

Hoval Belaria® fit (8-26)
Modulating monoblock heat pump for heating and cooling in the living area.

- For heating and cooling in cascades and domestic hot water production
- Modulating air/water heat pump in compact design for outdoor installation
- Smart Grid-ready
- Cladding made from painted, galvanised sheet steel (RAL 9001)
- Speed-controlled axial fans
 - Belaria fit® (8,13) 1 piece
 - Belaria fit® (20,26) 2 pieces
- Hermetic, inverter-controlled rotary compressor mounted on vibration-damping rubber mounts to ensure vibration-free operation under all operating conditions
- Silenced casing
- Oil sump heater
- Finned heat exchanger with hydrophilic Blue Fin coating
- Copper-soldered plate heat exchanger made of stainless steel with polypropylene insulation and frost protection heating
- Electronic expansion valve
- 4-way valve for refrigeration circuit switching
- Liquid separator and collector
- Filter dryer
- High and low-pressure switches
- Circulating pump
 - Belaria fit® (8,13) self-regulating
 - Belaria fit® (20,26) 3-stage
- Automatic bleeder valve
- Diaphragm pressure expansion tank
 - Usable volume 4.8 l
- Safety valve
- Flow monitor
- Electrical box internally wired ready for connection
- External operator terminal with display and function keys
- The operator terminal can be installed in any room.

Condensate drain

- It must be ensured that the condensate produced can be absorbed to a sufficient extent by a gravel bed (see configuration and connection diagram).
- Condensate drip tray see accessories

Hydraulic connections

- Heating connections

Electrical connections

- See installation instructions

Delivery

- Belaria® fit
- 1 temperature sensor (further temperature sensors see accessories)
- Operator terminal

On site

- Wall openings for water-side connection lines
- Water-side connection lines
- Electrical connection lines



Model range

Belaria® fit type	Heat output		Cooling capacity		
	35 °C	55 °C	A-7W35 kW	A2W35 kW	
(8) 1PH	A+++	A++	7.3	8.7	11.1
(13) 1PH	A+++	A++	12.7	13.2	15.3
(13) 3PH	A+++	A++	12.7	13.2	15.3
(20) 3PH	A+++	A++	19.9	20.2	21.7
(26) 3PH	A++	A+	23.3	26.0	31.9

1PH = 1-phase electrical connection 230 V/50 Hz
3PH = 3-phase electrical connection 400 V/50 Hz

Energy efficiency class of the compound system with control

Operator terminal

- Operator terminal with graphical display and function keys
- Control and monitoring of the modulating heat pumps
- Setting the heating and cooling curves
- Selection of the operating mode: Standard, Silent and Supersilent
- Display of the current operating parameters
- The operator terminal can be installed in any room.
- Can also be used as thermostat
- Control also possible via Modbus
- Operation available in 16 languages
- Included in the scope of delivery of the Belaria® fit



Air/water heat pump



Hoval Belaria® fit (8-26)

Typ	Heat output A2W35		Cooling capacity A35W18
	kW	kW	kW
(8) 1PH	7.3	8.7	11.1
(13) 1PH	12.7	13.2	15.3
(13) 3PH	12.7	13.2	15.3
(20) 3PH	19.9	20.2	21.7
(26) 3PH	23.3	26.0	31.9

1PH = 1-phase electrical connection
230 V/50 Hz
3PH = 3-phase electrical connection
400 V/50 Hz

Energy efficiency class
see "Description"

Notice
A buffer storage tank must be provided.
Suitable buffer storage tanks see "Calorifiers" and Engineering Belaria® fit (8-26).

Part No

- 7019 241
- 7019 242
- 7019 243
- 7019 244
- 7019 245

Accessories for Belaria® fit (8,13)



HP line insul. AF-WPP 125-32

for Belaria® pro (8,13) and Belaria® fit (8,13)
 Flexible, pre-insulated and self-compensating
 line with two heating pipes and two empty pipes.
 Outside diameter: 125 mm
 Fluid pipes: 2 x 32 mm/2.9 mm
 Empty pipe 1: 32 mm
 Empty pipe 2: 25 mm
 Bending radius: 0.5 m
 Operating temperature: -40 °C to +90 °C
 Maximum temperature: +95 °C

Dimension inside/outside	Line length m
DN 25/32	10
DN 25/32	15
DN 25/32	20
DN 25/32	25

Part No.

2077 577
 2077 578
 2077 579
 2077 580



Connector set HP line VS 32-WPP

For HP line insulated AF-WPP 125-32
 Consisting of:
 - 2 shrink-fit end caps
 - 4 clamping adapters 1" external
 thread, PN 6
 - 1 building feed-in pressing water
 Core hole diameter 198-202 mm
 - 1 fixed point clamp

6053 304



Lining pipe DN 200 D210/200 x 400

For HP line insulated AF-WPP
 Lining pipe for feeding the HP lines
 through ceilings, walls and floors.
 Suitable for walling in and
 cementing in.
 Lining pipe material: PVC
 Formwork cover material: PE
 Outer Ø: 210 mm
 Internal Ø: 200 mm
 Length: 400 mm

2080 584



Adhesive tape IKB

for thermal insulation made of EPDM
 Thickness: 3 mm
 width: 50 mm
 roll: 15 m

2023 563

Accessories for Belaria® fit (20,26)



WP-Leitung isol. AF-WPP 145-40

for Belaria® pro (15), Belaria® fit (20,26) and Daikin Altherma 3 H HT W (14,18)
 Flexible, pre-insulated and self-compensating line with two heating pipes and two empty pipes.
 Outside diameter: 125 mm
 Fluid pipes: 2 x 32 mm/2.9 mm
 Empty pipe 1: 32 mm
 Empty pipe 2: 25 mm
 Bending radius: 0.5 m
 Operating temperature: -40 °C to +90 °C
 Maximum temperature: +95 °C

Dimension inside/outside	Line length m
DN 32/40	10
DN 32/40	15
DN 32/40	20
DN 32/40	25

Part No

2077 581
 2077 582
 2077 583
 2077 584



Connector set HP line VS 40-WPP

For HP line insulated AF-WPP 145-40
 Consisting of:
 - 2 shrink-fit end caps
 - 4 clamping adapters 1¼" external thread, PN 6
 - 1 building feed-in pressing water
 Core hole diameter: 198-202 mm
 - 1 fixed point clamp

6053 305



Lining pipe DN 200 D210/200 x 400

For HP line insulated AF-WPP
 Lining pipe for feeding the HP lines through ceilings, walls and floors.
 Suitable for walling in and cementing in.
 Lining pipe material: PVC
 Formwork cover material: PE
 Outer Ø: 210 mm
 Internal Ø: 200 mm
 Length: 400 mm

2080 584



Adhesive tape IKB

for thermal insulation made of EPDM
 Thickness: 3 mm
 width: 50 mm
 roll: 15 m

2023 563

Accessories



At least 2 pieces are required!

Drains the heating system if the temperature of the heating water falls below +3 °C (± 1 °C). Not below +7 °C for cooling. Observe downward slope, more drain valves may be necessary (flow, return, water traps).

**Frost protection valve FS108-32
G 1¼" BS**

- Drains the heating system if the temperature of the heating water falls below 3 °C.
- Casing made of brass EN 12165 CW724R-M
- Springs made of stainless steel EN 10270-3
- EPDM seals
- Connection: G 1¼" (ISO 228-1) flat-sealing
- Operating medium: water
- Operating pressure: max. 10 bar
- Operating temperature: 0-65 °C
- Ambient temperature: -30 °C / +60 °C
- Opening temperature (water): 3 ±1 °C
- Closing temperature (water) 4 ±1 °C
- Kv (passage) = 70 m³/h
- Discharge capacity at 3 bar: 0.5-1 l/h

2075 998



Additional electrical heating

Electric auxiliary heater with output power that can be selected locally in three levels, with power supply 230 V/50 Hz or 400 V+N/50 Hz. The kit includes contactors and safety devices for proper operation. Thermostat with manual reset, thermostat with automatic reset and fuses for protection against abnormal overcurrents.

	Output power kW	
Belaria® fit (8,13) 1PH	2/4/6	6061 315
Belaria® fit (13-26) 3PH	3/6/9	6061 316

6061 315
6061 316



Vibration damper set

- for Belaria® fit (8-26)
- for reducing the transmission of solid-borne noise in installation **without** condensate drip tray
- Consisting of:
- 6 vibration-damping adjustable feet
- 6 threaded rods M10
- incl. fitting accessories

6061 180



Vibration damper set

- for Belaria® fit
- for reducing the transmission of solid-borne noise in installation **without** condensate drip tray
- Consisting of:
- 6 vibration-damping adjustable feet
- 6 threaded rods M10
- incl. fitting accessories

Belaria® fit (8,13)
Belaria® fit (20,26)

6061 321
6061 322



Condensate drip tray

Condensate drip tray with electric heater for collecting and draining the condensate, with connection for the siphon.

The drip tray is equipped with an automatically activated frost protection heater that prevents freezing of the condensate and is controlled by a thermostat.

Notice:

When using the condensate drip tray, the corresponding vibration damper set must also be ordered.

Part No

6061 314

Condensate hose set

Hose 2 m incl. clip

6061 156



Temperature sensor

Temperature sensor for recording the following temperatures:

- Thermal solar circuit
- Boiler or external electric heating
- Hot water storage tank
- Mixer circuit
- Low loss header

Length 10 m

Length 30 m

6061 317

6061 318



Switching ball valve VBI60...L

DN 25-50, PN 16, 120 °C

- Three-way ball valve made of brass with threaded connection
- Leakage rate: 0 ... 0.0001 % of kvs value
- Permitted media: cold water, cooling water, DHW, hot water, water with frost protection
- Recommendation: water treatment according to VDI 2035
- Media temperature: -10 ... 120 °C

DN	Connection inches	kvs m³/h
25	Rp 1"	9
32	Rp 1¼"	13
40	Rp 1½"	25
50	Rp 2"	37

6052 444

6052 445

6052 446

6052 447



Motor drive GLB341.9E

For straight-way ball valves VAG60.. and switching ball valves VBI60.. DN 15..50

Operating voltage: 230 V, 50/60 Hz

Control signal 2-point/3-point

Single-wire/2 wire control

Operating time: 150 s

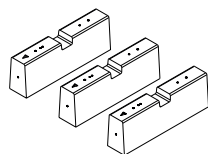
Nominal torque: 10 Nm

Permitted ambient temperature:

-32 °C to +55 °C

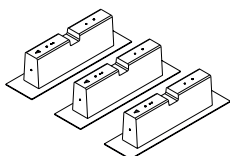
2070 331

Part No.



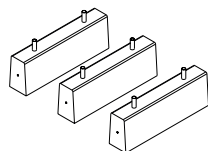
Concrete base set BSW01-FU3
 for Belaria® fit (8-26)
 for safe installation of the heat pump
 on a firm base
 Consisting of:
 3 concrete bases with cast-in
 fastening sleeves, screw set
 Dimensions (H x W x D):
 250 x 750 x 150 mm
 Weight: 3 pieces of 58 kg

6061 176



Concrete base set BSW01-FD3
 for Belaria® fit (8-26)
 for safe installation of the heat pump
 on the flat roof
 Consisting of:
 3 concrete bases with cast-in
 fastening sleeves, protective mats with
 aluminium lining, screw set
 Dimensions (H x W x D):
 250 x 750 x 150 mm
 Weight: 3 pieces of 58 kg

6061 177



Concrete base set BSW01-ZS3
 for Belaria® fit (8-26)
 for safe installation of the heat pump
 in gravel bed for gardens and meadows.
 Additional base height 250 mm for plug
 combination with concrete base set
 BSW01-FU3
 Consisting of:
 3 additional concrete bases,
 screw set
 Dimensions (H x W x D):
 250 x 750 x 150 mm
 Weight: 3 pieces of 58 kg

6061 178

Notice

For fastening the Belaria® fit (8-26) on the
 concrete base sets BSW01, the base set
 SWK02-3 must also be ordered.

Notice

In a flat roof installation, all standards
 concerning statics, wind load and access to
 roofs must be complied with.

Further information

see "Engineering" chapter



Base set SKW02-3
 for concrete base set BSW01
 for safe installation of an
 outdoor unit on a firm base
 or on the flat roof
 Consisting of:
 - 3 mounting rails
 - 3 fastening sets

6061 179



Room control module
 for Belaria® fit (8-26)
 Display and operating unit as
 remote control of the heat pump
 incl. room thermostat.
 Programs can be set on the heat pump
 controller.
 Colour: white

6061 325



Vibration decoupler

for reducing structure-borne noise from heat pumps in the indoor area

Consisting of:

- 1 vibration decoupler insulated for heating side flat-sealing with union nut
- 2 flat seals

Nominal pressure: PN 10

Dimension	Connection inches	Nominal length mm
DN 25	1"	300
DN 25	1"	500
DN 25	1"	1000
DN 32	1¼"	300
DN 32	1¼"	500
DN 32	1¼"	1000
DN 40	1½"	500
DN 40	1½"	1000
DN 50	2"	500
DN 50	2"	1000

Part No

2082 222
2082 223
2080 794
2082 224
2082 225
2080 796
2082 226
2080 798
2082 227
2080 800



System water protection filter FGM025-200

For horizontal installation in return
For filtration of heating and cooling water, with high filtration capacity for corrosion particles and dirt without significant pressure drop

Consisting of:

- Filter head and bowl in brass
 - Magnetic insert (nickel-neodymium)
 - 2 pressure gauges
 - Very large filter surface in stainless steel
 - Filter fineness 200 µm
 - With drain valve
 - Connections Rp 1" internal thread with integrated shut-off valves and union connection (outlet)
- Max. flow rate ($\Delta p < 0.1 \text{ bar}$): 5.5 m³/h
Weight: 6.8 kg
Water temperature: max. 90 °C
- incl. steam diffusion-tight insulating shells

6058 256

Notice

Performs the function of sludge separator and strainer.



Dew point switch FAS

mechanical dew point switch for monitoring the formation of condensate using adjustable switching value

2070 911



Safety set SG15-1"

Suitable up to max. 50 kW complete with safety valve (3 bar) Pressure gauge and autom. aspirator with shut-off valve. Connection: DN 15, 1" internal thread

641 184

Services



Commissioning

Commissioning by works service or Hoval trained authorised serviceman/company is condition for warranty.

For commissioning and other services please contact your Hoval sales office.

Part No.

Belaria® fit (8-26)

Type		(8) 1 PH	(13) 1 PH	(13) 3 PH	(20) 3 PH	(26) 3 PH
• Energy efficiency class of the compound system with control	35 °C/55 °C		A+++ / A++		A+++ / A++	A++ / A+
• Room heating energy efficiency "moderate climate" 35 °C η _S	%	206	186	186	181	165
• Room heating energy efficiency "moderate climate" 55 °C η _S	%	131	135	135	125	123
• Seasonal coefficient of performance moderate climate 35 °C	SCOP	5.2	4.7	4.7	4.6	4.2
• Seasonal coefficient of performance moderate climate 55 °C	SCOP	3.4	3.5	3.5	3.2	3.2
Max. performance data heating and cooling in acc. with EN 14511						
• Heat output A2W35	kW	8.7	13.2	13.2	20.2	26.0
• Coefficient of performance A2W35	COP	4.1	3.5	3.5	3.2	2.9
• Heat output A-7W35	kW	7.3	12.7	12.7	19.9	23.3
• Coefficient of performance A-7W35	COP	3.2	2.8	2.8	2.4	2.3
• Cooling capacity A35W18	kW	11.1	15.3	15.3	21.7	31.9
• Energy efficiency ratio A35W18	EER	4.7	3.3	3.3	4.4	3.7
• Cooling capacity A35W7	kW	7.9	11.7	11.7	17.1	12.7
• Energy efficiency ratio A35W7	EER	3.5	2.3	2.3	2.9	2.3
Sound data						
• Sound power level "Standard"	dB(A)	59	65	65	71	77
• Sound power level "Silent" ¹⁾	dB(A)	56	61	61	66	75
• Sound power level "Supersilent" ¹⁾	dB(A)	54	59	59	63	73
Hydraulic data						
• Maximum flow temperature	°C	65	65	65	60	60
• Max. operating pressure on the heating side	bar			3		
• Built-in fan			1 axial fan		2 axial fans	
Cooling technical data						
• Refrigerant		R32	R32	R32	R32	R32
• Refrigeration circuits				1		
• Compressor stages		modulating	modulating	modulating	modulating	modulating
• Refrigerant filling quantity	kg	1.40	1.75	1.75	5.00	5.00
Electrical data						
• Connections	V/Hz	1~230/50	1~230/50	3~400/50	3~400/50	3~400/50
• Starting current (compressor and fan) ²⁾	A	16	26	11	21	28.5
Dimensions/Weight						
• Dimensions (H x W x D)	mm	864 x 1385 x 523			1557 x 1120 x 528	
• Weight	kg	105	129	144	177	177

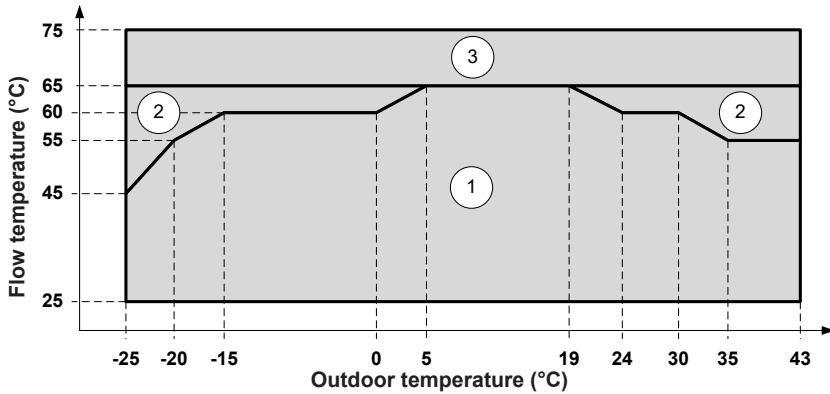
¹⁾ Reduced outputs according to performance data.

²⁾ Country-specific regulations must be observed. Selection of the fuse size by the electrician.

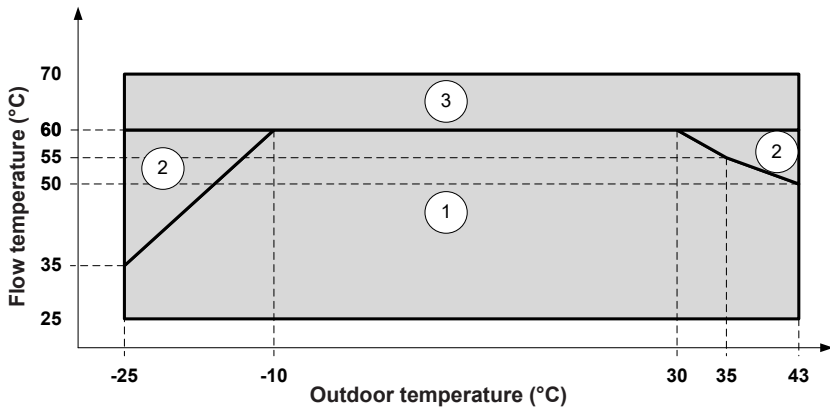
The use of a fast-acting fault-current circuit breaker (< 0.1 s) IΔn ≥ 30 mA is recommended. Country-specific regulations must be observed.

Diagrams of areas of application

Heating and hot water Belaria® fit (8,13)

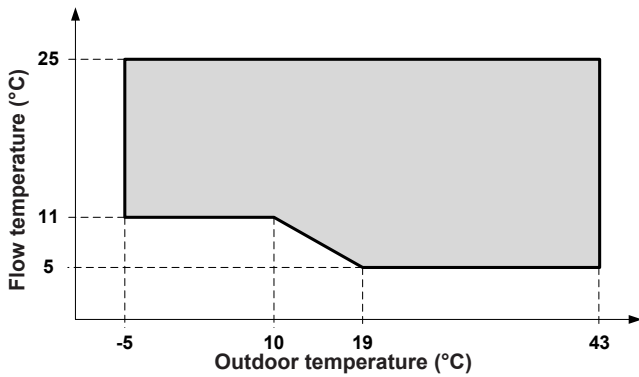


Heating and hot water Belaria® fit (20,26)

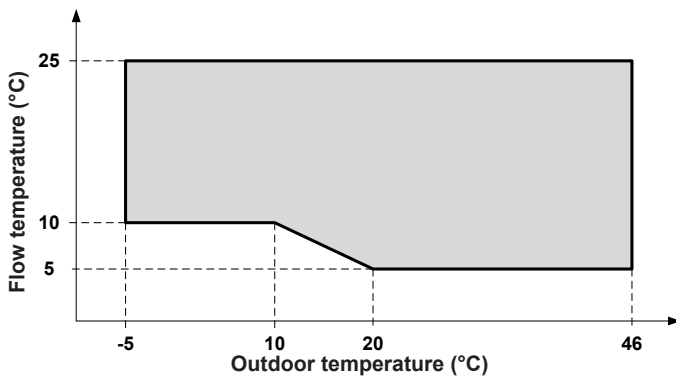


- 1 Area of application of the heat pump for heating and domestic hot water
- 2 Extended area of application of the heat pump for heating and domestic hot water including electric heating element
- 3 Extended area of application of the heat pump for heating and domestic hot water including boiler

Cooling Belaria® fit (8,13)



Cooling Belaria® fit (20,26)



Sound pressure level

Type	Sound power level frequency band [Hz]								Sound power level ¹⁾ dB(A)	Sound pressure level ¹⁾ dB(A)
	63	125	250	500	1000	2000	4000	8000		
Belaria® fit (8) 1PH	68	69	58	56	52	49	48	39	59 / 56 / 54	45 / 42 / 40
Belaria® fit (13) 1PH	73	68	62	63	59	57	50	44	65 / 61 / 59	50 / 46 / 44
Belaria® fit (13) 3PH	71	72	64	60	58	57	57	54	65 / 61 / 59	50 / 46 / 44
Belaria® fit (20) 3PH	71	79	70	67	64	61	53	50	70 / 66 / 63	55 / 51 / 49
Belaria® fit (26) 3 PH	75	81	77	73	71	69	61	57	77 / 75 / 73	61 / 59 / 57

¹⁾ Standard / Silent (low noise / Super Silent (whisper mode))

The sound data refers to units under full load with nominal test conditions.

Reference conditions: water inlet/outlet temperature 47/55 °C, outdoor temperature 7 °C, dry bulb / 6 °C wet bulb

The sound pressure level refers to a distance of 1 metre from the outer surface of the unit during operation in the open.

The sound power level is determined according to the tensiometric method (EN ISO 9614-2).

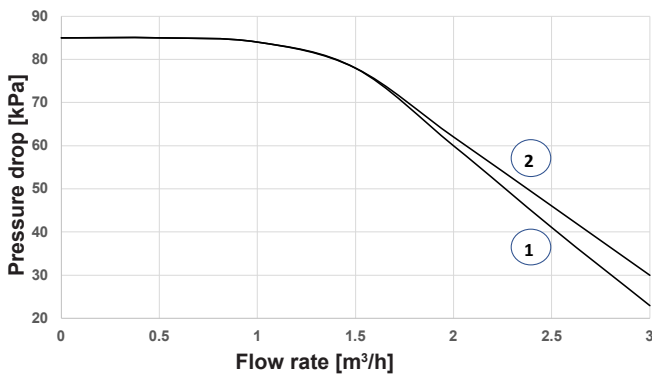
In Silent mode, the maximum outputs must be reduced by the correction factor 0.8.

In Supersilent mode, the maximum outputs must be reduced by the correction factor 0.6.

Notice: The Silent and Supersilent functions are designed for temporary operation of the unit.

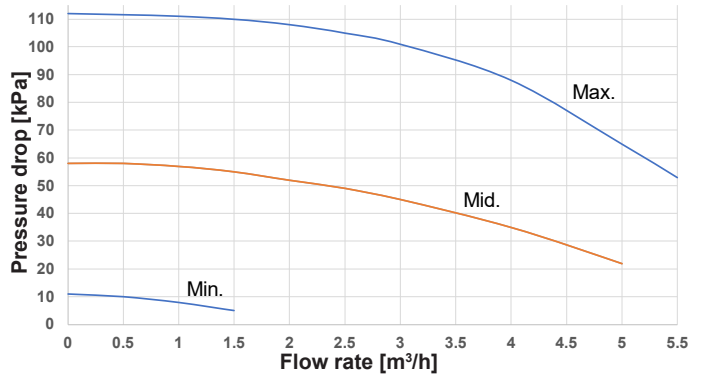
Residual overpressure

Belaria® fit (8,13)



- 1 Belaria® fit (8) 1PH
- 2 Belaria® fit (13) 1PH / 3PH

Belaria® fit (20,26)



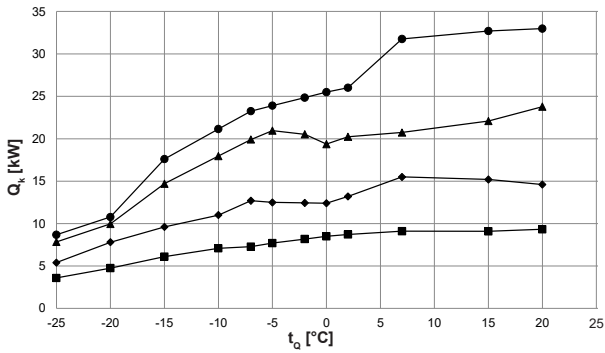
Notice

It is recommended for a buffer storage tank to be installed.

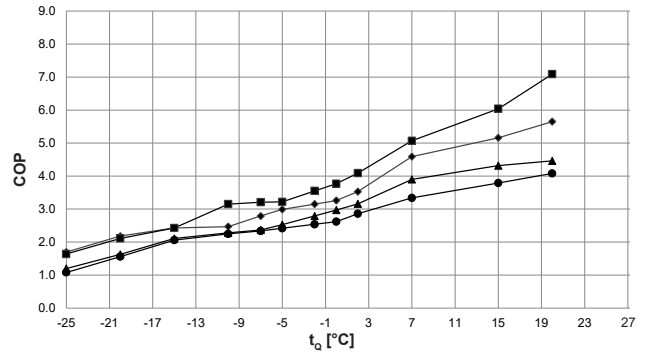
Performance data – heating

Maximum heat output allowing for defrosting losses

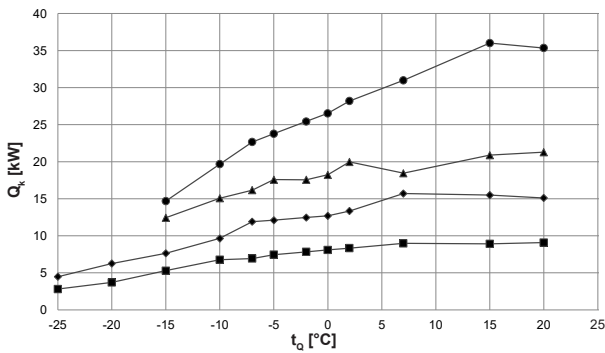
Heat output - t_{VL} 35 °C



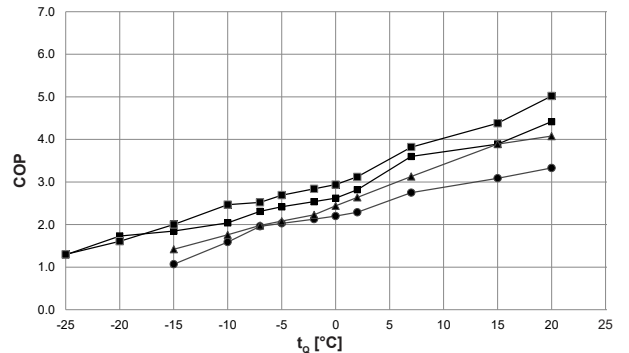
Coefficient of performance - t_{VL} 35 °C



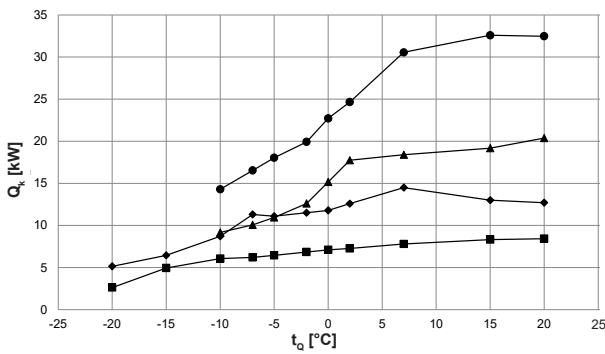
Heat output - t_{VL} 45 °C



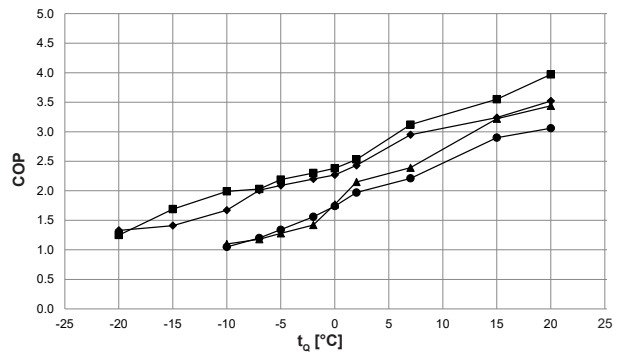
Coefficient of performance - t_{VL} 45 °C



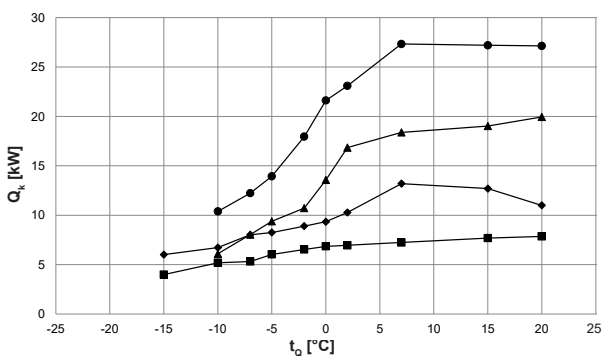
Heat output - t_{VL} 55 °C



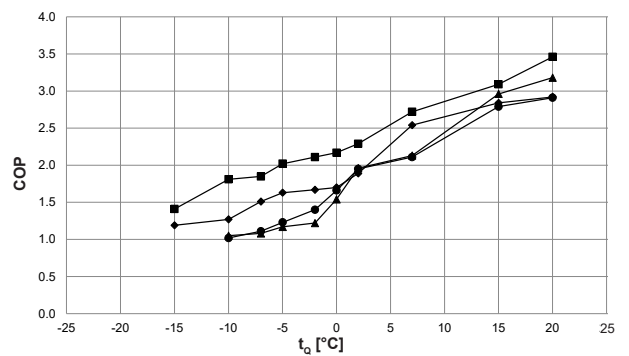
Coefficient of performance - t_{VL} 55 °C



Heat output - t_{VL} 60 °C



Coefficient of performance - t_{VL} 60 °C



t_{VL} = heating flow temperature (°C)

t_o = source temperature (°C)

Q_h = heat output at full load (kW), measured in accordance with standard EN 14511

COP = Coefficient of performance for the overall unit in accordance with standard EN 14511

- Belaria® fit (8) 1PH
- ◆ Belaria® fit (13) 1PH/3PH
- ▲ Belaria® fit (20) 3PH
- Belaria® fit (26) 3PH

Performance data - heating

Data according to EN 14511

Type	t _{VL} °C	t _o °C	Belaria® fit (8)			Belaria® fit (13)			Belaria® fit (20)			Belaria® fit (26)		
			Q _h kW	P kW	COP	Q _h kW	P kW	COP	Q _h kW	P kW	COP	Q _h kW	P kW	COP
35	-25	-25	3.6	2.2	1.6	5.4	3.2	1.7	7.8	6.5	1.2	8.7	8.0	1.1
	-20	-20	4.7	2.2	2.1	7.8	3.6	2.2	10.0	6.1	1.6	10.8	6.9	1.6
	-15	-15	6.1	2.5	2.4	9.6	4.0	2.4	14.7	7.0	2.1	17.6	8.5	2.1
	-10	-10	7.1	2.2	3.2	11.0	4.5	2.5	18.0	7.9	2.3	21.1	9.4	2.3
	-7	-7	7.3	2.3	3.2	12.7	4.6	2.8	19.9	8.4	2.4	23.3	9.9	2.3
	-5	-5	7.7	2.4	3.2	12.5	4.2	3.0	21.0	8.3	2.5	23.9	9.9	2.4
	-2	-2	8.2	2.3	3.6	12.4	3.9	3.2	20.5	7.4	2.8	24.9	9.8	2.5
	0	0	8.5	2.3	3.8	12.4	3.8	3.3	19.4	6.5	3.0	25.5	9.7	2.6
	2	2	8.7	2.1	4.1	13.2	3.7	3.5	20.2	6.4	3.2	26.0	9.1	2.9
	7	7	9.1	1.8	5.1	15.5	3.4	4.6	20.7	5.3	3.9	31.8	9.5	3.3
	15	15	9.1	1.5	6.0	15.2	2.9	5.2	22.1	5.1	4.3	32.7	8.6	3.8
20	20	9.3	1.3	7.1	14.6	2.6	5.7	23.8	5.3	4.5	33.0	8.1	4.1	
45	-25	-25	2.8	2.2	1.3	4.5	3.5	1.3	-	-	-	-	-	-
	-20	-20	3.7	2.3	1.6	6.3	3.6	1.7	-	-	-	-	-	-
	-15	-15	5.3	2.6	2.0	7.6	4.1	1.9	12.4	8.8	1.4	14.7	13.7	1.1
	-10	-10	6.8	2.7	2.5	9.6	4.7	2.0	15.1	8.6	1.8	19.7	12.4	1.6
	-7	-7	6.9	2.8	2.5	11.9	5.2	2.3	16.2	8.2	2.0	22.7	11.6	2.0
	-5	-5	7.4	2.8	2.7	12.1	5.0	2.4	17.6	8.5	2.1	23.8	11.7	2.0
	-2	-2	7.8	2.8	2.8	12.5	4.9	2.5	17.6	7.9	2.2	25.4	11.9	2.1
	0	0	8.1	2.8	2.9	12.7	4.8	2.6	18.2	7.5	2.4	26.5	12.1	2.2
	2	2	8.3	2.7	3.1	13.3	4.7	2.8	20.0	7.6	2.6	28.2	12.3	2.3
	7	7	9.0	2.4	3.8	15.7	4.4	3.6	18.5	5.9	3.1	31.0	11.3	2.8
	15	15	8.9	2.0	4.4	15.5	4.0	3.9	20.9	5.4	3.9	36.0	11.7	3.1
20	20	9.1	1.8	5.0	15.1	3.4	4.4	21.3	5.2	4.1	35.3	10.6	3.3	
55	-25	-25	-	-	-	-	-	-	-	-	-	-	-	-
	-20	-20	2.6	2.1	1.3	5.1	3.9	1.3	-	-	-	-	-	-
	-15	-15	4.9	2.9	1.7	6.5	4.6	1.4	-	-	-	-	-	-
	-10	-10	6.1	3.1	2.0	8.7	5.2	1.7	9.2	8.3	1.1	14.3	13.6	1.1
	-7	-7	6.2	3.1	2.0	11.3	5.6	2.0	10.1	8.5	1.2	16.5	13.8	1.2
	-5	-5	6.5	2.9	2.2	11.1	5.3	2.1	11.0	8.6	1.3	18.0	13.5	1.3
	-2	-2	6.8	3.0	2.3	11.5	5.2	2.2	12.6	8.9	1.4	19.9	12.8	1.6
	0	0	7.1	3.0	2.4	11.8	5.2	2.3	15.2	8.6	1.8	22.7	13.1	1.7
	2	2	7.3	2.9	2.5	12.6	5.2	2.4	17.7	8.3	2.2	24.7	12.5	2.0
	7	7	7.8	2.5	3.1	14.5	4.9	3.0	18.4	7.7	2.4	30.6	13.8	2.2
	15	15	8.3	2.3	3.6	13.0	4.0	3.2	19.2	6.0	3.2	32.6	11.2	2.9
20	20	8.4	2.1	4.0	12.7	3.6	3.5	20.4	5.9	3.4	32.5	10.6	3.1	
60	-25	-25	-	-	-	-	-	-	-	-	-	-	-	-
	-20	-20	-	-	-	-	-	-	-	-	-	-	-	-
	-15	-15	4.0	2.8	1.4	6.0	5.1	1.2	-	-	-	-	-	-
	-10	-10	5.2	2.9	1.8	6.7	5.3	1.3	6.1	5.8	1.1	10.4	10.2	1.0
	-7	-7	5.3	2.9	1.9	8.0	5.3	1.5	8.0	7.4	1.1	12.2	11.0	1.1
	-5	-5	6.0	3.0	2.0	8.3	5.1	1.6	9.4	8.0	1.2	13.9	11.3	1.2
	-2	-2	6.5	3.1	2.1	8.9	5.3	1.7	10.7	8.8	1.2	18.0	12.8	1.4
	0	0	6.9	3.2	2.2	9.3	5.5	1.7	13.6	8.8	1.5	21.6	13.0	1.7
	2	2	7.0	3.0	2.3	10.3	5.4	1.9	16.8	8.6	2.0	23.1	11.8	2.0
	7	7	7.2	2.7	2.7	13.2	5.2	2.5	18.4	8.6	2.1	27.3	13.0	2.1
	15	15	7.7	2.5	3.1	12.7	4.5	2.8	19.0	6.4	3.0	27.2	9.7	2.8
20	20	7.9	2.3	3.5	11.0	3.8	2.9	19.9	6.3	3.2	27.1	9.3	2.9	

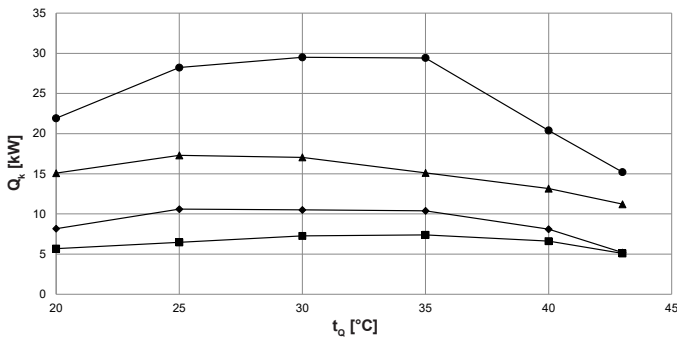
t_{VL} = heating flow temperature (°C)
 t_o = source temperature (°C)
 Q_h = heat output at full load (kW), measured in accordance with standard EN 14511
 P = power consumption for the overall unit (kW)
 COP = Coefficient of performance for the overall unit in accordance with standard EN 14511

Observe daily power interruptions!
 see "Engineering heat pumps general"

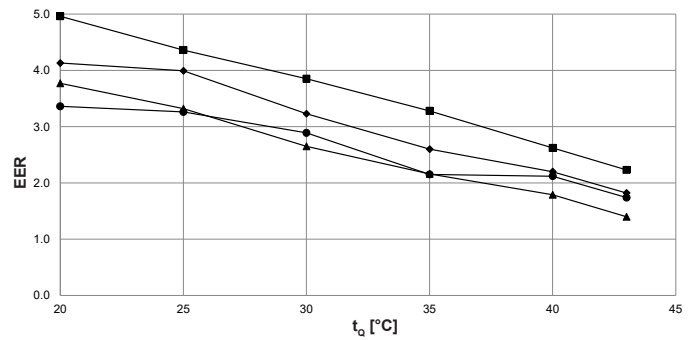
Performance data - cooling

Maximum cooling capacity

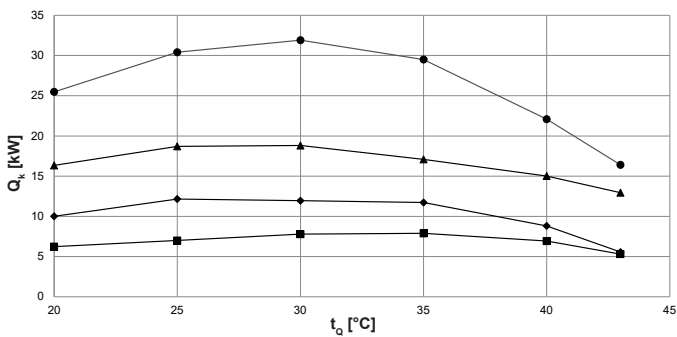
Cooling capacity - $t_{VL} 5\text{ °C}$



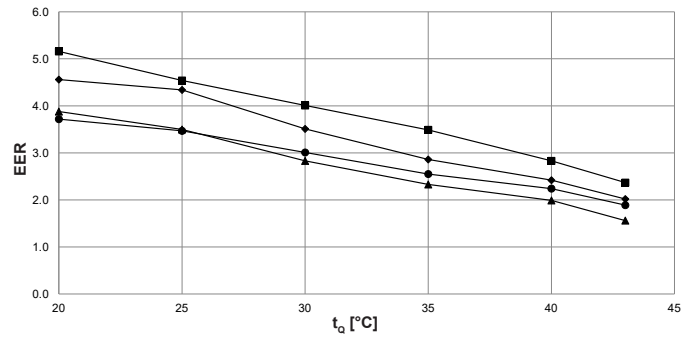
Energy efficiency ratio - $t_{VL} 5\text{ °C}$



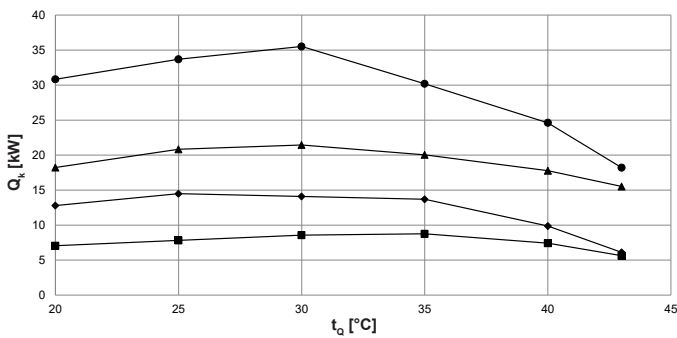
Cooling capacity - $t_{VL} 7\text{ °C}$



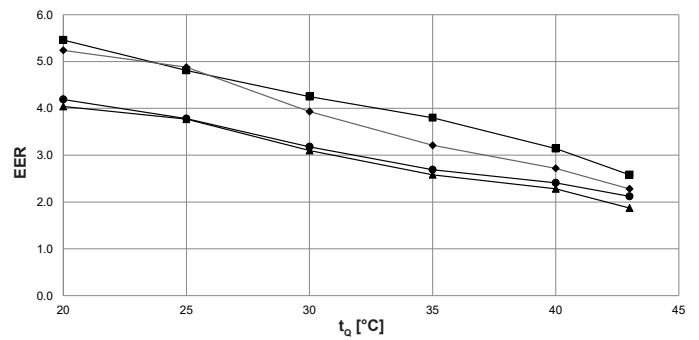
Energy efficiency ratio - $t_{VL} 7\text{ °C}$



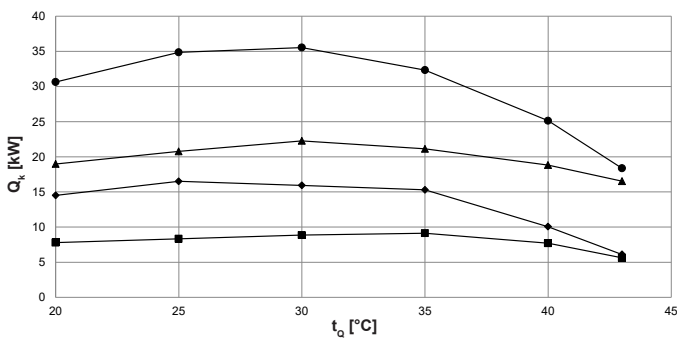
Cooling capacity - $t_{VL} 10\text{ °C}$



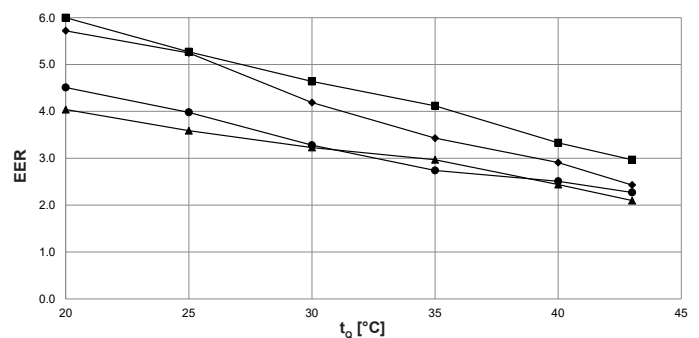
Energy efficiency ratio - $t_{VL} 10\text{ °C}$



Cooling capacity - $t_{VL} 12\text{ °C}$



Energy efficiency ratio - $t_{VL} 12\text{ °C}$



t_{VL} = cooling water flow temperature (°C)

t_o = source temperature (°C)

Q_k = cooling capacity at full load (kW), measured in accordance with standard EN 14511

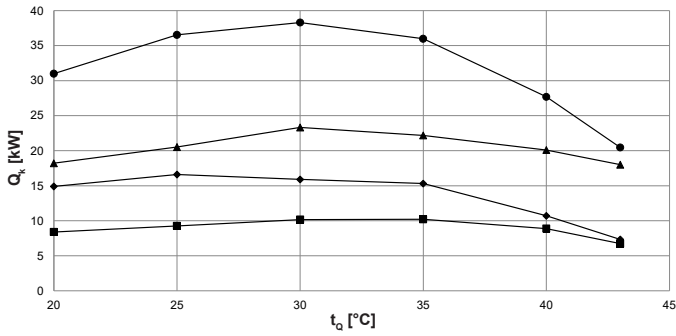
EER = Energy Efficiency Ratio for the overall unit in accordance with standard EN 14511

- Belaria® fit (8) 1PH
- ◆ Belaria® fit (13) 1PH/3PH
- ▲ Belaria® fit (20) 3PH
- Belaria® fit (26) 3PH

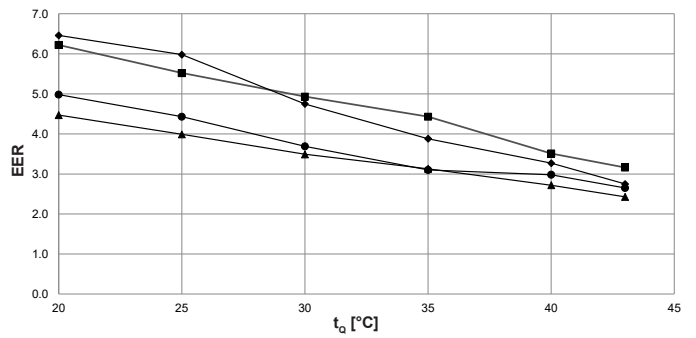
Performance data - cooling

Maximum cooling capacity

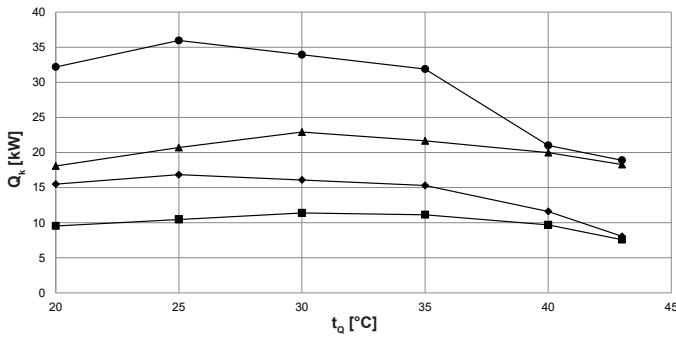
Cooling capacity - $t_{VL} 15\text{ °C}$



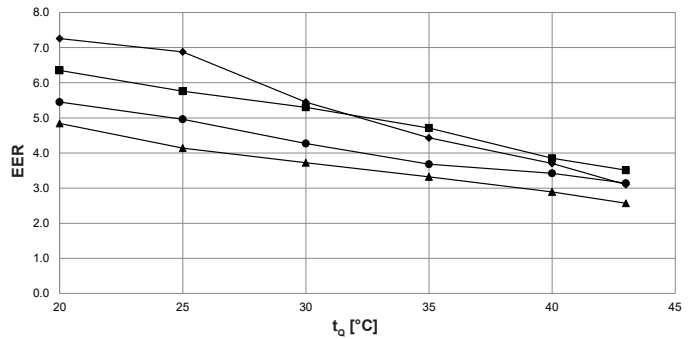
Energy efficiency ratio - $t_{VL} 15\text{ °C}$



Cooling capacity - $t_{VL} 18\text{ °C}$



Energy efficiency ratio - $t_{VL} 18\text{ °C}$



t_{VL} = cooling water flow temperature (°C)

t_o = source temperature (°C)

Q_k = cooling capacity at full load (kW), measured in accordance with standard EN 14511

EER = Energy Efficiency Ratio for the overall unit in accordance with standard EN 14511

- Belaria® fit (8) 1PH
- ◆ Belaria® fit (13) 1PH/3PH
- ▲ Belaria® fit (20) 3PH
- Belaria® fit (26) 3PH

Performance data – cooling

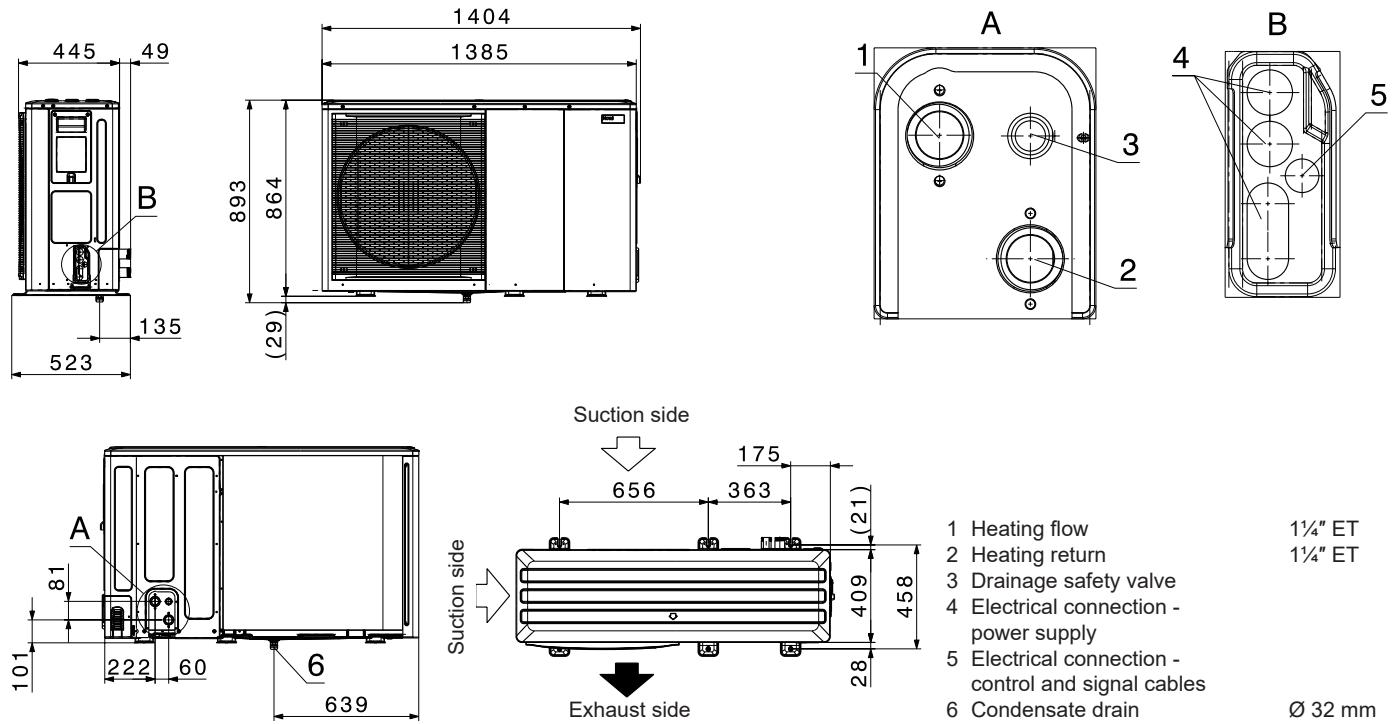
Data according to EN 14511

Typ	t _{VL} °C	Belaria® fit (8)			Belaria® fit (13)			Belaria® fit (20)			Belaria® fit (26)		
		t _Q °C	Q _h kW	P kW	EER	Q _h kW	P kW	EER	Q _h kW	P kW	EER	Q _h kW	P kW
5	20	5.7	1.1	5.0	8.2	2.2	3.8	15.1	3.7	4.1	21.9	6.5	3.4
	25	6.5	1.5	4.4	10.6	3.2	3.3	17.3	4.3	4.0	28.2	8.7	3.3
	30	7.3	1.9	3.9	10.5	4.0	2.7	17.1	5.3	3.2	29.5	10.2	2.9
	35	7.4	2.3	3.3	10.4	4.8	2.2	15.1	5.8	2.6	29.4	13.7	2.2
	40	6.6	2.5	2.6	8.1	4.5	1.8	13.2	6.0	2.2	20.4	9.6	2.1
	43	5.1	2.3	2.2	5.2	3.7	1.4	11.2	6.2	1.8	15.2	8.7	1.7
7	20	6.2	1.2	5.2	10.0	2.6	3.9	16.3	3.6	4.6	25.5	6.8	3.7
	25	7.0	1.5	4.5	12.2	3.5	3.5	18.7	4.3	4.3	30.4	8.8	3.5
	30	7.8	1.9	4.0	11.9	4.2	2.8	18.8	5.4	3.5	31.9	10.6	3.0
	35	7.9	2.3	3.5	11.7	5.0	2.3	17.1	6.0	2.9	29.5	11.6	2.6
	40	6.9	2.4	2.8	8.8	4.4	2.0	15.0	6.2	2.4	22.1	9.9	2.2
	43	5.3	2.2	2.4	5.6	3.6	1.6	12.9	6.4	2.0	16.4	8.7	1.9
10	20	7.1	1.3	5.5	12.8	3.2	4.0	18.2	3.5	5.2	30.8	7.4	4.2
	25	7.8	1.6	4.8	14.5	3.8	3.8	20.8	4.3	4.9	33.7	8.9	3.8
	30	8.6	2.0	4.3	14.1	4.5	3.1	21.5	5.5	3.9	35.5	11.2	3.2
	35	8.8	2.3	3.8	13.7	5.3	2.6	20.1	6.2	3.2	30.2	11.2	2.7
	40	7.4	2.4	3.1	9.9	4.3	2.3	17.8	6.5	2.7	24.6	10.2	2.4
	43	5.6	2.2	2.6	6.1	3.3	1.9	15.5	6.8	2.3	18.2	8.6	2.1
12	20	7.8	1.3	6.0	14.5	3.6	4.0	19.0	3.3	5.7	30.6	6.8	4.5
	25	8.3	1.6	5.3	16.5	4.6	3.6	20.8	4.0	5.3	34.9	8.8	4.0
	30	8.9	1.9	4.6	15.9	4.9	3.2	22.3	5.3	4.2	35.5	10.8	3.3
	35	9.1	2.2	4.1	15.3	5.2	3.0	21.1	6.2	3.4	32.3	11.8	2.7
	40	7.7	2.3	3.3	10.1	4.1	2.4	18.8	6.5	2.9	25.1	10.0	2.5
	43	5.6	1.9	3.0	6.1	2.9	2.1	16.5	6.8	2.4	18.4	8.1	2.3
15	20	8.4	1.3	6.2	14.9	3.3	4.5	18.2	2.8	6.5	31.0	6.2	5.0
	25	9.3	1.7	5.5	16.6	4.2	4.0	20.5	3.4	6.0	36.5	8.2	4.4
	30	10.2	2.1	4.9	15.9	4.6	3.5	23.3	4.9	4.8	38.3	10.4	3.7
	35	10.2	2.3	4.4	15.3	4.9	3.1	22.2	5.7	3.9	36.0	11.6	3.1
	40	8.9	2.5	3.5	10.7	3.9	2.7	20.1	6.1	3.3	27.7	9.3	3.0
	43	6.7	2.1	3.2	7.3	3.0	2.4	18.0	6.5	2.8	20.5	7.7	2.7
18	20	9.5	1.5	6.4	15.5	3.2	4.8	18.1	2.5	7.3	32.2	5.9	5.5
	25	10.5	1.8	5.8	16.8	4.1	4.1	20.7	3.0	6.9	36.0	7.2	5.0
	30	11.4	2.1	5.3	16.1	4.3	3.7	22.9	4.2	5.5	33.9	7.9	4.3
	35	11.1	2.4	4.7	15.3	4.6	3.3	21.7	4.9	4.4	31.9	8.7	3.7
	40	9.7	2.5	3.9	11.6	4.0	2.9	20.0	5.4	3.7	21.0	6.1	3.4
	43	7.6	2.2	3.5	8.1	3.1	2.6	18.3	5.9	3.1	18.9	6.0	3.1

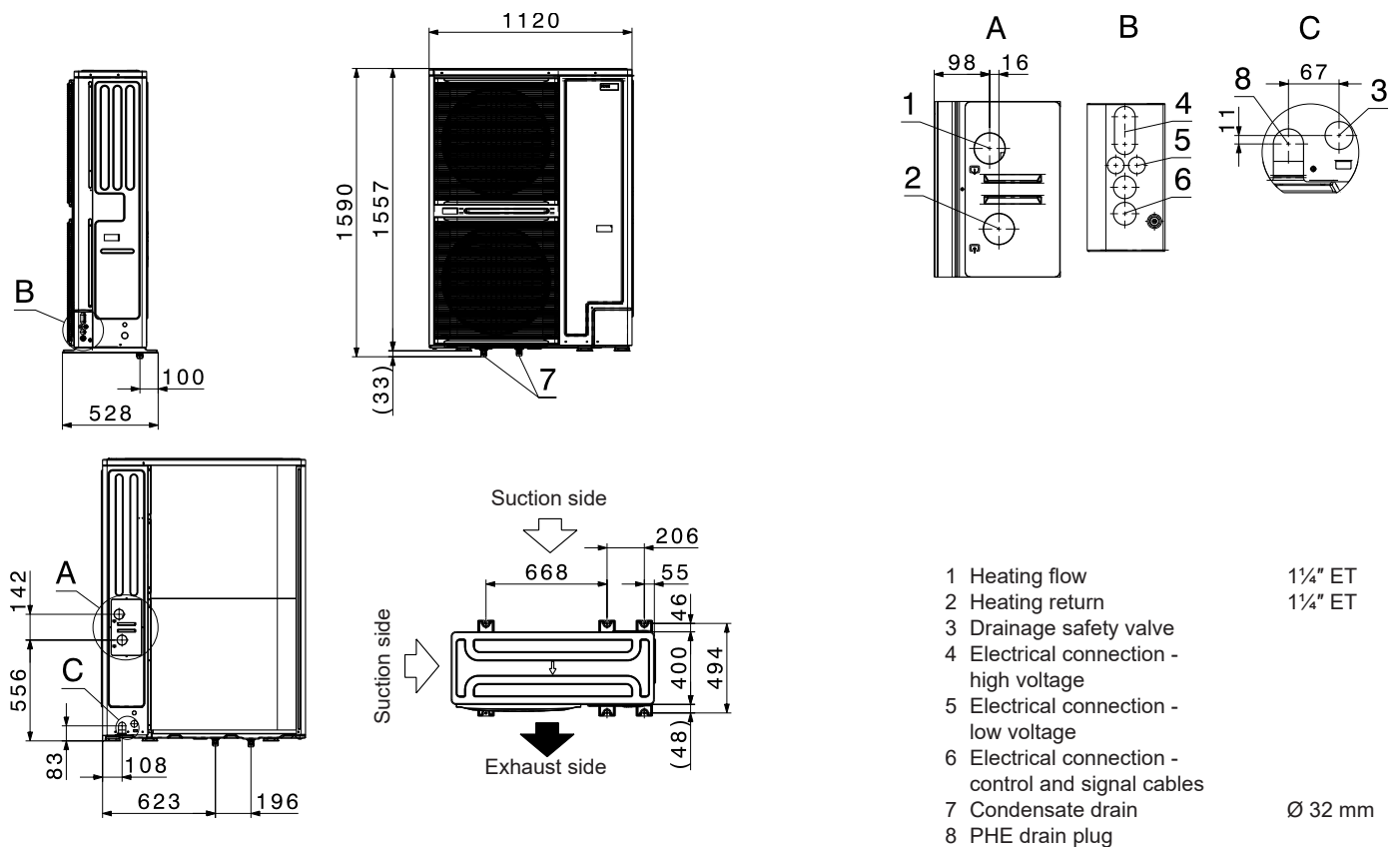
t_{VL} = cooling water flow temperature (°C)
 t_Q = source temperature (°C)
 Q_k = cooling capacity at full load (kW), measured in accordance with standard EN 14511
 P = power consumption for the overall unit (kW)
 EER = Energy Efficiency Ratio for the overall unit in accordance with standard EN 14511

Observe daily power interruptions!
 see "Engineering heat pumps general"

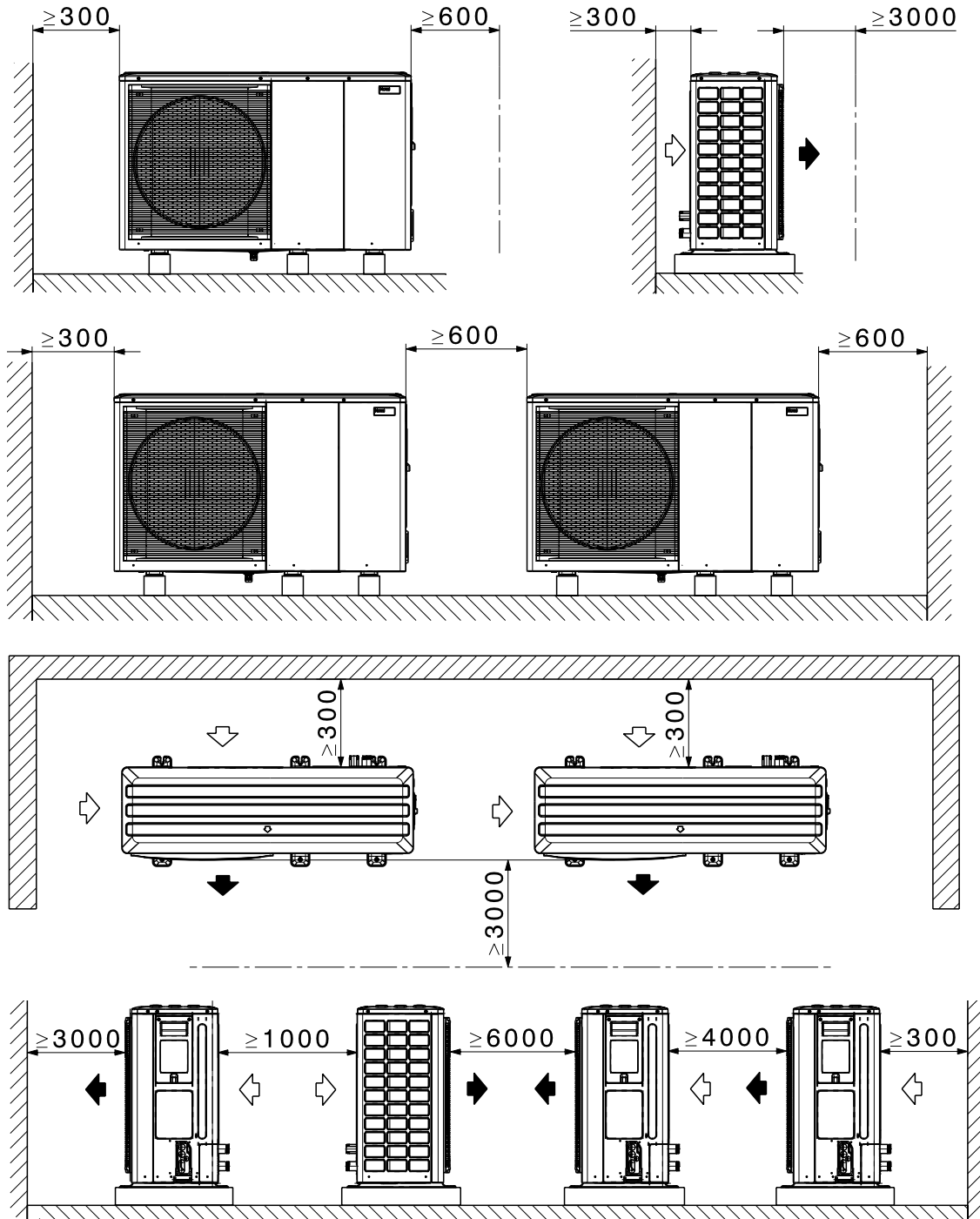
Belaria® fit (8,13)
(Dimensions in mm)



Belaria® fit (20,26)
(Dimensions in mm)

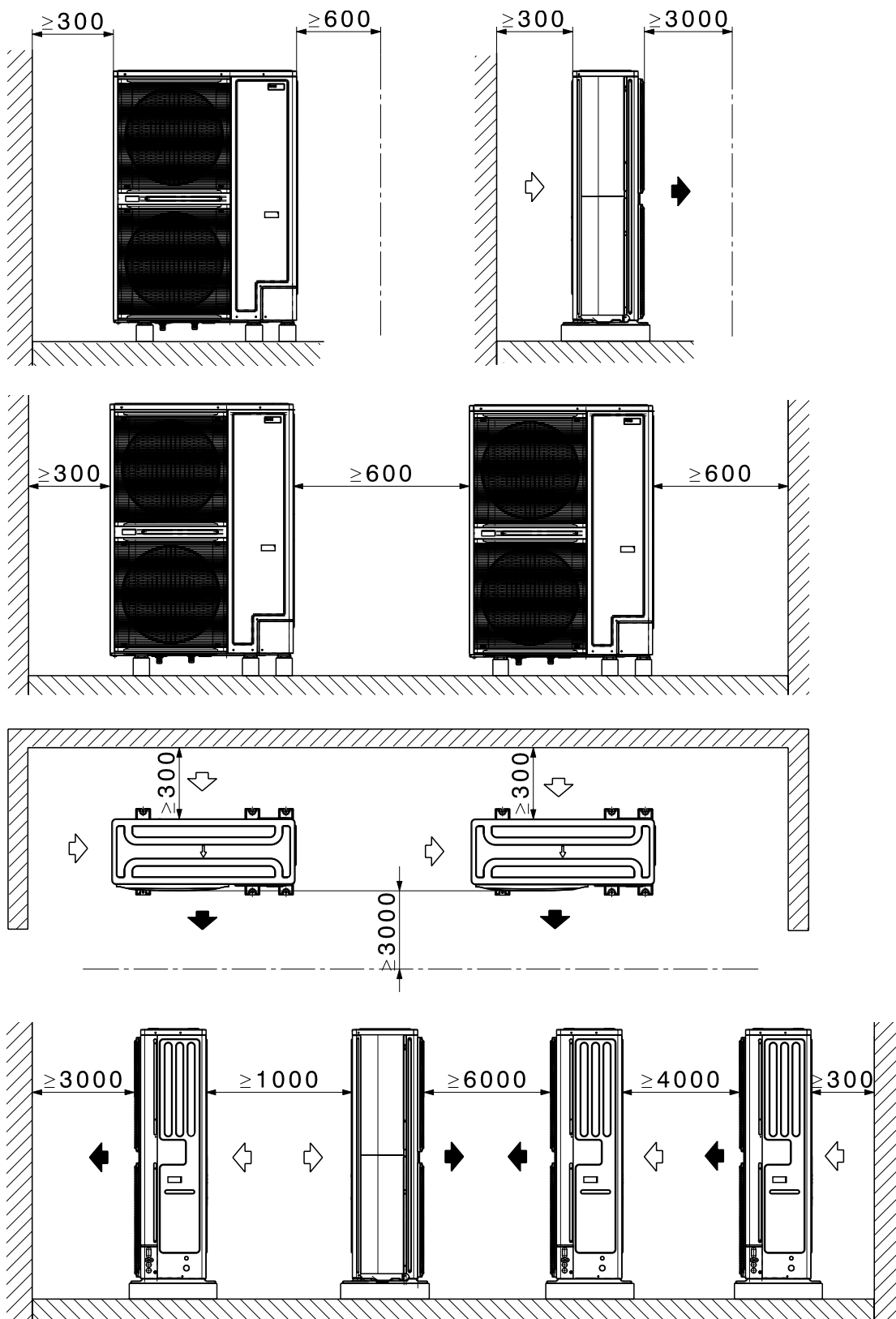


Space requirement Belaria® fit (8,13)
(Dimensions in mm)

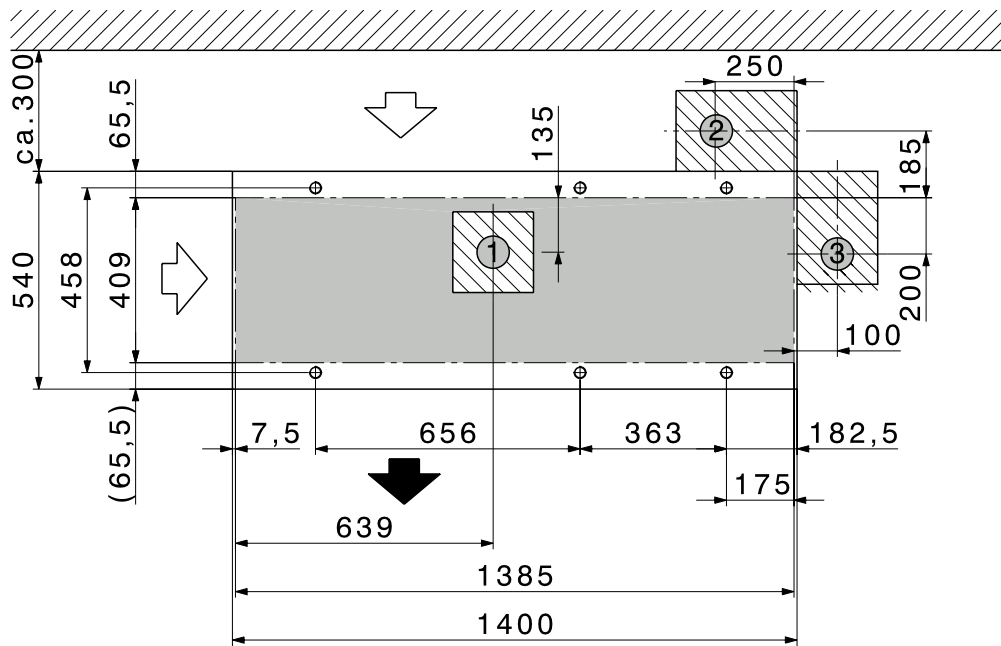
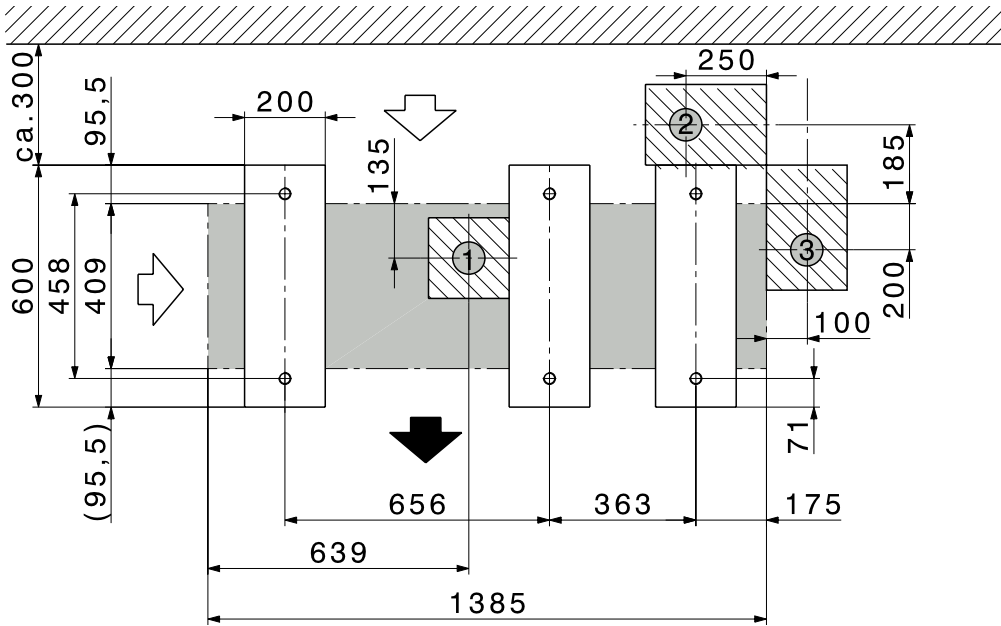


Space requirement Belaria® fit (20,26)

(Dimensions in mm)

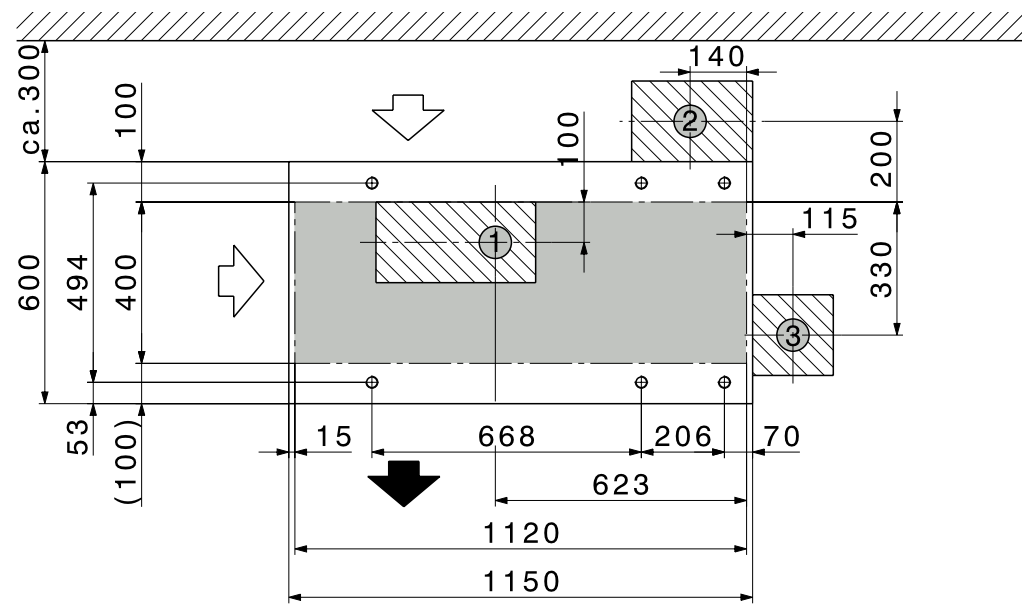
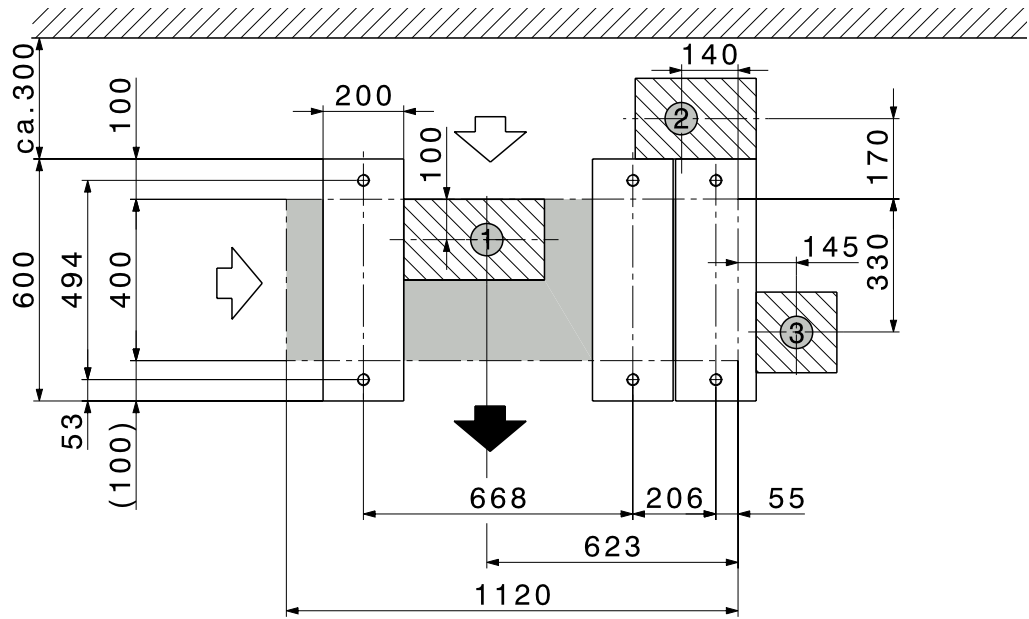


Installation of Belaria® fit
(Dimensions in mm)



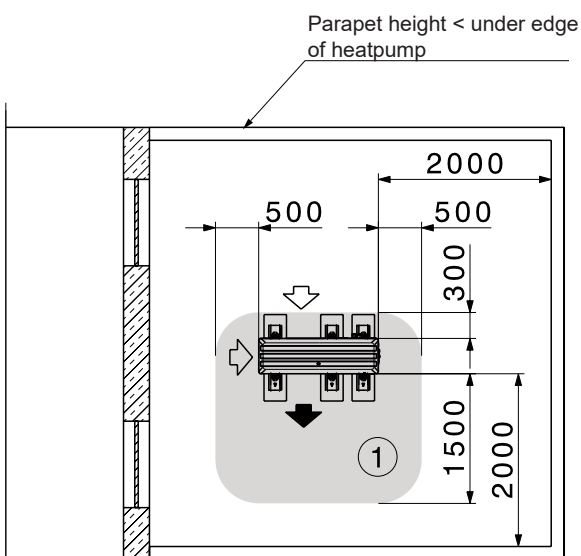
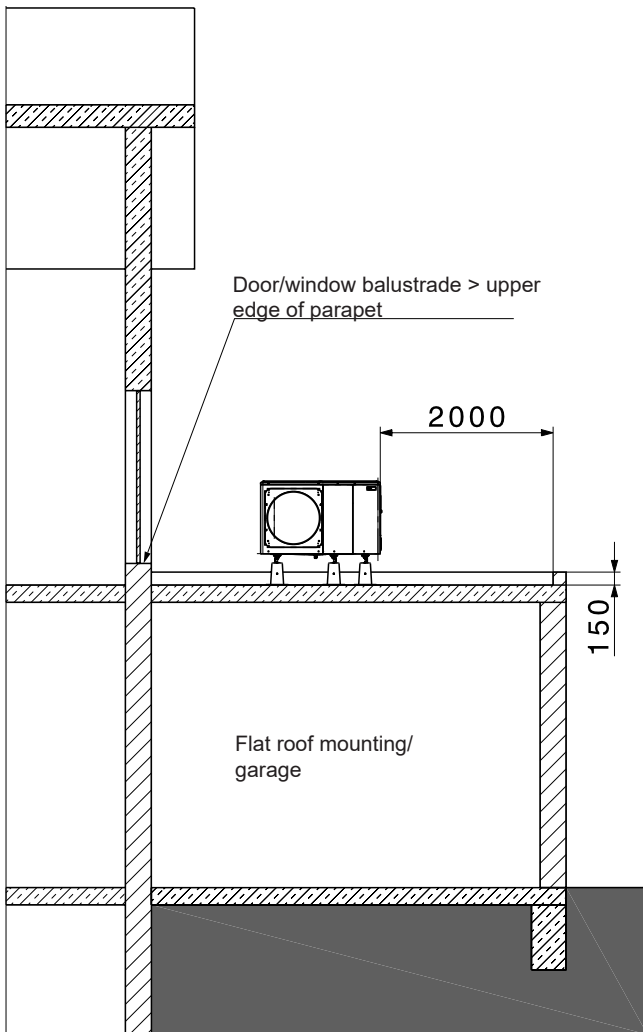
- 1 Condensate drain area
- 2 Flow/return area
- 3 Electrical connection

Installation of Belaria® fit (20,26)
(Dimensions in mm)



- 1 Condensate drain area
- 2 Flow/return area
- 3 Electrical connection

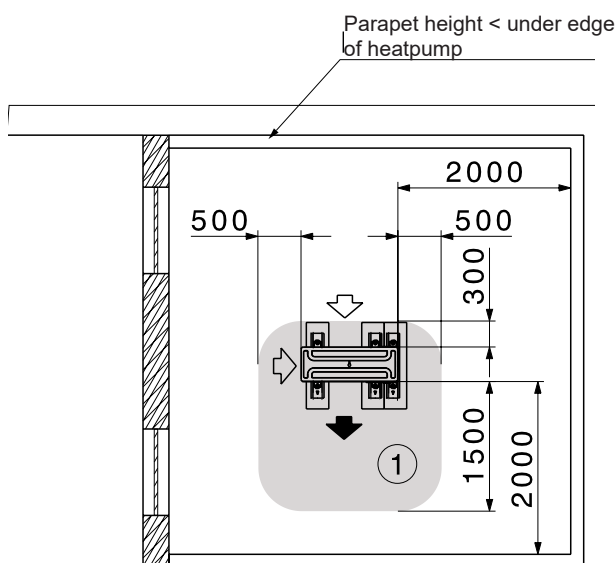
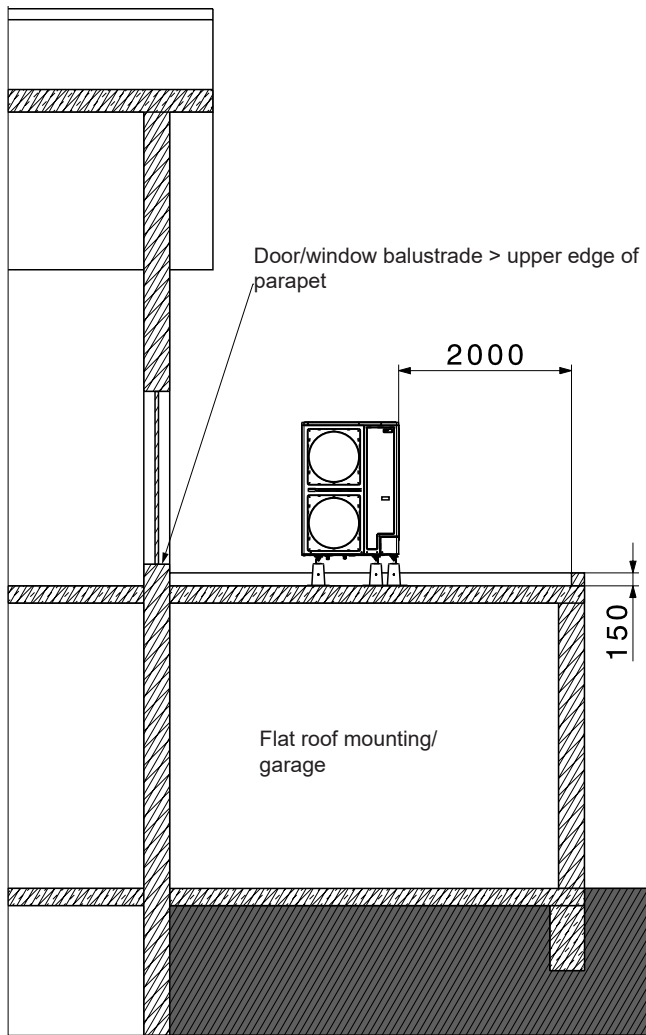
Installation of Belaria® fit (8,13)
(Dimensions in mm)



1 Operating range

- All standards concerning statics, wind load and access to roofs must be complied with. The outdoor unit must be firmly bolted onto the substructure (e.g. concrete base). The heat pump must be prevented from tilting.
- Minimum distance of the heat pump to the roof edge: 2 m (personal protection + working area refrigeration circuit).
- Accessibility for maintenance and repair work must be ensured. For work on the heat pump, a measuring case and test equipment, refrigerant bottle, etc. must be transported to the site, amongst other things. In addition to the safety equipment (fall protection devices, anchoring devices, etc.), this must also be taken into account for skylights, stairs, railings, etc.

Installation of Belaria® fit (20,26)
(Dimensions in mm)



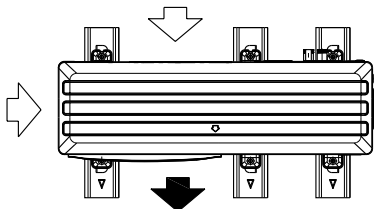
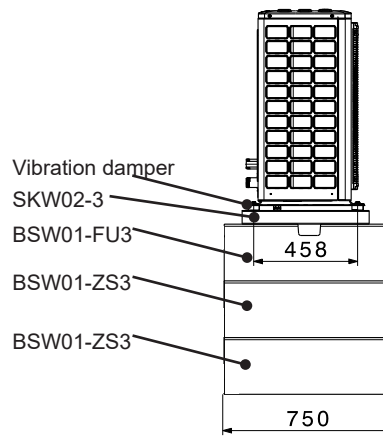
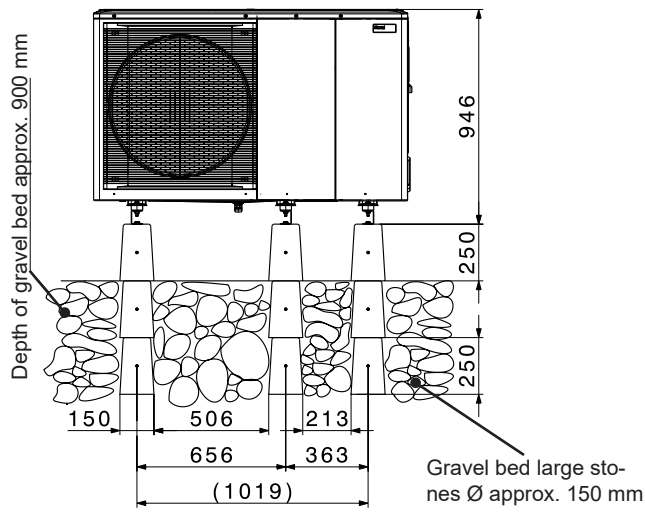
1 Operating range

- All standards concerning statics, wind load and access to roofs must be complied with. The outdoor unit must be firmly bolted onto the substructure (e.g. concrete base). The heat pump must be prevented from tilting.
- Minimum distance of the heat pump to the roof edge: 2 m (personal protection + working area refrigeration circuit).
- Accessibility for maintenance and repair work must be ensured. For work on the heat pump, a measuring case and test equipment, refrigerant bottle, etc. must be transported to the site, amongst other things. In addition to the safety equipment (fall protection devices, anchoring devices, etc.), this must also be taken into account for skylights, stairs, railings, etc.

Installation concrete base - gravel bed

Belaria® fit (8,13)

(Dimensions in mm)

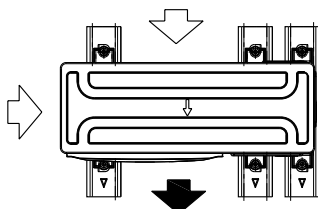
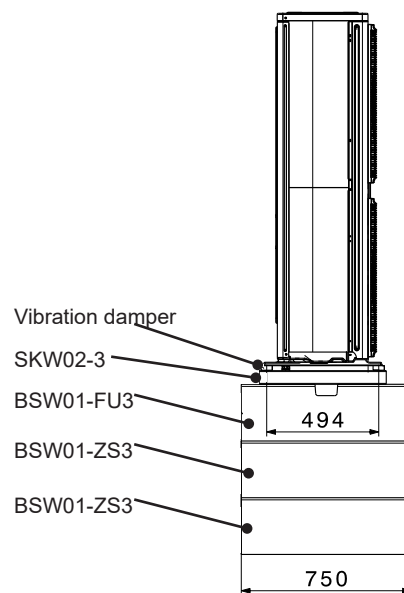
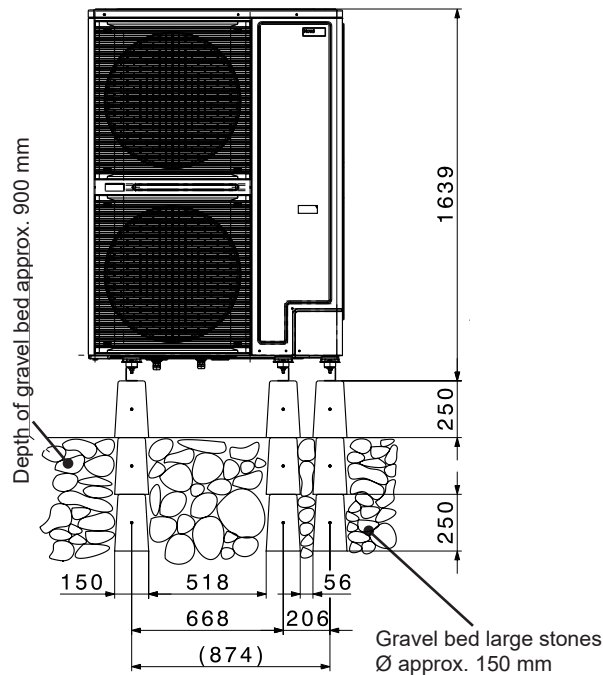


Notice

Use 6 sets of M10 anchor bolts, nuts and washers to secure the unit to the base set. Provide a free space of at least 150 mm under the unit. Place the unit on suitable vibration dampers appropriate to the weight of the unit, to effectively dampen vibrations.

Belaria® fit (20,26)

(Dimensions in mm)



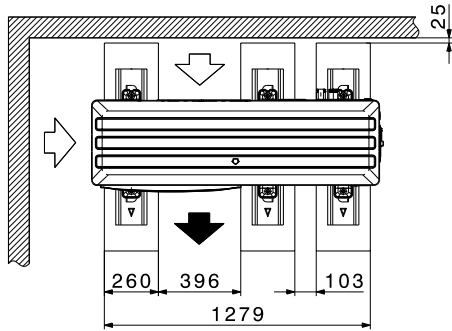
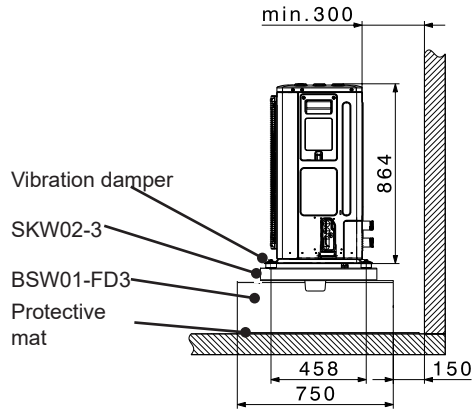
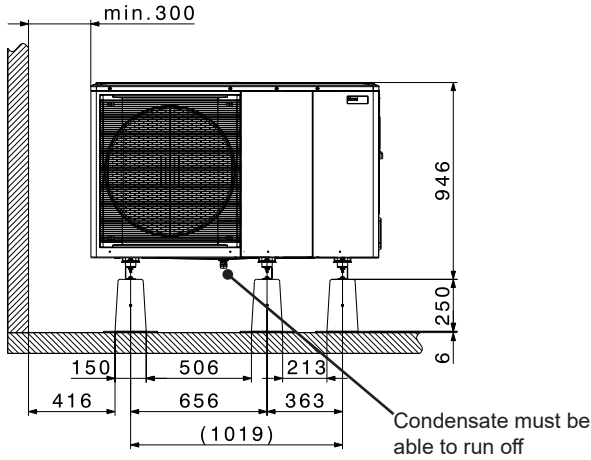
Notice

Use 6 sets of M10 anchor bolts, nuts and washers to secure the unit to the base set. Provide a free space of at least 150 mm under the unit. Place the unit on suitable vibration dampers appropriate to the weight of the unit, to effectively dampen vibrations.

Installation concrete base - flat roof

Belaria® fit (8,13)

(Dimensions in mm)

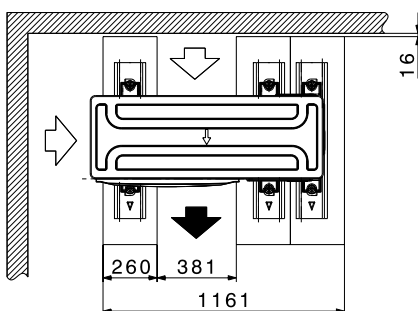
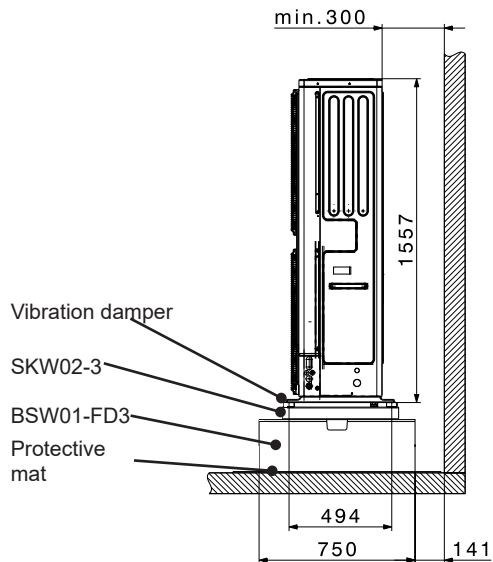
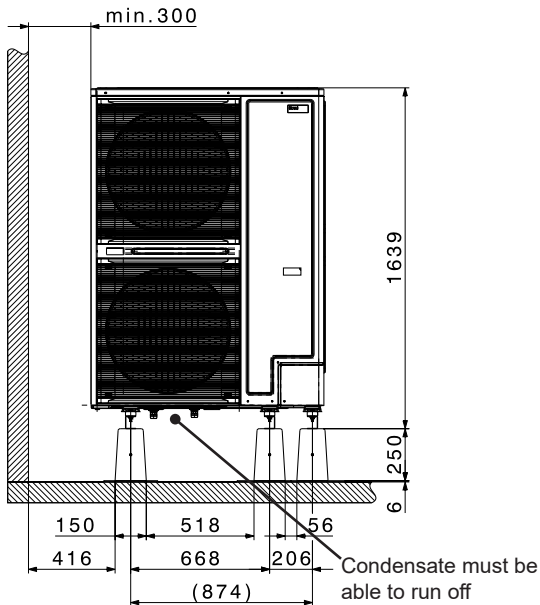


Notice

Use 6 sets of M10 anchor bolts, nuts and washers to secure the unit to the base set. Provide a free space of at least 150 mm under the unit. Place the unit on suitable vibration dampers appropriate to the weight of the unit, to effectively dampen vibrations.

Belaria® fit (20,26)

(Dimensions in mm)



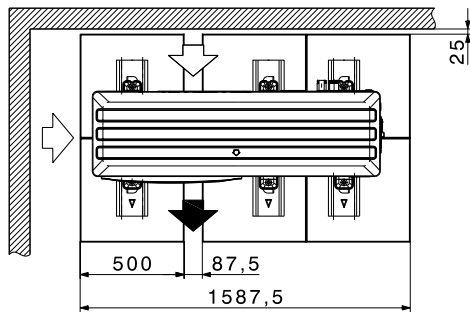
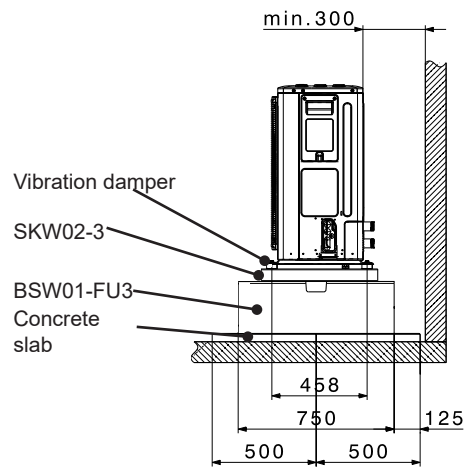
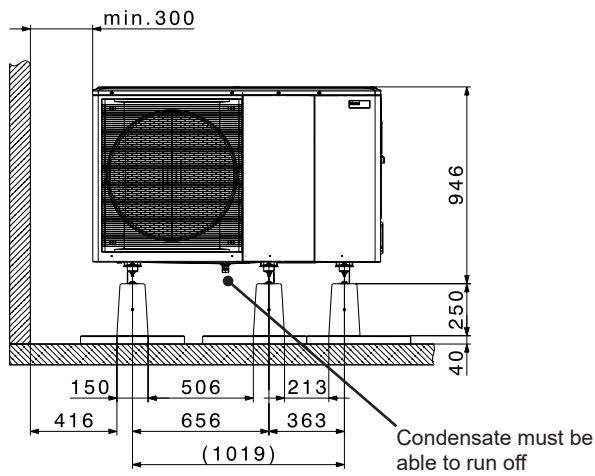
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Installation concrete base - firm base

Belaria® fit (8,13)

(Dimensions in mm)

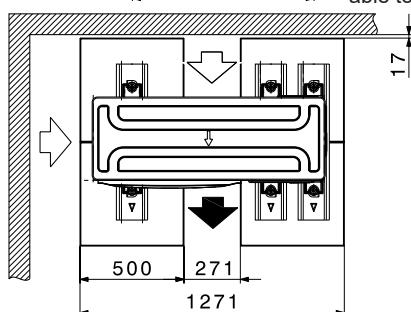
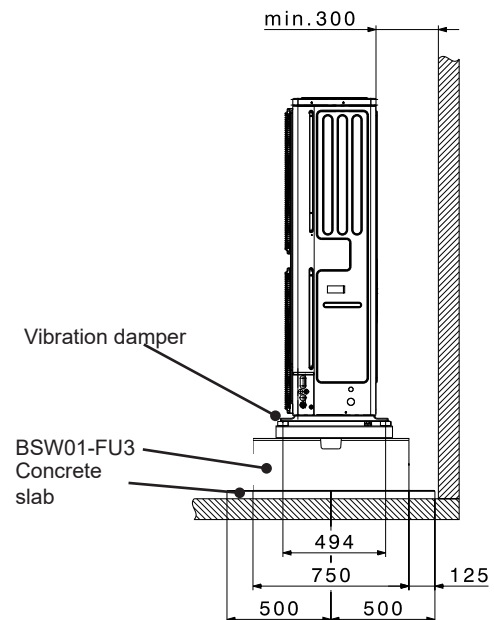
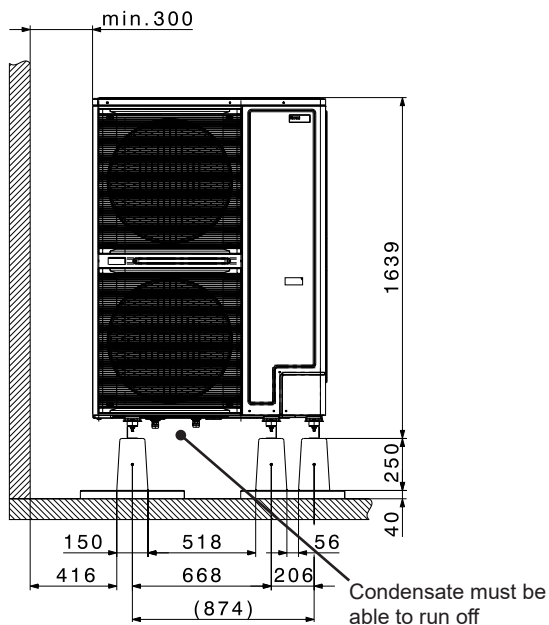


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Belaria® fit (20,26)

(Dimensions in mm)

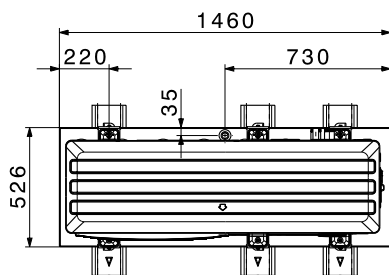
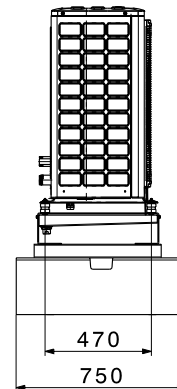
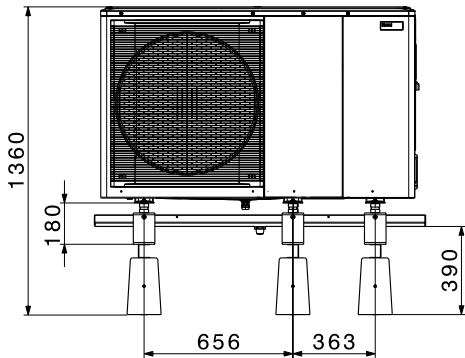


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Installation concrete base – condensate drip tray

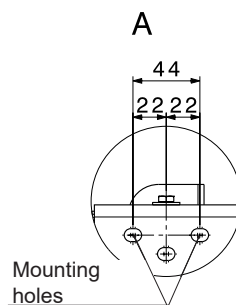
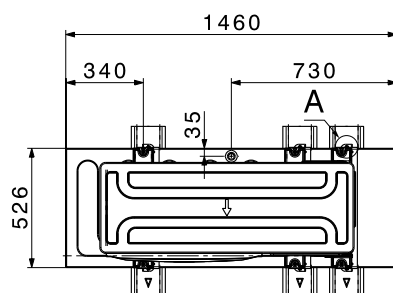
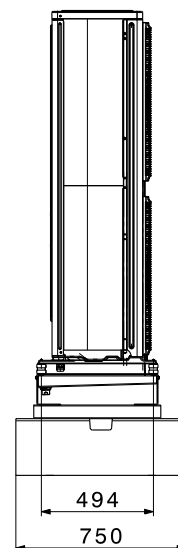
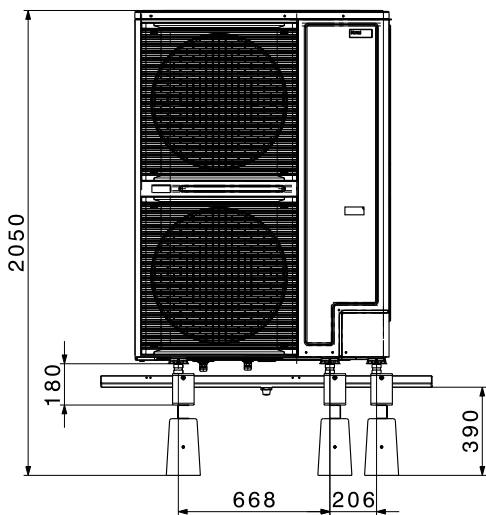
Belaria® fit (8,13)
(Dimensions in mm)



Notice

Use 6 sets of threaded rods M8, nuts and washers to secure the unit to the base set. Provide a free space of at least 150 mm under the unit. Place the unit on suitable vibration dampers appropriate to the weight of the unit, to effectively dampen vibrations.

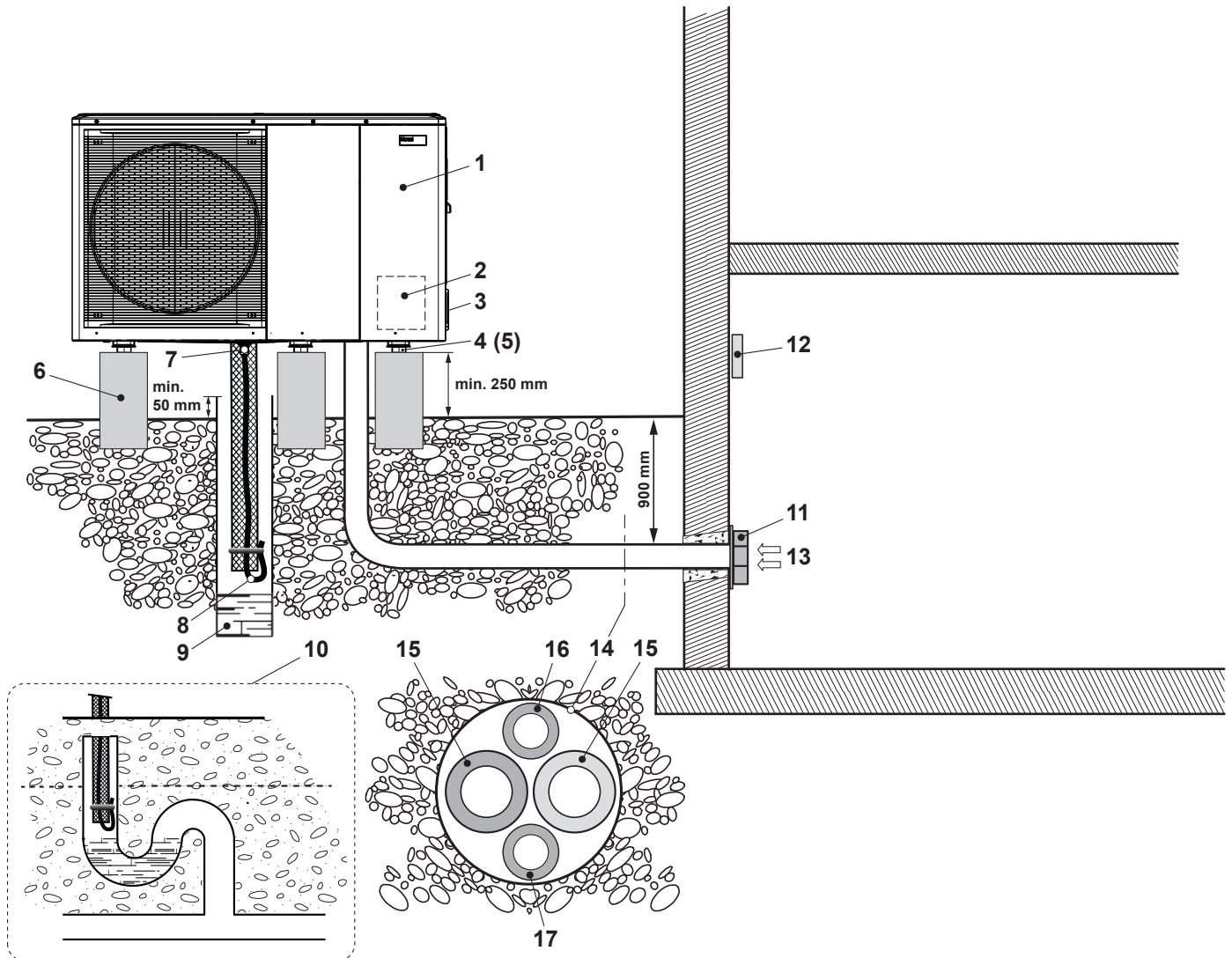
Belaria® fit (20,26)
(Dimensions in mm)



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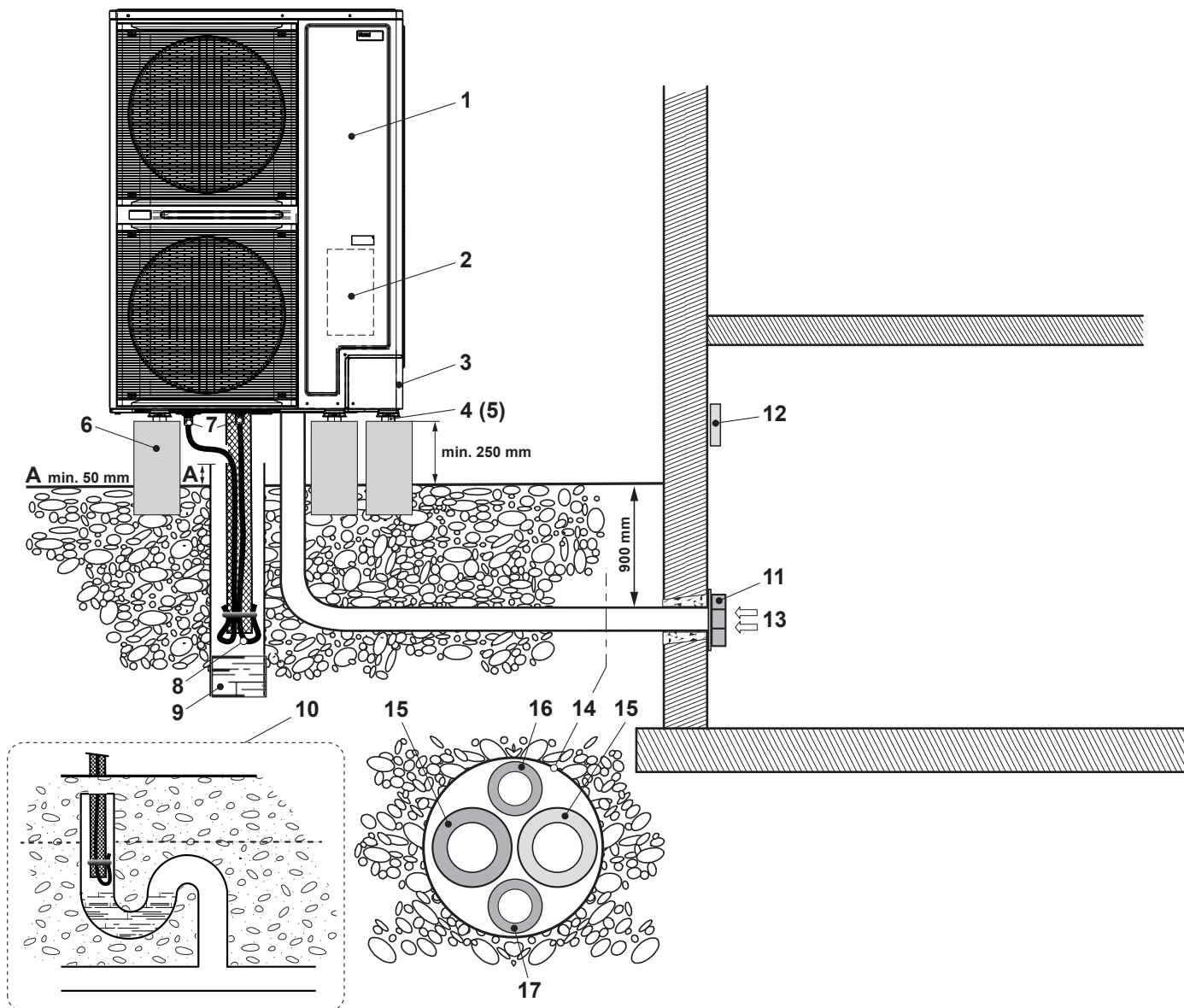
Configuration and connection diagram
Belaria® fit (8,13)



- 1 Belaria® fit (8,13)
- 2 Hydraulic connection
- 3 Electrical connection (electrical power supply, control and signal cables)
- 4 Vibration damper
- 5 Base kit
- 6 Concrete base
- 7 Condensate drain
- 8 Condensate drain hose
- 9 Absorbing well
- 10 Discharging into the sewage system (penetration into the soil must be made leak-tight)
- 11 Wall bushing
- 12 Operator terminal
- 13 Main current 3x400 V/50 Hz
- Control current 1x230 V/50 Hz
- 14 Heat pump line or empty tube
- 15 Connecting lines supply and return
- 16 Empty tube for electrical power supply
- 17 Empty tube for control and signal cables

The piping from the boiler room to the heat pump must be configured by the installer. Connecting pipes are not included.

Configuration and connection diagram
Belaria® fit (20,26)



- 1 Belaria® fit (20,26)
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Requirements and directives

The general requirements and directives listed in the chapter Engineering apply.

Aufstellung

- The Belaria® fit must be mounted outdoors. The installation location must be selected in accordance with the valid requirements and directives.
- Lines carrying water must be laid insulated and frost-proof.
- The installation location must be selected as close to the building as possible. Only short and simple routing of lines guarantees cost effectiveness and low heat losses.
- The installation location must be chosen in such a way that no noise pollution can occur (do not install near bedrooms, keep a distance from neighbours).
- Make sure that the installation location is well ventilated.
- DO NOT install the unit in the following places or locations:
 - In a potentially explosive atmosphere.
 - In places where there is a risk of fire due to escaping flammable gases (e.g. thinner or petrol) or airborne carbon fibres or flammable dust particles.
 - In places where corrosive gases (example: sulphuric acid gas) are produced.
- Wall ducts into the building must be airtight.
- The heat pump must not be placed closer than 1 m to the boundary of the property. Country-specific regulations must be observed.
- The air intake and air outlet sides must not be narrowed or covered.
- The air supply and the air outlet must be without obstruction.
- It is imperative that the minimum distances are observed (see Dimensions/Space requirement).
- The intake air must be free of impurities such as sand and aggressive substances such as ammonia, sulphur, chlorine etc.
- The heat pump must be installed on a load-bearing fixed structure.
- If the heat pump is installed at wind-prone locations, the alignment of the heat pump must be selected in such a way that the expected wind direction is at right angles to the suction direction.
- If an alternative installation in areas subject to strong winds cannot be avoided, an additional wind shield in the form of a hedge, for example, should be installed.
- The heat pump must always be installed on a solid surface in a horizontal position. This can be achieved by means of concrete bases.
- The load-bearing capacity must be adequate. The unit is mounted with 6 vibration-damping adjustable feet.
- Air/water heat pumps generate condensate during operation. It must be ensured that the condensate produced can be absorbed to a sufficient extent by a gravel bed (see configuration and connection diagram).
- When air is discharged upwards, there is an increased frost hazard. Gutters, water pipes and water containers must not be situated in the immediate vicinity.

- The condensate drain must be discharged outside the building and must not be led into or through a building.
- To prevent damage caused by animals such as rodents or insects, all cable ducts must be properly sealed.
- The hydraulic lines from the heat pump can transmit structure-borne noise. Therefore, structure-borne noise decoupling should be provided, e.g. with compensators.

Flat roof installation

Flat roof installation of the Belaria® fit is possible under the following conditions:

- All standards concerning statics, wind load and access to roofs must be complied with.
- The heat pump must be firmly bolted onto the substructure (e.g. concrete base). The heat pump must be prevented from tilting.
- Minimum distance of the heat pump to the roof edge: 2 m (personal protection) + 0.5 m (working area refrigeration circuit).
- Accessibility for maintenance and repair work must be ensured. For work on the heat pump, a measuring case and test equipment, refrigerant bottle, etc. must be transported to the site, amongst other things. In addition to the safety equipment (fall protection devices, anchoring devices, etc.), this must also be taken into account for skylights, stairs, railings, etc.

Room cooling

- Room cooling can be provided by fan convectors and is recommended. The connection lines for the fan convectors must have condensation-tight insulation.
- In addition, the condensate from the fan convectors must be drained off.
- If panel heating is used for room cooling, various criteria such as temperatures below the dewpoint or the temperature profiles must be allowed for, and can lead to costly consequential damage in the case of inadequate planning or incorrect use. We recommend that you consult Hoval.

Installation on heating side

- All pertinent laws, regulations and standards for heating house pipework and for heat pump systems must be complied with.
- A sludge separator must be installed in the heating flow and a filter ball valve in the heating return.
- The safety and expansion devices for closed heating systems must be provided in accordance with EN 12828.
- Dimensioning of the pipework must be done according to the required flow rates and given pressure drops.
- Ventilation must be provided at the highest points and drainage at the lowest points of the connection lines.
- To prevent energy losses, the connection lines must be insulated with suitable material.

Electrical connections

- The electrical connection must be carried out by a qualified technician and registered with the responsible energy supply company. The relevant electrical installation company is responsible for ensuring that electrical connection is carried out in accordance with standards and that safeguard measures are put in place.
- The mains voltage at the connection terminals of the heat pump must be 400 V or 230 V +/-10%. The conductor cross-sections of the connection line must be checked by the electrical company carrying out the work.
- A fast-acting fault-current circuit breaker ($< 0.1 \text{ s} / I_{\Delta N} \geq 30 \text{ mA}$) is recommended. Country-specific requirements must be complied with. If the "fault-current circuit breaker" safeguard measure is implemented by the electrical company, a separate fault-current circuit breaker is recommended for the heat pumps. The specified RCCB types apply to the heat pump regardless of externally connected components (refer to assembly instructions, data sheets).
- Circuit breakers must be provided for the main circuit. The starting currents must be taken into account in the design.
- The electrical connection and feeder lines must be copper cables.
- Please refer to the wiring diagram for electrical details.
- The wall feedthrough should slope down from the inside to the outside.
- To avoid damage, the opening should be padded on the inside or, for example, lined with a PVC pipe.
- After installation, the wall opening must be sealed with a suitable sealing compound on site in compliance with fire protection regulations!
- The distance between the high and low voltage cables should be at least 50 mm.

Routing of the hydraulic connection lines

- If the hydraulic connection lines are laid in the ground, this must be done in a protective tube. For example, this can be a PVC pipe with a diameter of 250 mm.
- Wall ducts must be sealed to the outside on site.
- After the hydraulic connection lines have been laid, they must be checked for damage and reinsulated. In case of cooling, condensate can form on the pipes.
- The hydraulic connection lines must be laid decoupled from the building and must never be laid flush-mounted.
- Care must be taken to ensure that water pipes do not pass through the sleeping or living areas.
- Shut-off valves must be installed on site in accordance with the corresponding hydraulic diagram. Opening the shut-off valves is only allowed immediately before commissioning!
- The danger of frost damage must be taken into account if there are prolonged power outages.
- False flow rates as a result of incorrect dimensions of the pipework, incorrect fittings or improper pump operation can cause damage to the heat pump.

Notice

To protect against frost damage to the heat exchanger of the heat pump, frost protection valves must be installed in the supply and return of the heat pump.
At least 2 pieces are required!
Observe downward slope, more drain valves may be necessary (flow, return, water traps).

Buffer storage tank

A buffer storage tank ensures optimal operating conditions for the heat pump.

- Hydraulic decoupling of the various volumetric flows from the heat pump and heat distribution system (heating)
- Absorbs the power reserves of the heat pump and reduces the switch-on frequency (cycling)
- Allows several heating circuits to be connected

A buffer storage tank is mandatory for Hoval air/water heat pumps. A buffer storage tank can be dispensed with if a direct heating or cooling circuit with storage capacity is involved, and there is always a constant flow rate (½ must be unblockable).

For Hoval heat pumps, the following minimum sizes of the buffer storage tank (EnerVal) must be observed. The minimum running times of the heat pumps are taken into account.

For air/water heat pumps, the energy required for defrosting the heat pump is included.

The volumes for power company off-periods shall be added on a project-by-project basis in accordance with local regulations.

Minimum sizes of buffer storage tank

	EnerVal type
Belaria® fit (8)	100
Belaria® fit (13)	300
Belaria® fit (20)	500
Belaria® fit (26)	800

Transport and storage

- When removing the packaging, check the heat pump for damage. If the heat pump was damaged during transport or storage, contact Hoval customer service, a service partner or a licensed specialist immediately. They must carry out a leak test with a suitable leak detector. In the event of a leak, the heat pump must be repaired.
- Store the outdoor unit in a cool place without fire hazard and without direct exposure to heat sources. The ambient temperature must not exceed 43 °C.
- The same regulations apply for storage as for installation (no recesses, ventilation pipes, ignition sources in the storage area).
- The heat pump must not be stored in closed rooms, cellars or garages.
- The heat pump is only allowed to be stored outdoors.
- During transport, ensure sufficient ventilation in the closed vehicle, also when parking and stopping.
- Storage in passageways, escape routes or in front of entrances or exits is not permitted
- Ignition sources such as naked flames, switched-on gas appliances, electric heaters, etc. must be kept away from the unit.
- Transport and storage only in upright position. Protect from mechanical damage and from falling over or falling down (make sure the load is secure).