

Data Sheet

Heating Center BHZ 3.0



Product information

The heating system BRUNNER (BHZ) Generation 3.0 consists of a hydraulic box and the matching system storage tank.

- hydraulic box in the power ratings: 15, 30 and 50 kW;
 - system storage tank for: 750, 1000, 1500 and 2000 liters;
 - eco-hierarchical use of all heat generators: renewable energy sources have priority;
 - enables common control and regulation coordination between all heat generators and heat consumers of a modern heating system;
 - timeless design, flexible installation method;
- and much more

Special product features

- Simple control via a modern display that provides centralized control for all heat generators and consumers. The clear glass touch display can also be installed in the living room;
 - automatic archiving of all operating data of the connected components as well as all messages;
 - minimal power consumption and lowest standby losses;
 - system visualization and control via PC, smartphone or tablet via www.mybrunner.com;
 - due to the modular design, an upgrade of the central heating system is also easily possible at a later date;
- and much more

Optional modules for upgrading

- Drinking water- heating with fresh water module, up to 40 liters/minute;
 - drinking water heating with hot water storage tank;
 - solar circuit with system separation (plate heat exchanger)
 - solar circuit without system separation;
 - circulation, incl. various control options: by pushbuttons, at setpoint temperature or circulation periods;
 - additional heating (e.g. oil/gas boilers, heat pumps);
 - expansion boards for additional heating circuits and power measurement via CAN-BUS;
- and much more

1 Übersicht der Bauteile

The BHZ 3.0 Heating Center consists of:

A = Hydraulic Box

B = System Storage

The connections can be arranged on the left or right, depending on conditions on site.

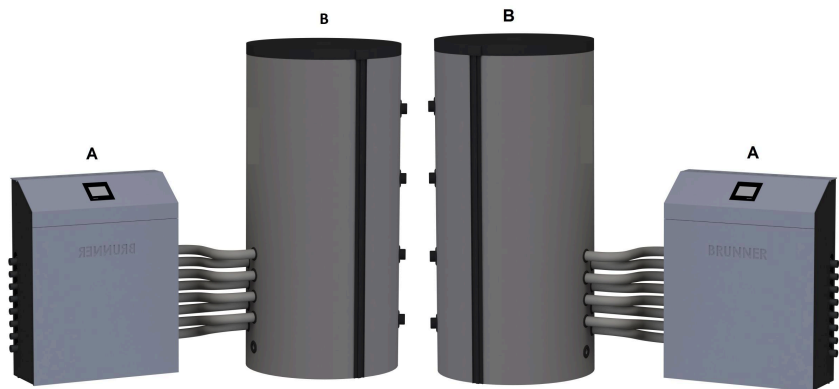


Illustration 1: right

Illustration 2: left

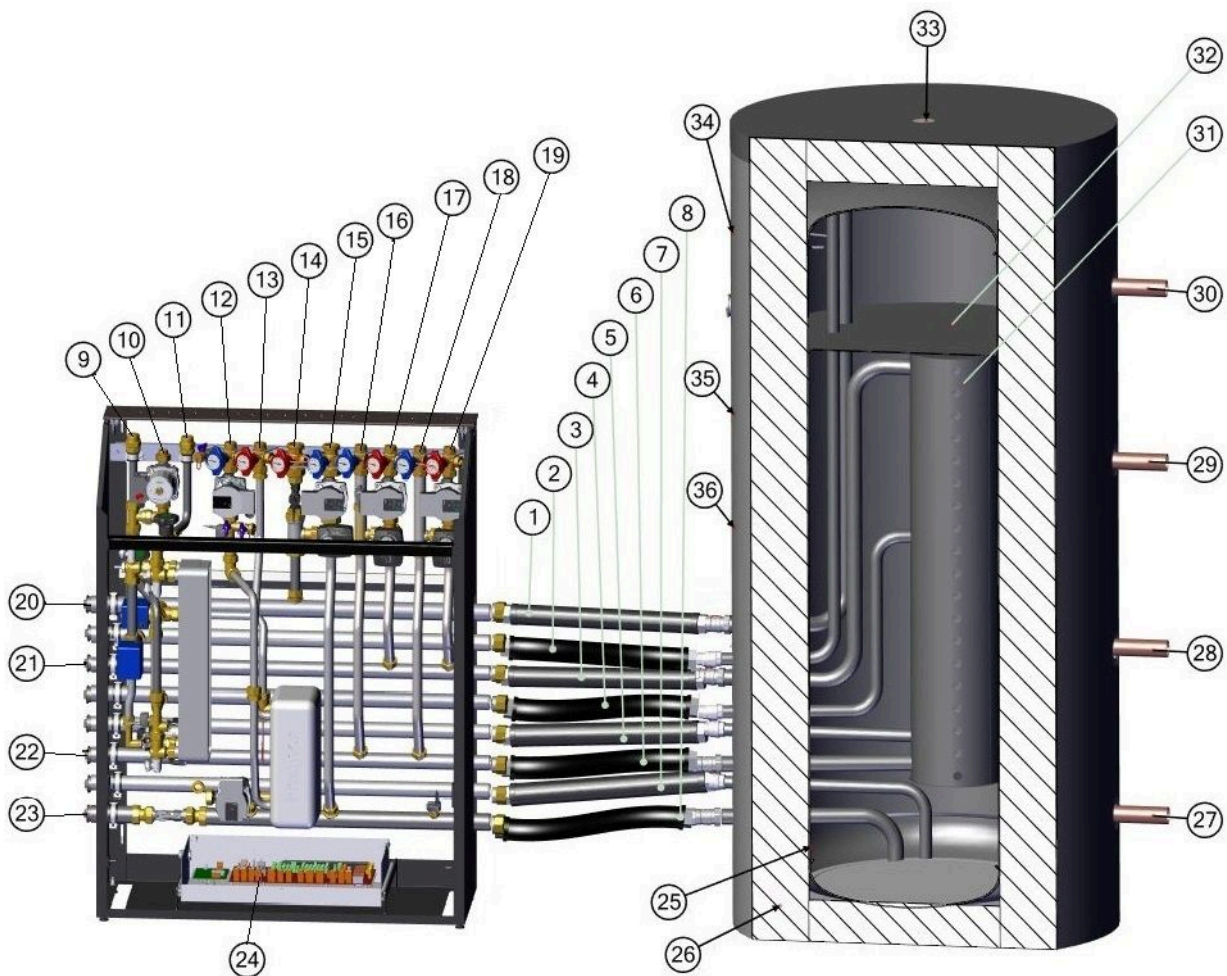


Illustration 3: Construction example

1	Supply, additional heating, solar, solid fuel boiler	19	Heating circuit 2, supply
2	Supply, hot water,	20	Supply for additional heating connection
3	Supply, heating circuit 3+4	21	Supply for the 3rd & 4th heating circuit connection
4	Supply, solar, mid of tank,	22	Return for the 3rd & 4th heating circuit connection
5	Return, hot water	23	Return for additional heating connection
6	Return, heating circuit	24	Heating Center controller board
7	Return, solar heating system	25	Bottom tank sensor (S5)
8	Return, connection for additional heating/solid fuel boiler	26	System Storage insulation
9	Cold water	27	Connection for additional tank (Standard Storage Tank type)
10	Circulation	28	Connection for additional tank (Standard Storage Tank type)
11	Hot water	29	Connection for additional tank (Standard Storage Tank type)
12	Solar heating system	30	Connection for additional tank (Standard Storage Tank type)
13	Solar heating system	31	Laminar loading cylinder
14	Solid fuel/biomass boiler or tiled stove	32	Baffle for separation of storage tank areas for drinking water and heating
15	Solid fuel/biomass boiler or tiled stove	33	Vent pipe
16	Heating circuit 1, return	34	Upper tank sensor (S3)
17	Heating circuit 1, supply	35	Mid of tank sensor (S4)
18	Heating circuit 2, return	36	Mid of tank sensor (S4.1)

2 Dimension drawings

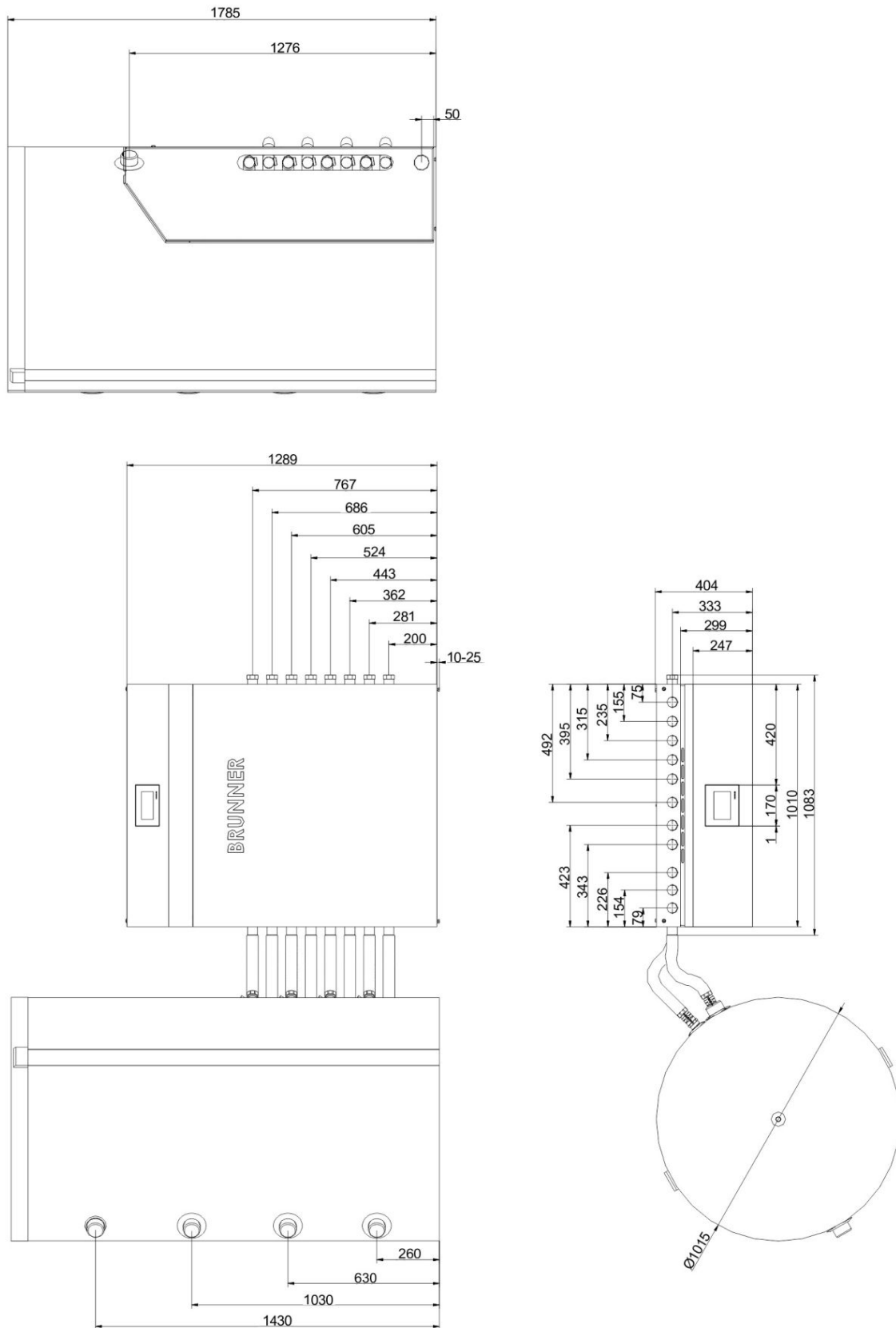


Illustration 4: BHZ 3.0 with 750 Liter System Storage

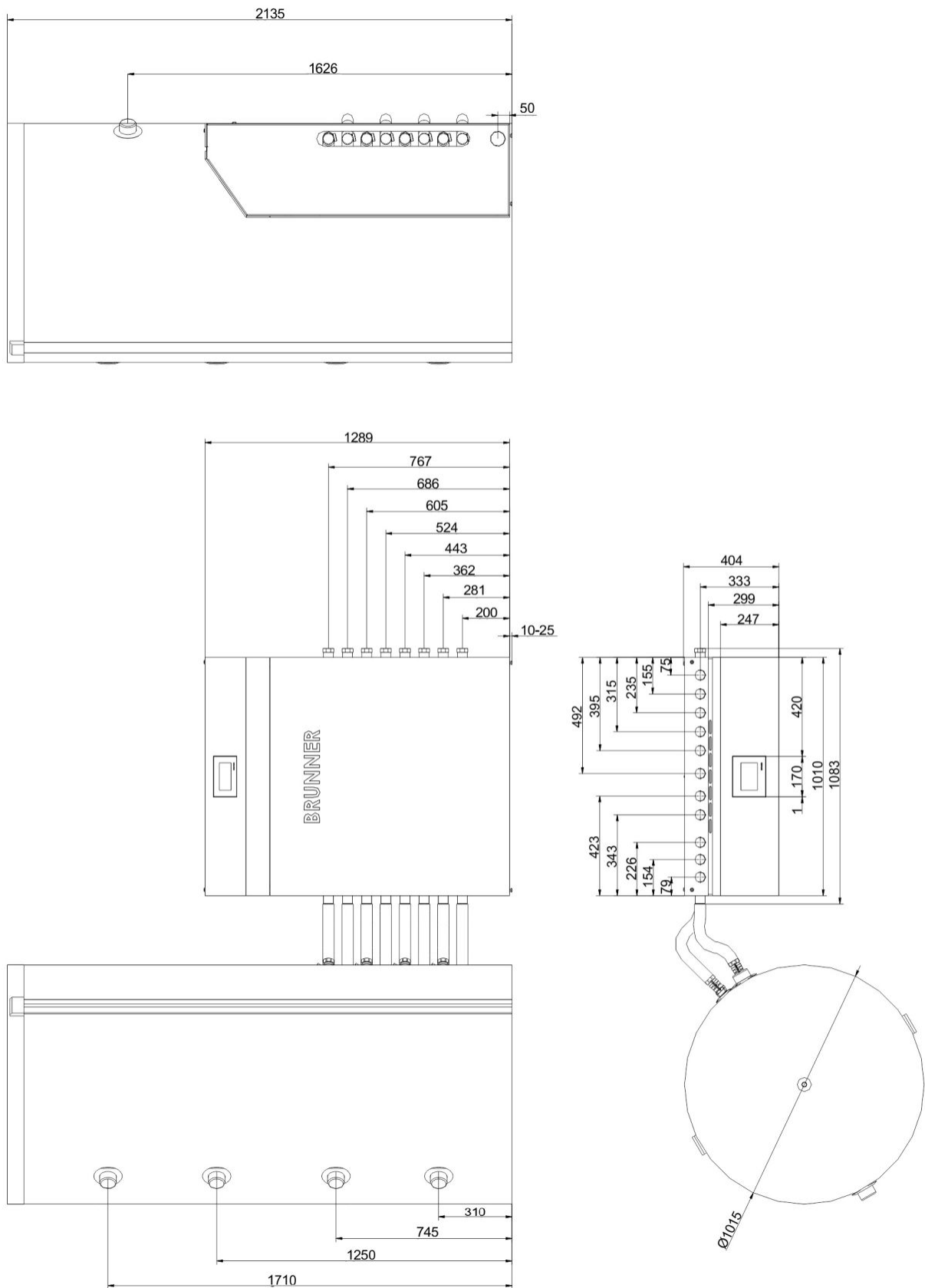


Illustration 5: BHZ 3.0 with 1000 Liter System Storage

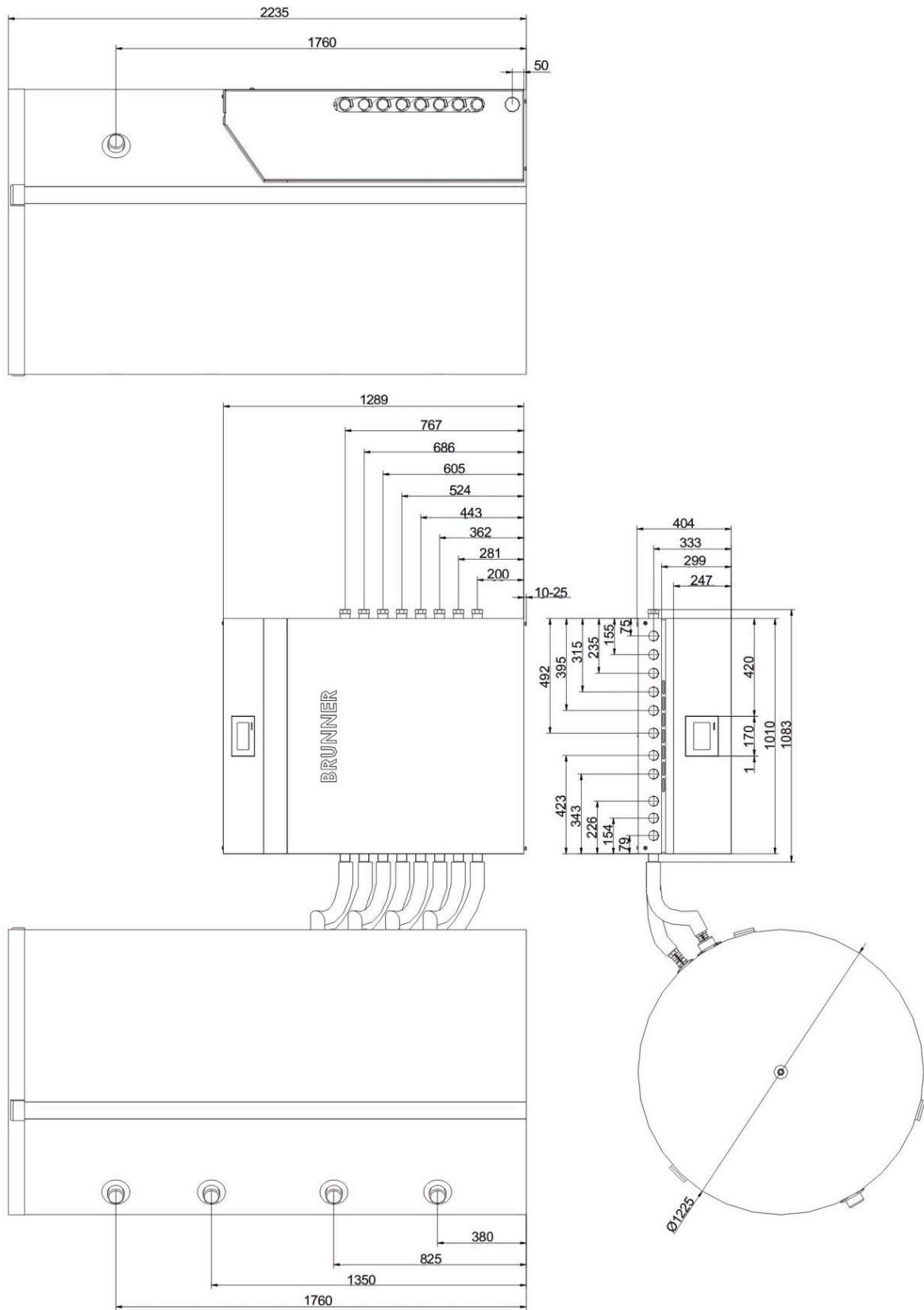


Illustration 6: BHZ 3.0 with 1500 Liter System Storage

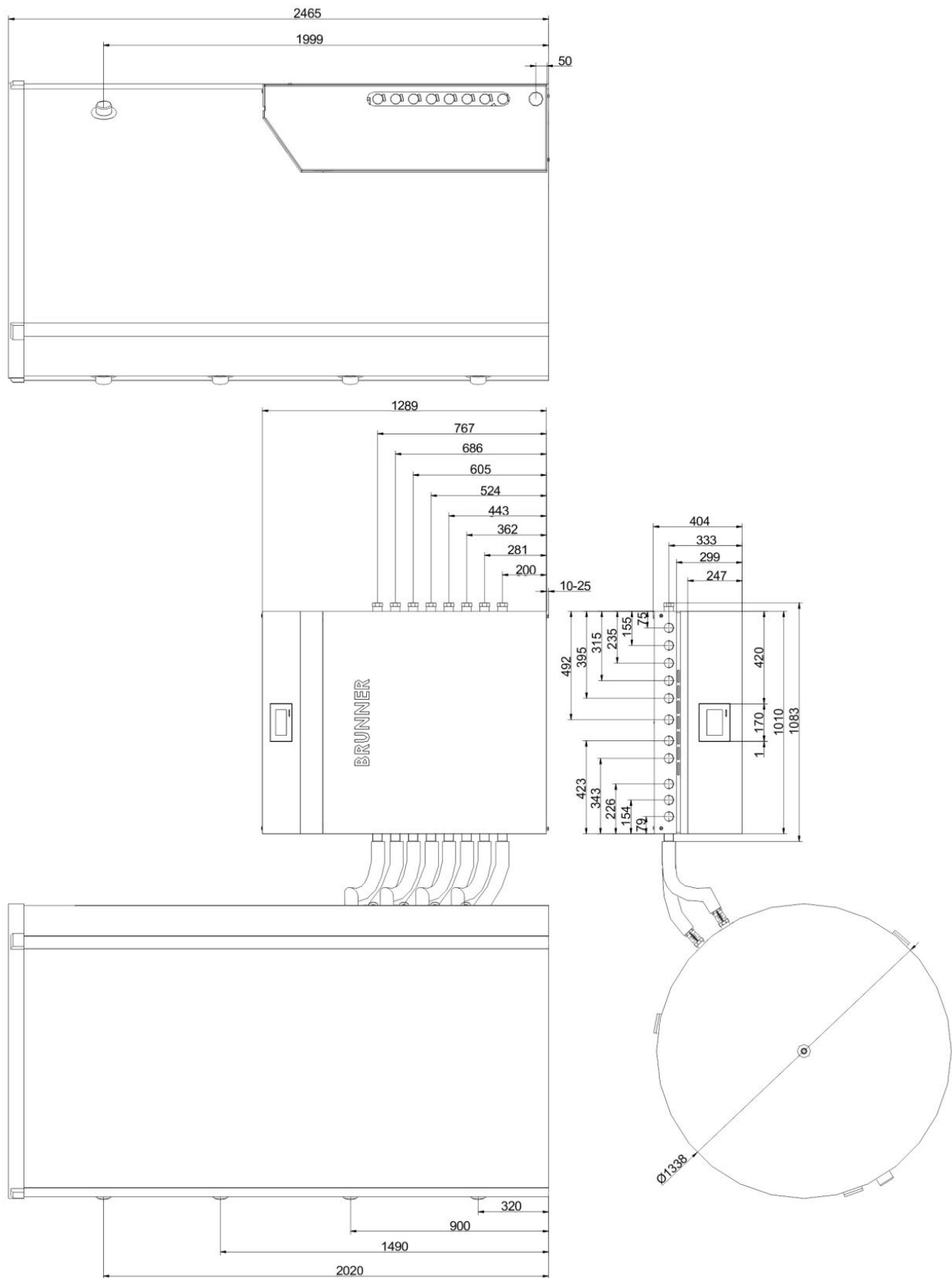


Illustration 7: BHZ 3.0 with 2000 Liter System Storage

BHZ 3.0 with additional storage tank

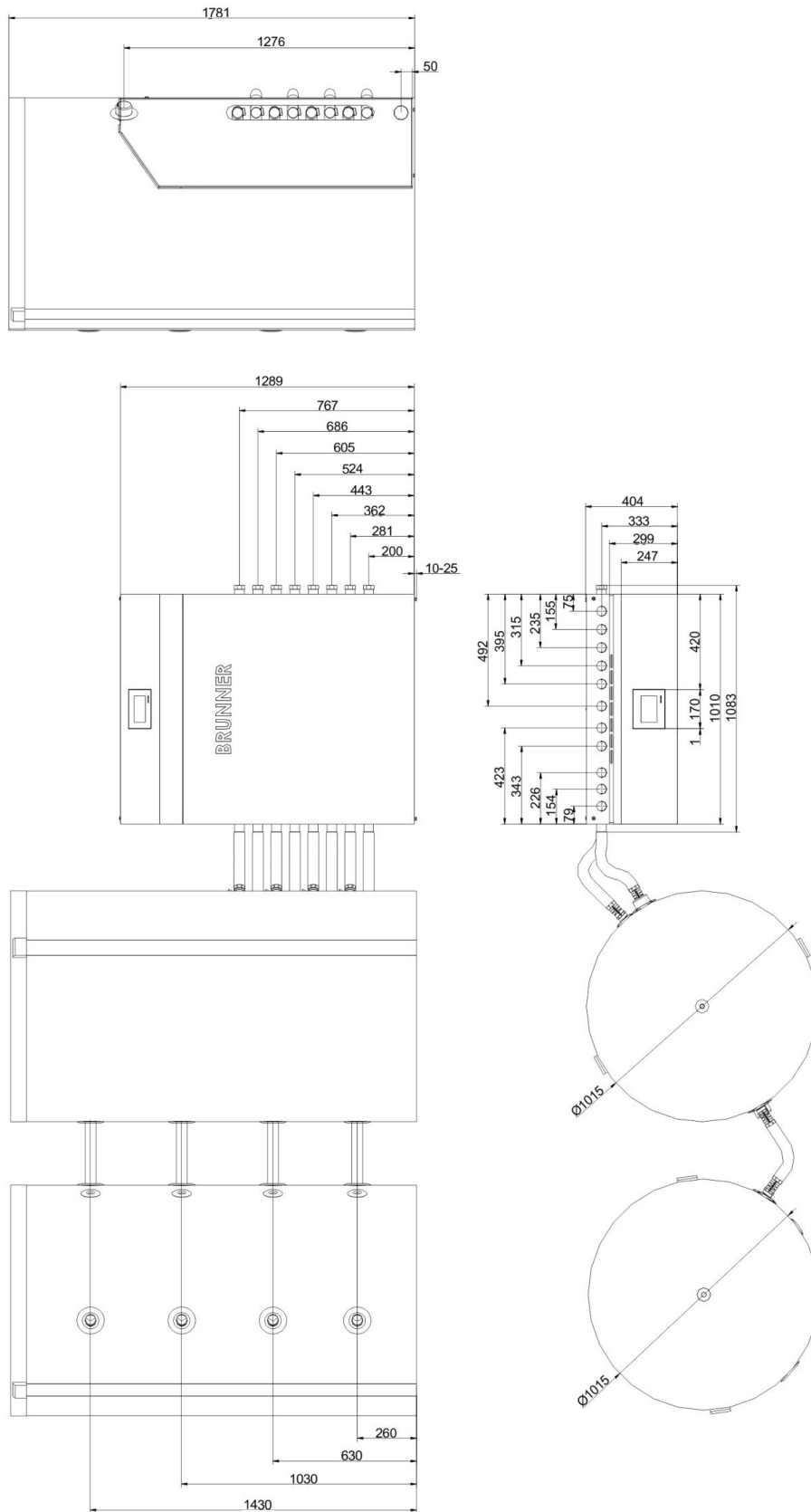


Illustration 8: BHZ 3.0 with 750 Liter System Storage and 750 l additional storage tank

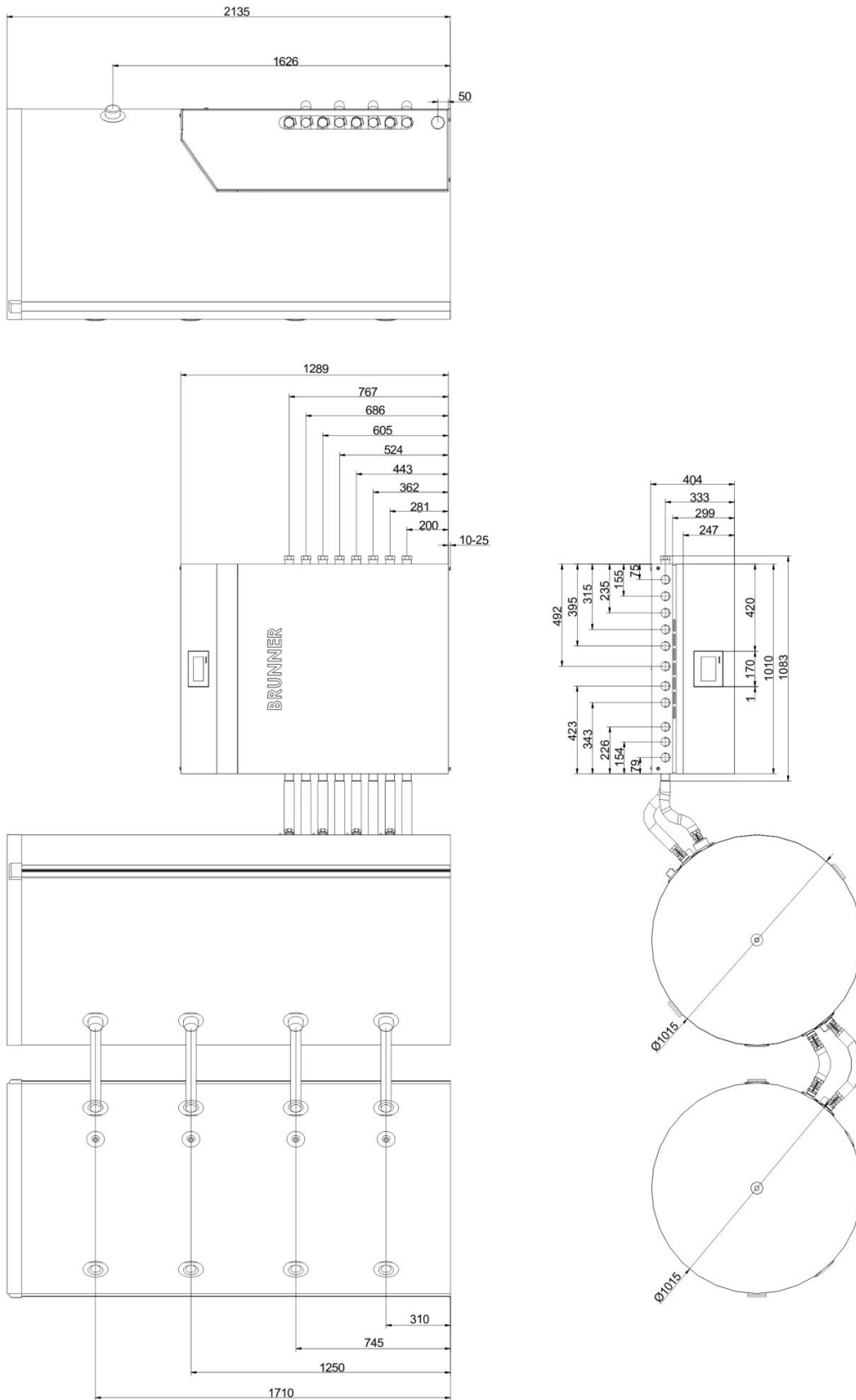


Illustration 9: BHZ 3.0 with 1000 Liter System Storage and 1000 l additional storage tank

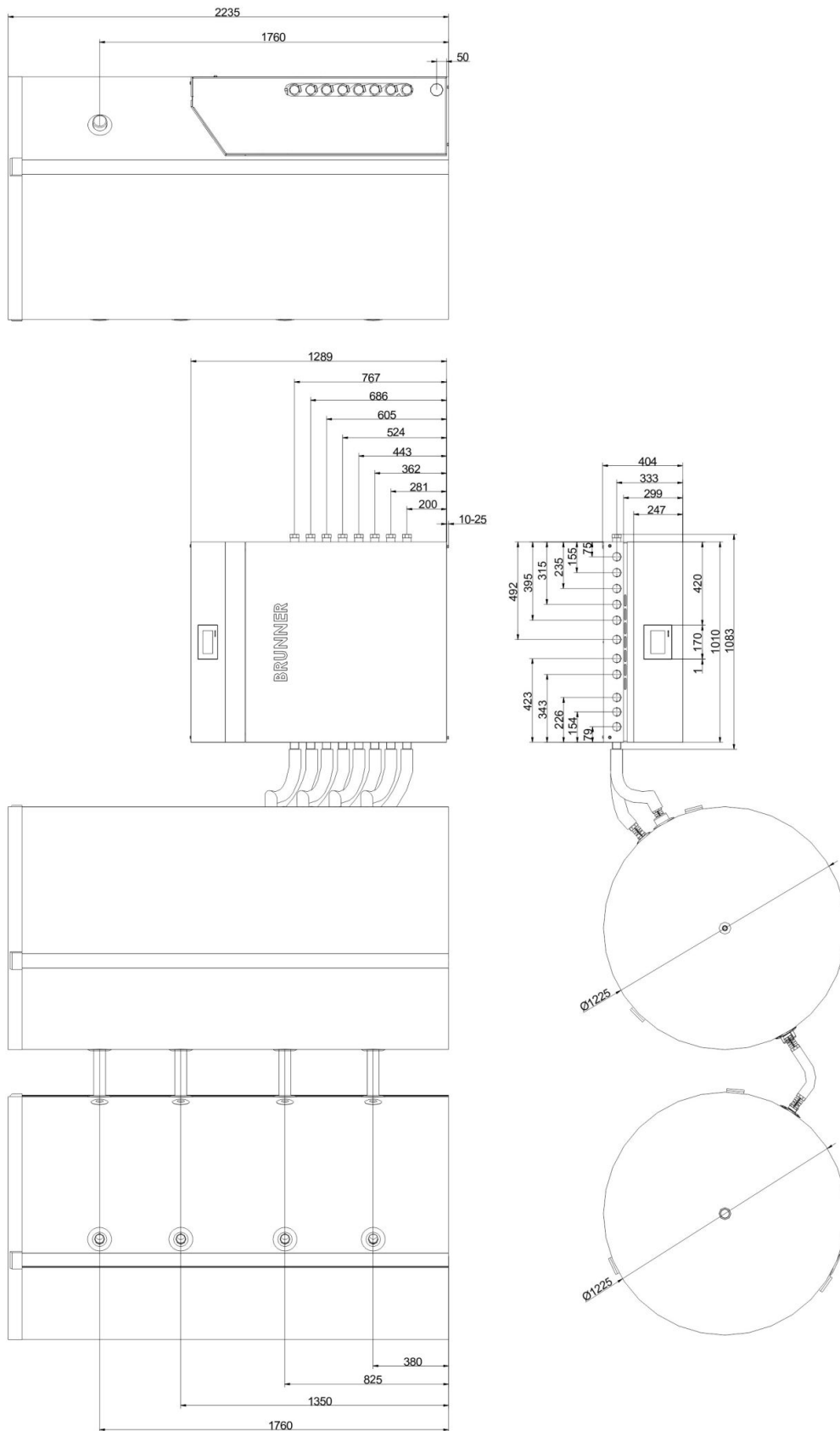


Illustration 10: BHZ 3.0 with 1500 Liter System Storage and 1500 l additional storage tank

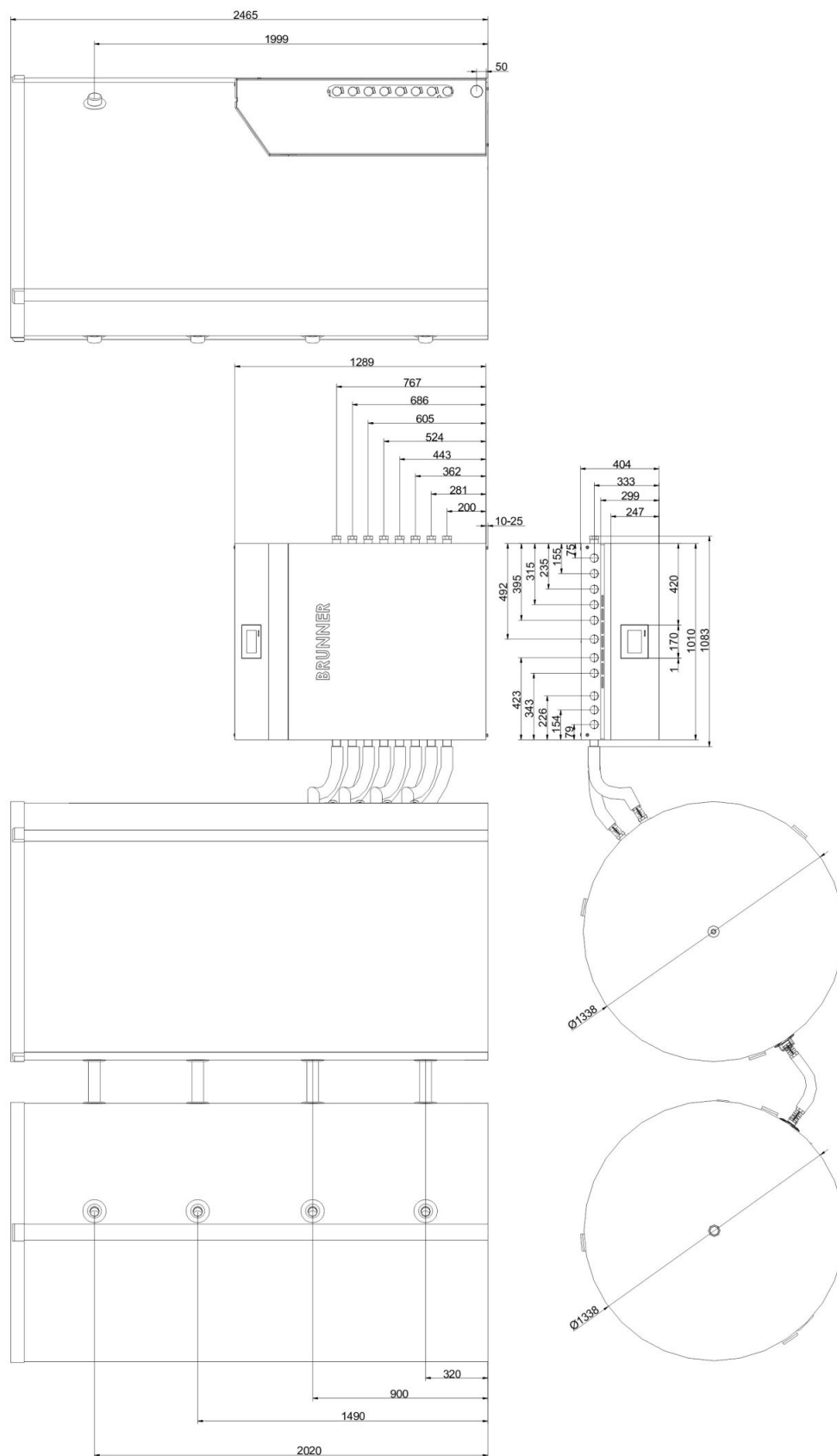


Illustration 11: BHZ 3.0 with 2000 Liter System Storage and 2000 l additional storage tank

3 Technical Data

Hydraulic box parameters		
Height x width x depth	mm	1289 x 1083 x 404
Cladding		Front cover panel made of powdered steel. Foldable and lockable lid; rear and side panels from steel; gray front, 6 mm thick; detachable rear panel; black, 2 mm thick; side panels attached to frame with screws, black; 2 mm thick;
Insulation		13 mm insulating material-HT around all duct segments;
Main board		Protected against temperature and humidity, central connection point for all sensors and electrical components. Bus connection for remote touch-sensitive display;
Average power consumption Winter/Summer	W	30-90 / 20-40
Stand-by	W	9
Max. weight	kg	95

Height x Width x Depth Touch-sensitive display	mm	170 x 170 x 58
Touch-Display colored	mm	5,7" VGA (16 bit)
Connections		CAN bus, Ethernet port, USB
Flush-mount box for remote display: height x width x depth	mm	160 x 160 x 70
Connection cable for remote display	m	10 m, 15 m, max. 50 m
Software updates		Update through USB port; current software on request www.brunner.de

Eco-Design-directive 2010/30/EU	
Temperature regulator class	II
Energy efficiency contribution	2 %

Storage tank Parameters / Nominal volume	Unit	750 liters	1000 liters	1500 liters	2000 liters
Storage volume Heating	l	560	810	1250	1785
Storage volume Hot water	l	190	190	265	265
Storage tank weight / Insulation weight	kg / kg	102 / 20	129 / 24	219 / 31	268 / 37
Polyester fleece insulation with clamp lock, (WLG 035)	mm	100	100	100	100
Standing loss (directive 2010/30/EU)	W	108	126	153	180
Storage tank insulation class according to DIN EN 13501-1 / DIN 4102-1		E / B2	E / B2	E / B2	E / B2

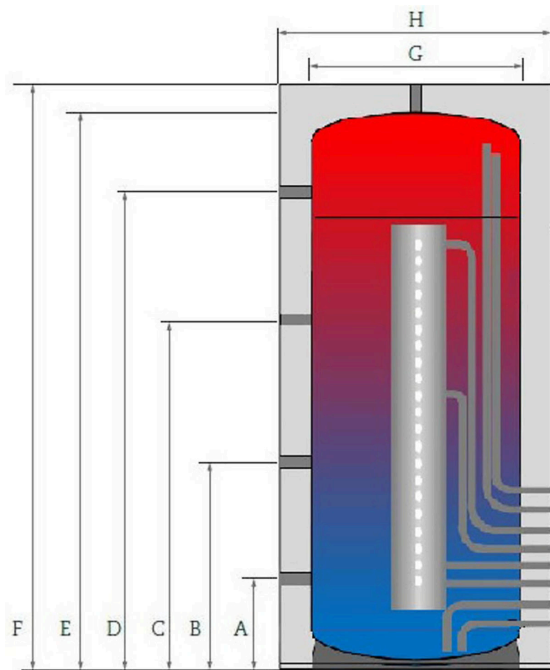


Illustration 12: Storage tank - dimensions

Dimensions	Unit	750 l	1000 l	1500 l	2000 l
A	mm	260	310	380	320
B	mm	630	745	825	900
C	mm	1030	1250	1350	1490
D	mm	1430	1710	1760	2020
E	mm	1700	2050	2150	2380
F	mm	1785	2135	2235	2465
G	mm	790	790	1000	1100
H	mm	1015	1015	1225	1338
Tilted height	mm	1750	2090	2270	2460

Technical data of installed components - *Heat generator:*

Water heating tiled stove / fireplace / kitchen stove	
Max. boiler power	30 kW
Return flow increase	Motorized 3-way mixer (make Belimo), Boiler pump by Wilo (Para 15-130/6-43/SC-12).
Natural Power boiler(solid fuel boiler)	
Max. boiler power	till 50 kW
Return flow increase	Motorized 3-way mixer (different pump: 15 kW - Para 25-180/7-50/iPWM1-12; 30 kW - Wilo Stratos Para 30/1-9 PWM1, 180 mm or 50 kW - Wilo Stratos Para 30/1-8 PWM1, 180mm.
Switching	via 230 VAC switch contact or potential-free relay in combination with BRUNNER-Natural Power boiler.
Switching	with differential temperature control and minimum temperature limitation, or when temperatures are lower than set for the system in corresponding standby times.

BRUNNER heating pump 9 green

max. Power	10 kW
Triggering	via internal bus wiring; pump: Para 25-180/9-87/iPWM1-12
Flow control	Control systems integrated with heat demand of heating centre

Solar circuit with system separation (plate heat exchanger)

Collector field size, absorber area	Absorber area up to 25 m ² ; heat transfer fluid with antifreeze;
Control	Primary circuit with variable speed pump (Para ST 15-130/13-75/iPWM2-12, and secondary circuit (Wilo Para 15-130/6-43/iPVVM1-12) with volume flow limiting device
Switching	via temperature sensor in collector field, with differential temperature control and maximum temperature limit.
Regulation	Energy yield optimization through different storage tank feeding levels (zone valve); This regulation can be performed based on temperature, energy yield or automatically optimized.

Heat pump (other manufacturers) (with switching input for heat demand - hot water/heating)

Max. power	till 20 kW
Connection	4 x 1 1/4" on System Storage, 1 1/2" on Hydraulic Box;

Control	via 230 VAC switch contact or potential-free relay, switching output for "Hot water/ Heating" demand and for switching valve "Tank loading top/middle";
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Other heat generators (oil/gas boiler)

Max. boiler power	till 30 kW
Control	via 230 VAC switch contact or potential-free relay;
Switching	when temperatures are below set temperatures for the system in corresponding standby times. Available settings: partial loading, full loading, hot water, heating, frost protection.

Photovoltaic integration (only in connection with domestic water module)

Zone valve	MOD. SF25 E, 230V,50/60 Hz, SW0,04A, Max. Temp. 60 °C, max. operating temperature 110°C, path AB/A currentless, path AB/B current; Manual operation AB/A/ B
Electric heater	9 kW; immersion depth: 800mm, therefrom 100mm unheated. Thermal cut-out 135°C, AG 1 1/2 Zoll.
Energy consumption meter	3x230V, 50Hz, 3x35A, Modbus
Electronic power controller	3x230V, permanent running: 3x16A, 50 Hz, automatic circuit breaker: 3x20A

Electrical additional heating module (only in connection with domestic water module)

Zone valve	MOD. SF25 E, 230V,50/60 Hz, SW0,04A, max. temp. 60 °C, max. operating temp. 110°C, way AB/A no current, way AB/B under current; manual operation way AB/A/B.
Electric immersion heater	9 kW; immersion depth: 800mm, including unheated part 100mm. Safety temperature limiter 135°C, ext. thread 1 1/2 inch
Power switch	3x230V, continuous operation: 3x16A, 50 Hz, automatic breaker: 3x20A

Technical data of installed components *Heat consumers:*

Drinking water heating with domestic water module (plate heat exchanger)

Tapping rate	selectable according to demand: 20 resp. 40 liters per minute at 10°C / 55°C,
Hot water volume	190 l - 265 l of reserved volume in System Storage at average storage temperature of 60°C (primary side)
Control	Demand-coupled drinking water heating. The tank feeding pump (Wilo Yonos PARA 15/6 PWM1, 130 mm for 20 l/min or Para 15-130/8-75/iPWM1-12 at 40 l/min) is controlled via volume flow meter to ensure lowest return flow temperatures.

Drinking water - heating with hot water storage tank

Control	Integrated feeding pump by Wilo (Para 25-130/6-43/SC-12); temperature sensor connection on;
Loading	Differential temperature control with maximum temperature limit; when hot water temperatures are lower than set temperatures in corresponding standby times. Programs for absence, permanent activation mode and disinfection program.

Circulation

Control	Integrated circulation pump by Wilo (ZRS 15/4-3); 230 VAC triggered via flow pressure signal, push button activation or during standby times.
Control system	The circulation interval ends automatically when set temperatures are reached. The circulation periods are available for individual setting.

Heating circuit 1 / Heating circuit 2 (via extension board to additional 3./4. Heating circuit)

Regulation	Outdoor temperature controlled heating circuits with energy-saving pump by Wilo (Para 25-180/6-43/SC-12). <ul style="list-style-type: none"> - Operation periods can be set individually. - Reduced mode (Standard, Frost protection, Cooldown protection). - Programs for absence, continuous operation as well as screed drying.
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