



Water-to-water reversible heat pumps

AGEO

Total comfort, slim design
Environmentally sound heating
The most ecological and cost-effective solution for your comfort



Cooling capacity: 5 to 28 kW
Heating capacity: 7 to 36 kW



Cooling



Heating



Hydraulic module



USE

CIAT rounds out its portfolio of products for the residential heating market with this new range of water-to-water reversible heat pumps.

Each packaged and attractive unit is of high technical quality and comes equipped with all the hydraulic components needed for connection to a loop and comfort unit.

Each unit is factory tested and set and delivered ready for use in service rooms, laundry rooms, garages or anywhere protected from adverse weather and freezing temperatures.

With the sanitary hot water tank option, the heat pump produces hot water for the entire residence indefinitely.

RANGE

Ageo heat pumps harness the inexhaustible supply of heat stored in ground water and the earth and operate at efficiency levels that conventional heating systems can't even begin to match.

By design, water-to-water heat pumps are extremely economical to run and maintain.

They can be connected to sources of "gentle heat" such as heating and cooling floors, or comfort units such as fan coil units and water cassettes.

By means of one single investment, they also offer the triple advantage of guaranteeing the heating, cooling and sanitary hot water production for the whole house.

DESCRIPTION

Packaged unit protected in a coated, corrosion-resistant galvanised steel casing and ABS front panel. The internal self-supporting chassis is dissociated from the casing by anti-vibration mounts.

■ Standard equipment:

- Scroll compressor
- Water-to-refrigerant brazed plate heat exchangers
- Hydraulic module on both exchangers, with accelerator pump and expansion vessel.
- Microconnect microprocessor-controlled control unit with two-wire remote control.

Ageo water-to-water reversible heat pumps meet the following directives:

Low voltage (2006/95/EC)

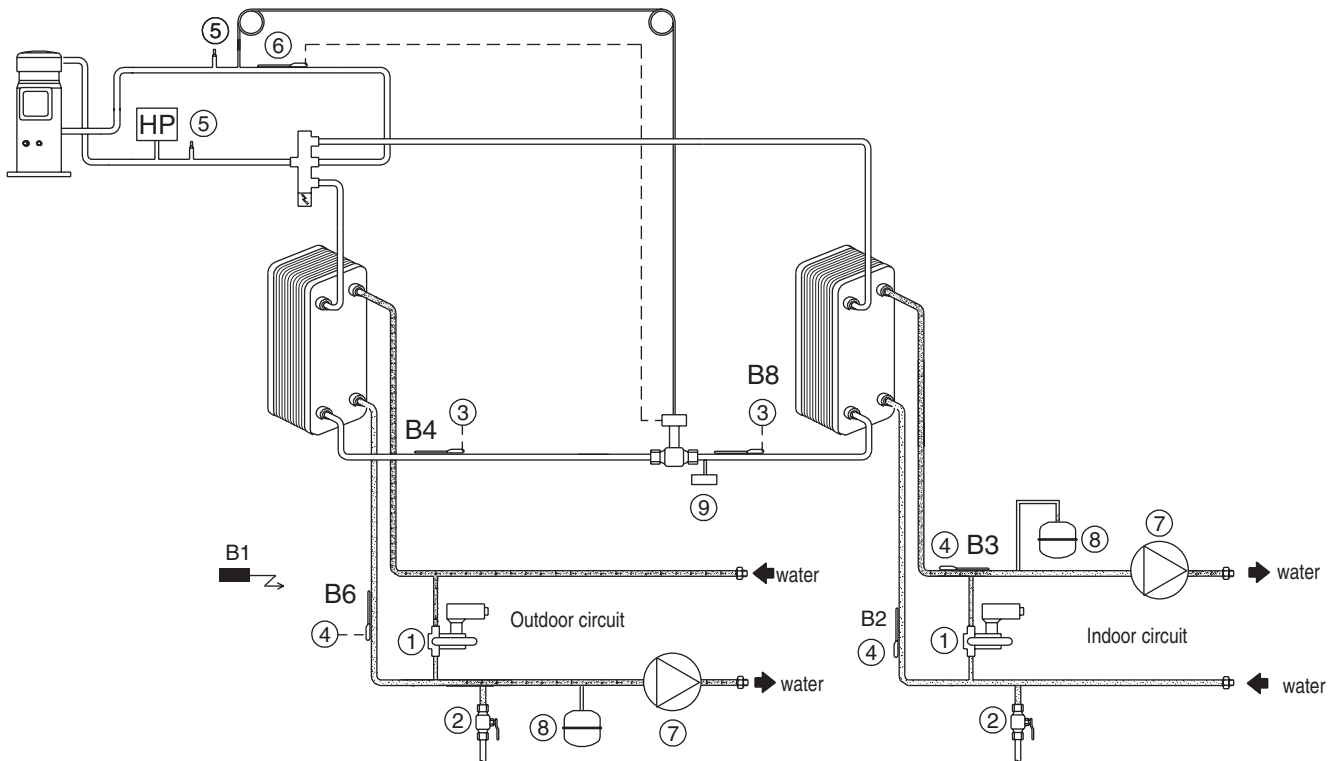
CEM (2004/108/EC)

PED (97/23/EC):

category 1: models 20 to 80

category 2: models 100 to 120

SCHEMATIC DIAGRAM OF REFRIGERATION CIRCUIT AND HYDRAULIC MODULE



SENSORS

- B1 Outdoor air sensor
- B2 Water return sensor
- B3 Water outlet sensor
- B8 Indoor exchanger freon sensor
- B6 Water outlet sensor
- B4 Outdoor exchanger freon sensor

- ① Differential pressure switch
- ② Drain valve
- ③ Frost protection sensor
- ④ Control sensor
- ⑤ Schröder valve

- ⑥ Expansion bulb
- ⑦ Accelerator pump
- ⑧ Expansion vessel
- ⑨ Fuse plug

WATER FLOW RATES

IMPORTANT:

Minimum flow rates: freezing temperatures could destroy the exchanger if the flow rates fall below the required minimum. CIAT shall not be held liable for damage from frost caused by flow rates below the minimum rates specified below.

Nominal flow rates: to be used to size all the system's hydraulic components.

		Ageo							
		20	30	40	50	65	80	100	120
INDOOR EXCHANGER	Minimum flow rate: (m ³ /h)	0,85	1.08	1.40	1.90	2.12	2.75	3.45	4.27
	Nominal flow rate, heating mode, underground loop (m ³ /h) (1)	1,25	1.35	1.60	2.35	2.54	3.20	4.20	5.30
	Nominal flow rate, heating mode, ground water (m ³ /h) (2)	1,47	1.56	1.98	2.63	3.27	4.00	5.08	5.95
OUTDOOR EXCHANGER	Minimum flow rate (m ³ /h)	0,82	1.15	1.45	1.95	2.48	3.00	3.84	4.45
	Nominal flow rate, heating mode (m ³ /h)	1,54	1.58	2.03	2.72	3.34	4.00	5.05	5.95

(1) heating mode, underground loop, water 0°C / -3°C, transmitter unit 30°C / 35°C

(2) heating mode, groundwater, water, transmitter unit 40°C / 45°C



Water-to-water reversible heat pumps

QUICK SELECTION GUIDE

Ageo		20H	30H	40H	50H	20HT	30HT	40HT	50HT	65HT	80HT	100HT	120HT
Cooling capacity (1)	kw	5.0	6.9	9.2	11.3	5.0	6.7	9.2	12.7	15.5	18.4	23.2	27.6
Compressor power input (1)	kw	1.51	1.94	2.64	3.04	1.47	1.92	2.51	3.25	3.88	4.71	5.73	7.06
EER		3.16	3.31	3.52	3.65	3.35	3.4	3.92	3.89	3.98	3.84	4	3.97
Heating capacity (2)	kw	6.95	8.84	12.13	15.31	6.89	8.95	11.93	16.06	19.83	24.46	30.90	36.34
Compressor power input (2)	kw	1.6	2.1	2.6	3.1	1.5	2.0	2.6	3.2	3.9	4.8	5.8	6.9
C.O.P.		4.60	4.56	4.59	5.04	4.68	4.66	4.76	4.94	5.11	5.19	5.39	5.15
Sound power level - (2)	dBA	53/30	53/30	54/31	57/33	53/30	53/30	54/31	57/33	58/36	59/36	61/38	63/41

(1) Cooling capacities given for chilled water at 7/12°C and a condenser temperature of 30/35°C

(2) Heating capacities given for hot water at 35/30°C and an evaporator temperature of 10°C certified NFPAC

COMPOSITION

■ 1 hermetic compressor

- Rotary scroll on/off
- Built-in electric motor cooled by suction gas.
- Internal motor protected by winding sensors.
- Self-supporting, noise-damping frame.

■ 2 brazed-plate heat exchangers

- AISI 316 stainless steel plates.
- High-performance, optimised plate patterns.
- Thermal insulation.

■ Standard accessories

- Refrigerant reversing valve.
- Biflow expansion valve.
- Anti-vibration supports mounted on the casing.

■ Electrical panel

- Meets EN 60335-1 and EN 60335-2-40.
- Front panel with built-in display.
- Remote-control terminal.
- Outdoor temperature sensor.
- Remote-control circuit protection.
- Compressor motor contactor.
- Main earth connection.
- Reduction of starting current (Single-phase).

■ µConnect control board

- Chilled water or hot water temperature control (reversible heat pump) via a water law based on the outdoor temperature, with room temperature compensation.
- Self-adjusting control during compressor short cycles, increase in stage differential.
- Boiler-heat pump switchover mode: switchover managed automatically by the control system via a setting that can be adjusted based on the outdoor temperature.

Exchanger water outlet temperatures displayed on front panel.

- Operating settings check
- Temperatures displayed on control terminal
 - Room temperature or water setpoint in terminal unit mode
 - Room temperature in floor mode (underfloor heating and cooling systems)

■ Control of operating parameters

- Remote-control terminal with voltage-free two-wire connection.
- ON/OFF input control (2 inputs, automatic / load shedding, heating/cooling / absence)
- short-cycle protection (5 mm)
- low-temperature start-up (temperature, indoor water circuit > 5°C) accelerator pump speed adjusted to water start temperature.

■ Safety and control devices

- High-pressure safety switch with automatic reset.
- Frost sensors on exchangers.
- Chilled water return sensor, hot water start (on indoor exchanger).

■ 2 built-in hydraulic modules (loop and transmitter sides) with the following accessories:

- 1 expansion vessel.
- 1 drain.
- 1 multi-speed accelerator pump (3 speeds, 2 of which are usable on some models) with shut-off valves and insulation jacket.
- Differential water pressure switch.

■ Options (for installation on site)

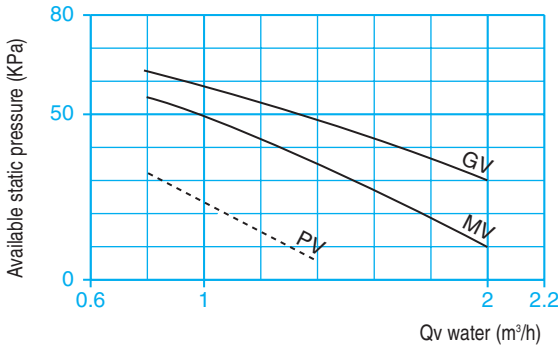
- Insulated connection sleeves.
- Screen filter with shut-off valves.
- Charging kit.
- Start-up kit (models 20 to 120) - three phase only.
- Compressor noise insulation kit.
- Single-phase or three-phase loop heater
- Pressure gauge valve kit



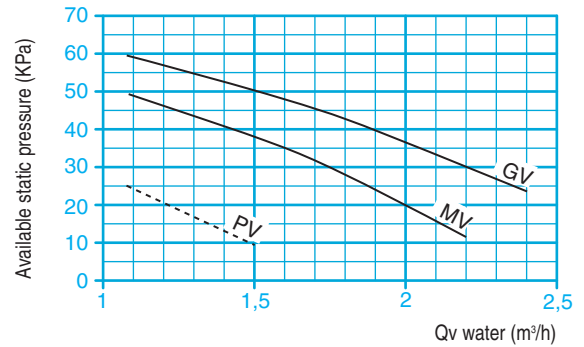
AVAILABLE PRESSURE IN THE INDOOR CIRCUIT

Indoor circuit

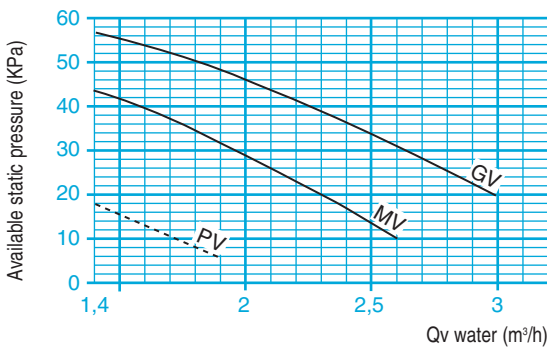
Ageo - 20H(T)



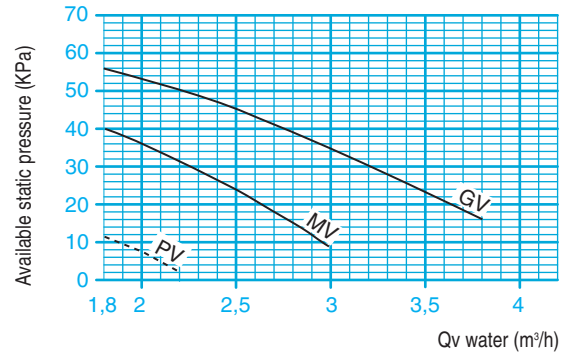
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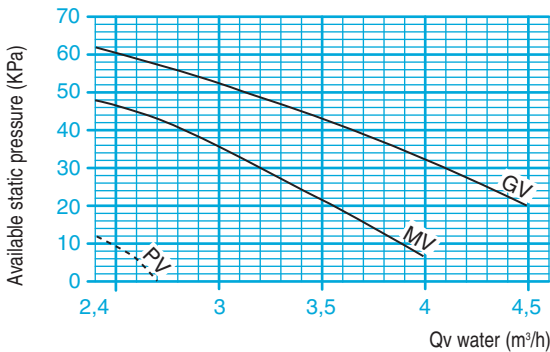
Ageo - 40H(T)



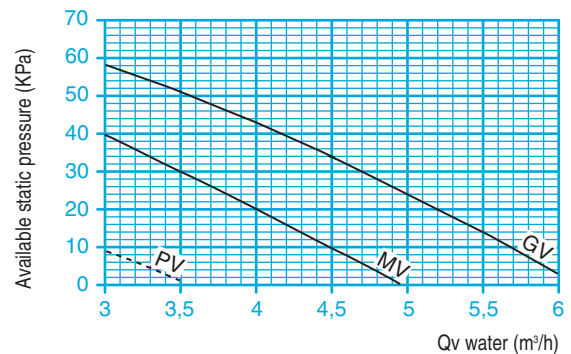
Ageo - 50H(T)



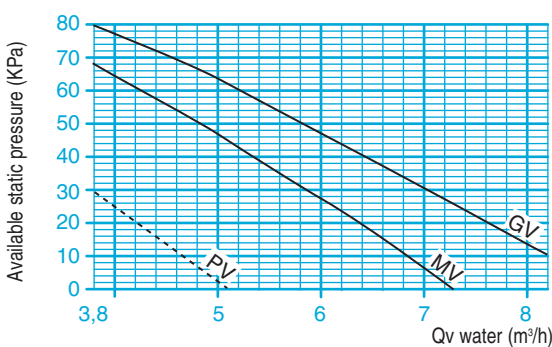
Ageo - 65HT



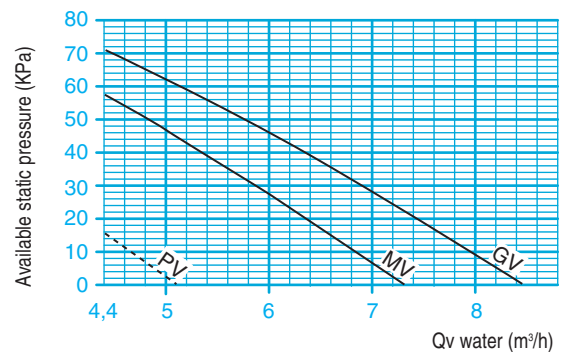
Ageo - 80HT



Ageo - 100HT



Ageo - 120HT



IMPORTANT: The indoor accelerator pump cannot be used at low speed.

The available pressure curves are given for pure water.

If 40% monopropylene glycol is to be used, reduce the available pressures by 5 kPa.

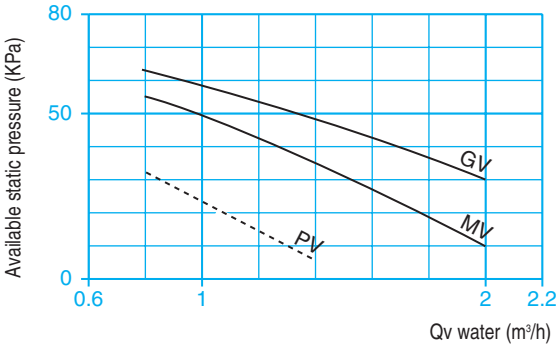


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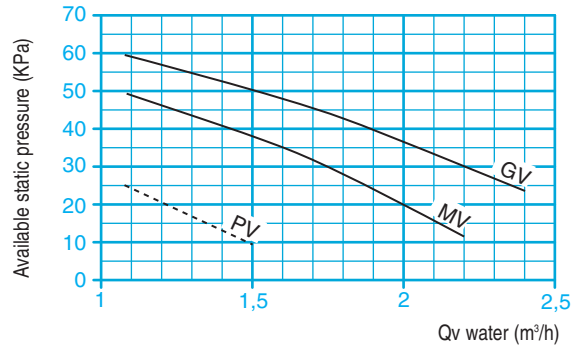
AVAILABLE PRESSURE IN THE OUTDOOR CIRCUIT

Outdoor circuit

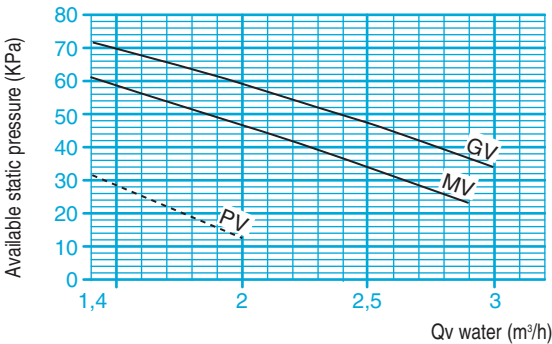
Ageo - 20H(T)



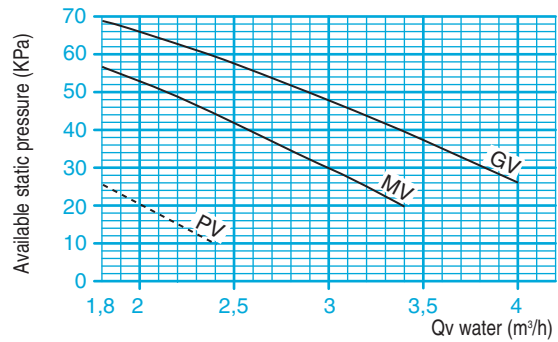
Ageo - 30H



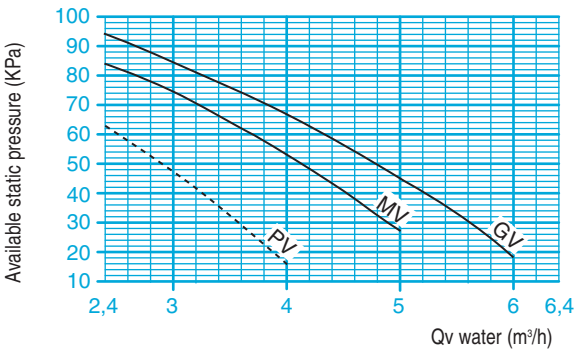
Ageo - 40H(T)



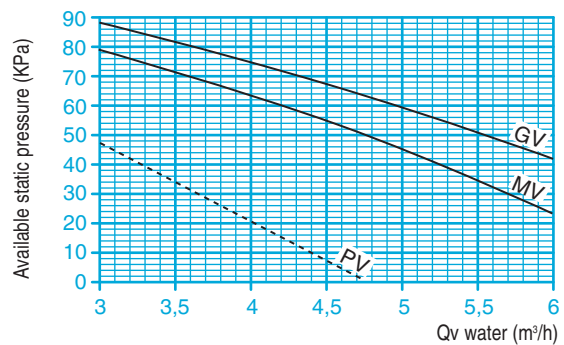
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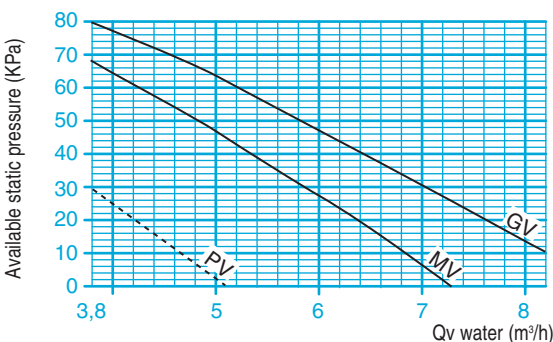
Ageo - 65HT



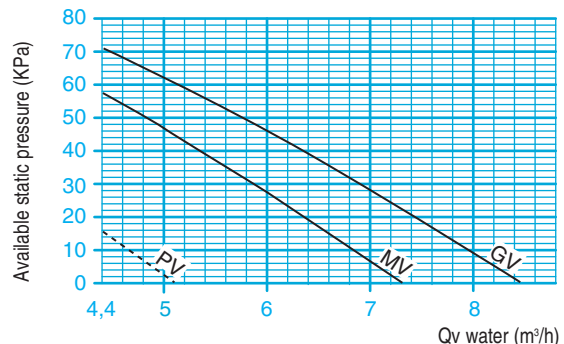
Ageo - 80HT



Ageo - 100HT



Ageo - 120HT



The available pressure curves are given for pure water.

If monopropylene glycol is to be used, reduce the available pressures by:

- 5 kPa for 20% MPG
- 10 kPa for 40% MPG



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AGEO

COOLING AND HEATING CAPACITIES

Cold water outlet temp. (°C)		Hot water outlet temp. (°C)																				
		30			35			40			45			50			55					
		Pf kW	Pa kW	Pc kW	Pf kW	Pa kW	Pc kW	Pf kW	Pa kW	Pc kW	Pf kW	Pa kW	Pc kW	Pf kW	Pa kW	Pc kW	Pf kW	Pa kW	Pc kW			
20H	40% monopropylene glycol solution	-6	3.4	1.3	4.3	3.3	1.4	4.6	3.1	1.6	4.6	2.9	1.8	4.6	2.7	2.1	4.6	2.3	2.4	4.5		
		-4	3.7	1.3	4.9	3.6	1.4	4.9	3.4	1.6	4.9	3.2	1.8	5.9	2.9	2.1	4.9	2.6	2.4	4.8		
		-2	4.0	1.3	5.2	3.8	1.4	5.2	3.7	1.6	5.2	3.5	1.8	5.2	3.2	2.1	5.1	2.9	2.4	5.1		
		0	4.4	1.3	5.6	4.2	1.4	5.6	4.0	1.6	5.5	3.8	1.8	5.5	3.5	2.1	5.4	3.2	2.3	5.4		
		2	4.7	1.3	5.9	4.5	1.4	5.9	4.3	1.6	5.8	4.1	1.8	5.8	3.8	2.1	5.7	3.4	2.3	5.6		
	Municipal water	5	5.5	1.3	6.7	5.2	1.4	6.6	5.0	1.6	6.6	4.7	1.8	6.5	4.4	2.1	6.4	4.1	2.3	6.3		
		6	5.9	1.3	7.2	5.6	1.5	7.0	5.2	1.6	6.8	4.9	1.9	6.7	4.6	2.1	6.6	4.3	2.3	6.5		
		7	6.2	1.3	7.4	5.8	1.5	7.2	5.4	1.6	7.0	5.1	1.9	6.8	4.8	2.1	6.7	4.4	2.3	6.6		
		8	6.3	1.3	7.6	6.0	1.5	7.4	5.6	1.6	7.2	5.3	1.8	7.1	4.9	2.1	6.9	4.6	2.3	6.8		
		10	6.7	1.3	8.0	6.4	1.5	7.8	6.0	1.6	7.6	5.7	1.8	7.4	5.3	2.1	7.3	4.9	2.3	7.2		
		12	7.2	1.3	8.4	6.8	1.5	8.2	6.4	1.6	8.0	6.0	1.8	7.8	5.7	2.1	7.7	5.3	2.3	7.5		
		15	7.9	1.3	9.1	7.5	1.5	9.0	7.1	1.6	8.7	6.7	1.9	8.5	6.3	2.1	8.3	5.9	2.3	8.2		
		18	8.8	1.3	10.0	8.4	1.4	9.8	8.0	1.6	9.6	7.5	1.9	9.3	7.0	2.1	9.0	6.5	2.3	8.7		
		20	9.3	1.3	10.6	8.9	1.4	10.3	8.5	1.6	10.1	7.9	1.9	9.7	7.4	2.1	9.5	7.0	2.3	9.2		
		30H	40% monopropylene glycol solution	-6	5.1	1.7	6.7	4.8	2.0	6.6	4.5	2.2	6.6	4.2	2.5	6.6	3.8	2.9	6.6	3.5	3.3	6.5
				-4	5.5	1.7	7.1	5.2	1.9	7.0	4.8	2.2	7.0	4.5	2.5	6.9	4.2	2.9	6.9	3.8	3.3	6.9
				-2	5.9	1.7	7.5	5.6	1.9	7.4	5.2	2.2	7.4	4.9	2.5	7.3	4.5	2.9	7.2	4.1	3.3	7.2
				0	6.4	1.7	8.0	6.0	1.9	7.9	5.6	2.2	7.8	5.3	2.5	7.7	4.9	2.9	7.6	4.5	3.3	7.5
				2	6.8	1.7	8.5	6.5	1.9	8.3	6.1	2.2	8.2	5.7	2.5	8.1	5.3	2.9	8.0	4.8	3.3	7.9
			Municipal water	5	8.0	1.6	9.6	7.5	1.9	9.4	7.0	2.2	9.1	6.5	2.5	9.0	6.1	2.9	8.8	5.6	3.2	8.6
6	8.1			1.7	9.8	7.7	1.9	9.6	7.2	2.2	9.4	6.8	2.5	9.2	6.3	2.9	9.0	5.8	3.2	8.8		
7	8.4			1.7	10.1	8.0	1.9	9.8	7.5	2.2	9.6	7.0	2.5	9.4	6.5	2.9	9.2	6.0	3.2	9.1		
8	8.8			1.6	10.4	8.3	1.9	10.2	7.9	2.1	9.9	7.3	2.5	9.7	6.7	2.8	9.5	6.2	3.2	9.3		
10	9.3			1.7	11.0	8.8	1.9	10.7	8.3	2.2	10.4	7.8	2.5	10.2	7.2	2.8	9.9	6.7	3.2	9.7		
12	10.0			1.7	11.6	9.4	1.9	11.3	8.9	2.2	11.0	8.3	2.5	10.7	7.7	2.8	10.4	7.1	3.2	10.2		
15	11.0			1.7	12.6	10.4	1.9	12.3	9.8	2.2	11.9	9.2	2.5	11.6	8.6	2.8	11.3	7.9	3.2	11.0		
18	12.1			1.7	13.7	11.5	1.9	13.3	10.8	2.2	12.9	10.1	2.5	12.5	9.4	2.8	12.1	8.7	3.2	11.7		
20	12.8			1.7	14.4	12.1	1.9	14.0	11.4	2.2	13.5	10.7	2.5	13.1	10.0	2.8	12.7	9.2	3.1	12.2		
40H	40% monopropylene glycol solution			-6	6.5	2.2	8.6	6.2	2.5	8.5	5.8	2.8	8.4	5.4	3.2	8.4	5.0	3.6	8.4	4.5	4.1	8.3
				-4	7.1	2.2	9.1	6.7	2.5	9.0	6.3	2.8	8.9	5.8	3.2	8.9	5.4	3.6	8.8	4.9	4.1	8.8
				-2	7.6	2.2	9.7	7.2	2.4	9.6	6.8	2.8	9.4	6.3	3.2	9.3	5.8	3.6	9.2	5.4	4.1	9.2
				0	8.3	2.1	10.3	7.8	2.4	10.1	7.3	2.8	10.0	6.8	3.2	9.8	6.3	3.6	9.7	5.8	4.1	9.6
				2	8.8	2.1	10.9	8.3	2.4	10.7	7.8	2.8	10.5	7.3	3.2	10.4	6.8	3.6	10.2	6.2	4.0	10.1
	Municipal water			5	10.2	2.1	12.2	9.6	2.4	12.0	9.0	2.8	11.7	8.5	3.2	11.5	7.8	3.6	11.2	7.2	4.0	11.0
		6	10.5	2.1	12.6	9.9	2.4	12.3	9.4	2.8	12.0	8.8	3.2	11.8	8.1	3.6	11.5	7.5	4.0	11.3		
		7	10.9	2.1	13.0	10.3	2.4	12.7	9.7	2.8	12.4	9.1	3.2	12.1	8.4	3.6	11.8	7.8	4.0	11.6		
		8	11.3	2.1	13.3	10.7	2.4	13.0	10.0	2.8	12.7	9.4	3.1	12.4	8.7	3.6	12.1	8.0	4.0	11.8		
		10	12.1	2.1	14.1	11.4	2.4	13.7	10.8	2.8	13.4	10.1	3.1	13.1	9.3	3.5	12.7	8.6	4.0	12.4		
		12	12.9	2.1	15.0	12.2	2.4	14.5	11.5	2.7	14.1	10.8	3.1	13.8	10.0	3.5	13.4	9.2	4.0	13.0		
		15	14.2	2.1	16.3	13.4	2.4	15.8	12.7	2.7	15.3	11.9	3.1	14.9	11.0	3.5	14.4	10.3	3.9	14.1		
		18	15.7	2.1	17.7	14.8	2.4	17.2	14.0	2.7	16.6	13.1	3.1	16.1	12.2	3.5	15.6	11.3	3.9	15.1		
		20	16.6	2.1	18.6	15.7	2.4	18.0	14.8	2.7	17.5	13.9	3.1	16.9	12.9	3.5	16.3	12.0	3.9	15.7		
		50H	40% monopropylene glycol solution	-6	8.4	2.4	10.9	8.0	2.8	10.8	7.5	3.2	10.7	7.1	3.6	10.7	6.4	4.1	10.5	5.5	4.8	10.3
				-4	9.1	2.4	11.5	8.6	2.8	11.4	8.1	3.2	11.2	7.7	3.6	11.3	6.9	4.1	11.1	6.1	4.8	10.9
				-2	9.8	2.4	12.2	9.3	2.8	12.1	8.7	3.2	11.9	8.3	3.6	11.8	7.5	4.1	11.7	6.8	4.7	11.5
				0	10.5	2.4	13.0	10.0	2.8	12.8	9.4	3.2	12.6	9.0	3.6	12.5	8.2	4.1	12.3	7.3	4.7	12.0
				2	11.3	2.4	13.7	10.7	2.8	13.5	10.1	3.2	13.2	9.6	3.6	13.2	8.8	4.1	12.9	8.0	4.7	12.7
			Municipal water	5	12.9	2.5	15.4	12.3	2.8	15.1	11.6	3.2	14.8	11.0	3.6	14.5	10.1	4.1	14.3	9.3	4.7	14.0
6	13.3			2.5	15.8	12.6	2.8	15.4	12.0	3.2	15.2	11.5	3.6	15.0	10.5	4.1	14.6	9.6	4.7	14.3		
7	13.8			2.5	16.3	13.1	2.8	15.9	12.4	3.2	15.5	11.6	3.7	15.3	10.9	4.1	15.0	9.9	4.7	14.6		
8	14.2			2.5	16.7	13.6	2.8	16.4	12.7	3.2	15.9	12.1	3.7	15.8	11.3	4.1	15.4	10.3	4.6	14.9		
10	15.2			2.5	17.7	14.4	2.9	17.2	13.7	3.2	16.9	12.9	3.7	16.6	12.0	4.1	16.2	11.1	4.6	15.7		
12	16.2			2.5	18.7	15.3	2.9	18.2	14.6	3.2	17.7	13.8	3.7	17.4	12.8	4.1	16.9	11.9	4.6	16.5		
15	17.9			2.5	20.4	16.8	2.9	19.7	15.9	3.3	19.2	15.2	3.7	18.9	14.2	4.1	18.3	13.2	4.6	17.8		
18	19.5			2.6	22.1	18.6	2.9	21.4	17.5	3.3	20.8	16.7	3.8	20.4	15.6	4.1	19.7	14.5	4.6	19.1		
20	20.6			2.6	23.3	19.5	3.0	22.5	18.5	3.4	21.8	17.6	3.8	21.4	16.6	4.1	20.7	15.3	4.6	19.9		

Cc: Validated cooling capacity based on the operating limits.
 Pi: Compressor power input.
 Hc: Validated heating capacity based on the operating limits.

Glycol / water solution required.
 Refer to the maintenance manual for information on adjusting the water flow rate on the outdoor exchanger (ground water loop).



Water-to-water reversible heat pumps

COOLING AND HEATING CAPACITIES

Cold water outlet temp. (°C)		Hot water outlet temp. (°C)																		
		30			35			40			45			50			55			
		Pf kW	Pa kW	Pc kW	Pf kW	Pa kW	Pc kW	Pf kW	Pa kW	Pc kW	Pf kW	Pa kW	Pc kW	Pf kW	Pa kW	Pc kW	Pf kW	Pa kW	Pc kW	
20HT	40% monopropylene glycol solution	-6	3.5	1.2	4.2	3.3	1.4	4.6	3.1	1.5	4.6	2.9	1.7	4.6	2.7	2.0	4.6	2.3	2.3	4.5
		-4	3.7	1.2	4.9	3.6	1.4	4.9	3.4	1.5	4.9	3.2	1.7	5.8	2.9	2.0	4.8	2.6	2.2	4.7
		-2	4.0	1.2	5.2	3.9	1.4	5.1	3.7	1.5	5.1	3.5	1.7	5.1	3.2	2.0	5.1	2.9	2.2	5.0
		0	4.5	1.2	5.6	4.3	1.4	5.5	4.0	1.5	5.5	3.8	1.7	5.5	3.5	2.0	5.4	3.2	2.2	5.3
		2	4.7	1.2	5.9	4.5	1.4	5.8	4.3	1.5	5.8	4.1	1.7	5.8	3.8	1.9	5.7	3.5	2.2	5.6
	Municipal water	5	5.6	1.2	6.7	5.3	1.4	6.6	5.0	1.5	6.5	4.8	1.7	6.4	4.4	2.0	6.3	4.1	2.2	6.2
		6	6.0	1.2	7.1	5.6	1.4	6.9	5.3	1.6	6.7	4.9	1.8	6.6	4.7	2.0	6.5	4.3	2.2	6.4
		7	6.2	1.2	7.3	5.8	1.4	7.1	5.5	1.6	6.9	5.1	1.8	6.8	4.8	2.0	6.7	4.5	2.2	6.6
		8	6.4	1.2	7.5	6.0	1.4	7.3	5.7	1.5	7.1	5.3	1.7	7.0	5.0	2.0	6.8	4.6	2.2	6.7
		10	6.8	1.2	7.9	6.4	1.4	7.7	6.1	1.5	7.5	5.7	1.7	7.4	5.3	2.0	7.2	5.0	2.2	7.1
		12	7.2	1.2	8.3	6.8	1.4	8.1	6.5	1.5	7.9	6.1	1.7	7.7	5.7	2.0	7.6	5.4	2.2	7.4
		15	7.9	1.2	9.0	7.6	1.4	8.9	7.2	1.6	8.6	6.8	1.8	8.4	6.4	2.0	8.2	6.0	2.2	8.1
		18	8.9	1.2	9.9	8.5	1.4	9.7	8.1	1.5	9.5	7.6	1.8	9.2	7.1	2.0	8.9	6.6	2.2	8.7
		20	9.4	1.2	10.5	9.0	1.4	10.2	8.6	1.5	10.0	8.0	1.8	9.6	7.5	2.0	9.4	7.0	2.2	9.1
30HT	40% monopropylene glycol solution	-6	4.9	1.6	6.8	4.6	1.9	6.7	4.4	2.1	6.7	4.1	2.4	6.7	3.7	2.8	6.7	3.4	3.1	6.6
		-4	5.3	1.6	7.2	5.0	1.8	7.1	4.6	2.1	7.1	4.4	2.4	7.0	4.1	2.8	7.0	3.7	3.1	7.0
		-2	5.7	1.6	7.6	5.4	1.8	7.5	5.0	2.1	7.5	4.7	2.4	7.4	4.4	2.8	7.3	4.0	3.1	7.3
		0	6.2	1.6	8.1	5.8	1.8	8.0	5.4	2.1	7.9	5.1	2.4	7.8	4.7	2.8	7.7	4.4	3.1	7.6
		2	6.6	1.6	8.6	6.3	1.8	8.4	5.9	2.1	8.3	5.5	2.4	8.2	5.1	2.8	8.1	4.6	3.1	8.0
	Municipal water	5	7.7	1.5	9.7	7.3	1.8	9.5	6.8	2.1	9.2	6.3	2.4	9.1	5.9	2.8	8.9	5.4	3.1	8.7
		6	7.8	1.6	9.9	7.4	1.8	9.7	7.0	2.1	9.5	6.6	2.4	9.3	6.1	2.8	9.1	5.6	3.1	8.9
		7	8.1	1.6	10.2	7.7	1.8	9.9	7.3	2.1	9.7	6.8	2.4	9.5	6.3	2.8	9.3	5.8	3.1	9.2
		8	8.5	1.5	10.5	8.0	1.8	10.3	7.6	2.0	10.0	7.1	2.4	9.8	6.5	2.7	9.6	6.0	3.1	9.4
		10	9.0	1.6	11.1	8.5	1.8	10.8	8.0	2.1	10.5	7.5	2.4	10.3	7.0	2.7	10.0	6.5	3.1	9.8
		12	9.7	1.6	11.7	9.1	1.8	11.4	8.6	2.1	11.1	8.0	2.4	10.8	7.4	2.7	10.5	6.9	3.1	10.3
		15	10.6	1.6	12.7	10.1	1.8	12.4	9.5	2.1	12.0	8.9	2.4	11.7	8.3	2.7	11.4	7.6	3.1	11.1
		18	11.7	1.6	13.8	11.1	1.8	13.4	10.4	2.1	13.0	9.8	2.4	12.6	9.1	2.7	12.2	8.4	3.1	11.8
		20	12.4	1.6	14.5	11.7	1.8	14.1	11.0	2.1	13.6	10.3	2.4	13.2	9.7	2.7	12.8	8.9	3.0	12.3
40HT	40% monopropylene glycol solution	-6	6.6	2.0	8.5	6.2	2.2	8.4	5.8	2.5	8.2	5.4	2.8	8.1	5.0	3.2	8.0	4.5	3.6	7.9
		-4	7.1	2.0	9.1	6.7	2.3	8.9	6.3	2.5	8.7	5.9	2.8	8.6	5.4	3.2	8.4	4.9	3.6	8.3
		-2	7.7	2.0	9.6	7.3	2.3	9.4	6.8	2.5	9.2	6.4	2.9	9.1	5.9	3.2	8.9	5.4	3.6	8.8
		0	8.3	2.0	10.2	7.8	2.3	10.0	7.3	2.6	9.8	6.8	2.9	9.6	6.3	3.2	9.4	5.8	3.6	9.2
		2	8.9	2.0	10.9	8.4	2.3	10.6	7.9	2.6	10.4	7.4	2.9	10.1	6.8	3.2	9.9	6.3	3.6	9.7
	Municipal water	5	10.2	2.0	12.2	9.7	2.3	11.9	9.1	2.6	11.6	8.5	2.9	11.3	7.9	3.3	11.0	7.2	3.6	10.7
		6	10.6	2.0	12.6	10.0	2.3	12.2	9.4	2.6	11.9	8.8	2.9	11.6	8.1	3.3	11.3	7.5	3.7	11.0
		7	11.0	2.0	13.0	10.4	2.3	12.6	9.7	2.6	12.2	9.1	2.9	11.9	8.4	3.3	11.6	7.8	3.7	11.3
		8	11.4	2.0	13.3	10.7	2.3	13.0	10.1	2.6	12.6	9.4	2.9	12.2	8.7	3.3	11.9	8.0	3.7	11.5
		10	12.1	2.0	14.1	11.5	2.3	13.7	10.8	2.6	13.3	10.1	2.9	12.9	9.4	3.3	12.5	8.6	3.7	12.2
		12	12.9	2.0	14.9	12.2	2.3	14.5	11.5	2.6	14.1	10.8	2.9	13.6	10.0	3.3	13.2	9.3	3.7	12.8
		15	14.3	2.0	16.3	13.5	2.3	15.7	12.7	2.6	15.3	11.9	2.9	14.8	11.1	3.3	14.3	10.3	3.7	13.9
		18	15.7	2.0	17.7	14.9	2.3	17.1	14.0	2.6	16.6	13.1	2.9	16.0	12.2	3.3	15.4	11.3	3.7	14.9
		20	16.6	2.1	18.6	15.8	2.4	18.0	14.9	2.6	17.5	14.0	2.9	16.8	13.0	3.3	16.3	12.0	3.7	15.7
50HT	40% monopropylene glycol solution	-6	8.9	2.6	11.4	8.5	3.0	11.3	8.0	3.4	11.2	7.4	3.8	11.1	6.8	4.4	10.9	5.9	5.1	10.7
		-4	9.6	2.6	12.1	9.1	3.0	12.0	8.6	3.4	11.8	8.0	3.8	11.7	7.4	4.4	11.5	6.6	5.1	11.3
		-2	10.3	2.6	12.8	9.8	3.0	12.7	9.3	3.4	12.5	8.7	3.8	12.3	8.0	4.4	12.1	7.2	5.0	11.9
		0	11.1	2.6	13.6	10.5	3.0	13.4	10.0	3.4	13.2	9.3	3.8	13.0	8.6	4.4	12.8	7.8	5.0	12.5
		2	11.9	2.6	14.4	11.3	3.0	14.2	10.7	3.4	13.9	10.0	3.8	13.7	9.3	4.4	13.4	8.4	5.0	13.2
	Municipal water	5	13.6	2.7	16.2	12.9	3.0	15.8	12.2	3.4	15.5	11.5	3.8	15.1	10.6	4.4	14.8	9.7	5.0	14.5
		6	14.0	2.7	16.6	13.3	3.0	16.2	12.6	3.4	15.9	11.8	3.8	15.6	11.0	4.4	15.2	10.1	5.0	14.8
		7	14.5	2.7	17.1	13.8	3.0	16.7	13.0	3.4	16.3	12.2	3.9	15.9	11.4	4.4	15.6	10.5	5.0	15.2
		8	14.9	2.7	17.5	14.2	3.0	17.2	13.4	3.4	16.7	12.6	3.9	16.4	11.8	4.4	16.0	10.8	4.9	15.5
		10	15.9	2.7	18.6	15.2	3.1	18.1	14.3	3.4	17.7	13.5	3.9	17.2	12.6	4.4	16.8	11.6	4.9	16.3
		12	17.0	2.7	19.6	16.1	3.1	19.1	15.3	3.4	18.6	14.4	3.9	18.1	13.4	4.4	17.6	12.4	4.9	17.1
		15	18.7	2.7	21.4	17.7	3.1	20.7	16.7	3.5	20.1	15.8	3.9	19.6	14.8	4.4	19.0	13.7	4.9	18.5
		18	20.5	2.8	23.2	19.4	3.1	22.5	18.4	3.5	21.8	17.3	4.0	21.2	16.2	4.4	20.5	15.1	4.9	19.8
		20	21.7	2.8	24.4	20.5	3.2	23.6	19.4	3.6	22.9	18.3	4.0	22.2	17.2	4.4	21.5	15.9	4.9	20.7

Cc: Validated cooling capacity based on the operating limits.
PI: Compressor power input.
Hc: Validated heating capacity based on the operating limits.

Glycol / water solution required.
 Refer to the maintenance manual for information on adjusting the water flow rate on the outdoor exchanger (ground water loop).



Water-to-water reversible heat pumps

AGEO

COOLING AND HEATING CAPACITIES

Cold water outlet temp. (°C)		Hot water outlet temp. (°C)																		
		30			35			40			45			50			55			
		Pf kW	Pa kW	Pc kW	Pf kW	Pa kW	Pc kW	Pf kW	Pa kW	Pc kW	Pf kW	Pa kW	Pc kW	Pf kW	Pa kW	Pc kW	Pf kW	Pa kW	Pc kW	
65HT	40% monopropylene glycol solution	-6	10.7	3.1	13.7	10.1	3.49	13.4	9.4	3.9	13.1	8.7	4.4	12.9	7.9	4.9	12.5	7.0	5.5	12.2
		-4	11.5	3.2	14.6	10.9	3.52	14.3	10.2	3.9	14.0	9.5	4.4	13.7	8.7	4.9	13.3	7.8	5.5	13.0
		-2	12.4	3.2	15.5	11.7	3.54	15.2	11.0	4.0	14.8	10.3	4.42	14.5	9.5	4.9	14.1	8.6	5.5	13.8
		0	13.4	3.2	16.4	12.7	3.57	16.1	11.9	4.0	15.8	11.1	4.5	15.4	10.3	5.0	15.0	9.4	5.5	14.6
		2	14.4	3.2	17.5	13.6	3.60	17.1	12.8	4.0	16.7	12.0	4.5	16.3	11.1	5.0	15.9	10.2	5.6	15.4
	Municipal water	5	16.7	3.2	19.8	15.6	3.7	19.2	14.8	4.1	18.7	13.8	4.6	18.2	12.8	5.1	17.7	11.8	5.6	17.2
		6	17.1	3.3	20.3	16.2	3.7	19.7	15.3	4.1	19.2	14.3	4.6	18.7	13.3	5.1	18.2	12.2	5.6	17.6
		7	17.6	3.3	20.8	16.7	3.7	20.3	15.8	4.1	19.8	14.8	4.6	19.2	13.8	5.1	18.7	12.7	5.7	18.1
		8	18.2	3.3	21.4	17.3	3.7	20.9	16.3	4.1	20.3	15.3	4.6	19.7	14.3	5.1	19.2	13.2	5.7	18.6
		10	19.5	3.3	22.7	18.5	3.7	22.1	17.5	4.1	21.5	16.4	4.6	20.9	15.3	5.1	20.2	14.1	5.7	19.6
		12	20.8	3.3	24.0	19.7	3.7	23.3	18.6	4.2	22.7	17.5	4.6	22.0	16.3	5.2	21.3	15.1	5.7	20.6
		15	22.8	3.4	26.1	21.7	3.8	25.4	20.5	4.2	24.6	19.2	4.7	23.8	18.0	5.2	23.0	16.8	5.8	22.3
		18	25.1	3.4	28.5	23.8	3.8	27.6	22.5	4.2	26.7	21.2	4.7	25.8	19.8	5.2	24.9	18.4	5.8	24.0
		20	26.5	3.4	29.9	25.2	3.8	28.9	24.0	4.2	28.1	22.4	4.7	27.0	21.0	5.3	26.1	19.5	5.8	25.2
80HT	40% monopropylene glycol solution	-6	13.0	3.8	16.7	12.3	4.3	16.4	11.5	4.8	16.1	10.7	5.3	15.8	9.8	6.0	15.5	8.9	6.7	15.2
		-4	14.1	3.9	17.8	13.3	4.3	17.4	12.5	4.8	17.1	11.6	5.4	16.7	10.7	6.0	16.4	9.8	6.7	16.1
		-2	15.2	3.9	19.0	14.4	4.3	18.6	13.5	4.8	18.2	12.6	5.4	17.8	11.7	6.0	17.4	10.7	6.7	17.0
		0	16.4	3.9	20.2	15.5	4.4	19.7	14.6	4.9	19.3	13.7	5.4	18.9	12.7	6.0	18.4	11.6	6.7	18.0
		2	17.6	3.9	21.5	16.7	4.4	21.0	15.8	4.9	20.5	14.8	5.5	20.0	13.7	6.1	19.5	12.6	6.8	19.0
	Municipal water	5	20.2	4.0	24.1	19.2	4.5	23.5	18.2	5.0	23.0	17.0	5.5	22.3	15.8	6.2	21.7	14.5	6.8	21.1
		6	20.9	4.0	24.8	19.9	4.5	24.2	18.8	5.0	23.6	17.6	5.6	23.0	16.4	6.2	22.3	15.1	6.9	21.6
		7	21.6	4.0	25.6	20.6	4.5	24.9	19.4	5.0	24.3	18.2	5.6	23.6	16.9	6.2	22.9	15.6	6.9	22.2
		8	22.3	4.1	26.3	21.3	4.5	25.6	20.1	5.0	24.9	18.8	5.6	24.2	17.5	6.2	23.5	16.2	6.9	22.8
		10	23.9	4.1	27.8	22.7	4.5	27.1	21.5	5.1	26.4	20.1	5.6	25.6	18.8	6.3	24.8	17.4	6.9	24.0
		12	25.4	4.1	29.4	24.2	4.5	28.6	22.9	5.1	27.8	21.5	5.7	27.0	20.1	6.3	26.1	18.6	7.0	25.3
		15	27.9	4.1	31.9	26.5	4.6	31.0	25.1	5.1	30.1	23.7	5.7	29.2	22.1	6.3	28.2	20.5	7.0	27.3
		18	30.3	4.2	34.4	28.9	4.6	33.4	27.4	5.1	32.4	25.8	5.7	31.3	24.1	6.4	30.3	22.5	7.0	29.3
		20	31.9	4.2	36.0	30.5	4.6	35.0	28.9	5.2	33.9	27.2	5.8	32.8	25.5	6.4	31.7	23.8	7.1	30.6
100HT	40% monopropylene glycol solution	-6	16.1	4.7	20.7	15.3	5.3	20.4	14.4	5.9	20.0	13.4	6.6	19.7	12.2	7.5	19.2	10.7	8.5	18.7
		-4	17.5	4.7	22.1	16.7	5.3	21.7	15.7	5.9	21.4	14.6	6.6	20.9	13.4	7.5	20.5	12.1	8.4	20.0
		-2	19.0	4.8	23.6	18.1	5.3	23.2	17.1	5.9	22.7	15.9	6.6	22.3	14.7	7.4	21.8	13.4	8.4	21.3
		0	20.5	4.8	25.1	19.5	5.3	24.7	18.4	5.9	24.2	17.3	6.6	23.7	16.0	7.5	23.1	14.6	8.4	22.5
		2	22.1	4.8	26.8	21.0	5.4	26.2	19.9	6.0	25.6	18.7	6.7	25.1	17.4	7.5	24.5	15.9	8.4	23.9
	Municipal water	5	25.5	4.9	30.3	24.2	5.4	29.5	22.9	6.1	28.8	21.5	6.8	28.0	20.1	7.5	27.3	18.5	8.4	26.6
		6	26.4	4.9	31.1	25.1	5.5	30.4	23.7	6.1	29.6	22.3	6.8	28.8	20.8	7.6	28.1	19.2	8.5	27.3
		7	27.3	4.9	32.1	25.9	5.5	31.3	24.5	6.1	30.5	23.1	6.8	29.6	21.6	7.6	28.8	19.9	8.5	28.0
		8	28.2	5.0	33.1	26.8	5.5	32.2	25.4	6.1	31.3	23.9	6.8	30.5	22.3	7.6	29.6	20.6	8.5	28.8
		10	30.2	5.0	35.1	28.7	5.6	34.1	27.1	6.2	33.1	25.5	6.9	32.2	23.9	7.7	31.2	22.1	8.5	30.3
		12	32.2	5.1	37.2	30.6	5.7	36.1	29.0	6.3	35.0	27.3	6.9	34.0	25.5	7.7	32.9	23.7	8.6	31.9
		15	35.5	5.2	40.6	33.7	5.8	39.4	31.8	6.4	38.0	30.0	7.1	36.8	28.1	7.8	35.6	26.2	8.6	34.5
		18	39.1	5.3	44.3	37.1	5.9	42.8	35.0	6.5	41.4	33.0	7.2	40.0	30.9	7.9	38.6	28.8	8.7	37.3
		20	41.4	5.4	46.7	39.2	6.0	45.1	37.0	6.6	43.5	34.9	7.3	41.9	32.7	8.0	40.4	30.5	8.8	39.0
120HT	40% monopropylene glycol solution	-6	19.0	5.5	24.3	17.9	6.2	23.8	16.7	6.9	23.4	15.4	7.8	22.9	14.2	8.8	22.5	12.6	9.9	21.9
		-4	20.6	5.5	25.9	19.4	6.2	25.4	18.2	7.0	24.9	16.9	7.8	24.3	15.5	8.8	23.8	14.0	9.9	23.3
		-2	22.2	5.6	27.6	21.0	6.2	27.0	19.7	7.0	26.4	18.3	7.9	25.8	16.8	8.8	25.2	15.3	9.9	24.7
		0	23.9	5.6	29.3	22.7	6.3	28.7	21.3	7.1	28.1	19.8	7.9	27.4	18.3	8.9	26.7	16.6	10.0	26.1
		2	26.0	5.5	31.3	24.4	6.3	30.5	22.9	7.1	29.8	21.4	8.0	29.0	19.8	8.9	28.3	18.0	10.0	27.5
	Municipal water	5	29.6	5.7	35.1	28.0	6.4	34.3	26.5	7.2	33.4	24.7	8.0	32.5	22.8	9.0	31.5	20.9	10.1	30.5
		6	30.6	5.7	36.2	29.1	6.4	35.3	27.4	7.2	34.4	25.6	8.1	33.4	23.7	9.0	32.4	21.7	10.1	31.4
		7	31.6	5.8	37.2	30.1	6.4	36.3	28.3	7.2	35.3	26.4	8.1	34.3	24.6	9.0	33.3	22.5	10.1	32.2
		8	32.7	5.8	38.3	31.1	6.5	37.4	29.4	7.2	36.4	27.4	8.1	35.2	25.4	9.1	34.2	23.4	10.1	33.1
		10	34.8	5.8	40.5	33.2	6.5	39.6	31.4	7.3	38.4	29.4	8.1	37.2	27.3	9.1	36.0	25.1	10.1	34.8
		12	37.2	5.9	42.9	35.4	6.6	41.8	33.5	7.3	40.6	31.4	8.2	39.3	29.2	9.1	38.0	26.9	10.1	36.7
		15	40.7	6.0	46.6	38.9	6.7	45.4	36.9	7.4	44.1	34.7	8.2	42.6	32.3	9.2	41.1	29.9	10.2	39.7
		18	44.8	6.1	50.8	42.8	6.7	49.4	40.7	7.4	48.0	38.2	8.3	46.3	35.7	9.2	44.6	33.1	10.2	42.9
		20	47.4	6.2	53.5	45.2	6.8	51.9	43.0	7.5	50.3	40.5	8.3	48.6	37.8	9.2	46.8	35.2	10.2	45.2

Cc: Validated cooling capacity based on the operating limits.
 Pi: Compressor power input.
 Hc: Validated heating capacity based on the operating limits.

Glycol / water solution required.
 Refer to the maintenance manual for information on adjusting the water flow rate on the outdoor exchanger (ground water loop).



Water-to-water reversible heat pumps

TECHNICAL CHARACTERISTICS

Ageo		20H	30H	40H	50H	20HT	30HT	40HT	50HT	65HT	80HT	100HT	120HT	
Compressor	Number	1												
	Type	SCROLL												
	Capacity control	%												
	Rotation speed	rpm												
	R-410A refrigerant	kg	0.68	0.74	0.88	1.48	0.68	0.74	0.88	1.48	1.55	1.85	2.95	2.95
	Oil capacity (POE)	l	1.1	1.25		1.66	1.1	1.25		1.95	1.66	1.77	3.25	3.25
Indoor heat exchanger	Number / circuits	1 / 1												
	Type	brazed plates												
	Water capacity	l	1.04	1.24	1.62	2.38	1.04	1.24	1.62	2.38	2.76	3.7	4.17	4.17
Indoor hydraulic module	Expansion vessel capacity	l	8						12					
	Expansion vessel pre-charge pressure	bar	1.5											
	Max. water capacity of system (pure water / glycol-water solution)	l	250 / 120						375 / 180					
	Min. water capacity of system	l	38	40	52	66	40	52	66	83	102	127	148	
	Number of accelerator pump speeds / Available pressure 30/35°C 10°C	Kpa	2 / 48		2 / 36	2 / 39	2 / 48	2 / 36	2 / 39	2 / 45	2 / 40	2 / 58	2 / 42	
Outdoor heat exchanger	Number / circuits	1 / 1												
	Type	brazed plates												
	Water capacity	l	1.04	1.24	1.62	2.38	1.04	1.24	1.62	2.38	2.76	3.7	4.17	4.17
Outdoor hydraulic module	Expansion vessel capacity	l	8						12					
	Expansion vessel pre-charge pressure	bar	1.5											
	Max. water capacity of system (glycol / water solution)	l	214						321					
	Number of accelerator pump speeds / Available pressure 30/35°C 10°C	Kpa	3 / 39	3 / 45	3 / 38	3 / 39	3 / 45	3 / 38	3 / 57	3 / 58	3 / 44	3 / 19		

AGEO

ELECTRICAL CHARACTERISTICS

Ageo		20H	30H	40H	50H	20HT	30HT	40HT	50HT	65HT	80HT	100HT	120HT	
Electrical power supply		230V - 1ph +Neutral+Earth - 50Hz						400V - 3ph +Neutral +Earth - 50Hz						
Rated current	Compressor	A	13.9	17.5	22.2	27	3.4	4.8	7.6	10.3	11.2	14.3	16.4	20.5
	Indoor circuit pump (min./max.)	A	0.57 / 0.96						0.65 / 1.10					
	Outdoor circuit pump (min./max.)	A	0.57 / 0.96		0.65 / 1.10		0.57 / 0.96		0.65 / 1.10		1.75 / 2.02			
	Control	A	0.18											
Max. system current (In)	A	16	19.6	24.5	31.8	5.5	6.9	9.84	12.54	14.5	17.6	19.7	24.72	
Compressor starting current without/with soft starter kit	A	-/23	-/29	-/39	-/43	22/9	30/10	48/14	64/17	74/21	101/26	111/36	118/37	
Electrical wiring		3G4		3G6	3G10	5G2.5		5G4			5G6			
Connections: thermostat, outdoor sensor, pool sensor, On/Off inputs	mm ²	0.2 - 1.5												
Connections: summer/winter bypass valve, well pump contactor coil, kit control circuits	mm ²	1.5												
Circuit breaker (not supp.) (C or D curve)	Am	20	25	32	10	16			20	25				

- (1) Corresponds to max. compressor current while running
 (2) Cable with 2 or 3 charged PVC conductors for temperatures below 60°C
 Note: for other conditions, refer to current standards.

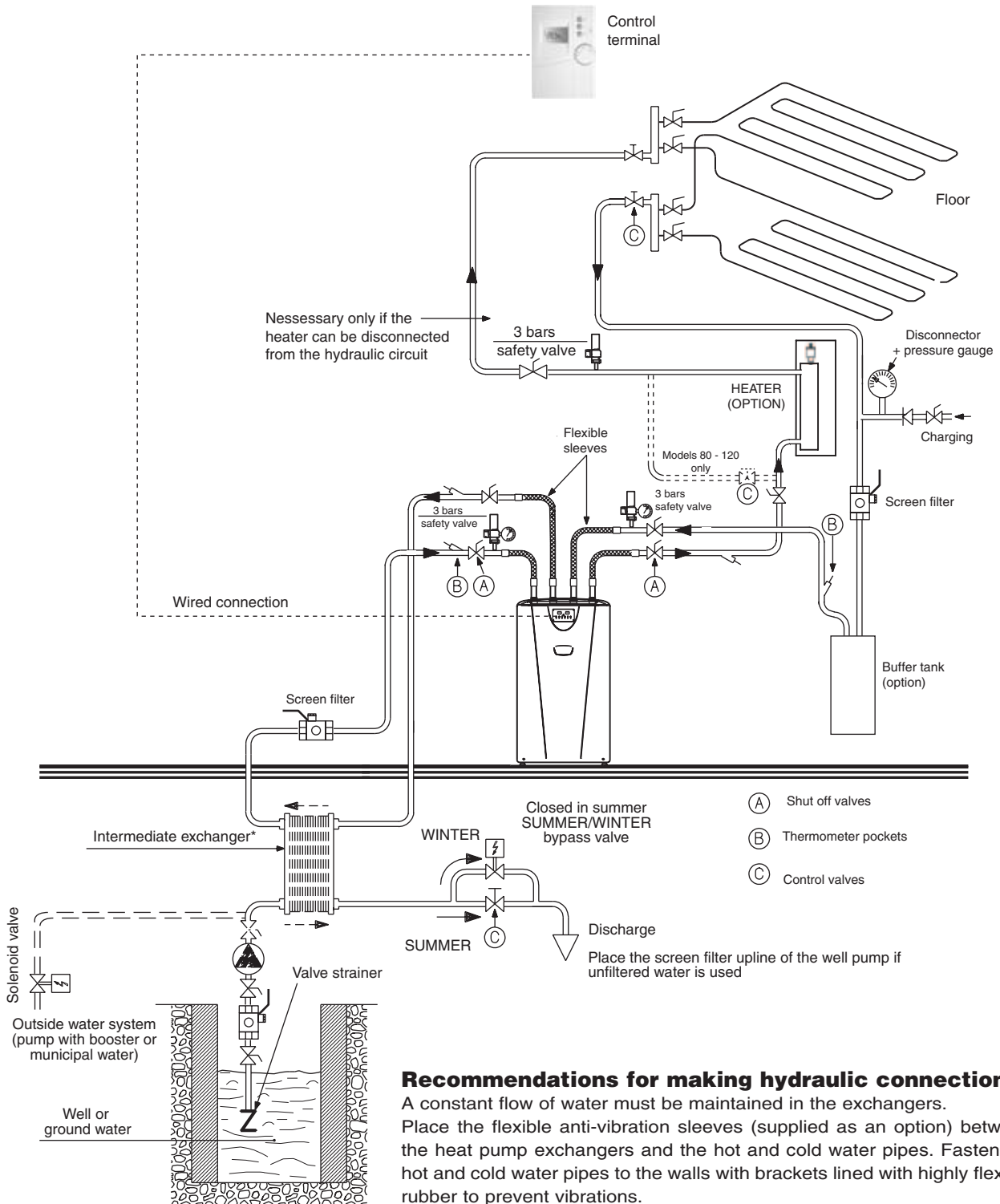
Sound levels

Ageo		20H	30H	40H	50H	20HT	30HT	40HT	50HT	65HT	80HT	100HT	120HT
Sound power	dB(A)	53	54	57	53	54	57	58	59	61	63		
Sound pressure	dB(A)	30	31	33	30	31	33	36	36	38	41		

Sound power certified NFPAC

Sound pressure level at 5 metres, 1.5 metres from ground, in a free field, directivity 2.

SCHEMATIC INSTALLATION DIAGRAM



Recommendations for making hydraulic connections

A constant flow of water must be maintained in the exchangers. Place the flexible anti-vibration sleeves (supplied as an option) between the heat pump exchangers and the hot and cold water pipes. Fasten the hot and cold water pipes to the walls with brackets lined with highly flexible rubber to prevent vibrations.

The system must be charged with a sufficient volume of water to avoid compressor short cycles. Install a buffer tank if the volume of water in the heating or cooling system is too low. See the minimum water capacities given in the technical characteristics.

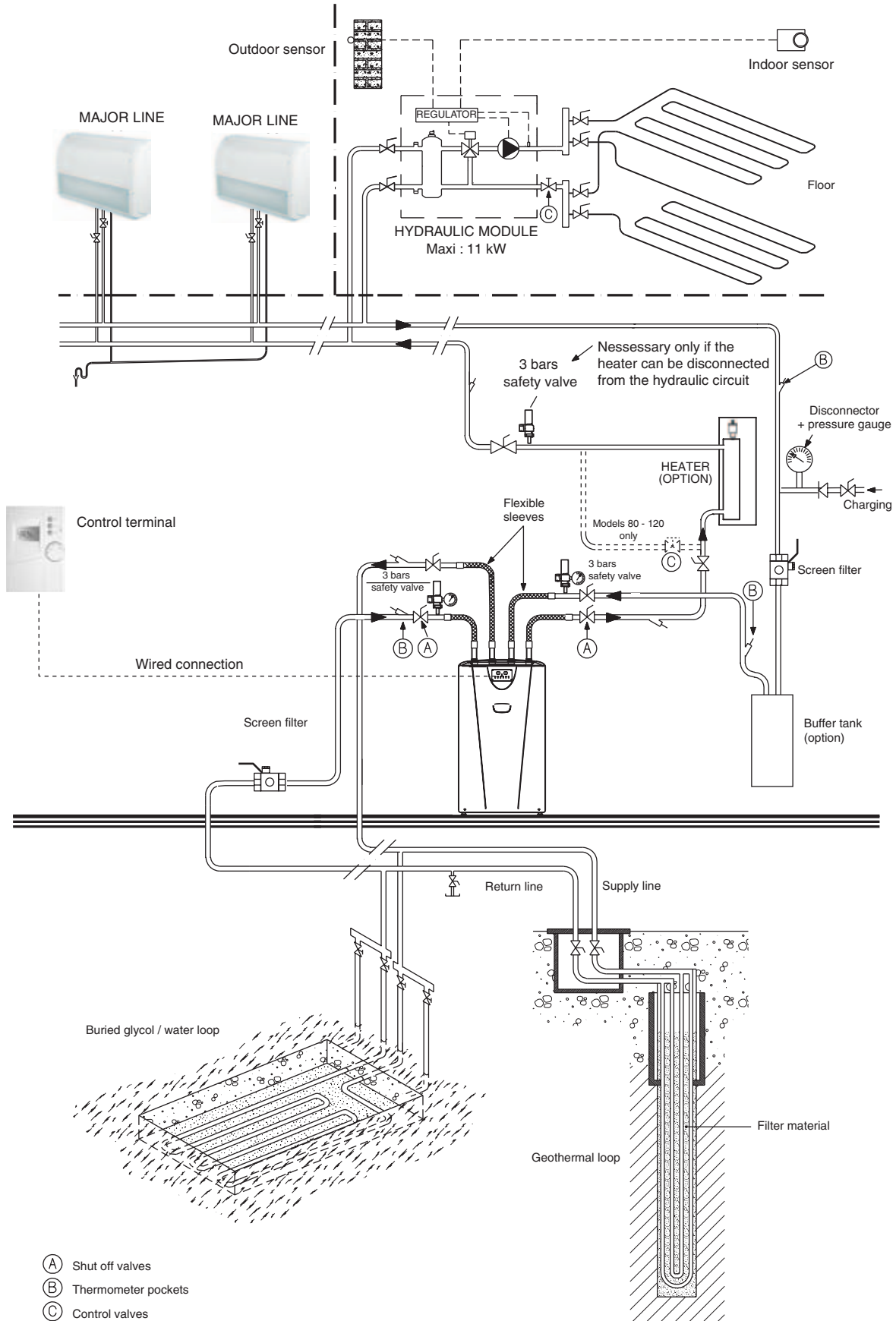
* CIAT declines all liability for the clogging and malfunctioning of the exchanger inside the Ageo heat pump if this exchanger is not installed.

Note: the schematic diagrams herein are provided for information only. Under no circumstances do they constitute an actual installation diagram.



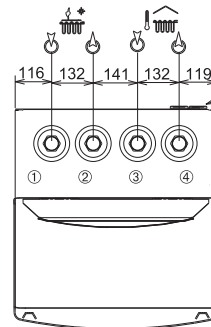
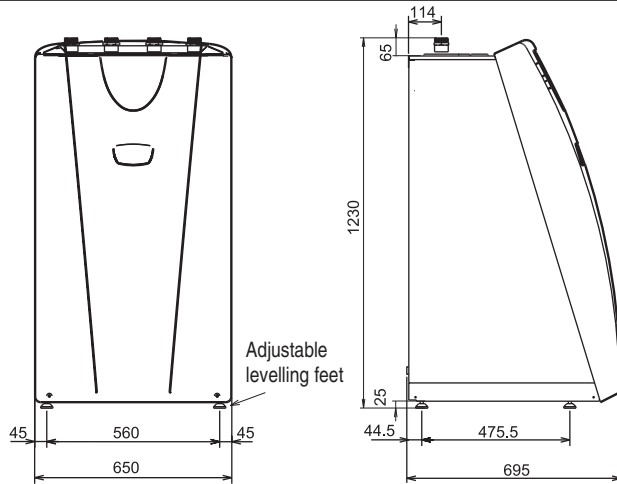
Water-to-water reversible heat pumps

SCHEMATIC INSTALLATION DIAGRAM



Note: the schematic diagrams herein are provided for information only. Under no circumstances do they constitute an actual installation diagram.

DIMENSIONS



- ⚡ Electrical power supply
- ① Water inlet on outdoor circuit
- ② Water outlet on outdoor circuit
- ③ Water inlet on indoor circuit
- ④ Water outlet on indoor circuit
- 🔌 Water inlet
- 🔌 Water outlet

Ageo	20	30	40	50	65	80	100	120
Connection dia. ① ② ③ ④	1" G M			1" 1/4 G M			1" 1/2 G M	
Weight in kg	133	135	139	154	164	168	190	195

INSTALLATION RECOMMENDATIONS

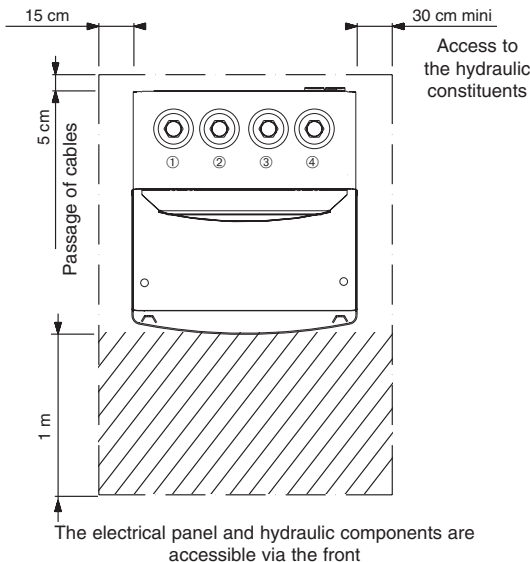
Installation

Ageo heat pumps are designed for installation in service rooms, laundry rooms and garages protected from adverse weather and freezing temperatures.

Carefully consider where to install the unit inside your home and choose a location that meets your noise level requirements. For example, install it away from bedrooms and avoid contact with surfaces that could transfer noise.

There should be enough clearance around the unit to allow access to the electrical panel and other system components.

Necessary clearance



Electrical connections

- All the information needed to wire the system is provided on the wiring diagram supplied with the unit. The diagram should be followed to the letter.
- Wiring must be performed in accordance with accepted engineering practice and conform to the regulations in force.
- A switch and circuit breaker must be installed on the

consumer unit by the fitter.

NOTE: To protect the indoor circuit from frost, leave the unit on so that water can flow along the hydraulic lines. Add glycol if the system is not used for an extended period of time.

Ageo does not protect the outdoor circuit from freezing temperatures.

- Add glycol to horizontal loops and geothermal loops
- Well / ground water heat pumps: lay the pipes in an area protected from freezing temperatures. If necessary, install pipe heaters.

Hydraulic connections

- Hydraulic connections are to be made in accordance with accepted engineering practice.
- Use flexible connections to prevent the transmission of noise along the pipes.
- As heat pump exchangers are sensitive to clogging, flush the lines thoroughly before connecting them to the unit.
- The following accessories are essential to any hydraulic system and must also be installed:
 - System drain connection at low point.
 - Air vents at high points, etc.
 - Safety valves (3 bar tare).
 - Make sure the water capacity of the system is sufficient (see technical characteristics).
 - Install a buffer tank if necessary.
 - A constant flow of water must be maintained in the indoor and outdoor exchangers.
 - Install a screen filter on both lines ($\varnothing < 600 \mu\text{m}$) to protect the plate heat exchangers from clogging.
 - Follow the direction of the water flow in the exchangers.

Start-up

- Follow the instructions given in our installation and maintenance manuals.

Maintenance

- Follow the owner's manual.
- Take out a maintenance contract.

This document is non-contractual. As part of its policy of continual product improvement, CIAT reserves the right to make any technical modification it feels appropriate without prior notification.

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