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## REYHQ16-24P

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# 1 Specifications

1-1 INDEPENDENT UNIT			REYHQ16PY1B	REYHQ20PY1B	REYHQ22PY1B	REYHQ24PY1B
Outdoor Unit			REMQ8P9Y1B	REMQ8P9Y1B	REMQ10P8Y1B	REMHQ12P8Y1B
			REMQ8P9Y1B	REMHQ12P8Y1B	REMHQ12P8Y1B	REMHQ12P8Y1B

1-2 TECHNICAL SPECIFICATIONS				REYHQ16PY1B	REYHQ20PY1B	REYHQ22PY1B	REYHQ24PY1B	
Capacity	Cooling	kW		45.0	56.0	61.5	67.0	
	Heating	kW		50.0	62.5	69.0	75.0	
COP	Cooling			4.29	4.04	3.84	3.89	
	Heating			4.36	4.36	4.24	4.37	
Capacity range			HP	16	20	22	24	
Power input (nominal)(50Hz)	Cooling		kW	10.5	13.9	16.0	17.2	
	Heating		kW	11.5	14.3	16.3	17.2	
PED category				Category II				
Max n× of indoor units to be connected				26	32	35	39	
Indoor index connection	Minimum			200	250	275	300	
	Maximum			520	650	715	780	
Casing	Colour			Daikin White				
	Material			Painted galvanised steel				
Heat Exchanger	Dimensions	Length	mm	1,778 + 1,778	1,778 + 2,088	1,778 + 2,088	2,088 + 2,088	
		Nr of Rows		54	54	54	54	
		Fin Pitch	mm	2	2	2	2	
		Nr of Passes		18 + 18	18 + 21	18 + 21	21 + 21	
		Face Area	m²	2.112 + 2.112	2.112 + 2.481	2.112 + 2.481	2.481 + 2.481	
		Nr of Stages		2	2	2	2	
	Tube type		Hi-XSS (8)					
Fin	Fin type		Non-symmetric waffle louvre					
	Treatment		Hydrophilic and anti corrosion resistant					
Fan	Type			Propeller				
	Quantity			2	3	3	4	
Air Flow Rate (nominal at 230V)	Cooling	m³/min		180 + 180	180 + 230	180 + 230	230 + 230	
		cfm		180 + 180	180 + 230	180 + 230	230 + 230	
Fan	External static pressure		Pa	78 Pa in high static pressure				
	Discharge direction			Vertical				
	Motor	Quantity		2	3	3	4	
		Model		Brushless DC				
	Output motor	W	750 + 750	750 + 750	750 + 2x350	2x350 + 2x350		
Compressor	Quantity			2	3	4	4	
	Motor	Quantity		2	2	2	2	
		Model		Inverter				
		Type		Hermetically sealed scroll compressor				
		Speed	rpm	7,980 + 7,980	7,980 + 6,300	6,300 + 6,300	6,300 + 6,300	
		Motor Output	kW	4.7 + 4.7	4.7 + 3.5	2.2 + 3.5	3.5 + 3.5	
		Crankcase Heater	W	33	33	33	33	
		Quantity			1	1 + 1	1 + 1	
		Model			ON - OFF	ON - OFF	ON - OFF	
		Type			Hermetically sealed scroll compressor	Hermetically sealed scroll compressor	Hermetically sealed scroll compressor	
		Speed	rpm		2,900	2,900 + 2,900	2,900 + 2,900	
		Motor Output	kW		4.5	4.5 + 4.5	4.5 + 4.5	
		Crankcase Heater	W		33	33	33	
		Cooling	Standard	Min	×CDB	-5	-5	-5

# 1 Specifications

1-2 TECHNICAL SPECIFICATIONS				REYHQ16PY1B	REYHQ20PY1B	REYHQ22PY1B	REYHQ24PY1B
Operation Range	Cooling	Max	×CDB	43	43	43	43
	Heating	Min	×CWB	-20	-20	-20	-20
		Max	×CWB	15	15	15	15
Sound level	Cooling	Sound Power (Nominal)	dB(A)	82	85	85	87
		Sound Pressure (Nominal)	dB(A)	62	64	64	66
Refrigerant	Name			R-410A			
	Charge		kg	8.2 + 8.2	8.2 + 11.7	9.0 + 11.7	11.7 + 11.7
	Control			Expansion valve (electronic type)			
	Nr of Circuits			1	1	1	1
Refrigerant Oil	Name			Synthetic (ether) oil			
	Charged Volume		l	1.4 + 1.4	1.4 + 2.5	1.8 + 2.5	2.5 + 2.5
Piping connections	Liquid (OD)	Type		Braze connection			
		Diameter (OD)	mm	12.7	15.9	15.9	15.9
	Gas	Type		Braze connection			
		Diameter (OD)	mm	28.6	28.6	28.6	34.9
	Heat Insulation			Both liquid and gas pipes			
Max total length			1,000				
Defrost Method				Reversed cycle			
Defrost Control				Sensor for outdoor heat exchanger temperature			
Capacity Control Method				Inverter controlled			
Capacity Control				~ 100			
Safety devices				HPS			
				Fan motor driver overload protector			
				Over current relay			
				Inverter overload protector			
				PC board fuse			
Standard Accessories	Standard Accessories			Installation manual			
	Quantity			1	1	1	1
	Standard Accessories			Operation manual			
	Quantity			1	1	1	1
	Standard Accessories			Connection pipes			
Quantity			4	4	4	4	
Notes				Nominal cooling capacities are based on : indoor temperature : 27×CDB, 19×CWB, outdoor temperature : 35×CDB, equivalent refrigerant piping : 7.5m, level difference : 0m.			
				Nominal heating capacities are based on : indoor temperature : 20×CDB, outdoor temperature : 7×CDB, 6×CWB, equivalent refrigerant piping : 7.5m, level difference : 0m			
				Sound pressure			
				Sound values			
				Sound values are measured in a semi-anechoic room.			

1-3 ELECTRICAL SPECIFICATIONS (50HZ)				REYHQ16PY1B	REYHQ20PY1B	REYHQ22PY1B	REYHQ24PY1B
Power Supply	Name			Y1			
	Phase			3N-			
	Frequency	Hz		50	50	50	50
	Voltage	V		380-415			

# 1 Specifications

1-3 ELECTRICAL SPECIFICATIONS (50HZ)				REYHQ16PY1B	REYHQ20PY1B	REYHQ22PY1B	REYHQ24PY1B
Current	Nominal running current (RLA)	Cooling	A	16.4	19.1	22.2	21.8
	Starting current (MSC)		A	4	79	88	88
	Z-max	Text		-	0.27	0.25	0.24
	Minimum Ssc value		kVa	2,436	2,332	2,042	2,228
	Minimum circuit amps (MCA)		A	37.0	50.0	53.1	63.0
	Maximum fuse amps (MFA)		A	50	63	63	80
	Full load amps (FLA)		A	1.4	1.9	2.1	2.4
Voltage range	Minimum		V	342	342	342	342
	Maximum		V	456	456	456	456
Wiring connections	For Power Supply	Quantity		5	5	5	5
		Remark		Earth wire include			
	For connection with indoor	Quantity		2	2	2	2
		Remark		F1 - F2			
Power Supply Intake				Both indoor and outdoor unit			
Notes				MFA is used to select the circuit breaker and the ground fault circuit interrupter (earth leakage circuit breaker)			
				MSC means the maximum current during start up of the compressor			
				Maximum allowable voltage range variation between phases is 2%			
				RLA is based on following conditions : indoor temperature : 27×CDB/19×CWB , outdoor temperature : 35×CDB			
				Select wire size based on the value of MCA or TOCA			
				TOCA means the total value of each OC set			
				Voltage range : units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits			
In accordance with EN/IEC 61000-3-11(1), respectively EN/IEC 61000-3-12(2), it may be necessary to consult the distribution network operator to ensure that the equipment is connected only to a supply with Zsys(4) <= Zmax, respectively Ssc(3) >= minimum Ss							

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1

## 2 Electrical data

### REYHQ-P

	Coombination of	Minimum $S_{sc}$ value [kVA]	$Z_{max}$ [ $\Omega$ ]
REYHQ16P	REMQ8P9 + REMQ8P9	2436	-
REYHQ20P	REMQ8P9 + REMQ12P8	2332	0,27
REYHQ22P	REMQ10P8 + REMHQ12P8	2042	0,25
REYHQ24P	REMHQ12P8 + REMHQ12P8	2228	0,24

#### NOTES

- 1 In accordance with EN/IEC 61000-3-11<sup>(1)</sup>, respectively EN/IEC 61000-3-11<sup>(2)</sup>, it may be necessary to consult the distribution network operator to ensure that the equipment is connected only to a supply with  $Z_{sys}^{(4)} \leq Z_{max}$ , respectively  $S_{sc}^{(3)}$  minimum  $S_{sc}$  value
- 2 <sup>(1)</sup> European/International technical standard setting the limits for voltage changes, voltage fluctuations and flicker in public low-voltage supply systems for equipment with rated  $\leq 75A$ .  
<sup>(2)</sup> European/International technical standard setting the limits for harmonic currents produced by equipment connected to public low-voltage system with input current  $> 16A$  and  $\leq 75A$  per phase .  
<sup>(3)</sup> Short-circuit power  
<sup>(4)</sup> System impedance.

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### 3 Options

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#### REYHQ-P

Description		REYQ18-48P+REYHQ16,20,22,24P Multi combination of REMQ-16P+REMHQ12P						
		REMQ8P9	REMQ10P8	REMQ12P9	REMHQ12P9 REMQ14P8	REMQ16P8	2-unit multi	3-unit multi
Refnet header	KHRQ23M29H	0	0	0	0	0	0	0
	KHRQ23M64H	-	-	-	-	-	0	0
	KHRQ23M75H	-	-	-	-	-	0	0
Refnet joint	KHRQ23M20T	0	0	0	0	0	0	0
	KHRQ23M29T9	0	0	0	0	0	0	0
	KHRQ23M64T	-	-	0	0	0	0	0
	KHRQ23M75T	-	-	-	-	-	0	0
Outdoor unit multipiping connection kit for H/R	BHFQ23P907	-	-	-	-	-	0	-
	BHFQ23P1357	-	-	-	-	-	-	0
Central drain pan kit	KWC26C280	0	0	0	-	-	See note 4	See note 4
	KWC26C450	-	-	-	0	0	See note 4	See note 4
Digital pressure gauge kit (See note 2)	BHGP26A1	0	0	0	0	0	-	-
BS box for H/R	BSVQ100P	0	0	0	0	0	0	0
	BSVQ160P	0	0	0	0	0	0	0
	BSVQ250P	0	0	0	0	0	0	0
Central BSVQ box (See note 6)	BSV4Q100P	0	0	0	0	0	0	0
Sound reduction kit for BSVQ box (See note 3)	EKBSVQLNP	0	0	0	0	0	0	0
Wind cover (See note 5)	Full set REMQ8-12	KPS26C280	0	0	0	-	-	-
	Full set REMQ14-16 + REMHQ12	KPS26C504	-	-	-	0	0	-
	Top/discharge for REMQ8-12	KPS26C280T	0	0	0	-	-	See note 4
	Top/discharge for REMQ14-16 + REMHQ12	KPS26C504T	-	-	-	0	0	See note 4
	Left/suction for REMQ8-16 + REMHQ	KPS26C504L	0	0	0	0	0	See note 4
	Right/suction for REMQ8-16 + REMHQ	KPS26C504R	0	0	0	0	0	See note 4
	Rear/suction REMQ8-12P	KPS26C280B	0	0	0	-	-	See note 4
	Rear/suction REMQ14-16 + REMHQ12	KPS26C504B	-	-	-	0	0	See note 4

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#### NOTES

- All options are kits
- Only 1 option per installation is needed.
- Only available for standard BSVQ boxes (not possible for central BSV4Q).  
Allows to reduce operating sound of BSVQ-box (requires 1 sound kit per BSVQ-box)
- To be combined based on the outdoor multi connection table.
- Only required for technical cooling (outdoor temp < -5°C).
- Factory pre-assembly of 4xBSVQ100P

## 4 Capacity tables

### 4 - 1 Combination table

REYHQ-P

UNIT	REMQ8P9	REMQ10P8	REMHQ12P8
REYHQ16P	2		
REYHQ20P	1		1
REYHQ22P		1	1
REYHQ24P			2

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# 4 Capacity tables

## 4 - 2 Cooling capacity tables

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### REYHQ16P

TC: Total Capacity: kW ; PI: Power Input: kW (compressor + outdoor fan motor)

Combination (%)	Capacity index	Outdoor air temp. (°CDB)	Indoor air temperature: °CDB															
			14.0		16.0		18.0		19.0		20.0		22.0		24.0			
			TC kW	PI kW	TC kW	PI kW	TC kW	PI kW	TC kW	PI kW	TC kW	PI kW	TC kW	PI kW	TC kW	PI kW		
130%	520.0	10	39.5	4.83	47.1	5.92	54.7	7.0	56.7	7.2	57.4	7.0	58.8	6.7	60.2	6.44		
		12	39.5	4.92	47.1	6.03	54.7	7.2	55.9	7.2	56.7	7.0	58.1	6.7	59.5	6.6		
		14	39.5	5.02	47.1	6.15	54.5	7.3	55.2	7.1	55.9	7.0	57.3	6.9	58.8	7.0		
		16	39.5	5.11	47.1	6.27	53.8	7.2	54.5	7.2	55.2	7.2	56.6	7.3	58.0	7.3		
		18	39.5	5.21	47.1	6.39	53.0	7.5	53.7	7.5	54.5	7.6	55.9	7.7	57.3	7.7		
		20	39.5	5.32	47.1	6.8	52.3	7.9	53.0	7.9	53.7	7.9	55.2	8.0	56.6	8.1		
		21	39.5	5.47	47.1	7.1	51.9	8.1	52.7	8.1	53.4	8.1	54.8	8.2	56.2	8.3		
		23	39.5	5.85	47.1	7.6	51.2	8.4	51.9	8.5	52.6	8.5	54.1	8.6	55.5	8.7		
		25	39.5	6.26	47.1	8.1	50.5	8.8	51.2	8.8	51.9	8.9	53.3	9.0	54.7	9.1		
		27	39.5	6.7	47.1	8.7	49.7	9.2	50.5	9.2	51.2	9.3	52.6	9.4	54.0	9.4		
		29	39.5	7.1	47.1	9.3	49.0	9.5	49.7	9.6	50.4	9.6	51.9	9.7	53.3	9.8		
		31	39.5	7.6	46.9	9.8	48.3	9.9	49.0	10.0	49.7	10.0	51.1	10.1	52.6	10.2		
		33	39.5	8.1	46.1	10.2	47.5	10.3	48.3	10.3	49.0	10.4	50.4	10.5	51.8	10.6		
		35	39.5	8.6	45.4	10.5	46.8	10.7	47.5	10.7	48.2	10.8	49.7	10.9	51.1	11.0		
		37	39.5	9.2	44.7	10.9	46.1	11.0	46.8	11.1	47.5	11.2	48.9	11.3	50.4	11.4		
		39	39.5	9.8	43.9	11.3	45.4	11.4	46.1	11.5	46.8	11.5	48.2	11.7	49.6	11.8		
		120%	480.0	10	36.4	4.42	43.5	5.40	50.5	6.42	54.0	6.9	56.5	7.2	57.8	7.0	59.1	6.7
				12	36.4	4.50	43.5	5.50	50.5	6.54	54.0	7.1	55.8	7.2	57.1	6.9	58.4	6.6
14	36.4			4.58	43.5	5.60	50.5	6.7	54.0	7.2	55.0	7.2	56.3	6.9	57.7	6.9		
16	36.4			4.67	43.5	5.71	50.5	6.8	53.6	7.3	54.3	7.2	55.6	7.2	56.9	7.3		
18	36.4			4.76	43.5	5.82	50.5	7.0	52.9	7.5	53.6	7.5	54.9	7.6	56.2	7.7		
20	36.4			4.85	43.5	6.06	50.5	7.6	52.2	7.9	52.8	7.9	54.1	8.0	55.5	8.0		
21	36.4			4.90	43.5	6.27	50.5	7.8	51.8	8.0	52.5	8.1	53.8	8.2	55.1	8.2		
23	36.4			5.23	43.5	6.7	50.4	8.4	51.1	8.4	51.7	8.5	53.0	8.5	54.4	8.6		
25	36.4			5.59	43.5	7.2	49.7	8.7	50.3	8.8	51.0	8.8	52.3	8.9	53.6	9.0		
27	36.4			5.97	43.5	7.7	49.0	9.1	49.6	9.2	50.3	9.2	51.6	9.3	52.9	9.4		
29	36.4			6.37	43.5	8.2	48.2	9.5	48.9	9.5	49.5	9.6	50.9	9.7	52.2	9.8		
31	36.4			6.8	43.5	8.8	47.5	9.8	48.1	9.9	48.8	9.9	50.1	10.0	51.4	10.1		
33	36.4			7.2	43.5	9.3	46.8	10.2	47.4	10.3	48.1	10.3	49.4	10.4	50.7	10.5		
35	36.4			7.7	43.5	10.0	46.0	10.6	46.7	10.6	47.3	10.7	48.7	10.8	50.0	10.9		
37	36.4			8.2	43.5	10.6	45.3	11.0	46.0	11.0	46.6	11.1	47.9	11.2	49.2	11.3		
39	36.4			8.7	43.2	11.2	44.6	11.3	45.2	11.4	45.9	11.5	47.2	11.6	48.5	11.7		
110%	440.0			10	33.4	4.01	39.8	4.89	46.3	5.80	49.5	6.27	52.7	6.7	56.8	7.2	58.0	6.9
				12	33.4	4.08	39.8	4.98	46.3	5.91	49.5	6.39	52.7	6.9	56.1	7.1	57.3	6.9
		14	33.4	4.16	39.8	5.07	46.3	6.02	49.5	6.51	52.7	7.0	55.3	7.1	56.5	6.9		
		16	33.4	4.24	39.8	5.17	46.3	6.14	49.5	6.6	52.7	7.1	54.6	7.2	55.8	7.2		
		18	33.4	4.32	39.8	5.27	46.3	6.26	49.5	6.8	52.7	7.5	53.9	7.5	55.1	7.6		
		20	33.4	4.40	39.8	5.37	46.3	6.6	49.5	7.3	51.9	7.9	53.1	7.9	54.3	8.0		
		21	33.4	4.44	39.8	5.54	46.3	6.9	49.5	7.6	51.6	8.0	52.8	8.1	54.0	8.2		
		23	33.4	4.65	39.8	5.93	46.3	7.4	49.5	8.1	50.8	8.4	52.0	8.5	53.2	8.5		
		25	33.4	4.97	39.8	6.34	46.3	7.9	49.5	8.7	50.1	8.8	51.3	8.8	52.5	8.9		
		27	33.4	5.30	39.8	6.8	46.3	8.4	48.8	9.1	49.4	9.1	50.6	9.2	51.8	9.3		
		29	33.4	5.65	39.8	7.2	46.3	9.0	48.0	9.5	48.6	9.5	49.8	9.6	51.1	9.7		
		31	33.4	6.01	39.8	7.7	46.3	9.6	47.3	9.8	47.9	9.9	49.1	10.0	50.3	10.1		
		33	33.4	6.40	39.8	8.2	46.0	10.2	46.6	10.2	47.2	10.2	48.4	10.3	49.6	10.4		
		35	33.4	6.8	39.8	8.8	45.2	10.5	45.8	10.6	46.4	10.6	47.6	10.7	48.9	10.8		
		37	33.4	7.2	39.8	9.3	44.5	10.9	45.1	10.9	45.7	11.0	46.9	11.1	48.1	11.2		
		39	33.4	7.7	39.8	9.9	43.8	11.3	44.4	11.3	45.0	11.4	46.2	11.5	47.4	11.6		
		100%	400.0	10	30.4	3.62	36.2	4.39	42.1	5.20	45.0	5.62	47.9	6.04	53.8	6.9	56.9	7.1
				12	30.4	3.68	36.2	4.47	42.1	5.30	45.0	5.72	47.9	6.15	53.8	7.0	56.2	7.1
14	30.4			3.75	36.2	4.55	42.1	5.40	45.0	5.83	47.9	6.27	53.8	7.2	55.4	7.1		
16	30.4			3.82	36.2	4.64	42.1	5.50	45.0	5.94	47.9	6.39	53.6	7.3	54.7	7.2		
18	30.4			3.89	36.2	4.73	42.1	5.61	45.0	6.06	47.9	6.52	52.9	7.5	54.0	7.6		
20	30.4			3.96	36.2	4.82	42.1	5.78	45.0	6.37	47.9	7.0	52.1	7.9	53.2	7.9		
21	30.4			4.00	36.2	4.87	42.1	5.98	45.0	6.6	47.9	7.2	51.8	8.0	52.9	8.1		
23	30.4			4.10	36.2	5.19	42.1	6.41	45.0	7.1	47.9	7.8	51.0	8.4	52.1	8.5		
25	30.4			4.38	36.2	5.55	42.1	6.9	45.0	7.6	47.9	8.3	50.3	8.8	51.4	8.8		
27	30.4			4.67	36.2	5.92	42.1	7.3	45.0	8.1	47.9	8.9	49.6	9.1	50.7	9.2		
29	30.4			4.97	36.2	6.31	42.1	7.8	45.0	8.6	47.7	9.4	48.8	9.5	49.9	9.6		
31	30.4			5.29	36.2	6.7	42.1	8.4	45.0	9.2	47.0	9.8	48.1	9.9	49.2	10.0		
33	30.4			5.62	36.2	7.2	42.1	8.9	45.0	9.8	46.3	10.2	47.4	10.3	48.5	10.4		
35	30.4			5.98	36.2	7.6	42.1	9.5	45.0	10.5	45.5	10.5	46.6	10.6	47.7	10.7		
37	30.4			6.35	36.2	8.1	42.1	10.1	44.3	10.9	44.8	10.9	45.9	11.0	47.0	11.1		
39	30.4			6.7	36.2	8.6	42.1	10.8	43.5	11.2	44.1	11.3	45.2	11.4	46.3	11.5		

4TW31482-3

**NOTES - ANMERKUNGEN - Σημειώσεις - NOTAS - REMARQUES - NOTE - OPMERKINGEN - примечания - NOTLAR**

1 The above table shows the average value of conditions which may occur.  
 Die obige Tabelle zeigt den Durchschnittswert der Bedingungen, die auftreten können.  
 Στον παραπάνω πίνακα αναγράφεται η μέση τιμή για συνθήκες που μπορεί να προκύψουν.  
 La tabla de arriba muestra el valor medio de condiciones que pueden ocurrir.  
 Le tableau ci-dessus donne la valeur moyenne pour des conditions qui peuvent survenir.  
 La tabella in alto mostra il valore delle condizioni medie che si possono riscontrare.  
 De tabel hierboven geeft de gemiddelde waarde aan van situaties die kunnen voorvallen.  
 Таблица расположенная выше показывает среднее значение условий, которые могут наступить.  
 Yukarıdaki tablo meydana gelebilecek koşulların ortalama değerini göstermektedir.









# 4 Capacity tables

## 4 - 2 Cooling capacity tables

1  
4

### REYHQ22P

TC: Total Capacity: kW ; PI: Power Input: kW (compressor + outdoor fan motor)

Combination (%)	Capacity index	Outdoor air temp. (°CDB)	Indoor air temperature: °CDB															
			14.0		16.0		18.0		19.0		20.0		22.0		24.0			
			TC kW	PI kW	TC kW	PI kW	TC kW	PI kW	TC kW	PI kW	TC kW	PI kW	TC kW	PI kW	TC kW	PI kW		
130%	715.0	10	54.0	7.37	64.4	9.02	74.8	10.7	77.5	11.0	78.4	10.7	80.4	10.3	82.3	9.8		
		12	54.0	7.50	64.4	9.19	74.8	10.9	76.5	10.9	77.4	10.7	79.4	10.2	81.3	10.1		
		14	54.0	7.64	64.4	9.4	74.5	11.1	75.5	10.8	76.4	10.6	78.4	10.5	80.3	10.6		
		16	54.0	7.79	64.4	9.5	73.5	11.0	74.5	10.9	75.4	11.0	77.4	11.1	79.3	11.2		
		18	54.0	7.94	64.4	9.7	72.5	11.4	73.5	11.5	74.4	11.5	76.4	11.7	78.3	11.8		
		20	54.0	8.10	64.4	10.4	71.5	12.0	72.5	12.1	73.4	12.1	75.4	12.2	77.3	12.4		
		21	54.0	8.33	64.4	10.7	71.0	12.3	72.0	12.3	72.9	12.4	74.9	12.5	76.8	12.6		
		23	54.0	8.92	64.4	11.5	70.0	12.8	71.0	12.9	71.9	13.0	73.9	13.1	75.8	13.2		
		25	54.0	9.5	64.4	12.3	69.0	13.4	70.0	13.5	70.9	13.5	72.9	13.7	74.8	13.8		
		27	54.0	10.2	64.4	13.2	68.0	14.0	69.0	14.0	69.9	14.1	71.9	14.3	73.8	14.4		
		29	54.0	10.9	64.4	14.1	67.0	14.5	68.0	14.6	68.9	14.7	70.9	14.8	72.8	15.0		
		31	54.0	11.6	64.0	14.9	66.0	15.1	67.0	15.2	67.9	15.3	69.9	15.4	71.8	15.6		
		33	54.0	12.4	63.0	15.5	65.0	15.7	66.0	15.7	66.9	15.8	68.9	16.0	70.8	16.2		
		35	54.0	13.2	62.0	16.1	64.0	16.2	65.0	16.3	65.9	16.4	67.9	16.6	69.8	16.8		
		37	54.0	14.0	61.0	16.6	63.0	16.8	64.0	16.9	64.9	17.0	66.9	17.2	68.8	17.4		
		39	54.0	14.9	60.0	17.2	62.0	17.4	63.0	17.5	63.9	17.6	65.9	17.8	67.8	18.0		
		120%	660.0	10	49.8	6.73	59.4	8.22	69.0	9.8	73.8	10.6	77.2	11.0	79.0	10.6	80.8	10.2
				12	49.8	6.85	59.4	8.38	69.0	10.0	73.8	10.8	76.2	11.0	78.0	10.5	79.8	10.1
14	49.8			6.98	59.4	8.54	69.0	10.2	73.8	11.0	75.2	10.9	77.0	10.5	78.8	10.5		
16	49.8			7.11	59.4	8.70	69.0	10.4	73.3	11.1	74.2	10.9	76.0	11.0	77.8	11.1		
18	49.8			7.25	59.4	8.87	69.0	10.7	72.3	11.4	73.2	11.5	75.0	11.6	76.8	11.7		
20	49.8			7.40	59.4	9.23	69.0	11.5	71.3	12.0	72.2	12.0	74.0	12.1	75.8	12.3		
21	49.8			7.47	59.4	9.6	69.0	11.9	70.8	12.3	71.7	12.3	73.5	12.4	75.3	12.5		
23	49.8			7.98	59.4	10.2	68.9	12.8	69.8	12.8	70.7	12.9	72.5	13.0	74.3	13.1		
25	49.8			8.52	59.4	11.0	67.9	13.3	68.8	13.4	69.7	13.4	71.5	13.6	73.3	13.7		
27	49.8			9.10	59.4	11.7	66.9	13.9	67.8	13.9	68.7	14.0	70.5	14.1	72.3	14.3		
29	49.8			9.7	59.4	12.5	65.9	14.4	66.8	14.5	67.7	14.6	69.5	14.7	71.3	14.9		
31	49.8			10.3	59.4	13.4	64.9	15.0	65.8	15.1	66.7	15.2	68.5	15.3	70.3	15.5		
33	49.8			11.0	59.4	14.2	63.9	15.6	64.8	15.6	65.7	15.7	67.5	15.9	69.3	16.0		
35	49.8			11.7	59.4	15.2	62.9	16.1	63.8	16.2	64.7	16.3	66.5	16.5	68.3	16.6		
37	49.8			12.5	59.4	16.2	61.9	16.7	62.8	16.8	63.7	16.9	65.5	17.1	67.3	17.2		
39	49.8			13.3	59.1	17.1	60.9	17.3	61.8	17.4	62.7	17.5	64.5	17.7	66.3	17.8		
110%	605.0			10	45.7	6.11	54.5	7.44	63.3	8.84	67.7	9.6	72.0	10.3	77.6	10.9	79.3	10.5
				12	45.7	6.22	54.5	7.58	63.3	9.01	67.7	9.7	72.0	10.5	76.6	10.9	78.3	10.5
		14	45.7	6.34	54.5	7.73	63.3	9.18	67.7	9.9	72.0	10.7	75.6	10.8	77.3	10.5		
		16	45.7	6.45	54.5	7.87	63.3	9.4	67.7	10.1	72.0	10.9	74.6	10.9	76.3	11.0		
		18	45.7	6.58	54.5	8.03	63.3	9.5	67.7	10.4	72.0	11.4	73.6	11.5	75.3	11.6		
		20	45.7	6.70	54.5	8.19	63.3	10.1	67.7	11.2	71.0	12.0	72.6	12.1	74.3	12.2		
		21	45.7	6.77	54.5	8.44	63.3	10.5	67.7	11.6	70.5	12.2	72.1	12.3	73.8	12.4		
		23	45.7	7.09	54.5	9.04	63.3	11.2	67.7	12.4	69.5	12.8	71.1	12.9	72.8	13.0		
		25	45.7	7.57	54.5	9.7	63.3	12.0	67.7	13.3	68.5	13.4	70.1	13.5	71.8	13.6		
		27	45.7	8.07	54.5	10.3	63.3	12.9	66.7	13.9	67.5	13.9	69.1	14.0	70.8	14.2		
		29	45.7	8.60	54.5	11.0	63.3	13.7	65.7	14.4	66.5	14.5	68.1	14.6	69.8	14.7		
		31	45.7	9.16	54.5	11.8	63.3	14.7	64.7	15.0	65.5	15.0	67.1	15.2	68.8	15.3		
		33	45.7	9.8	54.5	12.5	62.8	15.5	63.7	15.5	64.5	15.6	66.1	15.8	67.8	15.9		
		35	45.7	10.4	54.5	13.3	61.8	16.0	62.7	16.1	63.5	16.2	65.1	16.3	66.8	16.5		
		37	45.7	11.0	54.5	14.2	60.8	16.6	61.7	16.7	62.5	16.8	64.1	16.9	65.8	17.1		
		39	45.7	11.7	54.5	15.1	59.8	17.2	60.7	17.3	61.5	17.3	63.1	17.5	64.8	17.7		
		100%	550.0	10	41.5	5.51	49.5	6.69	57.5	7.92	61.5	8.56	65.5	9.20	73.5	10.5	77.7	10.9
				12	41.5	5.61	49.5	6.81	57.5	8.07	61.5	8.72	65.5	9.4	73.5	10.7	76.7	10.8
14	41.5			5.71	49.5	6.93	57.5	8.22	61.5	8.89	65.5	9.6	73.5	10.9	75.7	10.8		
16	41.5			5.81	49.5	7.07	57.5	8.38	61.5	9.06	65.5	9.7	73.2	11.1	74.7	10.9		
18	41.5			5.92	49.5	7.20	57.5	8.55	61.5	9.24	65.5	9.9	72.2	11.4	73.7	11.5		
20	41.5			6.03	49.5	7.34	57.5	8.81	61.5	9.7	65.5	10.6	71.2	12.0	72.7	12.1		
21	41.5			6.09	49.5	7.42	57.5	9.12	61.5	10.1	65.5	11.0	70.7	12.3	72.2	12.4		
23	41.5			6.25	49.5	7.91	57.5	9.8	61.5	10.8	65.5	11.8	69.7	12.8	71.2	12.9		
25	41.5			6.67	49.5	8.45	57.5	10.4	61.5	11.5	65.5	12.7	68.7	13.4	70.2	13.5		
27	41.5			7.11	49.5	9.02	57.5	11.2	61.5	12.3	65.5	13.5	67.7	13.9	69.2	14.1		
29	41.5			7.57	49.5	9.6	57.5	11.9	61.5	13.2	65.3	14.4	66.7	14.5	68.2	14.6		
31	41.5			8.06	49.5	10.3	57.5	12.7	61.5	14.1	64.3	14.9	65.7	15.1	67.2	15.2		
33	41.5			8.57	49.5	10.9	57.5	13.6	61.5	15.0	63.2	15.5	64.7	15.6	66.2	15.8		
35	41.5			9.11	49.5	11.6	57.5	14.5	61.5	16.0	62.2	16.1	63.7	16.2	65.2	16.4		
37	41.5			9.7	49.5	12.4	57.5	15.4	60.5	16.6	61.2	16.6	62.7	16.8	64.2	16.9		
39	41.5			10.3	49.5	13.2	57.5	16.4	59.5	17.1	60.2	17.2	61.7	17.4	63.2	17.5		

4TW31482-3

#### NOTES - ANMERKUNGEN - Σημειώσεις - NOTAS - REMARQUES - NOTE - OPMERKINGEN - примечания - NOTLAR

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*La tabella in alto mostra il valore delle condizioni medie che si possono riscontrare.*  
 De tabel hierboven geeft de gemiddelde waarde aan van situaties die kunnen voorvallen.  
*Таблица расположенная выше показывает среднее значение условий, которые могут наступить.*  
 Yukarıdaki tablo meydana gelebilecek koşulların ortalama değerini göstermektedir.











# 4 Capacity tables

## 4 - 3 Heating capacity tables

REYHQ16P

TC: Total Capacity: kW ; PI: Power Input: kW (compressor + outdoor fan motor)

Combination (%)	Capacity index	Outdoor air temp.		Indoor air temperature: °CDB																			
				16.0		18.0		20.0		21.0		22.0		24.0									
				TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI								
		°CDB	°CWB	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW									
90%	360.0	-19.8	-20.0	30.1	10.07	30.0	10.47	29.9	10.86	29.9	11.1	29.8	11.3	29.7	11.8	11.7							
		80%	320.0	-19.8	-20.0	29.9	10.85	29.8	11.2	29.8	11.6	29.7	11.7	29.7	11.9	29.6	12.3						
				70%	280.0	-19.8	-20.0	29.7	11.6	29.7	11.9	29.6	12.2	29.6	12.4	29.6	12.6	29.5	12.9				
						60%	240.0	-19.8	-20.0	29.6	12.4	29.5	12.7	29.5	12.9	29.0	12.8	28.1	12.3	26.1	11.3		
								50%	200.0	-19.8	-20.0	28.2	12.3	26.6	11.5	25.0	10.7	24.2	10.3	23.4	9.9	21.8	9.1

4TW31482-4











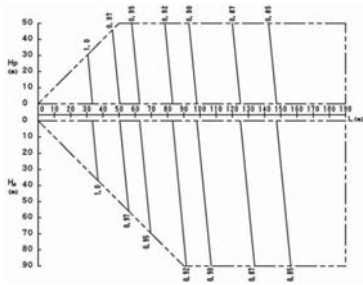


# 4 Capacity tables

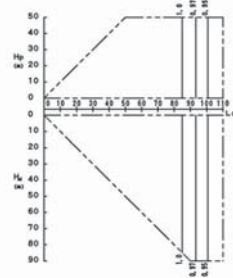
## 4 - 4 Capacity correction factor

### REYHQ16P

• Rate of change in cooling capacity



• Rate of change in heating capacity



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### NOTES

- These figures illustrate the rate of change in capacity of a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions. Moreover, under partial load conditions there is only a minor deviation from the rate of change in capacity shown in the above figures. With this outdoor unit, evaporating pressure constant control when cooling, and condensing pressure constant control when heating is carried out.
- Method of calculating A/C (cooling / heating) capacity:  
The maximum A/C capacity of the system will be either the total A/C capacity of the indoor units obtained from capacity characteristic table or the maximum A/C capacity of outdoor units as mentioned below, whichever smaller.

#### Calculating A/C capacity of outdoor units

- Condition: Indoor unit combination ratio does not exceed 100%

$$\text{Maximum A./C capacity of outdoor units} = \text{A/C capacity of outdoor units obtained from performance characteristics table at the 100\% combination} \times \text{capacity change rate due to piping length to the farthest indoor unit}$$

- Condition: Indoor unit combination ratio exceeds 100%

$$\text{Maximum A./C capacity of outdoor units} = \text{A/C capacity of outdoor units obtained from capacity characteristics table at the combination} \times \text{capacity change rate due to piping length to the farthest indoor unit}$$

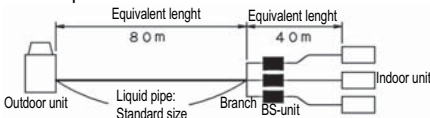
- When overall equivalent pipe length is 90m or more, the diameter of the main liquid pipes (outdoor unit-branch sections) must be increased. When level difference is 50m or more, the diameter of the main gas and liquid pipes (outdoor unit-brach sections) must be increased. [Diameter of above case]

Model	Liquid
REYQ16P9Y1B	Ø15.9

\*If available on the site, use this size. Otherwise, not increased.

- When the main sections of the interunit liquid pipe diameters are increased the overall equivalent length should be calculated as follows. (Heating only)  
**Overall equivalent length = Equivalent length to main pipe x Correction factor + Equivalent length after branching**  
Choose a correction factor from the following table.

Example in case of REYQ18PY1



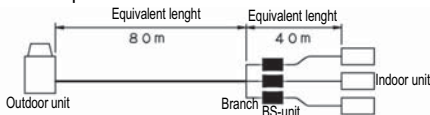
In the above case (Heating)

$$\text{Overall equivalent length} = 80\text{m} \times 0.3 + 40\text{m} = 64\text{m}$$

The correction factor in capacity when  $H_p=0\text{m}$  is thus approximately 1.0

- In combination which does not include cooling only indoor unit. Calculate the equivalent length pipe by the following when you calculate cooling capacity  
**Overall equivalent length = Equivalent length to main pipe x 0.5 + Equivalent length after branching**

Example



In the above case (Cooling)

$$\text{Overall equivalent length} = 80\text{m} \times 0.5 + 40\text{m} = 80\text{m}$$

The correction factor in capacity when  $H_p=0\text{m}$  is thus approximately 0.88

### EXPLANATION OF SYMBOLS

- $H_p$  : Level difference (m) between indoor and outdoor units where indoor unit in inferior position
- $H_M$  : Level difference (m) between indoor and outdoor units where indoor unit in superior position
- $L$  : Equivalent pipe length (m)
- $\alpha$  : Rate of change in cooling / heating capacity

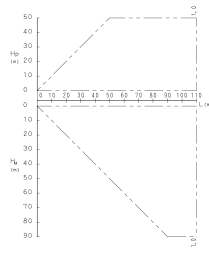
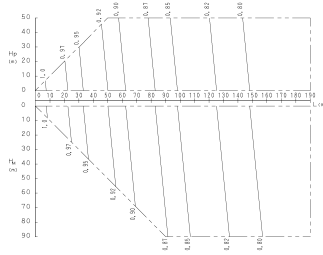
[Diameter of pipe (standard size)]

Model	Liquid
REYQ16P9Y1B	Ø12.7



# 4 Capacity tables

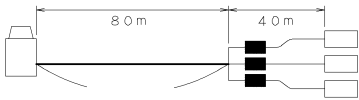
## 4 - 4 Capacity correction factor



- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

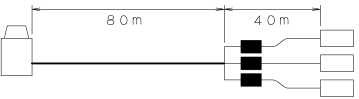
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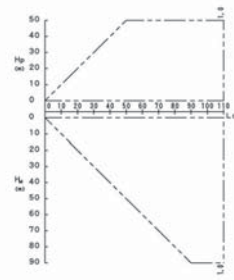
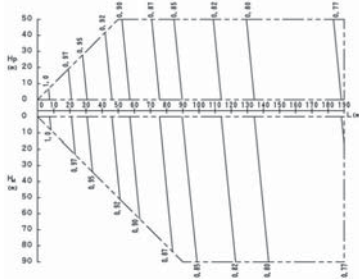
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# 4 Capacity tables

## 4 - 4 Capacity correction factor

### REYHQ22P

- Rate of change in cooling capacity
- Rate of change in heating capacity



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### NOTES

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- With this outdoor unit, evaporating pressure constant control when cooling, and condensing pressure constant control when heating is carried out.
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$$\text{Maximum A./C capacity of outdoor units} = \text{A/C capacity of outdoor units obtained from capacity characteristics table at the combination} \times \text{capacity change rate due to piping length to the farthest indoor unit}$$

- When overall equivalent pipe length is 90m or more, the diameter of the main liquid pipes (outdoor unit-branch sections) must be increased. When level difference is 50m or more, the diameter of the main gas and liquid pipes (outdoor unit-branch sections) must be increased.

[Diameter of above case]

Model	Liquid
REYQ8P9Y1B	Ø12.7
REYQ22P8Y1B	Ø19.1

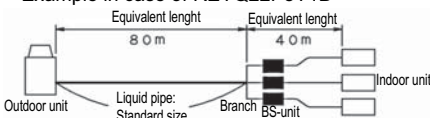
\*If available on the site, use this size. Otherwise, not increased.

- When the main sections of the interunit liquid pipe diameters are increased the overall equivalent length should be calculated as follows. (Heating only)  

$$\text{Overall equivalent length} = \text{Equivalent length to main pipe} \times \text{Correction factor} + \text{Equivalent length after branching}$$
 Choose a correction factor from the following table.

Model	Correction factor
REYQ8P9Y1B	0.2
REYQ22P8Y1B	0.4

Example in case of REYQ22P8Y1B



In the above case (Heating)

Overall equivalent length = 80m x 0.3 + 40m = 64m

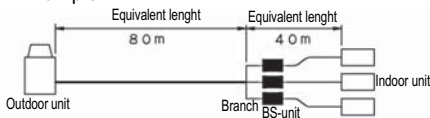
The correction factor in capacity when Hp=0m is thus approximately 1.0

- In combination which does not include cooling only indoor unit.

Calculate the equivalent length pipe by the following when you calculate cooling capacity

Overall equivalent length = Equivalent length to main pipe x 0.5 + Equivalent length after branching

Example



In the above case (Cooling)

Overall equivalent length = 80m x 0.5 + 40m = 80m

The correction factor in capacity when Hp=0m is thus approximately 0.88

### EXPLANATION OF SYMBOLS

- $H_p$  : Level difference (m) between indoor and outdoor units where indoor unit in inferior position
- $H_M$  : Level difference (m) between indoor and outdoor units where indoor unit in superior position
- $L$  : Equivalent pipe length (m)
- $\alpha$  : Rate of change in cooling / heating capacity

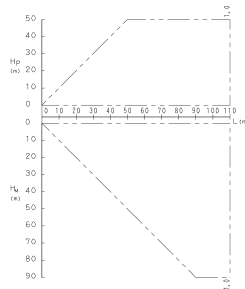
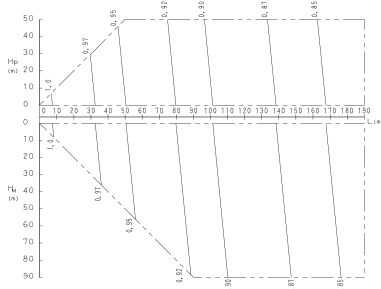
[Diameter of pipe (standard size)]

Model	Liquid
REYQ8P9Y1B	Ø9.5
REYQ22P8Y1B	Ø15.9

# 4 Capacity tables

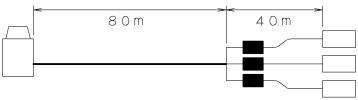
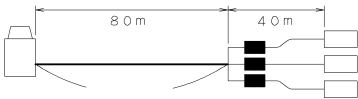
## 4 - 4 Capacity correction factor

H



- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

H	B	J
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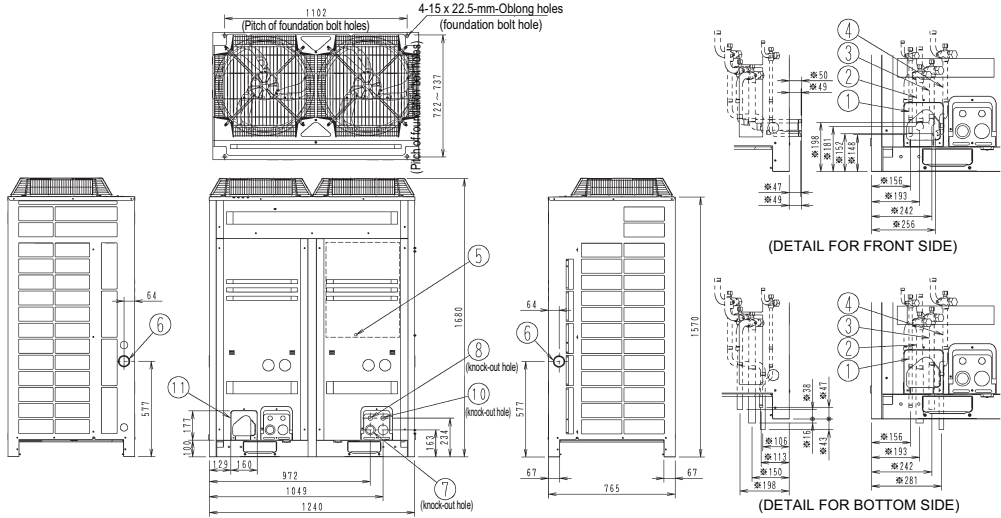
H	B	J
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# 5 Dimensional drawing & centre of gravity

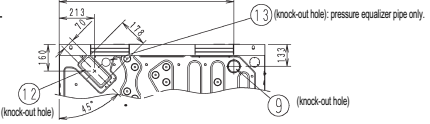
## 5 - 1 Dimensional drawing

REMHQ12P8

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- NOTES**
- 1 For piping connection method (front and bottom sides) see the installation manual.
  - 2 Piping connection diameter for field connection.
  - 3 ✱ shows the dimensions after fixing the accessory pipes.



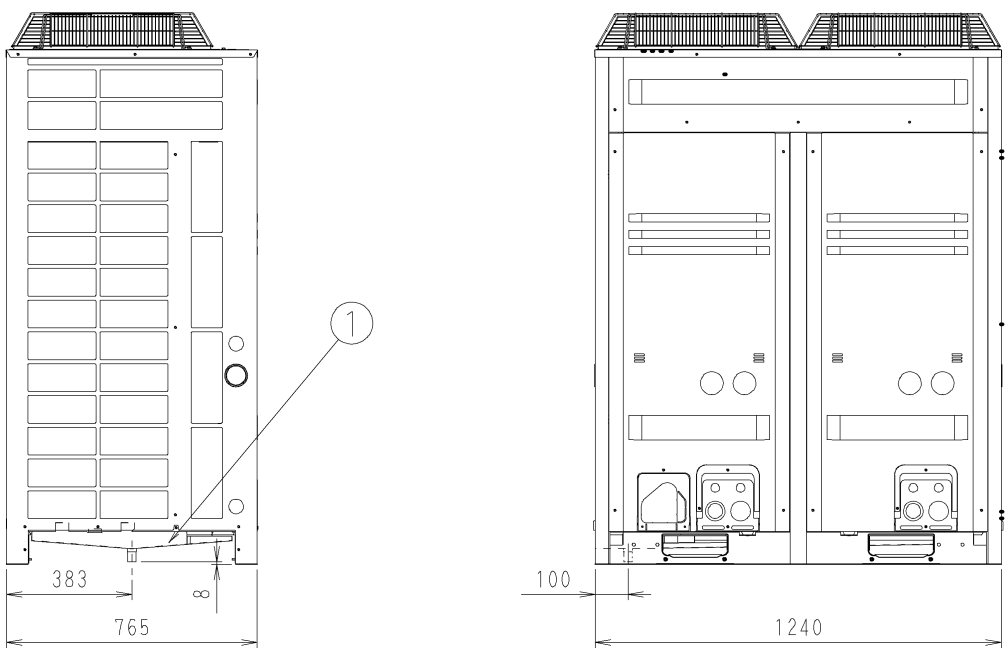
No.	Parts name	Remarks
4	Pressure equalizer pipe connection port.	∅ 19.1 Brazing connection. See note 2
5	Grounding terminal	inside of switch box (M8)
6	Power cord routing hole (side)	∅ 62
7	Power cord routing hole (front)	∅ 45
8	Power cord routing hole (front)	∅ 27
9	Power cord routing hole (bottom)	∅ 65.5
10	Wire routing hole (front)	∅ 27
11	Pipe routing hole (front)	See note 1.
12	Pipe routing hole (bottom)	See note 1.
13	Pipe routing hole (bottom)	∅ 50 See note 1.

No.	Parts name	Remarks
1	Liquid pipe connection port.	∅ 12.7 Brazing connection. See note 2
2	Suction gas pipe connection port.	∅ 28.6 Brazing connection. See note 2
3	High and low pressure gas pipe connection port	∅ 22.2 Brazing connection. See note 3

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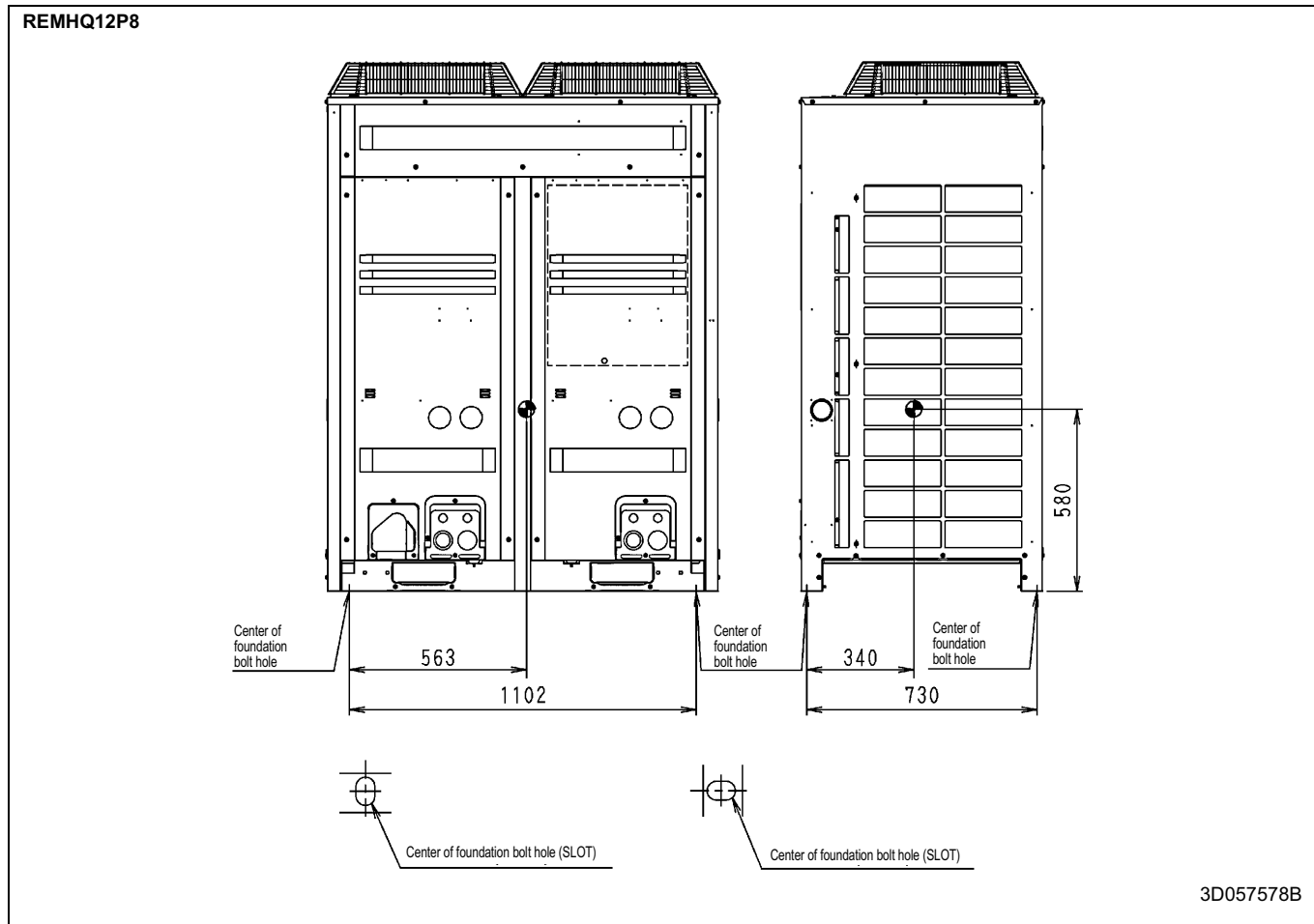
H 2P8



G

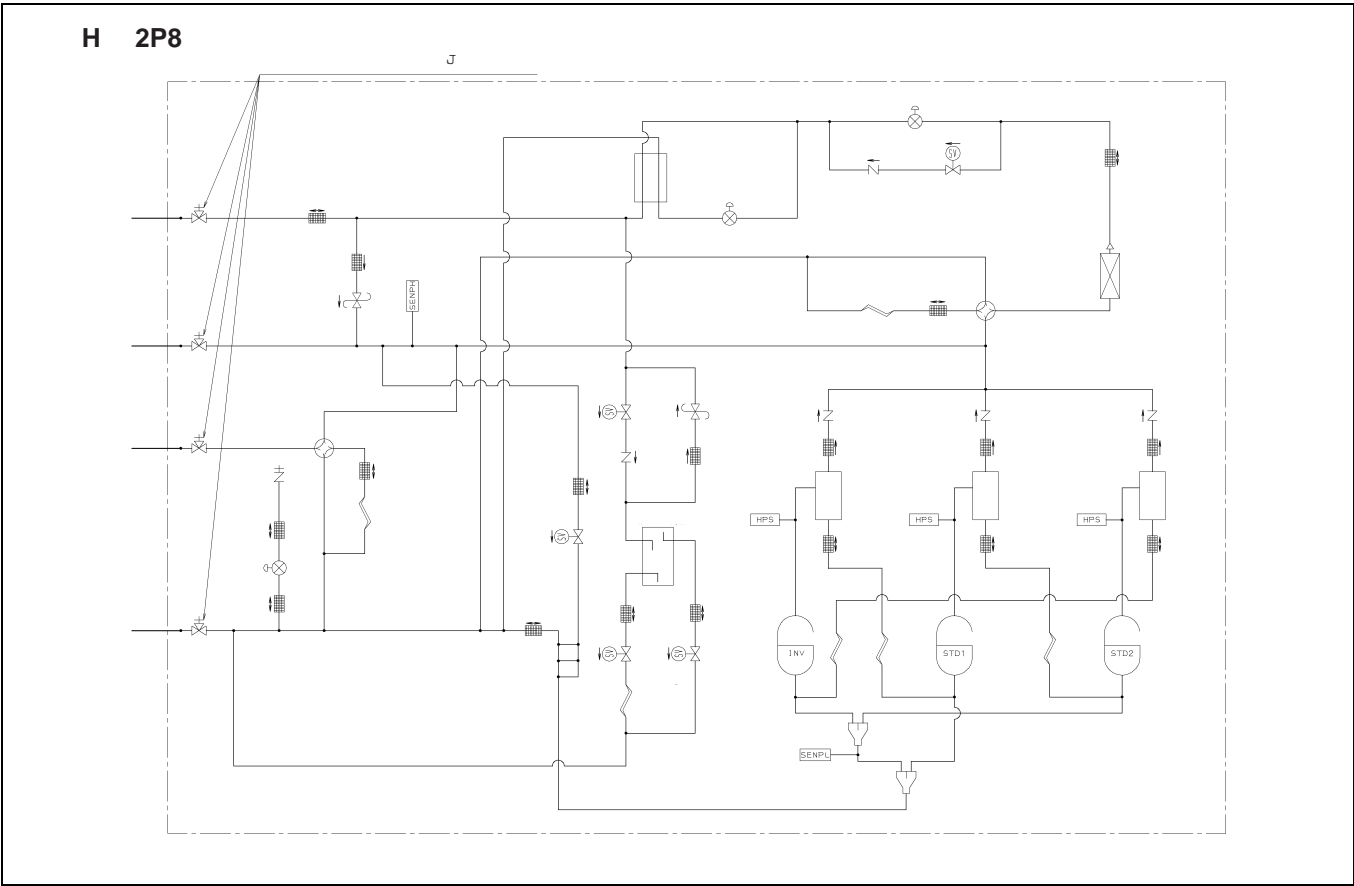
## 5 Dimensional drawing & centre of gravity

### 5 - 2 Centre of gravity



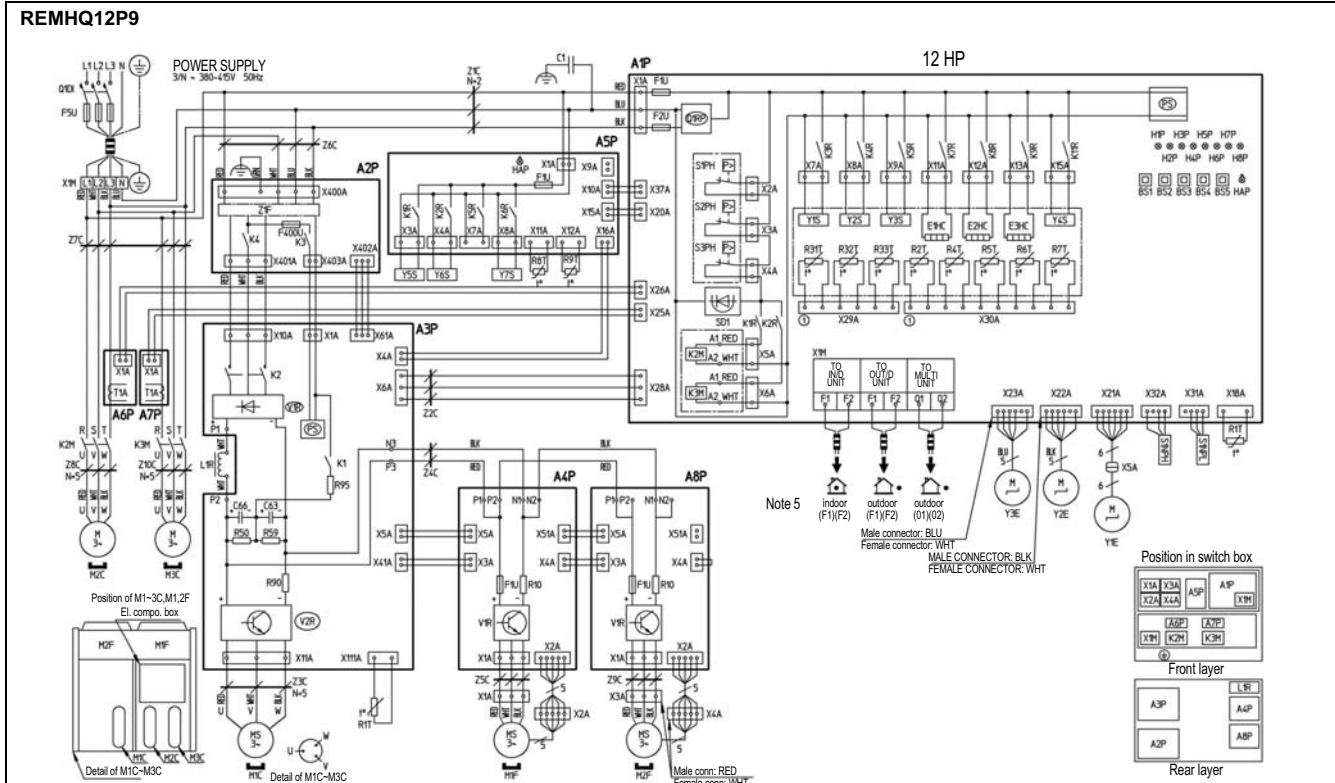
# 6 Piping diagram

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6



# 7 Wiring diagram

## 7 - 1 Wiring diagram



Indoor unit		Magnetic relay		V1R	Diode bridge (A3P)	Power module (A4P,A8P)
A1P~A8P	A1P: Main A2P: Noise filter A3P: Inverter	A4P,A8P: Fan A5P: Sub A6P,A7P: Current sensor	K1R: K2M (A1P) K2R: K3M (A1P) K3R: Y1S (A1P) K5R: Y3S (A1P) K6R: Y7S (A5P) K8R: E2HC (A1P) K11R: Y4S (A1P)	K1R: Y5S (A5P) K2R: Y6S (A5P) K4R: Y2S (A1P) K5R: (for option) (A5P) K7R: E1HC (A1P) K9R: E3HC (A1P)	V2R X1A~X4A X5A	Power module (A3P) Connector (M1F, M2F) Connector (Y1E)
BS1~BS5	Push button switch (Mode, Set, Return, Test, Reset)			X1M	Terminal strip (Power supply) Terminal strip (Control) (A1P)	
C1, C63, C66	Capacitor			X1M	Electronic expansion valve (Main)	
E1HC-E3HC	Crankcase heater			Y2E	Electronic expansion valve (Charge)	
F1U, F2U	Fuse (T, 3.15A, 250V) (A1P)	Q1RP	Reverse phase detection circuit	Y3E	Electronic expansion valve (Subcool)	
F1U	Fuse (T, 3.15A, 250V) (A5P)	R10	Resistor (current sensor) (A4P,A8P)		Solenoid valve	
F1U	Fuse (8A, DC650V) (A4P,A8P)	R50, R59	Resistor		Y1S: RMTG Y2S: 4 way valve (pipe)	
F5U	Field fuse	R90	Resistor (current sensor)		Y3S: 4 way valve (H/E Gas)	
F400U	Fuse (T, 63A, 250V) (A2P)	R95	Resistor (current limiting)	Y1S~Y3S	Y4S: RMTL Y5S: Hots gas Y6S: EV bypass Y7S: RMT0	
H1P~H8P	Pilotlamp (service monitor -orange) [H2P] Prepare, Test - - - - - Flickering Malfunction detection - - - - - Light up		Thermistor	Z1C~Z10C	Noise filter (ferrite core)	
HAP	Pilotlamp (service monitor - orange)		R1T: Air (A1P) R1T: Fin (A3P) R2T: H/E Gas R31T: M1C Discharge R32T: M2C Discharge R33T: M3C Discharge	Z1F	Noise filter (with surge absorber)	
K1~K4	K1: Magnetic relay K2: Magnetic contactor (M1C) K3: Magnetic relay K4: Magnetic contactor (M1C)	R1T~R9T R31T~R33T	R4T: H/E Deicer R5T: Sub cool H/E gas R6T: Sub cool H/E liq R7T: H/E Liquid R8T: Suction R9T: Liquid		Connector for optional parts	
K2M, K3M	Magnetic contactor (M2C, M3C)			X7A	Operation output (A5P)	
L1R	Reactor	S1NPH	Pressure sensor (High)	X9A	Power supply (ADAPTER) (A5P)	
M1C-M3C	Motor (Compressor)	S1NPL	Pressure sensor (Low)			
M1F, M2F	Motor (Fan)	S1PH~S3PH	Pressure switch (High)			
PS	Switching power supply (A1P, A3P)	SD1	Safety devices input			
Q1DI	Earth leakage breaker	T1A	Current sensor (A6P, A7P)			

- □ □ □ : Terminal
  - |—|—| : Field wiring
  - ○ □ : Connector
  - : Terminal
  - ⊕ : Protective earth (screw)
- Colors: BLK: Black, RED: Red, YLW: Yellow, WHT: White, PNK: Pink, BRN: Brown, GRY: Grey, GRN: Green, ORG: Orange, BLU: Blue

2TW29146-1A

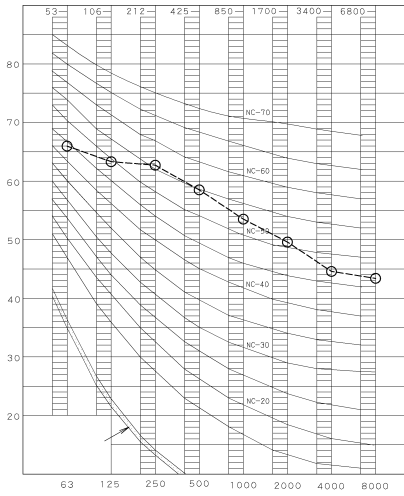
### NOTES

- When using the option adaptor, refer to the installation manual
- Refer to the installation manual, for connection wiring to indoor-outdoor transmission F1 - F2, outdoor transmission F1 - F2, outdoor-multi transmission Q1 - Q2 and on how to use BS1~BS5 and DS1, DS2 switch.
- Do not operate the unit by short-circuiting protection device S1PH~S3PH

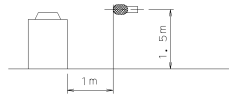
# 8 Sound data

## 8 - 1 Sound pressure spectrum

H 2P8




:



REYHQ-P

Sound power and pressure high cop (cooling)

UNIT	Sound Power	Sound Pressure
	[dB]	[dB]
REYHQ1P	82	82
REYHQ2P	85	84
REYHQ3P	85	84
REYHQ4P	87	86

4TW31487-5

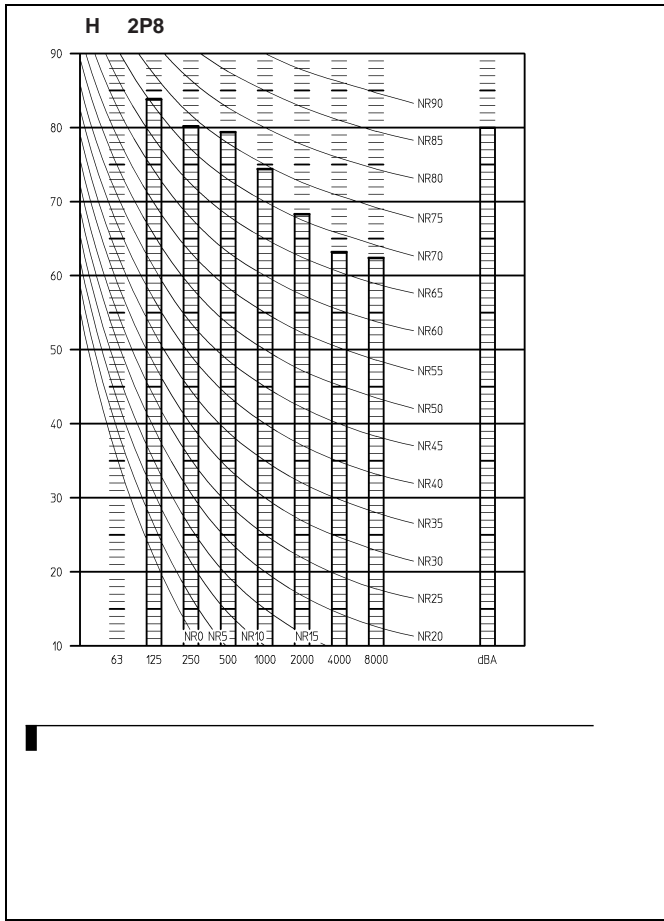
**NOTE**

- 1 Sound power level is an absolute value that a sound source generates.
- 2 Sound pressure level is a relative value, depending on the distance and acoustic environment. For more details, please refer to sound level drawings.
- 3 Mentioned values are theoretical values based on sound results of individually installed units. Possible deviations for sound values due to variety of installation patterns are not taken into account.



# 8 Sound data

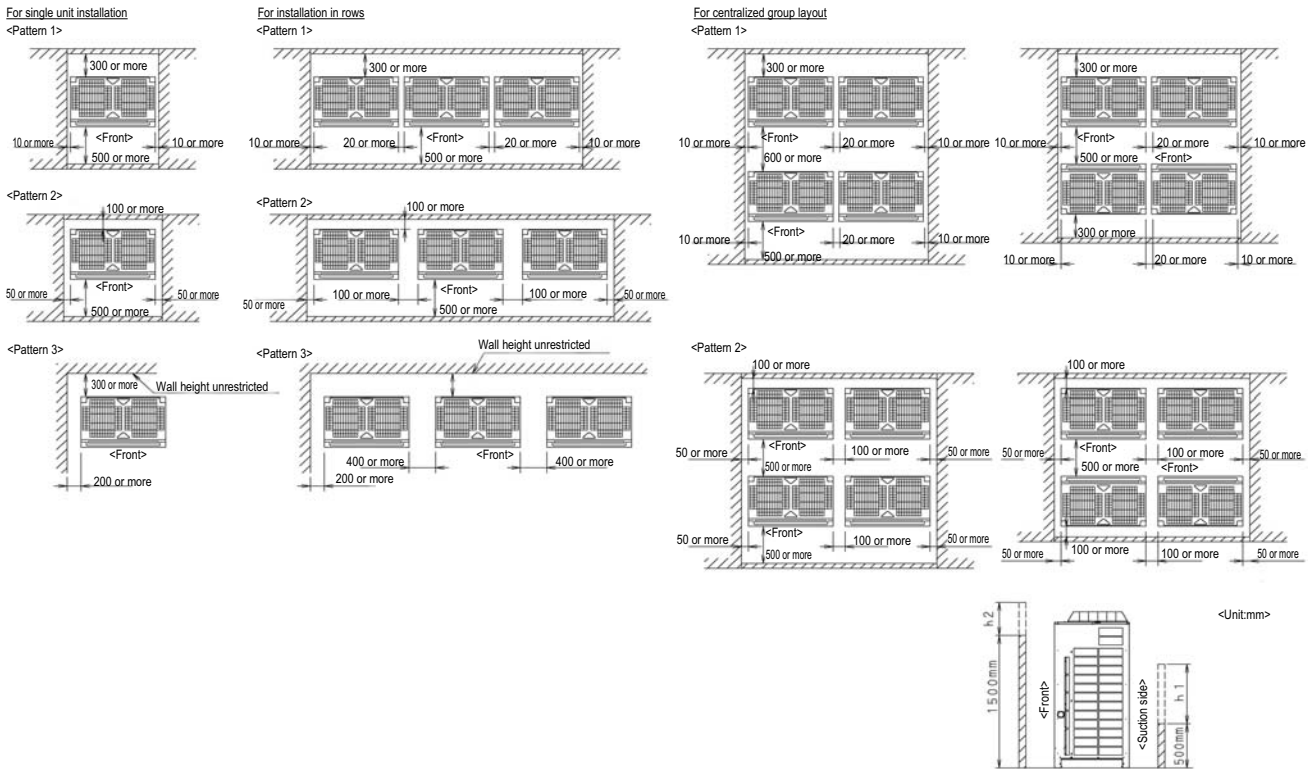
## 8 - 2 Sound power spectrum



# 9 Installation

## 9 - 1 Service space

### REYHQ12P8



3D051451M

### NOTES

- Height of walls in case of Patterns 1 and 2  
Front: 1500mm  
Suction side: 500mm  
Side: Height unrestricted.  
Installation space to be shown in this drawing is based on the cooling operation at 35 degrees outdoor air temperature. when the design outdoor air temperature exceeds 35 degrees or the load exceeds maximum ability because of much generation load of heat in all outdoor unit, take the suction side space more broadly than the space to be shown in this drawing.
- If the above wall heights are exceeded then  $h_2/2$  and  $h_1/2$  should be added to the front and suction side service spaces respectively as shown in the figure on the right.
- When installing the units most appropriate pattern should be selected from those shown above in order to obtain the best fit in the space available always bearing in mind the need to leave enough space for a person to pass between units and wall and for the air circulate freely. (If more units are to be installed than are catered for in the above patterns your layout should take account of the possibility of short circuits.)
- The units should be installed to leave insufficient space at the front for the on site refrigerant piping work to be carried out comfortably.

# 9 Installation

## 9 - 2 Fixation and foundation of units

**REMHQ12P8**

The drawing includes a top view of the unit with dimensions: overall width 929, overall height 729, and a 100mm offset from the left edge. It shows four mounting feet with a 60-degree angle and a diameter of 100mm. Dimensions A and B are indicated for the unit's footprint. A drain ditch is shown around the unit, with a note to smooth down the grade at a ratio of about 1/50. A Y-ditch is also shown, with a note that it is not required for 5HP models.

**Foundation bolt executing method:** Shows a cross-section of the unit's frame being secured to a concrete foundation. A foundation bolt (type JA, size M12) is used, secured with a nut and spring washer. The bolt must have 3 thread ridges or more. Four bolts are required per unit.

**When installing multiple units in connection:** Shows a side view of two units connected, with dimensions 160mm between units and A between the centerlines of the units.

**X - X cross section:** Shows the unit's base on a floor. It details the foundation construction for two cases: 'When building a foundation on the ground' and 'When building a foundation on the concrete floor'. Dimensions include 50mm for the base height and 100mm for the foundation width. A drain ditch is shown around the base.

Model	A	B
REMHQ12P8	1102	1302

**NOTES**

- 1 The proportions of cement:sand:gravel for the concrete shall be 1:2:4, and the reinforcement bars that their diameter are 10mm, (Approx. 300mm intervals) shall be placed.
- 2 The surface shall be finished with mortar. The corner edges shall be chamfered.
- 3 When the foundation is built on a concrete floor, rubble is not necessary. However, the surface of the section on which the foundation is built shall have rough finish.
- 4 A drain ditch shall be made around the foundation to thoroughly drain water from the equipment installation area.
- 5 When installing the equipment on a roof, the floor strength shall be checked, and water-proofing measures shall be taken.
- 6 Y ditch is not necessary for 5HP models.

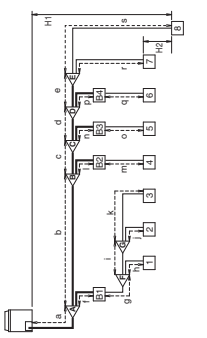
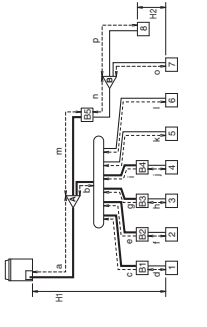
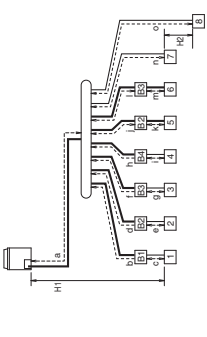
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# 9 Installation

## 9 - 3 Refrigerant pipe selection

REYQ18-48P819  
REYHQ-P

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Branch with refnet joint	Branch with refnet joint and refnet header	Branch with refnet header																																		
<p><b>Example of connection</b> (Connection of 8 indoor units)</p> <p>Use the outdoor unit multi connection piping kit that is sold separately as an option (BHFQ23P907+1357) for the multi installation of outdoor units. Selection method is as shown in the right table.</p>  <p>Install the joint part (◀ part in the figure) of the outdoor unit multi connection piping kit horizontally with attention to the installation restrictions described in "connecting the refrigerant piping". (* In case of multi combination, interpret the word "outdoor" as "first outdoor branch".</p>																																				
<p><b>Maximum allowable length</b></p> <p>Between outdoor and indoor units</p> <p>Between the first outdoor unit multi connection piping kit and outdoor unit (in case of a multiple outdoor unit system)</p>	<p>Pipe length between outdoor(*) and indoor units ≤ 165 m [Example] unit 6: a+b+1 ≤ 165 m, unit 8: a+m+n+p ≤ 165 m</p> <p>Equivalent pipe length between outdoor(*) and indoor units ≤ 190 m (Assume equivalent pipe length of the refnet joint to be 0.5 m, of the refnet header to be 1.0 m, of the BSVQ100 and BSVQ160 to be 4 m and of the BSVQ250 to be 6 m (for calculation purposes)).(See note 1)</p> <p>Total piping length from outdoor(*) to all indoor units ≤ 1000 m</p>	<p>Outdoor unit side (3 pipes) Indoor unit side (2 pipes)</p> <p>Outdoor unit side (3 pipes) Indoor unit side (2 pipes)</p>																																		
<p><b>Allowable height difference</b></p> <p>Between outdoor and indoor units</p> <p>Between indoor and indoor units</p> <p>Between outdoor and outdoor units</p>	<p>Difference in height between outdoor and indoor units (H1) ≤ 50 m (≤ 40 m if outdoor unit is located in a lower position).</p> <p>Difference in height between adjacent indoor units (H2) ≤ 15 m</p> <p>Difference in height between adjacent outdoor units (H3) ≤ 5 m</p>	<p>[Example] unit 8: a+o ≤ 165 m</p>																																		
<p><b>Allowable length after the branch</b></p> <p>Outdoor unit multi connection piping kit and refrigerant branch kit selection</p> <p>Refrigerant branch kits can only be used with R410A.</p>	<p>Actual pipe length</p> <p>When using refnet joints at the first branch counted from the outdoor unit side, choose from the following table in accordance with the capacity of the outdoor unit (example: refnet joint A).</p> <table border="1" data-bbox="997 1433 1141 1601"> <thead> <tr> <th>Outdoor unit capacity type (Hp)</th> <th>Refrigerant branch kit name</th> </tr> </thead> <tbody> <tr> <td>8+10</td> <td>KHRQ23M29T</td> </tr> <tr> <td>12-22</td> <td>KHRQ23M64T</td> </tr> <tr> <td>≥ 24</td> <td>KHRQ23M75T</td> </tr> </tbody> </table> <p>For refnet joints other than the first branch, select the proper branch kit model based on the total capacity index of all indoor units connected after the refrigerant branch.</p> <table border="1" data-bbox="1189 1433 1348 1601"> <thead> <tr> <th>Indoor capacity type</th> <th>Refrigerant branch kit name</th> </tr> </thead> <tbody> <tr> <td>&lt; 200</td> <td>KHRQ23M20T</td> </tr> <tr> <td>200 ≤ x &lt; 290</td> <td>KHRQ23M29T</td> </tr> <tr> <td>290 ≤ x &lt; 640</td> <td>KHRQ23M64T</td> </tr> <tr> <td>≥ 640</td> <td>KHRQ23M75T</td> </tr> </tbody> </table>	Outdoor unit capacity type (Hp)	Refrigerant branch kit name	8+10	KHRQ23M29T	12-22	KHRQ23M64T	≥ 24	KHRQ23M75T	Indoor capacity type	Refrigerant branch kit name	< 200	KHRQ23M20T	200 ≤ x < 290	KHRQ23M29T	290 ≤ x < 640	KHRQ23M64T	≥ 640	KHRQ23M75T	<p>How to select the refnet header</p> <p>Choose from the following table in accordance with the total capacity of all the indoor units connected below the refnet header.</p> <p>Note: 250 type indoor unit can not be connected lower than the refnet header/branch pipe.</p> <table border="1" data-bbox="997 1601 1141 1892"> <thead> <tr> <th>Indoor capacity type</th> <th>Refrigerant branch kit name</th> </tr> </thead> <tbody> <tr> <td>&lt; 200</td> <td>KHRQ23M29H</td> </tr> <tr> <td>200 ≤ x &lt; 290</td> <td>KHRQ23M29H</td> </tr> <tr> <td>290 ≤ x &lt; 640</td> <td>KHRQ23M64H</td> </tr> <tr> <td>≥ 640</td> <td>KHRQ23M75H</td> </tr> </tbody> </table> <p>How to choose an outdoor multi connection piping kit (this is required when the system is a multiple outdoor unit system)</p> <p>Choose from the following table in accordance with the number of outdoor units</p> <table border="1" data-bbox="1189 1601 1348 1892"> <thead> <tr> <th>Number of outdoor units</th> <th>Branch kit name</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>BHFQ23P907</td> </tr> <tr> <td>3</td> <td>BHFQ23P1357</td> </tr> </tbody> </table>	Indoor capacity type	Refrigerant branch kit name	< 200	KHRQ23M29H	200 ≤ x < 290	KHRQ23M29H	290 ≤ x < 640	KHRQ23M64H	≥ 640	KHRQ23M75H	Number of outdoor units	Branch kit name	2	BHFQ23P907	3	BHFQ23P1357
Outdoor unit capacity type (Hp)	Refrigerant branch kit name																																			
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Number of outdoor units	Branch kit name																																			
2	BHFQ23P907																																			
3	BHFQ23P1357																																			
<p><b>Example of downstream indoor units</b></p>	<p>[Example] in case of refnet joint C: indoor units 5+6+7+8</p>	<p>[Example] in case of refnet joint B: indoor units 7+8, in case of refnet header: indoor units 1+2+3+4+5+6+7+8</p>																																		

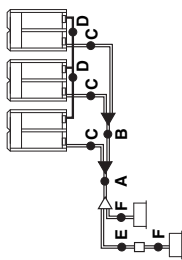
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# 9 Installation

## 9 - 3 Refrigerant pipe selection

REYQ18-48P819  
REYHQ-P

**Pipe size selection**  
For an outdoor unit multi installation (REYQ18-48 + REYHQ16-24), select the pipe size in accordance with the following figure.



**A. Piping between outdoor unit and refrigerant branch kit**  
**B. Piping between outdoor unit multi connection piping units**  
Choose from the following table in accordance with the outdoor unit total capacity type, connected downstream.

Outdoor unit capacity type (Hp)	Piping outer diameter size (mm)		
	Suction gas pipe	HPLP gas pipe	Liquid pipe
8	19.1	15.9	9.5
10	22.2	19.1	9.5
12	28.6	19.1	12.7
14+16	28.6	22.2	12.7
18	28.6	22.2	15.9
20+22	28.6	28.6	15.9
24	34.9	28.6	15.9
26-34	34.9	28.6	19.1
36	41.3	28.6	19.1
38-48	41.3	34.9	19.1

**C. Piping between outdoor unit multi connection piping kit and outdoor unit**  
Choose from the following table in accordance with the capacity type of the connected outdoor unit.

Outdoor unit capacity type (Hp)	Piping outer diameter size (mm)		
	Suction gas pipe	HPLP gas pipe	Liquid pipe
8+10	22.2	19.1	9.5
12	28.6	19.1	12.7
14+16	28.6	22.2	12.7

**How to calculate the additional refrigerant to be charged**  
Additional refrigerant to be charged R (kg)  
R should be rounded off in units of 0.1 kg

The refrigerant charge of the system must be less than 100 kg. This means that in case the calculated refrigerant charge is equal to or more than 95 kg you must divide your multiple outdoor system into smaller independent systems, each containing less than 95 kg refrigerant charge.  
For factory charge, refer to the unit name plate.

**R** =  $\frac{[(X1 \times 0.222) \times 0.37] + [(X2 \times 0.191) \times 0.26] + [(X3 \times 0.159) \times 0.18] + [(X4 \times 0.127) \times 0.12] + [(X5 \times 0.95) \times 0.059] + [(X6 \times 0.64) \times 0.022]}{1.02} + A + B$

**X1..6** = Total length (m) of liquid piping size at Øa  
**A** = Weight according to table A  
**B** = Weight according to table B in function of indoor unit connection ratio

REYQ	A
18-20 Hp	1.0 kg
22-24 Hp	1.5 kg
26 Hp	2.0 kg
28-30 Hp	2.5 kg
32-40 Hp	3.0 kg
42 Hp	3.5 kg
44-46 Hp	4.0 kg
48 Hp	4.5 kg

REYHQ	A
16 Hp	1.0 kg
20 Hp	1.5 kg
22-24 Hp	2.0 kg

**E. Piping between refrigerant branch kit and BSHR unit**  
Pipe size for direct connection to indoor unit must be the same as the connection size of indoor unit. Choose from the following table in accordance with the indoor unit total capacity type, connected downstream.

Indoor unit capacity type	Piping outer diameter size (mm)		
	Suction gas pipe	HPLP gas pipe	Liquid pipe
<150			
150 ≤ x < 200	19.1	15.9	9.5
200 ≤ x < 290	22.2	19.1	9.5
290 ≤ x < 420	28.6	19.1	12.7
420 ≤ x < 640	28.6	28.6	15.9
640 ≤ x < 920	34.9	28.6	19.1
≥920	41.3	28.6	19.1

**F. Piping between refrigerant branch kit or BSHR unit and indoor unit**  
Choose from the following table in accordance with the capacity type of the connected indoor unit.

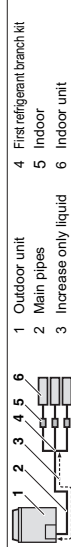
Indoor unit capacity type	Piping outer diameter size (mm)		
	Suction gas pipe	Liquid pipe	Liquid pipe
20, 25, 32, 40, 50	12.7		6.4
63, 80, 100, 125	15.9		9.5
200	19.1		9.5
250	22.2		9.5

**D. Equalizer piping (outdoor units only)**  
Piping outer diameter size (mm) 19.1

**Example for refrigerant branch using refined jointline branch pipe and refined header branch pipe for REYQ34, REYQ34 + REMC8+REYQ10+REMC16, the indoor unit connection ratio = 120% and the piping lengths are as below.**

a. Ø19.1x30 m	f. Ø9.5x10 m	k. Ø9.5x20 m	p. Ø6.4x10 m
b. Ø19.1x20 m	g. Ø9.5x10 m	l. Ø9.5x20 m	r. Ø12.7x3 m
c. Ø9.5x10 m	h. Ø9.5x10 m	m. Ø9.5x20 m	s. Ø9.5x3 m
d. Ø9.5x10 m	i. Ø9.5x10 m	n. Ø9.5x10 m	t. Ø9.5x3 m
e. Ø9.5x10 m	j. Ø9.5x10 m	o. Ø6.4x10 m	u. Ø15.9x1 m

$R = \frac{[150 \times 0.26] + [10 \times 0.18] + [30 \times 0.12] + [16 \times 0.059] + [200 \times 0.022]}{1.02} + 4.0 + 0.5 = 27.148 \rightarrow R = 27.1 \text{ kg}$



REY(H)Q Ø	REY(H)Q Ø
8+10	9.5 → 12.7
12-16	12.7 → 15.9
18-24	15.9 → 19.1
26-48	19.1 → 22.2

XPQ Ø	XPQ Ø
8+10	9.5 → 12.7
12-16	12.7 → 15.9
18-24	15.9 → 19.1
26-48	19.1 → 22.2

**Note 1**  
When the equivalent pipe length between outdoor and indoor units is 90 m or more, the size of the main liquid pipe must be increased. Never increase suction gas pipe and HPLP gas pipe sizes.  
Depending on the length of the piping, the capacity may drop, but even in such a case it is possible to increase the size of the main liquid pipe.

**Note 2**  
Allowable length after the first refrigerant branch kit to indoor units is 40 m or less, however it can be extended up to 90 m if the following conditions are fulfilled.

**Required conditions**

- It is necessary to increase the pipe size of the liquid and suction gas pipe if the pipe length between the first and the final branch kit is over 40 m (reduct must be procured on site). Increasing the HPLP gas pipe size is not allowed.
- If the increased liquid pipe size is larger than the pipe size of the main liquid pipe, then the pipe size of the main liquid pipe needs to be increased as well.
- If the increased suction gas pipe size is larger than the pipe size of the main suction gas pipe, then the allowable length after the first refrigerant branch kit may not be increased to 90 m.
- Size-up of the main suction gas pipe may affect a good oil return to the outdoor unit due to influence of the HPLP gas pipe.

For calculation of total extension length, the actual length of above pipes must be doubled (except length of main pipes and of pipes which do not have an increased pipe size).

Indoor unit to the nearest branch kit ≤ 40 m  
The difference between the distance of the outdoor unit to the farthest indoor unit and the distance of the outdoor unit to the nearest indoor unit ≤ 40 m

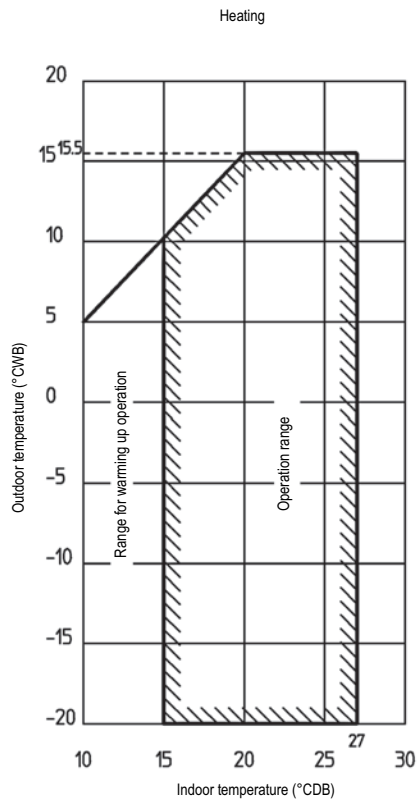
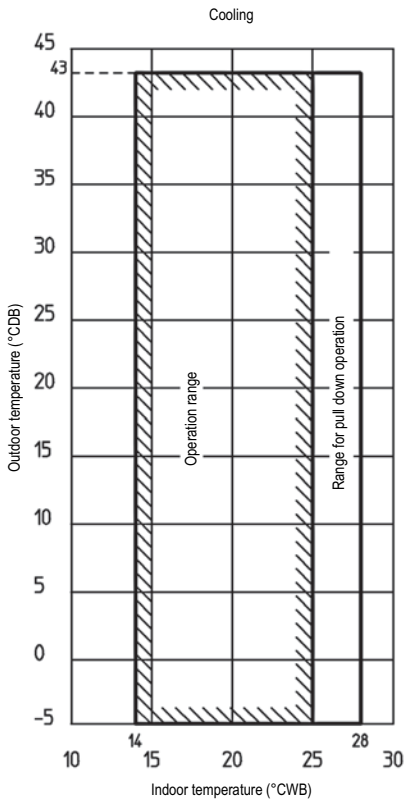
Example drawings  
Increase the pipe size as follows  
Ø9.5 → Ø12.7    Ø12.7 → Ø15.9    Ø15.9 → Ø19.1    Ø19.1 → Ø22.2

1 Outdoor unit  
2 Refined joints(a-g)  
3 Indoor units (1-8)

# 10 Operation range

1  
10

REYHQ12P8



**NOTES**

- 1 These figures assume the following operation conditions:  
Indoor and outdoor units:  
Equivalent pipe length: 7.5m  
Level difference: 0m
- 2 Depending on operation and installation conditions, the indoor unit can change over to freeze-up operation (indoor de-icing).
- 3 To reduce the freeze-up operation (indoor de-icing) frequency it is recommended to install the outdoor unit in a location not exposed to wind.

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