Calorifier charging system
Consisting of:
- calorifier charging module TransTherm® aqua L
- hot water charging tank CombiVal E or CombiVal C (optional)

Calorifier charging module TransTherm® aqua L

- Fully assembled station with plate heat exchanger for the provision of domestic hot water using the tank storage principle
- Intended for wall installation
- The primary side (heating side) contains the three-way valve, high-efficiency pump, air-bleeding, contact sensor and the filling and drain valve, line balancing valve. These components ensure a constant flow temperature at the plate heat exchanger. Pipes made from steel
- The secondary side (DHW side) contains the safety valve (10 bar), non-return valve, filling/drain valves and balancing valve. A flow sensor ensures the correct charging temperature for the hot process water storage tank. Pipes made from stainless steel
- Stainless steel plate heat exchanger 1.4404, copper-soldered or copper-free
- EPP insulation, 30 mm, for the heat exchanger
- Switch-on and switch-off of the charging pump is regulated via two sensors (included in the scope of delivery) in the storage tank.
- Mount tank sensor on the tank on site and connect it to the controller
- T-piece with dummy plug for on-site connection of the circulation group. Connect the pump to the controller on site.
- TopTronic® E control with integrated thermal disinfection of the DHW storage tank (anti-legionella circuit)

Delivery
- The storage tank required is not included in the scope of delivery

On site
- Installation of a circulation unit; the necessary connection is provided.
- Electrical connection of the controller

Suitable hot water charging tanks
see next page

TopTronic® E controller

TopTronic® E basic module district heating/ fresh water
- Control unit for controlling district heating systems in non-communicative networks and the corresponding consumers with integrated control functions for
  - primary valve control
  - cascade management
  - 1 heating/cooling circuit with mixer
  - 1 heating/cooling circuit without mixer
  - 1 hot water charging circuit
  - various additional functions

Range
Calorifier charging module

TransTherm® aqua L type	Output kW
(1-10)	50
(1-16)	90
(1-20)	115
(1-30)	175
(1-40)	230
(1-50)	275

Range
Hot water charging tank

CombiVal E		Content l
(300)	B	301
(500)	B	475
(800)		747
(1000)		968
(1500)		1472
(2000)		2000

CombiVal C		Content l
(200)	B	212
(300)	B	289
(400)	B	411
(500)	B	490
(750)		756
(1000)		990
(1500)		1415
(2000)		1975
(2500)		2450

- Various functions for hot water:
  - selection of different basic programs (week programs, economy mode, holiday until, etc.)
  - various operating modes (e.g. accumulator priority or parallel mode)
  - buffer storage circuit on the primary or secondary side
  - adjustable loading criteria (e.g. adjustable loading times, undershooting the minimum nominal value, etc.)
  - adjustable switch-off criteria (e.g. achieving the setpoint valve, achieving the lower sensor setpoint value, etc.)
  - adjustable loading block (if the loading flow temperature is too low, the setpoint temperature is not reached, differential temperature-dependent solar circuit control)
- Definable switching times for recirculation pump control
- Outdoor sensor
- Immersion sensor (calorifier sensor)
- Contact sensor (flow temperature sensor)
- Complete plug set for DH module
- RPM-regulated pumps

No further module expansions or controller modules can be installed in the control panel!

Option

TopTronic® E control module
- Simple, intuitive operating concept
- Display of the most important operating states
- Configurable start screen
- Operating mode selection
- Configurable day and week programs
- Operation of all connected Hoval CAN bus modules
- Commissioning wizard
- Service and maintenance function
- Fault message management
- Analysis function
- Weather display (with HovalConnect option)
- Adaptation of the heating strategy based on the weather forecast (with HovalConnect option)

Notice
The TopTronic® E control module for operating the basic module district heating/fresh water must be ordered separately!

Further information about the TopTronic® E
see “Controls”

Delivery
- All armatures required for operation, such as flow balancing and shut-off valves, backflow preventer, air-bleeding and drain valve are fitted.

Caution
As a result of thermal disinfection of the domestic hot water for legionella protection, increased water temperatures (at least 65-70 °C) occur. Depending on the water quality, this may result in increased calcification at the installed armatures and heat exchangers and also brings the risk of scalding at the tapping points. Corresponding protective measures must be implemented on site.

CombiVal C (200-2500)

- Charging tank made from stainless steel (without built-in heating coil) for combination with calorifier charging module TransTherm® aqua L
- (200-1000) with one flange
  (1500-2000) with two flanges
  (2500) with one manhole
  in each case with installed dummy flange plate for maintenance or, for types (200-2000), installation of a flange-mounted electric heating element
- Thermal insulation: Neodul® insulation (EPS rigid foam outside and 20 mm polyester fibre fleece inside) with zip, outer jacket made of polypropylene, colour red
  (200-1000) 2-piece
  (1500) 3-piece
  (2000-2500) 4-piece
- Thermometer incl. immersion sleeve loose (packed with the product)
- Sensor terminal bar
- Observe limit values for chloride content in domestic water - see “Engineering”.

Delivery

- (200-1000) with thermal insulation completely installed (can be removed for bringing in)
- (1500-2500) thermal insulation separately packed

Design on request

- (200-2000) Flange-mounted electric heating element

On site

- Installation of immersion sleeve for thermometer
- (1500-2500) Installation of the thermal insulation and attaching the protection rosettes

CombiVal E (300-2000)

- Charging tank made of steel, enamelled inside (without built-in heating coil) for combination with calorifier charging module TransTherm® aqua L
- (300-1000) with one flange
  (1500,2000) with two flanges
  in each case with installed dummy flange plate for maintenance or installation of a flange-mounted electric heating element
- (300-1000) one built-in magnesium protection anode (1500,2000) two built-in magnesium protection anodes
- Thermal insulation made of
  - (300,500) polyurethane rigid foam, directly foamed, with dismantable foil casing, 1-part, red coloured
  - (800-2000) polyester fleece with foil jacket, completely removable, red coloured
    (800-1500) 2-part
    (2000) 3-part
- With thermometer
- (300,500) sensor channel (800-2000) two terminal bars for contact sensor

Delivery

- (300,500) with foil casing completely mounted
- (800-2000) with thermal insulation fully installed (removable)

Design on request

- Flange-mounted electric heating element

On site

- Installation of the thermometer
- Attachment of the glue-on protection rosettes to the thermal insulation

Water quality
see end of this brochure

Calorifier charging module

TransTherm® aqua L

Fully assembled station with plate heat exchanger for the provision of domestic hot water using the storage tank charging principle and built-in Hoval TopTronic® E control
The required storage tank is not supplied.

TransTherm® aqua L	Output kW	Part No.
(1-10)	50	8005 864
(1-16)	90	8005 865
(1-20)	115	8005 866
(1-30)	175	8005 867
(1-40)	230	8005 868
(1-50)	275	8005 869

Version with copper-free heat exchanger

TransTherm® aqua L

with copper-free heat exchanger

TransTherm® aqua L	Output kW	Part No.
(1-10)	50	8006 491
(1-16)	90	8006 492
(1-20)	115	8006 493
(1-30)	175	8006 494
(1-40)	230	8006 495
(1-50)	275	8006 496

Electric heating elements
see chapter “Electric heating elements”

Accessories

	Part No.
	
TopTronic® E control module black with 4.3″ colour touchscreen For operation of all controller modules connected to the bus system (basic, solar, buffer modules etc.) Connection to the Hoval bus system via RJ45 plug connection or via plug terminals (max. 0.75 mm²), flat design with flexible installation option Installation: - in control panel of the heat generator - in the Hoval wall casing - in the control panel front, black high-gloss cover, customer-specific configurable start screen, Display of current weather or weather forecast (only possible in combination with HovalConnect) Consisting of: - TopTronic® E control module black - Clamping device set control module - RJ45-RAST 5 CAN cable, L = 500	6043 844
	
Return changeover valve set Consisting of: - temperature sensor - changeover valve - drive (8 sec.) DN 20-DN 40 - drive (30 sec.) DN 50-DN 80 - seals - screw connections	

Nominal diameter	Output kW	kvs m³/h	
DN 20	50-90	6.3	7010 832
DN 25	115-175	10	7010 836
DN 32	230-275	16	7011 009
DN 40	350	25	7011 025
DN 50	450	40	7016 331
DN 65	580	63	7016 332
DN 80	700	100	7016 333

Notice
When using a circulation set with integration at the heat exchanger (also on-site circulating pump), it is imperative to install a return switching valve set.

Circulation set
for TransTherm® aqua L, F
Piping of parts in contact with domestic water in stainless steel and gunmetal
Consisting of:
- temperature sensor PT1000
- recirculation pump Wilo Yonos PARA
- recirculation pump Wilo Para MAXO
- regulating valve
- non-return valve

Connection	Flow rate m³/h	Recirculation pump	
DN 20 ¾″ Rp	1.9	Z15/7.0 RKC	8005 279
DN 25 1″ Rp	3.4	Z25/180/08/F02	8005 280
DN 32 1¼″ Rp	5.8	Z25/180/08/F02	8005 281

		Part No.
	**Test valve DN 8 G ¼″** for TransTherm® aqua L, F, FS Test valve suitable for flame treatment for hygienic-microbiologic tests.	2049 861
	**Sludge separator with magnet MB3/L DN 25...DN 50** Fast and continuous removal of ferromagnetic and non-magnetic dirt and sludge particles Sludge separation up to a particle size of 5 µm Brass housing Max. operating pressure: 6 bar Max. flow temperature: 110 °C	
	MB3 DN 25 — Rp 1″ — 2.0 m³/h at 1 m/s flow speed	2062 165
	MBL DN 32 — Rp 1¼″ — 3.6 m³/h at 1 m/s flow speed	2062 166
	MBL DN 40 — Rp 1½″ — 5.0 m³/h at 1 m/s flow speed	2062 167
	MBL DN 50 — Rp 2″ — 7.5 m³/h at 1 m/s flow speed	2062 168
	Additional sludge separators see “Various system components”	
	**Temperature monitor 0…120 °C** for TransTherm® aqua L, F, FS	2048 299
	**Safety temperature monitor 70…130 °C** for TransTherm® aqua L, F, FS	2048 300
	**Safety temperature limiter 70…130 °C** for TransTherm® aqua L, F, FS	2049 619
	**Immersion sleeve G ½″ stainless steel for thermostat** for TransTherm® aqua L, F, FS Installation length = 100 mm Outer Ø: 8 mm, inner Ø: 6.5 mm	2048 285
	**Immersion sleeve G ½″ stainless steel for 2 thermostats** for TransTherm® aqua L, F, FS Installation length = 100 mm Outer Ø: 15 mm, inner Ø: 13.5 mm	2048 288

Hot water charging tank

CombiVal E

Enamelled charging tank
(without heating coil)

CombiVal E (300-1000) with one flange
CombiVal E (1500,2000) with two flanges
- (300,500) thermal insulation mounted with foil casing
- (800-2000) Thermal insulation fully installed (removable)

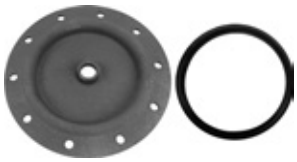
CombiVal type		Content l	Part No.
E (300)	B	301	6044 187
E (500)	B	475	6044 188
E (800)		747	6044 189
E (1000)		968	6044 190
E (1500)		1472	6044 191
E (2000)		2000	6044 192

CombiVal C

Stainless steel charging tank
(without heating coil)

CombiVal C (200-1000) with one flange
CombiVal C (1500-2000) with two flanges
CombiVal C (2500) with one manhole thermal insulation
- (200-1000) completely mounted (removable)
- (1500-2000) separately packed

CombiVal type		Content l	Part No.
C (200)	B	212	6049 693
C (300)	B	289	6049 694
C (400)	B	411	6049 695
C (500)	B	490	6049 696
C (750)		756	6049 697
C (1000)		990	6049 698
C (1500)		1415	6049 699
C (2000)		1975	6049 700
C (2500)		2450	6049 701

	Part No.
For CombiVal E (300-2000)	
 **Flange cover 180 - ¾″** for the installation of the Correx® impressed current anode in flange Ø 180/110 mm, enamelled on the inside with Rp ¾″ sleeve Seal included	2077 035
 **UP 2.3-919** **Kit Correx® impressed current anode UP2.3-919-L395/1** for long-term corrosion protection for installation in the enamelled calorifier with reduction R 1¼″ (ET) – Rp 1″ (IT) and R 1″ (ET) – Rp ¾″ (IT) Installation length: 395 mm Connection cable length: 1 x 2000 mm 1 Correx® impressed current anode	684 760
Either a Correx® impressed current anode **or** one/two magnesium anodes may be used.	
For CombiVal C (200-2500)	
 **Flange cover 180 - 1½″** for the installation of the Correx® impressed current anode in flange Ø 180/110 mm, stainless steel with Rp 1½″ sleeve Seal and screws included	2077 911
 **UP 1.9-924** **Kit Correx® impressed current anode UP1.9-924-L395/1** for long-term corrosion protection for installation in the stainless steel calorifier with reduction R 1½″ - Rp ¾″ Installation length: 395 mm Connection cable length: 1 x 3500 mm 1 Correx® impressed current anode (up to 800 l)	6031 813
The flange cover 180 - 1½″ must also be ordered for installation of the impressed current anode set.	
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.	

Performance data

TransTherm® aqua L (1-10 to 1-50)

Domestic water secondary	TransTherm® aqua L		Flow temperature heating water: 55 °C (1-...) (10)	(16)	(20)	(30)	(40)	(50)	60 °C (1-...) (10)	(16)	(20)	(30)	(40)	(50)
60/5 °C	T return primary	°C	-	-	-	-	-	-	-	-	-	-	-	-
	V̇ primary	**m³/h**	-	-	-	-	-	-	-	-	-	-	-	-
	Q max.	kW	-	-	-	-	-	-	-	-	-	-	-	-
	V̇ secondary	**m³/h**	-	-	-	-	-	-	-	-	-	-	-	-
60/10 °C	T return primary	°C	-	-	-	-	-	-	-	-	-	-	-	-
	V̇ primary	**m³/h**	-	-	-	-	-	-	-	-	-	-	-	-
	Q max.	kW	-	-	-	-	-	-	-	-	-	-	-	-
	V̇ secondary	**m³/h**	-	-	-	-	-	-	-	-	-	-	-	-
60/15 °C	T return primary	°C	-	-	-	-	-	-	-	-	-	-	-	-
	V̇ primary	**m³/h**	-	-	-	-	-	-	-	-	-	-	-	-
	Q max.	kW	-	-	-	-	-	-	-	-	-	-	-	-
	V̇ secondary	**m³/h**	-	-	-	-	-	-	-	-	-	-	-	-
60/20 °C	T return primary	°C	-	-	-	-	-	-	-	-	-	-	-	-
	V̇ primary	**m³/h**	-	-	-	-	-	-	-	-	-	-	-	-
	Q max.	kW	-	-	-	-	-	-	-	-	-	-	-	-
	V̇ secondary	**m³/h**	-	-	-	-	-	-	-	-	-	-	-	-
55/5 °C	T return primary	°C	-	-	-	-	-	-	30	30	30	30	30	30
	V̇ primary	**m³/h**	-	-	-	-	-	-	**1.25**	**2.04**	**2.51**	**3.71**	**4.76**	**5.66**
	Q max.	kW	-	-	-	-	-	-	43	70	86	127	163	194
	V̇ secondary	**m³/h**	-	-	-	-	-	-	**0.74**	**1.2**	**1.48**	**2.18**	**2.8**	**3.33**
55/10 °C	T return primary	°C	-	-	-	-	-	-	30	30	30	30	30	30
	V̇ primary	**m³/h**	-	-	-	-	-	-	**1.11**	**2.04**	**2.51**	**3.71**	**4.76**	**5.63**
	Q max.	kW	-	-	-	-	-	-	38	70	86	127	163	193
	V̇ secondary	**m³/h**	-	-	-	-	-	-	**0.73**	**1.34**	**1.64**	**2.43**	**3.12**	**3.69**
55/15 °C	T return primary	°C	-	-	-	-	-	-	30	30	30	30	30	30
	V̇ primary	**m³/h**	-	-	-	-	-	-	**0.76**	**1.46**	**1.95**	**3.06**	**4.23**	**5.4**
	Q max.	kW	-	-	-	-	-	-	26	50	67	105	145	185
	V̇ secondary	**m³/h**	-	-	-	-	-	-	**0.56**	**1.08**	**1.44**	**2.26**	**3.12**	**3.98**
55/20 °C	T return primary	°C	-	-	-	-	-	-	30	30	30	30	30	30
	V̇ primary	**m³/h**	-	-	-	-	-	-	**0.47**	**0.9**	**1.17**	**1.9**	**2.63**	**3.36**
	Q max.	kW	-	-	-	-	-	-	16	31	40	65	90	115
	V̇ secondary	**m³/h**	-	-	-	-	-	-	**0.39**	**0.76**	**0.99**	**1.6**	**2.22**	**2.83**
50/5 °C	T return primary	°C	30	30	30	30	30	30	30	30	30	30	30	30
	V̇ primary	**m³/h**	**1.29**	**2.03**	**2.51**	**3.67**	**4.72**	**5.66**	**1.28**	**2.04**	**2.51**	**3.71**	**4.76**	**5.63**
	Q max.	kW	37	58	72	105	135	162	44	70	86	127	163	193
	V̇ secondary	**m³/h**	**0.71**	**1.11**	**1.37**	**2**	**2.58**	**3.09**	**0.84**	**1.34**	**1.64**	**2.43**	**3.12**	**3.69**
50/10 °C	T return primary	°C	30	30	30	30	30	30	30	30	30	30	30	30
	V̇ primary	**m³/h**	**1.29**	**2.03**	**2.51**	**3.67**	**4.72**	**5.66**	**1.28**	**2.04**	**2.51**	**3.73**	**4.81**	**5.69**
	Q max.	kW	38	58	72	105	135	162	44	70	86	128	165	195
	V̇ secondary	**m³/h**	**0.82**	**1.25**	**1.77**	**2.26**	**2.9**	**3.48**	**0.95**	**1.51**	**1.85**	**2.75**	**3.55**	**4.19**
50/15 °C	T return primary	°C	30	30	30	30	30	30	30	30	30	30	30	30
	V̇ primary	**m³/h**	**1.29**	**2.03**	**2.51**	**3.67**	**4.72**	**5.66**	**1.11**	**1.95**	**2.48**	**3.76**	**4.76**	**5.69**
	Q max.	kW	37	58	72	105	135	162	38	67	85	129	163	195
	V̇ secondary	**m³/h**	**0.91**	**1.43**	**1.77**	**2.58**	**3.32**	**3.99**	**0.94**	**1.65**	**2.09**	**3.18**	**4.01**	**4.8**
50/20 °C	T return primary	°C	30	30	30	30	30	30	30	30	30	30	30	30
	V̇ primary	**m³/h**	**1.15**	**2.03**	**2.55**	**3.7**	**4.75**	**5.69**	**0.96**	**1.69**	**2.13**	**3.24**	**3.63**	**5.16**
	Q max.	kW	33	58	73	106	136	163	33	58	73	111	145	177
	V̇ secondary	**m³/h**	**0.95**	**1.67**	**2.1**	**3.05**	**3.91**	**4.69**	**0.95**	**1.67**	**2.1**	**3.19**	**4.17**	**5.09**

T return primary °C Return temperature primary
V̇ primary **m³/h** Flow rate primary
Q max. kW Output
V̇ secondary **m³/h** Flow rate secondary

The specified technical data relate to the full load of the module in each case.

Performance data

TransTherm® aqua L (1-10 to 1-50)

Domestic water secondary	TransTherm® aqua L		Flow temperature heating water: 65 °C (1-...) (10)	(16)	(20)	(30)	(40)	(50)	70 °C (1-...) (10)	(16)	(20)	(30)	(40)	(50)
60/5 °C	T return primary	°C	30	30	30	30	30	30	30	30	30	30	30	30
	V̇ primary	**m³/h**	**1.08**	**1.88**	**2.5**	**3.73**	**4.84**	**5.77**	**1.32**	**2.09**	**2.59**	**3.76**	**4.82**	**5.72**
	Q max.	kW	43	75	100	149	193	230	60	95	118	171	219	260
	V̇ secondary	**m³/h**	**0.67**	**1.17**	**1.55**	**2.33**	**3.01**	**3.59**	**0.94**	**1.48**	**1.84**	**2.67**	**3.42**	**4.06**
60/10 °C	T return primary	°C	30	30	30	30	30	30	30	30	30	30	30	30
	V̇ primary	**m³/h**	**0.8**	**1.5**	**2.01**	**3.16**	**4.34**	**5.39**	**1.08**	**1.94**	**2.48**	**3.77**	**4.95**	**5.92**
	Q max.	kW	32	60	80	126	173	215	50	90	115	175	230	275
	V̇ secondary	**m³/h**	**0.55**	**1.03**	**1.38**	**2.17**	**2.98**	**3.7**	**0.86**	**1.54**	**1.98**	**3.01**	**3.95**	**4.73**
60/15 °C	T return primary	°C	30	30	30	30	30	30	30	30	30	30	30	30
	V̇ primary	**m³/h**	**0.55**	**1.05**	**1.38**	**2.13**	**3.08**	**3.96**	**0.97**	**1.8**	**2.37**	**3.73**	**4.84**	**5.72**
	Q max.	kW	22	42	55	85	123	158	44	82	108	170	220	260
	V̇ secondary	**m³/h**	**0.42**	**0.8**	**1.05**	**1.63**	**2.35**	**3.02**	**0.84**	**1.57**	**2.08**	**3.24**	**4.21**	**4.98**
60/20 °C	T return primary	°C	30	30	30	30	30	30	30	30	30	30	30	30
	V̇ primary	**m³/h**	**0.3**	**0.6**	**0.8**	**1.28**	**1.75**	**2.33**	**0.62**	**1.14**	**2.05**	**2.4**	**3.43**	**4.22**
	Q max.	kW	12	24	32	51	70	93	28	52	68	109	156	192
	V̇ secondary	**m³/h**	**0.26**	**0.52**	**0.69**	**1.1**	**1.51**	**2**	**0.6**	**1.12**	**1.47**	**2.36**	**3.36**	**4.14**
55/5 °C	T return primary	°C	30	30	30	30	30	30	30	30	30	30	30	30
	V̇ primary	**m³/h**	**0.8**	**1.5**	**2.01**	**3.16**	**4.34**	**5.39**	**1.08**	**2.09**	**2.53**	**3.74**	**4.84**	**5.76**
	Q max.	kW	32	60	80	126	173	215	50	95	115	170	220	262
	V̇ secondary	**m³/h**	**0.55**	**1.03**	**1.38**	**2.17**	**2.98**	**3.7**	**0.86**	**1.63**	**1.97**	**2.92**	**3.78**	**4.5**
55/10 °C	T return primary	°C	30	30	30	30	30	30	30	30	30	30	30	30
	V̇ primary	**m³/h**	**1.3**	**2.06**	**2.53**	**3.71**	**4.81**	**5.64**	**1.08**	**1.87**	**2.42**	**3.74**	**4.84**	**5.72**
	Q max.	kW	52	82	101	148	192	225	49	85	110	170	220	260
	V̇ secondary	**m³/h**	**0.99**	**1.57**	**1.93**	**2.83**	**3.67**	**4.3**	**0.94**	**1.62**	**2.1**	**3.24**	**4.21**	**4.98**
55/15 °C	T return primary	°C	30	30	30	30	30	30	30	30	30	30	30	30
	V̇ primary	**m³/h**	**0.97**	**1.65**	**2.11**	**3.71**	**4.81**	**5.64**	**1.1**	**1.88**	**2.41**	**3.74**	**4.22**	**5.1**
	Q max.	kW	44	75	96	148	192	225	44	75	96	148	192	232
	V̇ secondary	**m³/h**	**0.95**	**1.61**	**2.07**	**3.19**	**4.13**	**4.84**	**0.94**	**1.62**	**2.1**	**3.19**	**4.21**	**5**
55/20 °C	T return primary	°C	30	30	30	30	30	30	30	30	30	30	30	30
	V̇ primary	**m³/h**	**0.95**	**1.68**	**2.13**	**3.23**	**4.24**	**5.14**	**0.84**	**1.47**	**1.87**	**2.84**	**3.72**	**4.51**
	Q max.	kW	38	67	85	129	169	205	38	67	85	129	169	205
	V̇ secondary	**m³/h**	**0.94**	**1.65**	**2.09**	**3.18**	**4.16**	**5.05**	**0.94**	**1.65**	**2.09**	**3.18**	**4.16**	**5.05**
50/5 °C	T return primary	°C	30	30	30	30	30	30	30	30	30	30	30	30
	V̇ primary	**m³/h**	**1.25**	**2.06**	**2.53**	**3.71**	**4.81**	**5.64**	**1.08**	**1.87**	**2.42**	**3.56**	**4.84**	**5.72**
	Q max.	kW	50	82	101	148	192	225	49	85	110	162	220	260
	V̇ secondary	**m³/h**	**0.95**	**1.57**	**1.93**	**2.83**	**3.67**	**4.3**	**0.94**	**1.62**	**2.1**	**3.09**	**4.21**	**4.98**
50/10 °C	T return primary	°C	30	30	30	30	30	30	30	30	30	30	30	30
	V̇ primary	**m³/h**	**1.1**	**1.88**	**2.41**	**3.71**	**4.81**	**5.64**	**0.97**	**1.65**	**2.11**	**3.25**	**4.22**	**5.1**
	Q max.	kW	44	75	96	148	192	225	44	75	96	148	192	232
	V̇ secondary	**m³/h**	**0.95**	**1.61**	**2.07**	**3.19**	**4.13**	**4.84**	**0.95**	**1.61**	**2.07**	**3.19**	**4.13**	**5**
50/15 °C	T return primary	°C	30	30	30	30	30	30	30	30	30	30	30	30
	V̇ primary	**m³/h**	**0.95**	**1.68**	**2.13**	**3.23**	**4.24**	**5.14**	**0.84**	**1.47**	**1.87**	**2.84**	**3.72**	**4.51**
	Q max.	kW	38	67	85	129	169	205	38	67	85	129	169	205
	V̇ secondary	**m³/h**	**0.94**	**1.65**	**2.09**	**3.18**	**4.16**	**5.05**	**0.94**	**1.65**	**2.09**	**3.18**	**4.16**	**5.05**
50/20 °C	T return primary	°C	30	30	30	30	30	30	30	30	30	30	30	30
	V̇ primary	**m³/h**	**0.83**	**1.45**	**1.81**	**2.44**	**3.63**	**4.44**	**0.73**	**1.28**	**1.61**	**2.44**	**3.19**	**3.89**
	Q max.	kW	33	58	73	111	145	177	33	58	73	111	145	177
	V̇ secondary	**m³/h**	**0.95**	**1.67**	**2.1**	**3.19**	**4.17**	**5.09**	**0.95**	**1.67**	**2.1**	**3.19**	**4.17**	**5.09**

T return primary	°C	Return temperature primary
V̇ primary	**m³/h**	Flow rate primary
Q max.	kW	Output
V̇ secondary	**m³/h**	Flow rate secondary

The specified technical data relate to the full load of the module in each case.

Performance data

TransTherm® aqua L (1-10 to 1-50)

Temperature primary 70 °C flow/30 °C return

Domestic water heating

			Cold water 10 °C Domestic water 60 °C					
		TransTherm® aqua L	(10)	(16)	(20)	(30)	(40)	(50)
		kW	50	90	115	175	230	275
		m³/h	0.86	1.54	1.97	3.00	3.94	4.71
		l/min	14.3	25.7	32.9	50.0	65.7	78.6
		l/s	0.2	0.4	0.5	0.8	1.1	1.3
Tank size l								
200	**V̇s**	**l/10 min**	343	457	529	-	-	-
	Hourly output	l/h at 60 °C	1057	1743	2171	-	-	-
	NL index		13	22	29	-	-	-
300	**V̇s**	**l/10 min**	443	557	629	800	-	-
	Hourly output	l/h at 60 °C	1157	1843	2271	3300	-	-
	NL index		21	31	39	57	-	-
400	**V̇s**	**l/10 min**	543	657	729	900	-	-
	Hourly output	l/h at 60 °C	1257	1943	2371	3400	-	-
	NL index		23	41	49	69	-	-
500	**V̇s**	**l/10 min**	643	757	829	1000	1157	-
	Hourly output	l/h at 60 °C	1357	2043	2471	3500	4443	-
	NL index		25	44	56	80	100	-
800	**V̇s**	**l/10 min**	943	1057	1129	1300	1457	-
	Hourly output	l/h at 60 °C	1657	2343	2771	3800	4743	-
	NL index		33	52	64	94	123	-
1000	**V̇s**	**l/10 min**	1143	1257	1329	1500	1657	1786
	Hourly output	l/h at 60 °C	1857	2543	2971	4000	4943	5714
	NL index		38	57	69	100	128	152
1500	**V̇s**	**l/10 min**	-	1757	1829	2000	2157	2286
	Hourly output	l/h at 60 °C	-	3043	3471	4500	5443	6214
	NL index		-	71	83	114	143	167
2000	**V̇s**	**l/10 min**	-	2257	2329	2500	2657	2786
	Hourly output	l/h at 60 °C	-	3543	3971	5000	5943	6714
	NL index		-	84	97	128	158	182
2500	**V̇s**	**l/10 min**	-	2757	2829	3000	3157	3286
	Hourly output	l/h at 60 °C	-	4043	4471	5500	6443	7214
	NL index		-	99	115	144	174	198

V̇s **l/10 min** 10 minutes peak flow rate at 60 °C

NL index Performance figure in accordance with DIN 4708 = number of flats which can be supplied with domestic hot water when the calorifier is heated and permanently reheated with the heat generator (standard flat: 1 bath - 4 rooms - 3.5 persons)

Performance data

TransTherm® aqua L (1-10 to 1-50)

Tapping point (mixing temperature)

			Cold water 10 °C Domestic water 45 °C					
		TransTherm® aqua L	(10)	(16)	(20)	(30)	(40)	(50)
		kW	50	90	115	175	230	275
		m³/h	1.22	2.20	2.82	4.29	5.63	6.73
		l/min	20.4	36.7	46.9	71.4	93.9	112.2
		l/s	0.3	0.6	0.8	1.2	1.6	1.9
Tank size l								
200	**V̇s**	**l/10 min**	490	653	755	-	-	-
	Hourly output	l/h at 45 °C	1510	2490	3102	-	-	-
	NL index		13	22	29	-	-	-
300	**V̇s**	**l/10 min**	633	796	898	1143	-	-
	Hourly output	l/h at 45 °C	1653	2633	3245	4714	-	-
	NL index		21	31	39	57	-	-
400	**V̇s**	**l/10 min**	776	939	1041	1286	-	-
	Hourly output	l/h at 45 °C	1796	2776	3388	4857	-	-
	NL index		23	41	49	69	-	-
500	**V̇s**	**l/10 min**	918	1082	1184	1429	1653	-
	Hourly output	l/h at 45 °C	1939	2918	3531	5000	6347	-
	NL index		25	44	56	80	100	-
800	**V̇s**	**l/10 min**	1347	1510	1612	1857	2082	-
	Hourly output	l/h at 45 °C	2367	3347	3959	5429	6776	-
	NL index		33	52	64	94	123	-
1000	**V̇s**	**l/10 min**	1633	1796	1898	2143	2367	2551
	Hourly output	l/h at 45 °C	2653	3633	4245	5714	7061	8163
	NL index		38	57	69	100	128	152
1500	**V̇s**	**l/10 min**	-	2510	2612	2857	3082	3265
	Hourly output	l/h at 45 °C	-	4347	4959	6429	7776	8878
	NL index		-	71	83	114	143	167
2000	**V̇s**	**l/10 min**	-	3224	3327	3571	3796	3980
	Hourly output	l/h at 45 °C	-	5061	5673	7143	8490	9592
	NL index		-	84	97	128	158	182
2500	**V̇s**	**l/10 min**	-	3939	4041	4286	4510	4694
	Hourly output	l/h at 45 °C	-	5776	6388	7857	9204	10306
	NL index		-	99	115	144	174	198

V̇s **l/10 min** 10 minutes peak flow rate at 45 °C

NL index Performance figure in accordance with DIN 4708 = number of flats which can be supplied with domestic hot water when the calorifier is heated and permanently reheated with the heat generator (standard flat: 1 bath - 4 rooms - 3.5 persons)

Hot water charging tank CombiVal E (300-2000)

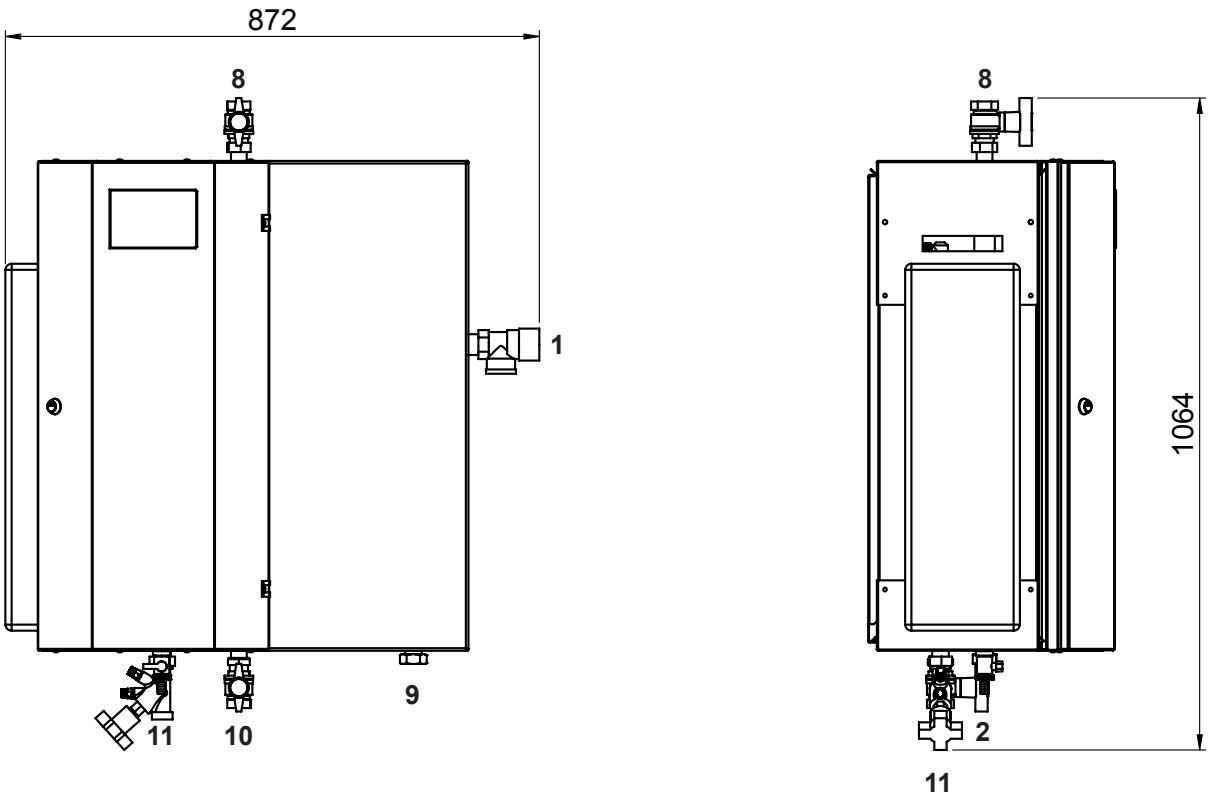
Type		(300)	(500)	(800)	(1000)	(1500)	(2000)
• Volume	l	301	475	747	968	1472	2000
• Max. operating/test pressure SVGW	bar	6/12	6/12	6/12	6/12	6/12	6/12
• Max. operating/test pressure DVGW	bar	10/13	10/13	10/13	10/13	10/13	10/13
• Max. operating temperature	°C	95	95	95	95	95	95
• Thermal insulation PU hard foam, foam-lined	mm	75	75	-	-	-	-
• Thermal insulation polyester fleece	mm	-	-	100	100	120	120
• Thermal insulation λ	W/mK	0.027	0.027	0.040	0.040	0.040	0.040
• Fire protection class		B2	B2	B2	B2	B2	B2
• Heat loss at 65 °C	W	58	75	128	139	170	190
• Transport weight	kg	97	126	205	264	400	600
• U value	W/m^2K	0.290	0.303	0.381	0.362	0.339	0.325

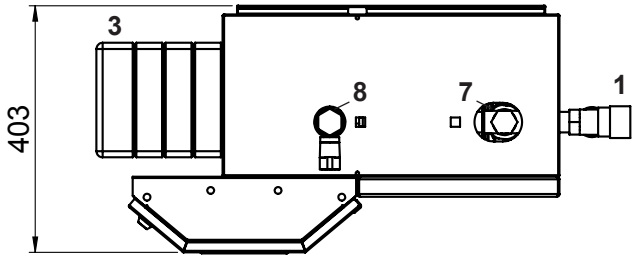
Hot water charging tank CombiVal C (200-2500)

Type		(200)	(300)	(400)	(500)	(750)	(1000)	(1500)	(2000)	(2500)
• Volume	l	212	289	411	490	756	990	1415	1975	2450
• Max. operating/test pressure SVGW	bar	6/12	6/12	6/12	6/12	6/12	6/12	6/12	6/12	6/12
• Max. operating temperature	°C	95	95	95	95	95	95	95	95	95
• Thermal insulation		Neodul® insulation (EPS rigid foam outside and polyester fibre fleece inside)								
	mm	100	100	100	100	100	100	120	120	120
• Thermal insulation λ	W/mK	0.0316	0.0316	0.0316	0.0316	0.0316	0.0316	0.0316	0.0316	0.0316
• Fire protection class		B2	B2	B2	B2	B2	B2	B2	B2	B2
• Heat loss at 65 °C	W	62	68	77	82	120	140	162	180	206
• Transport weight	kg	55	70	83	85	119	150	215	265	445
• U value	W/m^2K	0.329	0.329	0.329	0.329	0.329	0.329	0.273	0.273	0.273

Charging module TransTherm® aqua L (1-10)

(Dimensions in mm)





1 Safety valve
Hot water 10 bar
2 Filling/drain valve
3 Heat exchanger

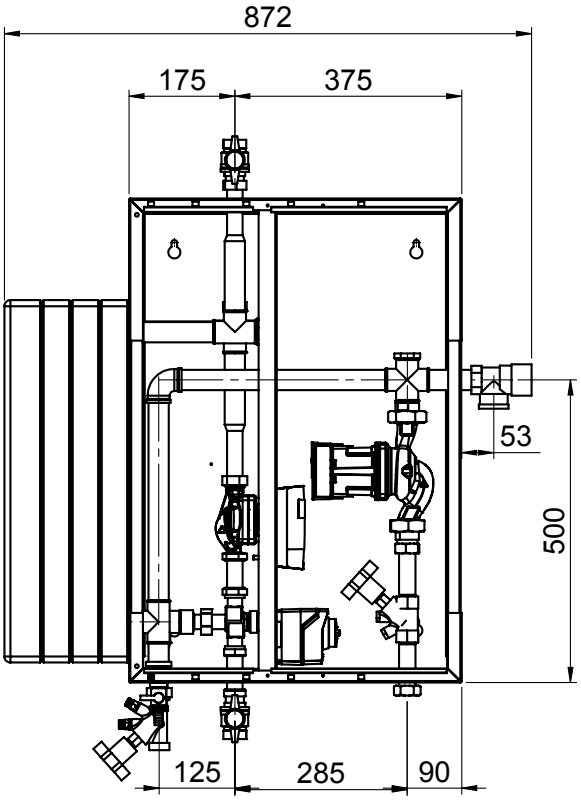
		(1-10)
7	Circulation	DN 25, Rp 1″ (20, Rp ¾″) (IT)
8	Hot water	DN 25, Rp 1″ (IT)
9	Cold water	DN 20, Gp 1″ (IT)
10	Flow heating water	DN 25, Rp 1″ (IT)
11	Return heating water	DN 25, Gp 1″ (IT)

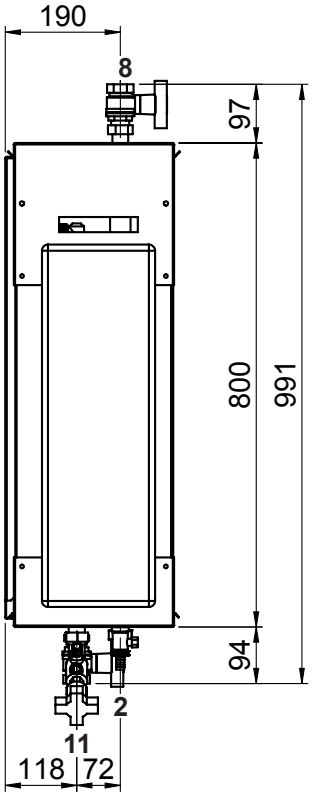
Gp = straight internal thread

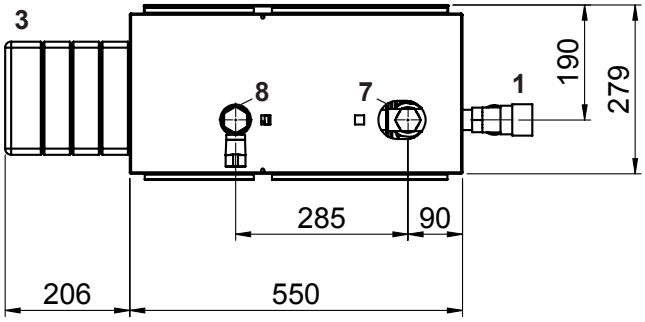
TransTherm® aqua L	Weight in kg
(1-10)	56

Charging module TransTherm® aqua L (1-10)

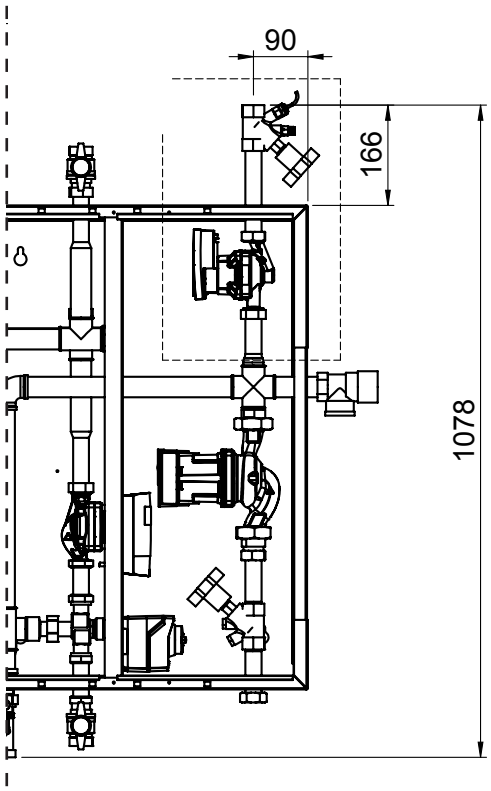
(Dimensions in mm)







Version incl. circulation set



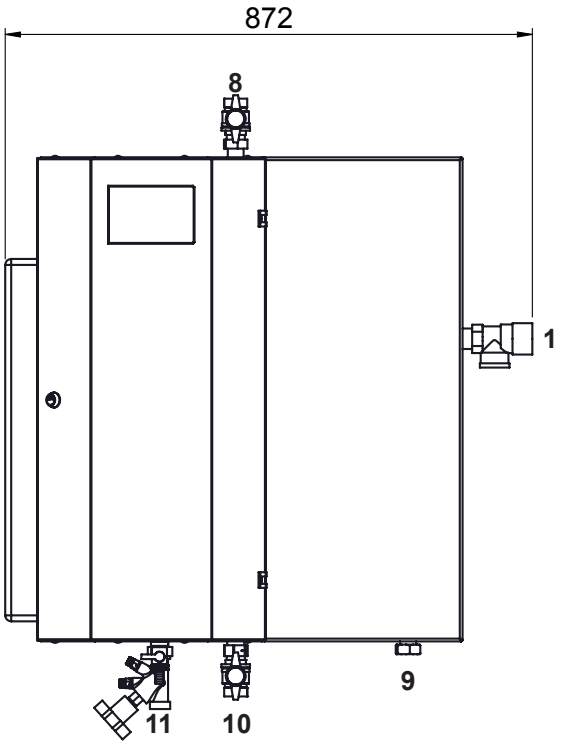
1 Safety valve
Hot water 10 bar
2 Filling/drain valve
3 Heat exchanger
4 Primary three-way valve
5 Primary circulating pump
6 Secondary circulating pump

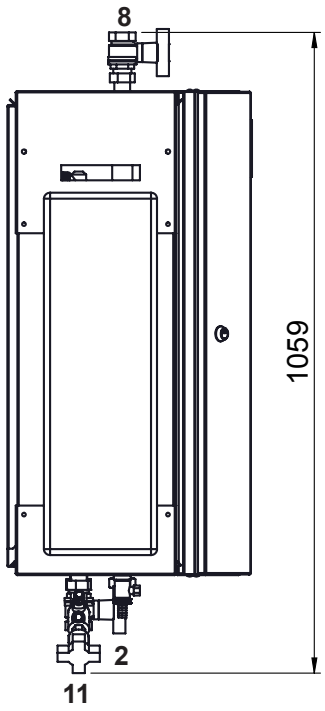
		(1-10)
7	Circulation	DN 25, Rp 1″ (20, Rp ¾″) (IT)
8	Hot water	DN 25, Rp 1″ (IT)
9	Cold water	DN 20, Gp 1″ (IT)
10	Flow heating water	DN 25, Rp 1″ (IT)
11	Return heating water	DN 25, Gp 1″ (IT)

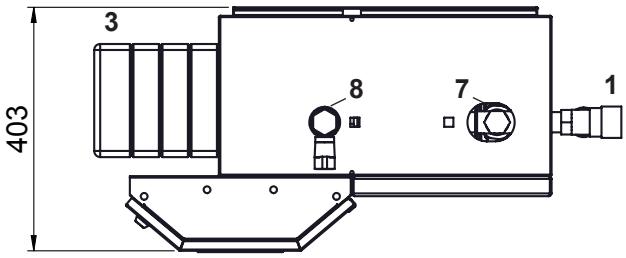
Gp = straight internal thread

Charging module TransTherm® aqua L (1-16, 1-20)

(Dimensions in mm)







1 Safety valve
Hot water 10 bar
2 Filling/drain valve
3 Heat exchanger

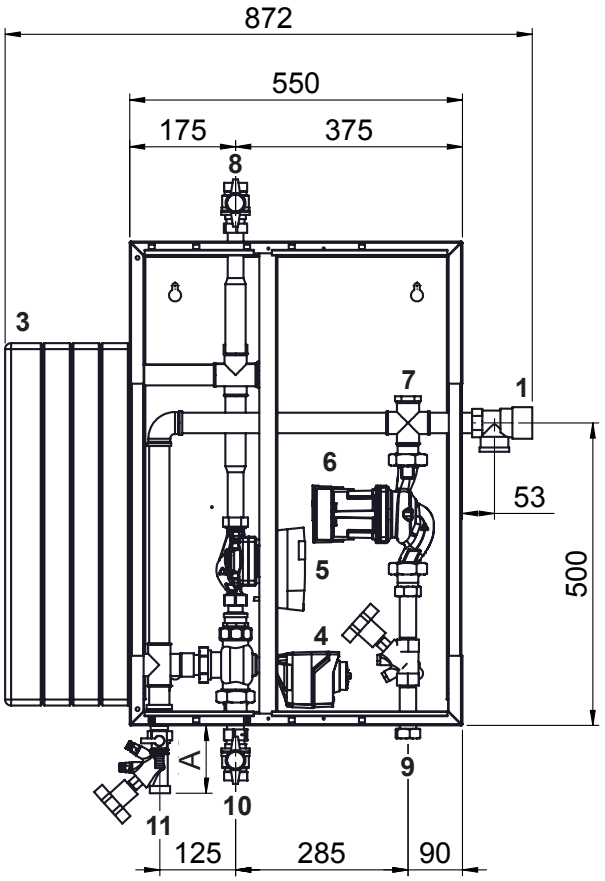
		(1-16) (1-20)
7	Circulation	DN 25, Rp 1″ (20, Rp ¾″) (IT)
8	Hot water	DN 25, Rp 1″ (IT)
9	Cold water	DN 20, Gp 1″ (IT)
10	Flow heating water	DN 25, Rp 1″ (IT)
11	Return heating water	DN 25, Gp 1″ (IT)

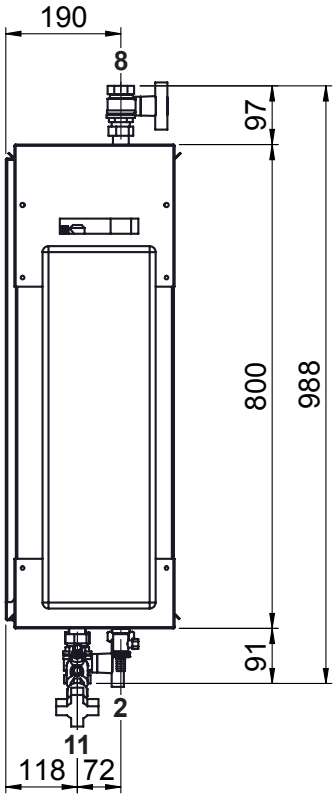
Gp = straight internal thread

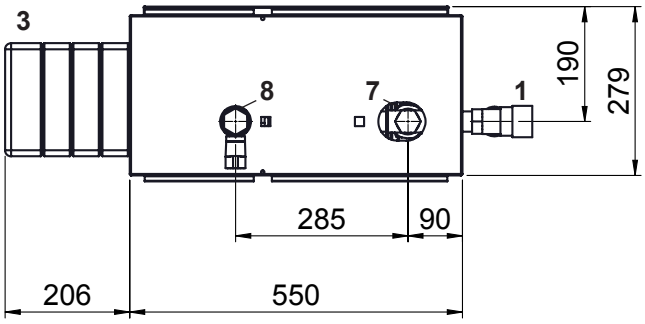
TransTherm® aqua L	Weight in kg
(1-16)	58
(1-20)	60

Charging module TransTherm® aqua L (1-16, 1-20)

(Dimensions in mm)







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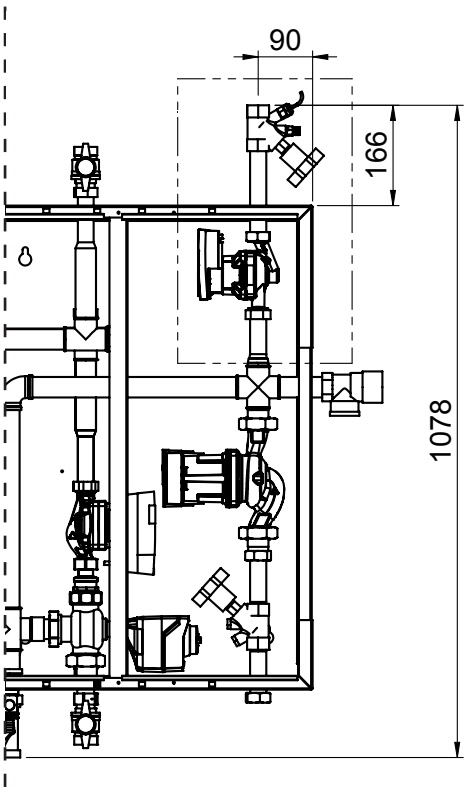


1 Safety valve
Hot water 10 bar
2 Filling/drain valve
3 Heat exchanger
4 Three-way valve primary
5 Primary circulating pump
6 Secondary circulating pump

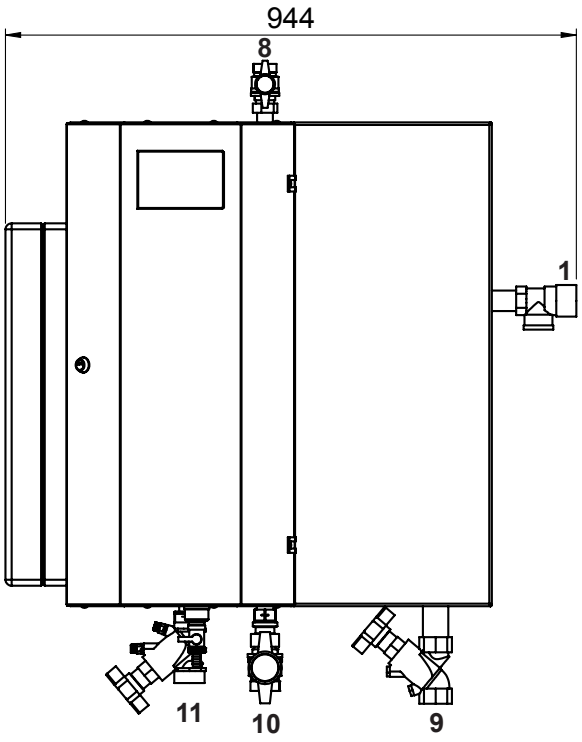
		(1-16) (1-20)
7	Circulation	DN 25, Rp 1″ (20, Rp ¾″) (IT)
8	Hot water	DN 25, Rp 1″ (IT)
9	Cold water	DN 20, Gp 1″ (IT)
10	Flow heating water	DN 25, Rp 1″ (IT)
11	Return heating water	DN 25, Gp 1″ (IT)

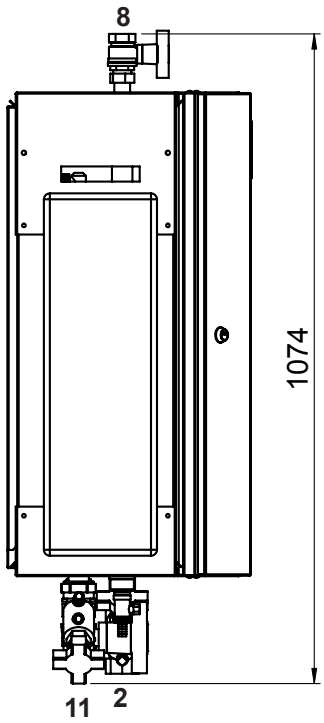
	A	B	C
(1-16)	112	166	1078
(1-20)	128	193	1121

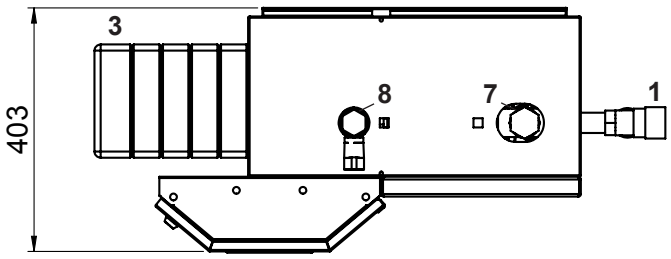
Gp = straight internal thread

Charging module TransTherm® aqua L (1-30 to 1-50)

(Dimensions in mm)







1 Safety valve
Hot water 10 bar
2 Filling/drain valve
3 Heat exchanger

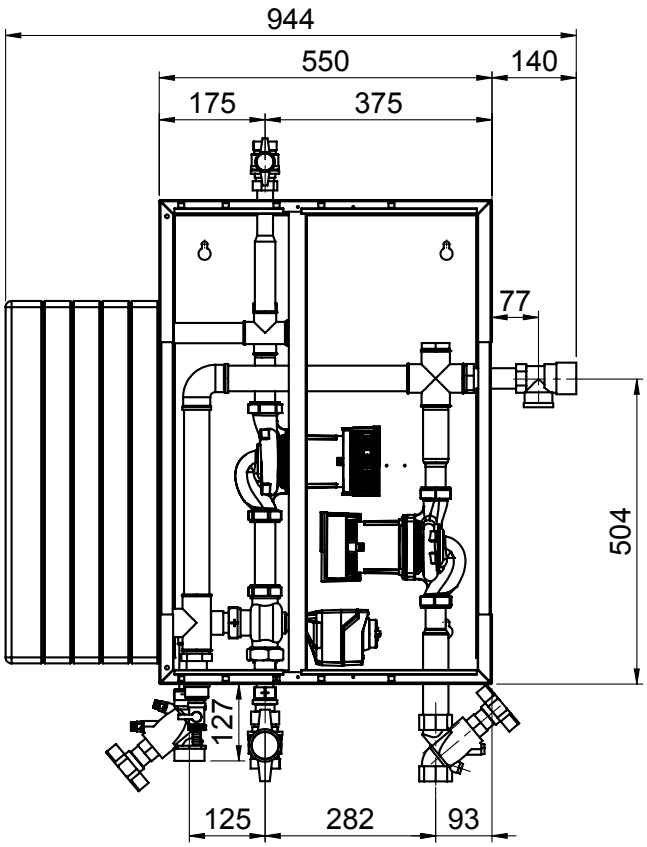
		(1-30) (1-40) (1-50)
7	Circulation	DN 32, Rp 1¼″ (25, Rp 1″) (20, Rp ¾″) (IT)
8	Hot water	DN 32, Rp 1¼″ (IT)
9	Cold water	DN 32, Rp 1¼″ (IT)
10	Flow heating water	DN 32, Rp 1¼″ (IT)
11	Return heating water	DN 32, Gp 1½″ (IT)

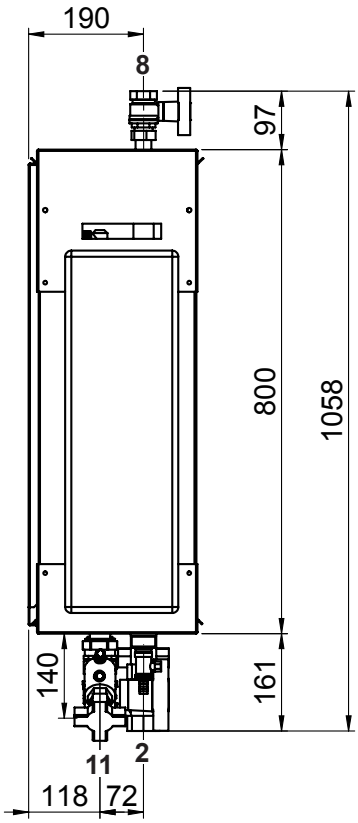
TransTherm® aqua L	Weight in kg
(1-30)	66
(1-40)	68
(1-50)	70

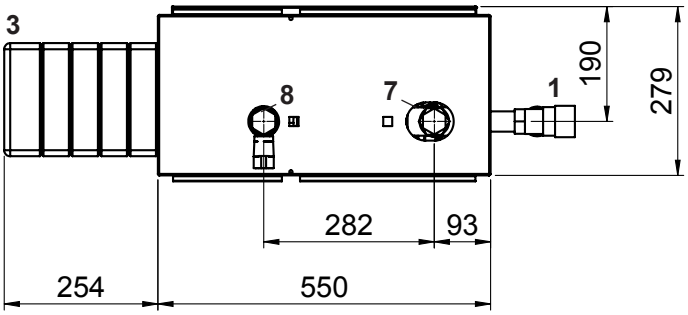
Gp = straight internal thread

Charging module TransTherm® aqua L (1-30 to 1-50)

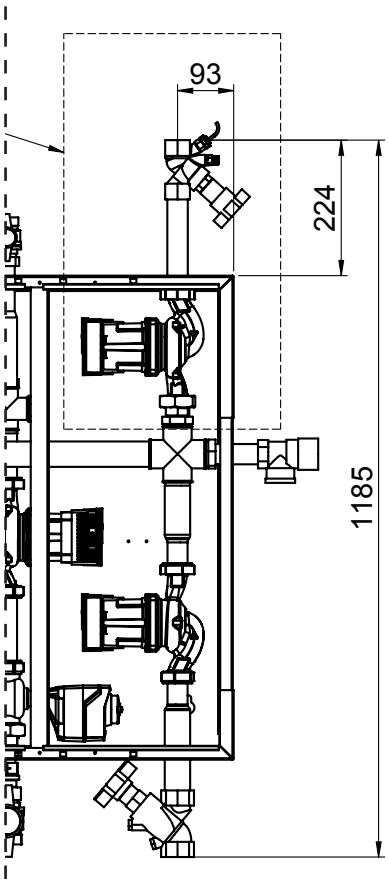
(Dimensions in mm)







Version incl. circulation set

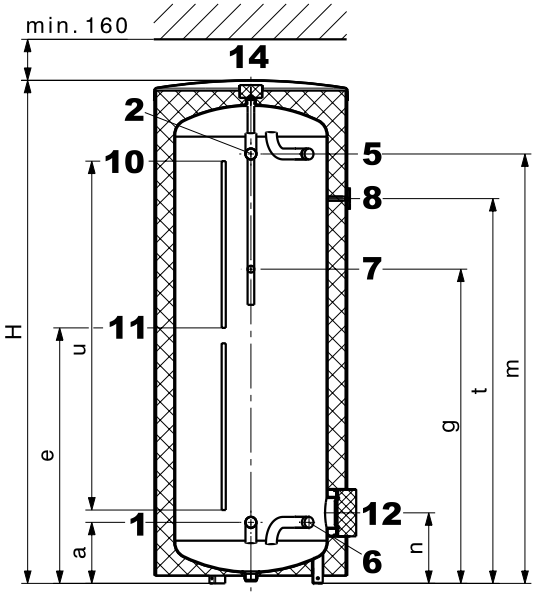


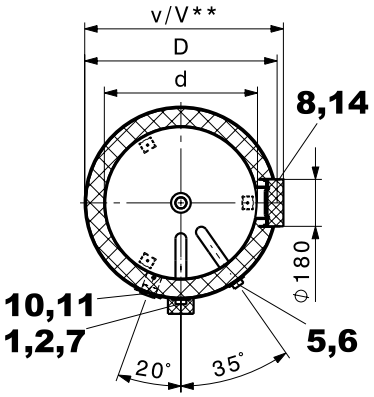
		(1-30) (1-40) (1-50)
1	Safety valve Hot water 10 bar	
2	Filling/drain valve	
3	Heat exchanger	
4	Primary three-way valve	
5	Primary circulating pump	
6	Secondary circulating pump	
7	Circulation	DN 32, Rp 1¼″ (25, Rp 1″) (20, Rp ¾″) (IT)
8	Hot water	DN 32, Rp 1¼″ (IT)
9	Cold water	DN 32, Rp 1¼″ (IT)
10	Flow heating water	DN 32, Rp 1¼″ (IT)
11	Return heating water	DN 32, Gp 1½″ (IT)

Gp = straight internal thread

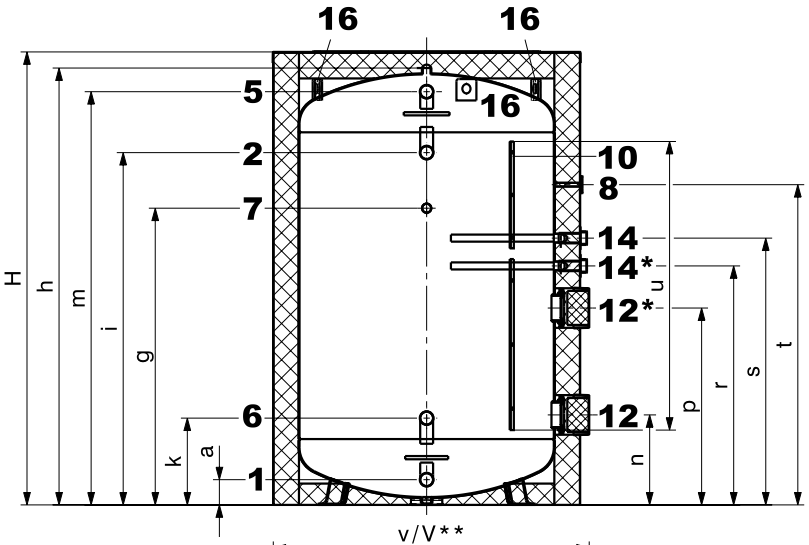
CombiVal E (300,500)

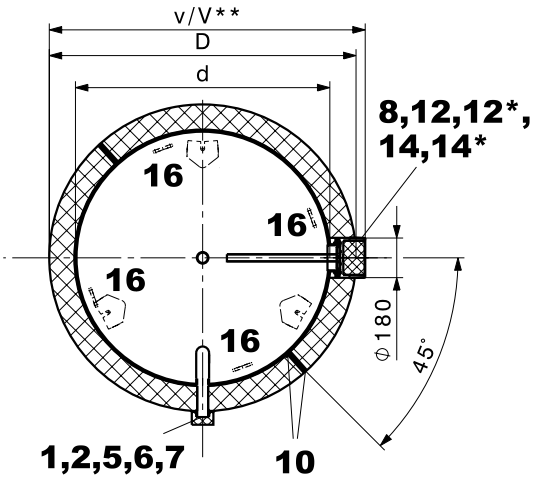
(Dimensions in mm)





CombiVal E (800-2000)





1	Cold water	type (300,500)	G 1¼″	(ET)
		type (800-2000)	G 2″	(ET)
2	Domestic hot water	type (300,500)	G 1¼″	(ET)
		type (800-2000)	G 2″	(ET)
5	Charging flow – hot	type (300,500)	G 1¼″	(ET)
		type (800-2000)	G 2″	(ET)
6	Charging return – cold	type (300,500)	G 1¼″	(ET)
		type (800-2000)	G 2″	(ET)
7	Circulation (removable insulated cap Ø 100 mm)	type (300,500)	G ¾″	(ET)
		type (800-2000)	G 1¼″	(ET)

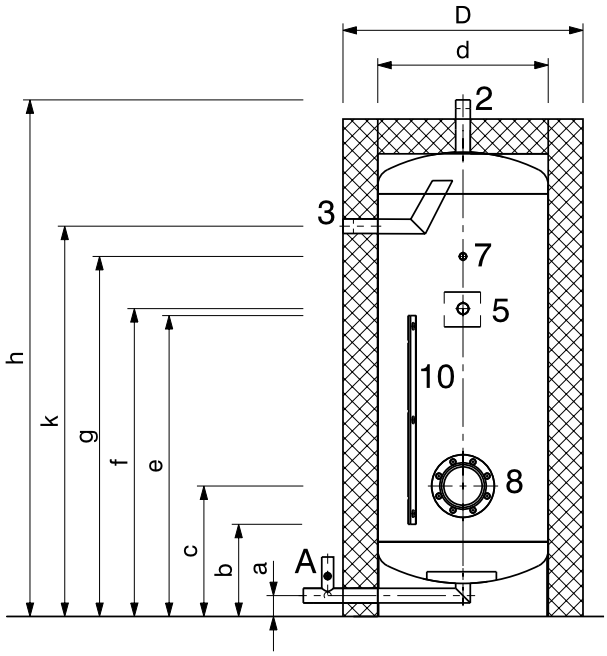
Variation because of the production tolerance possible
Dimension +/- 10 mm

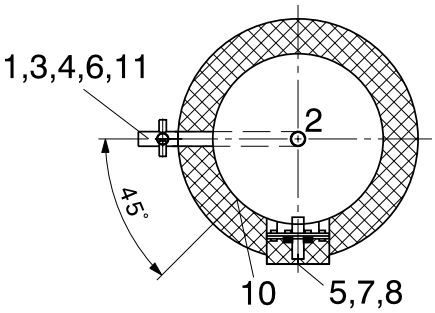
8	Thermometer			
10	Sensor channel, inner Ø 11 mm	type (300,500)		
	Sensor terminal strip (zip fastener)	type (800-2000)		
11	Removable cap (Ø 60 mm) for positioning the sensor in the sensor channel	type (300,500)		
12	Hand-hole flange (flange-mounted electric heating element) Ø 180/120 mm, pitch circle 150 mm, 8 x M10			
12*	**Attention:** type (800,1000) does not have a second flange			
14	Anode sleeve	type (300,500)	G 1″	(IT)
		type (800-2000)	G 1¼″	(IT)
14*	Anode sleeve Screw connection uninsulated	type (1500,2000)	G 1¼″	(IT)
16	Transport strap	type (800-2000)		

CombiVal E type	D	d	H	h	a	k	e	g	m	n	p	r	s	t	u	v	V**	Tilting dimension
(300)	650	500	1850	-	235	-	945	1160	1584	325	-	-	-	1505	1360	745	785	1961
(500)	750	597	1960	-	238	-	996	1225	1674	275	-	-	-	1500	1360	745	785	2082
(800)	950	750	2030	1938	101	347	-	1150	1893	352	-	-	1336	1505	1400	975	1020	1960
(1000)	1050	850	2060	1968	100	355	-	1158	1910	360	-	-	1331	1500	1400	1075	1120	2000
(1500)	1240	1000	2240	2133	105	375	-	1357	2049	390	890	1167	1521	1657	1450	1265	1310	2370
(2000)	1440	1200	2150	2044	118	406	-	1388	1933	421	921	1118	1248	1498	1350	1465	1510	2350

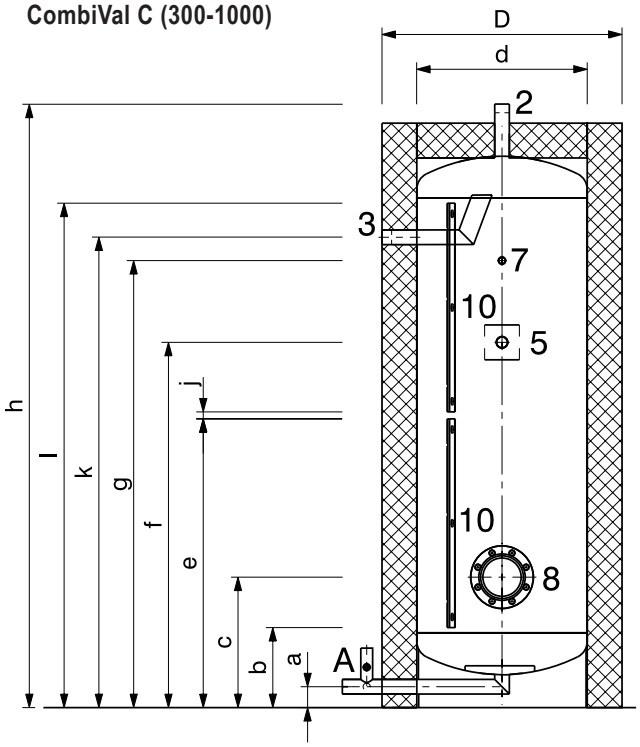
** when using a flange-mounted electric heating element

CombiVal C (200)
(Dimensions in mm)

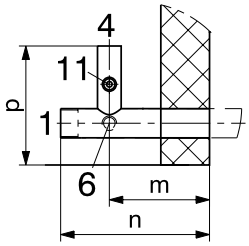


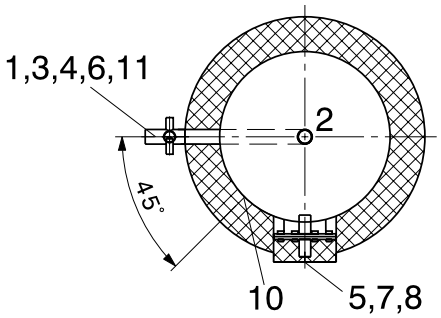


CombiVal C (300-1000)



Detail A





1	Cold water with baffle plate	type (200,300)	Rp 1 ¼″	(IT)
		type (400,500)	Rp 1 ½″	(IT)
		type (750,1000)	Rp 2″	(IT)
2	Hot water	type (200,300)	Rp 1 ¼″	(IT)
		type (400,500)	Rp 1 ½″	(IT)
		type (750,1000)	Rp 2″	(IT)
3	Charging flow - hot	type (200-500)	Rp 1″	(IT)
		type (750,1000)	Rp 1 ¼″	(IT)
4	Charging return - cold	type (200-500)	Rp 1″	(IT)
		type (750,1000)	Rp 1 ¼″	(IT)
5	Circulation with baffle plate	type (200-500)	Rp 1″	(IT)
		type (750,1000)	Rp 1 ¼″	(IT)
6	Drain	type (200-500)	Rp ½″	(IT)
		type (750,1000)	Rp ¾″	(IT)

7 Sleeve (Rp ½″ (IT)) for mountable immersion sleeve and thermometer (L = 100 mm, inner Ø = 8 mm)
8 Hand-hole flange (17.7 Nm)
Ø 180/120 mm, pitch circle 150 mm, 8 x M10 or optional:
- flange-mounted electric heating element or
- impressed current anode set with flange cover, 180 - 1½″ (IT)

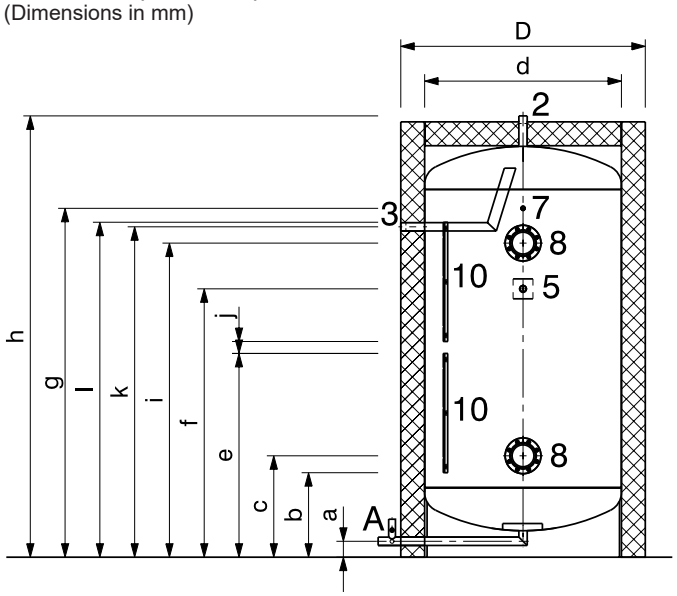
10 Sensor terminal bar 600 x 30 mm
1 x type (200), 2 x type (300-1000)

11 Immersion sleeve M16 x 1.5 for sensor/thermostat

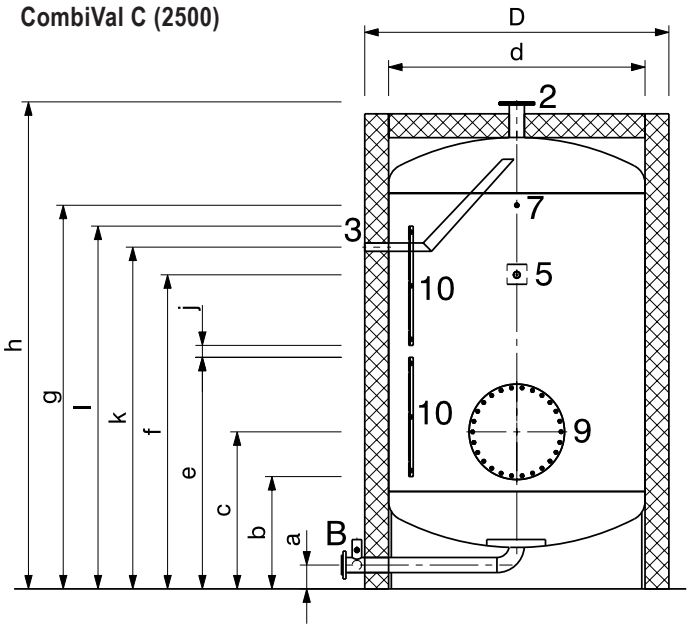
Variation because of the production tolerance possible
Dimension +/- 10 mm

CombiVal C type	a	b	c	d	D	e	f	g	h	j	k	l	m	n	p	Tilting dimension
(200)	60	240	375	490	690	840	885	1035	1485	-	1125	-	130	190	174	1515
(300)	60	240	375	490	690	840	1050	1285	1735	20	1355	1460	135	205	174	1765
(400)	70	285	420	590	790	885	1095	1330	1745	20	1365	1505	135	205	184	1780
(500)	80	295	430	640	840	895	1105	1340	1765	20	1375	1515	130	190	194	1805
(750)	80	335	470	740	940	935	1310	1590	2085	60	1665	1595	135	205	194	2130
(1000)	80	365	500	890	1090	965	1215	1495	1890	20	1384	1585	135	205	203	1950

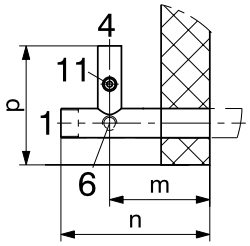
CombiVal C (1500,2000)
(Dimensions in mm)

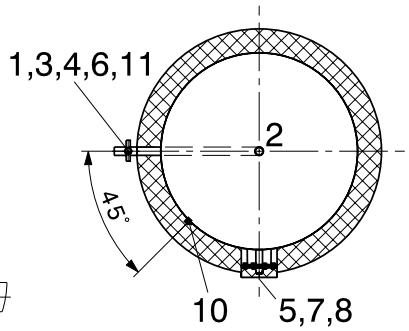


CombiVal C (2500)

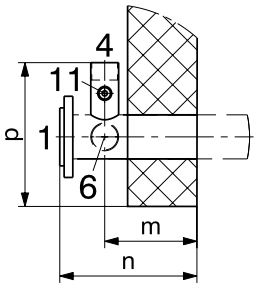


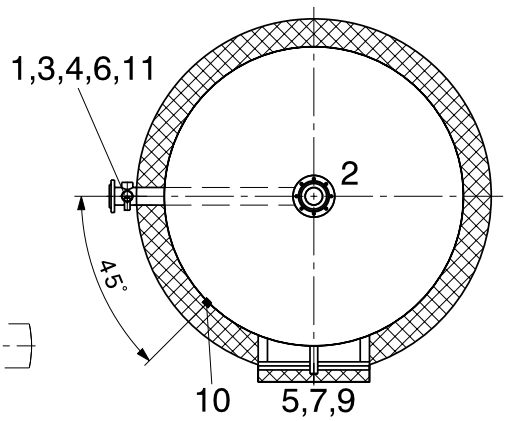
Detail A





Detail B





1	Cold water with baffle plate	type (1500,2000)	Rp 2″	(IT)
		type (2500)	DN 65/PN 10	
2	Hot water	type (1500,2000)	Rp 2″	(IT)
		type (2500)	DN 65/PN 10	
3	Charging flow - hot	type (1500-2000)	Rp 1 ½″	(IT)
4	Charging return - cold	type (1500-2000)	Rp 1 ½″	(IT)
5	Circulation with baffle plate	type (1500-2000)	Rp 1 ½″	(IT)
6	Drain	type (1500-2000)	Rp ¾″	(IT)

7 Sleeve (Rp ½″ (IT)) for mountable immersion sleeve and thermometer (L = 100 mm, inner Ø = 8 mm)

8 Hand-hole flange (17.7 Nm)
Ø 180/120 mm, pitch circle 150 mm, 8 x M10 or optional:
- flange-mounted electric heating element or
- impressed current anode set with flange cover, 180 - 1½″ (IT)

9 Manhole flange (40 Nm)
Ø 400/480 mm, pitch circle 445 mm, 26 x M14 or optional
Flange adapter:
- for electric heating element or
- for impressed current anode set with flange cover, 180 - 1½″ (IT)

10 Sensor terminal bar 600 x 30 mm
2 x type (1500-2500)

11 Immersion sleeve M16 x 1.5 for sensor/thermostat

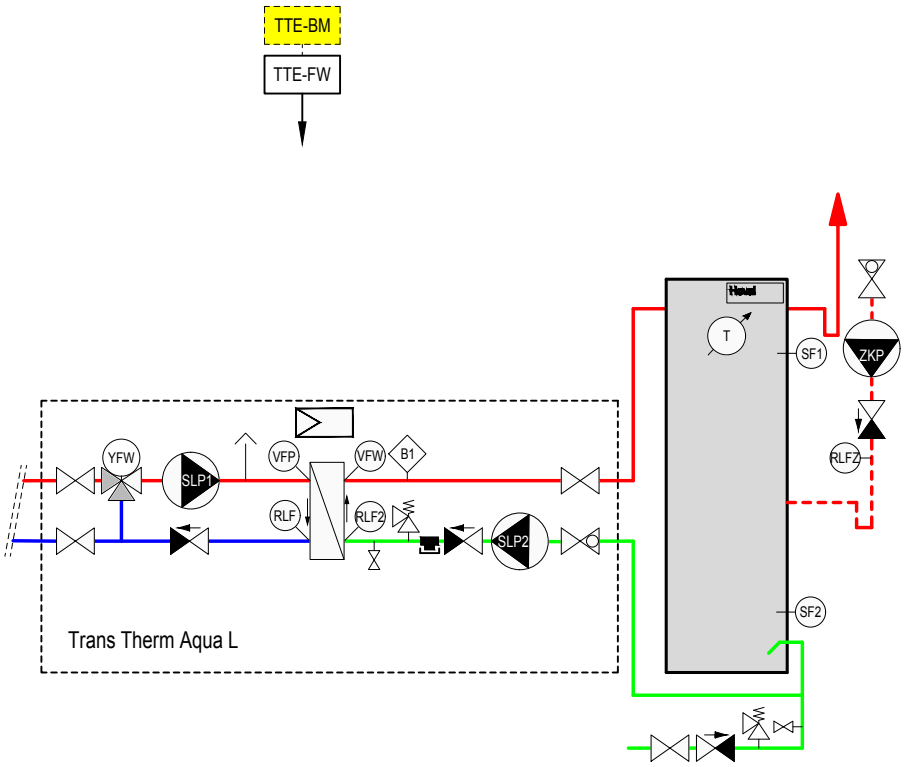
Variation because of the production tolerance possible
Dimension +/- 10 mm

CombiVal C type	a	b	c	d	D	e	f	g	h	i	j	k	m	n	p	Tilting dimension
(1500)	80	375	510	990	1230	975	1350	1755	2220	1580	60	1674	165	235	203	2300
(2000)	80	405	530	1090	1330	1005	1580	2035	2525	1860	165	1909	165	235	203	2610
(2500)	120	515	790	1290	1530	1115	1580	1930	2450	-	60	1719	165	250	243	2570

Water heating

TransTherm® aqua L

- Circulation via storage tank
- Storage tank charging system



TTE-FW	Basic module district heating/fresh water
B1	Flow temperature monitor (if required)
VFP	Primary flow sensor
VFW	Flow sensor domestic hot water
RLF	Primary return sensor
RLF2	Return sensor domestic cold water
SF1	Calorifier sensor 1
SF2	Calorifier sensor 2
RLFZ	Circulation sensor
PF1	Buffer sensor 1
SLP1	Calorifier charging pump primary
SLP2	Calorifier charging pump secondary
YFW	Three-way valve with actuator
ZKP	Recirculation pump

Option

BM	TopTronic® E control module

Notice
A safety valve (6 bar) must be installed in the cold water line. The loading module is already protected with a safety valve (10 bar).