

SERVICE MANUAL

R410A

Outdoor unit

[model names]

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

[Service Ref.]

 PU-P71VHA.UK
 PU-P71YHA.UK
 PU-P100VHA.UK
 PU-P100YHA.UK
 PU-P125YHA.UK
 PU-P140YHA.UK

 PU-P71VHA₁.UK
 PU-P71YHA₁.UK
 PU-P100VHA₁.UK
 PU-P100YHA₁.UK
 PU-P125YHA₁.UK
 PU-P140YHA₁.UK

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

 PUH-P71VHA.UK
 PUH-P71YHA.UK
 PUH-P100VHA.UK
 PUH-P100YHA.UK
 PUH-P125YHA.UK
 PUH-P140YHA.UK

 PUH-P71VHA₁.UK
 PUH-P71YHA₁.UK
 PUH-P100VHA₁.UK
 PUH-P100YHA₁.UK
 PUH-P125YHA₁.UK
 PUH-P140YHA₁.UK

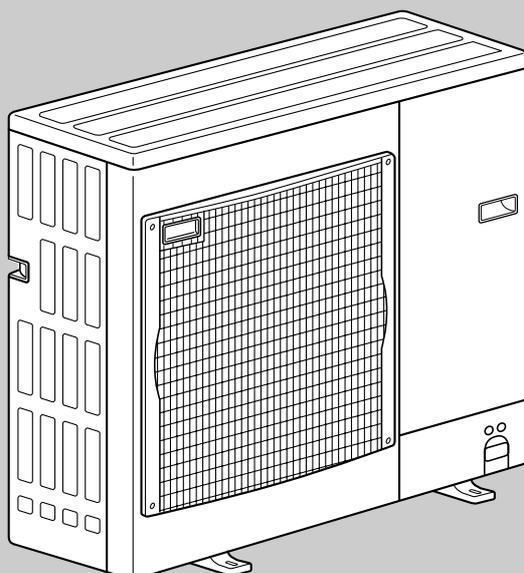
Revision:

- PU(H)-P71/100/125/140V/YHA₁.UK are added in REVISED EDITION-C.
- Some descriptions have been modified.

- Please void OC379 REVISED EDITION-B.

Note:

- This manual describes only service data of the outdoor units.
- RoHS compliant products have <G> mark on the spec name plate.
- For servicing of RoHS compliant products, refer to the RoHS Parts List.


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

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1 TECHNICAL CHANGES

PU-P71VHA.UK → PU-P71VHA₁.UK
PU-P71YHA.UK → PU-P71YHA₁.UK
PU-P100VHA.UK → PU-P100VHA₁.UK
PU-P100YHA.UK → PU-P100YHA₁.UK
PU-P125YHA.UK → PU-P125YHA₁.UK
PU-P140YHA.UK → PU-P140YHA₁.UK

PUH-P71VHA.UK → PUH-P71VHA₁.UK
PUH-P71YHA.UK → PUH-P71YHA₁.UK
PUH-P100VHA.UK → PUH-P100VHA₁.UK
PUH-P100YHA.UK → PUH-P100YHA₁.UK
PUH-P125YHA.UK → PUH-P125YHA₁.UK
PUH-P140YHA.UK → PUH-P140YHA₁.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	PLA-RP35/50/60/71AA.UK	OC335
PLA-RP35/50/60/71/100/125/40BA	PLA-RP35/50/60/71/100/125/40BA.UK	OCH412 OCB412
PLA-RP100/125/140AA2	PLA-RP100/125/140AA2.UK	OC357
PCA-RP50/60/71/100/125/140GA PCA-RP50GA2	PCA-RP50/60/71/100/125/140GA PCA-RP50GA2	OC328
PKA-RP35/50GAL	PKA-RP35/50GAL	OC330
PKA-RP60/71/100FAL PKA-RP50FAL2	PKA-RP60/71/100FAL PKA-RP50FAL2	OC331
PEAD-RP50/60/71/125/140EA PEAD-RP35/100EA2	PEAD-RP50/60/71/125/140EA.UK PEAD-RP35/100EA2.UK	HWE05210
PEAD-RP60/71/100GA	PEAD-RP60/71/100GA.UK	HWE05060

2-2. TECHNICAL DATA BOOK

Manual No. OCS07

3-1. CAUTIONS RELATED TO NEW REFRIGERANT

Caution 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 during installation indoors and keep 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 cycle, that can cause deterioration of refrigerant oil or malfunction of compressor.

Use ester oil, ether oil or alkylbenzene oil (small amount) as the refrigerant oil applied to flares and flange connections.

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 efficiency 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 cycle 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 scale

Keep the tools with care.

If dirt, dust or moisture enter into refrigerant cycle, 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 efficiency will be lowered.

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.)

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 time higher than that of R22, their sizes of flared sections and flare nuts are different.

① Thickness of pipes

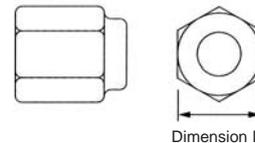
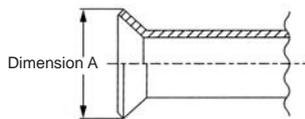
Because the working pressure of R410A is higher compared to R22, be sure to use refrigerant piping with thickness shown below. (Never use pipes of 0.7mm or below.)

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

② Dimensions 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 have been specified separately from the dimensions for other refrigerants as shown below. The dimension B of flare nut for R410A also have 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 (mm)

Nominal dimensions	Outside diameter	Dimension A ($^{+0}_{-0.4}$)	
		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 (mm)

Nominal dimensions	Outside diameter	Dimension B	
		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

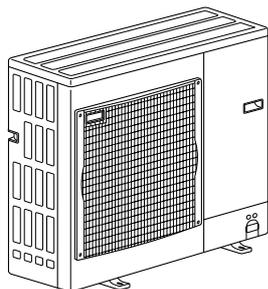
③ Tools for R410A (The following table shows whether conventional tools can be used or not.)

Tools and materials	Use	R410A tools	Can R22 tools be used?	Can R407C tools be used?
Gauge manifold	Air purge, refrigerant charge and	Tool exclusive for R410A	×	×
Charge hose	Operation check	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 alkylbenzene oil (minimum amount)	×	Ester oil: ○ Alkylbenzene 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	×	—

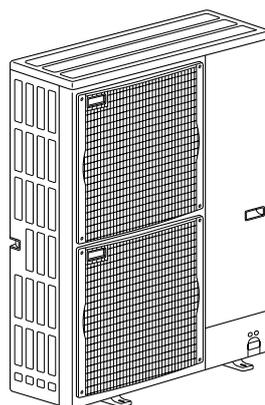
× : Prepare a new tool. (Use the new tool as the tool exclusive for R410A.)

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

○ : Tools for other refrigerants can be used.



PU-P71VHA₍₁₎.UK **PUH-P71VHA₍₁₎.UK**
PU-P71YHA₍₁₎.UK **PUH-P71YHA₍₁₎.UK**
PU-P100VHA₍₁₎.UK **PUH-P100VHA₍₁₎.UK**
PU-P100YHA₍₁₎.UK **PUH-P100YHA₍₁₎.UK**



PU-P125YHA₍₁₎.UK
PU-P140YHA₍₁₎.UK
PUH-P125YHA₍₁₎.UK
PUH-P140YHA₍₁₎.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 often causes problems. Heretofore it is completely eliminated. This unique system improves the quality and reliability of the work done. It also helps to speed up the installation time.

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SPECIFICATIONS

Service Ref.			PUH-P71VHA/YHA ⁽¹⁾ .UK		PUH-P100VHA/YHA ⁽¹⁾ .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	25.5		30.5		
	External finish		Munsell 5Y 7/1				
	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) × No.		Propeller fan × 1			
		Fan motor output	kW	0.070		0.110	
		Airflow	m ³ /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(lbs)	93(205)		94(207)			
Refrigerant		R410A					
Charge	kg(lbs)	3.6(7.9)		4.4(9.7)			
	Oil (Model)	L	1.30(MEL56)				
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		Max. 50m				
	Piping length		Max. 50m				

Service Ref.			PUH-P125YHA ⁽¹⁾ .UK		PUH-P140YHA ⁽¹⁾ .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	15.1		18.7		
	External finish		Munsell 5Y 7/1				
	Refrigerant control		Linear Expansion Valve				
	Compressor		Hermetic				
	Model		BN52YEGMT		BN65YEGMT		
	Motor output	kW	3.7		4.6		
	Starter type		Line start				
	Protection devices		Discharge thermo, HP switch		Thermal relay		
	Crankcase heater	W	25		25		
	Heat exchanger		Plate fin coil				
	Fan	Fan(drive) × No.		Propeller fan × 2			
		Fan motor output	kW	0.070+0.070			
		Airflow	m ³ /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(lbs)	131(289)		131(289)			
Refrigerant		R410A					
Charge	kg(lbs)	5.0(11.0)		5.0(11.0)			
	Oil (Model)	L	2.10(MEL56)				
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		Max. 50m				
	Piping length		Max. 50m				



Service Ref.				PU-P71VHA/YHA ⁽¹⁾ .UK		PU-P100VHA/YHA ⁽¹⁾ .UK	
OUTDOOR UNIT	Mode			Cooling		Cooling	
	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	25.5		30.5	
	External finish			Munsell 5Y 7/1			
	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) × No.		Propeller fan × 1		
			Fan motor output	kW	0.070		0.110
			Airflow	m ³ /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(lbs)	93(205)		94(207)	
	Refrigerant			R410A			
		Charge	kg(lbs)	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		Max. 50m			
Piping length		Max. 50m					

Service Ref.				PU-P125YHA ⁽¹⁾ .UK		PU-P140YHA ⁽¹⁾ .UK	
OUTDOOR UNIT	Mode			Cooling		Cooling	
	Power supply (phase, cycle, voltage)			3Phase, 50Hz, 400V			
		Running current	A	6.79		8.55	
		Max. current	A	15.1		18.7	
	External finish			Munsell 5Y 7/1			
	Refrigerant control			Linear Expansion Valve			
	Compressor			Hermetic			
		Model		BN52YEGMT		BN65YEGMT	
		Motor output	kW	3.7		4.6	
		Starter type			Line start		
		Protection devices			Discharge thermo, HP switch Thermal relay		
		Crankcase heater	W	25		25	
		Heat exchanger			Plate fin coil		
		Fan	Fan(drive) × No.		Propeller fan × 2		
			Fan motor output	kW	0.070+0.070		-
			Airflow	m ³ /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(lbs)	131(289)		-	
	Refrigerant			R410A			
		Charge	kg(lbs)	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		Max. 50m			
Piping length		Max. 50m					

6

DATA

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

Service Ref.	Piping length (one way)					Factory charged
	10m	20m	30m	40m	50m	
PUH-P71VHA/YHA ⁽¹⁾ .UK PU-P71VHA/YHA ⁽¹⁾ .UK	3.4	3.5	3.6	4.2	4.8	3.6
PUH-P100VHA/YHA ⁽¹⁾ .UK PU-P100VHA/YHA ⁽¹⁾ .UK	4.2	4.3	4.4	5.0	5.6	4.4
PUH-P125/140YHA ⁽¹⁾ .UK PU-P125/140YHA ⁽¹⁾ .UK	4.8	4.9	5.0	5.6	6.2	5.0

PRE-CHARGED REFRIGERANT IS SUPPLIED FOR PIPING LENGTH AT SHIPMENT.

6-2. COMPRESSOR TECHNICAL DATA

(at 20°C)

Unit		PUH-P71VHA ⁽¹⁾ .UK PU-P71VHA ⁽¹⁾ .UK	PUH-P71YHA ⁽¹⁾ .UK PU-P71YHA ⁽¹⁾ .UK	PUH-P100VHA ⁽¹⁾ .UK PU-P100VHA ⁽¹⁾ .UK	PUH-P100YHA ⁽¹⁾ .UK PU-P100YHA ⁽¹⁾ .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

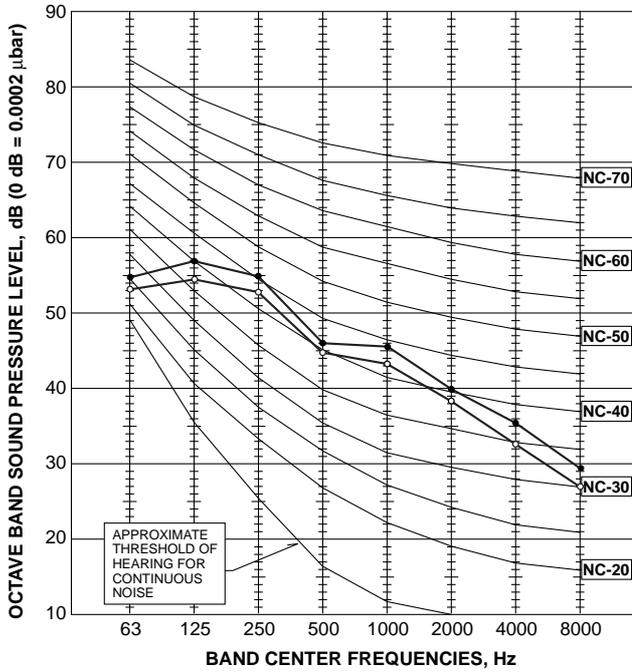
(at 20°C)

Unit		PUH-P125YHA ⁽¹⁾ .UK PU-P125YHA ⁽¹⁾ .UK	PUH-P140YHA ⁽¹⁾ .UK PU-P140YHA ⁽¹⁾ .UK
Compressor model		BN52YEGMT	BN65YEGMT
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

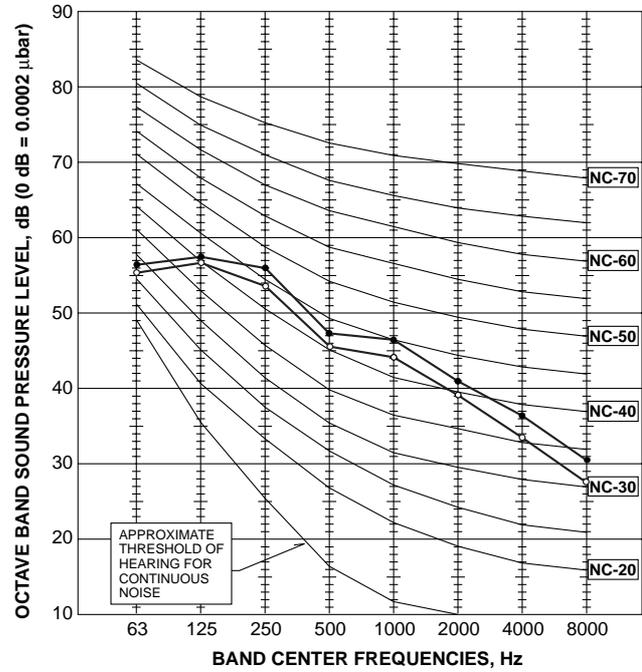
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 PUH-P71YHA₍₁₎.UK
 PU-P71VHA₍₁₎.UK
 PU-P71YHA₍₁₎.UK

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



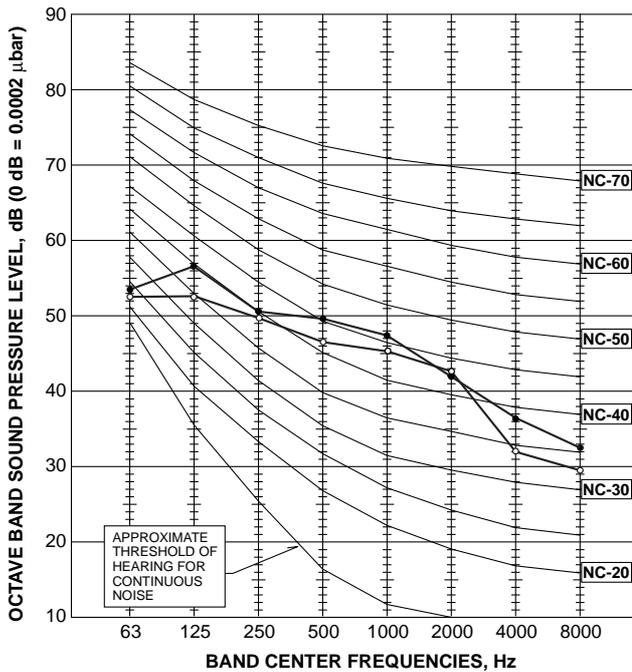
PUH-P100VHA₍₁₎.UK
 PUH-P100YHA₍₁₎.UK
 PU-P100VHA₍₁₎.UK
 PU-P100YHA₍₁₎.UK

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



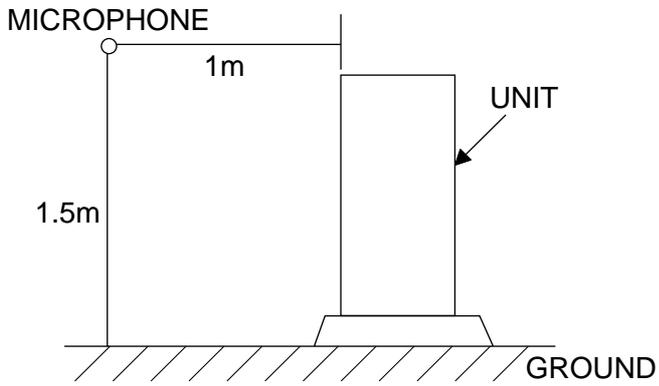
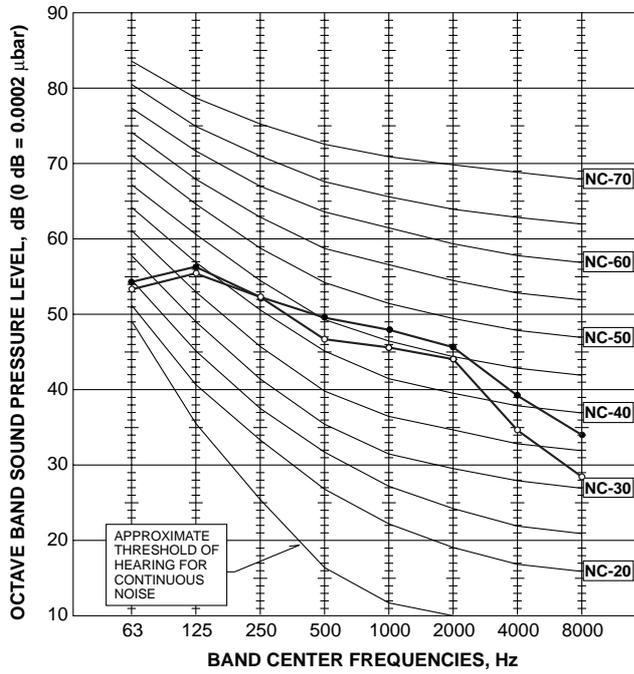
PUH-P125YHA₍₁₎.UK
 PU-P125YHA₍₁₎.UK

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



PUH-P140YHA⁽¹⁾.UK
PU-P140YHA⁽¹⁾.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/cm ²)	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/cm ²)	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/cm ²)	2.99 (30.4)	3.16 (32.2)	3.00 (30.6)	3.05 (31.1)	
	Suction pressure	MPa (kgf/cm ²)	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)

- PU-P71VHA.UK PUH-P71VHA.UK
- PU-P71YHA.UK PUH-P71YHA.UK
- PU-P100VHA.UK PUH-P100VHA.UK
- PU-P100YHA.UK PUH-P100YHA.UK
- PU-P71VHA₁.UK PUH-P71VHA₁.UK
- PU-P71YHA₁.UK PUH-P71YHA₁.UK
- PU-P100VHA₁.UK PUH-P100VHA₁.UK
- PU-P100YHA₁.UK PUH-P100YHA₁.UK

Unit : mm

1 FREE SPACE (Around the unit)

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

2 SERVICE SPACE

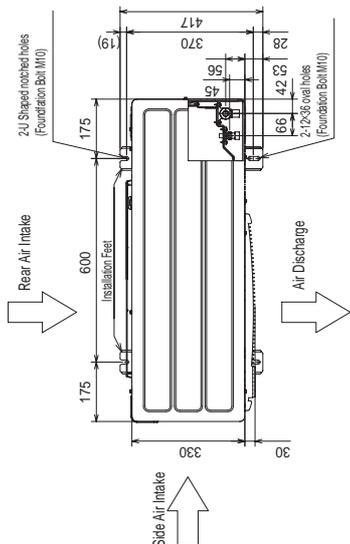
Dimensions of space needed for service access are shown in the below diagram.

3 FOUNDATION BOLTS

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

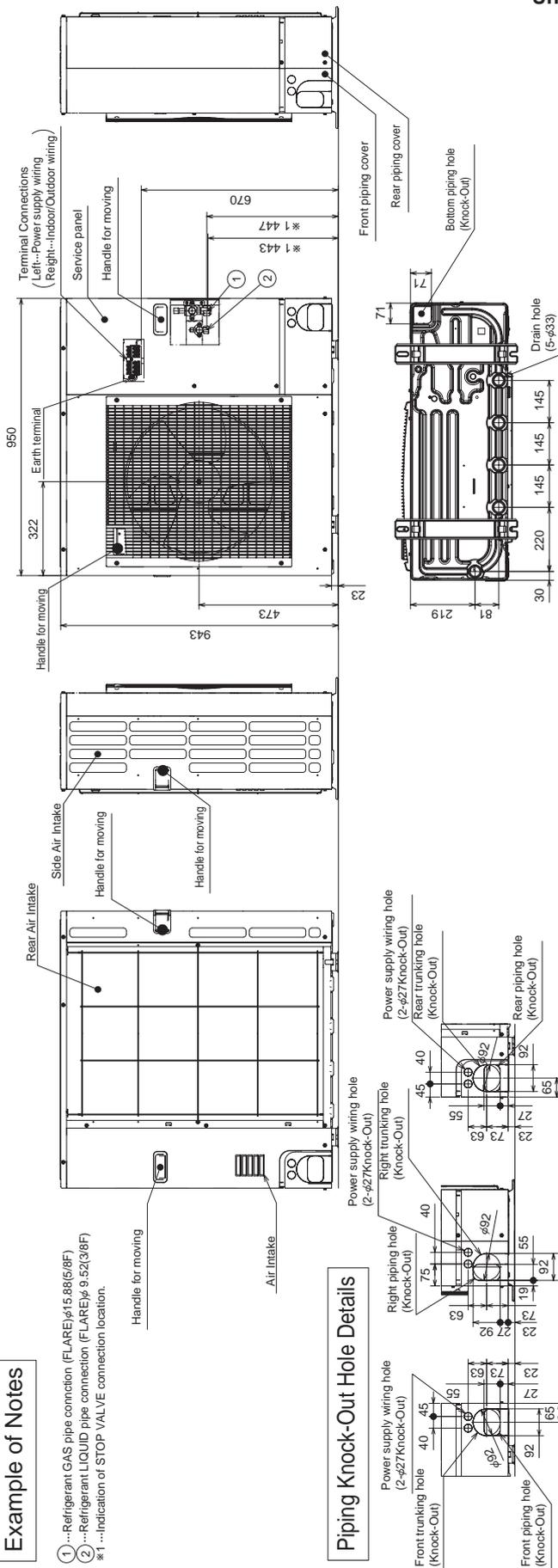
4 PIPING-WIRING DIRECTIONS

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

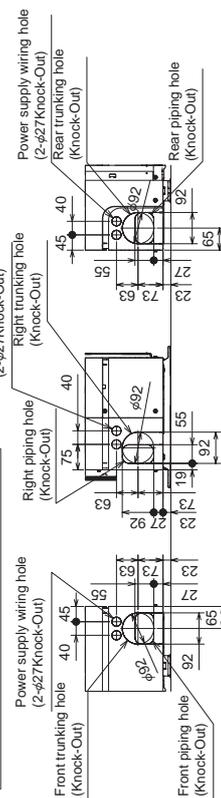


Example of Notes

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

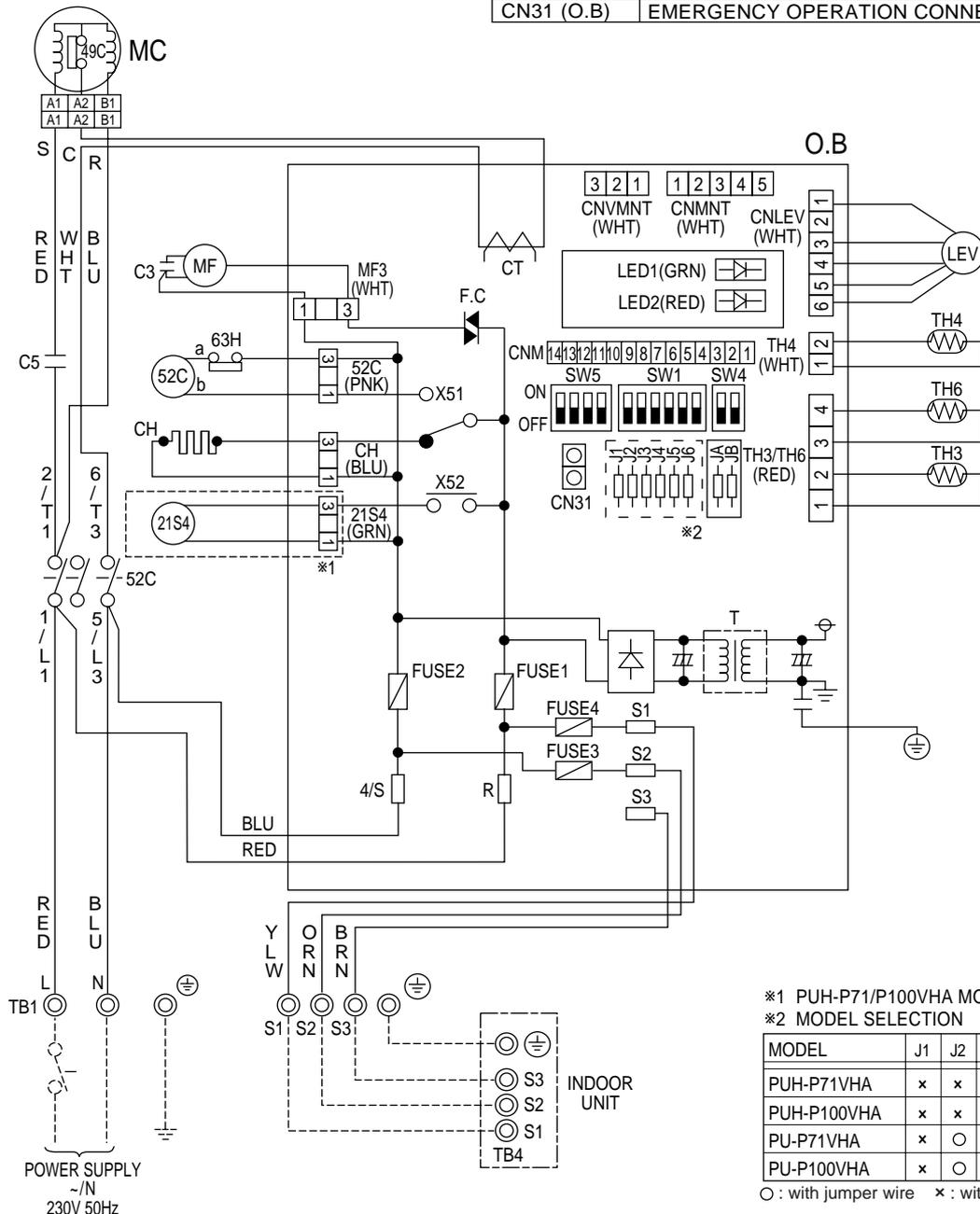


Piping Knock-Out Hole Details



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	FUSE3(O.B)	FUSE (6.3A 250V)
TH4		FUSE4(O.B)	FUSE (6.3A 250V)
TH6		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

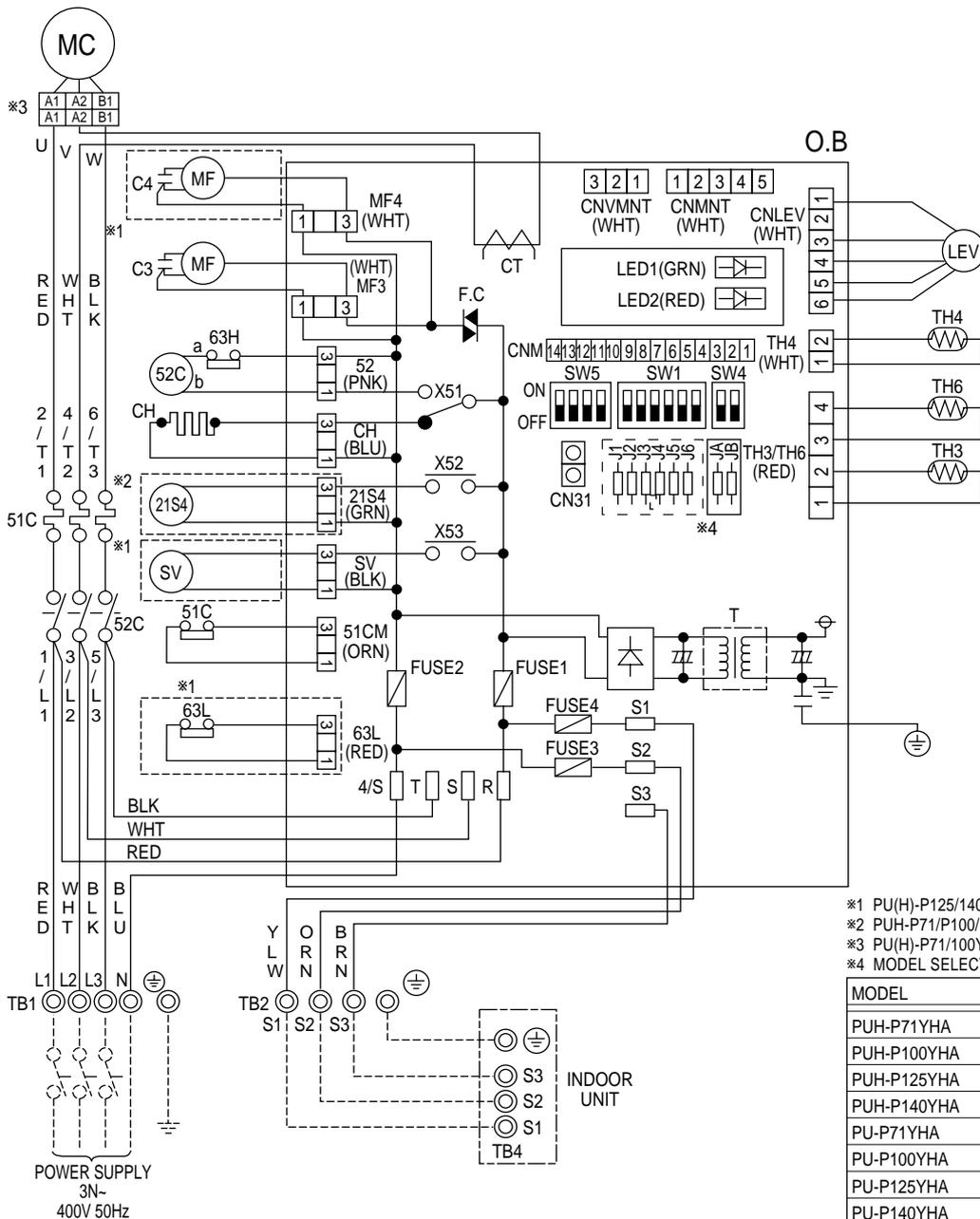


<Notes when servicing>

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.UK PUH-P71YHA.UK PU-P71YHA₁.UK PUH-P71YHA₁.UK
PU-P100YHA.UK PUH-P100YHA.UK PU-P100YHA₁.UK PUH-P100YHA₁.UK
PU-P125YHA.UK PUH-P125YHA.UK PU-P125YHA₁.UK PUH-P125YHA₁.UK
PU-P140YHA.UK PUH-P140YHA.UK PU-P140YHA₁.UK PUH-P140YHA₁.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	FUSE3(O.B)	FUSE (6.3A 250V)
TH4		FUSE4(O.B)	FUSE (6.3A 250V)
TH6		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



<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.

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. Permissible System Impedance (Ω)		0.06		0.23	0.22	0.14	0.12
Wiring Wire No. x size (mm ²)	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	*4		AC 230 V			
	Outdoor unit L1-N, L2-N, L3-N			AC 230 V			
	Indoor unit-Outdoor unit S1-S2			AC 230 V			
	Indoor unit-Outdoor unit S2-S3			DC 24 V			
Remote controller-Indoor unit *4				DC 12 V			

*1. A breaker with at least 3.0 mm contact separation in each poles shall be provided. Use non-fuse breaker (NF) or 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 insulated by the transformer or other device.

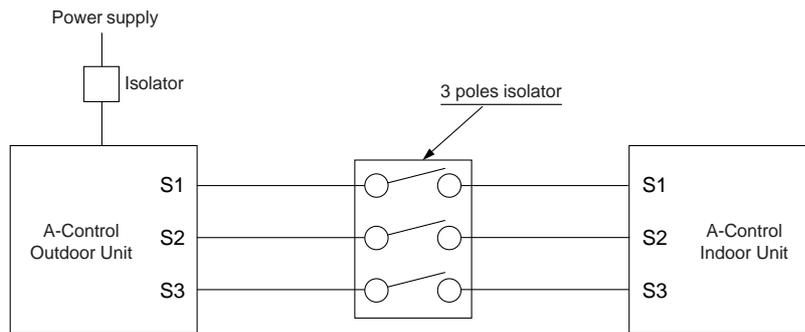
Notes: 1. Wiring size must comply with the applicable local and national code.

2. Power supply cords and Indoor/Outdoor unit connecting cords shall not be lighter than polychloroprene sheathed flexible cord. (Design 60245 IEC 57)

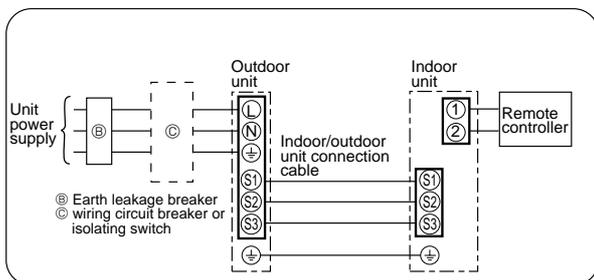
3. Install an earth longer than other cables.

⚠ Caution:

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

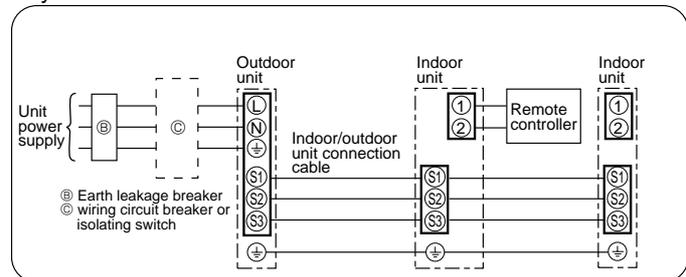


1:1 system

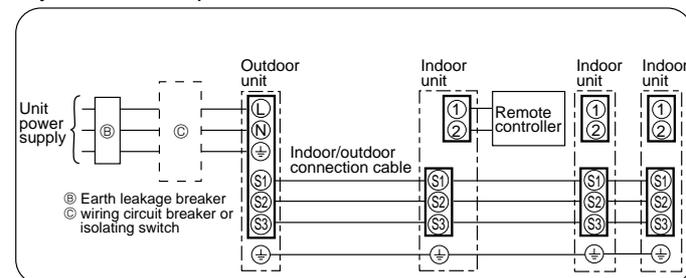


Synchronized twin and triple system Electrical wiring

• Synchronized twin



• Synchronized triple



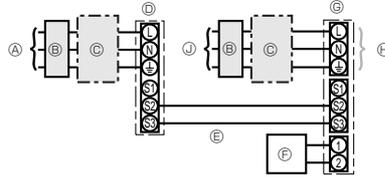
9-2. SEPARATE INDOOR UNIT/ OUTDOOR UNIT POWER SUPPLIES

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.



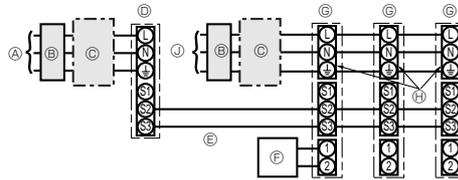
- Ⓐ Outdoor unit power supply
- Ⓑ Earth leakage breaker
- Ⓒ Wiring circuit breaker or isolating switch
- Ⓓ Outdoor unit
- Ⓔ Indoor unit/outdoor unit connecting cords
- Ⓕ Remote controller
- Ⓖ Indoor unit
- Ⓗ Option
- Ⓙ Indoor unit power supply

* 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 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.

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

*1. A breaker with at least 3 mm contact separation in each pole shall be provided. Use non-fuse breaker (NF) or 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.

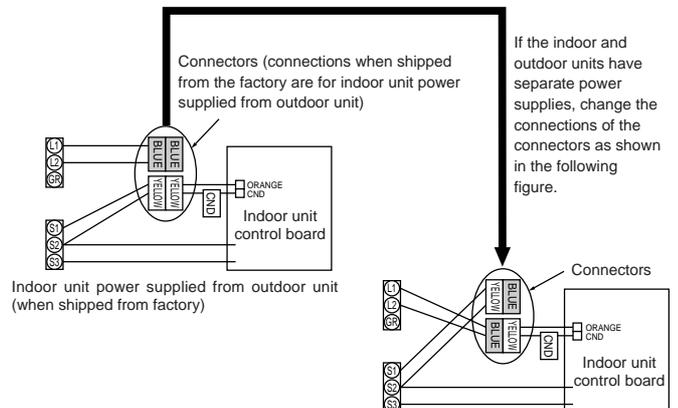
2. Power supply cords and indoor unit/outdoor unit connecting cords shall not be lighter than polychloroprene sheathed flexible cord. (Design 60245 IEC 57)

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.



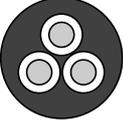
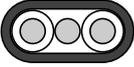
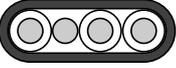
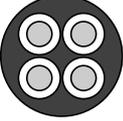
Separate indoor unit/outdoor unit power supplies

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

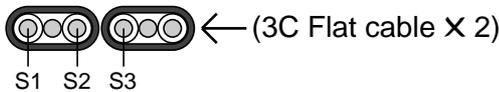
The cable shall not be lighter than design 60245 IEC or 227 IEC.

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 the 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 1.5mm².

*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 (mm ²)		
	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 (mm ²)
	Max. 120m
Indoor unit-Outdoor unit	2 × Min. 0.3
Indoor unit-Outdoor unit earth	—

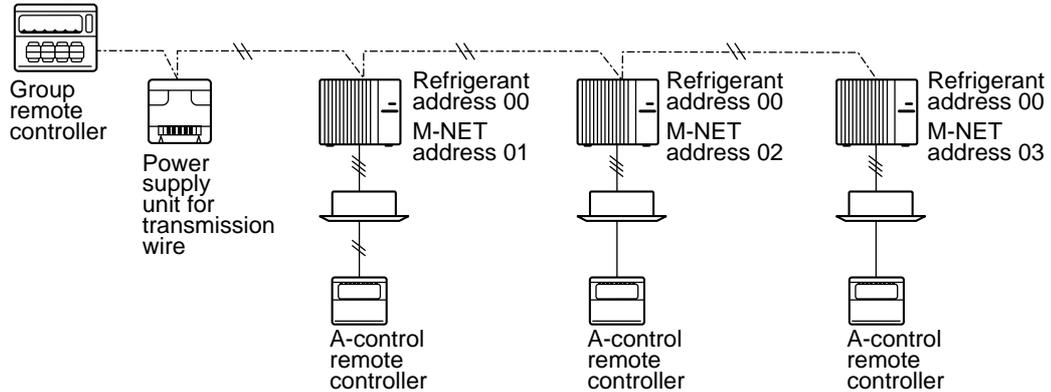
* The optional indoor power supply terminal kit is necessary

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.
(If an intermediate connection is necessary, be sure to take measures to prevent water from entering the cables.)

9-4. M-NET WIRING METHOD

(Points to notice)

- (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.

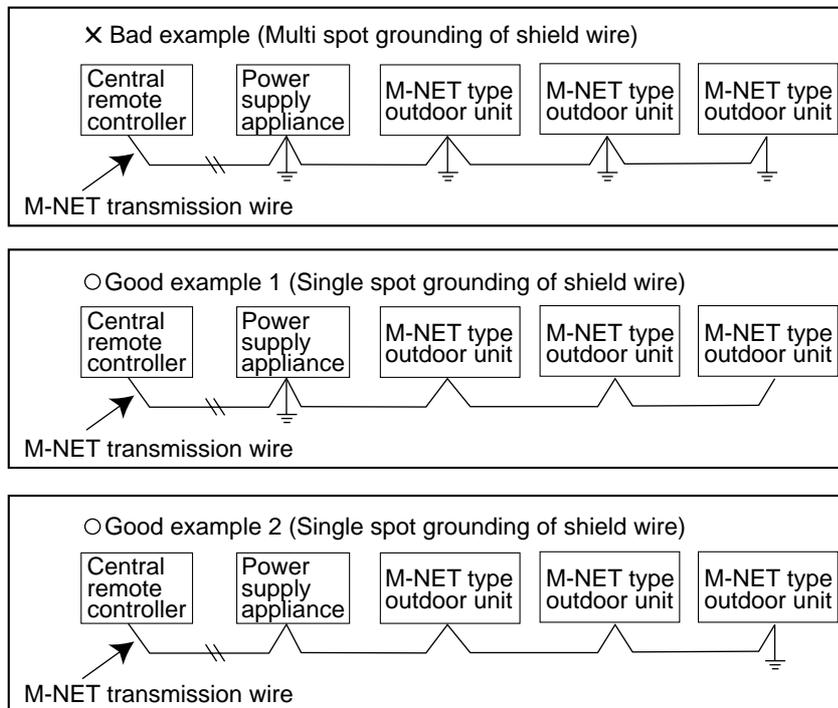


It would be ok if M-NET wire (non-polar, 2-cores) is arranged in addition to the wiring for A-control.

- (4) Ground 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.

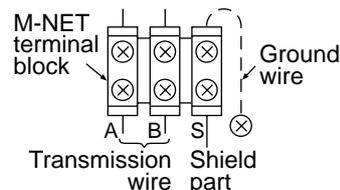


If there are more than two grounding spots on the shield wire, noise may enter into the shield wire because the ground wire and shield wire form one circuit and the electric potential difference occurs due to the impedance difference among grounding spots. In case of single spot grounding, noise does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

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

● M-NET wiring

- (1) Use 2-core x 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 Free Combo 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 Free Combo system), and the address number should be consecutively set in a same group.

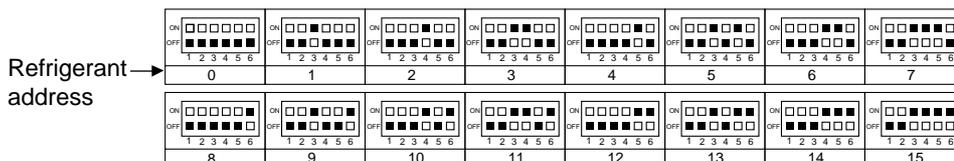
Address number can be set by using rotary switches (SW11 for ones digit and SW12 for tens digit), which is located on the M-NET board of outdoor unit. (Factory setting: all addresses are set to "0".)

<Setting example>

M-NET Address No.	1	2	...	50
Switch setting	SW11 ones digit: 01	SW11 ones digit: 02	~	SW11 ones digit: 00
	SW12 tens digit: 00	SW12 tens digit: 00		SW12 tens digit: 50

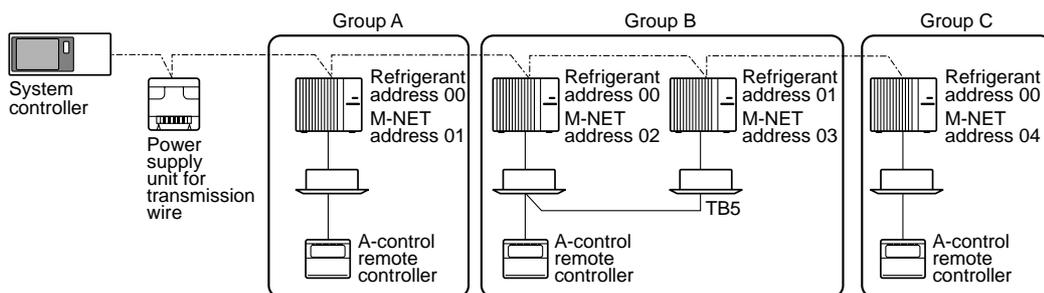
9-4-2. Refrigerant address setting

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. [Factory setting: all switches are OFF. (All refrigerant addresses are "00".)]

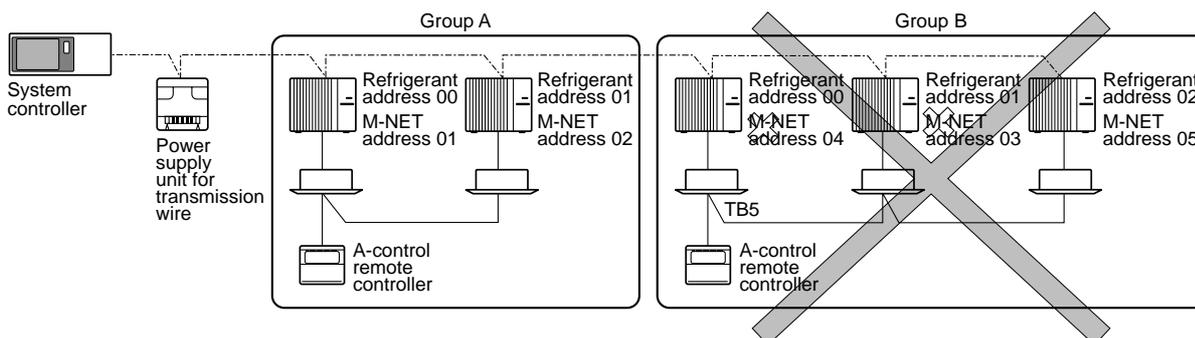


9-4-3. Regulations in address settings

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.

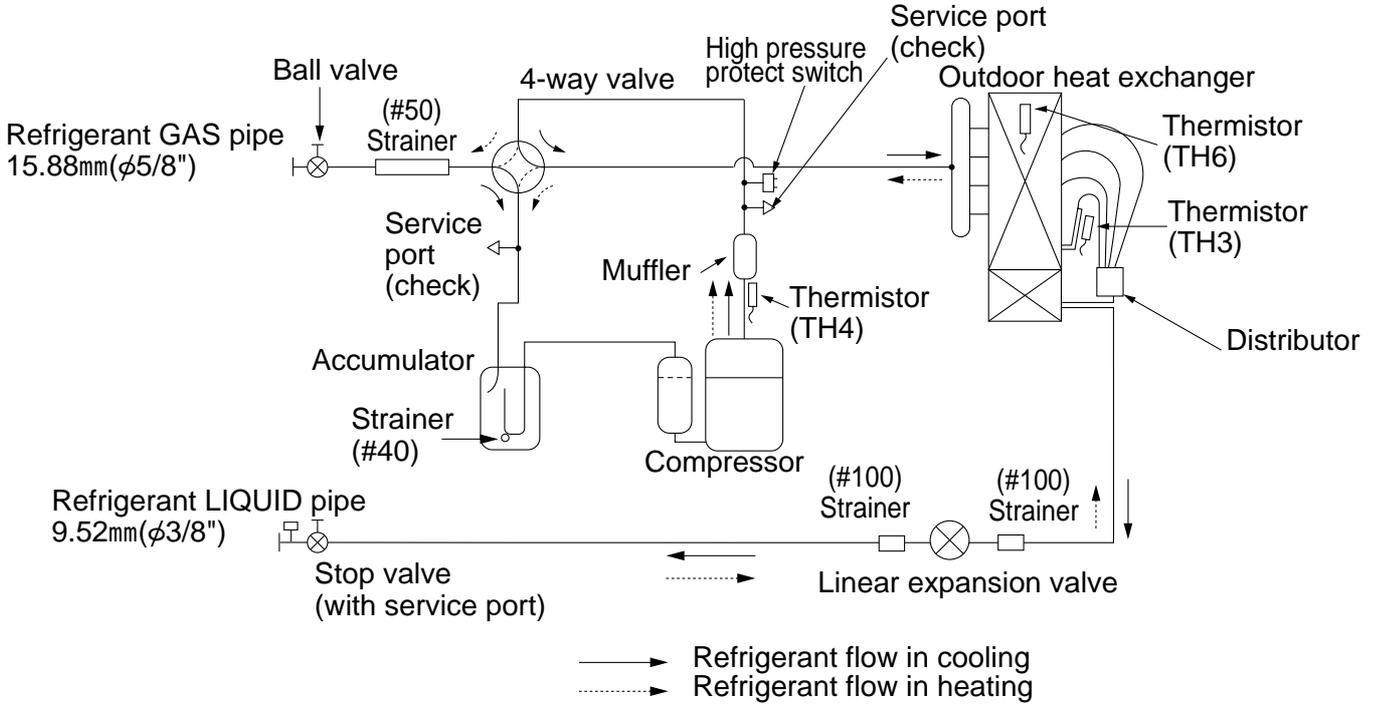


* Refrigerant addresses can be overlapped if they are in the different group.

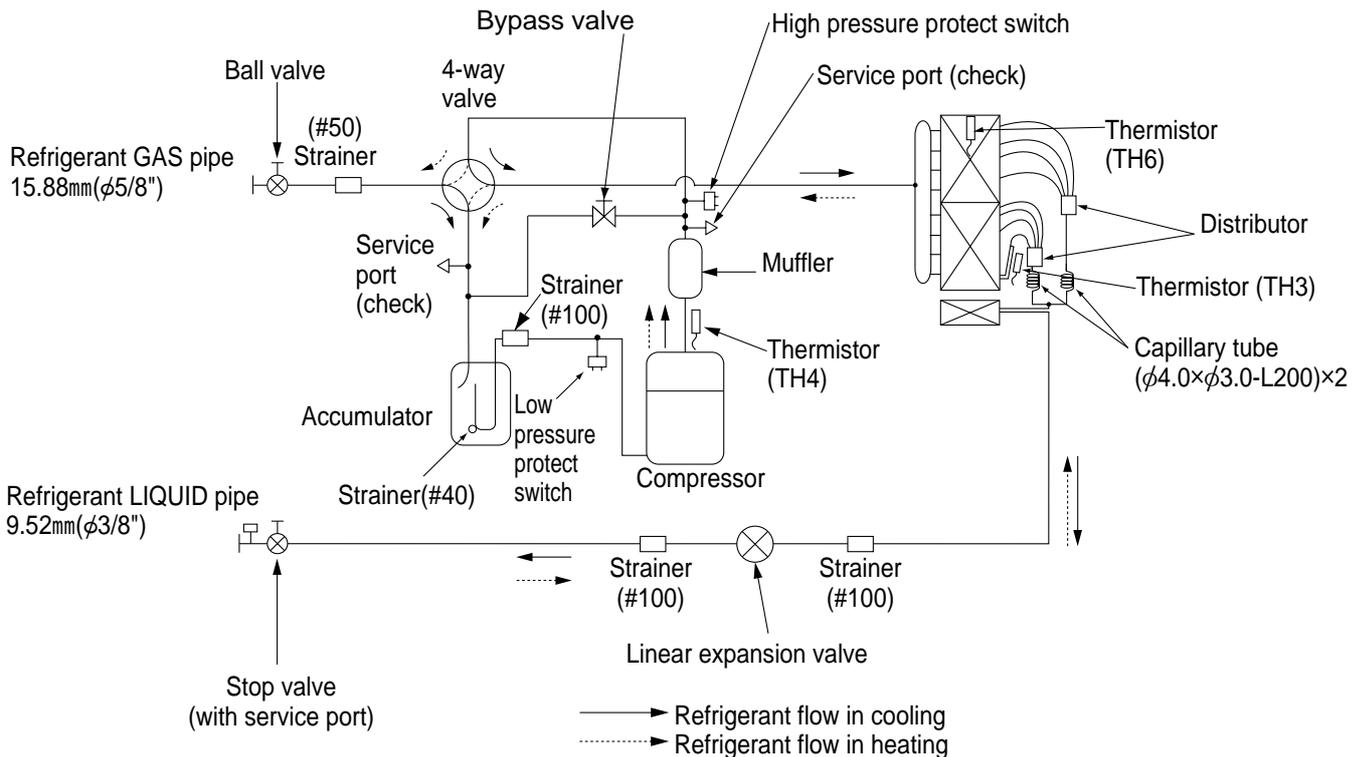


* In group B, M-NET address of the outdoor unit whose refrigerant address is "00" is not set to the minimum in the group. As "3" is right for this situation, the setting is wrong. Taking group A as a good sample, set the minimum M-NET address in the group for the outdoor unit whose refrigerant address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

PUH-P71VHA.UK	PU-P71VHA.UK	PUH-P71YHA.UK	PU-P71YHA.UK
PUH-P71VHA₁.UK	PU-P71VHA₁.UK	PUH-P71YHA₁.UK	PU-P71YHA₁.UK
PUH-P100VHA.UK	PU-P100VHA.UK	PUH-P100YHA.UK	PU-P100YHA.UK
PUH-P100VHA₁.UK	PU-P100VHA₁.UK	PUH-P100YHA₁.UK	PU-P100YHA₁.UK



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



11-1. TROUBLESHOOTING

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

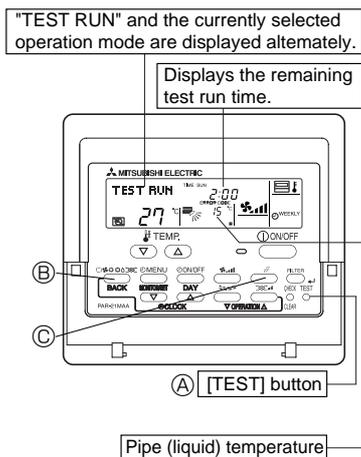
Present and past error codes are logged and displayed on the wired remote controller and control board of outdoor unit. Actions to be taken for service, which depends on whether or not the inferior phenomenon is reoccurring at service, are summarized in the table below. Check the contents below before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

Unit conditions at service	Error 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 by inferior phenomena".
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 and etc. Re-check the symptom, and check the installation environment, refrigerant amount, weather when the inferior phenomenon occurred, matters related to wiring and etc. ②Reset error code logs and restart the unit after finishing service. ③There is no abnormality concerning of parts such as electrical component, controller board, remote controller and etc.
	Not logged	①Re-check the abnormal symptom. ②Conduct trouble shooting and ascertain the cause of the inferior phenomenon according to "11-5. Troubleshooting by inferior phenomena". 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 and etc.

11-2. CHECK POINT UNDER TEST RUN

(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.
 - *Don't 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 "Selection of Functions through Remote Controller".
- Make sure to read operation manual before test run. (Especially items to secure safety.)



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 (A) [TEST] button twice.	The [TEST RUN] appears on the screen.
3. Press (B) [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 (C) [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 doesn't 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.

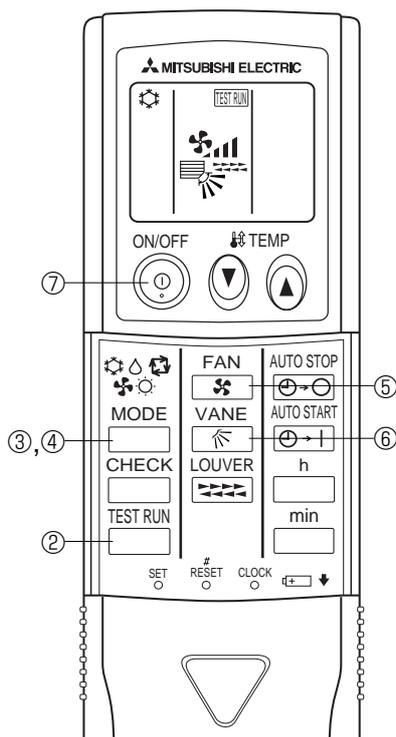
Symptoms in test run mode		Cause
Remote Controller Display	OUTDOOR BOARD LED Display < > indicates digital display.	
Remote controller displays "PLEASE WAIT", and cannot be operated.	After "startup" is displayed, only green lights up. <00>	• After power is turned on, "PLEASE WAIT" is displayed for 2 minutes during system startup. (Normal)
After power is turned on, "PLEASE WAIT" is displayed for 3 minutes, then error code is displayed.	After "startup" is displayed, green(once) and red(once) blink alternately. <F1>	• Incorrect connection of outdoor terminal block (L1, L2, L3 and S1, S2, S3.)
No display appears even when remote controller operation switch is turned on. (Operation lamp does not light up.)	After "startup" is displayed, green(once) and red(twice) blink alternately. <F3, F5, F9>	• Outdoor unit's safeguard installation connector is open.
	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.
Display appears but soon disappears even when remote controller is operated.	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 burnout.
	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 error history
P8	Abnormality of pipe temperature	FFFF	No applied unit
P9	Abnormality of pipe temperature thermistor/Cond./Eva		
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 (microcomputer power supply)	Lits when power is supplied.
LED2 (remote controller)	Lits when power is supplied for wired remote controller. The indoor unit should be connected to the outdoor unit with address "0" setting.
LED3 (indoor/outdoor communication)	Flash when indoor and outdoor unit are communicating.



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 is blown out from the unit.
- ④ Press the **MODE** button () to activate **HEAT** mode, then check whether warm air is blown out from the unit.
- ⑤ Press the **FAN** button and check whether strong air is blown 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 the 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.)
- Measure the impedance between power terminals (Single phase: L,N,Ⓞ/ triple 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.

2) Test run start and finish

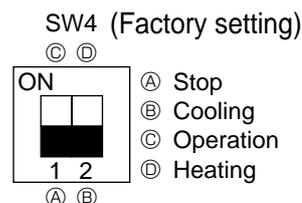
- Operation from the indoor unit
Execute the test run using the installation manual for the indoor unit.
- Operation from the outdoor unit.
Execute settings for test run start, finish and operation mode (cooling, heating) using the DIP switch SW 4 on the outdoor substrate.

- 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.)



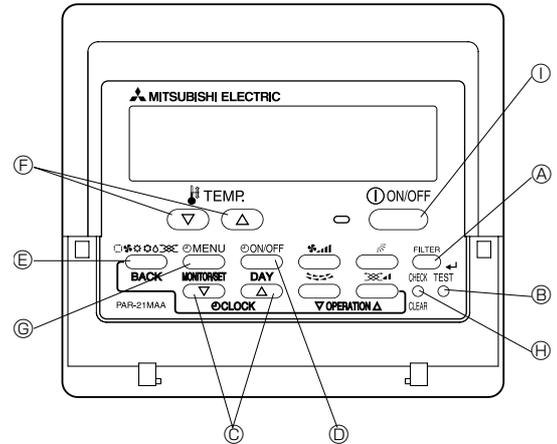
11-3. HOW TO PROCEED "SELF-DIAGNOSIS"

11-3-1. When a Problem Occurs During Operation

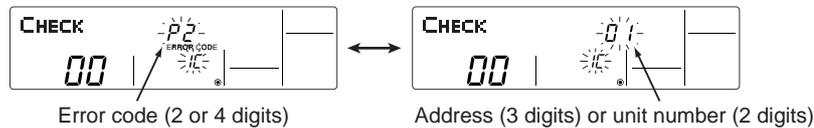
If a problem occurs in the air conditioner, the indoor and outdoor units will stop, and the problem is shown in the remote controller display.

[CHECK] and the refrigerant address are displayed on the temperature display, and the error 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 error code of the unit that first experienced trouble (i.e., the unit that transmitted the error code) will be displayed.
- ③ To clear the error code, press the **ON/OFF** button.



(Alternating Display)



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

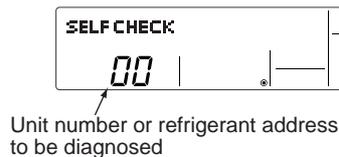
11-3-2. Self-Diagnosis During Maintenance or Service

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

Check the error code history for each unit using the remote controller.

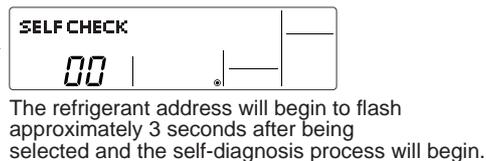
- ① Switch to self-diagnosis mode.

- ① 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.

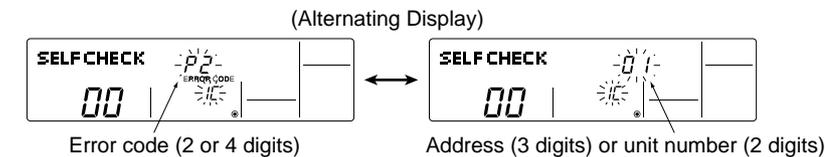
- ② Press the [TEMP] buttons (**TEMP** and **TEMP**) to select the desired number or address. The number (address) changes between [01] and [50] or [00] and [15].



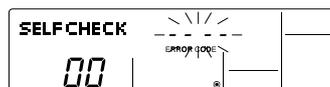
- ③ Display self-diagnosis results.

<When there is error code history>

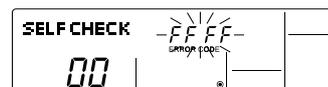
(For the definition of each error code, refer to the indoor unit's installation manual or service handbook.)



<When there is no error code history>

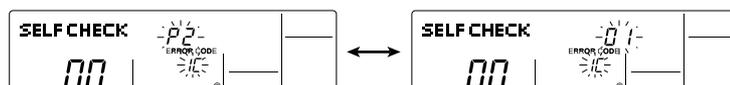


<When there is no corresponding unit>



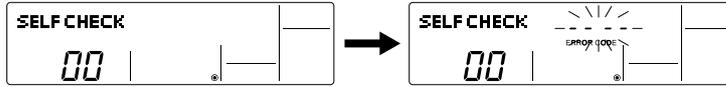
- ④ Reset the error history.

Display the error history in the diagnosis result display screen (see step ③).



- ④ Press the **ON/OFF** button twice within 3 seconds. The self-diagnosis address or refrigerant address will flash.

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



- ⑤ Cancel self-diagnosis.

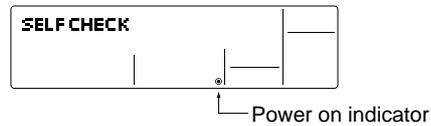
Self-diagnosis can be cancelled by the following two methods.

- ④ 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.

11-3-3. Remote Controller Diagnosis

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

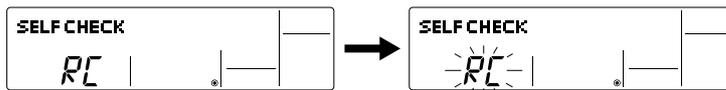
- ① First, check that the power-on indicator is lit.
If the correct voltage (DC12 V) is not supplied to the remote controller, the indicator will not light.
If this occurs, check the remote controller's wiring and the indoor unit.



- ② Switch to the remote controller self-diagnosis mode.

- ④ Press the **CHECK** button for 5 seconds or more. The display content will change as shown below.

- ④ Press the **FILTER** button to start self-diagnosis.



- ③ Remote controller self-diagnosis result

[When the remote controller is functioning correctly]



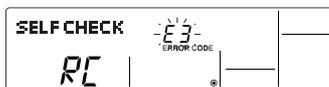
Check for other possible causes, as there is no problem with the remote controller.

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



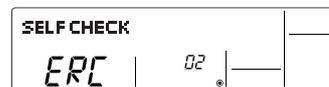
The remote controller must be replaced with a new one.

[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

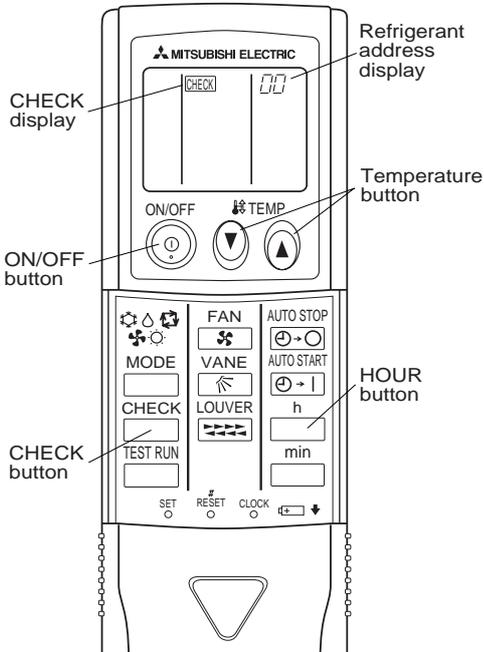
- ④ Press the **CHECK** button for 5 seconds or more. Remote controller diagnosis will be cancelled, "PLEASE WAIT" and operation lamp will flash. After approximately 30 seconds, the state in effect before the diagnosis will be restored.

11-3-4. 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>

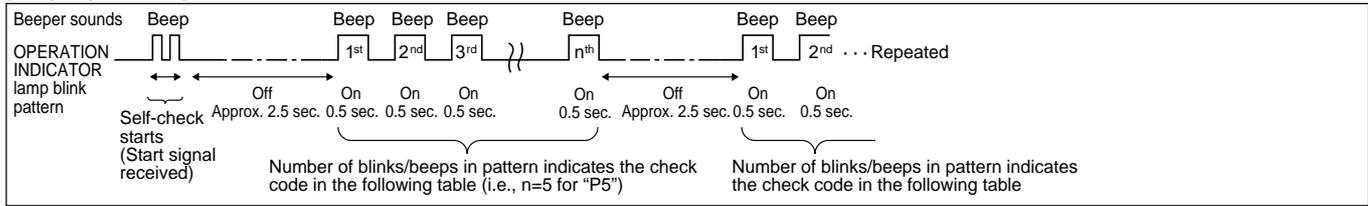


[Procedure]

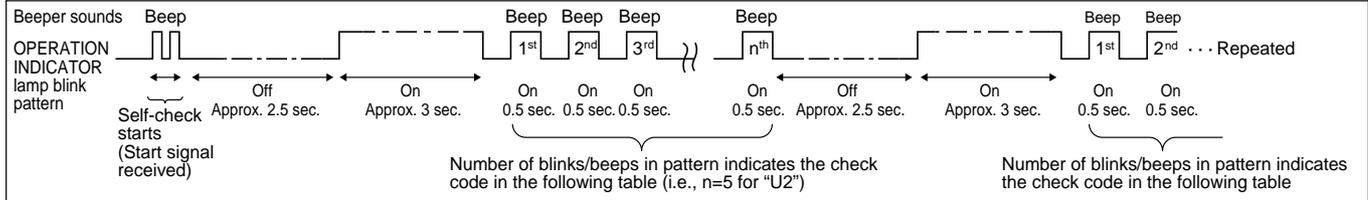
1. Press the CHECK button twice.
 - "CHECK" lights, and refrigerant address "00" flashes.
 - Check that the remote controller's display has stopped before continuing.
2. Press the temperature   buttons.
 - Select the refrigerant address of the indoor unit for the self-diagnosis.
 - Note: Set refrigerant 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 error code is output. (It takes 3 seconds at most for error 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	
6	U1,Ud	Abnormal high pressure (63H worked)/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 worked)	

*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> (Note 1) The number in () is the error cord of upper remote controller (M-NET)

Error Code	Meaning of error 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/PUH-P125, 140YHA ⁽¹⁾ .UK 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 11-7. 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 11-7. 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.



Error Code	Meaning of error code and detection method	Case	Judgment and action
EA (6844)	<p>Indoor/outdoor unit connector mis-wiring, excessive number of units (5 units or more)</p> <p>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.</p> <p>2. Abnormal if outdoor controller board recognizes the number of connected indoor units as "5 units or more".</p>	<p>① Contact failure or mis-wiring of indoor/outdoor unit connecting wire.</p> <p>② Diameter or length of indoor/outdoor unit connecting wire is out of specified capacity.</p> <p>③ Five or more indoor units are connected to one outdoor unit.</p> <p>④ Defective transmitting receiving circuit of outdoor controller board</p> <p>⑤ Defective transmitting receiving circuit of indoor controller board</p> <p>⑥ Noise has entered into power supply or indoor/outdoor unit connecting wire.</p> <p>⑦ Remote controller is wired up among indoor units (twin, triple or quadro units).</p> <p>⑧ Two or more outdoor units has refrigerant address "0." (In case of group control).</p>	<p>① Check disconnection or looseness or polarity of indoor/outdoor unit connecting wire of indoor and outdoor units.</p> <p>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.</p> <p>③ Check the number of indoor units that are connected to one outdoor unit. (If EA is detected.)</p> <p>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.</p> <p>⑥ Inspect transmission line to solve the problem.</p>
Eb (6845)	<p>Mis-wiring of indoor/outdoor unit connecting wire (converse wiring or disconnection)</p> <p>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 mis-wiring (converse wiring or disconnection) of indoor/outdoor unit connecting wire.</p>	<p>① Contact failure or mis-wiring of indoor/outdoor unit connecting wire</p> <p>② Diameter or length of indoor/outdoor unit connecting wire is out of specified capacity.</p> <p>④ Defective transmitting receiving circuit of outdoor controller board</p> <p>⑤ Defective transmitting receiving circuit of indoor controller board</p> <p>⑥ Noise has entered into power supply or indoor/outdoor unit connecting wire.</p> <p>⑦ Remote controller is wired up among indoor units (twin, triple or quadro units).</p> <p>⑧ Two or more outdoor units has refrigerant address "0." (In case of group control).</p> <p>⑨ Outdoor power supply board is defective.</p>	<p>⑦ Wire the remote controller to one of the multiple indoor units.</p> <p>⑧ Set the refrigerant address of outdoor units with different number starting from "0."</p> <p>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.</p> <p>* The descriptions above, ①-⑨, are for EA, Eb and EC.</p>
EC (6846)	<p>Start-up time over</p> <p>The unit can not finish start-up process within 4 minutes after power on.</p>	<p>① Contact failure of indoor/outdoor unit connecting wire</p> <p>② Diameter or length of indoor/outdoor unit connecting wire is out of specified capacity.</p> <p>⑥ Noise has entered into power supply or indoor/outdoor unit connecting wire.</p> <p>⑦ Remote controller is wired up among indoor units (twin, triple or quadro units).</p> <p>⑧ Two or more outdoor units has refrigerant address "0." (In case of group control).</p>	
Ed (0403)	<p>Serial communication error</p> <p>The communication between outdoor controller board and M-NET p.c. board is not available.</p>	<p>① Breaking of wire or contact failure of connector between outdoor controller board and M-NET p.c. board.</p> <p>② Contact failure of M-NET p.c. board power supply line</p> <p>③ Entrance of noise into transmission wire</p> <p>④ Defective transmitting receiving circuit of M-NET p.c. board</p> <p>⑤ Defective serial transmitting receiving circuit of outdoor controller board</p>	<p>① Check disconnection, looseness, or breaking of connecting wire between outdoor controller board CN1 and M-NET p.c. board CN5.</p> <p>② Check departure or looseness of M-NET p.c. board power supply line (CND-TB1).</p> <p>③ Replace M-NET p.c. board.</p> <p>④ Replace outdoor controller board.</p>



Error Code	Meaning of error code and detection method	Case	Judgment and action										
U1 (1302)	<p>Abnormal high pressure (High-pressure switch 63H worked) Abnormal if high-pressure switch 63H worked (more than 4.14 MPa) during compressor operation. 63H: High-pressure switch * Use current sensor to detect work or return of 63H.</p>	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 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. ⑯ Replace refrigerant. 										
U1	<p>Abnormal low current or open phase</p> <ul style="list-style-type: none"> • 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: <p><Condition></p> <p>① For PU/PUH-P71~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.</p> <p>② For PU/PUH-P71 ~ 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.</p> <table border="1" data-bbox="300 1420 651 1588"> <thead> <tr> <th>Model</th> <th>Detected current</th> </tr> </thead> <tbody> <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> </tbody> </table>	Model	Detected current	P71V	2.4 A	P71Y,P100V,P100Y	1.0 A	P125Y	1.2 A	P140Y	1.6 A	<ol style="list-style-type: none"> 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. 	<ol style="list-style-type: none"> 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.
Model	Detected current												
P71V	2.4 A												
P71Y,P100V,P100Y	1.0 A												
P125Y	1.2 A												
P140Y	1.6 A												
U2 (1102)	<p>Abnormal high discharging temperature Abnormal if discharging temperature thermistor (TH4) exceeds following temperature during compressor operation. Normal operation: 115°C (P71-P100)/ 125°C (P125,P140) or more for three minutes continuously or 135°C During defrosting: 135°C</p>	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 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. 										
U2 (1501)	<p>Abnormal shortage of refrigerant Abnormal if intake super heat exceeds following temperature during heating compressor operation. 70°C or more, and indoor pipe <condenser- evaporator> temperature (TH5) is 35°C or less.</p>	<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 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 										



Error Code	Meaning of error code and detection method	Case	Judgment and action
U3 (5104)	Open/short circuit of discharging thermistor (TH4) Abnormal if open (0°C or less) or short (216°C 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 11-7 Check breaking of the lead wire for thermistor (TH4). Refer to 11-6 ② Check resistance value of thermistor (Refer to 11-6.), or check temperature by microcomputer (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°C or less) or short (88°C 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 11-7. Check breaking of the lead wire for thermistor (TH3/TH6). Refer to 11-6. ② Check resistance value of thermistor (Refer to 11-6.), or check temperature by microcomputer (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. 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. ③,④ Check 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°C	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. 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.
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.

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

Error Code	Meaning of error 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. 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.



Error Code	Meaning of error code and detection method	Case	Judgment and action
EF (6607 or 6608)	Not defined error code This code is displayed when not defined error 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.

Error Code	Meaning of error 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 Pline 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 Pline 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.



Error Code	Meaning of error code and detection method	Case	Judgment and action
<p style="text-align: center;">A7 (6607)</p>	<p>NO ACK</p> <p>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.</p> <p>Note) The address and attribute displayed at remote controller indicate the controller that did not reply (ACK).</p>	<p>Common factor that has no relation with abnormality source.</p> <p>① The unit of former address does not exist as address switch has changed while the unit was energized.</p> <p>② Extinction of transmission wire voltage and signal is caused by over-range transmission wire.</p> <ul style="list-style-type: none"> • Maximum distance200m • Remote controller line --(12m) <p>③ Extinction of transmission wire voltage and signal is caused by type-unmatched transmission wire.</p> <p>Type</p> <ul style="list-style-type: none"> With shield wire- CVVS, CPEVS With normal wire (no shield)- VCTF, VCTFK, CVV CVS, VVR, VVF, VCT <p>Diameter....1.25mm² or more</p> <p>④ Extinction of transmission wire voltage and signal is caused by over-numbered units.</p> <p>⑤ Accidental malfunction of abnormality-detected controller (noise, thunder surge)</p> <p>⑥ Defective of abnormality-generated controller</p>	<p>Always try the followings when the error "A7" occurs.</p> <p>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.</p> <p>② Check address switch of abnormality-generated address.</p> <p>③ Check disconnection or looseness of abnormality-generated or abnormality-detected transmission wire (terminal block and connector).</p> <p>④ Check if tolerance range of transmission wire is not exceeded.</p> <p>⑤ Check if type of transmission wire is correct or not.</p> <p>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.</p> <ul style="list-style-type: none"> • 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. <p>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.</p> <p>Only the system FRESH MASTER or LOSSNAY are connected to, or the system that is equipped with group setting of different refrigerant system.</p> <p>If there was no trouble with ①-⑥ above, replace the controller board of displayed address or attribute.</p> <p>If the unit does not return normally, multi-controller board of outdoor unit may be defective (repeater circuit).</p> <p>Replace multi-controller board one by one to check if the unit returns normally.</p>
	<p>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).</p>	<p>① Contact failure of transmission wire of outdoor unit or indoor unit</p> <p>② Disconnection of transmission connector (CN2M) of outdoor unit</p> <p>③ Defective transmitting receiving circuit of outdoor unit or indoor unit</p>	
	<p>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).</p>	<p>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.</p> <p>② Contact failure of transmission wire of remote controller or indoor unit</p> <p>③ Disconnection of transmission connector (CN2M) of indoor unit</p> <p>④ Defective transmitting receiving circuit of indoor unit or remote controller</p>	
	<p>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).</p>	<p>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.</p> <p>② Contact failure of transmission wire of remote controller or indoor unit</p> <p>③ Disconnection of transmission connector (CN2M) of indoor unit</p> <p>④ Defective transmitting receiving circuit of indoor unit or remote controller</p>	

From the previous page.

Error Code	Meaning of error 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 "A7" 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 nonexistent	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 distance200m • 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 BY INFERIOR PHENOMENA

Phenomena				Factor	Countermeasure
(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 : Micro computer power supplyDisplay of DC14V is supply or not from indoor power. LED2 : Power output supplied to remote controllerDisplays the power condition supplied to wired remote controller. When the refrigerant address is "0" supplied power output ON. LED3 : Indoor outdoor communication monitorBlinking, when receiving the signal normally from the outdoor unit.	
	LED1	LED2	LED3		
①	off	off	off	① Main power is not turned on. (Power supply inferior) ② Mis-wiring, breaking or contact failure of the connecting line	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.
②	Lighting	off	off (or blinking)	① Refrigerant address excepts "0" ② Mis-wiring, breaking or contact failure of the connecting line	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.
③	Lighting	Blinking (or lighting)	-	① Short circuit, miswiring and breaking	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.
(2) Remaining "PLEASE WAIT" display on the remote controller				① At longest 2 minutes after the power supply "PLEASE WAIT" is displayed to start up.	Normal operation
				① Communication fault between the remote controller and indoor ② Communication fault between the indoor and outdoor ③ Outdoor unit protection device is opened. (Abnormal code will be displayed after 2~6 minutes.)	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 on p.31 to take appropriate action. ② If "H0" display remains for 6 minutes: Failure in indoor control PCB or remote controller
(3) When pressing the remote controller operation switch the OPERATION display is appeared but it will be turned off soon.				① After cancelling to select function from the remote controller, the remote controller operation switch will be not accepted for approx 30 seconds.	Normal operation
(4) Even controlling by the wireless remote controller no beep and not working (Display is available on the wireless remote controller.)				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)	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).
(5) When operating by the wireless remote controller, beep sound is heard without working.				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)	① Normal operation ② Normal operation ③ Check the details of above (2).
(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~J15 (SW1). ④ A) Limited switch (LS) conductance check B) Check the removing of indoor controller board (CN23), breaking line and contact fault.



Phenomena	Factor	Countermeasure
(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. Raising 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	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.)	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.
	Check the temperature setting and adjust it if necessary.	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.
	Increase the space surrounding the outdoor unit.	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.
	Is the air intake or air outlet blocked? Is a window or door open?	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 unit does not blow air out right away in the heating mode.	The unit is preparing to deliver warm air.	The indicators of the remote controller do not light up when operated.	Turn on the power switch "⊙" will be displayed.
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.	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 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.	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).
	When the unit is in the heating or defrosting mode, it will automatically change to the "Horizontal air-flow mode". The vanes will go through a test run before they situate into the specified angle.	Fan speed doesn't 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 micro-processor to prevent overcooling and to ensure efficient dehumidification. The fan speed can't be set by the remote controller during DRY operation.
Air direction doesn't 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 doesn't have this function, "FUNCTION DOESN'T EXIST" appears when you press the remote control's UP/DOWN VANE or LOUVER button.	Fan speed doesn't 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.
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.	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.
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	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.	"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.
	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 unit stopped even though the start/stop button was not pushed.	Is the timer on? Press the start/stop button to restart the unit.	An error 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.
	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.	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.
"PLEASE WAIT" is displayed in the remote controller.	An automatic startup test is being performed (will last for about 2 minutes).		
"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.	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 bought the air conditioner. Provide him or her with the name of the unit.
"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.		

[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 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.
Unit discharges air well, but fails to cool or heat the room well.	Liquid-crystal display indicates that the unit operates.	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.
		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.
Unit does not start immediately.	Liquid-crystal display indicates that the unit operates.	A door or window has been open.	Shut door or window.
		Unit is waiting 3 minutes before restarting.	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

PUH-P71VHA⁽¹⁾.UK

PUH-P100VHA⁽¹⁾.UK

PUH-P71YHA⁽¹⁾.UK

PUH-P100YHA⁽¹⁾.UK

PUH-P125YHA⁽¹⁾.UK

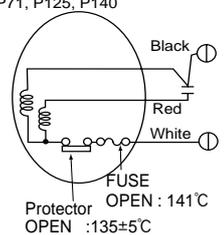
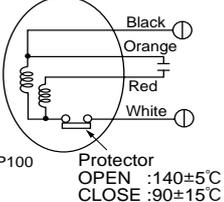
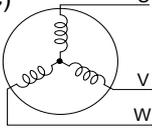
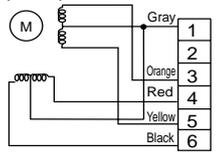
PUH-P140YHA⁽¹⁾.UK

PU-P71VHA⁽¹⁾.UK

PU-P100VHA⁽¹⁾.UK

PU-P125YHA⁽¹⁾.UK

PU-P140YHA⁽¹⁾.UK

Parts name	Check points														
Thermistor (TH3) <Outdoor pipe> Thermistor (TH4) <Discharge> Thermistor (TH6) <Outdoor 2-phase pipe>	Disconnect the connector then measure the resistance using a tester. (Surrounding temperature 10°C ~30°C) <table border="1" style="margin-top: 10px;"> <thead> <tr> <th></th> <th>Normal</th> <th>Abnormal</th> </tr> </thead> <tbody> <tr> <td>TH4</td> <td>160kΩ~410kΩ</td> <td rowspan="2">Open or short</td> </tr> <tr> <td>TH3 TH6</td> <td>4.3kΩ~9.6kΩ</td> </tr> </tbody> </table>		Normal	Abnormal	TH4	160kΩ~410kΩ	Open or short	TH3 TH6	4.3kΩ~9.6kΩ						
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FAN MOTOR(MF) P71, P125, P140  P100 	Measure the resistance between the terminals using a tester. (Surrounding temperature 20°C) <table border="1" style="margin-top: 10px;"> <thead> <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> </thead> <tbody> <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> </tbody> </table>	Motor lead wire	Normal		Abnormal	P71, P125, P140	P100	White — Black	82.5Ω ±10%	44.5Ω ±7%	Open or short	White — Red	102.0Ω ±10%	43.7Ω ±7%	
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Solenoid valve coil <Four-way valve> (21S4)	Measure the resistance between the terminals using a tester. (Surrounding temperature 20°C) <table border="1" style="margin-top: 10px;"> <thead> <tr> <th colspan="2">Normal</th> <th>Abnormal</th> </tr> </thead> <tbody> <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> </tbody> </table>	Normal		Abnormal	P71,P100	P125,P140	Open or short	1500±150Ω	1435±150Ω						
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Motor for compressor (MC) 	Measure the resistance between the terminals using a tester. (Winding temperature 20°C) <table border="1" style="margin-top: 10px;"> <thead> <tr> <th>Normal</th> <th>Abnormal</th> </tr> </thead> <tbody> <tr> <td>Refer to 6-2.</td> <td>Open or short</td> </tr> </tbody> </table>	Normal	Abnormal	Refer to 6-2.	Open or short										
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Refer to 6-2.	Open or short														
Linear expansion valve (LEV) 	Disconnect the connector then measure the resistance using a tester. (Winding temperature 20°C) <table border="1" style="margin-top: 10px;"> <thead> <tr> <th colspan="4">Normal</th> <th>Abnormal</th> </tr> </thead> <tbody> <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> </tbody> </table>	Normal				Abnormal	Gray - Black	Gray - Red	Gray - Yellow	Gray - Orange	Open or short	46±3Ω			
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Gray - Black	Gray - Red	Gray - Yellow	Gray - Orange	Open or short											
46±3Ω															
Solenoid valve coil <Bypass valve> (SV) For P125, P140	Measure the resistance between the terminals using a tester. (Surrounding temperature 20°C) <table border="1" style="margin-top: 10px;"> <thead> <tr> <th>Normal</th> <th>Abnormal</th> </tr> </thead> <tbody> <tr> <td>1450±150Ω</td> <td>Open or short</td> </tr> </tbody> </table>	Normal	Abnormal	1450±150Ω	Open or short										
Normal	Abnormal														
1450±150Ω	Open or short														
CRNKCASE HEATER (CH)	Measure the resistance between the terminals using a tester. <table border="1" style="margin-top: 10px;"> <thead> <tr> <th>Normal</th> <th>Abnormal</th> </tr> </thead> <tbody> <tr> <td>P71,P100,P125,P140</td> <td rowspan="2">Open or short</td> </tr> <tr> <td>2304Ω±7%</td> </tr> </tbody> </table>	Normal	Abnormal	P71,P100,P125,P140	Open or short	2304Ω±7%									
Normal	Abnormal														
P71,P100,P125,P140	Open or short														
2304Ω±7%															

11-7. HOW TO CHECK THE COMPONENTS

<Thermistor feature chart>

Low temperature thermistors

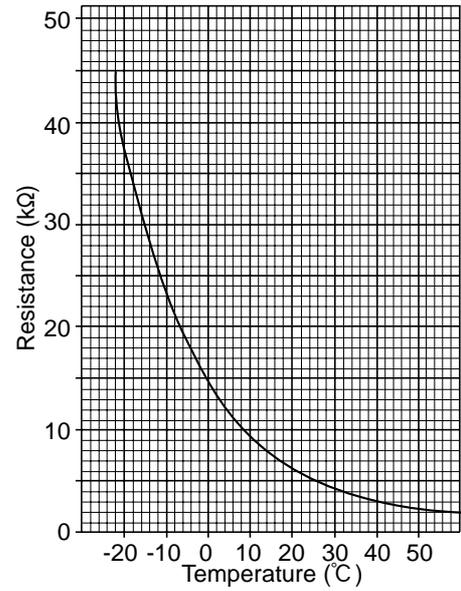
- Thermistor <Outdoor pipe> (TH3)
- Thermistor <Outdoor 2-phase pipe> (TH6)

Thermistor R0 = 15kΩ ± 3%

B constant = 3480 ± 2%

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

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



High temperature thermistor

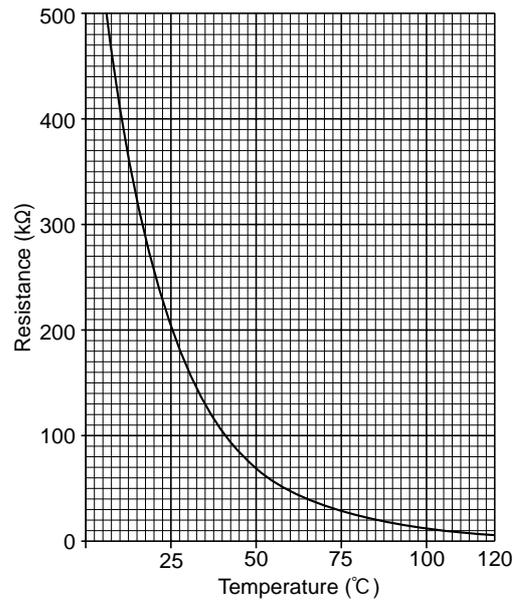
- Thermistor <Discharge> (TH4)

Thermistor R120 = 7.465kΩ ± 2%

B constant = 4057 ± 2%

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

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

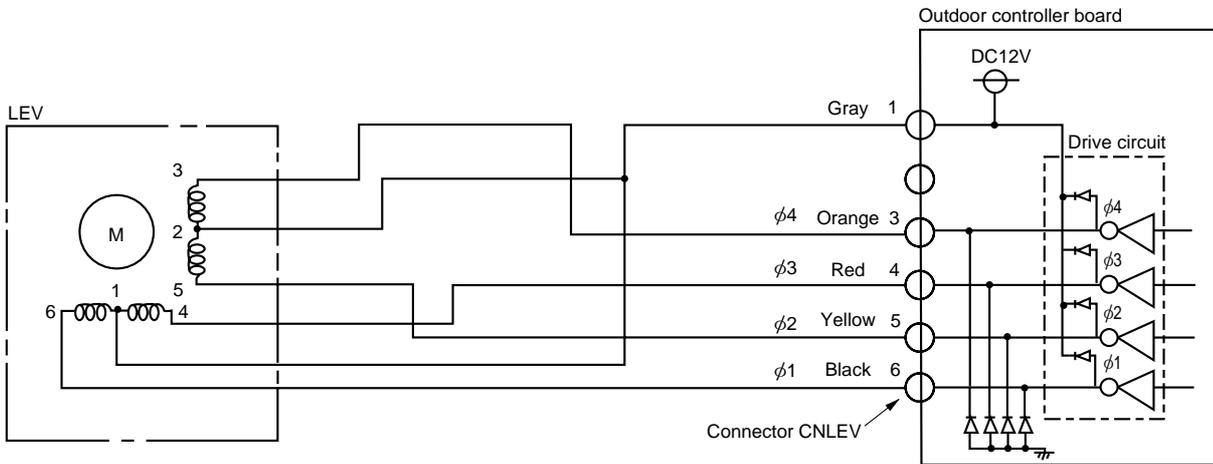


Linear expansion valve

(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 indoor 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
$\phi 1$	ON	ON	OFF	OFF	OFF	OFF	OFF	ON
$\phi 2$	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
$\phi 3$	OFF	OFF	OFF	ON	ON	ON	OFF	OFF
$\phi 4$	OFF	OFF	OFF	OFF	OFF	ON	ON	ON

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

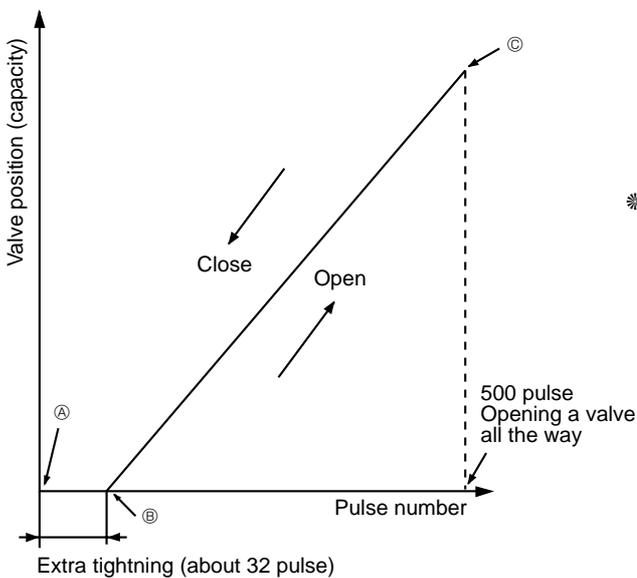
Closing a valve : 1 → 2 → 3 → 4 → 5 → 6 → 7 → 8 → 1

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 ① point in order to define the valve position. (The pulse signal is being sent for about 20 seconds.)

(2) Linear expansion valve operation



When the valve moves smoothly, there is no noise or vibration occurring from the linear expansion valve ; however, when the pulse number moves from ② to ① or when the valve is locked, more noise can be heard than normal situation.

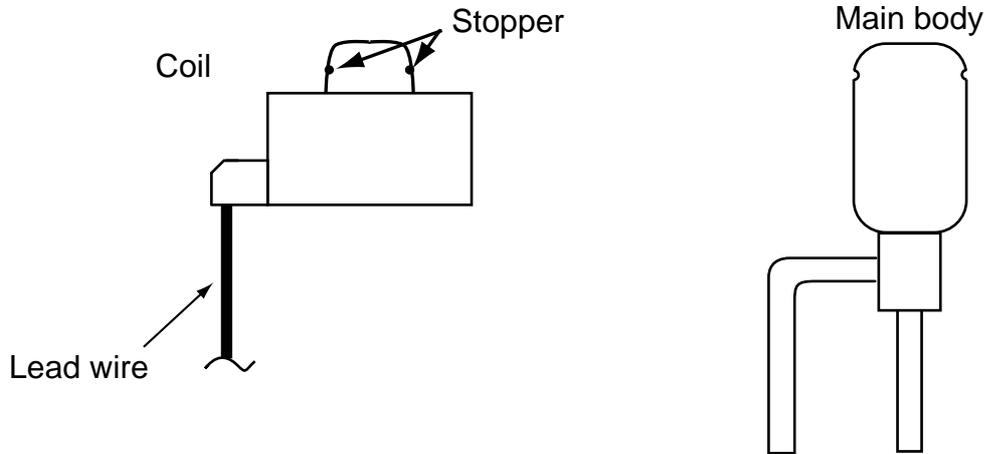
No noise is heard when the pulse number moves from ② to ① in case coil is burn out or motor is locked by open-phase.

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

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

<Composition>

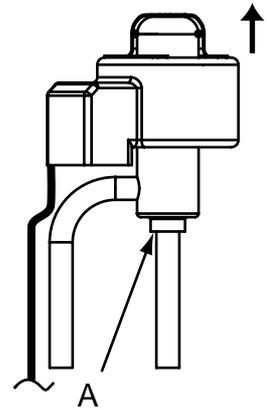
Linear expansion valve is separable into the main body and the coil as shown in the diagram below.



<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.

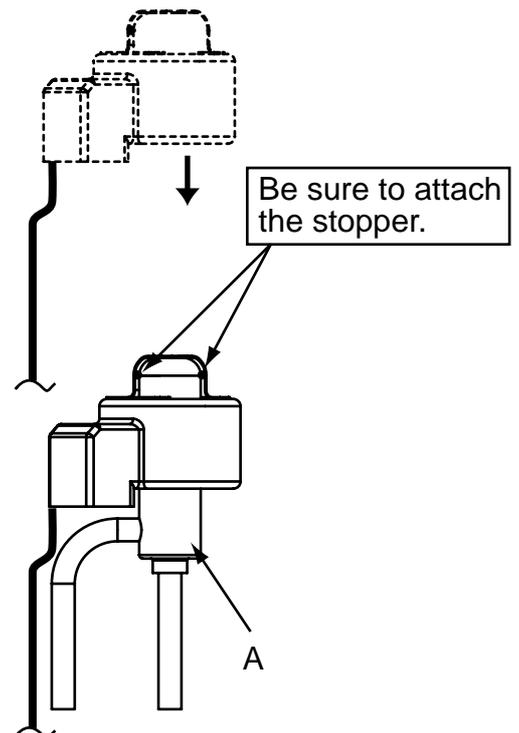
Be sure to detach the coil holding main body firmly. Otherwise pipes can bend due to pressure.



<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

PUH-P71VHA₍₁₎.UK

PUH-P100VHA₍₁₎.UK

PUH-P125YHA₍₁₎.UK

PUH-P140YHA₍₁₎.UK

PUH-P71YHA₍₁₎.UK

PUH-P100YHA₍₁₎.UK

PU-P71VHA₍₁₎.UK

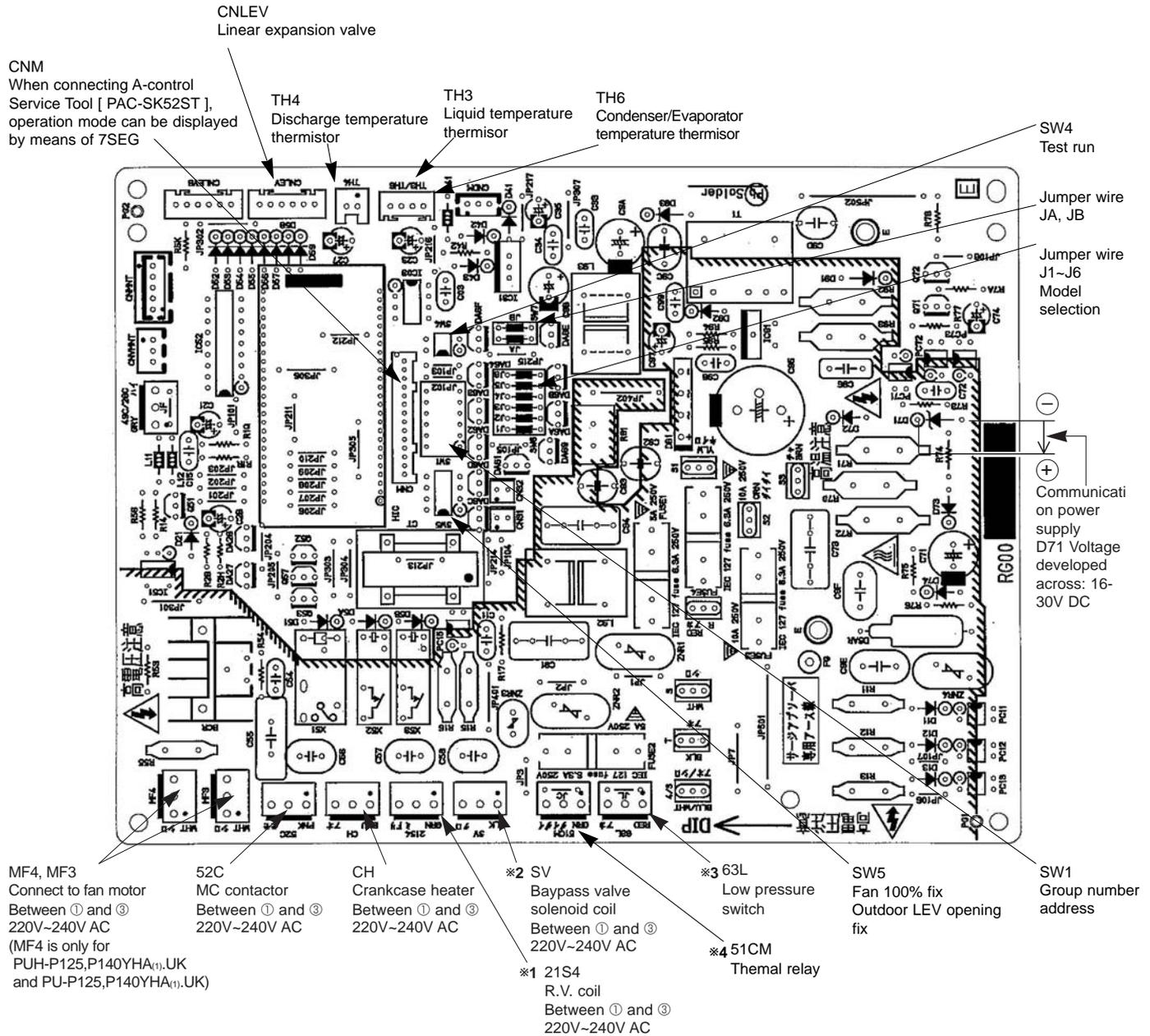
PU-P100VHA₍₁₎.UK

PU-P125YHA₍₁₎.UK

PU-P140YHA₍₁₎.UK

PU-P71YHA₍₁₎.UK

PU-P100YHA₍₁₎.UK



※1. 21S4 is only for PUH-P71, P100VHA₍₁₎.UK and PUH-P71, P100, P125, P140YHA₍₁₎.UK.
 ※2. SV is only for PUH-P125, P140YHA₍₁₎.UK and PU-P125, P140YHA₍₁₎.UK.
 ※3. 63L is only for PUH-P125, P140YHA₍₁₎.UK and PU-P125, P140YHA₍₁₎.UK.
 ※4. Thermal relay is only for PU(H)-P71,P100, P125, P140YHA₍₁₎.UK.

11-9. EMERGENCY OPERATION

1. When the outdoor unit becomes under mentioned inspection display. Also when the wired remote controller or micro computer 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

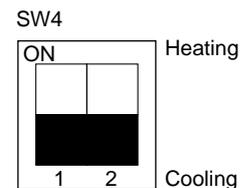
Display	Inspections details
U4	Piping thermistor (TH3) or condenser thermistor (TH6) open/short
E8	Transmission between indoor and outdoor unit Receiving trouble (outdoor unit)
E9	Transmission between indoor and outdoor unit Transmission trouble (outdoor unit)
E0~E7	Transmission trouble except for outdoor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

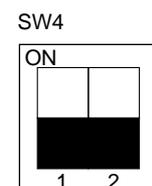


4. Emergency operation details

- (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 SWITCHS, CONNECTORS AND JUMPERS

● Outdoor switch for a new freon function table

Switch		Function	Action by the switch operation		Effective timing	
Signal	No.		ON	OFF		
SW1	1	Compulsory defrosting *1	Start	Normal	Heat compressor operating off or operating	
	2	Abnormal history clear	Clear	Normal		
	3 6	Refrigerant address setting	0			When power supply ON
			1			
			2			
			3			
			4			
			5			
			6			
			7			
			8			
			9			
			10			
			11			
			12			
			13			
14						
15						
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 *2	Fix	Normal	off or operating	
	3	No function	No function	No function	—	
	4	Length of defrost operation	20 minutes	15 minutes (Normal)	Always	

*1 Compulsory defrosting should be done as follows.

① Change 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.

*2 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

Switch		Function	Action by the switch operation		Effective timing																													
Signal	No.		ON (With jumper wire)	OFF (Without jumper wire)																														
J1		Switch of single phase and 3 phase power supply	3 phase	Single phase	When power supply ON																													
J2		Switch of cooling only/ heat pump	Cooling only	Heat pump	When power supply ON																													
J3		Capacity switch	○: with jumper wire ×: without jumper wire		When power supply ON																													
J4			<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th rowspan="2">Model</th> <th colspan="4">Setting</th> </tr> <tr> <th>J3</th> <th>J4</th> <th>J5</th> <th>J6</th> </tr> </thead> <tbody> <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> </tbody> </table>			Model	Setting				J3	J4	J5	J6	P71	○	×	○	×	P100	×	○	○	×	P125	○	○	○	×	P140	×	×	×	○
Model	Setting																																	
	J3		J4	J5		J6																												
P71	○		×	○		×																												
P100	×	○	○	×																														
P125	○	○	○	×																														
P140	×	×	×	○																														
J5																																		
J6																																		
CN31		Emergency operation	Emergency operation	Normal	When power supply ON																													
JA		Auto restart	Normal	Auto restart	When power supply ON																													
JB		Separate inoor / outdoor power supply	Ineffective	Effective																														

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

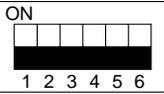
● Function of switches

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

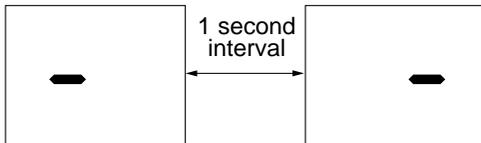
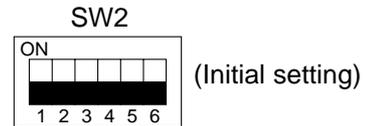
Operation indicator SW2 : Indicator change of self diagnosis

SW2 setting	Display detail	Explanation for display	Unit
			Code indication

<Digital indicator LED1 working details>

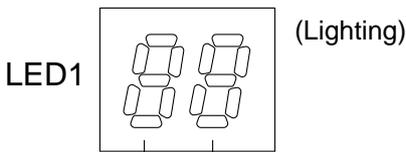
· Lighting (Normal operation) : Indicating the operation mode.
(Be sure the 1 to 6 in the SW2 are set to OFF)

- (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.



The tens digit : Operation mode

Display	Operation mode
O	OFF
C	COOL
H	HEAT
d	DEFROSTING

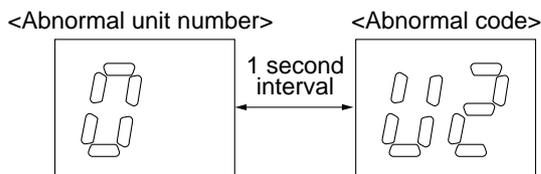
The units digit : Relay output

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.



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.

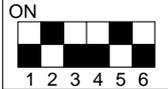
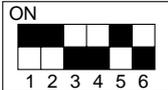
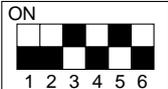
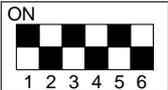
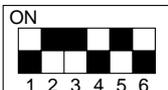
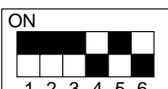
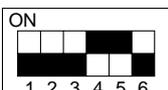


SW2 setting	Display detail	Explanation for display	Unit
	Piping temperature (TH3) – 40~90	– 40~90 (When the coil thermistor is 0°C or below, “–” and temperature displays by turns.) (Example) When -10°C One second interval – □ ← → 10	°C
	Discharge temperature (TH4) 0~216	0~216 (When the discharge thermistor is 100 or more, the hundreds digit and tens, unit digits are displayed by turns.) (Example) When 150°C One second interval 1 □ ← → 50	°C
	FAN output step 0~16	0~16	Step
	The number of ON / OFF times 0~9999	0~9999 (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 0~9999	0~9999 (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 0~40	0~40	A
	LEV opening 0~500	0~500	Pulse
	New error postponement code New outdoor unit error postponement display	No postponement code is “00”. bling : 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 - 40~90	- 40~90 (When the coil thermistor is 0°C and less, “-” and temperature are displayed by turns) (Example) When -15°C One second interval - □ ← → 15	°C
	Compressor temperature (TH4) or discharge temperature (TH4) on error occurring 0~216	0~216 (When the temperature is 100 or more, the hundreds digit and tens, unit digits are displayed by turns.) (Example) When 130°C One second interval 1 □ ← → 30	°C
	Compressor operating current on error occurring 0~40	0~40	A
	Error code history (1) (latest) Alternate display of abnormal unit number and code	When no error history, “0” and “-” and displayed by turns.	Code display
	Error code history (2) Alternate display of error unit number and code	When no error history, “0” and “-” and displayed by turns.	Code display
	Thermo ON time 0~999	0~999 (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 0~120	0~120 (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 0~4	0~4	Unit



SW2 setting	Display detail	Explanation for display	Unit										
	Capacity setting display	Display as an outdoor capacity code <table border="1" data-bbox="1069 309 1377 499"> <thead> <tr> <th>Capacity</th> <th>Code</th> </tr> </thead> <tbody> <tr> <td>P71</td> <td>14</td> </tr> <tr> <td>P100</td> <td>20</td> </tr> <tr> <td>P125</td> <td>25</td> </tr> <tr> <td>P140</td> <td>28</td> </tr> </tbody> </table>	Capacity	Code	P71	14	P100	20	P125	25	P140	28	Code display
Capacity	Code												
P71	14												
P100	20												
P125	25												
P140	28												
	Outdoor unit setting advice	<ul style="list-style-type: none"> ● The tens digit (Total display for applied setting) <table border="1" data-bbox="818 678 1393 801"> <thead> <tr> <th>Setting details</th> <th>Display details</th> </tr> </thead> <tbody> <tr> <td>H·P / Cooling only</td> <td>0 : H·P 1 : Cooling only</td> </tr> <tr> <td>Single phase / Three phase</td> <td>0 : Single phase 2 : Three phase</td> </tr> </tbody> </table> ● The units digit <table border="1" data-bbox="818 857 1393 940"> <thead> <tr> <th>Setting details</th> <th>Display details</th> </tr> </thead> <tbody> <tr> <td>Defrosting switch</td> <td>0 : Normal 1 : High humidity region</td> </tr> </tbody> </table> <p>(Example) When switching cooling and heat pump, three phase, defrosting (normal) "20"</p>	Setting details	Display details	H·P / Cooling only	0 : H·P 1 : Cooling only	Single phase / Three phase	0 : Single phase 2 : Three phase	Setting details	Display details	Defrosting switch	0 : Normal 1 : High humidity region	Code display
Setting details	Display details												
H·P / Cooling only	0 : H·P 1 : Cooling only												
Single phase / Three phase	0 : Single phase 2 : Three phase												
Setting details	Display details												
Defrosting switch	0 : Normal 1 : High humidity region												
	Indoor unit piping temperature / LIQUID (TH2) Indoor 1 – 39~88	– 39~88 (When the temperature is 0°C or less, “–” and temperature are displayed by turns.)	°C										
	Indoor unit piping temperature / LIQUID (TH2) Indoor 2 – 39~88	– 39~88 (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 / LIQUID (TH2) Indoor 3 – 39~88	– 39~88 (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 / LIQUID (TH2) Indoor 4 – 39~88	– 39~88 (When the temperature is 0°C or less, “–” and temperature are displayed by turns.) When no indoor unit, “00” is displayed.	°C										
	Indoor room temperature (TH1) 8~39	8~39	°C										



SW2 setting	Display detail	Explanation for display	Unit
	Indoor setting temperature 17~30	17~30	℃
	Outdoor piping temperature/Cond./Eva. (TH6) - 39~88	- 39~88 (When the temperature is 0℃ or less, “-” and temperature are displayed by turns)	℃
	Discharge super heat. SHd 0~255 [Cool = TH4-TH6] [Heat = TH4-TH5]	0~255 (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 0~130 [Cool = TH6-TH3] [Heat = TH5-TH2]	0~130 (When the temperature is 100 or more, the hundreds digit and tens, unit digits are displayed by turns.)	℃
	Communication demanded capacity 0~255 [When air conditioners are connected to M-NET and under central control.] [When no communication demanded setting, “100” is displayed.]	0~255 (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 0~16	0~16	Step
	LEV opening on error occurring 0~500	0~500	Pulse
	Outdoor piping temperature/Cond./Eva. on error occurring (TH6) - 39~88	- 39~88 (When the thermistor is 0℃ and less, “-” and temperature are displayed by turns.) (Example) When -15℃ One second interval - □ ←→ 15	℃
	Discharge super heat on error occurring SHd 0~255 [Cool = TH4-TH6] [Heat = TH4-TH5]	0~255 (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 0~130 [Cool = TH6-TH3] [Heat = TH5-TH2]	0~130 (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 0~999	0~999 (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 -39~88	-39~88 (When the temperature is 0°C or less, “-” and temperature are displayed by turns.)	°C
	Indoor unit piping temperature / cond. / Eva. (TH5) indoor 2 -39~88	-39~88 (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 -39~88	-39~88 (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 -39~88	-39~88 (When the temperature is 0°C or less, “-” and temperature are displayed by turns.) When no indoor unit, “00” is displayed.	°C

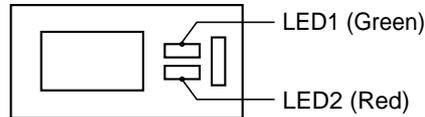
● For A-control Service Tool [PAC-SK52ST]

[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—LED1(Green) and LED2(Red)—show 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	<ul style="list-style-type: none"> •Negative phase detection •The wires of power supply and connecting wires of indoor / outdoor units are crossed with one another. 	<ol style="list-style-type: none"> 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	<ul style="list-style-type: none"> •51CM connector open •63L connector open 	<ol style="list-style-type: none"> ① Check if the connectors of 51CM (51C) on outdoor controller board are disconnected. ② Check the continuity of connector 51CM (51C) by using a tester. 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 by tester. Replace outdoor controller board. ④ Replace outdoor controller board.
2 blinks	1 blink	<ul style="list-style-type: none"> •Indoor / outdoor unit connector mis-wiring •Excessive numbers of indoor units per an outdoor unit (five or more) •Mis-wiring of indoor / outdoor unit connection wires (crossed wiring or disconnection) •Start-up time is up. 	<ol style="list-style-type: none"> ① Check if the wirings are correct on the connecting wires of indoor / outdoor units. ② Check if a single outdoor unit connects five or more indoor units.
	2 blinks	<ul style="list-style-type: none"> •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) 	<ol style="list-style-type: none"> 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	<ul style="list-style-type: none"> •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) 	<ol style="list-style-type: none"> 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	<ul style="list-style-type: none"> •Undefined error code 	<ol style="list-style-type: none"> 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 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 worked)	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 by using a tester.
		•Abnormal low pressure (Low pressure switch 63L worked)	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 processing 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 by using 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 blinks	•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, and CN29 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-up machine	① Check if the connector of CN31 on indoor controller board is disconnected. ② Measure the resistance value of drain sensor. ③ Measure resistance values among terminals on drain-up machine by using a tester.
	3 blinks	•Abnormality of pipe temperature	① Check if the connectors of CN20, CN21, and CN29 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.

12-1. UNIT FUNCTION SETTING BY THE REMOTE CONTROLLER

Each function can be set according to necessity 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.

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

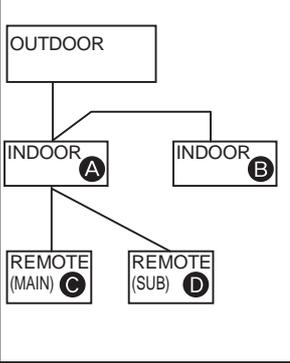
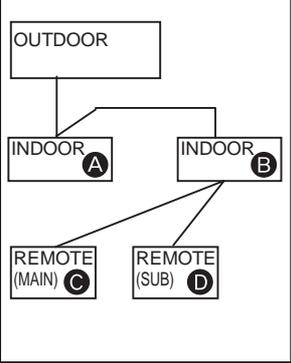
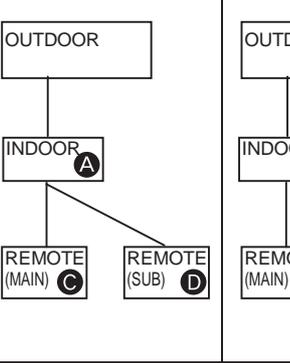
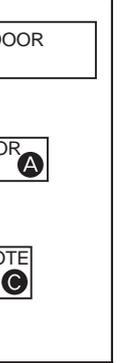
*1 The functions below are available only when the wired remote controller is used. The functions are not available for floor standing models.

<Table 1> Function selections

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 *1	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	●	
Auto operating mode	Auto energy-saving operation ON	05	1	●	
	Auto energy-saving operation OFF		2		
Frost prevention temperature	2°C (Normal)	15	1	●	
	3°C		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		

Meaning of "Function setting"

mode02:indoor temperature detecting

No	indoor temperature(ta)=					
No1.	Average data of the sensor on all the indoor units	factory 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. Can be set only when the outdoor unit is an inverter type.

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

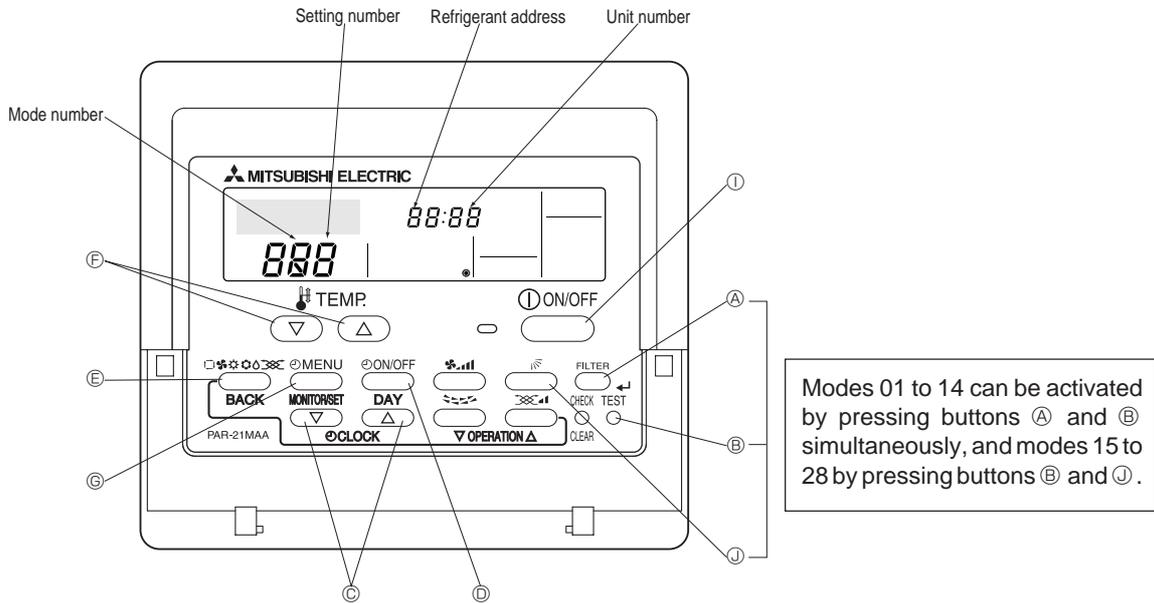
- When setting functions for an indoor unit in an independent system, set the unit number to 01 referring to ④ setting the indoor unit number.
- When setting functions for a simultaneous- Twin Triple indoor unit system, set the unit number to 01 to 03 for each indoor unit in case of selecting different 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		Wall mounted	Floor standing	1-Way Casette
				PLA-BA	PLA-AA(2) PLH-AAH	PEAD-EA(2) PEHD-EAH PEAD-GA	PCA-GA PCH-GAH	PCA-HA	PKA-GAL PKH-GALH PKA-FAL PKH-FALH	PSA-GA PSH-GAH	PMH-BA
Filter sign	100Hr	07	1								
	2500Hr		2	●	●		●	●	●	●	●
	No filter sign indicator		3			●					
Air flow (Fan speed)	Quiet	08	1		●			-	-	-	-
	Standard		2	●			●	-	-	-	-
	High ceiling ①		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	●	●			-	-	-	-
Energy saving air flow (Heating mode)	Disabled	12	1	●	●		●	-	-	-	●
	Enabled		2					-	-	-	-
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°C)	14	1					-	-	-	-
	No.2 setting (Standard: TH5:28-32°C)		2	●	●		●	-	●	-	●
	No.3 setting (TH5: 32-38°C)		3					-	-	-	-
Swing	Not available	23	1					-	-	-	-
	Available		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								
Quiet operation mode of PLA-AA(Fan speed)	Disabled (Standard)	26	1	●	●			-	-	-	-
	Enabled (Quiet operation mode)		2					-	-	-	-
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								

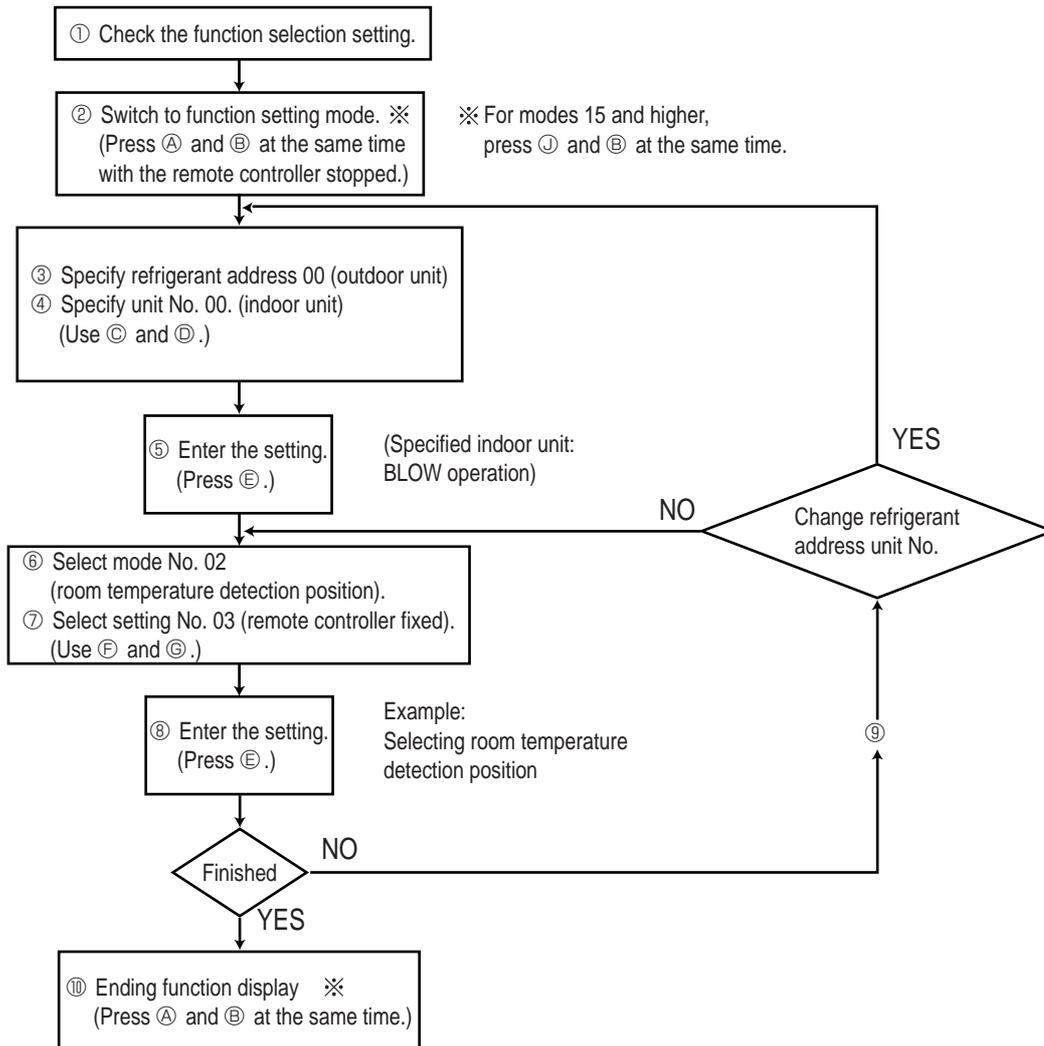
12-1-1. Selecting functions using the wired remote controller

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.



Selecting functions using the wired remote controller



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

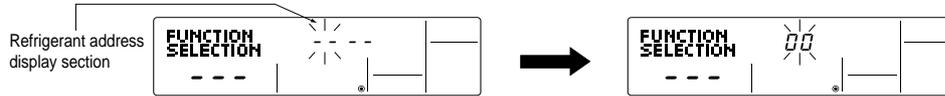
[Operating Procedure]

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 at least 2 seconds. **FUNCTION SELECTION** will start to flash, and then the remote controller's display content will change as shown below.



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.)

* 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.

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.

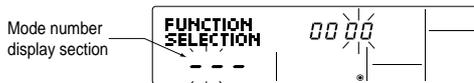
* To set modes 01 to 06 or 15 to 22 select unit number "00".

* 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".

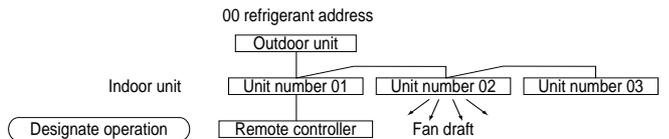
⑤ Confirm the refrigerant address and unit number.

Ⓔ 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.



Ⓒ 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.

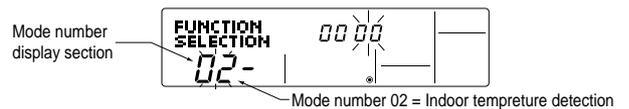


* "88" will flash in the room temperature display area if the selected refrigerant address does not exist in the system. Furthermore, if "F" appears and flashes in the unit number display area and the refrigerant address display area also flashes, there are no units that correspond to the selected unit 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 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.

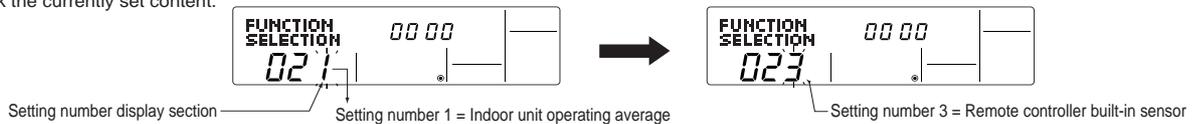
Ⓕ Press the **[TEMP]** buttons (**(▽)** and **(△)**) to set the desired mode number. (Only the selectable mode numbers can be selected.)



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 If you wish to continue to select other functions, repeat steps ③ to ⑧.

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.)



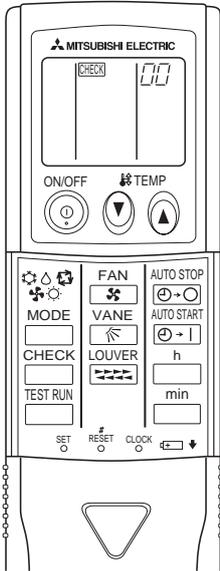
Note

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

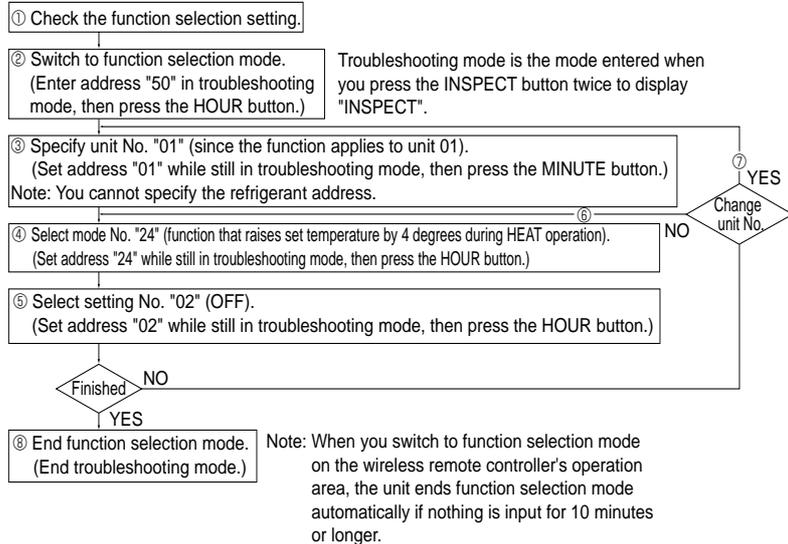
12-1-2. Selecting functions using the wireless remote controller (Type C)

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. 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.)
* 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.
* 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 h 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)
* 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.
* 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)
* If a setting number that cannot be recognized by the unit is entered, the setting will turn back to the original setting.
* 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

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") (2) Use of automatic mode setting ("SELECT AUTO MODE") (3) Temperature range limit setting ("LIMIT TEMP FUNCTION")	• Setting the range of operation limit (operation lock) • Setting the use or non-use of "automatic" operation mode • Setting the temperature adjustable range (maximum, minimum)
3.Mode selection ("MODE SELECTION")	(1) Remote controller main/sub setting ("CONTROLLER MAIN/SUB") (2) Use of clock setting ("CLOCK") (3) Timer function setting ("WEEKLY TIMER") (4) Contact number setting for error situation ("CALL.")	• Selecting main or sub remote controller * When two remote controllers are connected to one group, one controller must be set to sub. • Setting the use or non-use of clock function • Setting the timer type • Contact number display in case of error • Setting the telephone number
4.Display change ("DISP MODE SETTING")	(1) Temperature display °C/°F setting ("TEMP MODE °C/°F") (2) Room air temperature display setting ("ROOM TEMP DISP SELECT") (3) Automatic cooling/heating display setting ("AUTO MODE DISP C/H")	• Setting the temperature unit (°C or °F) to display • Setting the use or non-use of the display of indoor (suction) air temperature • 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), ② English (GB), ③ German (D), ④ Spanish (E), ⑤ Russian (RU), ⑥ Italian (I), ⑦ Chinese (CH), French (F)

[4] -2. Function limit

(1) Operation function limit setting (operation lock)

- To switch the setting, press the [⊖ON/OFF] button.
- ① no1 : Operation lock setting is made on all buttons other than the [⊖ON/OFF] button.
- ② no2 : Operation lock setting is made on all buttons.
- 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 [TEMP (▽) or (△)] button. The selected setting will flash and the temperature can be set.
- Settable range
Cooling/Dry mode : Lower limit: 19 °C ~ 30 °C Upper limit: 30 °C ~ 19 °C
Heating mode : Lower limit: 17 °C ~ 28 °C Upper limit: 28 °C ~ 17 °C
Automatic mode : Lower limit: 19 °C ~ 28 °C Upper limit: 28 °C ~ 19 °C

[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 °C/°F setting

- To switch the setting, press the [⊖ON/OFF] button.
- ① °C : The temperature unit °C 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.

[Function selection flowchart]
Setting language (English)

Normal display
(Display when the air conditioner is not running)

Hold down the (E) button and press the (D) button for 2 seconds.

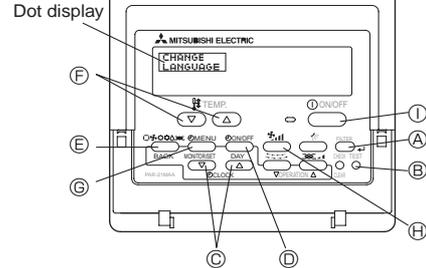
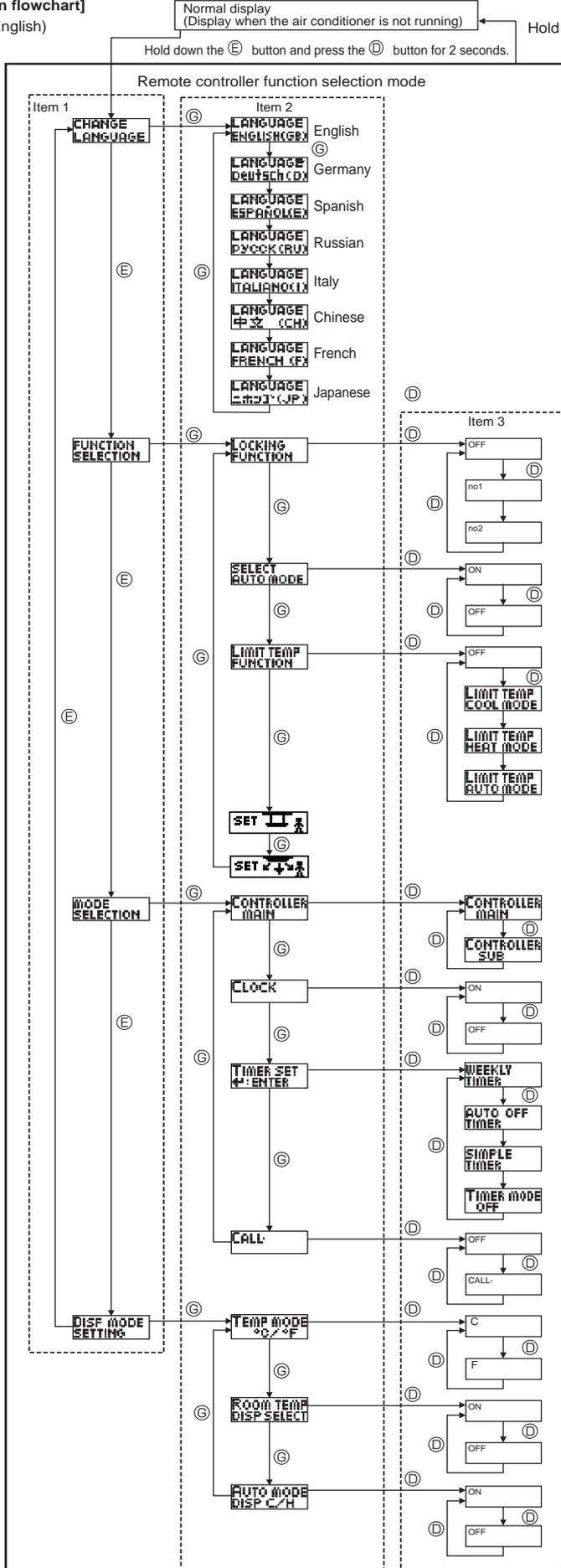
- (E) Press the operation mode button.
- (G) Press theTIMER MENU button.
- (D) Press theTIMER ON/OFF button.

Change Language

Function selection

Mode selection

Display mode setting



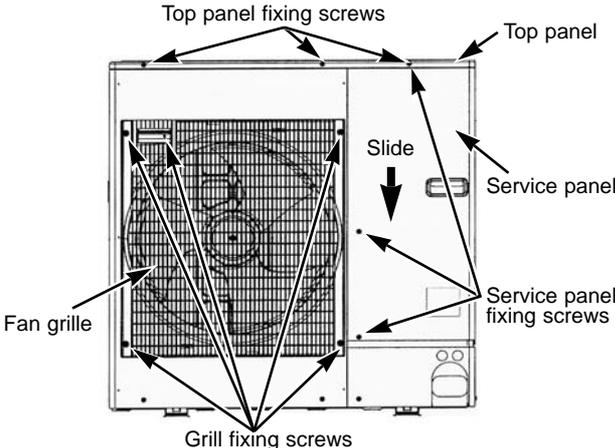
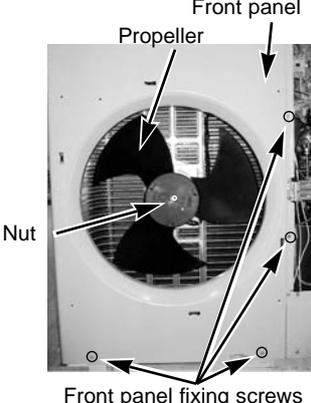
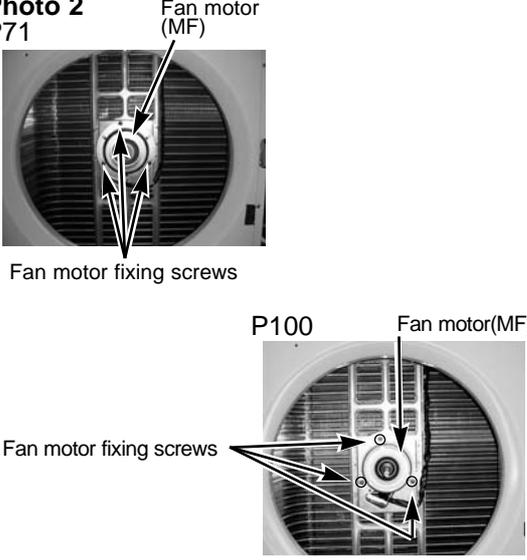
- Operation lock setting is not used. (Initial setting value)
- Operation lock setting is except On/Off button.
- Operation lock setting is All buttons.
- The automatic mode is displayed when the operation mode is selected. (Initial setting value)
- The automatic mode is not displayed when the operation mode is selected.
- The temperature range limit is not active. (Initial setting value)
- The temperature range can be changed on cooling/dry mode.
- The temperature range can be changed on heating mode.
- The temperature range can be changed on automatic mode.
- Automatic filter elevation panel up/down operation mode
Not necessary to set this mode. Refer to OPERATION MANUAL of Optional Parts (Panel) for details on operation.
- Fixed air flow direction mode
Not necessary to set this mode. Refer to OPERATION MANUAL of indoor unit for details on operation.
- The remote controller will be the main controller. (Initial setting value)
- The remote controller will be the sub controller.
- The clock function can be used. (Initial setting value)
- The clock function can not be used.
- Weekly timer can be used. (Initial setting value)
- Auto off timer can be used.
- Simple timer can be used.
- Timer mode can not be used.
- The set contact numbers are not displayed in case of error. (Initial setting value)
- The set contact numbers are displayed in case of error.
- The temperature unit °C is used. (Initial setting value)
- The temperature unit °F is used.
- Room air temperature is displayed. (Initial setting value)
- Room air temperature is not displayed.
- One of "Automatic cooling" and "Automatic heating" is displayed under the automatic mode is running. (Initial setting value)
- Only "Automatic" is displayed under the automatic mode.

PUH-P71VHA.UK
 PU-P71VHA.UK
 PUH-P71VHA₁.UK
 PU-P71VHA₁.UK

PUH-P100VHA.UK
 PU-P100VHA.UK
 PUH-P100VHA₁.UK
 PU-P100VHA₁.UK

PUH-P71YHA.UK
 PU-P71YHA.UK
 PUH-P71YHA₁.UK
 PU-P71YHA₁.UK

PUH-P100YHA.UK
 PU-P100YHA.UK
 PUH-P100YHA₁.UK
 PU-P100YHA₁.UK

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

OPERATING PROCEDURE

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<Outdoor pipe>, thermistor<Discharge>, thermistor<Outdoor 2-phase pipe>, crankcase heater, high pressure switch, four-way valve. Then remove a screw (4 X 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 <Outdoor 2-phase pipe, Outdoor pipe> (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 X 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.

4. Removing the thermistor <Outdoor 2-phase pipe> (TH6) and thermistor <outdoor pipe> (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 <Outdoor 2-phase pipe> (TH6) and thermistor <outdoor pipe> (TH3) from the sensor holder.

Note: In case of replacing thermistor <Outdoor 2-phase pipe> (TH6), replace it together with thermistor <Outdoor pipe> (TH3), since they are combined together.

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.

PHOTOS

Photo 3

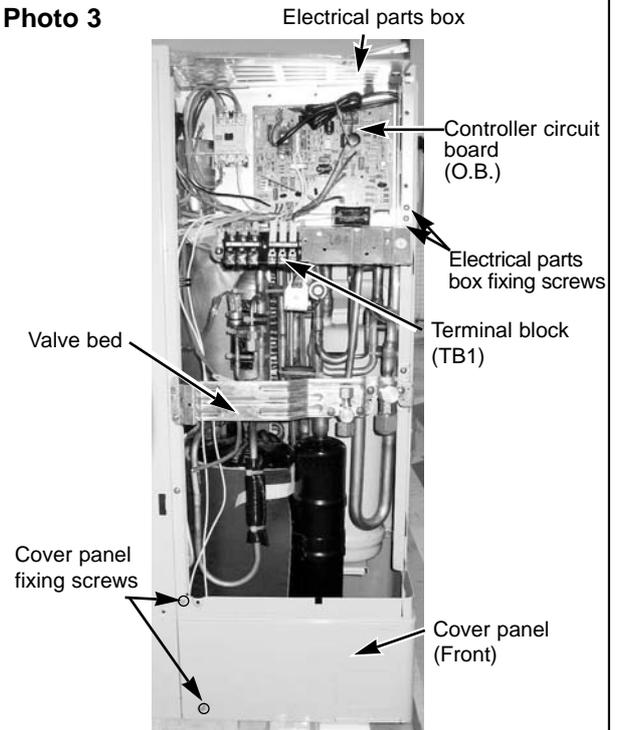


Photo 4

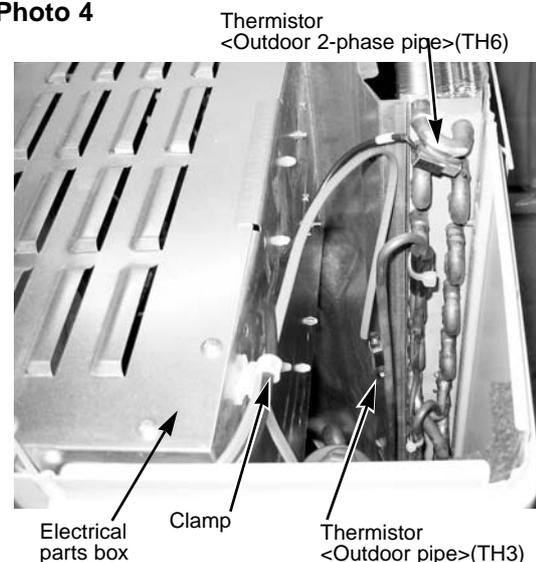
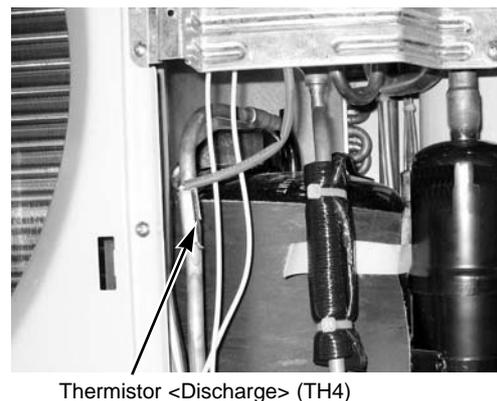


Photo 5



OPERATING PROCEDURE

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 X 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.

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 X 10) and 4 ball valve and stop valve fixing screws (5 X 16) and then remove the valve bed.
- (5) Remove 3 right side panel fixing screws (5 X 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: Collect 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 X 10) and 4 ball valve and stop valve fixing screws (5 X 16) and then remove the valve bed.
- (5) Remove 3 right side panel fixing screw (5 X 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: Collect 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

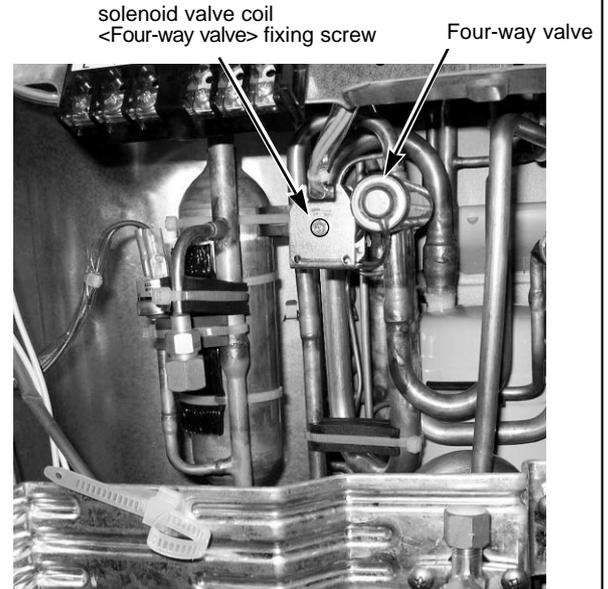
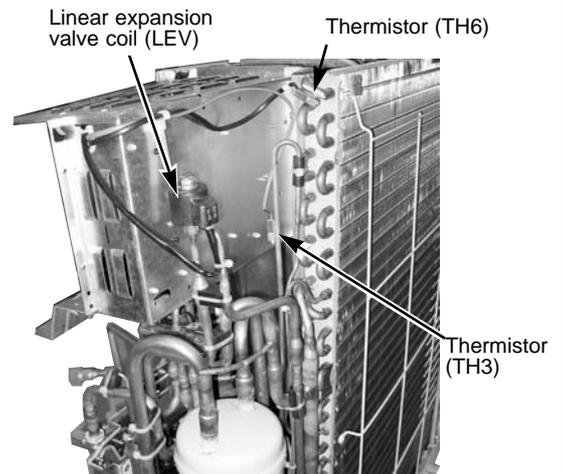


Photo 7



OPERATING PROCEDURE

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 X 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.

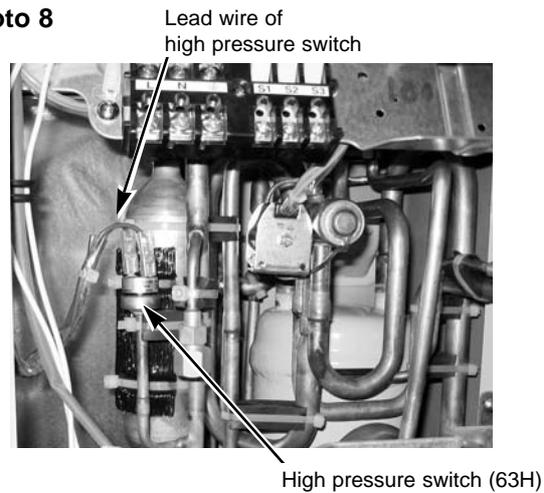
Note 1: Collect refrigerant without spreading it in the air.

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.

PHOTOS

Photo 8

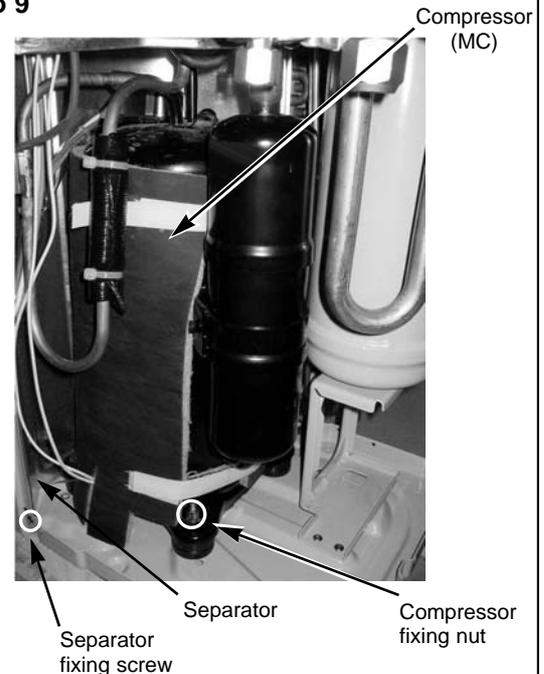


10. Removing the motor for compressor (MC)

- (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 X 10) and remove the front cover panel. (See photo 3.)
- (4) Remove 2 back cover panel fixing screws (5 X 10) and remove the back cover panel.
- (5) Remove the electrical parts box. (See photo 3.)
- (6) Remove 3 valve bed fixing screws (4 X 10) and 4 ball valve and stop valve fixing screws (5 X 16) and then remove the valve bed.
- (7) Remove 3 right side panel fixing screws (5 X 10) in the rear of the unit and then remove the right side panel.
- (8) Remove 3 separator fixing screws (4 X 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: Collect refrigerant without spreading it in the air.

Photo 9

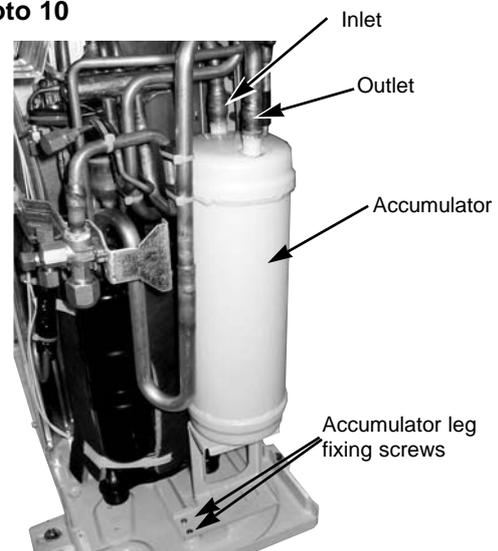


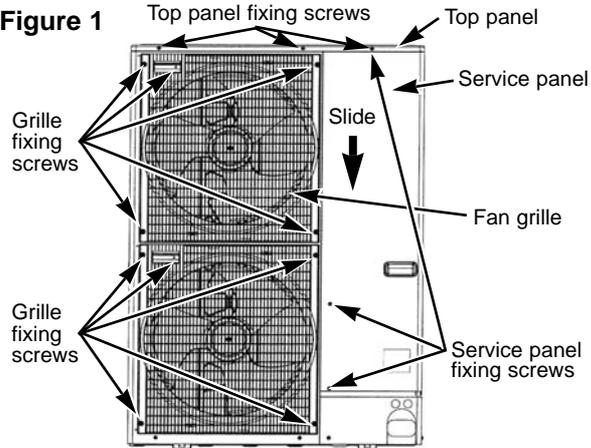
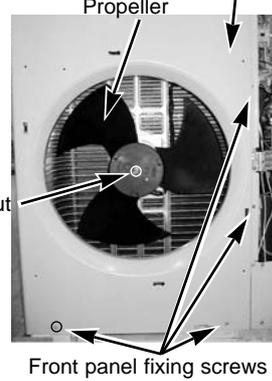
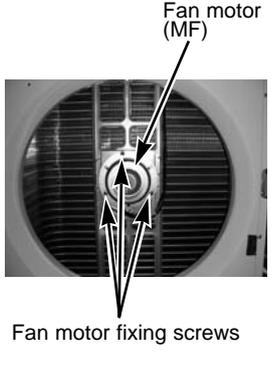
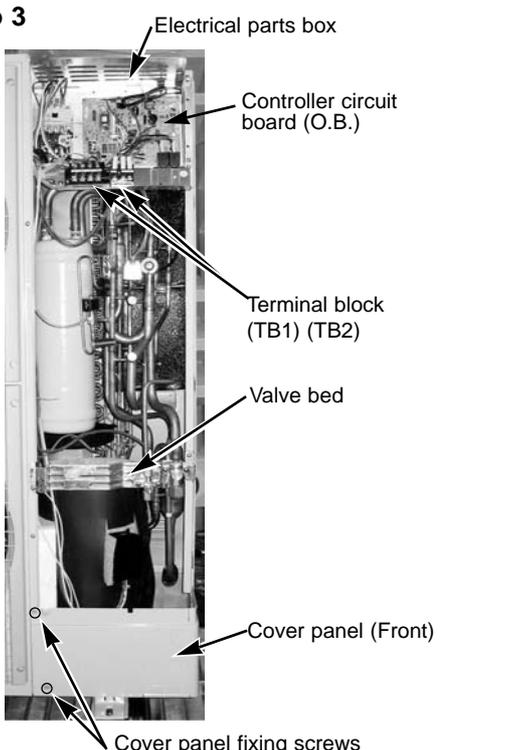
11. Removing the Accumulator

- (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 X 10) and remove the front cover panel. (See photo 3.)
- (4) Remove 2 back cover panel fixing screws (5 X 10) and remove the back cover panel.
- (5) Remove the electrical parts box. (See photo 3.)
- (6) Remove 3 valve bed fixing screws (4 X 10) and 4 ball valve and stop valve fixing screws (5 X 16) and then remove the valve bed.
- (7) Remove 3 right side panel fixing screws (5 X 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: Collect refrigerant without spreading it in the air.

Photo 10



OPERATING PROCEDURE	PHOTOS & ILLUSTRATION
<p>1. Removing the service panel and top panel</p> <p>(1) Remove 3 service panel fixing screws (5 X 10) and slide the hook on the right downward to remove the service panel.</p> <p>(2) Remove screws (3 for front, 3 for rear/5 X 10) of the top panel and remove it.</p>	<p>Figure 1</p> 
<p>2. Removing the fan motor (MF)</p> <p>(1) Remove the service panel. (See figure 1.)</p> <p>(2) Remove the top panel. (See figure 1.)</p> <p>(3) Remove 5 fan grille fixing screws (5 X 10) to detach the fan grille. (See figure 1.)</p> <p>(4) Remove a nut (for right handed screw of M6) to detach the propeller. (See photo 1.)</p> <p>(5) Disconnect the connectors, MF3, MF4 on controller circuit board in electrical parts box.</p> <p>(6) Remove 3 fan motor fixing screws (5 X 16) to detach the fan motor. (See photo 2.)</p>	<p>Photo 1</p>  <p>Photo 2</p> 
<p>3. Removing the electrical parts box</p> <p>(1) Remove the service panel. (See figure 1.)</p> <p>(2) Remove the top panel. (See figure 1.)</p> <p>(3) Disconnect the indoor/outdoor connecting wire from terminal block.</p> <p>(4) Remove all the following connectors from controller circuit board; fan motor, linear expansion valve, thermistor <Outdoor pipe>, thermistor <Discharge>, thermistor <Outdoor 2-phase pipe>, high pressure switch, solenoid valve coil <Four-way valve> and solenoid valve coil <Bypass valve>. Then remove a screw (4 X 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></p> <ul style="list-style-type: none"> • Fan motor (MF3, MF4) • Linear expansion valve (CNLEV) • Thermistor <Discharge> (TH4) • Thermistor <Outdoor 2-phase pipe, Outdoor pipe> (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) <p>(5) Remove the terminal cover and disconnect the compressor lead wire.</p> <p>(6) Remove an electrical parts box fixing screw (4 X 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.</p>	<p>Photo 3</p> 

OPERATING PROCEDURE

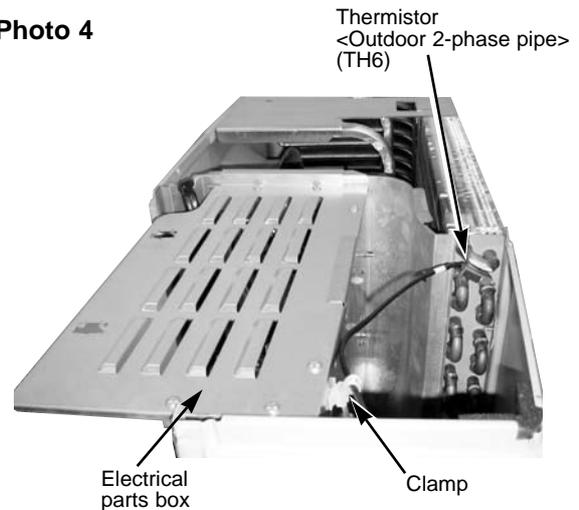
4. Removing the thermistor <Outdoor 2-phase pipe> (TH6)

- (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 <Outdoor 2-phase pipe> (TH6) from the sensor holder.

Note: In case of replacing thermistor <Outdoor 2-phase pipe> (TH6), replace it together with thermistor <Outdoor pipe> (TH3), since they are combined together. Refer to No.5 below to remove thermistor <Outdoor pipe>.

PHOTOS

Photo 4

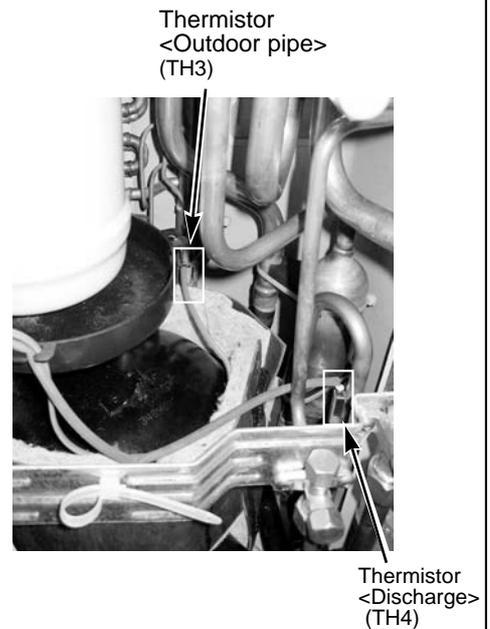


5. Removing the thermistor <Outdoor pipe> (TH3) and thermistor <Discharge> (TH4)

- (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 <Outdoor pipe> (TH3) and thermistor <Discharge> (TH4) from the sensor holder.

Note: In case of replacing thermistor <Outdoor pipe> (TH3), replace it together with thermistor <Outdoor 2-phase pipe> (TH6), since they are combined together. Refer to No.4 above to remove thermistor <Outdoor 2-phase pipe>.

Photo 5



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 X 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 X 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 X 10) and 4 ball valve and stop valve fixing screws (5 X 16) and then remove the valve bed.
- (4) Remove 4 right side panel fixing screws (5 X 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: Collect 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 X 10) and 4 ball valve and stop valve fixing screws (5 X 16) and then remove the valve bed.
- (4) Remove 4 right side panel fixing screws (5 X 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.

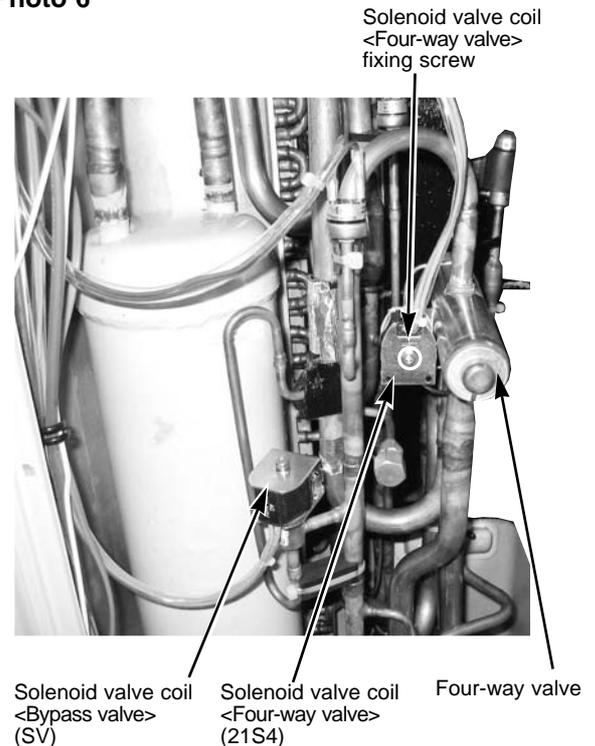
Note 1: Collect refrigerant without spreading it in the air.

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

9. Removing the bypass valve

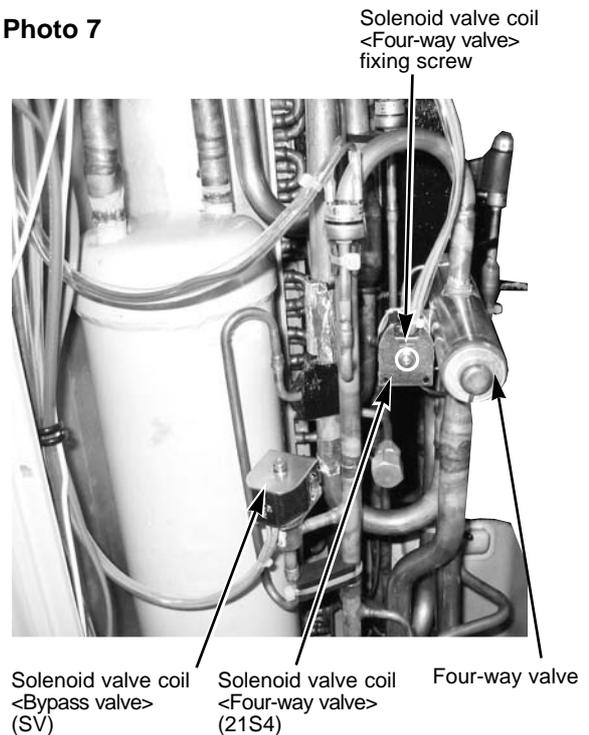
- (1) Remove the service panel. (See figure 1.)
- (2) Remove the top panel. (See figure 1.)
- (3) Remove the electrical parts box. (See photo 3.)
- (4) Remove 3 right side panel fixing screws (5 X 10) in the rear of the unit and remove the right side panel.
- (5) Remove the bypass valve solenoid coil. (See photo 7.).
- (6) Collect the refrigerant.
- (7) Remove the welded part of bypass valve.

Note 1: Collect refrigerant without spreading it in the air.

Note 2: The welded part can be removed easily by removing the right side panel.

PHOTOS

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 X 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.

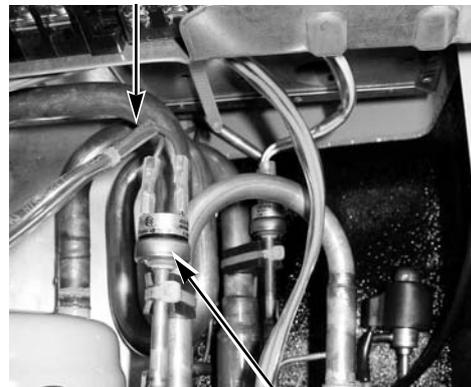
Note 1: Collect refrigerant without spreading it in the air.

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

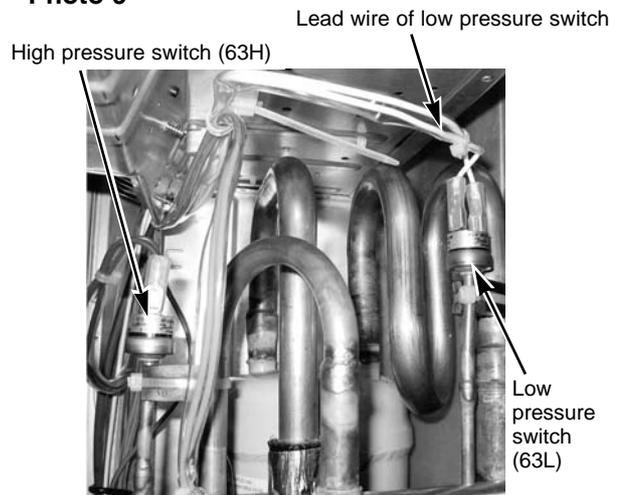


11. Removing the low pressure switch

- (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.

Photo 9



OPERATING PROCEDURE

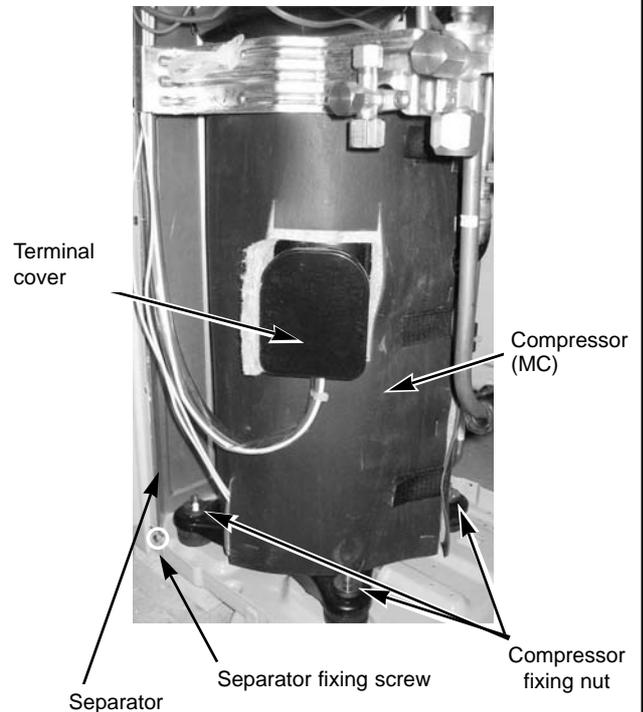
12. Removing the motor for compressor (MC)

- (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 X 10) and remove the front cover panel. (See photo 3.)
- (4) Remove 2 back cover panel fixing screws (5 X 10) and remove the back cover panel.
- (5) Remove the electrical parts box. (See photo 3.)
- (6) Remove 3 valve bed fixing screws (4 X 10) and 4 ball valve and stop valve fixing screws (5 X 16) and then remove the valve bed.
- (7) Remove 3 right side panel fixing screws (5 X 10) in the rear of the unit and then remove the right side panel.
- (8) Remove 3 separator fixing screws (4 X 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 an adjustable wrench.
- (11) Remove the welded pipe of motor for compressor inlet and outlet and then remove the compressor.

Note: Collect refrigerant without spreading it in the air.

PHOTOS

Photo 10

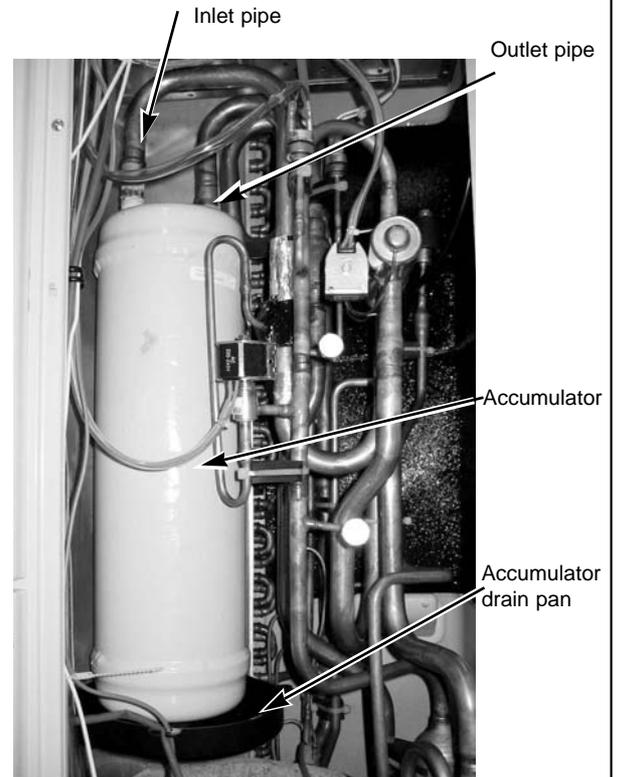


13. Removing the Accumulator

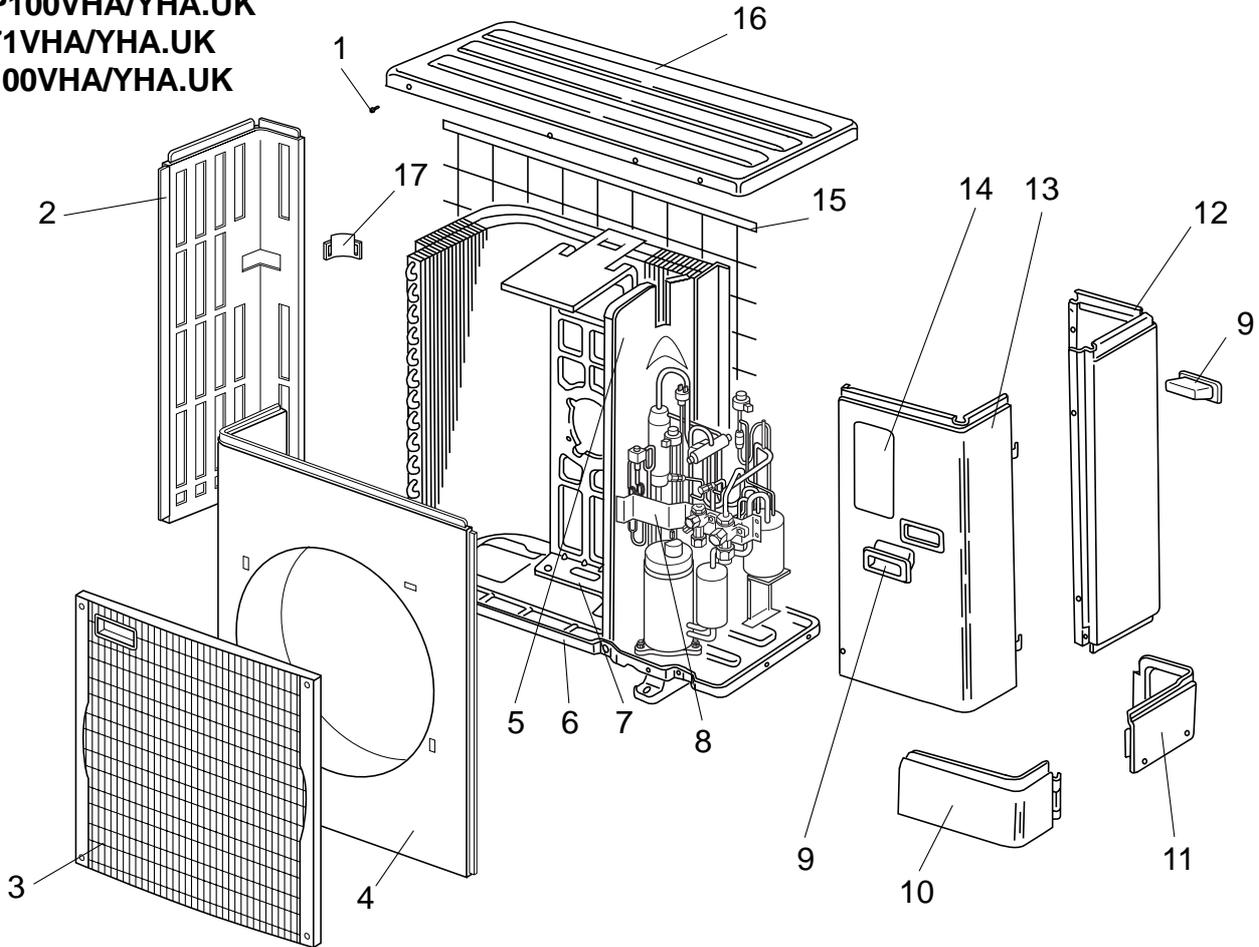
- (1) Remove the service panel. (See figure 1.)
- (2) Remove the top panel. (See figure 1.)
- (3) Remove 2 front cover panel fixing screws (5 X 10) and remove the front cover panel. (See photo 3.)
- (4) Remove 2 back cover panel fixing screws (5 X 10) and remove the back cover panel.
- (5) Remove the electrical parts box. (See photo 3.)
- (6) Remove 3 valve bed fixing screws (4 X 10) and 4 ball valve and stop valve fixing screws (5 X 16) and then remove the valve bed.
- (7) Remove 3 right side panel fixing screws (5 X 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: Collect refrigerant without spreading it in the air.

Photo 11

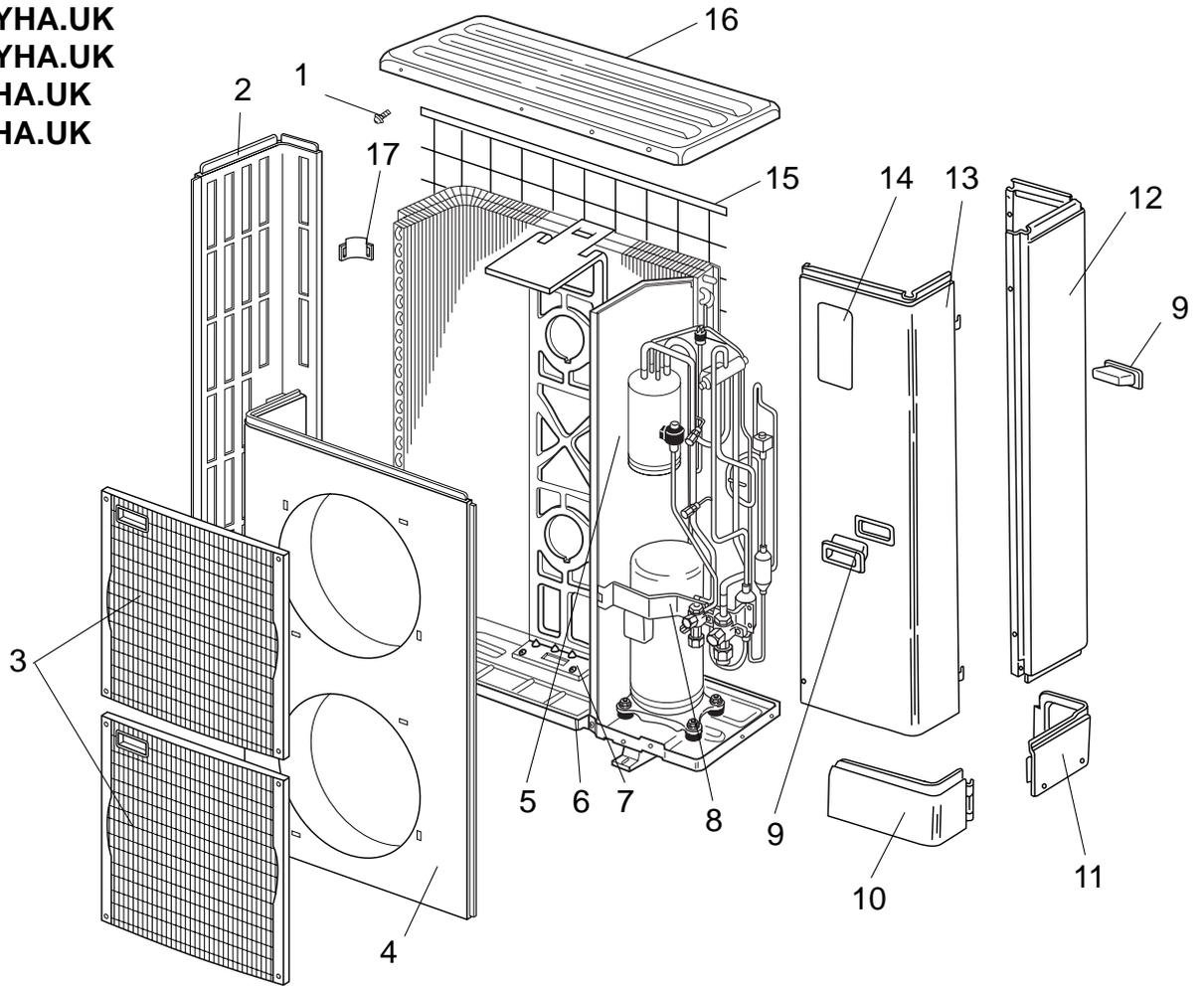


STRUCTURAL PARTS
PUH-P71VHA/YHA.UK
PUH-P100VHA/YHA.UK
PU-P71VHA/YHA.UK
PU-P100VHA/YHA.UK



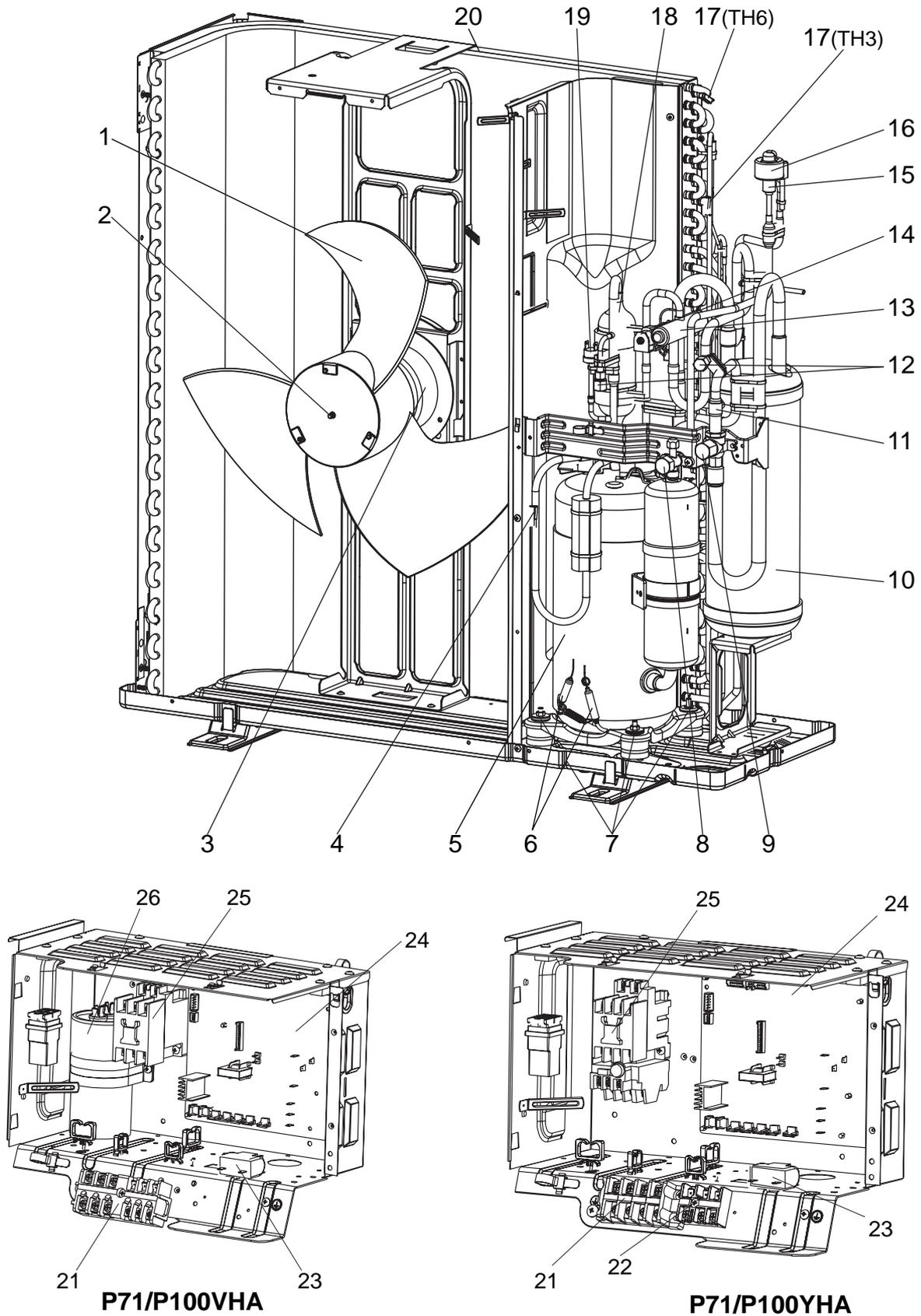
No.	Part No.	Part Name	Specification	Q'ty/set	Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
				PUH-P/ PU-P 71/ 100 VHA/ YHA.UK				Unit	Amount
1	—	F.ST SCREW	(5×10)	31	(DG12F536H10)				
2	S70 E10 662	SIDE PANEL (L)		1					
3	S70 E20 675	FAN GRILLE		1					
4	S70 E10 668	FRONT PANEL		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



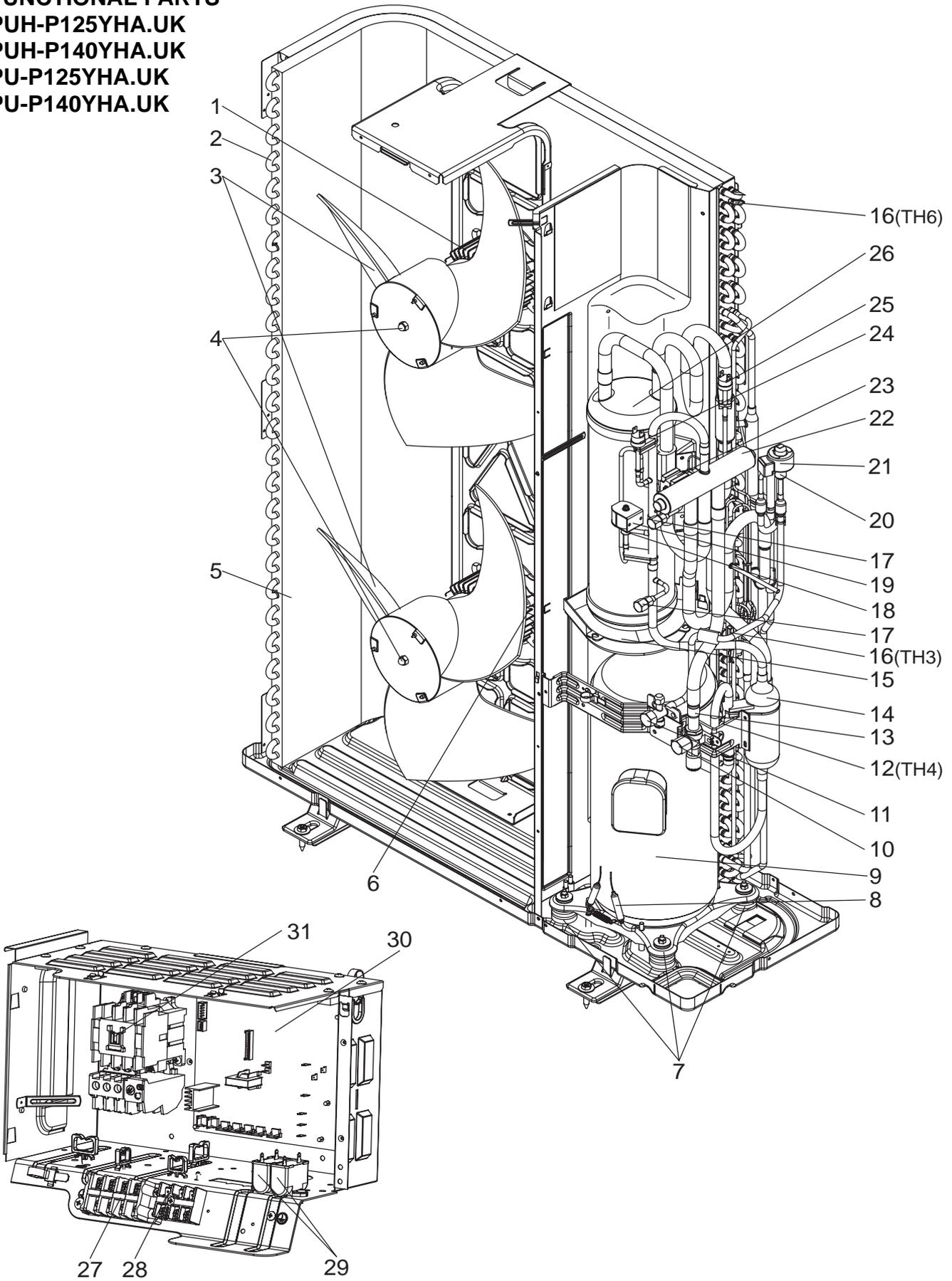
No.	Part No.	Part Name	Specification	Q'ty/set	Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
				PUH-P/ PU-P 125/ 140 YHA.UK				Unit	Amount
1	—	F.ST SCREW	(5X10)	46	(DG12F536H10)				
2	S70 E20 662	SIDE PANEL (L)		1					
3	S70 E20 675	FAN GRILLE		2					
4	S70 E20 668	FRONT PANEL		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



No.	Part No.	Part Name	Specification	Q'ty/set								Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price		
				PUH-P71		PUH-P100		PU-P71		PU-P100					Unit	Amount	
				VHA	YHA	VHA	YHA	VHA	YHA	VHA	YHA						
				.UK													
1	S70 K04 115	PROPELLER FAN		1	1	1	1	1	1	1	1	1					
2	S70 K01 097	NUT	M6	1	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	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	1		CH			
7	S70 E30 401	RUBBER MOUNT		4	4	4	4	4	4	4	4	4					
8	S70 500 418	STOP VALVE	3/8	1	1	1	1	1	1	1	1	1					
9	S70 E04 411	BALL VALVE	5/8	1	1	1	1	1	1	1	1	1					
10	S70 E41 440	ACCUMULATOR		1	1	1	1	1	1	1	1	1					
11	S70 36L 450	STRAINER	#50	1	1	1	1	1	1	1	1	1					
12	S70 E02 413	CHARGE PLUG		2	2	2	2	2	2	2	2	2					
13	S70 E10 403	FOUR-WAY VALVE		1	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	1		LEV			
17	S70 E42 202	THERMISTOR		1	1	1	1	1	1	1	1	1		TH3,6			
18	S70 42H 467	MUFFLER		1	1	1	1	1	1	1	1	1					
19	S70 E10 208	HIGH PRESSURE SWITCH		1	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,0,S1,S2,S3)	1		1		1		1				TB1			
	S70 E10 716	TERMINAL BLOCK	4P(L1,L2,L3,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	3 μ F 440V	1	1			1	1					C3			
	S70 E51 255	FAN CAPACITOR	6 μ F 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	55 μ F 420V	1				1						C5			
	S70 E51 723	RUN CAPACITOR	60 μ F 450V			1				1				C5			

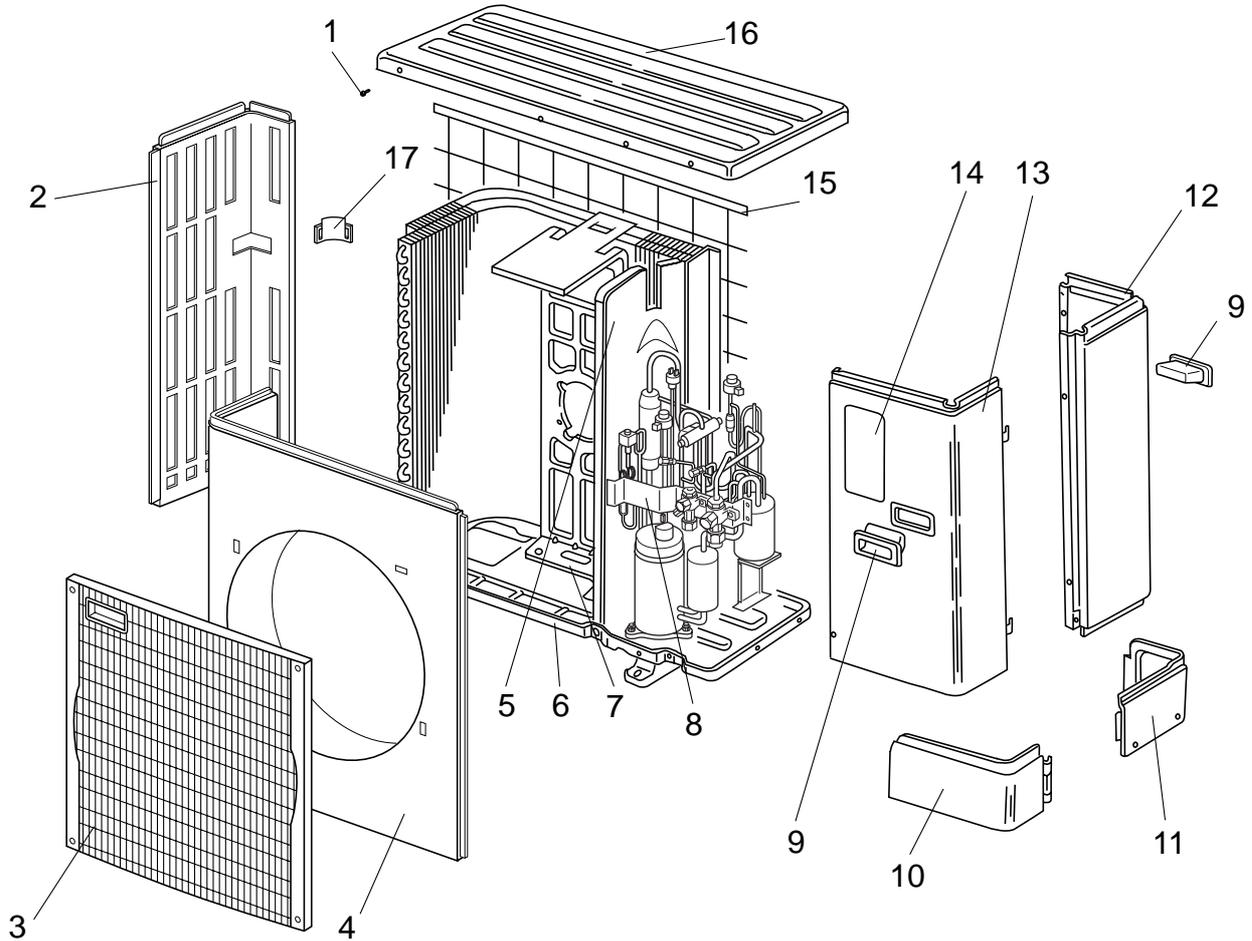
FUNCTIONAL PARTS
PUH-P125YHA.UK
PUH-P140YHA.UK
PU-P125YHA.UK
PU-P140YHA.UK



No.	Part No.	Part Name	Specification	Q'ty/set				Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
				PUH-P		PU-P					Unit	Amount
				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 529	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 208	HIGH PRESSURE SWITCH		1	1	1	1		63H			
25	S70 H20 209	LOW PRESSURE SWITCH		1	1	1	1		63L			
26	S70 E61 440	ACCUMULATOR		1	1	1	1					
27	S70 E10 716	TERMINAL BLOCK	4P(L1,L2,L3,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	3 μ F 440V	2		2			C3,C4			
	S70 31L 255	FAN CAPACITOR	3.5 μ F 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			

STRUCTURAL PARTS

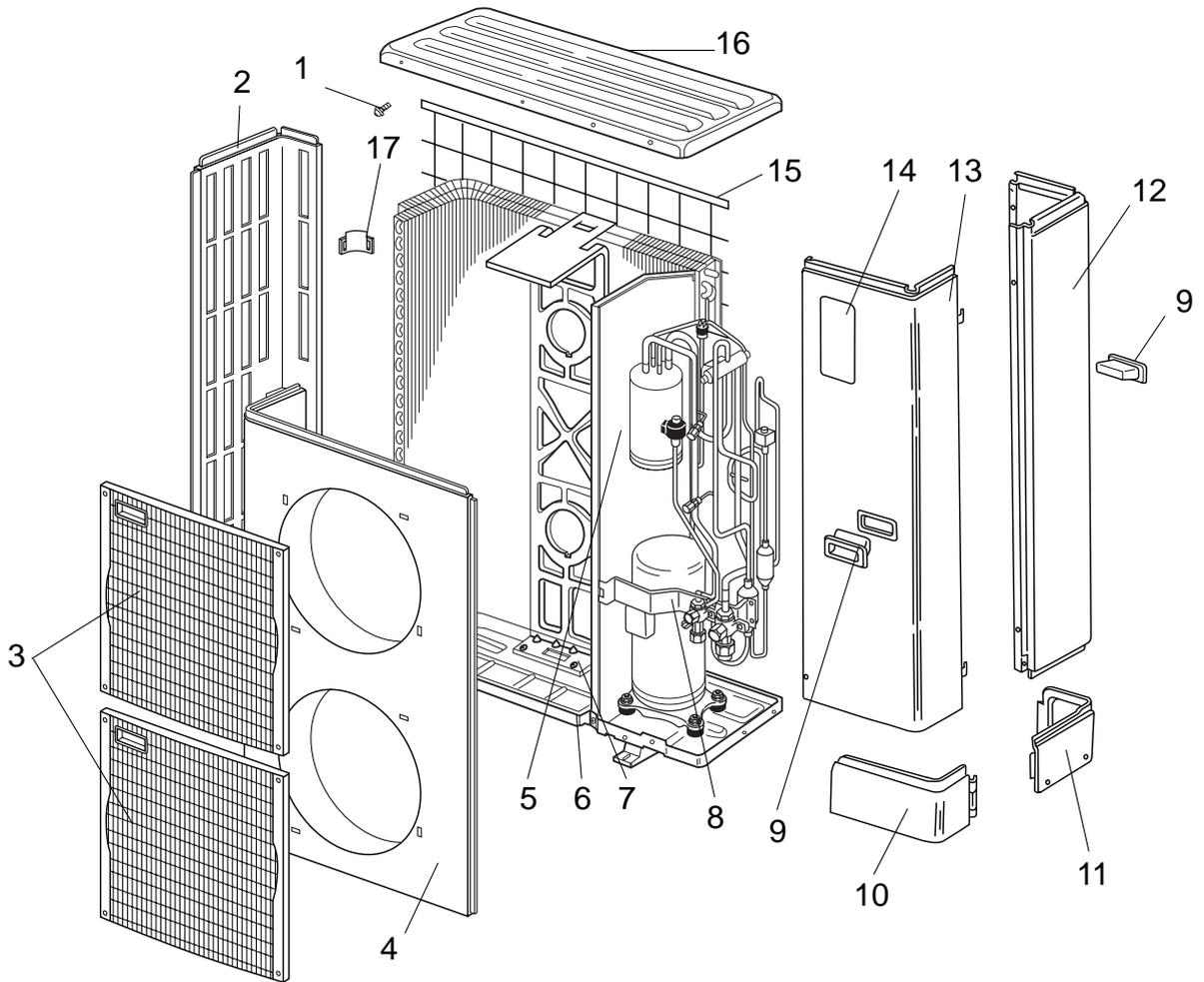
PUH-P71VHA/YHA.UK PU-P71VHA/YHA.UK PUH-P100VHA/YHA.UK PU-P100VHA/YHA.UK
 PUH-P71VHA/YHA₁.UK PU-P71VHA/YHA₁.UK PUH-P100VHA/YHA₁.UK PU-P100VHA/YHA₁.UK



No.	RoHS	Part No.	Part Name	Specification	Q'ty/set		Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
					PUH-P/ PU-P 71/ 100	VHA/ YHA ₍₁₎ .UK				Unit	Amount
1	G	—	F.ST SCREW	(5X10)	31		(DG12F536H10)				
2	G	S70 E10 662	SIDE PANEL (L)		1						
3	G	S70 E20 675	FAN GRILLE		1						
4	G	S70 E10 668	FRONT PANEL		1						
5	G	—	SEPARATOR		1		(BK00C456G04)				
6	G	S70 E30 686	BASE ASSY		1						
7	G	S70 E50 130	MOTOR SUPPORT		1						
8	G	—	VALVE BED ASSY		1		(BK00C493G01)				
9	G	S70 30L 655	HANDLE		2						
10	G	S70 E10 658	COVER PANEL (FRONT)		1						
11	G	S70 E20 658	COVER PANEL (REAR)		1						
12	G	S70 E30 662	SIDE PANEL (R)		1						
13	G	S70 E30 661	SERVICE PANEL		1						
14	G	S70 001 699	LABEL		1						
15	G	S70 E10 698	REAR GUARD		1						
16	G	S70 E10 641	TOP PANEL		1						
17	G	S70 E10 655	HANDLE		1						

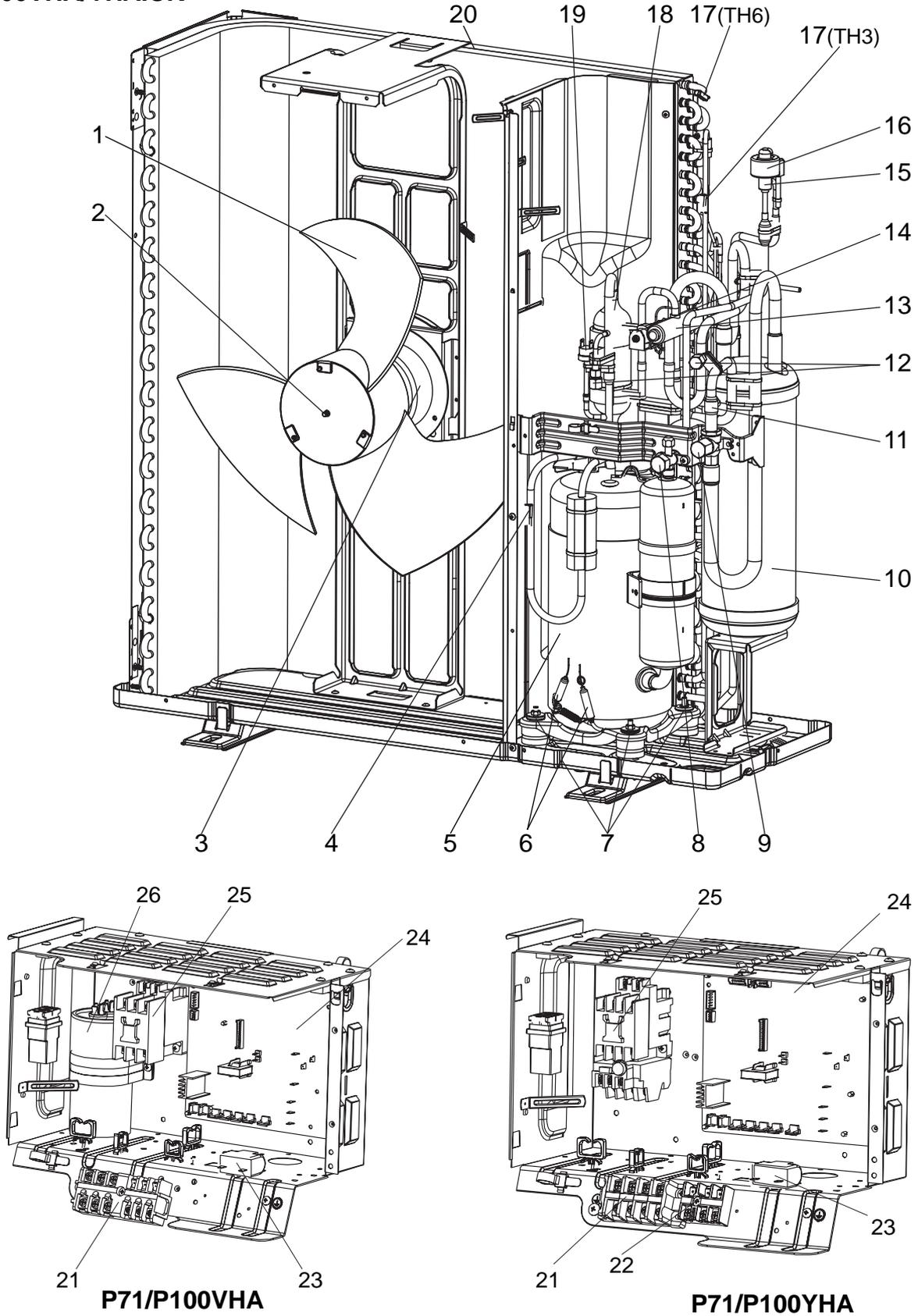
STRUCTURAL PARTS

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



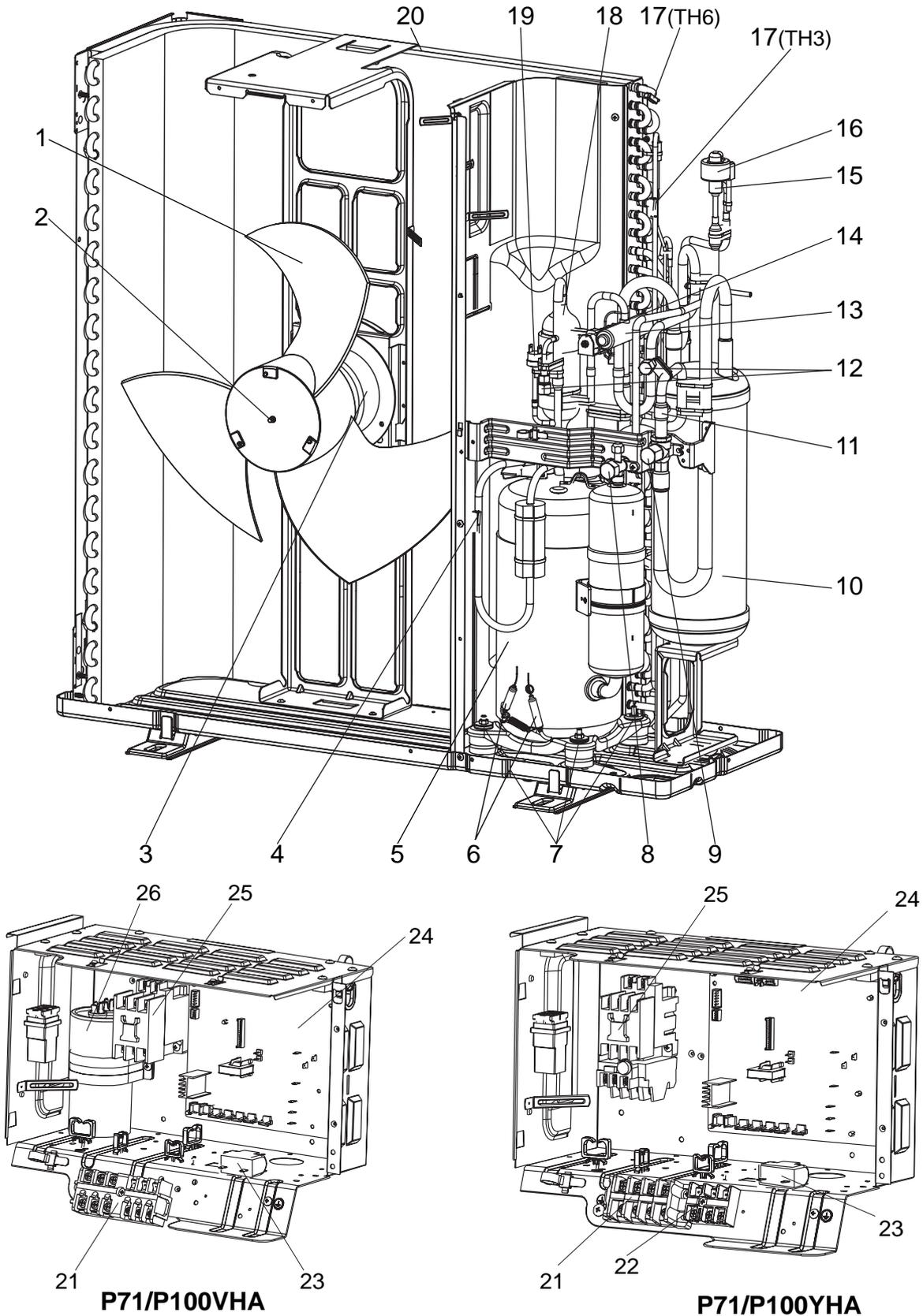
No.	RoHS	Part No.	Part Name	Specification	Q'ty/set	Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
					PUH-P/ PU-P 125/ 140 YHA ₍₁₎ .UK				Unit	Amount
1	G	—	F.ST SCREW	(5X10)	46	(DG12F536H10)				
2	G	S70 E20 662	SIDE PANEL (L)		1					
3	G	S70 E20 675	FAN GRILLE		2					
4	G	S70 E20 668	FRONT PANEL		1					
5	G	—	SEPARATOR		1	(BK00C456G05)				
6	G	S70 E40 686	BASE ASSY		1					
7	G	S70 E60 130	MOTOR SUPPORT		1					
8	G	—	VALVE BED ASSY		1	(BK00C493G01)				
9	G	S70 30L 655	HANDLE		2					
10	G	S70 E10 658	COVER PANEL (FRONT)		1					
11	G	S70 E20 658	COVER PANEL (REAR)		1					
12	G	S70 E40 662	SIDE PANEL (R)		1					
13	G	S70 E40 661	SERVICE PANEL		1					
14	G	S70 001 699	LABEL		1					
15	G	S70 E20 698	REAR GUARD		2					
16	G	S70 E10 641	TOP PANEL		1					
17	G	S70 E10 655	HANDLE		1					

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



No.	RoHS	Part No.	Part Name	Specification	Q'ty/set								Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
					PUH-P71		PUH-P100		PU-P71		PU-P100					Unit	Amount
					VHA	YHA	VHA	YHA	VHA	YHA	VHA	YHA					
					.UK												
1	G	S70 K04 115	PROPELLER FAN		1	1	1	1	1	1	1	1					
2	G	S70 K01 097	NUT	M6	1	1	1	1	1	1	1	1					
3	G	S70 E40 763	FAN MOTOR		1	1			1	1				MF			
	G	S70 E50 763	FAN MOTOR				1	1			1	1		MF			
4	G	S70 E41 202	THERMISTOR (DISCHARGE)		1	1	1	1	1	1	1	1		TH4			
5	G	S70 E72 400	COMPRESSOR	NN33VAAMT	1				1					MC			
	G	S70 E73 400	COMPRESSOR	NN33YCAMT	1				1					MC			
	G	S70 E74 400	COMPRESSOR	NN40VAAMT			1				1			MC			
	G	S70 E75 400	COMPRESSOR	NN40YCAMT			1				1			MC			
6	G	S70 E10 236	CRANKCASE HEATER		1	1	1	1	1	1	1	1		CH			
7	G	S70 E30 401	RUBBER MOUNT		4	4	4	4	4	4	4	4					
8	G	S70 500 418	STOP VALVE	3/8	1	1	1	1	1	1	1	1					
9	G	S70 E04 411	BALL VALVE	5/8	1	1	1	1	1	1	1	1					
10	G	S70 E41 440	ACCUMULATOR		1	1	1	1	1	1	1	1					
11	G	S70 36L 450	STRAINER	#50	1	1	1	1	1	1	1	1					
12	G	S70 E02 413	CHARGE PLUG		2	2	2	2	2	2	2	2					
13	G	S70 E10 403	FOUR-WAY VALVE		1	1	1	1	1	1	1	1					
14	G	S70 E41 242	SOLENOID VALVE COIL <FOUR-WAY VALVE>		1	1	1	1						21S4			
15	G	S70 E80 401	EXPANSION VALVE		1	1			1	1							
	G	S70 E90 401	EXPANSION VALVE				1	1			1	1					
16	G	S70 E91 402	LINEAR EXPANSION VALVE COIL		1	1	1	1	1	1	1	1		LEV			
17	G	S70 E42 202	THERMISTOR		1	1	1	1	1	1	1	1		TH3,6			
18	G	S70 42H 467	MUFFLER		1	1	1	1	1	1	1	1					
19	G	S70 E10 208	HIGH PRESSURE SWITCH		1	1	1	1	1	1	1	1		63H			
20	G	S70 E41 408	HEAT EXCHANGER		1	1			1	1							
	G	S70 E51 408	HEAT EXCHANGER				1	1			1	1					
21	G	S70 E05 716	TERMINAL BLOCK	6P(L,N,0,S1,S2,S3)	1		1		1		1			TB1			
	G	S70 E10 716	TERMINAL BLOCK	4P(L1,L2,L3,N)	1		1		1		1			TB1			
22	G	S70 E04 716	TERMINAL BLOCK	3P(S1,S2,S3)	1		1		1		1			TB2			
23	G	S70 E41 255	FAN CAPACITOR	3μF 440V	1	1			1	1				C3			
	G	S70 E51 255	FAN CAPACITOR	6μF 440V			1	1			1	1		C3			
24	G	S70 FV1 315	CONTROLLER CIRCUIT BOARD		1		1		1		1			O.B			
	G	S70 FY2 315	CONTROLLER CIRCUIT BOARD			1		1		1		1		O.B			
25	G	S70 330 708	CONTACTOR		1		1		1		1			52C			
	G	S70 440 708	CONTACTOR			1			1					51C,52C			
	G	S70 331 708	CONTACTOR				1				1			51C,52C			
26	G	S70 E41 723	RUN CAPACITOR	55μF 420V	1				1					C5			
	G	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

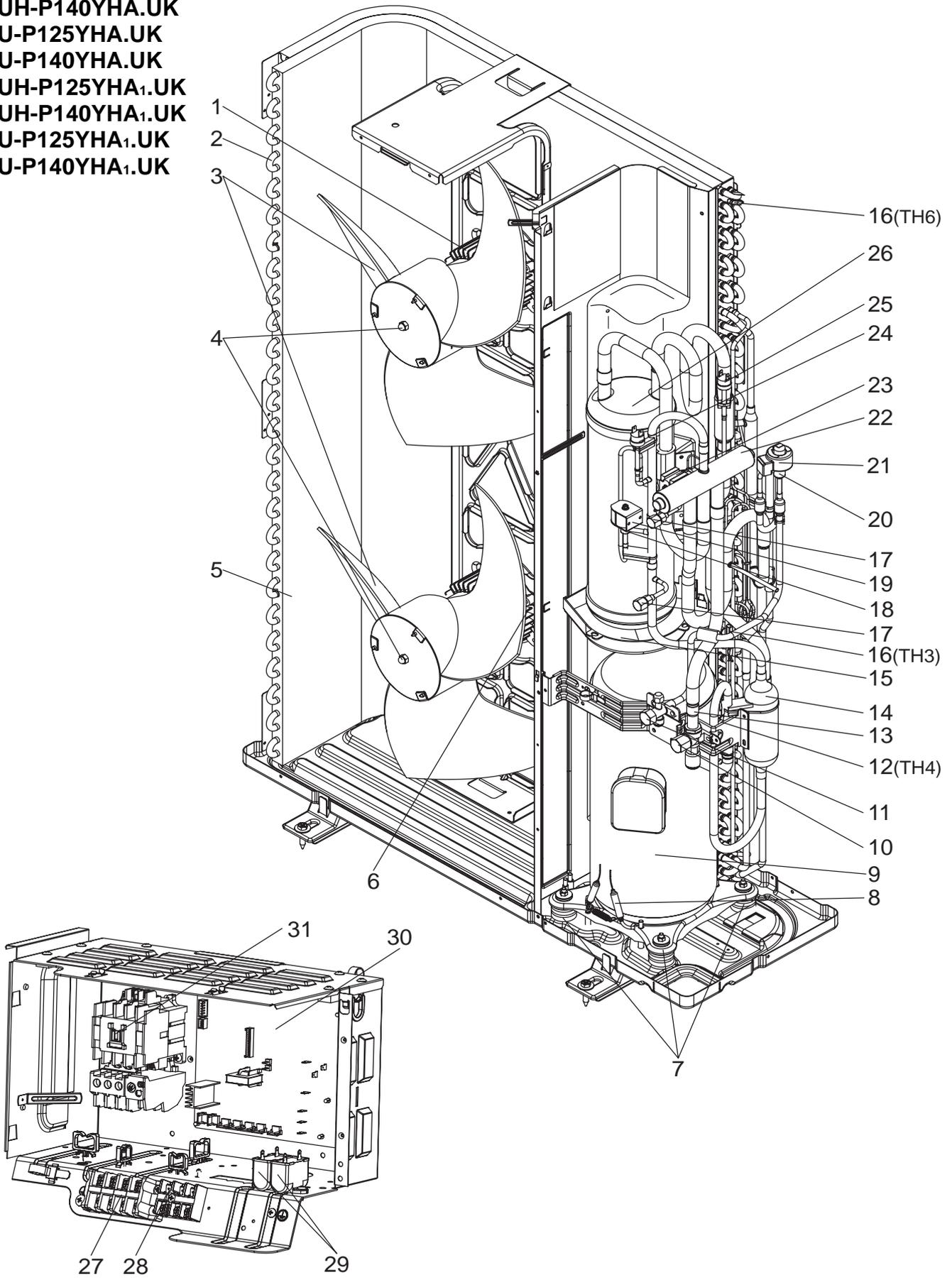




No.	RoHS	Part No.	Part Name	Specification	Q'ty/set								Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
					PUH-P71	PUH-P100	PU-P71	PU-P100								Unit	Amount
					VHA YHA	VHA YHA	VHA YHA	VHA YHA	.UK								
1	G	S70 K04 115	PROPELLER FAN		1	1	1	1	1	1	1	1					
2	G	S70 K01 097	NUT	M6	1	1	1	1	1	1	1	1					
3	G	S70 E40 763	FAN MOTOR		1	1			1	1					MF		
	G	S70 E50 763	FAN MOTOR				1	1			1	1			MF		
4	G	S70 E41 202	THERMISTOR (DISCHARGE)		1	1	1	1	1	1	1	1			TH4		
5	G	S70 E72 400	COMPRESSOR	NN33VAAMT	1				1						MC		
	G	S70 E73 400	COMPRESSOR	NN33YCAMT	1				1						MC		
	G	S70 E74 400	COMPRESSOR	NN40VAAMT			1				1				MC		
	G	S70 E75 400	COMPRESSOR	NN40YCAMT				1				1			MC		
6	G	S70 E10 236	CRANKCASE HEATER		1	1	1	1	1	1	1	1			CH		
7	G	S70 E30 401	RUBBER MOUNT		4	4	4	4	4	4	4	4					
8	G	S70 500 418	STOP VALVE	3/8	1	1	1	1	1	1	1	1					
9	G	S70 E04 411	BALL VALVE	5/8	1	1	1	1	1	1	1	1					
10	G	S70 E41 440	ACCUMULATOR		1	1	1	1	1	1	1	1					
11	G	S70 36L 450	STRAINER	#50	1	1	1	1	1	1	1	1					
12	G	S70 E02 413	CHARGE PLUG		2	2	2	2	2	2	2	2					
13	G	S70 E10 403	FOUR-WAY VALVE		1	1	1	1	1	1	1	1					
14	G	S70 E41 242	SOLENOID VALVE COIL <FOUR-WAY VALVE>		1	1	1	1							21S4		
15	G	S70 E80 401	EXPANSION VALVE		1	1			1	1							
	G	S70 E90 401	EXPANSION VALVE				1	1			1	1					
16	G	S70 E91 401	LINEAR EXPANSION VALVE COIL		1	1	1	1	1	1	1	1			LEV		
17	G	S70 E42 202	THERMISTOR		1	1	1	1	1	1	1	1			TH3,6		
18	G	S70 42H 467	MUFFLER		1	1	1	1	1	1	1	1					
19	G	S70 E10 208	HIGH PRESSURE SWITCH		1	1	1	1	1	1	1	1			63H		
20	G	S70 E41 408	HEAT EXCHANGER		1	1			1	1							
	G	S70 E51 408	HEAT EXCHANGER				1	1			1	1					
21	G	S70 E05 716	TERMINAL BLOCK	6P(L,N,0,S1,S2,S3)	1		1		1		1				TB1		
	G	S70 E10 716	TERMINAL BLOCK	4P(L1,L2,L3,N)	1		1		1		1				TB1		
22	G	S70 E04 716	TERMINAL BLOCK	3P(S1,S2,S3)	1		1		1		1				TB2		
23	G	S70 E41 255	FAN CAPACITOR	3μF 440V	1	1			1	1					C3		
	G	S70 E51 255	FAN CAPACITOR	6μF 440V			1	1			1	1			C3		
24	G	S70 FV8 315	CONTROLLER CIRCUIT BOARD		1		1		1		1				O.B		
	G	S70 FY9 315	CONTROLLER CIRCUIT BOARD			1		1		1		1			O.B		
25	G	S70 330 708	CONTACTOR		1		1		1		1				52C		
	G	S70 440 708	CONTACTOR			1			1						51C,52C		
	G	S70 331 708	CONTACTOR				1				1				51C,52C		
26	G	S70 E41 723	RUN CAPACITOR	55μF 420V	1				1						C5		
	G	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-P125YHA₁.UK
- PUH-P140YHA₁.UK
- PU-P125YHA₁.UK
- PU-P140YHA₁.UK





No.	RoHS	Part No.	Part Name	Specification	Q'ty/set								Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price		
					PUH-P		PU-P		PUH-P		PU-P					Unit	Amount	
					125	140	125	140	125	140	125	140						
1	G	S70 E40 763	FAN MOTOR		1	1	1	1	1	1	1	1		MF3				
2	G	S70 E81 408	HEAT EXCHANGER (TOP)		1	1	1	1	1	1	1	1						
3	G	S70 K04 115	PROPELLER FAN		2	2	2	2	2	2	2	2						
4	G	S70 K01 097	NUT	M6	2	2	2	2	2	2	2	2						
5	G	S70 E82 408	HEAT EXCHANGER (UNDER)		1	1	1	1	1	1	1	1						
6	G	S70 E60 763	FAN MOTOR		1	1	1	1	1	1	1	1		MF4				
7	G	S70 E02 004	RUBBER MOUNT		4	4	4	4	4	4	4	4						
8	G	S70 E20 236	CRANKCASE HEATER		1	1	1	1	1	1	1	1		CH				
9	G	S70 E76 400	COMPRESSOR	BN52YEGMT	1		1		1		1			MC				
	G	S70 E77 400	COMPRESSOR	BN65YEGMT		1		1		1		1		MC				
10	G	S70 E04 411	BALL VALVE	5/8	1	1	1	1	1	1	1	1						
11	G	S70 500 418	STOP VALVE	3/8	1	1	1	1	1	1	1	1						
12	G	S70 E43 202	THERMISTOR (DISCHARGE)		1	1	1	1	1	1	1	1		TH4				
13	G	S70 36L 450	STRAINER	#50	1	1	1	1	1	1	1	1						
14	G	S70 42H 467	MUFFLER		1	1	1	1	1	1	1	1						
15	G	S70 B01 529	ACCUMULATOR DRAIN PAN		1	1	1	1	1	1	1	1						
16	G	S70 E44 202	THERMISTOR		1	1	1	1	1	1	1	1		TH3,6				
17	G	S70 E02 413	CHARGE PLUG		2	2	2	2	2	2	2	2						
18	G	S70 282 403	BYPASS VALVE		1	1	1	1	1	1	1	1						
19	G	S70 E03 242	SOLENOID COIL (BYPASS VALVE)		1	1	1	1	1	1	1	1		SV				
20	G	S70 E90 401	EXPANSION VALVE		1	1	1	1	1	1	1	1						
21	G	S70 E91 401	LINEAR EXPANSION VALVE COIL		1	1	1	1	1	1	1	1		LEV				
22	G	S70 E03 403	FOUR-WAY VALVE		1	1	1	1	1	1	1	1						
23	G	S70 E43 241	SOLENOID COIL (FOUR-WAY VALVE)		1	1			1	1				21S4				
24	G	S70 E10 208	HIGH PRESSURE SWITCH		1	1	1	1	1	1	1	1		63H				
25	G	S70 H20 209	LOW PRESSURE SWITCH		1	1	1	1	1	1	1	1		63L				
26	G	S70 E61 440	ACCUMULATOR		1	1	1	1	1	1	1	1						
27	G	S70 E10 716	TERMINAL BLOCK	4P(L1,L2,L3,N)	1	1	1	1	1	1	1	1		TB1				
28	G	S70 E04 716	TERMINAL BLOCK	3P(S1,S2,S3)	1	1	1	1	1	1	1	1		TB2				
29	G	S70 E41 255	FAN CAPACITOR	3 μ F 440V	2		2		2		2			C3,C4				
	G	S70 31L 255	FAN CAPACITOR	3.5 μ F 440V		2		2		2		2		C3,C4				
30	G	S70 FY2 315	CONTROLLER CIRCUIT BOARD		1	1	1	1						O.B.				
	G	S70 FY9 315	CONTROLLER CIRCUIT BOARD						1	1	1	1		O.B.				
31	G	S70 640 708	CONTACTOR		1		1		1		1			51C,52C				
	G	S70 540 708	CONTACTOR			1		1		1		1		51C,52C				

Mr. SLIM™

 **MITSUBISHI ELECTRIC CORPORATION**

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