

# Advenco Steel Buffers

## MSB, MSS, CWT, CWS Ranges

### Installation, Operation, and Maintenance Manual



## Warnings

This manual should be read and understood prior to installation or operation of any Adveco MSB, MSS, CWT, or CWS vessel. Failure to read this manual or follow its printed instructions may lead to personal injury, damage to the vessel and damage to the water heating. These instructions should be kept in a safe and accessible place near the vessel.

Vessels should be stored in a safe place prior to installation to prevent damage.

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## How to Use This Manual

All general information, instructions and specifications listed within this manual applies to the full range of MSS, MSB, CWS, and CWT vessels. Any information relevant to only specific ranges is contained within dedicated sections and is clearly identifiable by section titles.

For any queries or issues not covered by the scope of this manual, please contact the Adveco Technical Department using the contact details provided on page 18.

## Glossary of Common Terms

**Primary system:** The sealed circulation circuits of the main system heat sources, i.e. the water within the electric boiler or air source heat pump. The primary circuits flow through heat exchangers within the hot water tank to transfer heat to the secondary system.

**Secondary system:** The free-flowing potable water side of the hot water, connected to the building cold water mains and running to the building outlets.

**Redundancy:** A level of reserve or backup heating capacity in a hot water system, typically present to ensure the availability of hot water in the event of a primary appliance failure.



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# Product Description

## Adveco Ranges of Carbon Steel Heating System Tanks

Adveco provide a diverse offering of heating system tanks from 300 to 5000 litres designed for use as buffers or thermal energy storage tanks suitable for a wide range of central heating and cooling applications. The offering is divided into four distinct model ranges based on application which are explained below.

The complete MSB, MSS, CWT, and CWS ranges are designed, manufactured, and tested in the EU to the requirements of:

### **The Pressure Equipment Directive**

**2014/68/EU Article 4, Paragraph 3, Sound Engineering Practice.**

The scope of 2014/68/EU covers standards for the design and manufacture of pressure equipment, including vessels, piping, safety and other accessories, with a maximum allowable pressure greater than 0.5 bar. Vessels classified within the Sound Engineering Practice category of the Pressure Equipment Directive are exempt from, and do not feature, CE marking.

### **MSB: Standard Heating Buffer**

The Adveco MSB is a standard carbon steel buffer vessel range suitable for most heating applications. It has a straightforward design with a large number of threaded tank connections positioned at various heights for compatibility with a wide range of system designs. The standard MSB range is available with a maximum working pressure of 3 bar. Models with an improved working pressure of 6 bar are available from Adveco upon request. The MSB is also available in a variant with a single fixed internal heat exchange coil for additional indirect heat input.

### **MSS: Premium Heating Buffer**

The Adveco MSS is a premium carbon steel buffer vessel range with more specialised features, designed for heating systems with more exacting demands and applications. The MSS features multiple large-bore flanged connections capable of supporting high flow rates and integration to larger systems. It includes three internal baffle plates for improved stratification of stored water, an increased number of sensor connections, and a clean-out inspection flange at low level. The MSS has also been specially designed with a low maximum tank height and lifting lugs for improved manoeuvrability and siting options. The MSS range is available with a maximum working pressure of 6 bar. Models with an improved working pressure of 10 bar are available from Adveco upon request.

### **CWT: Standard Chilled Water Buffer**

The Adveco CWT is a standard carbon steel chilled water buffer vessel range derived from the MSB heating buffer and modified with alternative insulation and an anti-condensing underlay to improve thermal performance in chilled water and cooling applications. The CWT similarly features a large number of threaded connections at various heights and a maximum working pressure of 3 bar.

### **CWS: Premium Chilled Water Buffer**

The Adveco CWS is a premium carbon steel chilled water buffer vessel range derived from the MSS heating buffer and modified with alternative insulation and an anti-condensing underlay to improve thermal performance in chilled water and cooling applications. The CWS includes the same features of the MSS, with large bore flanged connections, baffle plates, clean-out inspection flange, reduced maximum height and lifting lugs. The CWS range is available with a maximum working pressure of 6 bar, or with an improved working pressure of 10 bar upon request.

### **Model Number Identification:**

The buffer vessel model type, size, pressure, and coil configuration can be derived from the name of a tank. The first 3 letters denote the model as described above. The following 3 or 4 numbers denote the nominal storage capacity in litres. If this ends in '0', the tank has no internal coils. If this ends in '1', the tank has one internal heating coil. The final number after the hyphen denotes the working pressure of that tank. For example:

MSB 501-3: MSB standard buffer vessel, 500 litres with one coil, rated for pressures up to 3 bar.

MSS 1000-6: MSS premium buffer vessel, 1000 litres, no coils, rated for pressures up to 6 bar.

CWS 3000-10: CWS premium buffer vessel, 3000 litres, no coils, rated for pressures up to 10 bar.



# Installation Instructions

## 1. Responsibilities of the User

Following the commissioning of a system and in compliance with the procedures and advice contained within this manual, responsibility lies with the building controller to maintain a safe standard of operation and regular maintenance procedures as required by any site risk assessment. This includes ensuring that the unit is not operated at temperatures or pressures in excess of those stated on the vessel data plate. Nor should the vessel be exposed to a full or partial vacuum, such as can be present during draw-off or drainage of the unit while the cold feed or vent are closed or obstructed.

Failure to maintain a minimum of annual maintenance may void any and all warranties. Full maintenance procedures should only be carried out by a suitably qualified person. Basic maintenance regimes, as determined through site risk assessment, should be carried out by the user as directed on page 16.

Adveco Ltd. advise that heating systems in unoccupied premises, or that are subjected to long periods of shutdown, should be drained down according to the procedure on page 16, to remove the risk of failure and/or damage occurring while the system is not being monitored.

## 2. Responsibilities of the Installer / Designer

In compliance with the procedures and advice contained within this manual, responsibility lies with the installer to ensure that the vessels are correctly and safely installed in line with all local regulations and laws. In all cases, the relevant laws and regulations must take precedence over instructions contained within this manual.

# Installation Instructions

## 3. Location and Handling

Suitable methods of moving a vessel include the use of a forklift truck where the vessel is securely fixed to a pallet capable of supporting its weight, or by boom crane using adequate textile slings of suitable capacity to lift the weight of the tank. MSS and CWS vessels have been designed to incorporate lifting eyes on the top of the tank dome to assist with lifting and siting. Note that lifting eyes are not present on MSB or CWT ranges. For tank weight information, consult pages 10-15. Vessels should not be lifted using the insulation, by chains, or by straps that may damage the insulation, connections, or walls of the tank. Care should be taken when moving or lifting to minimise the risk of damage to the vessel.

The vessel is suitable for indoor installation only and must be positioned on a level base capable of supporting the unit when filled to capacity. Floor loading calculations should include the total filled weight, being equivalent to the sum of the empty weight of the vessel plus the water volume in litres of the tank (where 1 litre of water weighs 1 kg).

An installation should provide suitable clearances of no less than 800 mm on at least three sides of the unit in order to give adequate room for pipework and access to all connections and sensors. A height clearance of 150mm is required over the top of the vessel to accommodate the installation of an air vent. The vessel should be positioned to provide suitable access for visual inspection and maintenance of all connections, ancillaries, and fittings, as well as eventual replacement of the entire vessel.

Any water storage vessel requires some provision against damage to surrounding infrastructure, electronics, and equipment in the event of a leak, damage, or vessel failure. Acceptable methods of protection include suitable bunding, gulley, drainage, or a leak detection and warning system.

Additional precautions must be taken when the tank is installed in unheated spaces to prevent the risk of freezing. All tanks are provided with an insulation jacket as standard. This can be easily removed via zipper if necessary to manoeuvre the vessel into location, however must be replaced before the cylinder is connected to any pipework.

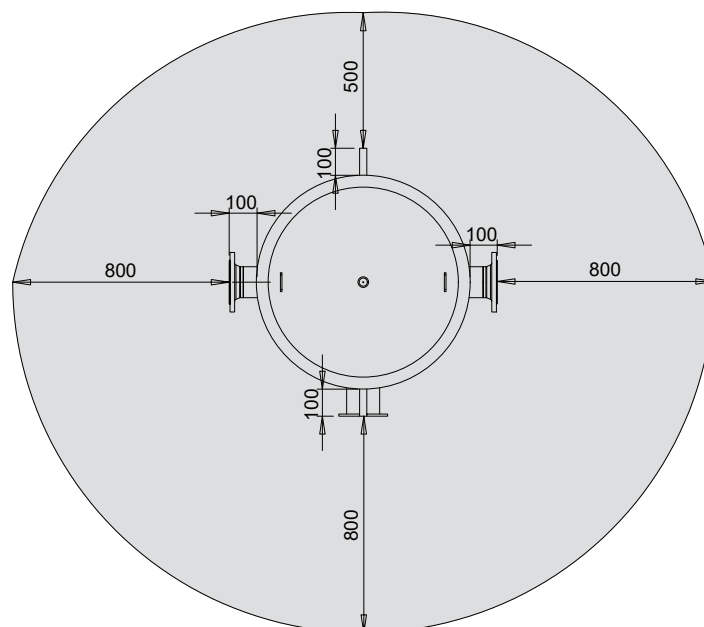


Figure 1: Recommended working clearances

# Installation Instructions

## 4. Primary Installation Procedure

Prior to the connection of primary pipework and ancillaries, the vessel should first be manoeuvred into its final position in accordance with the guidance on page 6 and the insulation jacket fitted.

Isolation valves should be fitted to the vessel (except on connections to the vent or any pressure relief valves) prior to installation of any pipework connections. Connections to the vessel should be made according to the locations and sizes denoted on pages 10-15. All pipework should be of an appropriate, non-corrosive material, and should be supported outside the vessel to prevent excessive load bearing upon the tank connection points. Pipework should be arranged to facilitate suitable access to system components. Any flanged connections to the vessel must be tightened in a diametrically opposed sequence to prevent uneven loads across the connection.

Vessels require a top-mounted automatic air vent designed to facilitate the release of air from sealed systems during filling and standard operation. A manual air vent should be installed in addition to this feature. Discharge pipework from pressure relief valves should follow the regulations defined on page 8.

Expansion vessels must be positioned on the return side of a system, and should be appropriately sized to accommodate approximately 10% of the total heating system volume. The Advenco Application Design department can provide a detailed expansion calculation upon request to verify the required size of expansion vessels, or for systems operating at specific pressures.

A drain should be installed on the lowest connection to the cylinder. The drain valve should be of suitable size to allow draining of the tank in a reasonable amount of time. It is recommended that a quarter-turn lever valve and plug or cap are used and that the valve size be one size smaller than the return feed connection size. A suitable drain or gulley should be provided to allow safe draining of the tank.

# Installation Instructions

## 5. Discharge Pipework

### Discharge from relief valves

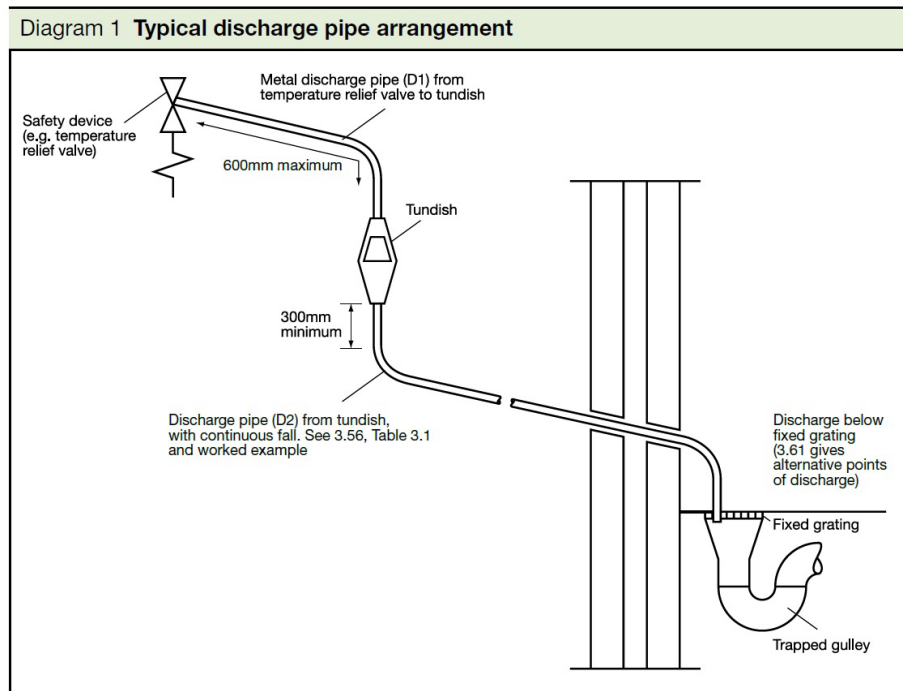


Figure 5: Discharge pipework diagram (as found in Building Regulations Part G)

Discharge pipework requirements for the UK are found in Building Regulations Part G. They are summarised here but it is recommended to read the regulations in full at <http://www.planningportal.gov.uk/buildingregulations/approveddocuments/partg/approved>

D1, the pipe from the relief valve to the air break, must have the same diameter as the valve, must be metal, and must be no longer than 600mm. An airbreak, such as a tundish or a funnel, must be installed at the end of D1.

D2, the pipe from the air break to termination, must be at least one size larger than D1, must have at least 300mm vertical drop before a bend, and must have a continuous fall. It should typically be metal, but PP is acceptable (note: PP is push-fit plastic. ABS and PVC solvent welded plastics are not suitable).

If D2 is longer than 9m total equivalent length (based on 1.4m per bend), then its diameter must be increased. Please refer to Building Regulation G3 at <http://www.planningportal.gov.uk/buildingregulations/>. If a number of D2 pipes are combined, the diameter of the common pipe should be one size larger than the biggest D2 pipe.

D2 should be terminated in one of the following ways:

- Into a soil stack, suitable for the temperature, with a mechanical seal, and with no sanitary appliances on it and a warning not to use the pipe for sanitary appliances.
- Into a trapped gulley with the pipe end below the grate but above the water seal.
- Terminating at low level to a suitable external ground level surface with a guard around the pipe end and that end within 100mm of the ground
- At high level into a suitable hopper or onto a roof that can withstand the temperature and does not have plastic guttering within 3m of the discharge and does not create a risk to people below.



# Installation Instructions

## 6. Water Quality

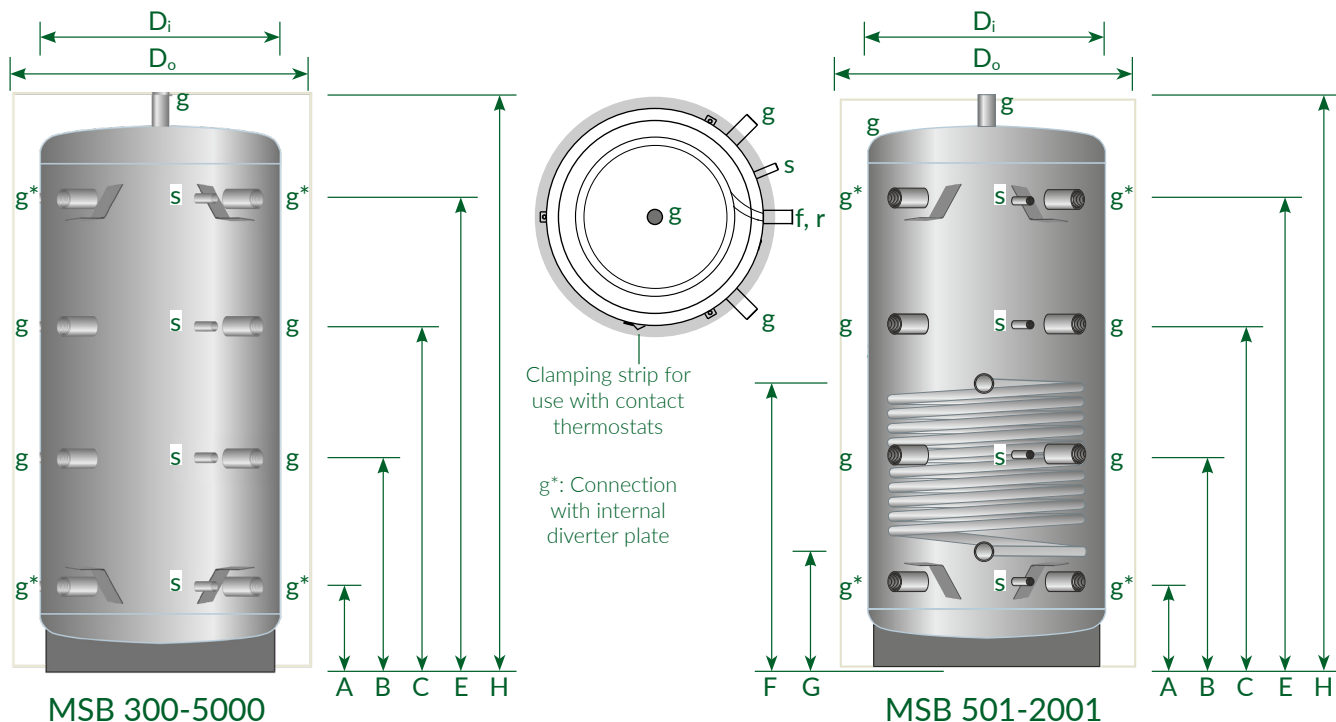
If the system includes a pressurisation unit, then a water meter is also required.

In order to prevent material corrosion within a central heating installation, the quality of input water must be taken into consideration. All filling water must meet the specifications outlined below. Water that does not meet these specifications should be sufficiently treated to the extent that it does. Failure to comply with water quality requirements may invalidate warranties on any or all components within the installation.

- The system should only be filled using potable or softened water. Groundwater and demineralised (demi- or distilled) water should not be used.
- For systems containing aluminium, the water pH level must be between 7.5 and 8.5. The ideal pH is 8.3.
- For mixed-metal systems not containing aluminium, the water pH level should be between 9.0 and 10.0. The ideal pH is 9.8.
- System water should have a maximum conductivity at 20°C of 2500 µS/cm.
- System water should have a maximum iron content of 0.2 ppm.
- In hard water areas, consideration should be given to filling the system with softened water to prevent scale build-up. Refer to the boiler manufacturer's literature for limits on hardness.
- There must be no capacity for oxygen diffusion into the system during operation.
- The system should be cleared of debris and dirt before use. This can be achieved by installation of a filter, or if this is not possible, by flushing with suitable water. No solid substances or residues should be present in the system water.
- Annual input of fresh water should not exceed 5% of the total system volume. This includes requirements of water input during maintenance, such as the recharging of expansion vessels.
- The addition of chemicals to the water should only be considered after reviewing the boiler manufacturer's literature.
- The addition of antifreeze and/or other additives necessitates the need for regular water quality checks, to meet the requirements imposed by the additive supplier(s). Advenco Ltd. recommends that records are kept of any additions to the system water and of water quality checks performed. Further advice on suggested corrosion inhibitors, anti-freeze or system cleaner additives is available by contacting the Advenco Technical Department.

# Technical Information

## 1. Specifications: MSB Range



Specifications: MSB	MSB 300-3	MSB 500-3	MSB 750-3	MSB 1000-3	MSB 1500-3	MSB 2000-3	MSB 3000-3	MSB 4000-3	MSB 5000-3
Storage volume (l)	310	475	740	940	1426	2122	2960	3820	5022
Max. working temperature (°C)	95	95	95	95	95	95	95	95	95
Max. working pressure (bar)	3	3	3	3	3	3	3	3	3
Insulation specification	100mm Polyester fibre, thermal conductivity $\lambda = 0.034\text{W/mK}$ , density = 25 kg/m <sup>3</sup>								
Standing losses (W) / (Energy Efficiency Class)	95 / (C)	109 / (C)	130 / (C)	141 / (C)	168 / (C)	192 / (C)	--	--	--
Dry mass (kg)	65	85	110	130	200	285	345	410	480

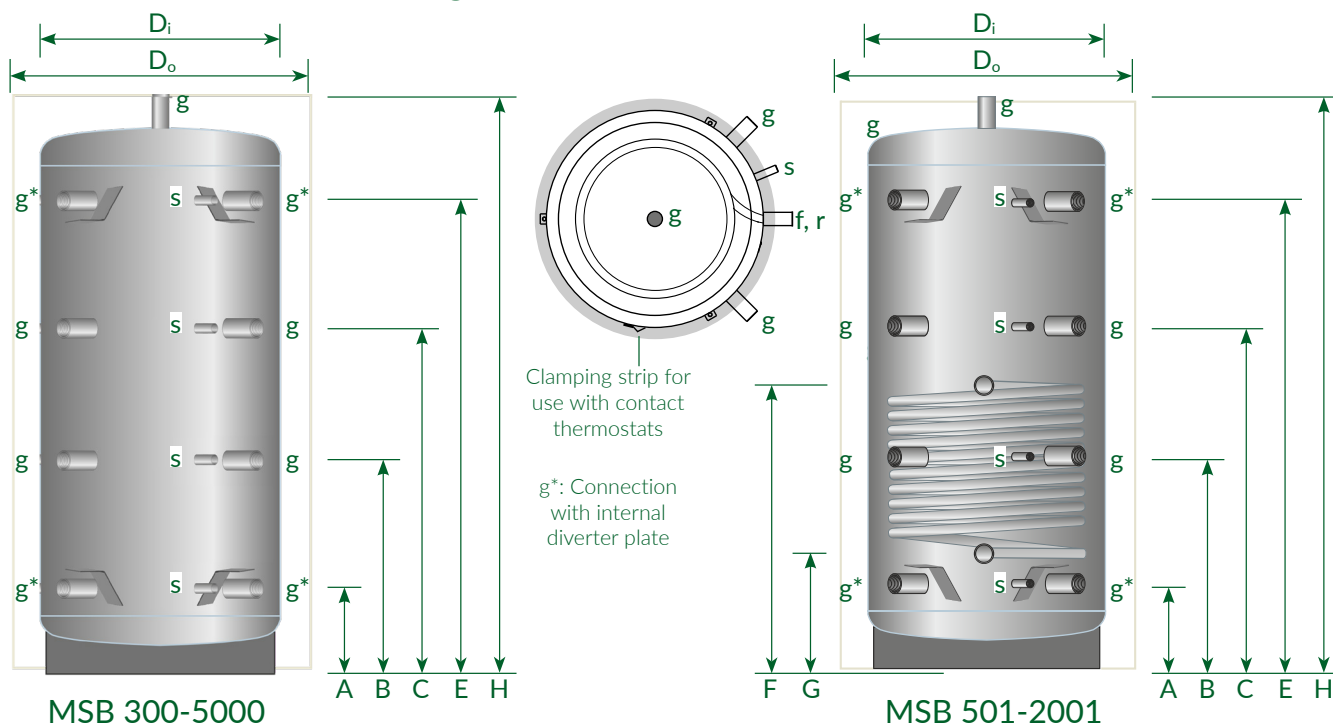
Specifications: MSB	MSB 501-3	MSB 751-3	MSB 1001-3	MSB 1501-3	MSB 2001-3
Storage volume (l)	475	740	940	1426	2122
Max. working temperature (°C)	95	95	95	95	95
Max. working pressure (bar)	3	3	3	3	3
Insulation specification	100mm Polyester fibre, thermal conductivity $\lambda = 0.034\text{W/mK}$ , density = 25 kg/m <sup>3</sup>				
Standing losses (W) / (Energy Efficiency Class)	109 / (C)	130 / (C)	141 / (C)	168 / (C)	192 / (C)
Dry mass (kg)	110	145	170	260	350

Specifications: MSB 6 bar pressure variant	MSB 300-6	MSB 500-6 501-6	MSB 750-6 751-6	MSB 1000-6 1001-6	MSB 1500-6 1501-6	MSB 2000-6 2001-6	MSB 3000-6	MSB 4000-6	MSB 5000-6
All other details as MSB above, except:									
Max. working pressure (bar)	6	6	6	6	6	6	6	6	6

Test pressures equal to 1.5 times rated working pressure.

# Technical Information

## 2. Dimensions: MSB Range



Connections:		MSB 300-3/6	MSB 500-3/6	MSB 750-3/6	MSB 1000-3/6	MSB 1500-3/6	MSB 2000-3/6	MSB 3000-3/6	MSB 4000-3/6	MSB 5000-3/6
Port	Purpose									
g (x9)	Connections	1.5"	1.5"	1.5"	1.5"	1.5"	1.5"	2.0"	2.0"	2.5"
s (x4)	Sensor connections	½"	½"	½"	½"	½"	½"	½"	½"	½"

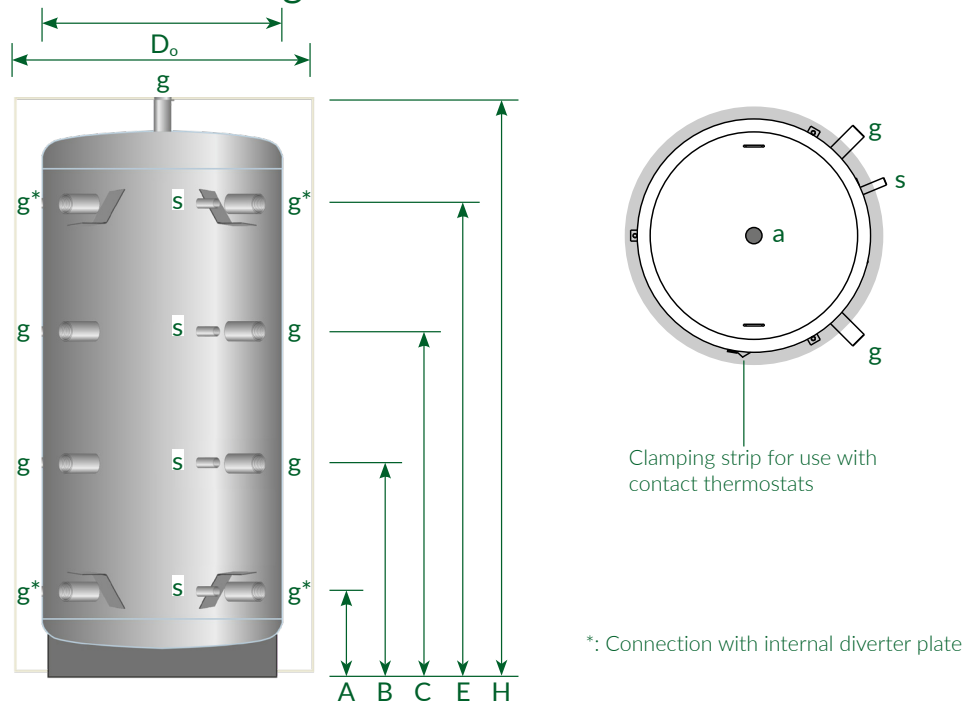
Connections:		MSB 501-3/6	MSB 751-3/6	MSB 1001-3/6	MSB 1501-3/6	MSB 2001-3/6
Port	Purpose					
g (x9)	Connections	1.5"	1.5"	1.5"	1.5"	1.5"
f, r	Coil connections	1¼"	1¼"	1¼"	1¼"	1¼"
s (x4)	Sensor connections	½"	½"	½"	½"	½"

Dimensions:		MSB 300-3/6	MSB 500-3/6 501-3/6	MSB 750-3/6 751-3/6	MSB 1000-3/6 1001-3/6	MSB 1500-3/6 1501-3/6	MSB 2000-3/6 2001-3/6	MSB 3000-3/6	MSB 4000-3/6	MSB 5000-3/6
H	Total height	1805	1602	1687	2093	2050	2140	2660	2765	2815
$D_o$	Diameter with insulation	700	850	990	990	1200	1400	1450	1600	1800
$D_i$	Diameter without insulation	500	650	790	790	1000	1200	1250	1400	1600
A	Connections	200	230	320	320	320	365	380	445	475
B	Connections	670	610	670	800	785	830	1010	1075	1090
C	Connections	1114	994	1014	1290	1255	1300	1635	1690	1705
E	Connections	1584	1374	1364	1770	1720	1765	2265	2320	2320
F	Coil inlet connection	--	680	920	1020	1120	1165	--	--	--
G	Coil outlet connection	--	280	370	370	420	465	--	--	--

Connection sizes given in inches. Dimensions given in millimetres.

# Technical Information

## 1. Specifications: CWT Range

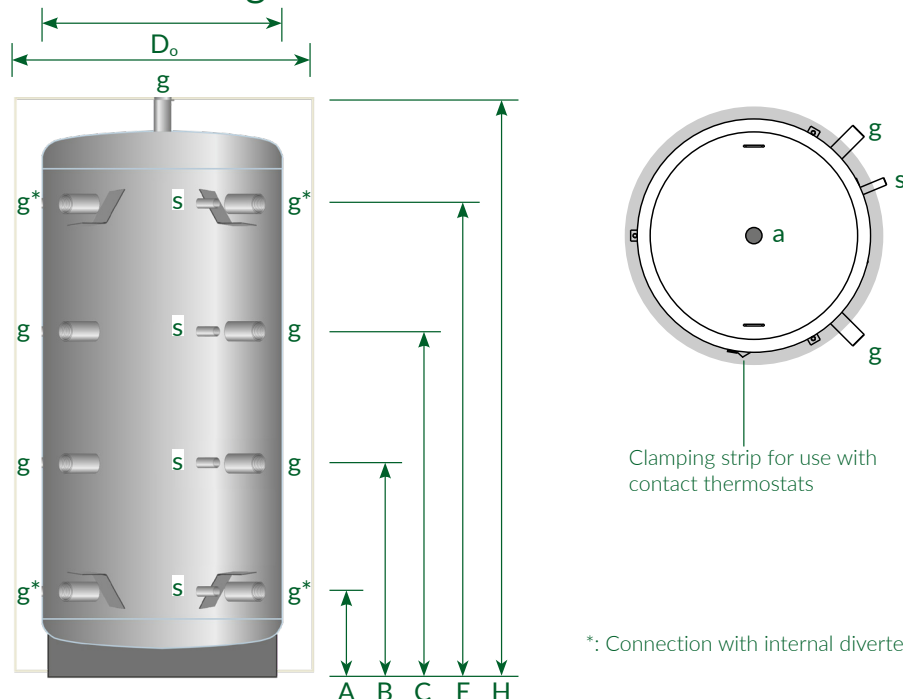


Specifications: CWT	CWT 300-3	CWT 500-3	CWT 750-3	CWT 1000-3	CWT 1500-3	CWT 2000-3	CWT 3000-3	CWT 4000-3	CWT 5000-3
Storage volume (l)	310	475	740	940	1426	2122	2960	3820	5022
Min. working temperature (°C)	-10	-10	-10	-10	-10	-10	-10	-10	-10
Max. working temperature (°C)	95	95	95	95	95	95	95	95	95
Max. working pressure (bar)	3	3	3	3	3	3	3	3	3
Insulation specification	25mm Closed-cell elastomeric foam, $\lambda \leq 0.036\text{W/mK}$ , vapour resistance $\mu \geq 7000$								
Dry mass (kg)	66	85	112	164	204	265	345	410	480

Test pressures equal to 1.5 times rated working pressure.

# Technical Information

## 2. Dimensions: CWT Range



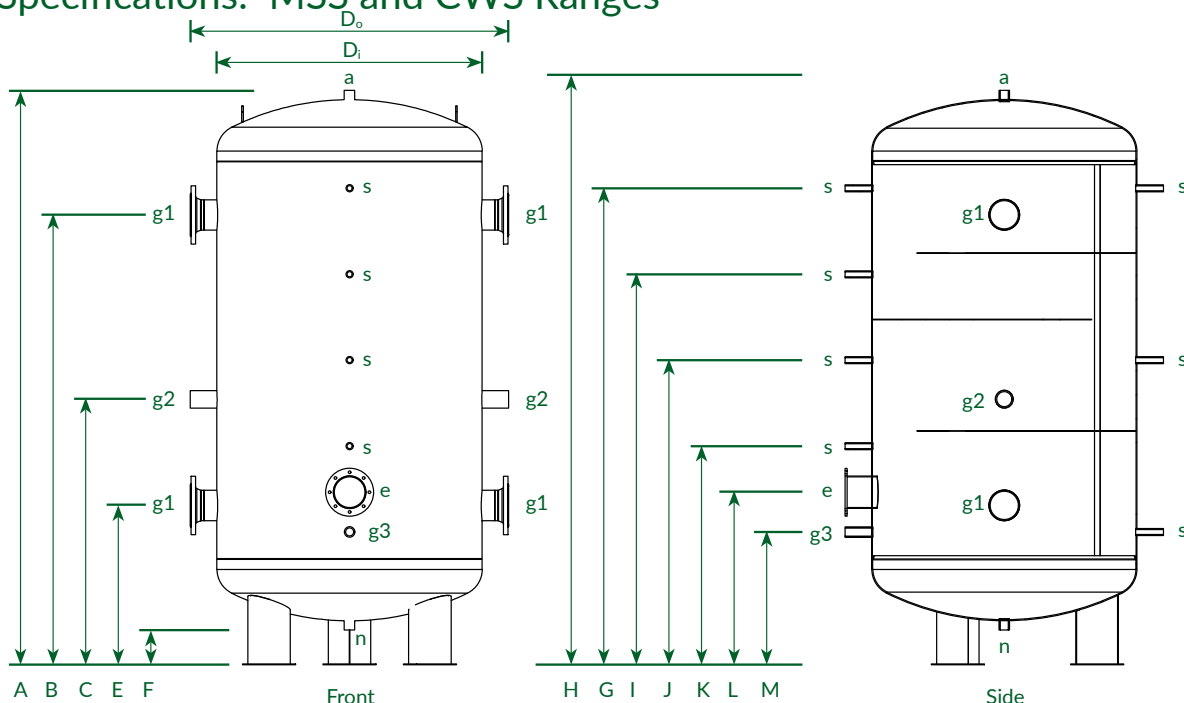
Connections:		CWT 300-3	CWT 500-3	CWT 750-3	CWT 1000-3	CWT 1500-3	CWT 2000-3	CWT 3000-3	CWT 4000-3	CWT 5000-3
Port	Purpose									
g (x9)	Connections	1.5"	1.5"	1.5"	1.5"	1.5"	1.5"	2.0"	2.0"	2.5"
s (x4)	Sensor connections	½"	½"	½"	½"	½"	½"	½"	½"	½"

Dimensions:		CWT 300-3	CWT 500-3	CWT 750-3	CWT 1000-3	CWT 1500-3	CWT 2000-3	CWT 3000-3	CWT 4000-3	CWT 5000-3
H	Total height	1805	1600	1690	2100	2050	2140	2660	2765	2815
$D_o$	Diameter with insulation	550	700	840	840	1050	1250	1300	1450	1650
$D_i$	Diameter without insulation	500	650	790	790	1000	1200	1250	1400	1600
A	Connections	200	230	320	320	320	365	380	445	475
B	Connections	670	610	670	800	785	830	1010	1075	1090
C	Connections	1115	995	1015	1290	1255	1300	1635	1690	1705
E	Connections	1585	1375	1365	1770	1720	1765	2265	2320	2320

Connection sizes given in inches. Dimensions given in millimetres.

# Technical Information

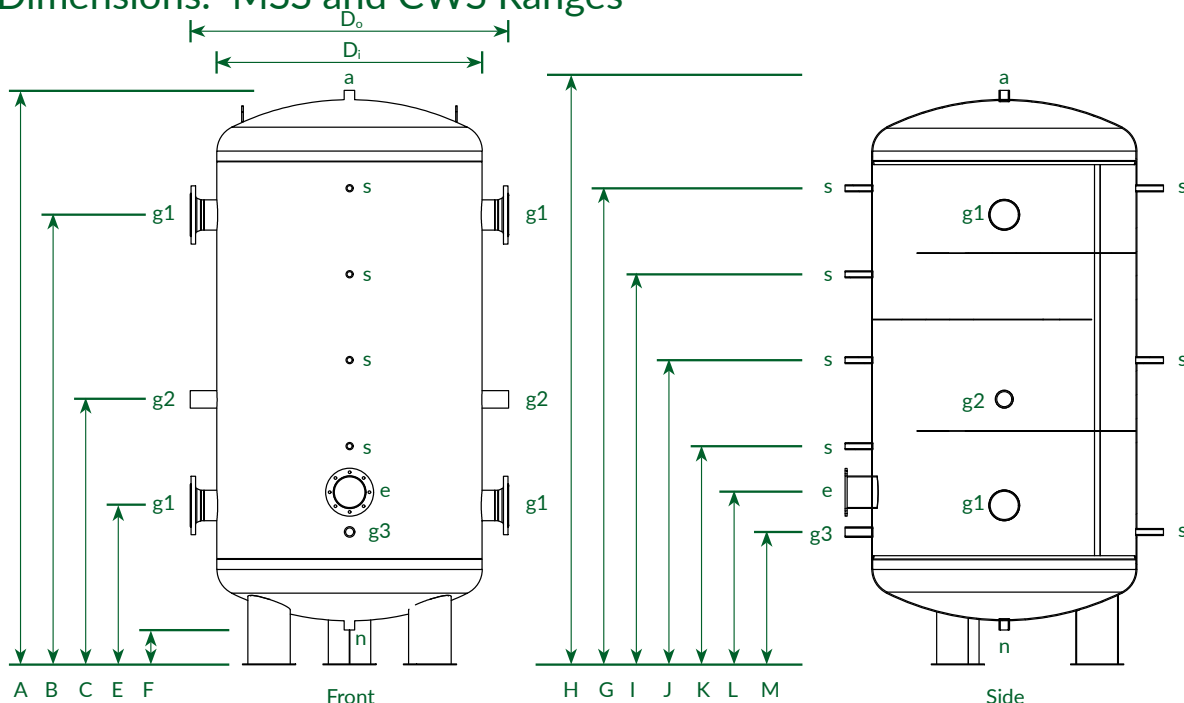
## 3. Specifications: MSS and CWS Ranges



Specifications: MSS	MSS 300-6	MSS 500-6	MSS 800-6	MSS 1000-6	MSS 1500-6	MSS 2000-6	MSS 2500-6	MSS 3000-6	MSS 4000-6	MSS 5000-6
Storage volume (l)	300	500	800	1000	1500	2000	2500	3000	4000	5000
Max. working temperature (°C)	95	95	95	95	95	95	95	95	95	95
Max. working pressure (bar)	6	6	6	6	6	6	6	6	6	6
Insulation specification	100mm Polyester fibre, thermal conductivity $\lambda = 0.034\text{W/mK}$ , density = 25 kg/m <sup>3</sup>									
Standing losses (W) / (Energy Efficiency Class)	95 / (C)	109 / (C)	130 / (C)	141 / (C)	168 / (C)	192 / (C)	203 / (C)	--	--	--
Dry mass (uninsulated) (kg)	85	112	142	192	245	351	475	543	800	--
Specifications: CWS	CWS 300-6	CWS 500-6	CWS 800-6	CWS 1000-6	CWS 1500-6	CWS 2000-6	CWS 2500-6	CWS 3000-6	CWS 4000-6	CWS 5000-6
Storage volume (l)	300	500	800	1000	1500	2000	2500	3000	4000	5000
Min. working temperature (°C)	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10
Max. working temperature (°C)	95	95	95	95	95	95	95	95	95	95
Max. working pressure (bar)	6	6	6	6	6	6	6	6	6	6
Insulation specification	25mm Closed-cell elastomeric foam, $\lambda \leq 0.036\text{W/mK}$ , vapour resistance $\mu \geq 7000$ plus 75mm Polyester fibre, thermal conductivity $\lambda = 0.034\text{W/mK}$ , density = 25 kg/m <sup>3</sup>									
Dry mass (uninsulated) (kg)	85	112	142	192	245	351	475	543	800	--
Specifications: 10 bar high pressure variant	MSS/CWS 300-10	MSS/CWS 500-10	MSS/CWS 800-10	MSS/CWS 1000-10	MSS/CWS 1500-10	MSS/CWS 2000-10	MSS/CWS 2500-10	MSS/CWS 3000-10	MSS/CWS 4000-10	MSS/CWS 5000-10
All other details as above, except:										
Max. working pressure (bar)	10	10	10	10	10	10	10	10	10	10
Test pressures equal to 1.5 times rated working pressure.										

# Technical Information

## 4. Dimensions: MSS and CWS Ranges



Connections:		MSS/CWS 300-6	MSS/CWS 500-6	MSS/CWS 800-6	MSS/CWS 1000-6	MSS/CWS 1500-6	MSS/CWS 2000-6	MSS/CWS 2500-6	MSS/CWS 3000-6	MSS/CWS 4000-6	MSS/CWS 5000-6
Port	Purpose										
g1(x4)	Connections	2"	2½"	2½"	DN100 PN16	DN100 PN16	DN125 PN16	DN125 PN16	DN125 PN16	DN150 PN16	DN150 PN16
g2(x2)	Add'l connections	1½"	1½"	1½"	2"	2"	2"	2"	2"	2"	2"
g3	Add'l connection	1"	1"	1"	1"	1"	1"	1"	1"	1"	1"
e	Inspection flange	DN180 PN16	DN180 PN16	DN180 PN16	DN180 PN16	DN180 PN16	DN180 PN16	DN180 PN16	DN180 PN16	DN180 PN16	DN180 PN16
s (x7)	Sensor connections	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"
a	Air vent connection	1"	1"	1"	1"	1"	2"	2"	2"	2"	2"
n	Drain connection	1"	1"	1"	1"	1"	2"	2"	2"	2"	2"
Dimensions:		MSS/CWS 300	MSS/CWS 500	MSS/CWS 800	MSS/CWS 1000	MSS/CWS 1500	MSS/CWS 2000	MSS/CWS 2500	MSS/CWS 3000	MSS/CWS 4000	MSS/CWS 5000
H	Height with insulation	1987	1779	1848	2260	2230	2114	2175	2010	2065	2265
A	Height without insulation	1927	1714	1793	2195	2165	2049	2110	1958	2000	2200
D <sub>o</sub>	Diameter with insulation	700	850	990	990	1200	1450	1600	1800	2100	2100
D <sub>i</sub>	Diameter without insulation	500	650	790	790	1000	1250	1400	1600	1900	1900
B	Upper flanges	1620	1395	1425	1780	1695	1510	1650	1391		
C	Mid-level connections	1025	895	925	930	1000	920	1085	1041		
E	Lower flanges	420	445	475	530	600	670	550	691		
F	Drain connection	112	127	108	115	131	131	105	125		
G	Upper sensor	1687	1495	1525	1870	1795	1640	1685	1441		
I	Upper middle sensor	1327	1208	1238	1510	1471	1365	1415	1241		
J	Middle sensor	967	920	950	1150	1148	1090	1145	1041		
K	Lower middle sensor	607	633	663	790	824	815	875	841		
L	Inspection flange	475	485	515	590	650	670	650	766		
M	Lower sensor	320	345	375	430	500	540	500	641		

Connection sizes given in inches. Dimensions given in millimetres. 15

# Maintenance Operations

While full maintenance and cleaning of vessels should only be carried out by a qualified operative, there is regular system maintenance that must be carried out more frequently and can be done by the building controller's nominated person.

The more involved maintenance regime of a tank will vary from site to site depending on water conditions and use. Maintenance must take place at least yearly, but more frequent visits may be required depending on the condition of the unit after one year. The maintenance of a tank involves checking the system and cleaning the tank.

## Checks to carry out:

Any thermostats present are functional and properly calibrated.

All relief valves operate and discharge correctly.

The heating system expansion vessel pressure is equal to the heating system pressure (checked when there is no pressure on the water side of the diaphragm). Recharge as appropriate.

All valves have free travel.

The system has no leaks. Particular attention should be paid to tank connections and air relief valves.

The heating system is correctly dosed with inhibitors.

## Cleaning:

All filters should be cleaned.

## Drainage Procedure:

Turn off all heat sources connected to the vessel.

Turn off any system pumps and isolate all connections to and from the vessel.

Ensure that the vessel drain connection is connected to, or positioned over, a drain or gully. Open the drain valve connection to release the pressure within the vessel.

Open a safety valve or remove automatic air vent connection to allow air into the unit and prevent negative pressure build-up during drainage.

Allow the vessel to fully drain via the drain valve connection.

It may also be required to drain any coils within the vessel. This should be done using a drain point located on the connecting pipework.





# Spares and Ancillaries Information

## Ancillaries

Item Description	Product Code
Buffer Installation Kit	1.0": MB0017
Includes AAV and valves for buffer vessel on primary side; valves and flow measurement device for pump commissioning; 2x T&P gauges for building flow and return.	1.5": MB0018
	2.0": MB0019

## Spares

Item Description	Product Code
Thermostats:	
0-70°C Pocket mounted control thermostat supplied with 0.5" long and short pocket	E0008
0-95°C Capillary type control thermostat. Does not include pocket or mounting clip	E0008/0-95C
0-120°C Pocket mounted control thermostat with adjustable hysteresis, supplied with 0.5" pocket	E0081
95°C Pocket mounted overheat thermostat supplied with 0.5" long and short pocket	E0009
95°C Capillary type overheat thermostat. Does not include pocket or mounting clip	E0011
Pocket mounted combined control and overheat thermostat, supplied with 0.5" double pocket	E0010
Sensor Pockets:	
0.5" Single chrome plated pocket 185mm	E0009.2
0.5" Double stainless pocket 110mm	0070912001
0.5" Triple stainless pocket 185mm (to hold a maximum of 2 capillary type sensors)	E0009.5
Sensor pocket mounting clip to secure probe wires to 0.5" pockets	810171
Temperature & Pressure Gauges:	
0-6 bar, 0-120°C combined gauge, 80 mm dial. Self-sealing 0.5" wet pocket	M0011
0-10 bar pressure gauge, 63mm dial, 1/4" rear connection	M0179
0-120°C temperature gauge, 80mm dial, 100mm probe length, 1/4" rear connection	M0180
Automatic Air Vent 0.5"	P0022
180mm EPDM inspection flange gasket	E0042.1

Further valves and spares available from Advenco upon request

## Contact Details and Warranty Information

The Adveco MSB, MSS, CWT, and CWS ranges, this manual, and all information contained within, are supplied by Adveco Ltd.

Adveco Ltd.  
Unit 7&8 Armstrong Mall,  
Southwood Business Park,  
Farnborough,  
Hampshire,  
GU14 0NR

T: 01252 551 540  
enquiries@adveco.co  
www.adveco.co

The Adveco MSB, MSS, CWT, and CWS ranges are provided with a 5 year vessel warranty reliant upon the following conditions:

- The vessel is correctly and safely stored, installed, and used as instructed by this manual.
- The vessel is used exclusively with water that satisfies the quality conditions as described on page 9 of this manual, or an approved glycol solution.
- The heating system is kept in a good condition and is suitably maintained, inclusive of maintenance of the vessel as directed on page 16 of this manual.
- The vessel has not been altered, tampered with, and has not been subjected to damage from frost, vacuum, or external influence.

Exclusions to warranty conditions:

- Consequential damage arising from malfunction, failure, or leaks associated with the vessel.
- Failure or damage of the vessel or heating system arising from the build up of excessive scale.
- Any parts and labour charges associated with maintenance, repair, or replacement of the vessel.

For further information and warranty claims, please contact Adveco Ltd. through the details listed on this page.

Adveco Sales Department  
T: 01252 551 540 Option 1  
E: Sales@adveco.co

Adveco Spares Department  
T: 01252 551 540 Option 3  
E: Spares@adveco.co

Adveco Technical Support Department  
T: 01252 551 540 Option 4  
E: Technical@adveco.co

Adveco Design Department  
T: 01252 551 540 Option 5  
E: Technical@adveco.co

Adveco Service & Commissioning Department  
T: 01252 551 540 Option 6  
E: Service@adveco.co



## Notes

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Adveco also offer the following products and services:

- Indirect and direct hot water systems
  - Electric hot water systems
  - Air Source Heat Pumps
  - Solar thermal systems
  - Hybrid hot water systems
  - Gas fired heating systems
  - Bespoke system design
  - Buffer tanks
  - Controls Systems
  - Off-site manufacturing of skids and plant rooms
  - Maintenance and service packages
- 



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**HOT WATER SPECIALISTS**