

Squire stainless Water heaters

Installation, commissioning, and maintenance instructions



Models:
SSCF130-305
STCF130-305
SIVS-HP150-500



Warning:

Read and fully understand this manual before attempting to install this Water heater. It can cause personal injury and damage to the Water heater when you do not read the manual and/or do not obey the instructions.



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1.0 INTRODUCTION

Lochinvar Squire stainless steel vessels are designed to be used as an indirect vessel in conjunction with a solar thermal system or with a circulating condensing Boiler.



Only models SIVS-HP are suitable for direct connection to an air source heat pump

There are three versions of the storage vessels.

The SSCF range are stainless steel vessels suitable for systems with a maximum working pressure of up to 6 bar featuring a single indirect coil and two 3kW immersion heaters.

The STCF range of stainless steel vessels are suitable for systems with a maximum working pressure of up to 6 bar featuring two coils. The lower coil is suitable for a Solar Thermal System or other LZC technology, to be used in conjunction with a boiler.

1.1 GENERAL DESCRIPTION OF SAFETY SYMBOLS USED



BANNED

A black symbol inside a red circle with a red diagonal indicates an action that should not be performed



WARNING

A black symbol added to a yellow triangle with black edges indicates danger



ACTION REQUIRED

A white symbol inserted in a blue circle indicates an action that must be taken to avoid risk

Lochinvar Squire stainless steel vessels are fitted with sensor pockets for monitoring the temperature via the solar control and/or BMS. Each vessel is also equipped with a twin thermostat (2 on STCF models) and a suitably sized unvented kit can.

- All installations must conform to the relevant Building Regulations. Health & Safety requirements must also be considered when installing any equipment. Failure to comply with the above may lead to prosecution.
- If the equipment is to be connected to an unvented (pressurised) system, care must be taken to ensure all extra safety requirements are satisfied should a high or low-pressure condition occur in the system.

2.0 SAFETY GUIDELINES

Carefully read all the instructions before commencing installation.

Keep these instructions near the water heater for quick reference.

This equipment must be installed by a competent person. All installations must conform to the relevant Building Regulations. Health & Safety requirements must also be considered when installing any equipment. Failure to comply with the above may lead to prosecution.

Commissioning, maintenance, and repair must be done by a skilled installer/engineer, according to all applicable standards and regulations.



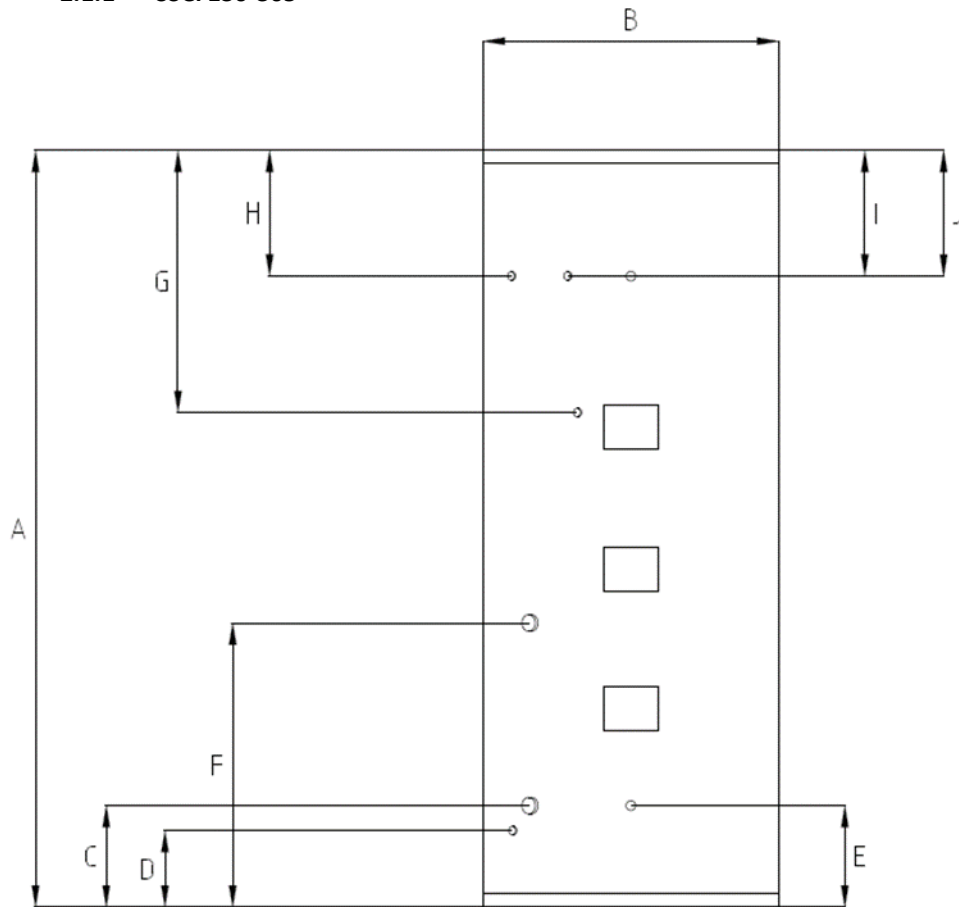
Lochinvar Limited is not liable for any damage caused by inaccurately following these mounting instructions. Only original parts may be used when carrying out any repair or service work.



This appliance is not intended for use by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

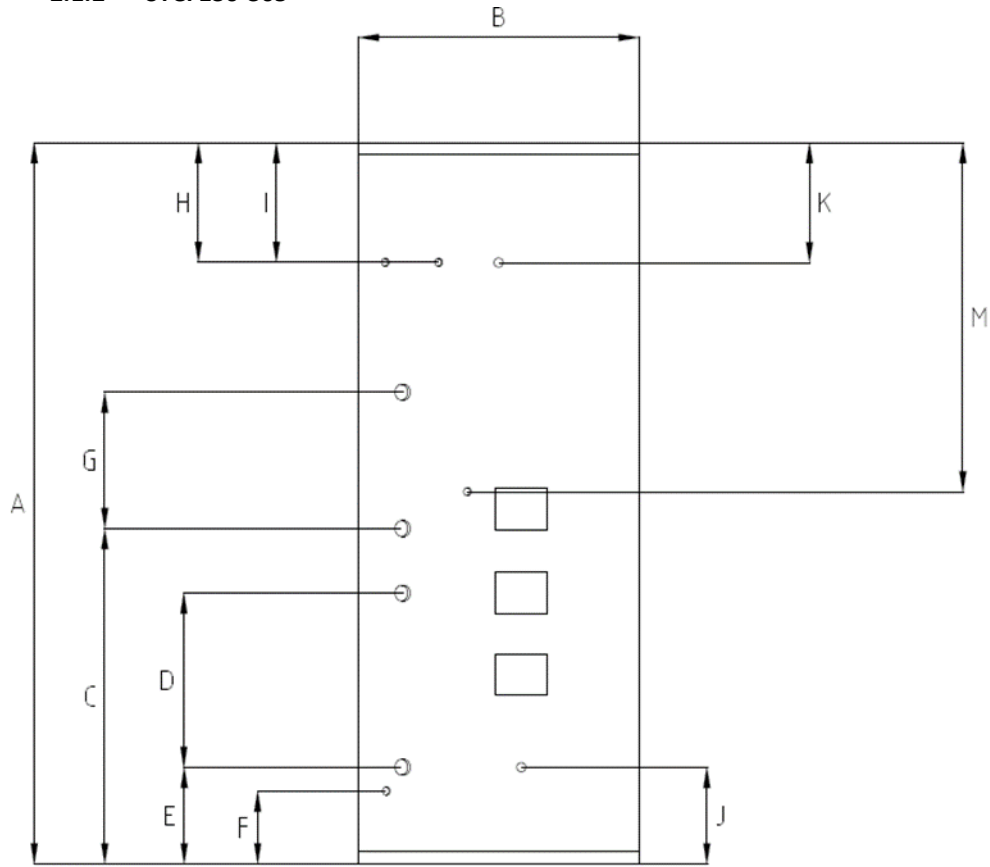
2.1 DIMENSIONAL DRAWINGS

2.1.1 SSCF130-305



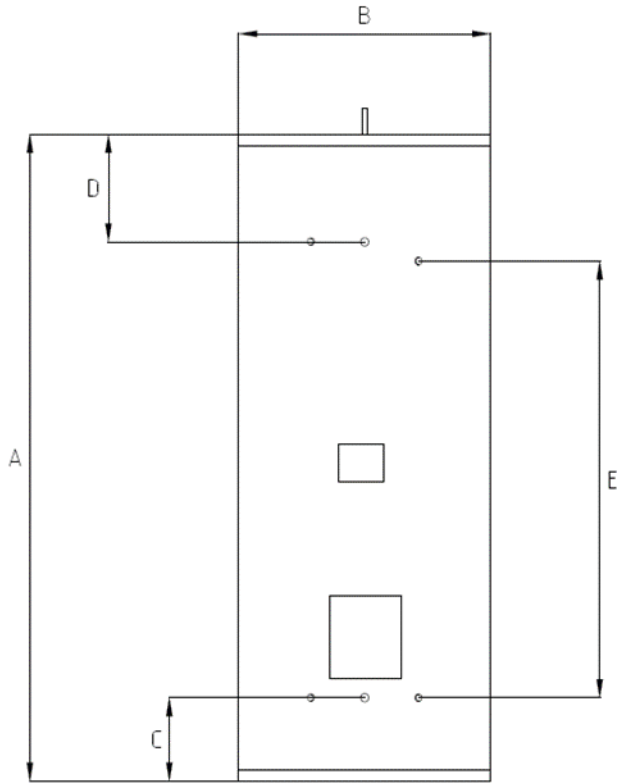
Model	A	B	C	D	E	F	G	H	I	J
SSCF130	957	576	215	185	185	407.5	322	222	222	222
SSCF150	1085	576	215	185	185	407.5	337	222	222	222
SSCF175	1242	576	215	185	185	482.5	470	222	222	222
SSCF215	1484	576	215	185	185	482.5	665	222	222	222
SSCF255	1752	576	215	185	185	482.5	665	222	222	222
SSCF305	2028	576	215	185	185	482.5	665	222	222	222

2.1.2 STCF130-305



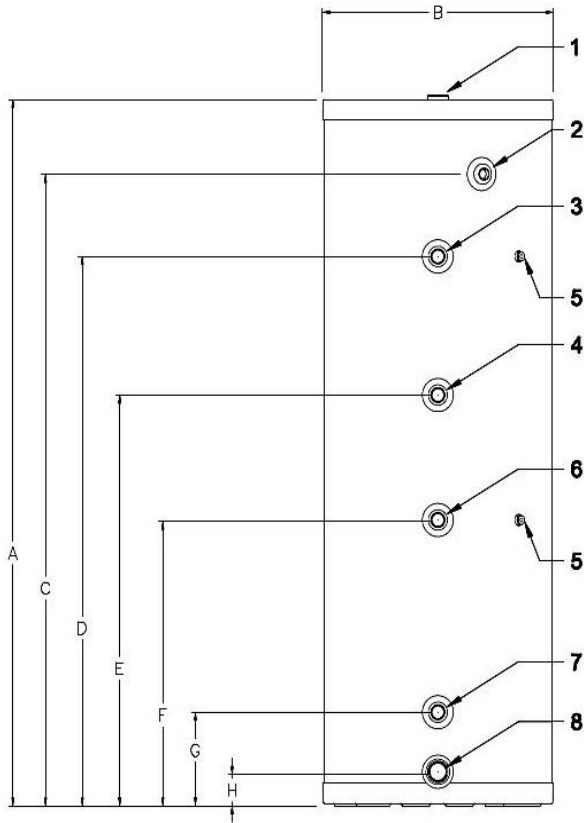
Model	A	B	C	D	E	F	G	H	I	J	K
STCF130	957	576	505	192.5	215	185	192.5	222	222	185	222
STCF150	1085	576	505	192.5	215	185	192.5	222	222	185	222
STCF175	1242	576	580	267.5	215	185	262.5	222	222	185	222
STCF215	1484	576	580	267.5	215	185	262.5	222	222	185	222
STCF255	1752	576	580	267.5	215	185	262.5	222	222	185	222
STCF305	2028	576	580	267.5	215	185	262.5	222	222	185	222

2.1.3 SIVS-HP150-500

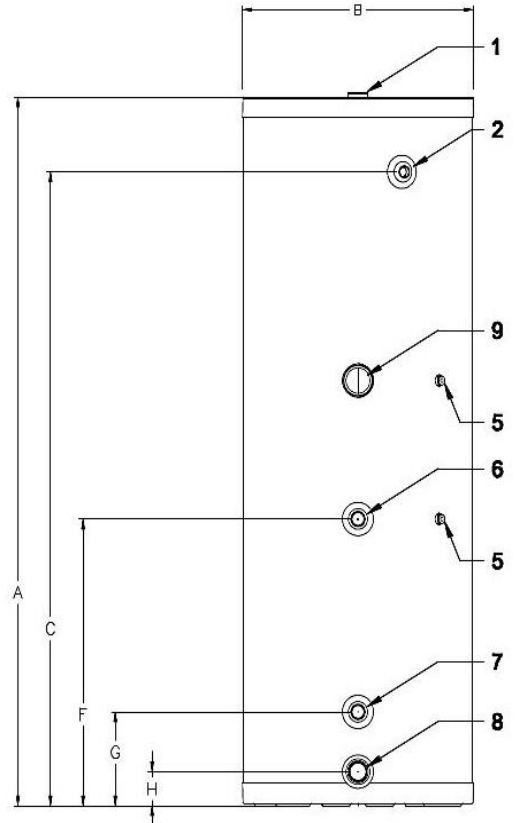


Model	A	B	C	D	E
SIVSHP-150	1085	575	182	225	182
SIVSHP-175	1242	575	182	225	182
SIVSHP-215	1485	575	182	225	182
SIVSHP-250	1752	575	182	225	182
SIVSHP-305	2028	575	182	225	182
SIVSHP-400	1405	750	228	262	228
SIVSHP-500	1690	750	228	262	228

2.1.4 SIT-SDT300-450



SDT Twin coil models



SIT Single coil models

Model No.	Storage Capacity Litres	Hot Outlet mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm
SIT300	310	1765	1765	609	1568	-	-	711	235	83
SIT450	427	1734	1734	711	1530	-	-	806	235	83
SDT300	299	1765	1765	609	1568	1365	1022	711	235	83
SDT450	416	1734	1734	711	1530	1384	952	806	235	83

3.0 GENERAL REQUIREMENTS

The Lochinvar Squire stainless steel vessel has been designed to operate trouble free for many years. These instructions should be followed closely to obtain the maximum usage and efficiency of the equipment. **PLEASE** read the instructions fully before installing or using the appliance.

3.1 RELATED DOCUMENTS

The installation should follow the relevant guidance offered in the following documents. It is not practical to list all relevant information but emphasis is placed on the following documents, as failure to comply with the guidance given will almost certainly result in an unsatisfactory installation:

BS 6700: 1997	Design, installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages
BS 7074: 1989 1 and 2	Application, selection and installation of expansion vessels and ancillary equipment for Parts sealed systems
BS 7671: 2008	Requirements for electrical installations, I.E.E. wiring regulations seventeenth edition
CP 342: Part 2 1974	Code of practice for centralised hot water supply-buildings other than dwellings

4.0 WATER QUALITY

Water supply quality may adversely affect the efficiency performance and longevity of Water Heaters and Hot Water systems. Hard water may cause the formation of limescale which will reduce operating efficiency and may cause early product failure. Please note the following: -

- Water Hardness – should not exceed 205ppm CaCO₃ and Total Dissolved Solids (TDS) of should not exceed 350ppm.
If these values are exceeded a water treatment specialist should be consulted. Water Softeners and Water Conditioners may be considered, but whichever method is selected, it should be suitable for installation with Squire stainless indirect Water Heaters. A maintenance regime will also be required for such systems.
- High hot water temperature and high demand for hot water is likely to cause quicker limescale formation.



The formation of limescale or other solids can cause a blockage within the heat exchanger, which in turn may cause premature failure. Such instances are not regarded as defects in manufacture and will not be covered under the product warranty

5.0 WATER CONNECTIONS

5.1 GENERAL

1. Circulating pipe work should be insulated; cisterns, expansion vessels and pipe work situated in areas exposed to freezing conditions should also be insulated.
2. Drain valves must be located in accessible positions that will permit draining of the entire system.
3. Ideally, individual valves should be fitted to each unit to enable isolation from the system.

5.2 UN-VENTED SYSTEM



It is the law that unvented hot water systems be installed by an approved installer.

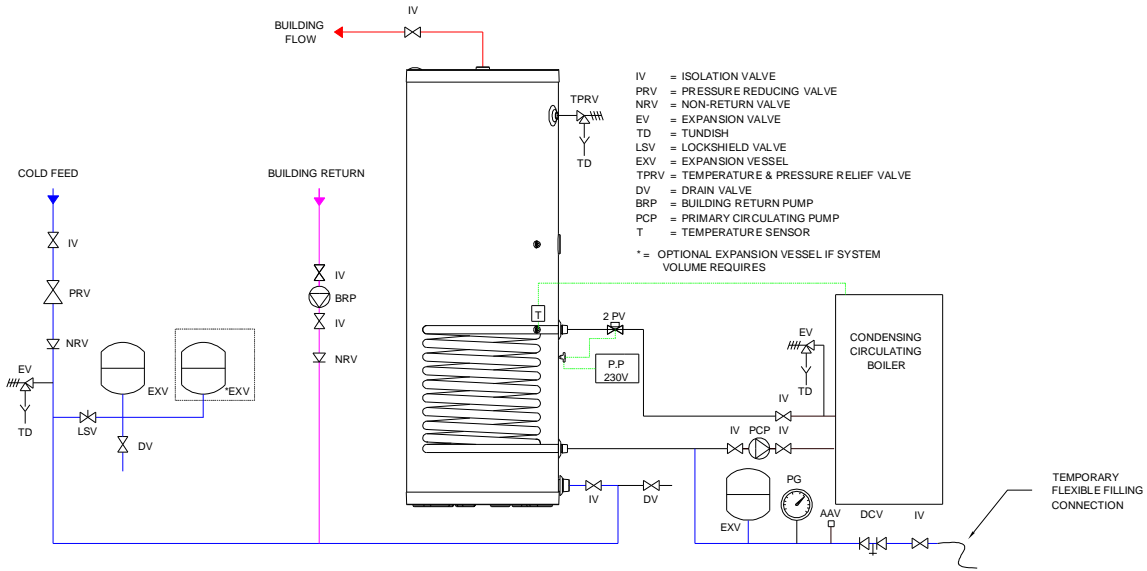
If the Lochinvar Squire stainless steel vessel is to be used in an unvented arrangement the system should follow the guidance given in **BS6700** and must comply with **The Building Regulations: Part G3 in England and Wales, P5 in Northern Ireland and P3 in Scotland**. A kit of components that have been suitably sized for the unvented or boosted operation of the appliance is available from Lochinvar Limited.

If you require a pipe work schematic for multiple appliance/storage vessel combinations, please contact Lochinvar Limited.

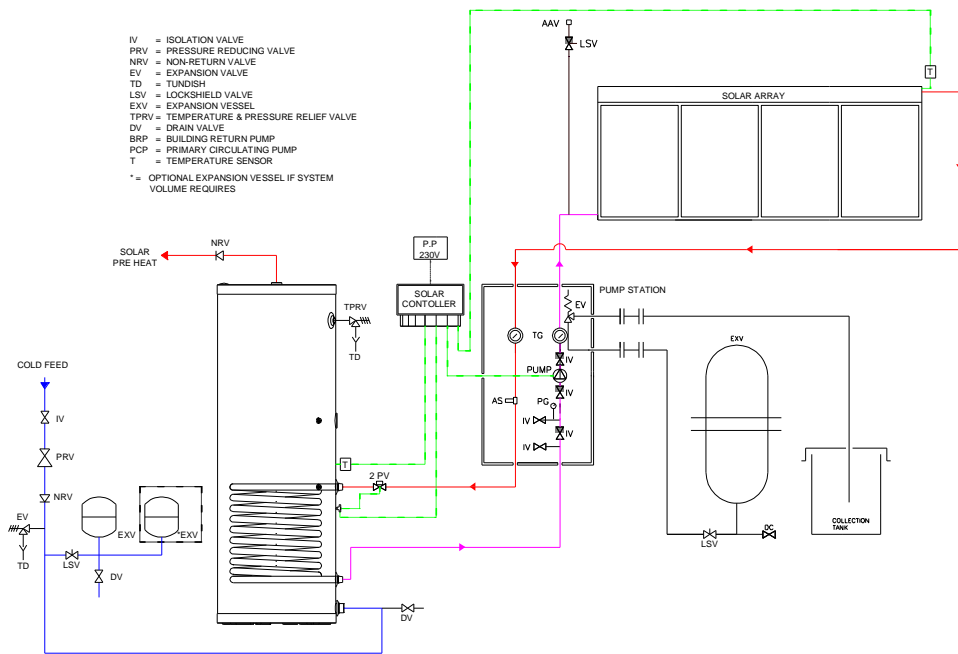
Safety must be provided on indirectly heater systems were the energy input must be restricted by control and/or other means. On unvented hot water systems were the heat source is from the primary circuit of a boiler, a two port motorised valve and high limit stat must be fitted which causes the valve to close to cut off the energy source.



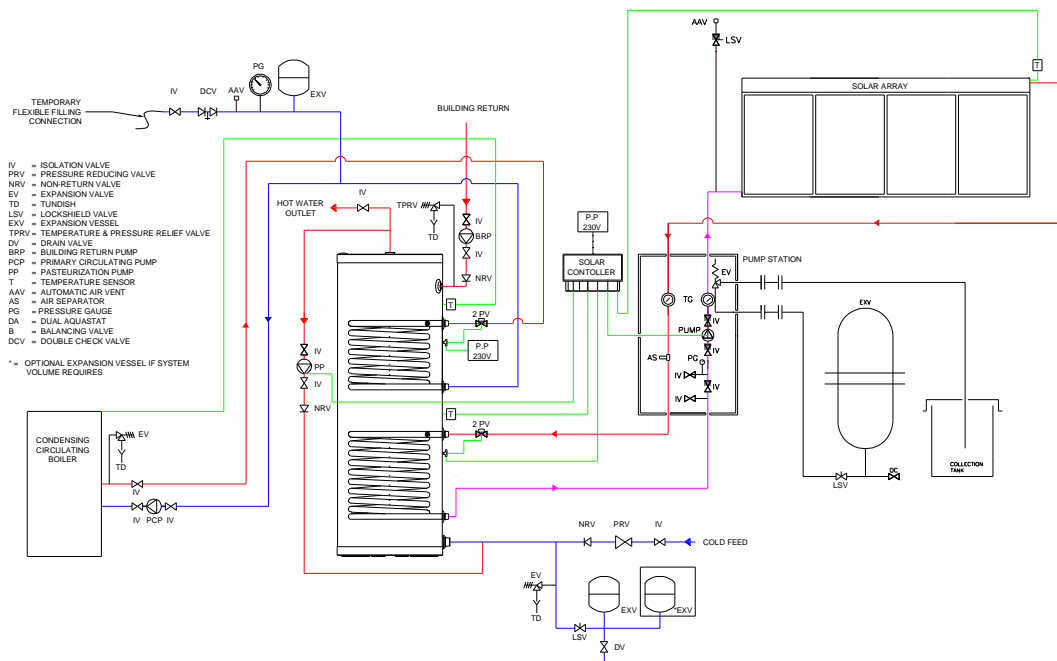
Lochinvar Ltd reserves the right to change specifications without prior notice. All necessary additional valves and fittings to be determined by those other than Lochinvar Ltd. Lochinvar Ltd may provide technical advice and guidance to assist with best practice, optimisation and installation of Lochinvar products; however, we will not be liable for any duties as Designers under Construction (Design and Management Regulations 2015). In all cases where information is provided, the customer must assess and manage risks associated with the technical information and advice provided.



5.2.1 TYPICAL SCHEMATIC SSCF INDIRECT WATER HEATER WITH BOILER



5.2.2 TYPICAL SCHEMATIC SSCF INDIRECT WATER HEATER USED AS A SOLAR PRE-HEAT



5.2.1 TYPICAL SCHEMATIC STCF INDIRECT WATER HEATER USED AS A SOLAR PRE-HEAT WITH BOILER

5.2.2 WHEN INSTALLING THE SIVS-HP PLEASE CONTACT LOCHINVAR TECHNICAL SUPPORT AS EACH PROJECT WILL REQUIRE INDIVIDUAL CONSIDERATION

5.2.3 TEMPERATURE AND PRESSURE RELIEF VALVE

A temperature and pressure relief valve is factory fitted.



The storage vessel relief valve connection should not be used for any other purpose.

5.2.4 RELIEF VALVE DISCHARGE PIPEWORK

It is important that any discharge water does not collect in the discharge pipework and can run freely to the tundish. The tundish should be mounted in a vertical and visible position located in the same space as the unvented hot water storage system and be fitted as close as possible and within 600mm of the safety device e.g. the temperature relief valve.

The discharge pipe from the tundish should terminate in a safe place where there is no risk to persons in the vicinity of the discharge, be of metal or other material that has been demonstrated to be capable of safely withstanding temperatures of the water discharged and is clearly and permanently marked to identify the product and performance standard, and:

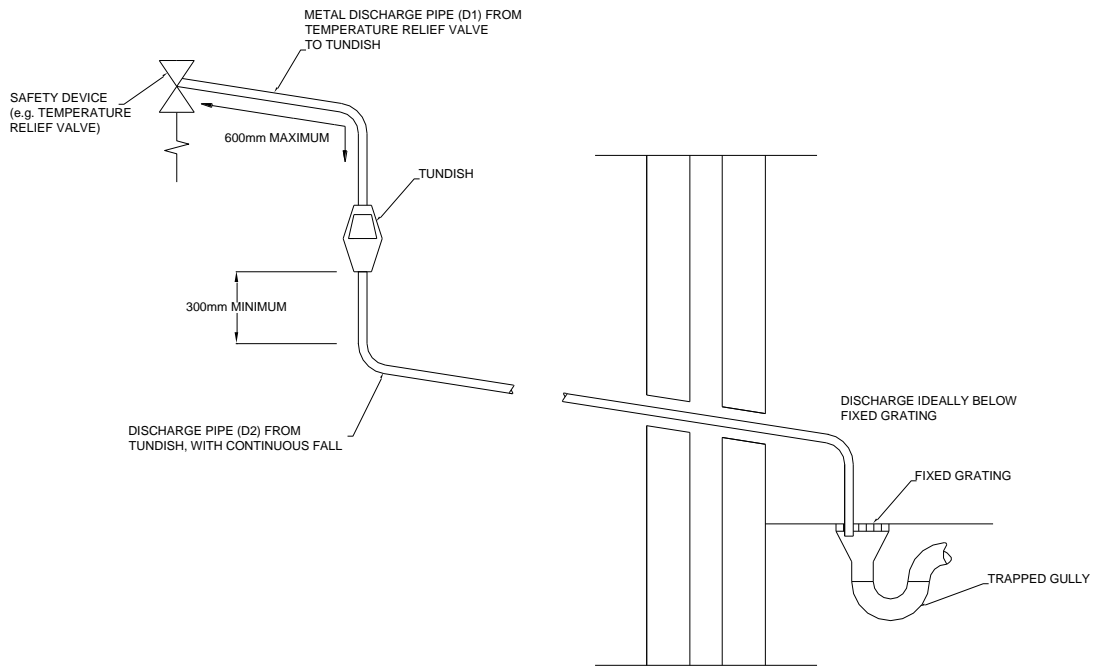
- a) Be at least one pipe size larger than the nominal outlet size of the safety device unless its total equivalent hydraulic resistance exceeds that of a straight pipe 9m long i.e. discharge pipes between 9m and 18m equivalent resistance length should be at least two sizes larger than the nominal outlet size of the safety device, between 18 and 27m at least 3 sizes larger, and so on. Bends must be taken into account in calculating the flow resistance.

An alternative approach for sizing discharge pipes would be to follow BS6700 Specification for design installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages.

- b) Have a vertical section of pipe at least 300mm long, below the tundish before any elbows or bends in the pipe work.
- c) Be installed with a continuous fall of at least 1 in 200.
- d) Have discharges visible at both the tundish and the final point of discharge but where this is not possible or is practically difficult there should be clear visibility at one or other of these locations.

Examples of acceptable discharge arrangements are:

- I. Ideally below the fixed grating and above the water seal in a trapped gully.
- II. Downward discharges at a low level; i.e. up to 100mm above external surfaces such as car parks, hard standings, grassed areas etc. are acceptable providing that where children play or otherwise come into contact with discharges, a wire cage or similar guard is positioned to prevent contact whilst maintaining visibility.
- III. Discharges at a high level; e.g. into a metal hopper and metal down pipe with the end of the discharge pipe clearly visible (tundish visible or not) or onto a roof capable of withstanding high temperature discharges of water and 3m from any plastic guttering systems that would collect such discharges (tundish visible).
- IV. Where a single pipe serves a number of discharges, such as in blocks of flats, the number served should be limited to not more than 6 systems so that any installation can be traced reasonably easily. The single common discharge pipe should be at least one pipe size larger than the largest individual discharge pipe to be connected. If unvented hot water storage systems are installed where discharges from safety devices may not be apparent i.e. in dwellings occupied by blind, infirm or disabled people, consideration should be given to the installation of an electronically operated device to warn when discharge takes place.



5.2.5 RELIEF VALVE DISCHARGE PIPEWORK

5.2.6 EXPANSION VESSEL SIZING

The following information is based on an inlet pressure of 3.5 bar. If a different inlet pressure is to be used, please consult **BS6700**.

$$V V = \frac{S V * e}{0.45}$$

Where:

- V V = Vessel Volume
- S V = System Volume
- e = Coefficient of Expansion (See Table Below)

Stored Temp.	°C	30	35	40	45	50	55	60
e		0.005	0.006	0.008	0.01	0.012	0.015	0.017
Stored Temp.	°C	65	70	75	80	82	85	90
e		0.02	0.023	0.026	0.03	0.031	0.033	0.037

5.2.7 COEFFICIENT OF EXPANSION OF WATER AT 3.5 BAR INLET PRESSURE

5.2.8 SOLAR EXPANSION VESSEL SIZING

Any solar expansion vessels should be sized, installed, and commissioned as per solar instructions.

5.3 DE-STRATIFICATION

5.3.1 GENERAL

The De-stratification Pump Kit works by using a pump to circulate water from the top of the vessel to the bottom of the vessel. This action ensures that the water held in the unit is maintained at a consistent temperature throughout. By achieving a uniformed stored water temperature of at least 60°C, the risk of any bacterial contamination is virtually eliminated.

Systems that have a building loop incorporated onto the vessel may not require a de-stratification kit, provided the circulation around the building from the top of the vessel returns to the bottom. This should provide sufficient mixing.

5.3.2 SOLAR THERMAL REQUIREMENTS

Lochinvar has developed this kit to meet the stringent recommendations of both the HSE Approved Code of Practice L8 and Department of Health Memorandum HTM 04-01 relating to the control of legionella within solar thermal installations.

6.0 COMMISSIONING AND TESTING

6.1 ELECTRICAL INSTALLATION

Any ancillary item that requires an electrical supply should be installed and commissioned as per instructions.

6.2 WATER CONNECTION

For design see **Section 5: Water connections.**



The system should be thoroughly flushed out with cold water without any circulating pumps in position. Ensure all the valves are open.

If a building return pump is to be fitted, it should be fitted before the system is filled and air locks cleared. Check the system for leaks and repair as necessary. If the system is configured in an unvented arrangement, check the expansion vessel cushion pressure.

6.3 PRIMARY HEAT SOURCE

The primary heat source operating in conjunction with the indirect water heater should be installed and commissioned in accordance with the relevant ICM Instructions provided.

7.0 MAINTENANCE

7.1 GENERAL

Regular servicing is recommended, preferably by a Lochinvar appointed person, to ensure trouble free operation. Even if a maintenance schedule is determined to be less than annually, it is important that all controls and safety features are checked for correct operation on an annual basis.

7.2 DRAINING THE WATER SYSTEM

Maintenance and service procedures for the Squire may require draining the water heater. The water heater must also be drained if it is to be shut down and exposed to freezing temperatures.

1. Turn off the water heater if applicable.
2. Connect a hose to the system drain valve.
3. Locate hose's discharge in an area where hot water will not cause any damage or injury.
4. Close the cold-water inlet valve to water heater system.
5. Open a nearby hot water outlet to vent the system.
6. Open the drain valve.
7. If the vessel is being drained for an extended shutdown, it is suggested the drain valve be left open during this period.

7.3 RE-FILLING THE SYSTEM

1. Close the drain valve.
2. Open a hot water fixture to allow air to escape.
3. Open the cold-water supply to water heater and allow the vessel to fill.
4. Check for water leakage.

7.4 OTHER CHECKS

7.4.1 RELIEF VALVE

At least once a year, the temperature and pressure relief valve and safety valve should be checked to ensure that they are in operating condition. To check each valve, lift the lever or turn the screw cap at the end of the valve several times. The valve should operate freely and seat properly.

If water does not flow, remove, and inspect for obstructions or corrosion. Replace with a new valve of the recommended size as necessary.

8.0 USER INSTRUCTIONS

Your Squire Stainless unvented hot water cylinder has been designed to give many years of trouble free service and is made from hygienic, high grade stainless steel. Where applicable, it includes a 3kW electric immersion heater which heats the water to 60°C once pre-heating of the solar system is completed (SSCF models for Solar use only).

The flow temperature of the hot water can be set to your requirements on the immersion heater (ideally 60°C maximum). Higher temperatures can cause tripping of the high limit thermostat and introduce more energy loss from the cylinder.

When a hot tap is turned on there may be a short surge of water, this is quite normal with unvented systems and does not mean there is a fault.

When you first fill a basin the water may sometimes appear milky. This is due to very tiny air bubbles in the water which will clear very quickly.



Warning: if cold/warm water exits from the temperature and pressure relief valve (TPV) or from the pressure relief valve (PRV) call your installer. If very hot water exits from either valve switch off the heat source immediately and isolate the electricity supply to the cylinder and separate heat source.



The solar system is configured to heat the water to its maximum economic temperature which may vary with ambient temperature and weather conditions. The immersion may be programmed to operate during fixed periods of the day or night.



If the hot water runs cool it may be necessary to manually switch on the immersion to heat the water – please see the relevant instructions for your alternative energy device.

9.0 APPENDIX 1 TECHNICAL DATA TABLES SSCF130-305

Description	Unit	SSCF130	SSCF150	SSCF175	SSCF215	SSCF255	SSCF305
General							
Storage volume	Litres	130	150	175	215	255	305
Heat loss	kW/24 hours	1.22	1.36	1.53	1.72	1.87	2.05
Coil size	m ²	0.75	0.75	1.1	1.1	1.1	1.1
Coil rating	kW	20	20	29	29	29	29
flowrate	l/sec	0.33	0.33	0.33	0.33	0.33	0.33
pressure drop	bar	0.3	0.3	0.3	0.3	0.3	0.3
Reheat time	mins	23	26	21	26	31	37
Immersion heater	kW	2 x 3	2 x 3	2 x 3	2 x 3	2 x 3	2 x 3
Connections							
Cold inlet	mm	22	22	22	22	22	22
Hot outlet	mm	22	22	22	22	22	22
Coil	mm	22	22	22	22	22	22
Immersion heater	Inch BSP	1¾	1¾	1¾	1¾	1¾	1¾

10.0 APPENDIX 2 TECHNICAL DATA TABLES STCF130-305

Description	Unit	STCF130	STCF150	STCF175	STCF215	STCF255	STCF305
General							
Storage volume	Litres	130	150	175	215	255	305
Heat loss	kW/24 hours	1.22	1.36	1.53	1.72	1.87	2.05
Top Coil size	m ²	0.54	0.54	0.75	0.75	0.75	0.75
Top Coil rating	kW	14.6	14.6	20	20	20	20
Top Coil flowrate	l/sec	0.33	0.33	0.33	0.33	0.33	0.33
Top Coil Pressure Drop	bar	0.3	0.3	0.3	0.3	0.3	0.3
Bottom coil size	m ²	0.75	0.75	1.1	1.1	1.1	1.1
Bottom Coil rating	kW	20	20	29	29	29	29
flowrate	l/sec	0.33	0.33	0.33	0.33	0.33	0.33
pressure drop	bar	0.3	0.3	0.3	0.3	0.3	0.3
Reheat time*	mins	31	36	31	37	44	53
Immersion heater	kW	1 x 3	1 x 3	1 x 3	1 x 3	1 x 3	1 x 3
Connections							
Cold inlet	mm	22	22	22	22	22	22
Hot outlet	mm	22	22	22	22	22	22
Coil	mm	22	22	22	22	22	22
Immersion heater	Inch BSP	1¾	1¾	1¾	1¾	1¾	1¾

*Using top coil only with shunt pump

11.0 APPENDIX 3 TECHNICAL DATA TABLES SIVS-HP150-500

Description	Unit	SIVSHP-150	SIVSHP-175	SIVSHP-215	SIVSHP-250	SIVSHP-305
General						
Storage volume	Litres	150	175	215	255	305
Heat loss	kW/24 hours	1.36	1.53	1.72	1.87	2.05
Coil size	m ²	2	2	3	3	3
Coil rating	kW	7	7	10	10	10
flowrate	l/sec	0.45	0.45	0.4	0.4	0.4
pressure drop	bar	0.3	0.3	0.3	0.3	0.3
Reheat time	mins	75	87	75	89	106
Immersion heater	kW	1 x 3	1 x 3	1 x 3	1 x 3	1 x 3
Connections						
Cold inlet	mm	22	22	22	22	22
Hot outlet	mm	22	22	22	22	22
Coil	mm	28	28	28	28	28
Immersion heater	Inch BSP	1¼	1¼	1¼	1¼	1¼

Description	Unit	SIVSHP-400	SIVSHP-500
General			
Storage volume	Litres	400	500
Heat loss	kW/24 hours	2.64	2.78
Coil size	m ²	4	4
Coil rating	kW	13	13
flowrate	l/sec	0.35	0.35
pressure drop	bar	0.3	0.3
Reheat time	mins	107	107
Immersion heater	kW	1 x 3	1 x 3
Connections			
Cold inlet	mm	22	22
Hot outlet	mm	22	22
Coil	Inch BSP	1"	1"
Immersion heater	Inch BSP	1¼	1¼

12.0 APPENDIX 4 TECHNICAL DATA TABLES SIT-SDT300-450

Description	Unit	SIT300	SIT450
General			
Storage volume	Litres	310	427
Heat loss	kW/24 hours	0.62	0.85
Coil size	m ²	1.25	2.05
Coil rating	kW	34	56
flowrate	l/sec	0.41	0.68
pressure drop	bar	0.1	0.14
Reheat time	mins	32	27
Connections			
Cold inlet	Inch BSP	1½	1½
Hot outlet	Inch BSP	1½	1½
Coil	Inch BSP	1	1
Immersion heater	Inch BSP	2¼	2¼

Description	Unit	SDT300	SDT450
General			
Storage volume	Litres	299	416
Heat loss	kW/24 hours	0.6	0.83
Top Coil size	m ²	1.25	2.05
Top Coil rating	kW	34	56
Top Coil flowrate	l/sec	0.41	0.68
Top Coil pressure drop	bar	0.1	0.14
Bottom coil size	m ²	0.85	1.5
Bottom Coil rating	kW	23	40
flowrate	l/sec	0.28	1.5
pressure drop	bar	0.1	0.1
Reheat time*	mins	32	27
Connections			
Cold inlet	Inch BSP	1½	1½
Hot outlet	Inch BSP	1½	1½
Coil	Inch BSP	1	1
Immersion heater	Inch BSP	2¼	2¼
*Using top coil only with shunt pump			

13.0 APPENDIX 5 ErP SPECIFICATION DATA SHEETS

Description	Unit	SSCF130	SSCF150	SSCF175	SSCF215	SSCF255	SSCF305
Energy efficiency class		B	C	C	C	C	C
Standing loss	Watts	51	57	64	72	78	85
Storage volume	Litres	130	150	175	215	255	305

Description	Unit	STCF130	STCF150	STCF175	STCF215	STCF255	STCF305
Energy efficiency class		B	C	C	C	C	C
Standing loss	Watts	51	57	64	72	78	85
Storage volume	Litres	130	150	175	215	255	305

Description	Unit	SIVSHP-150	SIVSHP-175	SIVSHP-215	SIVSHP-250	SIVSHP-305	SIVSHP-400	SIVSHP-500
Energy efficiency class		C	C	C	C	C	C	C
Standing loss	Watts	57	64	72	78	85	110	116
Storage volume	Litres	150	175	215	255	305	400	500

Description	Unit	SIT300	SIT450	SDT300	SDT450
Energy efficiency class		B	B	B	B
Standing loss	Watts	57	68	57	68
Storage volume	Litres	310	427	299	416

14.0 APPENDIX 6 WARRANTY



See individual warranty sheet for each model for warranty duration and temperature limitations.

(1) General Warranty

If within period shown on the individual warranty sheet of the invoice date of a water heater supplied by Lochinvar Ltd., following verification, and at the sole discretion of Lochinvar Ltd., the tank proves to be defective or fails to function correctly due to manufacturing and/or material defects, then Lochinvar Ltd. shall repair or replace this assembly or part.

(2) Ancillary Options

Any ancillary options purchased with the water heater are covered via a standard 12-month parts only warranty. This includes items such as unvented kit, thermostats, and immersion heaters.

The warranty starts from the date of delivery.

(3) Conditions for installation and use

The warranty set out in articles 1 and 2 will apply solely under the following conditions:

- a. The water heater is installed under strict adherence to Lochinvar Ltd. installation instructions for the specific model and must be in accordance with the relevant requirements of the Gas Safety Regulations, Building Regulations, I.E.E. Regulations, and the byelaws of the local water undertaking.
- b. The water heater remains installed at the original site of installation.
- c. The water heater is used exclusively with drinking water, which at all times can freely circulate (a separately installed heat exchanger is mandatory for heating saline water or corrosive water).
- d. The heat exchanger is safeguarded against harmful scaling and lime build-up by means of periodic maintenance.
- e. The water temperatures in the heater do not exceed the maximum setting as shown in the table above.
- f. The water pressure and/or heat load do not exceed the maximum values stated on the water heater rating plate.
- g. The water heater is installed in a non-corrosive atmosphere or environment.
- h. The water heater is connected to a protected cold supply arrangement, which is: approved by the relevant authority; with sufficient capacity for this purpose; supplying a pressure no greater than the working pressure stated on the water heater; and where applicable by a likewise approved temperature and pressure relief valve, fitted in accordance with installation instructions of Lochinvar Ltd. applying to the specific model of water heater, and further in compliance with Building Regulations, local authority installation byelaws and the Water Supply (Water Fittings) Regulations 1999.

(4) Exclusions

#Service parts and consumables are not included within the above warranty period, this includes (but is not limited to) any part identified within the Installation manual which should be changed as part of the service regime for the appliance. These parts have a 12-month warranty from the date of commissioning or from the date of delivery to site.

The warranty set out in articles 1 and 2 will not apply in the event of:

- a. damage to the water heater caused by an external factor.
- b. misuse, neglect (including frost damage), modification and incorrect and/or unauthorized use of the water heater.
- c. contaminants or other substances having been allowed to enter the heat exchanger.
- d. any attempts at repair to a defective water heater other than by an approved service engineer.

(5) Scope of the warranty

The obligations of Lochinvar Ltd. pursuant to the specified warranty are limited to free delivery from the warehouse of the replacement assemblies, parts, or water heater, respectively. Labour, installation, and any other costs associated with the replacement will not be accepted by Lochinvar Ltd.

Claims

A claim on grounds of the specified warranty must be submitted to the dealer from whom the water heater was purchased, or to another authorized dealer of Lochinvar Ltd. Inspection of the water heater as referred to in articles 1 and 2 shall take place in one of the laboratories of Lochinvar Ltd.

Obligations of Lochinvar Ltd.

Lochinvar Ltd. grants no other warranty or guarantee over its water heaters nor the (assemblies or parts of) water heaters supplied for replacement, other than the warranty expressly set out in these conditions. Under the terms of the supplied warranty, Lochinvar Ltd. is not liable for damage to persons or property caused by (assemblies or parts) of a (replacement) water heater that it has supplied.



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