Single-Type

1-1. Unit Specifications

PEY1

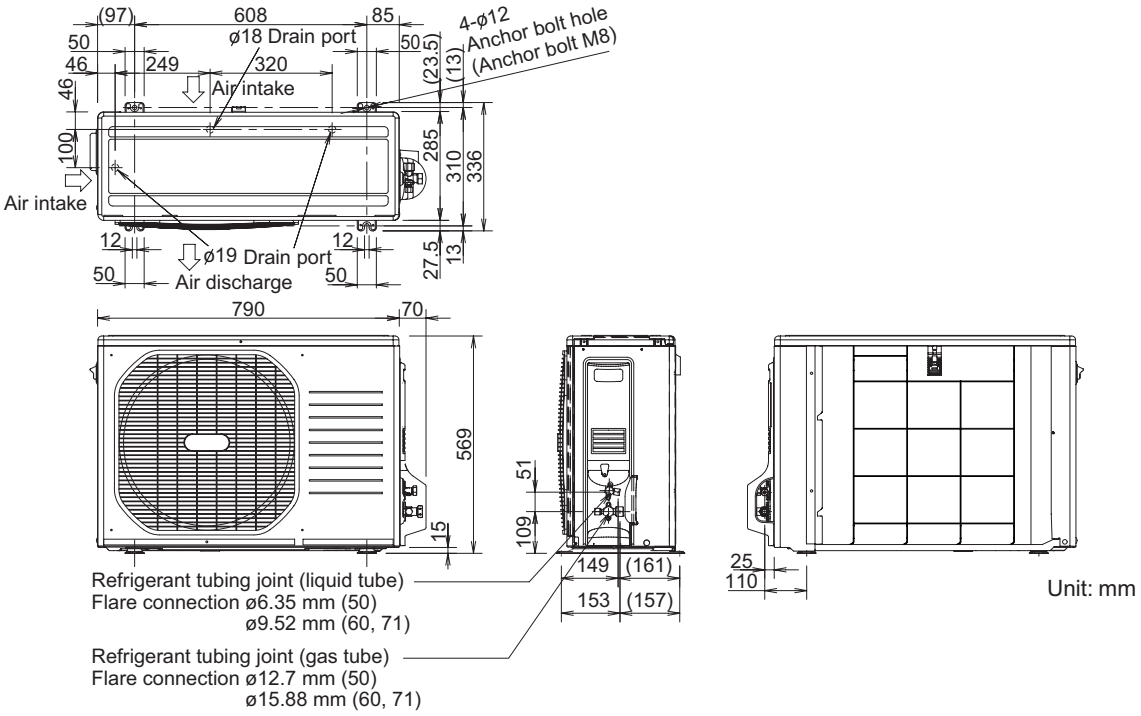
1. 4-Way Cassette Type S-71PU1E5 / U-71PEY1E5

INDOOR		MODEL	S-71PU1E5								
PANEL		MODEL	CZ-KPU2			-					
OUTDOOR		MODEL				U-71PEY1E5					
Branch pipe		MODEL	-								
PERFORMANCE TEST CONDITION			ISO5151 / EN14825								
POWER SUPPLY		ø, Hz	1ø 50Hz			1ø 50Hz					
		V	220	230	240	220	230	240	Min	Max	
COOLING	CAPACITY	kW	7.1	7.1	7.1				2.0	7.7	
		BTU/h	24200	24200	24200				6800	26300	
	CURRENT	A	0.36	0.33	0.32	10.70	10.30	9.80	-	-	
	INPUT POWER	W	40	40	40	2.150k	2.150k	2.150k	-	-	
		TOTAL W	-			2.190k	2.190k	2.190k	325	2.800k	
	ANNUAL CONSUMPTION	TOTAL kWh※4	-			1095	1095	1095	-	-	
	EER/EER CLASS	TOTAL(W/W)※5("A"~"G")	-	-	-	3.24	3.24 / A	3.24	6.15	2.75	
	Erp ※6 Pdsign	kW	-	-	-	-	7.1	-			
	Erp ※6 SEER	(W/W)	-	-	-	-	6.3	-			
	Erp ※6 Annual consumption	kWh	-	-	-	-	394	-			
	Erp ※6 Class		-	-	-	-	A++	-			
	POWER FACTOR	%	-	-	-	91	91	91	-	-	
	NOISE INDOOR	dB-A (H/M/L)	37/31/28								
		Power Level dB	54/48/45								
	NOISE OUTDOOR	dB-A (H/L)				50/-					
		Power Level dB				70/-					
HEATING	CAPACITY	kW	7.1	7.1	7.1				1.8	8.1	
		BTU/h	24200	24200	24200				6100	27600	
	CURRENT	A	0.35	0.32	0.31	9.10	8.70	8.30	-	-	
	INPUT POWER	W	40	40	40	1.840k	1.840k	1.840k	-	-	
		TOTAL W	-			1.880k	1.880k	1.880k	275	2.510k	
	COP/COP CLASS	TOTAL(W/W)※5("A"~"G")	-	-	-	3.78	3.78 / A	3.78	6.55	3.23	
	Erp ※6 Pdsign	kW	-	-	-	-	6.0	-			
	Erp ※6 Tbivalen	°C	-	-	-	-	-6	-			
	Erp ※6 SCOP	(W/W)	-	-	-	-	4.0	-			
	Erp ※6 Annual consumption	kWh	-	-	-	-	2100	-			
	Erp ※6 Class		-	-	-	-	A+	-			
	POWER FACTOR	%	-	-	-	92	92	92	-	-	
	NOISE INDOOR	dB-A (H/M/L)	37/31/28			-			／	／	
		Power Level dB	54/48/45			-					
	NOISE OUTDOOR	dB-A (H/L)	-			52/-			／	／	
		Power Level dB	-			70/-					
EXTRA LOW TEMP	Total CAPACITY(kW)/INPUT POWER(W)/COP		-								
MAX CURRENT(A)/MAX INPUT POWER(W)			0.36/40	0.33/40	0.32/40	18/3.64k	18/3.81k	18/3.97k	／		
STARTING CURRENT(A)/COMP OUTPUT(W)			-	-	-	10.7/2.2k	10.3/2.2k	9.80/2.2k	／		
NETWORK IMPEDANCE (ΩMAX.)			-			-					
FM OUTPUT (W)			60			90			／		
MOISTURE REMOVAL VOLUME		L/h(Pt/h)	4.2		(8.8)	-					
External static pressure		Pa (mmAq)	-								
I/D AIR FLOW	COOL	m^3/min (ft^3/min)	22		(777)						
	HEAT	m^3/min (ft^3/min)	22		(777)						
O/D AIR FLOW	COOL	m^3/min (ft^3/min)				39		(1377)			
	HEAT	m^3/min (ft^3/min)				39		(1377)			
REFRIGERANT TYPE, AMOUNT g(oz)						R410A	1.70k	(60.0)		/	
PRO DIM	HEIGHT : H mm(inch)		256 (10-3/32)			569 (22-13/32)				/	
	WIDTH : W mm(inch)		840 (33-3/32)			790 (31-7/64)				/	
	DEPTH : D mm(inch)		840 (33-3/32)			285 (11-7/32)				/	
PAC DIM	HEIGHT : H mm		298			645				/	
	WIDTH : W mm		929			921				/	
	DEPTH : D mm		929			386				/	
MASS	(NET) kg(lb)		24 (53)			42 (93)				/	
	(GROSS) kg(lb)		30 (66)			46 (101)				/	
LAYERS LIMIT (actually)			11 (12)			4 (5)					
Operation Condition	Cool (DBT)		18°C ~ 32°C			-10°C ~ 43°C					
	Heat (DBT)		16°C ~ 30°C			-15°C ~ 24°C					
PIPING	PIPE DIAMETER mm (inch)		(Liquid)ø9.52(3/8) (Gas)ø15.88(5/8)			(Liquid)ø9.52(3/8) (Gas)ø15.88(5/8)					
	CONNECT METHOD, STD LENGTH m (ft)		flared type, 5.0(16.4)			flared type, 5.0(16.4)					
	PIPE LENGTH RANGE m (ft)		5 ~ 50 (16.4 ~ 164)						~	~	
	I/D&O/D HEIGHT DIFFERENCE m (ft)		15 (OD located lower) / 30 (OD located higher) (49.2/98.4)								
	ADD GAS AMOUNT g/m (oz/ft)		40 (0.430)								
	PIPE LENGTH FOR ADDITIONAL GAS m (ft)		20 (65.6)								

*1: In case it is necessary to indicate the air flow volume in (l/s), the value in (m^3/min.) shall be multiplied by 16.7 and rounded down the decimal point.
*2: If the EUROVENT Certified models can be operated under the “extra-low” temperature condition, -7°C dry bulb and -8°C wet-bulb temperatures with rated voltage 230 V shall be used.
*3: Network Impedance shall be applicable for EUROPE and CHINA models.
*4: The annual consumption is calculated by multiplying the input power at 230 V (400 V) by an average of 500 hours per year in cooling mode.
*5: EER and COP classification is at 230 V (400 V) only in accordance with EU directive 2002/31/EC.
*6: SEER and SCOP classification is at 230V(400V) only in accordance with EN-14825. For heating, SCOP indicates the value of only Average heating season, Other fiche data indicates in an attached sheet.

1-2. Dimensional Data

(B) Outdoor Unit: U-50PE1E5
U-60PEY1E5 / U-71PEY1E5



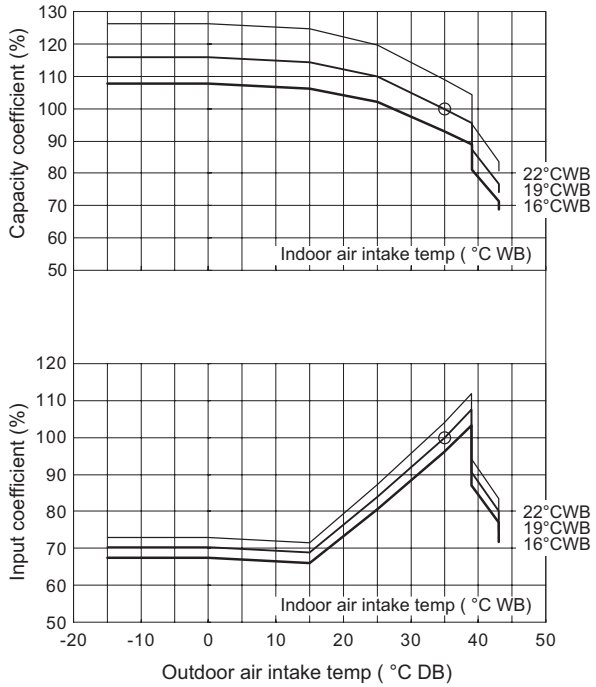
Unit: mm

1-5. Capacity Correction Graph According to Temperature Condition

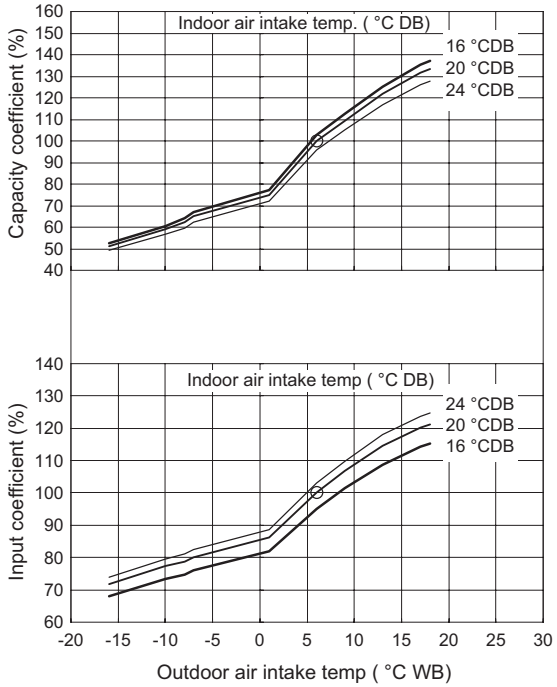
PEY1

U-71PEY1E5 (For 50 Hz)

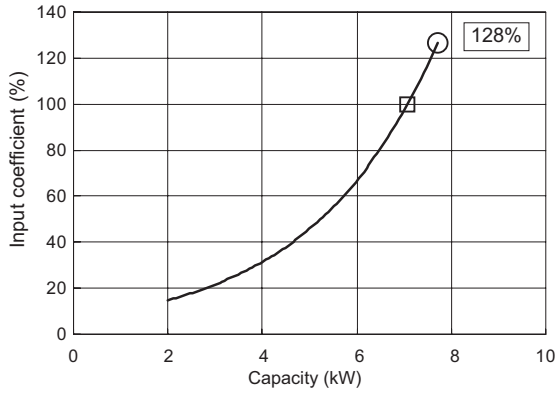
Cooling capacity ratio (maximum capacity)



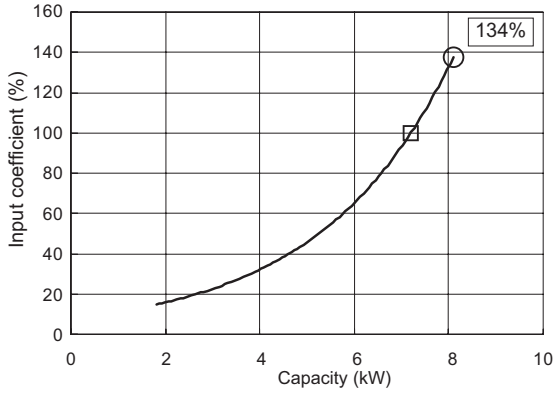
Heating capacity ratio (maximum capacity)



Cooling



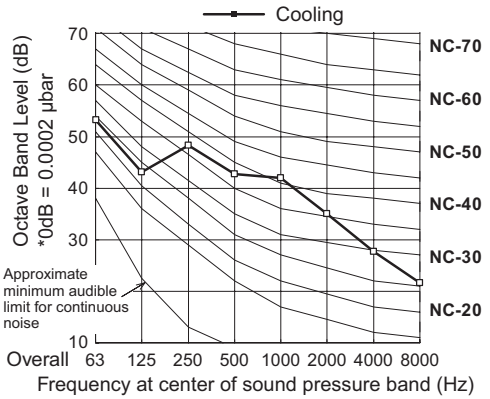
Heating



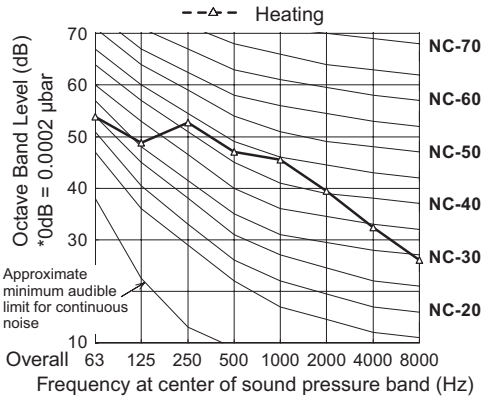
1-8. Noise Criterion Curves

(B) Outdoor Unit

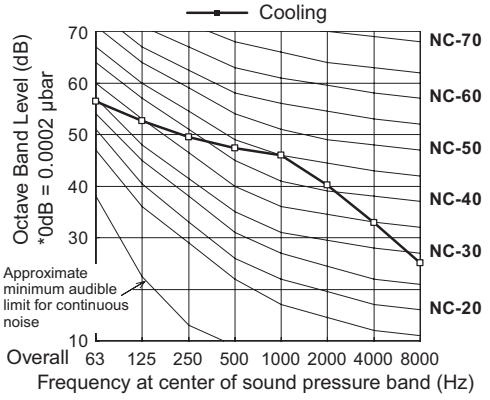
MODEL	: U-60PEY1E5
SOUND LEVEL	: Cooling 46 dB(A)
CONDITION	: 1 m in front at height of 1.5 m
SOURCE	: 220-230-240V, 1 phase, 50Hz



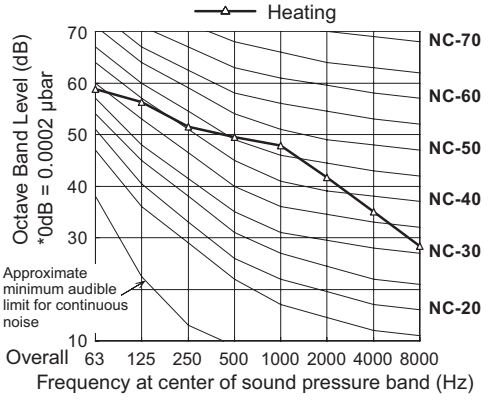
MODEL	: U-60PEY1E5
SOUND LEVEL	: Heating 50 dB(A)
CONDITION	: 1 m in front at height of 1.5 m
SOURCE	: 220-230-240V, 1 phase, 50Hz



MODEL	: U-71PEY1E5
SOUND LEVEL	: Cooling 50 dB(A)
CONDITION	: 1 m in front at height of 1.5 m
SOURCE	: 220-230-240V, 1 phase, 50Hz



MODEL	: U-71PEY1E5
SOUND LEVEL	: Heating 52 dB(A)
CONDITION	: 1 m in front at height of 1.5 m
SOURCE	: 220-230-240V, 1 phase, 50Hz



ELECTRICAL WIRING

General Precautions on Wiring

(1) Before wiring, confirm the rated voltage of the unit as shown on its nameplate, then carry out the wiring closely following the wiring diagram.
(2) Provide a power outlet to be used exclusively for each unit and a circuit breaker for overcurrent protection should be provided in the exclusive line.
(3) To prevent possible hazards from insulation failure, the unit must be grounded.
(4) Each wiring connection must be done in accordance with the wiring system diagram.
Wrong wiring may cause the unit to disorder or become damaged.
(5) Do not allow wiring to touch the refrigerant tubing, compressor, or any moving parts of the fan.
(6) Unauthorized changes in the internal wiring can be very dangerous.
The manufacturer will accept no responsibility for any damage or malfunction that occurs as a result of such unauthorized changes.
(7) Regulations on wire diameters differ from locality to locality.
For field wiring rules, please refer to your LOCAL ELECTRICAL CODES before beginning.
You must ensure that installation complies with all relevant rules and regulations.
(8) To prevent malfunction of the air conditioner caused by electrical noise, care must be taken when wiring as follows:
- The remote control wiring and the inter-unit control wiring should be wired apart from the inter-unit power wiring.
- Use shielded wires for inter-unit control wiring between units and ground the shield on both sides.

(9) If the power supply cord of this appliance is damaged, it must be replaced by a repair shop designated by the manufacturer, because special-purpose tools are required.

Recommended Wire Length and Wire Diameter for Power Supply System

Outdoor unit

	(A) Power supply		Time delay fuse or circuit capacity
	Wire size	Max. length	
U-50PE1E5	2.5 mm^2	29 m	16 A
U-60PEY1E5	2.5 mm^2	19 m	20 A
U-71PEY1E5	2.5 mm^2	19 m	20 A

Indoor unit

Type	(B) Power supply	Time delay fuse or circuit capacity
	2.5 mm^2	
K1	Max. 150 m	10 - 16 A
U1, Y1, T1, F1, N1	Max. 130 m	10 - 16 A

Control wiring

(C) Inter-unit (between outdoor and indoor units) control wiring	(D) Remote control wiring	(E) Control wiring for group control
0.75 mm^2(AWG #18) **Use shielded wiring**[*1]	0.75 mm^2(AWG #18) **Use shielded wiring**	0.75 mm^2(AWG #18) **Use shielded wiring**
Max. 1,000 m	Max. 500 m[*2]	Max. 200 m (Total)

NOTE

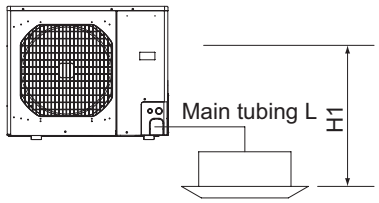
[*1] With ring-type wire terminal.
[*2] When (D) and (E) are used together with maximum length of 500 m for group control, and if the remote controller for the group control is wireless, the maximum length will be 400 m.

Tubing Size

(A) Single type

- Refrigerant tubing between the indoor and outdoor units should be kept as short as possible.
- The lengths of the refrigerant tubes between the indoor and outdoor units are limited by the elevation difference between the 2 units. During tubing work, try to make both the tubing length (L) and the difference in elevation (H1) as short as possible.

Single



Outdoor unit type	U-50PE1E5	U-60PEY1E5 U-71PEY1E5
Maximum allowable tubing length	40 m	50 m
Charge-less tubing length (actual length)	3 – 30 m	3 – 20 m
Additional charge per 1 m	20 g	40 g

(B) Simultaneous operation multi (Twin)

NOTE

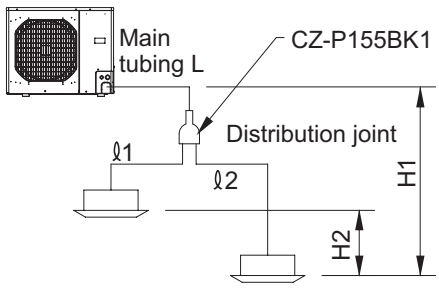
Because the indoor units run simultaneously, install them within the same room.

Table 1-1

Item		Contents	Symbol		Actual length (m)		
			Single	Twin	50	60 – 71 single	71 twin
Allowable tubing lengths	Maximum allowable tubing length	One-way length of tubing from outdoor unit to the most distant indoor unit	L	L + ℓ1 L + ℓ2	≤40	≤50	≤40
	Maximum distribution tubing length	Maximum length following the first branch point (No. 1 distribution)	–	ℓ1, ℓ2	–	–	≤15
Maximum branch tubing length		Difference between the maximum length and minimum length in tubing following the first branch point	–	ℓ1 > ℓ2 ℓ1 – ℓ2	–	–	≤10
Maximum difference between lengths of No. 1 distribution tubing (double twin)			–	–	–	–	–
Maximum difference between lengths of No. 2 distribution tubing (double twin)			–	–	–	–	–
Maximum allowable height difference	Maximum indoor-outdoor height difference	If outdoor unit is higher	H1		≤30	≤30	≤30
		If outdoor unit is lower			≤15	≤15	≤15
	Maximum height difference between indoor units		–	H2	–	–	≤0.5

* For connection tubing sizes, refer to Table above.

Twin



NOTE

- For refrigerant tube branches, use the optional distribution joints.
- For cautions on the use of the optional distribution joints, be sure to refer to the provided instruction sheet.
  Also, be careful to install them in the correct direction (orientation).

Table 1-2 Tubing Data for Models (Single, Twin)

Tubing Data \ Models			U-50PE1E5	U-60PEY1E5 U-71PEY1E5
Tubing size outer diameter	Liquid tube	mm (in.)	6.35 (1/4)	9.52 (3/8)
	Gas tube	mm (in.)	12.7 (1/2)	15.88 (5/8)
Limit of tubing length		(m)	40	50 *3
Limit of elevation difference between the 2 units	Outdoor unit is placed higher	(m)	30	30
	Outdoor unit is placed lower	(m)	15	15
Max. allowable tubing length at shipment		(m)	3 – 30	3 – 20
Required additional refrigerant		(g/m)	20 *2	40 *1
Refrigerant charged at shipment		(kg)	1.65	1.7

No additional charge of compressor oil is necessary.
*1 If total tubing length becomes 20 to 50 m, charge additional refrigerant by 40 g/m.
*2 If total tubing length becomes 30 to 40 m, charge additional refrigerant by 20 g/m.
*3 In case of single connection, limit of tubing length is 50 m.
In case of twin connection, limit of tubing length is 40 m.

Table 1-3 Connection Tube Sizes

	Main tubing (L)	Indoor unit connection tube (ℓ1, ℓ2)	
Type capacity of indoor unit	71	71	36
Gas tube	ø15.88	ø15.88	ø12.7
Liquid tube	ø9.52	ø9.52	ø6.35
Amount of additional charge per 1 m	40 g	40 g	20 g

Charge with the amount of additional refrigerant calculated using the formula below, based on the values in Table 1-3 and the size and length of the liquid tubing.

Amount of additional refrigerant charge (g)

Do not remove refrigerant from the system, even if the result of the calculation is negative.

Additional refrigerant amount (g) = Additional refrigerant for main tubing (g) + Additional refrigerant for distribution tubing (g) – Outdoor unit charge-less refrigerant amount (g)
= 40 × (a) + 20 × (b) – 400*1 (60 – 71 types)
*1 50 Type of outdoor unit is 600 g.
*1 In case of twin connection, 71 type of outdoor unit is 400 g.

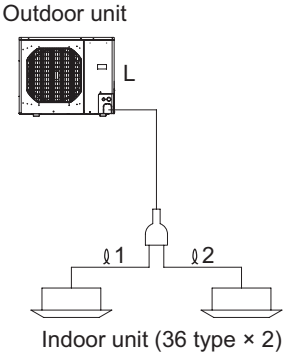
(Use with the current refrigerant charge.)
(a) Actual length (m) of main tubing (ø9.52) — Refrigerant charge per 1 m of actual length = 40 g/m (60 – 71 types)
(b) Total length of distribution tubing (ø6.35) — Refrigerant charge per 1 m of actual length = 20 g/m

Example

- Sample tubing lengths
  L = 25 m ℓ1 = 5 m
  ℓ2 = 10 m
- Find the liquid tube size from Table 1-3.
  L : ø9.52 (71 type)
  ℓ1 – ℓ2 : ø6.35
- The amount of additional on-site refrigerant charge is found by subtracting the outdoor unit charge-less refrigerant amount from the total charge amount for all tube sizes.

ø9.52 → L	: 25 m	× 40 g / m	=	1000
ø6.35 → ℓ1 – ℓ2	: (5 + 10) m	× 20 g / m	=	300
Outdoor unit charge-less refrigerant amount				–400
		Total		+900

- The amount of additional on-site refrigerant charge is 900 g.

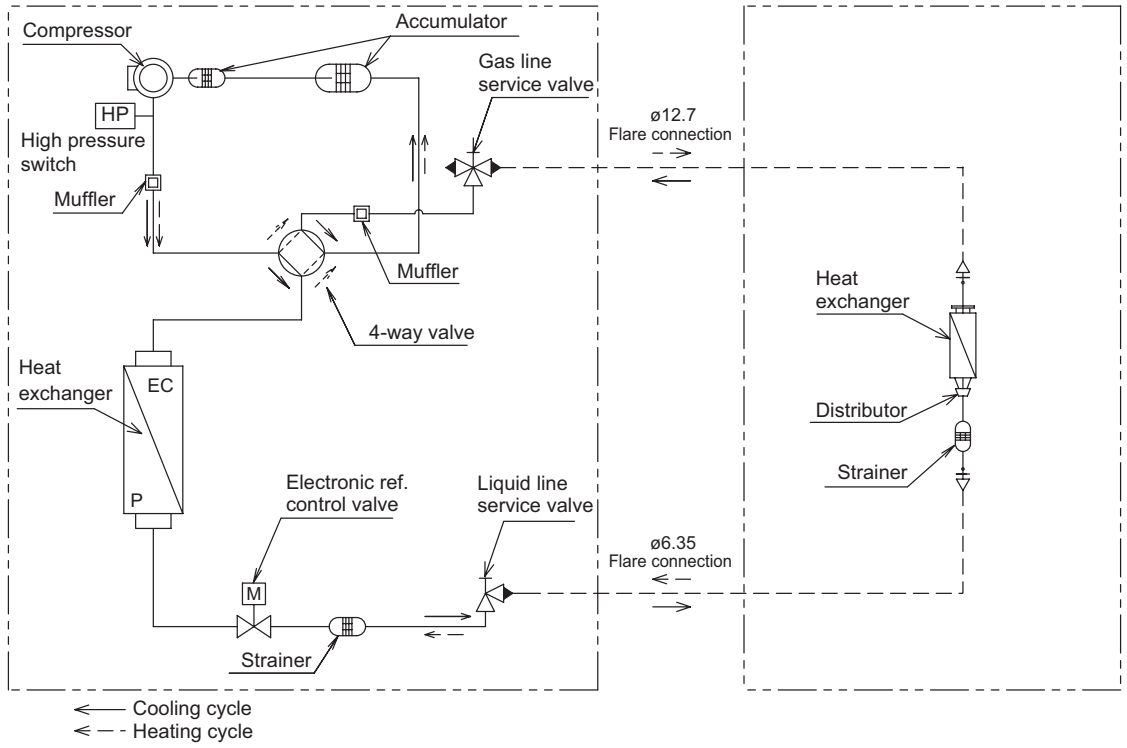


Note: For type 50, the additional refrigerant charge for tubing length (c) of 30 to 40 m is the following:
Additional refrigerant amount (g) = 20 × (c) – 600

1-3. Refrigerant Flow Diagram

Outdoor Unit: U-50PE1E5

Indoor Unit:



Outdoor Unit : U-60PEY1E5
U-71PEY1E5

Indoor Unit: