



**PROTANK DIRECT
HOT WATER CYLINDERS
Installation Manual**
CYSC500 and CYSC1000

INTRODUCTION TO PROTANK CYLINDERS

Protank direct hot water cylinders are designed for high demand hot water production using the high output 'Habanero' heat exchanger module or as a stand alone buffer tank for direct water heaters Internal tank and fittings are crafted from the highest possible spec 'Marine Duplex' 2205 stainless steel in order to achieve a 10bar maximum rating, highly insulated with an environmentally friendly 50mm foam layer and enclosed in a plasticized white 'Zintec' case.



Features

- Pre configured for connection to a 100kW or 200kW 'habanero' external heat exchange module.
- 800kPa or 1000kPa cold water expansion installation kits
- All tapping's including the inlet and outlet ports are side mounted for easy access and reduced overall height
- Direct mount pressure relief and cold water expansion valve ports vertically aligned for easy waste connection
- Up-sized 50mm inlet and outlet ports for low pressure drops and high flow rates
- Integrated temperature gauge port
- Convenient installation kit including gauge, pressure relief valve, cold water expansion valve & primary thermostat.

General Specification			
Manufactured by	RM Cylinders	Case Construction	
Country of origin	UK	End material	Polypropylene
Pressure Ratings		End thickness	2 mm
Max. Press. Relief valve setting	1200 kPa	Wall material	Painted Galvanized steel
Max. CWE valve setting	1000 kPa	Wall thickness	0.45 mm
Max. operating press.	900 kPa	End joint	Press fit
Recommended operating press.	600 / 800 kPa	Wall joint	Lock form joint
Shell Construction		Thermal Insulation	
Shell type	Single skin	Insulation specification	EPC/IsoPMDI
Shell material	2205 Marine Duplex SS	Wall thickness	50 mm
Thickness	1 mm	Base thickness	10 mm
Circumferential joint	Tig butt weld	Top thickness	50 mm
Longitudinal joint	Tig butt weld		

Draining

Isolate the unit from the cold mains. Open the hot tap closest to the unit and open the draining tap while ensuring the water drained does not exceed the capacity of the tun-dish.

WARNING: WATER DRAINED OFF MAY BE VERY HOT!

COMMISSIONING

Filling

Check all connections for water tightness such of all connections. The furtherest away hot tap should be opened before filling the system to let air out. The system should be flushed before use and the remaining taps should be opened in turn to expel air.

Storage Temperature

A storage temperature of 60-65°C is typical for normal applications. The G12 building code will require storing the water at >60°C, distributing at <55°C typically using a thermostatic mixing valves to control the final temperature. Utilise our free tech team design service to select the correct valve to suit your application.

Safety Valve Checks

Ensure the recommended maximum pressure settings for the safety valves in this document are adhered to. The temperature relief and expansion relief valves should be fully opened, one at a time then both together allowing as much water as possible to flow through the tun-dish. Check that your discharge pipework is free from debris and is carrying the water away without spillage over the tun-dish and release the valves and check that they re-seat properly.

Servicing

Servicing should only be carried out by a competent installer. NEVER bypass any safety devices or operate the unit without them fully operational.

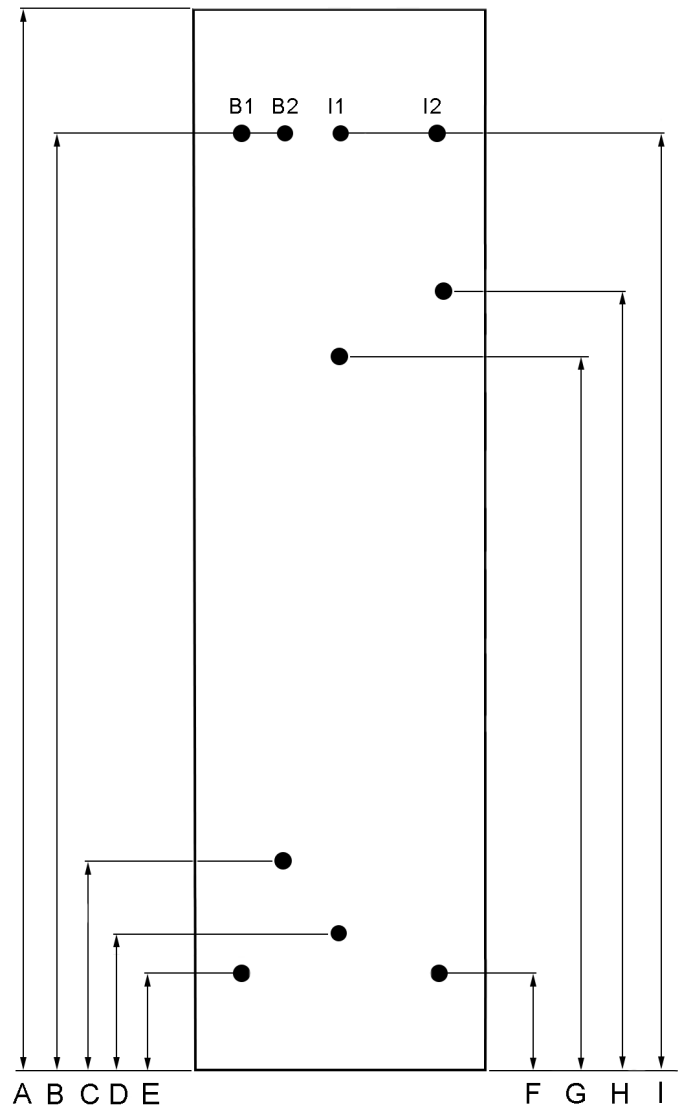
ANNUAL SERVICING

A competent installer should carry out the following checks on an annual basis, ideally at the same time as the annual boiler service.

1. The expansion relief valve on the inlet control set should be eased open allowing water to flow for 5 seconds. The valve should then be closed making sure it resets correctly. Repeat this procedure with the pressure / temperature relief valve. Always insure that the discharge pipework is allowing the water to drain away adequately. If not check for blockages etc. and clear. ***WARNING: THE WATER DISCHARGED MAY BE VERY HOT!**
2. Clean the mesh filter within whatever straining device is fitted to the system.
3. Update the service record supplied within this manual.

***YOUR GUARANTEE MAY BE VOID WITHOUT PROOF OF ANNUAL SERVICING**

PORT LAYOUT



Technical Specification	500L		1000L	
A. Overall height (Ø)	1830mm	(720mm)	2175mm	(915mm)
B1. Pressure Relief	1575mm	(20mm)	1865mm	(20mm)
B2. Upper Stat Pocket	1575mm	(22mm)	1865mm	(22mm)
C. Lower Stat Pocket	425mm	(22mm)	465mm	(22mm)
D. Habanero Return	285mm	(50mm)	325mm	(50mm)
E. Cold Water Expan.	225mm	(20mm)	265mm	(25mm)
F. Inlet	225mm	(50mm)	265mm	(50mm)
G. Habanero Flow	1285mm	(50mm)	1465mm	(50mm)
H. Return	1430mm	(20mm)	1435mm	(20mm)
I1. Gauge Port	1575mm	(15mm)	1865mm	(15mm)
I2. Outlet	1575mm	(50mm)	1865mm	(50mm)
Weight empty	50kg		150kg	
Weight full	590kg		1150kg	
Insulation quantity	211cm ²		341cm ²	

INSTALLATION KITS

Protank direct HWC are available with an optional 800kPa or 1000kPa cold water expansion installation kit depending on application. The kits include a pressure relief valve, cold water expansion valve, temperature gauge and thermostat.

Code	Description
CYSC500K	1000kPa PR / 800kPa CWE / Temp gauge / Thermostat
CYSC500KHP	1200kPa PR / 1000kPa CWE / Temp gauge / Thermostat
CYSC1000K	1000kPa PR / 800kPa CWE / Temp gauge / Thermostat
CYSC1000KHP	1200kPa PR / 1000kPa CWE / Temp gauge / Thermostat



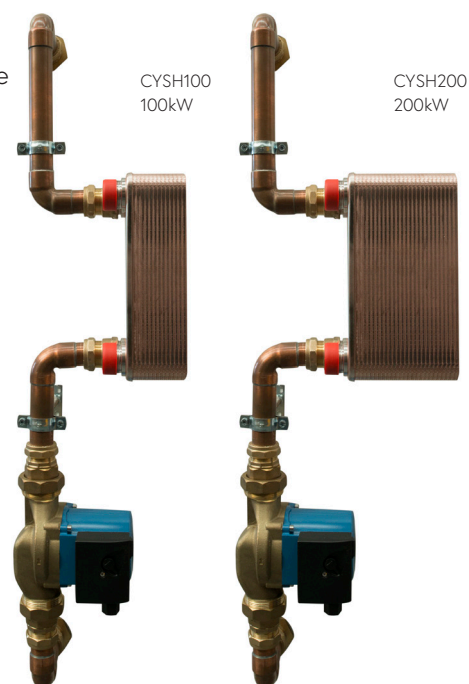
Optional 'Habanero' Module

In place of the traditional coil in tank style calorifier, together with RM Cylinders we have developed an external heat exchanger module which manifolds directly into the accumulators pre-arranged ports.

This allows a significantly higher kW transfer than would normally be possible if using internal heat exchange coils while also retaining the full 500L or 1000L storage capacity. The result is large volume hot water production for less cost and a smaller foot print.

Specification	CYSH100	CYSH200
GEA Heat exchanger	AISI304 brased plate	AISI304 brased plate
Maximum transfer	100kW	200kW
Primary flow required	8.8m ³ /hr	14.7m ³ /hr
Primary pressure drop	41kPa	35kPa
SS Recirc. pump size/volatge	32mm, 230V	32mm, 230V
Pump max consumption	190W	225W

Hot Water Production	60min	120min	180min	Recovery
500L + 100kW	2500L	4400L	6300L	11min
500L + 200kW	4400L	8200L	12000L	6min
1000L + 100kW	3200L	5100L	7000L	21min
1000L + 200kW	5100L	8900L	12700L	11min



The 500 and 1000L share the same convenient tapping size and positions which will accept both the 100kW or 200kW 'Habanero' modules.

ESSENTIAL INFORMATION

- The cylinder must be correctly installed as per the instructions contained within this document and any relevant local standards, regulations and codes of practice in force at the time.
- The cylinder must be installed in an accessible location with sufficient clearances to remove and replace the unit without remedial building work.
- The cylinder must not be modified in any way.
- The cylinder must not be misused, tampered with or subjected to neglect.
- The cylinder must be only be used for the storage of potable water.
- The cylinder must be connected to water supplies meeting or exceeding guidance values from New Zealand Drinking Water Standards 2008.
- The cylinder must not have been subjected to frost damage.
- The cylinder must be has been serviced annually (See service requirements, invoice evidence required).

Storage Prior To Installation

PROTANK cylinders should be stored upright in a dry area and kept in its original packaging until immediately prior to installation.

Siting The Unit

PROTANK cylinders can be positioned more or less anywhere in the dwelling but it should be remembered that for every 1 metre that an outlet is above the cylinder outlet, the pressure will be reduced by 0.1 bar. If siting outside the heated envelope of the dwelling such as in a garage or outbuilding then frost protection should be provided and exposed pipework should be insulated. PROTANK cylinders must be supported on a flat base capable of supporting the weight of the cylinder when full. It's important that consideration is given to access for maintenance of the valves.

INSTALLATION AND USE

Water Supply

The performance of any mains pressure system is only as good as the water supply. Both hot and cold services are supplied simultaneously from the mains so the maximum possible on-site water demand must be assessed and the water supply should be tested to ensure it can meet these requirements. If necessary consult the local water supplier regarding the likely pressure and flow rate availability.

It is important that site pressure readings are taken under dynamic flow conditions, high pressures under zero flow conditions are not necessarily indicative of satisfactory performance. A minimum of 1.5 bar at 20 l/m flow should be available. Where mains inlet pressures are likely to exceed 16 bar then an additional upstream pressure reducing device should be fitted.

The cylinder must be connected to water supplies meeting or exceeding guidance values from New Zealand Drinking Water Standards 2008. Hard water treatment must be applied in areas where total hardness (as CaCO₃) <200ppm.

Cold Supply Connection

Run the cold main through the building to the place where the Flow+ is to be installed. Take care not to run the cold pipe near hot water or heating pipe work so that the heat pick up is minimised. Identify the cold water supply pipe and fit an isolating valve (not supplied).

Balanced Cold Connection

Modern taps and showers are designed to operate correctly with balanced pressure hot and cold supplies. Include the combined hot and cold water demands when selecting the pressure control valves. Utilise our tech teams free design service to make these calculations for you to ensure hot and cold balanced pressures are maintained.

Ring Main Return Line

Where secondary circulation is required a circulator suitable for potable water should be used in conjunction with a non return valve to prevent backflow. A secondary return boss is fitted as standard on all models.

PROTANK LIMITED WARRANTY

All terms of the warranty, subject to the conditions below, are effective from the date of installation if proof of installation date can be provided. Where the date of installation is not known or cannot be proven, the warranty will commence one month after proof of purchase date.

Single Residential Domestic Warranty

A single residential domestic installation is defined as an installation where the hot water cylinder with a factory set thermostat delivers hot water to a privately owned single family residential dwelling which is not used for commercial purposes.

Protank Excluding Valves

5 YEARS FREE PARTS and LABOUR costs to replace or repair the cylinder if it fails due to manufacturing defect followed by;

5 YEARS FREE PARTS ONLY costs (excluding labour) to replace or repair the cylinder if it fails due to manufacturing defect followed by;

10 YEARS *PRO-RATA PARTS ONLY reducing costs (excluding labour) according to the below formula, to replace or repair the cylinder if it fails due to manufacturing defect.

*Pro-Rata Formula = Original purchase price x remaining warranty in years ÷ total warranty period of the cylinder.

Caleffi Valves (excluding any 3rd party valves)

5 YEARS FREE PARTS and LABOUR costs to replace or repair any valve that fails due to manufacturing defect.

Commercial Applications Warranty

Any installation not considered to be a single residential domestic type.

Protank and Caleffi Valves

5 YEARS FREE PARTS and LABOUR costs to replace or repair the cylinder or valves if failure is due to a manufacturing defect.

The above terms apply subject to and providing that;

- Any claim follows the process defined in this document below.
- Any labour charges must be pre approved in writing before any work commences and are subject to limitations described within this document.
- The cylinder has been correctly installed as per this document and any relevant local standards, regulations and codes of practice in force at the time.
- The cylinder is installed in an accessible location with sufficient clearances to remove and replace the unit without remedial building work.
- It has not been modified in any way.
- It has not been misused, tampered with or subjected to neglect.
- It has only been used for the storage of potable water.
- The cylinder must be connected to water supplies meeting or exceeding guidance values from New Zealand Drinking Water Standards 2008.
- The cylinder is filled with water before turning the electricity supply on to the heater element.
- It has not been subjected to frost damage.
- The unit has been serviced annually (invoice evidence required).

Limitations and Conditions

This limited warranty;

- Is not transferable, and rests with the original householder.
- Does not cover the effects of scale build up and or corrosion.
- Waterware Services Ltd. shall in no way be liable for any loss, damage (direct, indirect or consequential), cost or expense suffered or incurred by the purchaser.

Obligations accepted by Waterware Services Ltd. are.....

..... in addition to all other rights and remedies had by the Purchaser in law in respect of the valve and does not limit the right the Consumer may have under the Consumers Guarantee Act 1993.

..... subject to the exceptions and conditions previously listed. All expressed or implied conditions, statements or warranties as to the quality or fitness on any purpose of a tap or valve or otherwise are hereby expressly excluded to the fullest extent permitted by law except under conditions and warrants which cannot be legally excluded by law and which are intended in the contract for the supply of the valve by the Trade Practises and any other Act of Law.

We reserve the right to change and alter any specification and / or parts without notice. Any parts changed will perform similar or better functions to the ones they have replaced and we are not liable for any claims made by anyone because of this substitution.

GUIDANCE IN THE EVENT OF A PROBLEM

In the event of a problem, in the first instance contact the original installing plumber, or the plumber who carries out the annual servicing to determine the fault. If a manufacturing fault is suspected, contact Waterware Sales immediately for advice on how to proceed. Under no circumstances will liability be accepted for any costs associated with a suspected fault without prior consent or instruction. Upon inspection of the original unit by either a Waterware employee or an appointed service agent and a manufacturing fault is deemed to be at fault and provided all the terms and conditions within this document have been adhered



waterware.co.nz

info@waterware.co.nz

ph +64 9 273 9191 fax 09 273 9194