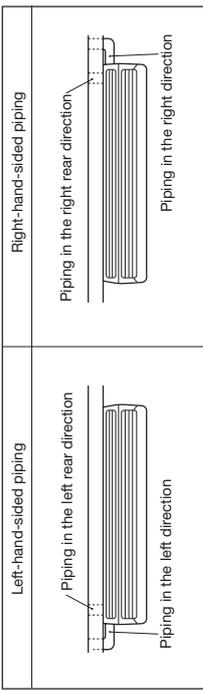
Installing the support of piping

Piping is possible in the rear, left rear, left downward, right or downward direction.

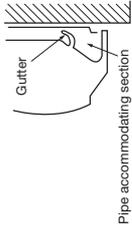


● Matters of special notice when piping from left or central/rear of the unit.

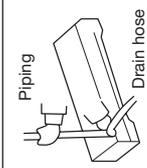
[Top view]



Since this air-conditioner has been designed to collect dew drops on the rear surface to the drain pan, do not attach the power cord above the gutter.



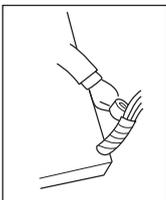
Shaping of pipings



- Hold the bottom of the piping and fix direction before stretching it and shaping it.
- Always tape the wiring with the piping.

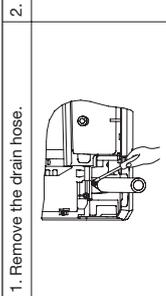
Sufficient care must be taken not to damage the panel when connecting pipes.

Taping of the exterior



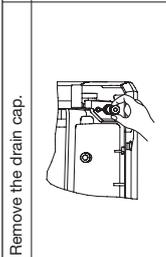
- Tape only the portion that goes through the wall.
- Always tape the wiring with the piping.

[Drain hose changing procedures]



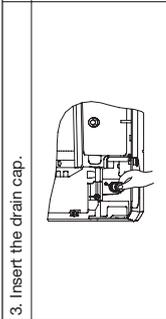
1. Remove the drain cap.

- Remove the screw and drain hose, making it rotate.
- Remove it with hand or pliers.



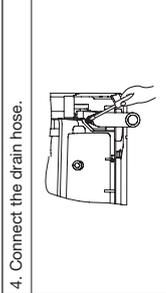
2. Remove the drain cap.

- Insert the drain cap which was removed at procedure "2" securely using a hexagonal wrench etc.
- Note: Be careful that if it is not inserted securely, water leakage may occur.



3. Insert the drain cap.

- Insert the drain hose securely, making rotate. And install the screw.
- Note: Be careful that if it is not inserted securely, water leakage may occur.



4. Connect the drain hose.

Drainage

- Arrange the drain hose in a downward angle.
- Avoid the following drain piping.



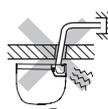
Higher than specified



Wavy



The gap to the ground is 5 cm or less.



Odor from the gutter

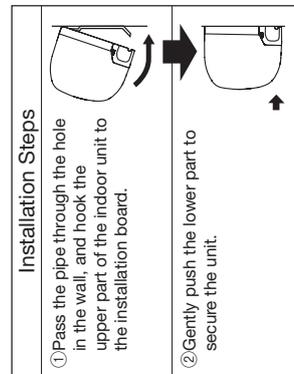
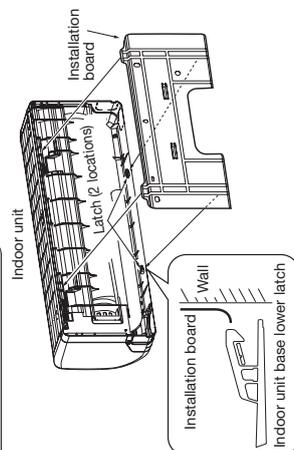
The drain hose tip is in the gutter.

CAUTION

Go through all installation steps and check if the drainage is all right. Otherwise, water leak may occur.

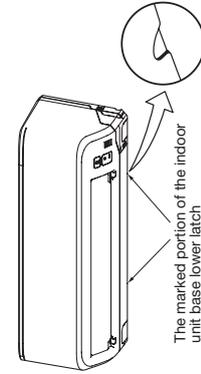
- Pour water to the drain pan located under the heat exchanger, and ensure that the water is discharged outdoor.
- When extended drain hose is present inside the room, insulate it securely with heat insulator available in the market.

Fixing of indoor unit



● How to remove the indoor unit from the installation board

1. Push up at the marked portion of the indoor unit base lower latch, and slightly pull it toward you. (The indoor unit base lower latch can be removed from the installation board)
2. Push up the indoor unit upward so that it can be removed from the installation board.



The marked portion of the indoor unit base lower latch

INSTALLATION OF THE OUTDOOR UNIT

Fixing of outdoor

- Make sure that the unit is stable in installation. Fix the unit to stable base.
- When installing the unit at a higher place or where it could be toppled by strong winds, secure the unit firmly with foundation bolts, wire, etc.

Electric wiring work

- Perform wiring, making wire terminal numbers conform to terminal numbers of indoor unit terminal block.
- Connect using ground screw located near \oplus mark.

CAUTION

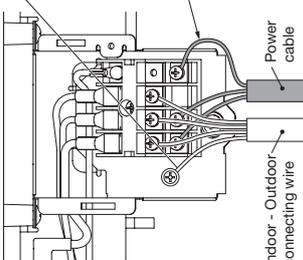
Connect the earthed line of indoor and outdoor connecting wire to a bracket part of the illustration.

Earth wire shall be Yellow/Green (Y/G) in color and longer than other AC wires for safety reason.

Main fuse specification

Specification	Part No.
250V 15A	SSA564A136

Indoor - Outdoor connecting wire
power cable, indoor - outdoor connecting wire circuit diagram



- Always perform grounding system installation work with the power cord unplugged.
- Connect a pair bearing a common terminal number with an indoor-outdoor connecting wire.
- In cabling, fasten cables securely with cable clamps so that no external force may work on terminal connections.
- Grounding terminals are provided in the terminal block.

Always use an earth leakage circuit breaker designed for inverter circuits to prevent a faulty operation.

CAUTION

Phase	Switchgear or Circuit Breaker		Interconnecting and grounding wires (minimum)
	Earth leakage breaker	Over current protector rated capacity	
Single-phase	15A, 30mA, 0.1sec or less	30A, 16A	1.5mm ² X 4
			2.0mm ²

- The specifications shown in the above table are for units without heaters. For units with heaters, refer to the installation instructions or the construction instructions of the indoor unit.
- Switchgear or Circuit breaker capacity which is calculated from maximum over current should be chosen along the regulations in each country.
- The cable specifications are based on the assumption that a metal or plastic conduit is used with no more than three cables contained in a conduit and a voltage drop is 2%. For an installation falling outside of these conditions, follow the internal cabling regulations. Adapt it to the regulation in effect in each country.

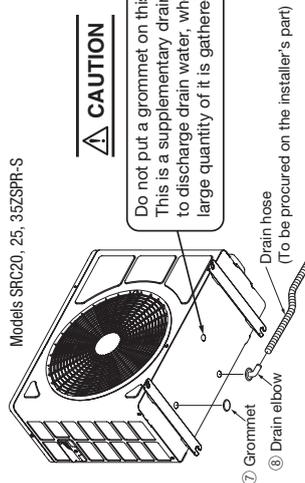
Drain piping work

- Execute drain piping by using a drain elbow and drain grommets supplied separately as accessories, where water drained from the outdoor unit is a problem.
- Water may drip where there is a larger amount of drain water. Seal around the drain elbow and drain grommets with putty or adequate caulking material.
- Condensed water may flow out from vicinity of service valve or connected pipes.
- Where you are likely to have several days of sub-zero temperatures in a row, do not use a drain elbow and drain grommets. (There is a risk of drain water freezing inside and blocking the drain.) ※

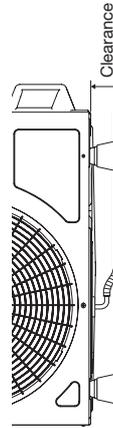
Models SR020, 25, 35ZSPR-S

CAUTION

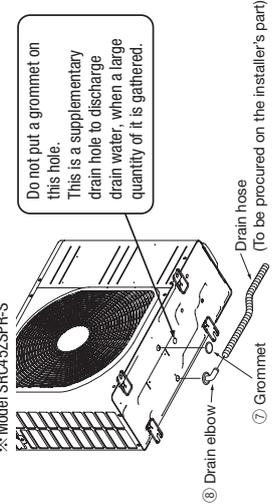
Do not put a grommet on this hole. This is a supplementary drain hole to discharge drain water, when a large quantity of it is gathered.



- When condensed water needs to be led to a drain, etc., install the unit on a flat base (supplied separately as a locally procured part) or concrete blocks. Then, secure space for the drain elbow and the drain hose.



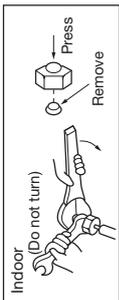
※ Model SR045ZSPR-S



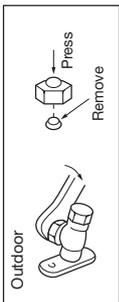
CONNECTION OF REFRIGERANT PIPINGS

Preparation

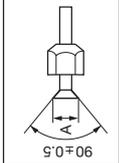
Keep the openings of the pipes covered with tapes etc. to prevent dust, sand, etc. from entering them.



- Remove the flared nuts. (on both liquid and gas sides)

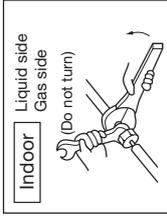


- Remove the flared nuts. (on both liquid and gas sides)

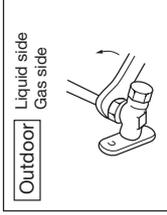


- Install the removed flared nuts to the pipes to be connected, then flare the pipes.

Connection



- Connect the pipes on both liquid and gas sides.
- Tighten the nuts to the following torque.
Liquid side (φ6.35): 14.0 – 18.0 N·m (1.4–1.8 kgf·m)
Gas side (φ9.52): 34.0 – 42.0 N·m (3.4–4.2 kgf·m)
(φ12.7): 49.0 – 61.0 N·m (4.9–6.1 kgf·m)



CAUTION

Do not apply excess torque to the flared nuts. Otherwise, the flared nuts may crack.

CAUTION

Do not apply refrigerating machine oil to the flared surface.

Flaring work

Copper pipe diameter	Measurement B (mm)	
	Clutch type flare tool for R410A	Conventional (R22) flare tool
φ6.35	0.0-0.5	1.0-1.5
φ9.52	0.0-0.5	1.5-2.0
φ12.7	0.0-0.5	2.0-2.5

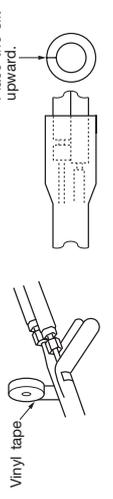
Use a flare tool designed for R410A or a conventional flare tool. Note that measurement B (protrusion from the flaring block) will vary depending on the type of a flare tool in use. If a conventional flare tool is used, use a copper pipe gauge or a similar instrument to check protrusion so that you can keep measurement B to a correct value.

Air purge

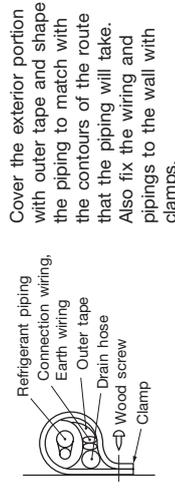
- 1 Tighten all flare nuts in the pipings both indoor and outside wall so as not to cause leak.
- 2 Connect service valve, charge hose, manifold valve and vacuum pump as is illustrated right.
- 3 Open manifold valve handle Lo to its full width, and perform vacuum or evacuation.
Continue the vacuum or evacuation operation for 15 minutes or more and check to see that the vacuum gauge reads -0.1MPa.
- 4 After completing vacuum operation, close the Lo handle and stop operation of the vacuum pump.
- 5 After completing vacuum operation, fully open service valve (Both gas and liquid sides) with hexagon headed wrench.
- 6 Check for possible leakage of gas in the connection parts of both indoor and outdoor.

Insulation of the connection portion

Cover the coupling with insulator and then cover it with tape.



Finishing work and fixing



Cover the exterior portion with outer tape and shape the piping to match with the contours of the route that the piping will take. Also fix the wiring and pipings to the wall with clamps.

INSTALLATION TEST CHECK POINTS

Check the following points again after completion of the installation, and before turning on the power. Conduct a test run again and ensure that the unit operates properly. At the same time, explain to the customer how to use the unit and how to take care of the unit following the instruction manual.

After installation

- The power source voltage is correct as the rating.
- No gas leaks from the joints of the service valve.
- Power cables and crossover wires are securely fixed to the terminal board.
- The screw of the lid is tightened securely.
- The screw of the service panel is tightened securely.
- Service valve is fully open.
- The pipe joints for indoor and outdoor pipes have been insulated.

Test run

- Air-conditioning operation is normal.
- No abnormal noise.
- Water drains smoothly.
- Protective functions are not working.
- The wireless remote control is normal.

Operation of the unit has been explained to the customer.

(Three-minute restart preventive timer)
When the air-conditioner is restarted or when changing the operation, the unit will not start operating for approximately 3 minutes. This is to protect the unit and it is not a malfunction.

RLD012A011A

(2) Models SRK63ZSPR-S, 71ZSPR-S, 80ZSPR-S

(a) Installation of indoor unit

- This installation manual illustrates the method of installing an indoor unit.
- For electrical wiring work, see instructions set out on the backside.
- For outdoor unit installation and refrigerant piping, refer to page 55.

SAFETY PRECAUTIONS

- Before installation, read the "SAFETY PRECAUTIONS" carefully and strictly follow it during the installation work in order to protect yourself!
- The precautionary items mentioned below are distinguished into two levels, **WARNING** and **CAUTION**.
- **WARNING** : Wrong installation would cause serious consequences such as injuries or death.
- **CAUTION** : Wrong installation might cause serious consequences depending on circumstances.
- Both mention the important items to protect your health and safety so strictly follow them by any means.
- Be sure to confirm no anomaly on the equipment by commissioning after completed installation and explain the operating methods as well as the maintenance methods of this equipment to the user according to the owner's manual.

Never do it under any circumstances.

WARNING

- **Installation must be carried out by the qualified installer.**
If you install the system by yourself, it may cause serious trouble such as water leaks, electric shocks, fire and personal injury, as a result of a system malfunction. Do not carry out the installation and maintenance work except the by qualified installer.
- **Install the system in full accordance with the installation manual.**
Incorrect installation may cause bursts, personal injury, water leaks, electric shocks and fire.
- **Be sure to use only for household and residence.**
If this appliance is installed in inferior environment such as machine shop and etc., it can cause malfunction.
- **Use the original accessories and the specified components for installation.**
If parts other than those prescribed by us are used, it may cause water leaks, electric shocks, fire and personal injury.
- **Install the unit in a location with good support.**
Unsuitable installation locations can cause the unit to fall resulting in material damage and personal injury.
- **Ventilate the working area well in the event of refrigerant leakage during installation.**
If the refrigerant comes into contact with naked flames, poisonous gas is produced.
- **When installing in small rooms, take prevention measures not to exceed the density limit of refrigerant in the event of leakage, referred by the formula (accordance with ISO5149).**
If the density of refrigerant exceeds the limit, consult the dealer and install the ventilation system, otherwise lack of oxygen can occur, which can cause serious accident.
- **After completing installation, check that no refrigerant leaks from the system.**
If refrigerant leaks into the room and comes into contact with an oven or other hot surface, poisonous gas is produced.
- **Use the prescribed pipes, flare nuts and tools for R410A.**
Using existing parts (for R22 or R407C) can cause the unit failure and serious accidents due to burst of the refrigerant circuit.
- **Do not put the drainage pipe directly into drainage channels where poisonous gases such as sulphide gas can occur.**
Poisonous gases will flow into the room through drainage pipe and seriously affect the user's health and safety. This can also cause the corrosion of the indoor unit and a resultant unit failure or refrigerant leak.
- **Ensure that no air enters in the refrigerant circuit when the unit is installed and removed.**
If air enters in the refrigerant circuit, the pressure in the refrigerant circuit becomes too high, which can cause burst and personal injury.
- **Do not process or splice the power cord, or share the socket with other power plugs.**
This may cause fire or electric shock due to detecting contact, detecting insulation and over-current etc.
- **Tighten the flare nut by torque wrench with specified method.**
If the flare nuts were tightened with excess torque, this may cause burst and refrigerant leakage after a long period.
- **The electrical installation must be carried out by the qualified electrician in accordance with "the norm for electrical work" and "national wiring regulation", and the system must be connected to the dedicated circuit.**
Power source with insufficient capacity and incorrect function done by improper work can cause electric shocks and fire.
- **Be sure to shut off the power before starting electrical work.**
Failure to shut off the power can cause electric shocks, unit failure or incorrect function of equipment.
- **Be sure to use the cables conformed to safety standard and cable ampacity for power distribution work.**
Unconformable cables can cause electric leak, anomalous heat production or fire.
- **This appliance must be connected to main power source by means of a circuit breaker or switch (Fuse Model 63(2)16A, Model 71(24), 80(28), 92, 100(20A) with a contact separation of at least 3mm.**
- **When plugging this appliance, a plug conforming to the norm IEC 60884-1 must be used.**
- **Use the prescribed cables for electrical connection, tighten the cables securely in terminal block and relieve the cables correctly to prevent overloading the terminal blocks.**
Loose connections or cable mountings can cause anomalous heat production or fire.
- **Arrange the wiring in the control box so that it cannot be pushed up further into the box. Install the service panel correctly.**
Incorrect installation may result in overheating and fire.
- **Be sure to switch off the power source in the event of installation, inspection or servicing.**
If the power source is not shut off, there is a risk of electric shocks, unit failure or personal injury due to the unexpected start of fan.
- **Be sure to wear protective goggles and gloves while at work.**
- **Earth leakage breaker must be installed.**
If the earth leakage breaker is not installed, it can cause electric shocks.
- **Do not bundle or wind or process the power cord. Do not deform the power cord by treating it.**
This may cause fire or heating.
- **Do not vent R410A into the atmosphere - R410A is a fluorinated greenhouse gas, covered by the Kyoto Protocol with Global Warming Potential (GWP)=1975.**
- **Do not run the unit with removed panels or protections.**
Touching rotating equipments, hot surfaces or high voltage parts can cause personal injury due to entrapment, burn or electric shocks.
- **Do not perform any change of protective device itself or its setup condition.**
The forced operation by short-circuiting protective device of pressure switch and temperature controller or the use of non specified component can cause fire or burst.

CAUTION

- **Carry out the electrical work for ground lead with care.**
Do not connect the ground lead to the gas line, water line, lightning conductor or telephone line's ground lead. Incorrect grounding can cause unit faults such as electric shocks due to short-circuiting.
- **Use the circuit breaker of correct capacity. Circuit breaker should be able to disconnect all poles under over current.**
Using the incorrect one could cause the system failure and fire.
- **Install isolator or disconnect switch on the power source wiring**
The isolator should be located in accordance with EN60204-1.
- **Be sure to install indoor unit properly according to instruction manual so that drainage can run off smoothly.**
Improper installation of indoor unit can cause dropping water into the room and damaging personal property.
- **Install the drainage pipe to run off drainage securely according to the installation manual.**
Incorrect installation of the drainage pipe can cause dropping water into the room and damaging personal property.
- **Be sure to install the drainage pipe with descending slope of 1/100 or more, and not to make traps and air-bleedings.**
Check if the drainage runs off securely during commissioning and ensure the space for inspection and maintenance.
- **After maintenance, all wiring, wiring ties and the like, should be returned to their original state and wiring route, and the necessary clearance from all metal parts should be secured.**
- **Secure a space for installation, inspection and maintenance specified in the manual.**
Insufficient space can result in accident such as personal injury due to falling from the installation place.
- **Take care when carrying the unit by hand.**
- **Do not install the unit in the locations listed below.**
Locations where carbon fiber, metal powder or any powder is floating.
- **Locations where any substances that can affect the unit such as sulphide gas, chloride gas, acid and alkaline can occur.**
- **Locations where cosmetic or special sprays are often used.**
- **Locations with direct exposure of oil mist and steam such as kitchen and machine plant.**
- **Locations where any machines which generate high frequency harmonics are used.**
- **Locations with salty atmospheres such as coastlines.**
- **Locations with heavy snow (If installed, be sure to provide base flame and snow hood mentioned in the manual).**
- **Locations where the unit is exposed to chimney smoke.**
- **Locations at high altitude (more than 1000m high).**
- **Locations with ammoniac atmospheres (e.g. organic fertilizer).**
- **Locations with calcium chloride (e.g. snow melting agent).**
- **Locations where heat radiation from other heat source can affect the unit.**
- **Locations without good air circulation.**
- **Locations with any obstacles which can prevent inlet and outlet air of the unit.**
- **Locations where short circuit of air can occur (in case of multiple units installation).**
- **Locations where strong air blows against the air outlet of outdoor unit.**
- **Locations where something located above the unit could fall.**
It can cause remarkable decrease in performance, corrosion and damage of components, malfunction and fire.
- **Do not install the indoor unit in the locations listed below (Be sure to install the indoor unit according to the installation manual for each model because each indoor unit has each limitation).**
Locations with any obstacles which can prevent inlet and outlet air of the unit.
- **Locations where vibration can be amplified due to insufficient strength of structure.**
- **Locations where the infrared receiver is exposed to the direct sunlight or the strong light beam (in case of the infrared specification unit).**
- **Locations where an equipment affected by high harmonics is placed (TV set or radio receiver is placed within 1m).**
Locations where drainage cannot run off safely.
- **Locations where drainage cannot run off easily.**
It can affect performance or function and etc.
- **Do not install the unit near the location where leakage of combustible gases can occur.**
- **If leaked gases accumulate around the unit, it can cause fire.**
- **Do not install the unit where corrosive gas (such as sulphurous acid gas etc.) or combustible gas (such as thinner and petroleum gases) can accumulate or collect, or where volatile combustible substances are handled.**
- **Corrosive gas can cause corrosion of heat exchanger, breakage of plastic parts and etc. And combustible gas can cause fire.**
- **Do not use the indoor unit at the place where water splashes may occur such as in laundries.**
Since the indoor unit is not waterproof, it can cause electric shocks and fire.
- **Do not install nor use the system close to the equipment that generates electromagnetic fields or high frequency harmonics.**
Equipment such as inverters, standby generators, medical high frequency equipment and telecommunication equipments can affect the system, and cause malfunctions and breakdowns. The system can also affect medical equipment and telecommunication equipment, and obstruct its function or cause jamming.
- **Do not place any variables which will be damaged by getting wet under the indoor unit.**
When the relative humidity is higher than 80% or drainage pipe is clogged, condensation or drainage water can drop and it can cause the damage of variables.
- **Do not install the remote control at the direct sunlight.**
It can cause malfunction or deformation of the remote control.
- **Do not use the unit for special purposes such as storing foods, cooling precision instruments and preservation of animals, plants or art.**
It can cause the damage of the items.
- **Do not use any materials other than a fuse with the correct rating in the location where fuses are to be used.**
Connecting the circuit with copper wire or other metal thread can cause unit failure and fire.
- **Do not touch any buttons with wet hands.**
It can cause electric shocks.
- **Do not touch any refrigerant pipes with your hands when the system is in operation.**
During operation the refrigerant pipes become extremely hot or extremely cold depending on the operating condition, and it can cause burn injury or frost injury.
- **Do not wash the inside of the air-conditioner.**
Water leakage and permanent damage may result.
- **Electrical hazard exists.**

BEFORE INSTALLATION

Before installation check that the power source matches the air-conditioner.

Standard accessories (Installation kit)	Qty
Accessories for indoor unit	
1 Installation board (Attached to the rear of the indoor unit)	1
2 Wireless remote control	1
3 Remote control holder	1
4 Tapping screws (for installation board 64 X 25mm)	10
5 Wood screws (for remote control holder 63.5 X 16mm)	2
6 Battery (R03 (AAA, Micro) 1.5V)	2
7 Air-cleaning filters	2
8 Filter holders	2
9 Insulation (#486 50 x 100 (3))	1

Locally procured parts	Qty
a Sealing plate	1
b Sleeve	1
c Inclination plate	1
d Putty	1
e Drain hose (extension hose)	1
f Piping cover (for insulation of connection piping)	1

Necessary tools for the installation work
1 Plus headed driver
2 Knife
3 Saw
4 Tape measure
5 Hammer
6 Spanner wrench
7 Torque wrench (14.0 - 82.0N.m (1.4 - 8.2kgf.m))
8 Hole core drill (65mm in diameter)
9 Wrench key (Hexagon) [4mm]
10 Flaring tool set (Designed specifically for R410A)
11 Gas leak detector (Designed specifically for R410A)
12 Gauge for projection adjustment (Used when flare is made by using conventional flare tool)
13 Pipe bender

SELECTION OF INSTALLATION LOCATION

(Install at location that meets the following conditions, after getting approval from the customer)

- Indoor unit**
- Where there is no obstructions to the air flow and where the cooled and heated air can be evenly distributed.
 - A solid place where the unit or the wall will not vibrate.
 - A place where there will be enough space for servicing. (Where space mentioned below can be secured)
 - Where wiring and the piping work will be easy to conduct.
 - The place where receiving part is not exposed to the direct rays of the sun or the strong rays of the street lighting.
 - A place where the unit can be easily drained.
 - Places where the unit is not affected by the television or the radio. (To prevent interferences to images and sounds.)
 - Places where this unit is not affected by the high frequency equipment or electric equipment.
 - Avoid installing this unit in place where there is much oil mist.
 - Places where there is no electric equipment or household under the installing unit.
 - Install the indoor unit on the wall where the height from the floor to the bottom of the unit is more than 1.8m.

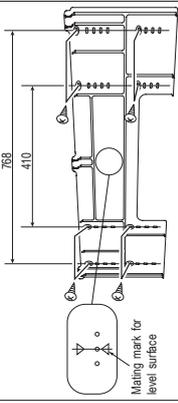
Wireless remote control

- A place where the air-conditioner can be received the signal surely during operating the wireless remote control.
- Places where there is no affected by the fan and radio etc.
- Do not place where exposed to direct sunlight or near heat devices such as a stove.

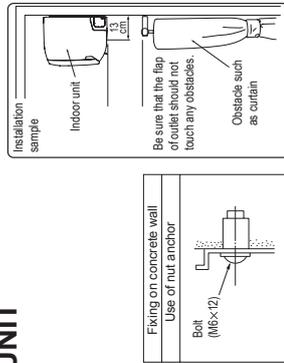
INSTALLATION OF INDOOR UNIT

Installation of installation board

Look for the inside wall structures (intermediate support or pillar and firmly install the unit after level surface has been checked.)

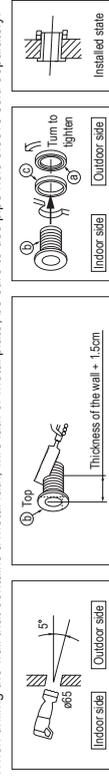


Adjustment of the installation board in the horizontal direction is to be conducted with eight screws in a temporary/lightened state.
Adjust so the board will be level by turning the board with the standard hole as the center.



Drilling of hole and fixture of sleeve (Locally procured parts)

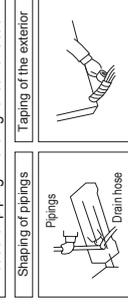
When drilling the wall that contains a metal lath, wire lath or metal plate, be sure to use pipe hole sleeve sold separately.



In case of rear piping draw out, cut off the lower and the right side portions of the sleeve collar.

Installing the support of piping

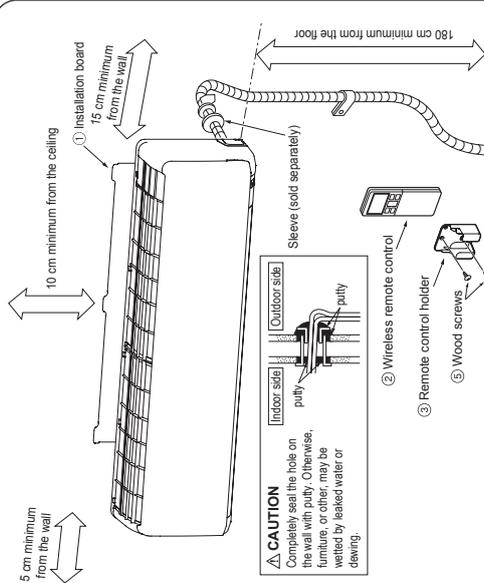
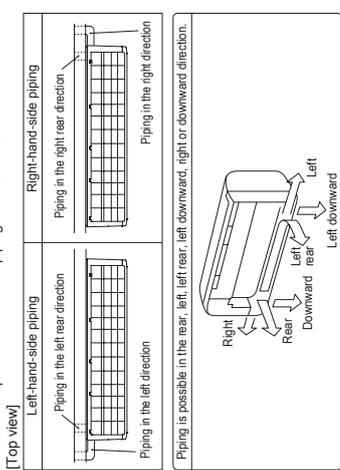
In case of piping in the right rear direction



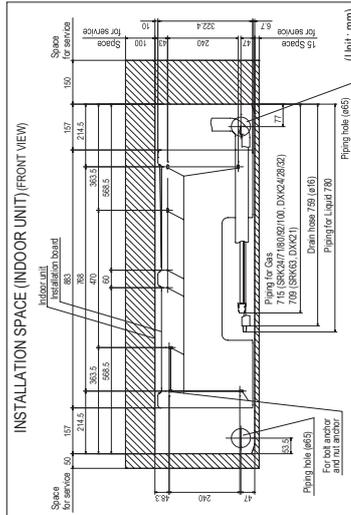
Hold the bottom of the piping and fix direction before stretching it and shaping it.
Tape only the portion that goes through the wall.
Always tape the wiring with the piping.

Sufficient care must be taken not to damage the panel when connecting pipes.

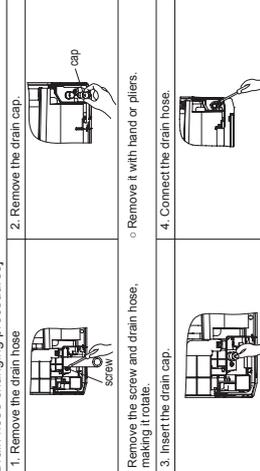
Matters of special notice when piping from left or central/rear of the unit.



Relation between setting plate and indoor unit



Drain hose changing procedures



Insert the drain cap which was removed at procedure "2" securely using a hexagonal wrench etc.
Note: Be careful that if it is not inserted securely, water leakage may occur.

Fixing of indoor unit

Since this air-conditioner has been designed to collect dew drops on the rear surface to the drain pan, do not attach the power cord above the gutter.

Pipe accommodating section

Installation Steps

- 1 Pass the pipe through the hole in the wall, and hook the upper part of the indoor unit to the installation board.
- 2 Gently push the lower part to secure the unit.

How to remove the indoor unit from the installation board

- 1 Push up at the marked portion of the indoor unit base lower latch, and slightly pull it toward you, (both right and left hand sides). (The indoor unit base lower latch can be removed from the installation board)
- 2 Push up the indoor unit upward so that it can be removed from installation board.

Drainage

- o Arrange the drain hose in a downward angle. Otherwise water leak may occur.
- o Avoid the following drain piping.

CAUTION Go through all installation steps and check if the drainage is all right. Otherwise water leak may occur.

- o Pour water to the drain pan located under the heat exchanger, and ensure that the water is discharged outdoor.
- o When extended drain hose is present inside the room, insulate it securely with heat insulator available in the market.

CONNECTION OF REFRIGERANT PIPINGS

Preparation Keep the openings of the pipes covered with tapes etc. to prevent dust, sand, etc. from entering them.

Indoor (Do not turn)

CAUTION Do not apply refrigerating machine oil to the flared surfaces.

Dimension A
Liquid side ø6.35 : 8.1 (mm)
ø9.52 : 13.2 (mm)
Gas side ø9.52 : 13.2 (mm)
ø15.88 : 19.7 (mm)

o Install the removed flared nuts to the pipes to be connected, then flare the pipes.

Flaring work

Use a flare tool designed for R410A or a conventional flare tool. Note that measurement B (protrusion from the flaring block) will vary depending on the type of a flare tool in use. If a conventional flare tool is used, use a copper pipe gauge or a similar instrument to check protrusion so that you can keep measurement B to a correct value.

Copper pipe diameter	Measurement B (mm)	
	Clutch type flare tool for R410A	Conventional (R22) flare tool
ø6.35	0.0 - 0.5	1.0 - 1.5
ø9.52	0.0 - 0.5	1.0 - 1.5
ø12.7	0.0 - 0.5	1.0 - 1.5
ø15.88	0.0 - 0.5	1.0 - 1.5

Flaring block
Copper pipe

Insulation of the connection portion

Cover the coupling with insulator and then cover it with tapes. Use an attached insulation pad for heat insulation.

Position it so that the slit area faces upward.

- o Cover the indoor unit's flap-connected joints, after they are checked for a gas leak, with an indoor unit heat insulating material and then wrap them with a tape with an attached insulation pad placed over the heat insulating material's slit area.

Finishing work and fixing

Cover the exterior portion with outer tape and shape the piping to match with the contours of the route that piping will take. Also fix the wiring and pipings to the wall with clamps.

CAUTION Do not apply excess torque to the flared nuts. Otherwise, the flared nuts may crack.

If DC7/NP is connected, use reducer of gas side of indoor unit to change the pipe size from ø19.88 to ø12.7. (Reducer is attached in the outdoor unit accessory)

Open/close and detachment/attachment of the air inlet panel

o To open, pull the panel at both ends of lower part and release latches, then pull up the panel until you feel resistance. (The panel stops at approx. 60° open position)

o To close, hold the panel at both ends of lower part to lower downward and push it slightly until the latch works.

o To remove, pull up the panel to the position shown in right illustration and pull it toward you.

o To install, insert the panel arm into the slot on the front panel from the position shown in right illustration, hold the panel at both ends of lower part, lower it downward slowly, then push it slightly until the latch works.

To remove / To install

How to remove and install the front panel

Removing

- 1 Remove the air inlet panel.
- 2 Remove the 8 screws fixing to the front panel.
- 3 Remove the 5 latches in the upper section of the front panel and then remove the front panel from the unit.

Installing

- 1 Remove the air filler.
- 2 Cover the unit with the front panel.
- 3 Tighten the 8 screws to fix the front panel.
- 4 Install the air filler.
- 5 Install the air inlet panel.

ELECTRICAL WIRING WORK

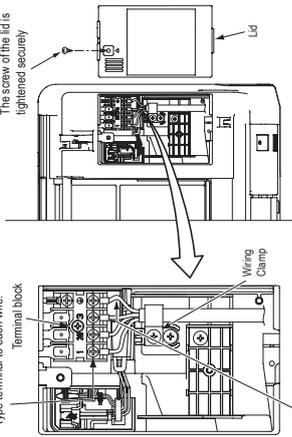
Preparation of indoor unit

- o In case of faulty wiring connection, indoor unit does not operate. Then, run lamp turns on and timer lamp blinks.

Mounting of connecting wires

- 1) Open the air inlet panel.
 - 2) Remove the lid.
 - 3) Remove the wiring clamp.
 - 4) Connect the connecting wire securely to the terminal block.
 - 1) Connect the connection wire securely to the terminal block. If the wire is not affixed completely, contact will be poor, and it is dangerous as the terminal block may heat up and catch fire.
 - 2) Take care not to confuse the terminal numbers for indoor and outdoor connections.
 - 5) Fix the connecting wire by wiring clamp.
 - 6) Attach the lid.
 - 7) Close the air inlet panel.
- Use cables for interconnection wire to avoid loosening of the wires.
 CENELEC code for cables Required field cables.
 HOSNRNR4G1.5 (example) or 245IEC57
 H Harmonized cable type
 05 300/500 volts
 R Natural-and/or synth. rubber wire insulation
 R Polythiophene rubber conductors insulation
 R Stranded core
 4or5 Number of conductors
 G One conductor of the cable is the earth conductor (yellow/green)
 1.5 Section of copper wire (mm²)

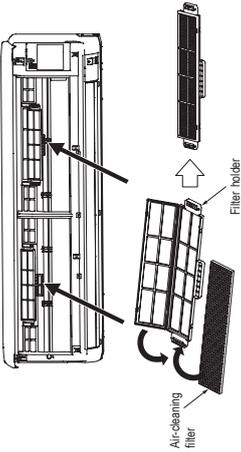
- Be sure to attach round clamp-type terminal to each wire.



- Pass the connecting wire through the path from the bottom of the control box to the front part as shown in the illustration.

Installing the air-cleaning filters

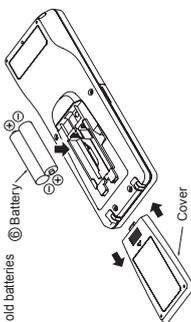
- 1) Open the air inlet panel and remove the air filters.
- 2) Install the air-cleaning filter in the filter holders, and then install the filter holders in the air-conditioner.
- 3) Each air-cleaning filter can be installed in the left or right filter holder.



INSTALLATION OF WIRELESS REMOTE CONTROL

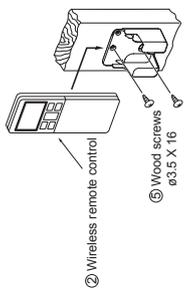
Mounting method of battery

- o Uncover the wireless remote control, and mount the batteries [R03 (AAA, Micro), x2, pieces] in the body regularly. (Fit the poles with the indication marks, ⊕ & ⊖ without fall)
- o Do not use new and old batteries together.



Fixing to pillar or wall

- o Conventionally, operate the wireless remote control by holding in your hand.
- o Avoid installing it on a clay wall etc.

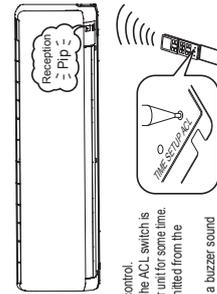


INSTALLING TWO AIR-CONDITIONERS IN THE SAME ROOM

When two air-conditioners are installed in the same room, use this setting when the two air-conditioners are not operated with one wireless remote control. Set the wireless remote control and indoor unit.

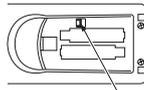
Setting an indoor unit

- 1) Turn off the power source, and turn it on after 1 minute.
 - 2) Point the wireless remote control that was set according to the procedure described on the left side at the indoor unit and send a signal by pressing the ACL switch on the wireless remote control. Since the signal is sent in about 6 seconds after the ACL switch is pressed, point the wireless remote control at the indoor unit for some time.
 - 3) Check that the reception buzzer sound "Pip" is emitted from the indoor unit.
- At completion of the setting, the indoor unit emits a buzzer sound "Pip". (If no reception tone is emitted, start the setting from the beginning again.)



Setting the wireless remote control

- 1) Pull out the cover and take out batteries.
- 2) Disconnect the switching line next to the battery with wire cutters.
- 3) Insert batteries. Close the cover.



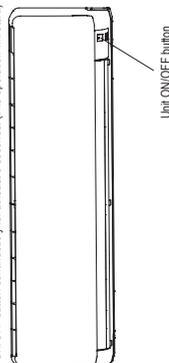
HOW TO RELOCATE OR DISPOSE OF THE UNIT

- o In order to protect the environment, be sure to pump down (recovery of refrigerant).
- o Pump down is the method of recovering refrigerant from the indoor unit to the outdoor unit when the pipes are removed from the unit.

<How to pump down>

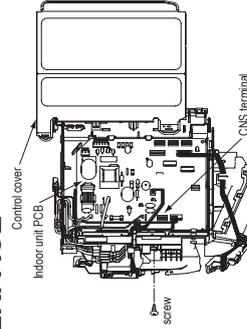
- 1) Connect charge hose to check point of outdoor unit.
- 2) Liquid side - Close the liquid valve with hexagon wrench key.
 Gas side - Fully open the gas valve.
 Carry out cooling operation. (If indoor temperature is low, operate forced cooling operation.)
- 3) After low pressure gauge become 0.01MPa, stop cooling operation and close the gas valve.

- Forced cooling operation
 Turn on power source again after a while. Then, press the ON/OFF button continuously for at least 5 seconds. (The operation will start.)



TERMINAL CONNECTION FOR AN INTERFACE

- 1) Remove the air inlet panel, lid and front panel.
 - 2) Remove the control cover. (Remove the screw.)
 - 3) There is a terminal (respectively marked with CNS) for the indoor control board. In connecting an interface, connect to the respective terminal securely with the connection harness supplied with an option "Interface connection kit SC-BIKN-E" and fasten the connection harness onto the indoor control box with the clamp supplied with the kit.
- For more details, refer to the user's manual of your "Interface connection kit SC-BIKN-E".



INSTALLATION TEST CHECK POINTS

After installation

- The power source voltage is correct as the rating.
- No gas leaks from the joints of the service valve.
- Power cables and crossover wires are securely fixed to the terminal board.

Test run

- Air-conditioning operation is normal.
- The wireless remote control is normal.
- No abnormal noise.
- Water drains smoothly.
- Protective functions are not working.

Check the following points again after completion of the installation, and before turning on the power. Conduct a test run again and ensure that the unit operates properly. At the same time, explain to the customer how to use the unit and how to take care of the unit following the user's manual.

- Operation of the unit has been explained to the customer. (Three-minutes restart preventive timer)
- When the air-conditioner is restarted or when changing the operation, the unit will not start operating for approximately 3 minutes. This is to protect the unit and it is not a malfunction.

RCR012A203A

Models 63-71-80
R410A REFRIGERANT USED

(b) Installation of outdoor unit

- This installation manual deals with outdoor units and general installation specifications only. For indoor units, refer to page 51.
- While installing the unit, be sure to check the selection of installation place, power source specifications, usage limitation (piping length, height differences between indoor and outdoor units, power source voltage etc.) and installation spaces.

SAFETY PRECAUTIONS

- Before installation, read the "SAFETY PRECAUTIONS" carefully and strictly follow it during the installation work in order to protect yourself.
- The precautionary items mentioned below are distinguished into two levels, **WARNING** and **CAUTION**.
- **WARNING**: Wrong installation would cause serious consequences such as injuries or death.
- **CAUTION**: Wrong installation might cause serious consequences depending on circumstances.
- Both mention the important items to protect your health and safety so strictly follow them by any means.
- Be sure to confirm no anomaly on the equipment by commissioning after completing installation and explain the operating methods as well as the maintenance methods of this equipment to the user according to the owner's manual.
- Keep the installation manual together with owner's manual at a place where any user can read at any time. Moreover if necessary, ask to hand them to a new user.
- Before starting the installation work, proper precautions (using suitable protective clothing, groves etc.) should be taken by qualified installer.
- Pay attention not to fall down the tools, etc., when installing the unit at the high position.
- If unusual noise can be heard during operation, consult the dealer.
- The meanings of "Marks" used here are shown as follows:

	Never do it under any circumstances.
	Always do it according to the instruction.

WARNING

<p>Installation must be carried out by the qualified installer. If you install the system by yourself, it may cause serious trouble such as water leaks, electric shocks, fire and personal injury, as a result of a system malfunction. Do not carry out the installation and maintenance work except the by qualified installer.</p> <ul style="list-style-type: none"> • Install the system in full accordance with the installation manual. Incorrect installation may cause bursts, personal injury, water leaks, electric shocks and fire. • Be sure to use only for household and residence. If this appliance is installed in interior environment such as machine shop etc., it can cause malfunction. • When installing in small rooms, take prevention measures not to exceed the density limit of refrigerant in the event of leakage, referred by the formula (accordance with ISO5149). If the density of refrigerant exceeds the limit, consult the dealer and install the ventilation system, otherwise lack of oxygen can occur, which can cause serious accident. • Use the original accessories and the specified components for installation. If parts other than those prescribed by us are used, it may cause water leaks, electric shocks, fire and personal injury. • Install the unit in a location with good support. Unsuitable installation locations can cause the unit to fall, resulting in material damage and personal injury. • Ensure the unit is stable when installed, so that it can withstand earthquakes and strong winds. Unsuitable installation locations can cause the unit to fall and cause material damage and personal injury. <p>• Ensure that no air enters in the refrigerant circuit when the unit is installed and removed. If air enters in the refrigerant circuit, the pressure in the refrigerant circuit becomes too high, which can cause burst and personal injury.</p> <ul style="list-style-type: none"> • Do not process or splice the power cord, or share the socket with other power plugs. This may cause fire or electric shock due to deflecting contact, deflecting insulation and over-current etc. 	<p>Ventilate the working area well in the event of refrigerant leakage during installation. If the refrigerant comes into contact with naked flames, poisonous gas is produced.</p> <ul style="list-style-type: none"> • Use the prescribed pipes, flare nuts and tools for R410A. Using existing parts (for R22 or R407C) can cause the unit failure and serious accidents due to burst of the refrigerant circuit. • Tighten the flare nuts by torque wrench with specified method. If the flare nut were tightened with excess torque, this may cause burst and refrigerant leakage after a long period. • Do not open the service valves for liquid line and gas line until completed refrigerant piping work, air tightness test and evacuation. If the compressor is operated in state of opening service valves before completing connection of refrigerant piping work, air can be sucked into refrigerant circuit, which can cause burst or personal injury due to anomalously high pressure in the refrigerant. • The electrical installation must be carried out by the qualified electrician in accordance with "the norm for electrical work" and "national wiring regulation", and the system must be connected to the dedicated circuit. Power source with insufficient capacity and incorrect function done by improper work can cause electric shocks and fire. • Be sure to shut off the power before starting electrical work. Failure to shut off the power can cause electric shocks, unit failure or incorrect function of equipment. • Be sure to use the cables conformed to safety standard and cable ampacity for power distribution work. Unconformable cables can cause electric leak, anomalous heat production or fire. • This appliance must be connected to main power source by means of a power cord by treading it. This may cause fire or heating. • Do not run the unit with removed panels or protections. Touching rotating equipments, hot surfaces or high voltage parts can cause personal injury due to entrapment, burn or electric shocks.
<p>Installation must be carried out by the qualified installer. If you install the system by yourself, it may cause serious trouble such as water leaks, electric shocks, fire and personal injury, as a result of a system malfunction. Do not carry out the installation and maintenance work except the by qualified installer.</p> <ul style="list-style-type: none"> • Install the system in full accordance with the installation manual. Incorrect installation may cause bursts, personal injury, water leaks, electric shocks and fire. • Be sure to use only for household and residence. If this appliance is installed in interior environment such as machine shop etc., it can cause malfunction. • When installing in small rooms, take prevention measures not to exceed the density limit of refrigerant in the event of leakage, referred by the formula (accordance with ISO5149). If the density of refrigerant exceeds the limit, consult the dealer and install the ventilation system, otherwise lack of oxygen can occur, which can cause serious accident. • Use the original accessories and the specified components for installation. If parts other than those prescribed by us are used, it may cause water leaks, electric shocks, fire and personal injury. • Install the unit in a location with good support. Unsuitable installation locations can cause the unit to fall, resulting in material damage and personal injury. • Ensure the unit is stable when installed, so that it can withstand earthquakes and strong winds. Unsuitable installation locations can cause the unit to fall and cause material damage and personal injury. <p>• Ensure that no air enters in the refrigerant circuit when the unit is installed and removed. If air enters in the refrigerant circuit, the pressure in the refrigerant circuit becomes too high, which can cause burst and personal injury.</p> <ul style="list-style-type: none"> • Do not process or splice the power cord, or share the socket with other power plugs. This may cause fire or electric shock due to deflecting contact, deflecting insulation and over-current etc. 	<p>Stop the compressor before removing the pipe after shutting the service valve on pump down work. If the pipe is removed when the compressor is in operation with the service valve open, air would be mixed in the refrigeration circuit and it could cause explosion and injuries due to abnormal high pressure in the cooling cycle.</p> <ul style="list-style-type: none"> • Only use prescribed option parts. The installation must be carried out by the qualified installer. If you install the system by yourself, it can cause serious trouble such as water leaks, electric shocks, fire. • Be sure to wear protective goggles and gloves while at work. • Earth leakage breaker must be installed. If the earth leakage breaker is not installed, it can cause electric shocks. <p>• Do not perform any change of protective device itself or its setup condition. The forced operation by short-circuiting protective device of pressure switch and temperature controller or the use of non specified component can cause fire or burst.</p>

⚠ CAUTION

⚡ Carry out the electrical work for ground lead with care.

- Do not connect the ground lead to the gas line, water line, lightning conductor or telephone line's ground lead. Incorrect grounding can cause unit faults such as electric shocks due to short-circuiting.
- Use the circuit breaker for all pole correct capacity. Circuit breaker should be able to disconnect all poles under over current.** Using the incorrect circuit breaker, it can cause the unit malfunction and fire.
- Install isolator or disconnect switch on the power source wiring in accordance with the local codes and regulations.** The isolator should be locked in OFF state in accordance with EN60204-1.
- After maintenance, all wiring, wiring ties and the like, should be returned to their original state and wiring route, and the necessary clearance from all metal parts should be secured.**
- Secure a space for installation, inspection and maintenance specified in the manual.** Insufficient space can result in accident such as personal injury due to falling from the installation place.

⊘ Do not install the unit in the locations listed below.

- Locations where carbon fiber, metal powder or any powder is floating.
- Locations where any substances that can affect the unit such as sulphide gas, chloride gas, acid and alkaline can occur.
- Vehicles and ships.
- Locations where cosmetic or special sprays are often used.
- Locations with direct exposure of oil mist and steam such as kitchen and machine plant.
- Locations where any machines which generate high frequency harmonics are used.
- Locations with salty atmospheres such as coastlines.
- Locations with heavy snow (If installed, be sure to provide base flame and snow hood mentioned in the manual).
- Locations where the unit is exposed to chimney smoke.
- Locations at high altitude (more than 1000m high).
- Locations with ammoniac atmospheres (e.g. organic fertilizer).
- Locations with calcium chloride (e.g. snow melting agent).
- Locations where heat radiation from other heat source can affect the unit.
- Locations without good air circulation.
- Locations with any obstacles which can prevent inlet and outlet air of the unit.
- Locations where short circuit of air can occur (in case of multiple units installation).
- Locations where strong air blows against the air outlet of outdoor unit.
- Locations where something located above the unit could fall.
- It can cause remarkable decrease in performance, corrosion and damage of components, malfunction and fire.

⚙ Check before installation work

- Model name and power source
- Refrigerant piping length
- Piping, wiring and miscellaneous small parts
- Indoor unit installation manual

Accessories for outdoor unit	Q'ty
Grommet (Heat pump type only)	4
Model 63	2

Locally procured parts	Q'ty
Sealing plate	1
Sleeve	1
Inclination plate	1
Putty	1
Drain hose (extension hose)	1
Piping cover (for insulation of connection piping)	1

Necessary tools for the installation work	
1 Plus headed driver	
2 Knife	
3 Saw	
4 Tape measure	
5 Hammer	
6 Spanner wrench	
7 Torque wrench [14.0-82.0N·m (1,4-8.2kgf·m)]	
8 Hole core drill (65mm in diameter)	

9 Wrench key (Hexagon)	[4m/m]
10 Vacuum pump	
11 Vacuum pump adapter (Anti-reverse flow type) (Designed specifically for R410A)	
12 Gauge manifold (Designed specifically for R410A)	
13 Charge hose (Designed specifically for R410A)	
14 Flaring tool set (Designed specifically for R410A)	
15 Gas leak detector (Designed specifically for R410A)	
16 Gauge for projection adjustment (Used when flare is made by using conventional flare tool)	

- When perform the air-conditioner operation (cooling or dehumidifying operation) in which ventilator is installed in the room. In this case, using the air-conditioner in parallel with the ventilator, there is the possibility that drain water may backflow in accordance with the room lapse into the negative pressure status. Therefore, set up the opening port such as incorporate the air into the room that may appropriate to ventilation (For example: Open the door a little). In addition, just as above, so set up the opening port if the room lapse into negative pressure status due to register of the wind for the high rise apartment etc.

- Do not install the outdoor unit in a location where insects and small animals can inhabit.** Insects and small animals can enter the electric parts and cause damage or fire. Instruct the user to keep the surroundings clean.
- Do not use the base frame for outdoor unit which is corroded or damaged due to long periods of operation.** Using an old and damaged base frame can cause the unit falling down and cause personal injury.
- Do not use any materials other than a fuse with the correct rating in the location where fuses are to be used.** Connecting the circuit with copper wire or other metal thread can cause unit failure and fire.
- Do not touch any buttons with wet hands.** It can cause electric shocks.
- Do not touch any refrigerant pipes with your hands when the system is in operation.** During operation the refrigerant pipes become extremely hot or extremely cold depending on the operating condition, and it can cause burn injury or frost injury. This may cause injury.
- Do not put anything on the outdoor unit and operating unit.** This may cause damage the objects or injury due to falling to the object.
- Do not use the unit for special purposes such as storing foods, cooling precision instruments and preservation of animals, plants or art.**
- Do not clean up the unit with water.**

- Take care when carrying the unit by hand.** If the unit weights more than 20kg, it must be carried by two or more persons. Do not carry by the plastic straps. Always use the carry handle when carrying the unit by hand. Use gloves to minimize the risk of cuts by the aluminum fins.
- Dispose of any packing materials correctly.** Any remaining packing materials can cause personal injury as it contains nails and wood. And to avoid danger of suffocation, be sure to keep the plastic wrapper away from children and to dispose after tear it up.
- Be sure to insulate the refrigerant pipes so as not to condense the ambient air moisture on them.** Insufficient insulation can cause condensation, which can lead to moisture damage on the ceiling, floor, furniture and any other valuables.
- Do not install the outdoor unit in the locations listed below.**
 - Locations where discharged hot air or operating sound of the outdoor unit can bother neighborhood.
 - Locations where outlet air of the outdoor unit blows directly to an animal or plants. The outlet air can affect adversely to the plant etc.
 - Locations where vibration can be amplified and transmitted due to insufficient strength of structure.
 - Locations where vibration and operation sound generated by the outdoor unit can affect seriously (on the wall or at the place near bed room).
 - Locations where an equipment affected by high harmonics is placed (TV set or radio receiver is placed within 1m).
 - Locations where drainage cannot run off safely. It can affect surrounding environment and cause a claim.
- Do not install the unit near the location where leakage of combustible gases can occur.** If leaked gases accumulate around the unit, it can cause fire.
- Do not install the unit where corrosive gas (such as sulfuric acid gas etc.) or combustible gas (such as thinner and petroleum gases) can accumulate or collect, or where volatile combustible substances are handled.** Corrosive gas can cause corrosion of heat exchanger, breakage of plastic parts and etc. And combustible gas can cause fire.
- Do not install nor use the system close to the equipment that generates electromagnetic fields or high frequency harmonics.** Equipment such as inverters, standby generators, medical high frequency equipments and telecommunication equipments can affect the system, and cause malfunctions and breakdowns. The system can also affect medical equipment and telecommunication equipment, and obstruct its function or cause jamming.

Note as a unit designed for R410A

- Do not use any refrigerant other than R410A. R410A will rise to pressure about 1.6 times higher than that of a conventional refrigerant.
- A cylinder containing R410A has a pink indication mark on the top.
- A unit designed for R410A has adopted a different size indoor unit, service valve charge port and a different size check joint provided in the unit to prevent the charging of a wrong refrigerant by mistake. The processed dimension of the flared part of a refrigerant pipe and a flare nut's parallel side measurement have also been altered to raise strength against pressure.
- Accordingly, you are required to arrange dedicated R410A tools listed in the table on the left before installing or servicing this unit.
- Do not use a charge cylinder. The use of a charge cylinder will cause the refrigerant composition to change, which results in performance degradation.
- In charging refrigerant, always take it out from a cylinder in the liquid phase.
- All indoor units must be models designed exclusively for R410A. Check connectable indoor unit models in a catalog, etc. (A wrong indoor unit, if connected into the system, will impair proper system operation)

1. HAULAGE AND INSTALLATION

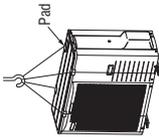
(Take particular care in carrying in or moving the unit, and always perform such an operation with two or more persons.)

CAUTION

When a unit is hoisted with slings for haulage, take into consideration the offset of its gravity center position. If not properly balanced, the unit can be thrown off-balance and fall.

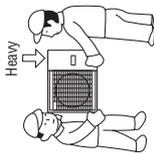
1) Delivery

- Deliver the unit as close as possible to the installation site before removing it from the packaging.
- When you have to unpack the unit for a compelling reason before you haul it to the installation point, hoist the unit with nylon slings or ropes and protection pads so that you may not damage the unit.



2) Portage

- The right hand side of the unit as viewed from the front (Fan side) is heavier. A person carrying the right hand side must take heed of this fact. A person carrying the left hand side must hold with his right hand the handle provided on the front panel of the unit and with his left hand the corner column section.



3) Selecting the installation location

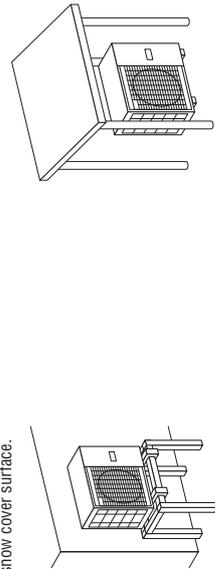
Be sure to select a suitable installation place in consideration of following conditions.

- A place where it is horizontal, stable and can endure the unit weight and will not allow vibration transmittance of the unit.
 - A place where it can be free from possibility of bothering neighbors due to noise or exhaust air from the unit.
 - A place where the unit is not exposed to oil splashes.
 - A place where it can be free from danger of flammable gas leakage.
 - A place where drain water can be disposed without any trouble.
 - A place where the unit will not be affected by heat radiation from other heat source.
 - A place where the unit can be kept away 1m or more from TV set and/or radio receiver in order to avoid any TV set or radio receiver interference.
 - A place where good air circulation can be secured, and enough service space can be secured for maintenance and service of the unit safely.
 - A place where the unit will not be affected by electromagnetic waves and/or high-harmonic waves generated by other equipment.
 - A place where chemical substances like sulfuric gas, chloric gas, acid and alkali (including ammonia), which can harm the unit, will not be generated and not remain.
 - If a operation is conducted when the outdoor air temperature is -5 or lower, the outdoor unit should be installed at a place where it is not influenced by natural wind.
 - A place where strong wind will not blow against the outlet air blow of the unit.
 - A place where stringent regulation of electric noises is not applicable.
- Do not install the unit in places which exposed to sea breeze (e.g. coastal area) or calcium chloride (e.g. snow melting agent), exposed to ammonia substance (e.g. organic fertilizer).

4) Caution about selection of installation location

- (1) If the unit is installed in the area where the snow will accumulate, following measures are required. The bottom plate of unit and intake, outlet may be blocked by snow.

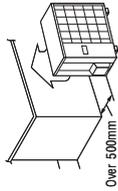
- 1 Install the unit on the base so that the bottom is higher than snow cover surface.
- 2 Install the unit under or provide the roof on site.



- Since drain water generated by defrost control may freeze, following measures are required.
- Do not execute drain piping work by using a drain elbow and drain grommets (accessories). [Refer to Drain piping work.]

- (2) If the unit can be affected by strong wind, following measures are required. Strong wind can cause damage of fan (fan motor), or can cause performance degradation, or can trigger anomalous stop of the unit due to rising of high pressure.

- 1 Place the unit outlet side is turned to the wall.



- 2 Install so the direction of the air from the blowing outlet will be perpendicular to the direction of the wind.

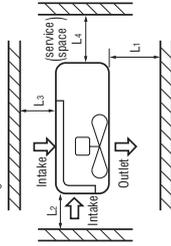


5) Installation space

- Walls surrounding the unit in the four sides are not acceptable.
- There must be a 1-meter or larger space in the above.
- When more than one unit are installed side by side, provide a 250mm or wider interval between them as a service space. In order to facilitate servicing of controllers, provide a sufficient space between units so that their top plates can be removed easily.
- Where a danger of short-circuiting exists, install guide louvers.
- When more than one unit are installed, provide sufficient intake space consciously so that short-circuiting may not occur.
- Where piling snow can bury the outdoor unit, provide proper snow guards.

Example Installation Size	Model 63				Model 71, 80			
	I	II	III	IV	I	II	III	IV
L1	Open	280	280	180	Open	Open	500	500
L2	100	75	Open	300	250	Open	100	100
L3	100	80	80	80	100	150	150	100
L4	250	Open	250	Open	250	250	250	250

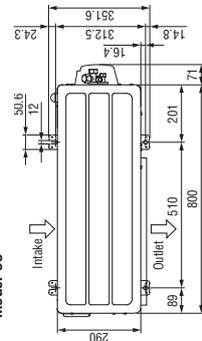
The height of a wall is 1200mm or less.



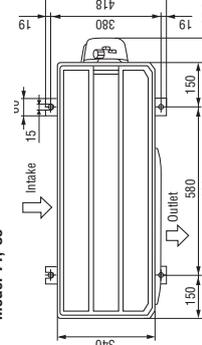
6) Installation

- ① Anchor bolt fixed position

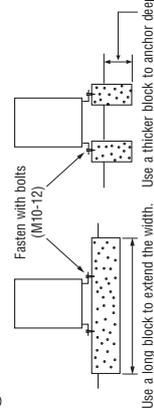
Model 63



Model 71, 80



- ② Notes for installation



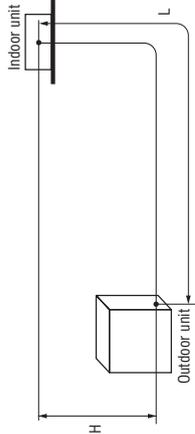
- In installing the unit, fix the unit's legs with bolts specified on the above.
- The protrusion of an anchor bolt on the front side must be kept within 15mm.
- Securely install the unit so that it does not fall over during earthquakes or strong winds, etc.
- Refer to the above illustrations for information regarding concrete foundations.
- Install the unit in a level area. (With a gradient of 5mm or less.) [Improper installation can result in a compressor failure, broken piping within the unit and abnormal noise generation.]

2. REFRIGERANT PIPING WORK

1) Restrictions on unit installation and use

- Check the following points in light of the indoor unit specifications and the installation site.
- Observe the following restrictions on unit installation and use. Improper installation can result in a compressor failure or performance degradation.

Restrictions	Dimensional restrictions	Marks appearing in the drawing on the right
Main pipe length	30m or less	L
Elevation difference between indoor and outdoor units	When the outdoor unit is positioned higher,	H
	When the outdoor unit is positioned lower,	H



⚠ CAUTION

- The use restrictions appearing in the table above are applicable to the standard pipe size combinations shown in the table below. Where an existing pipe system is utilized, different one-way pipe length restrictions should apply depending on its pipe size. For more information, see "5. UTILIZATION OF EXISTING PIPING."

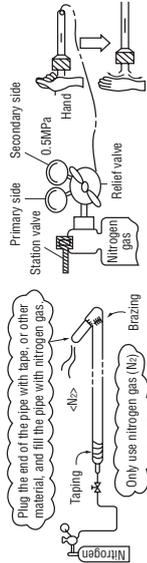
2) Determination of pipe size

Determine refrigerant pipe size according to the following guidelines based on the indoor unit specifications.

	Model 63	Model 71, 80
Outdoor unit connected	Gas pipe	Liquid pipe
	Flare	Flare
Refrigerant piping (branch pipe L)	Flare	Flare
	Flare	Flare
Indoor unit connected	Flare	Flare
	Flare	Flare

Pipe brazing

Brazing must be performed under a nitrogen gas flow. Without nitrogen gas, a large quantity of foreign matters (oxidized film) are created, causing a critical failure from capillary tube or expansion valve clogging.



3) Refrigerant pipe wall thickness and material

- Select refrigerant pipes of the table shown on the right wall thickness and material as specified for each pipe size.

Pipe diameter [mm]	ø12.7	ø15.88
Minimum pipe wall thickness [mm]	0.8	1.0
Pipe material*	O-type pipe	O-type pipe

*Phosphorus deoxidized seamless copper pipe (CS 23,040.15, ICS 77.150.30)

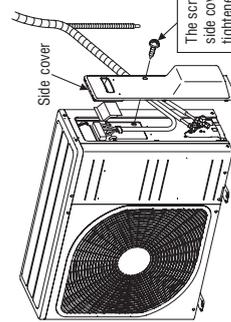
4) On-site piping work

- Take care so that installed pipes may not touch components within a unit.
- If pipes touch internal components, abnormal sounds and/or vibrations.

⚠ IMPORTANT

How to remove the side cover

- Remove the screw of the side cover and remove to the front.
- Carry out the on-site piping work with the service valve fully closed.
- Give sufficient protection to a pipe end (compressed and brazed, or with an adhesive tape) so that water or foreign matters may not enter the piping.
- Bend a pipe to a radius as large as practical (R100~R150). Do not bend a pipe repeatedly to correct its form.
- Flare connection is used between the unit and refrigerant pipe. Flare a pipe after engaging a flare nut onto it. Flare dimensions for R410A are different from those for conventional R407C. Although we recommend the use of flaring tools designed specifically for R410A, conventional flaring tools can also be used by adjusting the measurement of protrusion B with a protrusion control gauge.
- The pipe should be anchored every 1.5m or less to isolate the vibration.
- Tighten the flare joint securely with a double spanner.



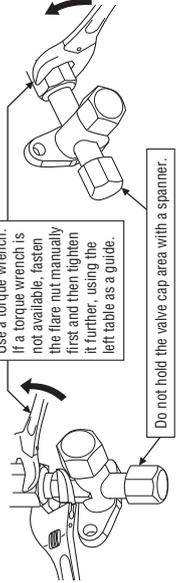
The screw of the side cover is tightened securely.

Flared pipe end : A (mm)	0	-04
Copper pipe outer diameter	ø6.35	ø9.1
	ø12.7	ø16.6
	ø15.88	ø19.7

Copper pipe protrusion for flaring : B (mm)	0-0.5	1.0-1.5
Copper pipe outer diameter	ø6.35	ø12.7
	ø15.88	

In the case of a rigid (clutch) type
With an R410A tool
With a conventional tool

Model 63



Use a torque wrench. If a torque wrench is not available, fasten the flare nut manually first and then tighten it further, using the left table as a guide.

Do not hold the valve cap area with a spanner.

Do not apply force beyond proper fastening torque in tightening the flare nut.

Fix both liquid and gas service valves at the valve main bodies as illustrated on the right, and then fasten them, applying appropriate fastening torque.

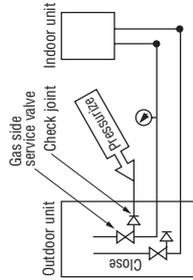
Service valve size (mm)	Tightening torque (Nm)	Tightening angle (°)	Recommended length of a tool handle (mm)
ø6.35 (1/4")	14-18	45-60	150
ø12.7 (1/2")	49-61	30-45	250
ø15.88 (5/8")	66-82	15-20	300

⚠ CAUTION

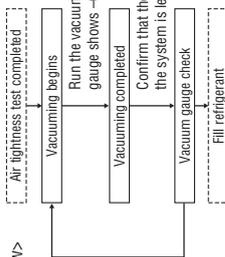
5) Air tightness test

① Although outdoor and indoor units themselves have been tested for air tightness at the factory, check the connecting pipes after the installation work from the service valve's check joint equipped on the outdoor unit side. While conducting a test, keep the service valve shut all the time.

- Raise the pressure to 0.5MPa, and then stop. Leave it for five minutes to see if the pressure drops.
 - Then raise the pressure to 1.5MPa, and stop. Leave it for five more minutes to see if the pressure drops.
 - Then raise the pressure to the specified level (4.15MPa), and record the ambient temperature and the pressure.
 - If no pressure drop is observed with an installation pressurized to the specified level and left for about one day, it is acceptable. When the ambient temperature fall 1 C, the pressure also fall approximately 0.01MPa. The pressure, if changed, should be compensated for.
 - If a pressure drop is observed in checking e) and a) - d), a leak exists somewhere. Find a leak by applying bubble test liquid to welded parts and flare joints and repair it. After repair, conduct an air tightness test again.
- ② In conducting an air tightness test, use nitrogen gas and pressurize the system with nitrogen gas from the gas side. Do not use a medium other than nitrogen gas under any circumstances.



6) Evacuation



When the system has remaining moisture inside or a leaky point, the vacuum gauge indicator will rise. Check the system for a leaky point and then draw air to create a vacuum again.

7) Additional refrigerant charge

Pay attention to the following points in addition to the above for the R410A and compatible machines.

- To prevent a different oil from entering, use dedicated tools, etc. to each refrigerant type. Under no circumstances must a gauge manifold and a charge hose in particular be shared with other refrigerant types (R22, R407C, etc.).
- Use a counterflow prevention adapter to prevent vacuum pump oil from entering the refrigerant system.

(1) Calculate a required refrigerant charge volume from the following table.

	Additional charge volume (g) per meter of refrigerant piping (liquid pipe ø6.35)	Refrigerant volume charged for shipment at the factory (kg)	Installation's pipe length (m) covered without additional refrigerant charge
Model 63	20	1.55	15
Model 71	25	1.80	15
Model 80	25	1.90	15

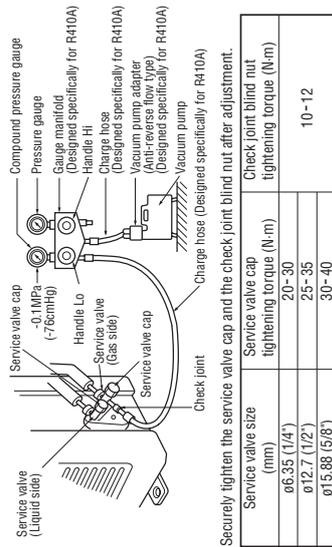
This unit contains factory charged refrigerant covering 15m of refrigerant piping and additional refrigerant charge on the installation site is not required for an installation with up to 15m refrigerant piping. When refrigerant piping exceeds 15m, additionally charge an amount calculated from the pipe length and the above table for the portion in excess of 15m.

- If an existing pipe system is used, required refrigerant charge volume will vary depending on the liquid pipe size. For further information, see "5. UTILIZATION OF EXISTING PIPING."

Formula to calculate the volume of additional refrigerant required

Model 63	Additional charge volume (g) = {Mean length (m) - Factory charged volume 15 (m)} x 20 (g/m)
Model 71, 80	Additional charge volume (g) = {Mean length (m) - Factory charged volume 15 (m)} x 25 (g/m)

- When an additional charge volume calculation result is negative, it is not necessary to charge refrigerant additionally.
- For an installation measuring 15m or shorter in pipe length, charge the refrigerant volume charged for shipment at the factory, when you recharge refrigerant after servicing etc.



Securely tighten the service valve cap and the check joint blind nut after adjustment.

Service valve size (mm)	Service valve cap tightening torque (N·m)	Check joint blind nut tightening torque (N·m)
ø6.35 (1/4")	20-30	10-12
ø12.7 (1/2")	25-35	
ø15.88 (5/8")	30-40	

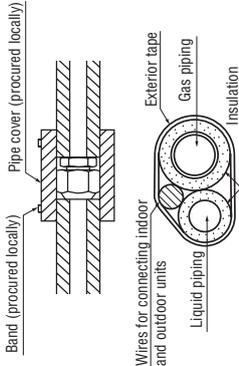
(2) Charging refrigerant

- Since R410A refrigerant must be charged in the liquid phase, you should charge it keeping the container cylinder upside down or using a refrigerant cylinder equipped with a siphon tube.
- Charge refrigerant always from the liquid side service port with the service valve shut. When you find it difficult to charge a required amount, fully open the outdoor unit valves on both liquid and gas sides and charge refrigerant from the gas (suction) side service port, while running the unit in the cooling mode. In doing so, care must be taken so that refrigerant may be discharged from the cylinder in the liquid phase all the time. When the cylinder valve is throttled down or a dedicated conversion tool to change liquid phase refrigerant into mist is used to protect the compressor, however, adjust charge conditions so that refrigerant will gassy upon entering the unit.
- In charging refrigerant, always charge a calculated volume by using a scale to measure the charge volume.
- When refrigerant is charged with the unit being run, complete a charge operation within 30minutes. Running the unit with an insufficient quantity of refrigerant for a long time can cause a compressor failure.

NOTE Put down the refrigerant volume calculated from the pipe length onto the caution label attached on the service panel.

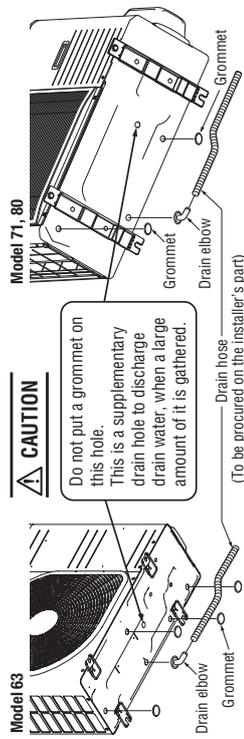
8) Heating and condensation prevention

- (1) Dress refrigerant pipes (both gas and liquid pipes) for heat insulation and prevention of dew condensation.
 - Improper heat insulation/anti-dew dressing can result in a water leak or dripping causing damage to household effects, etc.
- (2) Use a heat-insulating material that can withstand +20°C or a higher temperature. Poor heat-insulating capacity can cause heat-insulation problems or cable deterioration.
 - All gas pipes must be securely heat insulated in order to prevent damage from dripping water that comes from the condensation formed on them during a cooling operation or personal injury from burns because their surface can reach quite a high temperature due to discharged gas flowing inside during a heating operation.
 - Wrap indoor units' flare joints with heat-insulating parts (pipe cover) for heat insulation (both gas and liquid pipes).
 - Give heat insulation to both gas and liquid side pipes. Bundle a heat-insulating material and a pipe tightly together so that no gaps may be left between them and wrap them together with a connecting cable by a dressing tape.
 - **Both gas and liquid pipes need to be dressed with 20mm or thicker heat insulation materials above the ceiling where relative humidity exceeds 70%.**



3. DRAIN PIPING WORK

- Execute drain piping by using a drain elbow and drain grommets supplied separately as accessories, where water drained from the outdoor unit is a problem.
- Water may drip where there is a larger amount of drain water. Seal around the drain elbow and drain grommets with putty or adequate caulking material.
- Condensed water may flow out from vicinity of service valve or connected pipes.
- Where you are likely to have several days of sub-zero temperatures in a row, do not use a drain elbow and drain grommets. (There is a risk of drain water freezing inside and blocking the drain.)



- When condensed water needs to be led to a drain, etc., install the unit on a flat base (supplied separately as a locally procured part) or concrete blocks. Then, secure space for the drain elbow and the drain hose.

RCR012A200C

4. ELECTRICAL WIRING WORK For details of electrical cabling, refer to the indoor unit installation manual.

- Electrical installation work must be performed by an electrical installation service provider qualified by a power provider of the country. Electrical installation work must be executed according to the technical standards and other regulations applicable to electrical installations in the country.
- Do not use any power cable lighter than one specified in parentheses for each type below.
 - braided cord (code designation 60245 IEC 51)
 - ordinary tough rubber sheathed cord (code designation 60245 IEC 53)
 - flat twin tinsel cord (code designation 60227 IEC 41)
- Use polychloroprene sheathed flexible cord (code designation 60245 IEC57) for power cables of parts of appliances for outdoor use.
- Ground the unit. Do not connect the grounding wire to a gas pipe, water pipe, lightning rod or telephone grounding wire.
 - If improperly grounded, an electric shock or malfunction may result.
 - A grounding wire must be connected before connecting the power cable. Provide a grounding wire longer than the power cable.
 - The installation of an impulse withstanding type earth leakage breaker is necessary. A failure to install an earth leakage breaker can result in an accident such as an electric shock or a fire.
 - Do not turn on the power until the electrical work is completed.
 - Do not use a condensive capacitor for power factor improvement under any circumstances. (It does not improve power factor, while it can cause an abnormal overheating accident)

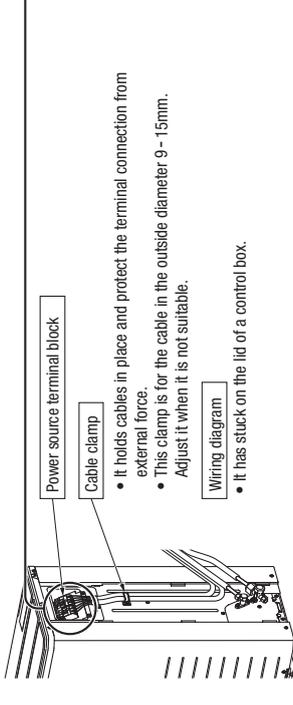
In case of faulty wiring connection, indoor unit dose not operate. Then, run lamp turns on and timer lamp blinks.

Use cables for interconnection wiring to avoid loosening of the wires. CENELEC code for cables Required field cables.

H05RN4G1.5	(Example) or 245IEC57
H	Harmonized cable type
05	300/500 volts
R	Natural-and/or synth. rubber wire insulation
N	Polychloroprene rubber conductors insulation
R	Stranded core
4or5	Number of conductors
G	One conductor of the cable is the earth conductor (yellow/green)
1.5	Section of copper wire (mm ²)

Main fuse specification

Specification	Part No.
250V 20A	SSA564A136A



Power source terminal block

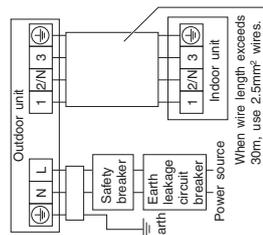
Cable clamp

- It holds cables in place and protect the terminal connection from external force.
- This clamp is for the cable in the outside diameter 9 - 15mm. Adjust it when it is not suitable.

Wiring diagram

- It has stuck on the lid of a control box.

Power cable, indoor-outdoor connecting wires

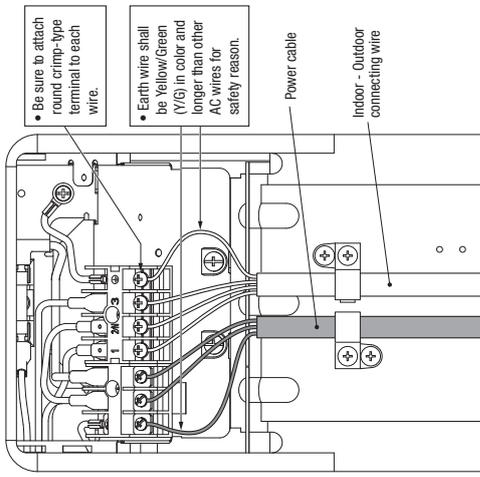


When wire length exceeds 30m, use 2.5mm² wires.

- Always perform grounding system installation work with the power cable unplugged.
- Connect a pair bearing a common terminal number with an indoor-outdoor connecting wire.
- In cabling, fasten cables securely with cable clamps so that no external force may work on terminal connections.
- Grounding terminals are provided in the terminal block.
- Use Polychloromene sheathed flexible cord (code designation 60245 IEC57, IEC60335-2-40) with cross-sectional area of 2.0 or 2.5 mm² for power cable of outdoor unit.

(POWER CABLE)
 CENELEC code for cables requiring fields cables.
 H05RN3G2.0 [MODEL 63]
 H05RN3G2.5 [MODEL 71, 80]

Power cable, indoor - outdoor connecting wire circuit diagram



- Be sure to attach round crimp-type terminal to each wire.

- Earth wire shall be Yellow/Green (Y/G) in color and longer than other AC wires for safety reason.

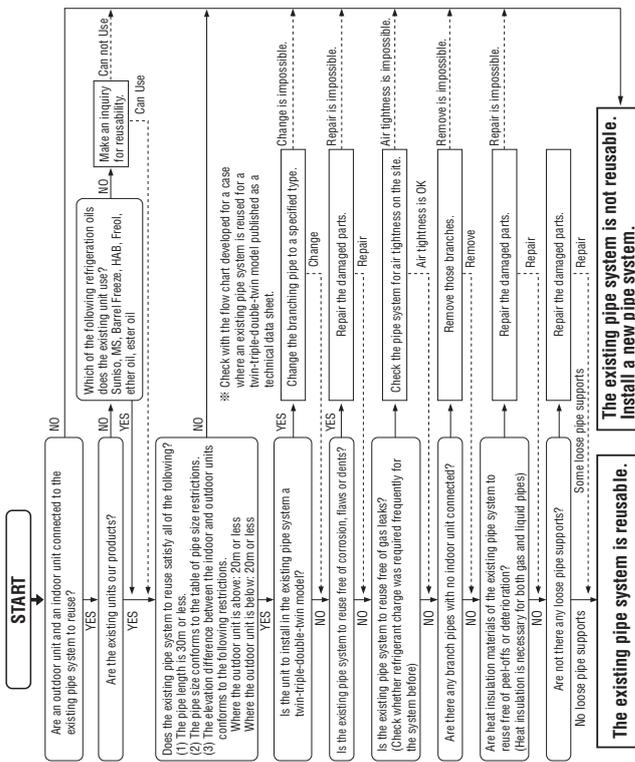
CAUTION
 Always use an earth leakage circuit breaker designed for inverter circuits to prevent a faulty operation.

	Phase	Earth leakage breaker	Switchgear or Circuit Breaker		Power source (minimum)	Interconnecting and grounding wires (minimum)
			Over current protector rated capacity	Switch breaker		
Model 63	Single-phase	15A, 30mA, 0.1sec or less	16A	30A	2.0mm ²	1.5mm ² X 4
Model 71, 80	Single-phase	20A, 30mA, 0.1sec or less	20A	30A	2.5mm ²	1.5mm ² X 4

- The specifications shown in the above table are for units without heaters. For units with heaters, refer to the installation instructions or the construction instructions of the indoor unit.
- Switchgear or Circuit breaker capacity which is calculated from maximum over current should be chosen along the regulations in each country.
- The cable specifications are based on the assumption that a metal or plastic conduit is used with no more than three cables contained in a conduit and a voltage drop is 2%. For an installation falling outside of these conditions, follow the internal cabling regulations. Adapt it to the regulation in effect in each country.

5. UTILIZATION OF EXISTING PIPING

Check whether an existing pipe system is reusable or not by using the following flow chart.



<Table of pipe size restrictions>

○: Standard pipe size △: Usable △: Restricted to shorter pipe length limits

Additional charge volume per meter of pipe	Model 63		Model 71, 80	
	20g/m	60g/m	25g/m	60g/m
Liquid pipe	06.35	09.52	06.35	09.52
Gas pipe	012.7	012.7	012.7	015.88
Usability	○	△	△	△
Maximum one-way pipe length	30	10	30	12
Length covered without additional charge	15	5	15	6

- Consult with our distributor in the area, if you need to recover refrigerant and charge it again.
- Any combinations of pipe sizes not listed in the table

Formula to calculate additional charge volume

Additional charge volume (g) =
 (Main pipe length (m) - Length covered without additional charge shown in the table (m)) X Additional charge volume per meter of pipe shown in the table (g/m)

※ If you obtain a negative figure as a result of calculation, no additional refrigerant needs to be charged.
Example When an SRC63 is installed in a 10m long existing pipe system (liquid 09.52, gas 012.7), the quantity of refrigerant to charge additionally should be (10m-5m) X 60g/m = 300g.

WARNING

<Where the existing unit can be run for a cooling operation.>
Carry out the following steps with the existing unit (in the order of (1), (2), (3) and (4))

- (1) Run the unit for 30 minutes for a cooling operation.
- (2) Stop the indoor fan and run the unit for 3 minutes for a cooling operation (returning liquid)
- (3) Close the liquid side service valve of the outdoor unit and pump down (refrigerant recovery)
- (4) Blow with nitrogen gas. ※ If discolored refrigeration oil or any foreign matters is discharged by the blow, wash the pipe system or install a new pipe system.
 - For the flare nut, do not use the old one, but use the one supplied with the outdoor unit.
 - Process a flare to the dimensions specified for R410A.

<Where the existing unit cannot be run for a cooling operation.>

- Wash the pipe system or install a new pipe system.
- If you choose to wash the pipe system, contact our distributor in the area.

INSTALLATION TEST CHECK After installation POINTS

Check the following points again after completion of the installation, and before turning on the power. Conduct a test run again and ensure that the unit operates properly. Explain to the customer how to use the unit and how to take care of the unit following the instruction manual.

- Power cables and connecting wires are securely fixed to the terminal block.
- The power source voltage is correct as the rating.
- The drain hose is fixed securely.
- Service valve is fully open.
- No gas leaks from the joints of the service valve.

- The pipe joints for indoor and outdoor pipes have been insulated.
- The reverse flow check cap is attached.
- The cover of the pipe cover (A) faces downward to prevent rain from entering.
- Gaps are properly sealed between the pipe covers (A) (B) and the wall surface / pipes.
- The screw of the side cover is tightened securely.

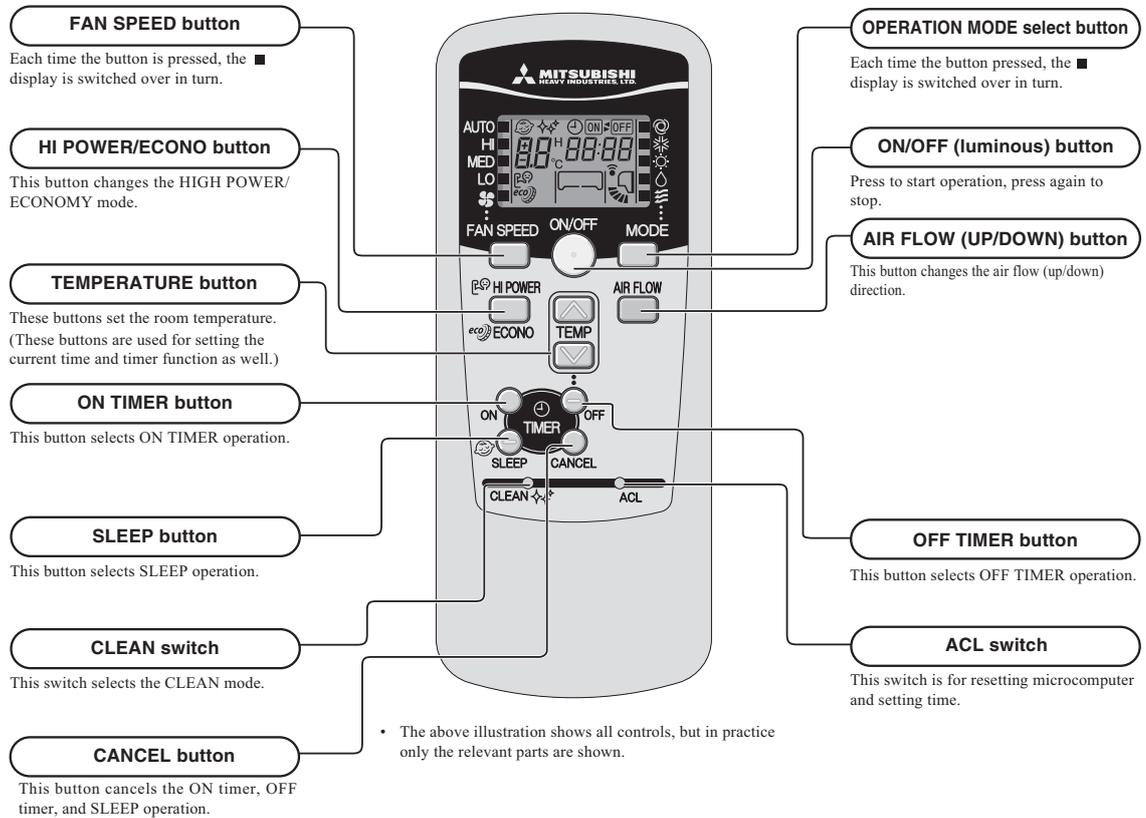
9. OUTLINE OF OPERATION CONTROL BY MICROCOMPUTER

(A) Models SRK20ZSPR-S, 25ZSPR-S, 35ZSPR-S, 45ZSPR-S

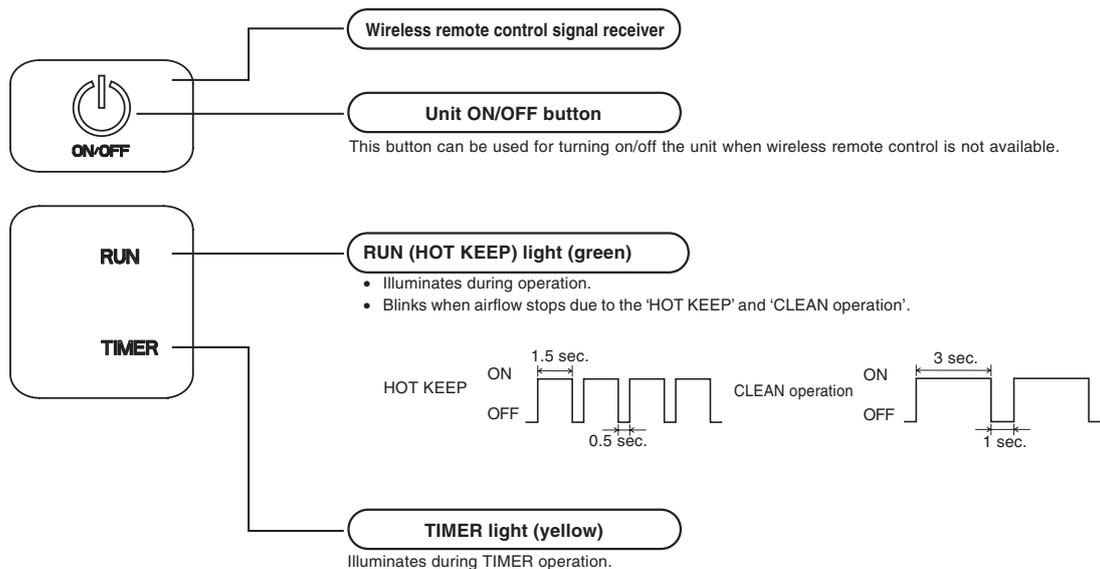
(1) Operation control function by wireless remote control

Remote control

◆ Operation section



Unit display section



(2) Unit ON/OFF button

When the wireless remote control batteries become weak, or if the wireless remote control is lost or malfunctioning, this button may be used to turn the unit on and off.

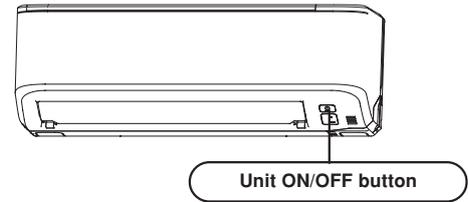
(a) Operation

Push the button once to place the unit in the automatic mode. Push it once more to turn the unit off.

(b) Details of operation

The unit will go into the automatic mode in which it automatically determines, from room temperature (as detected by sensor), whether to go into COOL, DRY or HEAT modes.

Function Operation mode	Room temperature setting	Fan speed	Flap	Timer switch
COOL	About 24°C	Auto	Auto	Continuous
DRY	About 24°C			
HEAT	About 26°C			



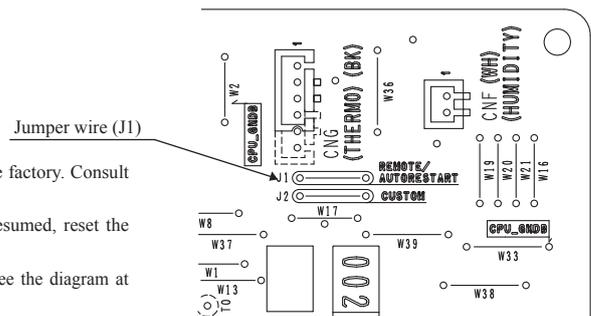
(3) Auto restart function

(a) Auto restart function records the operational status of the air-conditioner immediately prior to be switched off by a power cut, and then automatically resumes operations after the power has been restored.

(b) The following settings will be cancelled:

- (i) Timer settings
- (ii) HIGH POWER operation

- Notes
- (1) Auto restart function is set at on when the air-conditioner is shipped from the factory. Consult with your dealer if this function needs to be switched off.
 - (2) When power failure occurs, the timer setting is cancelled. Once power is resumed, reset the timer.
 - (3) If the jumper wire (J1) "AUTO RESTART" is cut, auto restart is disabled. (See the diagram at right)



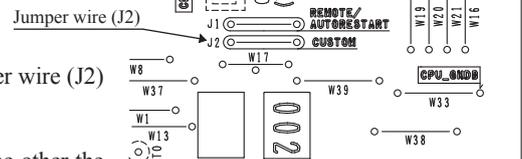
(4) Custom cord switching procedure

If two wireless remote control are installed in one room, in order to prevent wrong operation due to mixed signals, please modify the printed circuit board in the indoor unit's control box and the wireless remote control using the following procedure. Be sure to modify both boards. If only one board is modified, receiving (and operation) cannot be done.

(a) Modifying the indoor unit's printed circuit board

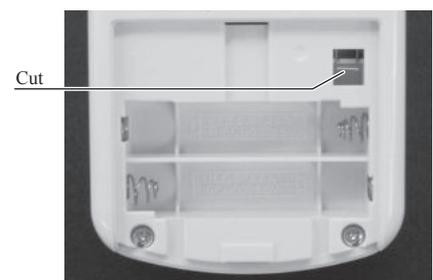
Take out the printed circuit board from the control box and cut off jumper wire (J2) using wire cutters.

After cutting of the jumper wire, take measures to prevent contact with the other the lead wires, etc.



(b) Modifying the wireless remote control

- (i) Remove the battery.
- (ii) Cut the jumper wire shown in the figure at right.



(5) High power operation

Pressing the HI POWER/ECONO button intensifies the operating power and initiates powerful cooling and heating operation for 15 minutes continuously. The wireless remote control displays and the FAN SPEED display disappears.

- (a) During the HIGH POWER operation, the room temperature is not controlled. When it causes an excessive cooling and heating, press the HI POWER/ECONO button again to cancel the HIGH POWER operation.
- (b) HIGH POWER operation is not available during dehumidifying and the program timer operations.
- (c) When HIGH POWER operation is set after ON TIMER operation, HIGH POWER operation will start from the set time.
- (d) When the following operation are set, HIGH POWER operation will be canceled.
 - ① When the HI POWER/ECONO button is pressed again.
 - ② When the operation mode is changed.
 - ③ When it has been 15 minutes since HIGH POWER operation has started.
- (e) Not operable while the air-conditioner is OFF.

(6) Economy operation

Pressing the HI POWER/ECONO button initiate a soft operation with the power suppressed in order to avoid an excessive cooling or heating. The unit operate 1.5°C higher than the setting temperature during cooling or 2.5°C lower than that during heating. The wireless remote control displays ECONO mark and the FAN SPEED display disappears.

- (a) It will go into ECONOMY operation at the next time the air-conditioner runs in the following cases.
 - ① When the air-conditioner is stopped by ON/OFF button during ECONOMY operation.
 - ② When the air-conditioner is stopped in SLEEP or OFF TIMER operation during ECONOMY operation.
 - ③ When the operation is retrieved from CLEAN operation.
- (b) When the following operation are set, ECONOMY operation will be canceled.
 - ① When the HI POWER/ECONO button is pressed again.
 - ② When the operation mode is changed DRY to FAN.
- (c) Not operable while the air-conditioner is OFF.
- (d) The setting temperature is adjusted according to the following table.

Mode	Cooling	Heating
Temperature adjustment	① +0.5 ② +1.0 ③ +1.5	① -1.0 ② -2.0 ③ -2.5

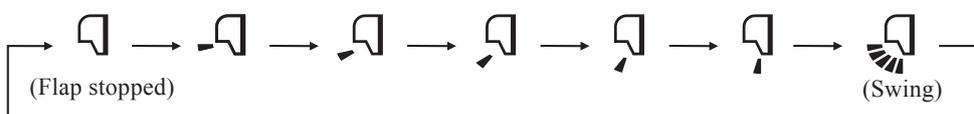
- ① at the start of operation.
- ② one hour after the start of operation.
- ③ two hours after the start of operation.

(7) Flap control

Control the flap by AIR FLOW  (UP/DOWN) button on the wireless remote control.

(a) Flap

Each time when you press the AIR FLOW  (UP/DOWN) button the mode changes as follows.

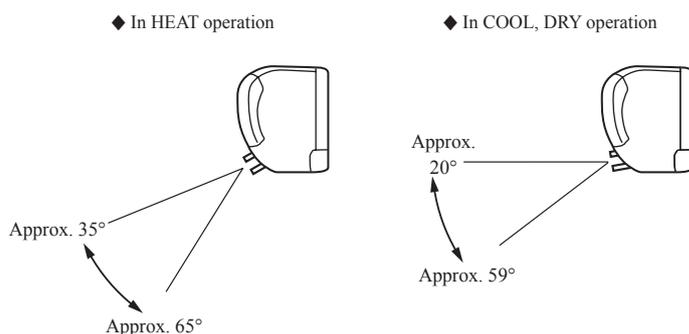


• Angle of flap from horizontal

Remote control display					
COOL , DRY	Approx. 15°	Approx. 25°	Approx. 35°	Approx. 45°	Approx. 59°
HEAT	Approx. 25°	Approx. 35°	Approx. 50°	Approx. 59°	Approx. 65°

(b) Swing

Flap moves in upward and downward directions continuously.



(c) Memory flap

When you press the AIR FLOW (UP/DOWN) button once while the flap is operating, it stops swinging at an angle. Since this angle is memorized in the microcomputer, the flap will automatically be set at this angle when the next operation is started.

(d) When not operating

The flap returns to the position of air flow directly below, when operation has stopped.

(8) Timer operation

(a) Comfortable timer setting (ON timer)

If the timer is set at ON when the operation select switch is set at the cooling or heating, or the cooling or heating in auto mode operation is selected, the comfortable timer starts and determines the starting time of next operation based on the initial value of 15 minutes and the relationship between the room temperature at the setting time (temperature of room temperature sensor) and the setting temperature.

(b) Sleep timer operation

Pressing the SLEEP button causes the temperature to be controlled with respect to the set temperature.

(c) OFF timer operation

The Off timer can be set at a specific time (in 10-minute units) within a 24-hour period.

(9) Outline of heating operation

(a) Operation of major functional components in heating mode

	Heating			
	Thermostat ON	Thermostat OFF	Defrost	Failure
Compressor	ON	OFF	OFF	OFF
Indoor fan motor	ON	ON(HOT KEEP)	OFF	OFF
Outdoor fan motor	ON	OFF (few minutes ON)	OFF	OFF
4-way valve	ON	ON	OFF	OFF (3 minutes ON)

(b) Details of control at each operation mode (pattern)

(i) Fuzzy operation

Deviation between the room temperature setting correction temperature and the suction air temperature is calculated in accordance with the fuzzy rule, and used for control of the air capacity and the compressor command speed.

Model	SRK20ZSPR-S	SRK25ZSPR-S	SRK35ZSPR-S	SRK45ZSPR-S
Fan speed				
AUTO	20-115rps			12-110rps
HI	20-115rps			12-110rps
MED	20-72rps		20-84rps	12-78rps
LO	20-54rps		20-62rps	12-50rps

When the defrosting, protection device, etc. is actuated, operation is performed in the corresponding mode.

(ii) Hot keep operation

If the hot keep operation is selected during the heating operation, the indoor blower is controlled based on the temperature of the indoor heat exchanger (Th2) to prevent blowing of cool wind.

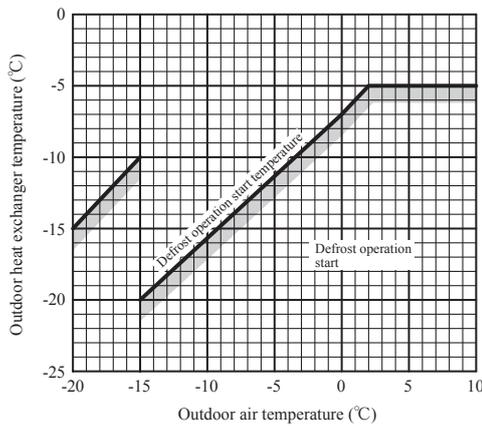
However, if the fan speed setting is HI and room temperature is 19°C or higher, this control is not executed.

(c) Defrost operation

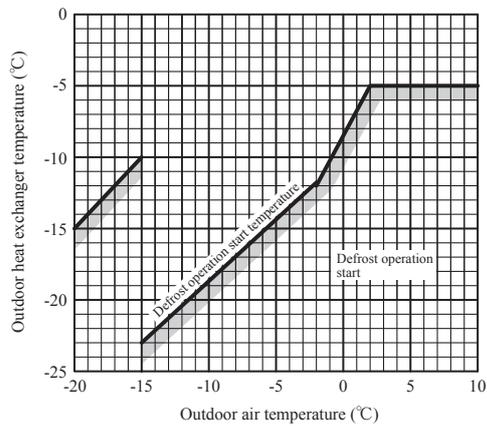
(i) Starting conditions (Defrost operation can be started only when all of the following conditions are satisfied.)

- 1) After start of heating operation
When it elapsed 35 (model SRK35 : 45) minutes. (Accumulated compressor operation time)
- 2) After end of defrost operation
When it elapsed 35 (model SRK35 : 45) minutes. (Accumulated compressor operation time)
- 3) Outdoor heat exchanger sensor (TH1) temperature
When the temperature has been below -5°C for 3 minutes continuously.
- 4) The difference between the outdoor air sensor temperature and the outdoor heat exchanger sensor temperature
 - The outdoor air temperature $\geq 0^\circ\text{C}$ (model SRK45 : $\geq -2^\circ\text{C}$) : 7°C (model SRK45 : 10°C) or higher
 - $-15^\circ\text{C} \leq$ The outdoor air temperature $< 0^\circ\text{C}$ (model SRK45 : $\geq -2^\circ\text{C}$) : $2/15 \times$ The outdoor air temperature + 7°C (model SRK45 : $+10^\circ\text{C}$) or higher
 - The outdoor air temperature $< -15^\circ\text{C}$: -5°C or higher

Models SRK20, 25, 35ZSPR-S



Model SRK45ZSPR-S

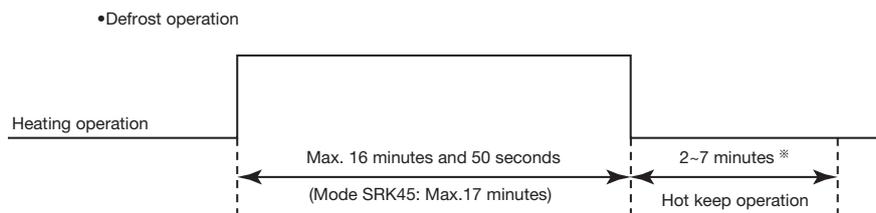


5) During continuous compressor operation

In addition, when the speed command from the indoor control of the indoor unit during heating operation has counted 0 rps 10 times or more and all conditions of 1), 2), 3) and 5) above and the outdoor air temperature is 3°C or less are satisfied (note that when the temperature for outdoor heat exchanger sensor (TH1) is -5°C or less: 62 rps or more, -4°C or less: less than 62 rps), defrost operation is started.

(ii) Ending conditions (Operation returns to the heating cycle when either one of the following is satisfied.)

- 1) Outdoor heat exchanger sensor (TH1) temperature: 13°C or higher
- 2) Continued operation time of defrost operation → For more than 16 minutes and 50 seconds (model SRK45 : 17 minutes).



※Depends on an operation condition, the time can be longer than 7 minutes.

(10) Outline of cooling operation

(a) Operation of major functional components in cooling mode

	Cooling		
	Thermostat ON	Thermostat OFF	Failure
Compressor	ON	OFF	OFF
Indoor fan motor	ON	ON	ON
Outdoor fan motor	ON	OFF (few minutes ON)	OFF (few minutes ON)
4-way valve	OFF	OFF	OFF

(b) Detail of control in each mode (Pattern)

(i) Fuzzy operation

During the fuzzy operation, the air flow and the compressor command speed are controlled by calculating the difference between the room temperature setting correction temperature and the suction air temperature.

Model	SRK20ZSPR-S	SRK25ZSPR-S	SRK35ZSPR-S	SRK45ZSPR-S
Fan speed				
AUTO	20-74rps		20-98rps	12-96rps
HI	20-74rps		20-98rps	12-96rps
MED	20-52rps		20-74rps	12-62rps
LO	20-38rps		20-46rps	12-38rps

(11) Outline of dry (dehumidifying) operation

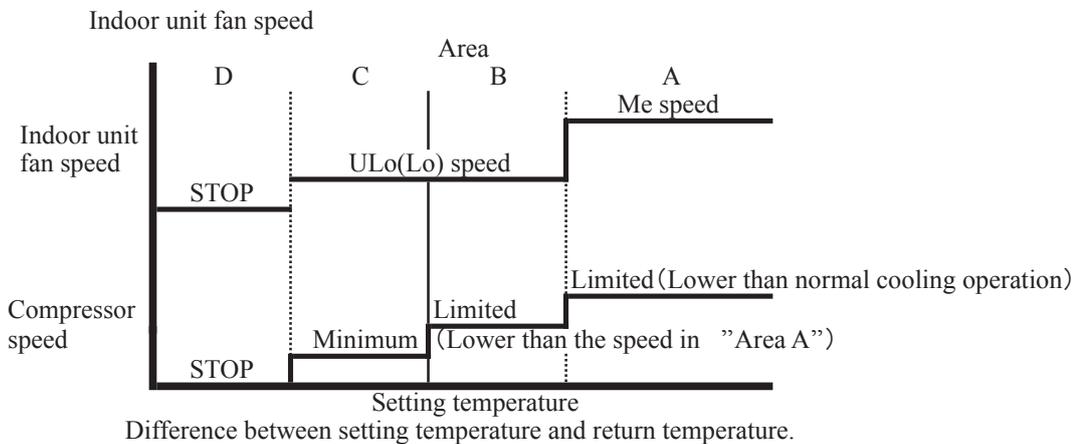
(a) Purpose of DRY mode

The purpose is "Dehumidification", and not to control the humidity to the target condition.

Indoor/outdoor unit control the operation condition to reduce the humidity, and also prevent over cooling.

(b) Outline of control

(i) Indoor unit fan speed and compressor are controlled by the area which is selected by the temperature difference.



(ii) The indoor unit check the current area by every 5 minutes, and operate by the next checking.

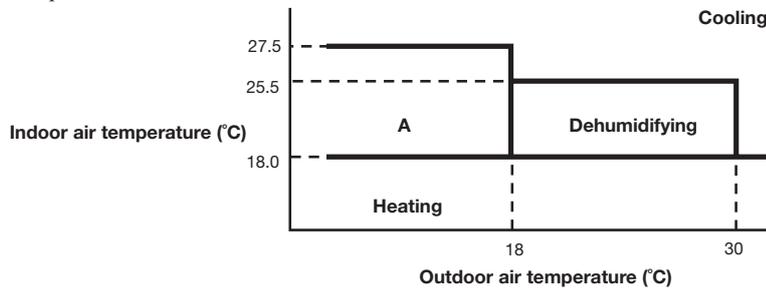
(c) Other

When the outdoor air temperature and room temperature is low for cooling operation, indoor unit can not operate in cooling. In this case, the units operate in heating to rise the room temperature, and after that start dehumidifying operation.

(12) Outline of automatic operation

(a) Determination of operation mode

The unit checks the indoor air temperature and the outdoor air temperature, determines the operation mode, and then begins in the automatic operation.



- (b) The unit checks the temperature every hour after the start of operation and, if the result of check is not same as the previous operation mode, changes the operation mode.
 - (i) If the setting temperature is changed with the wireless remote control, the operation mode is judged immediately.
 - (ii) When both the indoor and the outdoor air temperatures are in the range “A”, cooling or heating is switched depending on the difference between the setting temperature and the indoor air temperature.
 - (iii) When the operation mode has been judged following the change of setting temperature with the wireless remote control, the hourly judgment of operation mode is cancelled.
- (c) When the unit is started again within one hour after the stop of automatic operation or when the automatic operation is selected during heating, cooling or dehumidifying operation, the unit is operated in the previous operation mode.
- (d) Setting temperature can be adjusted within the following range. There is the relationship as shown below between the signals of the wireless remote control and the setting temperature.

		Signals of wireless remote control (Display)												
		-6	-5	-4	-3	-2	-1	±0	+1	+2	+3	+4	+5	+6
Setting temperature	Cooling	18	19	20	21	22	23	24	25	26	27	28	29	30
	Dehumidifying	19	20	21	22	23	24	25	26	27	28	29	30	31
	Heating	20	21	22	23	24	25	26	27	28	29	30	31	32

(13) Protection control function

(a) Dew prevention control [Cooling]:Prevents dewing on the indoor unit.

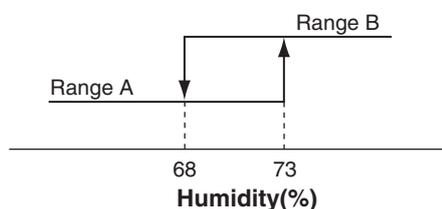
- (i) **Operating conditions:**When the following conditions have been satisfied for more than 30 minutes after starting operation
 - 1) Compressor's command speed is 32 rps or higher. (SRK20, 25, 35 only)
 - 2) Detected value of humidity is 68% or higher.

(ii) Contents of operation

- 1) Air capacity control

Item		Model	SRK20, 25, 35ZSPR-S	SRK45ZSPR-S
		LO	Upper limit of compressor's command speed	
Indoor fan			4th speed	
AUTO, HI, MED	Upper limit of compressor's command speed		RangeA: 45rps, RangeB: 45rps	RangeA: 50rps, RangeB: 34rps
	Indoor fan		Adaptable to compressor's command speed (Lower limit 4th speed)	

Note (1) Ranges A and B are as shown below.



- 2) When this control has continued for more than 30 minutes continuously, the following wind direction control is performed.
 - a) When the vertical wind direction is set at other than the vertical swing, the flaps change to the horizontal position.
 - b) When the horizontal wind direction is set at other than the horizontal swing, the louver changes to the vertical position.

(iii) Reset condition: When any of the following is satisfied.

- 1) Compressor's command speed is less than 32 rps. (SRK20, 25, 35 only)
- 2) Detected value of humidity is less than 63%.

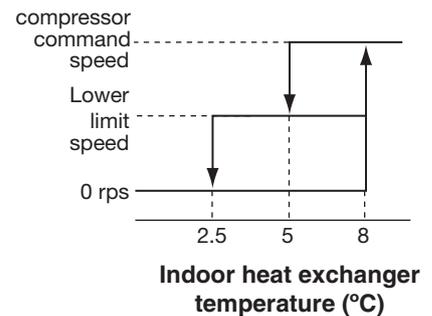
(b) Frost prevention control (During cooling or dehumidifying)

(i) Operating conditions

- 1) Indoor heat exchanger temperature (Th2) is lower than 5°C.
- 2) 5 minutes after reaching the compressor command speed except 0 rps.

(ii) Detail of anti-frost operation

Indoor heat exchanger temperature	5°C or lower	2.5°C or lower
Item		
Lower limit of compressor command speed	22 rps	0 rps
Indoor fan	Depends on operation mode	Protects the fan tap just before frost prevention control
Outdoor fan	Depends on command speed	Depends on stop mode
4-way valve	OFF	



- Notes
- (1) When the indoor heat exchanger temperature is in the range of 2.5-5°C, the speed is reduced by 4 rps at each 20 seconds.
 - (2) When the temperature is lower than 2.5°C, the compressor is stopped.
 - (3) When the indoor heat exchanger temperature is in the range of 5-8°C, the compressor command speed is been maintained.

(iii) Reset conditions: When either of the following condition is satisfied.

- 1) The indoor heat exchanger temperature (Th2) is 8°C or higher.
- 2) The compressor command speed is 0 rps.

(c) Cooling overload protective control

(i) Operating conditions: When the outdoor air temperature (TH2) has become continuously for 30 seconds at 41°C or more, or 47°C or more (model SRK45 : 41°C or more) with the compressor running, the lower limit speed of compressor is brought up.

Model	SRK20, 25, 35ZSPR-S		SRK45ZSPR-S
Item			
Outdoor air temperature	41°C or more	47°C or more	41°C or more
Lower limit speed	30 rps	40 rps	30 rps

(ii) Detail of operation

- 1) The outdoor fan is stepped up by 3 speed step. (Upper limit 8th speed.)
- 2) The lower limit of compressor command speed is set to 30 or 40 (model SRK45 : 30) rps and even if the calculated result becomes lower than that after fuzzy calculation, the speed is kept to 30 or 40 (model SRK45 : 30) rps. However, when the thermo OFF, the speed is reduced to 0 rps.

(iii) Reset conditions: When either of the following condition is satisfied.

- 1) The outdoor air temperature is lower than 40°C.
- 2) The compressor command speed is 0 rps.

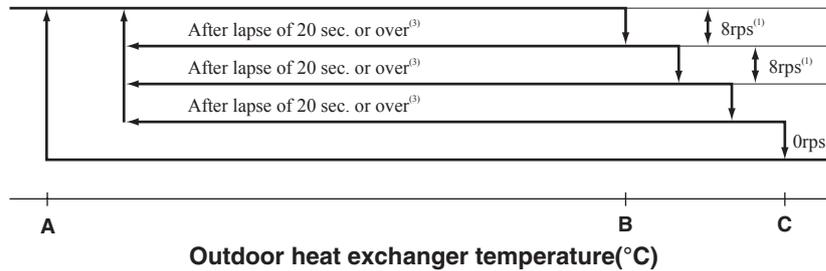
(d) **Cooling high pressure control**

(i) **Purpose:** Prevents anomalous high pressure operation during cooling.

(ii) **Detector:** Outdoor heat exchanger sensor (TH1)

(iii) **Detail of operation:**

(Example) Fuzzy



- Notes
- (1) When the outdoor heat exchanger temperature is in the range of B-C °C, the speed is reduced by 8 rps at each 20 seconds.
 - (2) When the temperature is C °C or higher, the compressor is stopped.
 - (3) When the outdoor heat exchanger temperature is in the range of A-B °C, if the compressor command speed is been maintained and the operation has continued for more than 20 seconds at the same speed, it returns to the normal cooling operation.

● **Temperature list**

	A	B	C
Outdoor air temperature ≥ 32 °C	50	52	56
Outdoor air temperature < 32 °C	42	44	50

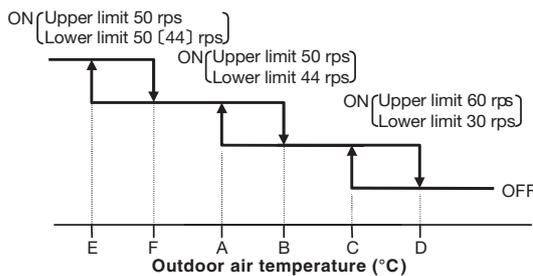
(e) **Cooling low outdoor air temperature protective control**

(i) **Operating conditions:** When the outdoor air temperature (TH2) is 22°C or lower continues for 20 seconds while the compressor command speed is other than 0 rps.

(ii) **Detail of operation:**

- 1) The lower limit of the compressor command speed is set to 50 [44] <44> (30) rps and even if the speed becomes lower than 50 [44] <44> (30) rps, the speed is kept to 50 [44] <44> (30) rps. However, when the thermo OFF, the speed is reduced to 0 rps.
- 2) The upper limit of the compressor command speed is set to 50 <50> (60) rps and even if the calculated result becomes higher than that after fuzzy calculation, the speed is kept to 50 <50> (60) rps.

- Notes
- (1) Values in < > are for outdoor air temperature is A°C or B°C
 - (2) Values in () are for outdoor air temperature is C°C or D°C
 - (3) Values in [] are for the model SRK45.



● Values of A, B, C, D, E, F (Models SRK20, 25, 35)

	Outdoor air temperature (°C)					
	E	F	A	B	C	D
First time	-8	-5	0	3	22	25
After the second times	-2	1	5	8	25	28

● Values of A, B, C, D, E, F (Model SRK45)

	Outdoor air temperature (°C)					
	E	F	A	B	C	D
First time	0	2	9	11	22	25
After the second times	5	7	16	19	25	28

(iii) **Reset conditions:** When either of the following condition is satisfied

- 1) The outdoor air temperature (TH2) is D °C or higher.
- 2) The compressor command speed is 0 rps.

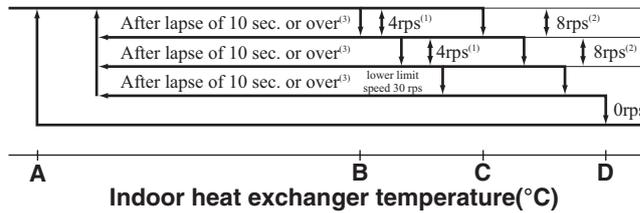
(f) Heating high pressure control

(i) Purpose: Prevents anomalous high pressure operation during heating.

(ii) Detector: Indoor heat exchanger sensor (Th2)

(iii) Detail of operation:

(Example) Fuzzy



- Notes
- (1) When the indoor heat exchanger temperature is in the range of B-C °C, the speed is reduced by 4 rps at each 10 seconds.
 - (2) When the indoor heat exchanger temperature is in the range of C-D °C, the speed is reduced by 8 rps at each 10 seconds. When the temperature is D °C or higher continues for 1 minute, the compressor is stopped.
 - (3) When the indoor heat exchanger temperature is in the range of A-B °C, if the compressor command speed is been maintained and the operation has continued for more than 10 seconds at the same speed, it returns to the normal heating operation.
 - (4) Indoor fan retains the fan tap when it enters in the high pressure control. Outdoor fan is operated in accordance with the speed.

● **Temperature list**

Models SRK20, 25, 35

Unit : °C

	A	B	C	D
RPSmin < 50	48	52	54	55
50 ≤ RPSmin < 91	48.5	54.5	58	61
91 ≤ RPSmin < 97	48.5	54.5 – 51.5	58	61
97 ≤ RPSmin < 100	48.5	51.5 – 50	58 – 56	61
100 ≤ RPSmin < 115	48.5 – 40.1	50 – 42	56 – 47.3	61
115 ≤ RPSmin	40.1	42	47.3	61

Model SRK45

Unit : °C

	A	B	C	D
RPSmin < 80	46	54	56	58 – 62
80 ≤ RPSmin < 102	46 – 33.5	54 – 38.5	56 – 39.5	58 – 51
102 ≤ RPSmin < 120	33.5	38.5	39.5	51
120 ≤ RPSmin	33.5	38.5	39.5	51

Note (1) RPSmin: The lower one between the compressor command speed

(g) Heating overload protective control

(i) Indoor unit side

- 1) Operating conditions :** When the outdoor air temperature (TH2) is 17°C or higher continues for 30 seconds while the compressor command speed other than 0 rps.
- 2) Detail of operation :** The indoor fan is stepped up by 1 speed step. (Upper limit 8th speed)
- 3) Reset conditions :** The outdoor air temperature (TH2) is lower than 16°C.

(ii) Outdoor unit side

- 1) Operating conditions :** When the outdoor air temperature (TH2) is 17 or 22 (14 or 20)°C or higher continues for 30 seconds while the compressor command speed other than 0 rps.
- 2) Detail of operation:** Upper and lower limits of compressor speed and the outdoor unit fan speed are restricted.

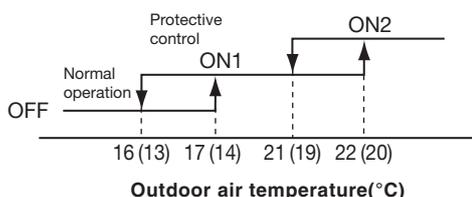
Models SRK20, 25, 35

	Compressor command speed (rps)		Outdoor fan speed
	Lower limit	Upper limit	
ON1	–	–	2nd speed
ON2	40	60	1st speed

Model SRK45

	Compressor command speed (rps)		Outdoor fan speed
	Lower limit	Upper limit	
ON1	30	78	(1)
ON2	30	51	2nd speed

Note (1) Outdoor fan speed
 Lower limit : 4th speed
 Upper limit : 7th speed



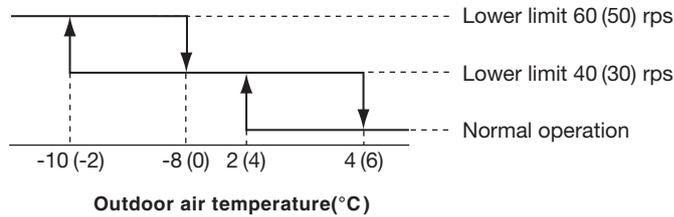
- 3) Reset conditions:** When the outdoor air temperature drops below 16 (13) °C.

Note (1) Values in () are for the model SRK45.

(h) Heating low outdoor temperature protective control

(i) Protective control I

- 1) **Operating conditions:** When the outdoor air temperature (TH2) is lower than 2 (4)°C or higher continues for 30 seconds while the compressor command speed is other than 0 rps.
- 2) **Detail of operation:** The lower limit compressor command speed is changed as shown in the figure below.



- 3) **Reset conditions:** When either of the following condition is satisfied.
 - a) The outdoor air temperature (TH2) becomes 4 (6)°C.
 - b) The compressor command speed is 0 rps.

Note (1) Values in () are for the model SRK45.

(ii) Protective control II (Models SRK20, 25, 35 only)

- 1) **Operating conditions:** When the outdoor heat exchanger sensor (TH1) is -10°C or lower continuously for 10 minutes while the compressor command speed is other than 0 rps.
- 2) **Detail of operation:** Upper limit of compressor command speed is 115 rps.
- 3) **Reset conditions:** When the either of the following condition is satisfied.
 - a) When the outdoor heat exchanger sensor (TH1) becomes -8°C or higher.
 - b) When the compressor command speed is 0 rps.

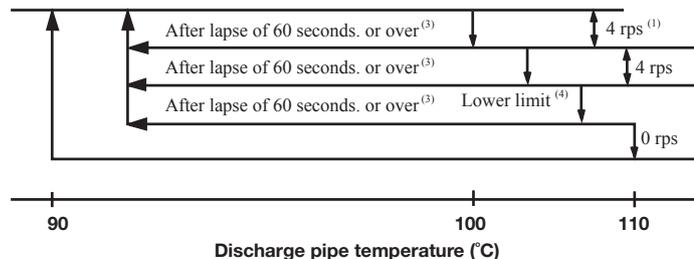
(i) Compressor overheat protection

(i) Purpose: It is designed to prevent deterioration of oil, burnout of motor coil and other trouble resulting from the compressor overheat.

(ii) Detail of operation

- 1) Speeds are controlled with temperature detected by the sensor mounted on the discharge pipe.

(Example) Fuzzy



- Notes
- (1) When the discharge pipe temperature is in the range of 100 to 110 °C, the speed is reduced by 4 rps.
 - (2) When the discharge pipe temperature is raised and continues operation for 20 seconds without changing, then the speed is reduced again by 4 rps.
 - (3) If the discharge pipe temperature is in the range of 90–100°C even when the compressor command speed is maintained for 60 seconds when the temperature is in the range of 90–100°C, the speed is raised by 1 rps and kept at that speed for 60 second. This process is repeated until the command speed is reached.
 - (4) Lower limit speed

	Cooling	Heating
All models	20 rps	30 rps

- 2) If the temperature of 110°C is detected by the sensor on the discharge pipe, then the compressor will stop immediately. When the discharge pipe temperature drops and the time delay of 3 minutes is over, the unit starts again within 1 hour but there is no start at the third time.

(j) Current safe

(i) Purpose: Current is controlled not to exceed the upper limit of the setting operation current.

(ii) Detail of operation: Input current to the converter is monitored with the current sensor fixed on the printed circuit board of the outdoor unit and, if the operation current value reaches the limiting current value, the compressor command speed is reduced.

If the mechanism is actuated when the speed of compressor command is less than 30 rps, the compressor is stopped immediately. Operation starts again after a delay time of 3 minutes.

(k) Current cut

(i) Purpose: Inverter is protected from overcurrent.

(ii) Detail of operation: Output current from the converter is monitored with a shunt resistor and, if the current exceeds the setting value, the compressor is stopped immediately. Operation starts again after a delay time of 3 minutes.

(l) Outdoor unit failure

This is a function for determining when there is trouble with the outdoor unit during air-conditioning.

The compressor is stopped if any one of the following in item (i), (ii) is satisfied. Once the unit is stopped by this function, it is not restarted.

(i) When the input current is measured at 1 A or less for 3 continuous minutes or more.

(ii) If the compressor command sends a 0 rps signal to the indoor unit 3 times or more within 20 minutes of the power being turned on.

(m) Indoor fan motor protection

When the air-conditioner is operating and the indoor fan motor is turned ON, if the indoor fan motor has operated at 300 min^{-1} or under for more than 30 seconds, the unit enters first in the stop mode and then stops the entire system.

(n) Serial signal transmission error protection

(i) Purpose: Prevents malfunction resulting from error on the indoor ↔ outdoor signals.

(ii) Detail of operation: If the compressor is operating and a serial signal cannot be received from the indoor control with outdoor control having serial signals continues for 7 minute and 35 seconds, the compressor is stopped.

After the compressor has been stopped, it will be restarted after the compressor start delay if a serial signal can be received again from the indoor control.

(o) Rotor lock

If the motor for the compressor does not turn after it has been started, it is determined that a compressor lock has occurred and the compressor is stopped.

(p) Outdoor fan motor protection

If the outdoor fan motor has operated at 75 min^{-1} or under for more than 30 seconds, the compressor and fan motor are stopped.

(q) Outdoor fan control at low outdoor temperature

(i) Cooling

- 1) **Operating conditions:** When the outdoor air temperature (TH2) is 22°C or lower continues for 30 seconds while the compressor command speed is other than 0 rps.
- 2) **Detail of operation:** After the outdoor fan operates at A speed for 60 seconds; the corresponding outdoor heat exchanger temperature shall implement the following controls.

● Value of A

	Outdoor fan
Outdoor temperature > 10°C	2nd speed
Outdoor temperature ≤ 10°C	1st speed

- a) Outdoor heat exchanger temperature (TH1) ≤ 21°C
After the outdoor fan speed drops (down) to 1 speed for 60 seconds; if the outdoor heat exchanger temperature is lower than 21°C, gradually reduce the outdoor fan speed by 1 speed. (Lower limit 1st speed)
 - b) 21°C < Outdoor heat exchanger temperature (TH1) ≤ 38°C
After the outdoor fan speed maintains at A speed for 20 seconds; if the outdoor heat exchanger temperature is 21°C-38°C, maintain outdoor fan speed.
 - c) Outdoor heat exchanger temperature (TH1) > 38°C
After the outdoor fan speed rises (up) to 1 speed for 60 seconds; if the outdoor heat exchanger temperature is higher than 38°C, gradually increase outdoor fan speed by 1 speed. (Upper limit 3rd speed)
- 3) **Reset conditions:** When either of the following conditions is satisfied.
 - a) The outdoor air temperature (TH2) is 25°C or higher.
 - b) The compressor command speed is 0 rps.

(ii) Heating

- 1) **Operating conditions:** When the outdoor air temperature (TH2) is 4°C (model SRK45 : 0°C) or lower continues for 30 seconds while the seconds while the compressor command speed is other than 0 rps.
- 2) **Detail of operation:** The outdoor fan is stepped up by 2 speed step at each 20 seconds. (Upper limit 8th speed)
- 3) **Reset conditions:** When either of the following conditions is satisfied.
 - a) The outdoor air temperature (TH2) is 6°C (model SRK45 : 2°C) or higher.
 - b) The compressor command speed is 0 rps.

(r) Refrigeration cycle system protection

(i) Starting conditions

- 1) When 5 minutes have elapsed after the compressor ON or the completion of the defrost operation.
- 2) Other than the defrost operation.
- 3) When, after satisfying the conditions of 1) and 2) above, the compressor speed, indoor air temperature (Th1) and indoor heat exchanger temperature (Th2) have satisfied the conditions in the following table for 10 (model SRK45 : 5) minutes:

Operation mode	Compressor speed (N)	Indoor air temperature (Th1)	Indoor air temperature (Th1)/ Indoor heat exchanger temperature (Th2)
Cooling	50 ≤ N	10 ≤ Th1 ≤ 40	Th1 - 4 < Th2
Heating(1)	50 ≤ N	0 ≤ Th1 ≤ 40	Th2 < Th1 + 6

Note (1) Except that the fan speed is HI in heating operation.

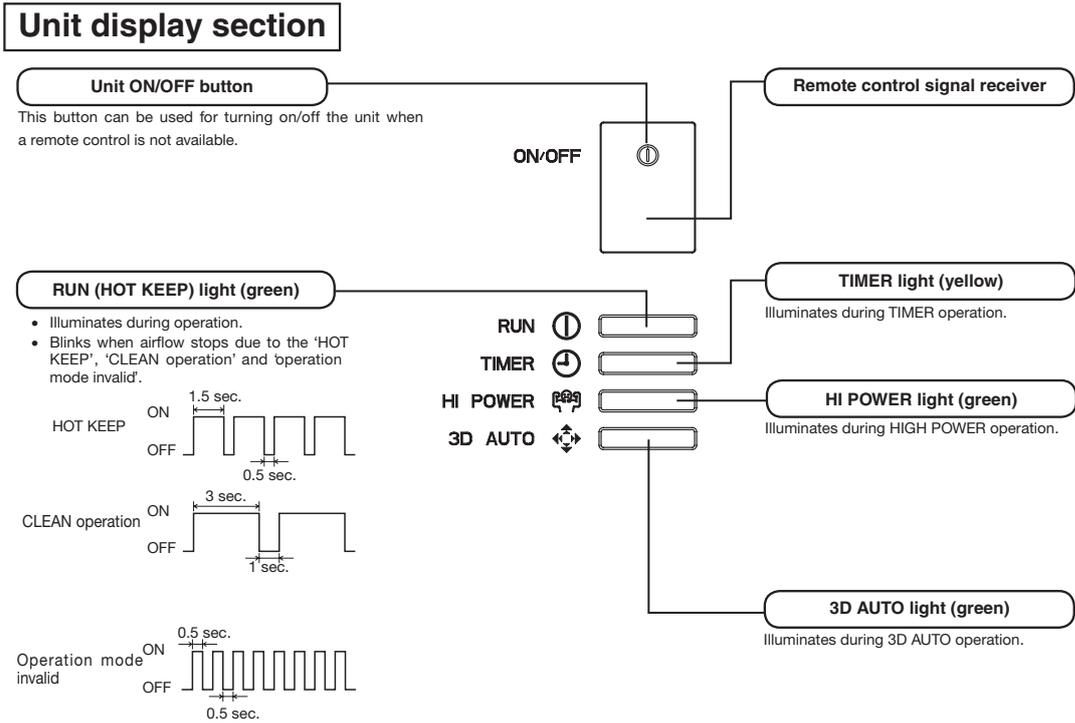
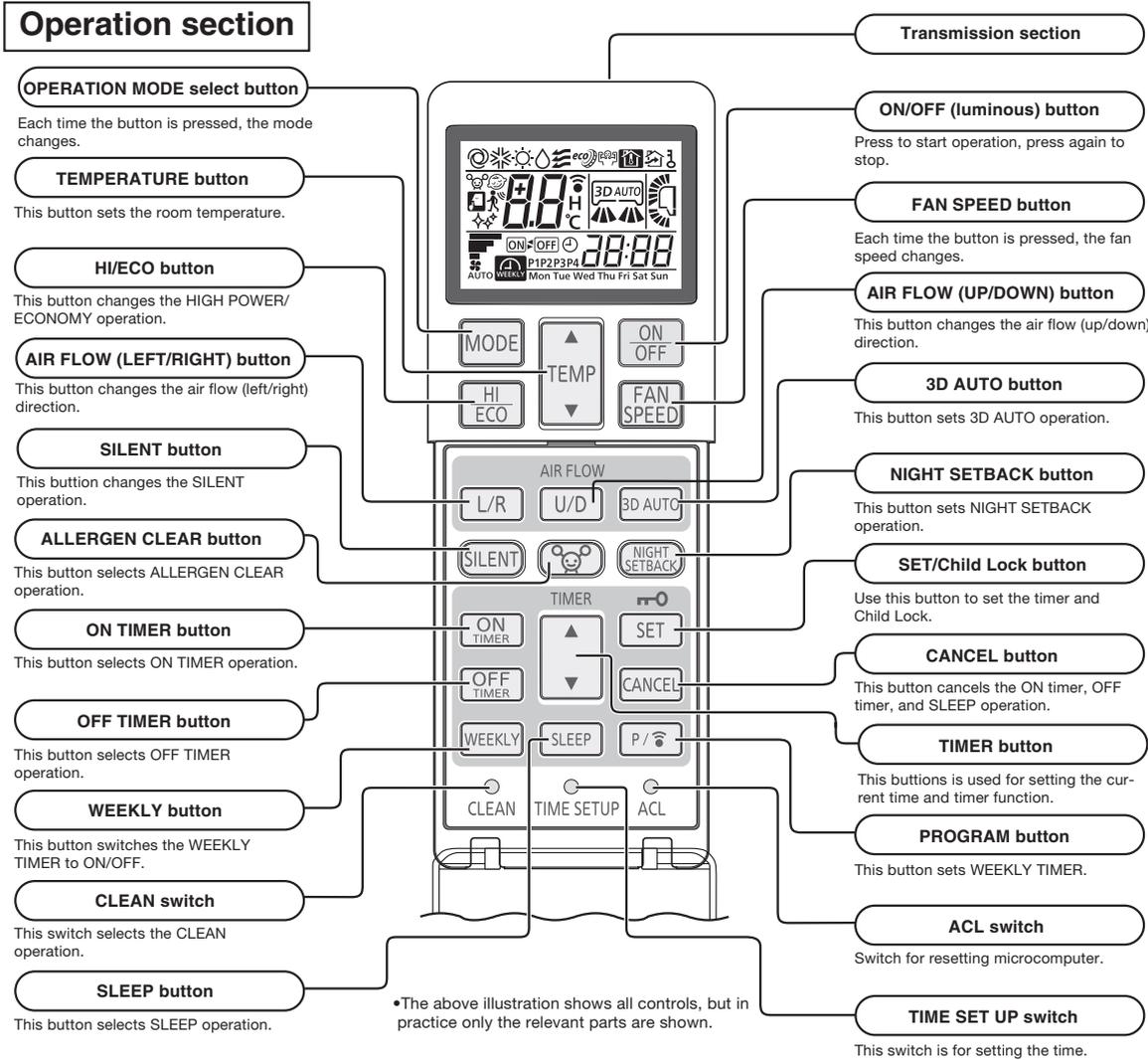
(ii) Contents of control

- 1) When the conditions of (i) above are satisfied, the compressor stops.
- 2) Error stop occurs when the compressor has stopped 3 times within 60 minutes.

(iii) Reset condition

When the compressor has been turned OFF.

(B) Models SRK63ZSPR-S, 71ZSPR-S, 80ZSPR-S
(1) Operation control function by wireless remote control



(2) Unit ON/OFF button

When the wireless remote control batteries become weak, or if the wireless remote control is lost or malfunctioning, this button may be used to turn the unit on and off.

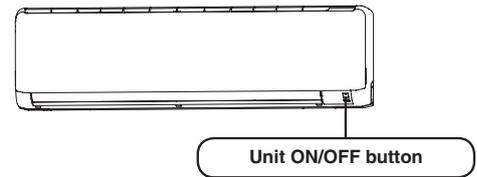
(a) Operation

Push the button once to place the unit in the automatic mode. Push it once more to turn the unit off.

(b) Details of operation

The unit will go into the automatic mode in which it automatically determines, from indoor temperature (as detected by sensor), whether to go into COOL, DRY or HEAT modes.

Function	Indoor temperature setting	Fan speed	Flap/Louver	Timer Switch
Operation mode				
COOL	About 24°C	Auto	Auto	Continuous
DRY				
HEAT				



(3) Auto restart function

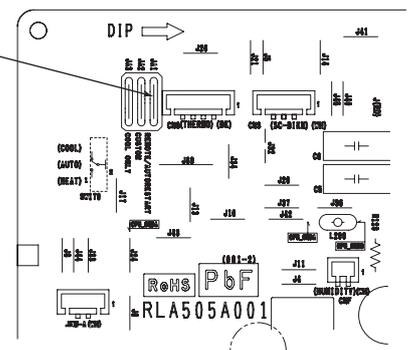
(a) Auto restart function records the operational status of the air-conditioner immediately prior to be switched off by a power cut, and then automatically resumes operations after the power has been restored.

(b) The following settings will be cancelled:

- (i) Timer settings
- (ii) HIGH POWER operations

- Notes
- (1) Auto restart function is set at on when the air-conditioner is shipped from the factory. Consult with your dealer if this function needs to be switched off.
 - (2) When power failure occurs, the timer setting is cancelled. Once power is resumed, reset the timer.
 - (3) If the jumper wire (JA1) "AUTO RESTART" is cut, auto restart is disabled. (See the diagram at right)

Jumper wire (JA1)

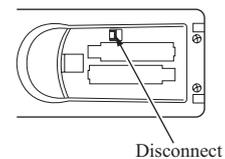


(4) Installing two air-conditioners in the same room

When two air-conditioners are installed in the room, use setting when the two air-conditioners are not operated with one wireless remote control. Set the wireless remote control and indoor unit.

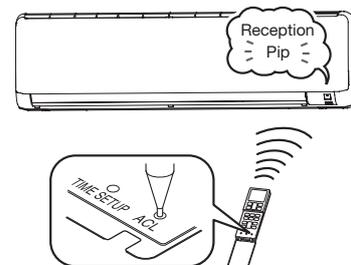
(a) Setting the wireless remote control

- (i) Pull out the cover and take out batteries.
- (ii) Disconnect the switching line next to the battery with wire cutters.
- (iii) Insert batteries, Close the cover.



(b) Setting an indoor unit

- (i) Turn off the power source, and turn it on after 1 minute.
- (ii) Point the wireless remote control that was set according to the procedure described on the left side at the indoor unit and send a signal by pressing the ACL switch on the wireless remote control.
Since the signal is sent in about 6 seconds after the ACL switch is pressed, point the wireless remote control at the indoor unit for some time.
- (iii) Check that the reception buzzer sound "Pip" is emitted from the indoor unit. At completion of the setting, the indoor unit emits a buzzer sound "Pip".
(If no reception tone is emitted, start the setting from the beginning again.)

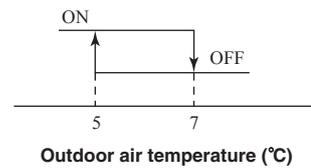
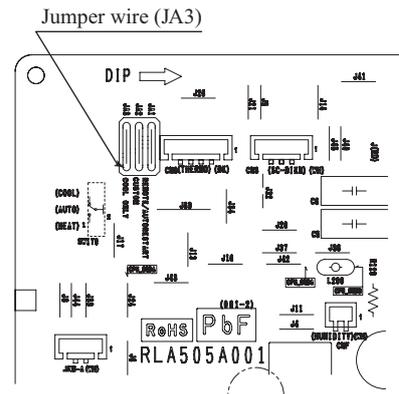


(5) Selection of the annual cooling function

(a) The annual cooling function can be enabled or disabled by means of the jumper wire (JA3) on the indoor unit PCB and the dip switch (SW2-4) on the interface kit (option) PCB.

Jumper wire (JA3)	Interface kit (SC-BIKN-E) SW2-4	Function
Shorted	ON	Enabled
Shorted	OFF	Disabled
Open	ON	Disabled
Open	OFF	Disabled

Note: (1) Default states of the jumper wire (JA3) and the interface kit at the shipping from factory – On the PCB, the dip switch (SW2-4) is set to enable the annual cooling function.
 (2) To cancel the annual cooling setting, consult your dealer.



(b) Content of control

- (i) If the outdoor air temperature sensor (TH2) detects below 5°C, the indoor fan speed is switched to 8th step. (It is not possible to change.)
- (ii) If the outdoor air temperature sensor (TH2) detects higher than 7°C, the indoor fan speed is changed to the normal control speed.

(6) High power operation

Pressing the HI POWER/ECONO button intensifies the operating power and initiates powerful cooling and heating operation for 15 minutes continuously. The wireless remote control displays and the FAN SPEED display disappears.

- (a) During the HIGH POWER operation, the room temperature is not controlled. When it causes an excessive cooling and heating, press the HI POWER/ECONO button again to cancel the HIGH POWER operation.
- (b) HIGH POWER operation is not available during dehumidifying and the program timer operations.
- (c) When HIGH POWER operation is set after ON TIMER operation, HIGH POWER operation will start from the set time.
- (d) When the following operation are set, HIGH POWER operation will be cancelled.
 - ① When the HI POWER/ECONO button is pressed again.
 - ② When the operation mode is changed.
 - ③ When it has been 15 minutes since HIGH POWER operation has started.
 - ④ When the 3D AUTO button is pressed.
 - ⑤ When the SILENT button is pressed.
 - ⑥ When the NIGHT SETBACK button is pressed.
- (e) Not operable while the air-conditioner is OFF.
- (f) After HIGH POWER operation, the sound of refrigerant flowing may be heard.

(7) Economy operation

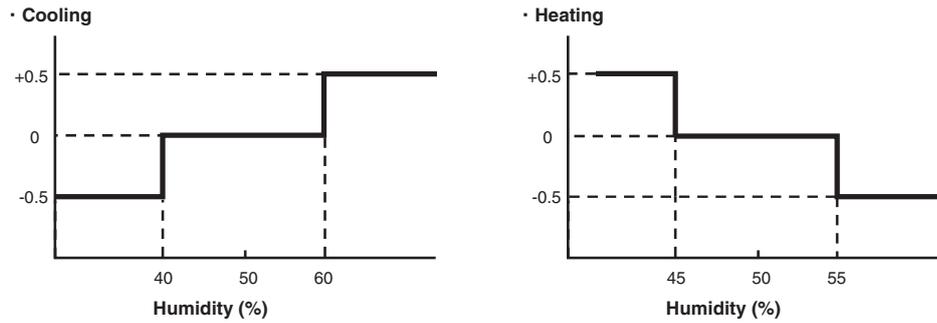
Pressing the HI POWER/ECONO button initiate a soft operation with the power suppressed in order to avoid an excessive cooling or heating. The unit operate 1.0°C higher than the setting temperature during cooling or 2.0°C lower than that during heating. The wireless remote control displays ECONO mark and the FAN SPEED display disappears.

- (a) It will go into ECONOMY operation at the next time the air-conditioner runs in the following cases.
 - ① When the air-conditioner is stopped by ON/OFF button during ECONOMY operation.
 - ② When the air-conditioner is stopped in SLEEP or OFF TIMER operation during ECONOMY operation.
 - ③ When the operation is retrieved from CLEAN or ALLERGEN CLEAR operation.
- (b) When the following operation are set, ECONOMY operation will be cancelled.
 - ① When the HI POWER/ECONO button is pressed again.
 - ② When the operation mode is changed DRY to FAN.
 - ③ When the NIGHT SETBACK button is pressed.
- (c) Not operable while the air-conditioner is OFF.

(d) The setting temperature is adjusted according to the following table.

Item \ Mode	Cooling	Heating
Temperature adjustment	① +0.5	① -1.0
	② +1.0	② -2.0
	③	③

- ① at the start of operation.
- ② one hour after the start of operation.
- ③ two hours after the start of operation.

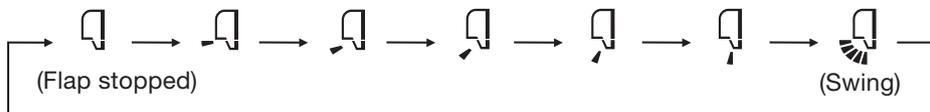


(8) Flap and louver control

Control the flap and louver by AIR FLOW U/D (UP/DOWN) and L/R (LEFT/RIGHT) button on the wireless remote control.

(a) Flap

Each time when you press the AIR FLOW U/D (UP/DOWN) button the mode changes as follows.

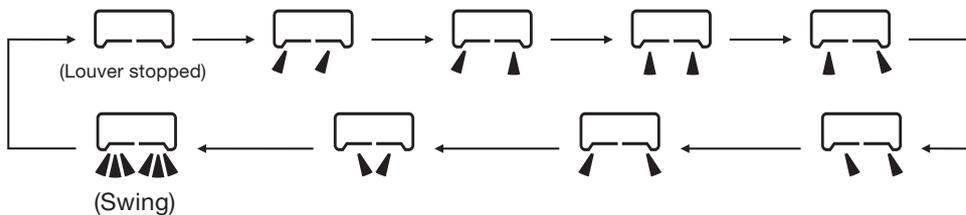


• Angle of flap from horizontal

Remote control display					
COOL , DRY, FAN	Approx. 5°	Approx. 20°	Approx. 35°	Approx. 50°	Approx. 70°
HEAT	Approx. 20°	Approx. 35°	Approx. 45°	Approx. 60°	Approx. 70°

(b) Louver

Each time when you press the AIR FLOW L/R (LEFT/RIGHT) button the mode changes as follows.



• Angle of louver

Remote control display					
Center installation	Left Approx. 50°	Left Approx. 20°	Center	Right Approx. 20°	Right Approx. 50°

(c) Swing

(i) Swing flap

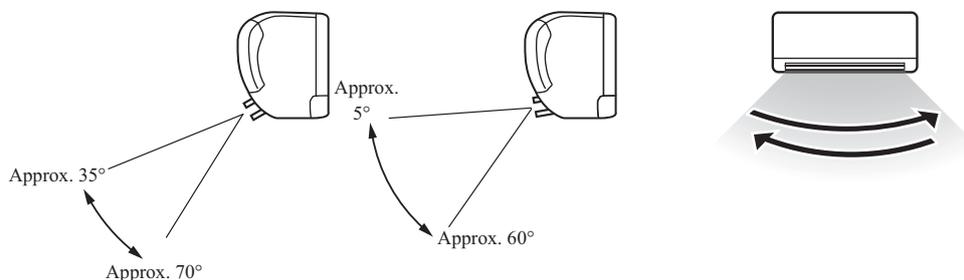
Flap moves in upward and downward directions continuously.

(ii) Swing louver

Louver moves in left and right directions continuously.

◆ In HEAT operation

◆ In COOL, DRY, FAN operation



(d) Memory flap (Flap or louver stopped)

When you press the AIR FLOW (UP/DOWN or LEFT/RIGHT) button once while the flap or louver is operating, it stops swinging at the position. Since this angle is memorized in the microcomputer, the flap or louver will automatically be set at this angle when the next operation is started.

(e) When not operating

The flap returns to the position of air flow directly below, when operation has stopped.

(9) 3D auto operation

Control the flap and louver by 3D AUTO button on the wireless remote control.

Air flow selection and air flow direction are automatically controlled, allowing the entire indoor to efficiently conditioned.

(a) During cooling and heating (Including auto cooling and heating)

(i) Air flow selection is determined according to indoor temperature and setting temperature.

Operation mode	Air flow selection					
	AUTO		HI	MED	LO	ULO
Cooling	Indoor temp. – Setting temp. >5°C	Indoor temp. – Setting temp. ≤ 5°C	HI	MED	LO	ULO
	HIGH POWER	AUTO				
Heating	Setting temp. – Indoor temp. >5°C	Setting temp. – Indoor temp. ≤ 5°C	HI	MED	LO	ULO
	HIGH POWER	AUTO				

(ii) Air flow direction is controlled according to the indoor temperature and setting temperature.

1) When 3D auto operation starts

	Cooling	Heating
Flap	Up/down swing	
Louver	Wide (Fixed)	Center (Fixed)

2) When Indoor temp. – Setting temp. is ≤ 5°C during cooling and when Setting temp. – Indoor temp. is ≤ 5°C during heating, the system switches to the following air flow direction control. After the louver swings left and right symmetrically for 3 cycles, control is switched to the control in 3).

	Cooling	Heating
Flap	Horizontal blowing (Fixed)	Slant forwardl blowing (Fixed)
Louver	Left/right swing	

3) After the flap swings for 5 cycles, control is switched to the control in 4).

	Cooling	Heating
Flap	Up/down swing	
Louver	Center (Fixed)	

4) For 5 minutes, the following air flow direction control is carried out.

	Cooling	Heating
Flap	Horizontal blowing (Fixed)	Slant forwardl blowing (Fixed)
Louver	Wide (Fixed)	

5) After 5 minutes have passed, the air flow direction is determined according to the indoor temperature and setting temperature.

Operation mode	Air flow direction control		
Cooling	Indoor temp. – Setting temp. $\leq 2^{\circ}\text{C}$	$2^{\circ}\text{C} < \text{Indoor temp. – Setting temp.} \leq 5^{\circ}\text{C}$	Indoor temp. – Setting temp. $> 5^{\circ}\text{C}$
	The control in 4) continues.	Control returns to the control in 2).	Control returns to the control in 1).
Heating	Setting temp. – Indoor temp. $\leq 2^{\circ}\text{C}$	$2^{\circ}\text{C} < \text{Setting temp. – Indoor temp.} \leq 5^{\circ}\text{C}$	Setting temp. – Indoor temp. $> 5^{\circ}\text{C}$
	The control in 4) continues.	Control returns to the control in 2).	Control returns to the control in 1).

(b) During dehumidifying operation (including auto dehumidifying operation)

Flap	Horizontal blowing (Fixed)
Louver	Wide (Fixed)

(10) Timer operation

(a) Comfortable timer setting (ON timer)

If the timer is set at ON when the operation select switch is set at the cooling or heating, or the cooling or heating in auto mode operation is selected, the comfortable timer starts and determines the starting time of next operation based on the initial value of 15 minutes and the relationship between the indoor temperature at the setting time (temperature of room temperature sensor) and the setting temperature.

(b) Sleep timer operation

Pressing the SLEEP button causes the temperature to be controlled with respect to the set temperature.

(c) OFF timer operation

The Off timer can be set at a specific time (in 10-minute units) within a 24-hour period.

(d) Weekly timer operation

Timer operation (ON timer, OFF timer) can be set up to 4 times a day for each weekday.

(11) Silent mode

As “Silent mode start” signal is received from the wireless remote control, it operates by dropping the outdoor fan tap and the compressor command speed.

	SRK63ZSPR-S	SRK71ZSPR-S	SRK80ZSPR-S
Outdoor fan tap (Upper limit)	5th speed	3rd speed	3rd speed
Compressor command speed	48 rps	50 rps	54 rps

(12) Night setback

As “Night setback” signal is received from the wireless remote control, the heating operation starts with the setting temperature at 10°C .

(13) Installation location setting

When the indoor unit is installed at the end of a room, control the air flow direction so that it is not toward the side walls. If you set the wireless remote control installation position, keep it so that the air flow is within the range shown in the following figure.

(a) Setting

(i) If the air-conditioning unit is running, press the ON/OFF button to stop.

The installation location setting cannot be made while the unit is running.

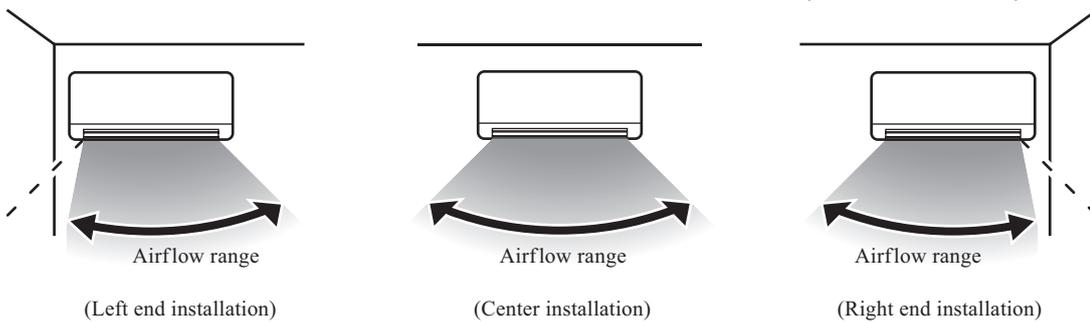
(ii) Press the AIR FLOW U/D (UP/DOWN) button and the AIR FLOW L/R (LEFT/RIGHT) button together for 5 seconds or more.

The installation location display illuminates.

(iii) Setting the air-conditioning installation location.

Press the AIR FLOW L/R (LEFT/RIGHT) button and adjust to the desired location.

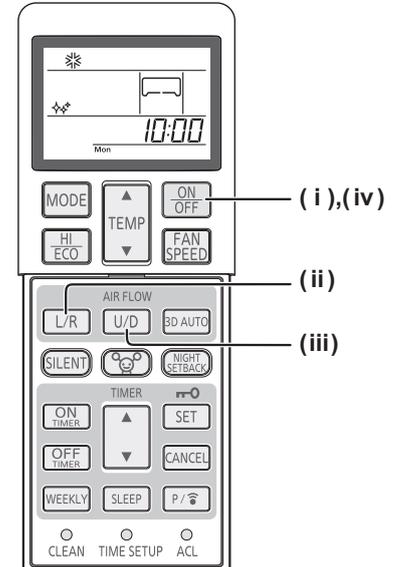
Each time the AIR FLOW L/R (LEFT/RIGHT) button is pressed, the indicator is switched in the order of:



(iv) Press the ON/OFF button.

The air-conditioner's installation location is set.

Press within 60 seconds of setting the installation location (while the installation location setting display illuminates).



(14) Outline of heating operation

(a) Operation of major functional components in heating mode

	Heating		
	Thermostat ON	Thermostat OFF	Failure
Compressor	ON	OFF	OFF
Indoor fan motor	ON	ON(HOT KEEP)	OFF
Outdoor fan motor	ON	OFF (few minutes ON)	OFF
4-way valve	ON	ON	OFF (3 minutes ON)

(b) Details of control at each operation mode (pattern)

(i) Fuzzy operation

Deviation between the indoor temperature setting correction temperature and the return air temperature is calculated in accordance with the fuzzy rule, and used for control of the air capacity and the compressor speed.

Model	SRK63ZSPR-S	SRK71ZSPR-S	SRK80ZSPR-S
Fan speed			
AUTO	12-120rps	20-116rps	20-120rps
HI	12-120rps	20-116rps	20-120rps
MED	12-120rps	20-116rps	20-120rps
LO	12-94rps	20-78rps	20-86rps
ULO	12-54rps	20-46rps	20-52rps

When the defrosting, protection device, etc. is actuated, operation is performed in the corresponding mode.

(ii) Hot keep operation

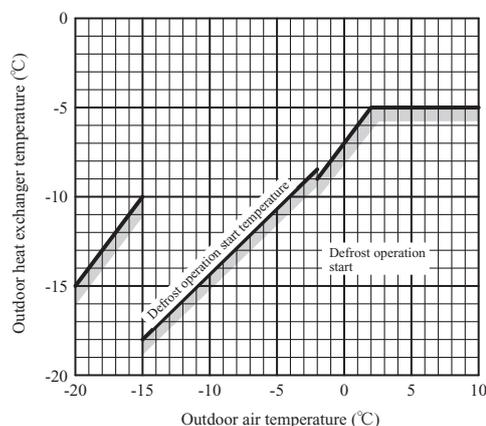
If the hot keep operation is selected during the heating operation, the indoor blower is controlled based on the temperature of the indoor heat exchanger (Th2) to prevent blowing of cool wind.

However, if the fan speed setting is HI and room temperature is 19°C or higher, this control is not executed.

(c) Defrost operation

(i) Starting conditions (Defrosting operation can be started only when all of the following conditions are satisfied.)

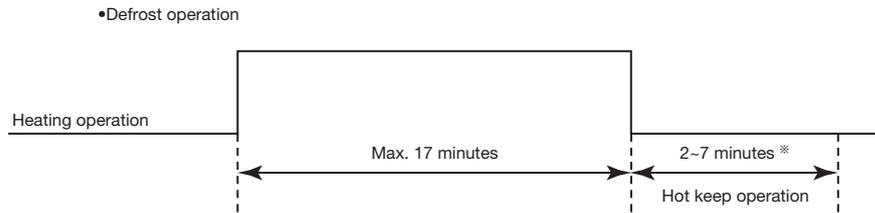
- 1) After start of heating operation
When it elapsed 35 minutes. (Accumulated compressor operation time)
- 2) After end of defrost operation
When it elapsed 35 minutes. (Accumulated compressor operation time)
- 3) Outdoor heat exchanger sensor (TH1) temperature
When the temperature has been below -5°C for 3 minutes continuously.
- 4) The difference between the outdoor air sensor temperature and the outdoor heat exchanger sensor temperature
 - The outdoor air temperature $\geq -2^\circ\text{C} : 7^\circ\text{C}$ or higher
 - $-15^\circ\text{C} \leq$ The outdoor air temperature $< -2^\circ\text{C} : 4/15 \times$ The outdoor air temperature $+ 7^\circ\text{C}$ or higher
 - The outdoor air temperature $< -15^\circ\text{C} : -5^\circ\text{C}$ or higher



5) During continuous compressor operation

In addition, when the speed command from the indoor control of the indoor unit during heating operation has counted 0 rps 10 times or more and all conditions of 1), 2), 3) and 5) above and the outdoor air temperature is 3°C or less are satisfied (note that when the temperature for outdoor heat exchanger sensor (TH1) is -5°C or less: 62 rps or more, -4°C or less: less than 62 rps), defrost operation is started.

- (ii) Ending conditions (Operation returns to the heating cycle when either one of the following is satisfied.)
 - 1) Outdoor heat exchanger sensor (TH1) temperature: 13°C (model SRK63 : 10°C) or higher
 - 2) Continued operation time of defrost operation → For more than 17 minutes.



※Depends on an operation condition, the time can be longer than 7 minutes.

(15) Outline of cooling operation

(a) Operation of major functional components in cooling mode

	Cooling		
	Thermostat ON	Thermostat OFF	Failure
Compressor	ON	OFF	OFF
Indoor fan motor	ON	ON	OFF
Outdoor fan motor	ON	OFF (few minutes ON)	OFF (few minutes ON)
4-way valve	OFF	OFF	OFF

(b) Detail of control in each mode (Pattern)

1) Fuzzy operation

During the fuzzy operation, the air flow and the compressor speed are controlled by calculating the difference between the indoor temperature setting correction temperature and the return air temperature.

Fan speed \ Model	SRK63ZSPR-S	SRK71ZSPR-S	SRK80ZSPR-S
AUTO	12-106rps	20-76rps	20-98rps
HI	12-106rps	20-76rps	20-98rps
MED	12-68rps	20-56rps	20-64rps
LO	12-50rps	20-40rps	20-46rps
ULO	12-32rps	20-26rps	20-26rps

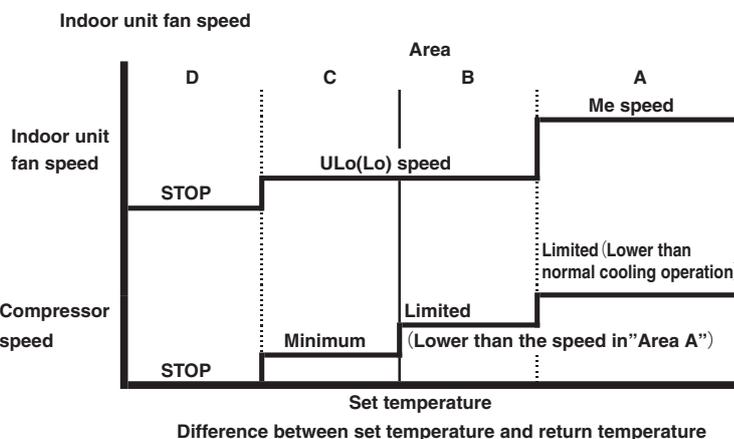
(16) Outline of dry(dehumidifying) operation

(a) Purpose of DRY mode

The purpose is "Dehumidification", and not to control the humidity to the target condition. Indoor/outdoor unit control the operation condition to reduce the humidity, and also prevent over cooling.

(b) Outline of control

- (i) Indoor unit fan speed and compressor are controlled by the area which is selected by the temperature difference.



- (ii) The indoor unit check the current area by every 5 minutes, and operate by the next checking.

(c) Other

When the outside temperature. and room temperature. is low for cooling operation, indoor unit can not operate in cooling, and dehumidifying. In this case, the units operate in heating to rise the room temperature and after that start dehumidifying operation.