

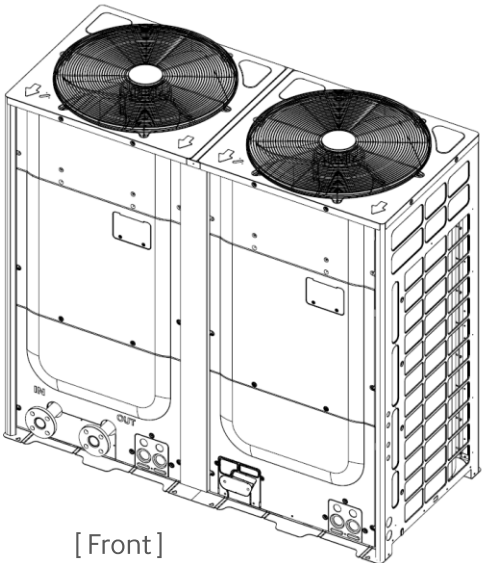
1. Specification (TBD)

Model Name				AG042KSVANH/EU	AG056KSVANH/EU	AG070KSVANH/EU
Power Supply			Φ, #, V, Hz	3,4,380-415,50	3,4,380-415,50	3,4,380-415,50
Mode			-	Heat Pump	Heat Pump	Heat Pump
Performance	Capacity (Nominal)	Cooling	usRT	12	16	20
			kW	42.0	56.0	69.8
		Heating	kW	42.0	56.0	69.8
			Heating at -20℃	kW	31.5	42.0
Power	Power Input	Cooling	kW	12.35	18.67	TDB
		Heating		11.83	17.50	24.49
COP	Nominal Cooling		W/W	3.40	3.00	TDB
	Nominal Heating		W/W	3.55	3.20	2.85
ESEER (EN14511)			W/W	5.7	5.4	5.0
Compressor	Type		-	Dual BLDC Scroll	Dual BLDC Scroll	Dual BLDC Scroll
	Oil		-	PVE	PVE	PVE
Fan	Type		-	Propeller	Propeller	Propeller
	Output x n		W	630 x 2	630 x 2	(630 x 2)
	Max. External Static Pressure		mmAq	78.5	78.5	78.5
Water Side Heat Exchanger	Type		-	Brazing Plate	Brazing Plate	Brazing Plate
	Water Flow Rate		LPM	120	160	200
	Pressure Drop of water		kPa	TBD(65)	TBD(100)	TBD(115)
	Max Operationg Pressure (Water side)		MPa	1.0	1.0	1.0
	Water Connection	Type	-	Flange (EN 1092)	Flange (EN 1092)	Flange (EN 1092)
		Materials	-	SUS 304, PN10	SUS 304, PN10	SUS 304, PN10
	Pipe (Inlet/Outlet)		-	40A	40A	50A
	Q'Ty		EA	2	2	2
Refrigerant			-	R410A, 18kg	R410A, 18kg	R410A, 18kg
Sound Pressure			dB(A)	60	61	63
Net Weight			kg	446	446	466
Net Dimensions (W x H x D)			mm	1,795 x 1,695 x 765	1,795 x 1,695 x 765	1,795 x 1,695 x 765
Operating Range (Water)	Cooling		℃	5 ~ 25 (-10~25 @ Brine)	5 ~ 25 (-10~25 @ Brine)	5 ~ 25 (-10~25 @ Brine)
	Heating		℃	25 ~ 55	25 ~ 55	25 ~ 55
Operating Range (Ambient)	Cooling		℃	-15 ~ 48	-15 ~ 48	-15 ~ 48
	Heating		℃	-25 ~ 43	-25 ~ 43	-25 ~ 43

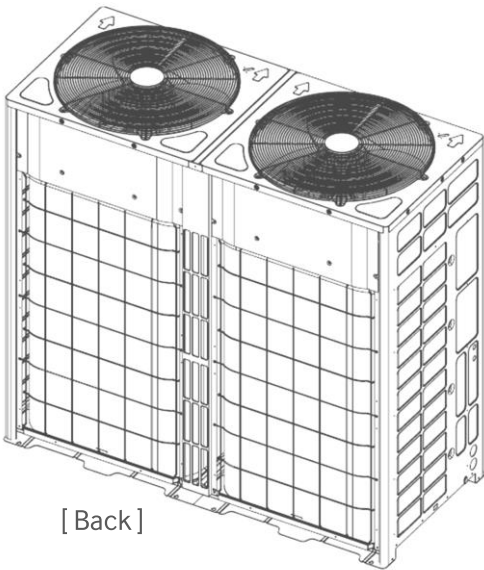
2. Combination Table

Model Name for combination		No. of units			
	Capacity (kW)		AG042KSVANH/EU	AG056KSVANH/EU	AG070KSVANH/EU
AG616KSVANH	1,848	3		1	8
AG602KSVANH	5,418	9	1		8
AG434KSVANH	2,170	5	2		5
AG378KSVANH	378	1	1	1	4

● AG042/056/070KSVA*



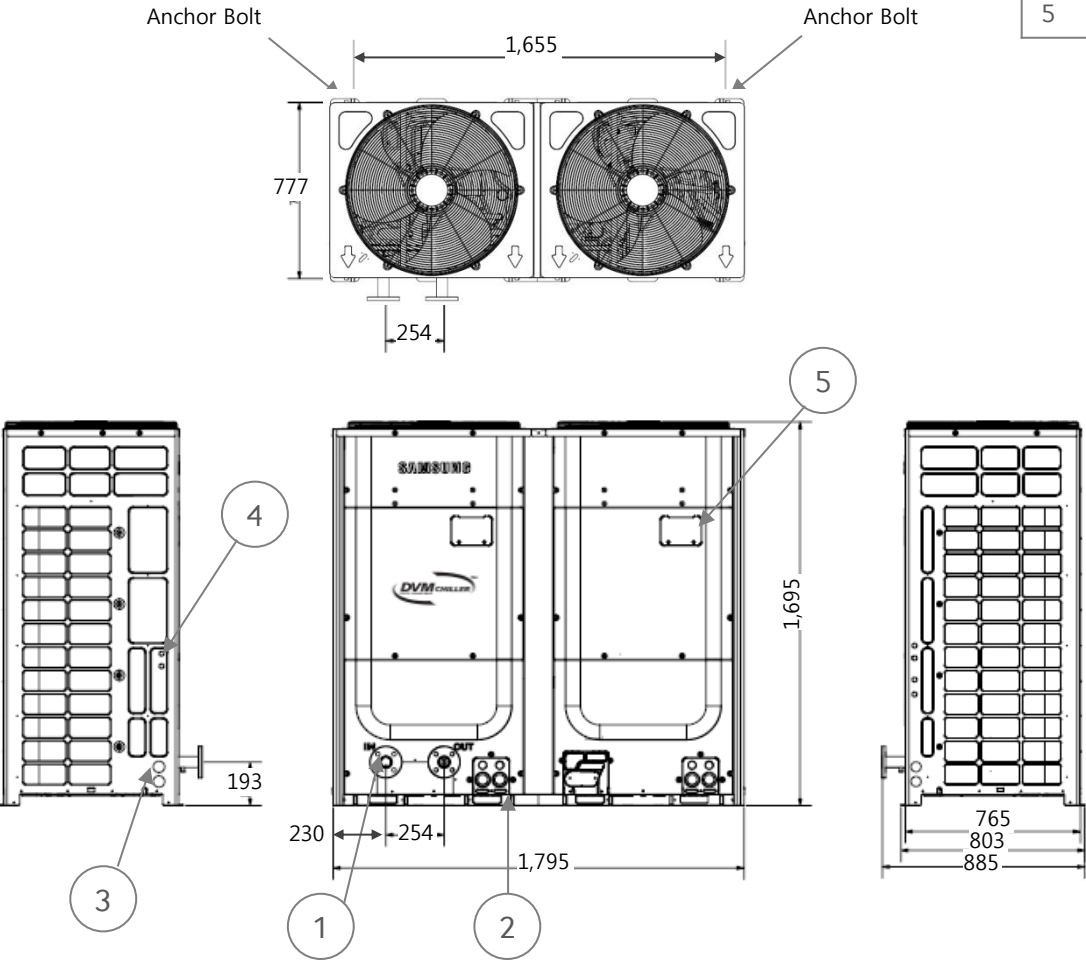
[Front]



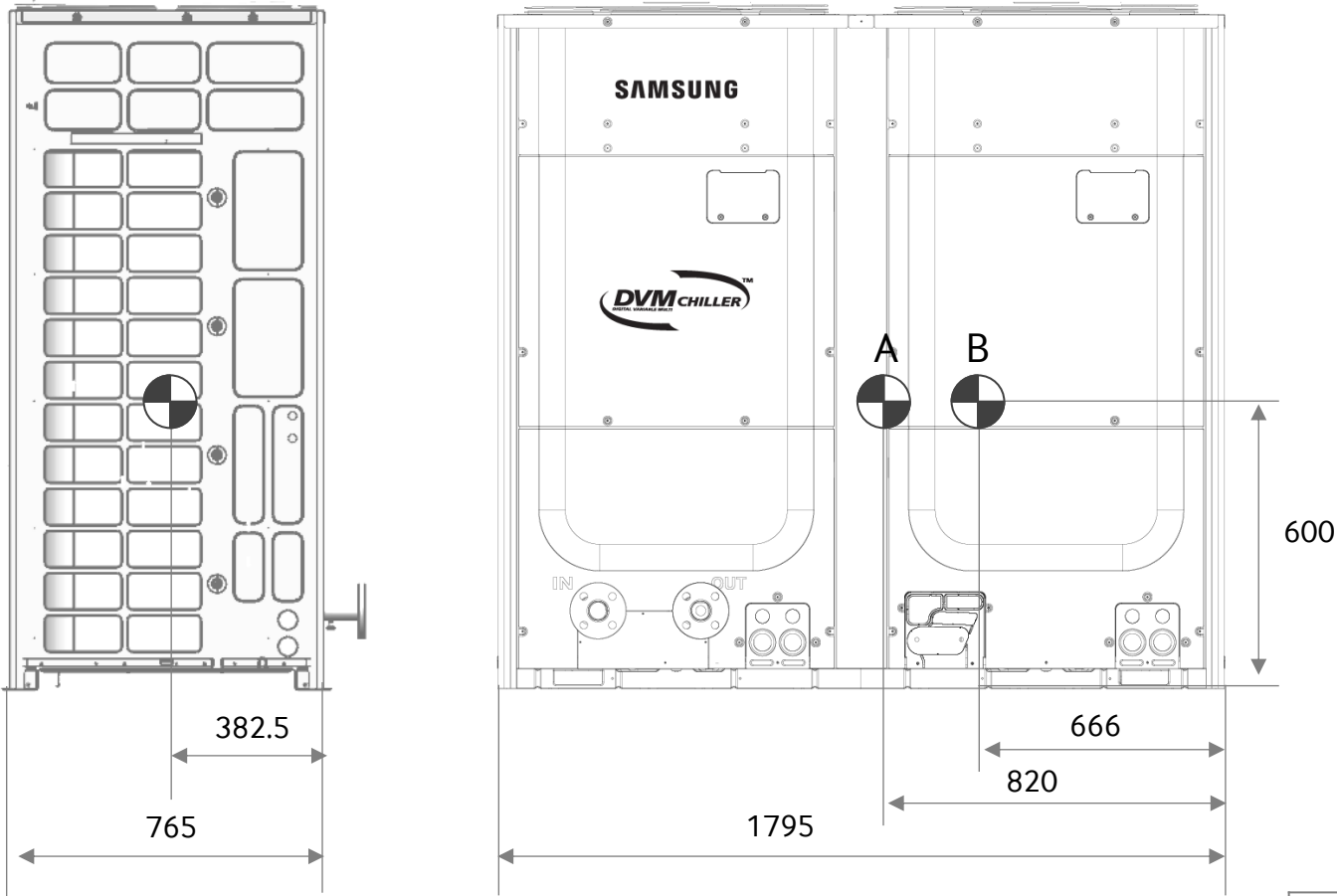
[Back]

3. Dimensional Drawings

No	Part Name	Specification
1	Water Connections	Flange 40/50A
2	Power Hole (front)	161*157 mm
3	Power Hole (side)	Left $\Phi 50$, Right $\Phi 43.7\text{mm}$
4	Communication Hole (Front)	$\Phi 34.5\text{ mm}$
5	Monitoring Window	178*129 mm

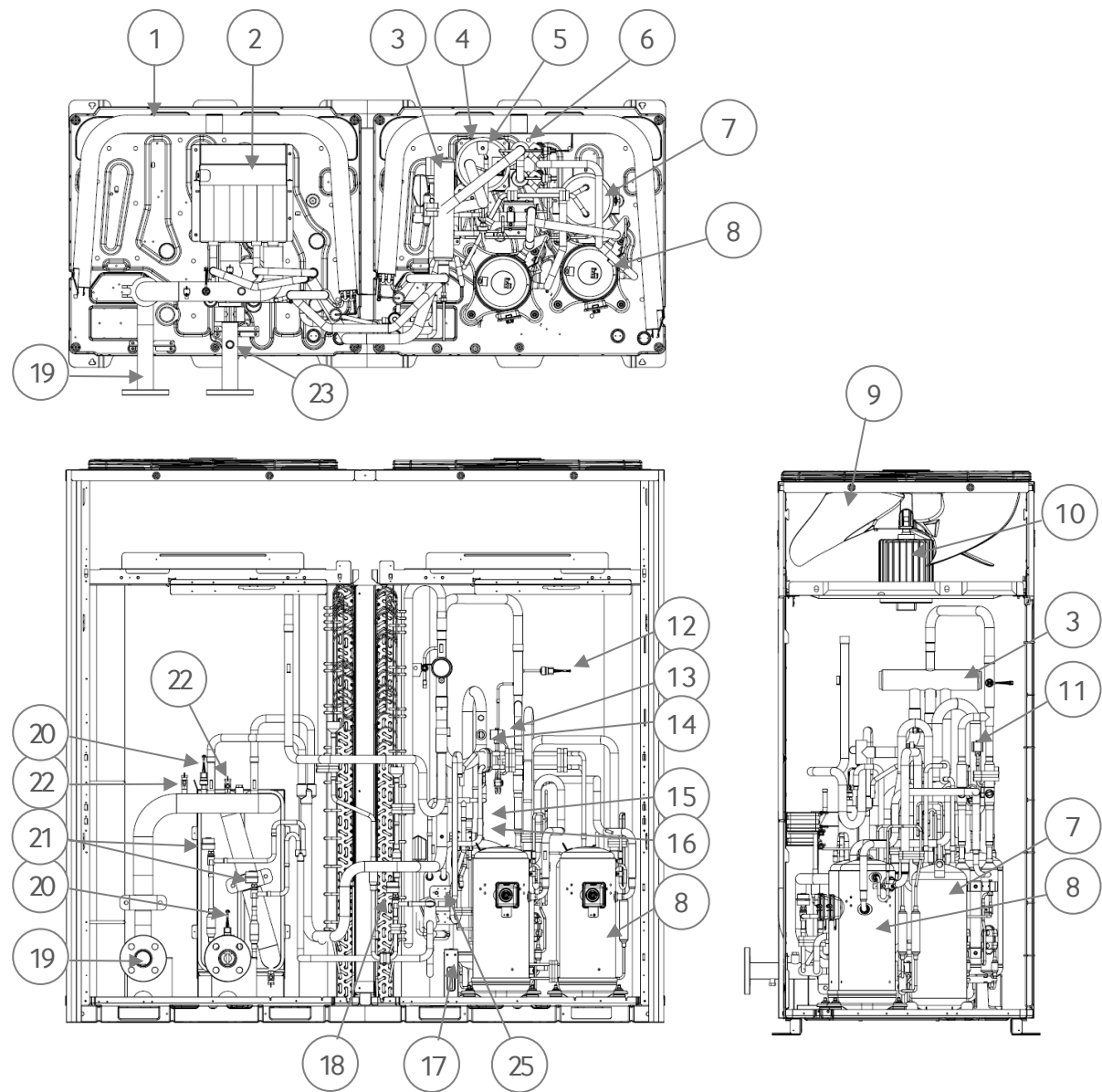


4. Center of Gravity



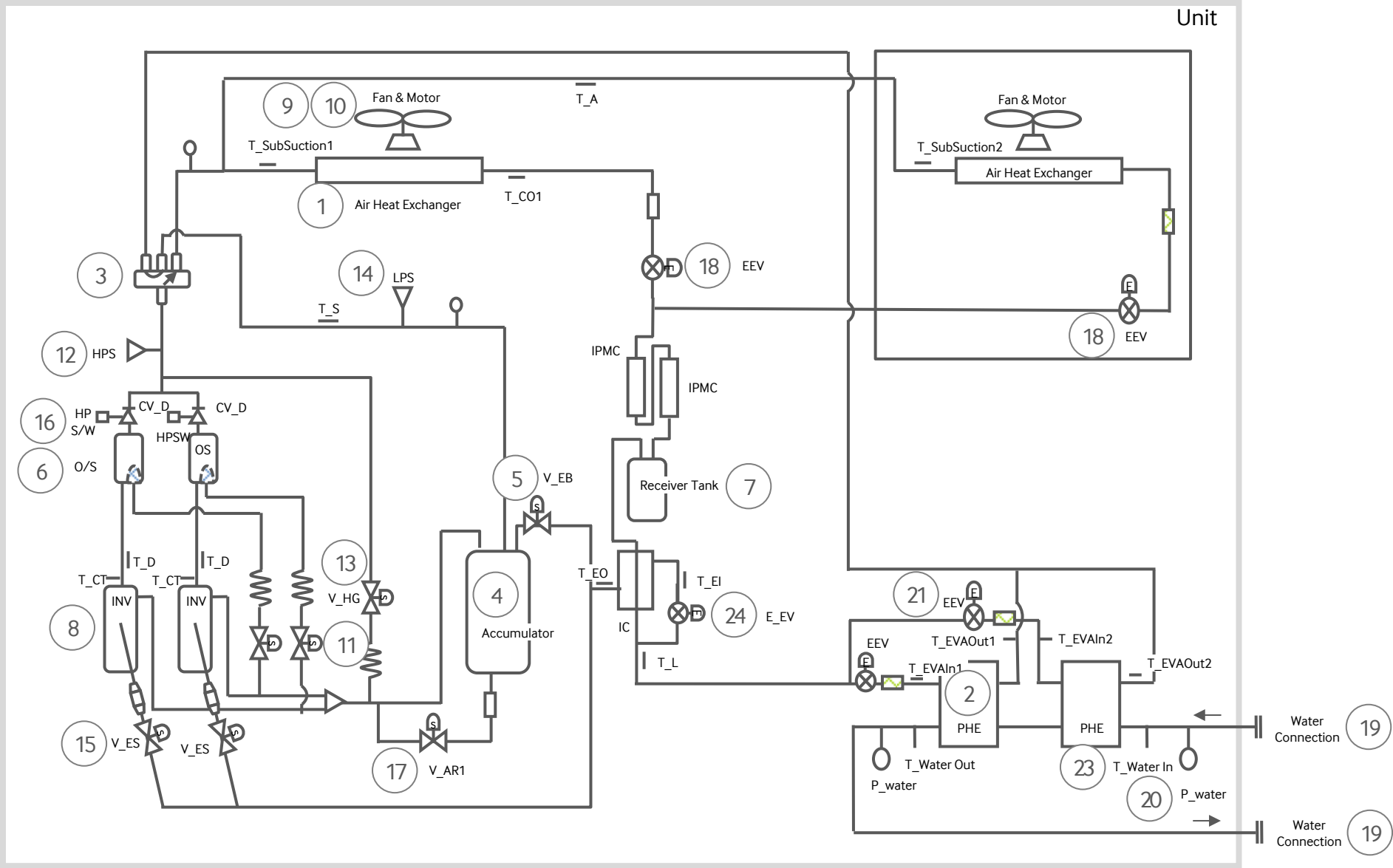
A	AG***KSVANH*
B	AG***KSVPNH* (Water Pump included)

5. Parts List



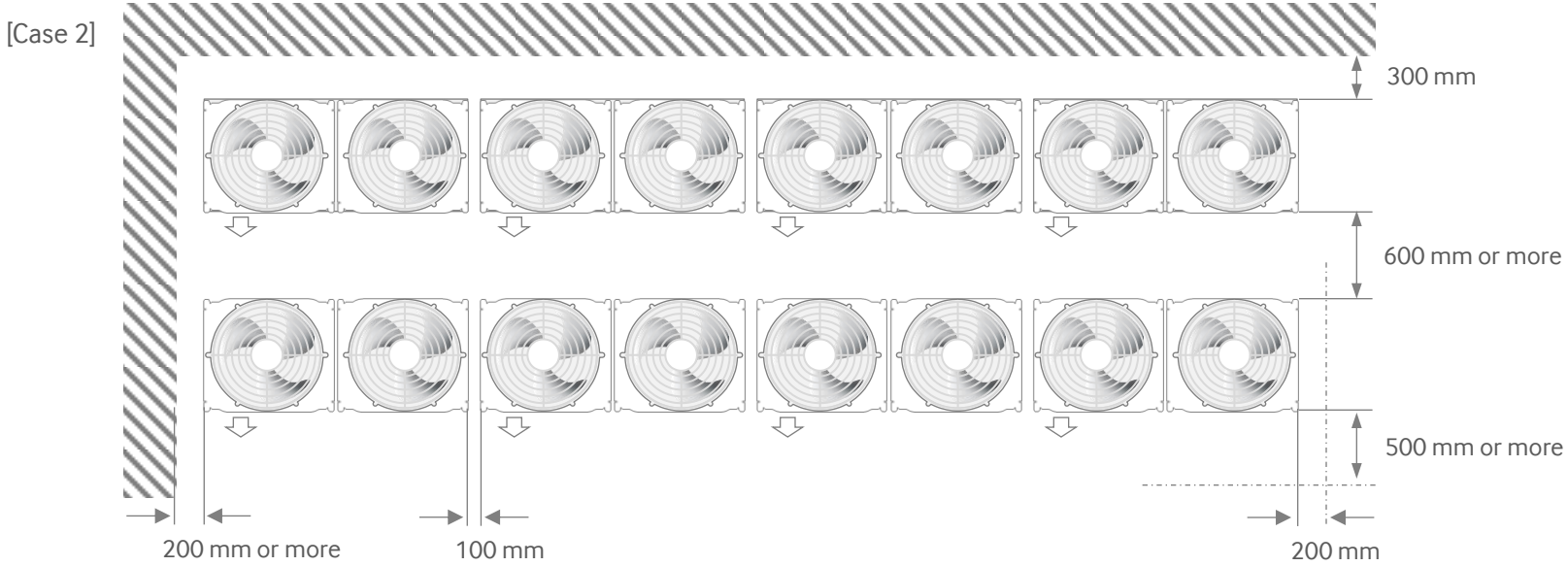
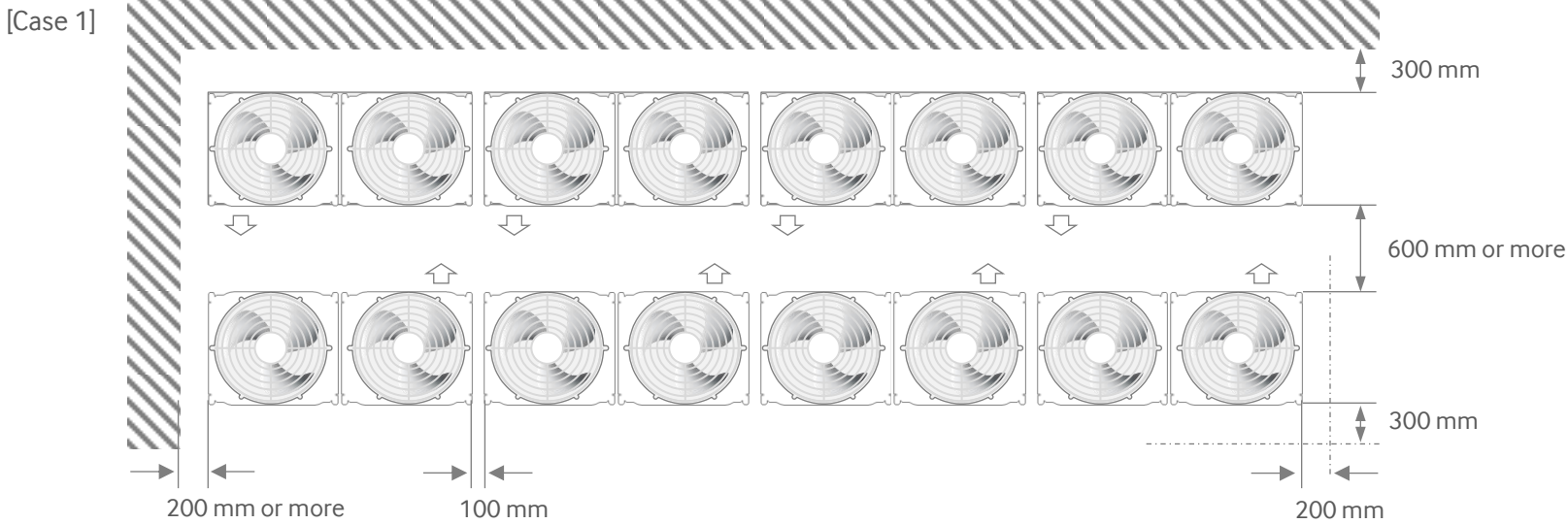
No	Part Name	Specification
1	Air Heat Exchanger	
2	Water Heat Exchanger	Brazing Plate, CBH60 x 2ea
3	4way Valve	
4	Accumulator	6 Liter, Φ165 x H280 mm
5	EVI Bypass Valve	
6	Oil Separator	0.5 Liter x 2ea
7	Receiver Tank	7 Liter
8	Scroll Compressor	BLDC Scroll, 70cc x 2ea
9	Propeller Fan	
10	Fan Motor	
11	Oil Return Valve	2ea
12	High Pressure Sensor	
13	Hot Gas Bypass Valve	
14	Low Pressure Sensor	
15	Vapor Injection Valve	2ea
16	High Pressure Switch	2ea
17	Accum. Return Valve	
18	Main EEV	2ea
19	Water Connection	50A x 2ea, SUS304 Flange
20	Water Pressure Sensor	¼" x 2ea
21	PHE EEV	2ea
22	Air Vent	Φ3/8" x 2ea, Manual
23	Water Temp. Sensor	2ea
24	EVI EEV	
25	Sub Cooler	Brazing Plate, ACH30

6. Piping Diagram

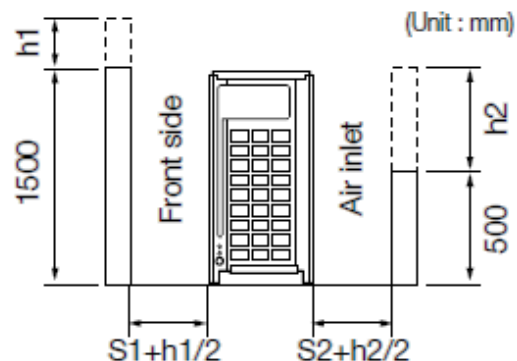


7. Installation Method

Water Connections



8. Installation Method

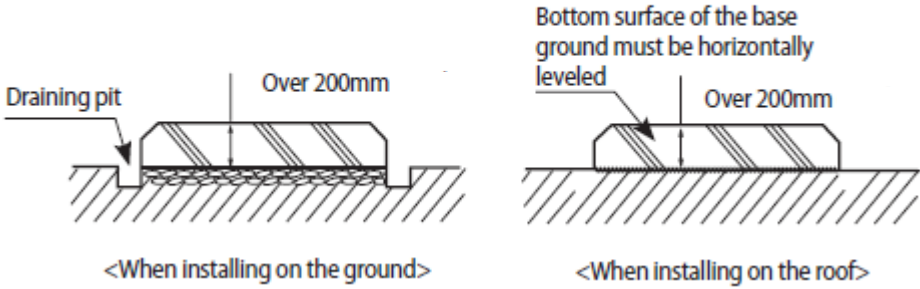


NOTES

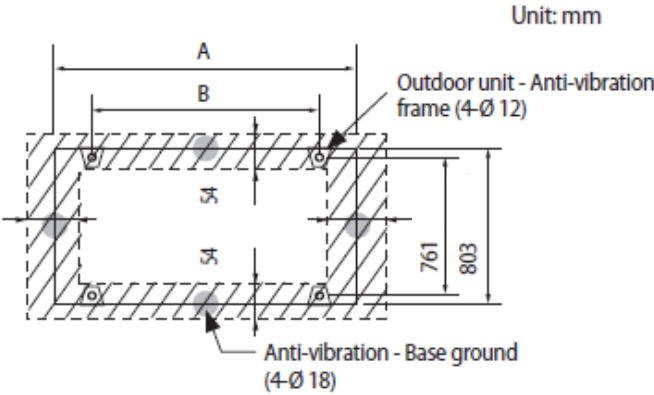
1. Heights of walls in case of patterns 1 and 2:
Front: 1500mm
Suction side: 500mm
Side: Height unrestricted
Installation space as shown on this drawing is based on the cooling operation at 35 degrees outdoor air temperature.
When the design outdoor air temperature exceeds 35 degrees or the load exceeds maximum ability of much generation load of heat in all outdoor unit, take the suction side space more broadly than the space as shown on this drawing.
2. If the above wall heights are exceeded then $h2/2$ and $h1/2$ should be added to the front and suction side service spaces respectively as shown in the figure on the right.
3. 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 keep in mind the need to leave enough space for a person to pass between units and wall and also for the air to 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).
4. The units should be installed to leave sufficient space at the front for the on site refrigerant piping work to be carried out comfortably.

9. Foundation

Base ground construction



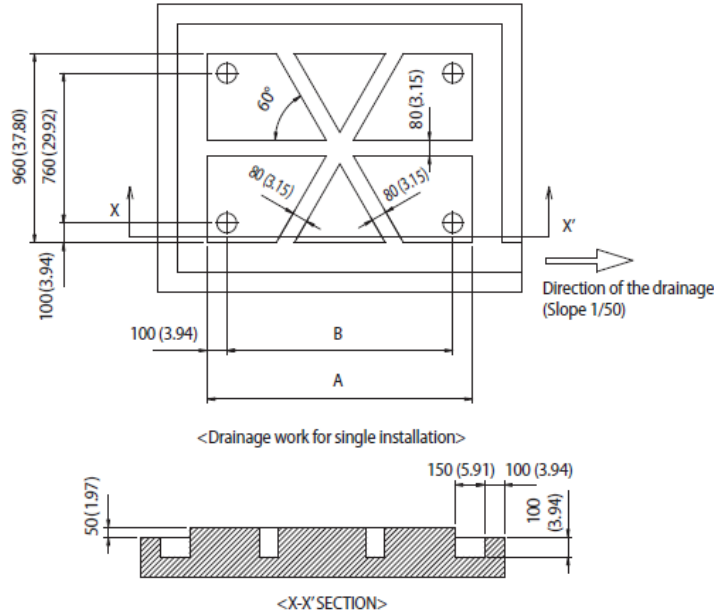
Outdoor unit base mount and anchor bolt position



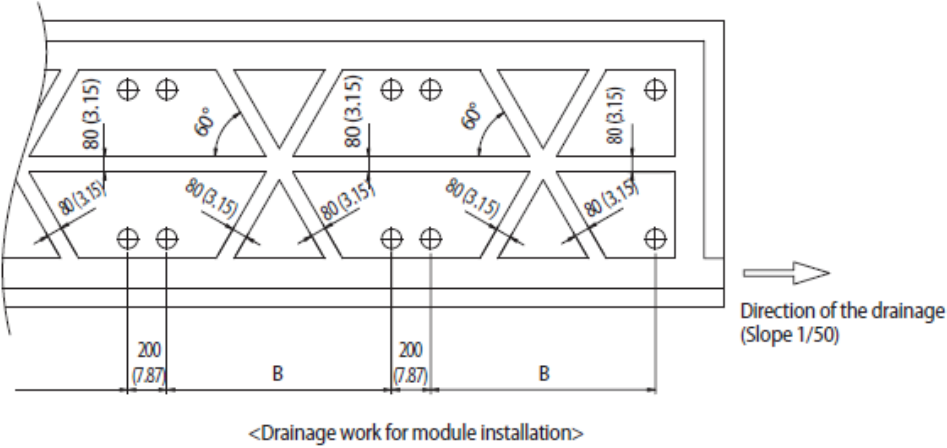
AG042/056/070KSVA*	Dimension
A	1,795
B	1,655

Examples of draining work

- ▶ Construct the drainage ditch with reinforced concretes and make sure that water-proofing work is done.
- ▶ For smooth draining of defrost water, make sure to apply 1/50 slope.
- ▶ Construct a drainage around the outdoor unit to prevent the defrost water (from the outdoor unit) from stagnating, overflowing or freezing near the installation space.
- ▶ When the outdoor unit is installed on the roof, check the strength and waterproof status of the roof.



Unit: mm (Inch)

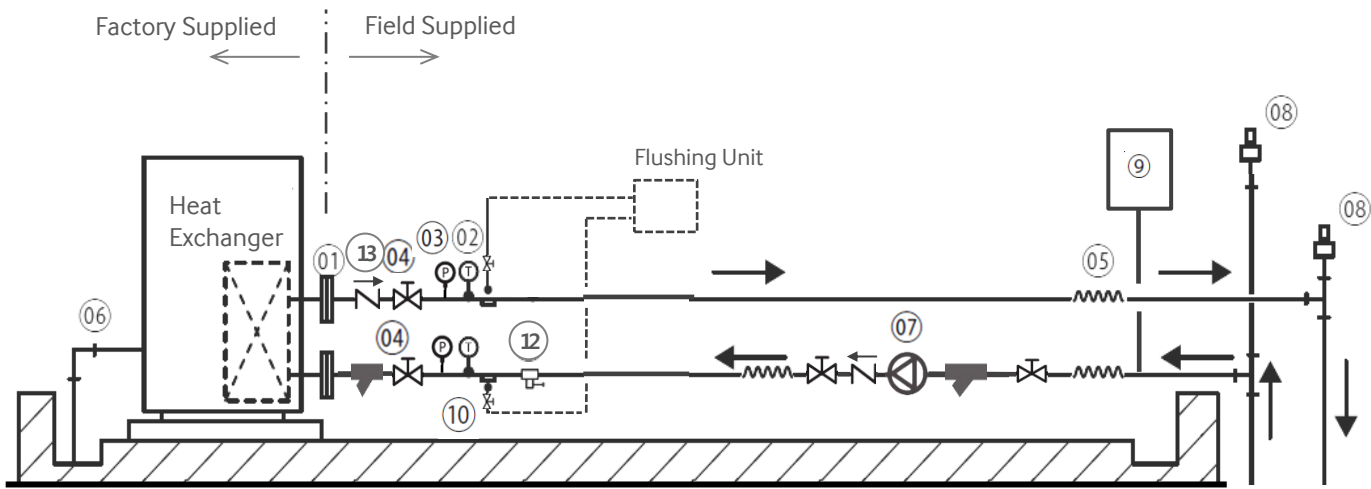


AG042/056/070KSVA*	Dimension
A	1,855
B	1,655

10. Water Piping

- Contaminants in the water system can reduce or stop flow, and cause damage of heat exchanger.
 - Water quality should be maintained within the limits indicated in the limitation table.
 - It should be installed over 40 mesh strainer to protect unit from damage.
 - Unless flushing and air purging work are performed adequately, it might result in malfunctions.
 - Before connecting pipes to chiller unit, Be sure to flush water pipes clean to remove contaminants during 1 hour.
 - Purge the air in the pipes. circulate the water for long enough to ensure that all air has been bled from the complete water system.
- ※ After installation, commissioning should be performed by qualified representatives.

【 Single Installation 】



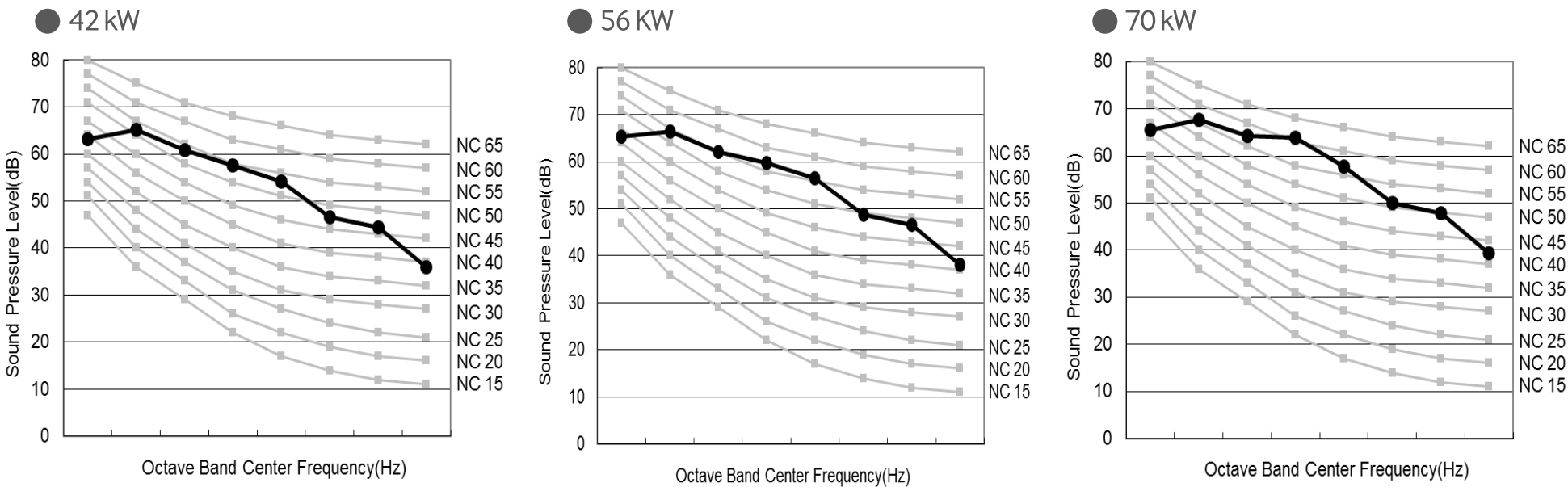
No	Equipment
1	Water Connection
2	Temp. Gauge
3	Pressure Gauge
4	Gate Valve
5	Flexible Joint
6	Drainage
7	Water Pump
8	Air Vent
9	Expansion Tank
10	Drain Valve
11	Strainer (Mesh 40)
12	Check Valve
13	Drain Valve

10. Water Piping

- The Limitation of Water Quality
 - High level of contaminants can cause corrosion or scale of PHE and water system.

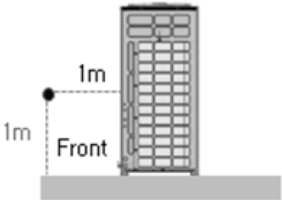
Section	Item	Closed circuit system		Effects		Recommended number for water quality inspection
		Heat source water	Make-up water	Corrosion	Scale	
Standard value	pH[25 °C]	7.0 ~ 8.0	7.0 ~ 8.0	0	0	Twice a month
	Electric conductivity [25 °C] (mS/m)	30 and below	30 and below	0	0	
	Chloride ion (mg Cl-/L)	50 and below	50 and below	0		Once a month
	Sulfate ion (mg SO ₄ ²⁻ /L)	50 and below	50 and below	0		
	M alkali level [pH 4.8](mg CaCO ₃ /L)	50 and below	50 and below		0	
	Total hardness (mg CaCO ₃ /L)	70 and below	70 and below		0	
	Calcium hardness (mg CaCO ₃ /L)	50 and below	50 and below		0	
	Ionized silica (mg SiO ₂ /L)	30 and below	30 and below		0	
Reference	Iron (mg Fe/L)	1.0 and below	0.3 and below	0	0	Once a month
	Copper (mg Cu/L)	1.0 and below	1.0 and below	0		
	Sulfate ion(mg S ²⁻ /L)	Not to be detected	Not to be detected	0		
	Ammonium ion (mg NH ₄ ⁺ /L)	0.3 and below	0.1 and below	0		
	Residual chlorine (mg Cl/L)	0.25 and below	0.3 and below	0		
	Free carbon dioxide (mg CO ₂ /L)	0.4 and below	0.4 and below	0		
	Stability index	-	-	0	0	

11. Sound Pressure Level



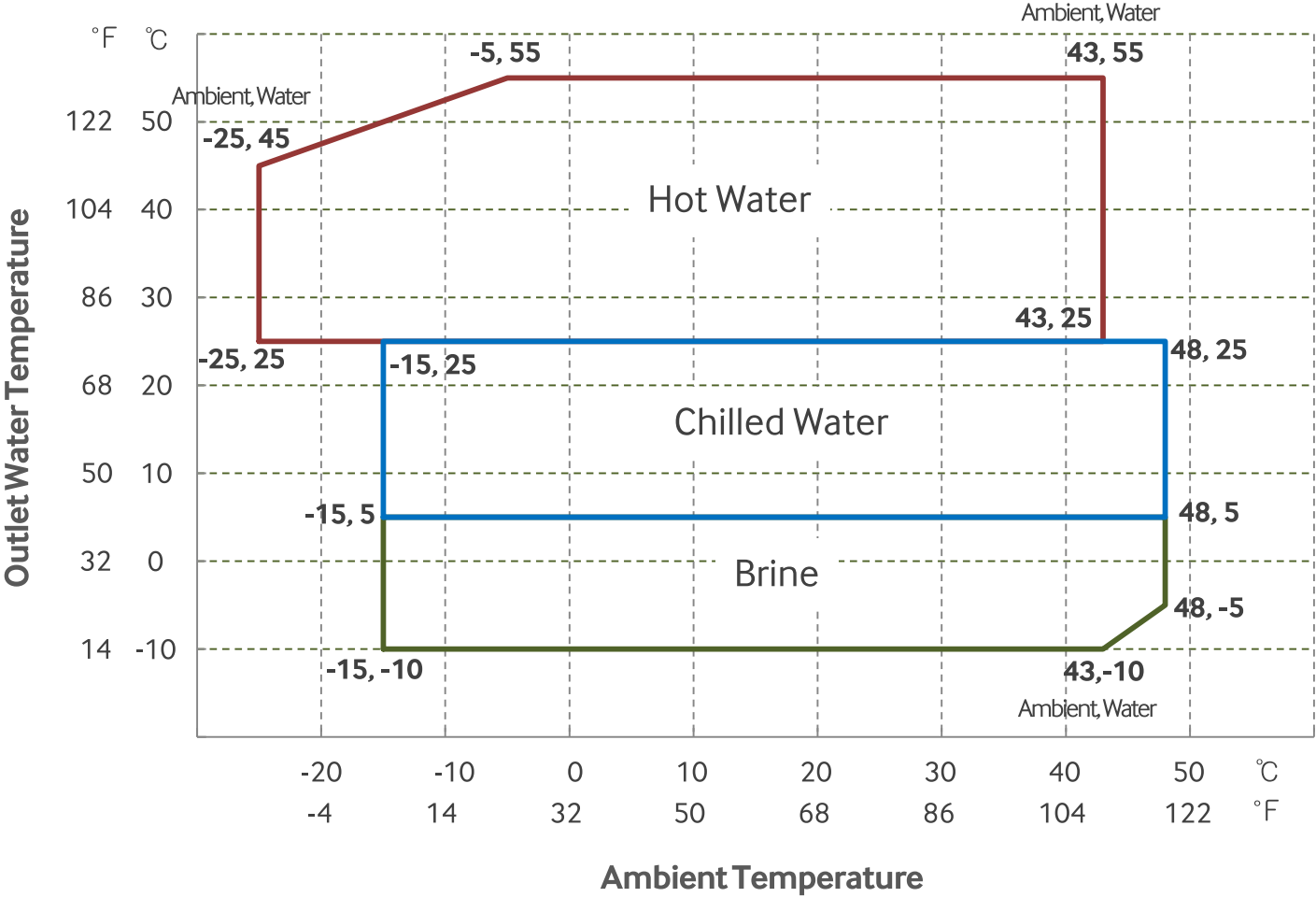
NOTES

- 1. Data is valid at free field condition
- 2. Data is valid at nominal operation condition
- 3. dBA = A-weighted sound pressure level (A-scale according to IEC)
- 4. Reference acoustic pressures 0dB = 20μPa
- 5. Measuring position.



Capacity	Unit(dBA)
42 kW (12 ton)	60
56 kW (16 ton)	62
70 kW (20 ton)	63

12. Operating Range



13. Control Plan

