



BOSS™ Unvented cylinders

Technical data



BSS INDUSTRIAL IS THE UK'S LEADING DISTRIBUTOR OF PIPELINE AND HEATING SOLUTIONS.

BSS, the UK's leading Industrial Pipeline and Heating Solutions Distributor, can now supply a complete range of BOSS™ Stainless Steel Cylinders to satisfy customer's requirements as part of our one-stop-shop policy.

Now part of Travis Perkins Plc, BSS has a long established history of over 100 years, a comprehensive product range of over 60,000 lines and a nationwide branch network of 64 locations, supported by two national distribution centres – 145,000 sq ft National Distribution Centre at Magna Park, Leicestershire delivering daily to all our branches and also a 47,500 sq ft National Tube Distribution Centre at Cross Point, Coventry stocking linear product.

BOSS™ is BSS's premium own brand offering which has a reputation for quality, value and reliability. BOSS™ products are competitively priced without compromising on quality. BSS are constantly updating and expanding the BOSS™ range to ensure it meets the needs of today's customer as well as changes to legislation.

BOSS™ UNVENTED CYLINDERS.

BOSS™ offers a complete range of unvented cylinders manufactured to the highest standards. Constructed from high grade Duplex stainless steel these cylinders will offer long life and great performance.

BOSS™ Unvented mains pressure cylinders offer outstanding performance, heat recovery and heat retention.

The wide range from 120 litres to a massive 1000 litre capacity are available in either Direct, Indirect or Solar variants.

BOSS™ Unvented cylinders are supported by a 25 year warranty package which offers peace of mind and security (for full warranty terms see page 13).

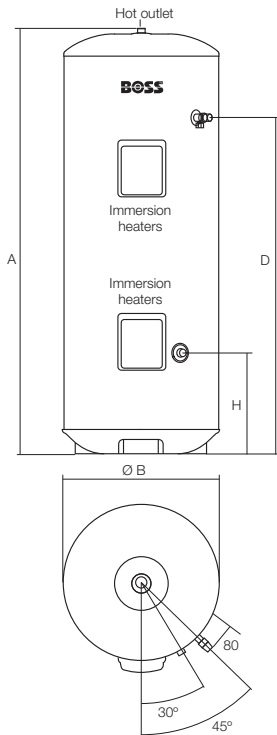
A highly trained team of experts are on hand, if in the unlikely event a problem does occur.

	DIRECT			INDIRECT			SOLAR		
	120 to 300 litre models	400 to 570 litre models	800 to 1000 litre models	120 to 300 litre models	400 to 570 litre models	800 to 1000 litre models	190 to 300 litre models	400 to 570 litre models	800 to 1000 litre models
COMPONENTS									
Factory fitted Immersion Heater(s)	YES	YES	YES	YES	YES	YES	YES	YES	YES
Thermal Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES
Cold water inlet control comprising	YES	YES	YES	YES	YES	YES	YES	YES	YES
0.35 MPa (3.5 bar) Pressure Reducing Valve	YES	YES	YES	YES	YES	YES	YES	YES	YES
0.6 MPa (6 bar) Pressure Relief Valve (BS EN 1567, BS EN 1491, EN 13959)	YES	NO	NO	YES	NO	NO	YES	NO	NO
0.8 MPa (8 bar) Pressure Relief Valve (BS EN 1567, BS EN 1491, EN 13959)	NO	YES	YES	NO	YES	YES	NO	YES	YES
¼ Turn Isolating Valve	YES	YES	YES	YES	YES	YES	YES	YES	YES
Line Strainer	YES	YES	YES	YES	YES	YES	YES	YES	YES
Non-Return Valve	YES	YES	YES	YES	YES	YES	YES	YES	YES
Factory fitted Temperature and Pressure Relief Valve set at 90°C / 1 MPa (10 bar) (BS EN 1490)	YES	YES	YES	YES	YES	YES	YES	YES	YES
Tundish	YES	YES	YES	YES	YES	YES	YES	YES	YES
Additional Thermostat and Thermal Cut-Out (Indirect models only)	NO	NO	NO	YES	YES	YES	YES	YES	YES
Drain Valve	YES	YES	YES	YES	YES	YES	YES	YES	YES
Wiring Center (Indirect and Solar models only)	NO	NO	NO	YES	YES	YES	YES	YES	YES
2 Port Motorised Valve (Indirect and Solar models only)	NO	NO	NO	YES	YES	YES	YES	YES	YES
Expansion Vessel including mounting	YES	YES	YES	YES	YES	YES	YES	YES	YES
TECHNICAL SPECIFICATIONS									
Maximum supply pressure to incoming mains cold water Combination Valve (supplied)	1.6 MPa (16 bar)	1.6 MPa (16 bar)	1.6 MPa (16 bar)	1.6 MPa (16 bar)	1.6 MPa (16 bar)	1.6 MPa (16 bar)	1.6 MPa (16 bar)	1.6 MPa (16 bar)	1.6 MPa (16 bar)
Minimum recommended supply pressure at 50 litres per minute	0.15 MPa (1.5 bar)	0.15 MPa (1.5 bar)	0.15 MPa (1.5 bar)	0.15 MPa (1.5 bar)	0.15 MPa (1.5 bar)	0.15 MPa (1.5 bar)	0.15 MPa (1.5 bar)	0.15 MPa (1.5 bar)	0.15 MPa (1.5 bar)
Operating pressure	0.35 MPa (3.5 bar)	0.35 MPa (3.5 bar)	0.35 MPa (3.5 bar)	0.35 MPa (3.5 bar)	0.35 MPa (3.5 bar)	0.35 MPa (3.5 bar)	0.35 MPa (3.5 bar)	0.35 MPa (3.5 bar)	0.35 MPa (3.5 bar)
Inner water container	DUPLEX	DUPLEX	DUPLEX	DUPLEX	DUPLEX	DUPLEX	DUPLEX	DUPLEX	DUPLEX
Thermal insulation - fire retardant expanded polyurethane foam, 50mm	YES	n/a	n/a	YES	n/a	n/a	YES	n/a	n/a
Thermal insulation - fire retardant expanded polyurethane foam, 100mm	n/a	YES	YES	n/a	YES	YES	n/a	YES	YES
Pressure Relief Valve	0.6 MPa (6 bar)	0.8 MPa (8 bar)	0.8 MPa (8 bar)	0.6 MPa (6 bar)	0.8 MPa (8 bar)	0.8 MPa (8 bar)	0.6 MPa (6 bar)	0.8 MPa (8 bar)	0.8 MPa (8 bar)
Immersion Heater 3kW @ 240v, 2.8kw @ 230v - AC Supply only - Number fitted	2	4	n/a	1	1	n/a	1	1	n/a
Immersion Heater 6kW @ 240v, 5.6kw @ 230v - AC Supply only - Number fitted	n/a	n/a	4	n/a	n/a	1	n/a	n/a	1
Primary Coil hydraulic resistance at 15 lpm	n/a	n/a	n/a	0.02 MPa (0.2 bar)	0.002 MPa (0.02 bar)	0.002 MPa (0.02 bar)	n/a	n/a	n/a
Primary Coil hydraulic resistance at 30 lpm	n/a	n/a	n/a	-	0.006 MPa (0.06 bar)	0.008 MPa (0.08 bar)	n/a	n/a	n/a
Primary Coil hydraulic resistance at 60 lpm	n/a	n/a	n/a	-	0.025 MPa (0.25 bar)	0.03 MPa (0.3 bar)	n/a	n/a	n/a
Solar coil hydraulic resistance at 15 lpm	n/a	n/a	n/a	n/a	n/a	n/a	0.002 MPa (0.02 bar)	0.002 MPa (0.02 bar)	0.002 MPa (0.02 bar)
Solar coil hydraulic resistance at 30 lpm	n/a	n/a	n/a	n/a	n/a	n/a	-	0.006 MPa (0.06 bar)	0.008 MPa (0.08 bar)
Solar coil hydraulic resistance at 60 lpm	n/a	n/a	n/a	n/a	n/a	n/a	-	0.025 MPa (0.25 bar)	0.03 MPa (0.3 bar)
Auxiliary coil hydraulic resistance at 15 lpm	n/a	n/a	n/a	n/a	n/a	n/a	-	0.001 MPa (0.01 bar)	0.001 MPa (0.01 bar)
Auxiliary coil hydraulic resistance at 30 lpm	n/a	n/a	n/a	n/a	n/a	n/a	-	0.002 MPa (0.02 bar)	0.002 MPa (0.02 bar)
Auxiliary coil hydraulic resistance at 60 lpm	n/a	n/a	n/a	n/a	n/a	n/a	-	0.02 MPa (0.2 bar)	0.017 MPa (0.17 bar)
CONNECTIONS									
Primary flow	n/a	n/a	n/a	¾" BSP (M)	1" BSP (F)	1 1/4" BSP (F)	n/a	n/a	n/a
Primary Return	n/a	n/a	n/a	¾" BSP (M)	1" BSP (F)	1 ¼" BSP (F)	n/a	n/a	n/a
Hot outlet	¾" BSP (M)	1" BSP (F)	2" BSP (F)	¾" BSP (M)	1" BSP (F)	2" BSP (F)	¾" BSP (M)	1" BSP (F)	2" BSP (F)
Cold inlet	¾" BSP (M)	1" BSP (F)	1" BSP (F)	¾" BSP (M)	1" BSP (F)	1" BSP (F)	¾" BSP (M)	1" BSP (F)	1" BSP (M)
Immersion heater boss	1 ¾" BSP (F)	1 ¾" BSP (F)	1 ¾" BSP (F)	1 ¾" BSP (F)	1 ¾" BSP (F)	1 ¾" BSP (F)	1 ¾" BSP (F)	1 ¾" BSP (F)	1 ¾" BSP (F)
Secondary return	n/a	1" BSP (F)	1" BSP (F)	n/a	1" BSP (F)	1" BSP (F)	½" BSP (F)	1" BSP (F)	1" BSP (F)
Solar Flow	n/a	n/a	n/a	n/a	n/a	n/a	¾" BSP (M)	1" BSP (F)	1 ¼" BSP (F)
Solar Return	n/a	n/a	n/a	n/a	n/a	n/a	¾" BSP (M)	1" BSP (F)	1 ¼" BSP (F)
Auxiliary Flow	n/a	n/a	n/a	n/a	n/a	n/a	¾" BSP (M)	1" BSP (F)	1 ¼" BSP (F)
Auxiliary Return	n/a	n/a	n/a	n/a	n/a	n/a	¾" BSP (M)	1" BSP (F)	1 ¼" BSP (F)
Sensor pockets	n/a	n/a	n/a	n/a	n/a	n/a	n/a	½" BSP (F)	½" BSP (F)

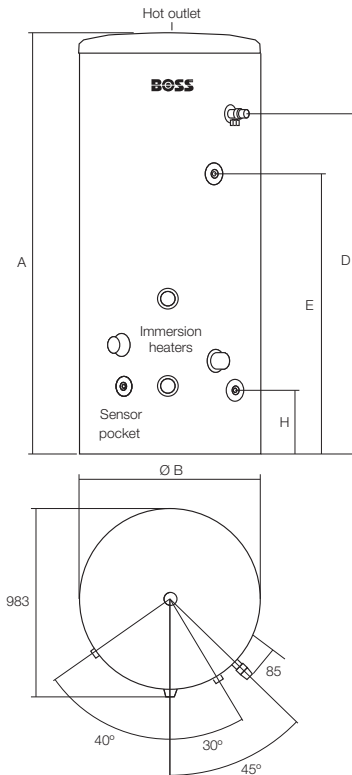
Ordering guide

PRODUCT	BOSS™ CODE
BOSS™ UNVENTED DIRECT	
BOSS™ UNVENTED 120 Direct	34320001
BOSS™ UNVENTED 150 Direct	34320012
BOSS™ UNVENTED 170 Direct	34320023
BOSS™ UNVENTED 210 Direct	34320034
BOSS™ UNVENTED 250 Direct	34320045
BOSS™ UNVENTED 300 Direct	34320056
BOSS™ UNVENTED 400 Direct	34320067
BOSS™ UNVENTED 500 Direct	34320078
BOSS™ UNVENTED 570 Direct	34320089
BOSS™ UNVENTED 800 Direct	34320108
BOSS™ UNVENTED 1000 Direct	34320119
BOSS™ UNVENTED INDIRECT	
BOSS™ UNVENTED 120 Indirect	34320174
BOSS™ UNVENTED 150 Indirect	34320185
BOSS™ UNVENTED 170 Indirect	34320196
BOSS™ UNVENTED 210 Indirect	34320204
BOSS™ UNVENTED 250 Indirect	34320215
BOSS™ UNVENTED 300 Indirect	34320226
BOSS™ UNVENTED 400 Indirect	34320237
BOSS™ UNVENTED 500 Indirect	34320248
BOSS™ UNVENTED 570 Indirect	34320259
BOSS™ UNVENTED 800 Indirect	34320270
BOSS™ UNVENTED 1000 Indirect	34320281
BOSS™ UNVENTED SOLAR INDIRECT	
BOSS™ UNVENTED 190 Solar Indirect	34320333
BOSS™ UNVENTED 210 Solar Indirect	34320344
BOSS™ UNVENTED 250 Solar Indirect	34320355
BOSS™ UNVENTED 300 Solar Indirect	34320366
BOSS™ UNVENTED 400 Solar Indirect	34320377
BOSS™ UNVENTED 500 Solar Indirect	34320388
BOSS™ UNVENTED 570 Solar Indirect	34320399
BOSS™ UNVENTED 800 Solar Indirect	34320407
BOSS™ UNVENTED 1000 Solar Indirect	34320418

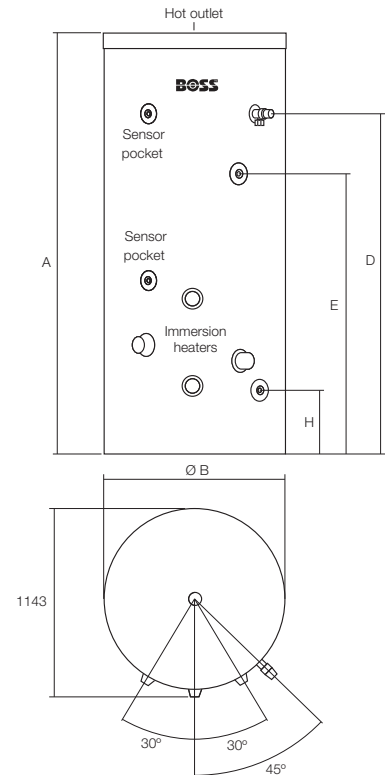
120-300 LITRE DIRECT



400-570 LITRE DIRECT



800-1000 LITRE DIRECT

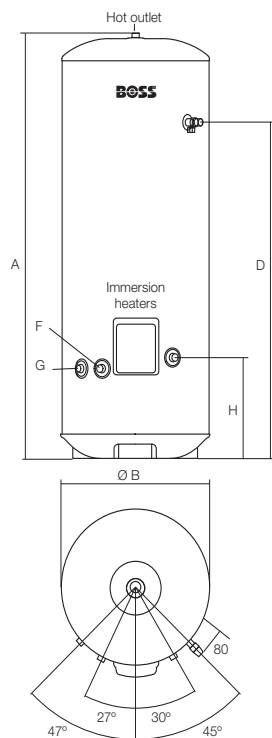


Volume (litre)	120	150	170	210	250	300	400	500	570	800	1000
Height - A	931	1114	1241	1499	1752	2065	1502	1802	1997	1914	2327
Diameter - B	550	550	550	550	550	550	861	861	861	1019	1019
T&P Height - D	616	800	927	1184	1379	1674	1116	1419	1611	1503	1908
Secondary Return Height - E	n/a	n/a	n/a	n/a	n/a	n/a	832	1132	1436	1188	1583
Cold Water Inlet - H	306	306	306	306	306	306	309	309	309	393	393
Weight (dry kg)	25	28	29	36	45	55	72	89	101	207	215
Weight (normal full kg)	145	178	199	246	295	355	472	589	671	1007	1215
Insulation thickness (mm)	50	50	50	50	50	50	100	100	100	100	100
T&P tapping	½	½	½	½	½	½	¾	¾	¾	¾	¾
T&P pressure setting (bar)	10	10	10	10	10	10	10	10	10	10	10
T&P temperature setting (°C)	90	90	90	90	90	90	90	90	90	90	90
Expansion Relief setting (bar)	6	6	6	6	6	6	8	8	8	8	8
Electrical Heater quantity	2	2	2	2	2	2	4	4	4	4	4
Electrical Heater rating	2 X 3kW @ 240v	2 X 3kW @ 240v	2 X 3kW @ 240v	2 X 3kW @ 240v	2 X 3kW @ 240v	2 X 3kW @ 240v	4x 3kW @240V	4x 3kW @240V	4x 3kW @240V	4x 6kW @240V	4x 6kW @240V
Re-heat times (mins)	88	110	125	154	184	220	73	92	104	73	92
Heat Up time (from cold) (mins)*	121	152	173	215	257	310	104	131	149	104	133
Continuous performance Δt 45°C (l/hr)	57	57	57	57	57	57	229	229	229	458	458
1st hour performance Δt 45°C (l/hr)	121	152	173	215	257	310	629	729	799	1258	1458
Heat loss (W/litre)	0.43	0.4	0.39	0.38	0.37	0.35	0.19	0.21	0.24	0.25	0.28
Heat loss (kWh/24h)	1.25	1.45	1.63	1.91	2.22	2.52	1.72	2.14	2.44	2.74	3.33
Global Warming Potential	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Expansion Vessel (litre)	12	12	18	18	24	24	60	60	60	60	60
Cylinder material	HGD	HGD	HGD	HGD	HGD	HGD	MGD	MGD	MGD	MGD	MGD

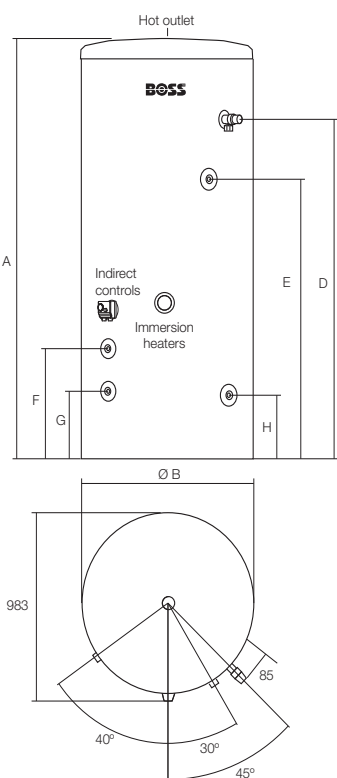
* Figures based on 15lpm flow rate for Domestic cylinders up to 300 litres and 60 lpm for Commercial cylinders above 400 litres. HGD - High Grade Duplex, MGD - Marine Grade Duplex 2205.

Indirect model

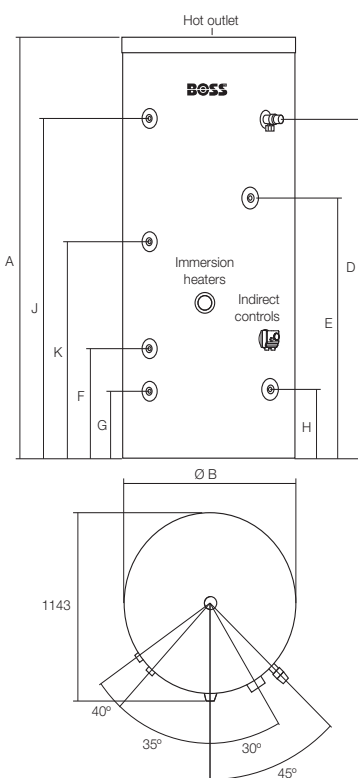
120-300 LITRE INDIRECT



400-570 LITRE INDIRECT



800-1000 LITRE INDIRECT



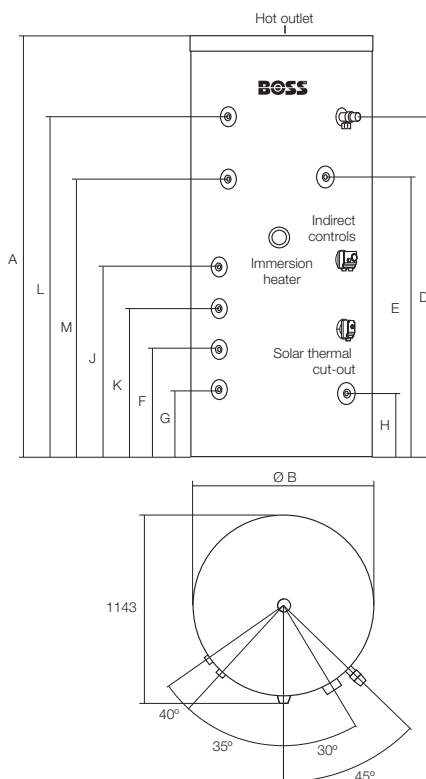
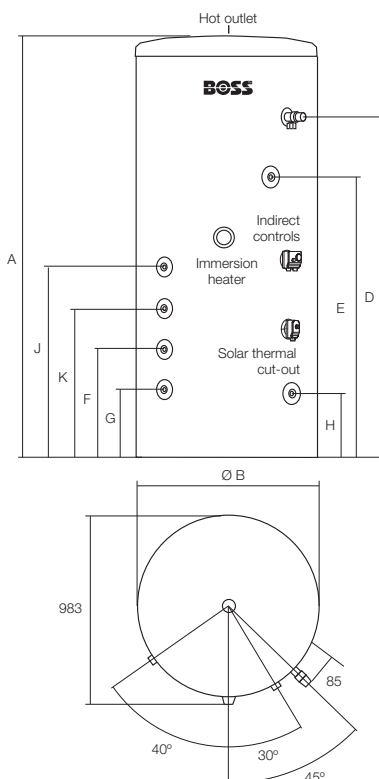
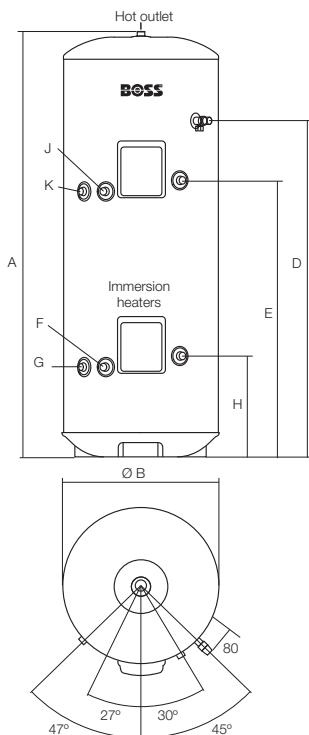
Volume (litre)	120	150	170	210	250	300	400	500	570	800	1000
Height - A	931	1114	1241	1499	1752	2065	1502	1802	1997	1914	2327
Diameter - B	550	550	550	550	550	550	861	861	861	1019	1019
T&P Height - D	616	800	925	1184	1379	1694	1116	1419	1611	1503	1863
Secondary Return Height - E	n/a	n/a	n/a	n/a	n/a	n/a	832	1135	1330	1218	1438
Primary Flow Height - F	315	315	315	315	315	315	499	499	499	623	623
Primary Return Height - G	315	315	315	315	315	315	325	325	325	448	448
Cold Water Inlet - H	354	354	354	354	354	354	309	309	309	438	438
Sensor pocket - J	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1503	1908
Sensor pocket - K	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1023	1023
Weight (dry kg)	27	31	33	41	50	60	78	95	107	211	219
Weight (normal full kg)	147	184	203	251	300	360	478	595	677	1011	1219
Insulation Thickness (mm)	50	50	50	50	50	50	100	100	100	100	100
T&P tapping	½	½	½	½	½	½	¾	¾	¾	¾	¾
T&P pressure setting (bar)	10	10	10	10	10	10	10	10	10	10	10
T&P temperature setting (°C)	90	90	90	90	90	90	90	90	90	90	90
Expansion Relief Setting (bar)	6	6	6	6	6	6	8	8	8	8	8
Electrical Heater Quantity	1	1	1	1	1	1	1	1	1	1	1
Electrical Heater Rating	3kW @ 240V	3kW @ 240V	3kW @ 240V	3kW @ 240V	3kW @ 240V	3kW @ 240V	3kW @ 240V	3kW @ 240V	3kW @ 240V	6kW @ 240V	6kW @ 240V
Re-heat times (mins)*	17	21	21	24	29	35	15	20	20	24	28
Heat Up time (from cold) (mins)†	24	29	30	34	42	49	21	28	28	32	39
Max. Primary Pressure (coil) (bar)	10**	10**	10**	10**	10**	10**	10**	10**	10**	10**	10**
Primary Flow rate (Boiler l/min)	15	15	15	15	15	15	60	60	60	60	60
Primary Coil resistance at 15 lpm (MPa / bar)	0.02 / 0.2	0.02 / 0.2	0.02 / 0.2	0.02 / 0.2	0.02 / 0.2	0.02 / 0.2	0.002 / 0.02	0.002 / 0.02	0.002 / 0.02	0.002 / 0.02	0.002 / 0.02
Primary Coil resistance at 30 lpm (MPa / bar)	-	-	-	-	-	-	0.006 / 0.06	0.006 / 0.06	0.006 / 0.06	0.008 / 0.08	0.008 / 0.08
Primary Coil resistance at 60 lpm (MPa / bar)	-	-	-	-	-	-	0.025 / 0.25	0.025 / 0.25	0.025 / 0.25	0.03 / 0.3	0.03 / 0.3
Continuous performance Δt 45°C (l/hr)	294	303	330	366	355	358	1085	1035	1022	1068	1236
1st hour performance Δt 45°C (l/hr)	414	453	500	576	605	658	1485	1535	1592	1868	2239
Coil rating‡ (kW)	15.4	15.9	17.3	19.2	18.6	18.8	56.9	54.3	53.6	58.7	64.8
Heat loss (W/litre)	0.43	0.4	0.39	0.38	0.37	0.35	0.18	0.18	0.19	0.21	0.24
Heat loss (kWh/24h)	1.25	1.45	1.63	1.91	2.22	2.52	1.72	2.14	2.44	2.74	3.33
Coil surface area (m²)	0.51	0.51	0.51	0.51	0.65	0.65	2	2	2	3	3
Global Warming Potential	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Expansion Vessel (litre)	12	12	18	18	24	24	35	35	35	60	60
Maximum Primary working pressure (bar)	10**	10**	10**	10**	10**	10**	10**	10**	10**	10**	10**
Cylinder material	HGD	HGD	HGD	HGD	HGD	HGD	MGD	MGD	MGD	MGD	MGD

‡ Figures based on 80°C flow temperature with 15 lpm flow rate for cylinders up to 300 litres and 60 lpm for cylinders above 400 litres. *Continuous based on Secondary Δt 45°C and a Primary flow temperature of 80°C. **Note coil is capable of 10 bar - Zone valve is up to 8.5 bar. If 10 bar is required a suitable replacement zone valve is needed (For 400 to 1000 litre models it is important to note that the coil must not be brought under pressure until the cylinder is full). HGD - High Grade Duplex, MGD - Marine Grade Duplex 2205.

190-300 LITRE SOLAR INDIRECT

400-570 LITRE SOLAR INDIRECT

800-1000 LITRE SOLAR INDIRECT



Volume (litre)	190	210	250	300	400	500	570	800	1000
Height - A	1399	1499	1752	2065	1502	1802	1997	1914	2327
Diameter - B	550	550	550	550	861	861	861	1019	1019
T&P Height - D	1085	1186	1438	1752	1116	1419	1611	1503	1886
Secondary Return Height - E	925	1026	1279	1592	771	1135	1330	1218	1538
Solar Flow Height - F	373	373	373	373	499	499	499	623	623
Solar Return Height - G	373	373	373	373	325	325	325	448	448
Cold Water Inlet - H	415	415	415	415	309	309	309	438	438
Auxiliary Flow - J	784	1012	1143	1440	871	871	1020	998	1198
Auxiliary Return - K	784	1012	1143	1440	671	671	820	798	998
Sensor Pocket - L	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1503	1886
Sensor Pocket - M	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1218	1538
Weight (dry kg)	45.5	47.5	56.5	66.5	83	100	112	217	225
Weight (normal full kg)	240	264	308	367	483	600	682	1017	1225
Insulation thickness (mm)	50	50	50	50	100	100	100	100	100
T&P tapping	½	½	½	½	¾	¾	¾	¾	¾
T&P pressure setting (bar)	10	10	10	10	10	10	10	10	10
T&P temperature setting (°C)	90	90	90	90	90	90	90	90	90
Expansion Relief setting (bar)	6	6	6	6	8	8	8	8	8
Electrical Heater quantity	1	1	1	1	1	1	1	1	1
Electrical Heater rating	3kW @ 240V	3kW @ 240V	3kW @ 240V	3kW @ 240V	3kW @ 240V	3kW @ 240V	3kW @ 240V	6kW @ 240V	6kW @ 240V
Max. Primary pressure (coil) (bar)	10**	10**	10**	10**	10**	10**	10**	10**	10**
Solar Coil resistance at 15 lpm (MPa / bar)	0.002 / 0.02	0.002 / 0.02	0.002 / 0.02	0.002 / 0.02	0.002 / 0.02	0.002 / 0.02	0.002 / 0.02	0.002 / 0.02	0.002 / 0.02
Solar Coil resistance at 30 lpm (MPa / bar)	-	-	-	-	0.006 / 0.06	0.006 / 0.06	0.006 / 0.06	0.008 / 0.08	0.008 / 0.08
Solar Coil resistance at 60 lpm (MPa / bar)	-	-	-	-	0.025 / 0.25	0.025 / 0.25	0.025 / 0.25	0.03 / 0.3	0.03 / 0.3
Auxiliary coil resistance 15 lpm (MPa / bar)	-	-	-	-	0.001 / 0.01	0.001 / 0.01	0.001 / 0.01	0.001 / 0.01	0.001 / 0.01
Auxiliary coil resistance 30 lpm (MPa / bar)	-	-	-	-	0.002 / 0.02	0.002 / 0.02	0.002 / 0.02	0.002 / 0.02	0.002 / 0.02
Auxiliary coil resistance 60 lpm (MPa / bar)	-	-	-	-	0.02 / 0.2	0.02 / 0.2	0.02 / 0.2	0.017 / 0.17	0.017 / 0.17
Solar coil rating at 30 l/min and 80°C flow temp	n/a	n/a	n/a	n/a	42	46.1	41.7	42.9	54.3
Aux Coil rating (kW)*	14.7	15	16.2	18.8	37.6	38.2	38.1	47.5	45.8
Heat loss (W/litre)	0.39	0.38	0.37	0.35	0.19	0.21	0.24	0.25	0.28
Heat loss (kWh/24h)	1.63	1.91	2.22	2.52	1.72	2.14	2.44	2.74	3.33
Solar Primary Coil surface (m²)	1.1	1.1	1.1	1.1	2	2	2	3	3
Aux Coil surface area (m²)	1.1	1.1	1.1	1.1	1	1	1	1.5	1.5
Global Warming Potential	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Expansion Vessel (litre)	24	24	24	24	35	35	35	60	60
Cylinder material	HGD	HGD	HGD	HGD	MGD	MGD	MGD	MGD	MGD

* Figures based on 80°C flow temperature with 15 lpm flow rate for cylinders up to 300 litres and 60 lpm for cylinders above 400 litres. Continuous based on Secondary At 45°C and a Primary flow temperature of 80°C. **Note coil is capable of 10 bar - Zone valve is up to 8.5 bar. If 10 bar is required a suitable replacement zone valve is needed (For 400 to 1000 litre models it is important to note that the coil must not be brought under pressure until the cylinder is full). HGD - High Grade Duplex, MGD - Marine Grade Duplex 2205.

INSTALLATION REQUIREMENT

The installation must be carried out in accordance with the appropriate Building Regulations & Technical Standards. Building Regulations Part G and Part L (England and Wales), Scottish Building Standards Section 4 and Section 6, Building Regulations (Northern Ireland) Parts F1 and F2 and Part P, Water Supply (Water Fittings) Regulations (England and Wales), The Water Byelaws 2004 (Scotland), Water Supply (Water Fittings) Regulations (Northern Ireland).

WATER SUPPLY

It should be noted that the incoming mains water supply will be supplying both the hot and cold water requirements.

It is recommended that the maximum water demand is assessed and the water supply checked to ensure the demand can be met.

NOTE: A high mains water pressure will not always guarantee high flow rates.

Wherever possible the main supply pipe should be in 28mm or greater.

The minimum mains water supply requirements should be 0.15 MPa (1.5 bar) working pressure and 50 litres per minute flow rate. At these values outlet flow rates may be unsatisfactory if several outlets are used simultaneously. The higher the available pressure and flow rate the better the system performance will be.

The BOSS™ Unvented cylinder has an operating pressure of 3.5 bar which is controlled by the Cold Water Combination Valve. This valve can be connected to a maximum mains supply pressure of 1.6 MPa (16 bar).

The water supply must be of wholesome water quality (Fluid Category 1 as defined by the Water Regulations 1999).

The BOSS™ Unvented cylinder is to be used for the storage of wholesome water (max.250mg/l chloride).

ELECTRICAL SUPPLY

The BOSS™ Unvented cylinder must be earthed.

The BOSS™ Unvented cylinder is suitable for AC supply only.

Electrical installation must be carried out by a competent electrician and be in accordance with the latest I.E.E. wiring regulations.

SECONDARY CIRCULATION

If a secondary circulation system is required using an indirect cylinder it is recommended that it be connected to the BOSS™ Unvented 120/300 cylinder as shown in the diagram on page 9.

If a secondary circulation system is required using a BOSS™ Unvented 120/300 Direct cylinder it is recommended that it be connected via a swept tee joint into the cold feed to the cylinder.

The secondary return pipe bore should be sized accordingly and fitted with an appropriate check valve to prevent backflow. A suitable WRAS approved bronze circulation pump will be required.

NOTE: On larger systems, due to the increase in water content, it may be necessary to fit additional expansion volume to the secondary system by fitting an external expansion vessel to the circuit. This should be done if the capacity of the secondary system exceeds 10 litres.

As a guide:

Pipe capacities
15mm O/D = 0.13 litres per metre
(10 litres = 77m)

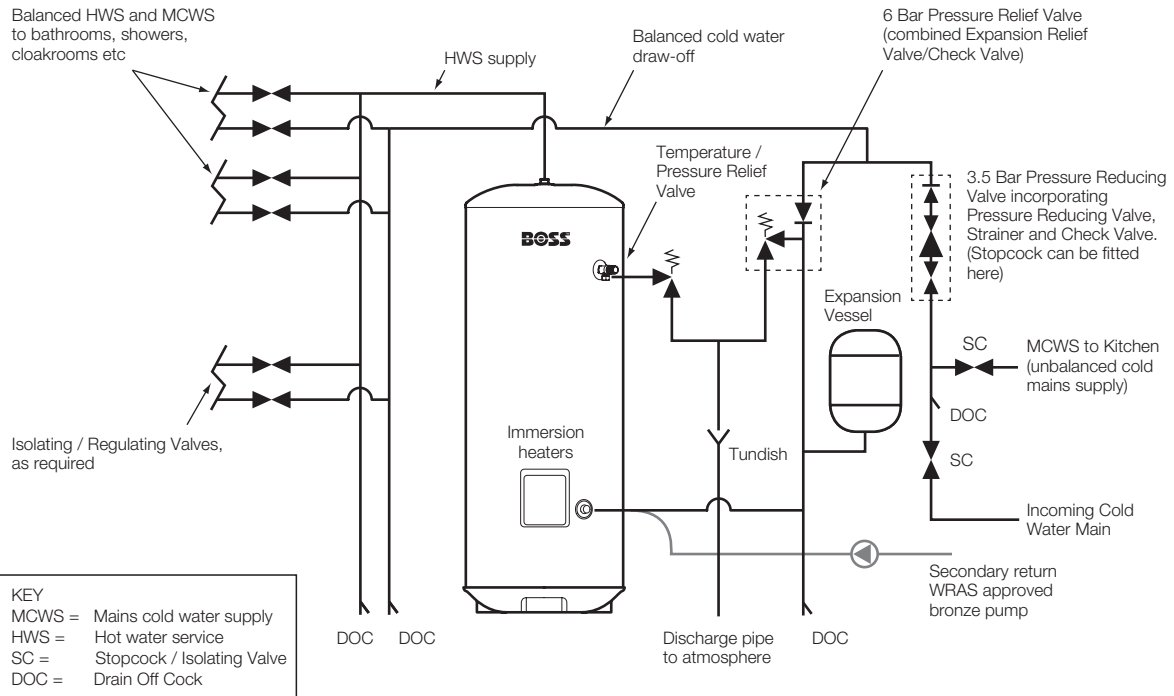
22mm O/D = 0.38 litres per metre
(10 litres = 26m)

28mm O/D = 0.55 litres per metre
(10 litres = 18m)

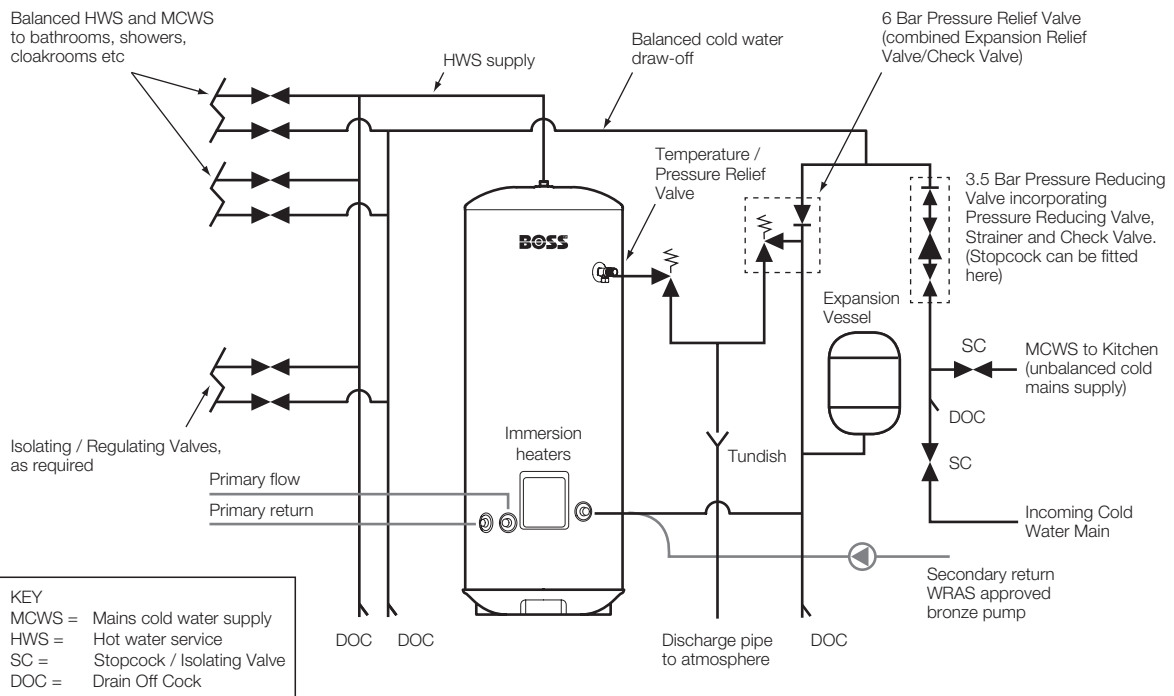
In direct electric installations where a secondary circulation is required particular attention should be paid by the installer to maintain the return water temperature (guidelines state that a minimum of 55° return temperature is advisable). Factors such as, but not limited to, secondary circulation flow rates, minimising heat loss of all secondary circuit pipework and timed operation during periods of high demand are critical to the correct operation and longevity of the heating element(s) and thermostats.

NOTE: Secondary circulation is not recommended for direct electric units using off-peak tariffs where the secondary circulation is not controlled in conjunction with the heat source as performance can be affected.

TYPICAL INSTALLATION – 120 / 300 DIRECT



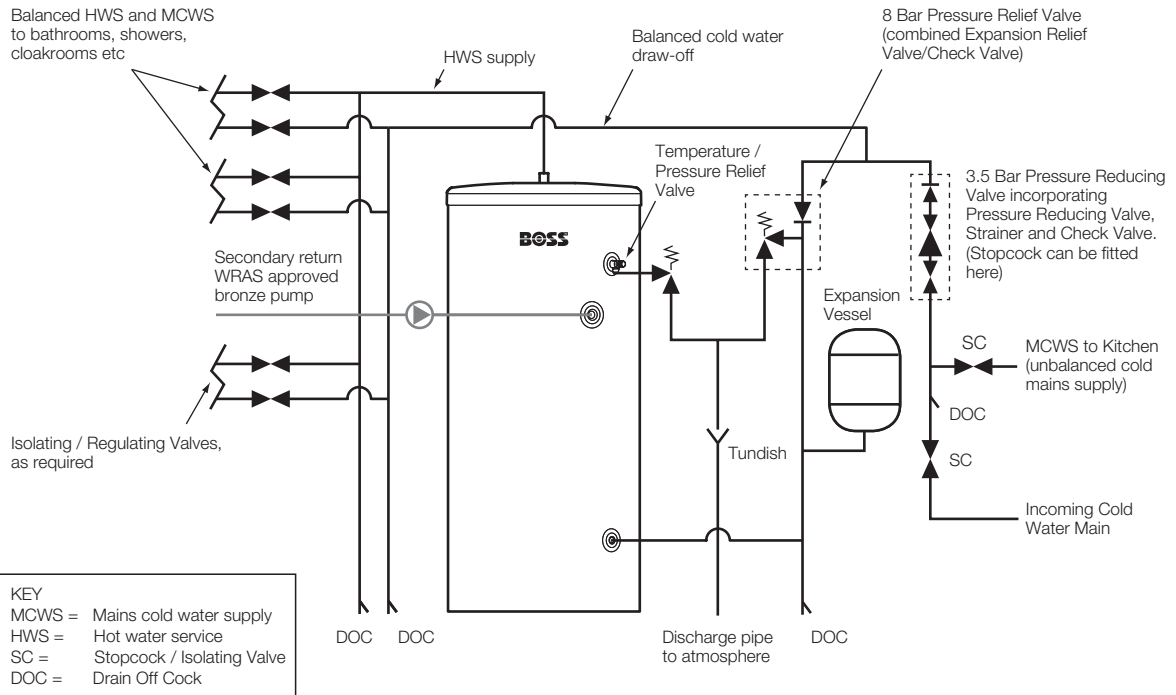
TYPICAL INSTALLATION – 120 / 300 INDIRECT



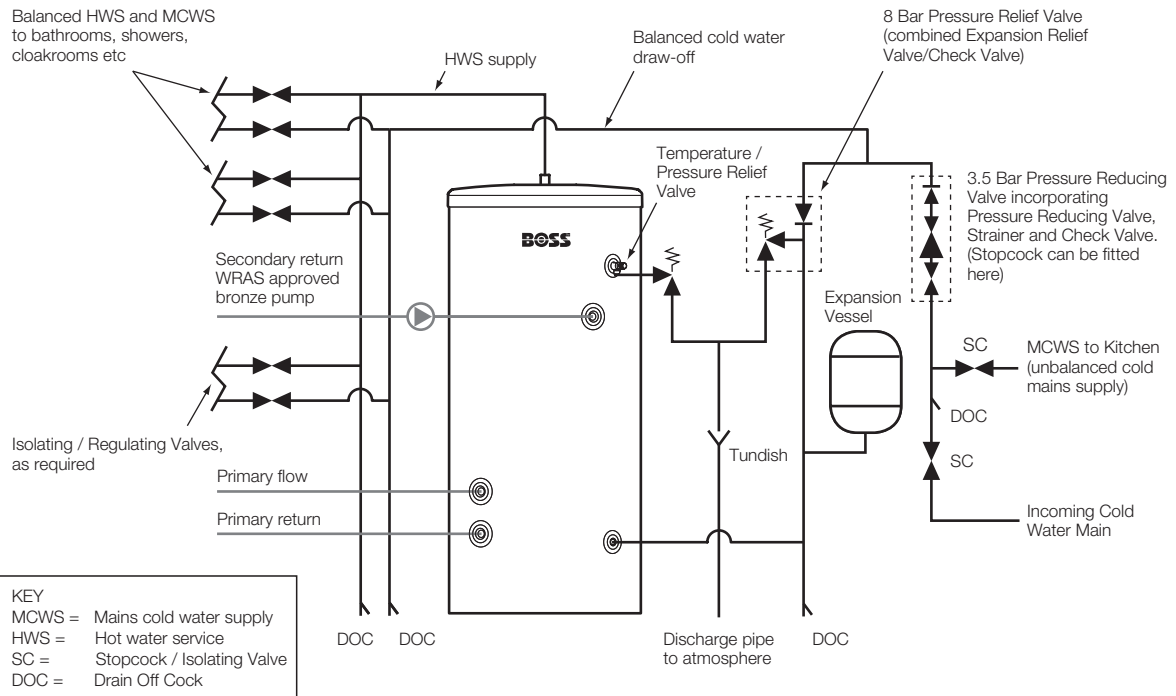
BOSS™ Unvented cylinders

Installation guidance

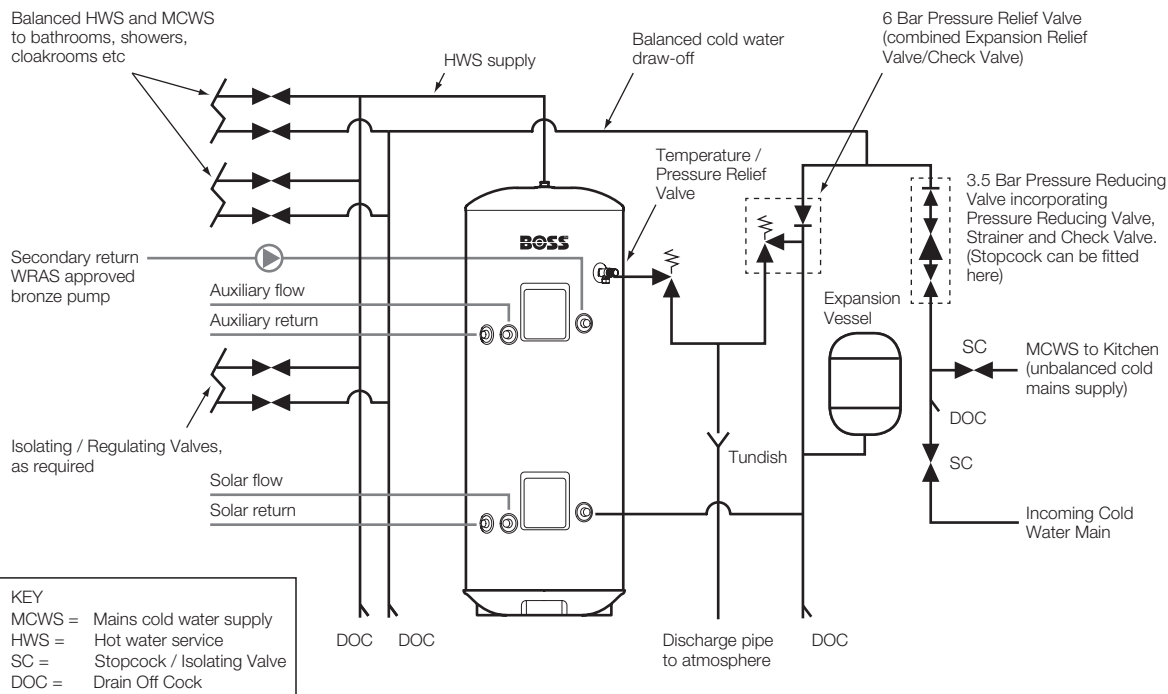
TYPICAL INSTALLATION – 400 / 1000 DIRECT



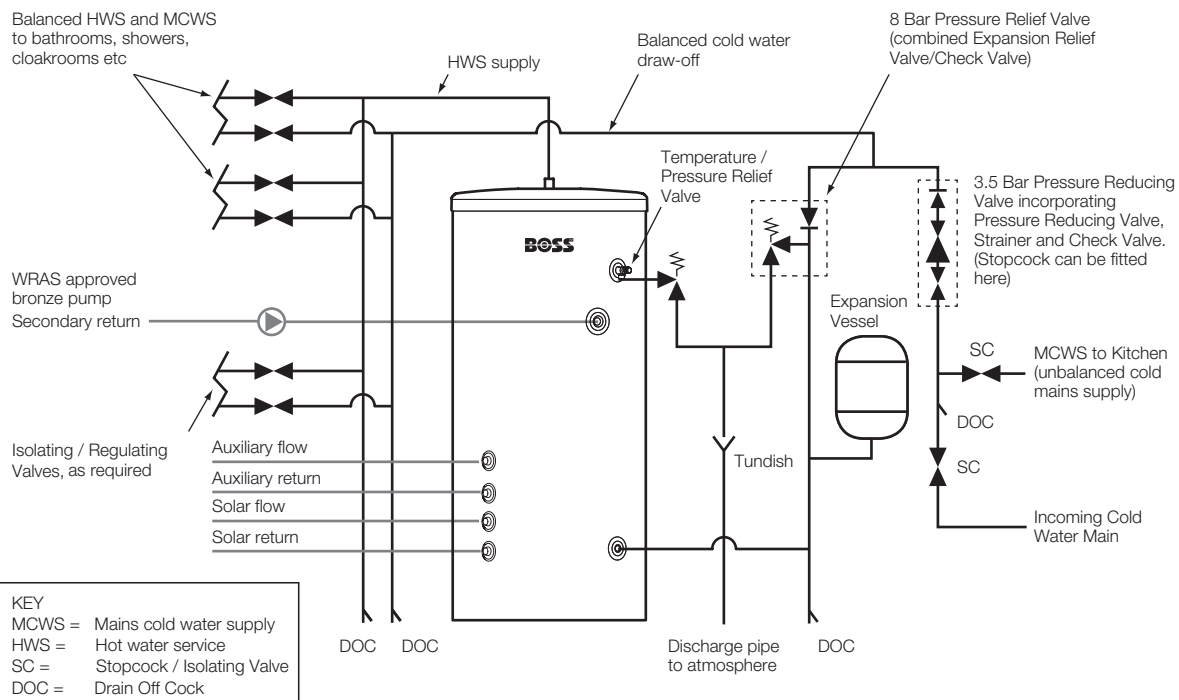
TYPICAL INSTALLATION – 400 / 1000 INDIRECT



TYPICAL INSTALLATION – 190 / 300 SOLAR INDIRECT



TYPICAL INSTALLATION – 400 / 1000 SOLAR INDIRECT



EU DIRECTIVES:

- Pressure Equipment Directive 97/23/EC.
- Low Voltage Directive (LVD) 2006/95/EC.
- Electromagnetic Compatibility (EMC) Directive 2004/108/EC.

LEGISLATION:

- Building Regulations Part G and Part L (England and Wales).
- Scottish Building Standards Section 4 and Section 6.
- Building Regulations (Northern Ireland) Parts F1 and F2 and Part P.
- Water Supply (Water Fittings) Regulations (England and Wales).
- The Water Byelaws 2004 (Scotland).
- Water Supply (Water Fittings) Regulations (Northern Ireland).

STANDARDS:

- Relevant clauses of the following standards are complied with:
- EN 12897 – Specification for indirectly heated unvented cylinders.
- EN 60335-2-21 – Safety-Particular requirements for storage water cylinders.
- The stainless steel materials used comply with the relevant clauses of:
- EN 10088 – Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes.

COMPONENTS SUPPLIED COMPLY WITH THE FOLLOWING STANDARDS:

- BS EN 1490 Building Valves – Combined Temperature and Pressure Relief Valves.
- BS EN 1491 Building Valves – Expansion Valves.
- BS 6144 Specification for Expansion Vessels Using An Internal Diaphragm For Unvented Water Supply Systems.
- BS EN 1567 Building Valves – Water Pressure Reducing Valves and Combination Reducing Valves.
- BS EN 60730-1 Automatic Electrical Controls – For households and similar use. Part 1: General Requirements.
- BS EN 60730-2-8 Automatic Electrical Controls – Particular Requirements for Electrically Operated Water Valves.
- BS EN 13959 Anti-pollution Check Valves.

THE USE OF THESE WATER HEATERS WILL AID IN COMPLIANCE WITH:

- Health and Safety Executive Approved Code of Practice L8: The control of legionella bacteria in water systems.
- BS EN 806 Parts 1 to 5: Specification for installations inside buildings conveying water for human consumption.
- BS 8558 Guide to the design, installation, testing and maintenance of services supplying water for domestic use within buildings.
- Chartered Institute of Building Services Engineers Guide B and Guide F.

MANUFACTURED IN A FACTORY APPROVED TO:

- BS EN ISO 9001.
- OHSAS 18001.
- ISO 14001.

APPROVALS:

- Kiwa Certification.
- Nemko Certification.

Warranty

WARNING: Should the factory fitted temperature and pressure relief valve be tampered with or removed your warranty will be invalidated.

WARRANTY TERMS

BSS Group Limited warranties the water heater against faulty manufacture or materials for a period of two years from the date of purchase including parts and labour. This two year warranty is extended to five years for the cold water control valve and to 25 years (from the date of installation) for the stainless steel inner vessel.

These warranties are valid provided that:

- The water heater has been installed by a competent engineer and as per the instructions contained in the installation manual and all relevant Codes of Practice and Regulations in force at the time of installation.
- Any disinfection has been carried out in accordance with BS EN 806-5:2012
- Should the factory fitted temperature and pressure relief valve be tampered with or removed your warranty will be invalidated.
- The water heater has not been modified in anyway other than by our approved engineers.
- The water heater has only been used for the storage of wholesome sanitary water (max 250mg/l chloride).
- Only stainless steel dummy plugs are to be used.
- The water heater unit has not been subjected to excessive pressure beyond the guidelines detailed in the installation instructions.
- The water heater unit has not been subjected to frost, nor has it been tampered with or been subject to misuse or neglect.
- No factory fitted parts have been removed for un-authorized repair or replacement
- Regular maintenance has been carried out by a competent person in accordance with the requirements set in the maintenance section of the installation manual and any replacement parts used should be approved spare parts.
- The warranty is not valid outside of the United Kingdom.

The warranty does NOT cover:

Consequential damages or profit loss which may arise from a defect.

Warranty claims have no delaying effect on the payment dates and other demands

Your water heater warranty covers you for a equivalent replacement and labour in the event that the unit fails prematurely as a result of a proved manufacturing defect.

In order that this can be achieved, full access to replace the unit is essential. If it is found that access can not be achieved the warranty will be limited to the replacement of the unit only and subsequent labour charges would not be met under the warranty.

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