

LST Direct Storage Vessel

Installation, Commissioning,
User & Maintenance Instructions

Models:

LST 66 G E

LST 100 G E

LST 110 G E

LST 130 G E

LST 165 G E

LST 220 G E

LV312748 | March 2025





IMPORTANT INFORMATION

These instructions must be read and understood before installing, commissioning, operating or maintaining the equipment.

**Read this manual
carefully**

Warning

Read this manual carefully before starting with the installation of the storage vessel. Failure to read the manual and to follow the printed instructions may lead to personal injury and damage to the storage vessel.

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Although considerable care has been taken to ensure a correct and suitably comprehensive description of all relevant components, the manual may nonetheless contain errors and inaccuracies. Should you detect any errors or inaccuracies in the manual, we would be grateful if you would inform us. This helps us to further improve our documentation.

More information

If you have any comments or queries concerning specific aspects related to the storage vessel, then please do not hesitate to contact the supplier.

In the event of problems with your water supply connections, please contact the supplier and/or installation engineer of your installation.

Regulations

If the Lochinvar LST is to be used in an unvented system installation, the system should follow the guidance given in BS6700, BS8558 and must comply with the Building Regulations 1992: Part G3, in England and Wales, P5 in Northern Ireland and P3 in Scotland and the Water Supply (Water Fittings) Regulations 1999, The Water Supply (Water Quality) Regulations (Northern Ireland) 2017 and the Public Water Supplies (Scotland) Amendment Regulations 2017.

A kit of parts is available from Lochinvar.

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1 Technical specifications

1.1 Floor load

Allow for the storage vessels weight and the maximum floor load; refer to the table (1.5 "General specifications").

1.2 Working clearance

For access to the storage vessel it is recommended that the following clearances are observed:

- around the anode connection: 100 cm.
- around the vessel: 50 cm.
- top of the vessel: 50 cm

Note

When installing the storage vessel, be aware that any leakage from the tank and/or connections can cause damage to the immediate environment or floors below the level of the boiler room. If this is the case, the storage vessel should be installed above a waste water drain or in a suitable metal leak tray.

The leak tray must have an appropriate waste water drain and must be at least 5 cm deep with a length and width at least 5 cm greater than the diameter of the storage vessel.

1.3 Packaging

The packaging prevents damage to the appliance during transport. The packaging material chosen is environmentally friendly, recyclable and relatively easy to dispose of in an environmentally aware way.



1.4 Disposal

Old end-of-life appliances contain materials that need to be recycled. When disposing of old devices that have reached the end of their service life, you should take account of local legislation relating to waste disposal.



You must therefore never dispose of your old appliance together with regular waste, but should and it into a municipal waste collection depot for electrical and electronic equipment. Ask your dealer/installation engineer for advice if necessary. The old appliance must be stored out of reach of children.



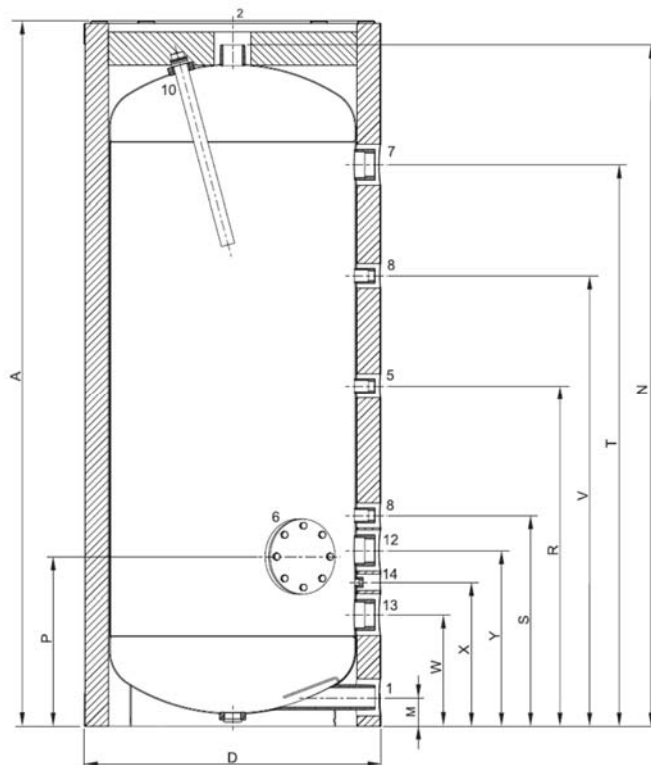
1.5 General specifications

Description	Unit	LST 66	LST 100	LST 110	LST 130	LST 165	LST 220
Storage Capacity	liters	312	405	499	678	763	1055
Empty Weight	kg	81	99	131	179	201	262
Max. Floor Load	kg	393	504	630	857	964	1317
Energy Efficiency Class (Energy Label)	-	C	C	C	-	-	-
Heat Loss	W	100	100	104	126	126	146
Max. Working Pressure Tank	kPa (bar)	1000 (10)	1000 (10)	1000 (10)	1000 (10)	1000 (10)	1000 (10)
Max. Water Temperature	°C	95	95	95	95	95	95
Anodes	-	1	1	1	1	1	1

1.6 Dimensions

		Unit	LST 66	LST 100	LST 110	LST 130	LST 165	LST 220
A	Total height	mm	1375	1710	2045	1840	2035	2005
D	Diameter (without insulation)	mm	600	600	600	750	750	900
	Diameter (with insulation)	mm	740	740	760	910	930	1100
M	Height cold water inlet	mm	75	70	70	85	85	95
N	Height warm water outlet	mm	1320	1655	1995	1805	2000	1965
P	Height inspection opening	mm	410	410	410	500	500	535
R	Height circulation	mm	660	825	995	1045	1085	1105
S	Height immersion well/temp. sensor	mm	510	510	510	655	655	705
T	Height T&P	mm	1030	1365	1700	1475	1670	1595
V	Height connection	mm	845	1095	1350	1260	1380	1355
W	Height connection	mm	270	270	270	320	320	365
X	Height connection	mm	350	350	350	405	405	450
Y	Height connection	mm	425	425	425	490	490	535
1	Connection cold water inlet	-	R 1½"	R 1½"	R 1½"	R 1½"	R 1½"	R 1½"
2	Connection warm water outlet	-	R 1½"	R 1½"	R 1½"	R 1½"	R 1½"	R 1½"
5	Connection circulation		Rp ¾"	Rp ¾"	Rp ¾"	Rp ¾"	Rp ¾"	Rp ¾"
6	Diameter inspection opening	mm	115	115	115	180	180	180
7	Connection T&P	-	Rp 1½"	Rp 1½"	Rp 1½"	Rp 1½"	Rp 1½"	Rp 1½"
8	Connection		Rp ¾"	Rp ¾"	Rp ¾"	Rp ¾"	Rp ¾"	Rp ¾"
10	Connection anode	-	Rp 1¼"	Rp 1¼"	Rp 1¼"	Rp 1¼"	Rp 1¼"	Rp 1¼"
12	Connection	-	Rp 1½"	Rp 1½"	Rp 1½"	Rp 1½"	Rp 1½"	Rp 1½"
13	Connection	-	Rp 1½"	Rp 1½"	Rp 1½"	Rp 1½"	Rp 1½"	Rp 1½"
14	Connection	-	Rp ¼"	Rp ¼"	Rp ¼"	Rp ¼"	Rp ¼"	Rp ¼"

Dimensioned Sketch



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2 Installation

Note

These products can be installed as vented and unvented. This manual only discusses unvented installations. For information about vented installations please contact your supplier.

2.1 Installation diagram

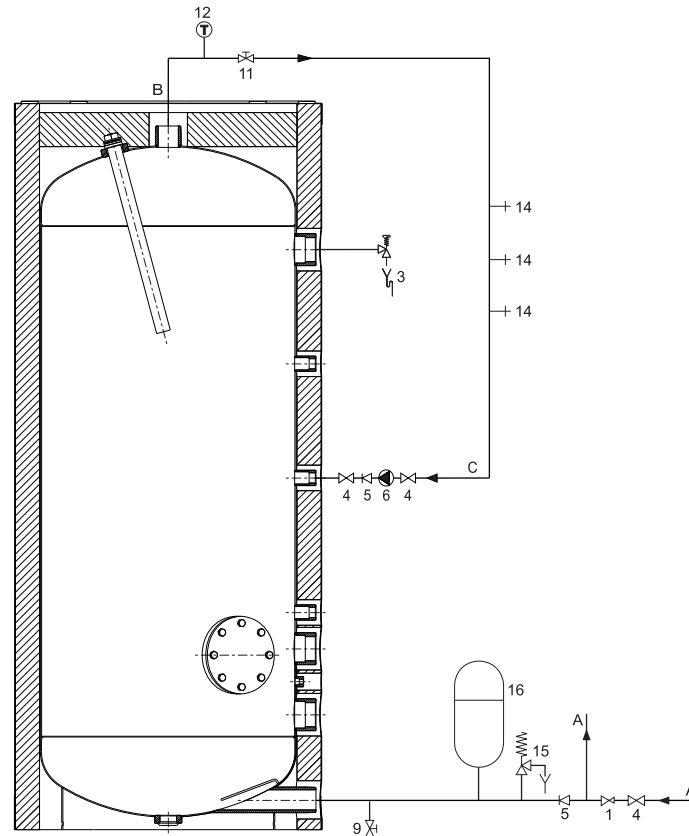
The figures below show the installation diagrams. These diagrams are referred to in the sections describing the actual connection procedure.

Installation Diagrams

Legend

1. pressure relief valve (mandatory)
3. T&P-valve (mandatory)
4. stop valve (recommended)
5. non-return valve (mandatory)
6. circulation pump (optional)
9. drain valve
11. service stop valve
12. temperature gauge (optional)
14. draw-off points
15. expansion valve (mandatory)
16. expansion vessel (mandatory)

- A. cold water supply
B. hot water supply
C. circulation pipe



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2.2 Water connections

Warning

The installation should be carried out by a competent person, in compliance with general and locally applicable regulations.

2.2.1 Cold water side

See (A) in the installation diagram (2.1 "Installation diagram").

1. Fit an approved stop valve (4) on the water supply side as required by the applicable regulations.
2. The maximum working pressure of the storage vessel is 10 bar. Because the pressure in the water pipe at times can exceed 10 bar, you must fit an approved pressure-reducing valve (1).

3. Fit a non-return valve (5) and an expansion vessel (16).
4. Fit an expansion valve (15) and connect the overflow side to an open waste water pipe.

2.2.2 Hot Water side

See (B) in the installation diagram ([2.1 "Installation diagram"](#)).

Note

Insulating long hot water pipes prevents unnecessary energy loss.

1. Optional: fit a temperature gauge (12) so you can check the temperature of the tap water.
2. Fit the T&P valve (3).
3. Fit a stop valve (11) in the hot water outlet pipe for servicing.

2.2.3 Circulation pipe

See (C) in the installation diagram ([2.1 "Installation diagram"](#)).

If an immediate flow of hot water is required at draw-off points, a circulation pump can be installed. This improves comfort, and reduces water wastage.

1. Fit a circulation pump (6) of the correct capacity for the length and resistance of the circulation system.
2. Fit a non-return valve (5) after the circulation pump to guarantee the direction of circulation.
3. Fit two stop valves for servicing (4).
4. Connect the circulation pipe according to the installation diagram ([2.1 "Installation diagram"](#)).

3 Filling and draining

Note

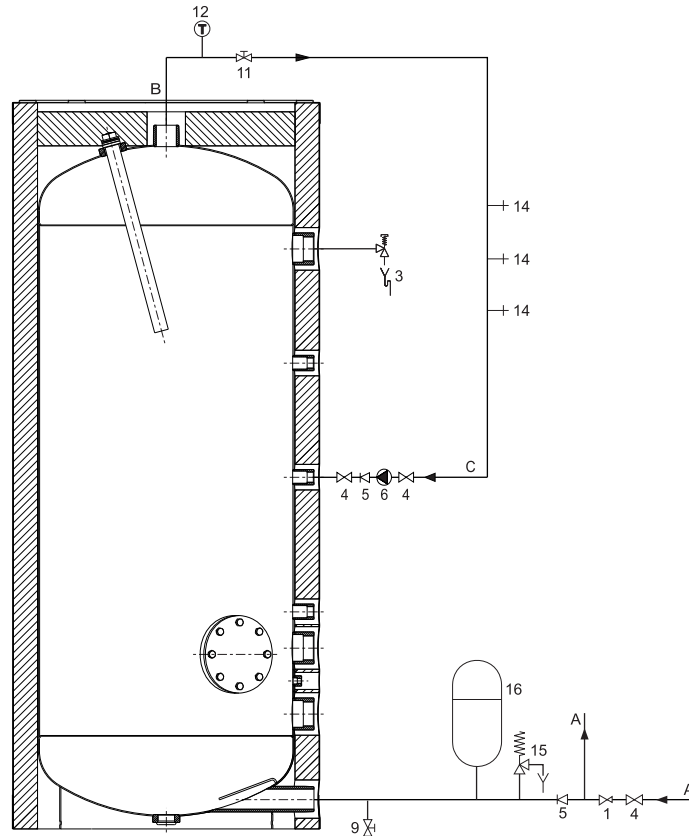
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Installation Diagram

Legend

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5. non-return valve (mandatory)
6. circulation pump (optional)
9. drain valve
11. service stop valve
12. temperature gauge (optional)
14. draw-off points
15. expansion valve (mandatory)
16. expansion vessel (mandatory)

- A. cold water supply
B. hot water supply
C. circulation pipe



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3.1 Filling

To fill the water heater, proceed as follows:

1. Open the stop valve (11) in the hot water pipe and, if present, the stop valves (4) for the circulation pump (6).
2. Close the drain valve (9).
3. Open the nearest hot water draw-off point (14).
4. Open the stop valve (4) on the cold water side (A) so that cold water flows into the water heater.
5. Completely fill the water heater. When a full water jet flows from the nearest draw-off point, the water heater is full.
6. Bleed the entire installation of air, for example by opening all draw-off points.
7. The water heater is now under water supply pressure. There should now be no water coming out of the inlet combination expansion valve or (if used) out of the T&P valve (3). If there is, the cause might be:
 - The water supply pressure is greater than the specified value (1.6 "General specifications"). Rectify this by fitting a pressure reducing valve (1).
 - The expansion valve in the protected cold supply set-up is defective or incorrectly fitted.

3.2 Draining

1. Close the stop valve (4) between the cold water head tank and the cold water inlet (A).
2. Open the drain valve (9).
3. Bleed the water heater (or installation) so that it drains completely.

4 Maintenance

Warning

Maintenance may only be carried out by a competent person.

At each service, the storage vessel undergoes maintenance on water side. The maintenance must be carried out in the following order.

1. Preparation for maintenance
2. Water-side maintenance
3. Finalising maintenance

Note

Before ordering spare parts, it is important to write down the installation type, storage vessel model and the full serial number of the storage vessel. These details can be found on the rating plate. Only by ordering with this information can you be sure receiving the correct spare parts.

4.1 Preparation for maintenance

The preparation for maintenance consists out of testing and checking if all components are still working properly by completing the following steps:

1. Test the operation of the overflow valve of the protected cold supply setup. The water should put out.
2. Check the drainage pipes from the discharge points of all valves and remove any scale deposits that may be present.
3. Drain the storage vessel.

4.2 Water-side maintenance

Water-side maintenance consists of descaling and cleaning the tank and checking the anode.

4.2.1 Descaling and cleaning the tank

Scale and lime build-up prevent effective conduction of the heat to the water. Periodic cleaning and descaling prevents build-up of these deposits. This increases the service life of the storage vessel, and also improves the heating process.

Take the rate of scale formation into account when deciding on the service interval. Scale formation depends on the local water composition, the water consumption and the water temperature setting. A water temperature setting of maximum 60°C is recommended for the prevention of excessive scale build-up.

To guarantee a good, watertight seal around the cleaning opening, replace the gasket, washers, bolts and, if necessary, the lid with new parts before reassembly. Spare parts are obtainable from the supplier/manufacturer.

To simplify descaling and cleaning of the tank, the storage vessel is equipped with a cleaning opening.

Work order:

1. Undo bolts from the cover.
2. Remove cover and the gasket.
3. Inspect the tank and remove the loose scale deposits and contamination.
4. If the scale cannot be removed by hand, descale the storage vessel with a descaling agent. Contact the supplier/manufacturer for advice on what descaling agent to use.
5. Close the cleaning opening. To avoid damage to the tank, tighten the bolts, that fasten the lid, with a torque no greater than 50 Nm. Use suitable tools for this.

4.2.2 Checking anode

Anode ensure the protection of the tank by sacrificing themselves. Insufficient anode material may lead to poor protection and, hence, leakage of the tank.

1. Loosen the anodes one by one.
2. Check the diameter of each anode in different places. The diameter must be at least 60% of the original diameter.
3. If the diameter is less than the minimum, the anode must be replaced. Please contact the supplier/manufacturer to order new anodes.
4. Mount the (new) anode.

5 Warranty

Contact Lochinvar Ltd. or got to www.lochinvar.ltd.uk for the current warranty terms and conditions.



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