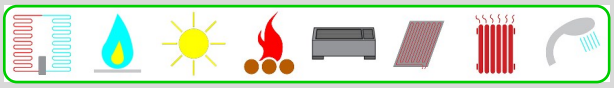
dal 1968

Pacetti

SCAMBIATORI - BOLLITORI - SERBATOI



BKPE TOP Q

COMBO DHW STORAGE CALORIFIER & BUFFER TANK
FOR HEAT PUMP PRIMARY

ENERGY EFFICIENCY CLASS A

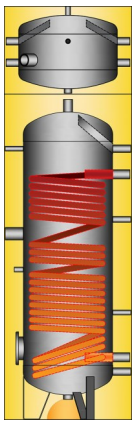
COMBO DHW STORAGE CALORIFIER & BUFFER TANK FOR HEAT PUMP PRIMARY - CLASS A

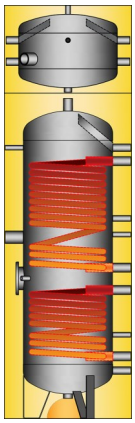
BKPE-TOP Q is an innovative combined system comprising a hot/cold water buffer vessel (**V-TOP**) and a Domestic Hot Water storage calorifier (**BKPE**). It is designed for connection to heat pumps and other energy sources.
By combining two separate tanks into a single system, the **BKPE-T Q** optimises space in heat pump-powered installations.
The structure consists of two stacked storage tanks:

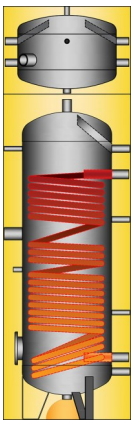
1. at the base is the DHW calorifier from the BKPE range, made of glass-lined steel or Stainless Steel AISI 316L
2. above, firmly anchored to the tank below, is a small buffer vessel made of untreated carbon steel (V-TOP), which acts as an inertial storage tank. It is essential for optimising compressor operation.

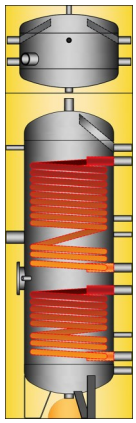
The hard foam polyrethane injected insulation supplied with the buffer tank reduces heat loss during hot water storage and prevents condensation when cold water is stored for the cooling system during the summer, when the DHW calorifier is heated only on demand.
The new **Q** range guarantees minimal heat loss while delivering maximum performance. Thanks to their increased insulation thickness, both storage tanks in this solution are classified as **energy efficiency class 'A'** in accordance with the European ErP Directive.
This makes the product a top-of-the-range choice in terms of quality, versatility, and cost-effectiveness.
It is particularly suitable for the most advanced and demanding systems, enabling the highest output from connected generators and raising the quality standard of the heating system.
When water at different temperatures is stored within the two tanks, the dielectric seal at the junction between the BKPE and V-TOP ensures perfect insulation and separation between the two tanks, eliminating any risk of a thermal bridge between them.
The V-TOP can be used with single and double coil water heaters from the BKPE range, and features the same external finish as the BKPE, ensuring an aesthetically pleasing look.
The design of the structure allows the upper V-TOP to be rotated so that the fitting can be aligned and joined to the pipes at the installation site.
Furthermore, no clearance is required above the unit for anode replacement.
In rooms with low ceilings, the V-TOP buffer tank can be removed from the top and positioned elsewhere, either on the floor or wall-mounted using the optional mounting brackets.
The **BKPE-T Q** is the only solution suitable for any system configuration.

CONSTRUCTION









	BKPE1-V-TOP Q	BKPE2-V-TOP Q	BKPE1-X-TOP Q	BKPE2-X-TOP Q
TANK MATERIAL	Carbon steel	Carbon steel	Stainless Steel AISI 316L	Stainless Steel AISI 316L
SPIRAL COIL MATERIAL	Carbon steel (glass-lined externally)	Carbon steel (glass-lined externally)	Stainless Steel AISI 316L	Stainless Steel AISI 316L
INT. SURFACE STEEL TREATMENT	Glass-lining (DIN 4753.3)	Glass-lining (DIN 4753.3)	Pickling and passivation	Pickling and passivation
EXT. SURFACE STEEL TREATMENT	Antirust primer	Antirust primer	Pickling and passivation	Pickling and passivation
CAPACITY	200-300 L	300 L	200-300 L	300 L
VERSION	Vertical	Vertical	Vertical	Vertical
CONNECTION TYPE	Threaded	Threaded	Threaded	Threaded
INSULATION	**Hard foam polyurethane** 105 mm	**Hard foam polyurethane** 105 mm	**Hard foam polyurethane** 105 mm	**Hard foam polyurethane** 105 mm
CLADDING	Light grey PVC - RAL7035	Light grey PVC - RAL7035	Light grey PVC - RAL7035	Light grey PVC - RAL7035
ANODE TYPE	Electronic (factory fitted)	Electronic (factory fitted)	Electronic (optional)	Electronic (optional)
ACCESSORIES (factory fitted)	Thermometer	Thermometer	Thermometer	Thermometer

	V-TOP Q
TANK MATERIAL	Carbon steel
INT. SURFACE STEEL TREATMENT	—
EXT. SURFACE STEEL TREATMENT	Antirust primer
CAPACITY	90
VERSION	Vertical
CONNECTION TYPE	Threaded
INSULATION	**Hard foam polyurethane** 80 mm
CLADDING	Light grey PVC - RAL7035
ACCESSORIES (factory fitted)	Thermometer

COMBO DHW STORAGE CALORIFIER & BUFFER TANK FOR HEAT PUMP PRIMARY - CLASS A

Energy efficiency class - Regulation EU 812/2013 & 814/2013 (European Directive 2009/125/CE)

				Capacity - L	200	300
BKPE1-V Q	Energy efficiency class				A	A
	Standing loss	S	W		41	47
	Storage total volume	V	L		206	269
BKPE2-V Q	Energy efficiency class					A
	Standing loss	S	W			48
	Storage total volume	V	L			270
BKPE1-X Q	Energy efficiency class				A	A
	Standing loss	S	W		41	46
	Storage total volume	V	L		206	270
BKPE2-X Q	Energy efficiency class					A
	Standing loss	S	W			48
	Storage total volume	V	L			271

				Capacity - L	90
V-TOP	Energy efficiency class				A
	Standing loss	S	W		32
	Storage total volume	V	litri		81

DHW CALORIFIER STANDARD WORKING CONDITIONS

Glass-lined calorifier	Working Pressure BKPE1-V Q / BKPE2-V Q	bar	ATM÷10
	Working Temperature BKPE1-V Q / BKPE2-V Q	°C	AMB÷95
Stainless Steel calorifier	Working Pressure BKPE1-X Q / BKPE2-X Q	bar	ATM÷8
	Working Temperature BKPE1-X Q / BKPE2-X Q	°C	AMB÷99
Spiral coil	Working Pressure	bar	ATM÷10
	Working Temperature	°C	AMB÷110

BUFFER TANK STANDARD WORKING CONDITIONS

Working Pressure V-TOP	bar	ATM÷3
Working Temperature V-TOP	°C	-10÷99

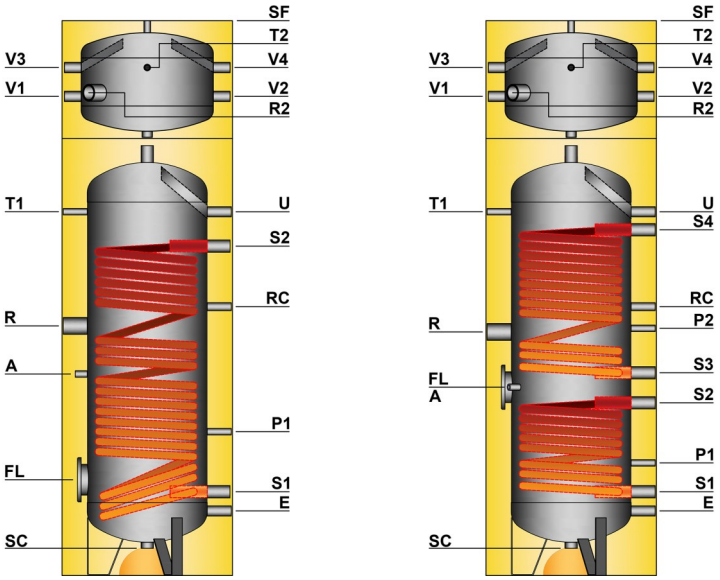
REGULATORY COMPLIANCE

ErP - Reg. 812/2013 & 814/2013 (European Directive 2009/125/CE)

European Pressure Equipment Directive (PED) 2014/68/EU | SEP (Sound Engineering Practice) - exclusion from CE marking - Art. 4.3

D.M. 174/04 or Reg. (CE) 1935/04 | Compatible with drinking water

COMBO DHW STORAGE CALORIFIER & BUFFER TANK FOR HEAT PUMP PRIMARY - CLASS A



GENERAL CHARACTERISTICS

			BKPE1-V TOP Q BKPE1-X TOP Q		BKPE2-V TOP Q BKPE2-X TOP Q
	Capacity - L		200 + 90	300 + 90	300 + 90
DIMENSIONS					
Diameter without insulation BKPE		mm	500	500	500
Diameter without insulation V-TOP		mm	550	550	550
Diameter with insulation		mm	710	710	710
Maximum height		mm	1949	2309	2309
Overturning height with | without insulation		mm	2080	2420	2420
CONNECTIONS BKPE Q					
E	Potable water inlet	mm | Ø	269 | 1"	269 | 1"	269 | 1"
U	DHW outlet	mm | Ø	1154 | 1"	1819 | 1"	1514 | 1"
RC	Recirculation	mm | Ø	969 | ¾"	1119 | ¾"	1119 | ¾"
A	Electronic anode	mm | Ø	629 | ½"	839 | ½"	784 | ½"
P1	Sensor	mm | Ø	629 | ½"	599 | ½"	469 | ½"
P2	Sensor	mm | Ø	—	—	1029 | ½"
T1	Thermometer	mm | Ø	1154 | ½"	1514 | ½"	1514 | ½"
FL	Inspection opening	mm | Ø	399 | 180×120	399 | 180×120	784 | 180×120
R	Immersion electric heater	mm | Ø	794 | 2"	1039 | 2"	1014 | 2"
S1	Lower Spiral coil primary outlet	mm | Ø	349 | 1"¼	349 | 1"¼	349 | 1"¼
S2	Lower Spiral coil primary inlet	mm | Ø	1084 | 1"¼	1371 | 1"¼	719 | 1"¼
S3	Upper Spiral coil primary outlet	mm | Ø	—	—	844 | 1"¼
S4	Upper Spiral coil primary inlet	mm | Ø	—	—	1439 | 1"¼
SC	Drain	mm | Ø	114 | 1"¼	114 | 1"¼	114 | 1"¼
CONNECTIONS V-TOP Q					
V1-V2	Spare	mm | Ø	1634 | 1"	1994 | 1"	1994 | 1"
V3-V4	Spare	mm | Ø	1754 | 1"	2114 | 1"	2114 | 1"
T2	Thermometer	mm | Ø	1754 | ½"	2114 | ½"	2114 | ½"
R2	Immersion electric heater	mm | Ø	1649 | 2"	2009 | 2"	2009 | 2"
SF	Drain	mm | Ø	1949 | ½"	2309 | ½"	2309 | ½"
PERFORMANCE					
DHW content BKPE		L	193	256	256
Hot water content V-TOP		L	81	81	81
Spiral coil surface area		**m²**	**3,0**	**4,2**	**—**
Spiral coil output (Primary 50/45°C - Secondary 10/45°C)		kW	21	29	—
DHW production at 45°C		l/h	516	720	—
Lower Spiral coil surface area		**m²**	**—**	**—**	**1,7**
Lower Spiral coil output (Primary 75/65°C - Secondary 10/45°C)		kW	—	—	50
DHW production at 45°C		l/h	—	—	1239
Upper Spiral coil surface area		**m²**	**—**	**—**	**2,5**
Upper Spiral coil output (Primary 50/45°C - Secondary 10/45°C)		kW	—	—	17
DHW production at 45°C		l/h	—	—	429
WEIGHT					
Empty weight		kg	174	190	195

NOTE: All the measurements of the hydraulic connections are considered "from the ground" - All the threads are female GAS type, unless otherwise specified.

COMBO DHW STORAGE CALORIFIER & BUFFER TANK FOR HEAT PUMP PRIMARY - CLASS A

BKPE1-V Q | BKPE1-X Q - SINGLE COIL OUTPUT

Primary (60-50)°C | Secondary (10-45)°C

				SECONDARY (DHW)		
Tank capacity	HP coil surface area	Max. output	Primary flow	Continuous flow	Output first 10'	Output first 60'
Litres	*m^2*	*kW*	*Litres/Hour*	*Litres/Hour*	*Litres*	*Litres*
200	3,0	**48**	4128	1180	397	1380
300	4,2	**67**	5775	1650	575	1950

Primary (55-45)°C | Secondary (10-45)°C

				SECONDARY (DHW)		
Tank capacity	HP coil surface area	Max. output	Primary flow	Continuous flow	Output first 10'	Output first 60'
Litres	*m^2*	*kW*	*Litres/Hour*	*Litres/Hour*	*Litres*	*Litres*
200	3,0	**31**	2666	762	327	962
300	4,2	**44**	3780	1080	480	1380

Primary (50-45)°C | Secondary (10-45)°C

				SECONDARY (DHW)		
Tank capacity	HP coil surface area	Max. output	Primary flow	Continuous flow	Output first 10'	Output first 60'
Litres	*m^2*	*kW*	*Litres/Hour*	*Litres/Hour*	*Litres*	*Litres*
200	3,0	**21**	3612	516	286	716
300	4,2	**29**	5040	720	420	1020

BKPE2-V Q | BKPE2-X Q - UPPER COIL OUTPUT (HP)

Primary (60-50)°C | Secondary (10-45)°C

				SECONDARY (DHW)		
Tank capacity	HP coil surface area	Max. output	Primary flow	Continuous flow	Output first 10'	Output first 60'
Litres	*m^2*	*kW*	*Litres/Hour*	*Litres/Hour*	*Litres*	*Litres*
300	2,5	**44**	2500	1071	479	1371

Primary (55-45)°C | Secondary (10-45)°C

				SECONDARY (DHW)		
Tank capacity	HP coil surface area	Max. output	Primary flow	Continuous flow	Output first 10'	Output first 60'
Litres	*m^2*	*kW*	*Litres/Hour*	*Litres/Hour*	*Litres*	*Litres*
300	2,5	**26**	2250	643	407	943

Primary (50-45)°C | Secondary (10-45)°C

				SECONDARY (DHW)		
Tank capacity	HP coil surface area	Max. output	Primary flow	Continuous flow	Output first 10'	Output first 60'
Litres	*m^2*	*kW*	*Litres/Hour*	*Litres/Hour*	*Litres*	*Litres*
300	2,5	**17**	3000	429	371	729

BKPE2-V Q | BKPE2-X Q - LOWER COIL OUTPUT (Additional heating source)

Primary (75-65)°C | Secondary (10-45)°C

				SECONDARY (DHW)
Tank capacity	Lower coil surface area	Max. output	Primary flow	Continuous flow
Litres	*m^2*	*kW*	*Litres/Hour*	*Litres/Hour*
300	1,7	**50**	4335	1239

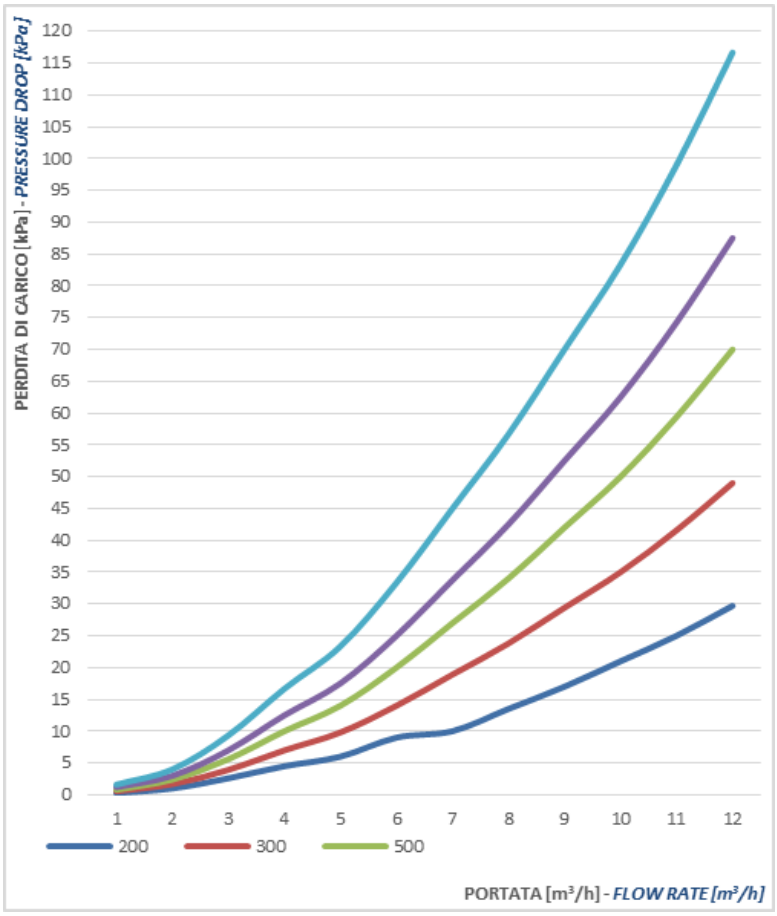
Primary (70-60)°C | Secondary (10-45)°C

				SECONDARY (DHW)
Tank capacity	Lower coil surface area	Max. output	Primary flow	Continuous flow
Litres	*m^2*	*kW*	*Litres/Hour*	*Litres/Hour*
300	1,7	**41**	3506	1002

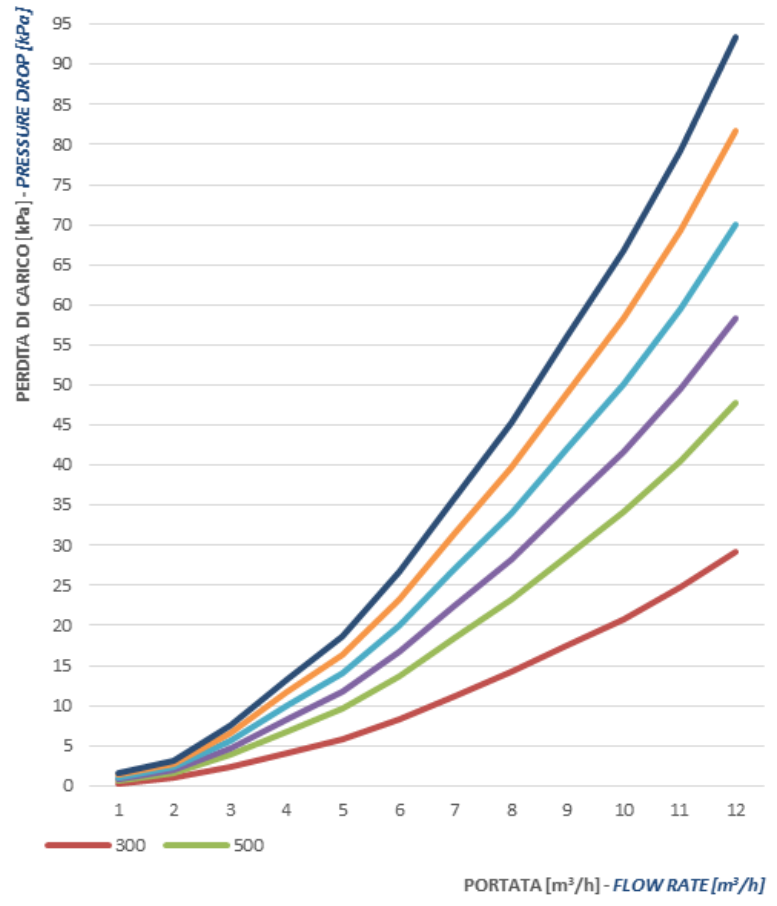
Primary (60-50)°C | Secondary (10-45)°C

				SECONDARY (DHW)
Tank capacity	Lower coil surface area	Max. output	Primary flow	Continuous flow
Litres	*m^2*	*kW*	*Litres/Hour*	*Litres/Hour*
300	1,7	**30**	1700	729

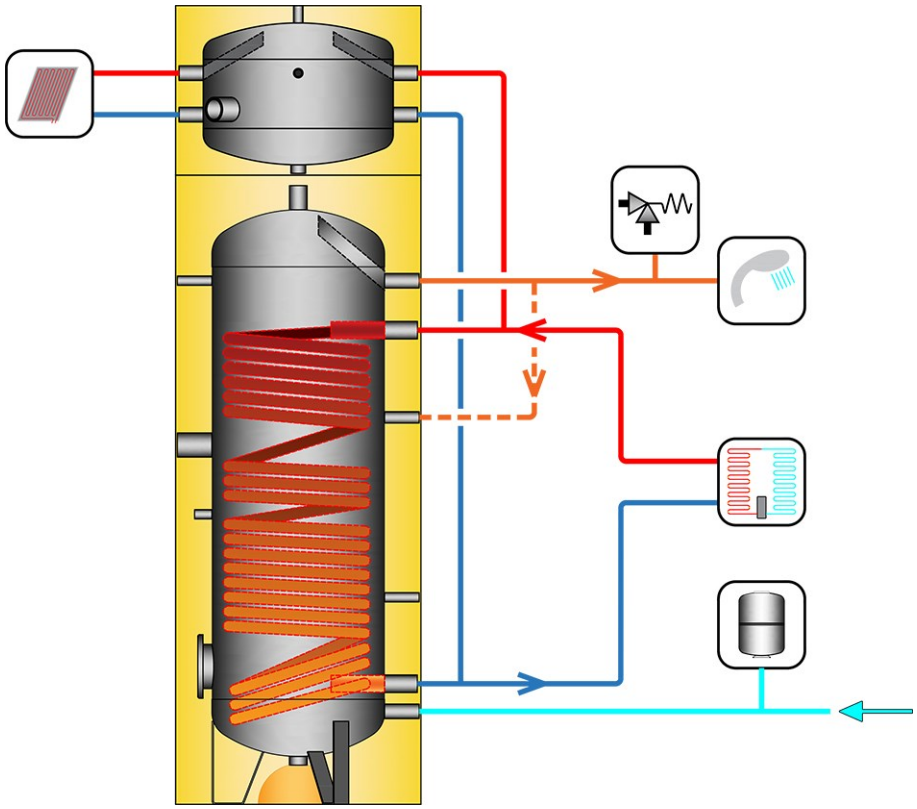
BKPE1-V Q | BKPE1-X Q - SINGLE COIL PRESSURE DROP

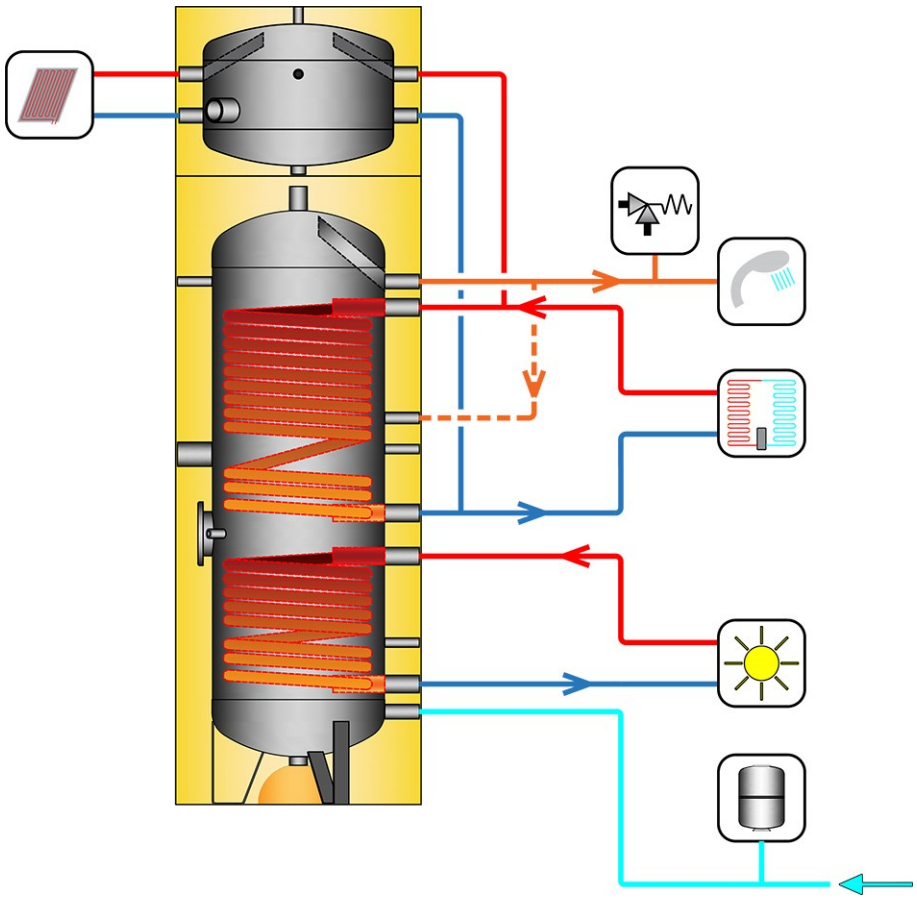


BKPE2-V Q | BKPE2-X Q - TWIN COIL PRESSURE DROP



INSTALLATION DIAGRAM EXAMPLE





The proposed diagrams are for illustration purposes only.

COMBO DHW STORAGE CALORIFIER & BUFFER TANK FOR HEAT PUMP PRIMARY - CLASS A

HOW TO ORDER - BKPE+V-TOP

1 → 1 Single fixed coil (HP)
2 → 2 Twin fixed coil (1 HP + 1 additional)

N → No anode (SS 316L)
E → Titanium anode

Tank capacity (L)

BKPE	1	T	-	V	0	V	E	Q	/	0200

HOW TO ORDER - V-TOP only

V	-	TOP	-	V	3	G	C	B	Q	/	090

ACCESSORIES AND SPARE PARTS

ITEM	PART NUMBER
THERMOMETER Ø65 mm | L=50 mm | *(0÷120)°C*	*TERMOMETRO-D65_S*
SENSOR POCKET Ø½" | L=50 mm | $Ø_{int}$10 mm	*POZZETTO_S*
THERMOSTAT *Ø½" (0÷90)°C*	*TERMOSTATO*
WALL MOUNTING BRACKET | V-TOP	*KIT_STAFFA_SOST_MURO*
HYDRAULIC CONNECTION KIT V-TOP to BKPE1/ BKPE2	*KIT_COLL_V-TOP*
TITANIUM ANODE for GLASS-LINED tanks	ANODE012X380_P
TITANIUM ANODE for SS316L tanks	ANODE_ARTHX1-150/400


THERMOMETER


SENSOR POCKET


THERMOSTAT


WALL MOUNTING BRACKET


TITANIUM ANODE

1-PHASE & 3-PHASE IMMERSION ELECTRIC HEATER - STAINLESS STEEL 316L TUBES
Threaded plug 1.1/2" with brass adapter 1.1/2" to 2" | Aluminium box IP54 | V220/1-V240/1 or V400/3

BKPE-V & BKPE-X:

Capacity	Capacity/L matching	Length	Volt	Plug type	2-THERMOSTAT Temperature regulation & overheating protection
Watt	*L*	*mm*	*V*	*mm*	*PART NO.*
2000	200÷300	310	220/1 240/1	SHUKO	*RES020-L310-6-M-BT*
3000	200÷300	350			*RES030-L350-6-M-BT*
5000	200÷300	375	400/3	Not supplied	*RES050-L375-6-T-BT*
6000	200÷300	435			*RES060-L435-6-T-BT*


1-PHASE

V-TOP:

Capacity	Capacity/L matching	Length	Volt	Plug type	2-THERMOSTAT Temp. regulation & ove-rheating protection
Watt		*mm*	*V*	*mm*	*PART NO.*
2000	90	310	220/1 240/1	SHUKO	*RES020-L310-6-M-BT*
3000	90	350			*RES030-L350-6-M-BT*
5000	90	375	400/3	Not supplied	*RES050-L375-6-T-BT*
6000	90	435			*RES060-L435-6-T-BT*


3-PHASE

This page intentionally blank.

ANTI-CORROSION PROTECTION STEEL TREATMENTS

PROTECTIVE TREATMENTS FOR CARBON STEEL TANKS

Glass-enamelling.

The glass-enamelling treatment is obtained with the application of one or two layers of enamel with characteristics of resistance to water and steam, which gives the treated product a high level of protection against the corrosion normally caused by the oxygen and the mineral salts dissolved in the water. The complete reliability of this type of treatment derives from its inorganic composition and from the link created between the enamel and the metallic surface.

After baking in an oven at about 850°C according to Bayer's method and DIN 4753.3 the enamel does not absorb water and does not conduct ions, allowing the 99.9% protection of the structure of the product. The remaining 0.01% (due to possible uncovered spots) is eliminated by inserting protective anticorrosive systems into the product such as the sacrificial magnesium anodes or the permanent electronic anodes.

PROTECTIVE TREATMENTS FOR STAINLESS STEEL TANKS.

Pickling and passivation

The calorifiers manufactured with the use of stainless steels are treated with picking procedures with full immersion and subsequent passivation, where planned.

CATHODIC PROTECTION

The corrosion of a metal structure occurs mainly in areas in which there is the passage of current (oxidation-reduction process) from the structure towards the outside (water or gas) causing a dissolution of the structure itself.

Cathodic protection by means of electronic impressed current system.

As an alternative to the galvanic system (coupling of materials with different potentials) there is a protection method which consists in applying an equal and opposite continuous current to the metallic structure to be protected, neutralising the voltages formed inside the tank.

Thanks to the modern techniques there is an innovative electronic system of cathodic protection with continuous impressed current.

The main advantages are:

- active protection by means of impressed currents from the outside;
- excellent flexibility of operation in order to adhere to the changeable internal coating conditions and the mass of water;
- reduction of maintenance costs due to the permanent protection of the system.

INSULATION

Insulating material	Removable	Thickness	Density	Thermal conductivity coefficient at 45°C	Operating temperature	Fire reaction class Euroclass EN13501-1
Hard polyurethane injected	✗	105 mm	40÷42 kg/m³	λ = 0,019 W/mK	-10°C / +99°C	F

Hard polyurethane

Thermal and anti-condensation insulation made of rigid closed cell polyurethane foam (PU), free from CFC and HCFC.
It is available in various thickness and can be injected directly to the walls of the tank to eliminate the possibility of formation of condensation and guarantee the minimum thermal dispersion, or pre-formed in removable half-shells to conserve the heat accumulated in the tank.
The extremely low thermal conductivity coefficient not only allows the limits specified by the ErP reference standard to be complied with, but actually to improve on them: the tanks of the new Q range, thanks to the careful study of the thicknesses and of the compounds, obtain the prestigious energy class "A" due to their limited heat dispersion values.

CLADDINGS

PVC

External cladding made of coloured PVC with hinge closing, suitable for installations in locations protected against adverse weather conditions. The standard colours of each product are indicated in their construction characteristics, but different colours can be requested for each model as shown in the following table.

ITEM	*PART NUMBER*
PVC COVER YELLOW RAL1023	*COVER-RAL1023*
PVC COVER ORANGE RAL2004	*COVER-RAL2004*
PVC COVER RED RAL3000	*COVER-RAL3000*
PVC COVER BLUE RAL5015	*COVER-RAL5015*
PVC COVER WHITE RAL9016	*COVER-RAL9016*
PVC COVER LIGHT GREY RAL7035	*COVER-RAL7035*
PVC COVER DARK GREY RAL7024	*COVER-RAL7024*
PVC COVER BLACK RAL9004	*COVER-RAL9004*

ALUMINIUM

External cladding made of embossed aluminium sheeting suitable also for outdoor installations. The insulations made with this type of cladding consist of panels joined together by means of rivets and extruded aluminium slats with an exclusive design, specifically designed to facilitate assembly even directly at the installation site.
The coverings and flange covers made of same material securely anchored to the insulation guarantee the same levels of quality in terms of duration and outside appearance and do not risk being damaged by the wind and adverse weather conditions.

www.pacetti.it

MADE IN ITALY

PACETTI S.r.l.
Via G. Marconi, 240/242
44122 - Ferrara - ITALY
Tel. +39 0532 774066
Fax +39 0532 773835
info@pacetti.it