

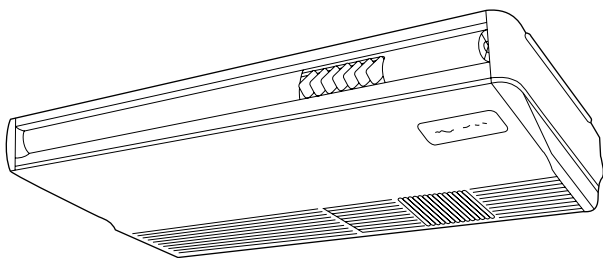
PCH24GK PCH30GK PCH36GK PCH42GK

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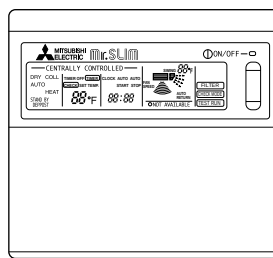
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FEATURES



Indoor unit



Microprocessor
Remote controller

Models Cooling capacity / Heating capacity SEER

PCH24GK	24,000 / 27,000 (35,500) Btu/h	10.3
PCH30GK	30,000 / 33,000 (42,500) Btu/h	10.0
PCH36GK	35,400 / 38,000 (47,500) Btu/h	10.3
PCH42GK	42,000 / 45,000 (52,500) Btu/h	10.3

1. AIR OUTLET

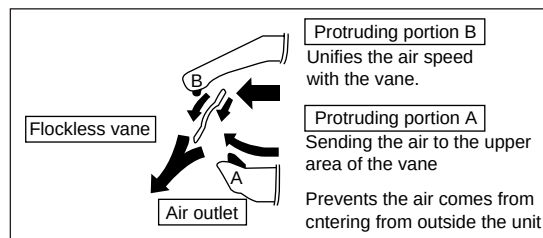
New PCH series models have 1 air outlet (auto vane switching of horizontal air flow / down flow by switched by auto vane) instead of 2 (horizontal, and down flows).

2. EASY TO CLEAN ; FLOCKLESS VANE

With our original air current control mechanism, a flockless vane is newly adapted.

The flockless vane prevents the condensation on the vane.

By changing the vane to the flockless type, the unit can be cleaned much easier with mild household detergent.



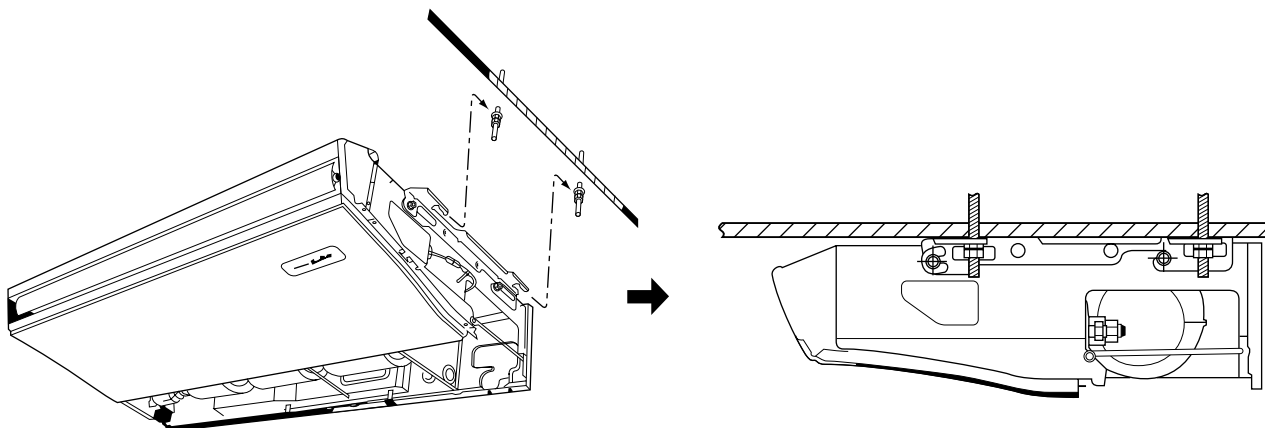
3. NEW MATERIALS FOR BETTER OIL RESISTANCE

We have changed the materials of grill, filter, fan and fan casing from ABS to P.P. (polypropylene) for better oil resistance. As a result, oil crazing is cut in half.

4. SIMPLIFIED INSTALLATION WORK (DIRECT SUSPENDING METHOD)

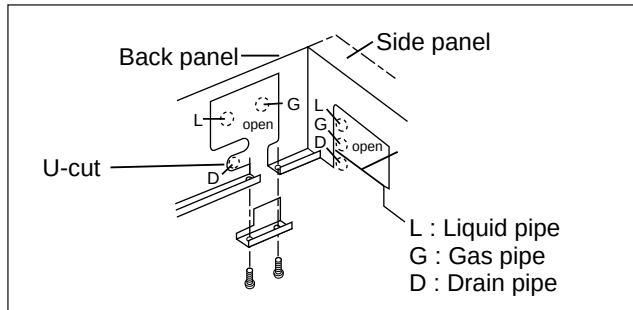
Simplified the installation work by changing the suspending method to the direct suspending method (suspending the unit directly from the suspension fixture).

In this way, the unit can be attached to the suspension fixture without removing the installation parts off (Only the side cover is removed). This method is much simpler than the "One-time installation method".



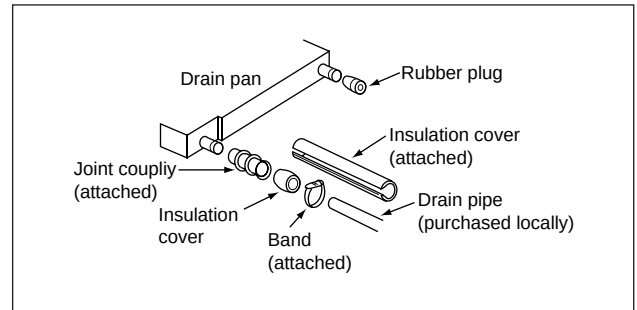
5. IMPROVING EFFICIENCY OF PIPING WORK

① Removed the knockout work by separating the piping space from the air outlet for efficiency of the piping work.



※ Knockout work is needed for the top part. When optional drain-up machine is installed, the refrigerant pipe exits out from the top.

② Improved the flexibility by making it possible for drainage pipe to exit not only from the right side back but also from the left side back.



※ Please move the rubber plug for the unit to the right joint when drainage pipe exits from the left side.

6. EASY MAINTENANCE ; NO MAINTENANCE NECESSARY FOR 2500 HOURS

The new long-life air filter can be used continuously 2500 hours without maintenance (at general office situation).

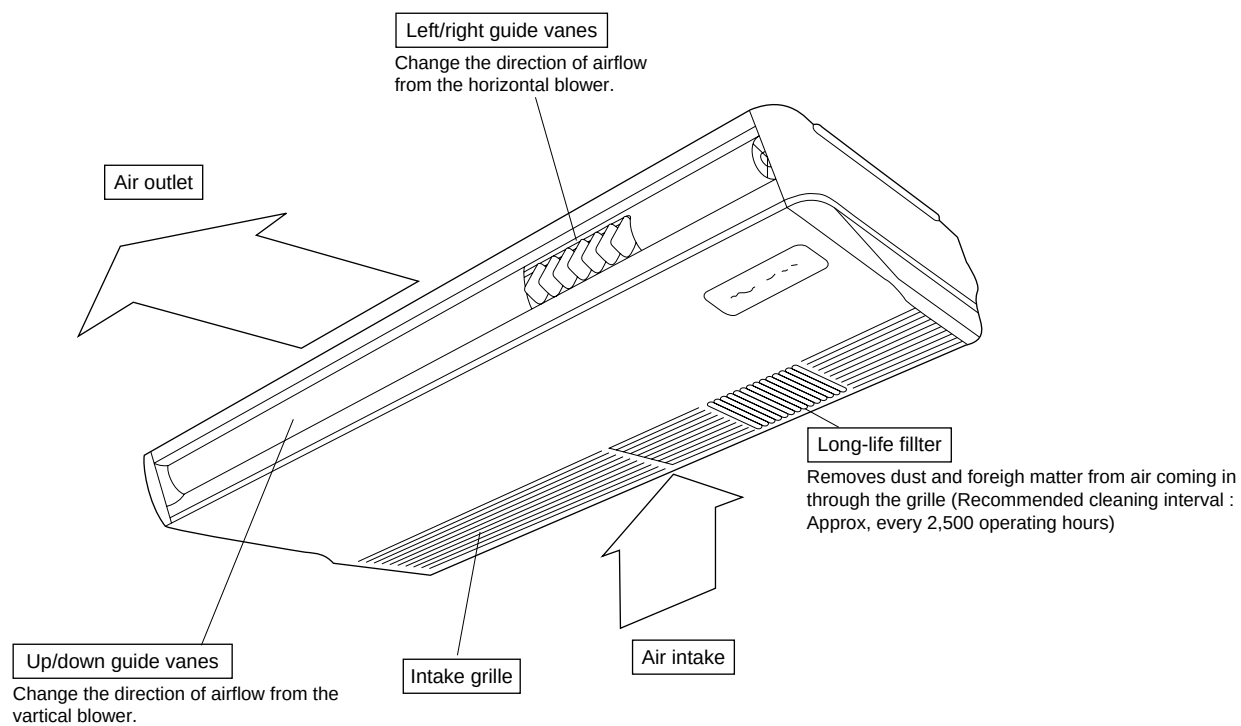
7. STABLE COOLING EVEN AT OUTDOOR TEMPERATURES AS LOW AS 23°F MAKES YEAR-ROUND AIR-CONDITIONING POSSIBLE

The microprocessor automatically adjusts fan speed in accordance with outdoor temperature to maintain the coolant at an even condensing temperature. The result is smooth, efficient cooling even when temperatures outdoors drop as low as 23°F. This makes the unit ideal for a wide range of specialised cooling needs, such as rooms with many office machines or computers and areas subject to strong sunlight.

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PART NAMES AND FUNCTIONS

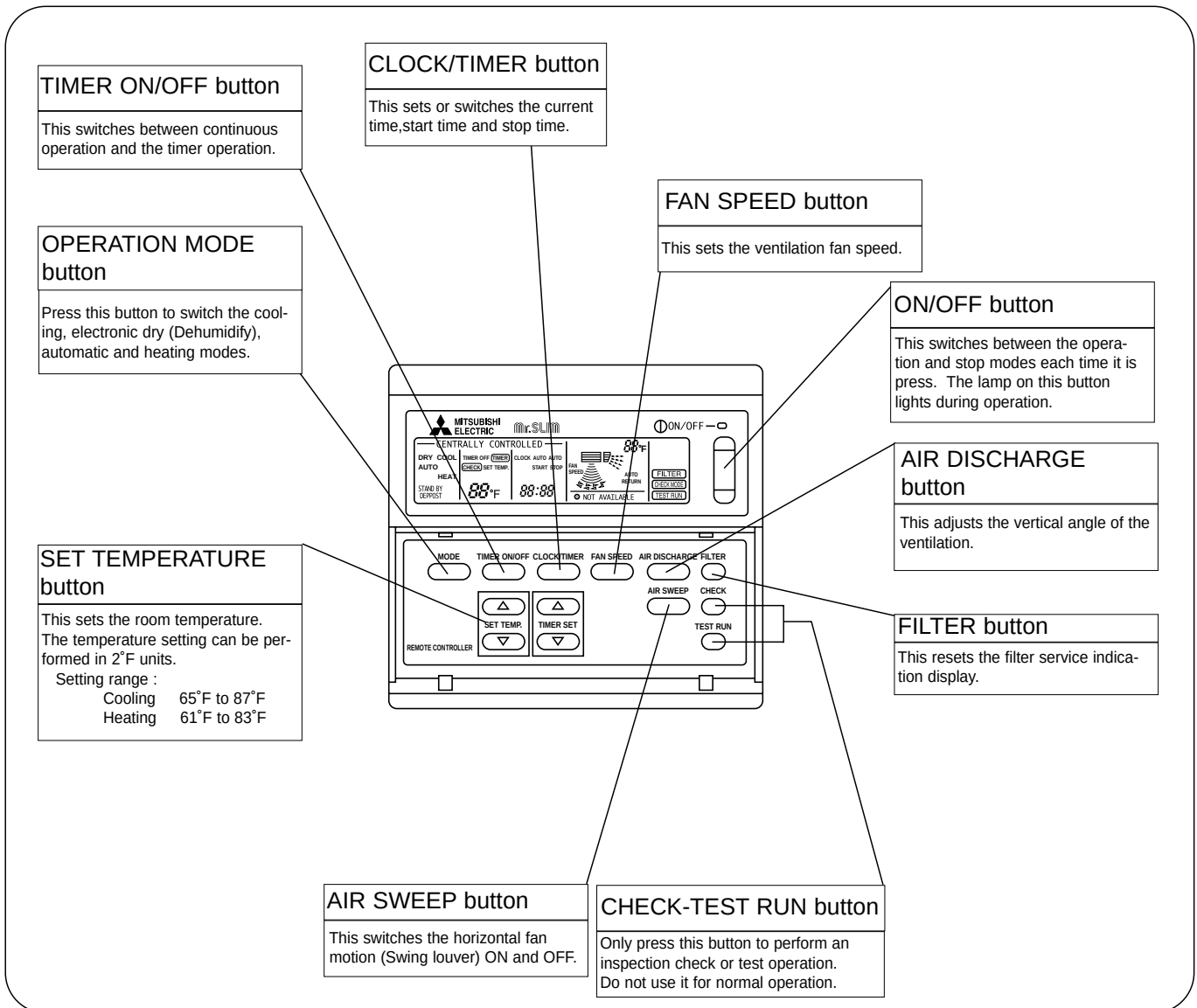
● Indoor (Main) Unit



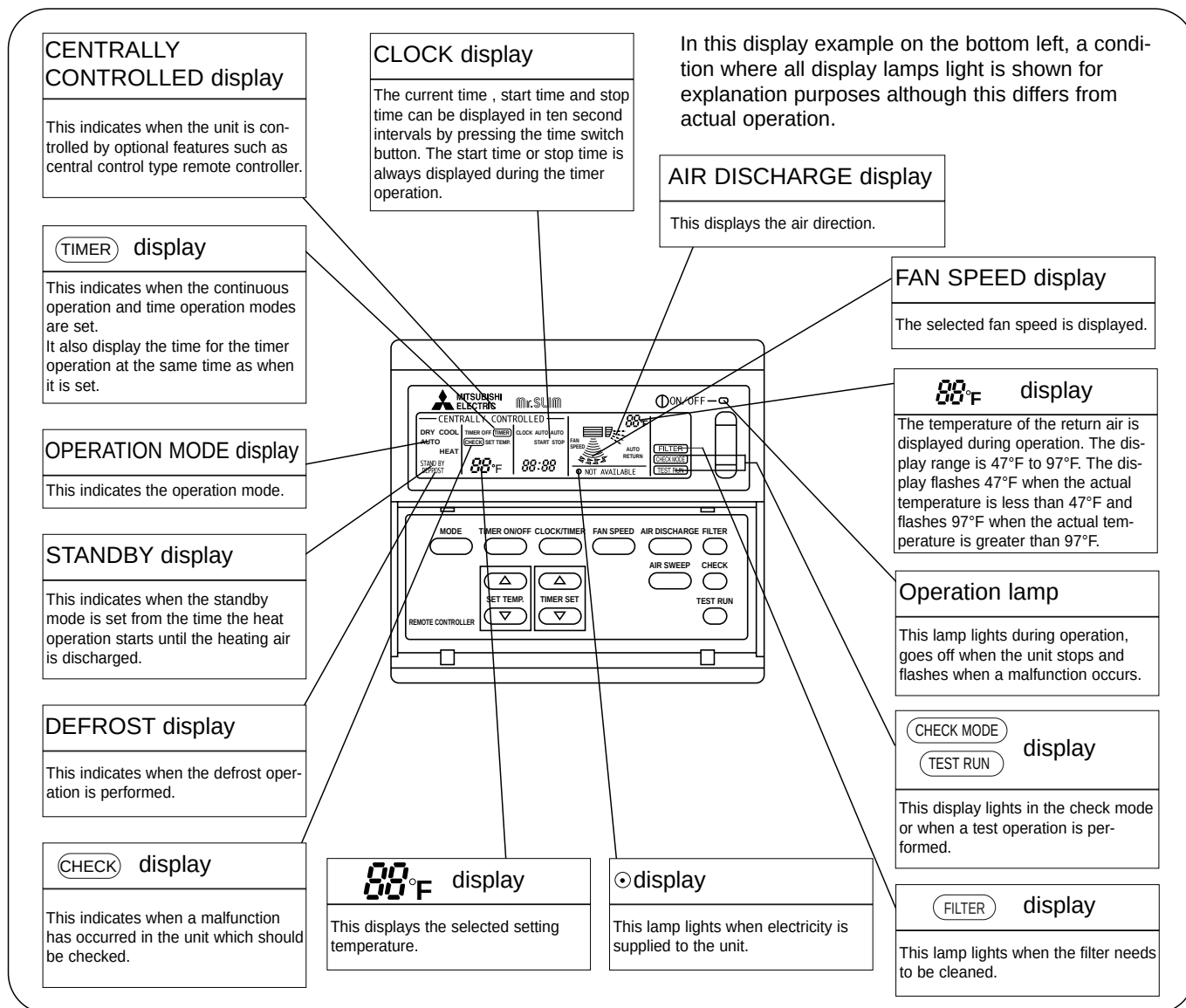
Remote controller

Once the controls are set, the same operation mode can be repeated by simply pressing the ON / OFF button.

Remote controller operation buttons



Remote controller display



Caution

- Only the ⊙ display lights when the unit is stopped and power supplied to the unit.
- When power is turned ON for the first time the (CENTRAL CTRL) display appears to go off momentarily but this is not a malfunction.
- When the central control remote control unit, which is sold separately, is used the ON-OFF button, OPERATION MODE button and SET TEMP. button do not operate.

MODELS : PCH24GK, PCH30GK, PCH36GK, PCH42GK

Model			PCH24GK	PCH30GK	PCH36GK	PCH42GK
Capacity	Cooling *1	Btu/h	24,000	30,000	35,400	42,000
	Heating *1	Btu/h	27,000[34,000/35,500]	33,000[40,500/42,500]	38,000[45,500/47,500]	45,000[52,500/54,500]
	Heating *2	Btu/h	14,800[21,800/23,300]	20,000[27,500/29,500]	21,000[28,500/30,500]	23,800[31,300/33,300]
Moisture removal		Pints/h	4.6	4.3	6.3	10.3
Power Consumption	Cooling *1	kW	2.51	3.23	3.60	4.10
	Heating *1	kW	2.46[4.49/4.94]	3.00[5.25/5.76]	3.32[5.57/6.08]	3.76[6.01/6.52]
	Heating *2	kW	1.95[3.98/4.43]	2.58[4.83/5.34]	2.63[4.88/5.39]	3.00[5.25/5.76]
EER		*1	9.6	9.3	9.8	10.5
SEER			10.3	10.0	10.3	10.3
HSPF			6.8	7.0	7.0	7.2
COP	*1		3.2	3.2	3.4	3.4
	*2		2.2	2.3	2.3	2.3
INDOOR UNIT MODELS			PCH24GK	PCH30GK	PCH36GK	PCH42GK
External finish			Munsell 0.70Y 8.59/0.97			
Power supply		V,phase,HZ	208/230,1,60			
Max.fuse size (time delay)		A	20	25	25	25
Min.ampacity		A	15	17	17	17
Fan motor		F.L.A.	1.1	1.3	1.3	1.3
Booster heater		A(kW)	9.8/10.8<2.0/2.5>	10.8/12.0<2.3/2.8>	10.8/12.0<2.3/2.8>	10.8/12.0<2.3/2.8>
Airflow Hi-Lo	Dry	CFM	880-710	1,240-990		
	Wet	CFM	810-640	1,130-880		
Sound level Hi-Lo		dB	48-43	51-45	51-45	51-45
Unit drain pipe O.D. (On a local side)		in.	1	1	1	1
Dimensions	W	in.	51-9/16	63-3/4		
	D	in.	26-3/4	26-3/4		
	H	in.	10-5/8	10-5/8		
Weight		lb	87	101	106	
OUTDOOR UNIT MODELS			PUH-24EK	PUH30EK	PUH36EK ₁	PUH42EK ₇
External finish			Munsell 5Y 7/1			
Power supply		V,phase,HZ	208/230,1,60			
Max.fuse size (time delay)		A	20	30	30	40
Min.ampacity		A	16	20	22	28
Fan motor		F.L.A.	0.65+0.65	0.75+0.75	0.75+0.75	0.8+0.8
Compressor	Model (type)		NH33NBD	NH41NAD	NH47NAD	ZR42K3PFV
		R.L.A.	11.5	14.0	17.5	20.4
		L.R.A.	54	73	87	109
Crankcase heater		A(W)	0.16/0.17<33/39>	0.16/0.17<33/39>	0.16/0.17<33/39>	0.16/0.17<33/39>
Refrigerant control			Capillary tube			
Defrost method			Reverse cycle			
Sound level		dB	55	55	55	56
Dimensions	W	in.	34-1/4	38-3/16		
	D	in.	11-5/8	13-9/16		
	H	in.	49-9/16	49-9/16		
Weight		lb	202	245	246	268
REMOTE CONTROLLER			With indoor unit			
Control voltage (by built-in transformer)			Indoor unit-remote controller: DC12V. Indoor unit-outdoor unit: DC12V			
REFRIGERANT PIPING			Not supplied (optional parts)			
Pipe size	Liquid	in.	3/8	1/2		
	Gas	in.	5/8	3/4		
Connection method	Indoors		Flared			
	Outdoors		Flared			
Between the indoor & outdoor units	Height difference	ft	164			
	Piping length	ft	165			

NOTES : *1.Rating conditions (cooling)-indoor : D.B. 80°F, W.B. 67°F outdoor : D.B. 95°F, W.B. 75°F.
(heating)-indoor: D.B. 70°F, W.B. 60°F outdoor : D.B. 47°F, W.B. 43°F.

*2.Rating conditions (heating)-indoor : D.B. 70°F, W.B. 60°F outdoor : D.B. 17°F, W.B. 15°F.

*3.Heating capacity and power consumption in [] includes booster heater operation at 208/230V.

Operating range

		Indoor intake air temperature	Outdoor intake air temperature
Cooling	Maximum	D.B. 95°F, W.B. 71°F	D.B. 115°F
	Minimum	D.B. 67°F, W.B. 57°F	D.B. 0°F *
Heating	Maximum	D.B. 80°F, W.B. 67°F	D.B. 75°F, W.B. 65°F
	Minimum	D.B. 70°F, W.B. 68°F	D.B. 17°F, W.B.15°F

* In case of the wind baffle is installed.

(In case of the wind baffle is not installed, the minimum temperature will be D.B. 23°F.)

MODELS : PCH24GK, PCH30GK, PCH36GK, PCH42GK
1. PERFORMANCE DATA
1) COOLING CAPACITY

Models	Indoor air		Outdoor intake air D.B. temperature (°F)																	
	Airflow (CFM) B.F	I.W.B. (°F)	65			75			85			95			105			115		
			TC	SHC	TPC	TC	SHC	TPC	TC	SHC	TPC	TC	SHC	TPC	TC	SHC	TPC	TC	SHC	TPC
PCH24GK	<u>810</u> 0.10	71	28.5	18.6	2.08	27.9	18.2	2.19	27.0	17.6	2.35	25.8	16.8	2.58	24.6	16.0	2.81	23.5	15.3	3.01
		67	26.8	21.1	2.04	26.0	20.6	2.14	25.2	19.9	2.30	24.0	19.0	2.51	22.8	18.0	2.72	21.7	17.2	2.90
		63	25.1	23.1	2.00	24.3	22.4	2.09	23.5	21.6	2.25	22.4	20.6	2.44	21.2	19.5	2.64	20.1	18.6	2.81
	D.B.75°F (50%RH)	62.5	24.8	20.6	1.99	24.1	20.0	2.09	23.2	19.3	2.24	22.1	18.4	2.44	21.0	17.4	2.63	19.9	16.6	2.80
	D.B.72°F (50%RH)	60	23.8	19.8	1.97	23.1	19.2	2.06	22.3	18.5	2.21	21.2	17.6	2.40	20.1	16.7	2.59	19.1	15.8	2.75
	D.B.70°F (50%RH)	59	23.4	19.4	1.96	22.7	18.7	2.05	21.9	18.1	2.19	20.8	17.2	2.38	19.7	16.3	2.57	18.7	15.4	2.73
PCH30GK	<u>1,130</u> 0.08	71	35.7	25.0	2.68	34.9	24.5	2.81	33.8	23.7	3.03	32.3	22.7	3.32	30.7	21.6	3.62	29.3	20.6	3.88
		67	33.4	28.1	2.63	32.6	27.3	2.75	31.5	26.4	2.96	30.0	25.2	3.23	28.5	23.9	3.50	27.1	22.8	3.73
		63	31.3	30.4	2.57	30.4	29.5	2.69	29.3	28.5	2.89	27.9	27.2	3.15	26.5	25.7	3.40	25.2	24.5	3.62
	D.B.75°F (50%RH)	62.5	31.0	27.4	2.57	30.1	26.6	2.69	29.1	25.6	2.88	27.7	24.4	3.13	26.2	23.1	3.39	24.9	22.0	3.60
	D.B.72°F (50%RH)	60	29.8	26.2	2.53	28.9	25.4	2.65	27.9	24.5	2.84	26.5	23.3	3.09	25.1	22.1	3.33	23.8	21.0	3.54
	D.B.70°F (50%RH)	59	29.3	25.7	2.52	28.4	24.8	2.64	27.4	24.0	2.82	26.0	22.8	3.06	24.6	21.5	3.31	23.3	20.4	3.51
PCH36GK	<u>1,130</u> 0.01	71	42.1	27.9	2.99	41.2	27.3	3.14	39.9	26.4	3.38	38.1	25.2	3.70	36.2	24.0	4.03	34.6	22.9	4.32
		67	39.5	31.6	2.93	38.4	30.7	3.07	37.1	29.7	3.30	35.4	28.3	3.60	33.6	26.9	3.91	32.0	25.6	4.16
		63	37.0	34.4	2.87	35.9	33.4	3.00	34.6	32.3	3.22	33.0	30.7	3.51	31.2	29.1	3.79	29.7	27.7	4.03
	D.B.75°F (50%RH)	62.5	36.6	30.8	2.86	35.5	29.9	2.99	34.3	28.9	3.21	32.7	27.5	3.49	30.9	26.0	3.78	29.4	24.8	4.02
	D.B.72°F (50%RH)	60	35.2	29.5	2.82	34.1	28.6	2.95	32.9	27.6	3.16	31.3	26.3	3.44	29.6	24.9	3.72	28.1	23.6	3.95
	D.B.70°F (50%RH)	59	34.6	28.9	2.81	33.5	28.0	2.94	32.3	27.0	3.14	30.7	25.7	3.41	29.0	24.3	3.69	27.5	23.0	3.91
PCH42GK	<u>1,130</u> 0.04	71	50.0	29.6	3.41	48.9	28.9	3.57	47.3	28.0	3.85	45.2	26.8	4.21	43.0	25.4	4.59	41.1	24.3	4.92
		67	46.8	34.2	3.34	45.6	33.3	3.49	44.0	32.1	3.76	42.0	30.7	4.10	39.9	29.1	4.45	38.0	27.7	4.74
		63	43.8	37.8	3.27	42.6	36.7	3.42	41.1	35.4	3.67	39.1	33.7	3.99	37.1	31.9	4.32	35.2	30.4	4.59
	D.B.75°F (50%RH)	62.5	43.4	33.5	3.26	42.1	32.5	3.41	40.7	31.4	3.66	38.7	29.9	3.98	36.7	28.3	4.30	34.9	26.9	4.58
	D.B.72°F (50%RH)	60	41.7	32.1	3.22	40.4	31.1	3.37	39.0	30.0	3.60	37.1	28.6	3.92	35.1	27.0	4.23	33.3	25.7	4.50
	D.B.70°F (50%RH)	59	41.0	31.4	3.20	39.7	30.4	3.35	38.3	29.3	3.58	36.4	27.9	3.89	34.4	26.4	4.20	32.7	25.0	4.46

Notes 1. B.F : Bypass Factor, I.W.B. : Intake air wet-bulb temperature

TC : Total Capacity ($\times 10^3$ Btu/h), SHC : Sensible Heat Capacity ($\times 10^3$ Btu/h)

TPC : Total Power Consumption (kW)

2. SHC is based on D.B. 80°F of indoor intake air temperature.

3. Cooling capacity correction factors and Refrigerant piping length (one way) range.

MODEL	Refrigerant piping length (one way)									
	25ft	40ft	55ft	70ft	85ft	100ft	115ft	130ft	150ft	164ft
PCH24GK	1.0	0.981	0.968	0.952	0.940	0.925	0.913	0.900	0.886	0.874
PCH30GK	1.0	0.981	0.986	0.952	0.940	0.925	0.913	0.900	0.886	0.874
PCH36GK	1.0	0.981	0.968	0.952	0.940	0.925	0.913	0.900	0.886	0.874
PCH42GK	1.0	0.975	0.955	0.935	0.918	0.900	0.884	0.869	0.855	0.840

2) HEATING CAPACITY

Models	Indoor air		Outdoor intake air W.B. temperature(°F)												Auxiliary heater (208V 230V)	
	Airflow (CFM)	I.D.B. (°F)	15		25		35		45		55		65			
			CA	PC	CA	PC	CA	PC	CA	PC	CA	PC	CA	PC	CA	PC
PCH24GK	880	75	17.8	1.91	20.4	2.11	23.9	2.37	27.1	2.60	31.3	2.89	35.0	3.15	6.8	2.0
		70	18.2	1.84	20.9	2.04	24.4	2.29	27.7	2.50	31.8	2.78	35.6	3.03	-----	-----
		65	18.6	1.77	21.4	1.96	25.0	2.20	28.2	2.41	32.5	2.67	36.3	2.91	8.5	2.5
PCH30GK	1,240	75	21.8	2.32	25.0	2.57	29.2	2.89	33.1	3.17	38.2	3.53	42.8	3.84	7.5	2.2
		70	22.2	2.25	25.5	2.48	29.9	2.79	33.8	3.05	38.9	3.39	43.5	3.69	-----	-----
		65	22.8	2.16	26.1	2.39	30.5	2.68	34.5	2.93	39.7	3.26	44.3	3.55	9.6	2.8
PCH36GK	1,240	75	25.0	2.57	28.7	2.85	33.7	3.20	38.1	3.51	44.0	3.91	49.3	4.25	7.5	2.2
		70	25.6	2.49	29.4	2.75	34.4	3.08	38.9	3.38	44.8	3.76	50.0	4.09	-----	-----
		65	26.2	2.39	30.1	2.64	35.2	2.96	39.8	3.25	45.7	3.61	51.0	3.93	9.6	2.8
PCH42GK	1,240	75	29.7	2.91	34.0	3.23	39.9	3.63	45.2	3.98	52.1	4.42	58.4	4.81	7.5	2.2
		70	30.3	2.82	34.8	3.11	40.7	3.49	46.1	3.83	53.0	4.25	59.3	4.63	-----	-----
		65	31.1	2.71	35.6	2.99	41.6	3.36	47.1	3.68	54.1	4.09	60.4	4.45	9.6	2.8

Notes 1. I.D.B. : Intake air dry-bulb temperature

CA : Capacity (x10³ Btu/h), PC : Power Consumption (kW)

2. When booster heater is "on", total capacity and total power consumption should be added the figures described in booster heater column.

•Booster heater ON : When the set temperature is higher than the room temperature by more than 5.4 deg.

•Booster heater OFF : When the set temperature is higher than the room temperature by less than 3.6 deg.

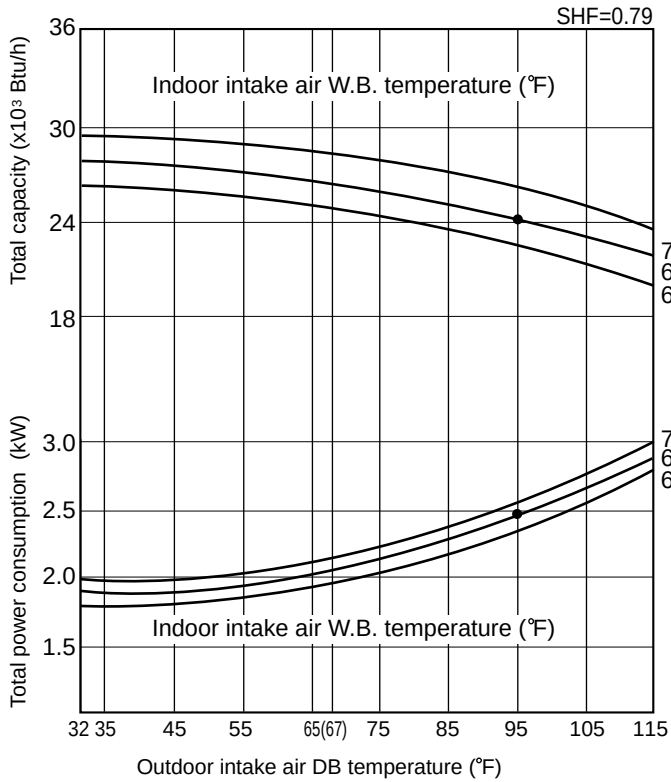
3. Heating capacity correction factors.

Models	Refrigerant piping length (one way)		
	Less than 100ft	100~130ft	130~164ft
PCH24GK	1.00	0.995	0.990
PCH30GK	1.00	0.995	0.990
PCH36GK	1.00	0.995	0.990
PCH42GK	1.00	0.995	0.990

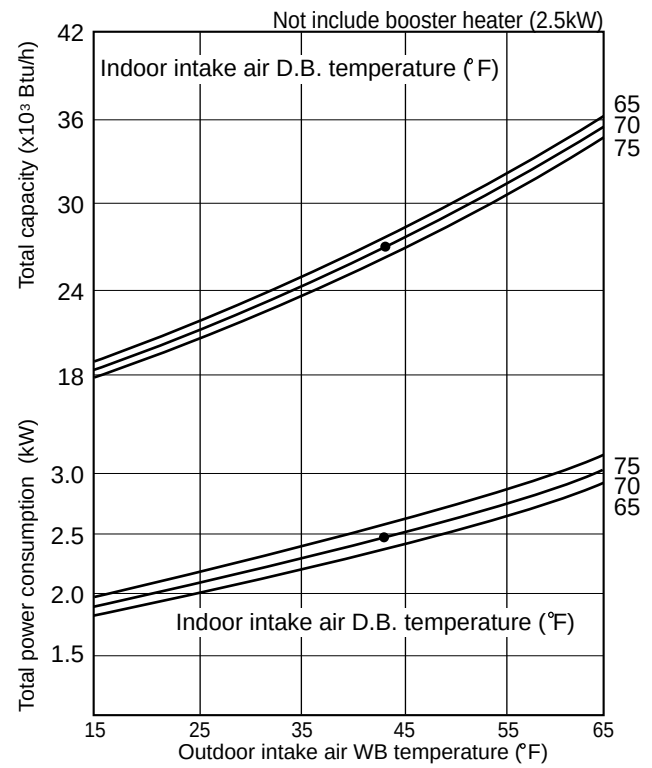
2. PERFORMANCE CURVE

NOTES : A point on the curve shows the reference point.

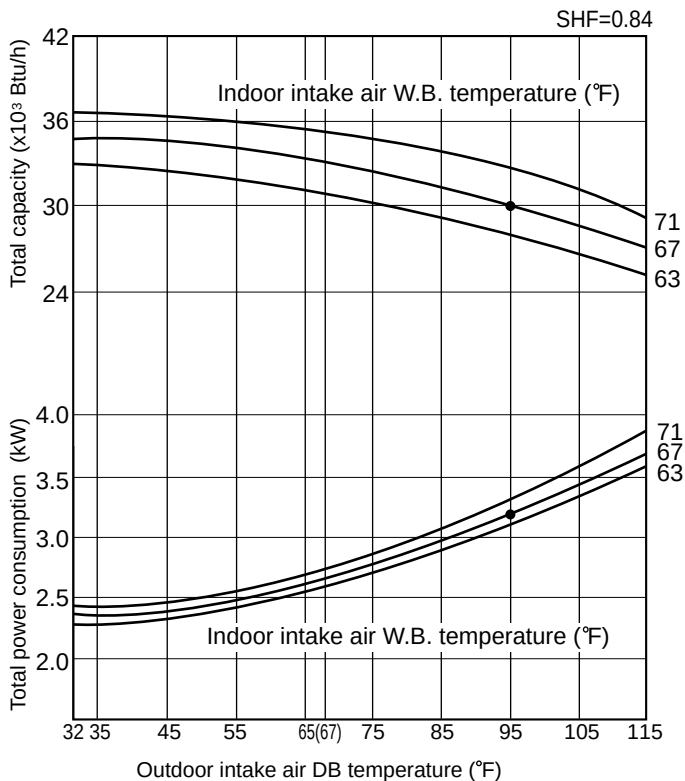
PCH24GK COOLING CAPACITY



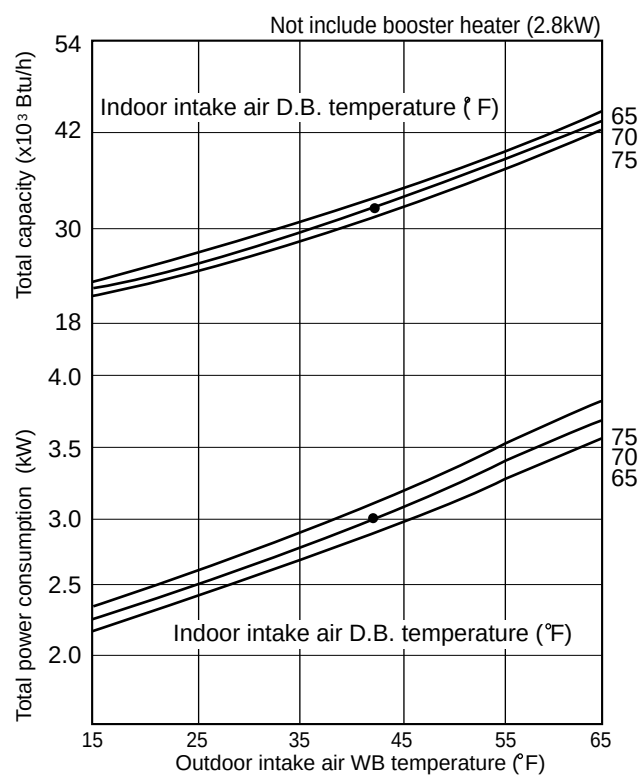
PCH24GK HEATING CAPACITY



PCH30GK COOLING CAPACITY

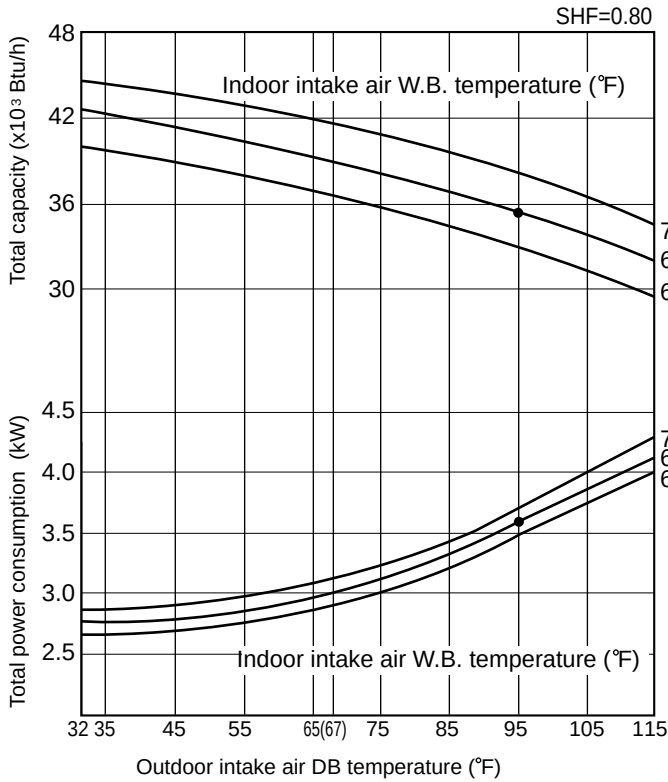


PCH30GK HEATING CAPACITY

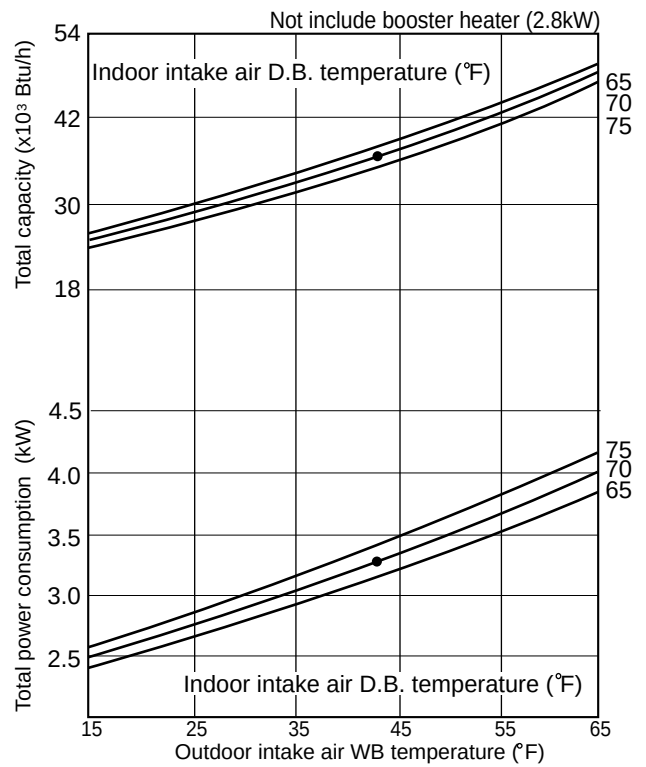


NOTES : A point on the curve shows the reference point.

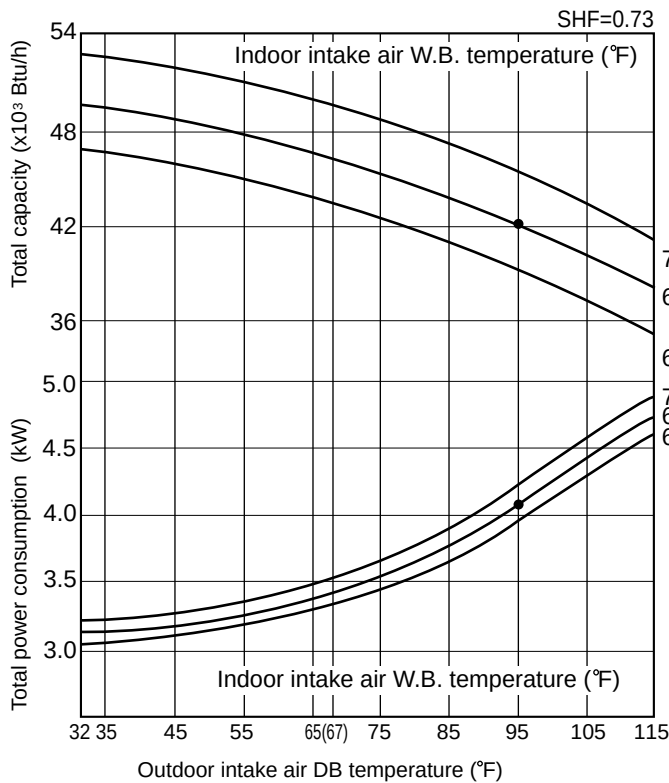
PCH36GK COOLING CAPACITY



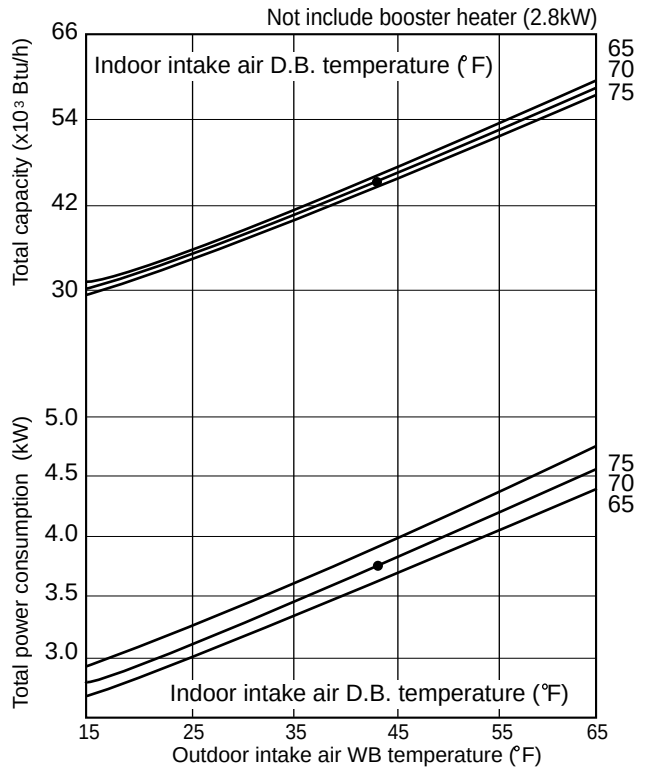
PCH36GK HEATING CAPACITY



PCH42GK COOLING CAPACITY



PCH42GK HEATING CAPACITY



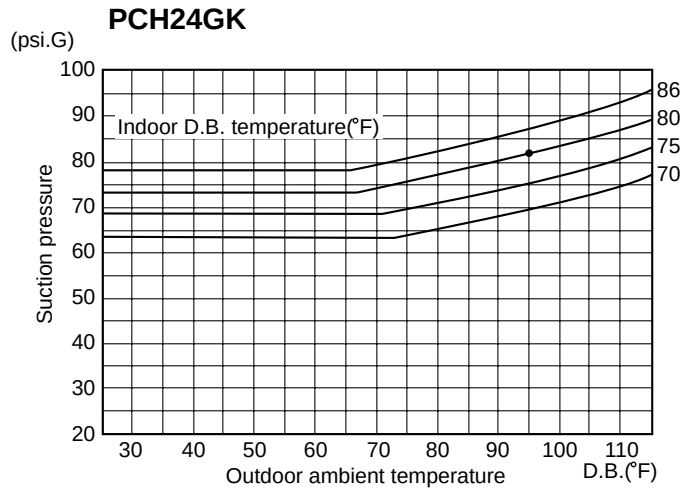
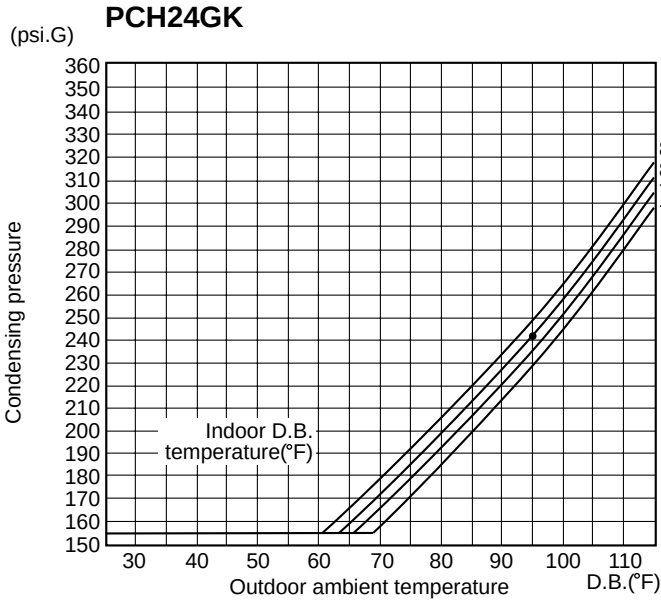
3. CONDENSING PRESSURE AND SUCTION PRESSURE

Data is based on the condition under indoor humidity 50%.

Air flow should be set at HI.

A point on the curve shows the reference point.

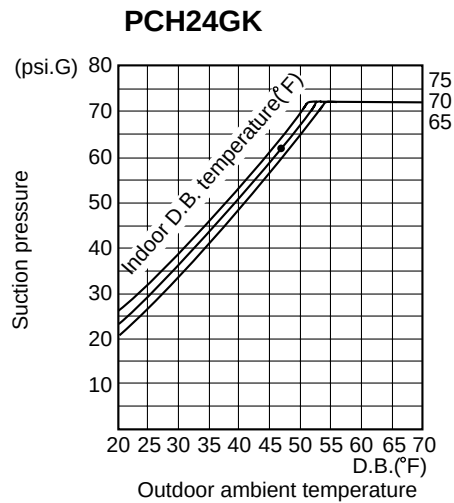
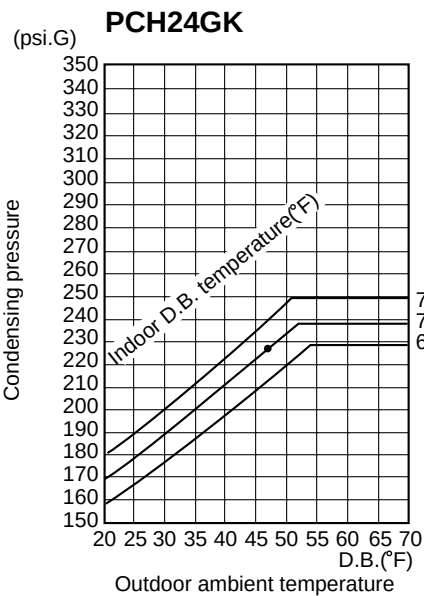
< Cooling mode >



Data is based on the condition under outdoor humidity 75%.

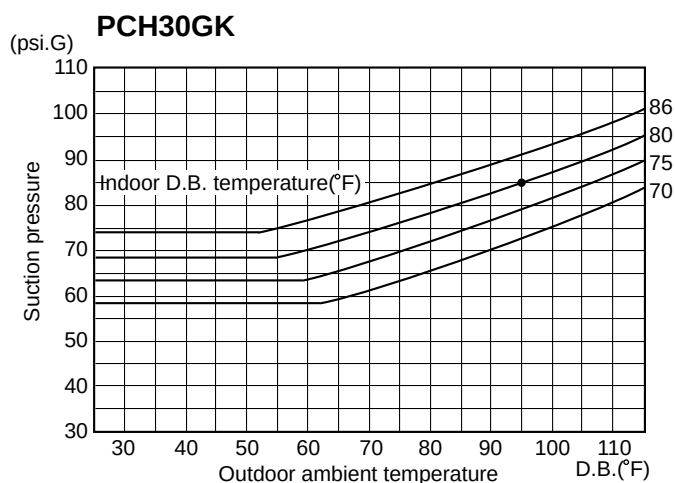
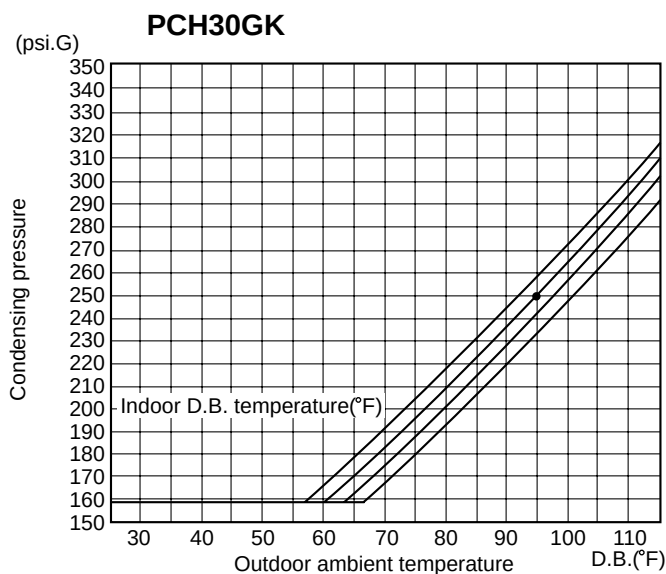
A point on the curve shows the reference point.

< Heating mode >



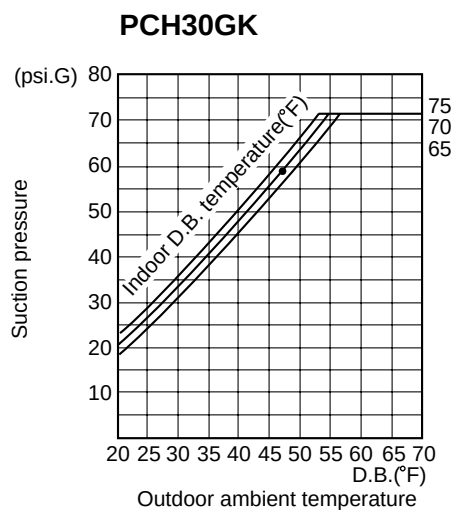
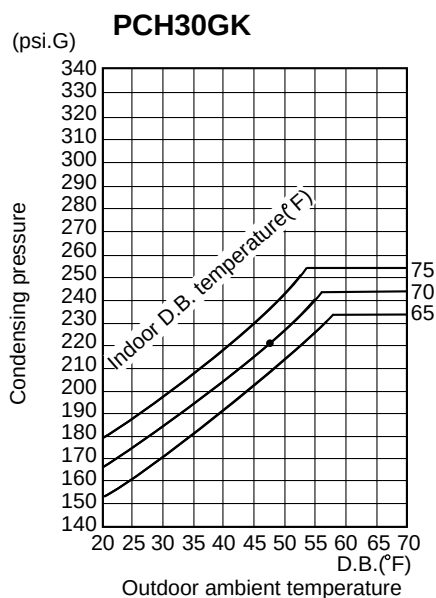
Data is based on the condition under indoor humidity 50%.
 Air flow should be set at HI.
 A point on the curve shows the reference point.

< Cooling mode>



Data is based on the condition under outdoor humidity 75%.
 A point on the curve shows the reference point.

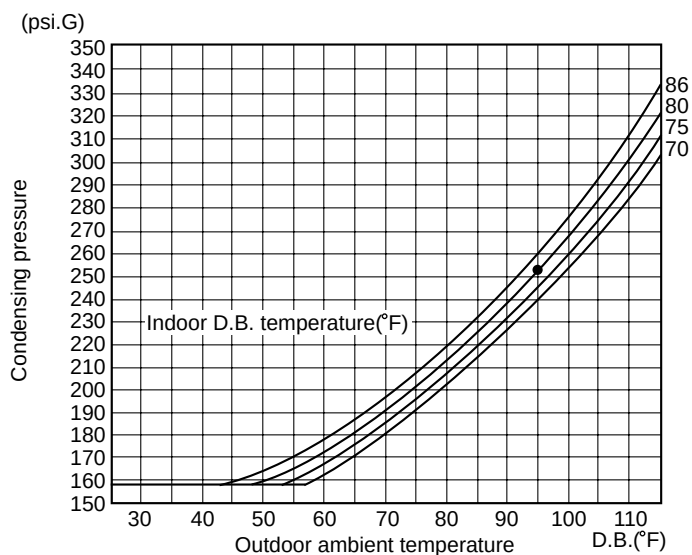
< Heating mode>



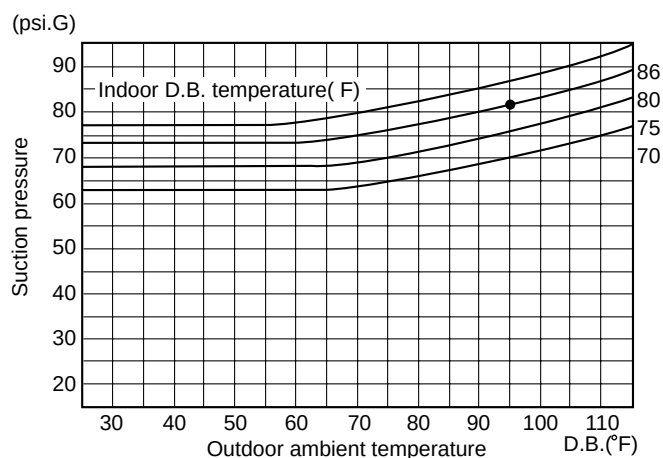
Data is based on the condition under indoor humidity 50%.
 Air flow should be set at HI.
 A point on the curve shows the reference point.

< Cooling mode >

PCH36GK



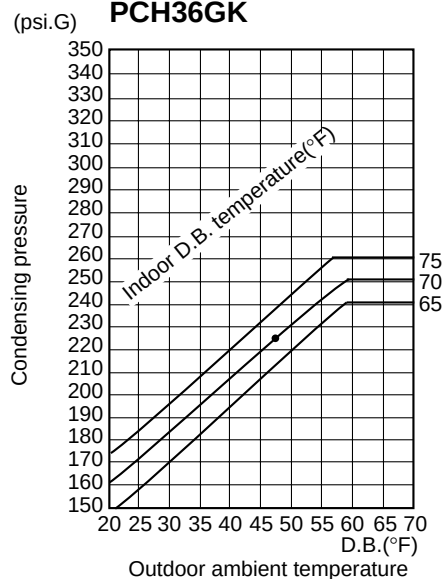
PCH36GK



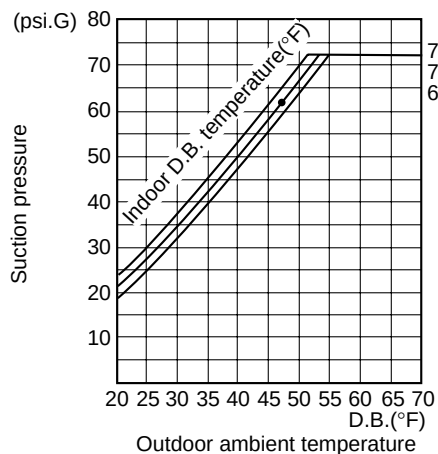
Data is based on the condition under outdoor humidity 75%.
 A point on the curve shows the reference point.

< Heating mode >

PCH36GK

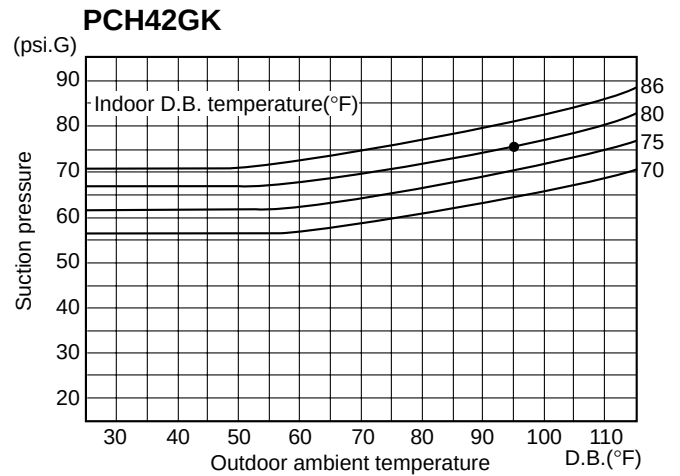
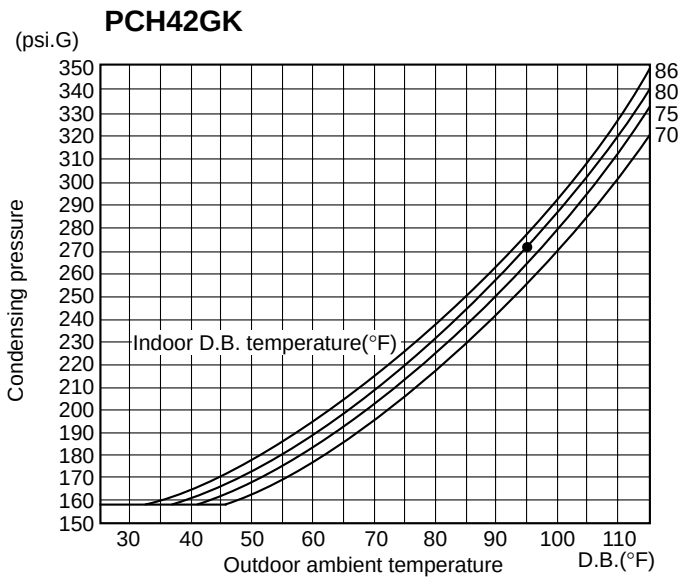


PCH36GK



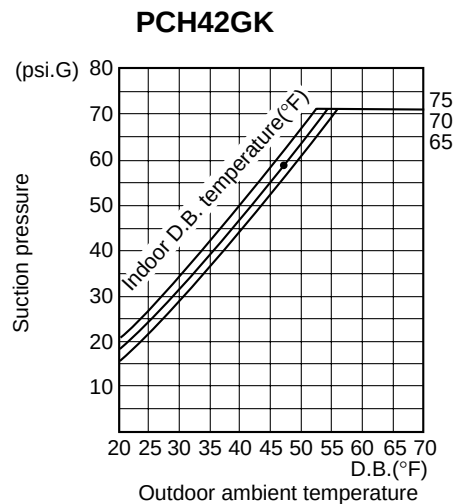
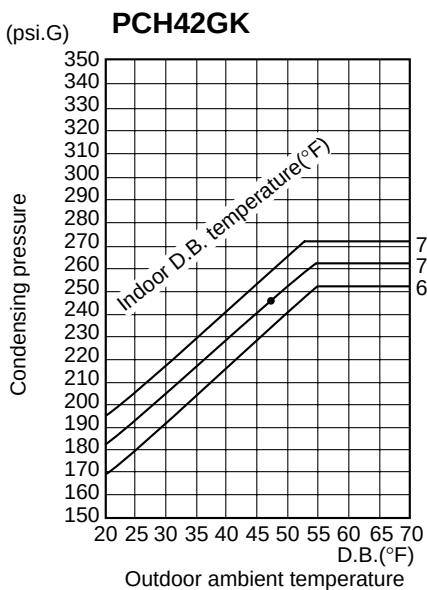
Data is based on the condition under indoor humidity 50%.
 Air flow should be set at HI.
 A point on the curve shows the reference point.

< Cooling mode>



Data is based on the condition under outdoor humidity 75%.
 A point on the curve shows the reference point.

< Heating mode>



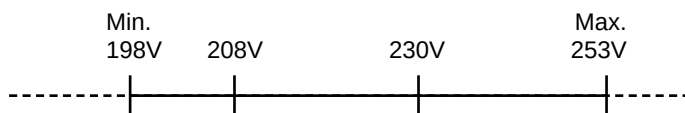
4. STANDARD OPERATION DATA

Models			PCH24GK		PCH30GK		PCH36GK		PCH42GK		
Item		Unit	Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating	
Electrical circuit	Voltage		V	208/230	208/230	208/230	208/230	208/230	208/230	208/230	
	Frequency		Hz	60		60		60		60	
	Total input		kW	2.51	2.46	3.23	3.00	3.60	3.32	4.10	3.76
	Indoor fan current		A	1.1	1.1	1.3	1.3	1.3	1.3	1.3	1.3
	Booster heater current		A	—	9.8/10.8	—	10.8/12.0	—	10.8/12.0	—	10.8/12.0
	Outdoor fan current		A	0.65+0.65	0.65+0.65	0.75+0.75	0.75+0.75	0.75+0.75	0.75+0.75	0.8+0.8	0.8+0.8
	Comp. current		A	11.3/10.4	10.9/10.2	14.5/13.3	13.4/12.5	16.51/15.1	15.0/14.0	18.8/17.3	17.2/16.0
Refrigerant circuit	Condensing pressure		psi.G	242	227	250	221	253	225	272	246
	Suction pressure		psi.G	82	62	85	59	82	62	76	59
	Discharge temperature		°F	161	155	164	155	164	155	173	153
	Condensing temperature		°F	115	111	115	108	117	109	122	115
	Suction temperature		°F	48	35	53	34	50	35	46	33
	Comp.shell bottom temperature		°F	144	132	156	145	153	138	119	87
	Ref. pipe length		ft	25		25		25		25	
	Refrigerant charge		—	9 lbs 15 oz		10 lbs 2 oz		10 lbs 9 oz		11 lbs 0 oz	
Indoor side	Intake air temperature	D.B.	°F	80	70	80	70	80	70	80	70
		W.B.	°F	67	60	67	60	67	60	67	60
	Discharge air temperature	D.B.	°F	59	100	60	96	57	101	56	105
		W.B.	°F	58	—	59	—	56	—	55	—
	Fan speed		r.p.m.	1,100	1,070	1,190	1,150	1,220	1,200	1,220	1,200
	Airflow (High)		CFM	810	880	1,130	1,240	1,130	1,240	1,130	1,240
Outdoor side	Intake air temperature	D.B.	°F	95	47	95	47	95	47	95	47
		W.B.	°F	—	43	—	43	—	43	—	43
	Fan speed upper/lower		r.p.m.	750/750		760/760		760/760		840/840	
	Airflow		CFM	3,170		3,350		3,350		3,530	
Capacity			Btu/h	24,000	27,000	30,000	33,000	35,400	38,000	42,000	45,000
SHF			—	0.79	—	0.84	—	0.80	—	0.73	—

5. OPERATING RANGE

1) POWER SUPPLY

1 Phase 60Hz 208/230V
Guaranteed voltage range



2) OPERATION

Function	Air intake temperature Condition	Indoor		Outdoor	
		D.B.(°F)	W.B.(°F)	D.B.(°F)	W.B.(°F)
Cooling	Standard temperature	80	67	95	75
	Maximum temperature	95	71	115	—
	Minimum temperature	67	57	23	—
	Maximum humidity	80	75	80	75
Heating	Standard temperature	70	60	47	43
	Maximum temperature	80	67	75	65
	Minimum temperature	70	60	17	15

6. OUTLET AIR SPEED AND COVERAGE RANGE

Model	Airflow (CFM)	Air speed (ft/sec)	Coverage range(ft)
PCH24GK	880	13.5	40
PCH30GK	1,240	14.8	50
PCH36GK	1,240	14.8	50
PCH42GK	1,240	14.8	50

The air coverage range is the value up to the position where the air speed is 0.8ft/sec. when air is blown out horizontally from the unit at the High notch position. The coverage range should be used only as a general guideline since it varies according to the size of the room and furniture installed inside the room.

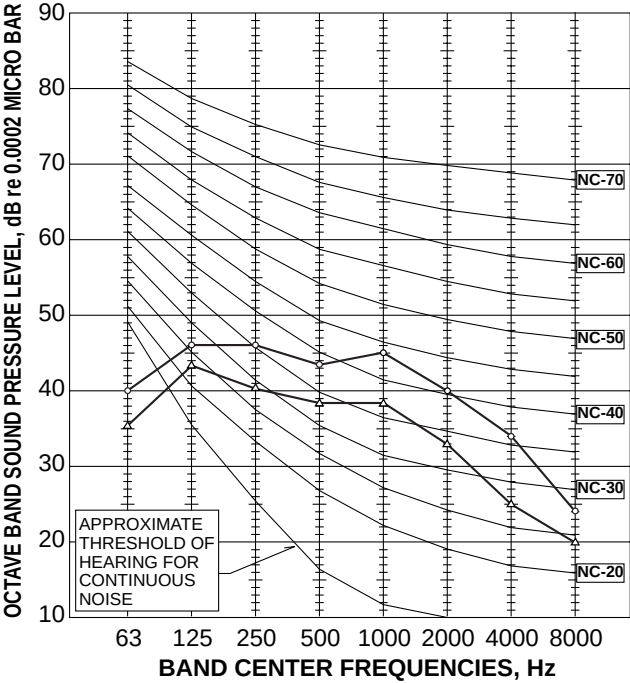
7. ADDITIONAL REFRIGERANT CHARGE (R22(oz))

Model	Outdoor unit precharged (up to 100ft)	Refrigerant piping length (one way)									
		25ft	40ft	55ft	70ft	85ft	100ft	115ft	130ft	150ft	164ft
PCH24GK	9 lbs 15 oz	0	0	0	0	0	0	2	4	7	9
PCH30GK	10 lbs 2 oz	0	0	0	0	0	0	5	10	16	20
PCH36GK	10 lbs 9 oz	0	0	0	0	0	0	5	10	16	20
PCH42GK	11 lbs 0 oz	0	0	0	0	0	0	5	10	16	20

8. NOISE CRITERION CURVES

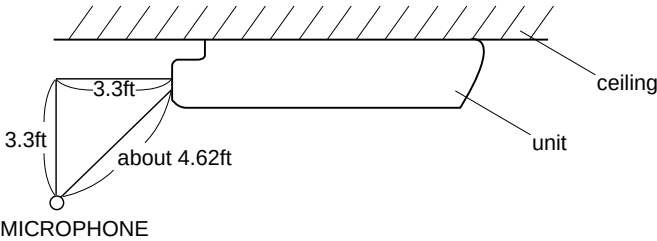
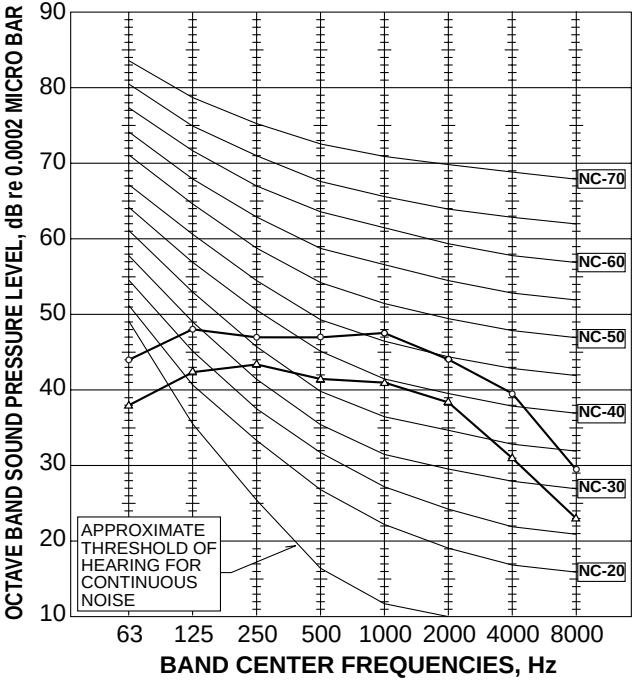
PCH24GK

NOTCH	SPL(db)	LINE
Hi	48	○—○
Lo	42	△—△



PCH30GK
PCH36GK
PCH42GK

NOTCH	SPL(db)	LINE
Hi	51	○—○
Lo	45	△—△

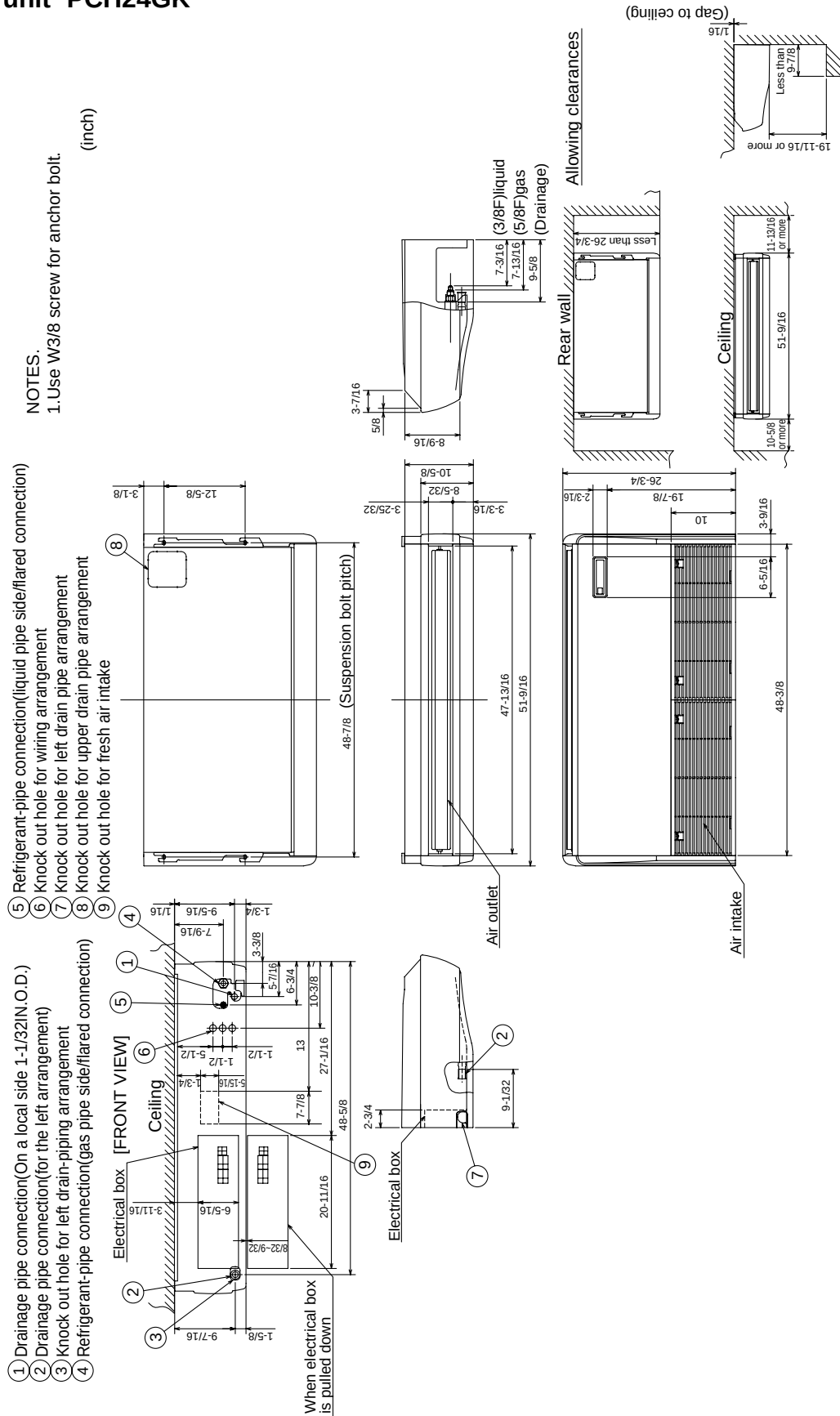


Ambient temperature 80°F

Test conditions are based on JIS Z8731

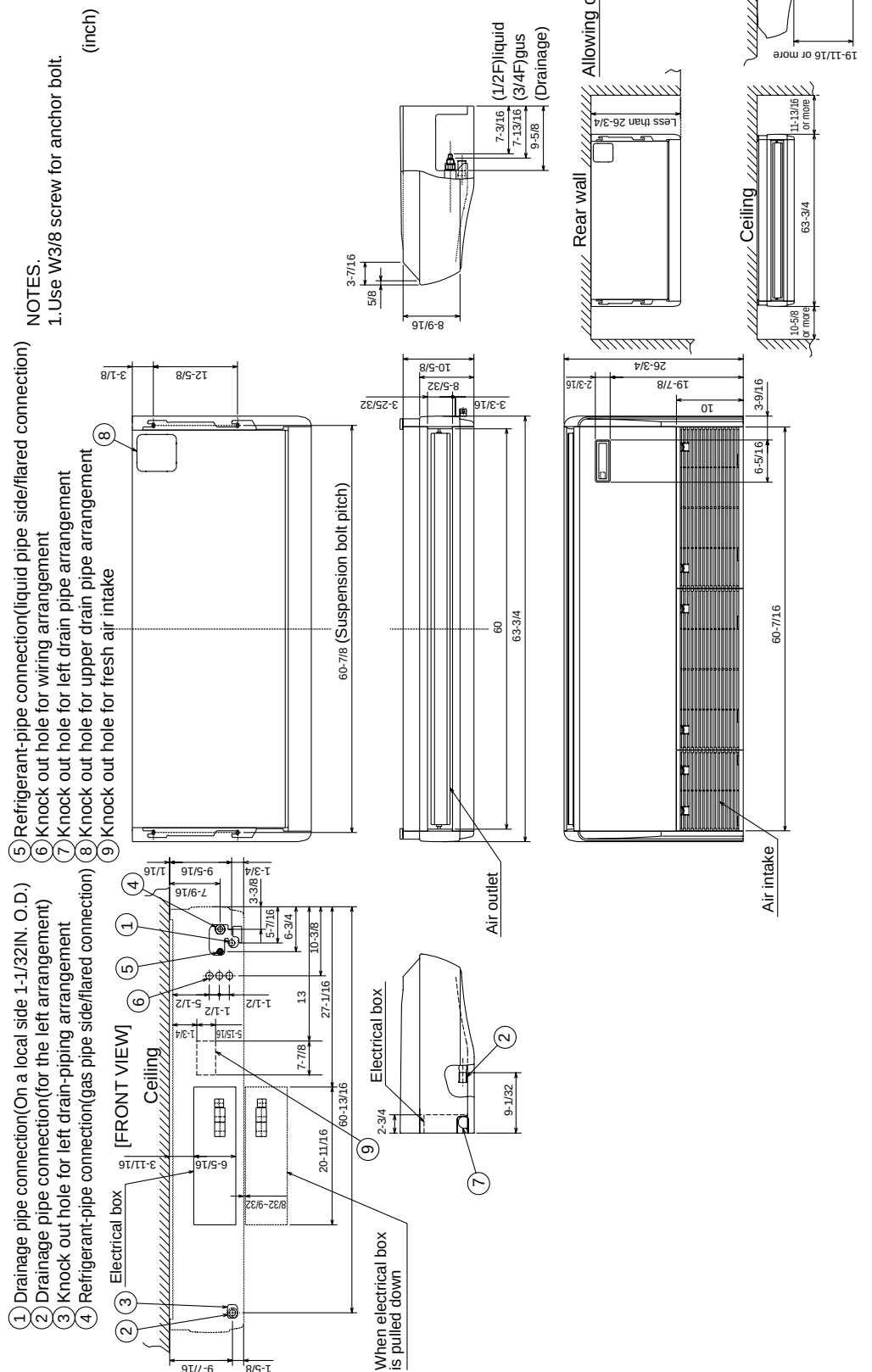
Indoor unit PCH24GK

Unit:inch



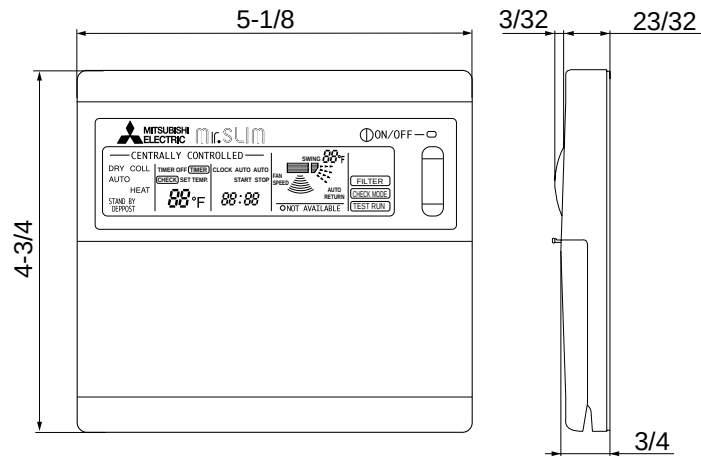
Indoor unit PCH30/36/42GK

Unit:inch



Remote controller

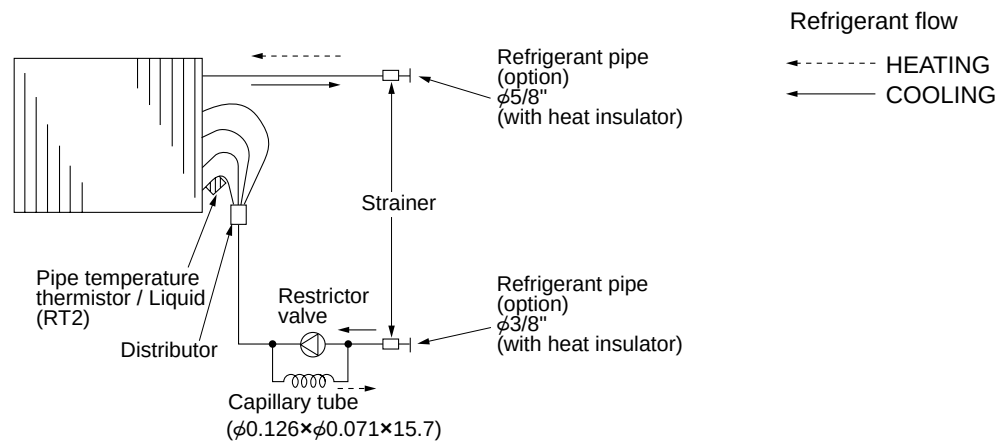
Unit : inch



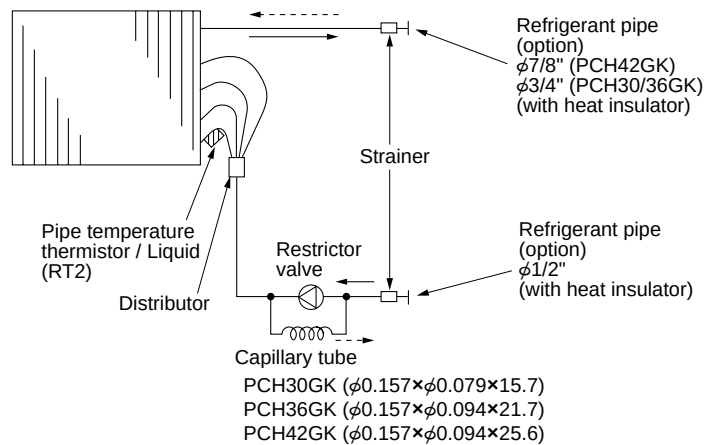
6

REFRIGERANT SYSTEM DIAGRAM

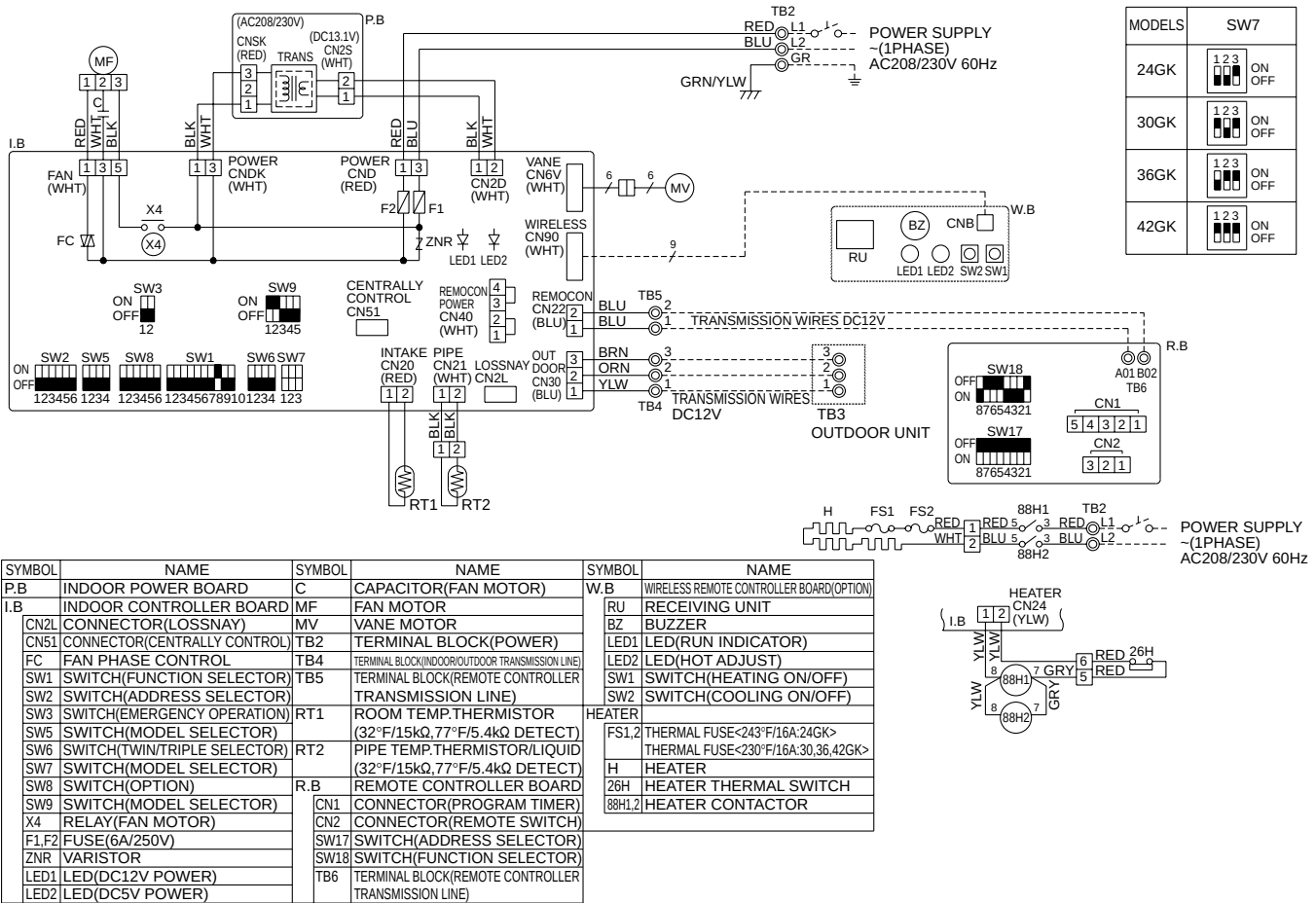
PCH24GK



PCH30GK PCH36GK PCH42GK



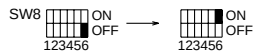
MODEL PCH24/30/36/42GK WIRING DIAGRAM



NOTES:

1. Since the indoor fan motor(MF) is connected with 230V power, using 208V power will require a setting change of the dip switch (SW8<I.B>) on indoor controller board as shown in fig.*1.

fig.*1 Indoor fan motor(MF) for 208V.



2. Since the outdoor side electric wiring may change, be sure to check the outdoor unit electric wiring for servicing.

3. Indoor and outdoor connecting wires are made with polarities, make wiring matching terminal numbers.

4. Symbols used in wiring diagram above are, □: Connector, ⊙: Terminal block.

5. Emergency operation

If remote controller or microcomputer fails but there is no other trouble, emergency operation is possible by setting dip switch (SW3<I.B>) on the indoor controller board.

6. Fasten terminal of the terminal board "TB4" equips lock system.

To remove the fasten terminal, pull it while pressing the protruding portion (locking lever) of the terminal.

Connection of the fasten terminal, protruding portion should face upward.

[Check items]

(1) Make sure that no other trouble exist in the outdoor unit. Trouble with the outdoor unit prevents emergency operation.

(If any trouble exists in the outdoor unit error code "P8" will be displayed on the remote controller and the trouble position will be shown on the outdoor controller board LED. See electric wiring diagram of the outdoor unit for details.)

(2) Make sure that there is no trouble with the indoor fan.

Emergency operation will be continuous operation mode. (ON/OFF by the remote controller is not possible.)

[Emergency operation procedure]

(1) Set the dip switch (SW3<I.B>) on the indoor controller board to ① on and ② off for cooling and ① · ② on for heating.

(2) Turn on outdoor unit side circuit breaker, then indoor unit side circuit breaker.

(3) During emergency operation, indoor fan runs at high speed but automatic vane does not work.

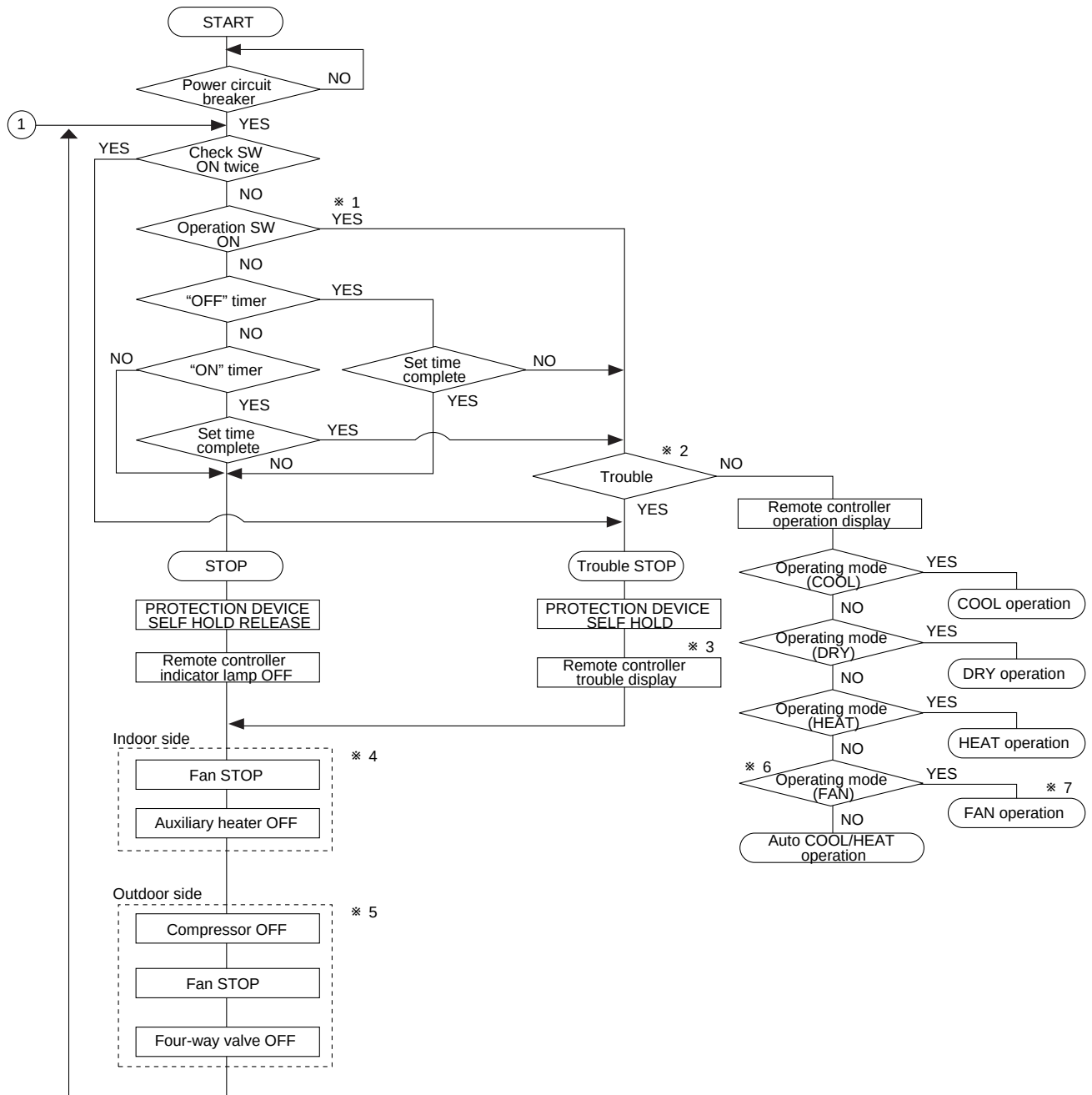
(4) Thermostat will not function. Cold air blows out for defrosting during heating thus do not operate defrosting for a long time.

(5) Emergency cooling should be limited to 10 hours maximum. (The indoor unit heat exchanger may freeze.)

(6) After every emergency operation, set all dip switch (SW3<I.B>) to OFF.

(7) Movement of the vane does not work in emergency operation, therefore you have to slowly set them manually to the appropriate position.

MAIN OPERATION



*1 In addition, the centralised and remote control can be operated.

*2 The modes which indicate the sources of trouble are listed below.

- EO=Signal transmitting/receiving error
- P1=Room temperature thermistor malfunction
- P2=Indoor coil thermistor malfunction
- P4=Drain sensor malfunction
- P5=Drain over flow
- P6=Coil frost/overheat protection
- P7=System error
- P8=Outdoor unit trouble

*3 The CHECK switch will show if an error has occurred in the past.

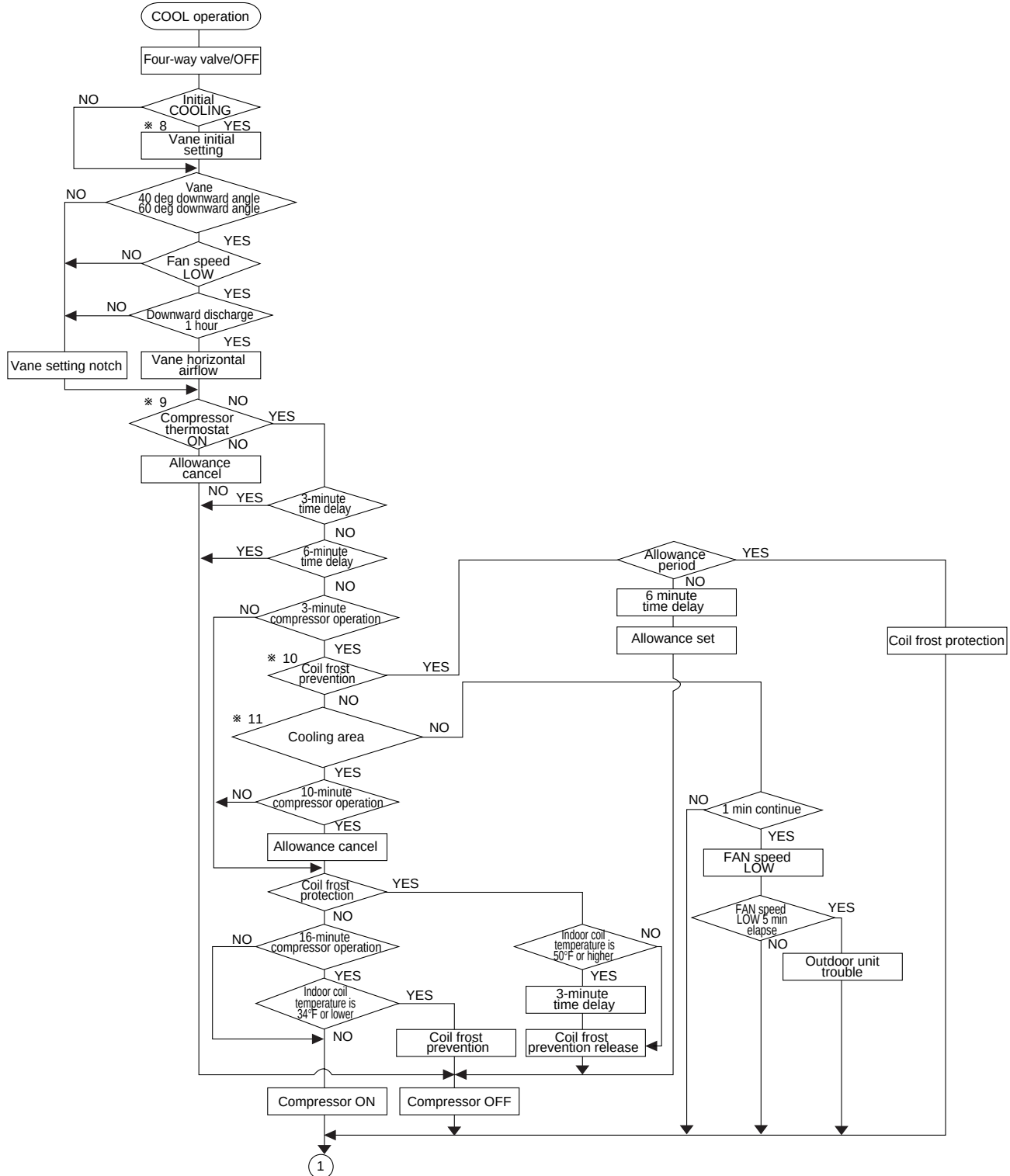
*4 Fan runs on low speed for 1 minute in order to remove overheat air.

*5 The 3-minute (6 minutes ... heating mode) time-delay functions after compressor stops.

*6 FAN or AUTO mode is selected by the indoor dip switch setting.

*7 In FAN mode, fan speed and vane operation depend on the remote controller setting. (Compressor is OFF.)

COOLING OPERATION



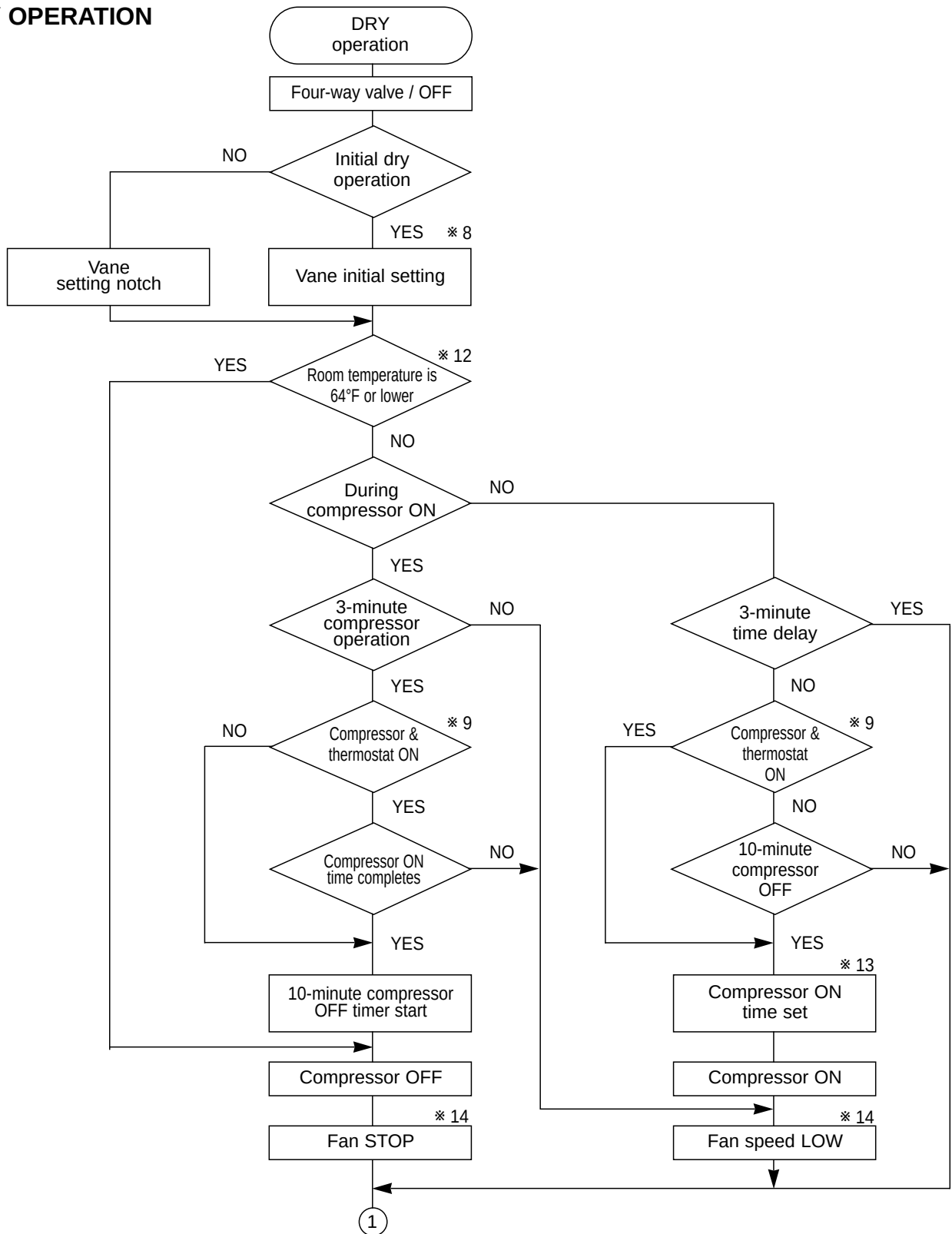
※8 When operation stops or changes to cooling or dry mode, the auto vane turns to a horizontal angle. If operation changes during auto vane SWING, the auto vane will continue to swing.

※9 When operating TEST RUN, the thermostat will be continuously ON.

※10 After 3 minute compressor operation, if the indoor coil thermistor reads -59°F or below for 3 minutes, the compressor will stop for 6 minutes.

※11 Cooling area : Indoor coil temperature is more than 9 degrees above the room temperature.
Heating area : Indoor coil temperature is more than 9 degrees below the room temperature.
FAN area : Indoor coil temperature is within 9 degrees either way of the room temperature.

DRY OPERATION



※8 ~ 9 Refer to page OC277-24.

※12 When room temperature is 64°F or below, the compressor cannot operate.
When room temperature rises over 64°F, the compressor starts after a 3-minute time delay.

※13 Compressor ON time is decided by room temperature. Refer to page OC277-33.

※14 In dry operation, compressor ON makes the fan speed LOW and compressor OFF stops the fan.
It is not possible to set the fan speed with the remote controller

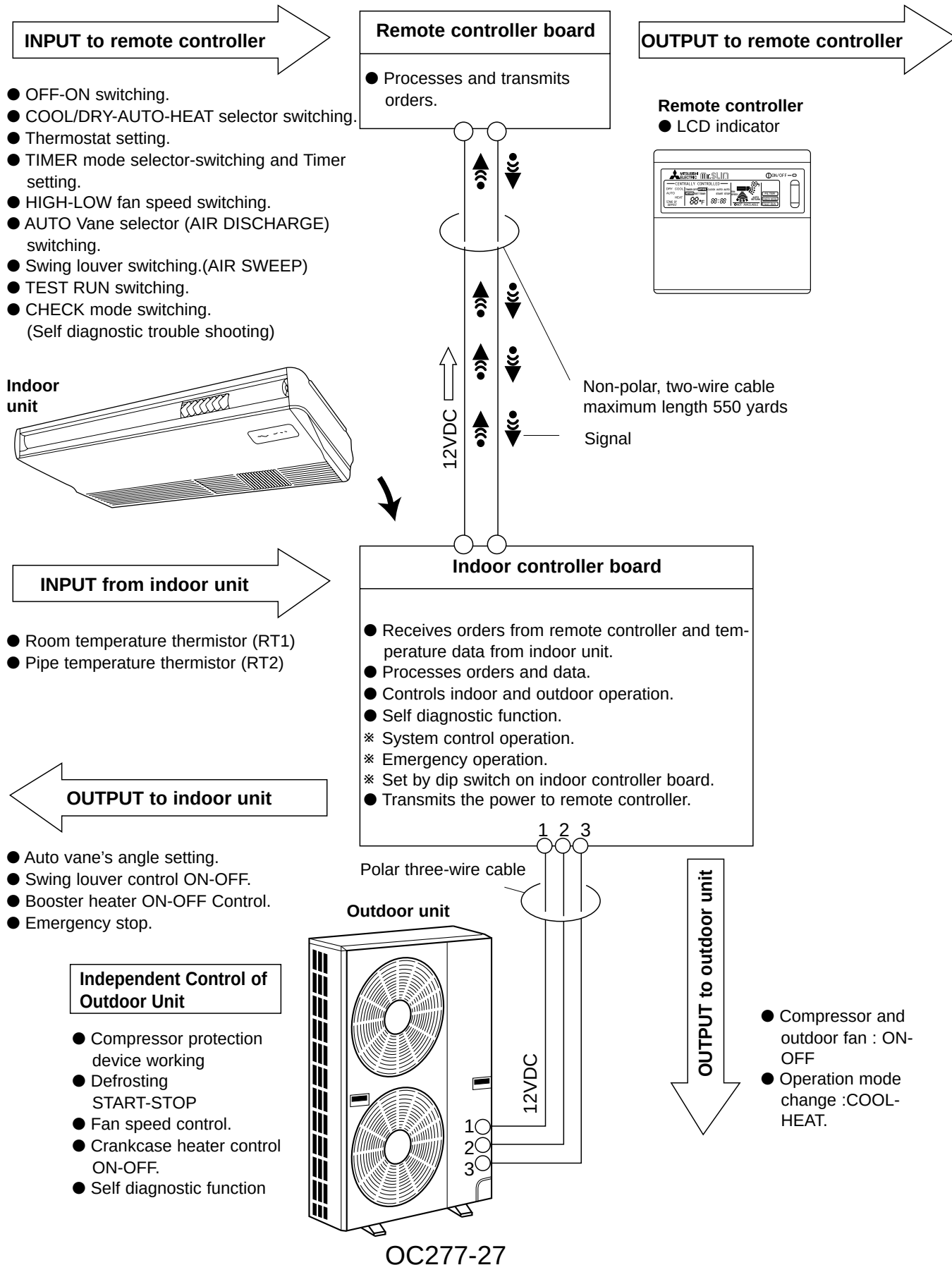
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graph TD
    Start([Heat operation]) --> InitH[Initial HEATING * 15]
    InitH -- NO --> VaneNotch[Vane setting notch]
    InitH -- YES --> VaneSet[Vane initial setting]
    VaneSet --> Defrosting{Defrosting}
    Defrosting -- YES --> FourWayValve[Four-way valve ON]
    Defrosting -- NO --> HotAdjust[Hot adjust in process]
    FourWayValve --> HotAdjust
    HotAdjust -- YES --> CompressorON[Compressor ON]
    CompressorON -- NO --> ThermostatOn{Compressor thermostat ON * 9}
    ThermostatOn -- YES --> AllowCancel[Allowance cancel]
    AllowCancel --> PipingCheck1{Indoor piping -5°F or lower}
    PipingCheck1 -- YES --> OutdoorTrouble1[Outdoor unit trouble]
    OutdoorTrouble1 --> FanSpeedLow[FAN SPEED Very low airflow]
    FanSpeedLow --> CompOff[Compressor OFF]
    CompOff --> Loop1((1))
    
    ThermostatOn -- NO --> RestPrevent{3 min. restart prevention}
    RestPrevent -- YES --> PipingCheck1
    RestPrevent -- NO --> HeatingArea{Heating area}
    HeatingArea -- YES --> A((A))
    HeatingArea -- NO --> TenMinComp{10-minute compressor operation}
    TenMinComp -- YES --> AllowCancel
    
    A --> FanStop[FAN STOP]
    FanStop --> AirflowArea{Airflow area 20 min. elapse * 11}
    AirflowArea -- YES --> HeatingArea
    AirflowArea -- NO --> CoolingArea{Cooling area * 11}
    CoolingArea -- YES --> DefrostStart[Defrost operation START]
    DefrostStart --> ValveOff[Four-way valve OFF]
    ValveOff --> Loop1
    
    CoolingArea -- NO --> OutdoorTrouble2[Outdoor unit trouble]
    OutdoorTrouble2 --> Loop1
    
    PipingCheck1 -- NO --> PipingCheck2{Indoor piping 131°F or lower}
    PipingCheck2 -- YES --> B((B))
    PipingCheck2 -- NO --> AuxHeaterOn{Auxiliary heater ON}
    AuxHeaterOn -- YES --> OverheatRemote[Overheat remote START]
    OverheatRemote --> Loop1
    
    AuxHeaterOn -- NO --> PipingCheck3{Indoor piping 140°F or higher}
    PipingCheck3 -- YES --> AuxHeaterOff[Auxiliary heater OFF]
    AuxHeaterOff --> PipingCheck2
    
    PipingCheck3 -- NO --> IndoorUnitTemp{Indoor unit 158°F or higher}
    IndoorUnitTemp -- YES --> AllowancePeriod{Allowance period}
    AllowancePeriod -- YES --> OverloadProtect[Overload protect]
    OverloadProtect --> Loop1
    AllowancePeriod -- NO --> RestartPrevent2{6-minute restart prevention}
    RestartPrevent2 --> AllowanceSet[Allowance set]
    AllowanceSet --> CompOff2[Compressor OFF]
    CompOff2 --> Loop1
    
    B --> PipingCheck4{HOT adjust 6 min. elapse}
    PipingCheck4 -- YES --> FanSpeedLow2[FAN SPEED Low]
    FanSpeedLow2 --> FanSpeedLowTime{FAN SPEED Low 2 min. elapse}
    FanSpeedLowTime -- YES --> FanSpeedSetting[FAN SPEED setting notch]
    FanSpeedSetting --> HotAdjustRelease[Hot adjust release]
    HotAdjustRelease --> Loop1
    
    FanSpeedLowTime -- NO --> PipingCheck5{Indoor piping 95°F or higher}
    PipingCheck5 -- YES --> PipingCheck4
    PipingCheck5 -- NO --> AuxHeaterThermostat{Auxiliary heater thermostat ON}
    AuxHeaterThermostat -- YES --> AuxHeaterOn
    
    AuxHeaterThermostat -- NO --> ThreeMinAuxHeaterOff{3-minute Auxiliary heater OFF}
    ThreeMinAuxHeaterOff --> IndoorCoilThermistor{Indoor coil thermistor is 140°F or higher}
    IndoorCoilThermistor -- NO --> FanSpeedLowNotch{FAN speed Low notch}
    FanSpeedLowNotch -- YES --> AirflowUp[Airflow 10% up]
    AirflowUp --> FanSettingNotch[FAN setting notch]
    FanSettingNotch --> Loop1
    
    FanSpeedLowNotch -- NO --> ThreeMinAuxHeaterOff
    
    IndoorCoilThermistor -- YES --> Loop1
    
    FanSpeedLowNotch --> Loop1
    
    AutoCoolHeat([Auto COOL/HEAT operation]) --> InitialMode[Initial mode * 16]
    InitialMode -- NO --> ModeSwitch{T1 ≥ T0 * 17}
    ModeSwitch -- YES --> CoolMode[COOL mode]
    ModeSwitch -- NO --> HeatMode[HEAT mode]
    CoolMode --> CoolModeCheck{T1 < (T0 - 2)}
    CoolModeCheck -- YES --> Delay15min1{After 15min. T1 < (T0 - 2)}
    Delay15min1 -- YES --> HeatOp1([HEAT operation])
    HeatOp1 --> Loop1
    Delay15min1 -- NO --> CoolOp1([COOL operation])
    CoolOp1 --> Loop1
    
    CoolModeCheck -- NO --> HeatMode
    
    HeatMode --> HeatModeCheck{T1 > (T0 + 2)}
    HeatModeCheck -- YES --> Delay15min2{After 15min. T1 > (T0 + 2)}
    Delay15min2 -- YES --> CoolModeSet[COOL mode set]
    CoolModeSet --> Loop1
    Delay15min2 -- NO --> HeatOp2([HEAT operation])
    HeatOp2 --> Loop1
    
    HeatModeCheck -- NO --> HeatOp2

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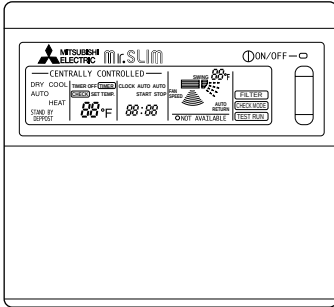
- OC277-26

1. OUTLINE OF MICROPROCESSOR CONTROL



2. INDOOR UNIT CONTROL

2-1 COOL operation

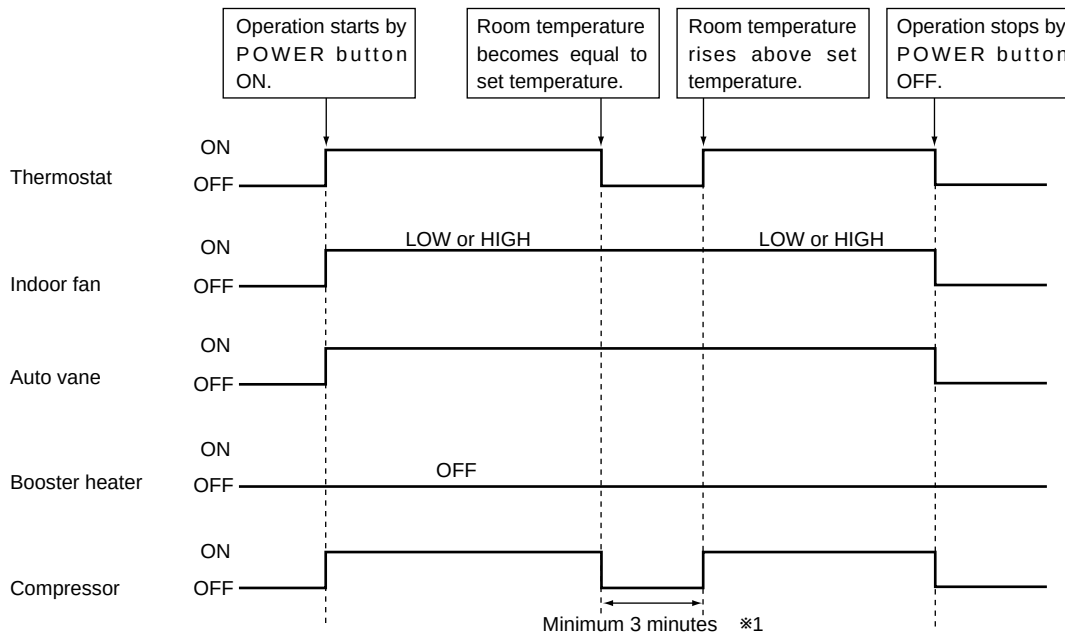


<How to operate>

- ① Press POWER ON/OFF button.
- ② Press the MODE button to display COOL.
- ③ Press the SET TEMP. button to set the desired temperature.

NOTE: Set temperature changes 2°F when the SET TEMP. button is pressed one time.
Cooling 65 to 87°F.

<COOL operation time chart>



*1 Even if the room temperature rise above the set temperature during this period, the compressor will not start until this period has ended.

(1) Compressor control

① 3-minute time delay

To prevent overload, the compressor will not start within 3 minutes after stop.

② The compressor runs when room temperature is higher than set temperature.

The compressor stops when room temperature is equal to or lower than the set temperature.

The compressor maintains the previous state when the room temperature minus the set temperature is 0 degrees or more, or lower than 2 degrees.

③ The compressor stops in check mode or during protective functions.

④ Coil frost prevention

To prevent indoor coil frost, the compressor will stop when the indoor coil thermistor (RT2) reads 34°F or below after the compressor has been continuously operated for at least 16 minutes or more. When the indoor coil temperature rises to 50°F or above, the compressor will start in a 3-minute(*2) time delay.

*2 When the indoor coil temperature is 30°F or less, the compressor starts in 6 minutes.

NOTE : By turning OFF the dip switch SW1-3 on indoor controller board, the start temperature of coil frost prevention changes from 34°F to 36°F.

⑤ Coil frost protection

When indoor coil temperature becomes 5°F or below, coil frost protection will proceed as follows.

<Start condition>

After the compressor has been continuously operated for 3 minutes or more, and the indoor coil temperature has been 5°F or below for 3 minutes, the coil frost protection will start.

<Coil frost protection>

Compressor stops for 6 minutes, and then restarts.

If the start condition is satisfied again during the first 10 minutes of compressor operation, both the indoor and outdoor units stop, displaying a check code of "P6" on the remote controller.

<Termination conditions>

Coil frost protection is released when the start condition is not satisfied again during the allowance, or when the COOL mode stops or changes to another mode.

(2) Indoor fan control

Indoor fan speed LOW/HIGH depends on the remote controller setting.

However, if an outdoor unit abnormality is detected, the indoor fan speed will be LOW, regardless of the remote controller setting.

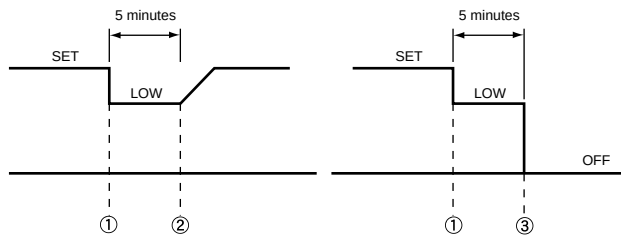
When the outdoor unit abnormality detection is released and the fan speed returns to the set speed, the quiet cycle control will work.

(a) Normal control

(i) Fan speed LOW/HIGH depends on the remote controller setting regardless of the thermostat ON/OFF.

(ii) Fan speed will remain on LOW if an abnormality in outdoor unit is detected. (5 minutes)

When the abnormality detection is released, the fan speed returns to the set speed.



- ① Start-up of outdoor unit abnormality detection.
- ② Release of outdoor unit abnormality detection.
- ③ Unit stop due to outdoor unit abnormality with P8 indication.

NOTE 1 : Fan stops immediately if the unit stops or the check mode is started.

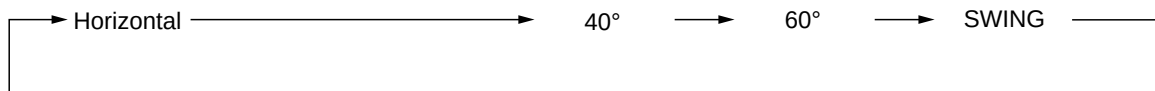
(3) Auto vane control

Auto vane position is set to horizontal airflow at the start-up of COOL operation. It can then be changed by the remote controller.

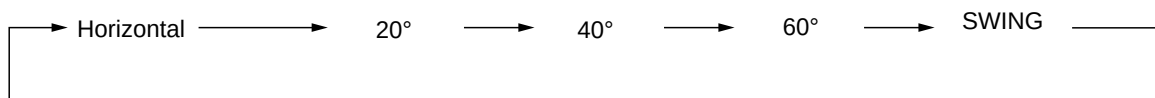
(a) Vane position set mode & swing mode.

- (i) Every time AIR DISCHARGE button is pressed, setting will be changed .
- (ii) Airflow direction can be changed with AIR DISCHARGE button.

① Fan speed : LOW

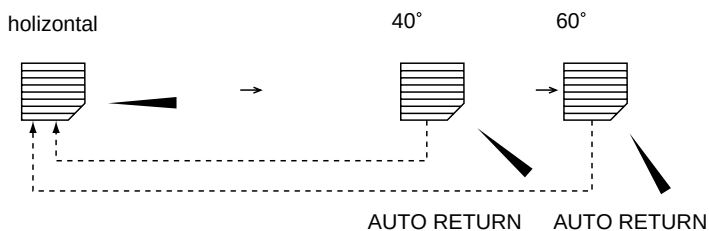


② Fan speed : HIGH

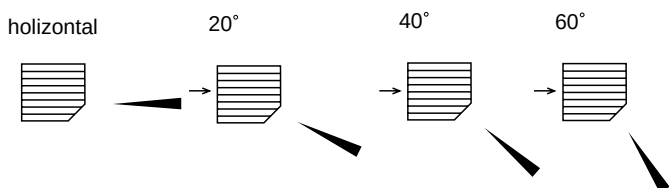


<AUTO RETURN>

① Fan speed : LOW



② Fan speed : HIGH



When 40° degrees or 60° degrees airflow is selected with the LOW fan speed in COOL operation, "AUTO RETURN" will appear below the temperature display. One hour later, the airflow direction returns to horizontal automatically and "AUTO RETURN" will disappear. If the airflow direction is set to horizontal during "AUTO RETURN" indication, the time counting for AUTO RETURN is cancelled.

(4) Detecting abnormalities in the outdoor unit

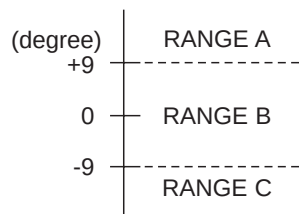
After the compressor has been continuously operated for 3 minutes, if the difference between the indoor coil temperature and room temperature is out of RANGE C for 1 minute, the indoor fan speed will turn to LOW. Five minutes later, if the difference is still out of RANGE C, the outdoor unit is functioning abnormally. Thus, the compressor stops and check code "P8" appears on remote controller.

RANGE A : Indoor coil temperature is more than 9 degrees above room temperature.

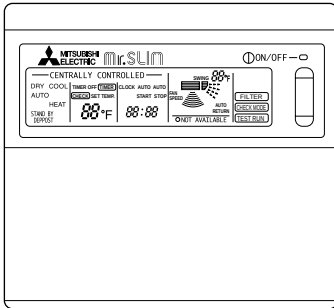
RANGE B : Indoor coil temperature is within 9 degrees either way of room temperature.

RANGE C : Indoor coil temperature is more than 9 degrees below room temperature.

Indoor coil temperature
minus room temperature



2-2 DRY operation

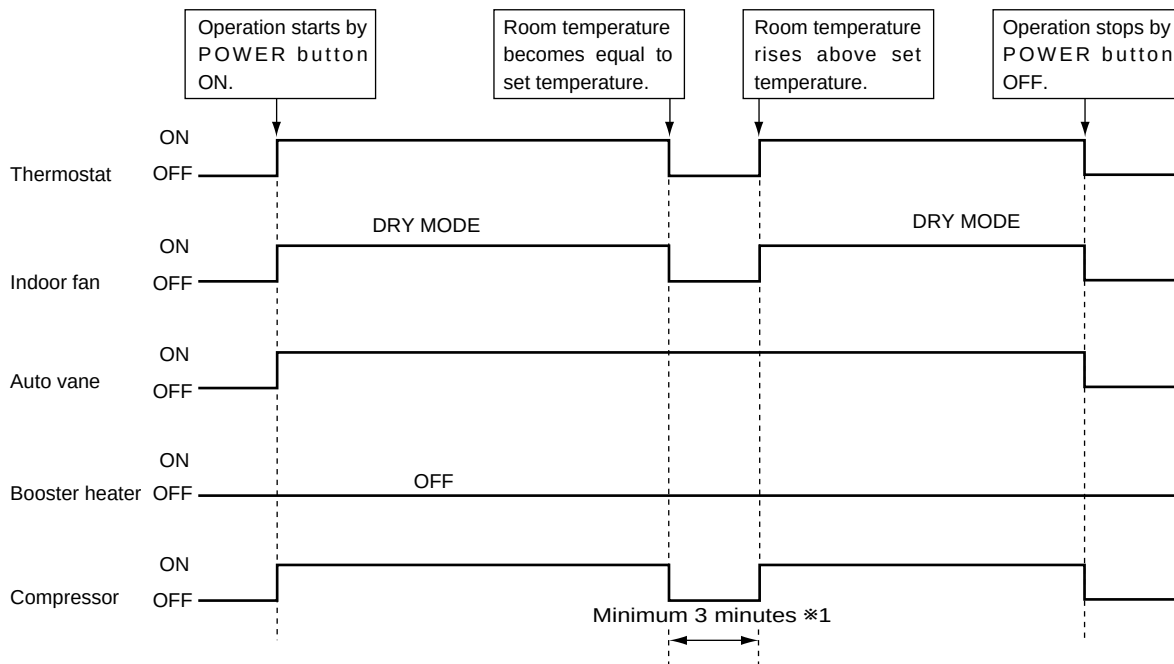


<How to operate>

- ① Press POWER ON/OFF button.
- ② Press the MODE button to display "DRY"
- ③ Press the SET TEMP. button to set the desired temperature.

NOTE: The set temperature changes 2°F when the SET TEMP. button is pressed one time.
Dry 65 to 87°F

<DRY operation time chart>



*1 Even if the room temperature rises above the set temperature during this period, the compressor will not start until this period has ended.

(1) Compressor control

- ① 3-minute time delay
To prevent overload, the compressor will not start within 3 minutes after stop.
- ② The compressor runs when room temperature is higher than set temperature.
The compressor stops when room temperature is equal to or lower than the set temperature.
The compressor maintains the previous state when the room temperature minus the set temperature is 0°F or more, or lower than 2°F.
- ③ The compressor stops in check mode or during protective functions.

④The compressor will not start when the room temperature is 64°F or below.

The compressor starts intermittent operation when the power is turned ON with room temperature above 64°F. The compressor ON/OFF time depends on the thermostat ON/OFF and the following room temperatures. After 3-minute compressor operation,

- If the room temperature thermistor reads above 85°F with thermostat ON, the compressor will operate for 6 more minutes and then stop for 3 minutes.
- If the room temperature thermistor reads 79°F to 82°F with thermostat ON, the compressor will operate for 4 more minutes and then stop for 3 minutes.
- If the room temperature thermistor reads 75°F to 79°F with thermostat ON, the compressor will operate for 2 more minutes and then stop for 3 minutes.
- If the room temperature thermistor reads below 75°F with thermostat ON, the compressor will stop for 3 minutes.
- If the thermostat is OFF regardless of room temperature, the compressor will stop for 10 minutes.

⑤Coil frost protection

Coil frost protection in DRY operation is the same as in COOL operation.

⑥Coil frost prevention

Coil frost prevention does not operate in DRY operation.

(2) Indoor fan control

The indoor fan runs on LOW speed during compressor operation. The fan speed cannot be changed with the remote controller. Also, the indoor fan does not run during compressor OFF.

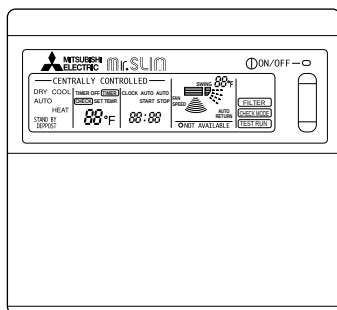
(3) Auto vane control

Same as in COOL operation

(4) Detecting abnormalities in the outdoor unit

An abnormality in the outdoor unit can not be detected in DRY operation.

2-3 HEAT operation



<How to operate>

- ① Press POWER ON/OFF button.
- ② Press the MODE button to display "HEAT"
- ③ Press the SET TEMP. button to set the desired temperature.

NOTE: The set temperature changes 2°F when the SET TEMP. button is pressed one time.
Heating 63 to 83°F.

<Display in HEAT operation>

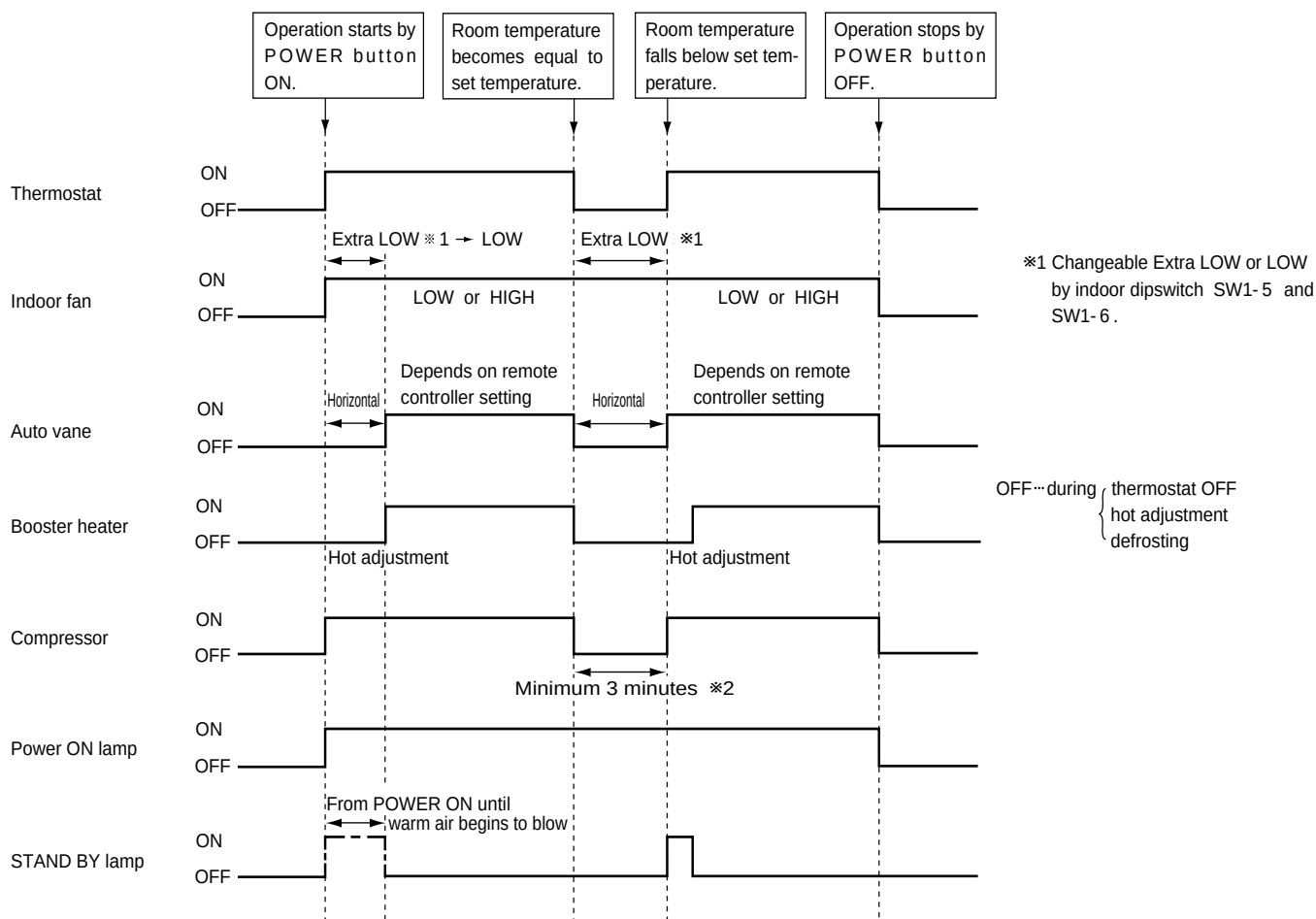
[DEFROST]

The [DEFROST] symbol is only displayed during the defrost operation.

[STANDBY]

The [STANDBY] symbol is only displayed from the time the heating operation starts until the heated air begins to blow.

<HEAT operation time chart>



(1) Compressor control

① 3-minute time delay

To prevent overload, the compressor will not start within 3 minutes after stop.

② The compressor runs when the room temperature is lower than the set temperature.

The compressor stops when the room temperature is equal to or higher than the set temperature.

③ The compressor stops in check mode or during protective functions.

④ Overheat protection

<Start condition>

When the indoor coil thermistor reads 158°F or above, the overheat protection will start.

<Overheat protection>

The compressor stops for 6 minutes, and then restarts.

If the start condition is satisfied again within 10 minutes of compressor operation, both the indoor and outdoor units stop, displaying a check code of "P6" on the remote controller.

<Termination conditions>

Overheat protection is terminated when the start condition is not satisfied again during the allowance (10-minute compressor operation), when operation mode changes to other mode, or when thermostat turns OFF.

(2) Indoor fan control

(a) Normal control

(i) The indoor fan runs on EXTRA-LOW speed during the thermostat OFF.

EXTRA-LOW speed can be changed to LOW or HIGH speed by setting the dip switch SW1-5 and SW1-6.

If the indoor coil temperature becomes more than 5 degrees below the room temperature during the thermostat OFF, the indoor fan will stop. After, when the indoor coil temperature becomes within 5 degrees of room temperature, the indoor fan will run on EXTRA-LOW speed.

(ii) Hot adjustment

Hot adjustment is a warm-up for HEAT operation

<Start conditions>

The hot adjustment works under any of the following conditions.

● HEAT operation starts.

● Defrosting ends.

● Thermostat turns ON.

[Hot adjustment]

Initially, the indoor fan runs on EXTRA-LOW speed. When 5 minutes have passed or the indoor coil temperature exceeds 95°F, the fan speed changes to LOW. 2 minutes later, the hot adjustment ends. Then, the fan speed depends on the remote controller setting.

(iii) The indoor fan stops when the indoor coil temperature is within 9 degrees either way of room temperature.

(iv) To eliminate the remaining heat, the indoor fan runs for the first 1 minute after the booster heater is turned OFF.

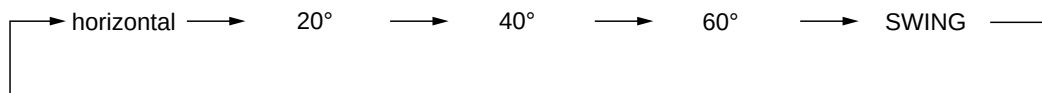
(3) Auto vane control

Auto vane position is set to 70 degrees airflow at the start-up of HEAT operation.

(a) Vane position set mode & swing mode.

(i) Every time AIR DISCHARGE button is pressed, setting will be changed .

(ii) Airflow direction can be changed with AIR DISCHARGE button.



NOTE : In the following cases, the discharge direction is horizontal regardless of the remote controller setting.

① During the hot adjustment with fan speed at EXTRA-LOW

② During defrosting with indoor fan OFF

③ During thermostat OFF

(4) Booster heater control

When the room temperature is 6 degrees below the set temperature, the booster heater will turn ON.

When the room temperature is equal to the set temperature, booster heater will turn OFF.

During the hot adjustment, the booster heater will not work.

<Overheat prevention>

When the indoor coil thermistor rises to 140°F or above, the booster heater cannot work.

When the indoor coil thermistor falls to 131°F or below, the booster heater can work.

(5) Detecting abnormalities in the outdoor unit

When the outdoor unit is determined to be abnormal by the following causes, the compressor will stop and the check code " P8 " will appear on the remote controller display.

(i) During compressor ON while hot adjustment is set.

- ① If the difference between the indoor coil temperature and room temperature is in the RANGE B, the indoor fan will stop.
- ② Within 20 minutes after entering RANGE B (except for the first 10 seconds),
 - a) If the temperature difference enters RANGE A, the hot adjustment starts,
 - b) If the temperature difference is still in RANGE B, the outdoor unit is deemed abnormal.
 - c) If the temperature difference enters RANGE C, defrosting starts.
- ③ Within 20 minutes after entering RANGE C, if the temperature difference does not return to RANGE B, the outdoor unit is deemed abnormal.
- ④ If the temperature difference returns to RANGE B, the next 20 minutes is an allowance period. If the difference enters RANGE A during the allowance, defrosting ends and the hot adjustment starts. If the difference does not enter RANGE A during the allowance, the outdoor unit is deemed abnormal.

(ii) During compressor ON in defrosting

After 30 minutes of defrosting in hot adjustment, if the temperature difference is still in RANGE C, the outdoor unit is determined to be abnormal.

When RANGE B does not change to RANGE A after 20 minutes have passed since RANGE C had outdoor unit is determined to be abnormal.

(iii) During compressor OFF

Not detecting abnormalities.

(6) Indoor coil temperature abnormality detection

An abnormality can be detected during compressor ON, except for the following.

● For the first 30 minutes after the temperature difference between the indoor coil temperature and room temperature enters the RANGE C.

● When the temperature difference enters the RANGE C until it moves to the RANGE B.

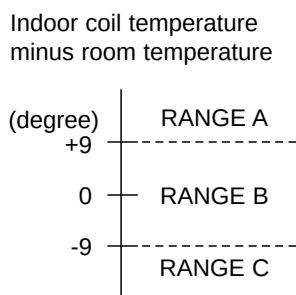
(7) Defrosting operation

After the outdoor unit starts the defrosting operation, when the temperature difference between the indoor coil temperature and room temperature gets out of RANGE A and into RANGE B, the indoor unit starts the defrosting mode. After the outdoor unit stops the defrosting operation, when the temperature difference returns to the RANGE A, the indoor unit stops the defrosting mode. While the indoor unit is in the defrosting mode, the indoor fan and the booster heater stop.

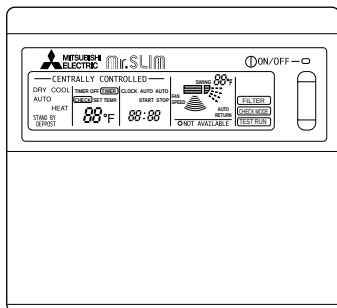
※1 RANGE A : Indoor coil temperature is more than 9 degrees above room temperature.

RANGE B : Indoor coil temperature is within 9 degrees either way of room temperature.

RANGE C : Indoor coil temperature is more than 9 degrees below room temperature



2-4 AUTO operation (Automatic COOL/HEAT change over operation)



<How to operate>

- ① Press POWER ON/OFF button.
- ② Press the MODE button to display "AUTO"
- ③ Press the SET TEMP. button to set the desired temperature.

NOTE: The set temperature changes 2°F when the SET TEMP. button is pressed one time.
Automatic 65 to 83°F.

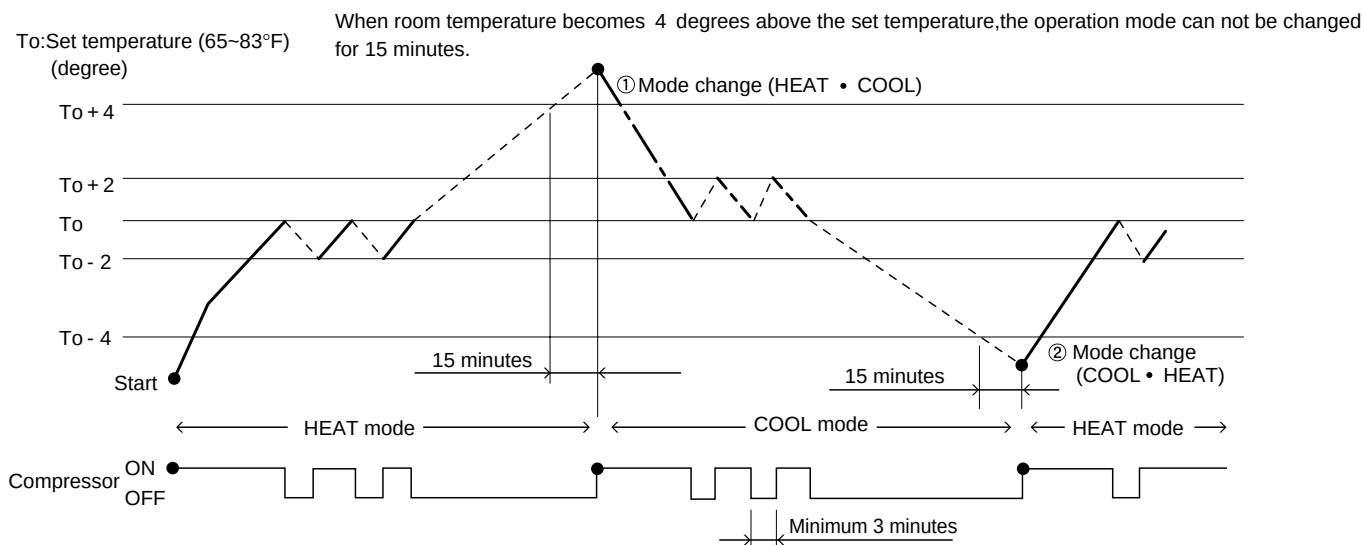
● "AUTOMATIC" works to change by itself the operation mode either to cooling or heating according to the room temperature.

(1) Initial mode

- ① When AUTO operation starts after unit OFF.
 - If the room temperature is higher than the set temperature, operation starts in COOL mode.
 - If the room temperature is equal to or lower than the set temperature, operation starts HEAT mode.
- ② When AUTO operation starts after COOL or HEAT operation, the previous mode continues.

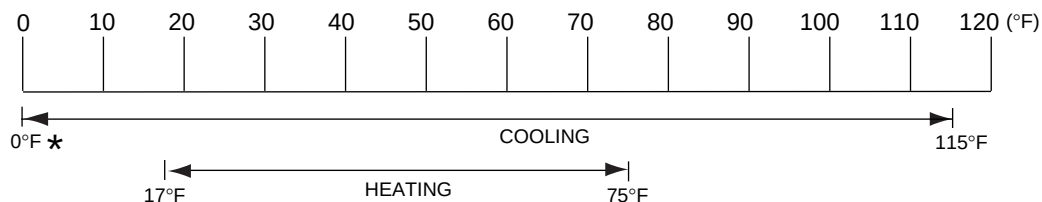
(2) Mode change

- ① HEAT mode changes to COOL mode when 15 minutes have passed since the room temperature became 4 degrees above the set temperature.
- ② COOL mode changes to HEAT mode when 15 minutes have passed since the room temperature became 4 degrees below the set temperature.



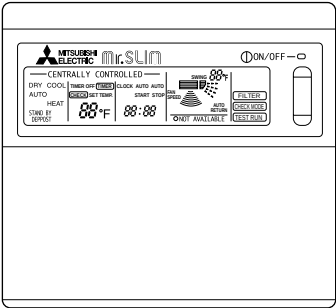
(3) Temperature range

AUTO operation is available under the outside air temperatures as follows.



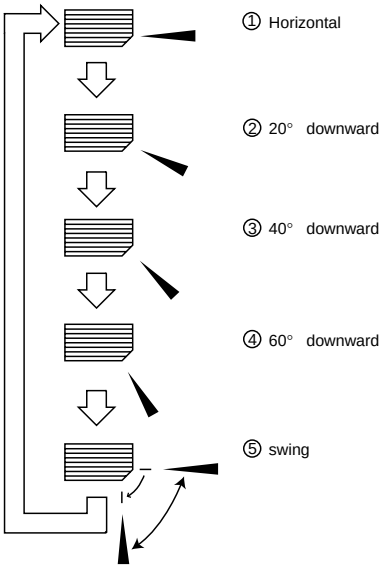
★ In case of the wind baffle installed.

2-5 Auto vane control



<How to operate>
To change the air flow direction, press AIR DISCHARGE button.

①	②	③	④	⑤
Horizontal	20°	40°	60°	SWING



Changes by pressing
the AIR DISCHARGE
button.

Available in COOL operation with fan speed on HIGH or in HEAT operation.
Unavailable in DRY operation.
If fan speed changes from HIGH to LOW during 20° downward airflow in COOL mode, the direction automatically changes to horizontal.

(1) COOL/DRY operation

At the start-up of COOL or DRY operation, the airflow direction is automatically set to horizontal. After, it can be changed to another direction with AIR DISCHARGE button on the remote controller.

<Auto return>

When 40° or 60° airflow is set with fan speed in LOW, "AUTO RETURN" appears right side of the air direction. One hour later the direction changes to horizontal degrees, automatically and "AUTO RETURN" disappears.

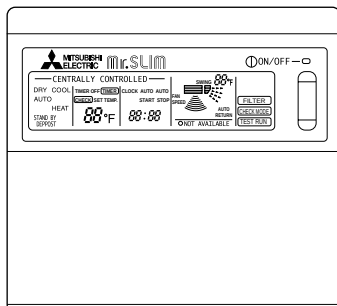
(2) HEAT operation

At the start-up of HEAT operation, airflow direction depends on the setting of the last operation. After, it can be changed to another direction with AIR DISCHARGE button. The airflow direction shifts to horizontal regardless of the remote controller settings under any of the following conditions.

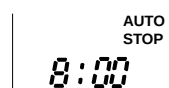
- Thermostat OFF
- Defrosting
- Indoor fan speed EXTRA-LOW in hot adjustment

2-6 TIMER operation

WIRED REMOTE CONTROLLER



<Timer setting example>



<Timer function>

AUTO STOP The air conditioner stops after the set time lapses.

AUTO START The air conditioner starts after the set time lapses.

AUTO OFF Timer is not active.

<How to operate>

1. Press POWER ON/OFF button.
2. Press "TIMER ON/OFF" button to select AUTO STOP or AUTO START.
3. Press "CLOCK/TIMER" button to set desired time.
Time setting is in 1 hour units for up to 24 hours.
Each time TIMER SET button is pressed, set time increases by 1 hour. When TIMER SET button is pressed and held, the set time increases by 1 hour every 0.5 seconds.
4. To cancel the timer operation, press POWER ON/OFF button.

This setting will stop the operation in 8hours.
With the lapse of time, time display changes in 1hour units,
showing remaining time.

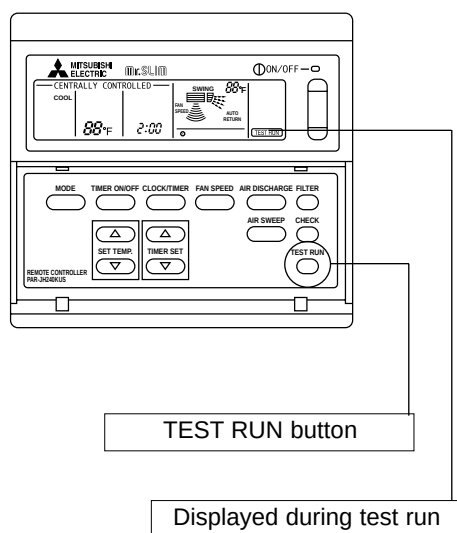
2-7 Test run

<Before test run>

- After installing, wiring, and piping the indoor and outdoor units, check for refrigerant leakage, looseness in power supply or control wiring, and mistaken polarity.
- Use a 500-volt measure to check the resistance between the power supply terminal block and ground to make sure that it is at least 1.0MΩ.

Attention:

Do not use the air conditioner if resistance is less than 1.0MΩ.



<How to operate>

1. Turn ON main breaker.
2. Press TEST RUN button twice. "TEST RUN" is displayed on remote controller.
3. Select "COOL" with MODE button to check that cool air is beginning discharged.
Select "HEAT" with MODE button to check that warm air is beginning discharged.(after a while)
4. Select LOW/HIGH with FAN SPEED button to check that the fan speed changes properly.
5. Press AIR DISCHARGE button to check auto vane operation.
6. Check outdoor fan operation.
7. Check compressor operation referring to the indoor coil temperature code displayed on the remote controller.
8. After checking, press the ON/OFF button.

· The test run works for 2 hours and stops automatically.
To cancel the test run, press ON / OFF button or TIMER ON / OFF button.

(1) Indoor coil temperature code

During the test run, the indoor coil temperature code from 1 to 15 is displayed on the remote controller instead of room temperature. The code should fall with the lapse of time in normal COOL operation, and should rise in normal HEAT operation.

Code	1	2	3	4	5	6	7	8
Indoor coil temperature	~34(36)°F	36(37)°F~50°F	~59°F	~68°F	~77°F	~86°F	~95°F	~104°F
Code	9	10	11	12	13	14	15	
Indoor coil temperature	~113°F	~122°F	~131°F	~140°F	~158°F	~191°F	Thermistor abnormality	

(2) Trouble during test run

- If the unit malfunctions during the test run, refer to section 10 in this manual entitled "TROUBLESHOOTING."
- When the optional program timer is connected to the conditioner, refer to its operating instructions.

2-8 Emergency operation

When the remote controller or microprocessor malfunctions but all other parts are normal, emergency operation is started by setting the dip switch SW3 on the indoor controller board.

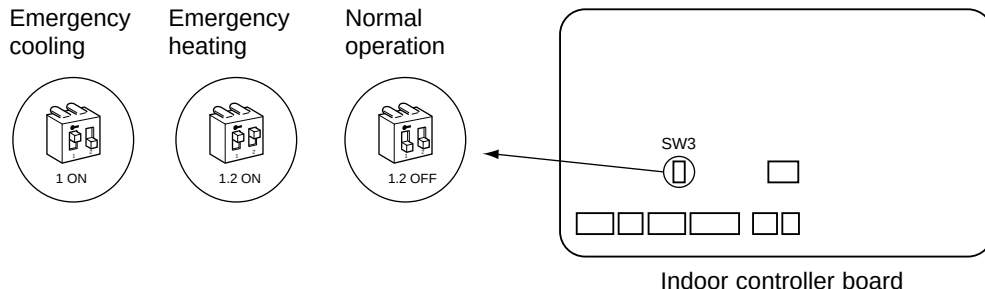
<Before emergency operation>

1. Make sure the compressor and the indoor fan are operating normally.
2. Locate the defect with the self-diagnostic function. When the self-diagnostic function indicates "protective function is working", release the protective function before starting the emergency operation.

CAUTION: When the self-diagnostic function indicates a check code of "P5" (drain pump malfunction), do not start the emergency operation because the drain may overflow.

<How to operate>

1. For emergency cooling, set the dip switch SW3-1 to ON and SW3-2 to OFF.
For emergency heating, set the dip switch SW3-1,2 to ON.



2. Turn ON the outdoor unit breaker and then ON the indoor unit breaker.
Emergency operation will now start.
3. During emergency operation, the indoor fan operates on high speed, the auto vanes do not operate.
4. To stop emergency operation, turn OFF the indoor unit breaker.
5. Movements of the vanes do not work in emergency operation, therefore you have to slowly set them manually to the appropriate position.

NOTE: The remote controller POWER ON/OFF button can not start/stop emergency operations.

CAUTION: Do not use emergency cooling for more than 10 hours, as the indoor coil may freeze.

2-9 Dip switch functions

Each figure shows the initial factory setting.

(1). On remote controller board

1. SW17(Address selector)

	1	2	3	4	5	6	7	8
ON	☐	☐	☐	☐	☐	☐	☐	☐
OFF	☒	☒	☒	☒	☒	☒	☒	☒

SW17-1~6) For address setting

SW17-7) When two remote controllers are used, this switch sets the controller function.

OFF: The remote controller is set as a main controller.

ON: The remote controller is set as a sub controller.

SW17-8) Switch for system back-up.

OFF: Without back-up

ON: With back-up

2. SW18(Function selector)

	1	2	3	4	5	6	7	8
ON	☐	☒	☒	☒	☒	☒	☒	☒
OFF	☒	☐	☐	☐	☐	☐	☐	☐

SW18-1) Switch for timer

OFF: Single day ON: timer every day

SW18-2) Switch for filter sign

OFF: filter sign absent

ON: filter sign present

SW18-3) Switch for filter sign time setting.

OFF: 100Hr ON: 2500Hr

SW18-4~8) Not for use.

(2). On indoor controller board

1. SW1 (Mode selector)

	1	2	3	4	5	6	7	8	9	10
ON	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐
OFF	☒	☒	☒	☒	☒	☒	☒	☐	☒	☒

SW1-1) Switch that changes between FAN mode and AUTO mode

OFF: AUTO mode for models with heat pump

ON: Fan mode for models without heat pump

SW1-2) Switch for drain pump

OFF: The drain pump works in COOL and DRY operation.

ON: The drain pump works in both COOL and DRY and HEAT operation.

SW1-3) Switch to change the temperature to start coil frost prevention

OFF: 34°F

ON: 36°F

SW1-4) Switch for set temperature adjustment in HEAT mode

During HEAT operation, warm air collects near the ceiling. When the indoor unit is installed near the ceiling, the temperature read by room temperature thermistor differs from the actual living-space temperature by about 7 degrees. Therefore, the room temperature read by room temperature thermistor must be lowered by 7 degrees.

OFF: 7-degree adjustment

ON: NO adjustment

SW1-5) Switch for fan speed during thermostat OFF in HEAT operation

OFF: EXTRA LOW

ON: LOW

SW1-6) Switch for fan speed during thermostat OFF in HEAT operation

OFF: EXTRA LOW or LOW (set with SW1-5)

ON: LOW or HIGH (set with remote controller)

SW1-7) Switch for detecting abnormalities in the outdoor unit abnormality detection

OFF: When an abnormality occurs, it is detected.

ON: Even if an abnormality occurs, it can not be detected.

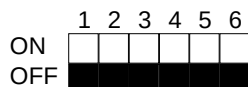
SW1-8) Switch for auto restart function

OFF: This function does not work

ON: This function works.

SW1-9, 10) Not for use.

2. SW2 (Address selector)



Used in setting the unit-address for group control.
For further information, refer to page OC277-51.

3. SW3 (Emergency operation switch)

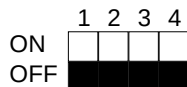
Normal operation

For emergency cooling

For emergency heating



4. SW5 (Model selector)



SW5-1) Not for use.

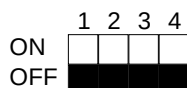
SW5-2) OFF: For models with heat pump

ON: For models with cooling only

SW5-3) Not for use.

SW5-4) Not for use.

5. SW6 (Address selector)



This switch is not available for series PCH.

6. SW7 (Model selector)

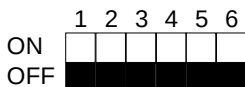
Switch to set the output of phase-controlled indoor fan motor.

Address setting is available at any time.

The initial factory setting by is based on each capacity.

Service Ref.	PCH24GK	PCH30GK	PCH36GK	PCH42GK
SW7	ON 	ON 	ON 	ON 
	OFF 	OFF 	OFF 	OFF 
	1 2 3	1 2 3	1 2 3	1 2 3

7. SW8 (Option)



SW8-1~2) Not for use.

SW8-3~4) Not for use.

SW8-5) Not for use.

SW8-6) OFF: For 230V power supply

ON: For 208V power supply

8. SW9 (Model selector)



SW9-1~5) Keep this switch.

2-10. INDOOR FAN CONTROL

Fan motor max. rotational frequency

Service Ref.	Voltage [V]	100% rotational frequency(rpm)
		60Hz
PCH24GK	208/230	1180/1290
PCH30GK	208/230	1190/1260
PCH36, 42GK	208/230	1220/1310

1. REMOTE CONTROLLER DISPLAY ABNORMALITY

Display abnormality	Cause	Check points																				
The display “centrally controlled” on remote controller does not disappear.	1) Wrong address setting of remote controller/indoor controller board. 2) Timer adapter is connected to the remote controller. 3) Signal transmission error between indoor unit and remote controller.	1) Check the address setting of remote controller and indoor controller. 2) Check if the timer adapter is used correctly. 3) ① Turn another remote controller's DIP SW17-7 ON to make it sub controller. ② Connect the sub controller to the unit, and turn circuit breaker ON. ● If the display “centrally controlled” disappears, replace the original remote controller. ● If the display remains the same, replace the indoor controller board.																				
When remote controller POWER switch is turned to ON, the check code “E0”appears.	1) Signal transmission error between indoor unit and remote controller	1) ① Connect a sub remote controller. ② Turn circuit breaker ON. If the display “centrally controlled” remains, replace the indoor controller board. ③ If the display disappears, turn the remote controller POWER switch ON and check as follows. <table><tr><td></td><td>Remote controller</td><td>Sub remote controller</td><td>Malfunction</td></tr><tr><td>1</td><td>Operating Display</td><td>E0 Display</td><td>Malfunction of Indoor Unit</td></tr><tr><td>2</td><td>Operating Display</td><td>Operating Display</td><td>Malfunction of Remote controller</td></tr><tr><td>3</td><td>No Display</td><td>E0 Display</td><td>Malfunction of Indoor Unit and Remote Controller</td></tr><tr><td>4</td><td>No Display</td><td>Operating Display</td><td>Malfunction of Remote controller</td></tr></table>		Remote controller	Sub remote controller	Malfunction	1	Operating Display	E0 Display	Malfunction of Indoor Unit	2	Operating Display	Operating Display	Malfunction of Remote controller	3	No Display	E0 Display	Malfunction of Indoor Unit and Remote Controller	4	No Display	Operating Display	Malfunction of Remote controller
	Remote controller	Sub remote controller	Malfunction																			
1	Operating Display	E0 Display	Malfunction of Indoor Unit																			
2	Operating Display	Operating Display	Malfunction of Remote controller																			
3	No Display	E0 Display	Malfunction of Indoor Unit and Remote Controller																			
4	No Display	Operating Display	Malfunction of Remote controller																			
When remote controller POWER switch is turned to ON, operating display appears, but disappears soon.	1) Short circuit of indoor/outdoor connecting wire 2) Short circuit of transmission wire. 3) Short circuit of drain sensor heater circuit. 4) Wrong operation of remote controller due to noise wave emitted by other appliances.	1), 2) Check the wire 3) Measure the resistance of the drain sensor connector CN50 ① - ③. If normal, the value should be 82Ω. 4) Turn the circuit breaker OFF, and then turn ON. If the remote controller remains abnormal, despite the above measures, replace the indoor controller board.																				
Despite turning POWER switch ON, the remote controller display does not appear.	1) Damaged remote controller. 2) Short circuit of transmission wire. 3) Bad contact of indoor CN40. 4) CN40 is attached to a sub unit. 5) Damaged transformer. 6) Bad contact of CN2D. 7) Broken fuse. 8) Circuit breaker OFF.	1) Measure the voltage between terminals of remote controller. If no voltage, remove the terminals and measure the voltage between wires. If the voltage is between 6VDC and 12V, replace the remote controller. 2) ~ 8) Check each point. If normal, replace the indoor controller board.																				

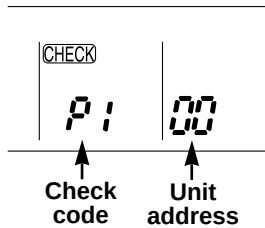
2. SELF DIAGNOSTIC FUNCTION WITH REMOTE CONTROLLER (WIRED REMOTE CONTROLLER)

2-1 When malfunction occurs during operation

When a malfunction occurs, the indoor and outdoor units stop and the malfunction is displayed on the LCD of the remote controller.

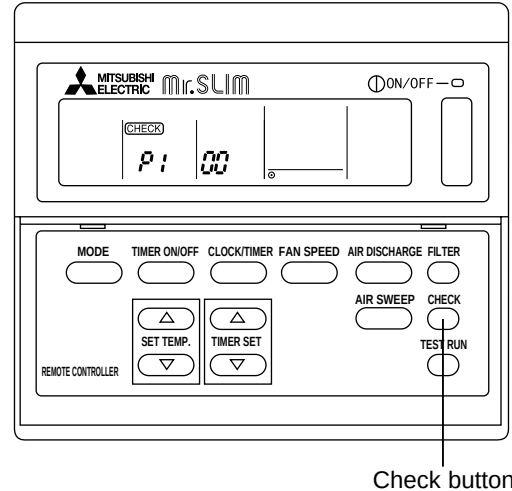
- (1) ON the set temperature display part, "CHECK" appears, and the unit address and the check code are displayed alternately at one-second intervals.

Example



- (2) When one remote controller controls several units in the group control, the LCD shows the unit address and check code of the first malfunctioning unit.
- (3) To cancel the check mode, press the ⓄON/OFF button. In remote ON/OFF control, press the remote Ⓞ ON/OFF switch. In centralise control, turn OFF the ⓄON/OFF button of centralise controller.

CHECK mode



NOTE: The latest check code is memorise, even if the check mode is cancelled by the way mentioned above. It takes 60 seconds maximum to display the memorise check code.

2-2 How to use the self diagnostic function for service

A. For normal control with one unit and one remote controller

- (1) Pressing the CHECK button on the remote controller twice starts the self diagnostic function.
- (2) During the self diagnostic function, "CHECK MODE" appears at two positions on the remote controller display. Then, at least 10 seconds later, the unit address and the check code is alternately displayed at one-second intervals.
- (3) Check and repair the unit according to the check code. (Refer to the next page.)

B. For group control using one remote controller

- (1) Pressing the CHECK button on the remote controller twice starts the self diagnostic function.
- (2) Press the SET TEMP. button or SET TEMP. button on the remote controller to advance or go back to the unit address. Each time SET TEMP. button is pressed, the unit address advances by one. Each time SET TEMP. button is pressed, the unit address goes back by one.
The check code and the unit address, appear alternately.
- (3) The check code "U8" means no malfunction has occurred since installation.
The check code "E0" means the following conditions:
 - The unit address displayed on the remote controller does not apply to any unit.
 - power is not supplied to the unit.
 - Signal transmitting/receiving circuit is abnormal.
- (4) Check and repair the unit according to the check code. (Refer to the next page.)

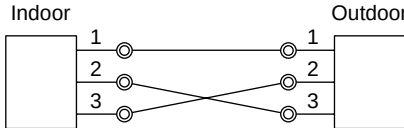
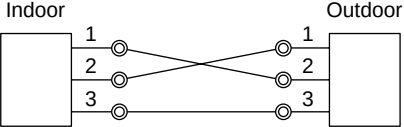
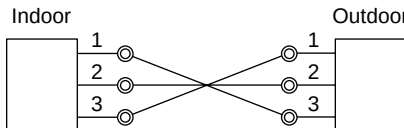
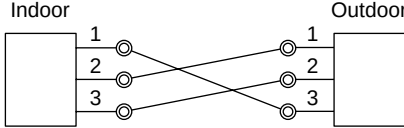
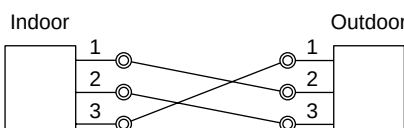
Check code	Diagnosis of malfunction	Cause	Check points
E0	Signal transmitting/receiving error (Indoor controller does not respond to remote controller signal.)	During individual unit control 1) Bad contact of transmission wire 2) Signal transmitting/receiving circuit is abnormal.	1) Check the transmission wire. 2) Check with another remote controller. If "E0" is still indicated, replace the indoor controller board. If other check code appears, replace the original remote controller.
P1	Abnormality of room temperature thermistor (RT1)	1) Bad contact of thermistor 2) Damaged thermistor	1) Check the thermistor. 2) Measure the resistance of the thermistor. Normal resistance should be as follows. 32°F...15kΩ 86°F...4.3kΩ 50°F...9.6kΩ 104°F...3.0kΩ 68°F...6.3kΩ If the resistance is normal, replace the indoor controller board.
P2	Abnormality of indoor coil thermistor (RT2)		
P3	Signal transmission error (Remote controller does not respond to indoor controller signal.)	1) Bad contact of transmission wire 2) Signal transmitting/receiving circuit is abnormal. 3) Wrong operation due to noise wave emitted by other appliances	1) Check the transmission wire. 2) Check with another remote controller. If "P3" is still indicated, replace the indoor board. If other check code appears, replace the original remote controller. 3) Short-circuit between ① and ② of CN40 and attach CN40 to the following units. ● Second unit in twin control ● Second and third units in triple control ● Sub units in group control
P4	Abnormality of drain sensor	1) Bad contact of transmission wire 2) Damaged thermistor	1) Check the connector. 2) Measure the resistance of the thermistor ① - ③. 32°F...6kΩ 59°F...3.2kΩ 86°F...1.8kΩ 41°F...4.8kΩ 68°F...2.6kΩ 95°F...1.5kΩ 50°F...3.9kΩ 77°F...2.2kΩ 104°F...1.3kΩ If the resistance is normal, replace the indoor controller board.
P5	Malfunction of drain pump	1) Malfunction of drain pump 2) Damaged drain sensor	1) Check the drain pump. 2) Check the drain sensor. (Check the drop of water is on.) If the resistance is normal, replace the indoor controller board.
P6	Freezing protection/overheating protection is working.	1) Short cycle of air cycle 2) Dirty air filter 3) Damaged fan 4) Abnormal refrigerant	1) Clear obstructions from the air cycle. 2) Clean the air filter 3) Check the fan. 4) Check the refrigerant temperature.
P7	System error	1) Wrong address-setting 2) Signal transmitting/receiving circuit of remote controller is abnormal. 3) Wrong SW6-setting	1) Check the address-setting. 2) Check with another remote controller. If check code other than "P7" appears, replace the original remote controller. 3) Check SW6 setting.
P8	Abnormality in outdoor unit	1) Wrong wiring of indoor/outdoor connecting wire 2) Reversed phase 3) Protection device is working 4) Damaged outdoor coil thermistor	1) Check the indoor/outdoor connecting wire. 2) Change the connection of electric wiring. 3) Check the protection device. 4) Measure the resistance of the outdoor coil thermistor. If the resistance is normal, replace the outdoor controller board.

3. WRONG WIRING ON SITE

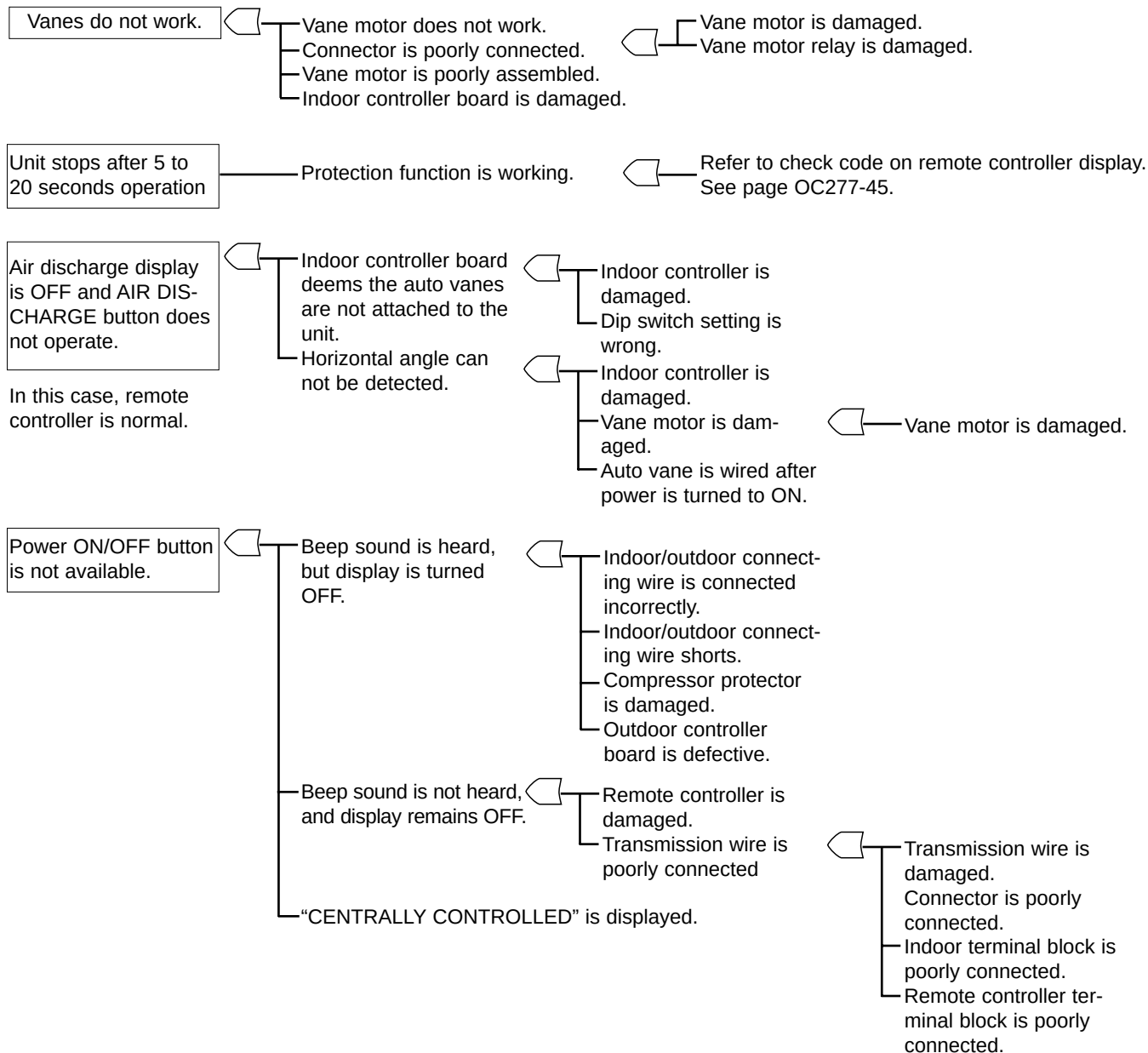
3-1 Between remote controller and indoor unit

If the wire is disconnected between the remote controller and the indoor unit, nothing is displayed on the remote controller when the POWER button is pressed. The beep sound will also not be heard.

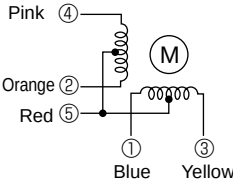
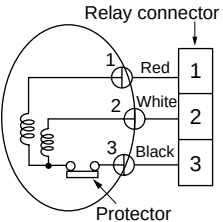
3-2 Phenomenon due to wrong wiring between indoor and outdoor units

Wrong wiring	Mode	Thermostat	Phenomenon
	COOL	OFF	Operation stops.
		ON	4-Way valve turns ON. 9 minutes later, check code "P8" appears on remote controller display.
	HEAT	OFF	Cooling operation. Several minutes later, check code "P8" appears on remote controller display.
		ON	Normal operation until first thermostat OFF.
	COOL	OFF	Outdoor unit stops.
		ON	Operation stops. 9 minutes later, check code "P8" appears on remote controller display.
	HEAT	OFF	Operation stops.
		ON	Operation stops. 27 minutes later, check code "P8" appears on remote controller display.
	COOL	OFF	Outdoor unit stops.
		ON	Operation stops. 9 minutes later, check code "P8" appears on remote controller display.
	HEAT	OFF	Operation stops.
		ON	Operation stops. 27 minutes later, check code "P8" appears on remote controller display.
	COOL	OFF	Outdoor unit stops.
		ON	Operation stops. 9 minutes later, check code "P8" appears on remote controller display.
	HEAT	OFF	Operation stops.
		ON	Operation stops. 27 minutes later, check code "P8" appears on remote controller display.
	COOL	OFF	Outdoor unit stops.
		ON	Operation stops. 9 minutes later, check code "P8" appears on remote controller display.
	HEAT	OFF	Operation stops.
		ON	Operation stops. 27 minutes later, check code "P8" appears on remote controller display.
Disconnection between 1 and 1 or 2 and 2.	COOL	OFF	Operation stops.
		ON	Operation stops. 9 minutes later, check code "P8" appears on remote controller display.
	HEAT	OFF	Operation stops. 4-way valve turns OFF.
		ON	27 minutes later, check code "P8" appears on remote controller display.
Disconnection between 3 and 3.	COOL	—	Normal operation.
	HEAT	OFF	Operation stops. 4-way valve turns OFF.
		ON	Operation stops. 27 minutes later, check code "P8" appears on remote controller display.

4. OTHER TROUBLES AND CAUSES



5. How to check the parts

Parts name	Check points															
Room temperature thermistor (RT1)	Disconnect the connector then measure the resistance using a tester. (Ambient temperature 50°F to 86°F)															
Liquid pipe thermistor (RT2)	<table><tr><th>Normal</th><th>Abnormal</th></tr><tr><td>4.3kΩ to 9.6kΩ</td><td>Open or short</td></tr></table>	Normal	Abnormal	4.3kΩ to 9.6kΩ	Open or short	(Refer to the next page for a detail.)										
Normal	Abnormal															
4.3kΩ to 9.6kΩ	Open or short															
Vane motor (MV)	Measure the resistance between the terminals using a tester. (Ambient temperature 77°F)															
	<table><tr><th rowspan="2">Connector</th><th colspan="2">Normal</th><th rowspan="2">Abnormal</th></tr><tr><th colspan="2">24,30,36,42GK</th></tr><tr><td>Red — Yellow</td><td colspan="2" rowspan="4">150Ω</td><td rowspan="4">Open or short</td></tr><tr><td>Red — Blue</td></tr><tr><td>Red — Orange</td></tr><tr><td>Red — Pink</td></tr></table>	Connector	Normal		Abnormal	24,30,36,42GK		Red — Yellow	150Ω		Open or short	Red — Blue	Red — Orange	Red — Pink		
Connector	Normal		Abnormal													
	24,30,36,42GK															
Red — Yellow	150Ω		Open or short													
Red — Blue																
Red — Orange																
Red — Pink																
Fan motor (MF)	Measure the resistance between the terminals using a tester.															
	<table><tr><th rowspan="3">Motor terminal or Relay connector</th><th colspan="2">Normal</th><th rowspan="3">Abnormal</th></tr><tr><th colspan="2">PCH</th></tr><tr><th>24GK</th><th>30,36,42GK</th></tr><tr><td>Red-Black</td><td>41.1Ω</td><td>20.4Ω</td><td rowspan="2">Open or short</td></tr><tr><td>White-Black</td><td>54.3Ω</td><td>20.7Ω</td></tr></table>	Motor terminal or Relay connector	Normal		Abnormal	PCH		24GK	30,36,42GK	Red-Black	41.1Ω	20.4Ω	Open or short	White-Black	54.3Ω	20.7Ω
Motor terminal or Relay connector	Normal		Abnormal													
	PCH															
	24GK	30,36,42GK														
Red-Black	41.1Ω	20.4Ω	Open or short													
White-Black	54.3Ω	20.7Ω														
Opening and closing temperature of protector. Open: 266±41°F (Fan motor OFF) Close: 176±68°F (Fan motor ON)																

<Thermistor Characteristic graph>

Thermistor for
lower temperature

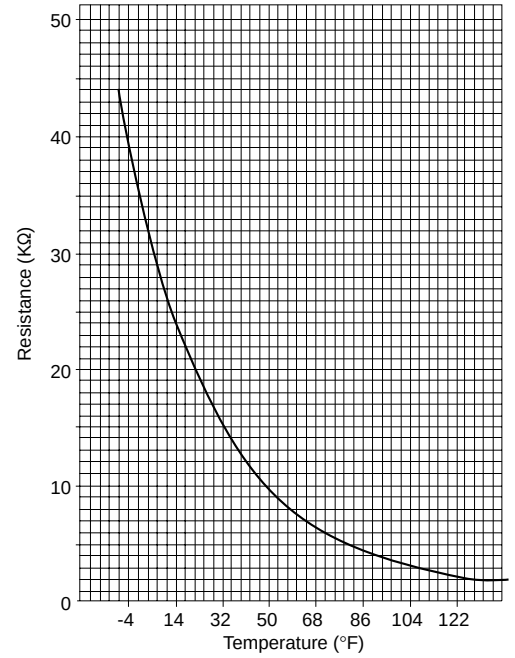
Room temperature thermistor(RT1)
Liquid pipe thermistor(RT2)

Thermistor $R_0=15k\Omega \pm 3\%$
Fixed number of $B=3480k\Omega \pm 2\%$

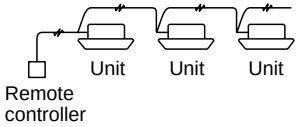
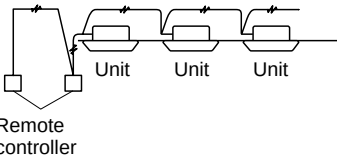
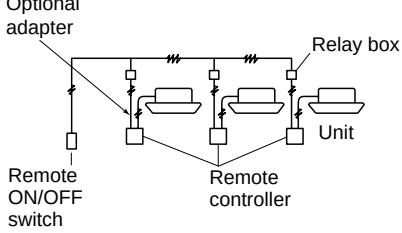
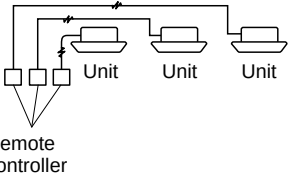
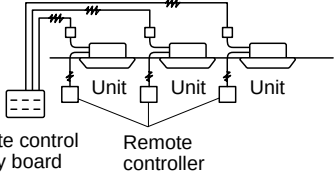
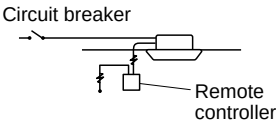
$$R_t = 15 \exp \left\{ 3480 \left(\frac{1}{273 + \{(t-32)/1.8\}} - \frac{1}{273} \right) \right\}$$

32°F	15kΩ
50°F	9.6kΩ
68°F	6.3kΩ
77°F	5.4kΩ
86°F	4.3kΩ
104°F	3.0kΩ

< Thermistor for lower temperature >



1. VARIETY OF SYSTEM CONTROL FUNCTIONS

① Group control with a single remote controller (See page OC277-51.)	 Remote controller	Many units, installed at different locations, can be started and controlled with a single remote controller. The remote controller can be mounted in a different location using a non-polar two-wire cable, which can be extended up to 500m. A maximum of 50 units can be controlled with a single remote controller. All units operate in the same mode.
② Control using two remote controllers (See page OC277-52.)	 Remote controller	Two remote controllers can be used to control either one unit or a group of units. Units can then be controlled from a distance or at close range. Units operate according to the latest command from either remote controller.
③ Both remote ON/OFF and individual controls (See page OC277-52.) ※ Timer adapter (PAC-SA89TA-E) is needed.	 Optional adapter Remote ON/OFF switch Relay box Remote controller	All units can be turned on or off simultaneously using a remote ON-OFF switch. Also, each unit can be controlled individually by each remote controller. During remote ON-OFF control, a message of "CENTRALLY CONTROLLED" is displayed on the LCD of the remote controller. This is available for both one unit control and several units control.
④ Individual control by grouping remote controllers (See page OC277-53.)	 Remote controller	By grouping the remote controllers in one place, several units installed at different locations can be controlled individually, and operation conditions of all units are visible without a special control board. The control method is the same as that of the single unit with a single remote controller.
⑤ Multiple remote control display (See page OC277-54.) ※ Multiple display adapter (PAC-SA88HA-E) is needed.	 Remote control display board Remote controller	Several units can be controlled with a remote control display board. Operation conditions of all the units are visible with the remote control display board. Individual control by each remote controller is also possible.
⑥ Auto restart function (See page OC277-54.)	 Circuit breaker Remote controller	A unit can be started or stopped with the circuit breaker on or off. Remote controller is also available. With this function, when the power is restored after power failure, the unit will restart automatically. (However, when the remote controller POWER ON/OFF button is OFF, the unit will not start.)

2. GROUP CONTROL WITH A SINGLE REMOTE CONTROLLER

A maximum of 50 units can be started in order according to the dip switch settings

2-1 How to wire

- (1) Connect the remote controller to the double terminal block on the indoor controller board of the master unit (No.0 unit). (See Figure 1.)
- (2) Connect the double terminal block of the master unit to the double terminal block of No.1 unit.
- (3) Connect the double terminal block of No.1 unit to the double terminal block of No.2 unit.
- (4) Continue the process until all the units are connected with two-wire cables. (See Figure 2.)
- (5) Remove the connector CN40 from the indoor controller board of each unit except the master unit. (See Figure 3.)
- (6) Set the unit-address of each unit with SW2 on the indoor controller board following the instructions below.

Figure 1

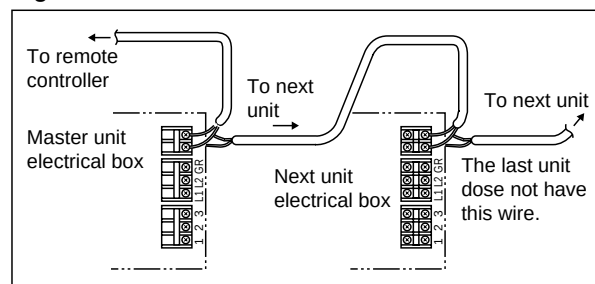
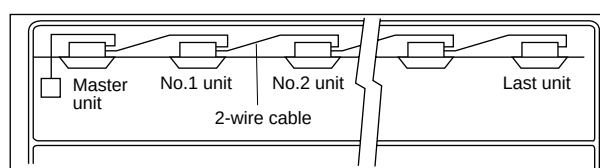


Figure 2



2-2 How to set unit-address

The unit-address also serves as a successive-start timer which starts each unit at intervals of 1 second. If two or more units have the same unit-address in a group control, operation stops due to system error. Be sure to set SW2 correctly following the instructions below.

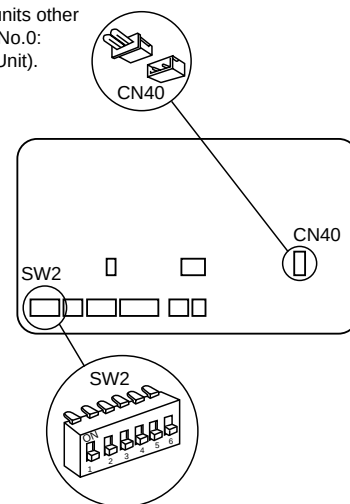
- (1) Each lever of SW2 shows the number as follows.

SW2-1 : 1	SW2-4 : 8
SW2-2 : 2	SW2-5 : 16
SW2-3 : 4	SW2-6 : 32
- (2) Total number of levers turned to ON shows the address of the unit.
For example, to set No.3 unit, turn ON SW2-1 and SW2-2.
- (3) In this way, set from the master unit to the last unit.
Do not forget to set the master (No. 0) unit.

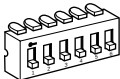
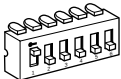
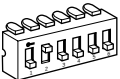
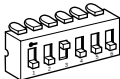
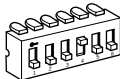
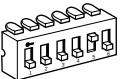
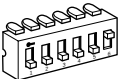
Figure 3

Indoor controller board ▼

Should be removed from all units other than unitNo.0: (Master Unit).



Setting examples

	Master (No. 0) unit	No. 1 unit	No. 2 unit	No. 4 unit	No. 8 unit	No. 16 unit	No. 32 unit
SW2	ALL OFF 	1 ON 	2 ON 	3 ON 	4 ON 	5 ON 	6 ON 
Unit address & start delay in seconds.	0	1	2	4	8	16	32

2-3 Unit control

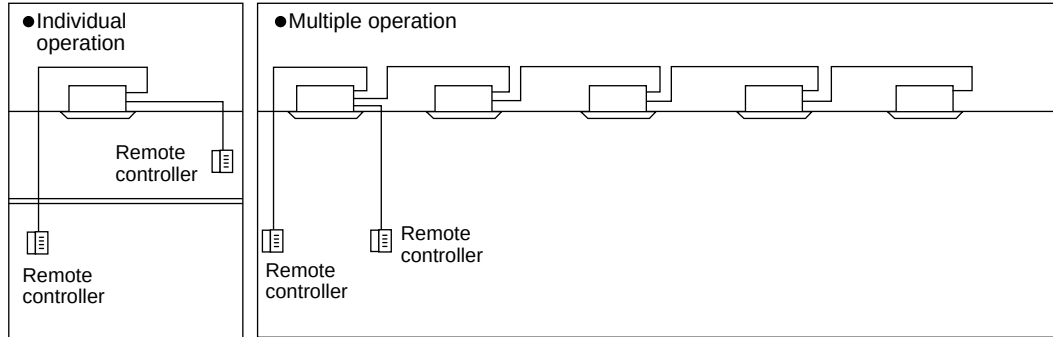
The remote controller can control all units ON/OFF, temperature, air flow, and swing louver. However, the thermostat in each unit turns ON or OFF individually to adjust to the room temperature.

3. CONTROL USING TWO REMOTE CONTROLLERS

Two remote controllers can be used to control either one unit or a group of units. Units operate according to the latest command from either of the two remote controllers.

Before operation, be sure to set one remote controller as the “main controller” and the other as the “sub controller”, using dip switch SW17-7 of the remote controller.

Figure 4



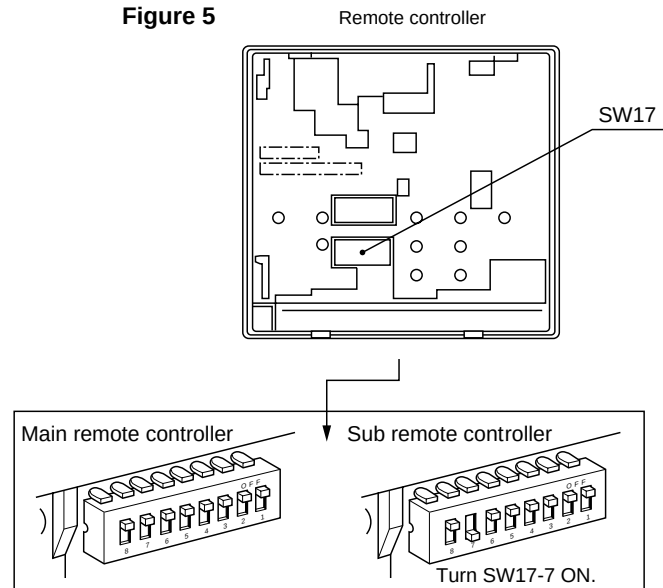
3-1 How to set SW17-7 (See Figure 5.)

- (1) For the main remote controller, turn SW17-7 OFF.
- (2) For the sub remote controller, turn SW17-7 ON.

3-2 Remote controller LCD indication

- (1) The same indications always appear on both the main and sub remote controllers, except during the timer operations.
- (2) Timer operations can be set with either of the two remote controllers. However, LCD indication appears only on the remote controller used for timer-settings.
- (3) If both remote controllers are set for timer operation with different time-settings, the timer operation with the shorter remaining-time is effective.
- (4) Self-diagnostic function is available with either of the two remote controllers. If one of the remote controllers is used for the self-diagnostic function, the other remote controller displays the check mode. If the self-diagnostic function is reset by either of the two remote controllers, both remote controllers are reset.

Figure 5



4. REMOTE ON-OFF AND INDIVIDUAL REMOTE CONTROLS

This method is available to control one unit or any number of units.

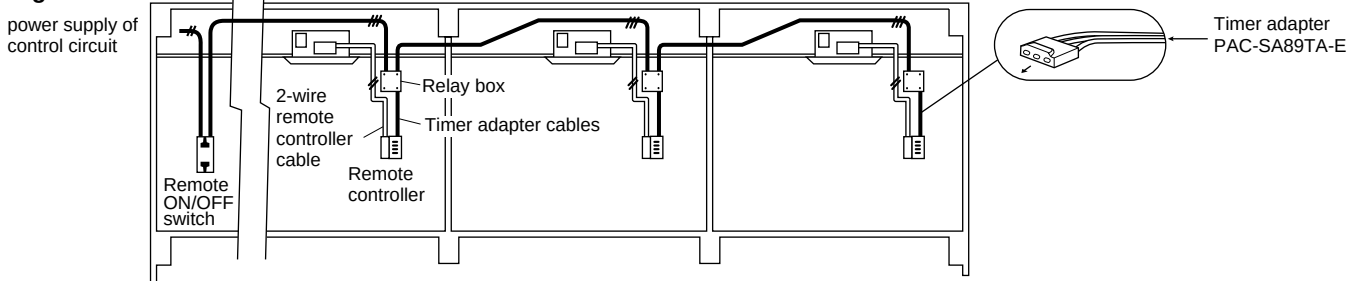
The following operations are available by connecting a relay, a timer adapter (PAC-SA89TA-E), and a remote ON/OFF switch to the system. Timer adapter is an optional part. Other parts are available on the market.

- (A) To start all units in order by remote ON-OFF switch
- (B) To stop all units simultaneously by remote ON-OFF switch
- (C) To switch between the remote ON-OFF control and the individual remote control

4-1 System

Figure 6 shows the case of three units. The same is the case with any number of units.

Figure 6



NOTE1 : Install the relay box where you can be serviced it easily.

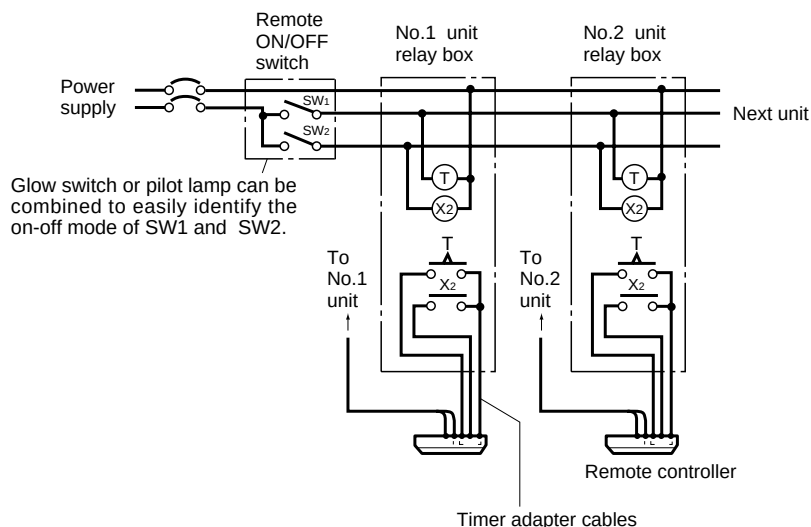
NOTE2 : For control circuit wiring, use a wire of No. 14 AWG or a control cable according to the power supply of control circuit.

NOTE3 : When the power supply of the control circuit is 208/230V AC,

- Do not connect the control circuit wire to the remote controller cable directly.
- Do not place the control circuit wire and the remote controller cable into the same conduit tube.

4-2 Basic wiring

Caution : Before starting all units simultaneously by the remote ON-OFF switch, be sure to connect a sequence-start timer into the remote ON-OFF circuit. Otherwise, a rush of starting current may damage the power supply.



4-3 Switch function of remote ON-OFF switch

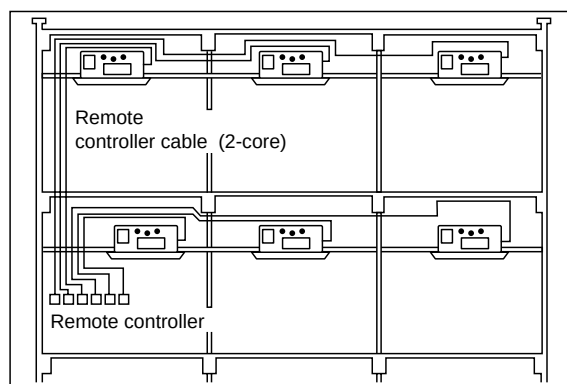
		SW2 (Switches between remote ON-OFF and individual control)	
		ON (Remote ON-OFF control)	OFF (Individual control)
SW1 (Switches between remote ON and OFF.)	ON (Start)	All units start together. *1 Individual control is not available.	Each unit can be controlled by each remote controller. Remote ON-OFF switch is not available.
	OFF (Stop)	All units stop together. *2 Individual control is not available.	

*1After all units start together, if SW2 is turned OFF, each unit can be individually stopped by each remote controller.

*2After all units stop together, if SW2 is turned OFF, each unit can be individually started by each remote controller.

5. INDIVIDUAL CONTROL BY GROUPING THE REMOTE CONTROLLERS

- Grouping the remote controllers allows individual control and centralise monitoring of units installed in different places without a special control board.
- Remote control cables are extendible up to 550 yards When the cable length exceeds 33ft, use the double-insulated two-core cable such as Belden 9407. Also, the cable thickness must be No. 22 AWG or above.
- When gathering the power ON/OFF switches of air conditioners near the remote controllers, you should also install the power ON/OFF switch near each unit to prevent electric trouble during servicing.

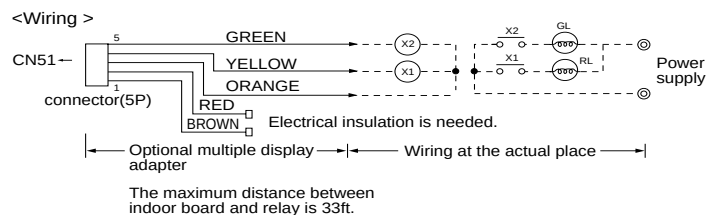


6. MULTIPLE REMOTE CONTROL DISPLAY

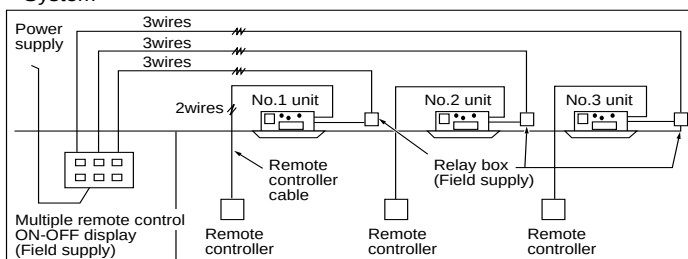
You can control several units with a multiple remote control display, by wiring an optional multiple display adapter (PAC-SA88HA-E) with relays and lamps on the market.

How to wire

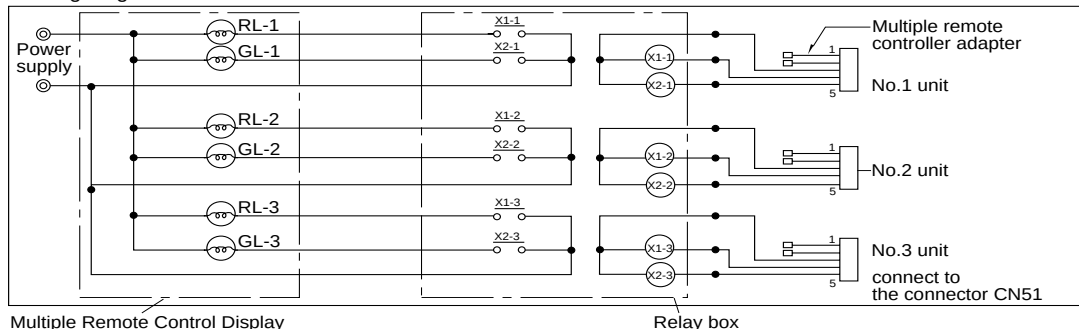
- (1) Connect the multiple display adapter to the connector CN51 on the indoor controller board.
- (2) Wire three of the five wires from the multiple display adapter as shown in the figure below.



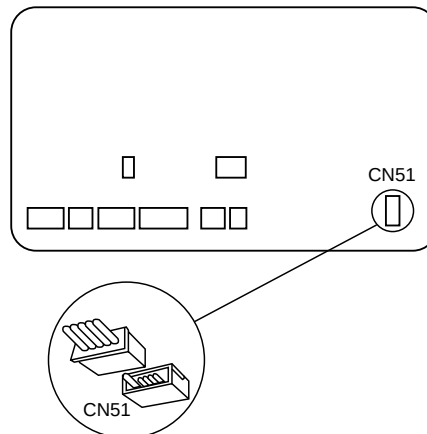
<System>



<Wiring diagram>



Indoor controller board



[Notes on Signs]

X1:Relay (for operation lamp)

X2:Relay (for check lamp)

RL:Operation Lamp

GL:Check Lamp

[Field supplied parts]

Relays:12V DC with rated coil power consumption below 0.9W.

Lamps:Matching to power supply voltage.

7. AUTO RESTART FUNCTION

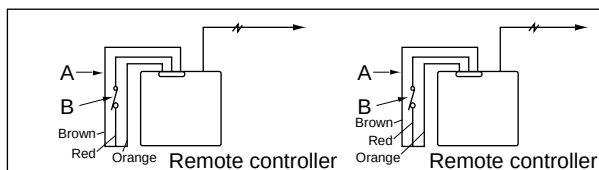
By setting the dip switch SW1-8 to ON, the air conditioner can be started/stopped by power supply ON/OFF.

If the air conditioner is OFF before the power failure, it will not start operation by power restore.

•This function is mainly to emergency performance when the power supply stops temporarily. Therefore, since the protection function (for example, clank case heater and prevention from restarting in 3 minutes, etc.) of the device is not operated, this function should not be used mostly.

8. TIMER OPERATION OR THE OPERATION BY AN EXTERNAL SIGNAL

<Wiring>

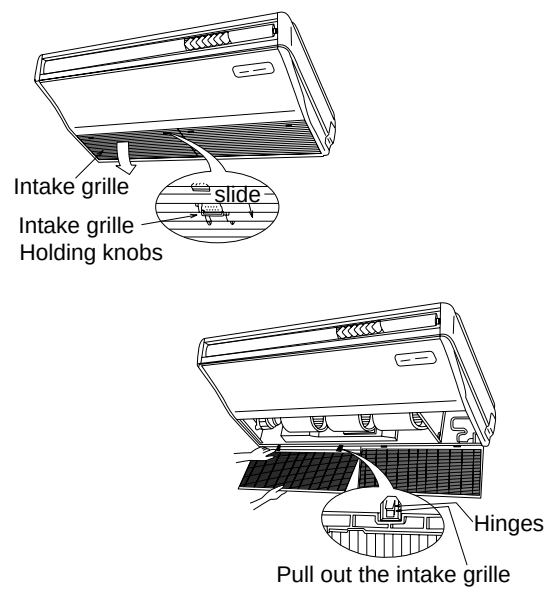
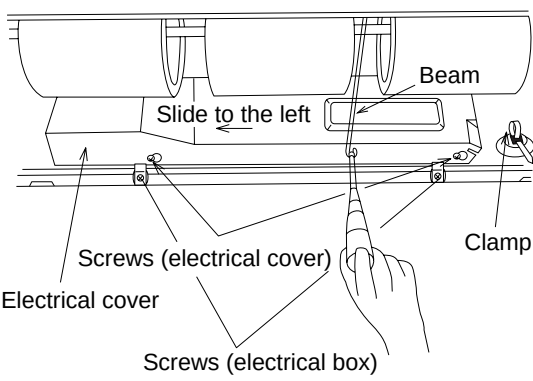
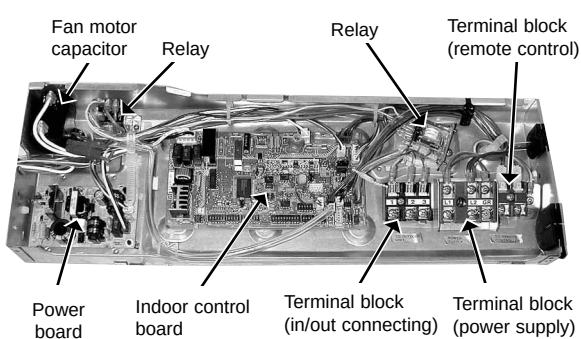


A : an optional timer adapter

B : a single-throw switch

For remote control, connect the optional timer adapter (PAC-SA89TA-E)

PCH24GK

OPERATING PROCEDURE	PHOTOS&ILLUSTRATIONS
1. Removing the air intake grille (1) Slide the intake grille holding knobs (at two locations) backward to open the intake grille. (2) When the intake grille left open, push the stoppers on the rear hinges (at two locations) to pull out the intake grille.	Figure 1  Intake grille Intake grille Holding knobs slide Hinges Pull out the intake grille
2. Removing the electrical box (1) Remove the air intake grille. (2) Remove the screw from the beam and remove the beam. (3) Remove the screws from the electrical cover, and remove the electrical cover. (4) Disconnectors including CN6V and CN21. (5) Remove the screws from the electrical box and pull out the electrical box. <Electrical parts in the electrical box> - Terminal block (for power supply) - Terminal block (for in/outdoor connecting wire) - Terminal block (for remote controller) - Fan motor capacitor - Indoor control board - Relay - Power Board	Figure 2  Beam Slide to the left Clamp Screws (electrical cover) Electrical cover Screws (electrical box) Photo 1  Fan motor capacitor Relay Relay Terminal block (remote control) Power board Indoor control board Terminal block (in/out connecting) Terminal block (power supply)

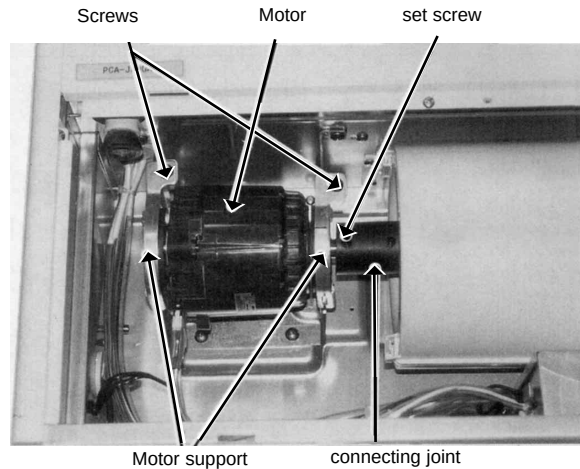
OPERATING PROCEDURE

PHOTOS&ILLUSTRATIONS

3. Removing the fan motor

- (1) Remove the intake grille.
- (2) Disconnect the fan motor connector.
- (3) Remove the screw for removing the motor support at both left and right side.
- (4) Loosen the set screws at the fan motor side of the connecting joint.
- (5) Slide the fan motor to the left side and pull it out.

Photo 2



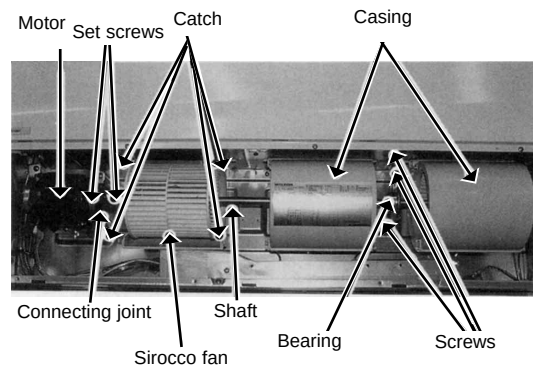
4. Removing the sirocco fan

- (1) Remove the air intake grille.
- (2) Remove 1 beam.
- (3) Remove the lower casing while pressing the stoppers at upper side of the casing.
- (4) Loosen the set screws at the connecting joint.
- (5) Remove the sirocco fan and shaft together by sliding the shaft to the left.

(Note)

Make sure that the upper side casing is snapped to the fan plate securely with catch.

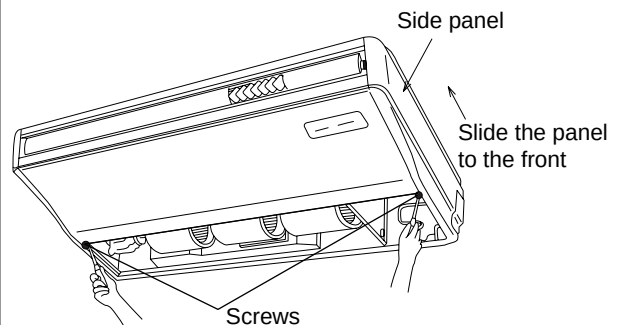
Photo 3



5. Removing the side panel

- (1) Remove the air intake grille.
- (2) Remove the screws from the side panel, and remove the side panel by sliding the panel to the front.

Figure 3



OPERATING PROCEDURE

6. Removing the vane motor

- (1) Remove the air intake grille.
- (2) Remove the left side panel.
- (3) Remove the relay connector of vane motor.
- (4) Remove the electrical box.
- (5) Remove the screws of vane motor, then remove vane motor.

(Note)

Connect the lead wires and connectors properly and place them in the proper position so that the wires are not pinched by other parts.

7. Removing the Indoor coil thermistor

- (1) Remove the air intake grille.
- (2) Remove the right side panel.
- (3) Remove the relay connector of the pipe thermistor.
- (4) Remove the screw, and remove the check panel.
- (5) Extract the indoor coil thermistor from the holder.

<Caution for the installation>

There is a possibility for the short circuit when connector gets wet by water through the thermistor lead wire. Therefore, lead wire of the indoor coil thermistor should be trapped as shown in the photo 5.

8. Removing the Under panel

- (1) Remove the air intake grille.
- (2) Remove the beam.
- (3) Remove the side panel (right and left).
- (4) Unscrew the screws of the under panel, then remove the under panel.

※ Weight of the under panel : approx. 5 lbs.

PHOTOS

Photo 4

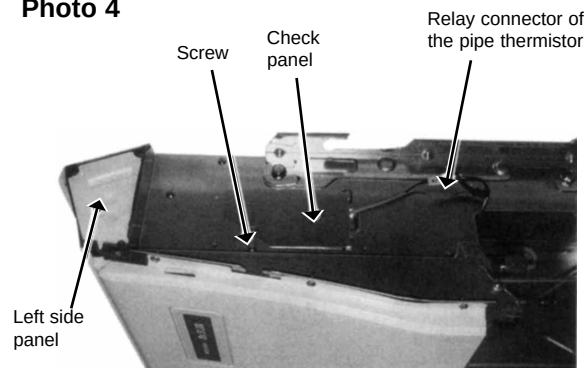


Photo 5

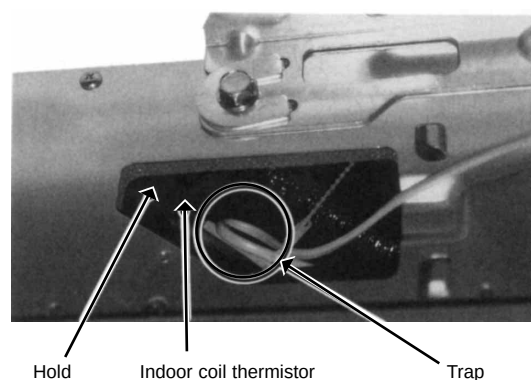


Photo 6

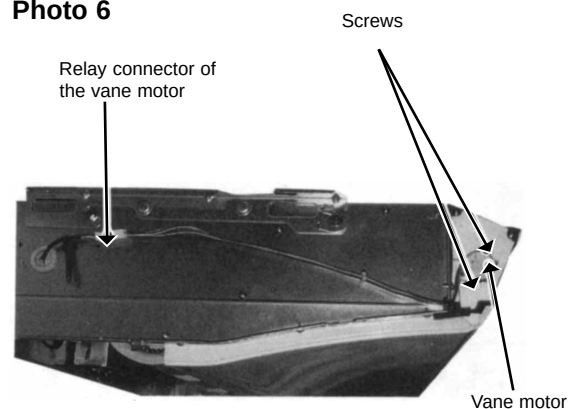
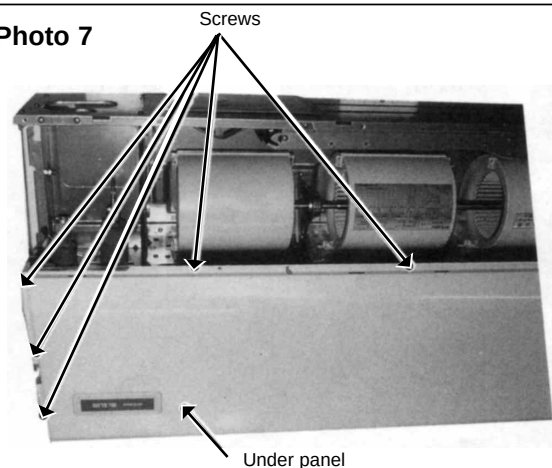
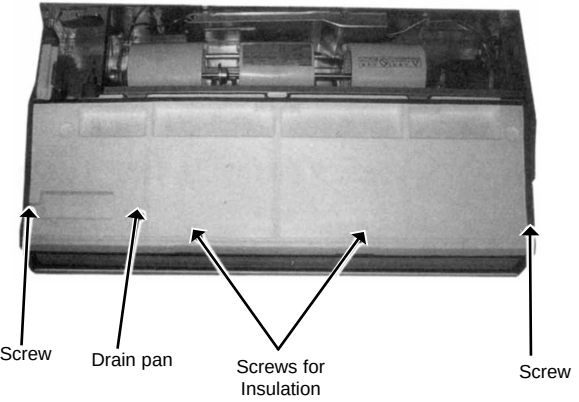
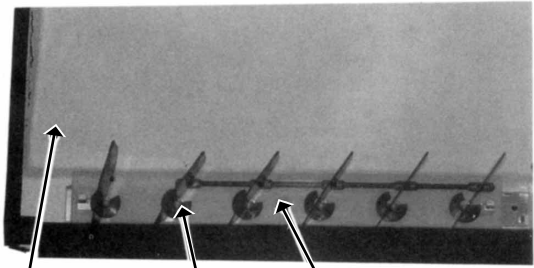
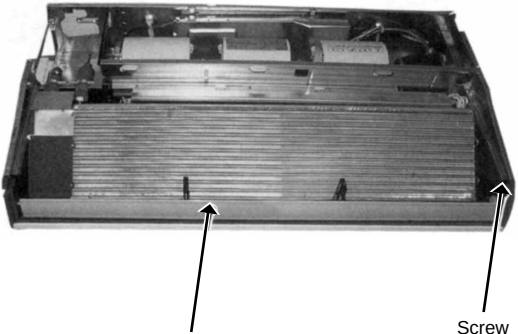


Photo 7





OPERATING PROCEDURE	PHOTOS
9. Removing the drain pan (1) Remove the air intake grille. (2) Remove the beam. (3) Remove the side panel (right and left). (4) Remove the under panel. Remove the screws of the right and left side drain pan. (5) Remove the insulation in center of the drain pan, and after removing the screw, remove the drain pan.	Photo 8  Screw Drain pan Screws for Insulation Screw
10. Removing the guide vane (1) Remove the intake grille. (2) Remove the beam. (3) Remove the side panel (right and left). (4) Remove the under panel. (5) Remove the drain pan. (6) Remove the screw from the guide vane, then remove the guide vane.	Photo 9  Drain pan Guide vane Screw
11. Removing the Auto vane (1) Remove the intake grille. (2) Remove the left side panel. (3) Remove the left side box. (4) Remove the under panel. (5) Remove the screw from the auto vane. (6) Slide the auto vane to the right side and pull the auto vane out.	Photo 10  Auto vane Screw

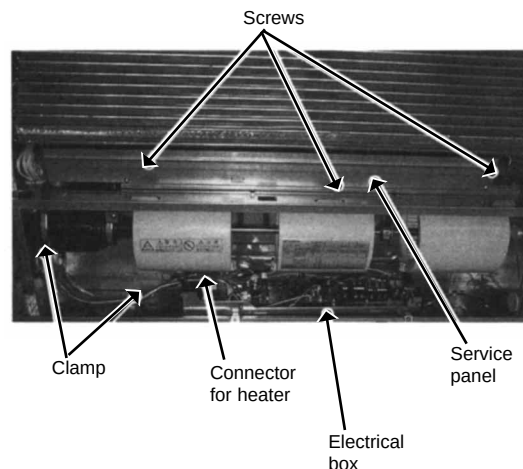
OPERATING PROCEDURE

12. Removing the support heater.

- (1) Remove the air intake grille.
- (2) Remove the beam.
- (3) Remove the side panel (right and left).
- (4) Remove the relay connector for the pipe thermistor.
- (5) Remove the under panel.
- (6) Remove the drain pan.
- (7) Remove the screw from the pipe cover, and remove the pipe cover.
- (8) Remove the screw from the pipe support, and remove the pipe fixed support.

PHOTOS

Photo 11

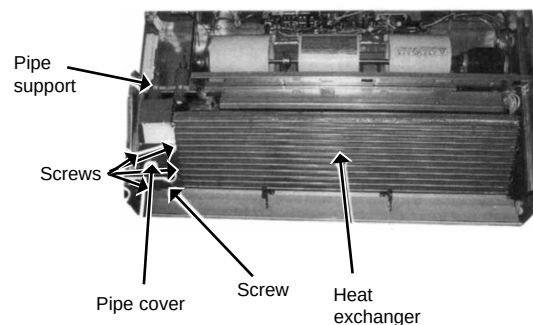


13. Removing the heat exchanger.

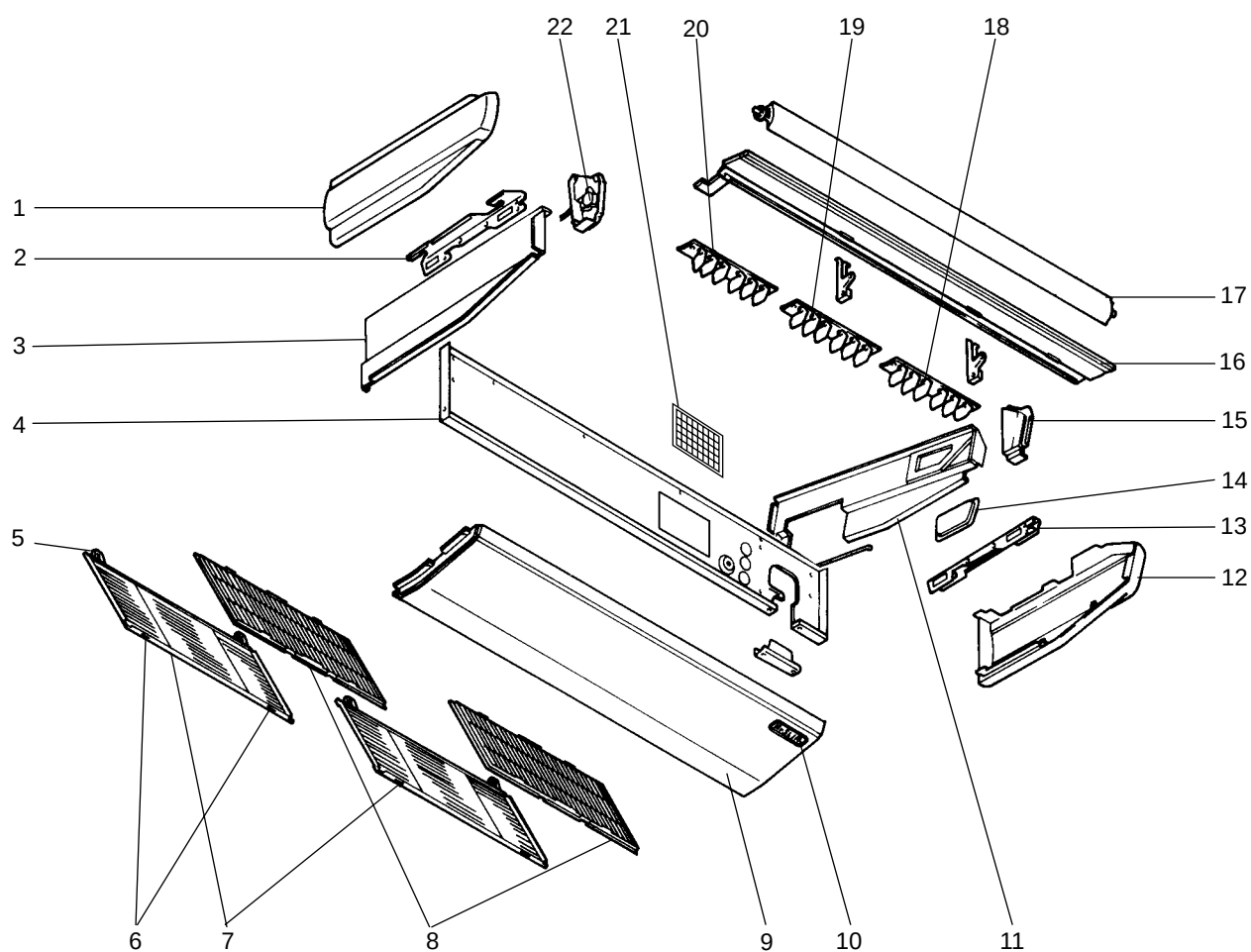
- (1) Remove the air intake grille.
 - (2) Remove the beam.
 - (3) Remove the side panel (right and left).
 - (4) Disconnect the relay connector.
 - (5) Remove the under panel.
 - (6) Remove the drain pan.
 - (7) Unscrew the screw of the pipe cover, and remove the pipe cover.
 - (8) Unscrew the screw of the pipe support, and remove the pipe support.
 - (9) Unscrew the screw of the heat exchanger, and remove the heat exchanger.
- Remove the heat exchanger with care. Since this is quite heavy, removing work should be done with more than 2 people.

※Weight of heat exchanger : approx. 12 lbs.

Photo 12



STRUCTURAL PART
PCH24GK

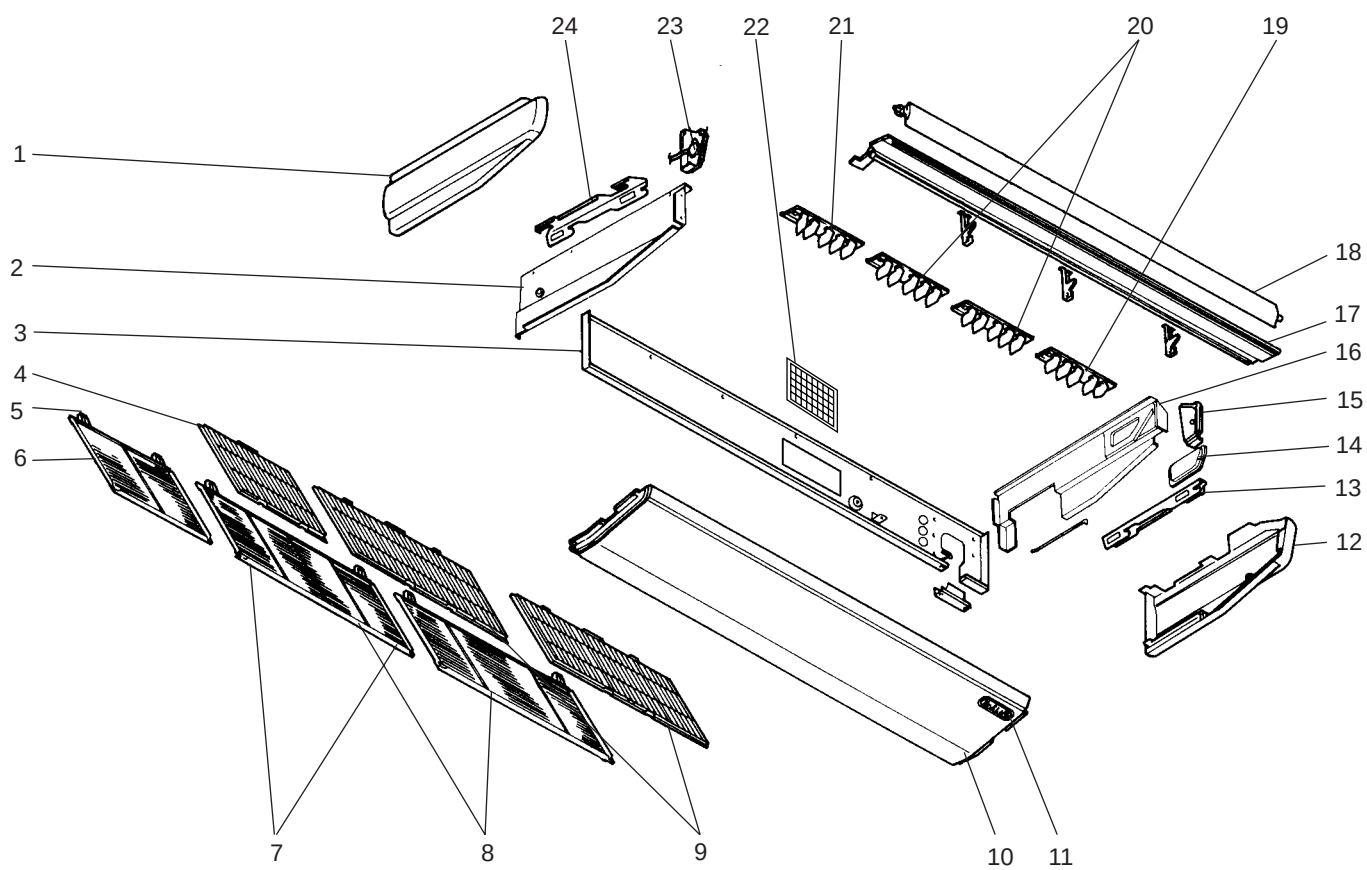




Part numbers that are circled are not shown in the illustration.

No.	Parts No.	Parts Name	Specifications	Q'ty / set	Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
				PCH				Unit	Amount
				24GK					
1	R01 35J 662	LEFT SIDE PANEL		1					
2	R01 17J 809	LEFT LEG		1					
3	T7W E00 666	SIDE PLATE-L.		1					
4	T7W E00 676	REAR PANEL		1					
5	R01 17J 061	GRILLE HINGE		4					
6	R01 17J 054	GRILLE CATCH		4					
7	R01 17J 691	GRILLE ASSY		2					
8	R01 A14 500	FILTER		2					
9	R01 29J 669	UNDER PANEL		1					
10	T7W E01 070	WIRELESS BOARD CASE		1					
11	T7W E00 665	SIDE PLATE-R.		1					
12	R01 35J 661	RIGHT SIDE PANEL		1					
13	R01 17J 808	RIGHT LEG		1					
14	T7W E01 668	SERVICE PANEL		1					
15	R01 35J 067	RIGHT SIDE BOX		1					
16	T7W E00 651	FRONT PANEL		1					
17	R01 35J 002	AUTO VANE		1					
18	R01 37J 085	GUIDE VANE ASSY-6R.		1					
19	R01 37J 087	GUIDE VANE ASSY-6C.		1					
20	R01 37J 086	GUIDE VANE ASSY-6L.		1					
21	T7W 051 501	AIR FLITER		1					
22	R01 35J 223	VANE MOTOR		1		MV			
②3	R01 17J 523	JOINT SOCKET		1					
②4	T7W E00 072	DRAIN HOSECOVER		1					

STRUCTURAL PART
PCH30GK
PCH36GK
PCH42GK

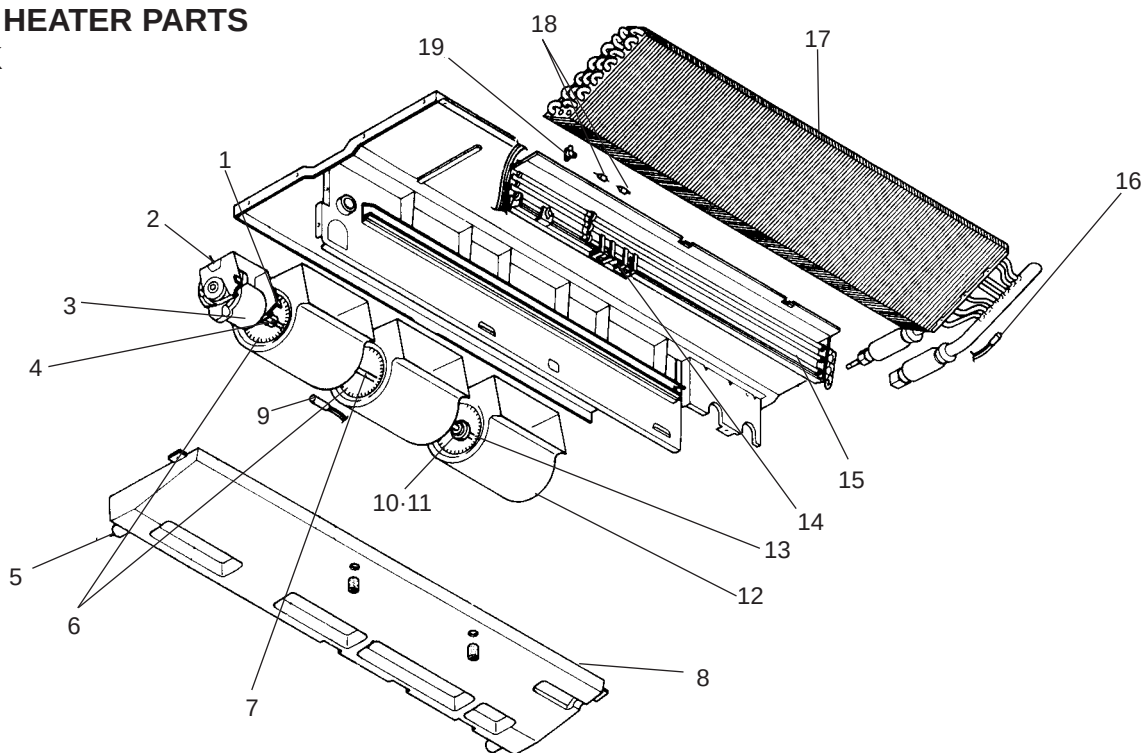




Part numbers that are circled are not shown in the illustration.

No.	Parts No.	Parts Name	Specifications	Q'ty / set	Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
				PCH				Unit	Amount
				30, 36, 42GK					
1	R01 35J 662	LEFT SIDE PANEL		1					
2	T7W E00 666	SIDE PLATE-L.		1					
3	T7W E01 676	REAR PANEL		1					
4	R01 A15 500	FILTER		1					
5	R01 17J 061	GRILLE HINGE		6					
6	R01 18J 691	GRILLE ASSY		1					
7	R01 17J 054	GRILLE CATCH		6					
8	R01 17J 691	GRILLE ASSY		2					
9	R01 A14 500	FILTER		2					
10	R01 41J 669	UNDER PANEL		1					
11	T7W E01 070	WIRELESS BOARD CASE		1					
12	R01 35J 661	RIGHT SIDE PANEL		1					
13	R01 17J 808	RIGHT LEG		1					
14	T7W E01 668	SERVICE PANEL		1					
15	R01 35J 067	RIGHT SIDE BOX		1					
16	T7W E00 665	SIDE PLATE-R.		1					
17	T7W E01 651	FRONT PANEL		1					
18	R01 41J 002	AUTO VANE		1					
19	R01 41J 085	GUIDE VANE ASSY-5R.		1					
20	R01 43J 087	GUIDE VANE ASSY-5C.		2					
21	R01 42J 086	GUIDE VANE ASSY-5L.		1					
22	T7W 051 501	AIR FILTER		1					
23	R01 35J 223	VANE MOTOR		1		MV			
24	R01 17J 809	LEFT LEG		1					
25	R01 17J 523	JOINT SOCKET		1					
26	T7W E00 072	DRAIN HOSE COVER		1					

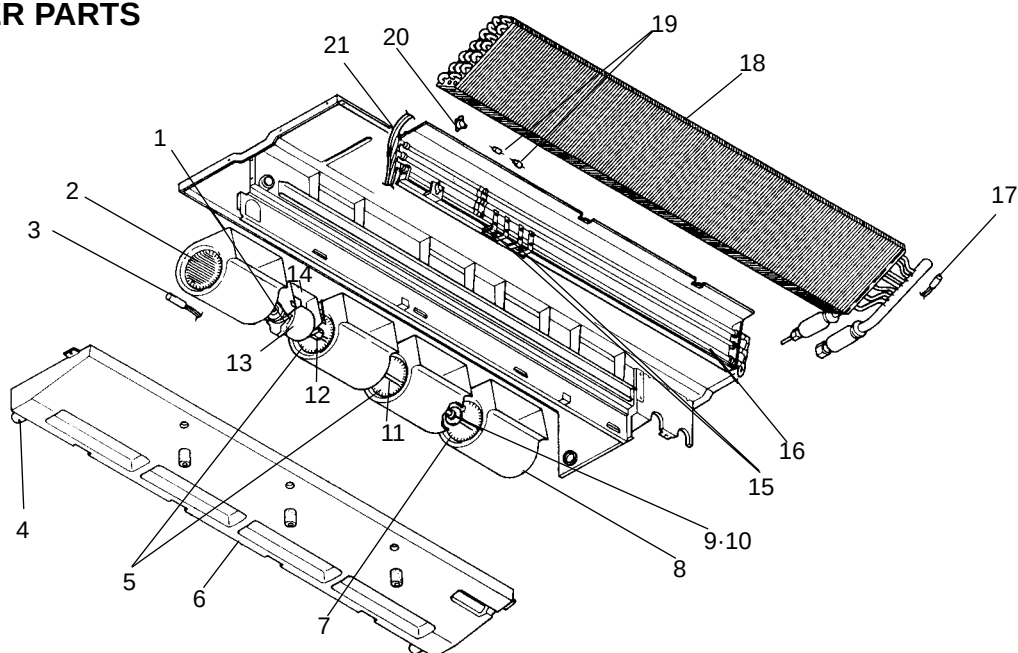
FAN AND HEATER PARTS PCH24GK



Part number that is circled is not shown in the illustration.

No.	Parts No.	Parts Name	Specifications	Q'ty / set	Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
				PCH 24GK				Unit	Amount
1	R01 43E 126	PIECE (MOTOR)		1					
2	R01 35J 130	MOTOR LEG		1					
3	T7W E14 762	FAN MOTOR	PN4N90-C	1		MF			
4	R01 700 116	SHAFT JOINT		1					
5	R01 17J 524	DRAIN PLUG		1					
6	R01 35J 114	SIROCCO FAN		2					
7	R01 29J 100	SHAFT		1					
8	T7W E15 529	DRAIN PAN		1					
9	R01 E26 202	ROOM TEMPERATURE THERMISTOR		1		RT1			
10	R01 705 103	SLEEVE BEARING		1					
11	R01 35J 145	BEARING SUPPORT		1					
12	R01 35J 110	CASING		3					
13	R01 39J 114	SIROCCO FAN		1					
14	R01 20J 303	INSULATOR		1					
	R01 36J 303	INSULATOR		3					
15	T7W 39J 300	HEATER ELEMENT	80V 900W	3		H			
16	R01 17J 202	PIPE TEMPERATURE THERMISTOR		1		RT2			
17	T7W E85 480	HEAT EXCHANGER		1					
18	T7W 589 706	THERMAL FUSE	117°C	1		FS1,2			
19	T7W E00 700	THERMAL SWITCH		1		26H			
20	R01 E00 418	RESTRICTOR VALVE		1					

FAN AND HEATER PARTS
PCH30GK
PCH36GK
PCH42GK



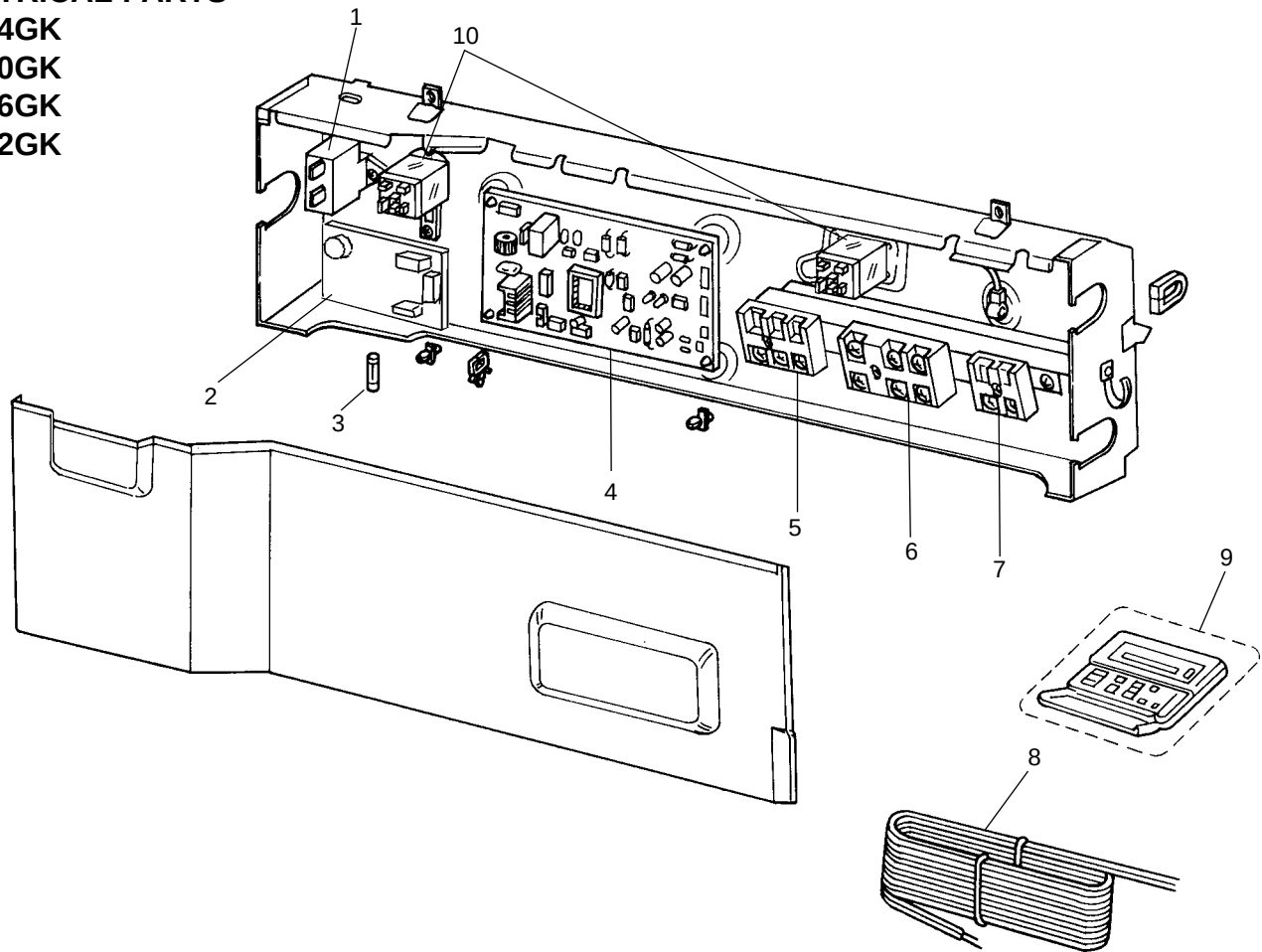
Part number that is circled is not shown in the illustration.

Part number that is circled is not shown in the illustration.

No.	Parts No.	Parts Name	Specifications	Q'ty / set			Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
				PCH						Unit	Amount
				30GK	36GK	42GK					
1	R01 43E 126	PIECE (MOTOR)		1	1	1					
2	R01 41J 114	SIROCCO FAN		1	1	1					
3	R01 E26 202	ROOM TEMPERATURE THERMISTOR		1	1	1		RT1			
4	R01 17J 524	DRAIN PLUG		1	1	1					
5	R01 35J 114	SIROCCO FAN		2	2	2					
6	T7W E16 529	DRAIN PAN		1	1	1					
7	R01 39J 114	SIROCCO FAN		1	1	1					
8	R01 35J 110	CASING		4	4	4					
9	R01 705 103	SLEEVE BEARING		1	1	1					
10	R01 35J 145	BEARING SUPPORT		1	1	1					
11	R01 29J 100	SHAFT		1	1	1					
12	R01 700 116	SHAFT JOINT		1	1	1					
13	T7W E15 762	FAN MOTOR	PN4N150-C	1	1	1		MF			
14	R01 41J 130	MOTOR LEG		1	1	1					
15	R01 20J 303	INSULATOR		1	1	1					
16	T7W 43J 300	HEATER ELEMENT	80V 1000W	3	3	3		H			
17	R01 17J 202	PIPE TEMPERATURE THERMISTOR		1	1	1		RT2			
18	T7W E86 480	HEAT EXCHANGER		1							
	T7W E87 480	HEAT EXCHANGER			1						
	T7W E88 480	HEAT EXCHANGER				1					
19	T7W 23J 706	THERMAL FUSE		1	1	1		FS1,2			
20	T7W E00 700	THERMAL SWITCH		1	1	1		26H			
21	R01 36J 303	INSULATOR		6	6	6					
22	R01 E00 418	RESTRICTOR VALVE		1	1	1					

ELECTRICAL PARTS

PCH24GK
PCH30GK
PCH36GK
PCH42GK



No.	Parts No.	Parts Name	Specifications	Q'ty / set				Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
				PCH							Unit	Amount
				24GK	30GK	36GK	42GK					
1	T7W E07 255	CAPACITOR	5μF. 440V	1					C			
	T7W E02 255	CAPACITOR	7μF. 440V		1	1	1		C			
2	R01 E02 313	POWER BOARD		1	1	1	1		P.B			
3	T7W 520 239	FUSE	250V 6.3A	2	2	2	2		F1,2			
4	T7W E24 310	CONTROLLER BOARD		1	1	1	1		I.B			
5	R01 KV6 246	TERMINAL BLOCK	3P (1,2,3)	1	1	1	1		TB4			
6	T7W E11 716	TERMINAL BLOCK	3P (L1,L2,GR)	1	1	1	1		TB2			
7	R01 556 246	TERMINAL BLOCK	2P (1,2)	1	1	1	1		TB5			
8	T7W A00 305	COORD (REMOCON)	33ft	1	1	1	1					
9	T7W E05 713	REMOTE CONTROLLER		1	1	1	1		R.B			
10	R01 479 215	RELAY	LY-1F DC12V	2	2	2	2		88H1,88H2			

1. TIMER

When using a program timer, a program timer adapter (PAC-825AD) is also needed.
(PAC-825AD is included with PAC-SC32PTA.)

Part No.	PAC-SC32PTA (with set back function)
Model Name	Program timer

1-1 Program timer specifications

Parts name	Program timer
Parts No.	PAC-SC32PTA
Exterior dimensions (inch)	5-4/32x4-23/32x23/32 (130x120x18mm)
Installation	Wall mount
Type of clock	Quartz
Clock accuracy	±50 second / month at 77°F
Display-Time	Liquid crystal display
-Week	Liquid crystal display
-Timer setting unit	Liquid crystal display
Program cycle	24 hours
Timer setting unit	30 minutes
No. of set points	48 / day
Power rating	5V DC ±5% (Supplied by Remote Controller)

1-2 Feature of program timer

(1) Daily timer function

Daily timer can be set in 30 minutes units for up to 24 hours.
Each unit can be set for unit ON, unit OFF, or setback operation.

(2) Setback operation (PAC-SC32PTA)

Set back operation is useful for reducing running costs

e.g. At a hotel with a 24-hour system

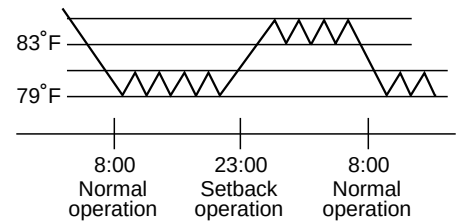
8:00~23:00 Cooling operation with set temperature at 79°F

23:00~8:00 Setback operation with 4 degrees of setback

As shown in the chart on the right, the set temperature rises 4 degrees automatically during the setback operation. When the setback operation ends, normal operation will begin.

(3) Weekly timer function

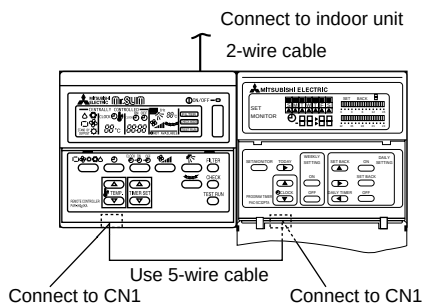
Daily timer function can apply to each day of the week.



1-3 How to connect program timer

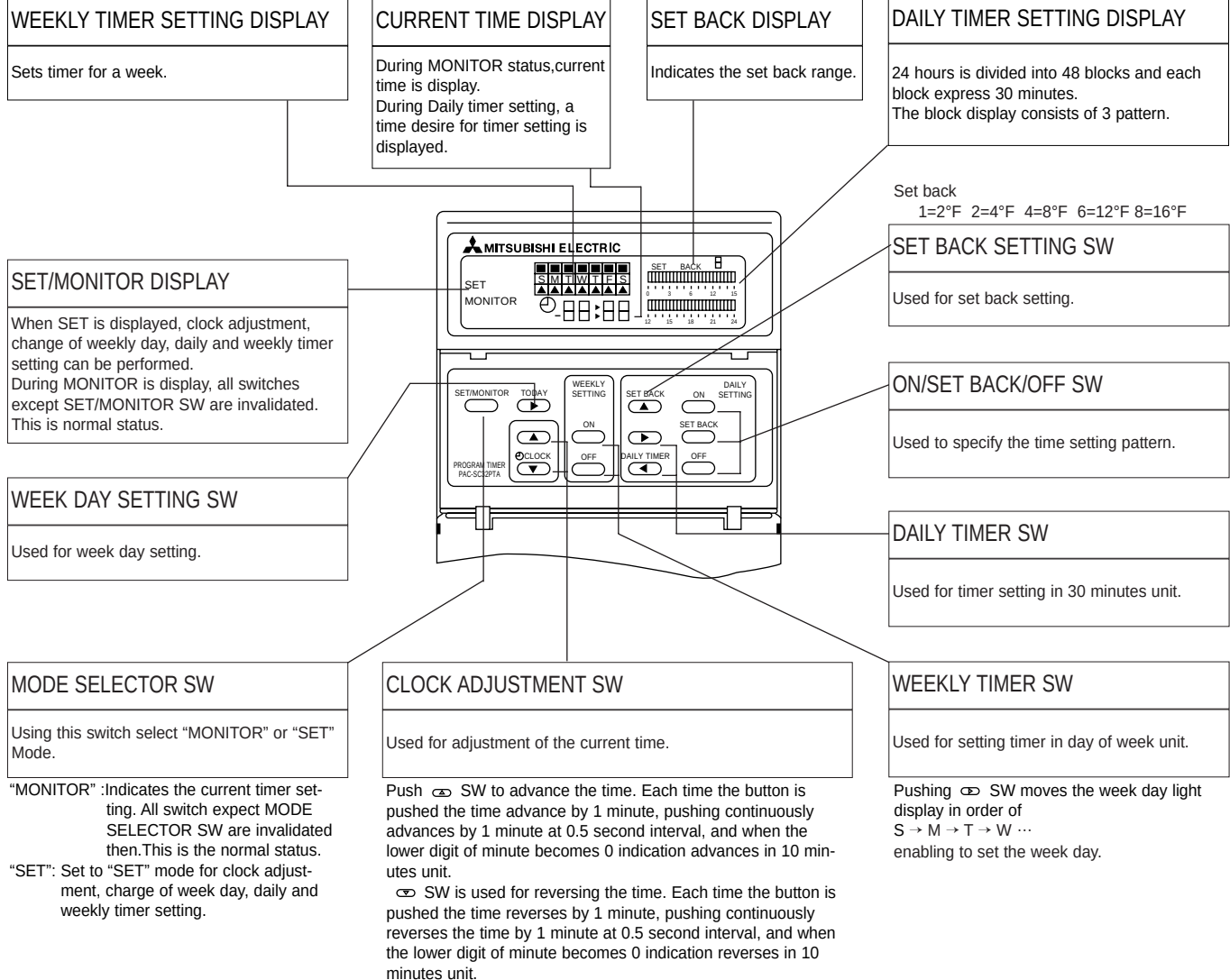
(1) Install the program timer next to the remote controller the same way as the remote controller is installed.

(2) Connect the program timer and the remote controller with a 5-wire cable as shown in the figure below



NOTE: While the program timer is connected to the remote controller, the 24-hour ON/OFF timer on the remote controller will not operate.

1-4 Names and functions <PAC-SC32PTA>



2. REFRIGERANT PIPES

Service Ref. : PCH24GK

Part No.	PACSK03FS	PACSK05FS	PACSK07FS	PACSK10FS	PACSK15FS
Pipe length (ft.)	10	16	23	33	49
Pipe size O.D.(in.) (in.)	Liquid: $\phi 3/8$ Gas: $\phi 5/8$				
Connection method	Indoor unit: Flared Outdoor unit: Flared				

Service Ref. : PCH30/36GK

Part No.	PACSK03FF	PACSK05FF	PACSK07FF	PACSK10FF	PACSK15FF
Pipe length (ft.)	10	16	23	33	49
Pipe size O.D.(in.) (in.)	Liquid: $\phi 1/2$ Gas: $\phi 3/4$				
Connection method	Indoor unit: Flared Outdoor unit: Flared				

Service Ref. : PCH42GK

Part No.	PACSK07FK	PACSK15FK
Pipe length (ft.)	23	49
Pipe size O.D.(in.) (in.)	Liquid: $\phi 1/2$ Gas: $\phi 7/8$	
Connection method	Indoor unit: Flared Outdoor unit: Flared	

Note 1. The refrigerant pipes and the indoor unit contain a nitrogen holding charge which must be removed by evacuation.

<Piping connection procedures>

See that ball valve on outdoor unit is fully shut (unit is shipped with valve shut). Remove caps from piping and unit and make flare connection promptly. Repeat for each connection, one at a time.

After all piping connections between indoor and outdoor unit have been completed, vacuum-purge air from system through the service port for the ball valve on the outdoor unit.

Note 2. The following parts are contained in optional refrigerant piping kit.

Heat insulating cover, vinyl tapes, nipples, sleeve and flange (for wall hole), connecting cables etc.

3. TIMER ADAPTER

This adapter is needed for system control and for operation via external contacts.

Part No.	PAC-SA89TA-E
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4. MULTIPLE REMOTE CONTROLLER ADAPTER

This adapter is needed for remote indication (operation/check).

Part No.	PAC-SA88HA-E
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