MITSUBISHI ELECTRIC

SPLIT-TYPE, HEAT PUMP AIR CONDITIONERS
SPLIT-TYPE, AIR CONDITIONERS

July 2019
No.OC379
REVISED EDITION-J

SERVICE MANUAL R410A

Outdoor unit
[Model Names]

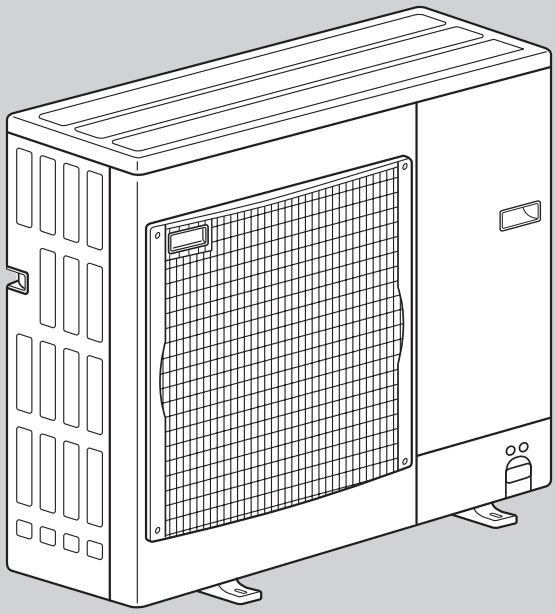
PU-P71VHA	**PUH-P71VHA**
PU-P71YHA	**PUH-P71YHA**
PU-P100VHA	**PUH-P100VHA**
PU-P100YHA	**PUH-P100YHA**
PU-P125YHA	**PUH-P125YHA**
PU-P140YHA	**PUH-P140YHA**

Revision:
- Some descriptions have been modified in REVISED EDITION-J.

OC379 REVISED EDITION-H is void.

Note:
- This manual describes service data of the outdoor units only.

[Service Ref.]
Service Ref. is on page 2.



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Mr.SLIM

[Service Ref.]

PU-P71VHA.UK	PU-P100VHA.UK	PU-P125YHA.UK	PU-P140YHA.UK
PU-P71VHA1.UK	PU-P100VHA1.UK	PU-P125YHA1.UK	PU-P140YHA1.UK
PU-P71VHA#2.UK	PU-P100VHA#2.UK	PU-P125YHA#2.UK	PU-P140YHA#2.UK
PU-P71VHAR3.UK	PU-P100VHAR3.UK	PU-P125YHAR3.UK	PU-P140YHAR3.UK
PU-P71YHA.UK	PU-P100YHA.UK	PU-P125YHAR4.UK	PU-P140YHAR4.UK
PU-P71YHA1.UK	PU-P100YHA1.UK	PU-P125YHAR5.UK	PU-P140YHAR5.UK
PU-P71YHA#2.UK	PU-P100YHA#2.UK	PU-P125YHAR6.UK	PU-P140YHAR6.UK
PU-P71YHAR3.UK	PU-P100YHAR3.UK		

PUH-P71VHA.UK	PUH-P100VHA.UK	PUH-P125YHA.UK	PUH-P140YHA.UK
PUH-P71VHA1.UK	PUH-P100VHA1.UK	PUH-P125YHA1.UK	PUH-P140YHA1.UK
PUH-P71VHA#2.UK	PUH-P100VHA#2.UK	PUH-P125YHA#2.UK	PUH-P140YHA#2.UK
PUH-P71VHAR3.UK	PUH-P100VHAR3.UK	PUH-P125YHAR3.UK	PUH-P140YHAR3.UK
PUH-P71YHA.UK	PUH-P100YHA.UK	PUH-P125YHAR4.UK	PUH-P140YHAR4.UK
PUH-P71YHA1.UK	PUH-P100YHA1.UK	PUH-P125YHAR5.UK	PUH-P140YHAR5.UK
PUH-P71YHA#2.UK	PUH-P100YHA#2.UK	PUH-P125YHAR6.UK	PUH-P140YHAR6.UK
PUH-P71YHAR3.UK	PUH-P100YHAR3.UK		

1 TECHNICAL CHANGES

PU-P125YHAR5.UK → PU-P125YHAR6.UK
PU-P140YHAR5.UK → PU-P140YHAR6.UK

PUH-P125YHAR5.UK → PUH-P125YHAR6.UK
PUH-P140YHAR5.UK → PUH-P140YHAR6.UK

• Compressor has been changed.

PU-P125YHAR4.UK → PU-P125YHAR5.UK
PU-P140YHAR4.UK → PU-P140YHAR5.UK

PUH-P125YHAR4.UK → PUH-P125YHAR5.UK
PUH-P140YHAR4.UK → PUH-P140YHAR5.UK

• CONTACTOR (52C) has been changed.

PU-P125YHAR3.UK → PU-P125YHAR4.UK
PU-P140YHAR3.UK → PU-P140YHAR4.UK

PUH-P125YHAR3.UK → PUH-P125YHAR4.UK
PUH-P140YHAR3.UK → PUH-P140YHAR4.UK

• Thermistor has been changed. (Discharge temp. thermistor → Compressor surface temp. thermistor (Protector of compressor))

PU-P71VHA#2.UK → PU-P71VHAR3.UK
PU-P71YHA#2.UK → PU-P71YHAR3.UK
PU-P100VHA#2.UK → PU-P100VHAR3.UK
PU-P100YHA#2.UK → PU-P100YHAR3.UK
PU-P125YHA#2.UK → PU-P125YHAR3.UK
PU-P140YHA#2.UK → PU-P140YHAR3.UK

PUH-P71VHA#2.UK → PUH-P71VHAR3.UK
PUH-P71YHA#2.UK → PUH-P71YHAR3.UK
PUH-P100VHA#2.UK → PUH-P100VHAR3.UK
PUH-P100YHA#2.UK → PUH-P100YHAR3.UK
PUH-P125YHA#2.UK → PUH-P125YHAR3.UK
PUH-P140YHA#2.UK → PUH-P140YHAR3.UK

• Fan grille has been changed.
• Structural parts have been changed. (Munsell 5Y 7/1 → 3Y 7.8/1.1)

PU-P71VHA$_1$.UK → PU-P71VHA#2.UK
PU-P71YHA$_1$.UK → PU-P71YHA#2.UK
PU-P100VHA$_1$.UK → PU-P100VHA#2.UK
PU-P100YHA$_1$.UK → PU-P100YHA#2.UK
PU-P125YHA$_1$.UK → PU-P125YHA#2.UK
PU-P140YHA$_1$.UK → PU-P140YHA#2.UK

PUH-P71VHA$_1$.UK → PUH-P71VHA#2.UK
PUH-P71YHA$_1$.UK → PUH-P71YHA#2.UK
PUH-P100VHA$_1$.UK → PUH-P100VHA#2.UK
PUH-P100YHA$_1$.UK → PUH-P100YHA#2.UK
PUH-P125YHA$_1$.UK → PUH-P125YHA#2.UK
PUH-P140YHA$_1$.UK → PUH-P140YHA#2.UK

• CONTACTOR (52C) has been changed.

PU-P71VHA.UK → PU-P71VHA$_1$.UK
PU-P71YHA.UK → PU-P71YHA$_1$.UK
PU-P100VHA.UK → PU-P100VHA$_1$.UK
PU-P100YHA.UK → PU-P100YHA$_1$.UK
PU-P125YHA.UK → PU-P125YHA$_1$.UK
PU-P140YHA.UK → PU-P140YHA$_1$.UK

PUH-P71VHA.UK → PUH-P71VHA$_1$.UK
PUH-P71YHA.UK → PUH-P71YHA$_1$.UK
PUH-P100VHA.UK → PUH-P100VHA$_1$.UK
PUH-P100YHA.UK → PUH-P100YHA$_1$.UK
PUH-P125YHA.UK → PUH-P125YHA$_1$.UK
PUH-P140YHA.UK → PUH-P140YHA$_1$.UK

• OUTDOOR CONTROLLER BOARD (O.B) has been changed.

2 REFERENCE MANUAL

2-1. INDOOR UNIT'S SERVICE MANUAL

Model name	Service Ref.	Service manual No.
PLA-RP35/50/60/71AA PLH-P35/50/60/71/100/125/140AAH	PLA-RP35/50/60/71AA.UK PLH-P35/50/60/71/100/125/140AAH.UK	OC335
PLA-RP35/50/60/71/100/125/140BA	PLA-RP35/50/60/71/100/125/140BA(#2).UK PLA-RP35/50/60/71BA1.UK PLA-RP71/100/125/140BA2.UK	OCH412 OCB412
PLA-RP100/125/140AA2	PLA-RP100/125/140AA2.UK	OC357
PCA-RP50/60/71/100/125/140GA PCA-RP50GA2 PCH-P50/60/71/100/125/140GAH	PCA-RP50/60/71/100/125/140GA(#1) PCA-RP50GA2(#1) PCH-P50/60/71/100/125/140GAH	OC328
PEAD-RP50/60/71/125/140EA PEAD-RP35/100EA2	PEAD-RP50/60/71/125/140EA(#1).UK PEAD-RP35/100EA2(#1).UK	HWE0521
PEAD-RP60/71/100GA	PEAD-RP60/71/100GA(#1).UK	HWE0506
PEHD-P35/50/60/71/100/125/140EAH	PEHD-P35/50/60/71/100/125/140EAH.UK	HWE0507
PKA-RP35/50HAL	PKA-RP35/50HAL	OCH453 OCB453
PKA-RP60/71/100KAL	PKA-RP60/71/100KAL.TH	OCH452 OCB452
PCA-RP50/60/71/100/125/140KA	PCA-RP50/60/71/100/125/140KA	OCH454 OCB454
PEAD-RP35/50/60/71/100/125/140JA(L)	PEAD-RP35/50/60/71/100/125/140JA(L).UK	HWE08130 BWE08240
PSA-RP71/100/125/140GA PSH-P71/100/125/140GAH	PSA-RP71/100/125/140GA(#1) PSH-P71/100/125/140GAH	OC332
PCA-RP71/125HA	PCA-RP71/125HA(#1)	OC329

2-2. TECHNICAL DATA BOOK

Manual No. OCS07

3 SAFETY PRECAUTION

3-1. ALWAYS OBSERVE FOR SAFETY

Before obtaining access to terminal, all supply circuits must disconnected.

3-2. CAUTIONS RELATED TO NEW REFRIGERANT

Cautions for units utilizing refrigerant R410A

Use new refrigerant pipes.

In case of using the existing pipes for R22, be careful with the followings
- Be sure to clean the pipes and make sure that the insides of the pipes are clean.
- Change flare nut to the one provided with this product. Use a newly flared pipe.
- Avoid using thin pipes

Make sure that the inside and outside of refrigerant piping is clean and it has no contamination such as sulfur hazardous for use, oxides, dirt, shaving particles, etc.
In addition, use pipes with specified thickness.

Contamination inside refrigerant piping can cause deterioration of refrigerant oil etc

Store the piping to be used indoors during installation and both ends of the piping sealed until just before brazing. (Leave elbow joints, etc. in their packaging.)

If dirt, dust or moisture enter into refrigerant type, that can cause deterioration of refrigerant oil or malfunction of compressor.

The refrigerant oil applied to flare and flange connections must be ester oil, ether oil or alkylbenzene oil in a small amount.

If large amount of mineral oil enter, that can cause deterioration of refrigerant oil etc

Charge refrigerant from liquid phase of gas cylinder.

If the refrigerant is charged from gas phase, composition change may occur in refrigerant and the efficeny will be lowered.

Do not use refrigerant other than R410A.

If other refrigerant (R22 etc) is used, chlorine in refrigerant can cause deterioration of refrigerant oil etc

Use a vacuum pump with a reverse flow check valve.

Vacuum pump oil may flow back into refrigerant type and that can cause deterioration of refrigerant oil etc

Use the following tools specifically designed for use with R410A refrigerant.

The following tools are necessary to use R410A refrigerant.

Tools for R410A	
Gauge manifold	Flare tool
Charge hose	Size adjustment gauge
Gas leak detector	Vacuum pump adaptor
Torque wrench	Electronic refrigerant charging cable

Handle tools with care.

If dirt, dust or moisture enter into refrigerant type, that can cause deterioration of refrigerant oil or malfunction of compressor.

Do not use a charging cylinder.

If a charging cylinder is used, the composition of refrigerant will change and the efficeny will be lowered.

Use the specified refrigerant only.

Never use any refrigerant other than that specified.
Doing so may cause a burst, an explosion, or fire when the unit is being used, serviced, or disposed of.
Correct refrigerant is specified in the manuals and on the spec labels provided with our products
We will not be held responsible for mechanical failure, system malfunction, unit breakdown or accidents caused by failure to follow the instructions

Ventilate the room if refrigerant leaks during operation. If refrigerant comes into contact with a flame, poisonous gases will be released.

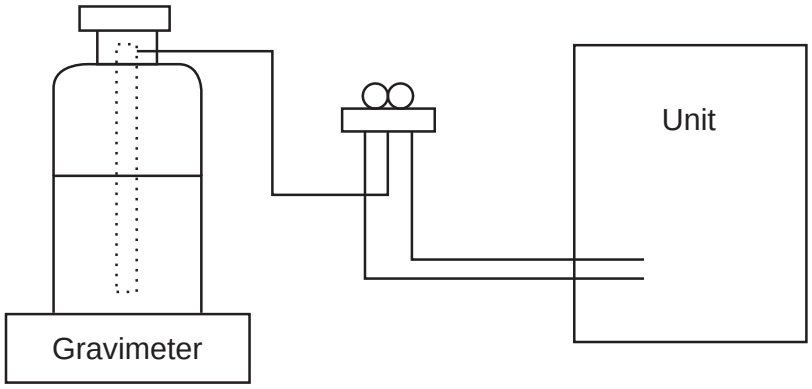
[1] Cautions for service

(1) Perform service after collecting the refrigerant left in unit completely.
(2) Do not release refrigerant in the air.
(3) After completing service, charge the cycle with specified amount of refrigerant.
(4) When performing service, install a filter drier simultaneously.
Be sure to use a filter drier for new refrigerant.

[2] Additional refrigerant charge

When charging directly from cylinder

· Check that cylinder for R410A on the market is syphon type.
· Charging should be performed with the cylinder of syphon stood vertically. (Refrigerant is charged from liquid phase.)



[3] Service tools

Use the below service tools as exclusive tools for R410A refrigerant.

No.	Tool name	Specifications
①	Gauge manifold	· Only for R410A
		· Use the existing fitting specifications. (UNF1/2)
		· Use high-tension side pressure of 5.3MPa·G or over.
②	Charge hose	· Only for R410A
		· Use pressure performance of 5.09MPa·G or over.
③	Electronic scale	—
④	Gas leak detector	· Use the detector for R134a, R407C or R410A.
⑤	Adaptor for reverse flow check	· Attach on vacuum pump.
⑥	Refrigerant charge base	—
⑦	Refrigerant cylinder	· Only for R410A · Top of cylinder (Pink) · Cylinder with syphon
⑧	Refrigerant recovery equipment	—

Cautions for refrigerant piping work

New refrigerant R410A is adopted for replacement inverter series. Although the refrigerant piping work for R410A is same as for R22, exclusive tools are necessary so as not to mix with different kind of refrigerant. Furthermore as the working pressure of R410A is 1.6 times higher than that of R22, their sizes of flared sections and flare nuts are different.

①Thickness of pipes

Because the working pressure of R410A is higher compared to R22, be sure to use refrigerant piping with thickness shown below. (Never use pipes of 0.7mm or below.)

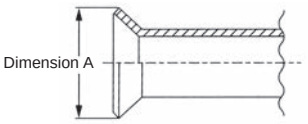
Diagram below: Piping diameter and thickness

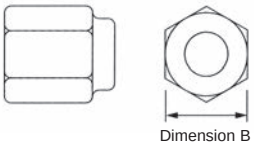
Nominal dimensions	Outside diameter (mm)	Thickness (mm)	
		R410A	R22
1/4”	6.35	0.8	0.8
3/8”	9.52	0.8	0.8
1/2”	12.70	0.8	0.8
5/8”	15.88	1.0	1.0
3/4”	19.05	—	1.0

②Dimensions of flare cutting and flare nut

The component molecules in HFC refrigerant are smaller compared to conventional refrigerants. In addition to that, R410A is a refrigerant, which has higher risk of leakage because of its working pressure higher than that of other refrigerants. Therefore, to enhance airtightness and intensity, flare cutting dimension of copper pipe for R410A has been specified separately from the dimensions for other refrigerants as shown below. The dimension B of flare nut for R410A also has partly been changed to increase intensity as shown below. Set copper pipe correctly referring to copper pipe flaring dimensions for R410A below. For 1/2" and 5/8", the dimension B changes.

Use torque wrench corresponding to each dimension.





Flare cutting dimensions

Nominal dimensions(inch)	Outside diameter(mm)	Dimension A ($^{+0}_{-0.4}$) (mm)	
		R410A	R22
1/4"	6.35	9.1	9.0
3/8"	9.52	13.2	13.0
1/2"	12.70	16.6	16.2
5/8"	15.88	19.7	19.4
3/4"	19.05	—	23.3

Flare nut dimensions

Nominal dimensions(inch)	Outside diameter(mm)	Dimension B(mm)	
		R410A	R22
1/4"	6.35	17.0	17.0
3/8"	9.52	22.0	22.0
1/2"	12.70	26.0	24.0
5/8"	15.88	29.0 *	27.0
3/4"	19.05	–	36.0

* 36.0mm for indoor unit of RP100, 125 and 140

③Tools for R410A (The following table shows whether conventional tools can be used or not.)

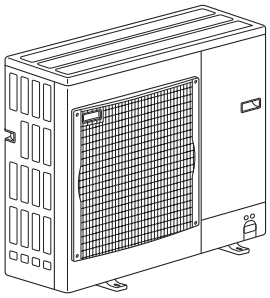
Tools and materials	Use	R410A tools	Can R22 tools be used?	Can R407C tools be used?
Gauge manifold	Air purge, refrigerant charge and Operation check	Tool exclusive for R410A	×	×
Charge hose		Tool exclusive for R410A	×	×
Gas leak detector	Gas leak check	Tool for HFC refrigerant	×	○
Refrigerant recovery equipment	Collection of refrigerant	Tool exclusive for R410A	×	×
Refrigerant cylinder	Refrigerant charge	Tool exclusive for R410A	×	×
Applied oil	Apply to flared section	Ester oil and alkyl benzene oil (minimum amount)	×	Ester oil: ○ Alkyl benzene oil: minimum amount
Safety charger	Prevent compressor malfunction when charging refrigerant by spraying liquid refrigerant	Tool exclusive for R410A	×	×
Charge valve	Prevent gas from blowing out when detaching charge hose	Tool exclusive for R410A	×	×
Vacuum pump	Vacuum drying and air purge	Tools for other refrigerants can be used if equipped with adopter for reverse flow check	△ (Usable if equipped with adopter for reverse flow)	△ (Usable if equipped with adopter for reverse flow)
Flare tool	Flaring work of piping	Tools for other refrigerants can be used by adjusting flaring dimension	△ (Usable by adjusting flaring dimension)	△ (Usable by adjusting flaring dimension)
Bender	Bend the pipes	Tools for other refrigerants can be used	○	○
Pipe cutter	Cut the pipes	Tools for other refrigerants can be used	○	○
Welder and nitrogen gas cylinder	Weld the pipes	Tools for other refrigerants can be used	○	○
Refrigerant charging scale	Charge refrigerant	Tools for other refrigerants can be used	○	○
Vacuum gauge or thermistor vacuum gauge and vacuum valve	Check the degree of vacuum. (Vacuum valve prevents back flow of oil and refrigerant to thermistor vacuum gauge)	Tools for other refrigerants can be used	○	○
Charging cylinder	Charge refrigerant	Tool exclusive for R410A	×	—

× : Prepare a new tool. (Use the new tool as the tool exclusive for R410A.)

△ : Tools for other refrigerants can be used under certain conditions

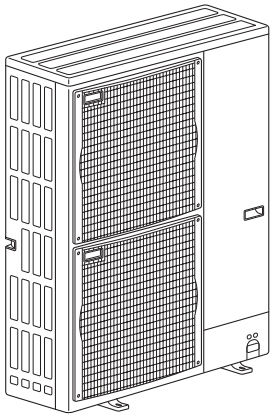
○ : Tools for other refrigerants can be used.

4 FEATURES

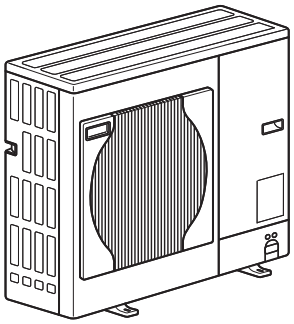


PU(H)-P71VHA(1).UK
PU(H)-P71YHA(1).UK
PU(H)-P100VHA(1).UK
PU(H)-P100YHA(1).UK

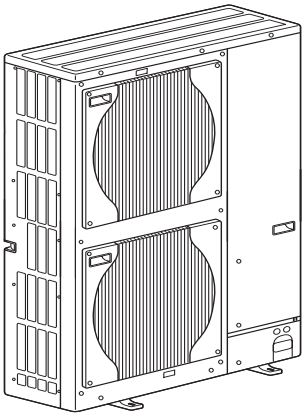
PU(H)-P71VHA#2.UK
PU(H)-P71YHA#2.UK
PU(H)-P100VHA#2.UK
PU(H)-P100YHA#2.UK



PU(H)-P125YHA(1).UK
PU(H)-P140YHA(1).UK
PU(H)-P125YHA#2.UK
PU(H)-P140YHA#2.UK



PU(H)-P71VHAR3.UK
PU(H)-P71YHAR3.UK
PU(H)-P100VHAR3.UK
PU(H)-P100YHAR3.UK



PU(H)-P125YHAR3.UK
PU(H)-P140YHAR3.UK
PU(H)-P125YHAR4.UK
PU(H)-P140YHAR4.UK
PU(H)-P125YHAR5.UK
PU(H)-P140YHAR5.UK
PU(H)-P125YHAR6.UK
PU(H)-P140YHAR6.UK

CHARGELESS SYSTEM

PRE-CHARGED REFRIGERANT IS SUPPLIED FOR PIPING LENGTH AT SHIPMENT. (Max.30m)

The refrigerant circuit with LEV (Linear Expansion Valve) and accumulator always control the optimal refrigerant level regardless of the length (30m max and 5m min.) of piping. The additional refrigerant charging work during installation which often caused problems heretofore is completely eliminated. This unique system improves the quality and reliability of the work done. It also helps to speed up the installation time.

5 SPECIFICATIONS

Service Ref.					PUH-P71VHA/YHA.UK PUH-P71VHA/YHA1.UK PUH-P71VHA/YHA#2.UK PUH-P71VHA/YHAR3.UK		PUH-P100VHA/YHA.UK PUH-P100VHA/YHA1.UK PUH-P100VHA/YHA#2.UK PUH-P100VHA/YHAR3.UK	
Mode					Cooling	Heating	Cooling	Heating
OUTDOOR UNIT	Power supply (phase, cycle, voltage)				Single, 50Hz, 230V/ 3Phase, 50Hz, 400V (4wires)			
		Running current		A	12.03/4.29	11.98/4.28	15.07/5.39	14.48/5.18
		Max current		A	23.5/7.8		28.5/9.4	
		Protection current		A	25.5/9.4		30.5/11.3	
	External finish				Munsell 5Y 7/1 / Munsell 3Y 7.8/1.1 (V/YHAR3)			
	Refrigerant control				Linear Expansion Valve			
	Compressor				Hermetic			
		Model			NN33VAAMT/ NN33YCAMT		NN40VAAMT/ NN40YCAMT	
		Motor output		kW	2.2		2.7	
		Starter type			Line start			
		Protection devices			(V) Internal thermostat HP switch Discharge thermo		(Y) Thermal relay HP switch Discharge thermo	
	Crankcase heater			W	25		25	
	Heat exchanger				Plate fin coil			
	Fan	Fan(drive) x No.			Propeller fan × 1			
		Fan motor output		kW	0.070		0.110	
		Airflow		m³/min (CFM)	55 (1940)		65 (2290)	
	Defrost method				Reverse cycle			
	Noise level		Cooling	dB	49		50	
			Heating	dB	50		52	
	Dimensions		W	mm (in)	950(37-3/8)			
			D	mm (in)	330+30 (13+1-3/16)			
			H	mm (in)	943 (37-1/8)			
	Weight			kg (lb)	93 (205)		94 (207)	
	Refrigerant				R410A			
		Charge		kg (lb)	3.6 (7.9)		4.4 (9.7)	
		Oil (Model)		L	1.30 (MEL56)			
REFRIGERANT PIPING	Pipe size O.D.		Liquid	mm (in)	9.52 (3/8)			
			Gas	mm (in)	15.88 (5/8)			
	Connection method		Indoor side		Flared			
			Outdoor side		Flared			
	Between the indoor & outdoor unit		Height difference		Maximum 50m			
			Piping length		Maximum 50m			

Service Ref.				PUH-P125YHA.UK PUH-P125YHA1.UK PUH-P125YHA#2.UK PUH-P125YHAR3.UK PUH-P125YHAR4.UK PUH-P125YHAR5.UK PUH-P125YHAR6.UK		PUH-P140YHA.UK PUH-P140YHA1.UK PUH-P140YHA#2.UK PUH-P140YHAR3.UK PUH-P140YHAR4.UK PUH-P140YHAR5.UK PUH-P140YHAR6.UK	
Mode				Cooling	Heating	Cooling	Heating
OUTDOOR UNIT	Power supply (phase, cycle, voltage)			3Phase, 50Hz, 400V			
		Running current	A	6.79	6.57	8.55	8.45
		Max current	A	12.6		15.6	
		Protection current	A	15.1		18.7	
	External finish			Munsell 5Y 7/1 / Munsell 3Y 7.8/1.1 (YHAR3)			
	Refrigerant control			Linear Expansion Valve			
	Compressor			Hermetic			
		Model		**YHA, YHA1,YHA#2, YHAR3 YHAR4, YHAR5:** BN52YEGMT or BN52YELMT **YHAR6:** BN52YFPMT		**YHA, YHA1,YHA#2, YHAR3 YHAR4, YHAR5:** BN65YEGMT or BN65YELMT **YHAR6:** BN65YFPMT	
		Motor output	kW	3.7		4.6	
		Starter type		Line start			
		Protection devices		**YHA, YHA1,YHA#2, YHAR3:** Discharge thermo, HP switch, Thermal relay **YHAR4,YHAR5:** Compressor surface thermo, HP switch, Thermal relay **YHAR6:** Inner protector, compressor surface thermo, HP swich, Thermal relay			
	Crankcase heater		W	25		25	
	Heat exchanger			Plate fin coil			
	Fan	Fan(drive) x No.		Propeller fan × 2			
		Fan motor output	kW	0.070+0.070			
		Airflow	m³/min (CFM)	100 (3,530)			
	Defrost method			Reverse cycle			
	Noise level	Cooling	dB	50		51	
		Heating	dB	52		53	
	Dimensions	W	mm (in)	950 (37-3/8)			
		D	mm (in)	330+30 (13+1-3/16)			
		H	mm (in)	1,350 (53-1/8)			
	Weight		kg (lb)	131 (289)			
	Refrigerant			R410A			
		Charge	kg (lb)	5.0 (11.0)			
		Oil (Model)	L	2.10 (MEL56)			
REFRIGERANT PIPING	Pipe size O.D.	Liquid	mm (in)	9.52 (3/8)			
		Gas	mm (in)	15.88 (5/8)			
	Connection method	Indoor side		Flared			
		Outdoor side		Flared			
	Between the indoor & outdoor unit	Height difference		Maximum 50m			
		Piping length		Maximum 50m			

Service Ref.				PU-P71VHA/YHA.UK PU-P71VHA/YHA1.UK PU-P71VHA/YHA#2.UK PU-P71VHA/YHAR3.UK	PU-P100VHA/YHA.UK PU-P100VHA/YHA1.UK PU-P100VHA/YHA#2.UK PU-P100VHA/YHAR3.UK
Mode				Cooling	Cooling
OUTDOOR UNIT	Power supply (phase, cycle, voltage)			Single, 50Hz, 230V / 3Phase, 50Hz, 400V (4wires)	
		Running current	A	12.03/4.29	15.07/5.18
		Max current	A	23.5/7.8	28.5/9.4
		Protection current	A	25.5/9.4	30.5/11.3
	External finish			Munsell 5Y 7/1 / Munsell 3Y 7.8/1.1(V/YHAR3)	
	Refrigerant control			Linear Expansion Valve	
	Compressor			Hermetic	
		Model		NN33VAAMT/ NN33YCAMT	NN40VAAMT/ NN40YCAMT
		Motor output	kW	2.2	2.7
		Starter type		Line start	
		Protection devices		(V) Internal thermostat HP switch Discharge thermo	(Y) Thermal relay HP switch Discharge thermo
	Crankcase heater		W	25	25
	Heat exchanger			Plate fin coil	
	Fan	Fan(drive) x No.		Propeller fan × 1	
		Fan motor output	kW	0.070	0.110
		Airflow	m³/min(CFM)	55 (1940)	65 (2290)
	Defrost method			–	
	Noise level	Cooling	dB	49	50
		Heating	dB	–	–
	Dimensions	W	mm (in)	950 (37-3/8)	
		D	mm (in)	330+30 (13+1-3/16)	
		H	mm (in)	943 (37-1/8)	
	Weight		kg (lb)	93 (205)	94(207)
	Refrigerant			R410A	
		Charge	kg (lb)	3.6 (7.9)	4.4(9.7)
		Oil (Model)	L	1.30 (MEL56)	
REFRIGERANT PIPING	Pipe size O.D.	Liquid	mm (in)	9.52 (3/8)	
		Gas	mm (in)	15.88 (5/8)	
	Connection method	Indoor side		Flared	
		Outdoor side		Flared	
	Between the indoor & outdoor unit	Height difference		Maximum 50m	
		Piping length		Maximum 50m	

Service Ref.				PU-P125YHA.UK PU-P125YHA1.UK PU-P125YHA#2.UK PU-P125YHAR3.UK PU-P125YHAR4.UK PU-P125YHAR5.UK PU-P125YHAR6.UK	PU-P140YHA.UK PU-P140YHA1.UK PU-P140YHA#2.UK PU-P140YHAR3.UK PU-P140YHAR4.UK PU-P140YHAR5.UK PU-P140YHAR6.UK
Mode				Cooling	Cooling
OUTDOOR UNIT	Power supply (phase, cycle, voltage)			3Phase, 50Hz, 400V	
		Running current	A	6.79	8.55
		Max current	A	12.6	15.6
		Protection current	A	15.5	18.7
	External finish			Munsell 5Y 7/1 / Munsell 3Y 7.8/1.1(YHAR3)	
	Refrigerant control			Linear Expansion Valve	
	Compressor			Hermetic	
		Model		**YHA, YHA1,YHA#2, YHAR3 YHAR4, YHAR5:** BN52YEGMT or BN52YELMT **YHAR6:** BN52YFPMT	**YHA, YHA1,YHA#2, YHAR3 YHAR4, YHAR5:** BN65YEGMT or BN65YELMT **YHAR6:** BN65YFPMT
		Motor output	kW	3.7	4.6
		Starter type		Line start	
		Protection devices		**YHA, YHA1,YHA#2, YHAR3:** Discharge thermo, HP switch, Thermal relay **YHAR4,YHAR5:** Compressor surface thermo, HP switch, Thermal relay **YHAR6:** Inner protector, compressor surface thermo, HP swich, Thermal relay	
	Crankcase heater		W	25	25
	Heat exchanger			Plate fin coil	
	Fan	Fan(drive) x No.		Propeller fan × 2	
		Fan motor output	kW	0.070+0.070	
		Airflow	m³/min (CFM)	100 (3,530)	
	Defrost method			–	
	Noise level	Cooling	dB	50	51
		Heating	dB	–	–
	Dimensions	W	mm (in)	950 (37-3/8)	
		D	mm (in)	330+30 (13+1-3/16)	
		H	mm (in)	1,350 (53-1/8)	
	Weight		kg (lb)	131 (289)	
	Refrigerant			R410A	
		Charge	kg (lb)	5.0 (11.0)	
		Oil (Model)	L	2.10 (MEL56)	
REFRIGERANT PIPING	Pipe size O.D.	Liquid	mm (in)	9.52 (3/8)	
		Gas	mm (in)	15.88 (5/8)	
	Connection method	Indoor side		Flared	
		Outdoor side		Flared	
	Between the indoor & outdoor unit	Height difference		Maximum 50m	
		Piping length		Maximum 50m	

6 DATA

6-1. REFILLING REFRIGERANT CHARGE (R410A : kg)

Service Ref.	Piping length (one way)					Factory charged
	10m	20m	30m	40m	50m	
PU(H)-P71VHA/YHA.UK PU(H)-P71VHA/YHA$_1$.UK PU(H)-P71VHA/YHA#2.UK PU(H)-P71VHA/YHAR3.UK	3.4	3.5	3.6	4.2	4.8	3.6
PU(H)-P100VHA/YHA.UK PU(H)-P100VHA/YHA$_1$.UK PU(H)-P100VHA/YHA#2.UK PU(H)-P100VHA/YHAR3.UK	4.2	4.3	4.4	5.0	5.6	4.4
PU(H)-P125/140YHA.UK PU(H)-P125/140YHA$_1$.UK PU(H)-P125/140YHA#2.UK PU(H)-P125/140YHAR3.UK PU(H)-P125/140YHAR4.UK PU(H)-P125/140YHAR5.UK PU(H)-P125/140YHAR6.UK	4.8	4.9	5.0	5.6	6.2	5.0

Additional charge is required for using pipes longer than 30 m.

6-2. COMPRESSOR TECHNICAL DATA

(at 20°C)

Unit		PU(H)-P71VHA.UK PU(H)-P71VHA$_1$.UK PU(H)-P71VHA#2.UK PU(H)-P71VHAR3.UK	PU(H)-P71YHA.UK PU(H)-P71YHA$_1$.UK PU(H)-P71YHA#2.UK PU(H)-P71YHAR3.UK	PU(H)-P100VHA.UK PU(H)-P100VHA$_1$.UK PU(H)-P100VHA#2.UK PU(H)-P100VHAR3.UK	PU(H)-P100YHA.UK PU(H)-P100YHA$_1$.UK PU(H)-P100YHA#2.UK PU(H)-P100YHAR3.UK
Compressor model		NN33VAAMT	NN33YCAMT	NN40VAAMT	NN40YCAMT
Winding Resistance (Ω)	U-V (R-C)	0.68	4.64	0.63	3.32
	U-W (S-C)	1.80	4.64	1.55	3.32
	W-V	–	4.64	–	3.32

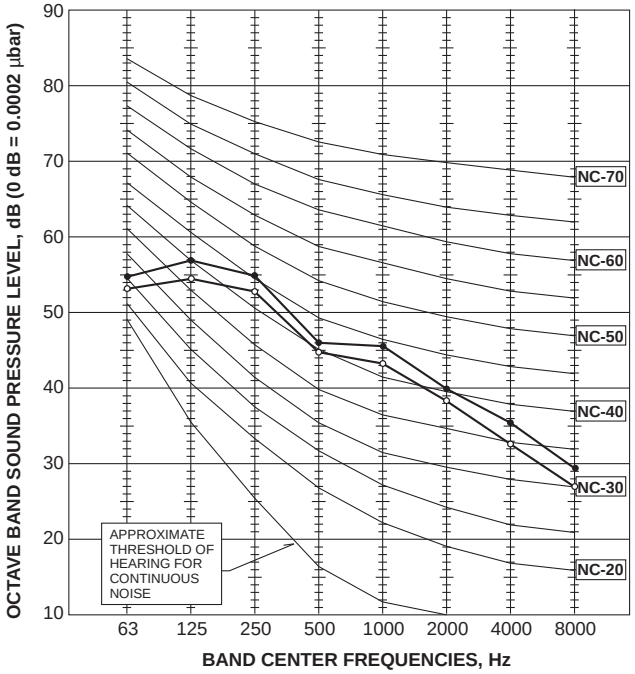
(at 20°C)

Unit		PU(H)-P125YHA.UK PU(H)-P125YHA$_1$.UK PU(H)-P125YHA#2.UK PU(H)-P125YHAR3.UK PU(H)-P125YHAR4.UK PU(H)-P125YHAR5.UK PU(H)-P125YHAR6.UK	PU(H)-P140YHA.UK PU(H)-P140YHA$_1$.UK PU(H)-P140YHA#2.UK PU(H)-P140YHAR3.UK PU(H)-P140YHAR4.UK PU(H)-P140YHAR5.UK PU(H)-P140YHAR6.UK
Compressor model		BN52YEGMT BN52YELMT BN52YEXMT BN52YFPMT	BN65YEGMT BN65YELMT BN65YEXMT BN65YFPMT
Winding Resistance (Ω)	U-V	2.149	1.794
	U-W	2.149	1.794
	W-V	2.149	1.794

6-3. NOISE CRITERION CURVES

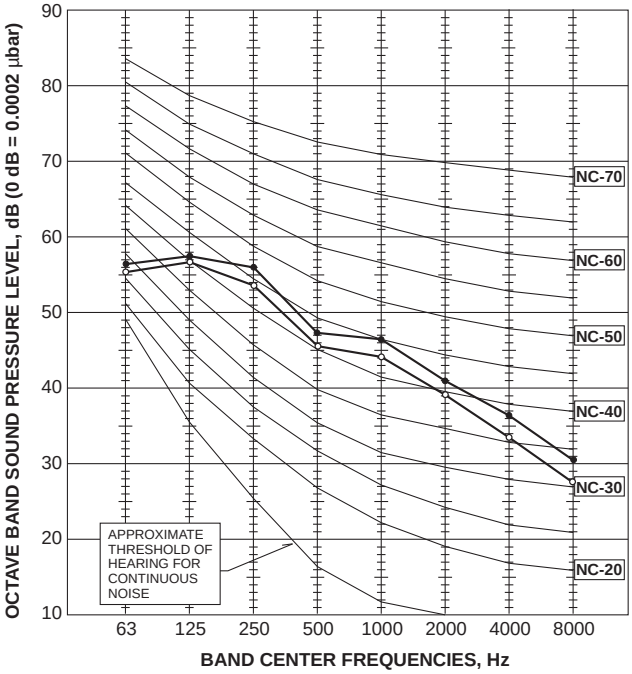
PU(H)-P71VHA.UK **PU(H)-P71YHA.UK**
PU(H)-P71VHA1.UK **PU(H)-P71YHA1.UK**
PU(H)-P71VHA#2.UK **PU(H)-P71YHA#2.UK**
PU(H)-P71VHAR3.UK **PU(H)-P71YHAR3.UK**

MODE	SPL(dB)	LINE
COOLING	49	○—○
HEATING	51	●—●



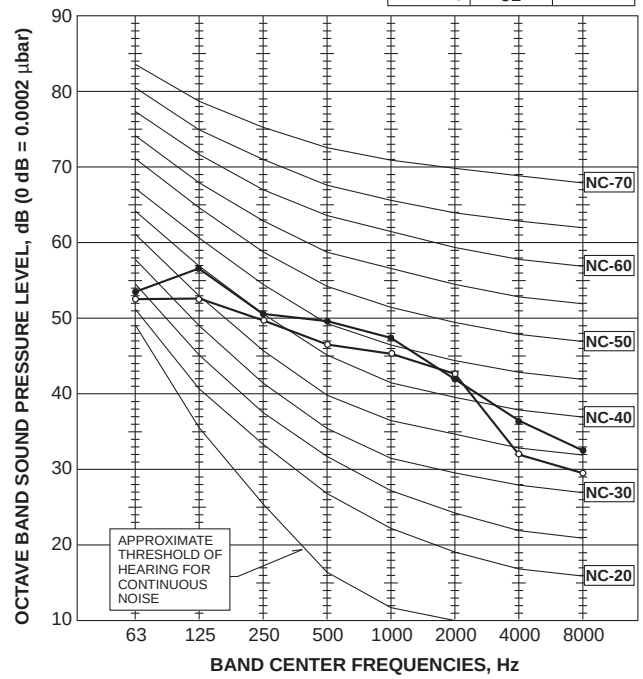
PU(H)-P100VHA.UK **PU(H)-P100YHA.UK**
PU(H)-P100VHA1.UK **PU(H)-P100YHA1.UK**
PU(H)-P100VHA#2.UK **PU(H)-P100YHA#2.UK**
PU(H)-P100VHAR3.UK **PU(H)-P100YHAR3.UK**

MODE	SPL(dB)	LINE
COOLING	50	○—○
HEATING	52	●—●



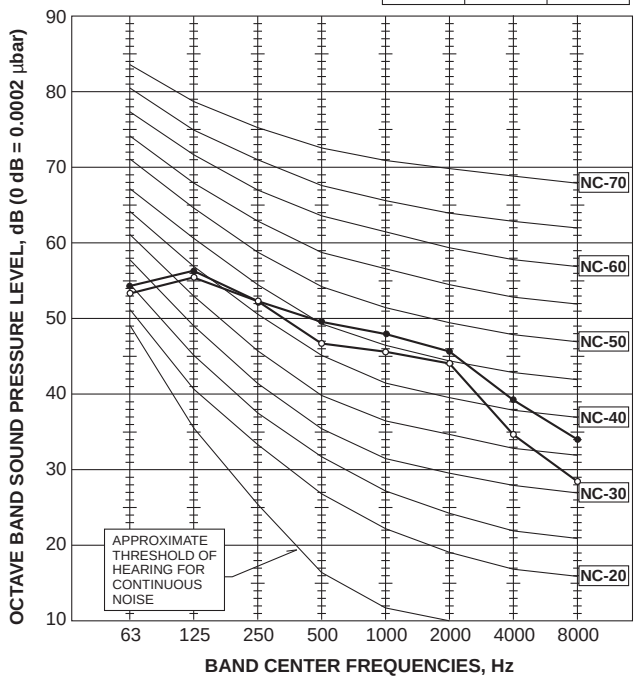
PU(H)-P125YHA.UK **PU(H)-P125YHAR4.UK**
PU(H)-P125YHA1.UK **PU(H)-P125YHAR5.UK**
PU(H)-P125YHA#2.UK **PU(H)-P125YHAR6.UK**
PU(H)-P125YHAR3.UK

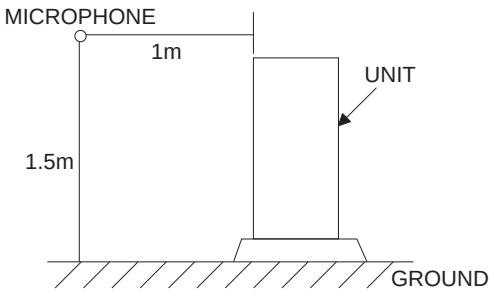
MODE	SPL(dB)	LINE
COOLING	50	○—○
HEATING	52	●—●



PU(H)-P140YHA.UK **PU(H)-P140YHAR4.UK**
PU(H)-P140YHA1.UK **PU(H)-P140YHAR5.UK**
PU(H)-P140YHA#2.UK **PU(H)-P140YHAR6.UK**
PU(H)-P140YHAR3.UK

MODE	SPL(dB)	LINE
COOLING	51	○—○
HEATING	53	●—●





6-4. STANDARD OPERATION DATA

Representative matching				PLA-RP71AA		PLA-RP100AA2		PLA-RP125AA2		PLA-RP140AA2	
Mode				Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating
Total	Capacity		W	8,000	9,000	10,000	11,500	12,300	14,300	14,200	17,000
	Input		kW	2.83	2.82	3.53	3.40	4.36	4.23	5.41	5.35
Electrical circuit	**Indoor unit**			**PLA-RP71AA**		**PLA-RP100AA2**		**PLA-RP125AA2**		**PLA-RP140AA2**	
	Phase , Hz			1 , 50		1 , 50		1 , 50		1 , 50	
	Volts		V	230		230		230		230	
	Amperes		A	0.79		0.92		0.92		0.92	
	Outdoor unit			**PUH-P71VHA PUH-P71YHA**		**PUH-P100VHA PUH-P100YHA**		**PUH-P125YHA**		**PUH-P140YHA**	
	Phase , Hz			1/3 , 50		1/3 , 50		3 , 50		3 , 50	
	Volts		V	230/400		230/400		400		400	
	Amperes		A	12.03/4.29	11.98/4.28	15.07/5.39	14.48/5.18	6.79	6.57	8.55	8.45
Refrigerant circuit	Discharge pressure		MPa (kgf/cm²)	2.99 (30.4)	2.55 (26.0)	3.16 (32.2)	2.67 (27.2)	3.00 (30.6)	2.97 (30.3)	3.05 (31.1)	3.68 (37.5)
	Suction pressure		MPa (kgf/cm²)	0.79 (8.0)	0.53 (5.4)	0.91 (9.3)	0.74 (7.5)	0.75 (7.7)	0.74 (7.5)	0.94 (9.6)	0.61 (6.2)
	Discharge temperature		°C	76.9	85.1	78.2	81.4	80.5	78.1	78.0	82.4
	Condensing temperature		°C	49.7	41.0	49.9	40.9	38.7	46.2	49.9	56.3
	Suction temperature		°C	3.8	6.5	4.2	4.0	2.4	-0.5	-0.8	-1.2
	Ref. pipe length		m	5	5	5	5	5	5	5	5
Indoor side	Intake air temperature	D.B.	°C	27	20	27	20	27	20	27	20
		W.B.	°C	19	15	19	15	19	15	19	15
	Discharge air temperature	D.B.	°C	12.8	44.5	13.4	42.2	12.3	46.1	11.2	51.6
Outdoor side	Intake air temperature	D.B.	°C	35	7	35	7	35	7	35	7
		W.B.	°C	24	6	24	6	24	6	24	6
SHF				0.74	—	0.78	—	0.74	—	0.70	—
BF				0.11	—	0.06	—	0.05	—	0.08	—

The unit of pressure has been changed to MPa based on international SI system.
The conversion factor is : 1(MPa)=10.2(kgf/cm²)

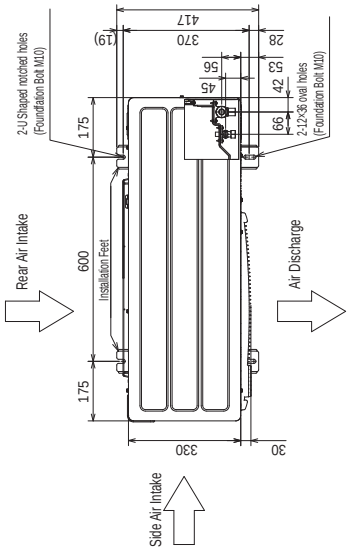
Representative matching				PLA-RP71AA	PLA-RP100AA2	PLA-RP125AA2	PLA-RP140AA2
Mode				Cooling	Cooling	Cooling	Cooling
Total	Capacity		W	8,000	10,000	12,300	14,200
	Input		kW	2.83	3.53	4.36	5.41
Electrical circuit	**Indoor unit**			**PLA-RP71AA**	**PLA-RP100AA2**	**PLA-RP125AA2**	**PLA-RP140AA2**
	Phase , Hz			1 , 50	1 , 50	1 , 50	1 , 50
	Volts		V	230	230	230	230
	Amperes		A	0.79	0.92	0.92	0.92
	Outdoor unit			**PU-P71VHA PU-P71YHA**	**PU-P100VHA PU-P100YHA**	**PU-P125YHA**	**PU-P140YHA**
	Phase , Hz			1/3 , 50	1/3 , 50	3 , 50	3 , 50
	Volts		V	230/400	230/400	400	400
	Amperes		A	12.03/4.29	15.07/5.39	6.79	8.55
Refrigerant circuit	Discharge pressure		MPa (kgf/cm²)	2.99 (30.4)	3.16 (32.2)	3.00 (30.6)	3.05 (31.1)
	Suction pressure		MPa (kgf/cm²)	0.79 (8.0)	0.91 (9.3)	0.75 (7.7)	0.94 (9.6)
	Discharge temperature		°C	76.9	78.2	80.5	78.0
	Condensing temperature		°C	49.7	49.9	38.7	49.9
	Suction temperature		°C	3.8	4.2	2.4	-0.8
	Ref. pipe length		m	5	5	5	5
Indoor side	Intake air temperature	D.B.	°C	27	27	27	27
		W.B.	°C	19	19	19	19
	Discharge air temperature	D.B.	°C	12.8	13.4	12.3	11.2
Outdoor side	Intake air temperature	D.B.	°C	35	35	35	35
		W.B.	°C	24	24	24	24
SHF				0.74	0.78	0.74	0.70
BF				0.11	0.06	0.05	0.08

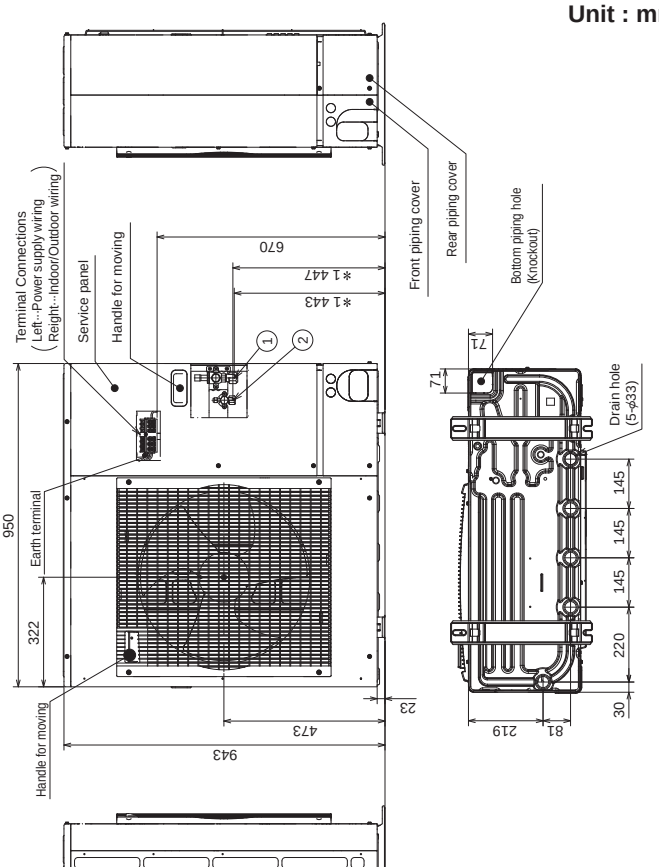
The unit of pressure has been changed to MPa based on international SI system.
The conversion factor is : 1(MPa)=10.2(kgf/cm²)

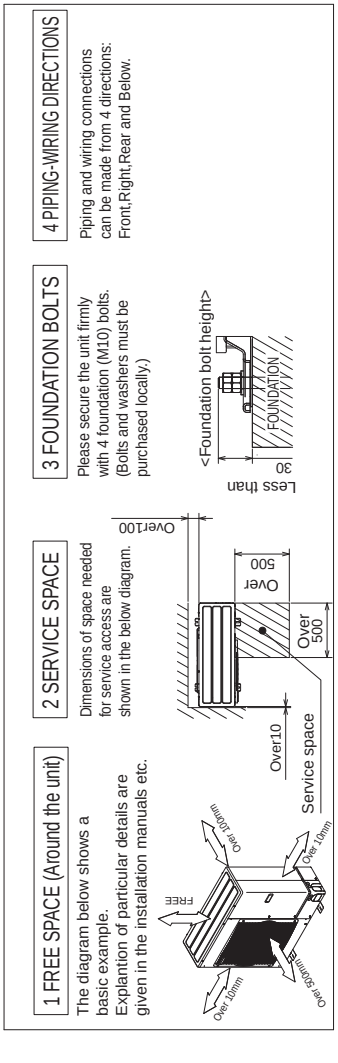
7 OUTLINES AND DIMENSIONS

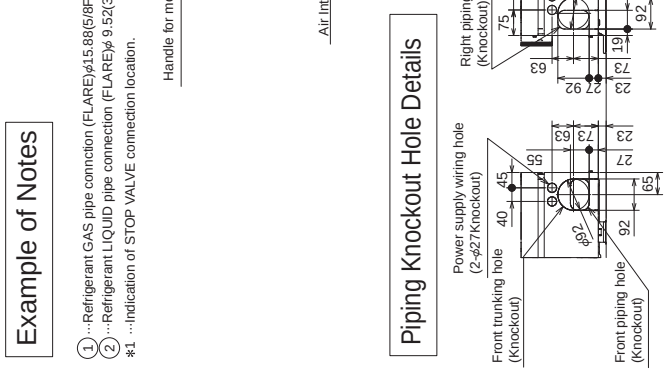
PU(H)-P71VHA.UK **PU(H)-P71VHA#2.UK**
PU(H)-P71YHA.UK **PU(H)-P71YHA#2.UK**
PU(H)-P100VHA.UK **PU(H)-P100VHA#2.UK**
PU(H)-P100YHA.UK **PU(H)-P100YHA#2.UK**
PU(H)-P71VHA$_1$.UK
PU(H)-P71YHA$_1$.UK
PU(H)-P100VHA$_1$.UK
PU(H)-P100YHA$_1$.UK

Unit : mm



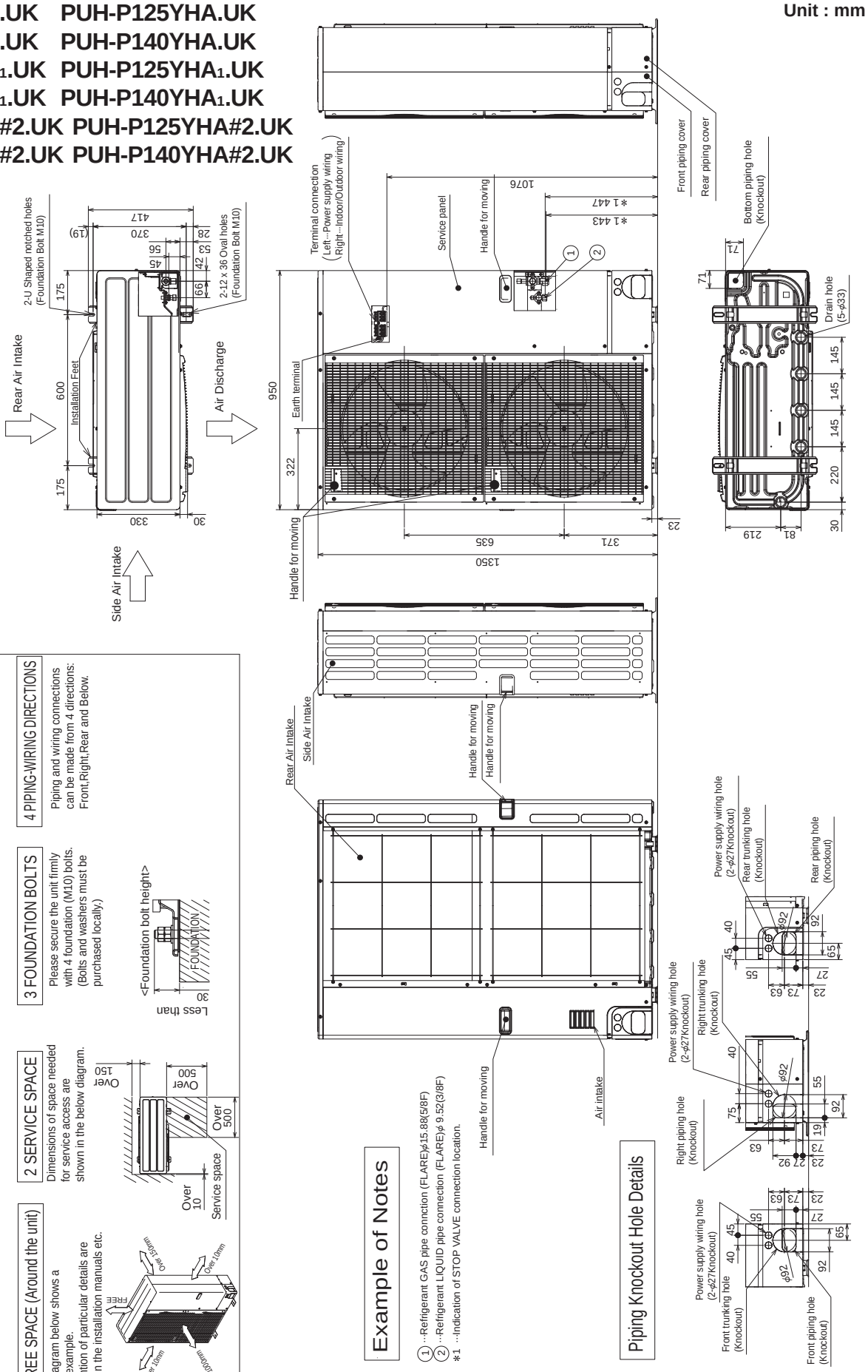






PU-P125YHA.UK PUH-P125YHA.UK
PU-P140YHA.UK PUH-P140YHA.UK
PU-P125YHA1.UK PUH-P125YHA1.UK
PU-P140YHA1.UK PUH-P140YHA1.UK
PU-P125YHA#2.UK PUH-P125YHA#2.UK
PU-P140YHA#2.UK PUH-P140YHA#2.UK

Unit : mm



1 FREE SPACE (Around the unit)

The diagram below shows a basic example.
Explantion of particular details are given in the installation manuals etc.

2 SERVICE SPACE

Dimensions of space needed for service access are shown in the below diagram.

3 FOUNDATION BOLTS

Please secure the unit firmly with 4 foundation (M10) bolts. (Bolts and washers must be purchased locally.)

4 PIPING-WIRING DIRECTIONS

Piping and wiring connections can be made from 4 directions: Front,Right,Rear and Below.

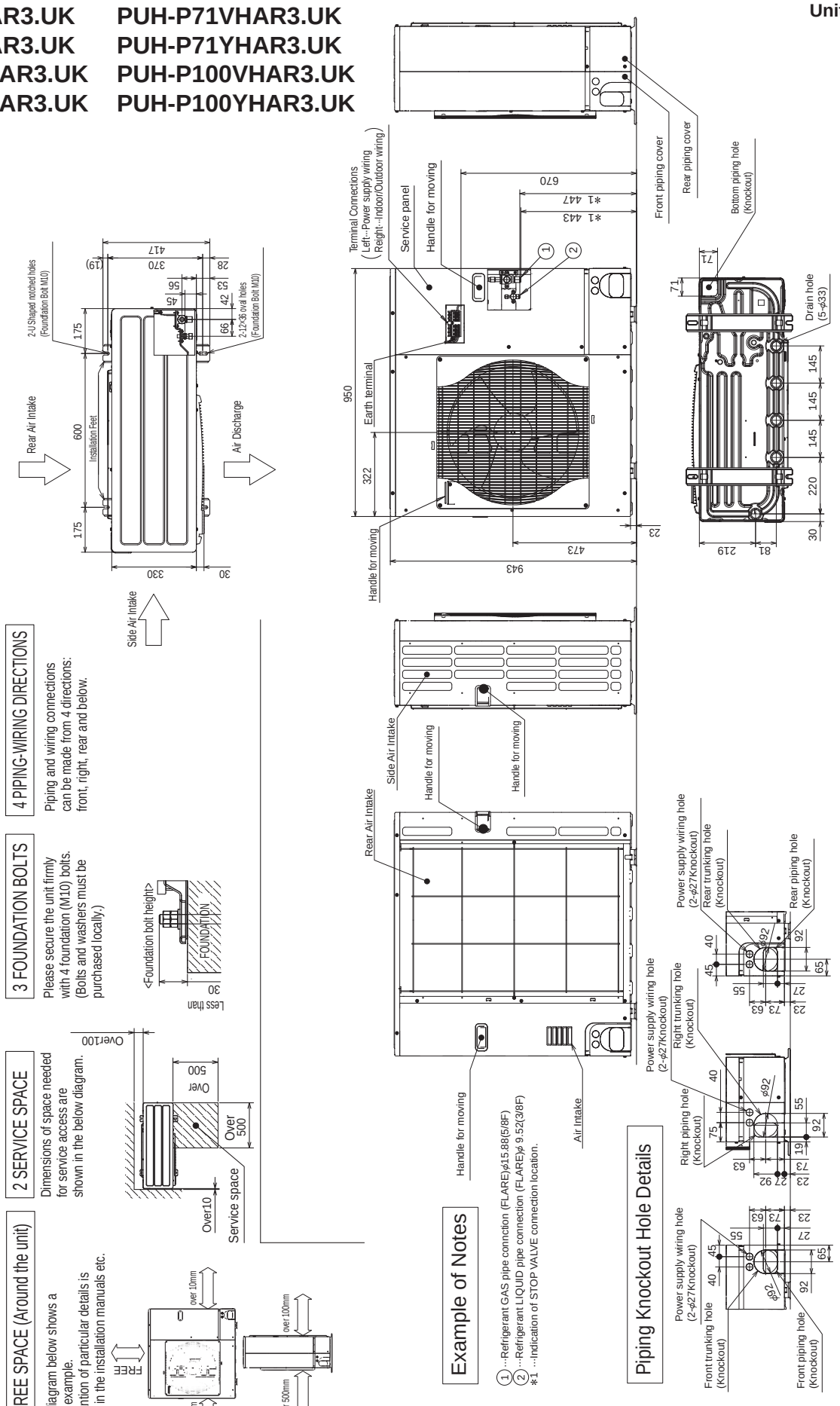
Example of Notes

① ···Refrigerant GAS pipe connction (FLARE)φ15.88(5/8F)
② ···Refrigerant LIQUID pipe connection (FLARE)φ 9.52(3/8F)
*1 ···Indication of STOP VALVE connection location.

Piping Knockout Hole Details

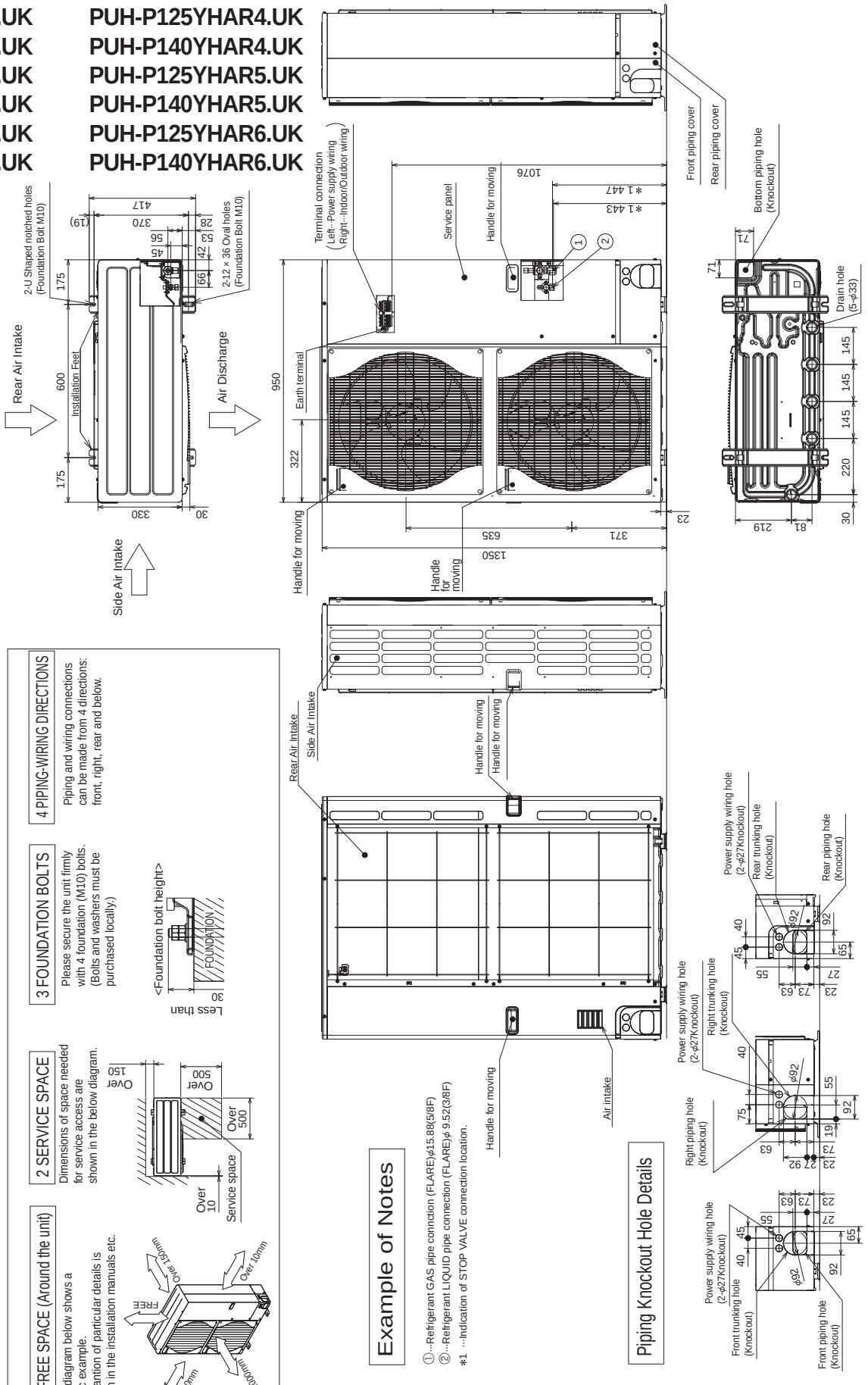
PU-P71VHAR3.UK **PUH-P71VHAR3.UK**
PU-P71YHAR3.UK **PUH-P71YHAR3.UK**
PU-P100VHAR3.UK **PUH-P100VHAR3.UK**
PU-P100YHAR3.UK **PUH-P100YHAR3.UK**

Unit : mm



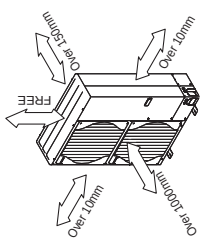
PU-P125YHAR3.UK **PUH-P125YHAR3.UK**
PU-P140YHAR3.UK **PUH-P140YHAR3.UK**
PU-P125YHAR4.UK **PUH-P125YHAR4.UK**
PU-P140YHAR4.UK **PUH-P140YHAR4.UK**
PU-P125YHAR5.UK **PUH-P125YHAR5.UK**
PU-P140YHAR5.UK **PUH-P140YHAR5.UK**
PU-P125YHAR6.UK **PUH-P125YHAR6.UK**
PU-P140YHAR6.UK **PUH-P140YHAR6.UK**

Unit : mm



1 FREE SPACE (Around the unit)

The diagram below shows a basic example.
Explantion of particular details is given in the installation manuals etc.



2 SERVICE SPACE

Dimensions of space needed for service access are shown in the below diagram.

3 FOUNDATION BOLTS

Please secure the unit firmly with 4 foundation (M10) bolts. (Bolts and washers must be purchased locally.)

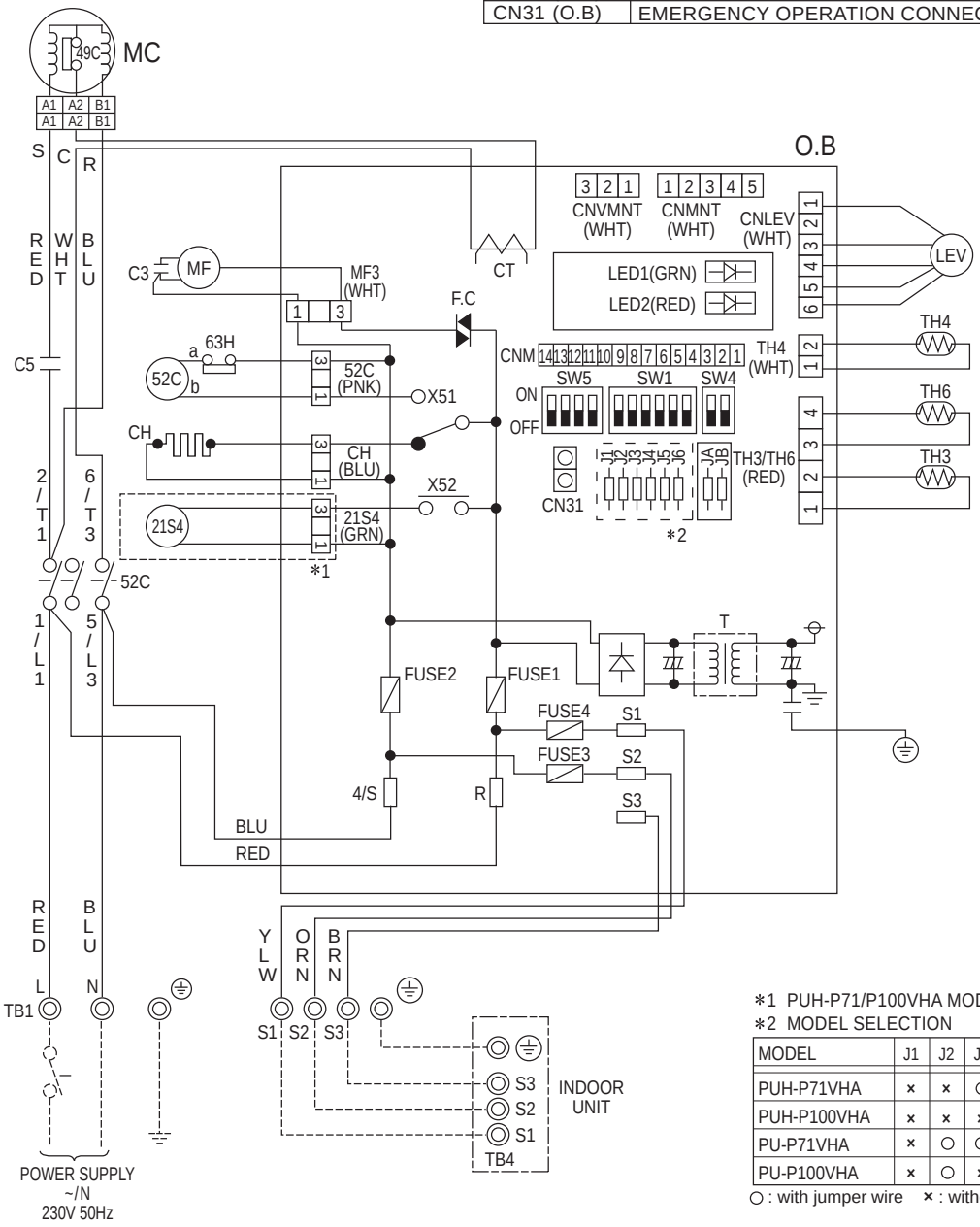
4 PIPING-WIRING DIRECTIONS

Piping and wiring connections can be made from 4 directions: front, right, rear and below.

8 WIRING DIAGRAM

PU-P71VHA.UK **PUH-P71VHA.UK** **PU-P100VHA.UK** **PUH-P100VHA.UK**
PU-P71VHA1.UK **PUH-P71VHA1.UK** **PU-P100VHA1.UK** **PUH-P100VHA1.UK**

SYMBOL	NAME		SYMBOL	NAME
MC	COMPRESSOR(INNER THERMOSTAT)		FUSE1(O.B)	FUSE (6.3A 250V)
MF	FAN MOTOR(INNER THERMOSTAT)		FUSE2(O.B)	FUSE (6.3A 250V)
TH3	THERMISTOR	LIQUID TEMP	FUSE3(O.B)	FUSE (6.3A 250V)
TH4		DISCHARGE TEMP	FUSE4(O.B)	FUSE (6.3A 250V)
TH6		COND./EVA.TEMP	X51 (O.B)	MC/CH RELAY
C3	MF CAPACITOR		X52 (O.B)	21S4 RELAY
C5	MC CAPACITOR		F.C (O.B)	FAN CONTROLLER
CH	CRANKCASE HEATER		SW1 (O.B)	GROUP NUMBER ADDRESS
52C	MC CONTACTOR		SW4 (O.B)	TEST RUN
21S4	4-WAY VALVE SOLENOID COIL		SW5 (O.B)	FUNCTION SELECTION
63H	HIGH PRESSURE PROTECT SWITCH		JA,JB (O.B)	JUMPER WIRE
49C	INNER THERMOSTAT FOR MC		JI~J6 (O.B)	MODEL SELECTION ＊2
TB1	TERMINAL BLOCK		T (O.B)	TRANSFORMER
LEV	LINEAR EXPANSION VALVE		CT (O.B)	CURRENT TRANS
O.B	OUTDOOR CONTROLLER BOARD		LED1 (O.B)	OPERATION CHECK DISPLAY LED
			LED2 (O.B)	OPERATION CHECK DISPLAY LED
			CN31 (O.B)	EMERGENCY OPERATION CONNECTER



＊1 PUH-P71/P100VHA MODEL ONLY
＊2 MODEL SELECTION

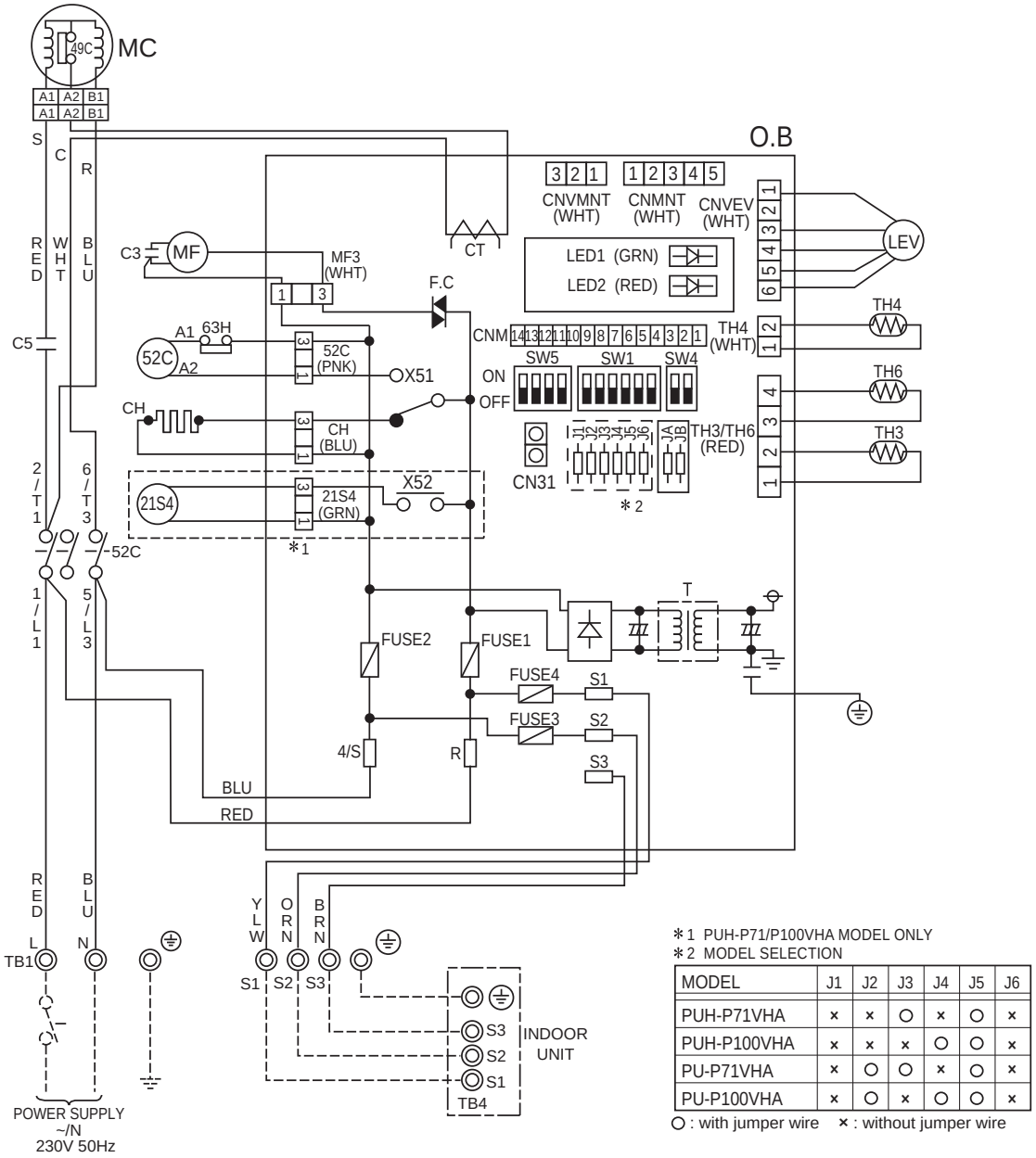
MODEL	J1	J2	J3	J4	J5	J6
PUH-P71VHA	×	×	○	×	○	×
PUH-P100VHA	×	×	×	○	○	×
PU-P71VHA	×	○	○	×	○	×
PU-P100VHA	×	○	×	○	○	×

○ : with jumper wire × : without jumper wire

<Notes when servicing>
Some fastening terminals have a lock mechanism:When removing the fastening terminal, push the projection (locking lever)on a terminal with your finger and pull it out.

PU-P71VHA#2.UK PUH-P71VHA#2.UK PU-P100VHA#2.UK PUH-P100VHA#2.UK
PU-P71VHAR3.UK PUH-P71VHAR3.UK PU-P100VHAR3.UK PUH-P100VHAR3.UK

SYMBOL	NAME		SYMBOL	NAME
MC	COMPRESSOR (INNER THERMOSTAT)		O.B	OUTDOOR CONTROLLER BOARD
MF	FAN MOTOR (INNER THERMOSTAT)		FUSE1 (O.B)	FUSE (6.3A 250V)
TH3	THERMISTOR	LIQUID TEMP	FUSE2 (O.B)	FUSE (6.3A 250V)
TH4		DISCHARGE TEMP	FUSE3 (O.B)	FUSE (6.3A 250V)
TH6		2-PHASE PIPE TEMP	FUSE4 (O.B)	FUSE (6.3A 250V)
C3	MF CAPACITOR		X51 (O.B)	MC/CH RELAY
C5	MC CAPACITOR		X52 (O.B)	21S4 RELAY
CH	CRANKCASE HEATER		F.C (O.B)	FAN CONTROLLER
52C	MC CONTACTOR		SW1 (O.B)	GROUP NUMBER ADDRESS
21S4	4-WAY VALVE SOLENOID COIL		SW4 (O.B)	TEST RUN
63H	HIGH PRESSURE PROTECT SWITCH		SW5 (O.B)	FUNCTION SELECTION
49C	INNER THERMOSTAT FOR MC		J1~J6 (O.B)	MODEL SELECTION ＊2
TB1	TERMINAL BLOCK		T (O.B)	TRANSFORMER
LEV	LINEAR EXPANSION VALVE		CT (O.B)	CURRENT TRANS
JA, JB(O.B)	JUMPER WIRE		LED1 (O.B)	OPERATION CHECK DISPLAY LED
			LED2 (O.B)	OPERATION CHECK DISPLAY LED
			CN31 (O.B)	EMERGENCY OPERATION CONNECTOR



＊1 PUH-P71/P100VHA MODEL ONLY
＊2 MODEL SELECTION

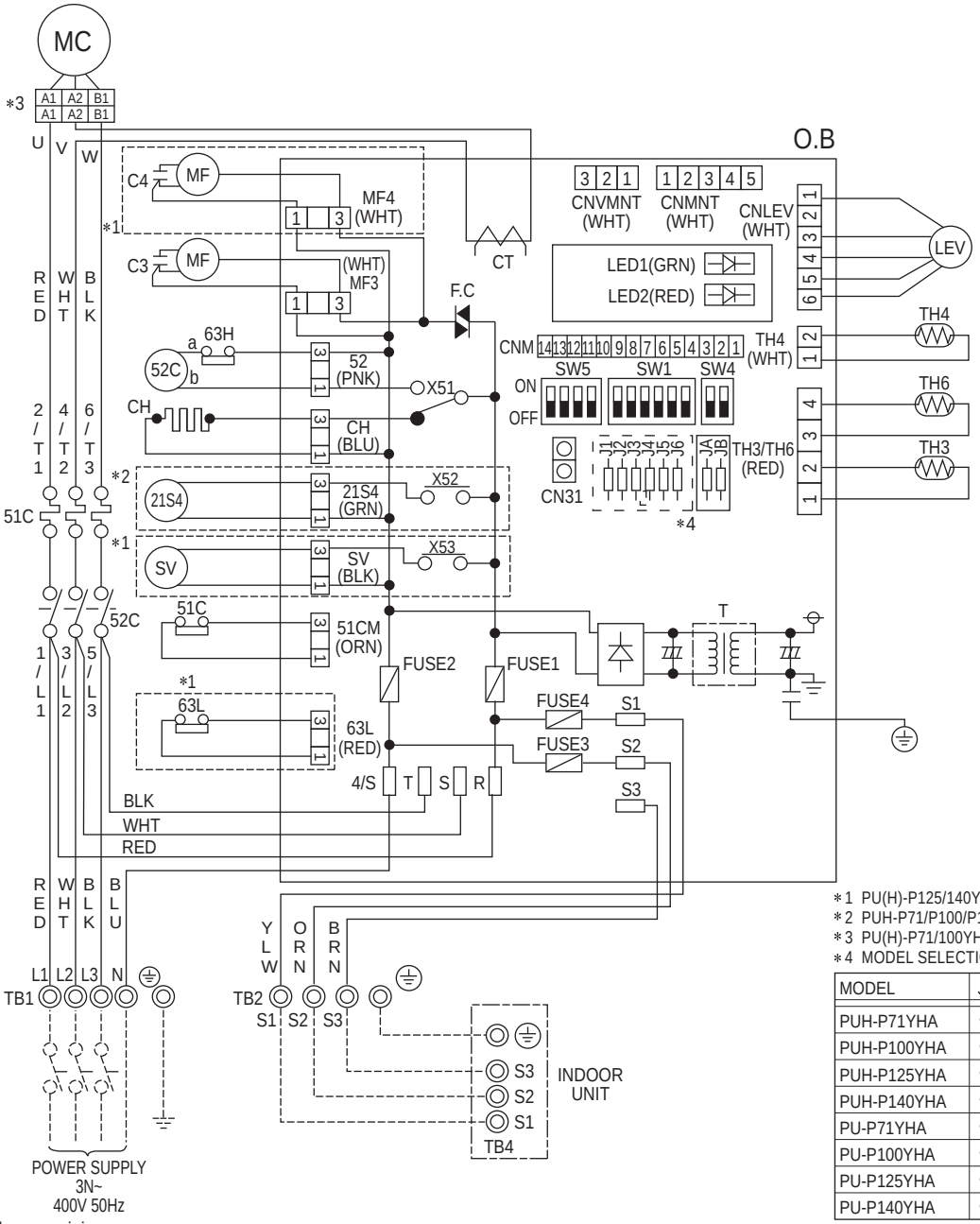
MODEL	J1	J2	J3	J4	J5	J6
PUH-P71VHA	×	×	○	×	○	×
PUH-P100VHA	×	×	×	○	○	×
PU-P71VHA	×	○	○	×	○	×
PU-P100VHA	×	○	×	○	○	×

○ : with jumper wire × : without jumper wire

<Notes when servicing>
Some fastening terminals have a lock mechanism : When removing the fastening terminal, push the projection (locking lever) on the terminal with your finger and pull it out.

PU-P71YHA(1).UK PU-P100YHA(1).UK PU-P125YHA(1).UK PU-P140YHA(1).UK
PUH-P71YHA(1).UK PUH-P100YHA(1).UK PUH-P125YHA(1).UK PUH-P140YHA(1).UK

SYMBOL	NAME		SYMBOL	NAME
MC	COMPRESSOR		FUSE1(O.B)	FUSE (6.3A 250V)
MF	FAN MOTOR(INNER THERMOSTAT)		FUSE2(O.B)	FUSE (6.3A 250V)
TH3	THERMISTOR	LIQUID TEMP	FUSE3(O.B)	FUSE (6.3A 250V)
TH4		DISCHARGE TEMP	FUSE4(O.B)	FUSE (6.3A 250V)
TH6		COND./EVA.TEMP	X51 (O.B)	MC/CH RELAY
C3	MF CAPACITOR		X52 (O.B)	21S4 RELAY
C4	MF CAPACITOR		X53 (O.B)	SV RELAY
CH	CRANKCASE HEATER		F.C (O.B)	FAN CONTROLLER
52C	MC CONTACTOR		SW1 (O.B)	GROUP NUMBER ADDRESS
21S4	4-WAY VALVE SOLENOID COIL		SW4 (O.B)	TEST RUN
SV	BYPASS VALVE SOLENOID COIL		SW5 (O.B)	FUNCTION SELECTION
63H	HIGH PRESSURE PROTECT SWITCH		JA,JB(O.B)	JUMPER WIRE
51C	THERMAL RELAY		JI~J6 (O.B)	MODEL SELECTION *4
TB1	TERMINAL BLOCK		T (O.B)	TRANSFORMER
LEV	LINEAR EXPANSION VALVE		CT (O.B)	CURRENT TRANS
TB2	TERMINAL BLOCK		LED1 (O.B)	OPERATION CHECK DISPLAY LED
63L	LOW PRESSURE PROTECT SWITCH		LED2 (O.B)	OPERATION CHECK DISPLAY LED
O.B	OUTDOOR CONTROLLER BOARD		CN31 (O.B)	EMERGENCY OPERATION CONNECTER



*1 PU(H)-P125/140YHA MODEL ONLY
*2 PUH-P71/P100/P125/P140YHA MODEL ONLY
*3 PU(H)-P71/100YHA MODEL ONLY
*4 MODEL SELECTION

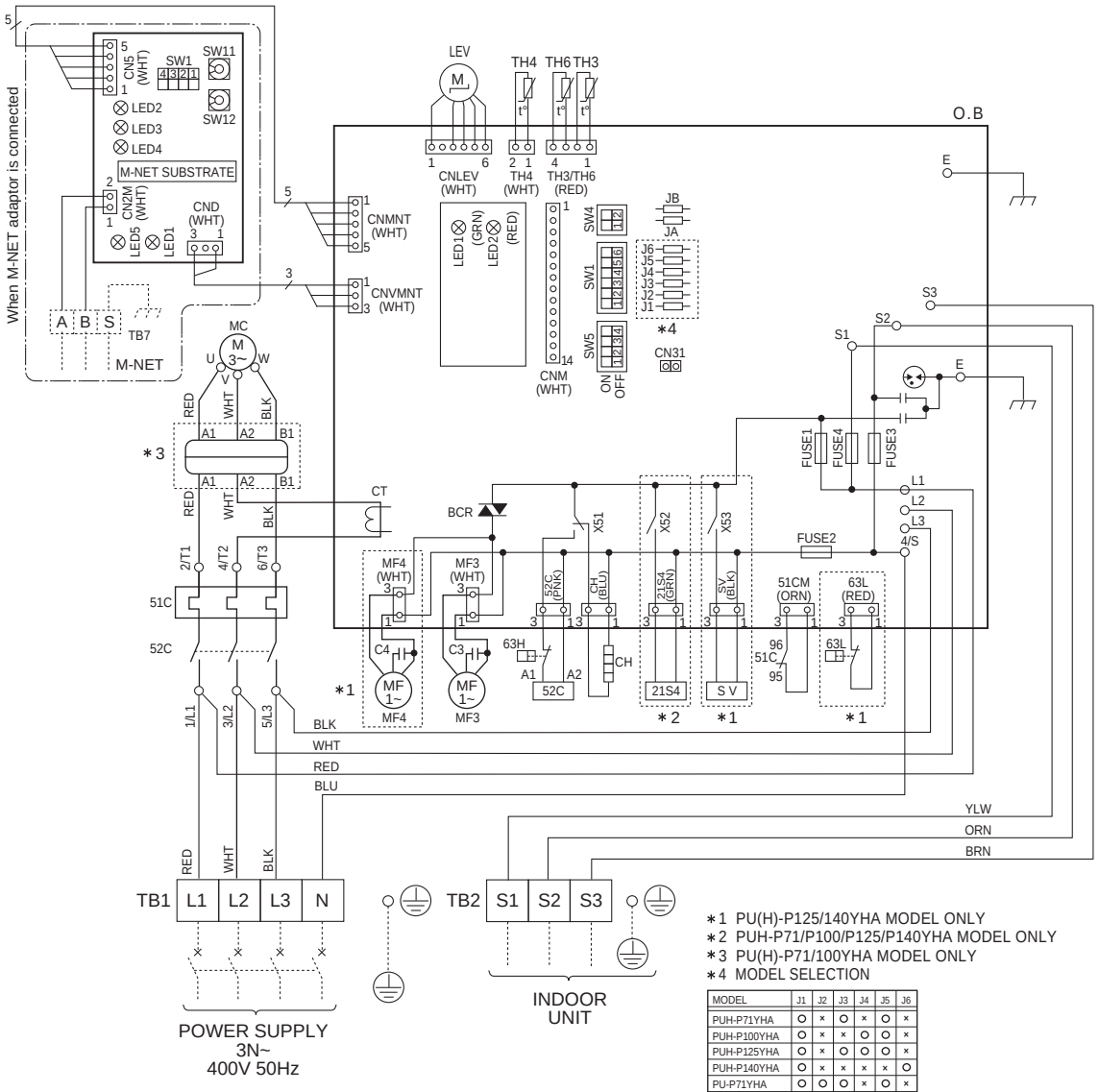
MODEL	J1	J2	J3	J4	J5	J6
PUH-P71YHA	○	×	○	×	○	×
PUH-P100YHA	○	×	×	○	○	×
PUH-P125YHA	○	×	○	○	○	×
PUH-P140YHA	○	×	×	×	×	○
PU-P71YHA	○	○	○	×	○	×
PU-P100YHA	○	○	×	○	○	×
PU-P125YHA	○	○	○	○	○	×
PU-P140YHA	○	○	×	×	×	○

○ : with jumper wire × : without jumper wire

<Notes when servicing>
Some fastening terminals have a lock mechanism:When removing the fastening terminal, push the projection(locking lever)on a terminal with your finger and pull it out.

PU-P71YHA#2.UK **PU-P100YHA#2.UK** **PU-P125YHA#2.UK** **PU-P140YHA#2.UK**
PUH-P71YHA#2.UK **PUH-P100YHA#2.UK** **PUH-P125YHA#2.UK** **PUH-P140YHA#2.UK**
PU-P71YHAR3.UK **PU-P100YHAR3.UK** **PU-P125YHAR3.UK** **PU-P140YHAR3.UK**
PUH-P71YHAR3.UK **PUH-P100YHAR3.UK** **PUH-P125YHAR3.UK** **PUH-P140YHAR3.UK**
PU-P125YHAR4.UK **PU-P140YHAR4.UK** **PUH-P125YHAR4.UK** **PUH-P140YHAR4.UK**
PU-P125YHAR5.UK **PU-P140YHAR5.UK** **PUH-P125YHAR5.UK** **PUH-P140YHAR5.UK**

SYMBOL	NAME		SYMBOL	NAME
MC	MOTOR FOR COMPRESSOR		O.B	OUTDOOR CONTROLLER BOARD
MF3,MF4	FAN MOTOR (INNER THERMOSTAT)		FUSE1 – 4 (O.B)	FUSE (6.3A/250V)
C3,C4	CAPACITOR (MF3, MF4)		X51 (O.B)	RELAY (52C/CH)
TH3	THERMISTOR	LIQUID TEMP	X52 (O.B)	RELAY (21S4)
TH4		DISCHARGE TEMP (P71/100) COMPRESSOR SURFACE TEMP (P125/140)	X53 (O.B)	RELAY (SV)
			LED1 (O.B)	OPERATION CHECK DISPLAY LED
TH6		2-PHASE PIPE TEMP	LED2 (O.B)	OPERATION CHECK DISPLAY LED
CH	CRANKCASE HEATER (MC)		BCR (O.B)	FAN CONTROLLER (MF3,MF4)
52C	MC CONTACTOR		SW1 (O.B)	GROUP NUMBER ADDRESS
21S4	4-WAY VALVE SOLENOID COIL		SW4 (O.B)	TEST RUN
SV	BYPASS VALVE SOLENOID COIL		SW5 (O.B)	FUNCTION SELECTION
63H	HIGH PRESSURE PROTECT SWITCH		JI – J6 (O.B)	MODEL SELECTION ＊4
63L	LOW PRESSURE PROTECT SWITCH		JA (O.B)	JUMPER WIRE (AUTO RESTART)
51C	THERMAL RELAY		JB (O.B)	JUMPER WIRE (SEPARATE INDOOR/OUTDOOR POWER SUPPLY)
TB1	TERMINAL BLOCK (POWER SUPPLY)		CT (O.B)	CURRENT TRANS(MC CURRENT)
TB2	TERMINAL BLOCK (INDOOR/OUTDOOR)		CNM (O.B)	CONNECTOR (A-CONTROL SERVICE INSPECTION KIT)
LEV	LINEAR EXPANSION VALVE		CN31 (O.B)	CONNECTOR (EMERGENCY OPERATION)



＊1 PU(H)-P125/140YHA MODEL ONLY
＊2 PUH-P71/P100/P125/P140YHA MODEL ONLY
＊3 PU(H)-P71/100YHA MODEL ONLY
＊4 MODEL SELECTION

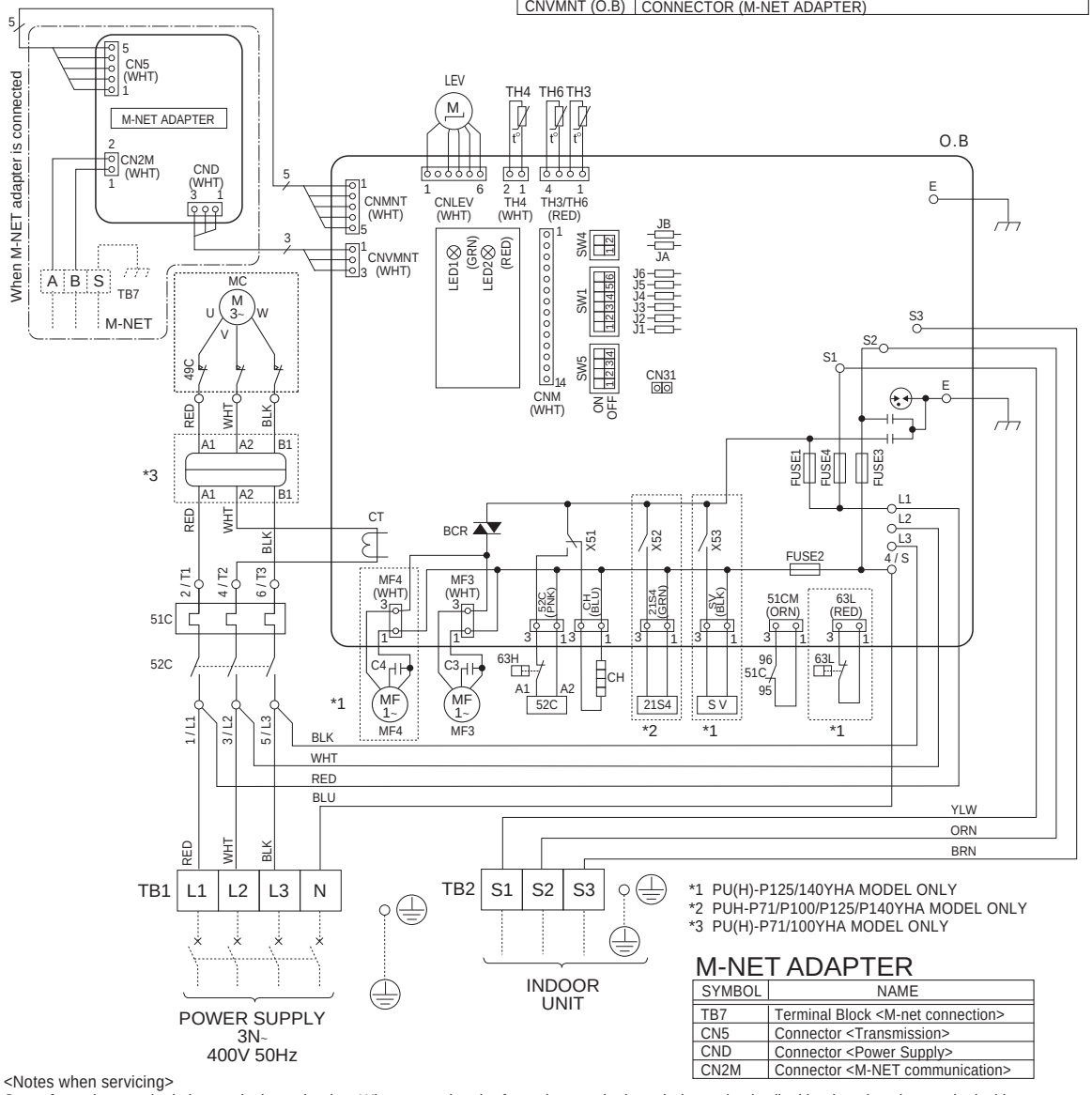
MODEL	J1	J2	J3	J4	J5	J6
PUH-P71YHA	○	×	○	×	○	×
PUH-P100YHA	○	×	×	○	○	×
PUH-P125YHA	○	×	○	○	○	×
PUH-P140YHA	○	×	×	×	×	○
PU-P71YHA	○	○	○	×	○	×
PU-P100YHA	○	○	×	○	○	×
PU-P125YHA	○	○	○	○	○	×
PU-P140YHA	○	○	×	×	×	○

○ : with jumper wire × : without jumper wire

<Notes when servicing>
Some fastening terminals have a lock mechanism: When removing the fastening terminal, push the projection(locking lever)on the terminal with your finger and pull it out.

PU-P125YHAR6.UK PU-P140YHAR6.UK PUH-P125YHAR6.UK PUH-P140YHAR6.UK

SYMBOL	NAME		SYMBOL	NAME
MC	MOTOR FOR COMPRESSOR(INNER THERMOSTAT)		O.B	OUTDOOR CONTROLLER BOARD
MF3,MF4	FAN MOTOR(INNER THERMOSTAT)		FUSE1 to 4(O.B)	FUSE (6.3A/250V)
C3,C4	CAPACITOR(MF3,MF4)		X51 (O.B)	RELAY (52C/CH)
TH3	THERMISTOR	LIQUID TEMP	X52 (O.B)	RELAY (21S4)
TH4		DISCHARGE TEMP(P71/100)	X53 (O.B)	RELAY (SV)
		COMPRESSOR SURFACE TEMP(P125/140)	LED1 (O.B)	OPERATION CHECK DISPLAY LED
TH6		2-PHASE PIPE TEMP	LED2 (O.B)	OPERATION CHECK DISPLAY LED
CH	CRANKCASE HEATER(MC)		BCR (O.B)	FAN CONTROLLER (MF3,MF4)
52C	MC CONTACTOR		SW1 (O.B)	GROUP NUMBER ADDRESS
21S4	4-WAY VALVE SOLENOID COIL		SW4 (O.B)	TEST RUN
SV	BYPASS VALVE SOLENOID COIL		SW5 (O.B)	FUNCTION SELECTION
63H	HIGH PRESSURE PROTECT SWITCH		J1 to J6 (O.B)	MODEL SELECTION
63L	LOW PRESSURE PROTECT SWITCH		JA (O.B)	JUMPER WIRE (AUTO RESTART)
51C	THERMAL RELAY		JB (O.B)	JUMPER WIRE (SEPARATE INDOOR/OUTDOOR POWER SUPPLY)
TB1	TERMINAL BLOCK(POWER SUPPLY)		CT (O.B)	CURRENT TRANS(MC CURRENT)
TB2	TERMINAL BLOCK(INDOOR/OUTDOOR)		CNM (O.B)	CONNECTOR (A-CONTROL SERVICE INSPECTION KIT)
LEV	LINEAR EXPANSION VALVE		CN31 (O.B)	CONNECTOR (EMERGENCY OPERATION)
49C	INNER THERMOSTAT FOR MC		CNMNT (O.B)	CONNECTOR (M-NET ADAPTER)
			CNVMNT (O.B)	CONNECTOR (M-NET ADAPTER)



*1 PU(H)-P125/140YHA MODEL ONLY
*2 PUH-P71/P100/P125/P140YHA MODEL ONLY
*3 PU(H)-P71/100YHA MODEL ONLY

M-NET ADAPTER

SYMBOL	NAME
TB7	Terminal Block <M-net connection>
CN5	Connector <Transmission>
CND	Connector <Power Supply>
CN2M	Connector <M-NET communication>

<Notes when servicing>
Some fastening terminals have a lock mechanism:When removing the fastening terminal, push the projection(locking lever)on the terminal with your finger and pull it out.

9 WIRING SPECIFICATIONS

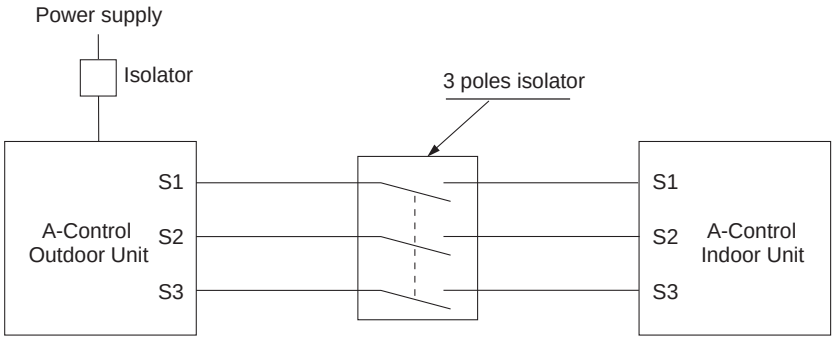
9-1. FIELD ELECTRICAL WIRING (power wiring specifications)

Outdoor unit model			P71V	P100V	P71Y	P100Y	P125Y	P140Y
Outdoor unit Power supply			~/N (single), 50 Hz, 230 V		3N~(3phase), 50 Hz, 400 V			
Outdoor unit input capacity Main switch (Breaker)		*1	32 A		16 A		25 A	
Max. Permissive System Impedance (Ω)			0.06		0.23	0.22	0.14	0.12
Wiring Wire No. × size (mm²)	Outdoor unit power supply		2 × Min. 4		4 × Min. 1.5		4 × Min. 2.5	
	Outdoor unit power supply earth		1 × Min. 4		1 × Min. 1.5		1 × Min. 2.5	
	Indoor unit-Outdoor unit	*2	3 × 1.5 (polar)					
	Indoor unit-Outdoor unit earth		1 × Min. 1.5					
	Remote controller-Indoor unit	*3	2 × 0.3 (Non-polar)					
Circuit rating	Outdoor unit L-N Outdoor unit L1-N, L2-N, L3-N	*4	AC 230 V					
	Indoor unit-Outdoor unit S1-S2	*4	AC 230 V					
	Indoor unit-Outdoor unit S2-S3	*4	DC 24 V					
	Remote controller-Indoor unit	*4	DC 12 V					

*1. A breaker with at least 3.0 mm contact separation in each pole shall be provided. Use earth leakage breaker (NV).
*2. Max. 45 m
If 2.5 mm² used, Max. 50 m
If 2.5 mm² used and S3 separated, Max. 80 m
*3. The 10 m wire is attached in the remote controller accessory.
*4. The figures are NOT always against the ground.
S3 terminal has DC 24 V against S2 terminal. However between S3 and S1, these terminals are NOT electrically insulataed by the transformer or other device.

Notes: 1. Wiring size must comply with the applicable local and national code.
2. Power supply cords and Indoor/Outdoor unit connecting cords shall not be lighter than polychloroprene sheathed flexible cord. (Design 60245 IEC 57)
3. Install an earth longer than other cables.

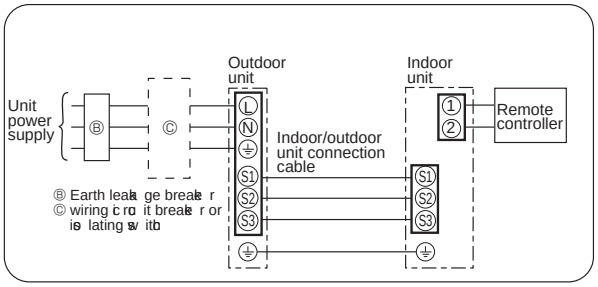
⚠ **Caution:**
Do not push the contactor button (52C) on the outdoor unit, otherwise the compressor may be damaged.



⚠ **Warning:**
In case of A-control wiring, there is high voltage potential on the S3 terminal caused by electrical circuit design that has no electrical insulation between power line and communication signal line. Therefore, please turn off the main power supply when servicing. And do not touch the S1, S2, S3 terminals when the power is energized. If isolator should be used between indoor unit and outdoor unit, please use 3-pole type.

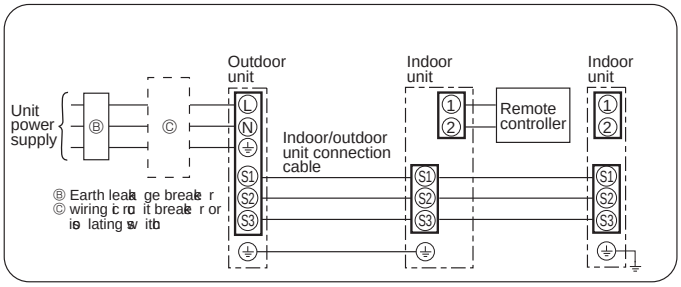
Never splice the power cable or the indoor-outdoor connection cable, otherwise it may result in a smoke, a fire or communication failure.

1:1 system

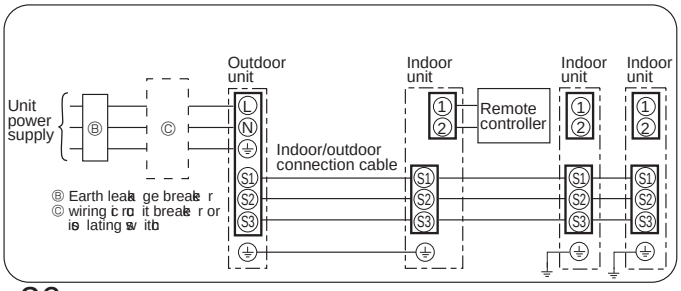


Synchronized twin and triple system Electrical wiring

• Synchronized twin



• Synchronized triple

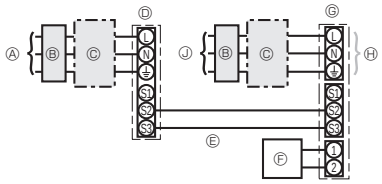


9-2. SEPARATE INDOOR UNIT/ OUTDOOR UNIT POWER SUPPLIES

The following connection patterns are available.
The outdoor unit power supply patterns vary on models.

1:1 System

<For models without heater>
The optional indoor power supply terminal kit is required.

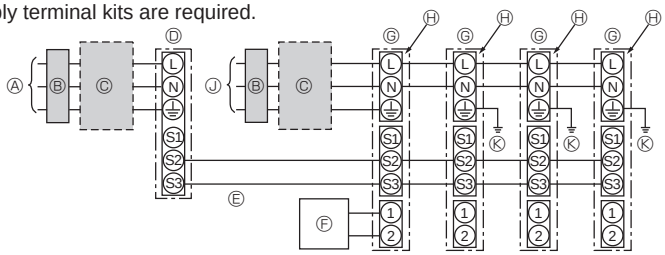


Ⓐ Outdoor unit power supply
Ⓑ Earth leakage breaker
Ⓒ Wiring circuit breaker or isolating switch
Ⓓ Outdoor unit
Ⓔ Indoor unit/outdoor unit connecting cords
Ⓕ Remote controller
Ⓖ Indoor unit
Ⓗ Option
Ⓙ Indoor unit power supply

Affix a label B that is included with the manuals near each wiring diagram for the indoor and outdoor units.

Simultaneous twin/triple system

<For models without heater>
The optional indoor power supply terminal kits are required.



Ⓐ Outdoor unit power supply
Ⓑ Earth leakage breaker
Ⓒ Wiring circuit breaker or isolating switch
Ⓓ Outdoor unit
Ⓔ Indoor unit/outdoor unit connecting cales
Ⓕ Remote controller
Ⓖ Indoor unit
Ⓗ Option
Ⓙ Indoor unit power supply
Ⓚ Indoor unit earth

Affix a label B that is included with the manuals near each wiring diagram for the indoor and outdoor units.

Indoor unit model			RP35~140
Indoor unit power supply			~/N (single), 50 Hz, 230 V
Indoor unit input capacity Main switch (Breaker)		*1	16 A
Wiring Wire No. × size (mm²)	Indoor unit power supply		2 × Min. 1.5
	Indoor unit power supply earth		1 × Min. 1.5
	Indoor unit-Outdoor unit	*2	2 × Min. 0.3
	Indoor unit-Outdoor unit earth		–
	Remote controller-Indoor unit	*3	2 × 0.3 (Non-polar)
Circuit rating	Indoor unit L-N	*4	AC 230 V
	Indoor unit-Outdoor unit S1-S2	*4	–
	Indoor unit-Outdoor unit S2-S3	*4	DC24 V
	Remote controller-Indoor unit	*4	DC12 V

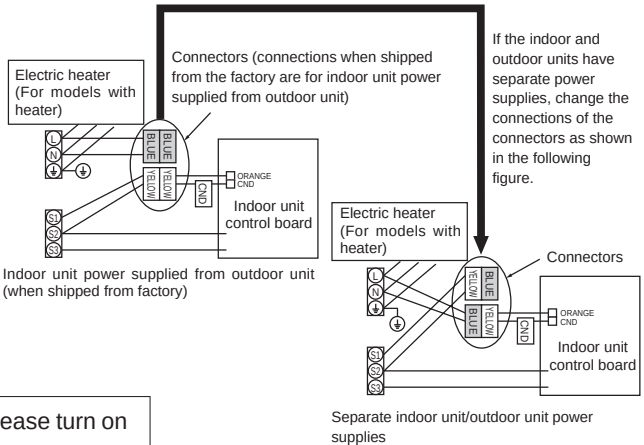
*1. A breaker with at least 3 mm contact separation in each pole shall be provided. Use earth leakage breaker (NV).
*2. Max. 120 m
*3.The 10 m wire is attached in the remote controller accessory. Max. 500 m
*4.The figures are NOT always against the ground.

Notes: 1. Wiring size must comply with the applicable local and national code.
2. Power supply cords and indoor unit/outdoor unit connecting cords shall not be lighter than polychloroprene sheathed flexible cord. (Design 60245 IEC 57)
3. Install an earth longer than other cables.

If the indoor and outdoor units have separate power supplies, refer to the table below. Change the indoor unit electrical box wiring referring to the figure in the right and the Jumper wire JB settings of the outdoor unit control board.

	Indoor unit specifications
Indoor unit electrical box connector connection change	Required
Label affixed near each wiring diagram for the indoor and outdoor units	Required
Outdoor unit jumper wire (when using separate indoor unit/outdoor unit power supplies only)	Jumper wire JB is cut.

* There are three types of labels (labels A, B, and C). Affix the appropriate labels to the units according to the wiring method.

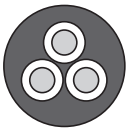
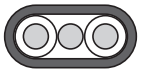
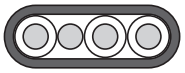
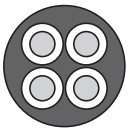


Please turn on the power supply of the outdoor unit first. Afterward, please turn on the power supply of the indoor unit.

9-3. INDOOR – OUTDOOR CONNECTING CABLE

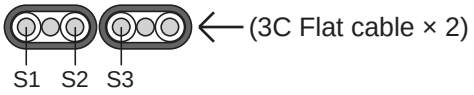
The cable shall not be lighter than design 60245 IEC or 227 IEC.

The cable length may vary depending on the condition of installation, humidity or materials, etc.

Cross section of cable	Wire size (mm^2)	Number of wires	Polarity	L(m) *5
Round 	2.5	3	Clockwise : S1-S2-S3	50 *1
Flat 	2.5	3	Not applicable (Because center wire has no cover finish)	Not applicable *2
Flat 	1.5	4	From left to right : S1-Open-S2-S3	45 *3
Round 	2.5	4	Clockwise : S1-S2-S3-Open Connect S1 and S3 to the opposite angle	60 *4

*1 : In case that cable with stripe of yellow and green is available.

*2 : In case that flat cables are connected as this picture, they can be used up to 80m.



*3 : In case of regular polarity connection (S1-S2-S3), wire size is $1.5mm^2$.

*4 : In case of regular polarity connection (S1-S2-S3).

*5 : Mentioned cable length is just a reference value.
It may be different depending on the condition of installation, humidity or materials, etc.

Outdoor power supply	Wire No. × Size (㎟)		
	Max. 45m	Max. 50m	Max. 80m
Indoor unit-Outdoor unit	3 × 1.5 (polar)	3 × 2.5 (polar)	3 × 2.5 (polar) and S3 separated
Indoor unit-Outdoor unit earth	1 × Min. 1.5	1 × Min. 2.5	1 × Min. 2.5

The Max. cable length may vary depending on the condition of installation, humidity or materials, etc.

Indoor/Outdoor separate power supply	Wire No. × Size (㎟)
	Max. 120m
Indoor unit-Outdoor unit	2 × Min. 0.3
Indoor unit-Outdoor unit earth	—

The optional indoor power supply terminal kit is necessary

Be sure to connect the indoor-outdoor connecting cables directly to the units (no intermediate connections).
Intermediate connections can lead to communication errors if water enters the cables and causes insufficient insulation to ground or a poor electrical contact at the intermediate connection point.

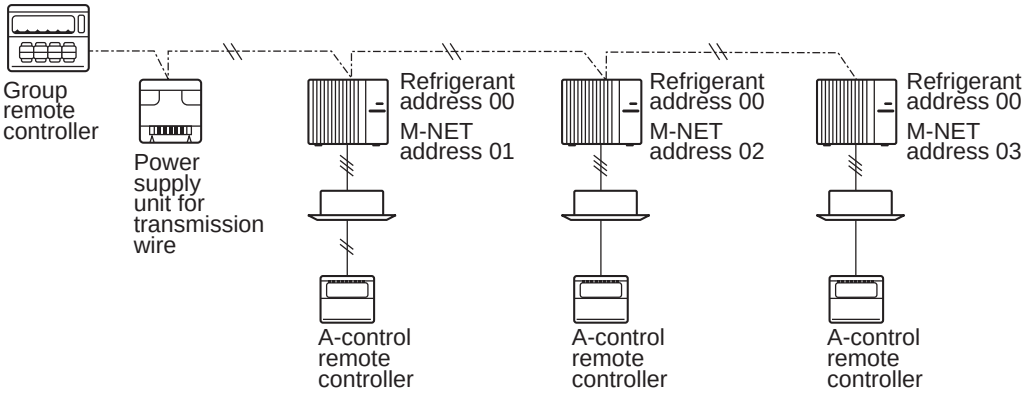
9-4. M-NET WIRING METHOD

(Points to note)

(1) Outside the unit, transmission wires should stay away from electric wires in order to prevent electromagnetic noise from making an influence on the signal communication. Place them at intervals of more than 5cm. Do not put them in the same conduit tube.

(2) Terminal block (TB7) for transmission wires should never be connected to 220~240V power supply. If it is connected, electronic parts on M-NET P.C. board may be burn out.

(3) Use 2-core x 1.25mm² shield wire (CVVS, CPEVS) for the transmission wire. Transmission signals may not be sent or received normally if different types of transmission wires are put together in the same multi-conductor cable. Never do this because this may cause a malfunction.

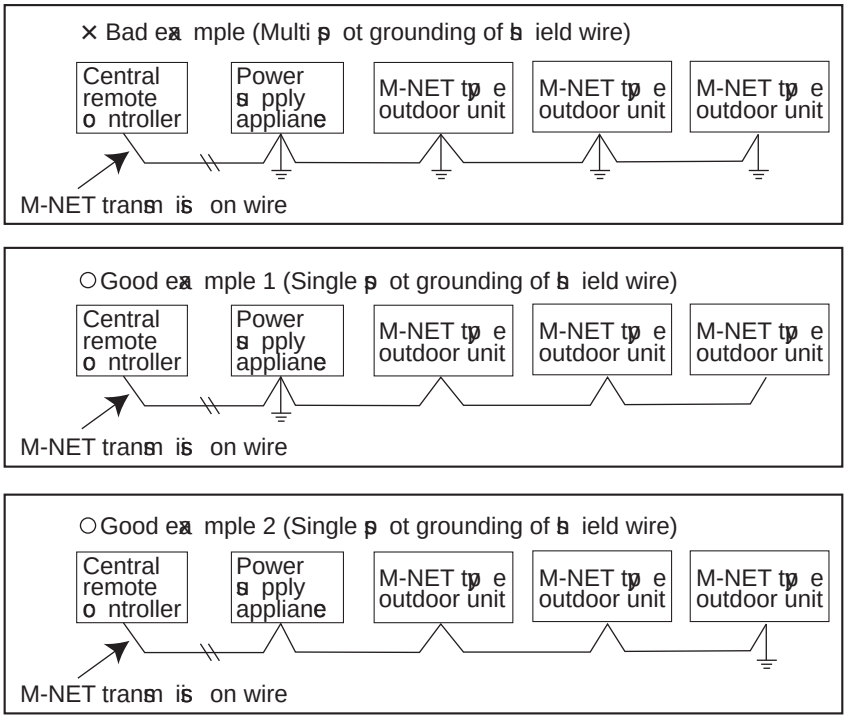


It would be ok if M-NET wire (non-polar, 2-cores) is arranged in addition to the wiring for A-control.

(4) Earth only one of any appliances through M-NET transmission wire (shield wire). Communication error may occur due to the influence of electromagnetic noise.

"Ed" error will appear on the LED display of outdoor unit.

"0403" error will appear on the central-control remote controller.

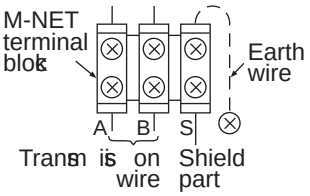


If there are more than two earthing spots on the shield wire, noise may enter into the shield wire because the earth wire and shield wire form one circuit and the electric potential difference occurs due to the impedance difference among earthing spots. In case of single spot earthing, noise does not enter into the shield wire because the earth wire and shield wire do not form one circuit.

To avoid communication errors caused by noise, make sure to observe the single spot earthing method described in the installation manual.

● **M-NET wiring**

(1) Use 2-core × 1.25mm² shield wire for electric wires.
(Excluding the case connecting to system controller.)
(2) Connect the wire to the M-NET terminal block.Connect one core of the transmission wire (non-polar) to A terminal and the other to B. Peel the shield wire, twist the shield part to a string and connect it to S terminal.
(3) In the system which several outdoor units are being connected, the terminal (A, B, S) on M-NET terminal block should be individually wired to the other outdoor unit's terminal, i.e. A to A, B to B and S to S.In this case, choose one of those outdoor units and drive a screw to fix an ground wire on the plate as shown on the right figure.



9-4-1. M-NET address setting

In A-control models, M-NET address and refrigerant address should be set only for the outdoor unit. Similar to CITY MULTI system, there is no need to set the address of outdoor unit and remote controller. To construct a central control system, the setting of M-NET address should be conducted only upon the outdoor unit. The setting range should be 1 to 50 (the same as that of the indoor unit in CITY MULTI system), and the address number should be consecutively set in a same group.

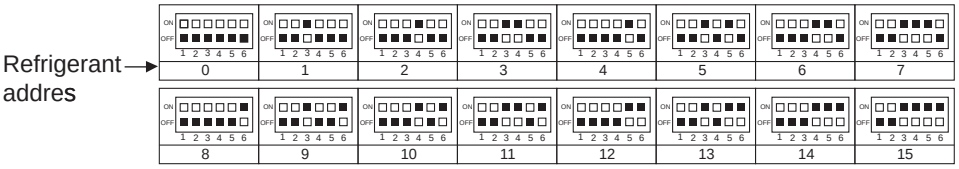
Address number can be set by using rotary switches (SW11 for ones digit and SW12 for tens digit), which is located on the M-NET board of outdoor unit.
(Initial setting: all addresses are set to "0".)

<Setting example>

M-NET Address No.		1	2	~	50
Switch setting	SW11 ones digit				
	SW12 tens digit				

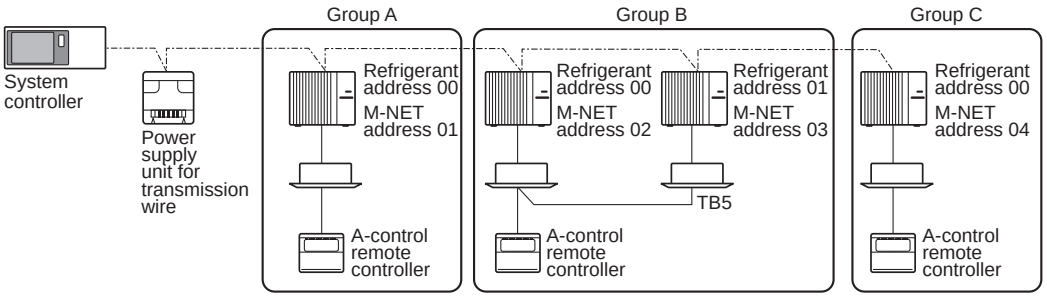
9-4-2. Refrigerant address setting

In case of multiple grouping system (multiple refrigerant circuits in one group), indoor units should be connected by remote controller wiring (TB5) and the refrigerant address needs to be set. Leave the refrigerant addresses to "00" if the group setting is not conducted. Set the refrigerant address by using DIP SW1-3 to -6 on the outdoor controller board. [Initial setting: all switches are OFF. (All refrigerant addresses are "00".)]

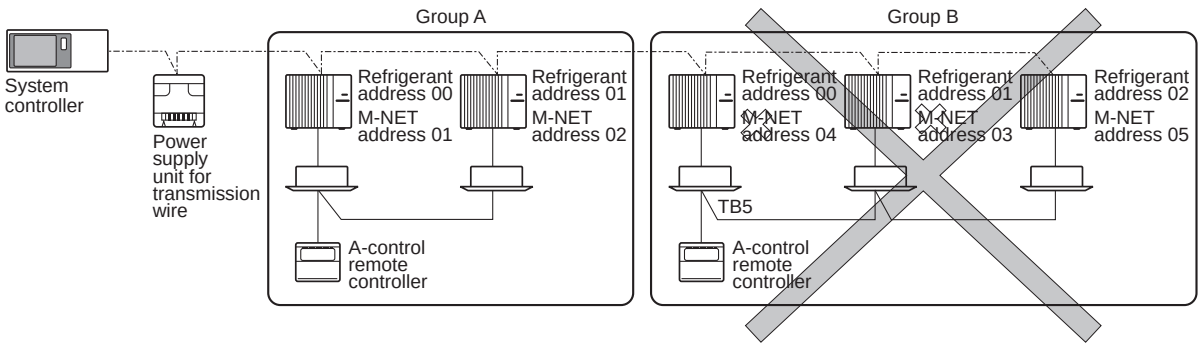


9-4-3. Regulations in address settings

In case of multiple grouping system, M-NET and refrigerant address settings should be done as explained in the above section. Set the lowest number in the group for the outdoor unit whose refrigerant address is "00" as its M-NET address.



Refrigerant addresses can be overlapped if they are in the different group.

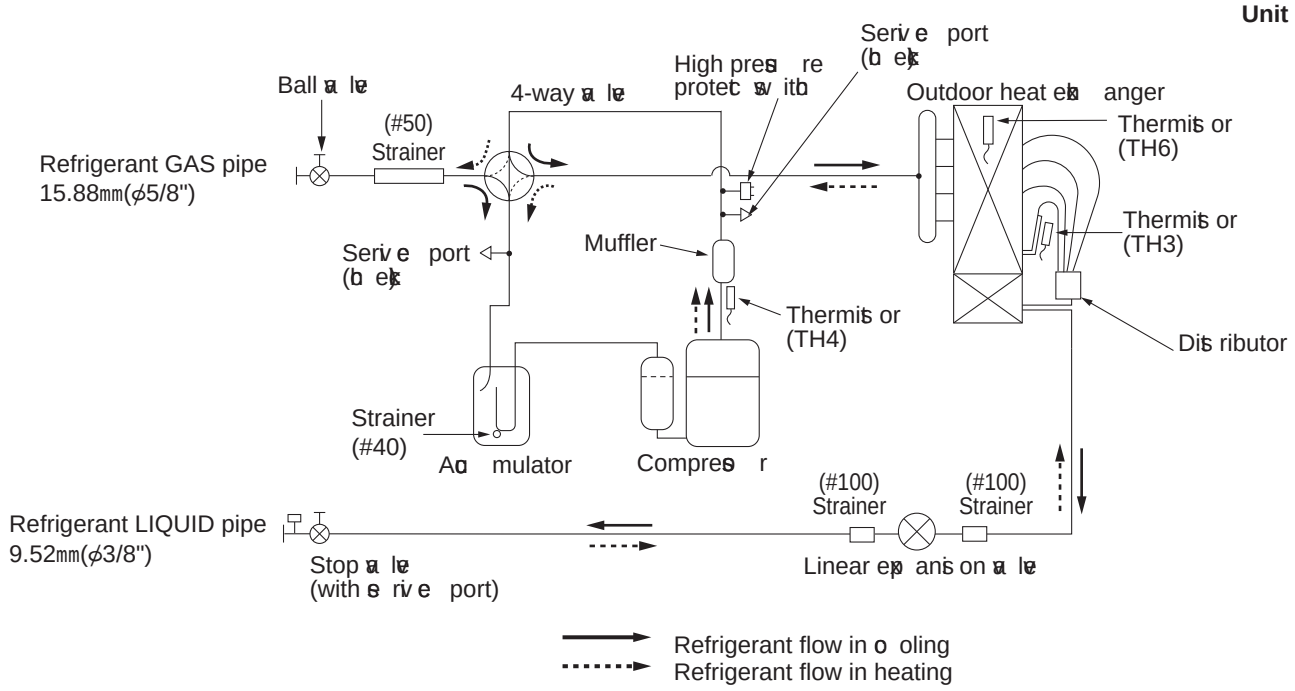


In group B, M-NET address of the outdoor unit whose refrigerant address is "00" is not set to the minimum in the group. As "3" is right for this situation, the setting is wrong. Taking group A as a good sample, set the minimum M-NET address in the group for the outdoor unit whose refrigerant address is "00".

10 REFRIGERANT SYSTEM DIAGRAM

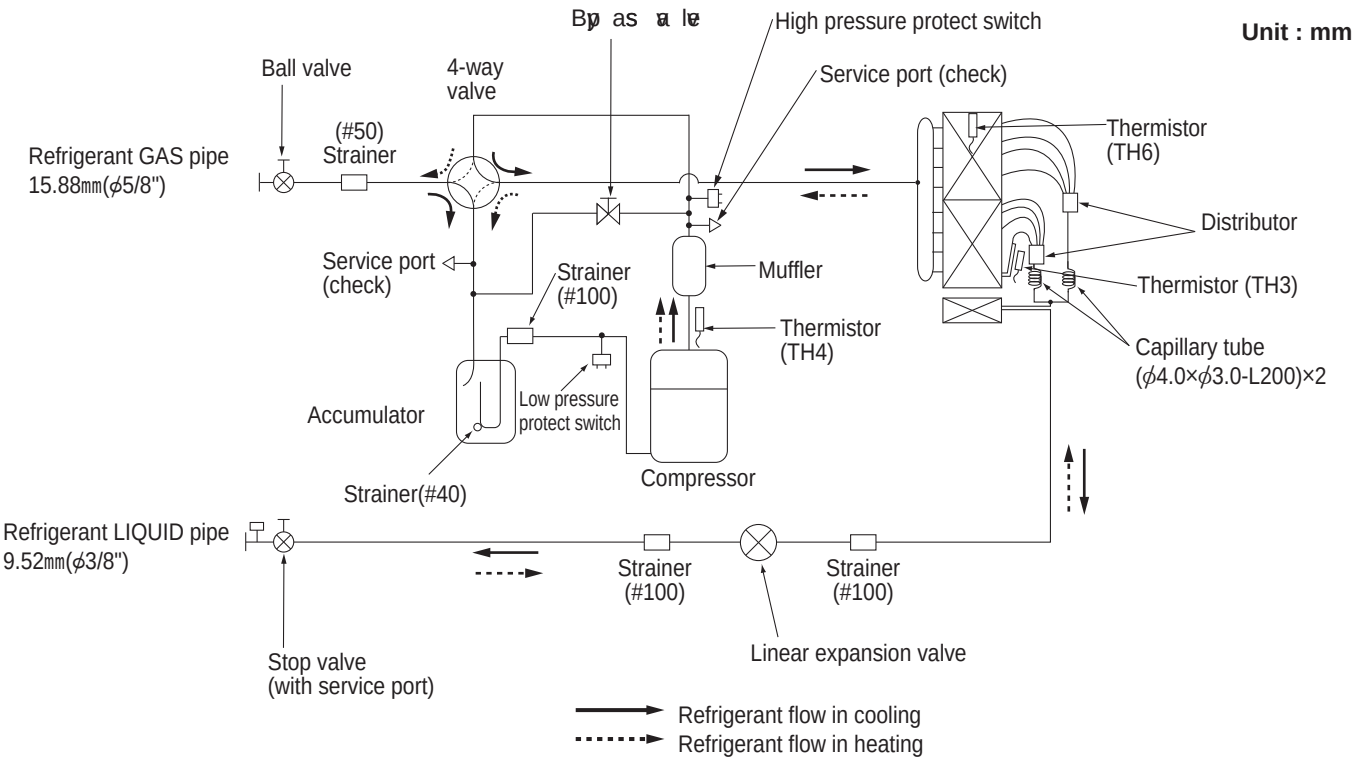
PUH-P71VHA(1).UK **PU-P71VHA(1).UK** **PUH-P71YHA(1).UK** **PU-P71YHA(1).UK**
PUH-P71VHA#2.UK **PU-P71VHA#2.UK** **PUH-P71YHA#2.UK** **PU-P71YHA#2.UK**
PUH-P71VHAR3.UK **PU-P71VHAR3.UK** **PUH-P71YHAR3.UK** **PU-P71YHAR3.UK**
PUH-P100VHA(1).UK **PU-P100VHA(1).UK** **PUH-P100YHA(1).UK** **PU-P100YHA(1).UK**
PUH-P100VHA#2.UK **PU-P100VHA#2.UK** **PUH-P100YHA#2.UK** **PU-P100YHA#2.UK**
PUH-P100VHAR3.UK **PU-P100VHAR3.UK** **PUH-P100YHAR3.UK** **PU-P100YHAR3.UK**

Unit : mm



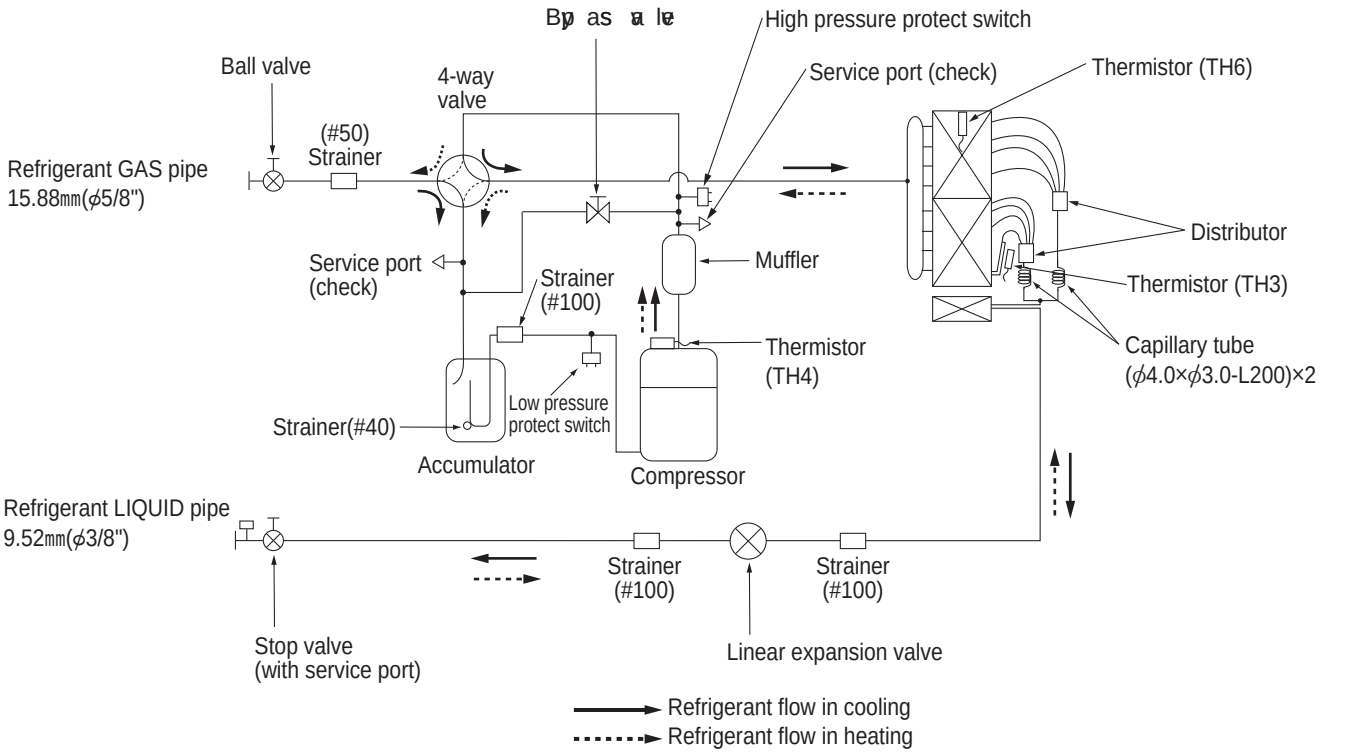
PUH-P125YHA.UK **PU-P125YHA.UK** **PUH-P125YHA1.UK** **PU-P125YHA1.UK**
PUH-P140YHA.UK **PU-P140YHA.UK** **PUH-P140YHA1.UK** **PU-P140YHA1.UK**
PUH-P125YHA#2.UK **PU-P125YHA#2.UK** **PUH-P140YHA#2.UK** **PU-P140YHA#2.UK**
PUH-P125YHAR3.UK **PU-P125YHAR3.UK** **PUH-P140YHAR3.UK** **PU-P140YHAR3.UK**

Unit : mm



PUH-P125YHAR4.UK **PU-P125YHAR4.UK**
PUH-P140YHAR4.UK **PU-P140YHAR4.UK**
PUH-P125YHAR5.UK **PU-P125YHAR5.UK**
PUH-P140YHAR5.UK **PU-P140YHAR5.UK**
PUH-P125YHAR6.UK **PU-P125YHAR6.UK**
PUH-P140YHAR6.UK **PU-P140YHAR6.UK**

Unit : mm



11 TROUBLESHOOTING

11-1. TROUBLESHOOTING

<Check code display by self-diagnosis and actions to be taken for service (summary)>

Present and past check codes are logged and displayed on the wired remote controller and control board of outdoor unit. Actions to be taken for service, which depends on whether or not the inferior phenomenon is reoccurring at service, are summarized in the table below. Check the contents below before investigating details.

Unit conditions at service	Check code	Actions to be taken for service (summary)
The inferior phenomenon is reoccurring.	Displayed	Judge what is wrong and take a corrective action according to “11-4. Self-diagnosis action table”.
	Not displayed	Conduct trouble shooting and ascertain the cause of the inferior phenomenon according to “11-5. Troubleshooting of problems”.
The inferior phenomenon is not reoccurring.	Logged	①Consider the temporary defects such as the work of protection devices in the refrigerant circuit including compressor, poor connection of wiring, noise, etc. Re-check the symptom, and check the installation environment, refrigerant amount, weather when the inferior phenomenon occurred, matters related to wiring, etc. ②Reset check code logs and restart the unit after finishing service. ③There is no abnormality concerning of parts such as electrical component, controller board, remote controller, etc.
	Not logged	①Re-check the abnormal symptom. ②Conduct trouble shooting and ascertain the cause of the inferior phenomenon according to “11-5. Troubleshooting of problems”. ③Continue to operate unit for the time being if the cause is not ascertained. ④There is no abnormality concerning of parts such as electrical component, controller board, remote controller, etc.

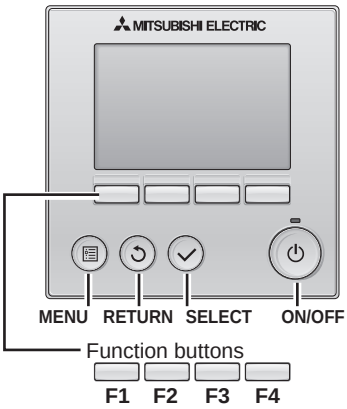
11-2. CHECK POINT UNDER TEST RUN

11-2-1. Before test run

- After installation of indoor and outdoor units, piping work and electric wiring work, re-check that there is no refrigerant leakage, loosened connections and incorrect polarity.
- Measure impedance between the ground and the power supply terminal block (L, N) on the outdoor unit by 500V Megger and check that it is 1.0MΩ or over.
  Note:
  Do not use 500V Megger to indoor/outdoor connecting wire terminal block (S1, S2, S3) and remote controller terminal block (1, 2). This may cause malfunction.
- Make sure that test run switch (SW4) is set to OFF before turning on power supply.
- Turn on power supply 12 hours before test run in order to protect compressor.
- For specific models which requires higher ceiling settings or auto-recovery feature from power failure, make proper changes of settings referring to the description of “12. FUNCTION SETTING”.

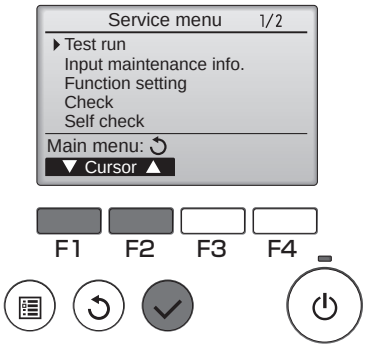
Make sure to read operation manual before test run. (Especially items to secure safety.)

11-2-2. Test run for wired remote controller <PAR-31MAA>

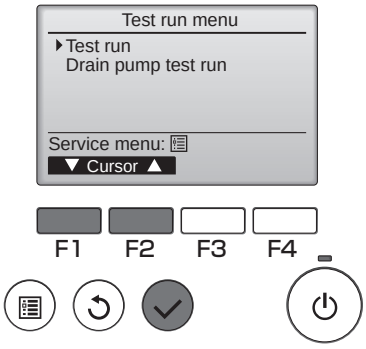


① Select "Service" from the Main menu, and press the ✓ button.

Select "Test run" with the F1 or F2 button, and press the ✓ button.



② Select "Test run" with the F1 or F2 button, and press the ✓ button.

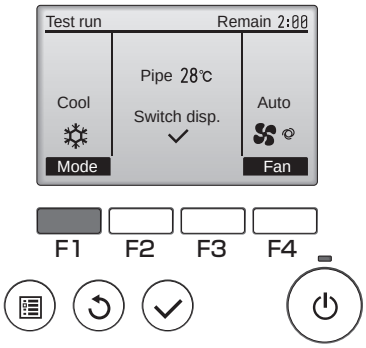


Test run operation

Press the F1 button to go through the operation modes in the order of "Cool and Heat".

Cool mode: Check the cold air blow off.
Heat mode: Check the heat blow off.

Press the ✓ button and open the Vane setting screen.



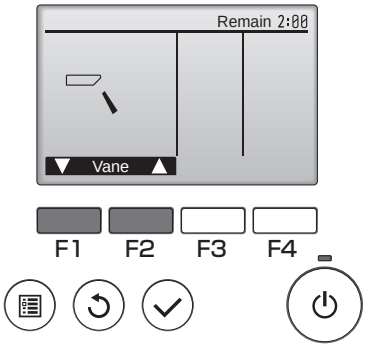
Auto vane check

Check the auto vane with the F1 F2 buttons.
Check the operation of the outdoor unit's fan, also.

Press the ↺ button to return to "Test run operation".

Press the ⏻ button.

When the test run is completed, the "Test run menu" screen will appear.
The test run will automatically stop after two hours.

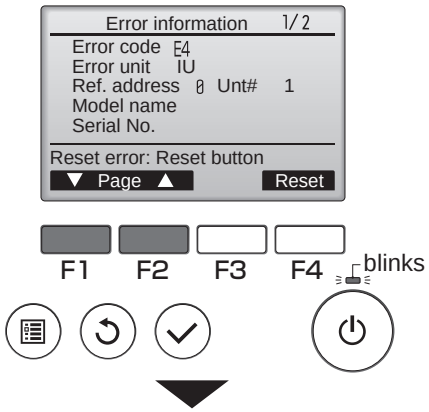


<Error information>

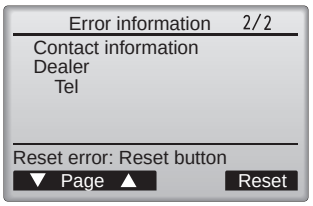
When an error occurs, the following screen will appear.
Check the error status, stop the operation, and consult your dealer.

① Check code, error unit, refrigerant address, unit model name, and serial number will appear.
The model name and serial number will appear only if the information have been registered.

Press the F1 or F2 button to go to the next page.



Contact information (dealer's phone number) will appear if the information have been registered.



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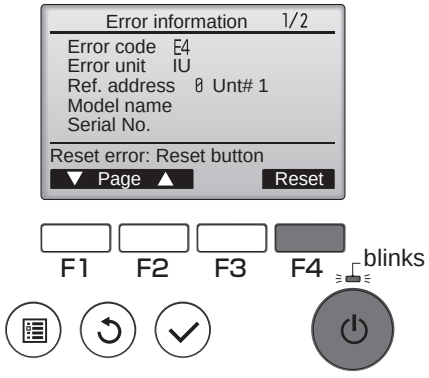
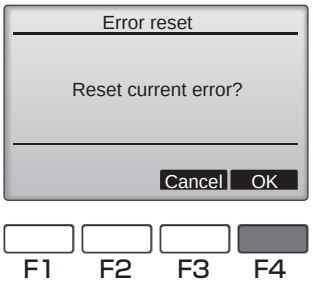
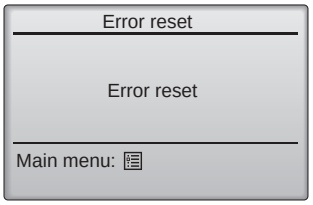
② Press the F4 button or the ⏻ button to reset the error that is occurring.

Errors cannot be reset while the ON/OFF operation is prohibited.



Select "OK" with the F4 button.

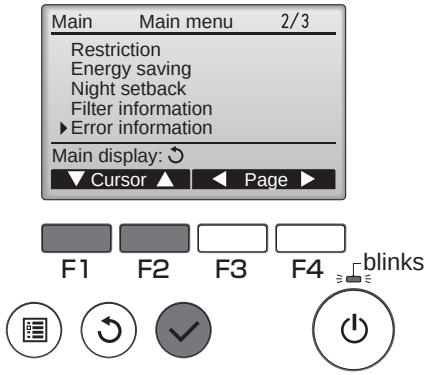




Navigating through the screens
• To go back to the Main menu ..... ⏻ button

<Checking the error information>

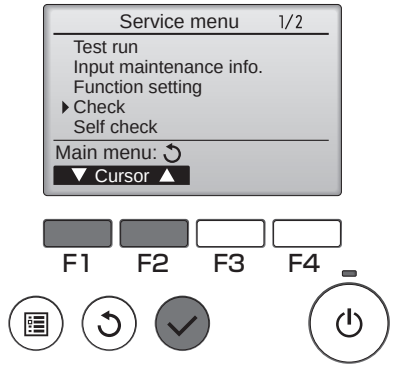
While no errors are occurring, page 2/2 of the error information can be viewed by selecting "Error information" from the Main menu.
Errors cannot be reset from this screen.



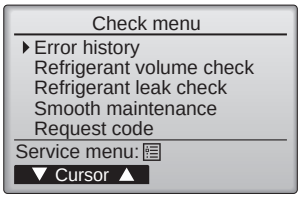
<Check code history>

① Select "Service" from the Main menu, and press the ✓ button.

Select "Check" with the F1 or F2 button, and press the ✓ button.



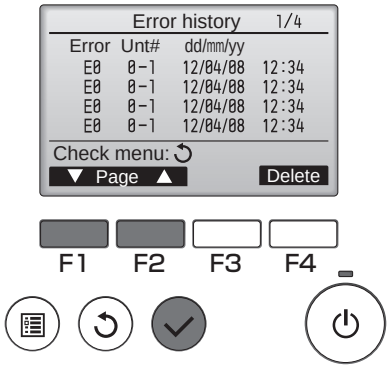
② Select "Check code history" with the F1 or F2 button, and press the ✓ button.



Check code history

③ Select "Check code history" from the Check menu, and press the ✓ button to view up to 16 check code history records.

Four records are shown per page, and the top record on the first page indicates the latest check code record.



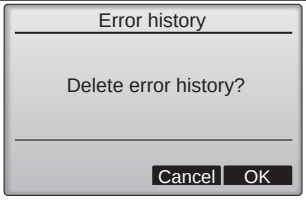
Deleting the check code history

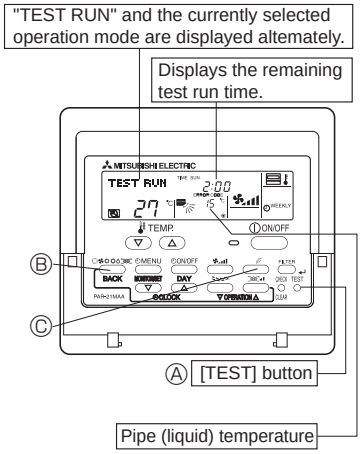
④ To delete the check code history, press the F4 button (Delete) on the screen that shows check code history.
A confirmation screen will appear asking if you want to delete the check code history.

Press the F4 button (OK) to delete the history.

"Check code history deleted" will appear on the screen.

Press the ↺ button to go back to the Check menu screen.





Operating procedures	
1. Turn on the main power supply.	While the room temperature display on the remote controller is “PLEASE WAIT”, the remote controller is disabled. Wait until “PLEASE WAIT” disappears before using remote controller. “PLEASE WAIT” appears for about 2 minutes after power supply is turned on. *1
2. Press Ⓐ TEST button twice.	The TEST RUN appears on the screen.
3. Press Ⓑ OPERATION SWITCH button.	Cooling mode: Check if cool air blows and water is drained. Heating mode: Check if warm air blows. (It takes a little while until warm air blows.)
4. Press Ⓒ AIR DIRECTION button.	Check for correct motion of auto-vanes.
5. Check the outdoor unit fan for correct running.	The outdoor unit features automatic capacity control to provide optimum fan speeds. Therefore, the fan keeps running at a low speed to meet the current outside air condition unless it exceeds its available maximum power. Then, in actuality, the fan may stop or run in the reverse direction depending on the outside air, but this does not mean malfunction.
6. Press the ON/OFF button to reset the test run in progress.	
7. Register the contact number.	

- In case of test run, the OFF timer will be activated, and the test run will automatically stop after two hours.
- The room temperature display section shows the pipe temperature of indoor units during the test run.
- Check that all the indoor units are running properly in case of simultaneous twin and triple operation. Malfunctions may not be displayed regardless of incorrect wiring.

*1 After turning on the power supply, the system will go into startup mode, “PLEASE WAIT” will blink on the display section of the room temperature, and lamp(green) of the remote controller will flash.
As to INDOOR BOARD LED, LED1 will be lit up, LED2 will either be lit up in case the address is 0 or turned off in case the address is not 0. LED3 will blink.
As to OUTDOOR BOARD LED, LED1(green) and LED2(red) will light up. (After the startup mode of the system finishes, LED2(red) will be turned off.)
In case OUTDOOR BOARD LED is digital display, □— and —□ will be displayed alternately every second.

- If one of the above operations does not function correctly, the causes written below should be considered. Find causes from the symptoms.

The below symptoms are under test run mode. “startup” in the table means the display status of *1 written above.

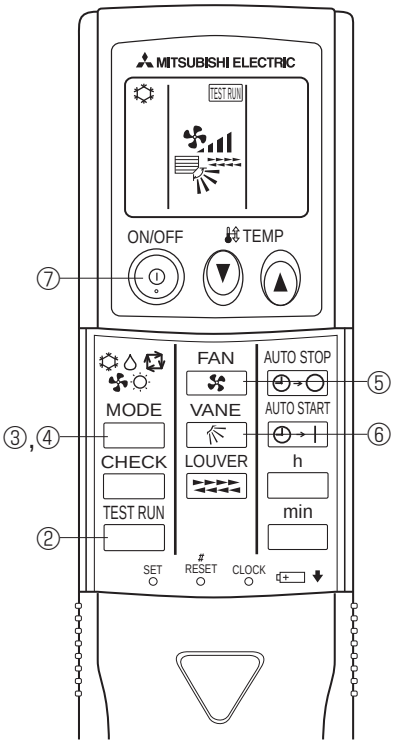
Symptoms in test run mode		Cause
Remote Controller Display	**OUTDOOR BOARD LED Display** < > indicates digital display.	
Remote controller displays “PLEASE WAIT”, and cannot be operated.	After “startup” is displayed, only green lights up. <00>	• After power is turned on, “PLEASE WAIT” is displayed for 2 minutes during system startup. (Normal)
After power is turned on, “PLEASE WAIT” is displayed for 3 minutes, then check code is displayed.	After “startup” is displayed, green(once) and red(once) blink alternately. <F1>	• Incorrect connection of outdoor terminal block (L_1, L_2, L_3 and S1, S2, S3.)
	After “startup” is displayed, green(once) and red(twice) blink alternately. <F3, F5, F9>	• Outdoor unit’s protection device connector is open.
No display appears even when remote controller operation switch is turned on. (Operation lamp does not light up.)	After “startup” is displayed, green(twice) and red(once) blink alternately. <EA. Eb>	• Incorrect wiring between the indoor and outdoor unit (Polarity is wrong for S1, S2, S3.) • Remote controller transmission wire short.
	After “startup” is displayed, only green lights up. <00>	• There is no outdoor unit of address 0. (Address is other than 0.) • Remote controller transmission wire open.
Display appears but soon disappears even when remote controller is operated.	After “startup” is displayed, only green lights up. <00>	• After canceling function selection, operation is not possible for about 30 seconds. (Normal)

Press the remote controller’s CHECK button twice to perform self-diagnosis. See the table below for the contents of LCD display.

LCD	Contents of inferior phenomena	LCD	Contents of inferior phenomena
P1	Abnormality of room temperature thermistor	U1~UP	Malfunction outdoor unit
P2	Abnormality of pipe temperature thermistor/Liquid	F3~F9	Malfunction outdoor unit
P4	Abnormality of drain sensor/Float switch connector open	E0~E5	Remote controller transmitting error
P5	Drain overflow protection is working.	E6~EF	Indoor/outdoor unit communication error
P6	Freezing/overheating protection is working.	----	No check code history
P8	Abnormality of pipe temperature	FFFF	No applied unit
P9	Abnormality of pipe temperature thermistor/Cond./Eva	PA	Forced compressor stop (due to water leakage abnormality)
Fb	Abnormality of indoor controller board		

See the table below for details of the LED display (LED 1, 2, 3) on the indoor controller board.

LED1 (mic oproe s r power s pply	Lights when power is s pplied.
LED2 (remote o ntroller)	Lights when power is s pplied for wired remote o ntroller. The indoor unit s ould be o nnec ed to the outdoor unit with addres "0" s tting.
LED3 (indoor/outdoor o mmunia tion)	Flas when indoor and outdoor unit are o mmunia ting.



Test run [for wireless remote controller]

Measure an impedance between the power supply terminal block on the outdoor unit and ground with a 500V Megger and check that it is equal to or greater than 1.0MΩ.

① Turn on the main power to the unit.

② Press the TEST RUN button twice continuously.
(Start this operation from the status of remote controller display turned off.)
A TEST RUN and current operation mode are displayed.

③ Press the MODE (☼♢♣☼⮌) button to activate COOL ☼ mode, then check whether cool air blows out from the unit.

④ Press the MODE (☼♢♣☼⮌) button to activate HEAT ☼ mode, then check whether warm air blows out from the unit.

⑤ Press the FAN button and check whether strong air blows out from the unit.

⑥ Press the VANE button and check whether the auto vane operates properly.

⑦ Press the ON/OFF button to stop the test run.

Note:

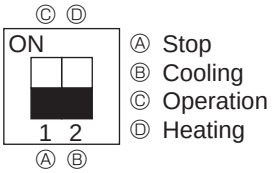
- **Point the remote controller towards the indoor unit receiver while following steps ② to ⑦.**
- **It is not possible to run in FAN, DRY or AUTO mode.**

(2) Outdoor Unit

1) Check Items

- After installation of indoor and outdoor units, and tubing and electric wiring work, check that the unit is free from leaks of refrigerant, loosened connections, and incorrect polarity.
- Check that there is no negative phase and open phase. (The F1 message for negative phase and the F2 message for open phase will flash at digital indicator LED 1 on the outdoor substrate. If this happens, rewire correctly.)
- Measure the impedance between power terminals (Single phase: L,N,⏚/ 3 phase: L1,L2,L3,⏚) and the ground with a 500V Megger and check that it is 1.0MΩ or more. Do not operate the equipment if measurement is less than 1.0mΩ. *Never conduct this operation on the outdoor connection wiring terminals (S1,S2,S3) as this causes damage.
- When there is no error at the outdoor unit.
  (If there is an error at the outdoor unit, it can be evaluated at LED 1 [digital display] of the outdoor substrate.)
- The stop valves are open both the liquid and gas sides.
  After checking the above, execute the test run in accordance with the following.

SW4 (Initial setting)



2) Test run start and finish

- Operation from the indoor unit
  Execute the test run using the installation manual for the indoor unit.
- Operation from the outdoor unit.
  Execute settings for test run start, finish and operation mode (cooling, heating) using the DIP switch SW 4 on the outdoor substrate.

① **Set the operation mode (cooling, heating) using SW4-2.**
② **Turn ON SW 4-1, The operation mode for SW 4-2 will be adhered to, and the test run will commence.**
③ **Turn OFF SW 4-1 to finish the test run.**

- There may be a faint knocking noise emitted from the proximity of the fan during the test run. This is torque fluctuation occurring due to control of fan revolutions. There is no problem with the product.

Note:
The SW 4-2 operation mode cannot be changed during the test run. (To change run mode, stop the equipment with SW 4-1, change the operation mode, then restart test run with SW 4-1.)

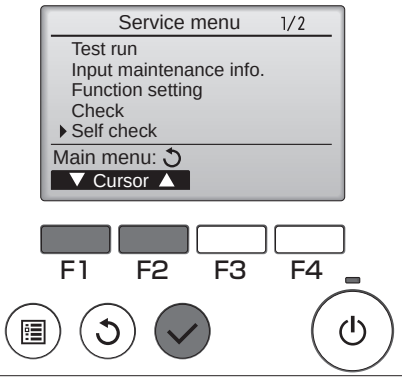
11-3. HOW TO PROCEED "SELF-DIAGNOSIS"

11-3-1. Self-diagnosis <PAR-31MAA>

① Select "Service" from the Main menu, and press the ✓ button.

▼

Select "Self check" with the F1 or F2 button, and press the ✓ button.



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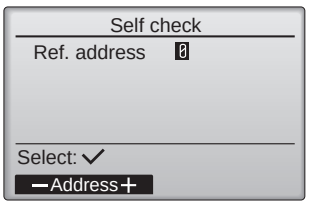
② With the F1 or F2 button, enter the refrigerant address, and press the ✓ button.



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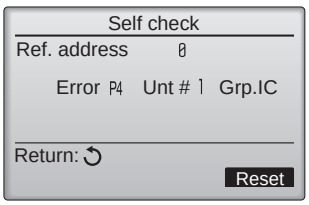
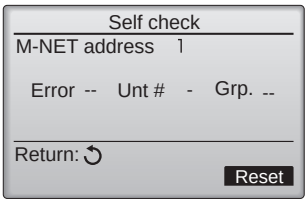
③ Check code, unit number, attribute will appear.
"-" will appear if no check code history is available.



When there is no check code history



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④ <u>Resetting the check code history.</u>

Press the F4 button (Reset) on the screen that shows the check code history.

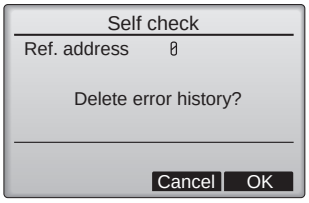
▼

A confirmation screen will appear asking if you want to delete the check code history.

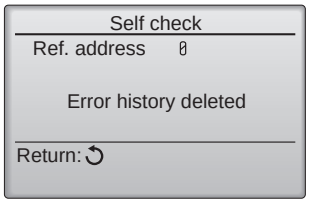
▼

Press the F4 button (OK) to delete the check code history.

If deletion fails, "Request rejected" will appear.
"Unit not ex st" will appear if no indoor units that are correspond to the entered address are found.



▼

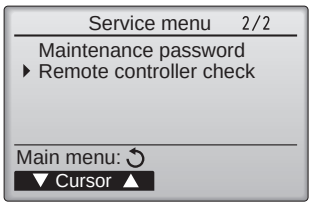


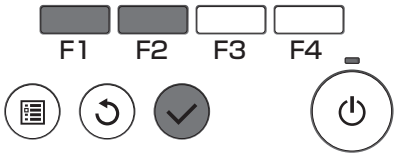
Navigating through the screens
- To go back to the Main menu ..... ▣ button
- To return to the previous screen ..... ↺ button

11-3-2. Remote controller check <PAR-31MAA>

If operations cannot be completed with the remote controller, diagnose the remote controller with this function.

① Select "Service" from the Main menu, and press the ✓ button.

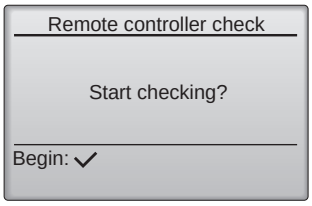




Select "Remote controller check" with the F1 or F2 button, and press the ✓ button.

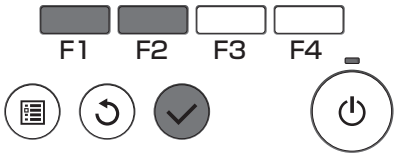
---

② Select "Remote controller check" from the Service menu, and press the ✓ button to start the remote controller check and see the check results.



To cancel the remote controller check and exit the Remote controller check menu screen, press the ☰ or the ↺ button.

The remote controller will not reboot itself.



---

③

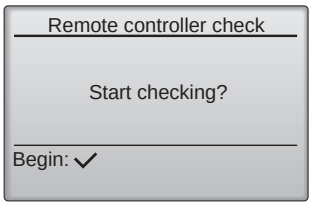
OK: No problems are found with the remote controller. Check other parts for problems.

E3, 6832: There is noise on the transmission line, or the indoor unit or another remote controller is faulty. Check the transmission line and the other remote controllers.

NG (ALL0, ALL1): Send-receive circuit fault. Remote controller needs replacing.

ERC: The number of data errors is the discrepancy between the number of bits in the data transmitted from the remote controller and that of the data that was actually transmitted over the transmission line. If data errors are found, check the transmission line for external noise interference.

Remote controller check results screen

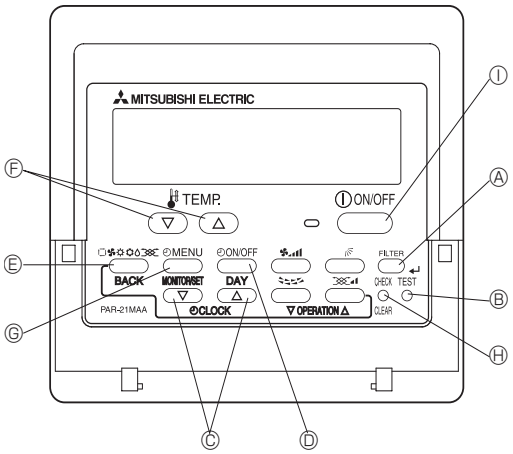


If the ✓ button is pressed after the remote controller check results are displayed, remote controller check will end, and the remote controller will automatically reboot itself.

Check the remote controller display and see if anything is displayed (including lines). Nothing will appear on the remote controller display if the correct voltage (8.5 – 12 VDC) is not supplied to the remote controller. If this is the case, check the remote controller wiring and indoor units.

11-3-3. When a Problem Occurs During Operation

If a problem occurs in the air conditioner, the indoor and outdoor units will stop, and the problem is shown in the remote controller display.
[CHECK] and the refrigerant address are displayed on the temperature display, and the check code and unit number are displayed alternately as shown below.



① If the outdoor unit is malfunctioning, the unit number will be "00".
② In the case of group control, for which one remote controller controls multiple refrigerant systems, the refrigerant address and check code of the unit that first experienced trouble (i.e., the unit that transmitted the check code) will be displayed.
③ To clear the check code, press the (Ⓘ ON/OFF) button.

(Alternating Display)

check code (2 or 4 digits)　　Address (3 digits) or unit number (2 digits)

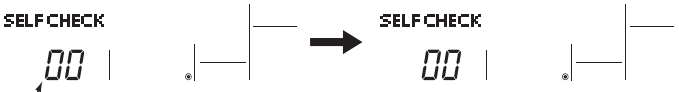
When using remote-/local-controller combined operation, cancel the check code after turning off remote operation. During central control by a MELANS controller, cancel the check code by pressing the (Ⓘ ON/OFF) button.

11-3-4. Self-Diagnosis During Maintenance or Service

Since each unit has a function that stores check codes, the latest check code can be recalled even if it is cancelled by the remote controller or power is shut off.

Check the check code history for each unit using the remote controller.
① Switch to self-diagnosis mode.
Ⓗ Press the (CHECK) button twice within 3 seconds. The display content will change as shown below.

② Set the unit number or refrigerant address you want to diagnose.
Ⓕ Press the [TEMP] buttons ((▽) and (△)) to select the desired number or address. The number (address) changes between [01] and [50] or [00] and [15].



Unit number or refrigerant address to be diagnosed

The refrigerant address will begin to flash approximately 3 seconds after being selected and the self-diagnosis process will begin.

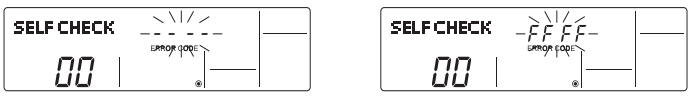
---

③ Display self-diagnosis results.
<When there is check code history>
(For the definition of each check code, refer to the indoor unit's installation manual or service handbook.)

(Alternating Display)

check code (2 or 4 digits)　　Address (3 digits) or unit number (2 digits)

<When there is no check code history>　　<When there is no corresponding unit>



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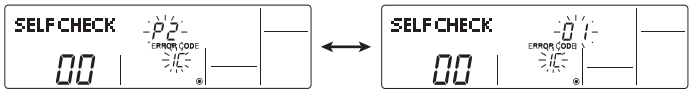
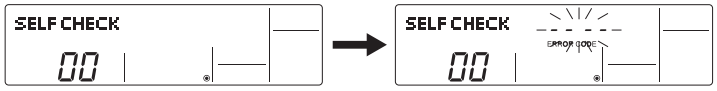
④ Reset the check code history.
Display the check code history in the diagnosis result display screen (see step ③).



Ⓓ Press the (ON/OFF) button twice within 3 seconds. The self-diagnosis address or refrigerant address will flash.

When the check code history is reset, the display will look like the one shown below. However, if you fail to reset the check code history, the error content will be displayed again.



⑤ Cancel self-diagnosis.
Self-diagnosis can be cancelled by the following two methods.

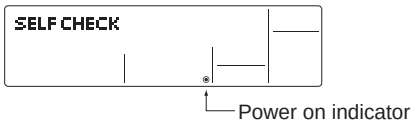
Ⓗ Press the (CHECK) button twice within 3 seconds. → Self-diagnosis will be cancelled and the screen will return to the previous state in effect before the start of self-diagnosis.

⑤ Press the (ON/OFF) button. → Self-diagnosis will be cancelled and the indoor unit will stop.

11-3-5. Remote Controller Diagnosis

If the air conditioner cannot be operated from the remote controller, diagnose the remote controller as explained below.

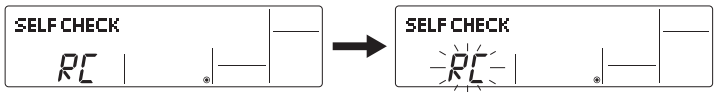
① First, check that the power-on indicator is lit.
If the correct voltage (DC12 V) is not supplied to the remote controller, the indicator will not light.
If this occurs, check the remote controller's wiring and the indoor unit.



② Switch to the remote controller self-diagnosis mode.

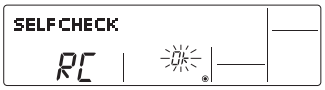
Ⓗ Press the (CHECK) button for 5 seconds or more. The display content will change as shown below.

Ⓐ Press the (FILTER) button to start self-diagnosis.



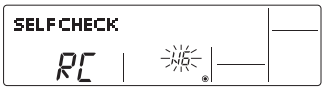
③ Remote controller self-diagnosis result

[When the remote controller is functioning correctly]



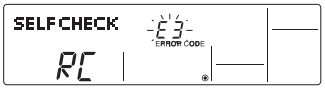
Check for other possible causes, as there is no problem with the remote controller.

[When the remote controller malfunctions]
(Error display 1) "NG" flashes. → The remote controller's transmitting-receiving circuit is defective.



The remote controller must be replaced with a new one.

[Where the remote controller is not defective, but cannot be operated.]
(Error display 2) [E3], [6833] or [6832] flashes. → Transmission is not possible.



There might be noise or interference on the transmission path, or the indoor unit or other remote controllers are defective. Check the transmission path and other controllers.

(Error display 3) "ERC" and the number of data errors are displayed.
→ Data error has occurred.

The number of data errors is the difference between the number of bits sent from the remote controller and the number actually transmitted through the transmission path. If such a problem is occurring, the transmitted data is affected by noise, etc. Check the transmission path.

☞ When the number of data errors is "02":
Transmission data from remote controller
Transmission data on transmission path

④ To cancel remote controller diagnosis

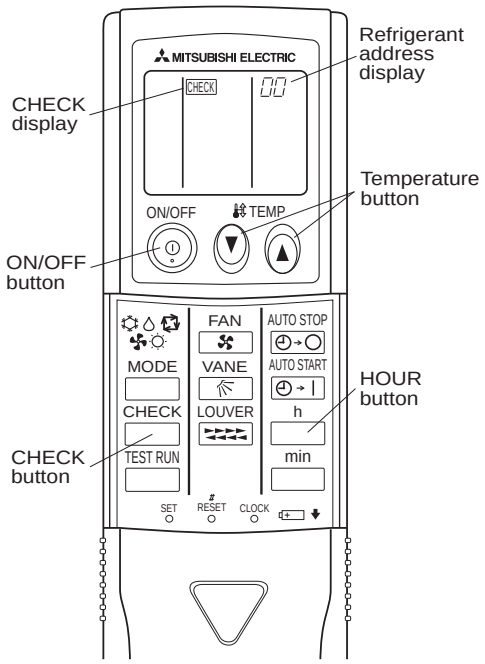
Ⓗ Press the (CHECK) button for 5 seconds or more. Remote controller diagnosis will be cancelled, "PLEASE WAIT" and operation lamp will flash. After approximately 30 seconds, the state in effect before the diagnosis will be restored.

11-3-6. Malfunction-diagnosis method by wireless remote controller

<In case of trouble during operation>

When a malfunction occurs to air conditioner, both indoor unit and outdoor unit will stop and operation lamp blinks to inform unusual stop.

<Malfunction-diagnosis method at maintenance service>

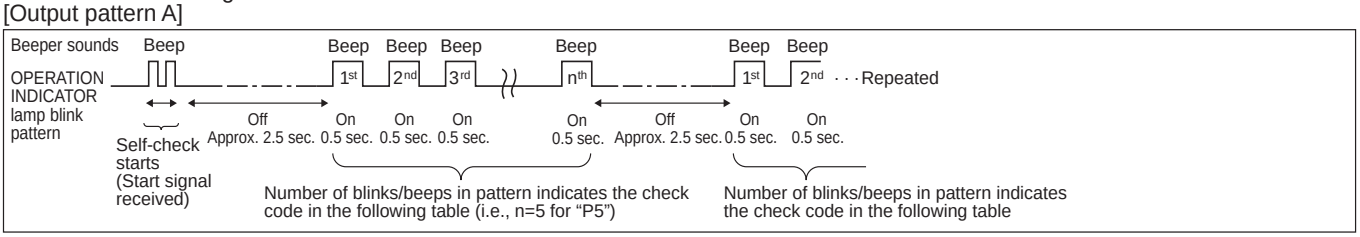


[Procedure]

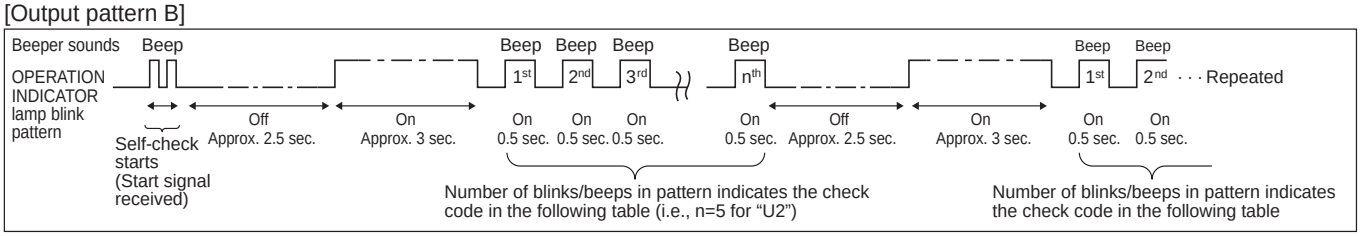
1. Press the CHECK button twice.	• "CHECK" lights, and refrigerant address "00" flashes. • Check that the remote controller's display has stopped before continuing.
2. Press the temperature buttons.	• Select the refrigerant address of the indoor unit for the self-diagnosis. Note: Set refrigerant address using the outdoor unit's DIP switch (SW1). (For more information, see the outdoor unit installation manual.)
3. Point the remote controller at the sensor to the indoor unit and press the HOUR button.	• If an air conditioner error occurs, the indoor unit's sensor emits an intermittent buzzer sound, the operation light flashes, and the check code is output. (It takes 3 seconds at most for check code to appear.)
4. Point the remote controller at the sensor to the indoor unit and press the ON/OFF button.	• The check mode is cancelled.

• Refer to the following tables for details on the check codes.

[Output pattern A]



[Output pattern B]



[Output pattern A] Errors detected by indoor unit

Wireless remote controller / Beeper sounds / OPERATION INDICATOR lamp blinks (Number of times)	Wired remote controller / Check code	Symptom	Remark
1	P1	Intake sensor error	As for indoor unit, refer to indoor unit's service manual.
2	P2	Pipe (TH2) sensor error	
	P9	Pipe (TH5) sensor error	
3	E6,E7	Indoor/outdoor unit communication error	
4	P4	Drain sensor error/Float switch connector open	
5	P5	Drain pump error	
	PA	Forced compressor stop	
6	P6	Freezing/Overheating protection operation	
7	EE	Communication error between indoor and outdoor units	
8	P8	Pipe temperature error	
9	E4, E5	Remote controller signal receiving error	
10	–	–	
11	–	–	
12	Fb	Indoor unit control system error (memory error, etc.)	
–	E0, E3	Remote controller transmission error	
–	E1, E2	Remote controller control board error	

[Output pattern B] Errors detected by unit other than indoor unit (outdoor unit, etc.)

Wireless remote controller / Beeper sounds / OPERATION INDICATOR lamp blinks (Number of times)	Wired remote controller / Check code	Symptom	Remark
1	E9	Indoor/outdoor unit communication error (Transmitting error) (Outdoor unit)	For details, check the LED display of the outdoor controller board.
2	–	–	
3	U3,U4	Open/short of thermistor(TH4/TH3) / Abnormal thermistor (TH6)	
4	UF	Compressor overcurrent interruption (When compressor locked)	
5	U2	Abnormal discharge temperature / Abnormal compressor surface temperature	
6	U1,Ud	Abnormal high pressure (63H operated)/Overheating protection (over-load operation protection / abnormal fan)	
7	–	–	
8	–	–	
9	U6	Compressor overcurrent interruption	
10	–	–	
11	UH	Current sensor error	
12	–	–	
13	–	–	
14	UA, UE, UL	Thermal relay (51C) has been tripped/ Abnormal high pressure (Ball valves close)/ Abnormal low pressure (63L operated)	

Notes

1. If the beeper does not sound again after the initial 2 beeps to confirm the self-check start signal was received and the OPERATION INDICATOR lamp does not come on, there are no error records.
2. If the beeper sounds 3 times continuously "beep, beep, beep (0.4 + 0.4 + 0.4 sec.)" after the initial 2 beeps to confirm the self-check start signal was received, the specified refrigerant address is incorrect.

11-4. SELF-DIAGNOSIS ACTION TABLE

<Abnormalities detected when the power is turned on> *The 4-digit number in parenthesis are the error cord of upper remote controller (M-NET)

Check code*	Meaning of check code and detection method	Case	Judgment and action
None	—	① No voltage is supplied to terminal block (TB1) of indoor unit. a) Power supply breaker is off. b) Contact failure or disconnection of power supply terminal c) L1-phased open phase ② Electric power is not charged to power supply terminal of controller board. a) Contact failure of power supply terminal b) Disconnection of terminal R or 4/S on controller board ③ Defective outdoor controller board a) Fuse 6.3A on controller board is blown. b) Defective parts	① Check following items. a) Power supply breaker b) Connection of power supply terminal block (TB1) c) Connection of power supply terminal block (TB1) ② Check following items. a) Connection of power supply terminal block (TB1) b) Connection of terminal on controller board ③ Replace following items. a) Fuse 6.3A b) Controller board (When items above are checked but the units can not be repaired)
F1 (4103)	**Reverse phase detection, Power supply and indoor/outdoor unit connecting wire converse connection** 1. 3 seconds after power on, judge reverse phase by detecting voltage phase of each phase. 2. Abnormal 4 minutes after power on if power supply and indoor/outdoor unit connecting wire have converse connection.	① L1, L2, L3 are not connected correctly. ② Converse wiring of outdoor power supply line (TB1) and indoor power supply wire (TB4)	① • Check outdoor power supply connection (TB1) • Replace two phases (for example phase L1 and phase L2) out of three phases of outdoor power supply line (TB1) ② Check wiring connection.
F2 (4102)	**L3-phased open phase detection** Detect open phase 2 seconds after power on.	① L3-phased open-phase	① Check power supply.
F3 (5202)	**63L connector open** Abnormal if 63L connector circuit is open for 3 minutes continuously after power supply. 63L: Low-pressure switch (PU(H)-P125, 140 only)	① Disconnection or contact failure of 63L connector on outdoor controller board ② Disconnection or contact failure of 63L ③ 63L is working due to refrigerant leakage or defective parts. ④ Defective outdoor controller board	① Check connection of 63L connector on outdoor controller board. Refer to "11-8. TEST POINT DIAGRAM". ② Check the 63L side of connecting wire. ③ Check refrigerant pressure. Charge additional refrigerant. Check continuity by tester. Replace the parts if the parts are defective. ④ Replace outdoor controller board.
F7 (4118)	**Reverse phase detector circuit (controller board) fault** Abnormal if some of each phase detection signal is not input 3 seconds after power supply.	Defective outdoor controller board	Replace outdoor controller board.
F9 (4119)	**2 or more connectors open** Abnormal if two more out of connector (63L, 51CM) circuits are open for 3 minutes continuously after power on.	① Disconnection or contact failure of connector (63L, 51CM) on outdoor controller board ② Disconnection or contact failure of (63L, 51C) ③ Defective (63L, 51C) (defective parts) ④ Defective outdoor controller board	① Check connection of (63L, 51CM) connector on outdoor controller board. Refer to "11-8. TEST POINT DIAGRAM". ② Check the (63L, 51CM) side of connecting wire. ③ Check continuity by tester. Replace the parts if the parts are defective. ④ Replace outdoor controller board.
FA (4108)	**51CM connector open** Abnormal if 51CM connector circuit is open for 3 minutes continuously after power on. 51CM: Thermal Relay	① Disconnection or contact failure of 51CM connector on outdoor controller board ② Disconnection or contact failure of 51CM ③ Defective 51CM (defective parts) ④ Defective outdoor controller	① Check connecting wire. ② Check connecting wire. ③ Check continuity by tester. Replace the parts if the parts are defective. ④ Replace outdoor controller board.

Check code	Meaning of check code and detection method	Case	Judgment and action
EA (6844)	**Indoor/outdoor unit connector mis-wiring, excessive number of units (5 units or more)** 1. Outdoor controller board can automatically check the number of connected indoor units. Abnormal if the number of connected indoor units can not be set within 4 minutes after power on because of mis-wiring of indoor/ outdoor unit connecting wire and the like. 2. Abnormal if outdoor controller board recognizes exce ssive number of indoor unit.	① Contact failure or mis-wiring of indoor/outdoor unit connecting wire. ② Diameter or length of indoor/ outdoor unit connecting wire is out of specified capacity. ③ Exce ssive number of indoor units are connected to 1 outdoor unit. (5 units or more) ④ Defective transmitting receiving circuit of outdoor controller board ⑤ Defective transmitting receiving circuit of indoor controller board ⑥ Noise has entered into power supply or indoor/outdoor unit connecting wire. ⑦ Remote controller is wired up among indoor units (twin, triple or quadruplet units). ⑧ Two or more outdoor units has refrigerant address “0.” (In case of group control).	① Check disconnection or looseness or polarity of indoor/outdoor unit connecting wire of indoor and outdoor units. ② Check diameter and length of indoor/outdoor unit connecting wire. Outdoor-indoor units’ interval: 50m maximum Indoor-indoor units’ interval: 30m maximum Also check if the connection order of flat cable (VVF etc.) is S1, S2, S3. ③ Check the number of indoor units that are connected to one outdoor unit. (If EA is detected.) ④⑤ Turn the power off, and on again to check. Replace outdoor controller board or indoor controller board if abnormality is displayed again. Check the indoor/ outdoor unit connecting wire. ⑥ Inspect transmission line to solve the problem.
Eb (6845)	**Miswiring of indoor/outdoor unit connecting wire (converse wiring or disconnection)** Outdoor controller board can automatically set the unit number of indoor units. Abnormal if the indoor unit number can not be set within 4 minutes after power on because of miswiring (converse wiring or disconnection) of indoor/outdoor unit connecting wire.	① Contact failure or mis-wiring of indoor/outdoor unit connecting wire ② Diameter or length of indoor/ outdoor unit connecting wire is out of specified capacity. ④ Defective transmitting receiving circuit of outdoor controller board ⑤ Defective transmitting receiving circuit of indoor controller board ⑥ Noise has entered into power supply or indoor/outdoor unit connecting wire. ⑦ Remote controller is wired up among indoor units (twin, triple or quadruplet units). ⑧ Two or more outdoor units has refrigerant address “0.” (In case of group control). ⑨ Outdoor power supply board is defective.	⑦ Wire the remote controller to one of the multiple indoor units. ⑧ Set the refrigerant address of outdoor units with different number starting from “0.” ⑨ Unless the wire has contact failure, disconnect CN2S on indoor power supply board to measure the voltage. When CN2S does not have a current of DC12V to DC16V, replace the indoor power supply board. Note: The descriptions above, ①-⑨, are for EA, Eb and EC.
EC (6846)	**Start-up time over** The unit can not finish start-up process within 4 minutes after power on.	① Contact failure of indoor/ outdoor unit connecting wire ② Diameter or length of indoor/ outdoor unit connecting wire is out of specified capacity. ⑥ Noise has entered into power supply or indoor/outdoor unit connecting wire. ⑦ Remote controller is wired up among indoor units (twin, triple or quadruplet units). ⑧ Two or more outdoor units has refrigerant address “0.” (In case of group control).	
Ed (0403)	**Serial communication error** The communication between outdoor controller board and M-NET P.C. board is not available.	① Breaking of wire or contact failure of connector between outdoor controller board and M-NET P.C. board. ② Contact failure of M-NET P.C. board power supply line ③ Entrance of noise into transmission wire ④ Defective transmitting receiving circuit of M-NET P.C. board ⑤ Defective serial transmitting receiving circuit of outdoor controller board	① Check disconnection, looseness, or breaking of connecting wire between outdoor controller board CN1 and M-NET P.C. board CN5. ② Check departure or looseness of M-NET P.C. board power supply line (CND-TB1). ③ Replace M-NET P.C. board. ④ Replace outdoor controller board.

<table>
<tr><th>Check code</th><th>Meaning of check code and detection method</th><th>Case</th><th>Judgment and action</th></tr>
<tr><td>U1
(1302)</td><td>Abnormal high pressure (High-pressure switch 63H operated)
Abnormal if high-pressure switch 63H operated (more than 4.14 MPa) during compressor operation.
63H: High-pressure switch
Use current sensor to detect work or return of 63H.</td><td>① Short cycle of indoor unit
② Clogged filter of indoor unit
③ Decreased airflow caused by dirt of indoor fan
④ Dirt of indoor heat exchanger
⑤ Locked indoor fan motor
⑥ Malfunction of indoor fan motor
⑦ Defective operation of stop valve (Not full open)
⑧ Clogged or broken pipe
⑨ Locked outdoor fan motor
⑩ Malfunction of outdoor fan motor
⑪ Short cycle of outdoor unit
⑫ Dirt of outdoor heat exchanger
⑬ Disconnection or contact failure of 63H connection
⑭ Defective outdoor controller board
⑮ Defective action of liner expansion valve
⑯ Refrigerant overcharge</td><td>①–⑥ Check indoor unit and repair defectives.
⑦ Check full open stop valve.
⑧ Check piping and repair defectives.
⑨–⑫ Check indoor unit and repair defectives.
⑬,⑭ Turn the power off and check UH display when the power is turned on again.
Follow the UH display if UH is displayed.
⑮ Check linear expansion valve.
Refer to "11-6. HOW TO CHECK THE PARTS".
⑯ Replace refrigerant.</td></tr>
<tr><td>U1</td><td>Abnormal low current or open phase
• An extreme degradation of current value causes abnormal stop.
• Abnormal if current detected phase (V-phase) is open phase after first compressor start-up after supplying the power by three phase power supply model.
• When compressor is operating, compressor is suspended under the following condition: and when current detector (CT) detects a current, which is lower than the detected current specified in the table below, under the following condition:

<Condition>
① For PU/PUH-P71 to P100V
Current detector (CT) has detected a current, which is lower than the detected current specified in the table below, for 0.7-0.8 second.
② For PU/PUH-P71 to P140Y
Current detector (CT) has detected a current, which is lower than the detected current specified in the table below, for 0.4-0.5 second.
<table>
<tr><th>Model</th><th>Detected current</th></tr>
<tr><td>P71V</td><td>2.4 A</td></tr>
<tr><td>P71Y,P100V,P100Y</td><td>1.0 A</td></tr>
<tr><td>P125Y</td><td>1.2 A</td></tr>
<tr><td>P140Y</td><td>1.6 A</td></tr>
</table></td><td>① Shortage of refrigerant
② Abnormal pressure degradation by pump down operation
③ V-phased open phase of compressor
④ Abnormal compressor
Not abnormal if V is instantly displayed when the main power is off.</td><td>① Check if refrigerant pressure is not degraded.
② Check current of compressor operation when abnormality occurred.
③ Check wiring of compressor.

④ Check or replace compressor.</td></tr>
<tr><td>U2
(1102)</td><td>Abnormal high discharging (compressor surface) temperature
Abnormal if discharging (compressor surface) temperature thermistor (TH4) exceeds following temperature during compressor operation.
Normal operation: 115℃ (P71-P100)/
125℃ (P125,P140)
or more for 3 minutes continuously or 135℃
During defrosting: 135℃</td><td>① Over-heated compressor operation caused by shortage of refrigerant
② Defective operation of stop valve
③ Defective thermistor
④ Defective outdoor controller board
⑤ Defective action of linear expansion valve</td><td>① Check intake super heat.
Check leakage of refrigerant.
Charge refrigerant.
② Check if stop valve is full open.

③④ Turn the power off and check if U3 is displayed when the power is turned on again.
When U3 is displayed, refer to “Judgement and action” for U3.
⑤ Check linear expansion valve.
Refer to "11-6. HOW TO CHECK THE PARTS".</td></tr>
<tr><td>U2
(1501)</td><td>Abnormal shortage of refrigerant
Abnormal if intake super heat exceeds following temperature during heating compressor operation.
70℃ or more, and indoor pipe <condenser-evaporator> temperature (TH5) is 35℃ or less.</td><td>① Leakage or shortage of refrigerant
② Defective operation of stop valve (not full open)
③ Defective thermistor (TH4, TH5, TH6)
④ Defective outdoor controller board
⑤ Defective action of electric expansion valve</td><td>① Check leakage of refrigerant.
Charge refrigerant.
② Check if stop valve is full open.
③④ Turn the power off and check if U3 or U4 is displayed when the power is put again.
When U3 or U4 is displayed, refer to “Judgement and action” for U3 or U4.
⑥ Check linear expansion valve.
Refer to "11-6. HOW TO CHECK THE PARTS".</td></tr>
</table>

Check code	Meaning of check code and detection method	Case	Judgment and action
U3 (5104)	**Open/short circuit of discharging (compressor surface) thermistor (TH4)** Abnormal if open (0℃ or less) or short (216℃ or more) is detected during compressor operation. (Detection is inoperative for 5 minutes of compressor starting process and for 10 minutes after defrosting.)	① Disconnection or contact failure of connector (TH4) on the indoor controller board ② Defective thermistor ③ Defective outdoor controller board	① Check contact of connector (TH4) on the indoor controller board. Refer to "11-8. TEST POINT DIAGRAM". Check breaking of the lead wire for thermistor (TH4). Refer to "11-6. HOW TO CHECK THE PARTS". ② Check resistance value of thermistor (Refer to "11-6. HOW TO CHECK THE PARTS"), or check temperature by microprocessor (Mode switch of SW2). ③ Replace outdoor controller board.
U4 (5105) (5107)	**Open/short circuit of the liquid pipe thermistor (TH3) or outdoor Condenser-Evaporator pipe thermistor (TH6)** Abnormal if open (-39℃ or less) or short (88℃ or more) is detected during compressor operation. (Detection is inoperative for 7 minutes after 10 seconds of compressor starting and for 10 minutes after defrosting.)	① Disconnection or contact failure of connector (TH3/TH6) on the indoor controller board ② Defective thermistor ③ Defective outdoor controller board	① Check contact of connector (TH3/TH6) on the indoor controller board. Refer to "11-8. TEST POINT DIAGRAM". Check breaking of the lead wire for thermistor (TH3/TH6). Refer to "11-6. HOW TO CHECK THE PARTS" ② Check resistance value of thermistor (Refer to 11-6.), or check temperature by microprocessor (Mode switch of SW2). ③ Replace outdoor controller board.
U6 (4101)	**Compressor over current (overload) breaking** Abnormal if current value exceeds overload set value during compressor operation. P71V··· 23.5A P71Y··· 7.8A P100V···28.5A P100Y···9.4A P125Y···12.6A P140Y···15.6A	① Gas pipe side ball valve and liquid pipe side stop valve are shut during operation. ② Abnormal compressor ③ Abnormal power supply voltage ④ Overload operation	① Open ball valve and stop valve. ② Check or replace compressor. Refer to "6-2. COMPRESSOR TECHNICAL DATA". ③ Check power supply voltage. ④ Check short cycle.
UA (4101)	**Thermal relay (51C) worked** Abnormal if 51C is open.	① Ball valve and stop valve are closed during operation. ② Abnormal compressor ③ Abnormal power supply voltage ④ Short interruption.	① Open ball valve and stop valve. ② Check or replace compressor. Refer to "6-2. COMPRESSOR TECHNICAL DATA". ③,④Check power supply voltage.
Ud (1504)	**Over heat protection (over-load operation protection/abnormal fan)** Abnormal if pipe thermistor detects the value that exceeds set value during compressor operation. P71-P140···70℃	① In cooling mode: defective outdoor fan (fan motor) or short cycle of air path ② Defective thermistor ③ Defective outdoor controller board	① Check outdoor fan (fan motor) Refer to "11-6. HOW TO CHECK THE PARTS". ②④ Turn the power off and operate again to check if U4 is displayed. If U4 is displayed, follow the U4 processing direction.
UE (1302)	**Abnormal High pressure** This error is detected (4.14MPa) from 63H action within 20 seconds of compressor starting in the first heating mode after power on. 63H: high-pressure switch	① Gas pipe side ball valve and liquid pipe side stop valve are shut during operation. ② Disconnection or contact failure of 63H ③ Defective outdoor controller board ④ Power supply reset is detected while indoor filter clogs and overload heating operation. ⑤ Defective outdoor controller board ⑥ Defective action of linear expansion valve	① Open ball valve and stop valve. ②③ Turn the power off, and operate again to check if F5 is displayed. If F5 is displayed, follow the F5 processing direction. ④ Check indoor filter. ⑤ Replace outdoor controller board. ⑥ Check linear expansion valve. Refer to "11-6. HOW TO CHECK THE PARTS".
UL (1300)	**Abnormal low pressure (63L worked)** Abnormal if connector (63L) is open (under-0.03MPa) during compressor operation.	① Gas pipe side ball valve and liquid pipe side stop valve are shut during operation. ② Disconnection or contact failure of connector (63L) on outdoor controller board ③ Disconnection or contact failure of 63L ④ Defective outdoor controller board ⑤ Leakage or defective of refrigerant ⑥ Defective action of linear expansion valve	① Open ball valve and stop valve. ②③④ Turn the power off and on again to check if F3 is displayed on restarting. If F3 is displayed, follow the F3 processing direction. ⑤ Leakage or defective of refrigerant ⑥ Check linear expansion valve Refer to "11-6. HOW TO CHECK THE PARTS".

Note: E1, E2 and E4 to E7, refer to indoor unit service manual.

Check code	Meaning of check code and detection method	Case	Judgment and action
UF (4100)	**Compressor over current (start-up locked) breaking** Abnormal if compressor current exceeds 1.2 times of overload set value.	① Abnormal compressor ② Clogged indoor filter ③ Open-phase compressor	① Check compressor. Refer to "6-2. COMPRESSOR TECHNICAL DATA". ② Check indoor unit and repair defective. ③ Check connection.
UH (5300)	**Current sensor error** Abnormal if compressor current is not detected on first compressor start-up after power supply is turned on.	① Disconnection or contact failure of connector (52C) on outdoor controller board ② Disconnection or contact failure of coil 52C ③ Defective outdoor controller board ④ Defective parts of 52C ⑤ Compressor V-phased wire does not penetrate through current detector.	①② Check connection. ③ Replace outdoor controller board. ④ Check 52C. ⑤ Check wiring.
E0 (No display)	**Remote controller communication error (Signal receiving error)** (1) Abnormal if any signal from IC of refrigerant address "0" could not normally received for 3 minutes. (2) Abnormal if sub remote controller could not receive any signal for 2 minutes.	① Defective communication circuit of remote controller ② Defective communication circuit of indoor controller board of refrigerant address "0" ③ Noise has entered transmission wire of remote controller. ④ All remote controllers are set as "sub" remote controller. In this case, E4 is displayed at outdoor LED, and E0 is displayed at remote controller. ⑤ Wiring regulations are not observed. • Length of wires • Number of remote controllers • Diameter of wires • Number of indoor units	①②③ Diagnose remote controller Dispose as follows according to diagnosis result. a) When "RC OK" is displayed, Remote controllers have no problem. Turn the power off, and on again to check. If, "PLEASE WAIT" is displayed for 4 minutes or more, replace indoor controller board. b) When "RC NG" is displayed, Replace remote controller. c) When "RC E3" or "ERC 00-66" is displayed, noise may be causing abnormality. ④ Set one of the remote controllers "main", if outdoor LED is E4 while E0 is displayed at remote controller.
E3 (No display)	**Remote controller communication error (Transmitting error)** (1) Abnormal if sub remote controller could not find blank of transmission path for 6 seconds. (2) Abnormal if remote controller could not finish transmitting 30 times continuously.	① Defective communication circuit of remote controller ② Noise has entered transmission wire of remote controller. ③ Two or more remote controllers are set as "main."	
E8 (6840)	**Indoor/outdoor unit communication error (Signal receiving error) (Outdoor unit)** (1) Abnormal if outdoor controller could not receive anything normally for 3 minutes.	① Contact failure of indoor/outdoor unit connecting wire ② Defective communication circuit of indoor controller board ③ Defective communication circuit of indoor controller board ④ Noise has entered indoor/ outdoor unit connecting wire.	① Check disconnection or looseness of indoor/ outdoor unit connecting wire of indoor or outdoor units. ②③④ Turn the power off, and on again to check. Replace indoor controller board or outdoor controller board if abnormality is displayed again.
E9 (6841)	**Indoor/outdoor unit communication error (Transmitting error) (Outdoor unit)** (1) Abnormal if "0" receiving is detected 30 times continuously though indoor controller has transmitted "1". (2) Abnormal if outdoor controller could not find blank of transmission path for 3 minutes.	① Defective communication circuit of outdoor controller ② Noise has entered power supply. ③ Noise has entered indoor/outdoor unit connecting wire. ④ Indoor/outdoor unit connecting wire has contact failure. ⑤ Defective communication circuit between indoor and outdoor unit on indoor controller board	①②③ Turn the power off, and on again to check. Replace outdoor controller board if abnormality is displayed again.

Check code	Meaning of check code and detection method	Case	Judgment and action
EF (6607 or 6608)	**Not defined check code** This code is displayed when not defined check code is received.	① Noise has entered transmission wire of remote controller. ② Noise has entered indoor/ outdoor unit connecting wire.	①② Turn the power off, and on again to check. Replace indoor controller board or outdoor controller board if abnormality is displayed again.
Ed (0403)	**Serial communication error** Abnormal if communication between outdoor controller circuit board and M-NET board is not available.	① Breaking of wire or contact failure of connector between outdoor controller circuit board and M-NET board ② Contact failure of M-NET board power supply line ③ Noise has entered into M-NET transmission wire.	① Check disconnection, looseness, or breaking of connection wire between outdoor controller circuit board (CNMNT) and M-NET board (CN5). ② Check disconnection, looseness, or breaking of connection wire between outdoor controller circuit board (CNMNT) and M-NET board (CND). ③ Check M-NET transmission wiring method.

<M-NET communication error>

Note: "Indoor unit" in the text indicates M-NET P.C. board in outdoor unit.

Check code	Meaning of check code and detection method	Case	Judgment and action
A0 (6600)	**Address duplicate definition** This error is displayed when transmission from the units of same address is detected. Note) The address and attribute displayed at remote controller indicate the controller that detected abnormality.	① There are two or more same address of controller of outdoor unit, indoor unit, FRESH MASTER, or LOSSNAY. ② Noise has entered into transmission signal and signal was transformed.	Search the unit with same address as abnormality occurred. If the same address is found, shut of the power supply of outdoor unit and indoor unit and FRESH MASTER or LOSSNAY at the same time for 2 minutes or more after the address is corrected, and turn the power on again. Check transmission waveform or noise on transmission wire.
A2 (6602)	**Hard ware error of transmission P line** Transmission processor intended to transmit "0", but "1" appeared on transmission wire. Note) The address and attribute display at remote controller indicate the controller that detected abnormality.	① Error is detected if waveform is transformed when wiring works of transmission wire of outdoor unit, indoor unit, FRESH MASTER or LOSSNAY are done, or polarity is changed with the power on and transmission data collide each other. ② Defective transmitting receiving circuit of transmission processor ③ Transmission data is changed by the noise on transmission.	① If the works of transmission wire is done with the power on, shut off the power supply of outdoor unit and indoor unit and FRESH MASTER or LOSSNAY at the same time for 2 minutes or more, and turn the power on again. ② Check transmission waveform or noise on transmission wire.
A3 (6603)	**BUS BUSY** 1. Over error by collision damage Abnormal if transmitting is not possible for 8-10 minutes continuously because of collision of transmission. 2. Data could not reach transmission wire for 8-10 minutes continuously because of noise or etc. Note) The address and attribute displayed at remote controller indicate the controller that detected abnormality.	① Transmission processor could not transmit because short cycle voltage of noise and the like have entered into transmission wire continuously. ② Transmission quantity has increased and transmission is not possible because there was wiring mistake of terminal block for transmission wire (TB3) and terminal block for central control (TB7) in outdoor unit. ③ Transmission are mixed with others and occupation rate on transmission wire rose because of defective repeater (a function to connector or disconnect transmission of control and central control system) of outdoor unit, then abnormality is detected.	① Check if transmission wire of indoor unit, FRESH MASTER, LOSSNAY, or remote controller is not connected to terminal block for central control (TB7) of outdoor unit. ② Check if transmission wire of indoor unit, FRESH MASTER or LOSSNAY is not connected to terminal block for transmission wire of outdoor unit. ③ Check if terminal block for transmission wire (TB3) and terminal block for central control (TB7) is not connected. ④ Check transmission waveform or noise on transmission wire.
A6 (6606)	**Communication error with communication P line** Defective communication between unit processor and transmission processor Note) The address and attribute display at remote controller indicate the controller that detected abnormality.	① Data of transmission processor or unit processor is not transmitted normally because of accidental trouble such as noise or thunder surge. ② Address forwarding from unit processor is not transmitted normally because of defective transmission processor hardware.	Turn off the power supply of outdoor unit and indoor unit and FRESH MASTER or LOSSNAY at the same time for 2 minutes or more, and put the power on again. System returns normally if abnormality was accidental malfunction. If the same abnormality generates again, abnormality-generated controller may be defective.

Check code	Meaning of check code and detection method	Case	Judgment and action
A7 (6607)	**NO ACK** 1. Transmitting side controller detects abnormal if a message was transmitted but there is no reply (ACK) that a message was received. Transmitting side detects abnormality every 30 seconds, six times continuously. Note) The address and attribute displayed at remote controller indicate the controller that did not reply (ACK).	Common factor that has no relation with abnormality source. ① The unit of former address does not exist as address switch has changed while the unit was energized. ② Extinction of transmission wire voltage and signal is caused by over-range transmission wire. • Maximum distance·····200m • Remote controller line····(12m) ③ Extinction of transmission wire voltage and signal is caused by type-unmatched transmission wire. Type····· With shield wire- CVVS, CPEVS With normal wire (no shield)- VCTF, VCTFK, CVV CVS, VVR, VVF, VCT Diameter·····1.25mm² or more ④ Extinction of transmission wire voltage and signal is caused by over-numbered units. ⑤ Accidental malfunction of abnormality-detected controller (noise, thunder surge) ⑥ Defective of abnormality-generated controller	**Always try the followings when the error "A 7" occurs.** ① Turn off the power supply of outdoor unit, indoor unit, and FRESH MASTER or LOSSNAY at the same time for 2 minutes or more, and turn the power on again. If malfunction was accidental, the unit returns to normal. ② Check address switch of abnormality-generated address. ③ Check disconnection or looseness of abnormality-generated or abnormality-detected transmission wire (terminal block and connector). ④ Check if tolerance range of transmission wire is not exceeded. ⑤ Check if type of transmission wire is correct or not. If there were some troubles of ①–⑤ above, repair the defective, then turn off the power supply of outdoor unit and indoor unit and FRESH MASTER or LOSSNAY at the same time for 2 minutes or more, and turn the power on again. • If there was no trouble with ①–⑤ above in single refrigerant system (one outdoor unit), controller of displayed address or attribute is defective. • If there was no trouble with ①–⑤ above in different refrigerant system (two or more outdoor units), judge with ⑥. ⑥ If address of abnormality source is the address that should not exist, there is the unit that memorizes nonexistent address information. Delete useless address information with manual setting function of remote controller. Only the system FRESH MASTER or LOSSNAY are connected to, or the system that is equipped with group setting of different refrigerant system. If there was no trouble with ①–⑥ above, replace the controller board of displayed address or attribute. If the unit does not return normally, multi-controller board of outdoor unit may be defective (repeater circuit). Replace multi-controller board one by one to check if the unit returns normally.
	2. If displayed address or attribute is outdoor unit, indoor unit detects abnormality when indoor unit transmitted to outdoor unit and there was no reply (ACK).	① Contact failure of transmission wire of outdoor unit or indoor unit ② Disconnection of transmission connector (CN2M) of outdoor unit ③ Defective transmitting receiving circuit of outdoor unit or indoor unit	
	3. If displayed address or attribute is indoor unit, remote controller detects abnormality when remote controller transmitted to indoor unit and there was no reply (ACK).	① During group operation with indoor unit of multi- refrigerant system, if remote controller transmit to indoor unit while outdoor unit power supply of one refrigerant system is off or within 2 minutes of restart, abnormality is detected. ② Contact failure of transmission wire of remote controller or indoor unit ③ Disconnection of transmission connector (CN2M) of indoor unit ④ Defective transmitting receiving circuit of indoor unit or remote controller	
	4. If displayed address or attribute is remote controller, indoor unit detects abnormality when indoor unit transmitted to remote controller and there was no reply (ACK).	① During group operation with indoor unit of multi- refrigerant system, if indoor unit transmit to remote controller while outdoor unit power supply of one refrigerant system is off or within 2 minutes of restart, abnormality is detected. ② Contact failure of transmission wire of remote controller or indoor unit ③ Disconnection of transmission connector (CN2M) of indoor unit ④ Defective transmitting receiving circuit of indoor unit or remote controller	

Continued to the next page.

From the previous page.

Check code	Meaning of check code and detection method	Case	Judgment and action
A7 (6607)	5. If displayed address or attribute is FRESH MASTER, Indoor unit detects abnormality when indoor unit transmitted to FRESH MASTER and there was no reply (ACK).	① During sequential operation of indoor unit and FRESH MASTER of other refrigerant system, if indoor unit transmits to FRESH MASTER while outdoor unit power supply of same refrigerant system with FRESH MASTER is off or within 2 minutes of restart, abnormality is detected. ② Contact failure of transmission wire of indoor unit or FRESH MASTER ③ Disconnection of transmission connector (CN2M) of indoor unit or FRESH MASTER ④ Defective transmitting receiving circuit of indoor unit or FRESH MASTER	**Same as mentioned in "A 7" of the previous page**
	6. If displayed address or attribute is LOSSNAY, Indoor unit detects abnormality when indoor unit transmitted to LOSSNAY and there was no reply (ACK).	① If the power supply of LOSSNAY is off, indoor unit detects abnormality when it transmits to LOSSNAY. ② During sequential operation of indoor unit and LOSSNAY of other refrigerant system, if indoor unit transmits to LOSSNAY while outdoor unit power supply of same refrigerant system with LOSSNAY is off or within 2 minutes of restart, abnormality is detected. ③ Contact failure of transmission wire of indoor unit of LOSSNAY ④ Disconnection of transmission connector (CN2M) of indoor unit ⑤ Defective transmitting receiving circuit of indoor unit or LOSSNAY	
	7. If displayed address or attribute is non-existent	① The unit of former address does not exist as address switch has changed while the unit was energized. ② Abnormality is detected when indoor unit transmitted because the address of FRESH MASTER and LOSSNAY are changed after sequential operation of FRESH MASTER and LOSSNAY by remote controller.	
A8 (6608)	**M-NET• NO RESPONSE** Abnormal if a message was transmitted and there were reply (ACK) that message was received, but response command does not return. Transmitting side detects abnormality every 30 seconds, six times continuously. Note) The address and attribute displayed at remote controller is indicate the controller that did not reply (ACK).	① Transmitting condition is repeated fault because of noise and the like. ② Extension of transmission wire voltage and signal is caused by over-range transmission wire. • Maximum distance·····200m • Remote controller line····(12m) ③ Extension of transmission wire voltage and signal is caused by type-unmatched transmission wire. Type····· With shield wire- CVVS, CPEVS With normal wire (no shield)- VCTF, VCTFK, CVV CVS, VVR, VVF, VCT Diameter.....1.25mm^2 or more ④ Accidental malfunction of abnormality-generated controller	① Check transmission waveform or noise on transmission wire. ② Turn off the power supply of outdoor unit and indoor unit and FRESH MASTER or LOSSNAY at the same time for 2 minutes or more, and turn the power on again. If malfunction was accidental, the unit returns to normal. If the same abnormality generates again, controller of displayed address and attribute may be defective.

11-5. TROUBLESHOOTING OF PROBLEMS

<table>
<tr><th colspan="5">Phenomena</th><th>Factor</th><th>Countermeasure</th></tr>
<tr><td colspan="5">(1) Remote controller display does not work.
(Electric current marker " ⦿ " is not displayed on the remote controller.)

Reference (Meaning of the indoor control board LED)
LED1 : Microprocessor power supply
....Display of DC14V is supply or not from indoor power.
LED2 : Power output supplied to remote controller
....Displays the power condition supplied to wired remote controller. When the refrigerant address is “0” supplied power output ON.
LED3 : Indoor outdoor communication monitor
....Blinking, when receiving the signal normally from the outdoor unit.</td><td></td><td></td></tr>
<tr><td></td><td></td><td colspan="3">Indoor control P.C. board LED</td><td></td><td></td></tr>
<tr><td></td><td></td><td>LED1</td><td>LED2</td><td>LED3</td><td></td><td></td></tr>
<tr><td></td><td>①</td><td>off</td><td>off</td><td>off</td><td>① Main power is not turned on. (Power supply inferior)
② Mis-wiring, breaking or contact failure of the connecting line</td><td>① Check the power wiring to the outdoor unit and the breaker.
② Check for incorrect wiring, wiring breaks and poor connections between the indoor and outdoor units.</td></tr>
<tr><td></td><td>②</td><td>Lighting</td><td>off</td><td>off
(or blinking)</td><td>① Refrigerant address exce pts “0”
② Mis-wiring, breaking or contact failure of the connecting line</td><td>① Set the refrigerant address to "0" (only 1 refrigerant can be "0" for group control).
② Check for incorrect wiring, wiring breaks and poor connections between the indoor and outdoor units.</td></tr>
<tr><td></td><td>③</td><td>Lighting</td><td>Blinking
(or lighting)</td><td>–</td><td>① Short circuit, miswiring and breaking</td><td>① Check for shorts, incorrect wiring and wiring breaks in the remote controller wires.
② Replace the remote controller if the voltage to the remote controller terminal block (TB6) is between 10 and 16V DC.</td></tr>
<tr><td colspan="5" rowspan="2">(2) Remaining “PLEASE WAIT” display on the remote controller</td><td>① At longest 2 minutes after the power supply “PLEASE WAIT” is displayed to start up.</td><td>Normal operation</td></tr>
<tr><td>① Communication fault between the remote controller and indoor
② Communication fault between the indoor and outdoor
③ Outdoor unit protection device is opened.
(Check code will be displayed after 2 to 6 minutes.)</td><td>Turn the power supply OFF/ON, and check the following:
① If an error is displayed on the remote controller or outdoor unit's LED within 6 minutes: Refer to the self-diagnosis table to take appropriate action.
② If "H0" display remains for 6 minutes: Failure in indoor control PCB or remote controller</td></tr>
<tr><td colspan="5">(3) When pressing the remote controller operation switch the OPERATION display is appeared but it will be turned off soon.</td><td>① After cancelling to select function from the remote controller, the remote controller operation switch will be not accepted for approx 30 seconds.</td><td>Normal operation</td></tr>
<tr><td colspan="5">(4) Even controlling by the wireless remote controller no beep and not working (Display is available on the wireless remote controller.)</td><td>① The pair number settings of the wireless remote controller and indoor control PCB are mismatched
② Disconnecting of wireless receiving board and contact failure
③ Factor of the above (1)</td><td>① Check the pair number settings.
② Check the indoor controller board connector (CN90).
Check the wireless receiving board connector (CNB).
③ Check the details of above (1).</td></tr>
<tr><td colspan="5">(5) When operating by the wireless remote controller, beep sound is heard without working.</td><td>① No operation for max 2 minutes after the power supply ON
② Remote operation is prohibited.
• Remote controlling adaptor is connected to the indoor controller board (CN32).
• Remote operation is prohibited by centralised controller etc. since it is connected to MELANS.
③ Factor of the above (2)</td><td>① Normal operation
② Normal operation
③ Check the details of above (2).</td></tr>
</table>

Phenomena	Factor	Countermeasure
(6) Upward/downward vane performance fault	① When the unit is as follows in the HEAT mode, the vane is not downward. (Working of COOL protection function) • During HEAT preparation • During defrosting • During compressor stop ② When setting the downward vane in the cool/dry mode, the vane changes to Horizontal position after 1 hour ③ Vane motor does not rotate. A) Vane motor fault B) Disconnecting, breaking and contact fault of the connector C) Setting to no vane unit ④ Standard position reading fault (Vane motor does not stop.) A) Limited switch fault B) Disconnecting breaking and contact fault of the connector ✻ Only AC timing motor adopting mode (No limited switch for stepping motor adopting model)	① Normal operation ② Normal operation ③ A) Vane motor resistance value check B) Disconnecting, breaking, and contact fault of the connector Stepping motor adopting model .... CN6V check AC timing motor adopting model .... CNV check C) Check the setting details by selecting the remote controller function. Setting check of the indoor controller board J11 to J15 (SW1). ④ A) Limited switch (LS) conductance check B) Check the removing of indoor controller board (CN23), breaking line and contact fault.
(7) Left/right louver performance fault	① Louver motor fault ② Disconnecting, breaking and contact fault of the connector	① Louver motor resistance value check ② Check the removing of indoor controller board (CNL) breaking line and contact fault.
(8) Though the remote controller display is normal in cool mode, the capacity is not enough.	① Filter clogging (dirt) ② Heat exchanger clogging (dirt) ③ Air duct short cycle ④ Refrigerant shortage ⑤ Operation failure in electronic expansion valve ⑥ Thermistor connection failure ⑦ Incorrect piping size ⑧ Piping is too long.	① Open the grille to check the filter. Clean the filter and remove dust or dirt away. ② Clean the heat exchanger. Lowering the indoor piping temperature and intake pressure means clogging in the heat exchanger. ③ Remove screen in the air duct (air outlet/intake). ④ Check if gas leaks or not in the piping joint. ⑤,⑥ Check the refrigerant circuit operation status. ⑦ Check the piping size. ⑧ Check the capacity loss characteristic for the piping length.
(9) Though the remote controller display is normal in Heat mode, the capacity is not enough.	① Filter clogging (dirt) ② Heat exchanger clogging (dirt) ③ Air duct short cycle ④ Refrigerant shortage ⑤ Outdoor unit bypass circuit failure ⑥ Indoor reverse check valve failure Reverse check valve failure may cause refrigerant leakage and restrictor failure. ⑦ Heat insulator of refrigerant pipes is defective. ⑧ Malfunction of LEV ⑨ Loose connection in thermistor	① Open the grille to check the filter. Clean the filter and remove dust or dirt away. ② Clean the heat exchanger. Rising the indoor piping temperature and outlet pressure means clogging in the heat exchanger. ③ Remove screen in the air duct (air outlet/intake). ④ Check if gas leaks or not in the piping joint. ⑤ Operating condition check in the refrigerant cycle. ⑥ Since outlet temperature and indoor heat exchanger temperature does not rise, measure the outlet pressure and determine the countermeasure. ⑦ Check the heat insulator. ⑧,⑨ Check the function of refrigerant circuit.

[For wired remote controller]

Check the following table to see whether there is a simple solution to your problem.

Problem	Solution
The room neither gets cool nor warm very much.	Clean the filter. (Dust and debris that are collected in the filter will decrease air-flow.)
	Check the temperature setting and adjust it if necessary.
	Increase the space surrounding the outdoor unit.
	Is the air intake or air outlet blocked?
	Is a window or door open?
The unit does not blow air out right away in the heating mode.	The unit is preparing to deliver warm air.
The unit stops operating before arriving at the set temperature in the heating mode.	Frost forms when the outdoor temperature is low and humidity is high. Wait for about 10 minutes for the frost to melt.
The airflow direction suddenly changes.	After 1 hour of cooling-mode operation with the airflow in a downward direction, the unit will automatically change to the “Horizontal air-flow” mode. This is to prevent any moisture that may have collected from dripping.
	When the unit is in the heating or defrosting mode, it will automatically change to the “Horizontal airflow mode”. The vanes will go through a test run before they situate into the specified angle.
Air direction does not move (change). (Up/down vane, left/right louver)	1) Check whether the vane has been set to a fixed position (check whether the vane motor connector has been removed). 2) Check whether the unit has a function for switching the air direction. If the unit does not have this function, "FUNCTION DOESN'T EXIST" appears when you press the remote control's UP/DOWN VANE or LOUVER button.
When changing the airflow direction, the vanes make at least a complete rotation before stopping in place.	The vanes will go through a test run before they situate into the specified angle.
There is a “swishing” noise that occurs from the unit when water flows.	This sound is made when refrigerant inside of the unit is flowing or refilling.
Unit occasionally makes a gurgling sound.	Not an error. This sound is caused by the flow of the refrigerant in the air conditioner being switched.
Unit occasionally thuds.	Not an error. This sound is emitted when the air conditioner (outdoor unit) starts operating.
Outdoor unit occasionally rattles.	Not an error. This sound is caused by the blower air volume control that the outdoor unit performs to maintain the optimum operation status.

Problem	Solution
A ticking noise is heard from inside of the unit.	This sound is made when internal parts of the unit expand or contract when the temperature changes.
An odour is detected in the room.	This is caused when the unit expels odours that have been absorbed from the walls, carpets, furniture or clothing.
A white mist is expelled from the indoor unit.	This may occur just after the unit is turned on when a high level of humidity is present in the room.
Water or moisture is expelled from the outdoor unit.	This occurs to expel water or moisture that may have collected in the pipes or around piping fixtures.
	This occurs to dispel water from the heat exchanger.
The indicators of the remote controller do not light up when operated.	Turn on the power switch “ ◉ “ will be displayed.
CENTRALLY CONTROLLED indicator is displayed in the remote controller.	The start and stop function of the remote controller are not available when the CENTRALLY CONTROLLED indicator is displayed.
The start and stop functions are not available just after restarting the unit.	Wait about three minutes (operation has stopped to prevent damage to the air conditioner).
Fan speed does not match set fan speed during DRY operation. (Sometimes no air comes out during DRY operation.)	Not an error. During the DRY operation, blower ON/OFF is controlled by a microprocessor to prevent overcooling and to ensure efficient dehumidification. The fan speed can't be set by the remote controller during DRY operation.
Fan speed does not match set fan speed during HEAT operation. (Sometimes no air comes out during HEAT operation.)	Not an error. 1) When the HEAT operation starts, to prevent the unit from emitting cold air, the fan speed is gradually increased from zero to the set speed, in proportion to the temperature rise of the air emitted. 2) When the room temperature reaches the set temperature and the outdoor unit stops, the unit starts the LOW AIR operation. 3) During the HEAT operation, the DEFROST operation is performed to melt the frost adhering to the outdoor unit. During the DEFROST operation, the blower is stopped to prevent cold air coming from the indoor unit.
Air sometimes comes out when operation is stopped after HEAT operation.	Not an error. The blower operates to eliminate the residual heat in the heated air conditioner. It stops after about 1 minute. This operation is performed when operation is stopped with the electric heater ON.

Problem	Solution
The unit started even though the start/stop button was not pushed.	Is this timer on? Press the start/stop button to stop the unit.
	Was a distant commend sent from the remote controller? Find out if the remote controller was used.
	Is the CENTRALLY CONTROLLED indicator displayed? Find out if the remote controller was used.
	Is the automatic (cooling/heating) mode selected? Press the start/ stop button to stop the unit.
The unit stopped even though the start/stop button was not pushed.	Is the timer on? Press the start/stop button to restart the unit.
	Was a distant command sent from the remote controller? Find out if the remote controller was used.
	Is the CENTRALLY CONTROLLED indicator displayed? Find out if the remote controller was used.
The remote controller`s timer cannot be set.	Set the schedule timer if one is connected.
"FILTER" is displayed.	Indicates that it is time to clean the air filter. Clean the air filter. Press the FILTER button on the remote controller twice to make the display disappear. See the instruction manual that came with the product for how to clean the filter.
"STAND BY" is displayed.	Displayed when the unit starts HEAT operation, when the air conditioning function puts the compressor in operation mode, or when the outdoor unit ends DEFROST operation and returns to HEAT operation. The display disappears after about 10 minutes. "STAND BY" displayed on the remote controller indicates that the indoor unit's heat exchanger hasn't fully heated up, so the blower air volume is restricted. To prevent cold air from being felt at this time, the up/down vane is automatically set to horizontal blow. When "STAND BY" is released, the up/down vane returns to the setting specified by the remote controller.

Problem	Solution
"DEFROST" is displayed (no air comes out the unit).	Frost adheres to the outdoor unit when the outside air temperature is low and the humidity is high. This display indicates that the DEFROST operation is being performed to melt this frost. The DEFROST operation ends after about 10 minutes (15 minutes maximum). During the DEFROST operation, the indoor unit's heat exchanger becomes cold, so the blower is stopped. The up/down vane is automatically set to horizontal blow. When the DEFROST operation ends, the unit switches to the HEAT SETUP operation.
A check code is displayed in the remote controller.	A self-diagnostic function is being performed to preserve the air conditioner. * Do not attempt to make repairs yourself. Turn the main switch off and contact the dealer from whom you bought the air conditioner. Provide him or her with the name of the unit and the information displayed in the remote controller.
No display appears on the wireless remote controller. Signals are not received by the thin sensor unless sent from close up.	The batteries are becoming weak. Replace the batteries and press the reset button. * If the display does not appear after replacing the batteries, make sure that the (+,–) cells are aligned correctly.
The operating display of the wireless remote controller`s receiver is flashing.	A self-diagnostic function is being performed to preserve the air conditioner. * Do not attempt to make repairs yourself. Turn the main switch off and contact the dealer from whom you bough the air conditioner. Provide him or her with the name of the unit.

[For wireless remote controller]

Check the following table to see whether there is a simple solution to your problem.

Problem	Display reading	Cause	Solution
Unit does not operate at all.	When POWER ON/OFF button is pushed, there is not beep and nothing is displayed.	Main power switch is turned off.	Turn the main power ON. Then press the POWER ON/OFF button to turn the unit on.
		Main power fuse has blown.	Replace the fuse.
		Outdoor unit`s ground fault breaker is open.	Replace the ground fault breaker.
		A power cut has occurred (see NOTE below).	Wait until power is restored, then press the POWER ON/OFF button to turn the unit on.
Unit discharges air well, but fails to cool or heat the room well.	Liquid-crystal display indicates that the unit operates.	Improper temperature setting.	After checking the temperature setting.
		Filters are clogged.	Clean the filter and resume operation.
		Outdoor unit`s intake or outlet is obstructed.	Remove the obstruction.
		A door or window has been open.	Shut door or window.
Unit does not start immediately.	Liquid-crystal display indicates that the unit operates.	Unit is waiting 3 minutes before restarting.	Shut door or window. Wait until the unit restarts automatically. The compressor may hesitate resuming because a 3-minute resume prevention circuit is incorporated in the outdoor unit for protection of the compressor.

NOTE: After a power cut, the unit will not restart automatically. You will have to restart it by pressing the POWER - ON/OFF button on the remote controller.

If none of the above apply, turn the main switch off and contact the dealer from whom you bought the air-conditioner, telling him the model name and the nature of the problem. Do not try to fix the unit yourself.

In any of the following cases, turn off the main power switch and contact your local dealer for service:

- The operation lamp (on the main unit) flashes.
- The switches do not work properly.
- The circuit breaker trips frequently (or the fuse blows frequently).
- Water has accidentally been splashed into the unit.
- Water leaks from the unit.
- Something is accidentally dropped into the air-conditioner.
- An unusual noise is heard during operation.

The following do not indicate any malfunction:

· Odours : Smells such as tobacco or cosmetic odours may persist after they have been sucked into the unit.

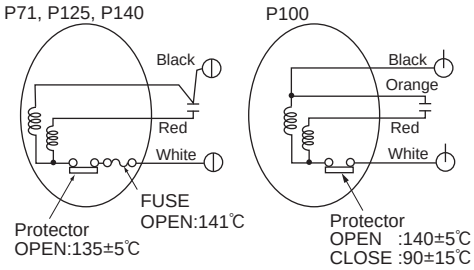
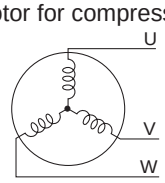
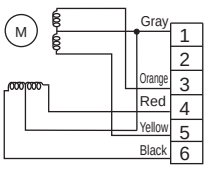
· Sound of liquid flowing inside indoor unit : This can occur during or after operation and is simply the sound of refrigerant being circulated inside the unit.

· Ticking sound coming from indoor unit : This can occur when cooling or heating has just begun or has just stopped. It is caused by the indoor unit shrinking or expanding slightly due to the change in temperature.

· The CENTRALLY CONTROLLED indicator appearing on the LCD panel : From time to time, this message may come up on the LCD panel. This does not indicate any malfunction.

11-6. HOW TO CHECK THE PARTS

PU(H)-P71VHA(1).UK PU(H)-P100VHA(1).UK PU(H)-P71YHA(1).UK PU(H)-P100YHA(1).UK
PU(H)-P125YHA(1).UK PU(H)-P140YHA(1).UK
PU(H)-P71VHA#2.UK PU(H)-P100VHA#2.UK PU(H)-P71YHA#2.UK PU(H)-P100YHA#2.UK
PU(H)-P125YHA#2.UK PU(H)-P140YHA#2.UK
PU(H)-P71VHAR3.UK PU(H)-P100VHAR3.UK PU(H)-P71YHAR3.UK PU(H)-P100YHAR3.UK
PU(H)-P125YHAR3.UK PU(H)-P140YHAR3.UK
PU(H)-P125YHAR4.UK PU(H)-P140YHAR4.UK
PU(H)-P125YHAR5.UK PU(H)-P140YHAR5.UK
PU(H)-P125YHAR6.UK PU(H)-P140YHAR6.UK

<table>
<tr><th>Parts name</th><th>Check points</th></tr>
<tr><td>Thermistor (TH3)
<Liquid Temp.>
Thermistor (TH4)
<Discharge, Compressor surface>
Thermistor (TH6)
<2-phase Pipe Temp., Cond./eva.></td><td>Disconnect the connector then measure the resistance with a tester.
(Surrounding temperature 10℃ to 30℃)
<table><tr><th></th><th>Normal</th><th>Abnormal</th></tr><tr><td>TH4</td><td>160kΩ to 410kΩ</td><td rowspan="2">Open or short</td></tr><tr><td>TH3
TH6</td><td>4.3kΩ to 9.6kΩ</td></tr></table></td></tr>
<tr><td>FAN MOTOR(MF)
 
</td><td>Measure the resistance between the terminals with a tester.
(Surrounding temperature 20℃)
<table><tr><th rowspan="2">Motor lead wire</th><th colspan="2">Normal</th><th rowspan="2">Abnormal</th></tr><tr><th>P71, P125, P140</th><th>P100</th></tr><tr><td>White — Black</td><td>82.5Ω ±10%</td><td>44.5Ω ±7%</td><td rowspan="2">Open or short</td></tr><tr><td>White — Red</td><td>102.0Ω ±10%</td><td>43.7Ω ±7%</td></tr></table></td></tr>
<tr><td>Solenoid valve coil (21S4)
<Four-way valve></td><td>Measure the resistance between the terminals with a tester.
(Surrounding temperature 20℃)
<table><tr><th colspan="2">Normal</th><th>Abnormal</th></tr><tr><td>P71,P100</td><td>P125,P140</td><td rowspan="2">Open or short</td></tr><tr><td>1500 ± 150Ω</td><td>1435 ± 150Ω</td></tr></table></td></tr>
<tr><td>Motor for compressor (MC)
 
</td><td>Measure the resistance between the terminals with a tester.
(Winding temperature 20℃)
<table><tr><th>Normal</th><th>Abnormal</th></tr><tr><td>Refer to “6-2. COMPRESSOR TECHNICAL DATA”.</td><td>Open or short</td></tr></table></td></tr>
<tr><td>Linear expansion valve (LEV)
 
</td><td>Disconnect the connector then measure the resistance with a tester.
(Winding temperature 20℃)
<table><tr><th colspan="4">Normal</th><th>Abnormal</th></tr><tr><td>Gray - Black</td><td>Gray - Red</td><td>Gray - Yellow</td><td>Gray - Orange</td><td rowspan="2">Open or short</td></tr><tr><td colspan="4">46 ± 3Ω</td></tr></table></td></tr>
<tr><td>Solenoid valve coil (SV)
<Bypass valve>
For P125, P140</td><td>Measure the resistance between the terminals with a tester.
(Surrounding temperature 20℃)
<table><tr><th>Normal</th><th>Abnormal</th></tr><tr><td>1450 ± 150Ω</td><td>Open or short</td></tr></table></td></tr>
<tr><td>CRNKCASE HEATER (CH)</td><td>Measure the resistance between the terminals with a tester.
<table><tr><th>Normal</th><th>Abnormal</th></tr><tr><td>P71,P100,P125,P140</td><td rowspan="2">Open or short</td></tr><tr><td>2304Ω ± 7%</td></tr></table></td></tr>
</table>

11-7. HOW TO CHECK THE COMPONENTS

<Thermistor feature chart>

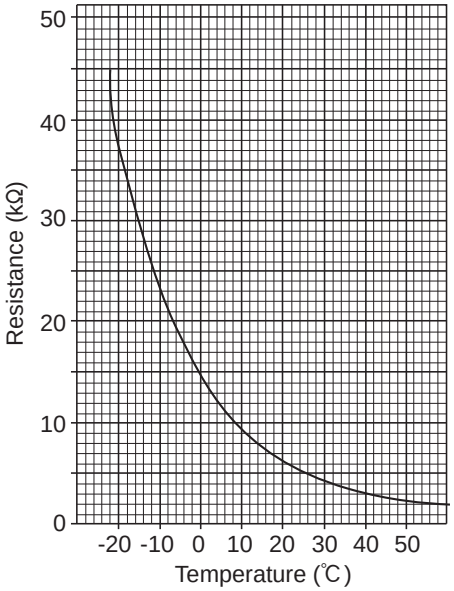
Low temperature thermistors

- Thermistor <Liquid Temp.> (TH3)
- Thermistor <2-phase pipe, Cond./eva.> (TH6)

Thermistor R0 = 15kΩ ± 3%
B constant = 3480 ± 2%

$$R_t = 15\exp\{3480(\frac{1}{273+t} - \frac{1}{273})\}$$

0℃	15kΩ	30℃	4.3kΩ
10℃	9.6kΩ	40℃	3.0kΩ
20℃	6.3kΩ		
25℃	5.2kΩ		



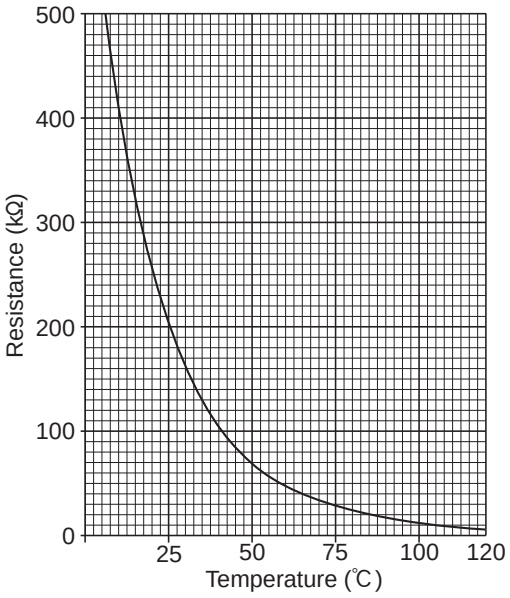
High temperature thermistor

- Thermistor <Discharge, Compressor Surface Temp.> (TH4)

Thermistor R120 = 7.465kΩ ± 2%
B constant = 4057 ± 2%

$$R_t = 7.465\exp\{4057(\frac{1}{273+t} - \frac{1}{393})\}$$

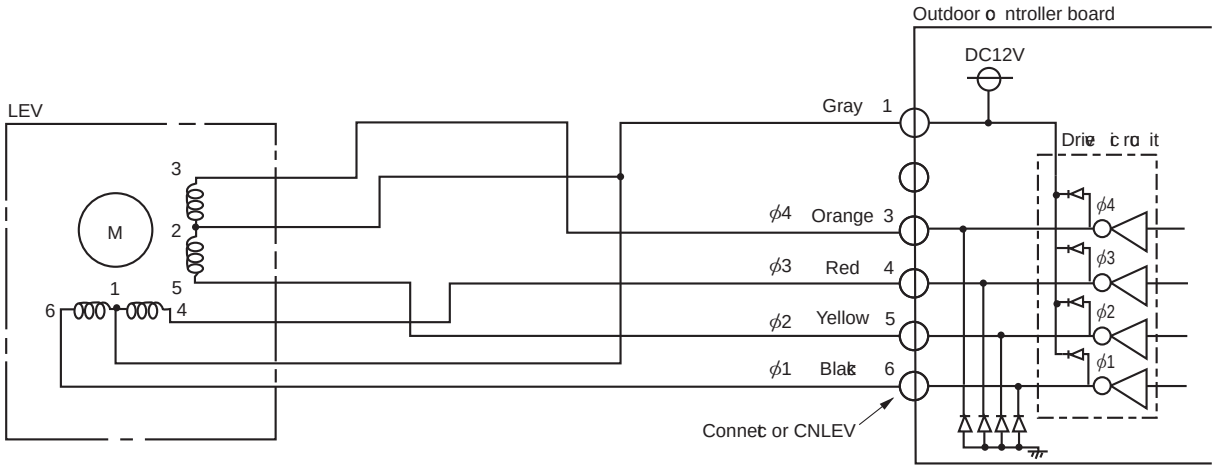
20℃	250kΩ	70℃	34kΩ
30℃	160kΩ	80℃	24kΩ
40℃	104kΩ	90℃	17.5kΩ
50℃	70kΩ	100℃	13.0kΩ
60℃	48kΩ	110℃	9.8kΩ



Linear expansion valve

(1) Operation summary of the linear expansion valve

• Linear expansion valve open/close through stepping motor after receiving the pulse signal from the outdoor controller board.
• Valve position can be changed in proportion to the number of pulse signal.
<Connection between the outdoor controller board and the linear expansion valve>



<Output pulse signal and the valve operation>

Output (Phase)	Output							
	1	2	3	4	5	6	7	8
φ1	ON	ON	OFF	OFF	OFF	OFF	OFF	ON
φ2	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
φ3	OFF	OFF	OFF	ON	ON	ON	OFF	OFF
φ4	OFF	OFF	OFF	OFF	OFF	ON	ON	ON

Opening a valve : 8 → 7 → 6 → 5 → 4 → 3 → 2 → 1 → 8
Closing a valve : 1 → 2 → 3 → 4 → 5 → 6 → 7 → 8 → 1

The output pulse shifts in above order.

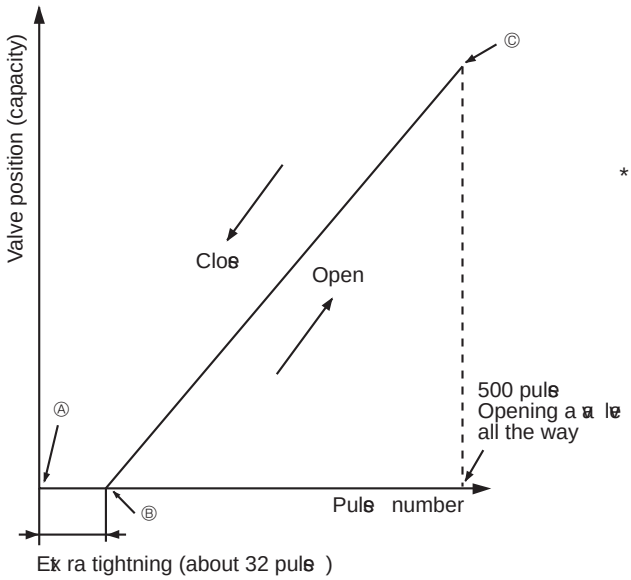
* 1. When linear expansion valve operation stops, all output phase become OFF.

* When the switch is turned on, 700 pulse closing valve signal will be sent till it goes to Ⓐ point in order to define the valve position. (The pulse signal is being sent for about 20 seconds.)

  When the valve moves smoothly, there is no noise or vibration occurring from the linear expansion valve ; however, when the pulse number moves from Ⓑ to Ⓐ or when the valve is locked, more noise can be heard than normal situation.
  No noise is heard when the pulse number moves from Ⓑ to Ⓐ in case coil is burn out or motor is locked by open-phase.

* Noise can be detected by placing the ear against the screw driver handle while putting the screw driver to the linear expansion valve.

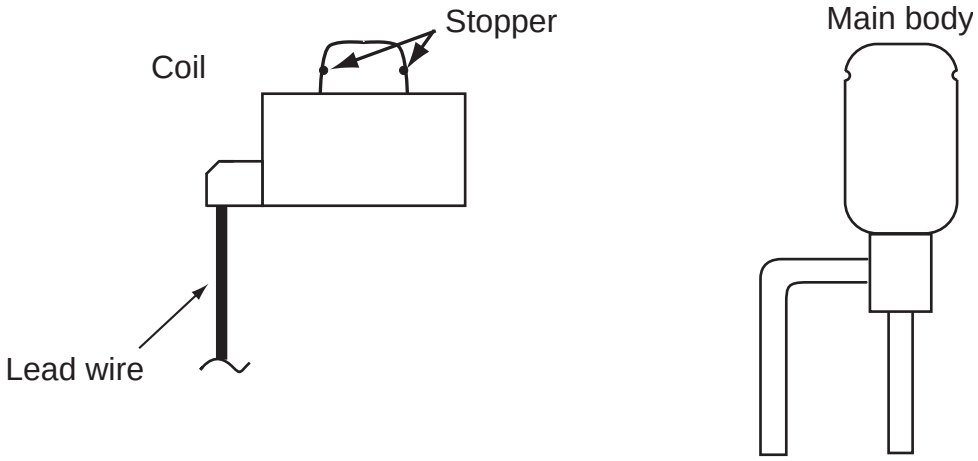
(2) Linear expansion valve operation



(3) How to attach and detach the coil of linear expansion valve

<Composition>

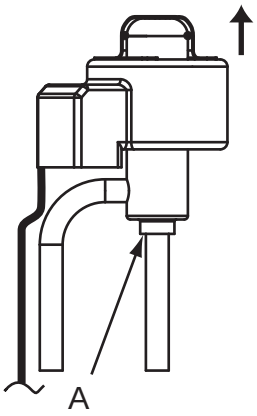
Linear expansion valve is separable into the main body and the coil as shown in the diagram below.



<How to detach the coil>

Hold the lower part of the main body (shown as A) firmly so that the main body does not move and detach the coil by pulling it upward.

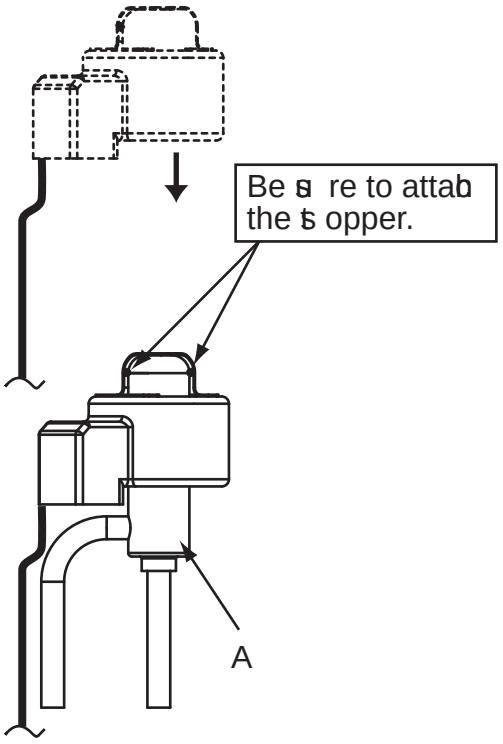
Be sure to detach the coil holding main body firmly. Otherwise pipes can bend due to pressure.



<How to attach the coil>

Hold the lower part of the main body (shown as A) firmly so that the main body does not move and attach the coil by inserting it downward into the main body. Then securely attach the coil stopper to main body. (At this time, be careful that stress is not added to lead wire and main body is not wound by lead wire.) If the stopper is not firmly attached to main body, coil may be detached from the main body and that can cause defective operation of linear expansion valve.

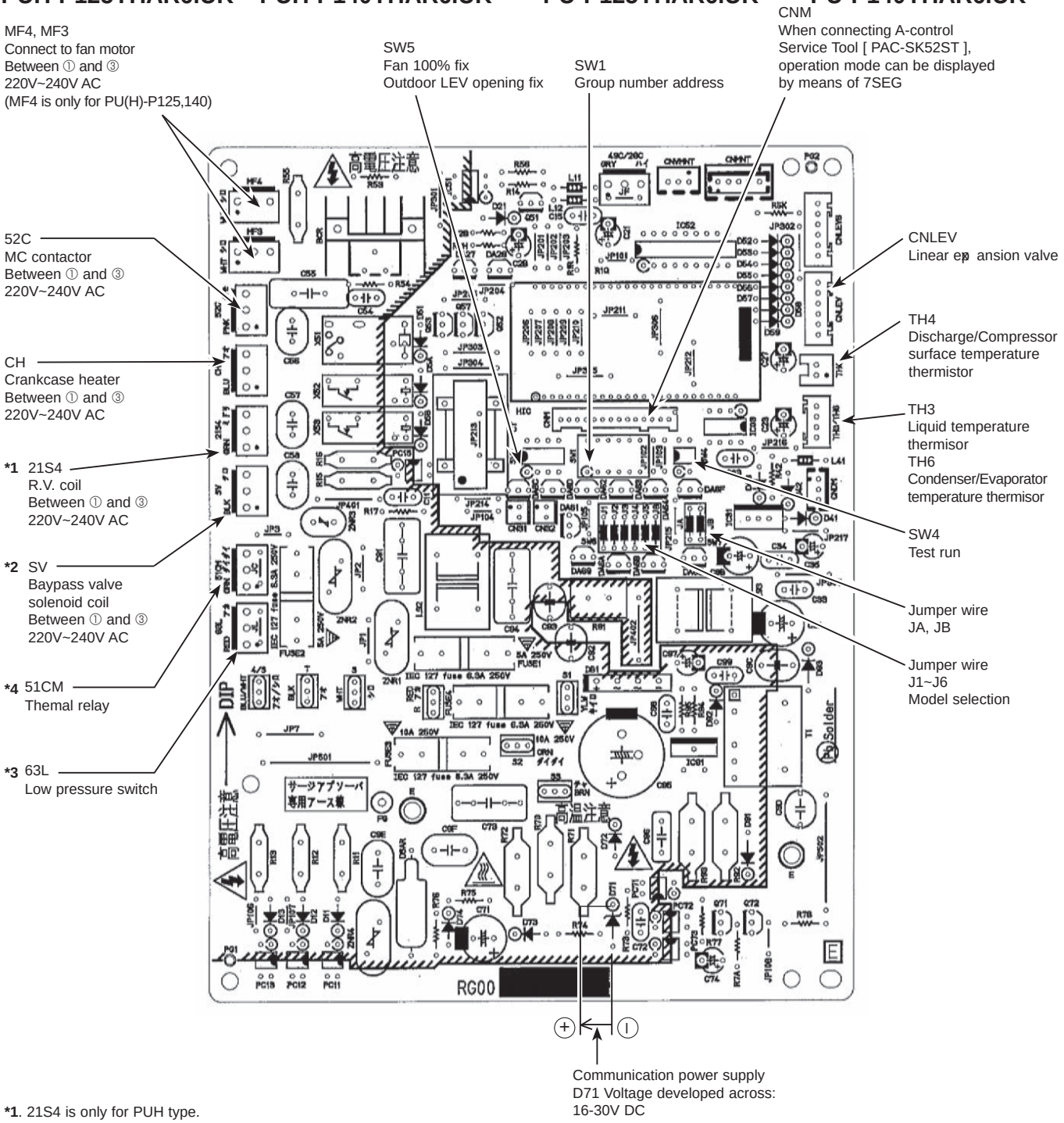
To prevent piping stress, be sure to attach the coil holding the main body of linear expansion valve firmly. Otherwise pipe may break.



11-8. TEST POINT DIAGRAM

● **Outdoor controller board**

PU(H)-P71VHA(1).UK	**PU(H)-P100VHA(1).UK**	**PU(H)-P71YHA(1).UK**	**PU(H)-P100YHA(1).UK**
PUH-P125YHA(1).UK	**PUH-P140YHA(1).UK**	**PU-P125YHA(1).UK**	**PU-P140YHA(1).UK**
PU(H)-P71VHA#2.UK	**PU(H)-P100VHA#2.UK**	**PU(H)-P71YHA#2.UK**	**PU(H)-P100YHA#2.UK**
PUH-P125YHA#2.UK	**PUH-P140YHA#2.UK**	**PU-P125YHA#2.UK**	**PU-P140YHA#2.UK**
PU(H)-P71VHAR3.UK	**PU(H)-P100VHAR3.UK**	**PU(H)-P71YHAR3.UK**	**PU(H)-P100YHAR3.UK**
PUH-P125YHAR3.UK	**PUH-P140YHAR3.UK**	**PU-P125YHAR3.UK**	**PU-P140YHAR3.UK**
PUH-P125YHAR4.UK	**PUH-P140YHAR4.UK**	**PU-P125YHAR4.UK**	**PU-P140YHAR4.UK**
PUH-P125YHAR5.UK	**PUH-P140YHAR5.UK**	**PU-P125YHAR5.UK**	**PU-P140YHAR5.UK**
PUH-P125YHAR6.UK	**PUH-P140YHAR6.UK**	**PU-P125YHAR6.UK**	**PU-P140YHAR6.UK**



1. 21S4 is only for PUH type.
2. SV is only for PUH-P125, P140.
3. 63L is only for PU(H)-P125, P140.
4. Themal relay is only for PU(H)-P71,P100, P125, P140Y.

11-9. EMERGENCY OPERATION

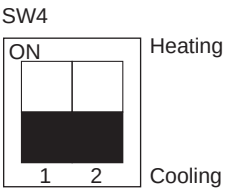
1. When the outdoor unit becomes under mentioned inspection display. Also when the wired remote controller or microprocessor in the indoor unit is broken. If there is not any wrong section, short-circuited connector (CN31) in the outdoor controller board is possible to emergency operation.

● Trouble to which emergency operation can be set

Display	Inspections details
U4	Piping thermistor (TH3) or condenser thermistor (TH6) open/short
E8	Transmission between indoor and outdoor unit Receiving trouble (outdoor unit)
E9	Transmission between indoor and outdoor unit Transmission trouble (outdoor unit)
E0~E7	Transmission trouble except for outdoor unit

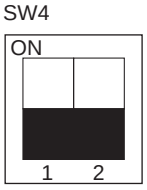
2. Check items and notices as the emergency operation
   (1) Be sure that there is no trouble in the outdoor unit any more besides above mentioned.
   (When there is trouble besides above mentioned, emergency operation is not available.)
   (2) When the emergency operation, their switch (SWE) setting in the indoor controller board is necessary.
   (3) Emergency operation will be serial operation by the power supply ON/OFF.
   ON/OFF or temperature, etc. adjustment is not operated by the remote controller.
   (4) Do not operate for a long time as cold air is blown from the indoor unit, when the outdoor unit starts defrosting operation during heating emergency operation.
   (5) Cool emergency operation must be within 10 hours at most. It may cause heat exchanger frosting in the indoor unit.
   (6) After completing the emergency operation, return the switch setting, etc. in former state.

3. How to operate the emergency operation
   (1) Turn off the main power supply.
   (2) Turn on the emergency switch (SWE) in the indoor controller board.
   (3) Short-circuit the CN31 (emergency operation connector) in the outdoor controller board.
   (4) Set the operation mode (COOL or HEAT) with the SW4-2 in the outdoor controller board.
   (SW4-1 cannot be used.)
   (5) Turn on the main power supply.
   (6) The emergency operation starts and be sure of blinking the operation mode display.



4. Emergency operation details
   (1) Operate with the operation mode which has set (COOL or HEAT) by the SW4-2.
   (2) In the fan operation conditions, the fan is always operated by 100 percent.
   (3) The operation mode display blinks at intervals of 1 second.

5. How to release the emergency operation
   (1) Turn off the main power supply.
   (2) Turn off the emergency switch (SWE) in the indoor controller board.
   (3) Open the CN31 (emergency operation connector) in the outdoor controller board.
   (4) Set the SW4-2 on the outdoor controller board as in the right.

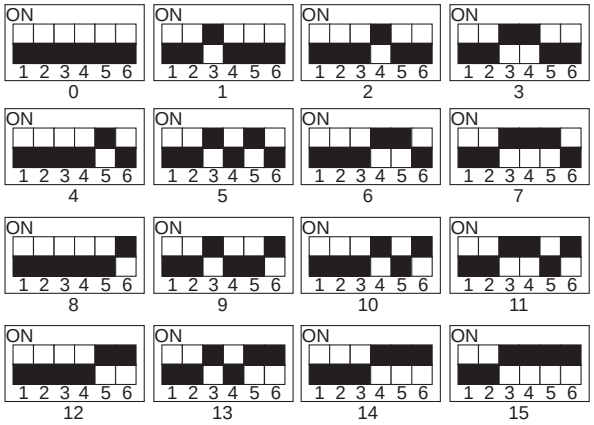


■ Unit operation during emergency operation

Parts name	Operation
Compressor	Always ON
Four way valve	Changeable with SW 4-2
Outdoor fan motor	Max speed
LEV	Full opening
Indoor fan motor	High

11-10. FUNCTION OF SWITCHES, CONNECTORS AND JUMPERS

● **Function of switches**

Switch		Function	Action by the switch operation		Effective timing
Signal	No.		ON	OFF	
SW1	1	Compulsory defrosting*	Start	Normal	Heat compressor operating
	2	Abnormal history clear	Clear	Normal	off or operating
	3 ~ 6	Refrigerant address setting			When power supply ON
SW4	1	Test run ON/OFF	ON	OFF	OFF
	2	Test run mode setting	Heat	Cool	
SW5	1	Fan 100% fix	100% fix	Normal	off or operating
	2	Outdoor LEV opening fix**	Fix	Normal	off or operating
	3	No function	No function	No function	–
	4	Length of defrost operation	20 minutes	15 minutes (Normal)	Always

*Compulsory defrosting should be done as follows.
①Change the DIP SW1-1 in the outdoor controller board OFF→ON (compulsory defrosting start).
According to the ① operation,
• Heat mode setting • Compressor operating • The defrosting starts when the piping temperature is 8˚C and below.
• When the stated condition is satisfied, the defrosting operation will be completed.

**Ignore the change of LEV opening, which is subject to change of subcooling, and fix DIP SW 5-2 in the on position. Then LEV opening is fixed. When air conditioner is overloaded for some reasons, ignore the change of subcooling and adjust the LEV opening in accordance with overload condition.

● **Jumper connector function table**

<table>
<tr><th colspan="2">Switch</th><th rowspan="2">Function</th><th colspan="2">Action by the switch operation</th><th rowspan="2">Effective timing</th></tr>
<tr><th>Signal</th><th>No.</th><th>ON
(With jumper wire)</th><th>OFF
(Without jumper wire)</th></tr>
<tr><td colspan="2">J1</td><td>Switch of single phase and 3 phase power supply</td><td>3 phase</td><td>Single phase</td><td>When power supply ON</td></tr>
<tr><td colspan="2">J2</td><td>Switch of cooling only heat pump</td><td>Cooling only</td><td>Heat pump</td><td>When power supply ON</td></tr>
<tr><td colspan="2">J3
J4
J5
J6</td><td>Capacity switch</td><td colspan="2">○: with jumper wire
×: without jumper wire
<table><tr><th rowspan="2">Model</th><th colspan="4">Setting</th></tr><tr><th>3</th><th>4</th><th>5</th><th>6</th></tr><tr><td>P71</td><td>○</td><td>×</td><td>○</td><td>×</td></tr><tr><td>P100</td><td>×</td><td>○</td><td>○</td><td>×</td></tr><tr><td>P125</td><td>○</td><td>○</td><td>○</td><td>×</td></tr><tr><td>P140</td><td>×</td><td>×</td><td>×</td><td>○</td></tr></table></td><td>When power supply ON</td></tr>
<tr><td colspan="2">CN31</td><td>Emergency operation</td><td>Emergency operation</td><td>Normal</td><td>When power supply ON</td></tr>
<tr><td colspan="2">JA</td><td>Auto restart</td><td>Normal</td><td>Auto restart</td><td rowspan="2">When power supply ON</td></tr>
<tr><td colspan="2">JB</td><td>Separate inoor / outdoor power supply</td><td>Ineffective</td><td>Effective</td></tr>
</table>

11-11. OPTIONAL PARTS
A-control Service Tool [PAC-SK52ST]

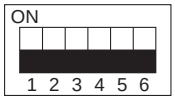
● **Function of switches**

Type of switches	Switch	No.	Function	Action by the switch operation		Effective timing
				ON	OFF	
DIP SW	SW2	1	Changing of LED display <Self-diagnosis>	Operation monitor	Operation monitor	Under operation or suspension
		2				
		3				
		4				
		5				
		6				

Note : Do not use CN33.

● **Outdoor unit operation monitor function**

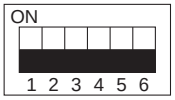
Operation indicator SW2 : Indicator change of self diagnosis

SW2 setting	Display detail	Explanation for display	Unit
			Code indication

<Digital indicator LED1 working details>

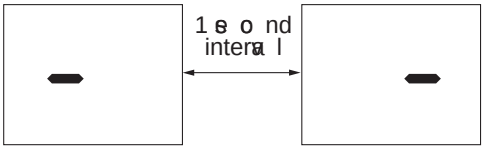
・Lighting (Normal operation) : Indicating the operation mode.
(Be sure the 1 to 6 in the SW2 are set to OFF)

SW2

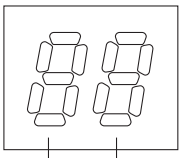


(Initial setting)

(1) Display when the power supply ON.
When the power supply ON, blinking displays by turns.
Wait for 4 minutes at the longest.



(2) When the display lights. (Normal operation)
①Operation mode display.

LED1  (Lighting)

The tens digit : Operation mode

Display	Operation mode
O	OFF
C	COOL
H	HEAT
d	DEFROSTING

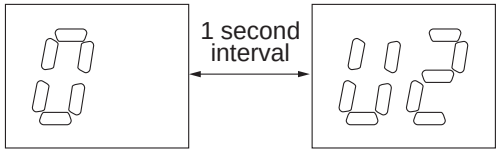
The units digit : Relay output

Display	Compressor	4-way valve	Bypass solenoid valve
0	—	—	—
1	—	—	ON
2	—	ON	—
3	—	ON	ON
4	ON	—	—
5	ON	—	ON
6	ON	ON	—
7	ON	ON	ON

②Error postponing display
(Compressor stop by the protection device working) : Display the postponement code.
Postponement code is display during the error postponing.

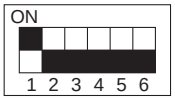
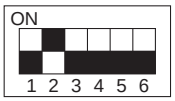
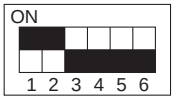
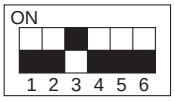
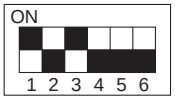
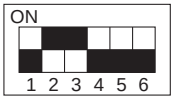
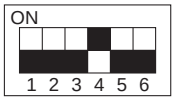
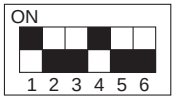
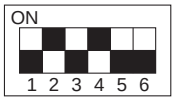
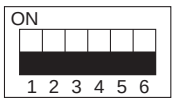
(3) When the display blinks (Operation stop by the protection device working) : Display the inspection code.
An error unit number and code are displayed by turns.

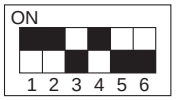
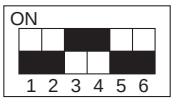
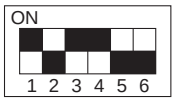
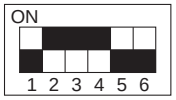
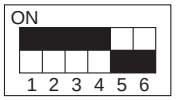
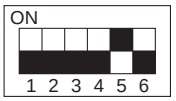
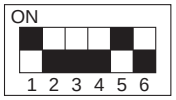
<Abnormal unit number> <Check code>

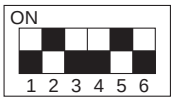
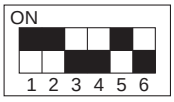
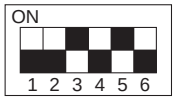
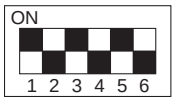
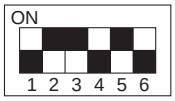
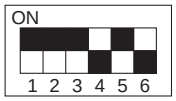
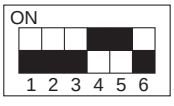


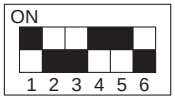
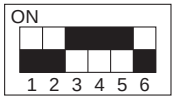
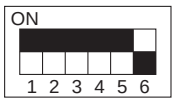
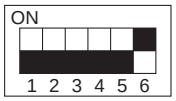
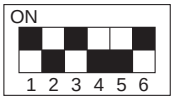
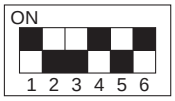
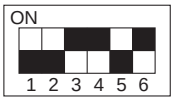
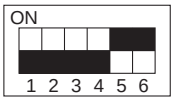
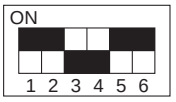
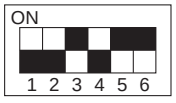
Display	Inspection unit
0	Outdoor unit
1	Indoor unit 1
2	Indoor unit 2
3	Indoor unit 3
4	Indoor unit 4

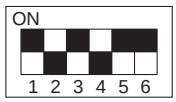
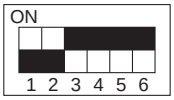
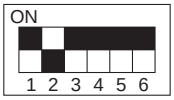
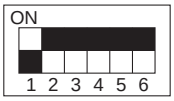
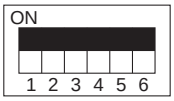
(4) When 7SEG display lights up (Protective device stops compressor operating.):
The screen displays the corresponding code when abnormality is being recorded.

SW2 setting	Display detail	Explanation for display	Unit
	Piping temperature (TH3) - 40 to 90	- 40 to 90 (When the coil thermistor is 0℃ or below, "–" and temperature displays by turns.) (Example) When -10℃ One second interval – □ ⟷ 10	℃
	Discharge/Compressor surface temperature (TH4) 0 to 216	0 to 216 (When the discharge/compressor surface thermistor is 100 or more, the hundreds digit and tens, unit digits are displayed by turns.) (Example) When 150℃ One second interval 1 □ ⟷ 50	℃
	FAN output step 0 to 16	0 to 16	Step
	The number of ON / OFF times 0 to 9999	0 to 9999 (When the number of times is 100 or more, the hundreds digit and tens, unit digits are displayed by turns.) (Example) When 42500 times One second interval 4 □ ⟷ 25	100 times
	Compressor integrating operation times 0 to 9999	0 to 9999 (When the time is 100 or more, the hundreds digit and tens, unit digits are displayed by turns.) (Example) When 2450 hours One second interval 2 □ ⟷ 45	10 hours
	Compressor operating current 0 to 40	0 to 40	A
	LEV opening 0 to 500	0 to 500	Pulse
	New error postponement code New outdoor unit error postponement display	No postponement code is "00". blink : during new error postponement light : new error	Code display
	Operation mode on error occurring	Operation mode on error stop. SW2 setting is displayed at below code. (SW2) 	Code display

SW2 setting	Display detail	Explanation for display	Unit
	Piping temperature (TH3) on error occurring - 40 to 90	- 40 to 90 (When the coil thermistor is 0℃ and less, "–" and temperature are displayed by turns) (Example) When –15℃ One second interval – □ ⟷ 15	℃
	Compressor temperature (TH4) or discharge temperature (TH4) on error occurring 0 to 216	0 to 216 (When the temperature is 100 or more, the hundreds digit and tens, unit digits are displayed by turns.) (Example) When 130℃ One second interval 1 □ ⟷ 30	℃
	Compressor operating current on error occurring 0 to 40	0 to 40	A
	Check code history (1) (latest) Alternate display of abnormal unit number and code	When no check code history, " 0 " and "– –" and displayed by turns.	Code display
	Check code history (2) Alternate display of error unit number and code	When no check code history, " 0 " and "– –" and displayed by turns.	Code display
	Thermo ON time 0 to 999	0 to 999 (When the time is 100 or more, the hundreds digit and tens, unit digits are displayed by turns.) (Example) When 245 minutes One second interval 2 □ ⟷ 45	Minute
	Trial run elapsed time 0 to 120	0 to 120 (When the time is 100 or more, the hundreds digit and tens, unit digits are displayed by turns.) (Example) When 105 minutes One second interval 1 □ ⟷ 05	Minute
	The number of connected indoor unit 0 to 4	0 to 4	Unit

SW2 setting	Display detail	Explanation for display	Unit
	Capacity setting display	Display as an outdoor capacity code Capacity / Code P71 / 14 P100 / 20 P125 / 25 P140 / 28	Code display
	Outdoor unit setting advice	● The tens digit (Total display for applied setting) Setting details: H·P / Cooling only — Display details: 0 : H·P 1 : Cooling only Setting details: Single phase / 3 phase — Display details: 0 : Single phase 2 : 3 phase ● The units digit Setting details: Defrosting switch — Display details: 0 : Normal 1 : High humidity region (Example) When switching cooling and heat pump, three phase, defrosting (normal) "20"	Code display
	Indoor unit piping temperature / LIQUID (TH2) Indoor 1 - 39 to 88	- 39 to 88 (When the temperature is 0℃ or less, "–" and temperature are displayed by turns.)	℃
	Indoor unit piping temperature / LIQUID (TH2) Indoor 2 - 39 to 88	- 39 to 88 (When the temperature is 0℃ or less, "–" and temperature are displayed by turns.) When no indoor unit, "00" is displayed.	℃
	Indoor unit piping temperature / LIQUID (TH2) Indoor 3 - 39 to 88	- 39 to 88 (When the temperature is 0℃ or less, "–" and temperature are displayed by turns.) When no indoor unit, "00" is displayed.	℃
	Indoor unit piping temperature / LIQUID (TH2) Indoor 4 - 39 to 88	- 39 to 88 (When the temperature is 0℃ or less, "–" and temperature are displayed by turns) When no indoor unit, "00" is displayed.	℃
	Indoor room temperature (TH1) 8 to 39	8 to 39	℃

SW2 setting	Display detail	Explanation for display	Unit
	Indoor setting temperature 17 to 30	17 to 30	℃
	Outdoor piping temperature/Cond./Eva. (TH6) - 39 to 88	- 39 to 88 (When the temperature is 0℃ or less, "–" and temperature are displayed by turns)	℃
	Discharge/Comprssor surface super heat. SHd 0 to 255 [Cool = TH4-TH6 Heat = TH4-TH5]	0 to 255 (When the temperature is 100 or more, the hundreds digit and tens, unit digits are displayed by turns.) (Example) 115 ℃ One second interval. 1□⟷15	℃
	Sub cool. SC 0 to 130 [Cool = TH6-TH3 Heat = TH5-TH2]	0 to 130 (When the temperature is 100 or more, the hundreds digit and tens, unit digits are displayed by turns.)	℃
	Communication demanded capacity 0 to 255 [When air conditioners are connected to M-NET and under central control.] [When no communication demanded setting, "100" is displayed.]	0 to 255 (When the capacity is 100 or more, the hundreds digit and tens, unit digits are displayed by turns) (Example) When 100 One second interval. 1□⟷00	%
	Error thermistor display	3: Outdoor liquid piping thermistor (TH3) 6: Outdoor condenser thermistor (TH6) [When no error thermistor, "–" is displayed.]	Code
	Fan step on error occurring 0 to 16	0 to 16	Step
	LEV opening on error occurring 0 to 500	0 to 500	Pulse
	Outdoor piping temperature/Cond./Eva. on error occurring (TH6) - 39 to 88	- 39 to 88 (When the thermistor is 0℃ and less, "–" and temperature are displayed by turns.) (Example) When - 15℃ One second interval –□⟷15	℃
	Discharge/Compressor surface super heat on error occurring SHd 0 to 255 [Cool = TH4-TH6 Heat = TH4-TH5]	0 to 255 (When the temperature is 100 or more, the hundreds digit and tens, unit digits are displayed by turns.) (Example) When 150℃ One second interval 1□⟷50	℃
	Sub cool on error occurring SC 0 to 130 [Cool = TH6-TH3 Heat = TH5-TH2]	0 to 130 (When the temperature is 100 or more, the hundreds digit and tens, unit digits are displayed by turns.) (Example) When 115℃ One second interval 1□⟷15	℃

SW2 setting	Display detail	Explanation for display	Unit
	Thermo-ON time to error stop 0 to 999	0 to 999 (When the time is 100 or more, the hundreds digit and tens, unit digits are displayed by turns.) (Example) When 415 minutes One second interval 4 □⟷15	Minute
	Indoor unit piping temperature / cond. / Eva. (TH5) indoor 1 - 39 to 88	- 39 to 88 (When the temperature is 0°C or less, "–" and temperature are displayed by turns.)	°C
	Indoor unit piping temperature / cond. / Eva. (TH5) indoor 2 - 39 to 88	- 39 to 88 (When the temperature is 0°C or less, "–" and temperature are displayed by turns.) When no indoor unit, "00" is displayed.	°C
	Indoor unit piping temperature / cond. / Eva. (TH5) indoor 3 - 39 to 88	- 39 to 88 (When the temperature is 0°C or less, "–" and temperature are displayed by turns.) When no indoor unit, "00" is displayed.	°C
	Indoor unit piping temperature / cond. / Eva. (TH5) indoor 4 - 39 to 88	- 39 to 88 (When the temperature is 0°C or less, "–" and temperature are displayed by turns.) When no indoor unit, "00" is displayed.	°C

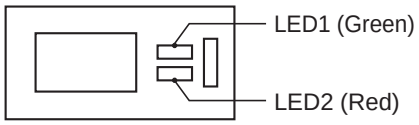
● **For A-control Service Tool [PAC-SK52ST]**

[Operation for A-control Service Tool]

1. By operating the dip switch SW2 on A-control Service Tool, the digital display of light-emitting diode (LED1) indicates the operation mode and types of inspection with a two-digit number and symbol.
2. After the inspection, A-control Service Tool shall be removed out of outdoor unit control board.

<Display function of inspection for outdoor unit>

• The blinking patterns of two LEDs~~L~~ ED1(Green) and LED2(Red)~~sh~~ ow the diagnoses of troubles in case of malfunction.
• By 7SEG indicator board indicates the operation mode and inspection types.



Indication (O.B)		Error Name	Inspection method
LED1 (Green)	LED2 (Red)		
1 blink	1 blink	•Negative phase detection •The wires of power supply and connecting wires of indoor / outdoor units are crossed with one another.	① Check if the wires of power supply are connected to their corresponding terminals on TB1. ② Check if the wirings are correct on power supply (TB1) and outdoor power supply board (TB2).
	2 blinks	•51CM connector open	① Check if the connectors of 51CM (51C) on outdoor controller board are disconnected. ② Check the continuity of connector 51CM (51C) with a tester.
		•63L connector open	① Check connection of 63L(63L) connector on outdoor controller board. ② Check the 63L side of connecting wire. ③ Check refrigerant pressure. Charge additional refrigerant. Check continuity with a tester. Replace outdoor controller board. ④ Replace outdoor controller board.
2 blinks	1 blink	•Indoor / outdoor unit connector mis-wiring •Excessive numbers of indoor units per an outdoor unit (five or more) •Miswiring of indoor / outdoor unit connection wires (crossed wiring or disconnection) •Start-up time is up.	① Check if the wirings are correct on the connecting wires of indoor / outdoor units. ② Check if a single outdoor unit connects 5 or more indoor units.
	2 blinks	•Indoor / outdoor unit transmission error (Signal receiving error: Indoor controller side) •Indoor / outdoor unit transmission error (Transmitting error: Indoor controller side) •Indoor / outdoor unit transmission error (Signal receiving error :Outdoor controller side) •Indoor / outdoor unit transmission error (Transmitting error: Outdoor controller side)	① Check if the wirings are correct on the connecting wires of indoor / outdoor units. ② Check if there is noise on the wires of power supply and connecting wires of indoor / outdoor units. ③ Check if there is noise on both indoor and outdoor controller board. ④ Turn the power off and let the units operate again to confirm.
	3 blinks	•Remote controller transmission error (Signal receiving error: Remote controller side) •Remote controller transmission error (Transmitting error: Remote controller side) •Remote controller transmission error (Signal receiving error: Indoor controller side) •Remote controller transmission error (Transmitting error: Indoor controller side)	① Check if the wirings are correct on indoor units or remote controllers. ② Check if there is noise on the transmission lines of remote controllers. ③ Turn the power off and let the units operate again to confirm.
	4 blinks	•Undefined check code	① Check if there is noise on the transmission lines of remote controllers. ② Check if there is noise on the connecting wires of indoor/outdoor units. ③ Turn the power off and let the units operate again to confirm.

To be continued on the next page.

From the preceding page.

Indication (O.B)		Error Name	Inspection method
LED1 (Green)	LED2 (Red)		
3 blinks	1 blink	•Abnormal high discharge/compressor surface temperature(TH4)	① Check if ball valves are open. ② Check the continuity of connector (TH4) on outdoor controller board by using a tester. ③ Check if the unit fills the refrigerant at the same amount as specified.
	2 blinks	•Abnormal high pressure (High pressure switch 63H operated)	① Check if indoor / outdoor units have a short cycle on their air ducts ② Check if the connector of 52C (63H) on outdoor controller board is disconnected. ③ Check if the units get their heat exchanger and filter dirty and clogged. ④ Measure resistance values among terminals on linear expansion valve with a tester.
		•Abnormal low pressure (Low pressure switch 63L operated)	① Check stop valve. ②③④ Turn the power off and on again to check if F3 is displayed on restarting. If F3 is displayed, follow the F3 proceeding direction. ⑤ Correct to proper amount of refrigerant. ⑥ Check linear expansion valve. Refer to 11-6.
	3 blinks	•Protection from overheat operation (TH3)	① Check if outdoor unit has a short cycle on its air duct. ② Check if the connector of TH3 on outdoor controller board is disconnected.
	4 blinks	•Compressor's overcurrent (Overload) •Thermal relay (51C) has been tripped •Overcurrent has locked the operation of compressor in start-up.	① Check if ball valves are open. ② Measure resistance values among terminals on compressor with a tester. ③ Check if outdoor unit has a short cycle on its air duct. ④ Check if the connector of 51CM (51C) on outdoor controller board is disconnected. ⑤ Check if the units get their heat exchanger and filter dirty and clogged.
	5 blinks	•Open / short circuit of discharge thermistor (TH4) •Open / short circuit of liquid pipe thermistor (TH3) •Open / short circuit of EVA / COND pipe thermistor (TH6)	① Check if the connectors of TH4, TH3, and TH6 on outdoor controller board are disconnected. ② Measure the resistance values of each thermistor (TH4, TH3, and TH6).
4 blinks	1 blink	•Abnormality of room temperature thermistor (Indoor unit side: TH1) •Abnormality of Liquid pipe thermistor (Indoor unit side:TH2) •Abnormality of EVA / COND pipe thermistor (Indoor unit side: TH5)	① Check if the connectors of CN20, CN21, CN29 and CN44 on indoor controller board are disconnected. ② Measure the resistance values of each thermistor (TH1, TH2, and TH5).
	2 blinks	•Abnormality of drain sensor (Indoor unit side : (DS)) •Malfunction of drain pump •Float switch (FS) connector open	① Check if the connector of CN31, CN4F on indoor controller board is disconnected. ② Measure the resistance value of drain sensor. ③ Measure resistance values among terminals on drain-up machine with a tester.
	3 blinks	•Abnormality of pipe temperature	① Check if the connectors of CN20, CN21, CN29 and CN44 on indoor controller board are disconnected. ② Check if ball valves are open. ③ Check if the wirings are correct on the connecting wires of indoor / outdoor units

12 FUNCTION SETTING

12-1. UNIT FUNCTION SETTING BY THE REMOTE CONTROLLER

Each function can be set as necessary using the remote controller. The setting of function for each unit can only be done by the remote controller. Select function available from the table 1.

<Table 1> Function selections

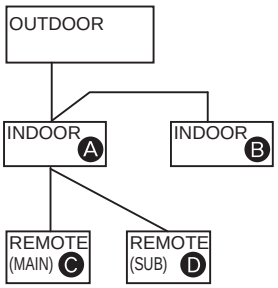
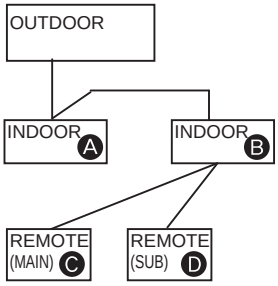
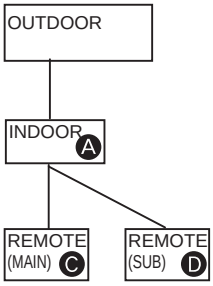
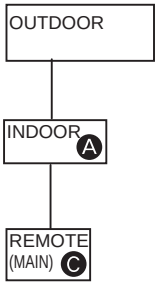
(1) Functions available when setting the unit number to 00 (Select 00 referring to ④ setting the indoor unit number.)

Function	Settings	Mode No.	Setting No.	Initial setting (when sent from the factory)	Remarks
Power failure automatic recovery	OFF	01	1		The setting is applied to all the units in the same refrigerant system.
	ON		2	●	
Indoor temperature detecting*	Average data from each indoor unit	02	1	●	
	Data from the indoor unit with remote controller		2		
	Data from main remote controller		3		
LOSSNAY connectivity	Not supported	03	1	●	
	Supported (Indoor unit does not intake outdoor air through LOSSNAY)		2		
	Supported (Indoor unit intakes outdoor air through LOSSNAY)		3		
Power supply voltage	240V	04	1		
	220V,230V		2	●	
Frost prevention temperature	2℃ (Normal)	15	1	●	
	3℃		2		
Humidifier control	When the compressor operates, the humidifier also operates.	16	1	●	
	When the fan operates, the humidifier also operates.		2		
Change of defrosting control	Standard	17	1	●	
	For high humidity		2		

*The functions above are available only when the wired remote controller is used. The functions are not available for floor standing models.

Meaning of "Function setting"

mode02:indoor temperature detecting

No	Indoor temperature(ta)=					
No1.	Average data of the sensor on all the indoor units	Initial setting	ta=(A+B)/2	ta=(A+B)/2	ta=A	ta=A
No2.	The data of the sensor on the indoor unit that connected with remote controller		ta=A	ta=B	ta=A	ta=A
No3	The data of the sensor on main remote controller.		ta=C	ta=C	ta=C	ta=C

(2) Functions available when setting the unit number to 01-03 or AL (07 in case of wireless remote controller)

- When setting functions for an indoor unit in an independent system, set the unit number to 01 referring to ④ setting the indoor unit number.
- When setting functions for a simultaneous- Twin Triple indoor unit system, set the unit number to 01 to 03 for each indoor unit in case of selecting different functions for each unit referring to ④ setting the indoor unit number.
- When setting the same functions for an entire simultaneous Twin Triple-indoor unit system, set refrigerant address to AL (07 in case of wireless remote controller) referring to ④ setting the indoor unit number.

Function	Settings	Mode No.	Setting No.	Initial setting (Factory setting) - : Not available					
				4-Way cassette		Ceiling concealed	Ceiling suspended		Floor standing
				PLA-BA	PLA-AA(2) PLH-AAH	PEAD-EA(2) PEHD-EAH PEAD-GA	PCA-GA PCH-GAH PCA-KA	PCA-HA	PSA-GA PSH-GAH
Filter sign	100Hr	07	1					●	
	2500Hr		2	●	●		●		●
	No filter sign indicator		3			●			
Air flow (Fan speed)	Quiet / Standard (PLA-AA, PLH)	08	1		●	-		-	-
	Standard / High ceiling① (PLA-AA, PLH)		2	●		-	●	-	-
	High ceiling / High ceiling② (PLA-AA, PLH)		3			-		-	-
No.of air outlets	4 directions	09	1	●	●	-	-	-	-
	3 directions		2			-	-	-	-
	2 directions		3			-	-	-	-
Optional high efficiency filter	Not supported	10	1	●	●	-	●	-	-
	Supported		2			-		-	-
Vane setting	No vanes (Vane No.3 setting : PLA, PLH only)	11	1			-		-	-
	Vane No.1 setting		2			-	●	-	-
	Vane No.2 setting		3	●	●	-		-	-
Optional humidifier (PLA-AA only)	Not supported	13	1	●	●	-	-	-	-
	Supported		2			-	-	-	-
Vane differential setting in heating mode (cold wind prevention)	No.1 setting (TH5: 24-28℃)	14	1			-		-	-
	No.2 setting (Standard, TH5:28-32℃)		2	●	●	-	●	-	-
	No.3 setting (TH5: 32-38℃)		3			-		-	-
Swing	Not available / Swing (PLA-BA)	23	1			-		-	-
	Available / Wave air flow (PLA-BA)		2	●	●	-	●	-	-
Set temperature in heating mode (4 deg up)	Available	24	1	●	●	●	●	●	
	Not available		2						●
Fan speed when the heating thermostat is OFF	Extra low	25	1	●	●	●	●	●	●
	Stop		2						
	Set fan speed		3						
Fan speed when the cooling thermostat is OFF	Set fan speed	27	1	●	●	●	●	●	●
	Stop		2						
Detection of abnormality of the pipe temperature (P8)	Available	28	1	●	●	●	●	●	●
	Not available		2						

Function	Settings	Mode No.	Setting No.	● : Initial setting (Factory setting) - : Not available	
				Wall mounted	
				PKA-HAL	PKA-KAL
Filter sign	100h	07	1	●	●
	2500h		2		
	No filter sign indicator		3		
Air flow (Fan speed)	Quiet	08	1	-	
	Standard		2	●	●
	High ceiling		3		-
Vane differential setting in heating mode (cold wind prevention)	No.1 setting (TH5: 24-28℃)	14	1		
	No.2 setting (Standard, TH5:28-32℃)		2	●	●
	No.3 setting (TH5: 32-38℃)		3		
Swing	Not available	23	1		
	Available		2	●	●
Set temperature in heating mode (2 deg up)	Available	24	1	●	●
	Not available		2		
Fan speed during the heating thermo OFF	Extra low	25	1	●	●
	Stop		2		
	Set fan speed		3		
Fan speed during the cooling thermo OFF	Set fan speed	27	1	●	●
	Stop		2		
Detection of abnormality of the pipe temperature (P8)	Available	28	1	●	●
	Not available		2		

PEAD-RP·JA(L)

Function	Settings	Mode No.	Setting No.	● : Initial setting (Factory setting)
Filter sign	100h	07	1	
	2500h		2	
	No filter sign indicator		3	●
External static pressure	35/50/70/100/150Pa	08	Refer to the right table	
External static pressure	35/50/70/100/150Pa	10	Refer to the right table	
Set temperature in heating mode (4 deg up)	Available	24	1	●
	Not available		2	
Fan speed during the heating thermo OFF	Extra low	25	1	●
	Stop		2	
	Set fan speed		3	
Fan speed during the cooling thermo OFF	Set fan speed	27	1	●
	Stop		2	
Detection of abnormality of the pipe	Available	28	1	●
	Not available		2	

External static pressure	Setting No.		Initial setting (Factory setting)
	Mode No. 08	Mode No. 10	
35Pa	2	1	
50Pa	3	1	●
70Pa	1	2	
100Pa	2	2	
150Pa	3	2	

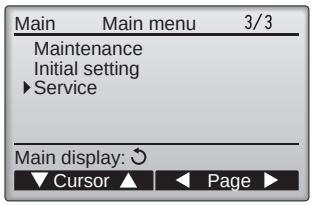
12-1-1. Selecting functions using the wired remote controller <PAR-31MAA>

<Service menu>

Maintenance password is required

① Select "Service" from the Main menu, and press the ⓥ button.

At the main display, the menu buttom and select "Service" to make the maintenance setting.



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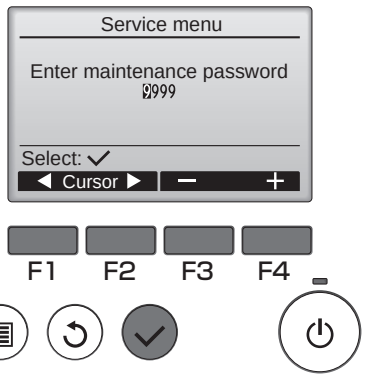
② When the Service menu is selected, a window will appear asking for the password.

To enter the current maintenance password (4 numerical digits), move the cursor to the digit you want to change with the F1 or F2 button.

Set each number (0 through 9) with the F3 or F4 button.

Then, press the ⓥ button.



Note: The initial maintenance password is "9999". Change the default password as necessary to prevent unauthorized access. Have the password available for those who need it.

: If you forget your maintenance password, you can initialize the password to the default password "9999" by pressing and holding the F1 and F2 buttons simultaneously for three seconds on the maintenance password setting screen.

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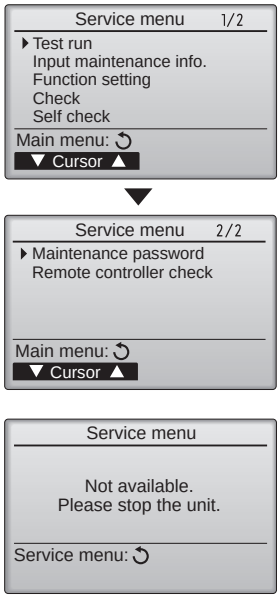
③ If the password matches, the Service menu will appear.

The type of menu that appears depends on the connected indoor units' type.



Note: Air conditioning units may need to be stopped to make certain settings. There may be some settings that cannot be made when the system is centrally controlled.

A screen will appear that indicates the setting has been saved.

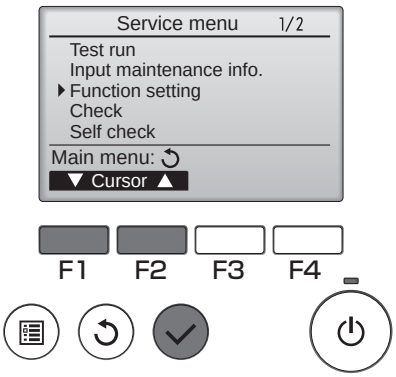
Navigating through the screens

- To go back to the Main menu ..... ⓜ button
- To return to the previous screen..... ⓑ button

<Function setting>

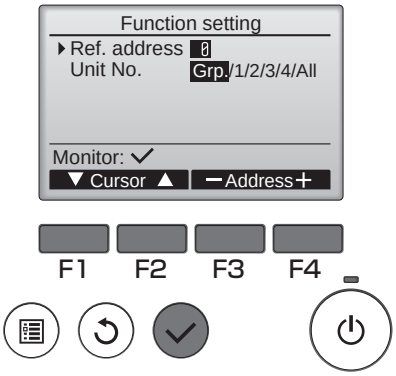
① Select "Service" from the Main menu, and press the ⊙ button.

Select "Function setting" with the F1 or F2 button, and press the ⊙ button.

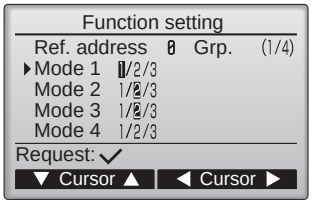


② Set the indoor unit refrigerant addresses and unit numbers with the F1 through F4 buttons, and then press the ⊙ button to confirm the current setting.

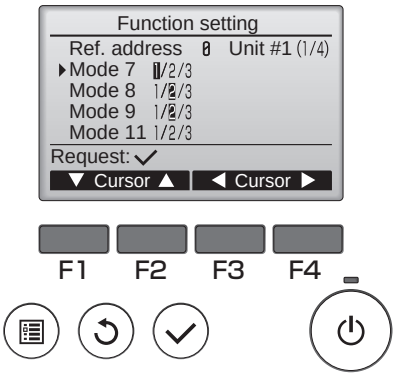
<Checking the indoor unit No.>
When the ⊙ button is pressed, the target indoor unit will start fan operation. If the unit is common or when running all units, all indoor units for the selected refrigerant address will start fan operation.



③ When data collection from the indoor units is completed, the current settings appears highlighted.
Non-highlighted items indicate that no function settings are made.
Screen appearance varies depending on the "Unit No." setting.

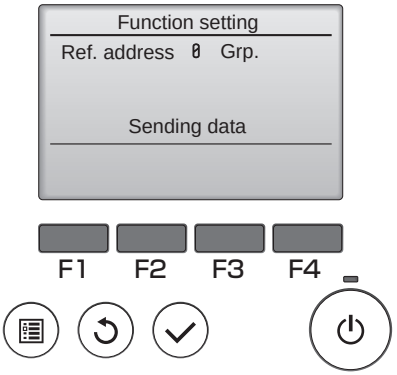


④ Use the F1 or F2 button to move the cursor to select the mode number, and change the setting number with the F3 or F4 button.



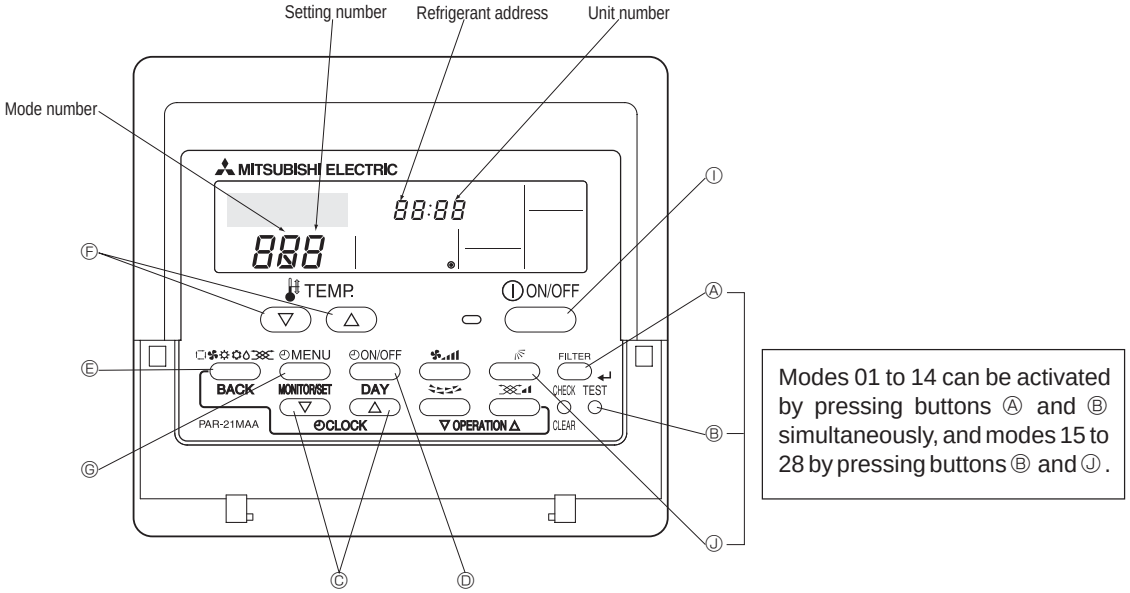
⑤ When the settings are completed, press the ⊙ button to send the setting data from the remote controller to the indoor units.
When the transmission is successfully completed, the screen will return to the Function setting screen.

Note: • Make the above settings only on Mr. Slim units as necessary.
• The above function settings are not available for the City Multi units.
• Table 1 summarizes the setting options for each mode number. Refer to the indoor unit Installation Manual for the detailed information about initial settings, mode numbers, and setting numbers for the indoor units.
• Be sure to write down the settings for all functions if any of the initial settings has been changed after the completion of installation work.

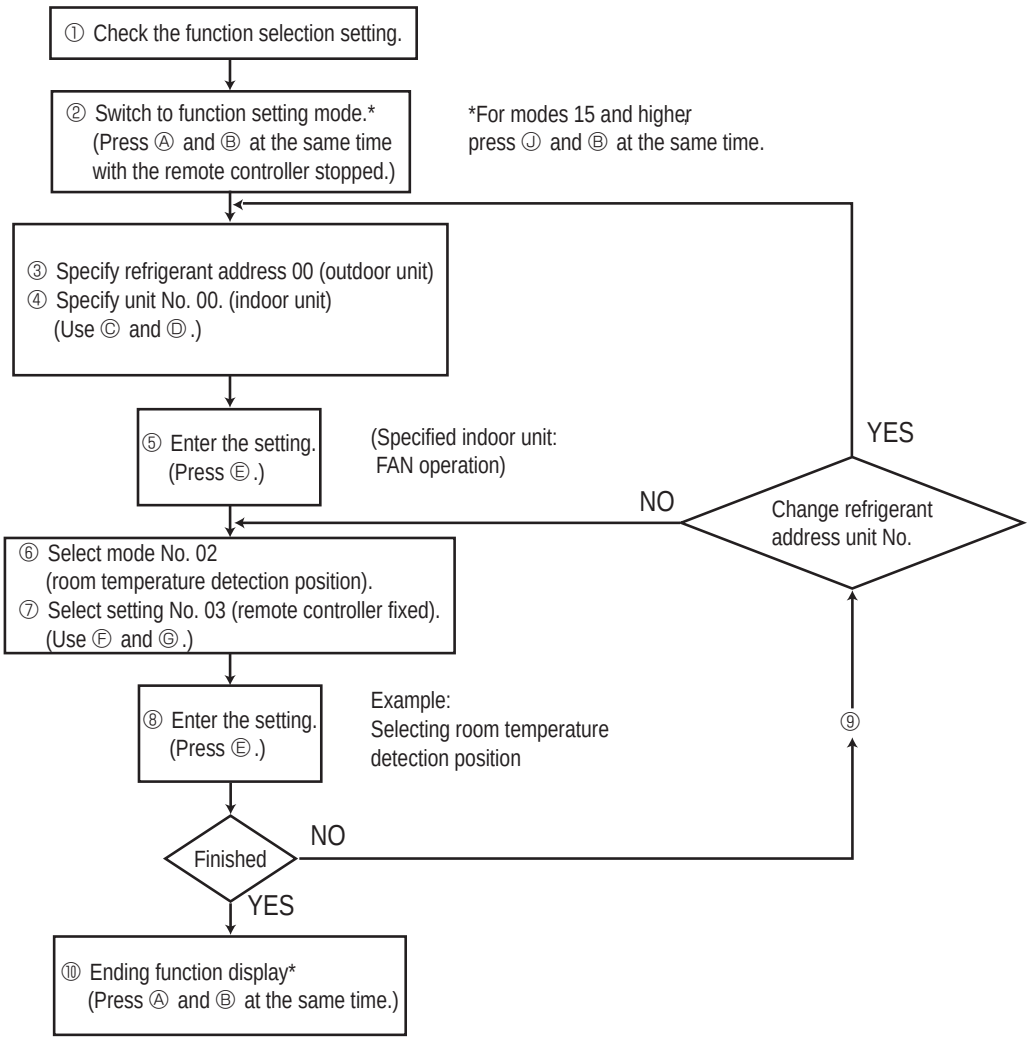


12-1-2. Selecting functions using the wired remote controller

First, try to familiarize yourself with the flow of the function selection procedure. In this section, an example of setting the room temperature detection position is given.
For actual operations, refer to steps ① to ⑩.



The flow of the function selection procedure is shown below.
This example shows how to use the remote controller's internal sensor.
(Mode No. 2: setting No. 3)

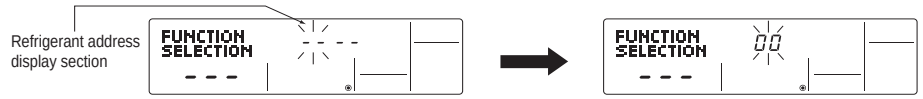


The above procedure must be carried out only if changes are necessary.

[Operating Procedure]

① Check the setting items provided by function selection.
If settings for a mode are changed by function selection, the functions of that mode will be changed accordingly. Check all the current settings according to steps ② to ⑦, fill in the "Check" column in Table 1, and then change them as necessary. For factory settings, refer to the indoor unit's installation manual.

② Switch off the remote controller.
Ⓐ Hold down the FILTER (mode is 15 to 28)and Ⓑ TEST buttons simultaneously for atleast 2 seconds. FUNCTION SELECTION will start to flash, and then the remote controller's display content will change as shown below.

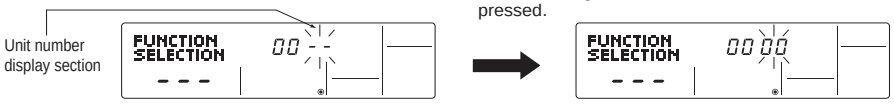


If the unit stops after FUNCTION SELECTION flashed for 2 seconds or "88" flashes in the room temperature display area for 2 seconds, a transmission error may have occurred. Check to see if there are any sources of noise or interference near the transmission path.

③ Set the outdoor unit's refrigerant address.
Ⓒ Press the [CLOCK] buttons (and) to select the desired refrigerant address. The refrigerant address changes from "00" to "15". (This operation is not possible for single refrigerant systems.)

Note
If you have made operational mistakes during this procedure, exit function selection (see step ⑩), and then restart from step ②.

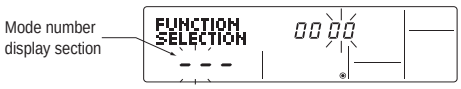
④ Set the indoor unit number.
Ⓓ Press the ON/OFF button so that "- -" flashes in the unit number display area.



Ⓒ Press the [CLOCK] buttons (and) to select the unit number of the indoor unit for which you want to perform function selection. The unit number changes to "00", "01", "02","03",04" and "AL" each time a button is pressed.

To set modes 01 to 06 or 15 to 22 select unit number "00".
To set modes 07 to 14 or 23 to 28 carry out as follows:
- To set each indoor unit individually, select " 01" to "04".
- To set all the indoor units collectively, select " AL".

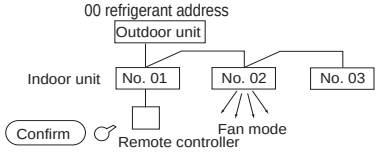
⑤ Confirm the refrigerant address and unit number.
Ⓔ Press the MODE button to confirm the refrigerant address and unit number.
After a while, "- - " will start to flash in the mode number display area.



"88" will flash in the room temperature display area if the selected refrigerant address does not exist in the system.
Furthermore, if "F" appears and flashes in the unit number display area and the refrigerant address display area also flashes, there are no units that correspond to the selected unit number. In this case, the refrigerant address and unit number may be incorrect, so repeat steps ② and ③ to set the correct ones.

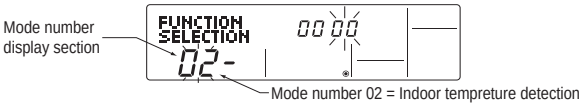
Ⓔ When the refrigerant address and unit number are confirmed by pressing the MODE button, the corresponding indoor unit will start fan operation. This helps you find the location of the indoor unit for which you want to perform function selection. However, if "00" or "AL" is selected as the unit number, all the indoor units corresponding to the specified refrigerant address will start fan operation.

Example) When the refrigerant address is set to 00 and the unit number is 02.

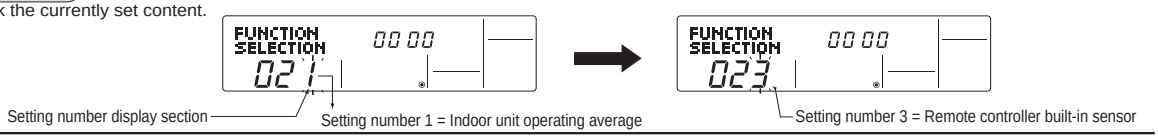


When grouping different refrigerant systems, if an indoor unit other than the one to which the refrigerant address has been set performs fan operation, there may be another refrigerant address that is the same as the specified one. In this case, check the DIP switch of the outdoor unit to see whether such a refrigerant address exists.

⑥ Select the mode number.
Ⓕ Press the [TEMP] buttons (and) to set the desired mode number.
(Only the selectable mode numbers can be selected.)



⑦ Select the setting content for the selected mode.
Ⓖ Press the MENU button. The currently selected setting number will flash, so check the currently set content.



Ⓕ Press the [TEMP] buttons (and) to select the desired setting number.

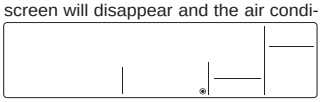
⑧ Register the settings you have made in steps ③ to ⑦.
Ⓔ Press the MODE button. The mode number and setting number will start to flash and registration starts.

The mode number and setting number will stop flashing and remain lit, indicating the end of registration.

If " - - - " is displayed for both the mode number and setting number and "88 " flashes in the room temperature display area, a transmission error may have occurred. Check to see if there are any sources of noise or interference near the transmission path.

⑨ To make additional settings in the FUNCTION SELECTION screen, repeat the steps ③ through ⑧.
Note. After setting the modes 07 through 14, the modes 23 through 28 cannot be set continuously, or vice versa. In this case, after completing the settings for the modes 07 through 14 or 23 through 28, go to the step 10 to finish setting, and restart setting from the step 1.
At this point, wait for 30 seconds or more before restarting setting. Otherwise, the temperature may indicate "88".

⑩ Complete function selection.
Ⓐ Hold down the FILTER (mode is 15 to 28) and TEST buttons simultaneously for at least 2 seconds.
After a while, the function selection screen will disappear and the air conditioner OFF screen will reappear.



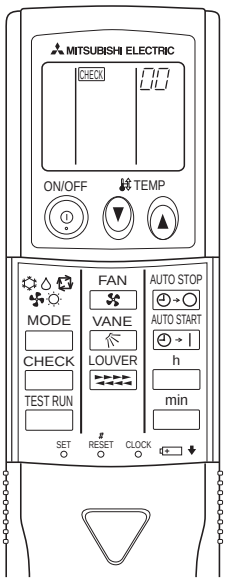
Do not operate the remote controller for at least 30 seconds after completing function selection. (No operations will be accepted even if they are made.)

Note:
If a function of an indoor unit is changed by function selection after installation is complete, make sure that a "○" mark, etc., is given in the "Check" column of Table 1 to indicate the change.

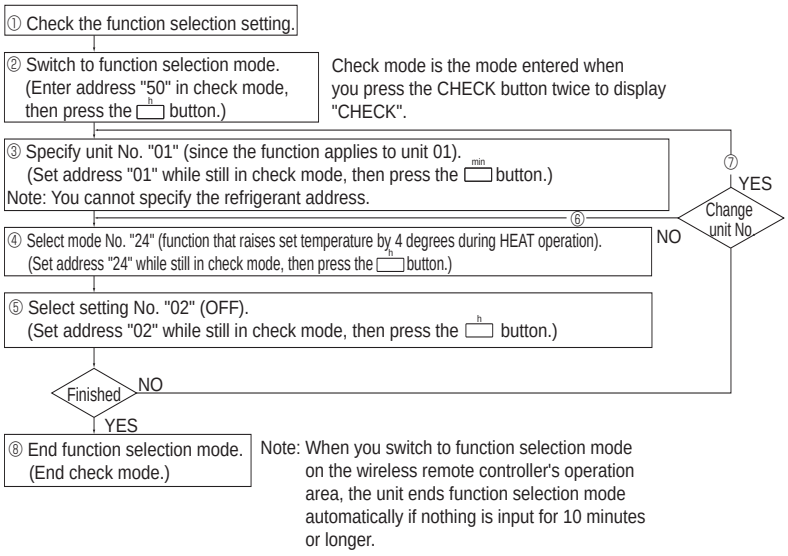
12-1-3. Selecting functions using the wireless remote controller (Type C)

Functions can be selected with the wireless remote controller. Function selection using wireless remote controller is available only for refrigerant system with wireless function. Refrigerant address cannot be specified by the wireless remote controller.

[Flow of function selection procedure]



The flow of the function selection procedure is shown below. This example shows how to turn off the function that raises the set temperature by 4 degrees during HEAT operation. (Mode 24: 2)
The procedure is given after the flow chart.



[Operating instructions]

① Check the function settings.

② Press the CHECK button twice continuously. → CHECK is lit and "00" blinks.
Press the temp ▼ button once to set "50". Direct the wireless remote controller toward the receiver of the indoor unit and press the h button.

③ Set the unit number.
Press the temp ▲ ▼ button to set the unit number. (Press "01" to specify the indoor unit whose unit number is 01.)
Direct the wireless remote controller toward the receiver of the indoor unit and press the min button.
(By setting unit number with the min button, specified indoor unit starts performing fan operation.
Detect which unit is assigned to which number using this function. If unit number is set to AL, all the indoor units in same refrigerant system start performing fan operation simultaneously.)

Notes:
1. If a unit number that cannot be recognized by the unit is entered, 3 beeps of 0.4 seconds will be heard. Reenter the unit number setting.
2. If the signal was not received by the sensor, you will not hear a beep or a "double beep" may be heard. Reenter the unit number setting.

④ Select a mode.
Press the temp ▲ ▼ button to set a mode. Press "24" to turn on the function that raises the set temperature by 4 degree during heat operation. Direct the wireless remote controller toward the sensor of the indoor unit and press the n button.
→ The sensor-operation indicator will flash and beeps will be heard to indicate the current setting number.
Current setting number: 1 = 1 beep (one second)
2 = 2 beeps (one second each)
3 = 3 beeps (one second each)

Notes:
1. If a mode number that cannot be recognized by the unit is entered, 3 beeps of 0.4 seconds will be heard. Reenter the mode number.
2. If the signal was not received by the sensor, you will not hear a beep or a "double beep" may be heard. Reenter the mode number.

⑤ Select the setting number.
Press the temp ▲ ▼ button to select the setting number. (02: Not available)
Direct the wireless remote controller toward the receiver of the indoor unit and press the h button.
→ The sensor-operation indicator will flash and beeps will be heard to indicate the the setting number.
Setting number: 1 = 2 beeps (0.4 seconds each)
2 = 2 beeps (0.4 seconds each, repeated twice)
3 = 2 beeps (0.4 seconds each, repeated three times)

Notes:
1. If a setting number that cannot be recognized by the unit is entered, the setting will turn back to the original setting.
2. If the signal was not received by the sensor, you will not hear a beep or a "double beep" may be heard. Reenter the setting number.

⑥ Repeat steps ④ and ⑤ to make an additional setting without changing unit number.

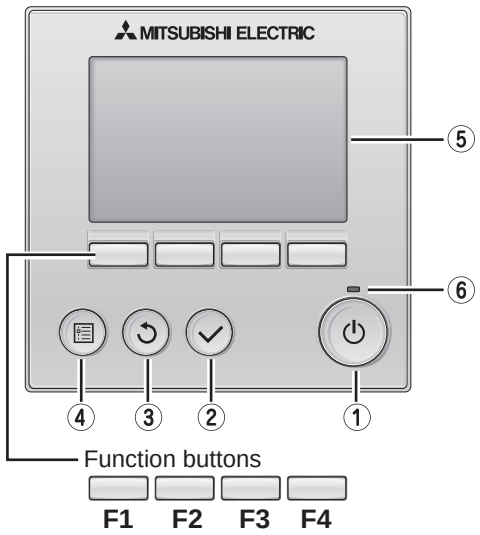
⑦ Repeat steps ③ to ⑤ to change unit number and make function settings on it.

⑧ Complete the function settings
Press ◎ button.

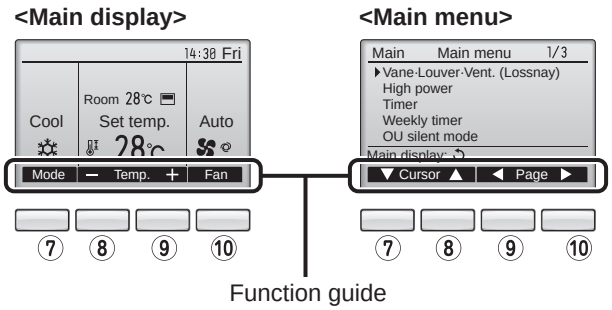
Do not use the wireless remote controller for 30 seconds after completing the function setting.

12-2. FUNCTION SELECTION OF REMOTE CONTROLLER

12-2-1. PAR-31MAA



The functions of the function buttons change depending on the screen. Refer to the button function guide that appears at the bottom of the LCD for the functions they serve on a given screen.
When the system is centrally controlled, the button function guide that corresponds to the locked button will not appear.



① ON / OFF button

Press to turn ON/OFF the indoor unit.

② SELECT button

Press to save the setting.

③ RETURN button

Press to return to the previous screen.

④ MENU button

Press to bring up the Main menu.

⑤ Backlit LCD

Operation settings will appear.
When the backlight is off, pressing any button turns the backlight on and it will stay lit for a certain period of time depending on the screen.

When the backlight is off, pressing any button turns the backlight on and does not perform its function. (except for the ⏻ (ON / OFF) button)

⑥ ON / OFF lamp

This lamp lights up in green while the unit is in operation. It blinks while the remote controller is starting up or when there is an error.

⑦ Function button F1

Main display : Press to change the operation mode.
Main menu : Press to move the cursor down.

⑧ Function button F2

Main display : Press to decrease temperature.
Main menu : Press to move the cursor up.

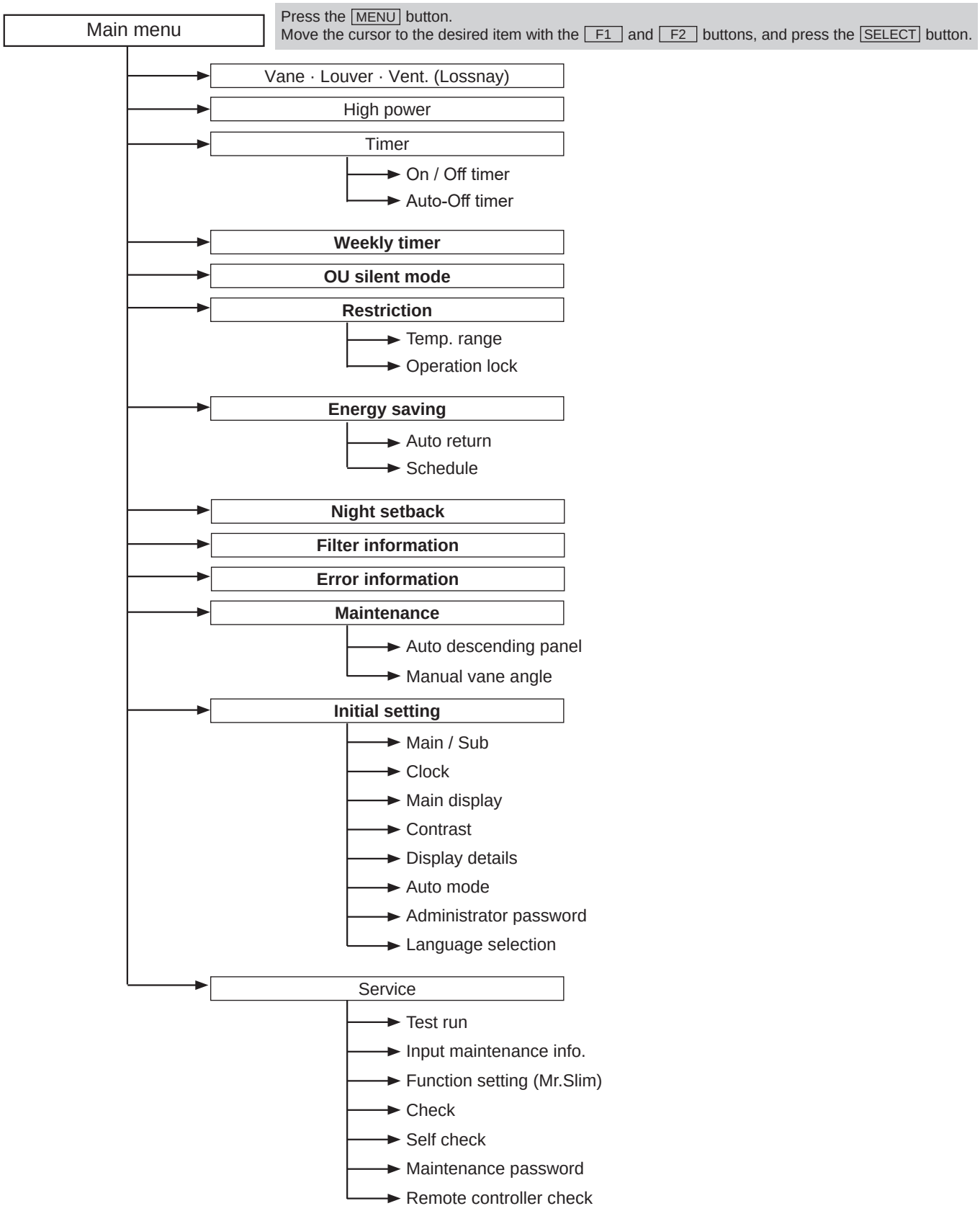
⑨ Function button F3

Main display : Press to increase temperature.
Main menu : Press to go to the previous page.

⑩ Function button F4

Main display : Press to change the fan speed.
Main menu : Press to go to the next page.

<Menu structure of PAR-31MAA>



Not all functions are available on all models of indoor units.

<Main menu list of PAR-31MAA>

Setting and display items		Setting details
Vane · Louver · Vent. (Lossnay)		Use to set the vane angle. • Select a desired vane setting from five different settings. Use to turn ON / OFF the louver. • Select a desired setting from "ON" and "OFF." Use to set the amount of ventilation. • Select a desired setting from "Off," "Low," and "High."
High power		Use to reach the comfortable room temperature quickly. • Units can be operated in the High-power mode for up to 30 minutes.
Timer	On/Off timer*	Use to set the operation On/Off times. • Time can be set in 5-minute increments.
	Auto-Off timer	Use to set the Auto-Off time. • Time can be set to a value from 30 to 240 in 10-minute increments.
Weekly timer*		Use to set the weekly operation On / Off times. • Up to eight operation patterns can be set for each day. (Not valid when the On/Off timer is enabled.)
OU silent mode*		Use to set the time periods in which priority is given to quiet operation of outdoor units over temperature control. Set the Start/Stop times for each day of the week. • Select the desired silent level from "Normal," "Middle," and "Quiet."
Restriction	Temp. range	Use to restrict the preset temperature range. • Different temperature ranges can be set for different operation modes.
	Operation lock	Use to lock selected functions. • The locked functions cannot be operated.
Energy saving	Auto return	Use to get the units to operate at the preset temperature after performing energy-save operation for a specified time period. • Time can be set to a value from 30 and 120 in 10-minute increments. (This function will not be valid when the preset temperature ranges are restricted.)
	Schedule*	Set the start/stop times to operate the units in the energy-save mode for each day of the week, and set the energy-saving rate. • Up to four energy-save operation patterns can be set for each day. • Time can be set in 5-minute increments. • Energy-saving rate can be set to a value from 0% and 50 to 90% in 10% increments.
Night setback*		Use to make Night setback settings. • Select "Yes" to enable the setting, and "No" to disable the setting. The temperature range and the start/stop times can be set.
Filter information		Use to check the filter status. • The filter sign can be reset.
Error information		Use to check error information when an error occurs. • Check code, error source, refrigerant address, unit model, manufacturing number, contact information (dealer's phone number) can be displayed. (The unit model, manufacturing number, and contact information need to be registered in advance to be displayed.)
Maintenance	Auto descending panel	Auto descending panel (Optional parts) Up / Down you can do.
	Manual vane angle	Use to set the vane angle for each vane to a fixed position.
Initial setting	Main/Sub	When connecting two remote controllers, one of them needs to be designated as a sub controller.
	Clock	Use to set the current time.
	Main display	Use to switch between "Full" and "Basic" modes for the Main display. • The initial setting is "Full."
	Contrast	Use to adjust screen contrast.

* Clock setting is required.

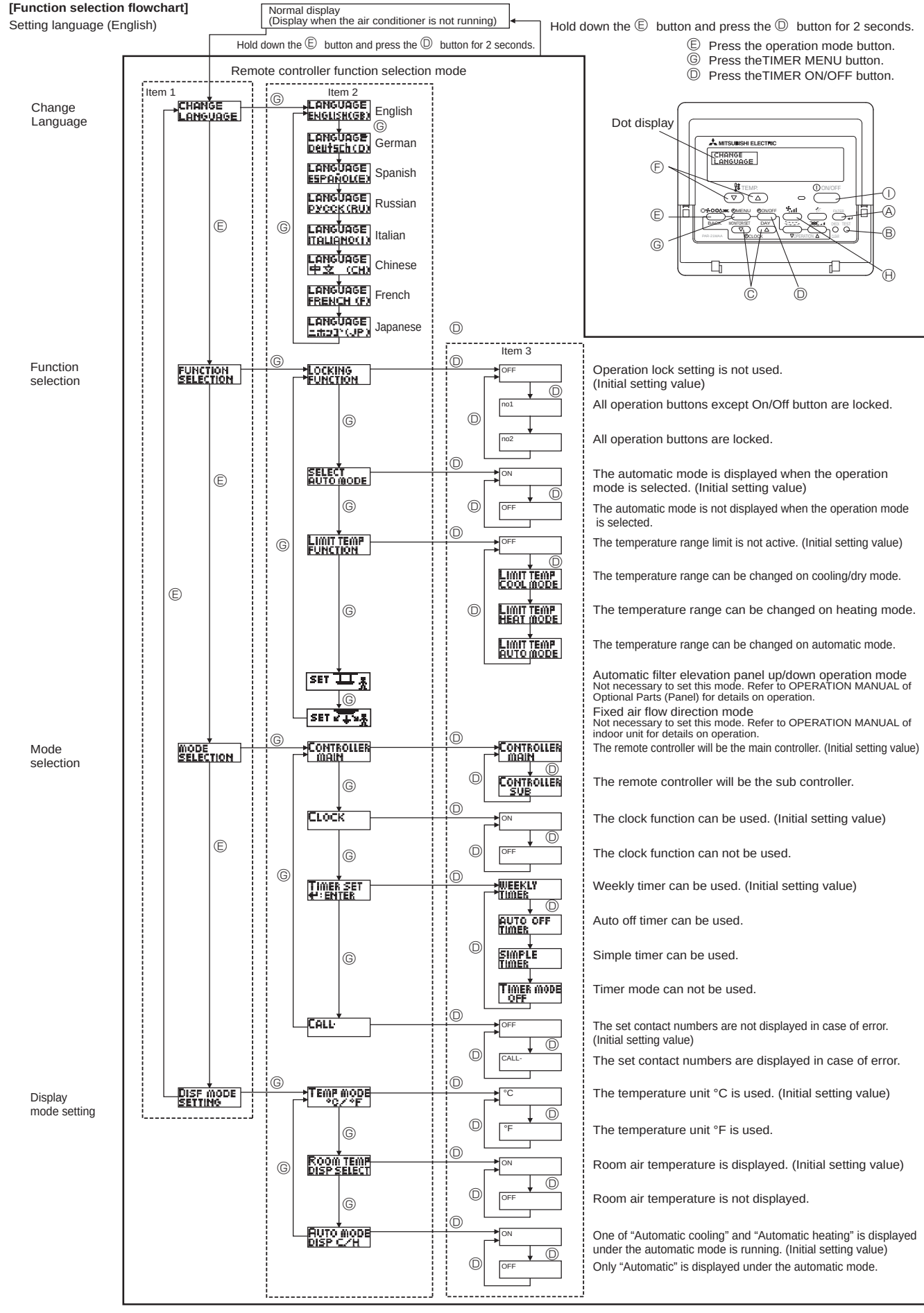
Continue to the next page

Setting and display items		Setting details
Initial setting	Display details	Make the settings for the remote controller related items as necessary. Clock: The factory settings are "Yes" and "24h" format. Temperature: Set either Celsius (°C) or Fahrenheit (°F). Room temp. : Set Show or Hide. Auto mode: Set the Auto mode display or Only Auto display.
	Auto mode	Whether or not to use the AUTO mode can be selected by using the button. This setting is valid only when indoor units with the AUTO mode function are connected.
	Administrator password	The administrator password is required to make the settings for the following items. • Timer setting • Energy-save setting • Weekly timer setting • Restriction setting • Outdoor unit silent mode setting • Night set back
	Language selection	Use to select the desired language.
Service	Test run	Select "Test run" from the Service menu to bring up the Test run menu. • Test run • Drain pump test run
	Input maintenance	Select "Input maintenance Info." from the Service menu to bring up the Maintenance information screen. The following settings can be made from the Maintenance Information screen. • Model name input • Serial No. input • Dealer information input
	Function setting	Make the settings for the indoor unit functions via the remote controller as necessary.
	Check	Check code history: Display the check code history and execute "delete check code history". Refrigerant leak check: Refrigerant leaks can be judged. Smooth maintenance: The indoor and outdoor maintenance data can be displayed. Request code: Details of the operation data including each thermistor temperature and check code history can be checked.
	Self check	Check code history of each unit can be checked via the remote controller.
	Maintenance password	Take the following steps to change the maintenance password.
	Remote controller check	When the remote controller does not work properly, use the remote controller checking function to troubleshoot the problem.

12-2-2. PAR-21MAA

[Function selection flowchart]

Setting language (English)



The setting of the following remote controller functions can be changed using the remote controller function selection mode.
Change the setting when needed.

Item 1	Item 2	Item 3 (Setting content)
1.Change Language ("CHANGE LANGUAGE")	Language setting to display	• Display in multiple languages is possible.
2.Function limit ("FUNCTION SELECTION")	(1) Operation function limit setting (operation lock) ("LOCKING FUNCTION")	• Setting the range of operation limit (operation lock)
	(2) Use of automatic mode setting ("SELECT AUTO MODE")	• Setting the use or non-use of "automatic" operation mode
	(3) Temperature range limit setting ("LIMIT TEMP FUNCTION")	• Setting the temperature adjustable range (maximum, minimum)
3.Mode selection ("MODE SELECTION")	(1) Remote controller main/sub setting ("CONTROLLER MAIN/SUB")	• Selecting main or sub remote controller * When two remote controllers are connected to one group, one controller must be set to sub.
	(2) Use of clock setting ("CLOCK")	• Setting the use or non-use of clock function
	(3) Timer function setting ("WEEKLY TIMER")	• Setting the timer type
	(4) Contact number setting for error situation ("CALL.")	• Contact number display in case of error • Setting the telephone number
4.Display change ("DISP MODE SETTING")	(1) Temperature display ℃/°F setting ("TEMP MODE ℃/°F")	• Setting the temperature unit (℃ or °F) to display
	(2) Room air temperature display setting ("ROOM TEMP DISP SELECT")	• Setting the use or non-use of the display of indoor (suction) air temperature
	(3) Automatic cooling/heating display setting ("AUTO MODE DISP C/H")	• Setting the use or non-use of the display of "Cooling" or "Heating" display during operation with automatic mode

[Function selection flowchart] Refer to next page.
[1] Stop the air conditioner to start remote controller function selection mode. →[2] Select from item1. → [3] Select from item2. →[4] Make the setting. (Details are specified in item3) → [5] Setting completed. →[6] Change the display to the normal one. (End)

[Detailed setting]

[4] -1. CHANGE LANGUAGE setting

The language that appears on the dot display can be selected.

- Press the [◴MENU] button to change the language.

① Japanese (JP), ②English (GB), ③German (D), ④Spanish (E), ⑤ Russian (RU), ⑥Italian (I), ⑦Chinese (CH), ⑧French (F)

[4] -2. Function limit

(1) Operation function limit setting (operation lock)

- To switch the setting, press the [◴ON/OFF] button.

① no1 : All operation buttons except [ⓘ ON/OFF] button are locked.
② no2 : All operation buttons are locked.
③ OFF (Initial setting value) : Operation lock setting is not made

* To make the operation lock setting valid on the normal screen, it is necessary to press buttons (Press and hold down the [FILTER] and [ⓘ ON/OFF] buttons at the same time for 2 seconds.) on the normal screen after the above setting is made.

(2) Use of automatic mode setting

When the remote controller is connected to the unit that has automatic operation mode, the following settings can be made.

- To switch the setting, press the [◴ON/OFF] button.

① ON (Initial setting value) : The automatic mode is displayed when the operation mode is selected.
② OFF : The automatic mode is not displayed when the operation mode is selected.

(3) Temperature range limit setting

After this setting is made, the temperature can be changed within the set range.

- To switch the setting, press the [◴ ON/OFF] button.

① LIMIT TEMP COOL MODE :
The temperature range can be changed on cooling/dry mode.
② LIMIT TEMP HEAT MODE :
The temperature range can be changed on heating mode.
③ LIMIT TEMP AUTO MODE :
The temperature range can be changed on automatic mode.
④ OFF (initial setting) : The temperature range limit is not active.

* When the setting, other than OFF, is made, the temperature range limit setting on cooling, heating and automatic mode is made at the same time. However the range cannot be limited when the set temperature range has not changed.

- To increase or decrease the temperature, press the [TEMP (▽) or (△)] button.
- To switch the upper limit setting and the lower limit setting, press the [ ] button. The selected setting will flash and the temperature can be set.
- Settable range
  Cooling/Dry mode : Lower limit: 19 ℃ ~ 30℃ Upper limit: 30 ℃ ~ 19℃
  Heating mode : Lower limit: 17 ℃ ~ 28℃ Upper limit: 28 ℃ ~ 17℃
  Automatic mode : Lower limit: 19 ℃ ~ 28℃ Upper limit: 28 ℃ ~ 19℃

[4] -3. Mode selection setting

(1) Remote controller main/sub setting

- To switch the setting, press the [◴ON/OFF] button.

① Main : The controller will be the main controller.
② Sub : The controller will be the sub controller.

(2) Use of clock setting

- To switch the setting, press the [◴ON/OFF] button.

① ON : The clock function can be used.
② OFF : The clock function cannot be used.

(3) Timer function setting

- To switch the setting, press the [◴ON/OFF] button (Choose one of the followings.).

① WEEKLY TIMER (initial setting):
The weekly timer can be used.
② AUTO OFF TIMER: The auto off timer can be used.
③ SIMPLE TIMER: The simple timer can be used.
④ TIMER MODE OFF: The timer mode cannot be used.

* When the use of clock setting is OFF, the "WEEKLY TIMER" cannot be used.

(4) Contact number setting for error situation

- To switch the setting, press the [◴ON/OFF] button.

① CALL OFF : The set contact numbers are not displayed in case of error.
② CALL **** *** **** : The set contact numbers are displayed in case of error.
CALL_ : The contact number can be set when the display is as shown on the left.

- Setting the contact numbers

To set the contact numbers, follow the following procedures.
Move the flashing cursor to set numbers. Press the [TEMP. (▽) and (△)] button to move the cursor to the right (left). Press the [◴CLOCK (▽) and (△)] button to set the numbers.

[4] -4. Display change setting

(1) Temperature display ℃/ °F setting

- To switch the setting, press the [◴ ON/OFF] button.

①℃ : The temperature unit ℃ is used.
②°F : The temperature unit °F is used.

(2) Room air temperature display setting

- To switch the setting, press the [◴ON/OFF] button.

① ON : The room air temperature is displayed.
② OFF : The room air temperature is not displayed.

(3) Automatic cooling/heating display setting

- To switch the setting, press the [◴ON/OFF] button.

① ON : One of "Automatic cooling" and "Automatic heating" is displayed under the automatic mode is running.
② OFF : Only "Automatic" is displayed under the automatic mode.

13 MONITORING THE OPERATION DATA BY THE REMOTE CONTROLLER

13-1. HOW TO "MONITOR THE OPERATION DATA"

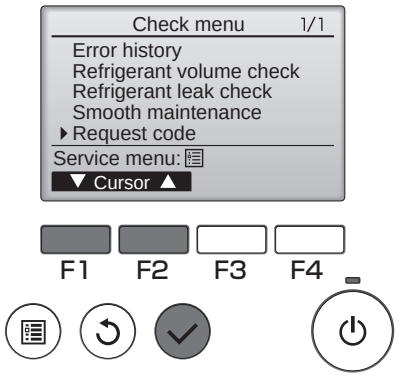
13-1-1. PAR-31MAA

Details on the operation data including each thermistor temperature and check code history can be confirmed with the remote controller.

① Select "Service" from the Main menu, and press the ⊙ button.

Select "Check" with the F1 or F2 button, and press the ⊙ button.

Select "Request code" with the F1 or F2 button, and press the ⊙ button.



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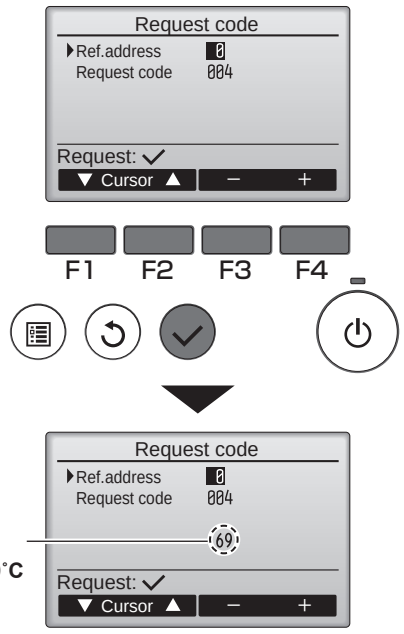
② Set the Refrigerant address and Request code.

Select the item to be changed with the F1 or F2 button.

Select the required setting with the F3 or F4 button.

■<Ref.address>setting [0] – [15]
■<Request code>setting

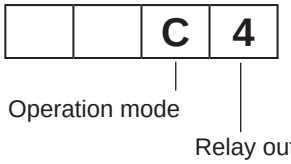
Press the ⊙ button, Data will be collected and displayed.



Request code: 004
Discharge temperature: 69˚C

<Operation state> (Request code "0")

Data display



1) Operation mode

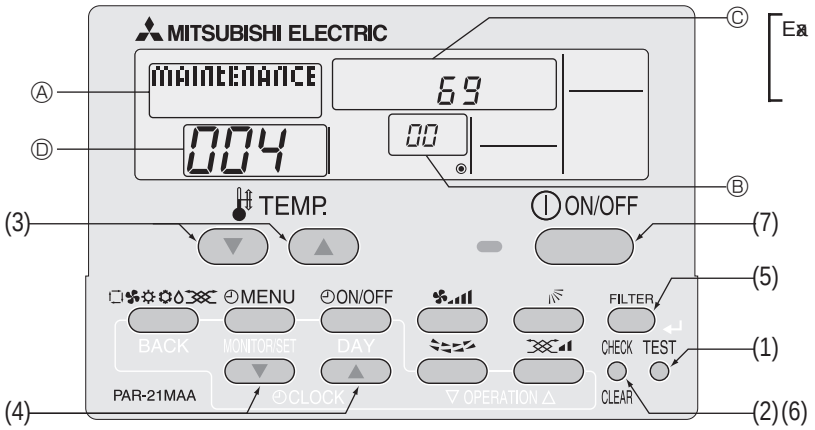
Display	Operation mode
0	STOP • FAN
C	COOL • DRY
H	HEAT
d	Defrost

2) Relay output state

Display	Power currently supplied to compressor	Compressor	Four-way valve	Solenoid valve
0	—	—	—	—
1				ON
2			ON	
3			ON	ON
4		ON		
5		ON		ON
6		ON	ON	
7		ON	ON	ON
8	ON			
A	ON		ON	

13-1-2. PAR-21MAA

● Turn on the [Monitoring the operation data]



[Example) Request code "004"
Discharge temperature 69℃
Refrigerant address "00"]

A: Maintenance mode
B: Refrigerant address
C: Data display area
D: Request code display area

(1) Press the TEST button for 3 seconds so that [Maintenance mode] appears on the screen (at Ⓐ).

(2) Press the CHECK button for 3 seconds to switch to [Maintenance monitor].
Note) It is not possible to switch to [Maintenance monitor] during data request in maintenance mode (i.e., while " - - - -" is blinking) since no buttons are operative.

● Operating the service inspection monitor

[- - -] appears on the screen (at Ⓓ) when [Maintenance monitor] is activated.
(The display (at Ⓓ) now allows you to set a request code No.)

(3) Press the [TEMP] buttons (▽ and △) to select the desired refrigerant address

[Screen Ⓑ] → 00 ↔ 01 ↔ ····· ↔ 15 ←

(4) Press the [CLOCK] buttons (▽ and △) to set the desired request code No.

(5) Press the FILTER button to perform data request.
(The requested data will be displayed at Ⓒ in the same way as in maintenance mode.)

Data collected during operation of the remote controller will be displayed.
The collected data such as temperature data will not be updated automatically even if the data changes
To display the updated data, carry out step (4) again.

● Cancelling the Monitoring the operation data

(6) While [Maintenance monitor] is displayed, press the CHECK button for 3 seconds to return to maintenance mode.

(7) To return to normal mode, press the ⏻ ON/OFF button.

<Request code list>

* Certain indoor/outdoor combinations do not have the request code function; therefore, no request codes are displayed.

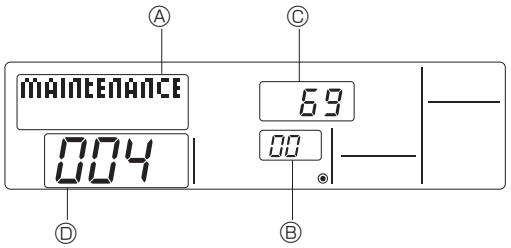
Request code	Request content	Description (Display range)	Unit	Remarks
0	Operation state	Refer to 13-1-2. Detail Contents in Request Code.	–	
1	Compressor-Operating current (rms)	0 – 50	A	
2	Compressor-Accumulated operating time	0 – 9999	10 hours	
3	Compressor-Number of operation times	0 – 9999	100 times	
4	Discharge temperature (TH4)	3 – 217	℃	
5	Outdoor unit - Liquid pipe 1 temperature (TH3)	-40 – 90	℃	
6	Outdoor unit - Liquid pipe 2 temperature	-40 – 90	℃	
7	Outdoor unit-2-phase pipe temperature (TH6)	-39 – 88	℃	
8				
9	Outdoor unit-Outside air temperature (TH7)	-39 – 88	℃	
10	Outdoor unit-Heatsink temperature (TH8)	-40 – 200	℃	
11				
12	Discharge superheat (SHd)	0 – 255	℃	
13	Sub-cool (SC)	0 – 130	℃	
14				
15				
16	Compressor-Operating frequency	0 – 255	Hz	
17	Compressor-Target operating frequency	0 – 255	Hz	
18	Outdoor unit-Fan output step	0 – 10	Step	
19	Outdoor unit-Fan 1 speed (Only for air conditioners with DC fan motor)	0 – 9999	rpm	
20	Outdoor unit-Fan 2 speed (Only for air conditioners with DC fan motor)	0 – 9999	rpm	"0" is displayed if the air conditioner is a single-fan type.
21				
22	LEV (A) opening	0 – 500	Pulses	
23	LEV (B) opening	0 – 500	Pulses	
24				
25	Primary current	0 – 50	A	
26	DC bus voltage	180 – 370	V	
27				
28				
29	Number of connected indoor units	0 – 4	Units	
30	Indoor unit-Setting temperature	17 – 30	℃	
31	Indoor unit-Intake air temperature <Measured by thermostat>	8 – 39	℃	
32	Indoor unit-Intake air temperature (Unit No. 1) <Heat mode-4-deg correction>	8 – 39	℃	"0"is displayed if the target unit is not present.
33	Indoor unit-Intake air temperature (Unit No. 2) <Heat mode-4-deg correction>	8 – 39	℃	↑
34	Indoor unit-Intake air temperature (Unit No. 3) <Heat mode-4-deg correction>	8 – 39	℃	↑
35	Indoor unit-Intake air temperature (Unit No. 4) <Heat mode-4-deg correction>	8 – 39	℃	↑
36				
37	Indoor unit - Liquid pipe temperature (Unit No. 1)	-39 – 88	℃	"0" is displayed if the target unit is not present.
38	Indoor unit - Liquid pipe temperature (Unit No. 2)	-39 – 88	℃	↑
39	Indoor unit - Liquid pipe temperature (Unit No. 3)	-39 – 88	℃	↑
40	Indoor unit - Liquid pipe temperature (Unit No. 4)	-39 – 88	℃	↑
41				
42	Indoor unit-Cond./Eva. pipe temperature (Unit No. 1)	-39 – 88	℃	"0" is displayed if the target unit is not present.
43	Indoor unit-Cond./Eva. pipe temperature (Unit No. 2)	-39 – 88	℃	↑
44	Indoor unit-Cond./Eva. pipe temperature (Unit No. 3)	-39 – 88	℃	↑
45	Indoor unit-Cond./Eva. pipe temperature (Unit No. 4)	-39 – 88	℃	↑
46				
47				
48	Thermostat ON operating time	0 – 999	Minutes	
49	Test run elapsed time	0 – 120	Minutes	← Not possible to activate maintenance mode during the test run.

Request code	Request content	Description (Display range)	Unit	Remarks
50	Indoor unit-Control state	Refer to 13-1-2.Detail Contents in Request Code.	–	
51	Outdoor unit-Control state	Refer to 13-1-2.Detail Contents in Request Code.	–	
52	Compressor-Frequency control state	Refer to 13-1-2.Detail Contents in Request Code.	–	
53	Outdoor unit-Fan control state	Refer to 13-1-2.Detail Contents in Request Code.	–	
54	Actuator output state	Refer to 13-1-2.Detail Contents in Request Code.	–	
55	Error content (U9)	Refer to 13-1-2.Detail Contents in Request Code.	–	
56				
57				
58				
59				
60	Signal transmission demand capacity	0 – 255	%	
61	Contact demand capacity	Refer to 13-1-2.Detail Contents in Request Code.	–	
62	External input state (silent mode, etc.)	Refer to 13-1-2.Detail Contents in Request Code.	–	
63				
64				
65				
66				
67				
68				
69				
70	Outdoor unit-Capacity setting display	Refer to 13-1-2.Detail Contents in Request Code.	–	
71	Outdoor unit-Setting information	Refer to 13-1-2.Detail Contents in Request Code.	–	
72				
73	Outdoor unit-SW1 setting information	Refer to 13-1-2.Detail Contents in Request Code.	–	
74	Outdoor unit-SW2 setting information	Refer to 13-1-2.Detail Contents in Request Code.	–	
75				
76	Outdoor unit-SW4 setting information	Refer to 13-1-2.Detail Contents in Request Code.	–	
77	Outdoor unit-SW5 setting information	Refer to 13-1-2.Detail Contents in Request Code.	–	
78	Outdoor unit-SW6 setting information	Refer to 13-1-2.Detail Contents in Request Code.	–	
79	Outdoor unit-SW7 setting information	Refer to 13-1-2.Detail Contents in Request Code.	–	
80	Outdoor unit-SW8 setting information	Refer to 13-1-2.Detail Contents in Request Code.	–	
81	Outdoor unit-SW9 setting information	Refer to 13-1-2.Detail Contents in Request Code.	–	
82	Outdoor unit-SW10 setting information	Refer to 13-1-2.Detail Contents in Request Code.	–	
83				
84	M-NET adapter connection (presence/absence)	"0000": Not connected "0001": Connected	–	
85				
86				
87				
88				
89	Display of execution of replace/wash operation	"0000": Not washed "0001": Washed	–	
90	Outdoor unit-Microprocessor version information	Examples) Ver 5.01 → "0501"	Ver	
91	Outdoor unit-Microprocessor version information (sub No.)	Auxiliary information (displayed after version information) Examples) Ver 5.01 A000 → "A000"	–	
92				
93				
94				
95				
96				
97				
98				
99				
100	Outdoor unit - Error postponement history 1 (latest)	Displays postponement code. (" - - " is displayed if no postponement code is present)	Code	
101	Outdoor unit - Error postponement history 2 (previous)	Displays postponement code. (" - - " is displayed if no postponement code is present)	Code	
102	Outdoor unit - Error postponement history 3 (last but one)	Displays postponement code. (" - - " is displayed if no postponement code is present)	Code	

Request code	Request content	Description (Display range)	Unit	Remarks
103	Check code history 1 (latest)	Displays the history. ("--" is displayed if no history is present.)	Code	
104	Check code history 2 (second to last)	Displays the history. ("--" is displayed if no history is present.)	Code	
105	Check code history 3 (third to last)	Displays the history. ("--" is displayed if no history is present.)	Code	
106	Abnormal thermistor display (TH3/TH6/TH7/TH8)	3 : TH3 6 : TH6 7 : TH7 8 : TH8 0 : No thermistor error	Sensor number	
107	Operation mode at time of error	Displayed in the same way as request code "0".	–	
108	Compressor-Operating current at time of error	0 – 50	A	
109	Compressor-Accumulated operating time at time of error	0 – 9999	10 hours	
110	Compressor-Number of operation times at time of error	0 – 9999	100 times	
111	Discharge temperature at time of error	3 – 217	℃	
112	Outdoor unit - Liquid pipe 1 temperature (TH3) at time of error	-40 – 90	℃	
113	Outdoor unit - Liquid pipe 2 temperature at time of error	-40 – 90	℃	
114	Outdoor unit-2-phase pipe temperature (TH6) at time of error	-39 – 88	℃	
115				
116	Outdoor unit-Outside air temperature (TH7) at time of error	-39 – 88	℃	
117	Outdoor unit-Heatsink temperature (TH8) at time of error	-40 – 200	℃	
118	Discharge superheat (SHd) at time of error	0 – 255	℃	
119	Sub-cool (SC) at time of error	0 – 130	℃	
120	Compressor-Operating frequency at time of error	0 – 255	Hz	
121	Outdoor unit at time of error • Fan output step	0 – 10	Step	
122	Outdoor unit at time of error • Fan 1 speed (Only for air conditioners with DC fan)	0 – 9999	rpm	
123	Outdoor unit at time of error • Fan 2 speed (Only for air conditioners with DC fan)	0 – 9999	rpm	"0"is displayed if the air conditioner is a single-fan type.
124				
125	LEV (A) opening at time of error	0 – 500	Pulses	
126	LEV (B) opening at time of error	0 – 500	Pulses	
127				
128				
129				
130	Thermostat ON time until operation stops due to error	0 – 999	Minutes	
131				
132	Indoor - Liquid pipe temperature at time of error	-39 – 88	℃	Average value of all indoor units is displayed if the air conditioner consists of 2 or more indoor units (twin, triple, quad).
133	Indoor - Cond/Eva. pipe temperature at time of error	-39 – 88	℃	Average value of all indoor units is displayed if the air conditioner consists of 2 or more indoor units (twin, triple, quad).
134	Indoor at time of error • Intake air temperature <Thermostat judge temperature>	-39 – 88	℃	
135				
136				
137				
138				
139				
140				
~				
146				
147				
148				
149				
150	Indoor - Actual intake air temperature	-39 – 88	℃	
151	Indoor - Liquid pipe temperature	-39 – 88	℃	
152	Indoor - Cond/Eva. pipe temperature	-39 – 88	℃	

Request code	Request content	Description (Display range)	Unit	Remarks
153				
154	Indoor-Fan operating time (After filter is reset)	0 – 9999	1 hour	
155	Indoor-Total operating time (Fan motor ON time)	0 – 9999	10 hours	
156				
157	Indoor fan output value (Sj value)	0 – 255 Fan control data	–	For indoor fan phase control
158	Indoor fan output value (Pulsation ON/OFF)	"00 **" "**" indicates fan control data.	–	For indoor fan pulsation control
159	Indoor fan output value (duty value)	"00 **" "**" indicates fan control data.	–	For indoor DC brushless motor control
160				
161				
162	Indoor unit-Model setting information	Refer to 13-1-2. Detail Contents in Request Code.	–	
163	Indoor unit-Capacity setting information	Refer to 13-1-2. Detail Contents in Request Code.	–	
164	Indoor unit-SW3 information	Undefined	–	
165	Wireless pair No. (indoor control board side) setting	Refer to 13-1-2. Detail Contents in Request Code.	–	
166	Indoor unit-SW5 information	Undefined	–	
167				
~				
189				
190	Indoor unit-Microprocessor version information	Examples) Ver 5.01 → "0501"	Ver	
191	Indoor unit-Microprocessor version information (sub No.)	Auxiliary information (displayed after version information) Examples) Ver 5.01 A000 → "A000"	–	
192				
~				
764				
765	Stable operation (Heat mode)	This request code is not provided to collect data. It is used to fix the operation state.		
766	Stable operation (Cool mode)	This request code is not provided to collect data. It is used to fix the operation state.		
767	Stable operation cancellation	This request code is not provided to collect data. It is used to cancel the operation state that has been fixed by request codes "765" and "766".		

<Detail contents in request code>



[Example) Request code "004"
Discharge temperature 69℃
Refrigerant address "00"]

A: Maintenance mode display
B: Refrigerant address
C: Data display area
D: Request code display area

[Operation state] (Request code :" 0")

Data display

		C	4

Relay output state

Operation mode

Operation mode

Display	Operation mode
0	STOP • FAN
C	COOL • DRY
H	HEAT
d	DEFROST

Relay output state

Display	Power currently supplied to compressor	Compressor	Four-way valve	Solenoid valve
0	–	–	–	–
1				ON
2			ON	
3			ON	ON
4		ON		
5		ON		ON
6		ON	ON	
7		ON	ON	ON
8	ON			
A	ON		ON	

[Indoor unit – Control state] (Request code :" 50 ")

Data display

✻	✻	✻	✻

Unit No. 4 state
Unit No. 3 state
Unit No. 2 state
Unit No. 1 state

Display	State
0	Normal
1	Preparing for heat operation
2	–
3	–
4	Heater is ON.
5	Anti-freeze protection is ON.
6	Overheat protection is ON.
7	Requesting compressor to turn OFF
F	There are no corresponding units.

[Outdoor unit – Control state] (Request code :" 51")

Data display				State
0	0	0	0	Normal
0	0	0	1	Preparing for heat operation
0	0	0	2	Defrost

[Compressor – Frequency control state] (Request code :" 52")

Data display

0	0	✻	✻

Frequency control state ②

Frequency control state ①

Frequency control state ①

Display	Current limit control
0	No current limit
1	Primary current limit control is ON.
2	Secondary current limit control is ON.

Frequency control state ②

Display	Discharge temperature overheat prevention	Condensation temperature overheat prevention	Anti-freeze protection control	Heatsink temperature overheat prevention
0				
1	Controlled			
2		Controlled		
3	Controlled	Controlled		
4			Controlled	
5	Controlled		Controlled	
6		Controlled	Controlled	
7	Controlled	Controlled	Controlled	
8				Controlled
9	Controlled			Controlled
A		Controlled		Controlled
b	Controlled	Controlled		Controlled
C			Controlled	Controlled
d	Controlled		Controlled	Controlled
E		Controlled	Controlled	Controlled
F	Controlled	Controlled	Controlled	Controlled

[Fan control state] (Request code :"53")

Data display | 0 | 0 | * | * |

- Fan step correction value by heatsink temperature overheat prevention control
- Fan step correction value by condensation temperature overheat prevention control

Display	Correction value
- (minus)	– 1
0	0
1	+1
2	+2

[Actuator output state] (Request code :"54")

Data display | 0 | 0 | * | * |

- Actuator output state ①
- Actuator output state ②

Actuator output state ①

Display	SV1	Four-way valve	Compressor	Compressor is warming up
0				
1	ON			
2		ON		
3	ON	ON		
4			ON	
5	ON		ON	
6		ON	ON	
7	ON	ON	ON	
8				ON
9	ON			ON
A		ON		ON
b	ON	ON		ON
C			ON	ON
d	ON		ON	ON
E		ON	ON	ON
F	ON	ON	ON	ON

Actuator output state ②

Display	52C	SV2	SS
0			
1	ON		
2		ON	
3	ON	ON	
4			ON
5	ON		ON
6		ON	ON
7	ON	ON	ON

[Error content (U9)] (Request code :"55")

Data display | 0 | 0 | * | * |

- Error content ①
- Error content ②

Error content ① ●: Detected

Display	Overvoltage error	Undervoltage error	L1-phase open error	Power synchronizing signal error
0				
1	●			
2		●		
3	●	●		
4			●	
5	●		●	
6		●	●	
7	●	●	●	
8				●
9	●			●
A		●		●
b	●	●		●
C			●	●
d	●		●	●
E		●	●	●
F	●	●	●	●

Error content ② ●: Detected

Display	Converter Fo error	PAM error
0		
1	●	
2		●
3	●	●

[Contact demand capacity] (Request code : "61")

Data display 0 0 0 *

Setting content

Setting content

Display	Setting value
0	0%
1	50%
2	75%
3	100%

[External input state] (Request code : "62")

Data display 0 0 0 *

Input state

Input state ● : Input present

Display	Contact demand input	Silent mode input	Spare 1 input	Spare 2 input
0				
1	●			
2		●		
3	●	●		
4			●	
5	●		●	
6		●	●	
7	●	●	●	
8				●
9	●			●
A		●		●
b	●	●		●
C			●	●
d	●		●	●
E		●	●	●
F	●	●	●	●

[Outdoor unit – Capacity setting display] (Request code : "70")

Data display	Capacity
9	35
10	50
11	60
14	71
20	100
25	125
28	140
40	200
50	250

[Outdoor unit – Setting information] (Request code : "71")

Data display 0 0 * *

Setting information ①

Setting information ②

Setting information ①

Display	Defrost mode
0	Standard
1	For high humidity

Setting information ②

Display	Single-/ 3-phase	Heat pump/ cooling only
0	Single-phase	Heat pump
1		Cooling only
2	3-phase	Heat pump
3		Cooling only

[Outdoor unit switch setting display (SW1 to SW10, except SW3)] Request codes: 73 to 82

0: Switch OFF 1: Switch ON

SW1, SW2, SW6, SW7						Data display
1	2	3	4	5	6	
0	0	0	0	0	0	00 00
1	0	0	0	0	0	00 01
0	1	0	0	0	0	00 02
1	1	0	0	0	0	00 03
0	0	1	0	0	0	00 04
1	0	1	0	0	0	00 05
0	1	1	0	0	0	00 06
1	1	1	0	0	0	00 07
0	0	0	1	0	0	00 08
1	0	0	1	0	0	00 09
0	1	0	1	0	0	00 0A
1	1	0	1	0	0	00 0b
0	0	1	1	0	0	00 0C
1	0	1	1	0	0	00 0d
0	1	1	1	0	0	00 0E
1	1	1	1	0	0	00 0F
0	0	0	0	1	0	00 10
1	0	0	0	1	0	00 11
0	1	0	0	1	0	00 12
1	1	0	0	1	0	00 13
0	0	1	0	1	0	00 14
1	0	1	0	1	0	00 15
0	1	1	0	1	0	00 16
1	1	1	0	1	0	00 17
0	0	0	1	1	0	00 18
1	0	0	1	1	0	00 19
0	1	0	1	1	0	00 1A
1	1	0	1	1	0	00 1B
0	0	1	1	1	0	00 1C
1	0	1	1	1	0	00 1D
0	1	1	1	1	0	00 1E
1	1	1	1	1	0	00 1F
0	0	0	0	0	1	00 20
1	0	0	0	0	1	00 21
0	1	0	0	0	1	00 22
1	1	0	0	0	1	00 23
0	0	1	0	0	1	00 24
1	0	1	0	0	1	00 25
0	1	1	0	0	1	00 26
1	1	1	0	0	1	00 27
0	0	0	1	0	1	00 28
1	0	0	1	0	1	00 29
0	1	0	1	0	1	00 2A
1	1	0	1	0	1	00 2B
0	0	1	1	0	1	00 2C
1	0	1	1	0	1	00 2D
0	1	1	1	0	1	00 2E
1	1	1	1	0	1	00 2F
0	0	0	0	1	1	00 30
1	0	0	0	1	1	00 31
0	1	0	0	1	1	00 32
1	1	0	0	1	1	00 33
0	0	1	0	1	1	00 34
1	0	1	0	1	1	00 35
0	1	1	0	1	1	00 36
1	1	1	0	1	1	00 37
0	0	0	1	1	1	00 38
1	0	0	1	1	1	00 39
0	1	0	1	1	1	00 3A
1	1	0	1	1	1	00 3B
0	0	1	1	1	1	00 3C
1	0	1	1	1	1	00 3D
0	1	1	1	1	1	00 3E
1	1	1	1	1	1	00 3F

0: Switch OFF 1: Switch ON

SW5				Data display
1	2	3	4	
0	0	0	0	00 00
1	0	0	0	00 01
0	1	0	0	00 02
1	1	0	0	00 03
0	0	1	0	00 04
1	0	1	0	00 05
0	1	1	0	00 06
1	1	1	0	00 07
0	0	0	1	00 08
1	0	0	1	00 09
0	1	0	1	00 0A
1	1	0	1	00 0b
0	0	1	1	00 0C
1	0	1	1	00 0d
0	1	1	1	00 0E
1	1	1	1	00 0F

0: Switch OFF 1: Switch ON

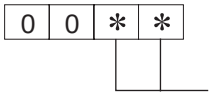
SW8			Data display
1	2	3	
0	0	0	00 00
1	0	0	00 01
0	1	0	00 02
1	1	0	00 03
0	0	1	00 04
1	0	1	00 05
0	1	1	00 06
1	1	1	00 07

0: Switch OFF 1: Switch ON

SW4, SW9, SW10		Data display
1	2	
0	0	00 00
1	0	00 01
0	1	00 02
1	1	00 03

[Indoor unit – Model setting information] (Request code : "162")

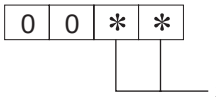
Data display



Display	Model setting state	Display	Model setting state
00	PSA-RP•GA, PSH-P•GAH	20	
01		21	
02	PEAD-RP•EA(2)/GA, PEHD-P•EAH	22	PCA-RP·GA(2), PCH-P·GAH, PLA-RP·BA(2)
03		23	
04		24	
05		25	
06	PCA-RP•HA	26	PCA-RP•KA
07		27	
08		28	
09		29	
0A		2A	
0b		2b	
0C		2C	
0d		2d	
0E		2E	
0F		2F	PLA-RP• AA
10		30	
11		31	PLH-P•AAH
12		32	
13		33	PKA-RP•HAL/KAL
14		34	PEAD-RP•JA(L)
15		35	
16		36	PLA-RP•AA2
17		37	
18		38	
19		39	
1A		3A	
1b		3b	
1C		3C	
1d		3d	
1E		3E	
1F		3F	

[Indoor unit – Capacity setting information] (Request code : "163")

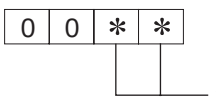
Data display



Display	Capacity setting state	Display	Capacity setting state
00	12	10	112
01	16	11	125
02	22	12	140
03	25	13	160
04	28	14	200
05	32	15	224
06	35, 36	16	250
07	40	17	280
08	45	18	
09	50	19	
0A	56	1A	
0b	63	1b	
0C	71	1C	
0d	80	1d	
0E	90	1E	
0F	100	1F	

[Wireless pair No. (indoor control board side) setting] (Request code :"165")

Data display



Display	Pair No. setting state
00	No. 0
01	No. 1 J41 disconnected
02	No. 2 J42 disconnected
03	No. 3 J41, J42 disconnected

14 EASY MAINTENANCE FUNCTION

14-1. SMOOTH MAINTENANCE

14-1-1. PAR-31MAA

Maintenance data, such as the indoor/outdoor unit's heat exchanger temperature and compressor operation current can be displayed with "Smooth maintenance".

This cannot be executed during test operation.

Depending on the combination with the outdoor unit, this may not be supported by some models.

Select "Service" from the Main menu, and press the ✓ button.

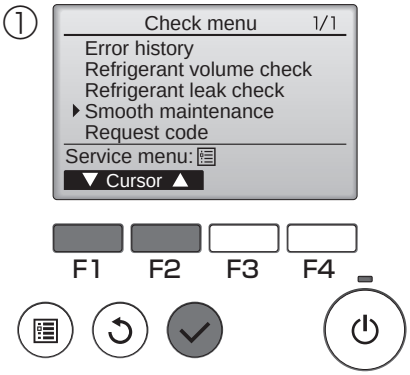
▼

Select "Check" with the F1 or F2 button, and press the ✓ button.

▼

Select "Smooth maintenance" with the F1 or F2 button, and press the ✓ button.

①



Set each item.

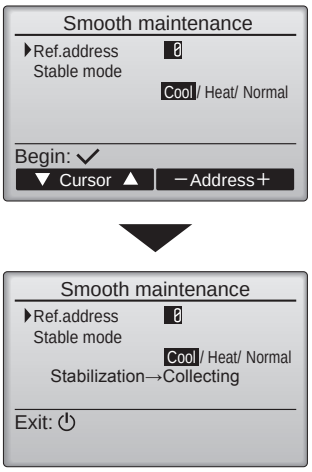
Select the item to be changed with the F1 or F2 button.

Select the required setting with the F3 or F4 button.

■<Ref.address>setting [0]~[15]
■<Stable mode>setting [Cool] / [Heat] / [Normal]

Press the ✓ button, Fixed operation will start.
Stable mode will take approx 20 minutes.

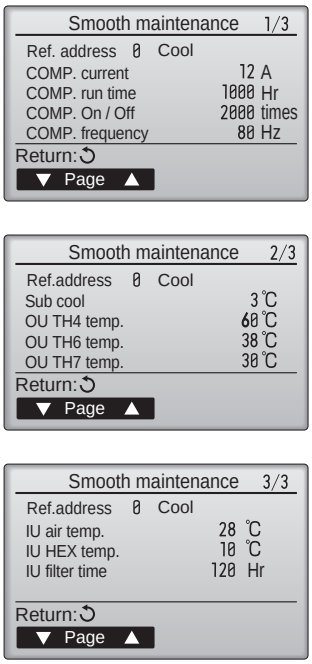
②



The operation data will appear.

The Compressor-Accumulated operating (COMP. run) time is 10-hour unit, and the Compressor-Number of operation times (COMP. On / Off) is a 100-time unit (fractions discarded).

③

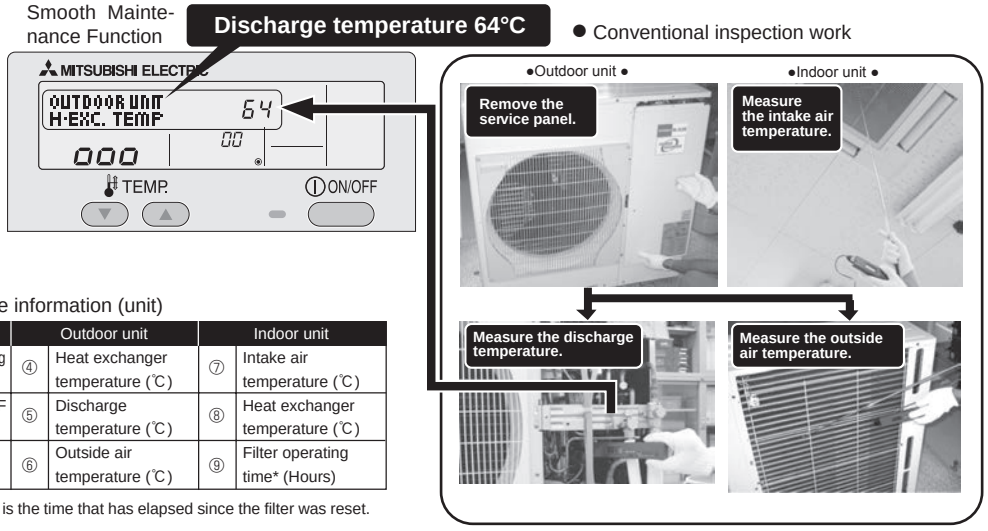


Navigating through the screens

- To go back to the Main menu ..... (≡) button
- To return to the previous screen ..... (↩) button

14-1-2. PAR-21MAA

- Reduces maintenance work drastically.
- Enables you to check operation data of the indoor and outdoor units by remote controller.
  Furthermore, use of maintenance stable-operation control that fixes the operating frequency, allows smooth inspection, even for inverter models.



Easy maintenance information (unit)

Compressor		Outdoor unit		Indoor unit	
①	Accumulated operating time (×10 hours)	④	Heat exchanger temperature (℃)	⑦	Intake air temperature (℃)
②	Number of ON/OFF times (×10 times)	⑤	Discharge temperature (℃)	⑧	Heat exchanger temperature (℃)
③	Operating current (A)	⑥	Outside air temperature (℃)	⑨	Filter operating time* (Hours)

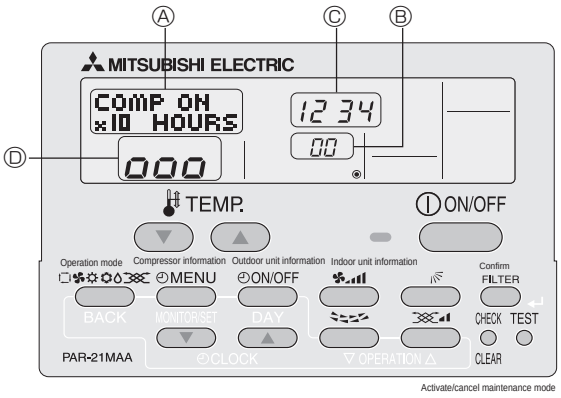
* The filter operating time is the time that has elapsed since the filter was reset.

<Maintenance mode operation method>

If you are going to use <GUIDE FOR OPERATION CONDITION>, set the airflow to "High" before activating maintenance mode.

- **Switching to maintenance mode**
  Maintenance mode can be activated either when the air conditioner is operated or stopped.
  It cannot be activated during test run.
  Note: Maintenance information can be viewed even if the air conditioner is stopped.

■ Remote controller button information



(1) Press the TEST button for 3 seconds to switch to maintenance mode.
[Display Ⓐ] MAINTENANCE
If stable operation is unnecessary or if you want to check the data with the air conditioner stopped, skip to step (4).

- **Fixed Hz operation**
  The operating frequency can be fixed to stabilize operation of inverter model.
  If the air conditioner is currently stopped, start it by this operation.

(2) Press the MODE button to select the desired operation mode.

[Display Ⓐ] → Stable cooling operation (COOL STABLE MODE) → Stable heating operation (HEAT STABLE MODE) → Stable operation cancellation (STABLE MODE CANCEL) → back to Stable cooling operation

(3) Press the FILTER (↵) button to confirm the setting.

[Display Ⓓ] Waiting for stabilization → (blank) → o → oo → ooo → Stabilized ooo
After 10 to 20 minutes

● **Data measurement**
When the operation is stabilized, measure operation data as explained below.

(4) Press the [TEMP] buttons (▽ and △) to select the desired refrigerant address

[Screen Ⓑ] 00 ↔ 01 ↔ ····· ↔ 15

(5) Select the type of data to be displayed.
After selecting, go to step (6).

Compressor information

MENU button

[Display Ⓐ] ① Cumulative operation time (COMP ON x10 HOURS) → ② ON/OFF Number (COMP ON x100 TIMES) → ③ Operating current (COMP ON CURRENT (A))

Outdoor unit information

ON/OFF button

[Display Ⓐ] ④ Heat exchanger temperature (OUTDOOR UNIT H·EXC. TEMP) → ⑤ Comp discharge temperature (OUTDOOR UNIT OUTLET TEMP) → ⑥ Outdoor ambient temperature (OUTDOOR UNIT OUTDOOR TEMP)

Indoor unit information

button

[Display Ⓐ] ⑦ Indoor room temperature (INDOOR UNIT INLET TEMP) → ⑧ Heat exchanger temperature (INDOOR UNIT H·EXC. TEMP) → ⑨ Filter operating time (INDOOR UNIT FILTER USE H)

(6) Press the FILTER (↵) button to confirm the setting.

[Display example for accumulated operating time]

Display Ⓒ: Waiting for response → Blinking → After approx. 10 seconds → 1234 (12,340 hours)

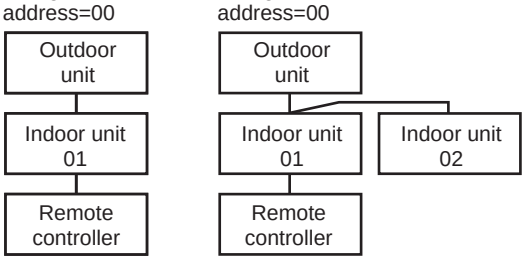
(7) Data is displayed on the display (at Ⓒ).
To check the data for each item, repeat steps (5) to (7).

(8) To cancel maintenance mode, press the TEST button for 3 seconds or press the ⏻ ON/OFF button.

■ Refrigerant address

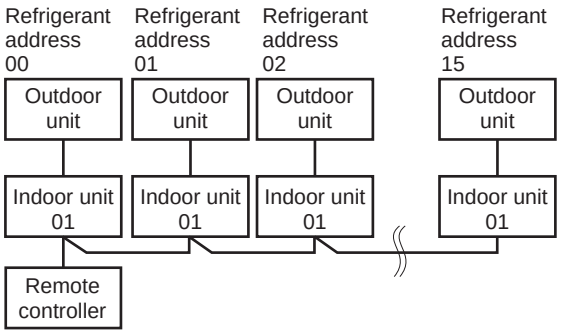
Single refrigerant system

In the case of single refrigerant system, the refrigerant address is "00" and no operation is required.
Simultaneous twin, triple units belong to this category (single refrigerant system).



Multi refrigerant system (group control)

Up to 16 refrigerant systems (16 outdoor units) can be connected as a group by 1 remote controller. To check or set the refrigerant address



<Guide for opration condition>

Inspection item				Result	
Power supply	Loose connection	Terminal block	Breaker	Good	Retightened
			Outdoor Unit	Good	Retightened
			Indoor Unit	Good	Retightened
		(Insulation resistance)			MΩ
		(Voltage)			V
Compressor		① Accumulated operating time			Time
		② Number of ON/OFF times			Times
		③ Current			A
Outdoor Unit	Temperature	④ Refrigerant/heat exchanger temperature		COOL ℃	HEAT ℃
		⑤ Refrigerant/discharge temperature		COOL ℃	HEAT ℃
		⑥ Air/outside air temperature		COOL ℃	HEAT ℃
		(Air/discharge temperature)		COOL ℃	HEAT ℃
	Cleanliness	Appearance		Good	Cleaning required
		Heat exchanger		Good	Cleaning required
		Sound/vibration		None	Present
Indoor Unit	Temperature	⑦ Air/intake air temperature		COOL ℃	HEAT ℃
		(Air/discharge temperature)		COOL ℃	HEAT ℃
		⑧ Refrigerant/heat exchanger temperature		COOL ℃	HEAT ℃
		⑨ Filter operating time*			Time
	Cleanliness	Decorative panel		Good	Cleaning required
		Filter		Good	Cleaning required
		Fan		Good	Cleaning required
		Heat exchanger		Good	Cleaning required
		Sound/vibration		None	Present

* The filter operating time is the time that has elapsed since the filter was reset.

Check Points

Enter the temperature differences between ⑤, ④, ⑦ and ⑧ into the graph given below.
Operation state is determined according to the plotted areas on the graph.
For data measurements, set the fan speed to "Hi" before activating maintenance mode.

Classification		Item	Result	
Cool	Inspection	Is "D000" displayed stably on the remote controller?	Stable	Unstable
	Temperature difference	(⑤ Discharge temperature) – (④ Outdoor heat exchanger temperature)	℃	
		(⑦ Indoor intake air temperature) – (⑧ Indoor heat exchanger temperature)	℃	
Heat	Inspection	Is "D000" displayed stably on the remote controller?	Stable	Unstable
	Temperature difference	(⑤ Discharge temperature) – (⑧ Indoor heat exchanger temperature)	℃	
		(⑧ Indoor heat exchanger temperature) – (⑦ Indoor intake air temperature)	℃	

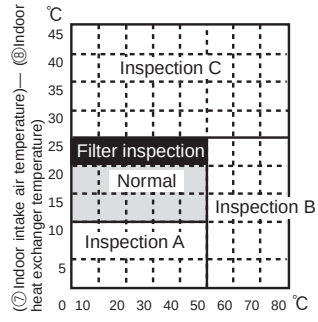
Notes:
1. Fixed Hz operation may not be possible under the following temperature ranges.
   A) In cool mode, outdoor intake air temperature is 40 ℃ or higher or indoor intake air temperature is 23℃ or lower.
   B) In heat mode, outdoor intake air temperature is 20 ℃ or higher or indoor intake air temperature is 25℃ or lower.
2. If the air conditioner is operated at a temperature range other than the ones above but operation is not stabilized after 30 minutes or more have elapsed, carry out inspection.
3. In heat mode, the operation state may vary due to frost forming on the outdoor heat exchanger.

Area	Check item	Judgement	
		Cool	Heat
Normal	Normal operation state		
Filter inspection	Filter may be clogged. *		
Inspection A	Performance has dropped. Detailed inspection is necessary.		
Inspection B	Refrigerant amount is dropping.		
Inspection C	Filter or indoor heat exchanger may be clogged.		

Note:
The above judgement is just guide based on Japanese standard conditions.
It may be changed depending on the indoor and outdoor temperature.
* It may be judged as "Filter inspection" due to the outdoor and indoor temperature, even though it is not clogged.

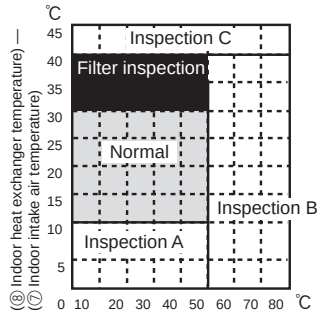
Result

Cool mode



[⑤ Discharge temperature] – [④ Outdoor heat exchanger temperature)

Heat mode



[⑤ Discharge temperature] – [⑧ Indoor heat exchanger temperature)

14-2. REFRIGERANT LEAK CHECK (except RP170, 200)

14-2-1. PAR-31MAA

Refrigerant leakage is detected after a long time.
To enable this function, the refrigerant volume must be saved (initial learning) after installation. Always operate this function in the following manner after installation.

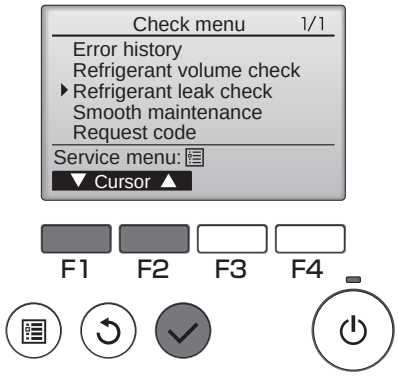
- Always perform test run before using this function, and confirm that the air conditioner operates normally.
- To accurately detect refrigerant leaks, set the wind speed to strong, and execute this operation.

*** "Refrigerant leak check" is valid only with models which support the refrigerant leak check function.**

① Select "Service" from the Main menu, and press the ✓ button.

Select "Check" with the F1 or F2 button, and press the ✓ button.

Select "Refrigerant leak check" with the F1 or F2 button, and press the ✓ button.



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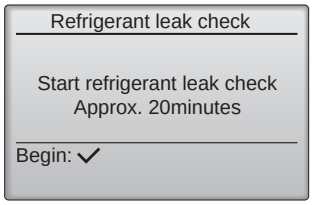
② Stable mode will start.

Press the ✓ button, stable mode will start.

*Stable mode will take approx 20 minutes.



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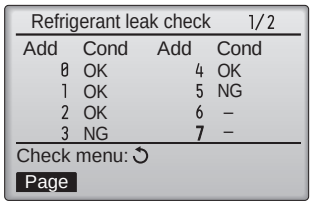
③ The operation data will appear.

The following value is the reference for the refrigerant volume check. If the refrigerant is leaking, "NG" will appear.

The refrigerant volume check reference value can be changed with the function selection.
Default value RP71 – : 80 %
– RP50 : 70 %



<Resetting the initial learning data>
If the unit has been relocated or if refrigerant has been additionally charged, the initial learning data must be reset and learning performed again.

How to reset the data:

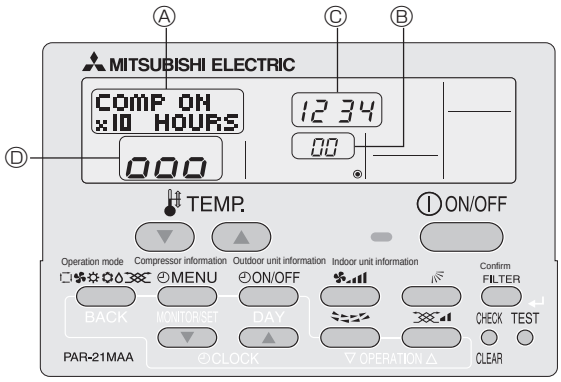
1. Turn the main power OFF.
2. Attach the short-circuit pin for the emergency operation connector (CN31) on the outdoor controller board to the ON side.
3. Turn ON the test run switch (SW4-1) on the outdoor controller board.
4. The data will be reset when the main power is turned ON.
5. Turn the main power OFF.
6. Turn OFF the test run switch (SW4-1).
7. Return the short-circuit pin for the emergency operation connector (CN31) to the OFF side.

Note: Under the following conditions, it may not be possible to carry out stable operation or accurately detect refrigerant leaks.

- When the outdoor intake temperature is 40°C or higher, or when the indoor intake temperature is 23 °C or less.
- When the indoor fan speed is not set to strong.

14-2-2. PAR-21MAA

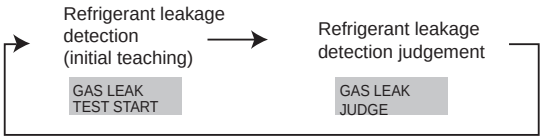
■ Remote controller button position



This air conditioner (Outdoor unit) can detect refrigerant leakage which may happen during a long period of use. In order to enable the leakage detection, the following settings are required to let the unit memorize the initial condition (initial refregerant amount).

⚠ Caution :
Make sure to perform the "test run" and confirm the unit works without any problems, before starting the following setting.
For more precise detection, make sure to set the airflow at "High notch" before enabling this setting.

[Display Ⓐ]



1.How to select the "Refrigerant Leakage Detection" mode

Detection is possible regardless of the unit`s operation (ON or OFF).
①Press (TEST) button for more than 3 seconds to switch to "EASY MAINTENANCE" mode.[Display Ⓐ]

2.How to start the initial learning

②Press CLOCK (▽) button and select the [GAS LEAK TEST START]
* The initial learning for the leakage detection is always done once after the new installation or the data reset.

[Display Ⓓ] Waiting for stabilization

After 45 minutes

③Press (FILTER) (↵)button to confirm.

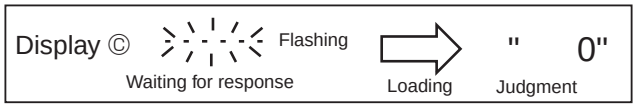
▸ **How to finish the initial learning**
Once the unit`s operation is stabilized, the initial learning is completed.
④Press (TEST) button for more than 3 seconds to cancel the initial leaning.
The initial learning can also be cancelled by pressing (ON/OFF) button.

3. How to start "Judgment of refrigerant leakage " mode.

To know the current condition of refrigerant amount, same operation must be performed.
Please repeat the same procedure ①~③ as when "Initial learning operation" for "Checking operation".

④Press ◴ CLOCK (▽) button and select the [GAS LEAK JUDGE]

⑤Press (FILTER) (↵) button to confirm. (Display Ⓐ LOADING)



Display[C] indication	Meaning (% setting : 80%)
" 0 "	Refrigerant leakage is less than 20% of initial condition.
" 20 "	Refrigerant leakage is more than 20% of initial condition.
" 8888 "	"Error" = No initial data is available.

<Note>
% for judgment can be changed by "Unit function setting of remote controller".
Selectable either 80% (initial setting) or 60%
Refer to “Mode No. 21” on <Table 1> Function selections in 11-1.
(When the "%" for judgment is changed, please start "Initial learning ①~③" about 1 minute (③) and cancel ④.)
Then, please start "Judgment of refrigerant leakage" mode (①~⑤).

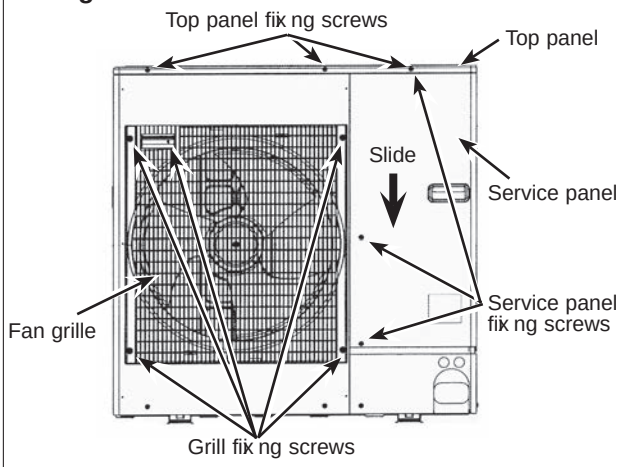
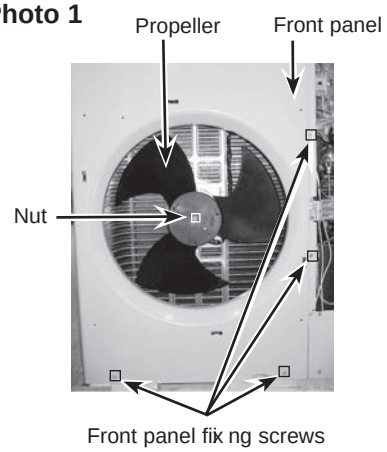
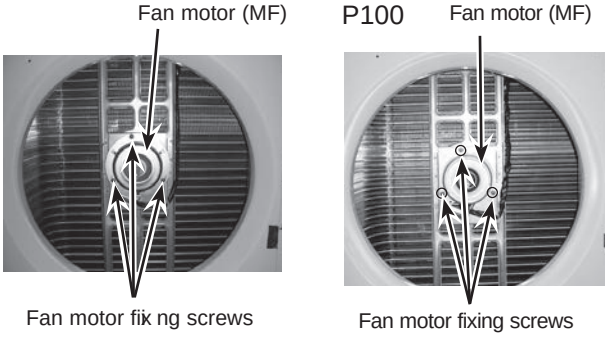
<How to reset the initial condition (data) >
When the unit is removed and installed again or refrigerant is changed additionally, the "Initial learning" must be performed again by following procedure.

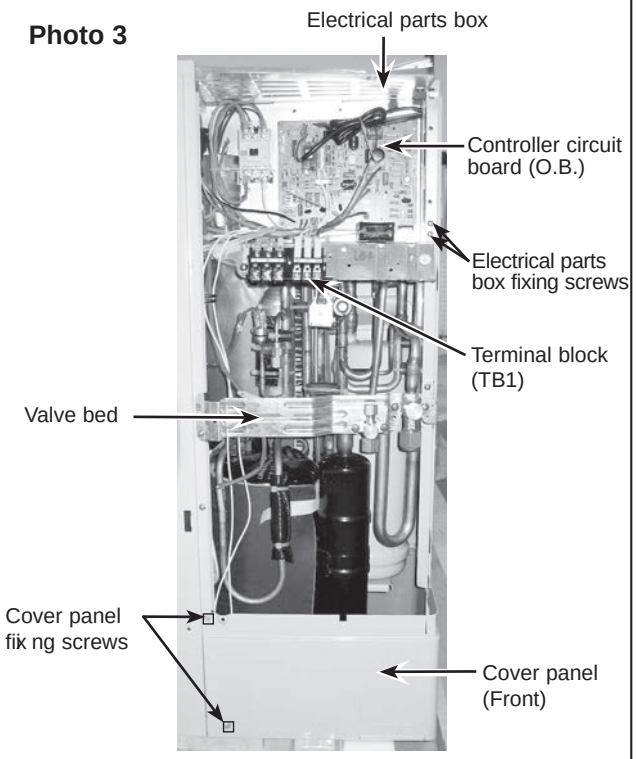
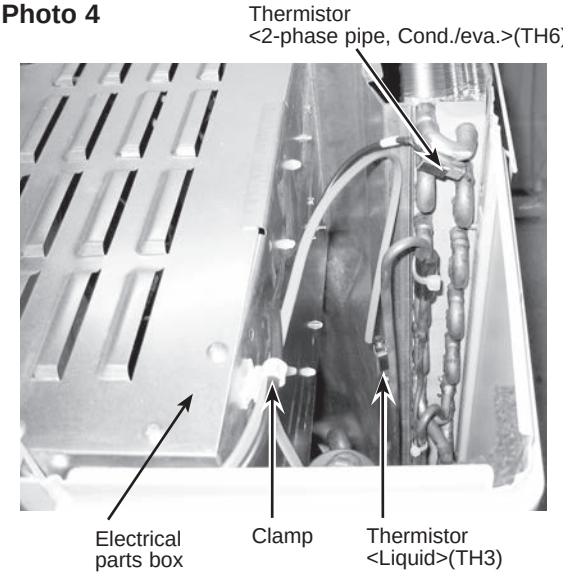
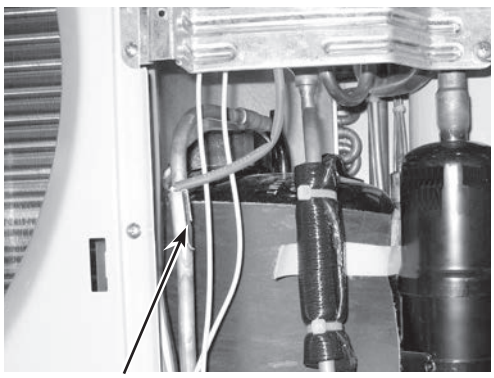
(1)Turn "Main Power" OFF.
(2)Connect the pin of CN31 to ON position on the outdoor controller board.
(3)Turn SW4-1 on the outdoor controller board to ON.
(4)Turn "Main Power" ON to reset the initial data.
After resetting the data, please turn the pin of CN31 and SW4-1 to original (OFF) position.

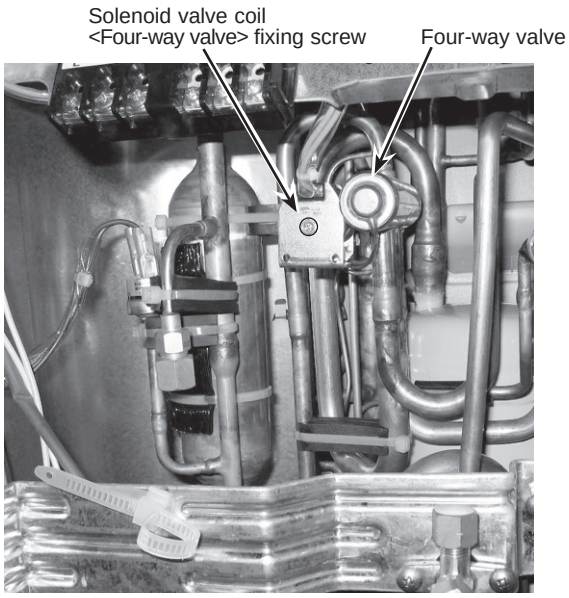
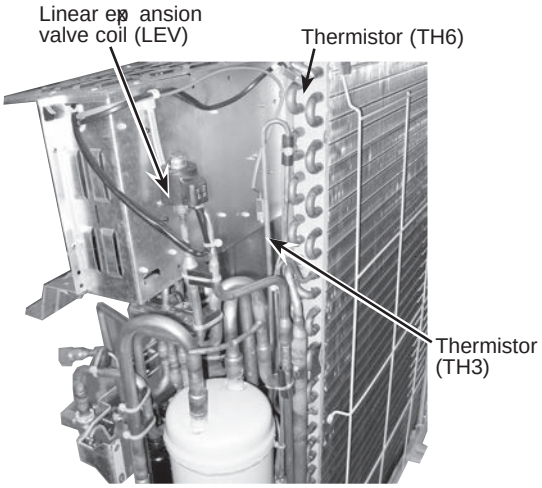
<Caution>
1. On the following condition, the operation cannot be stabillized and judgment of cheking operation may not be accurate.
(a) Outdoor temperature ≧ 40 °C or Room temperature ≦ 23 °C
(b) Airflow setting is not "High-notch".
2. Please check the operation and unit status, when the operation is not stabilized after more than 45 minutes.

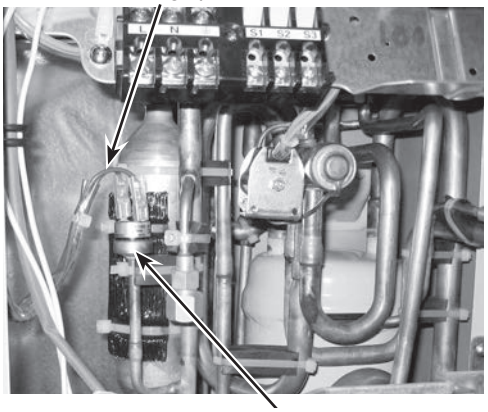
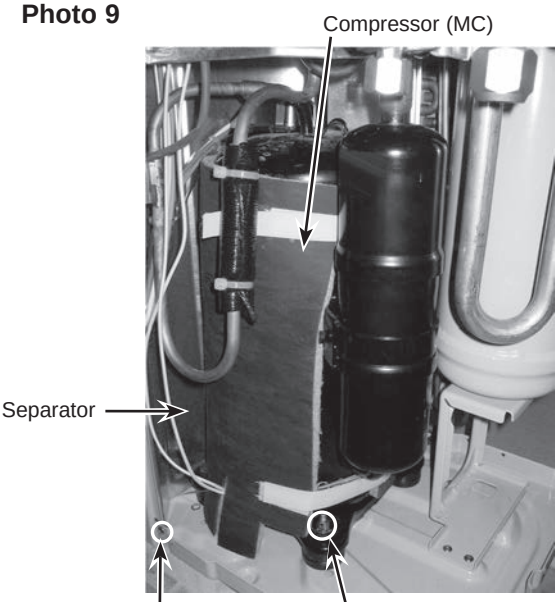
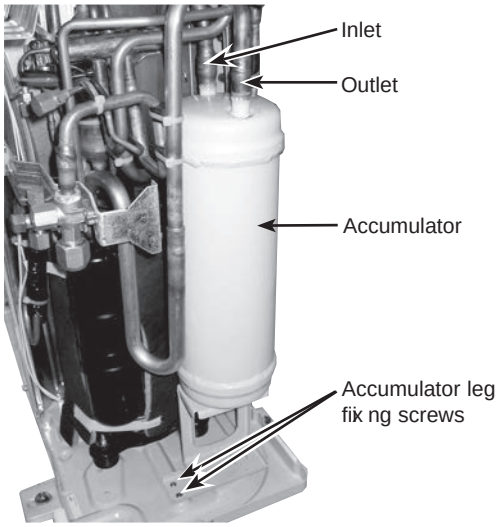
15 DISASSEMBLY PROCEDURE

PU(H)-P71VHA.UK **PU(H)-P100VHA.UK** **PU(H)-P71YHA.UK** **PU(H)-P100YHA.UK**
PU(H)-P71VHA$_1$.UK **PU(H)-P100VHA$_1$.UK** **PU(H)-P71YHA$_1$.UK** **PU(H)-P100YHA$_1$.UK**
PU(H)-P71VHA#2.UK **PU(H)-P100VHA#2.UK** **PU(H)-P71YHA#2.UK** **PU(H)-P100YHA#2.UK**
PU(H)-P71VHAR3.UK **PU(H)-P100VHAR3.UK** **PU(H)-P71YHAR3.UK** **PU(H)-P100YHAR3.UK**

OPERATING PROCEDURE	PHOTOS & ILLUSTRATION
1. Removing the service panel and top panel (1) Remove 3 service panel fixing screws (5 × 10) and slide the hook on the right downward to remove the service panel. (2) Remove screws (3 for front, 3 for rear/5 × 10) of the top panel and remove it.	**Figure 1** 
2. Removing the fan motor (MF) (1) Remove the service panel. (See Figure 1) (2) Remove the top panel. (See Figure 1) (3) Remove 5 fan grille fixing screws (5 × 10) to detach the fan grille. (See Figure 1) (4) Remove a nut (for right handed screw of M6) to detach the propeller. (See Photo 1) (5) Disconnect the connector MF3 on controller circuit board in electrical parts box (6) Remove 3 fan motor fixing screws (5 × 16) to detach the fan motor. (See Photo 2)	**Photo 1**  **Photo 2** 

OPERATING PROCEDURE	PHOTOS
3. Removing the electrical parts box (1) Remove the service panel. (See Figure 1) (2) Remove the top panel. (See Figure 1) (3) Disconnect the indoor/outdoor connecting wire from terminal block. (4) Remove all the following connectors from controller circuit board; fan motor, linear expansion valve, thermistor<Liquid>, thermistor<Discharge>, thermistor<2-phase pipe, Cond./eva.>, crankcase heater, high pressure switch, four-way valve. Then remove a screw (4 × 8) from the valve bed to remove the lead wire. Pull out the disconnected wire from the electrical parts box. <Diagram symbol in the connector housing> • Fan motor (MF3) • Linear expansion valve (CNLEV) • Thermistor <Discharge> (TH4) • Thermistor <2-phase pipe, Cond./eva./Liquid> (TH3/TH6) • Crankcase heater (CH) • High pressure switch (63H) • Solenoid valve coil <Four-way valve> (21S4) (5) Disconnect the compressor relay connector. (6) Remove 2 electrical parts box fixing screws (4 × 10) and detach the electrical parts box by pulling it upward. The electrical parts box is fixed with 2 hooks on the left and 1 hook on the right.	**Photo 3** 
4. Removing the thermistor <2-phase pipe, Cond./eva.> (TH6) and thermistor <Liquid> (TH3) (1) Remove the service panel. (See Figure 1) (2) Remove the top panel. (See Figure 1) (3) Disconnect the connector TH3/6(Red), on the controller circuit board in the electrical parts box (4) Loosen the clamp for the lead wire of the electrical parts box. (5) Pull out the thermistor <2-phase pipe, Cond./eva.> (TH6) and thermistor <Liquid> (TH3) from the sensor holder. **Note: When replacing thermistor <2-phase pipe, Cond./eva.> (TH6), replace it together with thermistor <Liquid> (TH3), since they are combined together.**	**Photo 4** 
5. Removing the thermistor <Discharge> (TH4) (1) Remove the service panel. (See Figure 1) (2) Disconnect the connector TH4 (white) on the controller circuit board in the electrical parts box (3) Loosen the clamp for the lead wire. (4) Pull out the thermistor <Discharge> (TH4) from the sensor holder.	**Photo 5** 

OPERATING PROCEDURE	PHOTOS
6. Removing the solenoid valve coil <Four-way valve> (21S4), linear expansion valve coil (LEV) (1) Remove the service panel. (See Figure 1) (2) Remove the top panel. (See Figure 1) (3) Remove the electrical parts box (See Photo 3) **[Removing the solenoid valve coil <Four-way valve>]** (4) Remove solenoid valve coil <Four-way valve> fixing screw (M4 × 6). (5) Remove the solenoid valve coil <Four-way valve> by sliding the coil toward you. (6) Disconnect the connector 21S4 (green) on the controller board in the electrical parts box **[Removing the linear expansion valve coil] (See Photo 7)** (4) Remove the linear expansion valve coil by sliding the coil upward. (5) Disconnect the connector CNLEV (white) on the controller circuit board in the electrical parts box	**Photo 6** 
7. Removing the four-way valve (1) Remove the service panel. (See Figure 1) (2) Remove the top panel. (See Figure 1) (3) Remove the electrical parts box (See Photo 3) (4) Remove 3 valve bed fixing screws (4 × 10) and 4 ball valve and stop valve fixing screws (5 × 16) and then remove the valve bed. (5) Remove 3 right side panel fixing screws (5 × 10) in the rear of the unit and then remove the right side panel. (6) Remove the solenoid valve coil <Four-way valve>. (See Photo 6) (7) Collect the refrigerant. (8) Remove the welded part of four-way valve. **Note 1: Recover refrigerant without spreading it in the air.** **Note 2: The welded part can be removed easily by removing the right side panel.** **Note 3: When installing the four-way valve, cover it with a wet cloth to prevent it from heating (120°C or more), then braze the pipes so that the inside of pipes are not oxidized.**	
8. Removing the linear expansion valve (1) Remove the service panel. (See Figure 1) (2) Remove the top panel. (See Figure 1) (3) Remove the electrical parts box (See Photo 3) (4) Remove 3 valve bed fixing screws (4 × 10) and 4 ball valve and stop valve fixing screws (5 × 16) and then remove the valve bed. (5) Remove 3 right side panel fixing screw (5 × 10) in the rear of the unit and then remove the right side panel. (6) Remove the linear expansion valve coil. (7) Collect the refrigerant. (8) Remove the welded part of linear expansion valve. **Note 1: Recover refrigerant without spreading it in the air.** **Note 2: The welded part can be removed easily by removing the right side panel.** **Note 3: When installing the linear expansion valve, cover it with a wet cloth to prevent it from heating (120°C or more), then braze the pipes so that the inside of pipes are not oxidized.**	**Photo 7** 

OPERATING PROCEDURE	PHOTOS
9. Removing the high pressure switch (63H) (1) Remove the service panel. (See Figure 1) (2) Remove the top panel. (See Figure 1) (3) Remove the electrical parts box (See Photo 3) (4) Remove 3 right side panel fixing screws (5 × 10) in the rear of the unit and remove the right side panel. (5) Pull out the lead wire of high pressure switch. (6) Collect the refrigerant. (7) Remove the welded part of high pressure switch. **Note 1: Recover refrigerant without spreading it in the air.** **Note 2: The welded part can be removed easily by removing the right side panel.** **Note 3: When installing the high pressure switch, cover it with a wet cloth to prevent it from heating (100°C or more), then braze the pipes so that the inside of pipes are not oxidized.**	**Photo 8** Lead wire of high pressure switch  High pressure switch (63H)
10. Removing the motor for compressor (MC) (1) Remove the service panel. (See Figure 1) (2) Remove the top panel. (See Figure 1) (3) Remove 2 front cover panel fixing screws (5 × 10) and remove the front cover panel. (See Photo 3) (4) Remove 2 back cover panel fixing screws (5 × 10) and remove the back cover panel. (5) Remove the electrical parts box (See Photo 3) (6) Remove 3 valve bed fixing screws (4 × 10) and 4 ball valve and stop valve fixing screws (5 × 16) and then remove the valve bed. (7) Remove 3 right side panel fixing screws (5 × 10) in the rear of the unit and then remove the right side panel. (8) Remove 3 separator fixing screws (4 × 10) and remove the separator. (9) Collect the refrigerant. (10) Remove the 3 points of the motor for compressor fixing nut using a spanner or a monkey wrench. (11) Remove the welded pipe of motor for compressor inlet and outlet and then remove the compressor. **Note: Recover refrigerant without spreading it in the air.**	**Photo 9** Compressor (MC)  Separator Separator fixing screw Compressor fixing nut
11. Removing the Accumulator (1) Remove the service panel. (See Figure 1) (2) Remove the top panel. (See Figure 1) (3) Remove 2 front cover panel fixing screws (5 × 10) and remove the front cover panel. (See Photo 3) (4) Remove 2 back cover panel fixing screws (5 × 10) and remove the back cover panel. (5) Remove the electrical parts box (See Photo 3) (6) Remove 3 valve bed fixing screws (4 × 10) and 4 ball valve and stop valve fixing screws (5 × 16) and then remove the valve bed. (7) Remove 3 right side panel fixing screws (5 × 10) in the rear of the unit and then remove the right side panel. (8) Collect the refrigerant. (9) Remove welded pipes of Accumulator inlet and outlet. **Note: Recover refrigerant without spreading it in the air.**	**Photo 10**  Inlet Outlet Accumulator Accumulator leg fixing screws

PU(H)-P125YHA.UK **PU(H)-P140YHA.UK** **PU(H)-P125YHA$_1$.UK** **PU(H)-P140YHA$_1$.UK**
PU(H)-P125YHA#2.UK **PU(H)-P140YHA#2.UK** **PU(H)-P125YHAR3.UK** **PU(H)-P140YHAR3.UK**
PU(H)-P125YHAR4.UK **PU(H)-P140YHAR4.UK** **PU(H)-P125YHAR5.UK** **PU(H)-P140YHAR5.UK**
PU(H)-P125YHAR6.UK **PU(H)-P140YHAR6.UK**

OPERATING PROCEDURE

1. Removing the service panel and top panel

(1) Remove 3 service panel fix ng screws (5 × 10) and slide the hook on the right downward to remove the service panel.

(2) Remove screws (3 for front, 3 for rear/5 × 10) of the top panel and remove it.

<Discharge Temp, Compressor Surface Temp.>

2. Removing the fan motor (MF)

(1) Remove the service panel. (See Figure 1)

(2) Remove the top panel. (See Figure 1)

(3) Remove 5 fan grille fix ng screws (5 × 10) to detach the fan grille. (See Figure 1)

(4) Remove a nut (for right handed screw of M6) to detach the propeller. (See Photo 1)

(5) Disconnect the connectors, MF3, MF4 on controller circuit board in electrical parts box

(6) Remove 3 fan motor fix ng screws (5 × 16) to detach the fan motor. (See Photo 2)

3. Removing the electrical parts box

(1) Remove the service panel. (See Figure 1)

(2) Remove the top panel. (See Figure 1)

(3) Disconnect the indoor/outdoor connecting wire from terminal block.

(4) Remove all the following connectors from controller circuit Temp. board; fan motor, linear expansion valve, thermistor <Liquid Temp.>, thermistor <Discharge Temp, Compressor Surface Temp.>, thermistor <2-phase Pipe Temp., Cond./eva.>, high pressure switch, solenoid valve coil <Four-way valve>and solenoid valve coil <Bypass valve>. Then remove a screw (4 × 8) from the valve bad to remove the lead wire.
Pull out the disconnected wire from the electrical parts box.
<Diagram symbol in the connector housing>
- Fan motor (MF3, MF4)
- Linear expansion valve (CNLEV)
- Thermistor <Discharge Temp, Compressor Surface Temp.>(TH4)
- Thermistor <2-phase Pipe Temp., Cond./eva.><Liquid Temp.> (TH3/ TH6)
- Crankcase heater (CH)
- High pressure switch (63H)
- Solenoid valve coil <Four-way valve> (21S4)
- Low pressure switch (63L)
- Solenoid valve coil <Bypass valve> (SV)

(5) Remove the terminal cover and disconnect the compressor lead wire.

(6) Remove an electrical parts box fix ng screw (4 × 10) and detach the electrical parts box by pulling it upward. The electrical parts box is fixed with 2 hooks on the left and 1 hook on the right.

PHOTOS & ILLUSTRATION

Figure 1

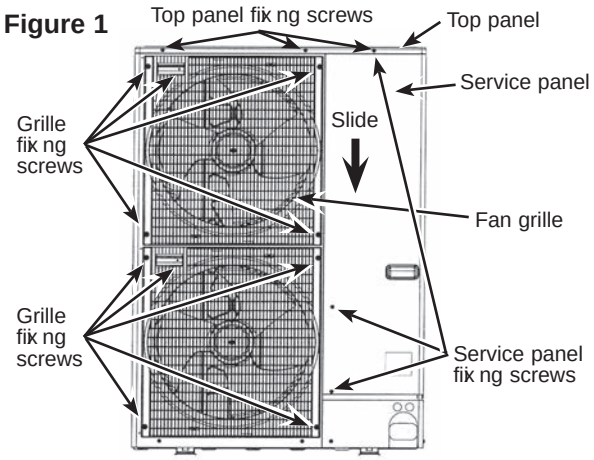


Photo 1

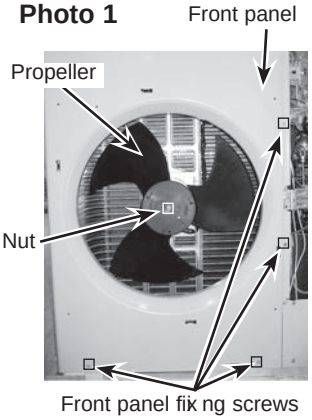


Photo 2

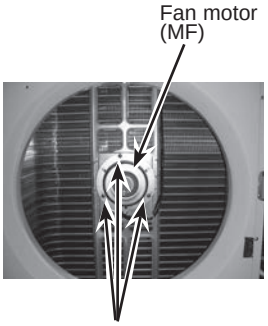
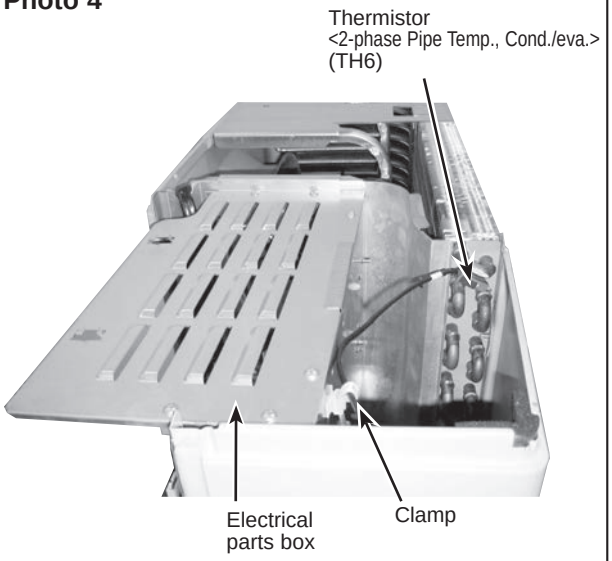
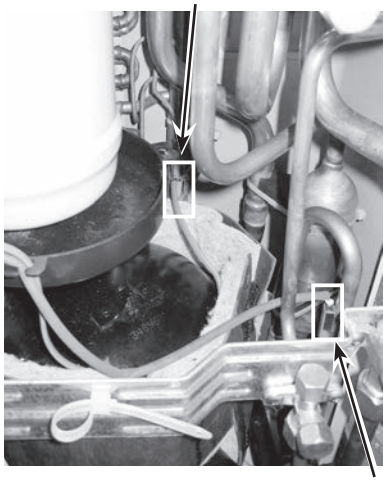
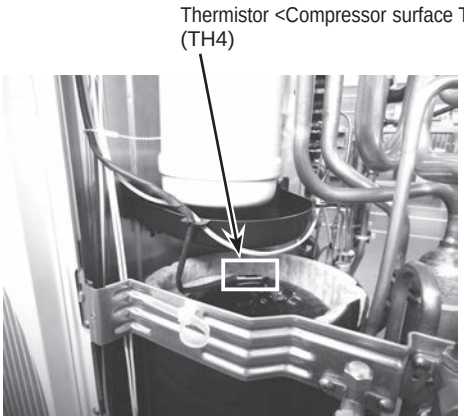


Photo 3

OPERATING PROCEDURE	PHOTOS
4. Removing the thermistor <2-phase Pipe Temp., Cond./eva.> (TH6) (1) Remove the service panel. (See Figure 1) (2) Remove the top panel. (See Figure 1) (3) Disconnect the connector TH3/TH6 (red) on the controller circuit board in the electrical parts box (4) Loosen the clamp for the lead wire in the rear of the electrical parts box. (5) Pull out the thermistor <2-phase pipe, Cond./eva.> (TH6) from the sensor holder. **Note: When replacing thermistor <2-phase Pipe Temp., Cond./eva.> (TH6), replace it together with thermistor <Liquid Temp.> (TH3), since they are combined together. Refer to procedure 5 below to remove thermistor <Liquid Temp.>.**	**Photo 4** 
<Except PU(H)-P125, 140YHAR4/R5/R6.UK> **5. Removing the thermistor <Liquid Temp.> (TH3) and thermistor <Discharge Temp.> (TH4)** (1) Remove the service panel. (See Figure 1) (2) Disconnect the connectors, TH3/TH6 (red) and TH4 (white), on the controller circuit board in the electrical parts box (3) Loosen the clamp for the lead wire. (4) Pull out the thermistor <Liquid Temp.> (TH3) and thermistor <Discharge Temp, Compressor Surface Temp.> (TH4) from the sensor holder. **Note: When replacing thermistor <Liquid Temp.> (TH3), replace it together with thermistor <2-phase pipe, Cond./eva.> (TH6), since they are combined together. Refer to procedure 4 above to remove thermistor <2-phase Pipe Temp., Cond./eva.>.**	**Photo 5** **<Except PU(H)-P125, 140YHAR4/R5/R6.UK>** 
<PU(H)-P125, 140YHAR4/R5/R6.UK> **5. Removing the thermistor < Compressor Surface Temp.> (TH4)** (1) Remove the service panel. (See Figure 1) (2) Disconnect the connectors, TH3/TH6 (red) and TH4 (white), on the controller circuit board in the electrical parts box (3) Loosen the clamp for the lead wire. (4) Pull out the thermistor < Compressor Surface Temp.> (TH4) from the sensor holder. **Note: When replacing thermistor <Liquid Temp.> (TH3), replace it together with thermistor <2-phase Pipe Temp., Cond./eva.> (TH6), since they are combined together. Refer to procedure 4 above to remove thermistor <2-phase Pipe Temp., Cond./eva.>.**	**<PU(H)-P125, 140YHAR4/R5/R6.UK>** 

OPERATING PROCEDURE

6. Removing the solenoid valve coil <Four-way valve> (21S4), linear expansion valve coil (LEV) and solenoid valve coil <Bypass valve> (SV)

(1) Remove the service panel. (See Figure 1)
(2) Remove the top panel. (See Figure 1)
(3) Remove the electrical parts box (See Photo 3)

[Removing the solenoid valve coil <Four-way valve>]

(4) Remove solenoid valve coil <Four-way valve> fixing screw (M4 × 6).
(5) Remove the solenoid valve coil <Four-way valve> by sliding the coil toward you.
(6) Disconnect the connector 21S4 (green) on the controller board in the electrical parts box

[Removing the linear expansion valve coil]

(4) Remove the linear expansion valve coil by sliding the coil upward.
(5) Disconnect the connector CNLEV (white) on the controller circuit board in the electrical parts box

[Removing the solenoid valve coil <Bypass valve>]

(4) Remove the solenoid valve coil <Bypass valve> fixing screw (M5 × 6).
(5) Remove the solenoid valve coil <Bypass valve> by sliding the coil upward.
(6) Disconnect the connector SV (black) on the controller circuit board in the electrical parts box

7. Removing the four-way valve

(1) Remove the service panel. (See Figure 1)
(2) Remove the top panel. (See Figure 1)
(3) Remove 3 valve bed fixing screws (4 × 10) and 4 ball valve and stop valve fixing screws (5 × 16) and then remove the valve bed.
(4) Remove 4 right side panel fixing screws (5 × 10) in the rear of the unit and then remove the right side panel.
(5) Remove the solenoid valve coil <Four-way valve>.
(6) Collect the refrigerant.
(7) Remove the welded part of four-way valve.

Note 1: Recover refrigerant without spreading it in the air.
Note 2: The welded part can be removed easily by removing the right side panel.
Note 3: When installing the four-way valve, cover it with a wet cloth to prevent it from heating (120°C or more), then braze the pipes so that the inside of pipes are not oxidized.

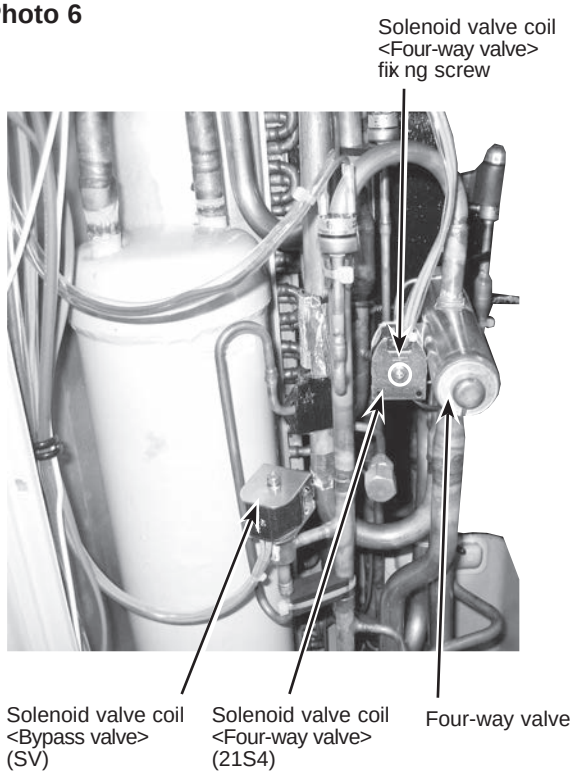
8. Removing linear expansion valve

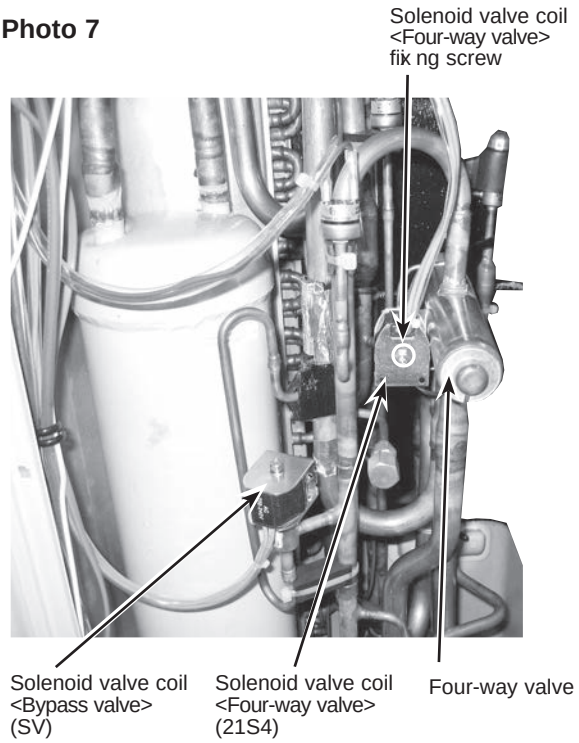
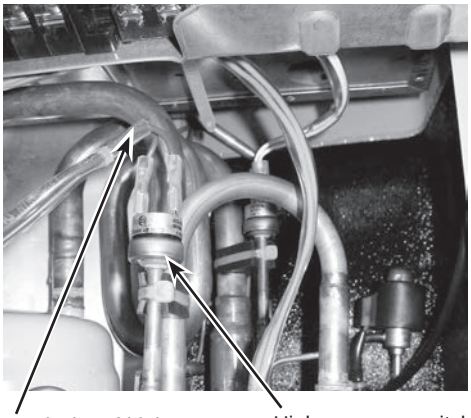
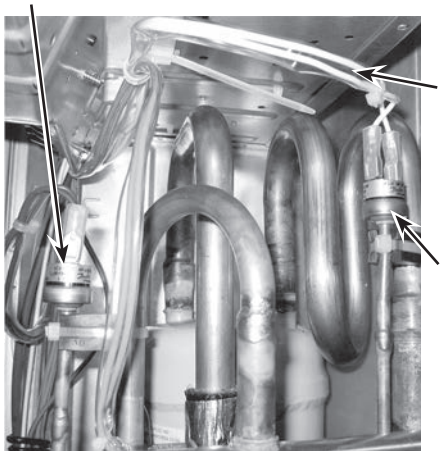
(1) Remove the service panel. (See Figure 1)
(2) Remove the top panel. (See Figure 1)
(3) Remove 3 valve bed fixing screws (4 × 10) and 4 ball valve and stop valve fixing screws (5 × 16) and then remove the valve bed.
(4) Remove 4 right side panel fixing screws (5 × 10) in the rear of the unit and then remove the right side panel.
(5) Remove the linear expansion valve.
(6) Collect the refrigerant.
(7) Remove the welded part of linear expansion valve.

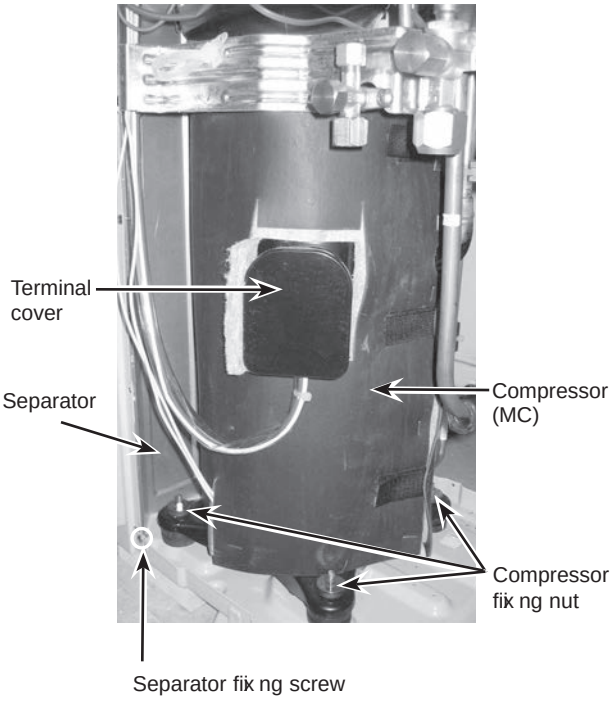
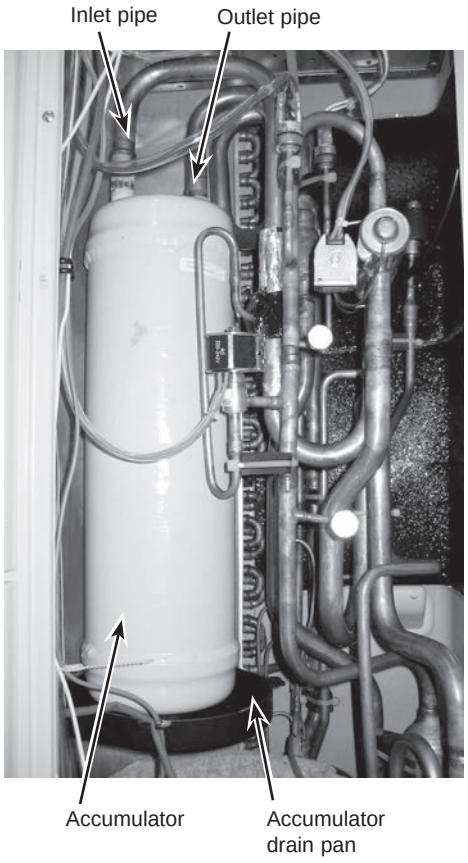
Note 1: Recover refrigerant without spreading it in the air.
Note 2: The welded part can be removed easily by removing the right side panel.
Note 3: When installing the linear expansion valve, cover it with a wet cloth to prevent it from heating (120°C or more), then braze the pipes so that the inside of pipes are not oxidized.

PHOTOS

Photo 6

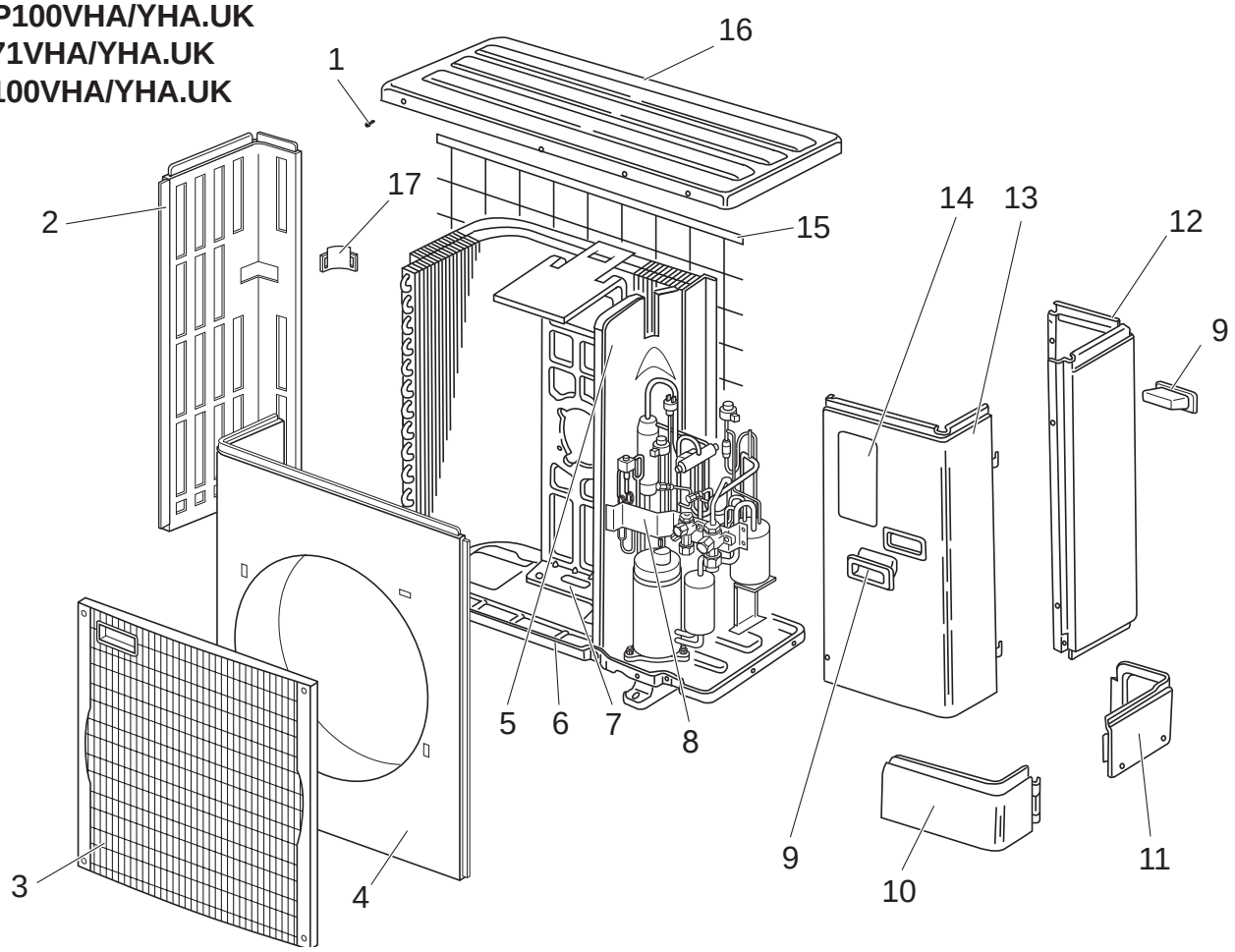


OPERATING PROCEDURE	PHOTOS
9. Removing the bypass valve (1) Remove the service panel. (See Figure 1) (2) Remove the top panel. (See Figure 1) (3) Remove the electrical parts box (See Photo 3) (4) Remove 3 right side panel fixing screws (5 × 10) in the rear of the unit and remove the right side panel. (5) Remove the bypass valve solenoid coil. (See Photo 7) (6) Collect the refrigerant. (7) Remove the welded part of bypass valve. **Note 1: Recover refrigerant without spreading it in the air.** **Note 2: The welded part can be removed easily by removing the right side panel.**	**Photo 7** 
10. Removing the high pressure switch (63H) (1) Remove the service panel. (See Figure 1) (2) Remove the top panel. (See Figure 1) (3) Remove the electrical parts box (See Photo 3) (4) Remove 3 right side panel fixing screws (5 × 10) in the rear of the unit and remove the right side panel. (5) Pull out the lead wire of high pressure switch. (6) Collect the refrigerant. (7) Remove the welded part of high pressure switch. **Note 1: Recover refrigerant without spreading it in the air.** **Note 2: The welded part can be removed easily by removing the right side panel.** **Note 3: When installing the high pressure switch, cover it with a wet cloth to prevent it from heating (100°C or more), then braze the pipes so that the inside of pipes are not oxidized.**	**Photo 8** 
11. Removing the low pressure switch (1) Remove the service panel. (See Photo 1) (2) Remove the top panel. (See Photo 1) (3) Remove the electrical box (See Photo 3) (4) Disconnect the lead wire of the low pressure switch. (5) Remove the braze part of the low pressure switch. Note : When installing the pressure switch, cover the pressure switch with a wet cloth to prevent the pressure switch from heating, then braze it. **Note 1: Recover refrigerant without spreading it in the air.** **Note 2: The welded part can be removed easily by removing the right side panel.** **Note 3: When installing the high/low pressure switch, cover it with a wet cloth to prevent it from heating (100°C or more), then braze the pipes so that the inside of pipes are not oxidized.**	**Photo 9** 

OPERATING PROCEDURE	PHOTOS
12. Removing the motor for compressor (MC) (1) Remove the service panel. (See Figure 1) (2) Remove the top panel. (See Figure 1) (3) Remove 2 front cover panel fixing screws (5 × 10) and remove the front cover panel. (See Photo 3) (4) Remove 2 back cover panel fixing screws (5 × 10) and remove the back cover panel. (5) Remove the electrical parts box (See Photo 3) (6) Remove 3 valve bed fixing screws (4 × 10) and 4 ball valve and stop valve fixing screws (5 × 16) and then remove the valve bed. (7) Remove 3 right side panel fixing screws (5 × 10) in the rear of the unit and then remove the right side panel. (8) Remove 3 separator fixing screws (4 × 10) and remove the separator. (9) Collect the refrigerant. (10) Remove the 3 points of the motor for compressor fixing nut using a spanner or a adjustable wrench. (11) Remove the welded pipe of motor for compressor inlet and outlet and then remove the compressor. **Note: Recover refrigerant without spreading it in the air.**	**Photo 10** 
13. Removing the Accumulator (1) Remove the service panel. (See Figure 1.) (2) Remove the top panel. (See Figure 1.) (3) Remove 2 front cover panel fixing screws (5 × 10) and remove the front cover panel. (See Photo 3.) (4) Remove 2 back cover panel fixing screws (5 × 10) and remove the back cover panel. (5) Remove the electrical parts box (See Photo 3.) (6) Remove 3 valve bed fixing screws (4 × 10) and 4 ball valve and stop valve fixing screws (5 × 16) and then remove the valve bed. (7) Remove 3 right side panel fixing screws (5 × 10) in the rear of the unit and then remove the right side panel. (8) Remove 2 accumulator fixing screws. (9) Collect the refrigerant. (10) Remove welded pipes of Accumulator inlet and outlet. **Note: Recover refrigerant without spreading it in the air.**	**Photo 11** 

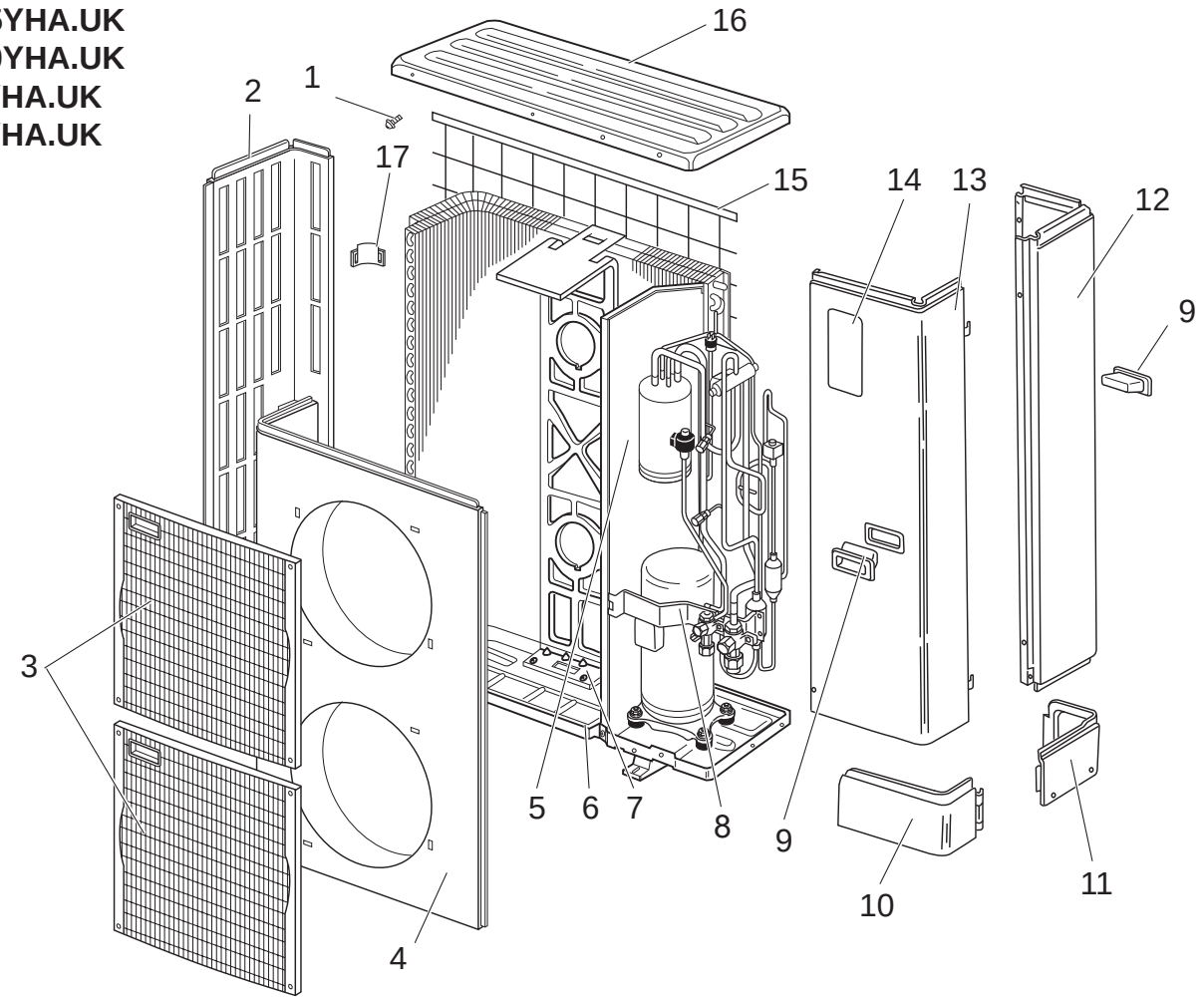
16 PARTS LIST (non-RoHS compliant)

STRUCTURAL PARTS
PUH-P71VHA/YHA.UK
PUH-P100VHA/YHA.UK
PU-P71VHA/YHA.UK
PU-P100VHA/YHA.UK



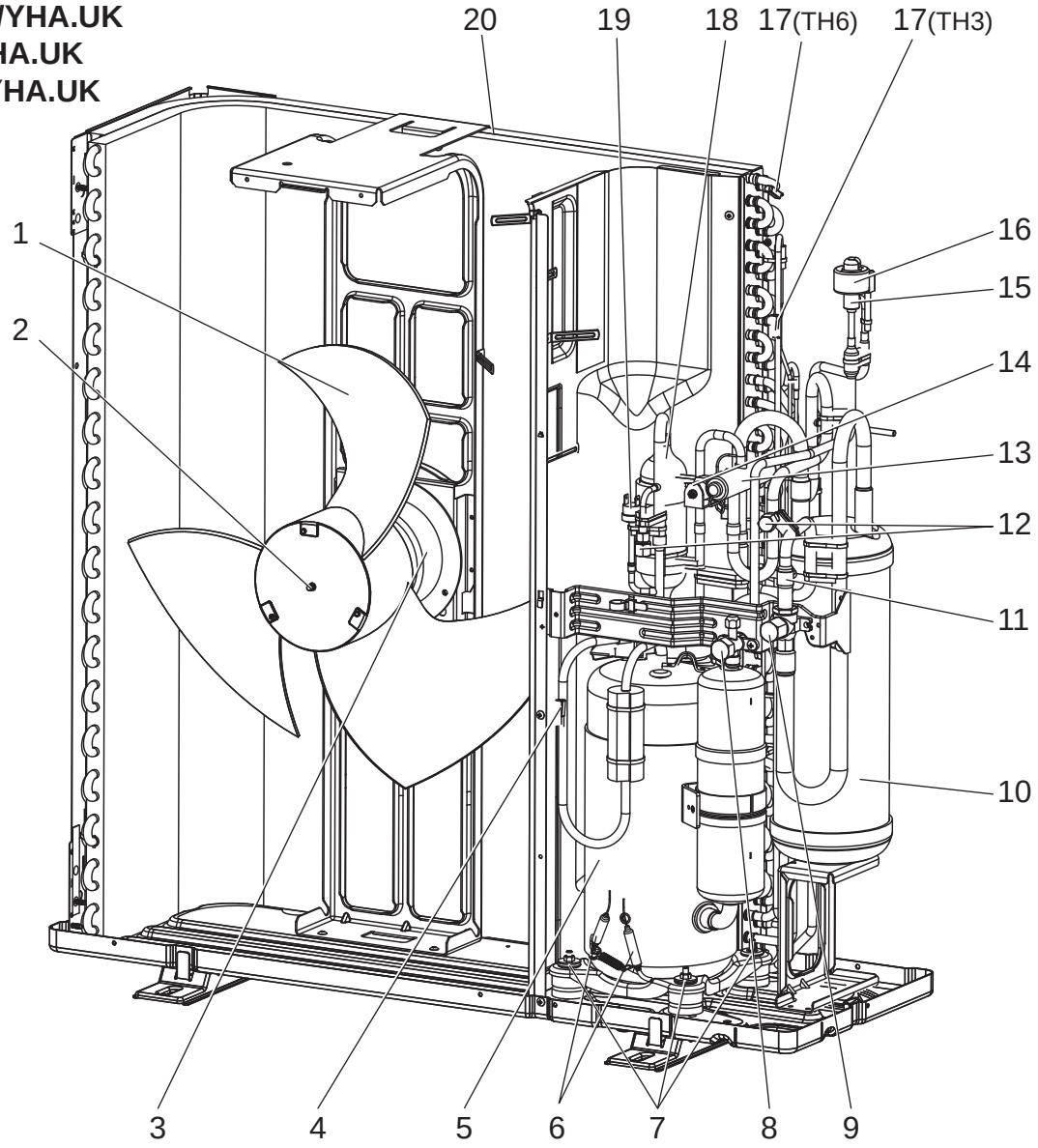
No.	Part No.	Part Name	Specification	Q'ty/unit PUH-P/PU-P 71/100 VHA/YHA.UK	Remarks (Drawing No.)	Wiring Diagram Symbol	Recommended Q'ty
1	—	F.ST SCREW	(5×10)	31	(DG12F536H10)		
2	S70 E10 662	SIDE PANEL (L)		1			
3	S70 E20 675	FAN GRILLE		1			
4	S70 E10 668	FRONT PANEL		1			
5	—	SEPARATOR		1	(BK00C456G04)		
6	S70 E30 686	BASE ASSY		1			
7	S70 E50 130	MOTOR SUPPORT		1			
8	—	VALVE BED ASSY		1	(BK00C493G01)		
9	S70 30L 655	HANDLE		2			
10	S70 E10 658	COVER PANEL (FRONT)		1			
11	S70 E20 658	COVER PANEL (REAR)		1			
12	S70 E30 662	SIDE PANEL (R)		1			
13	S70 E30 661	SERVICE PANEL		1			
14	S70 001 699	LABEL		1			
15	S70 E10 698	REAR GUARD		1			
16	S70 E10 641	TOP PANEL		1			
17	S70 E10 655	HANDLE		1			

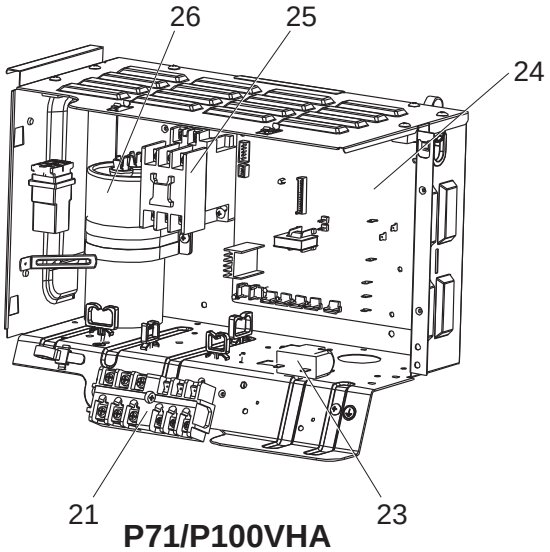
STRUCTURAL PARTS
PUH-P125YHA.UK
PUH-P140YHA.UK
PU-P125YHA.UK
PU-P140YHA.UK



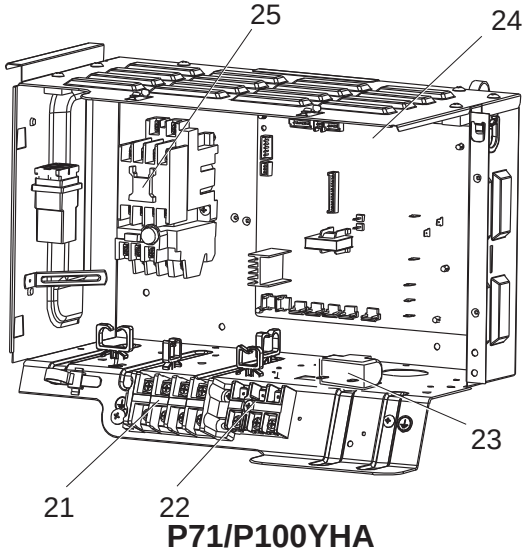
No.	Part No.	Part Name	Specification	Q'ty/unit PUH-P/PU-P 125/140 YHA.UK	Remarks (Drawing No.)	Wiring Diagram Symbol	Recommended Q'ty
1	—	F.ST SCREW	(5×10)	46	(DG12F536H10)		
2	S70 E20 662	SIDE PANEL (L)		1			
3	S70 E20 675	FAN GRILLE		2			
4	S70 E20 668	FRONT PANEL		1			
5	—	SEPARATOR		1	(BK00C456G05)		
6	S70 E40 686	BASE ASSY		1			
7	S70 E60 130	MOTOR SUPPORT		1			
8	—	VALVE BED ASSY		1	(BK00C493G01)		
9	S70 30L 655	HANDLE		2			
10	S70 E10 658	COVER PANEL (FRONT)		1			
11	S70 E20 658	COVER PANEL (REAR)		1			
12	S70 E40 662	SIDE PANEL (R)		1			
13	S70 E40 661	SERVICE PANEL		1			
14	S70 001 699	LABEL		1			
15	S70 E20 698	REAR GUARD		2			
16	S70 E10 641	TOP PANEL		1			
17	S70 E10 655	HANDLE		1			

FUNCTIONAL PARTS
PUH-P71VHA/YHA.UK
PUH-P100VHA/YHA.UK
PU-P71VHA/YHA.UK
PU-P100VHA/YHA.UK





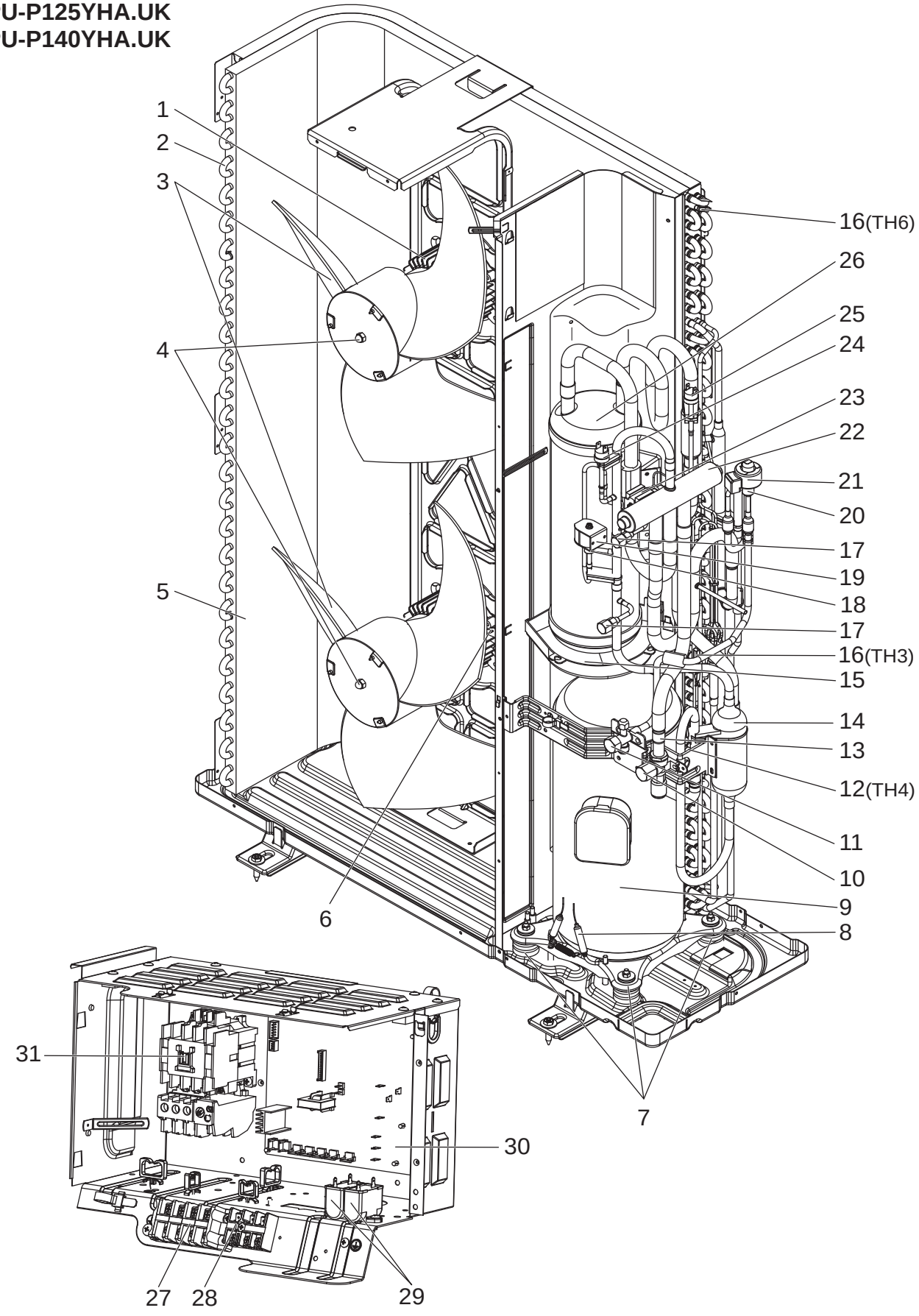
P71/P100VHA



P71/P100YHA

No.	Part No.	Part Name	Specification	Q'ty/unit								Remarks (Drawing No.)	Wiring Diagram Symbol	Recommended Q'ty
				PUH-P71		PUH-P100		PU-P71		PU-P100				
				VHA	YHA	VHA	YHA	VHA	YHA	VHA	YHA			
				.UK										
1	S70 K04 115	PROPELLER FAN		1	1	1	1	1	1	1	1			
2	S70 K01 097	NUT	M6	1	1	1	1	1	1	1	1			
3	S70 E40 763	FAN MOTOR		1	1			1	1				MF	
	S70 E50 763	FAN MOTOR				1	1			1	1		MF	
4	S70 E41 202	THERMISTOR (DISCHARGE)		1	1	1	1	1	1	1	1		TH4	
5	S70 E72 400	COMPRESSOR	NN33VAAMT	1				1					MC	
	S70 E73 400	COMPRESSOR	NN33YCAMT		1				1				MC	
	S70 E74 400	COMPRESSOR	NN40VAAMT			1				1			MC	
	S70 E75 400	COMPRESSOR	NN40YCAMT				1				1		MC	
6	S70 E10 236	CRANKCASE HEATER		1	1	1	1	1	1	1	1		CH	
7	S70 E30 401	RUBBER MOUNT		4	4	4	4	4	4	4	4			
8	S70 500 418	STOP VALVE	3/8	1	1	1	1	1	1	1	1			
9	S70 E04 411	BALL VALVE	5/8	1	1	1	1	1	1	1	1			
10	S70 E41 440	ACCUMULATOR		1	1	1	1	1	1	1	1			
11	S70 36L 450	STRAINER	#50	1	1	1	1	1	1	1	1			
12	S70 E02 413	CHARGE PLUG		2	2	2	2	2	2	2	2			
13	S70 E10 403	FOUR-WAY VALVE		1	1	1	1	1	1	1	1			
14	S70 E41 242	SOLENOID VALVE COIL <FOUR-WAY VALVE>		1	1	1	1						21S4	
15	S70 E80 401	EXPANSION VALVE		1	1			1	1					
	S70 E90 401	EXPANSION VALVE				1	1			1	1			
16	S70 E91 402	LINEAR EXPANSION VALVE COIL		1	1	1	1	1	1	1	1		LEV	
17	S70 E42 202	THERMISTOR		1	1	1	1	1	1	1	1		TH3,6	
18	S70 42H 467	MUFFLER		1	1	1	1	1	1	1	1			
19	S70 E10 208H	HIGH PRESSURE SWITCH		1	1	1	1	1	1	1	1		63H	
20	S70 E41 408	HEAT EXCHANGER		1	1			1	1					
	S70 E51 408	HEAT EXCHANGER				1	1			1	1			
21	S70 E05 716	TERMINAL BLOCK	6P(L,N,⏚,S1,S2,S3)	1		1		1		1			TB1	
	S70 E10 716	TERMINAL BLOCK	4P(L_1,L_2,L_3,N)		1		1		1		1		TB1	
22	S70 E04 716	TERMINAL BLOCK	3P(S1,S2,S3)		1		1		1		1		TB2	
23	S70 E41 255	FAN CAPACITOR	3μF 440V	1	1			1	1				C3	
	S70 E51 255	FAN CAPACITOR	6μF 440V			1	1			1	1		C3	
24	S70 FV1 315	CONTROLLER CIRCUIT BOARD		1		1		1		1			O.B	
	S70 FY2 315	CONTROLLER CIRCUIT BOARD			1		1		1		1		O.B	
25	S70 330 708	CONTACTOR		1		1		1		1			52C	
	S70 440 708	CONTACTOR			1				1				51C,52C	
	S70 331 708	CONTACTOR					1				1		51C,52C	
26	S70 E41 723	RUN CAPACITOR	55μF 420V	1				1					C5	
	S70 E51 723	RUN CAPACITOR	60μF 450V			1				1			C5	

FUNCTIONAL PARTS
PUH-P125YHA.UK
PUH-P140YHA.UK
PU-P125YHA.UK
PU-P140YHA.UK

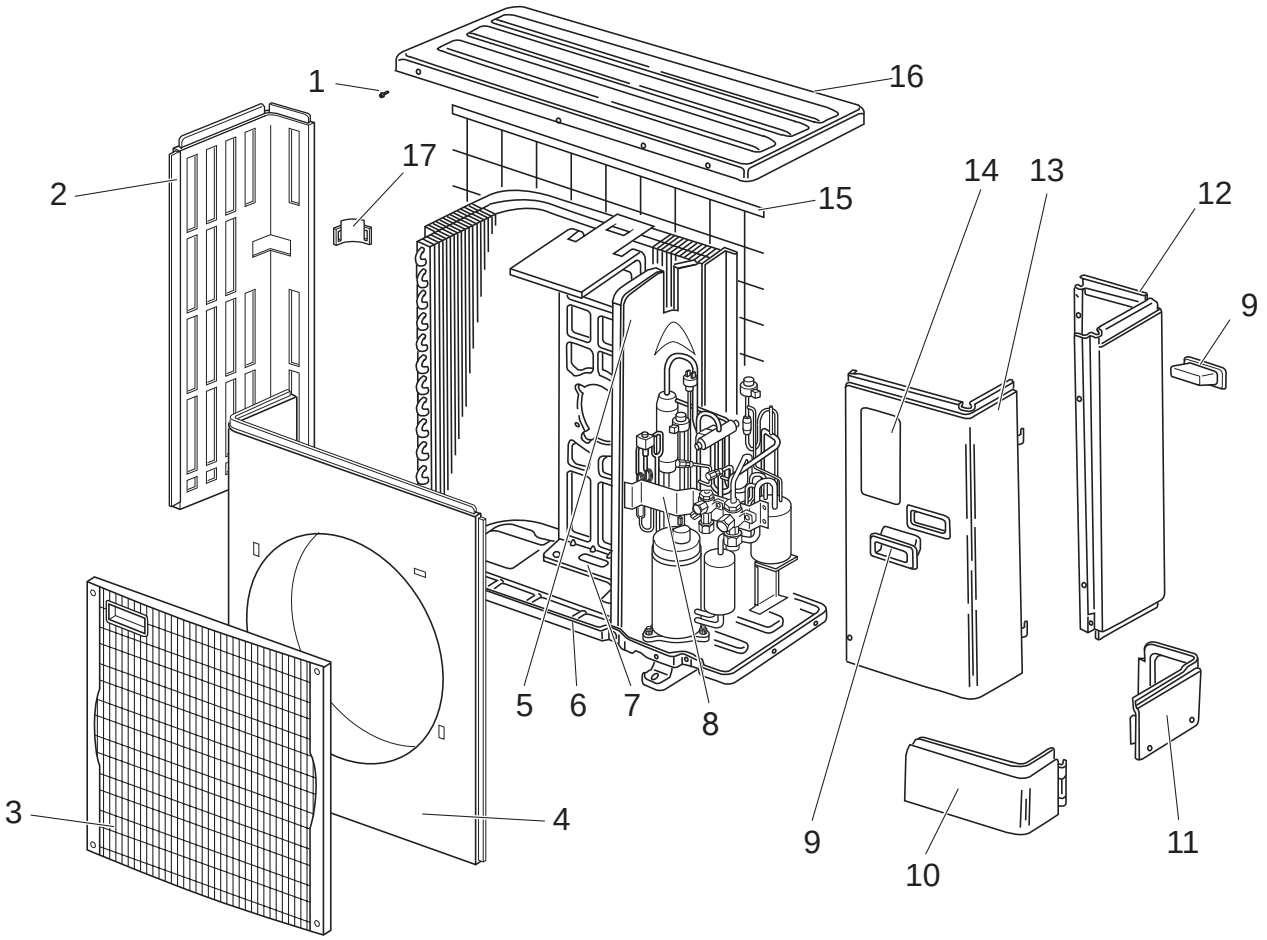


No.	Part No.	Part Name	Specification	Q'ty/unit				Remarks (Drawing No.)	Wiring Diagram Symbol	Recommended Q'ty
				PUH-P		PU-P				
				125	140	125	140			
				YHA.UK						
1	S70 E40 763	FAN MOTOR		1	1	1	1		MF3	
2	S70 E81 408	HEAT EXCHANGER (TOP)		1	1	1	1			
3	S70 K04 115	PROPELLER FAN		2	2	2	2			
4	S70 K01 097	NUT	M6	2	2	2	2			
5	S70 E82 408	HEAT EXCHANGER (UNDER)		1	1	1	1			
6	S70 E60 763	FAN MOTOR		1	1	1	1		MF4	
7	S70 E02 004	RUBBER MOUNT		4	4	4	4			
8	S70 E20 236	CRANKCASE HEATER		1	1	1	1		CH	
9	S70 E76 400	COMPRESSOR	BN52YEGMT	1		1			MC	
	S70 E77 400	COMPRESSOR	BN65YEGMT		1		1		MC	
10	S70 E04 411	BALL VALVE	5/8	1	1	1	1			
11	S70 500 418	STOP VALVE	3/8	1	1	1	1			
12	S70 E43 202	THERMISTOR (DISCHARGE)		1	1	1	1		TH4	
13	S70 36L 450	STRAINER	#50	1	1	1	1			
14	S70 42H 467	MUFFLER		1	1	1	1			
15	S70 B01 529H	ACCUMULATOR DRAIN PAN		1	1	1	1			
16	S70 E44 202	THERMISTOR		1	1	1	1		TH3,6	
17	S70 E02 413	CHARGE PLUG		2	2	2	2			
18	S70 282 403	BYPASS VALVE		1	1	1	1			
19	S70 E03 242	SOLENOID COIL (BYPASS VALVE)		1	1	1	1		SV	
20	S70 E90 401	EXPANSION VALVE		1	1	1	1			
21	S70 E91 401	LINEAR EXPANSION VALVE COIL		1	1	1	1		LEV	
22	S70 E03 403	FOUR-WAY VALVE		1	1	1	1			
23	S70 E43 241	SOLENOID COIL (FOUR-WAY VALVE)		1	1				21S4	
24	S70 E10 208H	HIGH PRESSURE SWITCH		1	1	1	1		63H	
25	S70 H20 209	LOW PRESSURE SWITCH		1	1	1	1		63L	
26	S70 E61 440H	ACCUMULATOR		1	1	1	1			
27	S70 E10 716	TERMINAL BLOCK	4P(L_1,L_2,L_3,N)	1	1	1	1		TB1	
28	S70 E04 716	TERMINAL BLOCK	3P(S1,S2,S3)	1	1	1	1		TB2	
29	S70 E41 255	FAN CAPACITOR	3μF 440V	2		2			C3,C4	
	S70 31L 255	FAN CAPACITOR	3.5μF 440V		2		2		C3,C4	
30	S70 FY2 315	CONTROLLER CIRCUIT BOARD		1	1	1	1		O.B.	
31	S70 640 708	CONTACTOR		1		1			51C,52C	
	S70 540 708	CONTACTOR			1		1		51C,52C	

17 SERVICE PARTS LIST

STRUCTURAL PARTS

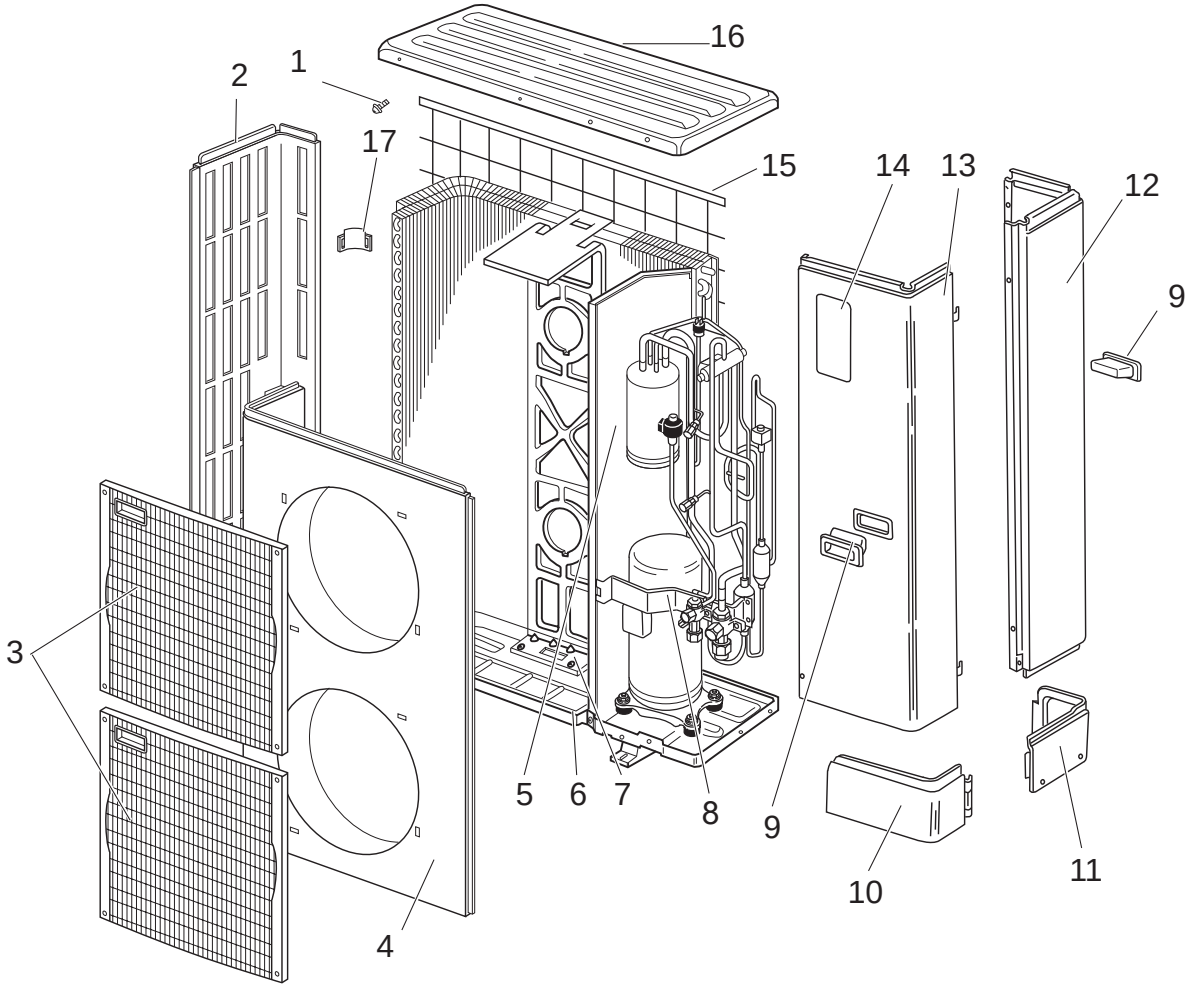
PUH-P71VHA/YHA.UK **PU-P71VHA/YHA.UK** **PUH-P100VHA/YHA.UK** **PU-P100VHA/YHA.UK**
PUH-P71VHA/YHA$_1$.UK **PU-P71VHA/YHA$_1$.UK** **PUH-P100VHA/YHA$_1$.UK** **PU-P100VHA/YHA$_1$.UK**
PUH-P71VHA/YHA#2.UK **PU-P71VHA/YHA#2.UK** **PUH-P100VHA/YHA#2.UK** **PU-P100VHA/YHA#2.UK**



No.	Part No.	Part Name	Specification	Q,ty/unit PUH-P/PU-P 71/100		Remarks (Drawing No.)	Wiring Diagram Symbol	Recommended Q'ty
				VHA/YHA.UK VHA/YHA$_1$.UK	VHA/YHA#2.UK			
1	—	F.ST SCREW	(5×10)	31	31	(DG12F536H10)		
2	S70 E10 662	SIDE PANEL (L)		1	1			
3	S70 E20 675	FAN GRILLE		1	1			
4	S70 E10 668	FRONT PANEL		1	1			
5	—	SEPARATOR		1	1	(BK00C456G07)		
6	S70 E30 686	BASE ASSY		1	1			
7	S70 E50 130	MOTOR SUPPORT		1	1			
8	—	VALVE BED ASSY		1	1	(BK00C493G01)		
9	S70 30L 655	HANDLE		2	2			
10	S70 E10 658	COVER PANEL (FRONT)		1	1			
11	S70 E20 658	COVER PANEL (REAR)		1	1			
12	S70 E30 662	SIDE PANEL (R)		1	1			
13	S70 E30 661	SERVICE PANEL		1	1			
14	S70 001 699	LABEL		1	1			
15	S70 E10 698	REAR GUARD		1	1			
16	S70 E10 641	TOP PANEL		1	1			
17	S70 E10 655	HANDLE		1	1			

STRUCTURAL PARTS

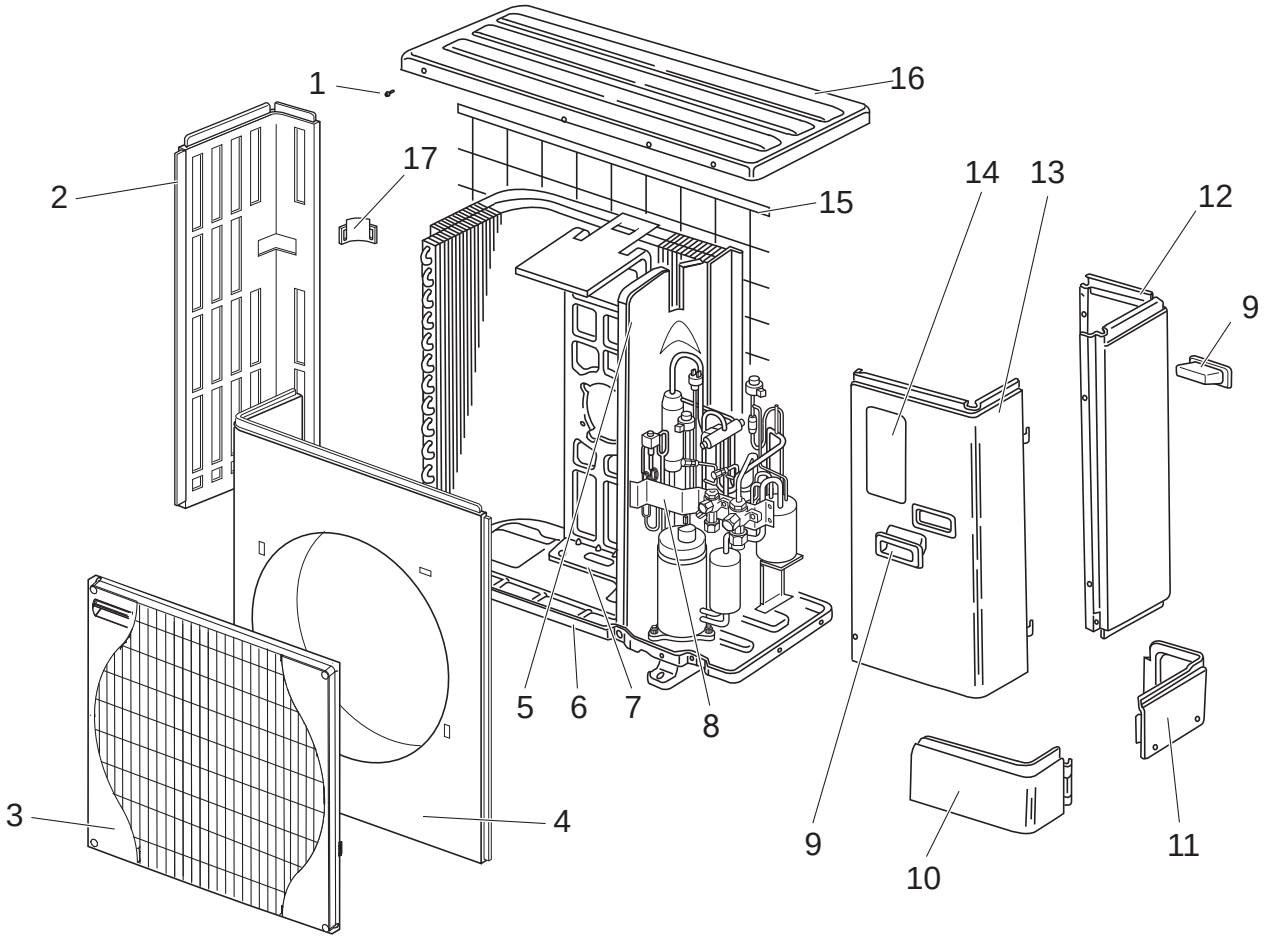
PUH-P125YHA.UK **PUH-P140YHA.UK** **PU-P125YHA.UK** **PU-P140YHA.UK**
PUH-P125YHA$_1$.UK **PUH-P140YHA$_1$.UK** **PU-P125YHA$_1$.UK** **PU-P140YHA$_1$.UK**
PUH-P125YHA#2.UK **PUH-P140YHA#2.UK** **PU-P125YHA#2.UK** **PU-P140YHA#2.UK**



No.	Part No.	Part Name	Specification	Q'ty/unit PUH-P/PU-P 125/140		Remarks (Drawing No.)	Wiring Diagram Symbol	Recommended Q'ty
				YHA.UK YHA$_1$.UK	YHA#2.UK			
1	—	F.ST SCREW	(5×10)	46	46	(DG12F536H10)		
2	S70 E20 662	SIDE PANEL (L)		1	1			
3	S70 E20 675	FAN GRILLE		2	2			
4	S70 E20 668	FRONT PANEL		1	1			
5	—	SEPARATOR		1	1	(BK00C456G10)		
6	S70 E40 686	BASE ASSY		1	1			
7	S70 E60 130	MOTOR SUPPORT		1	1			
8	—	VALVE BED ASSY		1	1	(BK00C493G01)		
9	S70 30L 655	HANDLE		2	2			
10	S70 E10 658	COVER PANEL (FRONT)		1	1			
11	S70 E20 658	COVER PANEL (REAR)		1	1			
12	S70 E40 662	SIDE PANEL (R)		1	1			
13	S70 E40 661	SERVICE PANEL		1	1			
14	S70 001 699	LABEL		1	1			
15	S70 E20 698	REAR GUARD		2	2			
16	S70 E10 641	TOP PANEL		1	1			
17	S70 E10 655	HANDLE		1	1			

STRUCTURAL PARTS

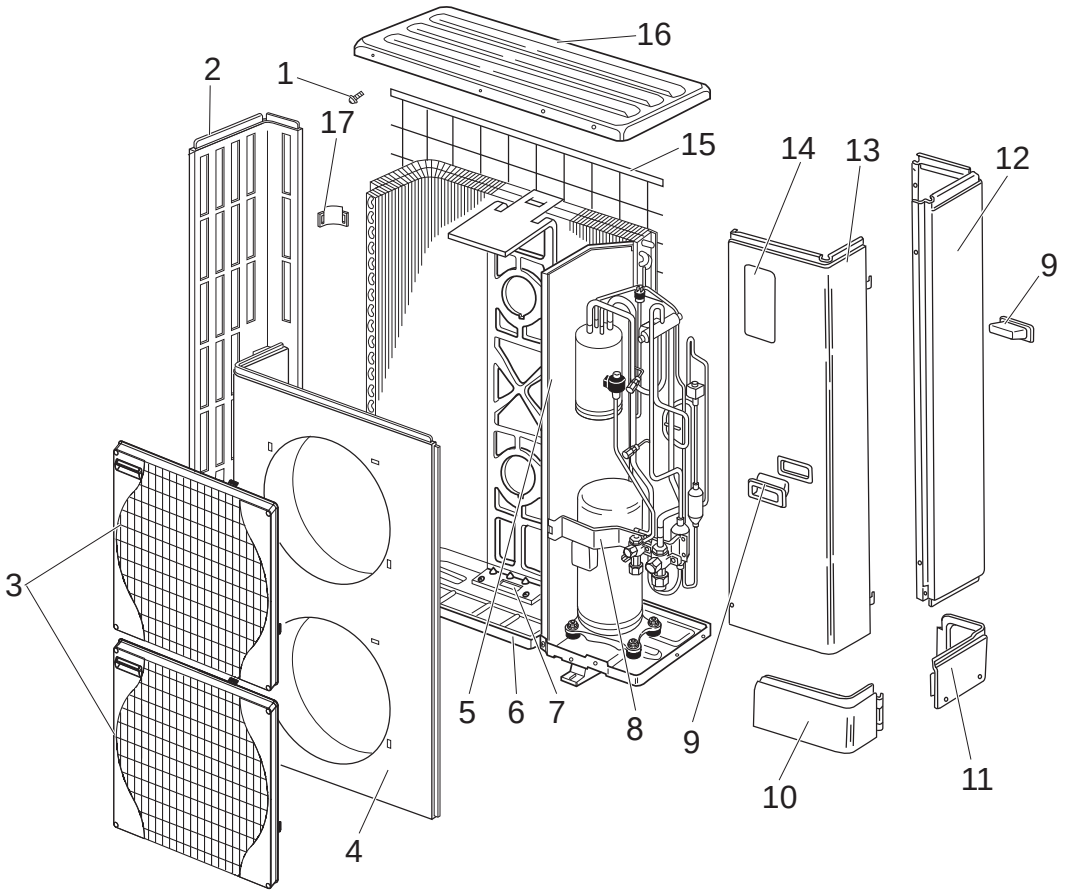
PUH-P71VHA/YHAR3.UK **PU-P71VHA/YHAR3.UK**
PUH-P100VHA/YHAR3.UK **PU-P100VHA/YHAR3.UK**



No.	Part No.	Part Name	Specification	Q'ty/unit PUH-P/PU-P 71/100 VHA/YHAR3.UK	Remarks (Drawing No.)	Wiring Diagram Symbol	Recommended Q'ty
1	—	F.ST SCREW	(5×10)	31	(DG12F536H10)		
2	S70 E11 662	SIDE PANEL (L)		1			
3	S70 E30 675	FAN GRILLE		1			
4	S70 E30 668	FRONT PANEL		1			
5	—	SEPARATOR		1	(BK00C456G13)		
6	S70 E21 686	BASE ASSY		1			
7	S70 E50 130	MOTOR SUPPORT		1			
8	S71 0VB 001	VALVE BED ASSY		1			
9	S70 30L 655	HANDLE		2			
10	S70 E30 658	COVER PANEL (FRONT)		1			
11	S70 E40 658	COVER PANEL (REAR)		1			
12	S70 E31 662	SIDE PANEL (R)		1			
13	S70 E50 661	SERVICE PANEL		1			
14	S70 001 699	LABEL		1			
15	S70 E10 698	REAR GUARD		1			
16	S70 E20 641	TOP PANEL		1			
17	S70 E10 655	HANDLE		1			

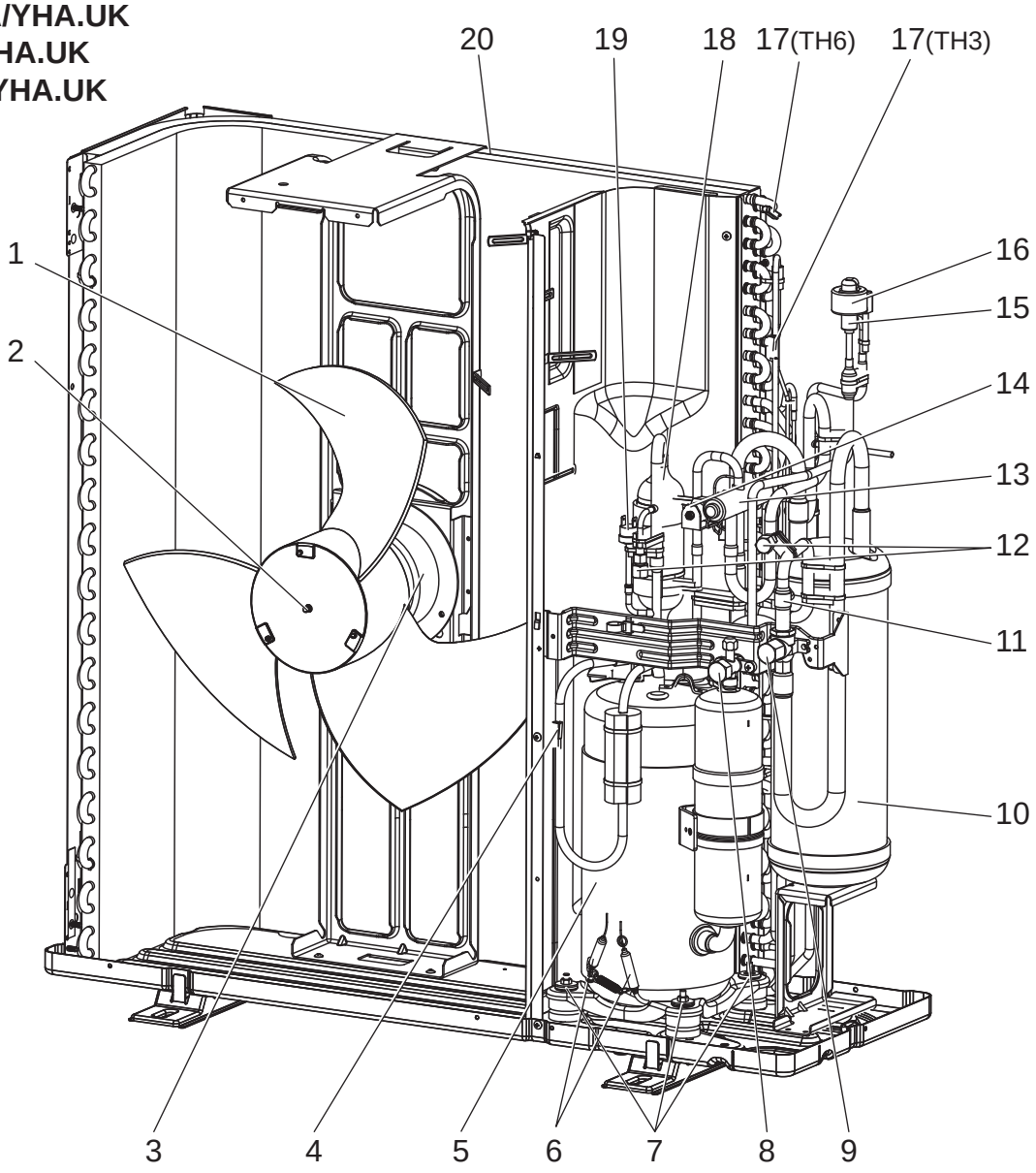
STRUCTURAL PARTS

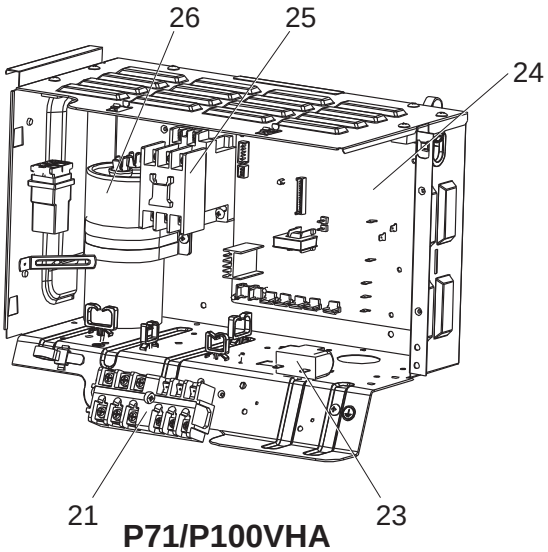
PUH-P125YHAR3.UK PU-P125YHAR3.UK PUH-P140YHAR3.UK PU-P140YHAR3.UK
PUH-P125YHAR4.UK PU-P125YHAR4.UK PUH-P140YHAR4.UK PU-P140YHAR4.UK
PUH-P125YHAR5.UK PU-P125YHAR5.UK PUH-P140YHAR5.UK PU-P140YHAR5.UK
PUH-P125YHAR6.UK PU-P125YHAR6.UK PUH-P140YHAR6.UK PU-P140YHAR6.UK



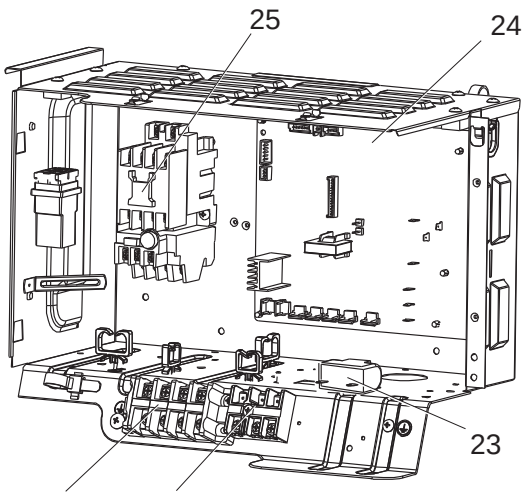
No.	Part No.	Part Name	Specification	Q'ty/unit PUH-P/PU-P 125/140 YHAR3.UK YHAR4.UK YHAR5.UK YHAR6.UK	Remarks (Drawing No.)	Wiring Diagram Symbol	Recommended Q'ty
1	—	F.ST SCREW	(5×10)	46	(DG12F536H12)		
2	S70 E21 662	SIDE PANEL (L)		1			
3	S70 E30 675	FAN GRILLE		2			
4	S70 E40 668	FRONT PANEL		1			
5	—	SEPARATOR		1	(BK00C456G52)		
6	S70 E31 686	BASE ASSY		1			
7	S70 E60 130	MOTOR SUPPORT		1			
8	S71 0VB 001	VALVE BED ASSY		1			
9	S70 30L 655	HANDLE		2			
10	S70 E30 658	COVER PANEL (FRONT)		1			
11	S70 E40 658	COVER PANEL (REAR)		1			
12	S70 E41 662	SIDE PANEL (R)		1			
13	S70 E60 661	SERVICE PANEL		1			
14	S70 001 699	LABEL		1			
15	S70 E20 698	REAR GUARD		2			
16	S70 E20 641	TOP PANEL		1			
17	S70 E10 655	HANDLE		1			

FUNCTIONAL PARTS
PUH-P71VHA/YHA.UK
PUH-P100VHA/YHA.UK
PU-P71VHA/YHA.UK
PU-P100VHA/YHA.UK





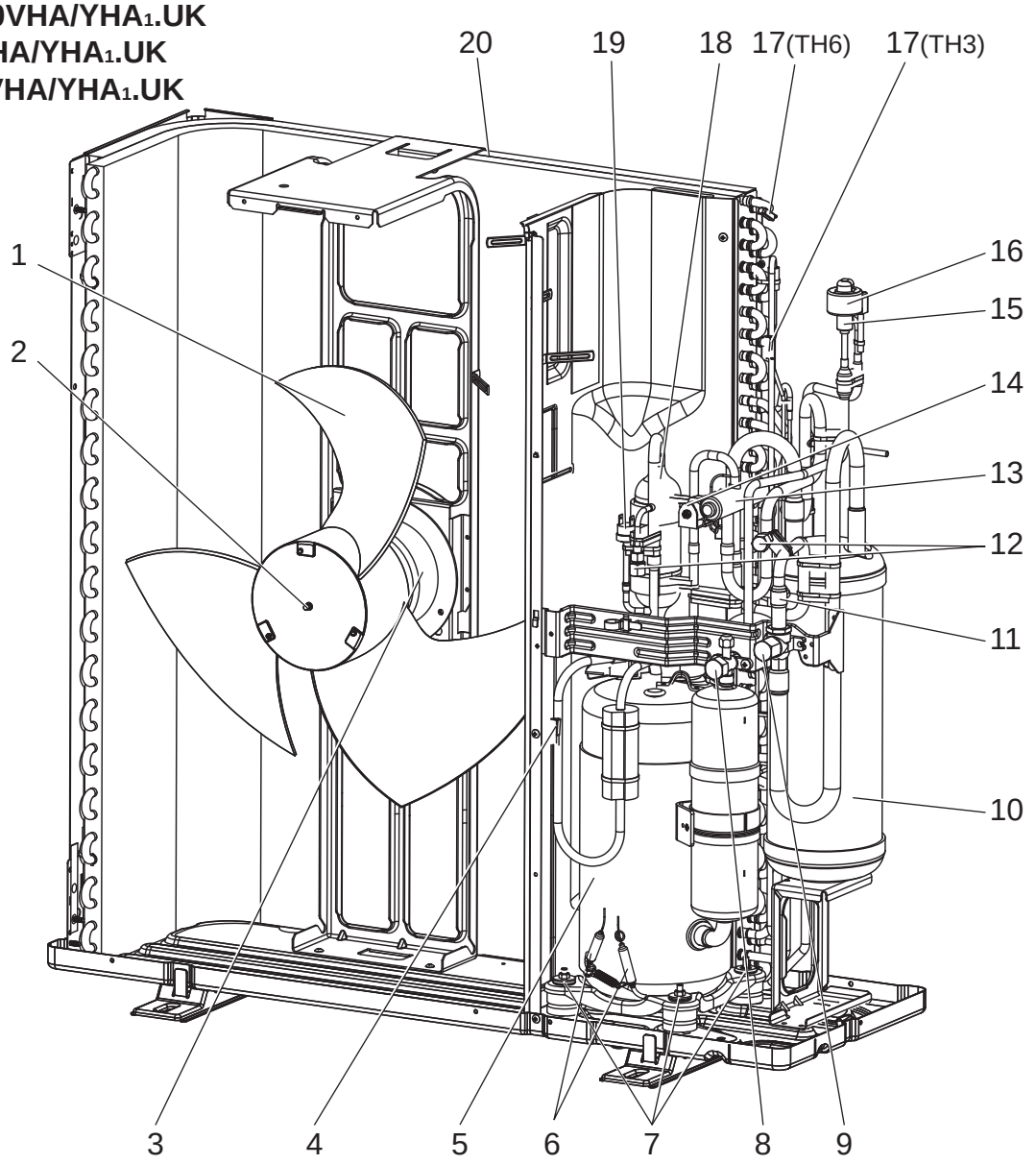
P71/P100VHA

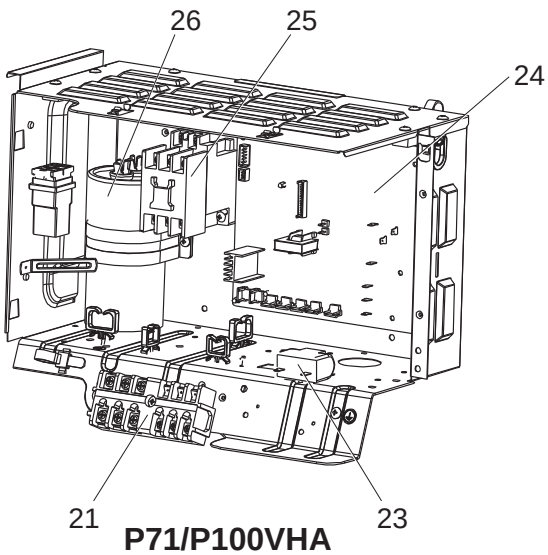


P71/P100YHA

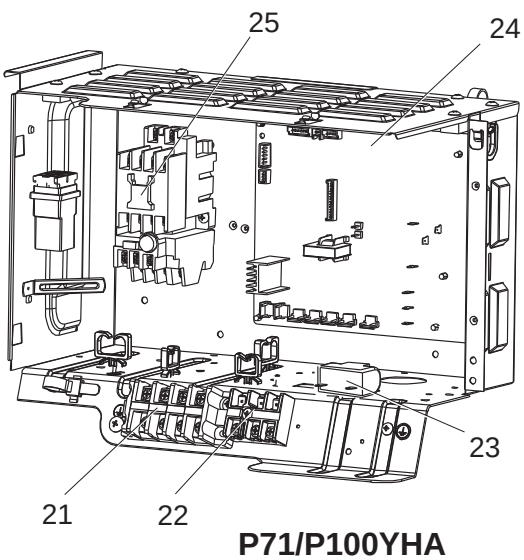
No.	Part No.	Part Name	Specification	Q'ty/unit								Remarks (Drawing No.)	Wiring Diagram Symbol
				PUH-P71		PUH-P100		PU-P71		PU-P100			
				VHA	YHA	VHA	YHA	VHA	YHA	VHA	YHA		
				.UK									
1	S70 K04 115	PROPELLER FAN		1	1	1	1	1	1	1	1		
2	S70 K01 097	NUT	M6	1	1	1	1	1	1	1	1		
3	S70 E40 763	FAN MOTOR		1	1			1	1				MF
	S70 E50 763	FAN MOTOR				1	1			1	1		MF
4	S70 E41 202	THERMISTOR (DISCHARGE)		1	1	1	1	1	1	1	1		TH4
5	S70 E72 400	COMPRESSOR	NN33VAAMT	1				1					MC
	S70 E73 400	COMPRESSOR	NN33YCAMT		1				1				MC
	S70 E74 400	COMPRESSOR	NN40VAAMT			1				1			MC
	S70 E75 400	COMPRESSOR	NN40YCAMT				1				1		MC
6	S70 E10 236	CRANKCASE HEATER		1	1	1	1	1	1	1	1		CH
7	S70 E30 401	RUBBER MOUNT		4	4	4	4	4	4	4	4		
8	S70 500 418	STOP VALVE	3/8	1	1	1	1	1	1	1	1		
9	S70 E04 411	BALL VALVE	5/8	1	1	1	1	1	1	1	1		
10	S70 E41 440	ACCUMULATOR		1	1	1	1	1	1	1	1		
11	S70 36L 450	STRAINER	#50	1	1	1	1	1	1	1	1		
12	S70 E02 413	CHARGE PLUG		2	2	2	2	2	2	2	2		
13	S70 E10 403	FOUR-WAY VALVE		1	1	1	1	1	1	1	1		
14	S70 E41 242	SOLENOID VALVE COIL <FOUR-WAY VALVE>		1	1	1	1						21S4
15	S70 E80 401	EXPANSION VALVE		1	1			1	1				
	S70 E90 401	EXPANSION VALVE				1	1			1	1		
16	S70 E91 402	LINEAR EXPANSION VALVE COIL		1	1	1	1	1	1	1	1		LEV
17	S70 E42 202	THERMISTOR (LIQUID TEMP, COND./EVA. TEMP)		1	1	1	1	1	1	1	1		TH3,6
18	S70 42H 467	MUFFLER		1	1	1	1	1	1	1	1		
19	S70 E10 208H	HIGH PRESSURE SWITCH		1	1	1	1	1	1	1	1		63H
20	S70 E41 408	HEAT EXCHANGER		1	1			1	1				
	S70 E51 408	HEAT EXCHANGER				1	1			1	1		
21	S70 E05 716	TERMINAL BLOCK	6P(L,N,⏚,S1,S2,S3)	1		1		1		1			TB1
	S70 E10 716	TERMINAL BLOCK	4P(L_1,L_2,L_3,N)		1		1		1		1		TB1
22	S70 E04 716	TERMINAL BLOCK	3P(S1,S2,S3)		1		1		1		1		TB2
23	S70 E41 255	FAN CAPACITOR	3μF 440V	1	1			1	1				C3
	S70 E51 255	FAN CAPACITOR	6μF 440V			1	1			1	1		C3
24	S70 FV1 315	CONTROLLER CIRCUIT BOARD		1		1		1		1			O.B
	S70 FY2 315	CONTROLLER CIRCUIT BOARD			1		1		1		1		O.B
25	S70 330 708	CONTACTOR		1		1		1		1			52C
	S70 440 708	CONTACTOR			1				1				51C,52C
	S70 331 708	CONTACTOR					1				1		51C,52C
26	S70 E41 723	RUN CAPACITOR	55μF 420V	1				1					C5
	S70 E51 723	RUN CAPACITOR	60μF 450V			1				1			C5

FUNCTIONAL PARTS
PUH-P71VHA/YHA1.UK
PUH-P100VHA/YHA1.UK
PU-P71VHA/YHA1.UK
PU-P100VHA/YHA1.UK





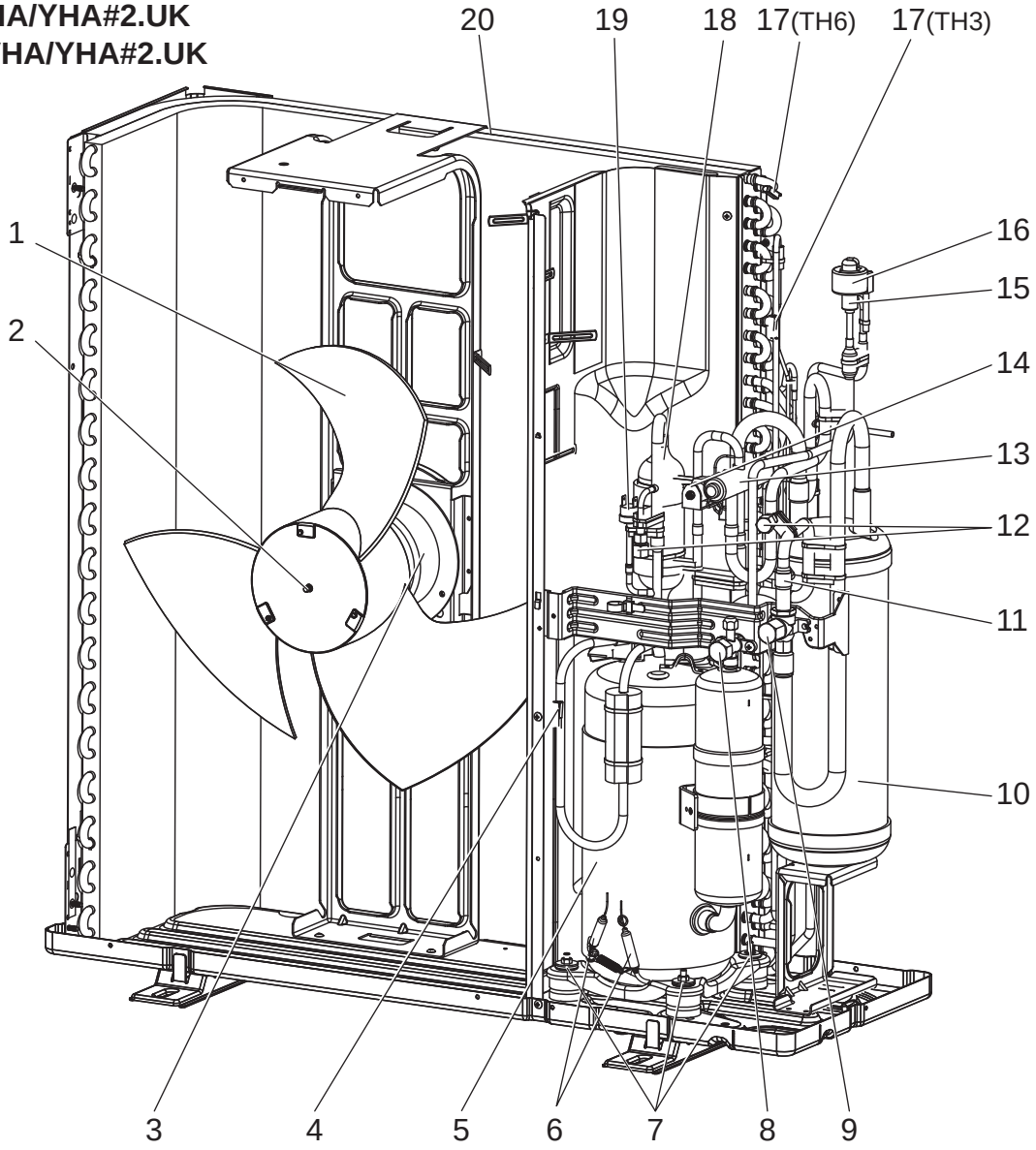
P71/P100VHA

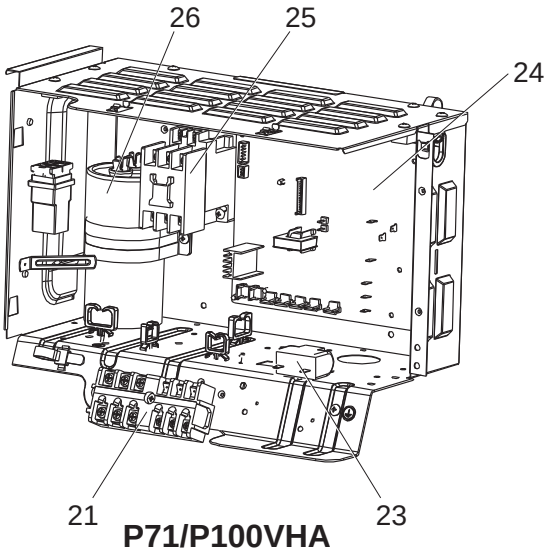


P71/P100YHA

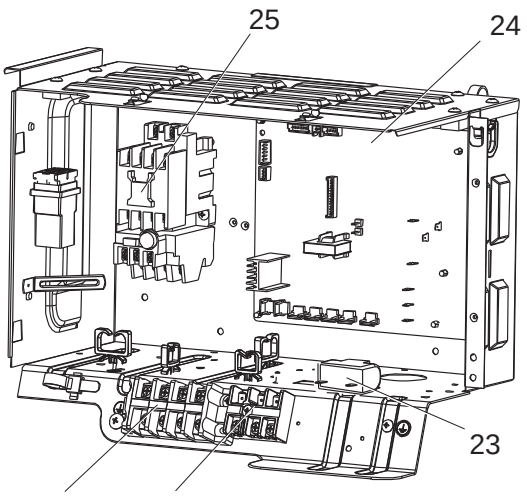
No.	Part No.	Part Name	Specification	Q'ty/unit								Remarks (Drawing No.)	Wiring Diagram Symbol
				PUH-P71		PUH-P100		PU-P71		PU-P100			
				V	Y	V	Y	V	Y	V	Y		
				HA1.UK									
1	S70 K04 115	PROPELLER FAN		1	1	1	1	1	1	1	1		
2	S70 K01 097	NUT	M6	1	1	1	1	1	1	1	1		
3	S70 E40 763	FAN MOTOR		1	1			1	1				MF
	S70 E50 763	FAN MOTOR				1	1			1	1		MF
4	S70 E41 202	THERMISTOR (DISCHARGE)		1	1	1	1	1	1	1	1		TH4
5	S70 E72 400	COMPRESSOR	NN33VAAMT	1				1					MC
	S70 E73 400	COMPRESSOR	NN33YCAMT		1				1				MC
	S70 E74 400	COMPRESSOR	NN40VAAMT			1				1			MC
	S70 E75 400	COMPRESSOR	NN40YCAMT				1				1		MC
6	S70 E10 236	CRANKCASE HEATER		1	1	1	1	1	1	1	1		CH
7	S70 E30 401	RUBBER MOUNT		4	4	4	4	4	4	4	4		
8	S70 500 418	STOP VALVE	3/8	1	1	1	1	1	1	1	1		
9	S70 E04 411	BALL VALVE	5/8	1	1	1	1	1	1	1	1		
10	S70 E41 440	ACCUMULATOR		1	1	1	1	1	1	1	1		
11	S70 36L 450	STRAINER	#50	1	1	1	1	1	1	1	1		
12	S70 E02 413	CHARGE PLUG		2	2	2	2	2	2	2	2		
13	S70 E10 403	FOUR-WAY VALVE		1	1	1	1	1	1	1	1		
14	S70 E41 242	SOLENOID VALVE COIL <FOUR-WAY VALVE>		1	1	1	1						21S4
15	S70 E80 401	EXPANSION VALVE		1	1			1	1				
	S70 E90 401	EXPANSION VALVE				1	1			1	1		
16	S70 E91 402	LINEAR EXPANSION VALVE COIL		1	1	1	1	1	1	1	1		LEV
17	S70 E42 202	THERMISTOR (LIQUID TEMP, 2-PHASE PIPE TEMP)		1	1	1	1	1	1	1	1		TH3,6
18	S70 42H 467	MUFFLER		1	1	1	1	1	1	1	1		
19	S70 E10 208H	HIGH PRESSURE SWITCH		1	1	1	1	1	1	1	1		63H
20	S70 E41 408	HEAT EXCHANGER		1	1			1	1				
	S70 E51 408	HEAT EXCHANGER				1	1			1	1		
21	S70 E05 716	TERMINAL BLOCK	6P(L,N,⏚,S1,S2,S3)	1		1		1		1			TB1
	S70 E10 716	TERMINAL BLOCK	4P(L_1,L_2,L_3,N)		1		1		1		1		TB1
22	S70 E04 716	TERMINAL BLOCK	3P(S1,S2,S3)		1		1		1		1		TB2
23	S70 E41 255	FAN CAPACITOR	3μF 440V	1	1			1	1				C3
	S70 E51 255	FAN CAPACITOR	6μF 440V			1	1			1	1		C3
24	S70 FV8 315	CONTROLLER CIRCUIT BOARD		1		1		1		1			O.B
	S70 FY9 315	CONTROLLER CIRCUIT BOARD			1		1		1		1		O.B
25	S70 330 708	CONTACTOR		1		1		1		1			52C
	S70 440 708	CONTACTOR			1				1				51C,52C
	S70 331 708	CONTACTOR					1				1		51C,52C
26	S70 E41 723	RUN CAPACITOR	55μF 420V	1				1					C5
	S70 E51 723	RUN CAPACITOR	60μF 450V			1				1			C5

FUNCTIONAL PARTS
PUH-P71VHA/YHA#2.UK
PUH-P100VHA/YHA#2.UK
PU-P71VHA/YHA#2.UK
PU-P100VHA/YHA#2.UK





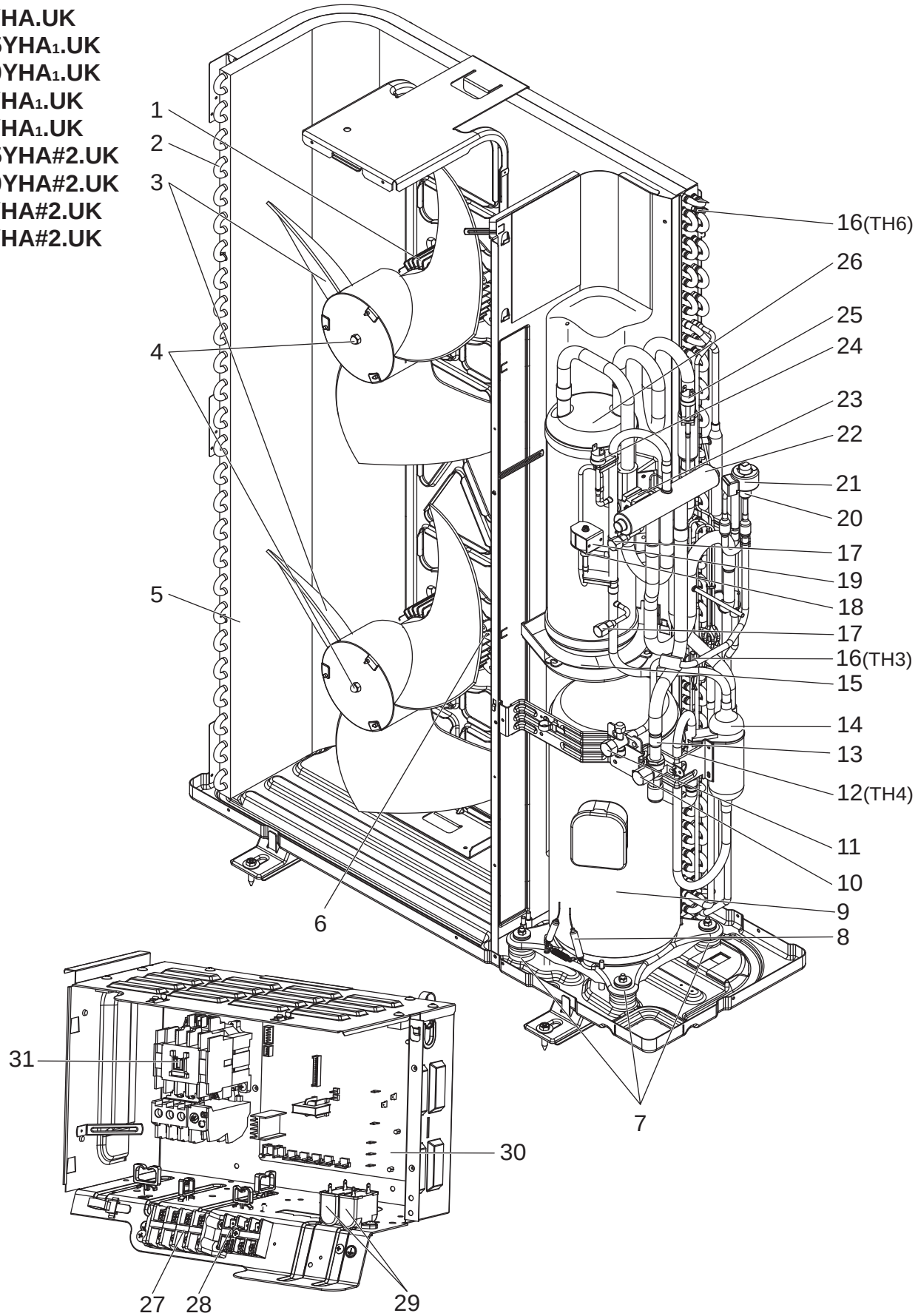
P71/P100VHA



P71/P100YHA

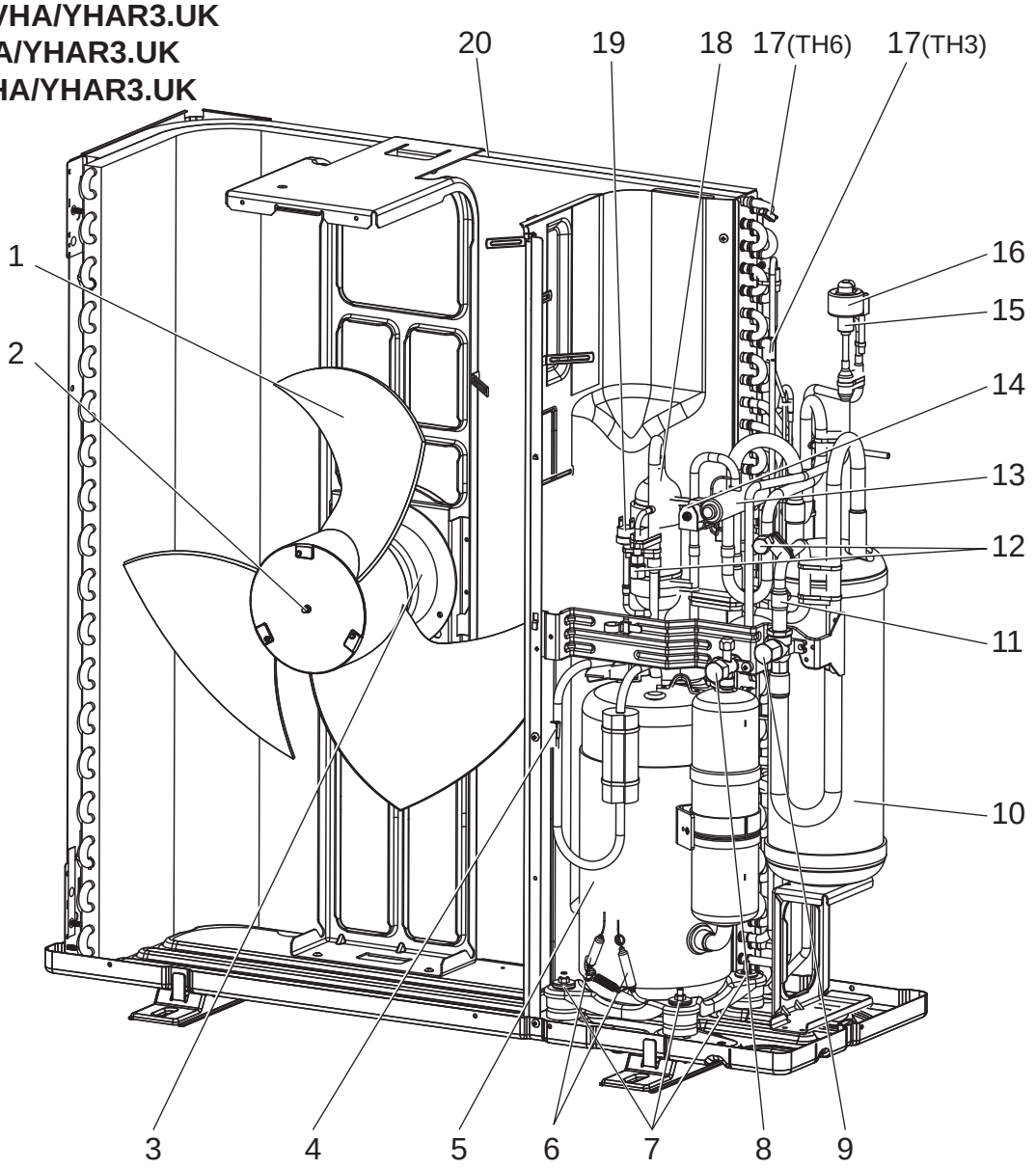
No.	Part No.	Part Name	Specification	Q'ty/unit								Remarks (Drawing No.)	Wiring Diagram Symbol
				PUH-P71		PUH-P100		PU-P71		PU-P100			
				V	Y	V	Y	V	Y	V	Y		
				HA#2.UK									
1	S70 K04 115	PROPELLER FAN		1	1	1	1	1	1	1	1		
2	S70 K01 097	NUT	M6	1	1	1	1	1	1	1	1		
3	S70 E40 763	FAN MOTOR		1	1			1	1				MF
	S70 E50 763	FAN MOTOR				1	1			1	1		MF
4	S70 E41 202	THERMISTOR (DISCHARGE)		1	1	1	1	1	1	1	1		TH4
5	S70 E72 400	COMPRESSOR	NN33VAAMT	1				1					MC
	S70 E73 400	COMPRESSOR	NN33YCAMT		1				1				MC
	S70 E74 400	COMPRESSOR	NN40VAAMT			1				1			MC
	S70 E75 400	COMPRESSOR	NN40YCAMT				1				1		MC
6	S70 E10 236	CRANKCASE HEATER		1	1	1	1	1	1	1	1		CH
7	S70 E30 401	RUBBER MOUNT		4	4	4	4	4	4	4	4		
8	S70 500 418	STOP VALVE	3/8	1	1	1	1	1	1	1	1		
9	S70 E04 411	BALL VALVE	5/8	1	1	1	1	1	1	1	1		
10	S70 E41 440	ACCUMULATOR		1	1	1	1	1	1	1	1		
11	S70 36L 450	STRAINER	#50	1	1	1	1	1	1	1	1		
12	S70 E02 413	CHARGE PLUG		2	2	2	2	2	2	2	2		
13	S70 E10 403	FOUR-WAY VALVE		1	1	1	1	1	1	1	1		
14	S70 E41 242	SOLENOID VALVE COIL <FOUR-WAY VALVE>		1	1	1	1						21S4
15	S70 E80 401	EXPANSION VALVE		1	1			1	1				
	S70 E90 401	EXPANSION VALVE				1	1			1	1		
16	S70 E91 401	LINEAR EXPANSION VALVE COIL		1	1	1	1	1	1	1	1		LEV
17	S70 E42 202	THERMISTOR (LIQUID TEMP, 2-PHASE PIPE TEMP)		1	1	1	1	1	1	1	1		TH3,6
18	S70 42H 467	MUFFLER		1	1	1	1	1	1	1	1		
19	S70 E10 208H	HIGH PRESSURE SWITCH		1	1	1	1	1	1	1	1		63H
20	S70 E41 408	HEAT EXCHANGER		1	1			1	1				
	S70 E51 408	HEAT EXCHANGER				1	1			1	1		
21	S70 E07 716	TERMINAL BLOCK	6P(L,N,⏚,S1,S2,S3)	1		1		1		1			TB1
	S70 E10 716	TERMINAL BLOCK	4P(L_1,L_2,L_3,N)		1		1		1		1		TB1
22	S70 E04 716	TERMINAL BLOCK	3P(S1,S2,S3)		1		1		1		1		TB2
23	S70 E41 255	FAN CAPACITOR	3μF 440V	1	1			1	1				C3
	S70 E51 255	FAN CAPACITOR	6μF 440V			1	1			1	1		C3
24	S70 FV8 315	CONTROLLER CIRCUIT BOARD		1		1		1		1			O.B
	S70 FY9 315	CONTROLLER CIRCUIT BOARD			1		1		1		1		O.B
25	S70 541 708	CONTACTOR			1				1				51C,52C
	S70 542 708	CONTACTOR					1				1		51C,52C
	S70 546 708	CONTACTOR		1		1		1		1			52C
26	S70 E41 723	RUN CAPACITOR	55μF 420V	1				1					C5
	S70 E51 723	RUN CAPACITOR	60μF 450V			1				1			C5

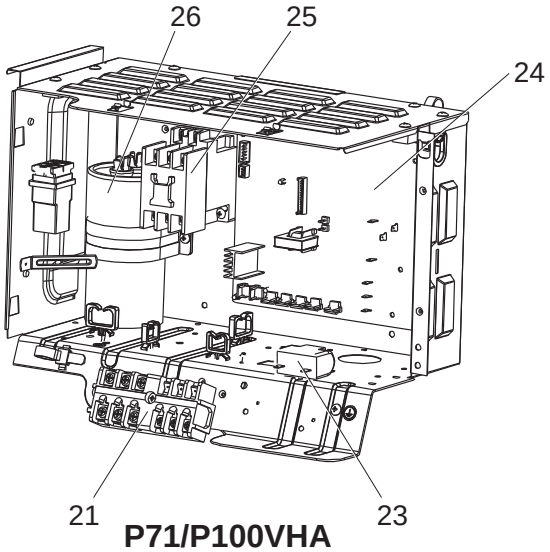
FUNCTIONAL PARTS
PUH-P125YHA.UK
PUH-P140YHA.UK
PU-P125YHA.UK
PU-P140YHA.UK
PUH-P125YHA$_1$.UK
PUH-P140YHA$_1$.UK
PU-P125YHA$_1$.UK
PU-P140YHA$_1$.UK
PUH-P125YHA#2.UK
PUH-P140YHA#2.UK
PU-P125YHA#2.UK
PU-P140YHA#2.UK



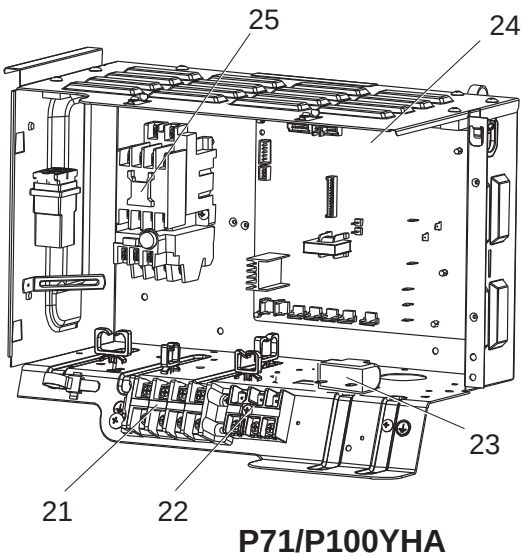
No.	Part No.	Part Name	Specification	Q'ty/unit												Remarks (Drawing No.)	Wiring Diagram Symbol
				PUH-P		PU-P		PUH-P		PU-P		PUH-P		PU-P			
				125	140	125	140	125	140	125	140	125	140	125	140		
				YHA.UK				YHA$_1$.UK				YHA#2.UK					
1	S70 E40 763	FAN MOTOR		1	1	1	1	1	1	1	1	1	1	1	1		MF3
2	S70 E81 408	HEAT EXCHANGER (TOP)		1	1	1	1	1	1	1	1	1	1	1	1		
3	S70 K04 115	PROPELLER FAN		2	2	2	2	2	2	2	2	2	2	2	2		
4	S70 K01 097	NUT	M6	2	2	2	2	2	2	2	2	2	2	2	2		
5	S70 E82 408	HEAT EXCHANGER (UNDER)		1	1	1	1	1	1	1	1	1	1	1	1		
6	S70 E60 763	FAN MOTOR		1	1	1	1	1	1	1	1	1	1	1	1		MF4
7	S70 E02 004	RUBBER MOUNT		4	4	4	4	4	4	4	4	4	4	4	4		
8	S70 E20 236	CRANKCASE HEATER		1	1	1	1	1	1	1	1	1	1	1	1		CH
9	S70 E76 400	COMPRESSOR	BN52YEGMT BN52YELMT BN52YEXMT	1		1		1		1		1		1			MC
	S70 E77 400	COMPRESSOR	BN65YEGMT BN65YELMT BN65YEXMT		1		1		1		1		1		1		MC
10	S70 E04 411	BALL VALVE	5/8	1	1	1	1	1	1	1	1	1	1	1	1		
11	S70 500 418	STOP VALVE	3/8	1	1	1	1	1	1	1	1	1	1	1	1		
12	S70 E43 202	THERMISTOR (DISCHARGE)		1	1	1	1	1	1	1	1	1	1	1	1		TH4
13	S70 36L 450	STRAINER	#50	1	1	1	1	1	1	1	1	1	1	1	1		
14	S70 42H 467	MUFFLER		1	1	1	1	1	1	1	1	1	1	1	1		
15	S70 B01 529H	ACCUMULATOR DRAIN PAN		1	1	1	1	1	1	1	1	1	1	1	1		
16	S70 E44 202	THERMISTOR (LIQUID TEMP, 2-PHASE PIPE TEMP)		1	1	1	1	1	1	1	1	1	1	1	1		TH3,6
17	S70 E02 413	CHARGE PLUG		2	2	2	2	2	2	2	2	2	2	2	2		
18	S70 282 403	BYPASS VALVE		1	1	1	1	1	1	1	1	1	1	1	1		
19	S70 E03 242	SOLENOID COIL (BYPASS VALVE)		1	1	1	1	1	1	1	1	1	1	1	1		SV
20	S70 E90 401	EXPANSION VALVE		1	1	1	1	1	1	1	1	1	1	1	1		
21	S70 E91 401	LINEAR EXPANSION VALVE COIL		1	1	1	1	1	1	1	1	1	1	1	1		LEV
22	S70 E03 403	FOUR-WAY VALVE		1	1	1	1	1	1	1	1	1	1	1	1		
23	S70 E43 241	SOLENOID COIL (FOUR-WAY VALVE)		1	1			1	1			1	1				21S4
24	S70 E10 208H	HIGH PRESSURE SWITCH		1	1	1	1	1	1	1	1	1	1	1	1		63H
25	S70 H20 209	LOW PRESSURE SWITCH		1	1	1	1	1	1	1	1	1	1	1	1		63L
26	S70 E61 440H	ACCUMULATOR		1	1	1	1	1	1	1	1	1	1	1	1		
27	S70 E10 716	TERMINAL BLOCK	4P(L_1,L_2,L_3,N)	1	1	1	1	1	1	1	1	1	1	1	1		TB1
28	S70 E04 716	TERMINAL BLOCK	3P(S1,S2,S3)	1	1	1	1	1	1	1	1	1	1	1	1		TB2
29	S70 E41 255	FAN CAPACITOR	3μF 440V	2		2		2		2		1		1			C3,C4
	S70 31L 255	FAN CAPACITOR	3.5μF 440V		2		2		2		2		1		1		C3,C4
30	S70 FY2 315	CONTROLLER CIRCUIT BOARD		1	1	1	1										O.B
	S70 FY9 315	CONTROLLER CIRCUIT BOARD						1	1	1	1	1	1	1	1		O.B
31	S70 640 708	CONTACTOR		1		1		1		1		1		1			51C,52C
	S70 540 708	CONTACTOR			1		1		1		1		1		1		51C,52C

FUNCTIONAL PARTS
PUH-P71VHA/YHAR3.UK
PUH-P100VHA/YHAR3.UK
PU-P71VHA/YHAR3.UK
PU-P100VHA/YHAR3.UK





P71/P100VHA

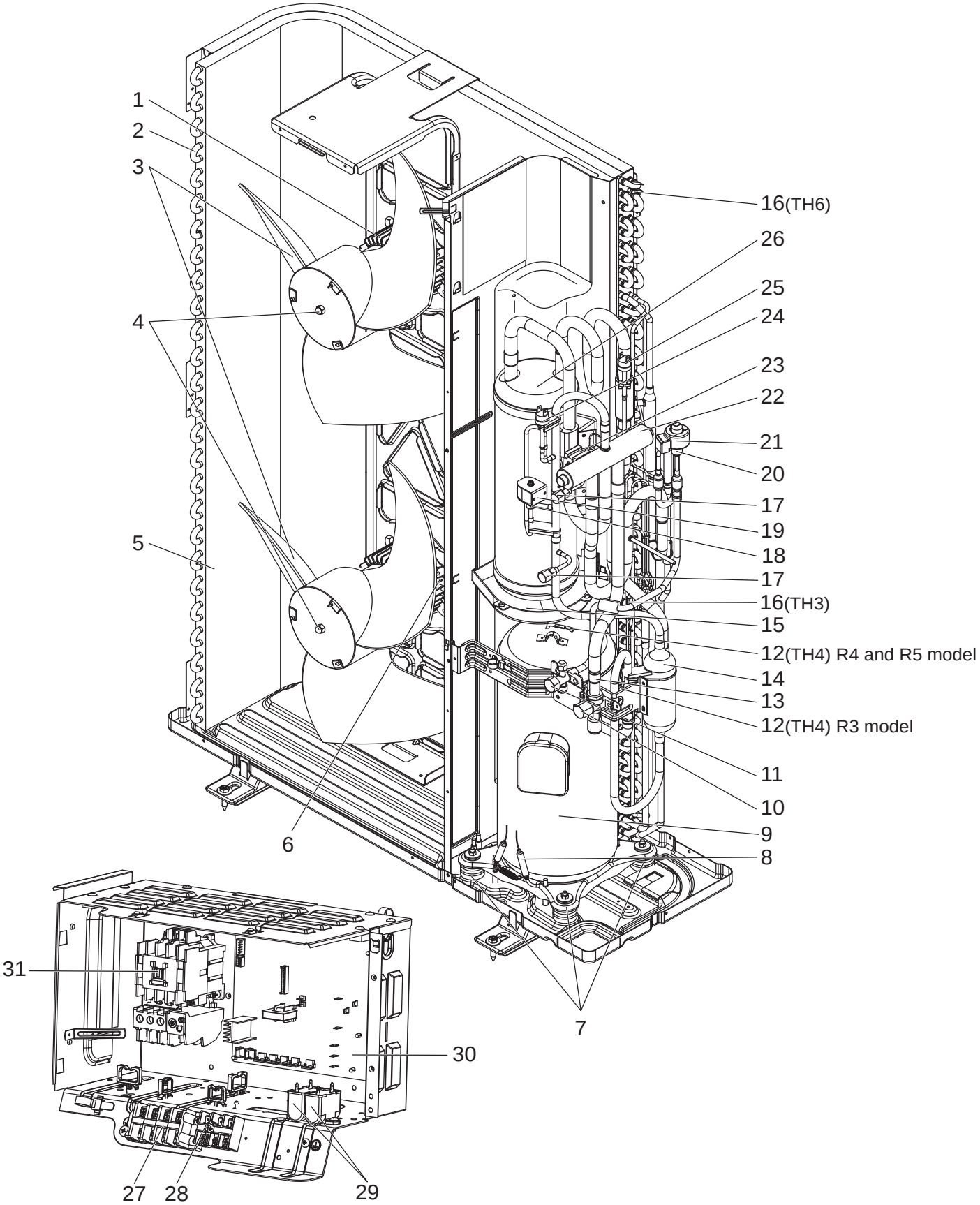


P71/P100YHA

No.	Part No.	Part Name	Specification	Q'ty/unit								Remarks (Drawing No.)	Wiring Diagram Symbol
				PUH-P71		PUH-P100		PU-P71		PU-P100			
				V	Y	V	Y	V	Y	V	Y		
				HAR3.UK									
1	S70 K04 115	PROPELLER FAN		1	1	1	1	1	1	1	1		
2	S70 K01 097	NUT	M6	1	1	1	1	1	1	1	1		
3	S70 E40 763	FAN MOTOR		1	1			1	1				MF
	S70 E50 763	FAN MOTOR				1	1			1	1		MF
4	S70 E41 202	THERMISTOR (DISCHARGE)		1	1	1	1	1	1	1	1		TH4
5	S70 E72 400	COMPRESSOR	NN33VAAMT	1				1					MC
	S70 E73 400	COMPRESSOR	NN33YCAMT		1				1				MC
	S70 E74 400	COMPRESSOR	NN40VAAMT			1				1			MC
	S70 E75 400	COMPRESSOR	NN40YCAMT				1				1		MC
6	S70 E10 236	CRANKCASE HEATER		1	1	1	1	1	1	1	1		CH
7	S70 E30 401	RUBBER MOUNT		4	4	4	4	4	4	4	4		
8	S70 600 418	STOP VALVE	3/8	1	1	1	1	1	1	1	1		
9	S70 E04 411	BALL VALVE	5/8	1	1	1	1	1	1	1	1		
10	S70 E12 440H	ACCUMULATOR		1	1	1	1	1	1	1	1		
11	S70 36L 450	STRAINER	#50	1	1	1	1	1	1	1	1		
12	S70 E02 413	CHARGE PLUG		2	2	2	2	2	2	2	2		
13	S70 E10 403	FOUR-WAY VALVE		1	1	1	1	1	1	1	1		
14	S70 E41 242	SOLENOID VALVE COIL <FOUR-WAY VALVE>		1	1	1	1						21S4
15	S70 E80 401	EXPANSION VALVE		1	1			1	1				
	S70 E90 401	EXPANSION VALVE				1	1			1	1		
16	S70 E91 401	LINEAR EXPANSION VALVE COIL		1	1	1	1	1	1	1	1		LEV
17	S70 E42 202	THERMISTOR		1	1	1	1	1	1	1	1		TH3,6
18	S70 42H 467	MUFFLER		1	1	1	1	1	1	1	1		
19	S70 E10 208H	HIGH PRESSURE SWITCH	4.14MPa	1	1	1	1	1	1	1	1		63H
20	S70 E41 408	HEAT EXCHANGER		1	1			1	1				
	S70 E51 408	HEAT EXCHANGER				1	1			1	1		
21	S70 E07 716	TERMINAL BLOCK	6P(L,N,⏚,S1,S2,S3)	1		1		1		1			TB1
	S70 E10 716	TERMINAL BLOCK	4P(L_1,L_2,L_3,N)		1		1		1		1		TB1
22	S70 E04 716	TERMINAL BLOCK	3P(S1,S2,S3)		1		1		1		1		TB2
23	S70 E41 255	FAN CAPACITOR	3μF 440V	1	1			1	1				C3
	S70 E51 255	FAN CAPACITOR	6μF 440V			1	1			1	1		C3
24	S70 FV8 315	CONTROLLER CIRCUIT BOARD		1		1		1		1			O.B
	S70 FY9 315	CONTROLLER CIRCUIT BOARD			1		1		1		1		O.B
25	S70 541 708	CONTACTOR			1				1				51C,52C
	S70 542 708	CONTACTOR					1				1		51C,52C
	S70 546 708	CONTACTOR		1		1		1		1			52C
26	S70 E41 723	RUN CAPACITOR	55μF 420V	1				1					C5
	S70 E51 723	RUN CAPACITOR	60μF 450V			1				1			C5

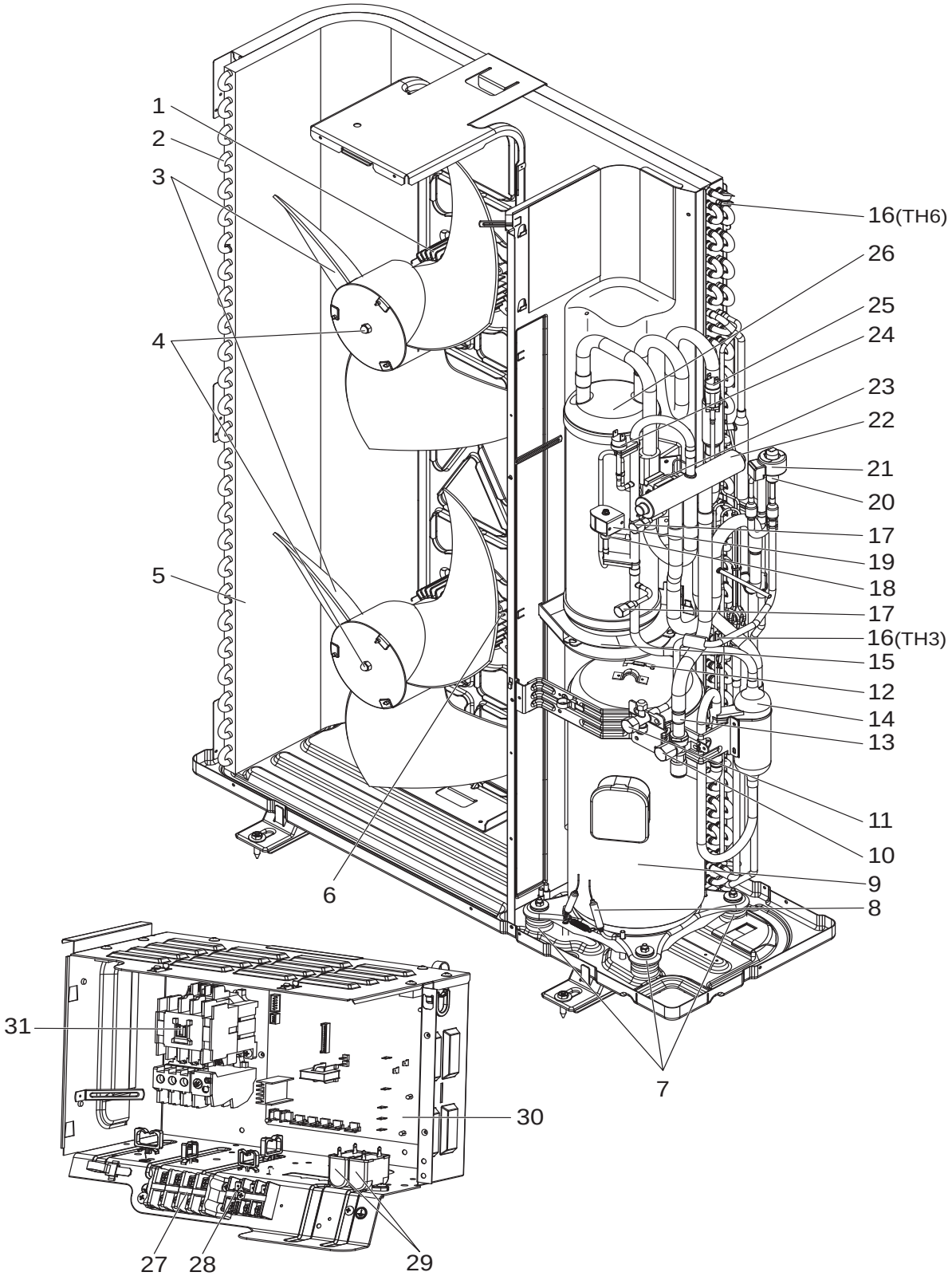
FUNCTIONAL PARTS

PUH-P125YHAR3.UK	**PUH-P125YHAR4.UK**	**PUH-P125YHAR5.UK**
PUH-P140YHAR3.UK	**PUH-P140YHAR4.UK**	**PUH-P140YHAR5.UK**
PU-P125YHAR3.UK	**PU-P125YHAR4.UK**	**PU-P125YHAR5.UK**
PU-P140YHAR3.UK	**PU-P140YHAR4.UK**	**PU-P140YHAR5.UK**



No.	Part No.	Part Name	Specification	Q'ty/unit								Remarks (Drawing No.)	Wiring Diagram Symbol
				PUH-P		PU-P		PUH-P		PU-P			
				125	140	125	140	125	140	125	140		
				YHAR3.UK				YHAR4.UK YHAR5.UK					
1	S70 E40 763	FAN MOTOR		1	1	1	1	1	1	1	1		MF3
2	S70 E81 408	HEAT EXCHANGER (TOP)		1	1	1	1	1	1	1	1		
3	S70 K04 115	PROPELLER FAN		2	2	2	2	2	2	2	2		
4	S70 K01 097	NUT	M6	2	2	2	2	2	2	2	2		
5	S70 E82 408	HEAT EXCHANGER (UNDER)		1	1	1	1	1	1	1	1		
6	S70 E60 763	FAN MOTOR		1	1	1	1	1	1	1	1		MF4
7	S70 E02 004	RUBBER MOUNT		4	4	4	4	4	4	4	4		
8	S70 E20 236	CRANKCASE HEATER		1	1	1	1	1	1	1	1		CH
9	S70 E76 400	COMPRESSOR	BN52YELMT BN52YEXMT	1		1							MC
	S70 E77 400	COMPRESSOR	BN65YELMT BN65YEXMT		1		1						MC
	S70 E86 400	COMPRESSOR	BN52YEXMT					1		1			MC
	S70 E87 400	COMPRESSOR	BN65YEXMT						1		1		MC
10	S70 E04 411	BALL VALVE	5/8	1	1	1	1	1	1	1	1		
11	S70 600 418	STOP VALVE	3/8	1	1	1	1	1	1	1	1		
12	S70 E43 202	THERMISTOR (DISCHARGE)		1	1	1	1						TH4
	S70 E43 202	THERMISTOR (COMPRESSOR SURFACE)						1	1	1	1		TH4
13	S70 36L 450	STRAINER	#50	1	1	1	1	1	1	1	1		
14	S70 42H 467	MUFFLER		1	1	1	1	1	1	1	1		
15	S70 B01 529H	ACCUMULATOR DRAIN PAN		1	1	1	1	1	1	1	1		
16	S70 E44 202	THERMISTOR		1	1	1	1	1	1	1	1		TH3,6
17	S70 E02 413	CHARGE PLUG		2	2	2	2	2	2	2	2		
18	S70 282 403	BYPASS VALVE		1	1	1	1	1	1	1	1		
19	S70 E03 242	SOLENOID COIL (BYPASS VALVE)		1	1	1	1	1	1	1	1		SV
20	S70 E90 401	EXPANSION VALVE		1	1	1	1	1	1	1	1		
21	S70 E91 401	LINEAR EXPANSION VALVE COIL		1	1	1	1	1	1	1	1		LEV
22	S70 E03 403	4-WAY VALVE		1	1	1	1	1	1	1	1		
23	S70 E43 241	SOLENOID COIL (4-WAY VALVE)		1	1			1	1				21S4
24	S70 E10 208H	HIGH PRESSURE SWITCH	4.14MPa	1	1	1	1	1	1	1	1		63H
25	S70 H20 209	LOW PRESSURE SWITCH	0.03MPa	1	1	1	1	1	1	1	1		63L
26	S70 E13 440H	ACCUMULATOR		1	1	1	1	1	1	1	1		
27	S70 E10 716	TERMINAL BLOCK	4P(L_1,L_2,L_3,N)	1	1	1	1	1	1	1	1		TB1
28	S70 E04 716	TERMINAL BLOCK	3P(S1,S2,S3)	1	1	1	1	1	1	1	1		TB2
29	S70 E41 255	FAN CAPACITOR	3μF 440V	1		1		1		1			C3,C4
	S70 31L 255	FAN CAPACITOR	3.5μF 440V		1		1		1		1		C3,C4
30	S70 FY9 315	CONTROLLER CIRCUIT BOARD		1	1	1	1	1	1	1	1		O.B.
31	S70 640 708	CONTACTOR		1		1		1		1			51C,52C
	S70 540 708	CONTACTOR			1		1		1		1		51C,52C

FUNCTIONAL PARTS
PUH-P125YHAR6.UK PUH-P140YHAR6.UK
PU-P125YHAR6.UK PU-P140YHAR6.UK



No.	Part No.	Part Name	Specification	Q'ty/ unit				Remarks (Drawing No.)	Wiring Diagram Symbol
				PUH-P		PU-P			
				125	140	125	140		
				YHAR6.UK					
1	S70 E40 763	FAN MOTOR		1	1	1	1		MF3
2	S70 E81 408	HEAT EXCHANGER (TOP)		1	1	1	1		
3	S70 K04 115	PROPELLER FAN		2	2	2	2		
4	S70 K01 097	NUT	M6	2	2	2	2		
5	S70 E82 408	HEAT EXCHANGER (UNDER)		1	1	1	1		
6	S70 E60 763	FAN MOTOR		1	1	1	1		MF4
7	S70 E02 004	RUBBER MOUNT		4	4	4	4		
8	S70 E20 236	CRANKCASE HEATER		1	1	1	1		CH
9	S70 E96 400	COMPRESSOR	BN52YFPMT	1		1			MC
	S70 E97 400	COMPRESSOR	BN65YFPMT		1		1		MC
10	S70 E04 411	BALL VALVE	5/8	1	1	1	1		
11	S70 600 418	STOP VALVE	3/8	1	1	1	1		
12	S70 E43 202	THERMISTOR (COMPRESSOR SURFACE)		1	1	1	1		TH4
13	S70 36L 450	STRAINER	#50	1	1	1	1		
14	S70 42H 467	MUFFLER		1	1	1	1		
15	S70 B01 529H	ACCUMULATOR DRAIN PAN		1	1	1	1		
16	S70 E44 202	THERMISTOR		1	1	1	1		TH3,6
17	S70 E02 413	CHARGE PLUG		2	2	2	2		
18	S70 282 403	BYPASS VALVE		1	1	1	1		
19	S70 E03 242	SOLENOID COIL (BYPASS VALVE)		1	1	1	1		SV
20	S70 E90 401	EXPANSION VALVE		1	1	1	1		
21	S70 E91 401	LINEAR EXPANSION VALVE COIL		1	1	1	1		LEV
22	S70 E03 403	4-WAY VALVE		1	1	1	1		
23	S70 E43 241	SOLENOID COIL (4-WAY VALVE)		1	1				21S4
24	S70 E10 208H	HIGH PRESSURE SWITCH	4.14MPa	1	1	1	1		63H
25	S70 H20 209	LOW PRESSURE SWITCH	0.03MPa	1	1	1	1		63L
26	S70 E13 440H	ACCUMULATOR		1	1	1	1		
27	S70 E10 716	TERMINAL BLOCK	4P(L_1,L_2,L_3,N)	1	1	1	1		TB1
28	S70 E04 716	TERMINAL BLOCK	3P(S1,S2,S3)	1	1	1	1		TB2
29	S70 E41 255	FAN CAPACITOR	3μF 440V	1		1			C3,C4
	S70 31L 255	FAN CAPACITOR	3.5μF 440V		1		1		C3,C4
30	S70 FY9 315	CONTROLLER CIRCUIT BOARD		1	1	1	1		O.B.
31	S70 640 708	CONTACTOR		1		1			51C,52C
	S70 540 708	CONTACTOR			1		1		51C,52C

Mr.SLIM

MITSUBISHI ELECTRIC CORPORATION

HEAD OFFICE: TOKYO BUILDING, 2-7-3, MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN

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