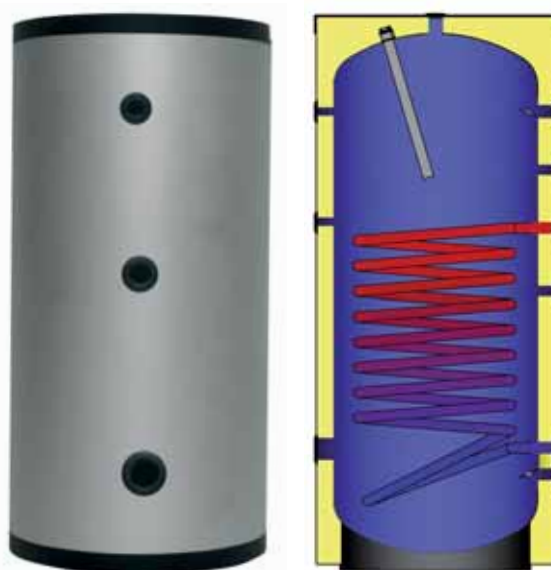


BSV SERIES

HIGH EFFICIENCY HOT WATER CYLINDERS

ELBI' s **High efficiency Hot Water Cylinders** are suitable for use in Domestic and Commercial applications.

While offering a remarkable storage capacity ELBI' s BSV cylinders perform more than satisfactorily in terms of heating time performance during the pick hours.



ELBI' s BSV cylinders are available in capacity ranging from 150 to 1000 litres. The simple installation procedure make it possible to adapt these cylinders to virtually all plant rooms.

ELBI' s BSV cylinders can be installed with:

- o Wall hung or floor standing Boilers
- o Condensing boilers
- o District heating
- o Solar heating systems

The **heat exchanger** is a coiled pipe with the heated water passing through it. The working conditions in the primary heated water shall not exceed those indicated in the technical features paragraph.

The BSV series is **vitreous enamel**.

The internal **enamel coating** is suitable for use in contact with DHW and provides enhanced protection from the corrosion that takes place in the cylinder. These cylinders are supplied with **Magnesium Anode and Tester**.

The Magnesium Anodes avoid the corrosion in the cylinder because the galvanic corrosion attack the sacrificial anode instead of corroding the less anodic metals in the cylinder.

ELBI' s BSV cylinders come with rigid polyurethane insulation CFC and HCFC free, grey RAL 9006. The outer case is available in soft polyurethane (BSV800 and BSV1000 with inspection flange).

Warranty: 5 years.

Technical Specifications

Cylinder

- Models: **BSV150 - BSV200 – BSV300 – BSV400 – BSV500 – BSV800 – BSV1000**
- Max. Allowable Working Pressure: **10 bar**;
- Max Allowable Temp.: **95°C**;
- Fluid: Domestic Hot Water

Heat Exchangers

- Heat Exchanger: **0.60–0.80–1.05–1.20–1.45–2.00–2.40** Sq. Mt.;
- Max Allowable Pressure: **12 bar**;
- Max Allowable Temp.: **110°C**;
- Fluid: Heated Water (from boiler).

Insulation

- **Material:**
- **BSV150÷BSV1000**
- Injected Polyurethane c/w 95% closed cells;
- Thickness: **40 mm**.
- Minimum Density 40 kg/m³
- Thermal Conductivity: 23,5 mW/m °K
- DIN 4102 Combustion Category: **B3**;
- Cover (External finish): RAL 9006 grey colour Polystyrene.
- **BSV800 Flø310÷ BSV1000 Flø310**
- Soft Polyurethane
- Thickness: **50 mm**.
- Thermal Conductivity: 39 m mW/m °K
- DIN 4102 Combustion Category: **B3**;
- Cover (External finish): skay in white colour

Elbi BSV calorifiers are in compliance with the European Directive No. PED 97/23/EC

Dimensional Data

MOD.	Litres	SINF m ²	SINF litres	Ds mm	Dc mm	H mm	A mm	B mm	C mm	E mm	F mm	G mm	L mm	M mm	N mm	Anode
BSV	150	0,60	4	500	580	1060	235	320	575	725	-	835	250	645	835	1.1/4"x350
	200	0,80	5	500	580	1260	235	320	735	885	-	1035	250	885	1035	1.1/4"x350
	300	1,05	7	550	630	1400	255	340	-	955	1055	1155	270	955	1155	1.1/4"x550
	400	1,20	8	650	730	1445	280	365	-	900	1040	1180	295	930	1180	1.1/4"x550
	500	1,45	9	650	730	1695	280	365	-	1060	1245	1430	295	1080	1430	1.1/4"x700
	800	2,00	13	800	880	1785	340	450	635	995	1195	1460	365	-	1470	1.1/4"x700
	1000	2,40	15	800	880	2035	340	450	645	1295	1495	1710	365	-	1720	1.1/4"x700
	800+FI	2,00	13	800	900	1785	340	450	635	995	1195	1460	435	-	1470	1.1/4"x700
	1000+FI	2,40	15	800	900	2035	340	450	645	1295	1495	1710	435	-	1720	1.1/4"x700

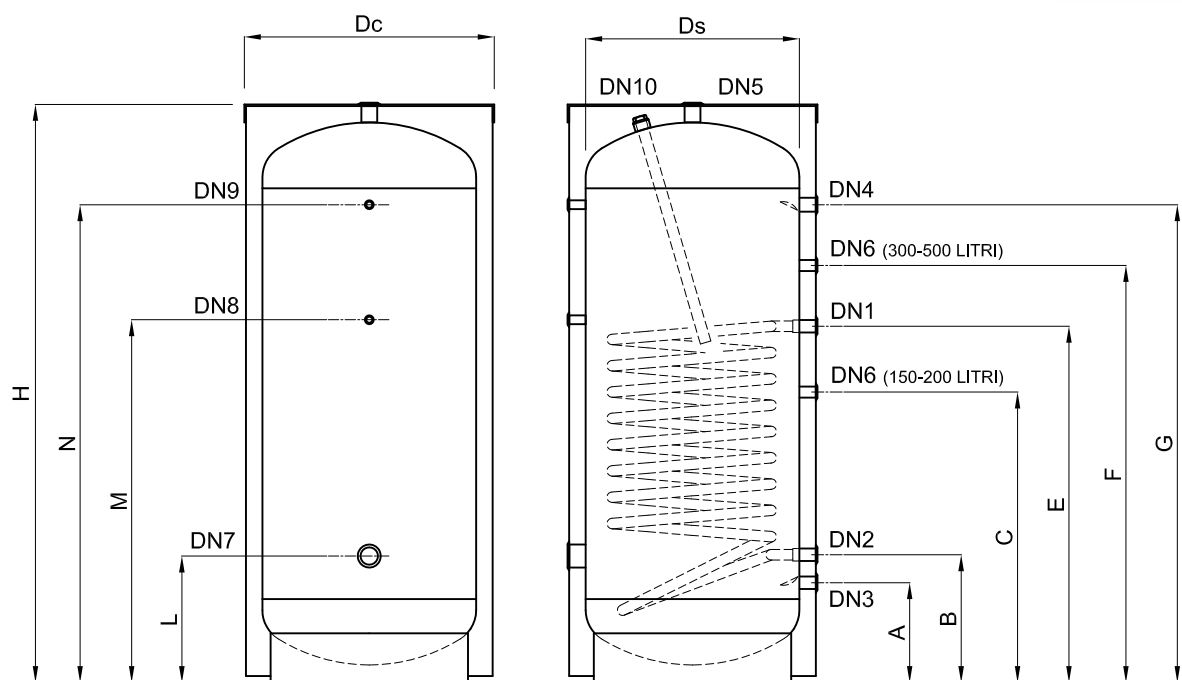
Models 150-500:

DN1-DN2: 1" (Primary Flow/ Return); **DN3:1"** (cold water supply); **DN4: 1"** (to draw-offs); **DN5: 1 1/4"** (to draw-offs); **DN6: 3/4"** Circulation; **DN7: 2"** (Immersion element/ Inspection boss); **DN8: 1/2"** Thermostat; **DN9: 1/2"** (thermometer); **DN10: 1 1/4"** (Magnesium Anode).

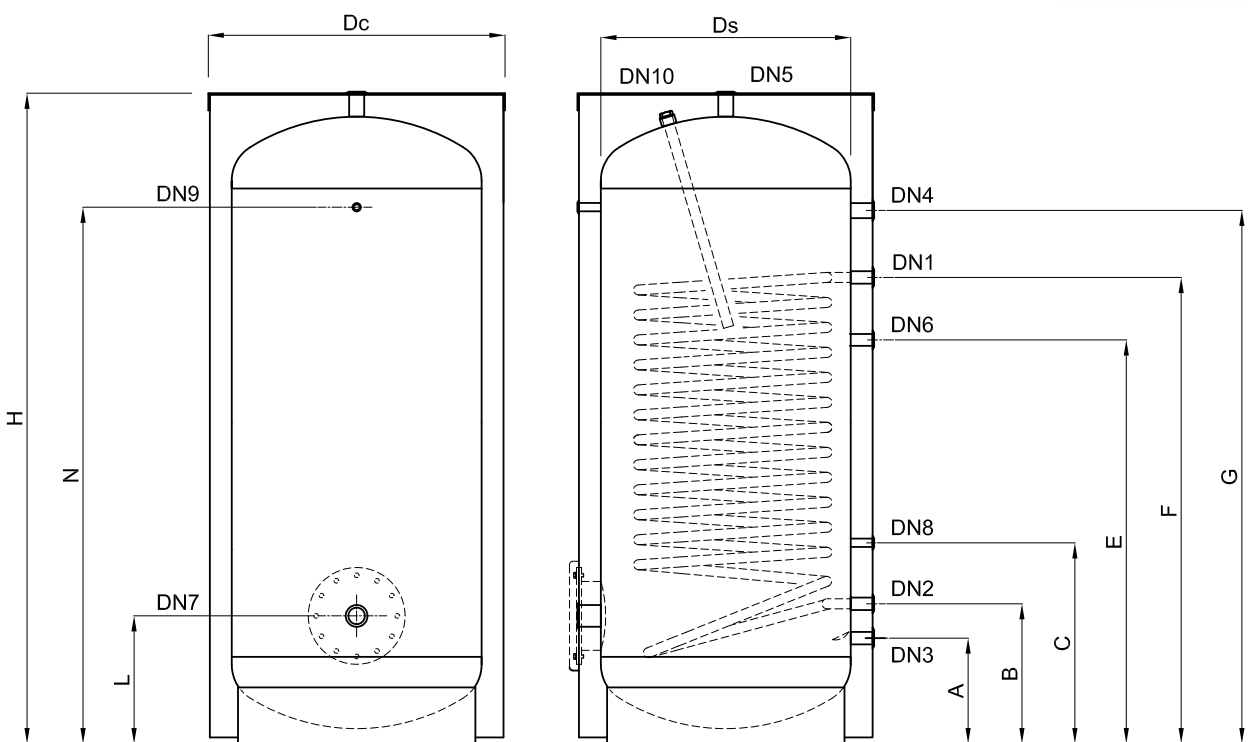
Models 800-1000:

DN1-DN2: 1" (Primary Flow/ Return); **DN3:1"** (cold water supply); **DN4: 1" 1/4** (to draw-offs); **DN5: 1 1/2"** (to draw-offs); **DN6: 1"** Circulation; **DN7: 2"** (Immersion element/ Inspection boss); **DN8: 1/2"** Thermostat; **DN9: 1/2"** (thermometer); **DN10: 1 1/4"** (Magnesium Anode). **DN11: 1 1/4"** (service boss. Please plug this boss before commissioning).

BSV 150 – 200 – 300 – 400 – 500



BSV 800 – 1000



Technical Information

ELBI **BSV** cylinders are selected in relation to the DHW requirements from the users. For correct sizing see on page 5.

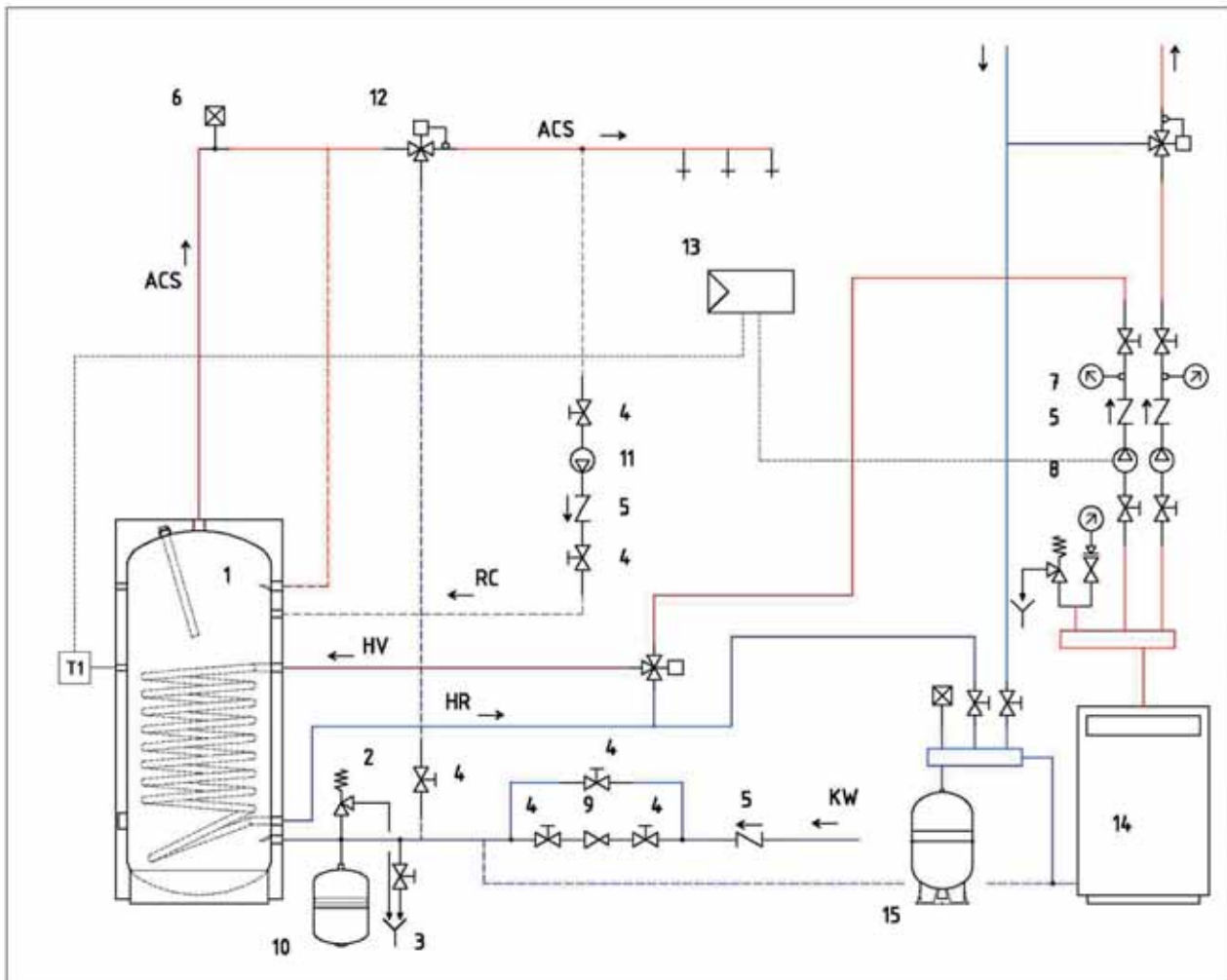
Safety devices:

In order to avoid overpressure to occur in the cylinder the following control and safety devices shall be installed:

- DHW circuit:
 - o Safety valve set at pressure below the cylinder maximum working pressure;
 - o ELBI **D-DV series** expansion vessel. The sizing chart below is applicable under the following working conditions:
Maximum hot water temp. 85°C / Mains Water 15°C /
Vessel precharge pressure: 3 bar / Safety Valve: 6 bar

Model	D-DV series expansion vessel
BSV-150	D – 11
BSV-200	D – 18
BSV-300	D – 24
BSV-400	D – 35
BSV-500	D – 35
BSV-800	DV – 80
BSV-1000	DV - 80

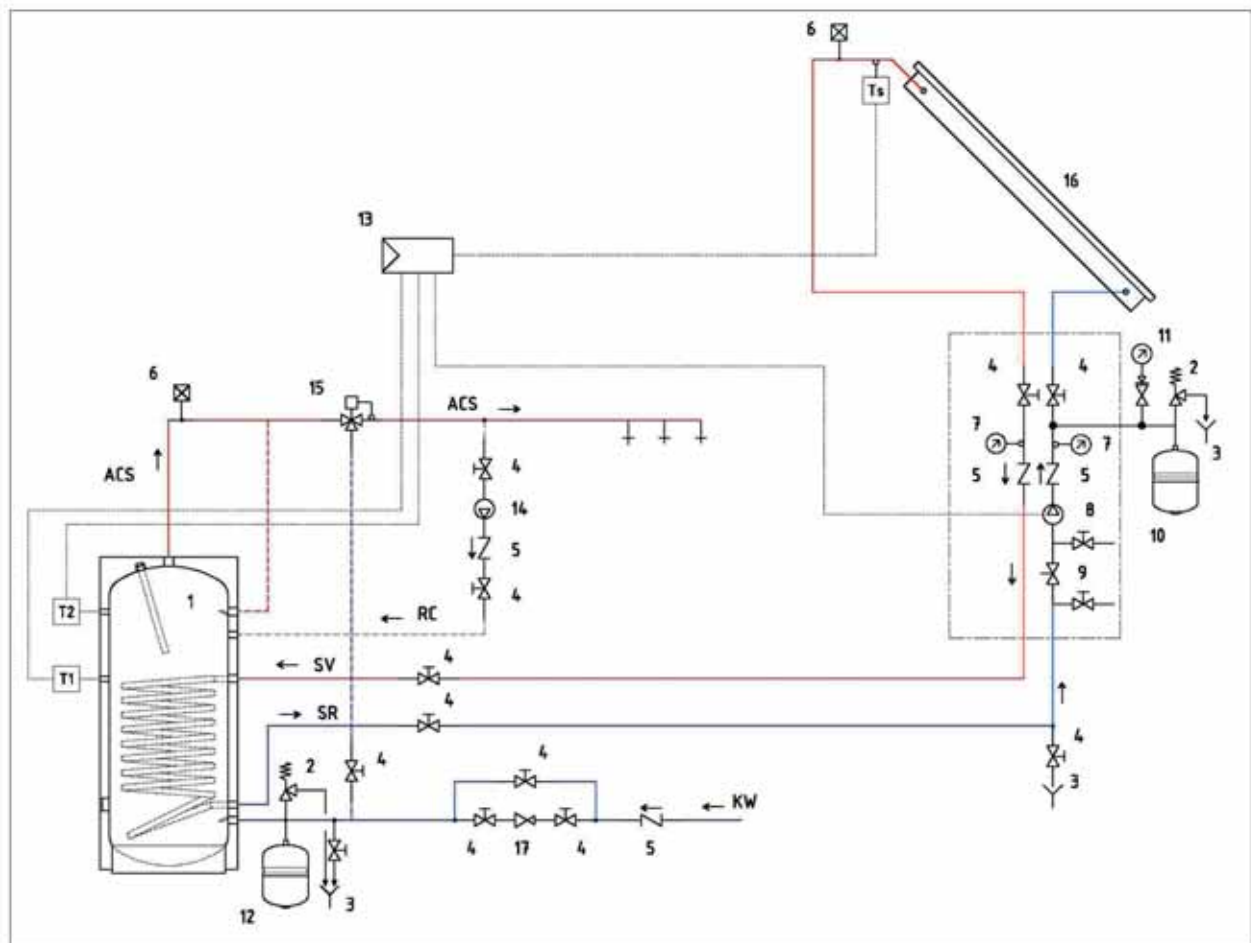
- Installation example (1):



- 1 – BSV Cylinder
- 2 – Safety Valve
- 3 – Drain
- 4 – Isolating Valve
- 5 – Check Valve
- 6 – Purge Valve
- 7 – Thermometer
- 8 – Hot water pump
- 9 – Pressure reducing valve
- 10 – D series Sanitary Expansion Vessel
- 11 – Circulation Pump

- 12 – Mixing Valve
- 13 – Control Panel
- 14 – Boiler
- DHW draw off
- KW Mains Water Supply
- RC Circulation
- HV Flow from Boiler
- HR Return to Boiler
- T₁ T₂ – Probes

- Installation example (2):



- 1 – BSV Cylinder
- 2 – Safety Valve
- 3 – Drain
- 4 – Isolating Valve
- 5 – Check Valve
- 6 – Purge Valve
- 7 – Thermometer
- 8 – Solar Circuit circulator Pump
- 9 – Fill-in Valve
- 10 – DS-DSV series expansion tank
- 11 – Pressure Gauge
- 12 – D-DV series Sanitary Expansion Vessel
- 13 – Control Panel

- 14 – Circulator pump
- 15 – Mixing valve
- 16 – Solar Panel
- 17 - Pressure reducing valve

DHW draw off
 KW Mains Water Supply
 RC Circulation
 SV – Primary flow from Solar Panel
 SR – Primary return to Solar Panel
 T₁ T₂ – Probes
 T_s – Solar Panel Probe

Performances

Heat exchanger with heated water passing through it at $T_i = 80^\circ\text{C}$ ($\Delta T=10^\circ\text{C}$). Maximum hot water temperature 60°C ; Mains Water supply temperature 15°C

Model	Power (1) (2) (Kw)	Pump capacity (litre/H)	Heating time (3) (min.)	DHW at 60°C (litre/H)	First 10 min. production of water @ 45°C (litre)
BSV 150	15,00	1320	37	287	176
BSV 200	19,50	1720	34	373	224
BSV 300	25,90	2290	34	495	300
BSV 400	29,00	2500	45	554	375
BSV 500	33,00	2900	47	630	449
BSV 800	50,00	4400	49	955	668
BSV 1000	60,00	5300	47	1140	770

(1) primary flow @ 80°C Primary return @ 70°C ;
 (2) Mains Water supply @ 15°C ;
 (3) Heating time from 15°C to 60°C ;
 (4) Domestic Hot Water available @ 45°C in the first 10 minutes
 of water draw-off from stored water @ 60°C

Heat exchanger with heated water passing through it at $T_i = 80^\circ\text{C}$ ($\Delta T=10^\circ\text{C}$), Maximum hot water temperature 45°C ; Mains Water supply temperature 15°C

Model	Power (1) (2) (Kw)	Pump capacity (litre/H)	Heating time (3) (min.)	DHW at 45°C (litre/H)
BSV 150	18,80	1650	20	536
BSV 200	25,00	2200	18	715
BSV 300	33,00	2900	18	945
BSV 400	36,00	3170	24	1030
BSV 500	43,00	3800	24	1230
BSV 800	59,50	5200	28	1700
BSV 1000	68,50	6000	27	1960

(1) primary flow @ 80°C Primary return @ 70°C ;
 (2) Mains Water supply @ 15°C ;
 (3) Heating time from 15°C to 45°C ;

Pressure drop (heat exchanger)

Model	Pressure Drop (mbar)
BSV 150	80
BSV 200	110
BSV 300	200
BSV 400	220
BSV 500	270
BSV 800	350
BSV 1000	400

Insulation thermal loss

Model	Q (kWh / 24h)
BSV 150	1,17
BSV 200	1,38
BSV 300	1,67
BSV 400	2,00
BSV 500	2,23
BSV 800	2,33
BSV 1000	2,53