



CHWS PRORAPID

SEMI INSTANTANEOUS DHW GENERATOR

Installation Manual
Operation & Maintenance Manual

CHWS ProRapid

Semi Instantaneous DHW Generator General Layout

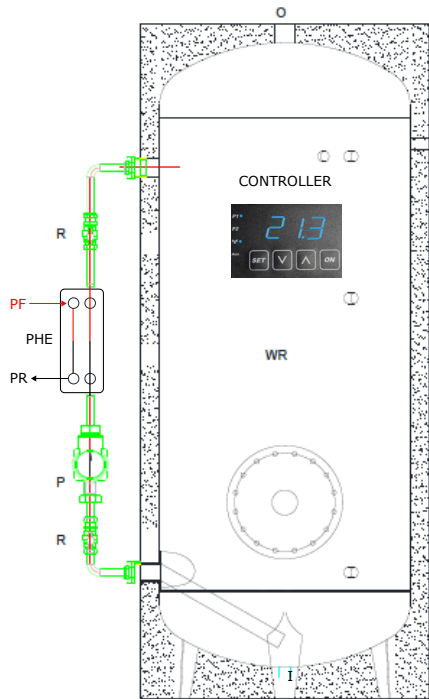


Fig. 1

Key

- O Sanitary hot water outlet
- I Inlet cold water
- PHE Plate Heat Exchanger
- P Circulation pump
- R Isolating valve
- WR Water recirculation
- PR Primary return
- PF Primary flow
- C Controller

Instructions For Use

General Information

This instruction manual is a part of the product, check that it is always supplied with the CHWS ProRapid DHW generator.

Carefully read the instructions contained in this chapter as they provide important information on the usage of the unit.

Keep this manual for future reference if the CHWS ProRapid DHW generator is sold or transferred to a different owner or leaving the unit where installed, please make sure that this manual always accompanies the CHWS ProRapid DHW generator so as it can be used for reference by the new owner or installation expert.

Important: This CHWS ProRapid Hot water generator has to be used to produce hot sanitary water, in accordance with its technical features of performance and power, by thermal exchange with a heating water supply ($t \leq 100^{\circ}\text{C}$) max.

Any different usage for the CHWS ProRapid Hot water generator is forbidden, do not clean the CHWS ProRapid Hot water generator with corrosive or flammable liquids.

The use of electric adapters, extension cords or socket sets is not recommended. In case of damages to the electric cord turn the power off and consult a professionally qualified technician.

An electric manual is enclosed in the appliance please observe the following fundamental rules:

- Do not touch the appliance with parts of the body which are wet, damp or in bare feet
- Do not pull the electric wires
- Do not allow children or unqualified persons to use the appliance

The manufacturer declines any responsibility for damages caused by neglect of the appliance or system. If the CHWS ProRapid hot water generator is not used for long periods of time, turn off the power supply and empty the unit.

Description

The CHWS ProRapid DHW generators is manufactured in stainless steel and is able to satisfy high requirements of sanitary hot water. The automatic system of water mixing will avoid temperature' stratification the heat storage is therefore higher. The external stainless steel plate exchanger enables easy maintenance and cleaning.

The system will reduce the potential for Legionella growth in an effective way by heating the stored contents. Each CHWS ProRapid DHW generator is covered by a thick and resistant insulation in polyurethane with PVC "1st category" fire reactive cover.

Periodical Checks

Periodic checks of the units must be performed by qualified personnel in order to guarantee the appliance efficiency and correct system operation, regular maintenance is recommended to ensure optimum operational performance and to meet safety requirements.

In the event that problems do occur during the hot water generation, turn it off and do not attempt to repair it please consult a qualified technician.

Important Information

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

Installation & Commissioning

Read this installation and commissioning manual and where necessary refer to appendix C before commencing, the CHWS ProRapid semi instantaneous DHW Generator is a controlled service as defined in the latest edition of the building regulations and should only be fitted by a competent person. Installation & Commissioning of equipment by accredited agents or specialist sub-contractors will ensure the equipment is operating safely and efficiently.

The installation should also be in accordance with the British Standard Codes

of Practice, current Building Regulations, , i.e. Health & Safety Document No. 635 (The Electricity At Work Regulations 1989), and the Water Supply (Water fittings) Regulations, BS 5449:1990 Forced circulation hot water systems , BS 6700:2006 Design, installation, testing and maintenance of services supplying water. The relevant regulations are: England and Wales – Building Regulation G3; Scotland – Technical Standard P3; North Ireland – Building Regulation P5.

Failure to install this appliance correctly could lead to prosecution and will invalidate the guarantee.

It is in your own interest and that of safety to ensure that the law is complied with.

Installation Instructions

General Information

This instruction manual is an integral and essential part of the product check that it is always furnished with the CHWS ProRapid DHW generator.

Carefully read the instructions contained in this chapter as it provides important information for the correct and safe installation and use of the appliance.

After the installation please deliver this manual to the user. The installation and start-up operations must be performed by professionally qualified technicians having the specific skills required in the heating system sector.

The manufacturer declines responsibility for any damage to persons or property caused by a faulty installation or start up.

Important: This appliance should be used only for the purpose mentioned any other use is improper and therefore dangerous. Before performing any operation on the appliance, turn off the electric power supply and close the water supply tap.

The use of any electric component involves the observance of the following fundamental rules:

- Always turn off the electric power supply switch before touching any electrical connection

- Do not touch the appliance with parts of the body which are wet, damp or in bare feet
- Do not pull the electric wires
- Do not expose the appliance to atmospheric conditions
- Do not leave the appliance on when not in use always turn the water and electric supplies off.

Start Up

Before starting up the CHWS ProRapid DHW generator, check that the unit is not damaged if in doubt, do not use it and contact CHWS Ltd.

The transport and positioning of the appliance should be carefully performed with the proper lifting hook. Avoid banging or forcing the control board and the insulation. The installation should be performed in a suitable environment.

The insulation is not fixed it is therefore possible to perform the hydraulic connections after temporarily removing the insulation.

The CHWS ProRapid is suitable for operating at 8 bar working pressure both for sanitary and heating purposes. In the event that the hydraulic pressure is higher than 8 bar, insert a pressure reducer in the sanitary

circuit and if necessary also a small closed expansion vessel for sanitary hot water.

Always cover both the sanitary hot water and the heating water pipes with an insulating coating according to the regulations in force.

Packaging components (plastic bags, etc.) are potential danger and should not be left within the reach of children.

Electric Connections

The electrical safety of the equipment is achieved when correctly connected to an efficient grounding system performed according to the regulations in force.

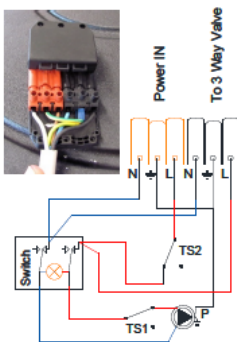
This fundamental safety requirement must be verified.

If in doubt, request installation of the electrical system by professionally qualified personnel. CHWS Ltd declines responsibility for damages caused by neglecting grounding the system.

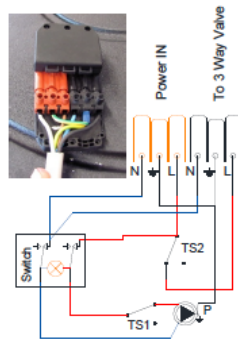
Gas, hydraulic and heating pipes cannot be used as grounding. Serious damages to pipes may occur within a short period of time.

The use of electric adapters, extension cords or socket sets is not recommended.

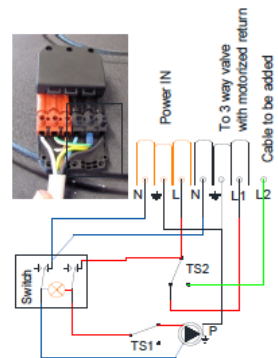
Each appliance must be connected to the electrical system by using a double-pole switch according to the regulations in force. The use of any component run by electrical power involves the observance of the



Standard electrical layout – 3 way valve and pump work together



Alternative electrical layout – 3 way valve and pump work independently



Other alternative electrical layout – 3 way valve and pump work independently and 3 way valve is motorized in opening and closing

following fundamental rules:

- Always turn off the electric power supply switch before touching the electrical connections
- Do not touch the appliance with parts of the body which are wet, damp or in bare feet
- Do not pull the wiring
- Do not expose the appliance to atmospheric conditions (rain, sun, etc.)

If for any reason the installation requires different wiring to control the system, it is possible to modify the wiring, for example in one of the following ways: Standard electrical layout – 3 way valve and pump work.

Loading System

In case the external temperature is very low, keep the temperature of the room where the CHWS ProRapid DHW generator is installed over 0°C when the hot water generator is not in use, in order to avoid bursting due to frost damage (the warranty does not cover damages due to frost).

Fill the CHWS ProRapid by using the hydraulic system check that the sanitary water safety valve and the drain work properly. Before filling the heating circuit with water, clean the system carefully in order to remove dirt and any residual substance that may cause scale or damage.

Operation

Before turning the system on check that:

- The pipe connections are completely sealed
- The system is equipped with safety devices and controls according to the regulations in force.
- The hot water pipes are insulated.

CHWS Controller

CHWS has developed a multipurpose controller for the CHWS ProRapid semi instantaneous DHW calorifier with a smart anti Legionella function.

The control is flexible, & satisfies the requirements for different ways of domestic hot water production and different approaches in handling primary heat support.

The electronic thermostat of the CHWS ProRapid calorifier controls the primary heat support, it displays the temperature of the domestic hot water in the CHWS ProRapid, calorifier and controls the following:

- A pump on the primary circuit
- A three way valve on the primary circuit
- A pump for destratification or domestic hot water flow in a plate heat exchanger, like in CHWS ProRapid calorifier
- A dry contact to switch on the heat generator on the primary circuit

The controller can switch on the anti-legionella function, activating the functions with different settings to suit different needs. It is possible to:

- Enable/disable the anti-legionella function in a period in the range 0 up to 7 days (0 means the anti-legionella is disabled)
- Setting of the anti-legionella temperature in the range 60-80°
- Post legionella timing, that fixes the time the legionella temperature is maintained in the calorifier in the range 10-60 minutes Set-up



Set-up

The user menu

During the standard working sequence it is possible to modify the temperature settings by pushing the “SET” button in the C07 programme it is possible to check and modify each parameter.

- The first parameter fixes the “ON” temperature of the primary pump P1, default 40°C range 25-99
- The second parameter fixes the ON temperature P2 on the secondary pump (sanitary)
- The third parameter drives the three way valve, setting the opening temperature
- The fourth parameter drives a clean contact to be used to enable a boiler. If in normal it is requested a closed contact on the controller the NO contact has to be used instead of the NC



The installer menu

The controller has 7 different configurations from C01 to C07.

The one to be used on the CHWS ProRapid calorifier is C07. In order to set up this configuration follow this procedure:

- Switch on the mains.
- Press the ON button to switch ON the controller
- Push at the same time the up and down buttons until the “0” flashing value appears on the display (about 5 seconds). Enter the password “007” with “up” and “down” buttons and store each digit with the “SET” button within 3 seconds after selection. If the procedure is not completed within this time or in case the password is wrong the system comes back to its standard working condition. In this way the installer set-up menu has been selected
- Once entered in the Installer Menu the display shows the PRG parameter, from 1 to 7. Using the “UP” and “DOWN” buttons it is possible to choose the “7” parameter necessary for the CHWS ProRapid calorifier. When the choice has been made push the “SET” button and the controller goes to the next step. The modified data is stored in the program after 5 seconds from the last action made the controller comes back to the standard working sequence.

The parameters described below can be set, and can be modified according to the procedure described above for program set-up.

Set - up table

| Parameter | Description | Default value | | Min - Max |
|-----------|---|----------------|-----|---------------------|
| | | C01-C06 | C07 | |
| PRG | Programme setup | 7 ¹ | | 1 - 7 |
| S01 | High temperature warning (°C) | 90 | | 80 - 99 |
| S02 | Limit temperature (°C) | 80 | | 80 - 90 |
| S03 | Anti frost temperature (°C) | 3 | 5 | 3 - 8 |
| S07 | Anti-condensing system (°C) | 40 | | 25 - 85 |
| S09 | Anti-Legionella temperature (°C) | 65 | | 60 - 80 |
| I04 | Hysteresis temperature on pump P1 (°C) | 2 | 4 | 1 - 20 |
| I05 | Hysteresis temperature on 3 way valve (°C) | 2 | 4 | 1 - 20 |
| I06 | Hysteresis temperature on pump P2 (°C) | 2 | 4 | 1 - 20 |
| I07 | Hysteresis temperature on anticondensing (°C) | 2 | 4 | 1 - 20 |
| I08 | Not available on C07 configuration | 5 | 4 | 1 - 20 |
| T01 | Timer pump activation to avoid block (h) | 168 | | 1 - 255 |
| T02 | Pump activation timing (sec) | 20 | | 0 - 99 ² |
| T03 | Antilegionella timing (days) | 7 | | 0 - 7 |
| T04 | post legionella timing (min) | 10 | | 10 - 60 |
| P01 | Enabling limiter temperature (1=enabling) | 0 | | 0 - 1 |

Maintenance Instructions

General Instructions

Read carefully the instructions contained in this chapter as they provide important indications on the use and maintenance of the appliance. Before performing any operation on the CHWS ProRapid DHW generator, turn off the electric power supply switch and close the water supply valve.

The use of any component which is electrically supplied entails the close observance of the following fundamental rules:

- Always turn off the electric power supply switch before touching any electrical connection
- Do not touch the appliance with parts of the body which are wet, damp or in bare feet
- Do not pull the wiring
- Do not expose the appliance to atmospheric conditions

Substitute parts or accessories of the appliance with original spare parts only. Do not leave the appliance on when not in use. Always turn the water and electric supply switches off.

Emptying The CHWS ProRapid DHW Hot Water Generator

Remove the electric supply and close the cold water supply and empty the CHWS

ProRapid DHW generator by opening the valve at the bottom of the tank. In case a vacuum circuit breaker was not inserted in the sanitary water circuit, insure that a valve is open at the top of the vessel to vent the vessel and avoid a damaging vacuum.

Troubleshooting

In case the heat exchange is not heating sufficiently, the cause can be:

- The boiler power is not sufficient
- The circulation of heating water is not sufficient because of a faulty or undersized pump
- The temperature of the heating water entering the ProRapid Plate Heat exchanger is too low
- The temperature of the sanitary water is too low or the temperature is too high
- The ProRapid is overused in comparison with its performance
- Calcium deposits or other deposits in the heat exchanger

The above listed causes must be verified by professionally qualified personnel.

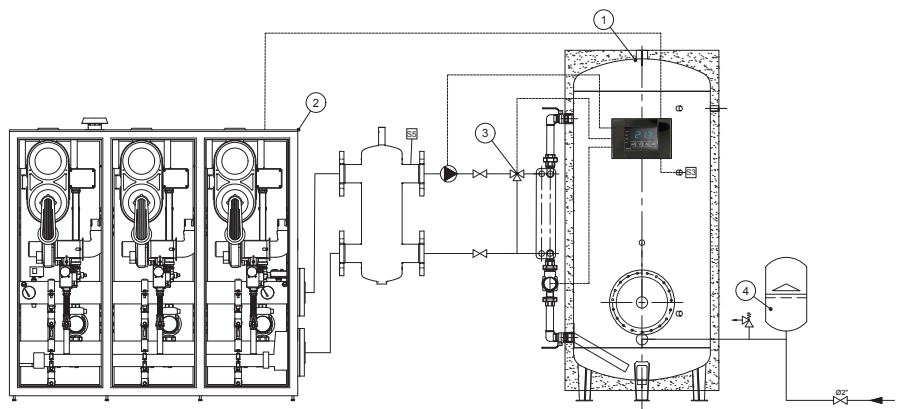
Warranty

This warranty is valid provided that all the appropriate rules and standard procedures for the installation and use have been strictly observed.

The Manufacturer declines responsibility for failures of the appliance or damage to persons or things caused by:

- Transport
- Installation in which the current regulations and practices of good workmanship have not been observed
- Misuse of the appliance, improper use conditions, tampering by non-authorised staff, or inadequate maintenance; hence by:
 - Scale and/or accumulation of debris in the appliance
 - Absence of electrical power, inadequate high tension or electric system, absence of grounding in the electric system, absence of adequate draining
 - Exceeding the maximum working pressure or operation at low pressure, faults in the electric or hydraulic system
 - Frost or fortuitous causes
 - Wear due to normal use
 - Faulty operation due to tampering of the safety or control units
- Corrosion caused by:
 - Oxygenation stray currents any other phenomena (e.g.: chlorides 300 p-p-m.)
 - The Manufacturer declines responsibility for any errors contained in this manual and have the rights to make any necessary changes without altering its essential characteristics

Appendix A



Key

1

Calorifier

2


Boiler or boiler cascade

3


3 way valve

4


Expansion vessel




Safety valve




Controller sensor




Boiler temperature probe



Pressure gauge



Non return valve



Air vent

Fig. 2 : the controller drives a ProRapid system, with plate exchanger for domestic hot water production

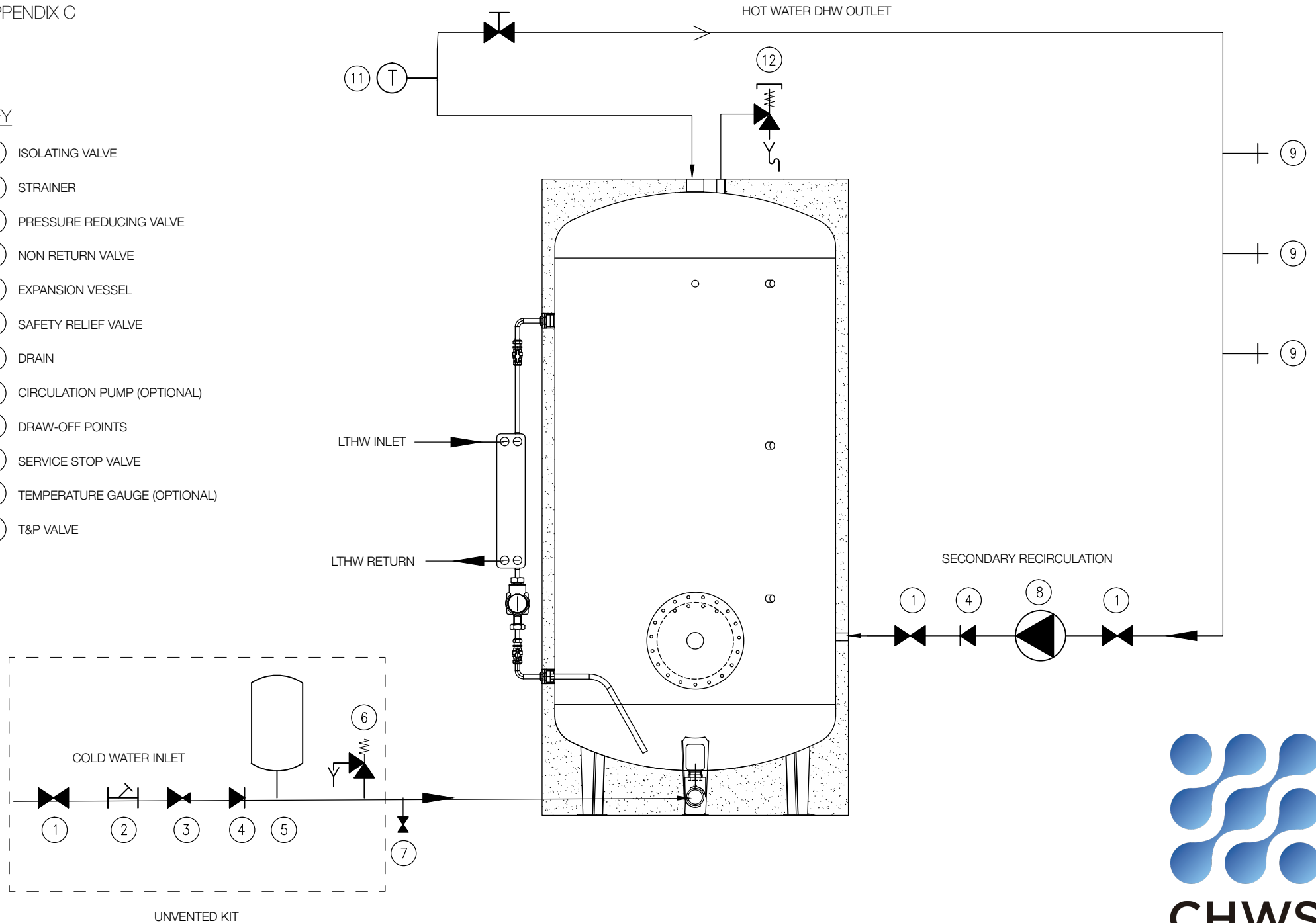
Appendix B

PRORAPID SEMI INSTANTANEOUS DHW GENERATOR

| | | 200 | 300 | 500 | 800 | 1000 175 | 1000 250 | 1500 175 | 1500 250 | 2000 175 | 2000 250 |
|---|-----|------|------|------|------|-------------|-------------|-------------|-------------|-------------|-------------|
| Cylinder Capacity | l | 185 | 295 | 500 | 795 | 920 | 920 | 1435 | 1435 | 1980 | 1980 |
| Heat exchanger's plates | Nr. | 30 | 30 | 30 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| Flow of heat exchanger secondary circuit dT50°C | l/h | 1892 | 1892 | 1892 | 2322 | 3010 | 4300 | 3010 | 4300 | 3010 | 4300 |
| Primary average circuit temperature with dT 20°C | °C | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| Primary flow to heat exchanger | l/h | 4730 | 4730 | 4730 | 5805 | 7525 | 10747 | 7525 | 10747 | 7525 | 10747 |
| Heat exchanger pressure drop primary circuit | kPa | 50 | 50 | 50 | 45 | 50 | 50 | 50 | 50 | 50 | 50 |
| Output of plate heat exchanger | kW | 110 | 110 | 110 | 135 | 175 | 250 | 175 | 250 | 175 | 250 |
| Continually production of H2O with ΔT 50°C | l/h | 1892 | 1892 | 1892 | 2322 | 3010 | 4300 | 3010 | 4300 | 3010 | 4300 |
| Max. production of H2O in the first 10 minutes with ΔT 50 °C | l | 515 | 615 | 815 | 1187 | 1502 | 1717 | 2002 | 2216 | 2502 | 2717 |
| Max. production of H2O in the first 60 minutesn with ΔT 50 °C | l | 2092 | 2192 | 2392 | 3122 | 4010 | 5300 | 4510 | 5800 | 5010 | 6300 |

KEY

- ① ISOLATING VALVE
- ② STRAINER
- ③ PRESSURE REDUCING VALVE
- ④ NON RETURN VALVE
- ⑤ EXPANSION VESSEL
- ⑥ SAFETY RELIEF VALVE
- ⑦ DRAIN
- ⑧ CIRCULATION PUMP (OPTIONAL)
- ⑨ DRAW-OFF POINTS
- ⑩ SERVICE STOP VALVE
- ⑪ TEMPERATURE GAUGE (OPTIONAL)
- ⑫ T&P VALVE





CHWS

TECHNICAL PRODUCT SUBMITTAL

ProRapid 200 - Semi Instantaneous DHW Generator

Product Description

The ProRapid Semi-Instantaneous DHW Generator is a duplex stainless steel buffer vessel with an externally mounted stainless steel Brazed Plate Heat Exchanger, which is able to generate large amounts of Domestic Hot Water very quickly with rapid recovery times for a variety of commercial applications. The plate heat exchanger is connected to a heat source such as a boiler which provides the heat energy driving the heat exchanger.

The ProRapid is supplied with various sized buffer vessels and brazed plate heat exchangers to suit the required application, also included is a suitably sized charging pump, a control panel incorporating a visual temperature gauge, and a high temperature thermostat. The ProRapid is supplied complete with a removable rigid polyurethane insulation jacket with a grey external finish.

ProRapid Range: Features

- Inspection Access
- Factory fitted temperature and pressure relief valve
- Visual DHW temperature gauge
- High temperature thermostat
- Potable water unvented system kit and expansion vessel
- Delivery to a mainland UK site address

ProRapid Range: Options

- Single or three phase electric immersion elements
- Surface mounted clips or immersed tapplings for BMS probes
- Larger services connections



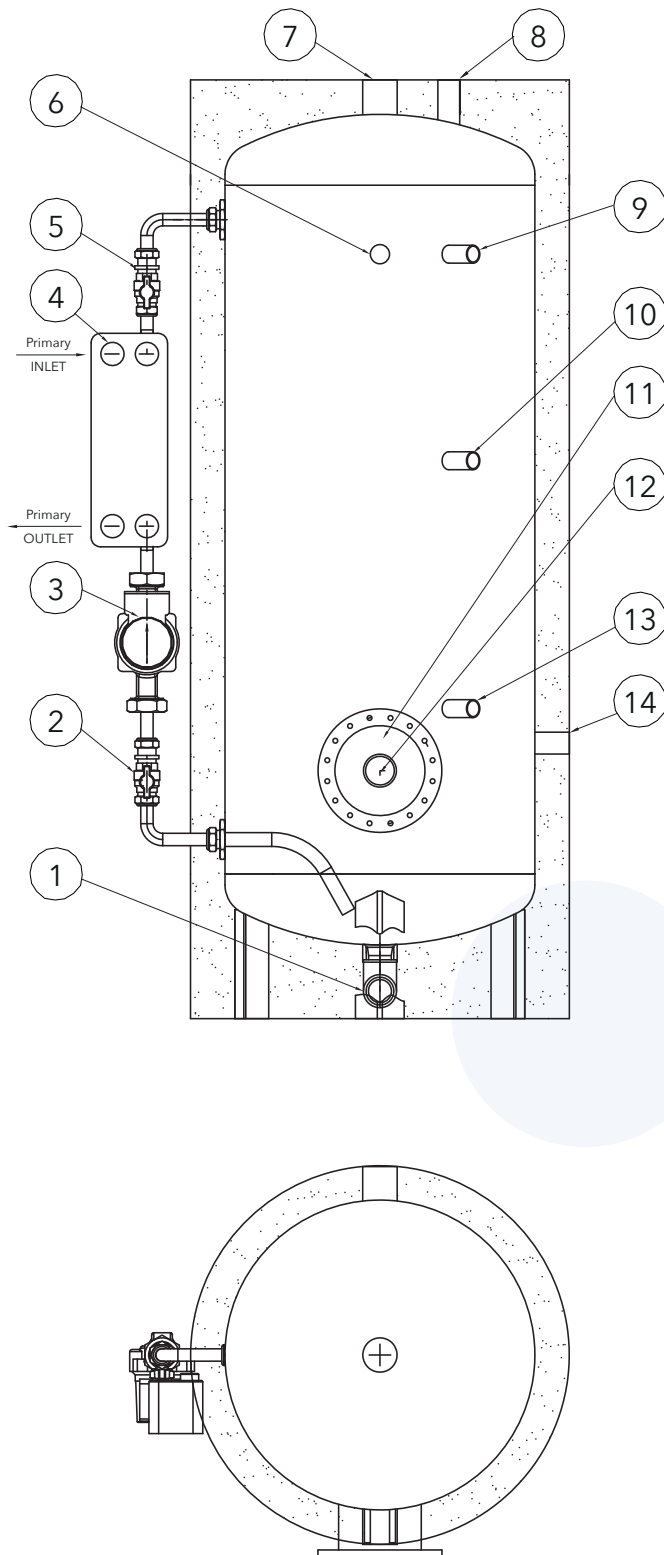
Technical Specification

| | |
|---|--------------------------|
| Capacity | 185 litres |
| Heat Input | 110 kw |
| Orientation | Vertical |
| Construction Materials: Shell | Duplex Stainless Steel |
| Construction Material: Plate Heat Exchanger | AISI 316 Stainless Steel |
| Insulation Material & Thickness | 50 mm Hard Polyurethane |
| Standing Energy Losses | 38 watts |
| Total Diameter with Insulation | 580 mm |
| Total Diameter without Insulation | 480 mm |
| Total Height with Insulation | 1363 mm |
| Weight Empty | 70 kg |
| Maximum working pressure - Vessel | 8 bar |
| Maximum working temperature | 99°C |

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ProRapid 200 - Semi Instantaneous DHW Generator



Performance @ Flow & Return -

80°C/60°C

| | |
|------------------------------------|--------------|
| Heat Input | 110 kW |
| 1st Hour Hot Water ΔT 50°C | 2092 litres |
| DHW Flow Rate ΔT 50°C | 1892 litres |
| Vessel Recovery Rate | 6.5 mins |
| Primary Flow Rate Required | 1.31 lit/sec |
| Exchanger Pressure Loss | 50 kpa |
| Standing Energy Loss | 38 watts |

Connections (BSP/mm)

| | | |
|----|------------------------------------|------------|
| 1 | Cold water inlet / Drain | 1 1/4" |
| 2 | Water Inlet to Brazed Plate | 1" |
| 3 | Charging Pump | |
| 4 | Primary Connections | 1" |
| 5 | Hot Water Outlet from Brazed Plate | 1" |
| 6 | Control Panel Connections | 1/2" |
| 7 | Domestic Hot Water Outlet | 1 1/4" |
| 8 | T & P Valve | 3/4" |
| 9 | Sensor Tapping | 1/2" |
| 10 | Sensor Tapping | 1/2" |
| 11 | Inspection Hatch | 120/180 mm |
| 12 | Optional Immersion Heater | 1 1/2" |
| 13 | Sensor Tapping | 1/2" |
| 14 | Domestic Hot Water Return | 3/4" |



CHWS

TECHNICAL PRODUCT SUBMITTAL

ProRapid 300 - Semi Instantaneous DHW Generator

Product Description

The ProRapid Semi-Instantaneous DHW Generator is a duplex stainless steel buffer vessel with an externally mounted stainless steel Brazen Plate Heat Exchanger, which is able to generate large amounts of Domestic Hot Water very quickly with rapid recovery times for a variety of commercial applications. The plate heat exchanger is connected to a heat source such as a boiler which provides the heat energy driving the heat exchanger.

The ProRapid is supplied with various sized buffer vessels and brazed plate heat exchangers to suit the required application, also included is a suitably sized charging pump, a control panel incorporating a visual temperature gauge, and a high temperature thermostat. The ProRapid is supplied complete with a removable rigid polyurethane insulation jacket with a grey external finish.

ProRapid Range: Features

- Inspection Access
- Factory fitted temperature and pressure relief valve
- Visual DHW temperature gauge
- High temperature thermostat
- Potable water unvented system kit and expansion vessel
- Delivery to a mainland UK site address

ProRapid Range: Options

- Single or three phase electric immersion elements
- Surface mounted clips or immersed tapplings for BMS probes
- Larger services connections



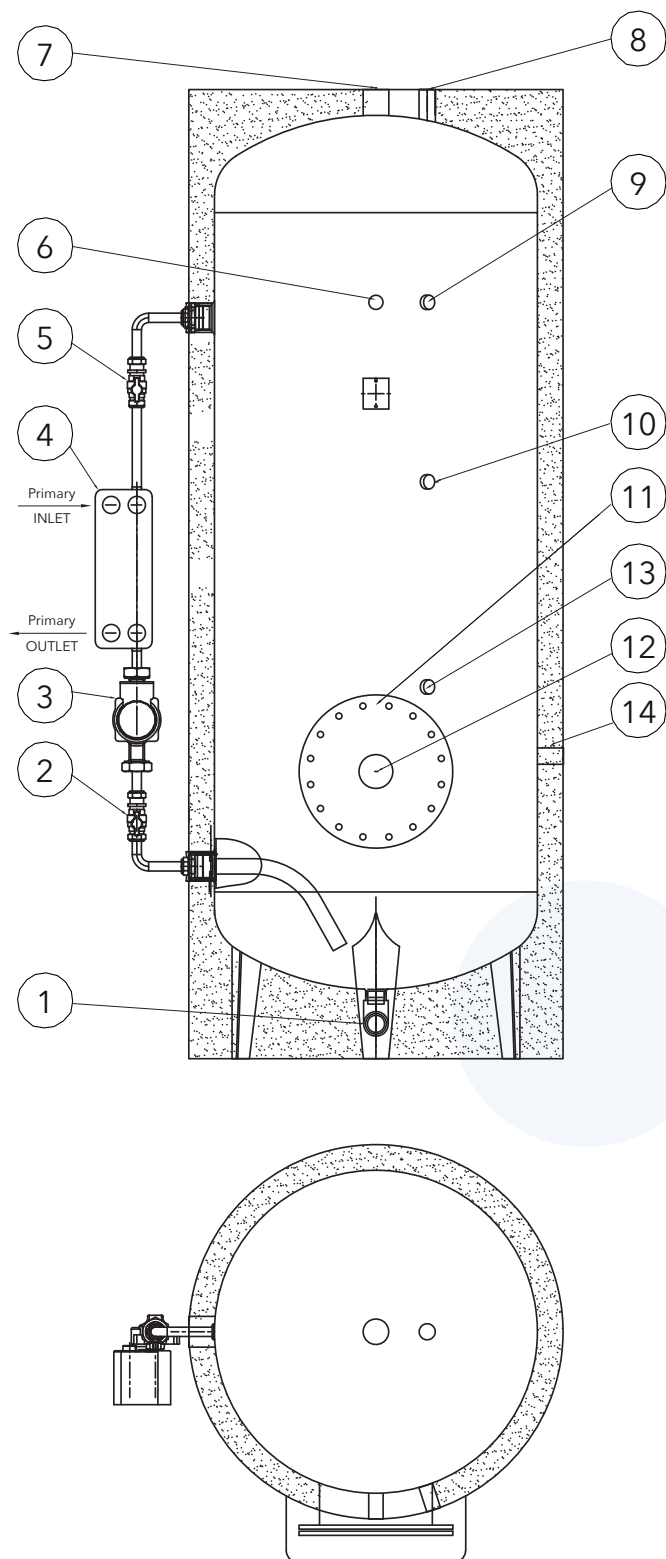
Technical Specification

| | |
|---|--------------------------|
| Capacity | 285 litres |
| Heat Input | 110 kw |
| Orientation | Vertical |
| Construction Materials: Shell | Duplex Stainless Steel |
| Construction Material: Plate Heat Exchanger | AISI 316 Stainless Steel |
| Insulation Material & Thickness | 50 mm Hard Polyurethane |
| Standing Energy Losses | 53 watts |
| Total Diameter with Insulation | 580 mm |
| Total Diameter without Insulation | 480 mm |
| Total Height with Insulation | 1742 mm |
| Weight Empty | 115 kg |
| Maximum working pressure - Vessel | 8 bar |
| Maximum working temperature | 99°C |

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ProRapid 300 - Semi Instantaneous DHW Generator



Performance @ Flow & Return -

80°C/60°C

| | |
|------------------------------------|--------------|
| Heat Input | 110 kW |
| 1st Hour Hot Water ΔT 50°C | 2192 litres |
| DHW Flow Rate ΔT 50°C | 1892 litres |
| Vessel Recovery Rate | 9.5 mins |
| Primary Flow Rate Required | 1.31 lit/sec |
| Exchanger Pressure Loss | 50 kpa |
| Standing Energy Loss | 53 watts |

Connections (BSP/mm)

| | | |
|----|------------------------------------|------------|
| 1 | Cold water inlet / Drain | 1 1/4" |
| 2 | Water Inlet to Brazed Plate | 1" |
| 3 | Charging Pump | |
| 4 | Primary Connections | 1" |
| 5 | Hot Water Outlet from Brazed Plate | 1" |
| 6 | Control Panel Connections | 1/2" |
| 7 | Domestic Hot Water Outlet | 1 1/2" |
| 8 | T & P Valve | 3/4" |
| 9 | Sensor Tapping | 1/2" |
| 10 | Sensor Tapping | 1/2" |
| 11 | Inspection Hatch | 120/180 mm |
| 12 | Optional Immersion Heater | 1 1/2" |
| 13 | Sensor Tapping | 1/2" |
| 14 | Domestic Hot Water Return | 3/4" |



CHWS

TECHNICAL PRODUCT SUBMITTAL

ProRapid 500 - Semi Instantaneous DHW Generator

Product Description

The ProRapid Semi-Instantaneous DHW Generator is a duplex stainless steel buffer vessel with an externally mounted stainless steel Brazen Plate Heat Exchanger, which is able to generate large amounts of Domestic Hot Water very quickly with rapid recovery times for a variety of commercial applications. The plate heat exchanger is connected to a heat source such as a boiler which provides the heat energy driving the heat exchanger.

The ProRapid is supplied with various sized buffer vessels and brazed plate heat exchangers to suit the required application, also included is a suitably sized charging pump, a control panel incorporating a visual temperature gauge, and a high temperature thermostat. The ProRapid is supplied complete with a removable rigid polyurethane insulation jacket with a grey external finish.

ProRapid Range: Features

- Inspection Access
- Factory fitted temperature and pressure relief valve
- Visual DHW temperature gauge
- High temperature thermostat
- Potable water unvented system kit and expansion vessel
- Delivery to a mainland UK site address

ProRapid Range: Options

- Single or three phase electric immersion elements
- Surface mounted clips or immersed tapings for BMS probes
- Larger services connections



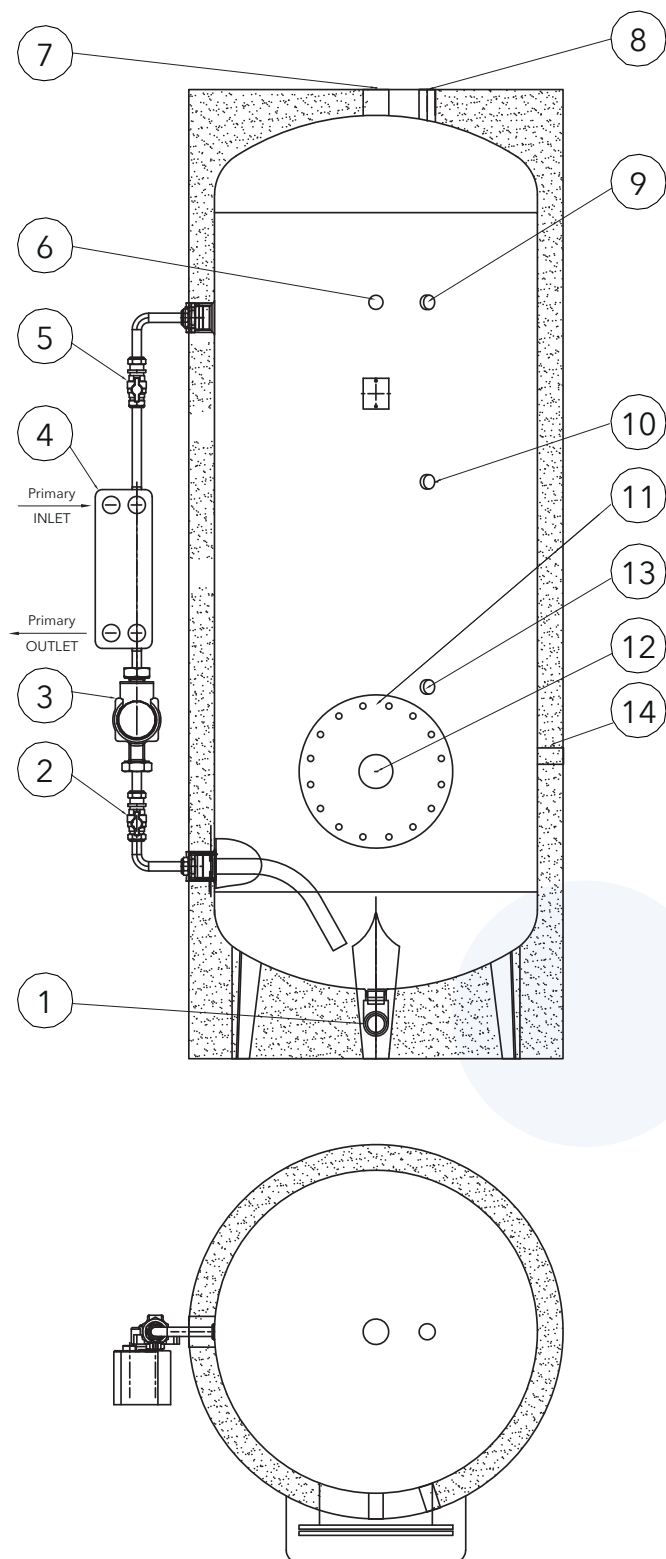
Technical Specification

| | |
|---|--------------------------|
| Capacity | 500 litres |
| Heat Input | 110 kw |
| Orientation | Vertical |
| Construction Materials: Shell | Duplex Stainless Steel |
| Construction Material: Plate Heat Exchanger | AISI 316 Stainless Steel |
| Insulation Material & Thickness | 50 mm Hard Polyurethane |
| Standing Energy Losses | 77 watts |
| Total Diameter with Insulation | 730 mm |
| Total Diameter without Insulation | 630 mm |
| Total Height with Insulation | 1890 mm |
| Weight Empty | 115 kg |
| Maximum working pressure - Vessel | 8 bar |
| Maximum working temperature | 99°C |

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ProRapid 500 - Semi Instantaneous DHW Generator



Performance @ Flow & Return -

80°C/60°C

| | |
|------------------------------------|--------------|
| Heat Input | 110 kW |
| 1st Hour Hot Water ΔT 50°C | 2392 litres |
| DHW Flow Rate ΔT 50°C | 1892 litres |
| Vessel Recovery Rate | 16 mins |
| Primary Flow Rate Required | 1.31 lit/sec |
| Exchanger Pressure Loss | 50 kpa |
| Standing Energy Loss | 77 watts |

Connections (BSP/mm)

| | | |
|----|------------------------------------|------------|
| 1 | Cold water inlet / Drain | 2" |
| 2 | Water Inlet to Brazed Plate | 1" |
| 3 | Charging Pump | |
| 4 | Primary Connections | 1" |
| 5 | Hot Water Outlet from Brazed Plate | 1" |
| 6 | Control Panel Connections | 1/2" |
| 7 | Domestic Hot Water Outlet | 1 1/2" |
| 8 | T & P Valve | 3/4" |
| 9 | Sensor Tapping | 1/2" |
| 10 | Sensor Tapping | 1/2" |
| 11 | Inspection Hatch | 220/300 mm |
| 12 | Optional Immersion Heater | 2" |
| 13 | Sensor Tapping | 1/2" |
| 14 | Domestic Hot Water Return | 3/4" |



CHWS

TECHNICAL PRODUCT SUBMITTAL

ProRapid 800 - Semi Instantaneous DHW Generator

Product Description

The ProRapid Semi-Instantaneous DHW Generator is a duplex stainless steel buffer vessel with an externally mounted stainless steel Brazen Plate Heat Exchanger, which is able to generate large amounts of Domestic Hot Water very quickly with rapid recovery times for a variety of commercial applications. The plate heat exchanger is connected to a heat source such as a boiler which provides the heat energy driving the heat exchanger.

The ProRapid is supplied with various sized buffer vessels and brazed plate heat exchangers to suit the required application, also included is a suitably sized charging pump, a control panel incorporating a visual temperature gauge, and a high temperature thermostat. The ProRapid is supplied complete with a removable Hard polyurethane insulation jacket with a grey external finish.

ProRapid Range: Features

- Inspection Access
- Factory fitted temperature and pressure relief valve
- Visual DHW temperature gauge
- High temperature thermostat
- Potable water unvented system kit and expansion vessel
- Delivery to a mainland UK site address

ProRapid Range: Options

- Single or three phase electric immersion elements
- Surface mounted clips or immersed tapings for BMS probes
- Larger services connections



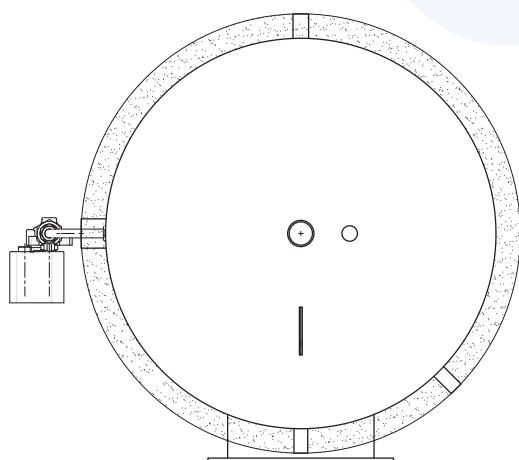
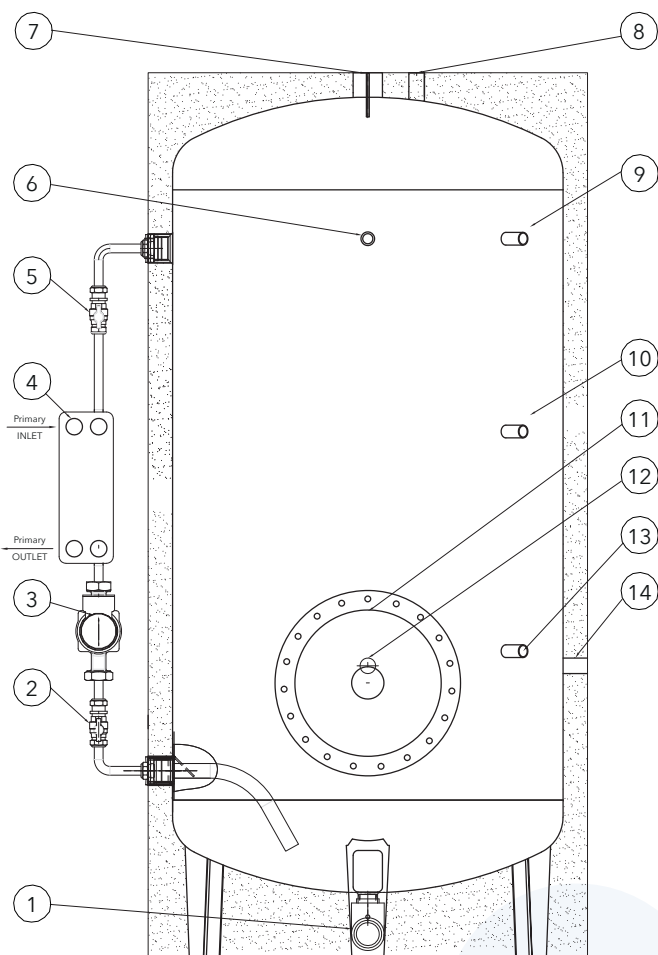
Technical Specification

| | |
|---|--------------------------|
| Capacity | 795 litres |
| Heat Input | 135 kw |
| Orientation | Vertical |
| Construction Materials: Shell | Duplex Stainless Steel |
| Construction Material: Plate Heat Exchanger | AISI 316 Stainless Steel |
| Insulation Material & Thickness | 50 mm Hard Polyurethane |
| Standing Energy Losses | 59 watts |
| Total Diameter with Insulation | 900 mm |
| Total Diameter without Insulation | 800 mm |
| Total Height with Insulation | 1815 mm |
| Weight Empty | 170 kg |
| Maximum working pressure - Vessel | 8 bar |
| Maximum working temperature | 99°C |

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ProRapid 800 - Semi Instantaneous DHW Generator



Performance @ Flow & Return -

80°C/60°C

| | |
|------------------------------------|--------------|
| Heat Input | 135 kW |
| 1st Hour Hot Water ΔT 50°C | 3122 litres |
| DHW Flow Rate ΔT 50°C | 2322 litres |
| Vessel Recovery Rate | 21 mins |
| Primary Flow Rate Required | 1.61 lit/sec |
| Exchanger Pressure Loss | 45 kpa |
| Standing Energy Loss | 59 watts |

Connections (BSP/mm)

| | | |
|----|------------------------------------|------------|
| 1 | Cold water inlet / Drain | 2" |
| 2 | Water Inlet to Brazed Plate | 1" |
| 3 | Charging Pump | |
| 4 | Primary Connections | 1" |
| 5 | Hot Water Outlet from Brazed Plate | 1" |
| 6 | Control Panel Connections | 1/2" |
| 7 | Domestic Hot Water Outlet | 2" |
| 8 | T & P Valve | 3/4" |
| 9 | Sensor Tapping | 1/2" |
| 10 | Sensor Tapping | 1/2" |
| 11 | Inspection Hatch | 300/380 mm |
| 12 | Optional Immersion Heater | 2" |
| 13 | Sensor Tapping | 1/2" |
| 14 | Domestic Hot Water Return | 3/4" |



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TECHNICAL PRODUCT SUBMITTAL

ProRapid 1000 - Semi Instantaneous DHW Generator

Product Description

The ProRapid Semi-Instantaneous DHW Generator is a duplex stainless steel buffer vessel with an externally mounted stainless steel Brazed Plate Heat Exchanger, which is able to generate large amounts of Domestic Hot Water very quickly with rapid recovery times for a variety of commercial applications. The plate heat exchanger is connected to a heat source such as a boiler which provides the heat energy driving the heat exchanger.

The ProRapid is supplied with various sized buffer vessels and brazed plate heat exchangers to suit the required application, also included is a suitably sized charging pump, a control panel incorporating a visual temperature gauge, and a high temperature thermostat. The ProRapid is supplied complete with a removable Hard polyurethane insulation jacket with a grey external finish.

ProRapid Range: Features

- Inspection Access
- Factory fitted temperature and pressure relief valve
- Visual DHW temperature gauge
- High temperature thermostat
- Potable water unvented system kit and expansion vessel
- Delivery to a mainland UK site address

ProRapid Range: Options

- Single or three phase electric immersion elements
- Surface mounted clips or immersed tapplings for BMS probes
- Larger services connections



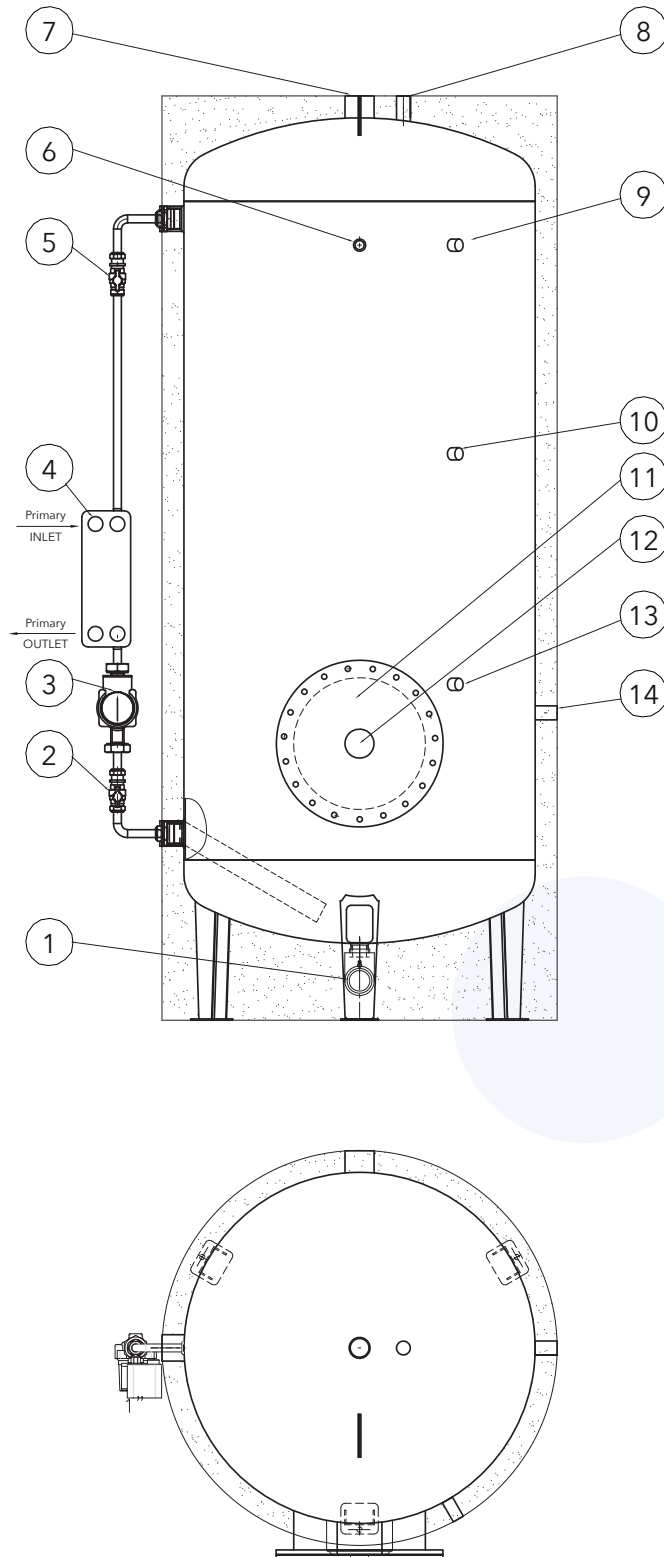
Technical Specification

| | |
|---|--------------------------|
| Capacity | 920 litres |
| Heat Input | 175 kw |
| Orientation | Vertical |
| Construction Materials: Shell | Duplex Stainless Steel |
| Construction Material: Plate Heat Exchanger | AISI 316 Stainless Steel |
| Insulation Material & Thickness | 50 mm Hard Polyurethane |
| Standing Energy Losses | 68 watts |
| Total Diameter with Insulation | 900 mm |
| Total Diameter without Insulation | 800 mm |
| Total Height with Insulation | 2105 mm |
| Weight Empty | 183 kg |
| Maximum working pressure - Vessel | 8 bar |
| Maximum working temperature | 99°C |

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ProRapid 1000 - Semi Instantaneous DHW Generator



Performance @ Flow & Return -

80°C/60°C

| | |
|------------------------------------|--------------|
| Heat Input | 175 kW |
| 1st Hour Hot Water ΔT 50°C | 4010 litres |
| DHW Flow Rate ΔT 50°C | 3010 litres |
| Vessel Recovery Rate | 20 mins |
| Primary Flow Rate Required | 2.08 lit/sec |
| Exchanger Pressure Loss | 50 kpa |
| Standing Energy Loss | 68 watts |

Connections (BSP/mm)

| | | |
|----|------------------------------------|------------|
| 1 | Cold water inlet / Drain | 2" |
| 2 | Water Inlet to Brazed Plate | 1" |
| 3 | Charging Pump | |
| 4 | Primary Connections | 1" |
| 5 | Hot Water Outlet from Brazed Plate | 1" |
| 6 | Control Panel Connections | 1/2" |
| 7 | Domestic Hot Water Outlet | 2" |
| 8 | T & P Valve | 3/4" |
| 9 | Sensor Tapping | 1/2" |
| 10 | Sensor Tapping | 1/2" |
| 11 | Inspection Hatch | 300/380 mm |
| 12 | Optional Immersion Heater | 2" |
| 13 | Sensor Tapping | 1/2" |
| 14 | Domestic Hot Water Return | 3/4" |



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TECHNICAL PRODUCT SUBMITTAL

ProRapid 1000 - Semi Instantaneous DHW Generator

Product Description

The ProRapid Semi-Instantaneous DHW Generator is a duplex stainless steel buffer vessel with an externally mounted stainless steel Brazed Plate Heat Exchanger, which is able to generate large amounts of Domestic Hot Water very quickly with rapid recovery times for a variety of commercial applications. The plate heat exchanger is connected to a heat source such as a boiler which provides the heat energy driving the heat exchanger.

The ProRapid is supplied with various sized buffer vessels and brazed plate heat exchangers to suit the required application, also included is a suitably sized charging pump, a control panel incorporating a visual temperature gauge, and a high temperature thermostat. The ProRapid is supplied complete with a removable Hard polyurethane insulation jacket with a grey external finish.

ProRapid Range: Features

- Inspection Access
- Factory fitted temperature and pressure relief valve
- Visual DHW temperature gauge
- High temperature thermostat
- Potable water unvented system kit and expansion vessel
- Delivery to a mainland UK site address

ProRapid Range: Options

- Single or three phase electric immersion elements
- Surface mounted clips or immersed tapplings for BMS probes
- Larger services connections



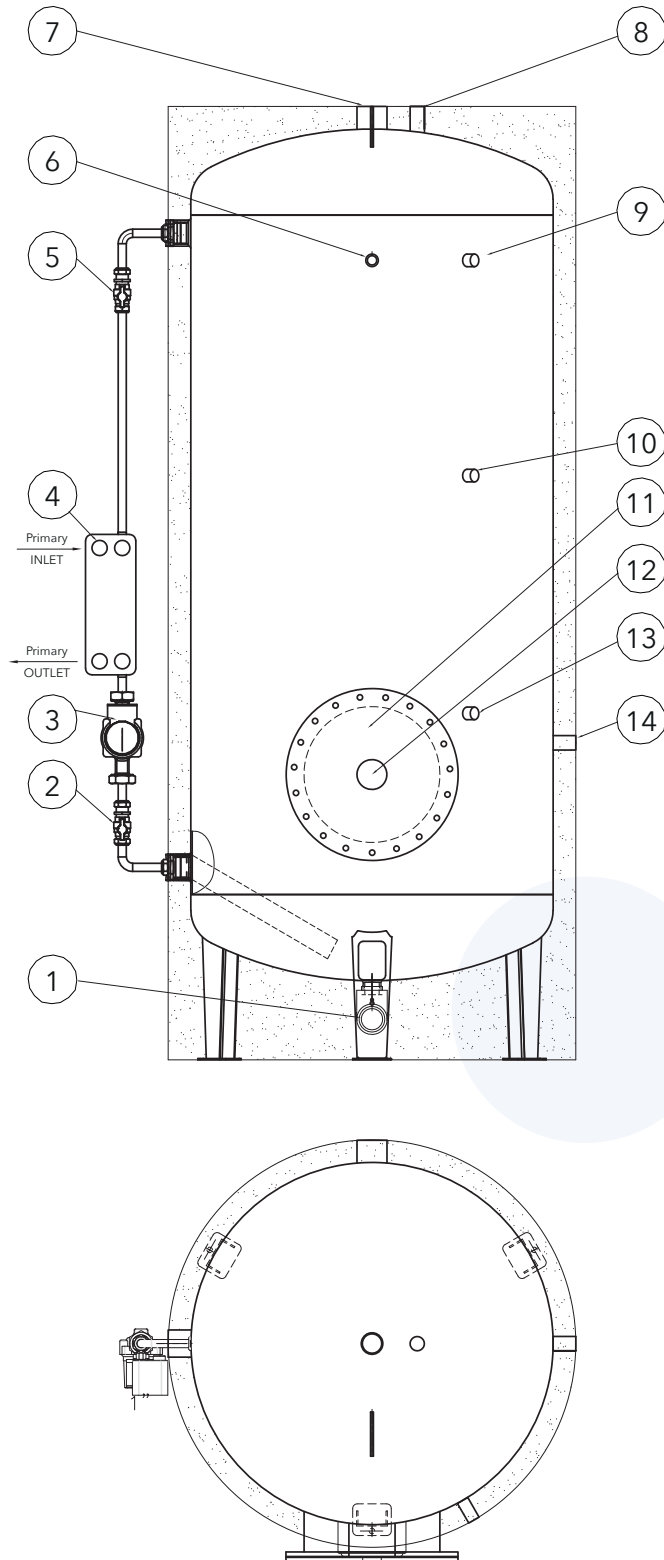
Technical Specification

| | |
|---|--------------------------|
| Capacity | 920 litres |
| Heat Input | 250 kw |
| Orientation | Vertical |
| Construction Materials: Shell | Duplex Stainless Steel |
| Construction Material: Plate Heat Exchanger | AISI 316 Stainless Steel |
| Insulation Material & Thickness | 50 mm Hard Polyurethane |
| Standing Energy Losses | 68 watts |
| Total Diameter with Insulation | 900 mm |
| Total Diameter without Insulation | 800 mm |
| Total Height with Insulation | 2105 mm |
| Weight Empty | 183 kg |
| Maximum working pressure - Vessel | 8 bar |
| Maximum working temperature | 99°C |

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ProRapid 1000 - Semi Instantaneous DHW Generator



Performance @ Flow & Return -

80°C/60°C

| | |
|------------------------------------|--------------|
| Heat Input | 250 kW |
| 1st Hour Hot Water ΔT 50°C | 5300 litres |
| DHW Flow Rate ΔT 50°C | 4300 litres |
| Vessel Recovery Rate | 14 mins |
| Primary Flow Rate Required | 2.98 lit/sec |
| Exchanger Pressure Loss | 50 kpa |
| Standing Energy Loss | 68 watts |

Connections (BSP/mm)

| | | |
|----|------------------------------------|------------|
| 1 | Cold water inlet / Drain | 2" |
| 2 | Water Inlet to Brazed Plate | 1" |
| 3 | Charging Pump | |
| 4 | Primary Connections | 1" |
| 5 | Hot Water Outlet from Brazed Plate | 1" |
| 6 | Control Panel Connections | 1/2" |
| 7 | Domestic Hot Water Outlet | 2" |
| 8 | T & P Valve | 3/4" |
| 9 | Sensor Tapping | 1/2" |
| 10 | Sensor Tapping | 1/2" |
| 11 | Inspection Hatch | 300/380 mm |
| 12 | Optional Immersion Heater | 2" |
| 13 | Sensor Tapping | 1/2" |
| 14 | Domestic Hot Water Return | 3/4" |



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TECHNICAL PRODUCT SUBMITTAL

ProRapid 1500 - Semi Instantaneous DHW Generator

Product Description

The ProRapid Semi-Instantaneous DHW Generator is a duplex stainless steel buffer vessel with an externally mounted stainless steel Brazen Plate Heat Exchanger, which is able to generate large amounts of Domestic Hot Water very quickly with rapid recovery times for a variety of commercial applications. The plate heat exchanger is connected to a heat source such as a boiler which provides the heat energy driving the heat exchanger.

The ProRapid is supplied with various sized buffer vessels and brazed plate heat exchangers to suit the required application, also included is a suitably sized charging pump, a control panel incorporating a visual temperature gauge, and a high temperature thermostat. The ProRapid is supplied complete with a removable Hard polyurethane insulation jacket with a grey external finish.

ProRapid Range: Features

- Inspection Access
- Factory fitted temperature and pressure relief valve
- Visual DHW temperature gauge
- High temperature thermostat
- Potable water unvented system kit and expansion vessel
- Delivery to a mainland UK site address

ProRapid Range: Options

- Single or three phase electric immersion elements
- Surface mounted clips or immersed tapplings for BMS probes
- Larger services connections



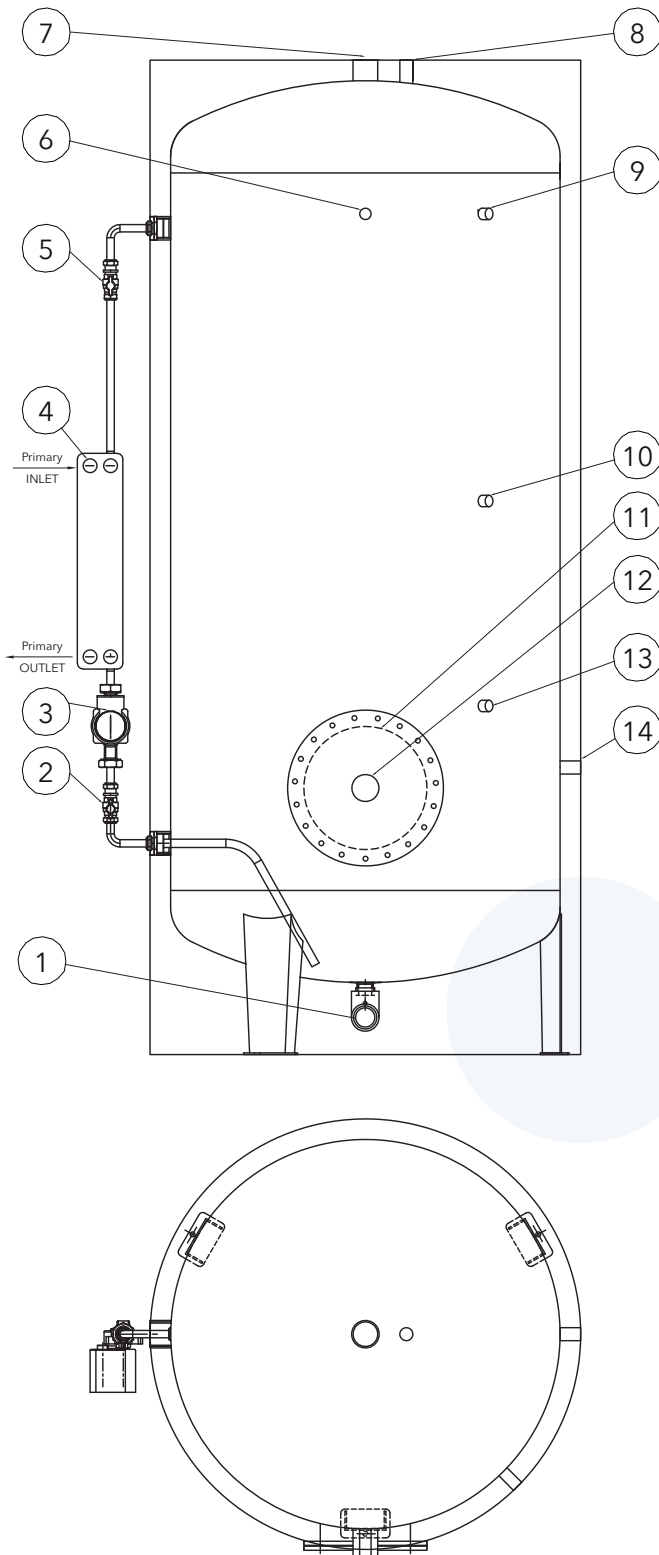
Technical Specification

| | |
|---|--------------------------|
| Capacity | 1435 litres |
| Heat Input | 175 kw |
| Orientation | Vertical |
| Construction Materials: Shell | Duplex Stainless Steel |
| Construction Material: Plate Heat Exchanger | AISI 316 Stainless Steel |
| Insulation Material & Thickness | 50 mm Hard Polyurethane |
| Standing Energy Losses | 92 watts |
| Total Diameter with Insulation | 1050 mm |
| Total Diameter without Insulation | 950 mm |
| Total Height with Insulation | 2425 mm |
| Weight Empty | 248 kg |
| Maximum working pressure - Vessel | 8 bar |
| Maximum working temperature | 99°C |

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ProRapid 1500 - Semi Instantaneous DHW Generator



Performance @ Flow & Return -

80°C/60°C

| | |
|------------------------------------|--------------|
| Heat Input | 175 kW |
| 1st Hour Hot Water ΔT 50°C | 4510 litres |
| DHW Flow Rate ΔT 50°C | 3010 litres |
| Vessel Recovery Rate | 30 mins |
| Primary Flow Rate Required | 2.08 lit/sec |
| Exchanger Pressure Loss | 50 kpa |
| Standing Energy Loss | 92 watts |

Connections (BSP/mm)

| | | |
|----|------------------------------------|------------|
| 1 | Cold water inlet / Drain | 2" |
| 2 | Water Inlet to Brazed Plate | 1" |
| 3 | Charging Pump | |
| 4 | Primary Connections | 1" |
| 5 | Hot Water Outlet from Brazed Plate | 1" |
| 6 | Control Panel Connections | 1/2" |
| 7 | Domestic Hot Water Outlet | 2" |
| 8 | T & P Valve | 3/4" |
| 9 | Sensor Tapping | 1/2" |
| 10 | Sensor Tapping | 1/2" |
| 11 | Inspection Hatch | 300/380 mm |
| 12 | Optional Immersion Heater | 2" |
| 13 | Sensor Tapping | 1/2" |
| 14 | Domestic Hot Water Return | 3/4" |



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TECHNICAL PRODUCT SUBMITTAL

ProRapid 1500 - Semi Instantaneous DHW Generator

Product Description

The ProRapid Semi-Instantaneous DHW Generator is a duplex stainless steel buffer vessel with an externally mounted stainless steel Brazen Plate Heat Exchanger, which is able to generate large amounts of Domestic Hot Water very quickly with rapid recovery times for a variety of commercial applications. The plate heat exchanger is connected to a heat source such as a boiler which provides the heat energy driving the heat exchanger.

The ProRapid is supplied with various sized buffer vessels and brazed plate heat exchangers to suit the required application, also included is a suitably sized charging pump, a control panel incorporating a visual temperature gauge, and a high temperature thermostat. The ProRapid is supplied complete with a removable Hard polyurethane insulation jacket with a grey external finish.

ProRapid Range: Features

- Inspection Access
- Factory fitted temperature and pressure relief valve
- Visual DHW temperature gauge
- High temperature thermostat
- Potable water unvented system kit and expansion vessel
- Delivery to a mainland UK site address

ProRapid Range: Options

- Single or three phase electric immersion elements
- Surface mounted clips or immersed tapings for BMS probes
- Larger services connections



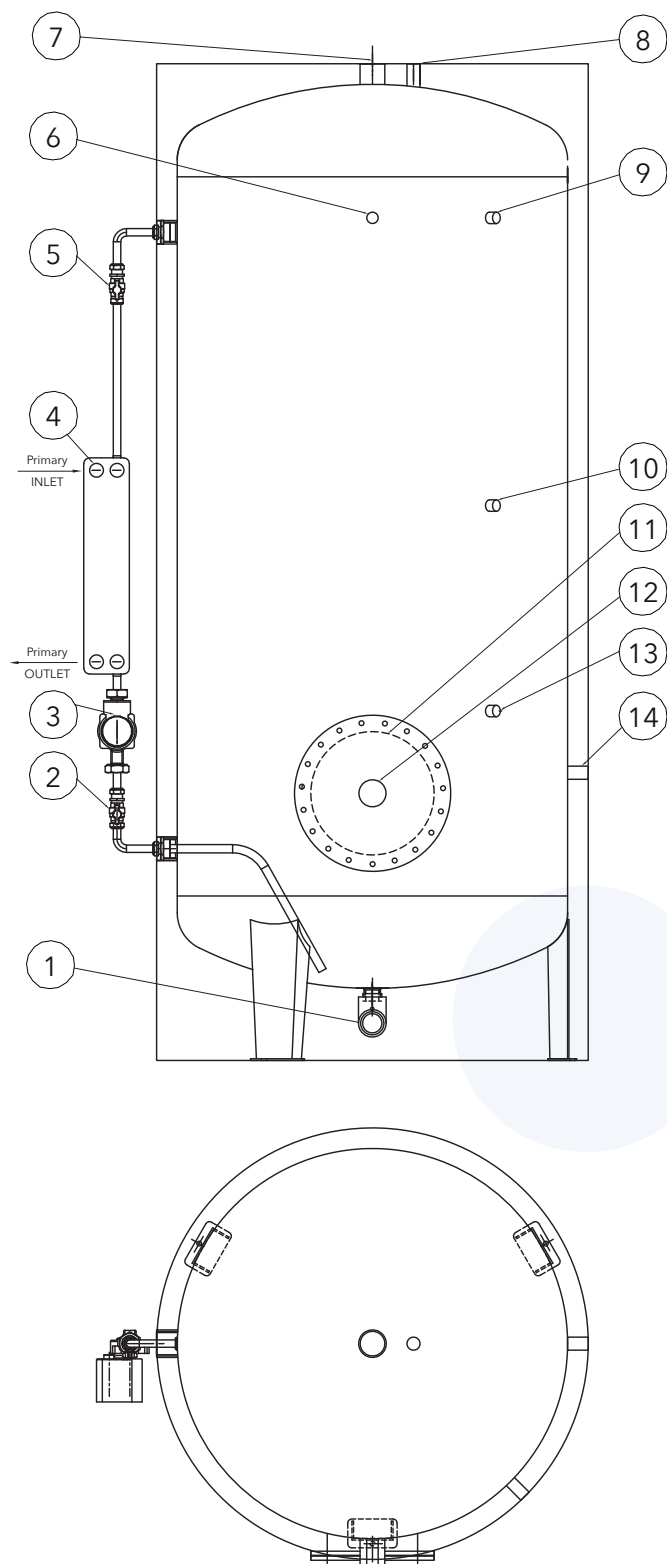
Technical Specification

| | |
|---|--------------------------|
| Capacity | 1435 litres |
| Heat Input | 250 kw |
| Orientation | Vertical |
| Construction Materials: Shell | Duplex Stainless Steel |
| Construction Material: Plate Heat Exchanger | AISI 316 Stainless Steel |
| Insulation Material & Thickness | 50 mm Hard Polyurethane |
| Standing Energy Losses | 92 watts |
| Total Diameter with Insulation | 1050 mm |
| Total Diameter without Insulation | 950 mm |
| Total Height with Insulation | 2425 mm |
| Weight Empty | 248 kg |
| Maximum working pressure - Vessel | 8 bar |
| Maximum working temperature | 99°C |

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ProRapid 1500 - Semi Instantaneous DHW Generator



Performance @ Flow & Return -

80°C/60°C

| | |
|------------------------------------|--------------|
| Heat Input | 250 kW |
| 1st Hour Hot Water ΔT 50°C | 5800 litres |
| DHW Flow Rate ΔT 50°C | 4300 litres |
| Vessel Recovery Rate | 21 mins |
| Primary Flow Rate Required | 2.98 lit/sec |
| Exchanger Pressure Loss | 50 kpa |
| Standing Energy Loss | 92 watts |

Connections (BSP/mm)

| | | |
|----|------------------------------------|------------|
| 1 | Cold water inlet / Drain | 2" |
| 2 | Water Inlet to Brazed Plate | 1" |
| 3 | Charging Pump | |
| 4 | Primary Connections | 1" |
| 5 | Hot Water Outlet from Brazed Plate | 1" |
| 6 | Control Panel Connections | 1/2" |
| 7 | Domestic Hot Water Outlet | 2" |
| 8 | T & P Valve | 3/4" |
| 9 | Sensor Tapping | 1/2" |
| 10 | Sensor Tapping | 1/2" |
| 11 | Inspection Hatch | 300/380 mm |
| 12 | Optional Immersion Heater | 2" |
| 13 | Sensor Tapping | 1/2" |
| 14 | Domestic Hot Water Return | 3/4" |



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TECHNICAL PRODUCT SUBMITTAL

ProRapid 2000 - Semi Instantaneous DHW Generator

Product Description

The ProRapid Semi-Instantaneous DHW Generator is a duplex stainless steel buffer vessel with an externally mounted stainless steel Brazen Plate Heat Exchanger, which is able to generate large amounts of Domestic Hot Water very quickly with rapid recovery times for a variety of commercial applications. The plate heat exchanger is connected to a heat source such as a boiler which provides the heat energy driving the heat exchanger.

The ProRapid is supplied with various sized buffer vessels and brazed plate heat exchangers to suit the required application, also included is a suitably sized charging pump, a control panel incorporating a visual temperature gauge, and a high temperature thermostat. The ProRapid is supplied complete with a removable Hard polyurethane insulation jacket with a grey external finish.

ProRapid Range: Features

- Inspection Access
- Factory fitted temperature and pressure relief valve
- Visual DHW temperature gauge
- High temperature thermostat
- Potable water unvented system kit and expansion vessel
- Delivery to a mainland UK site address

ProRapid Range: Options

- Single or three phase electric immersion elements
- Surface mounted clips or immersed tapplings for BMS probes
- Larger services connections



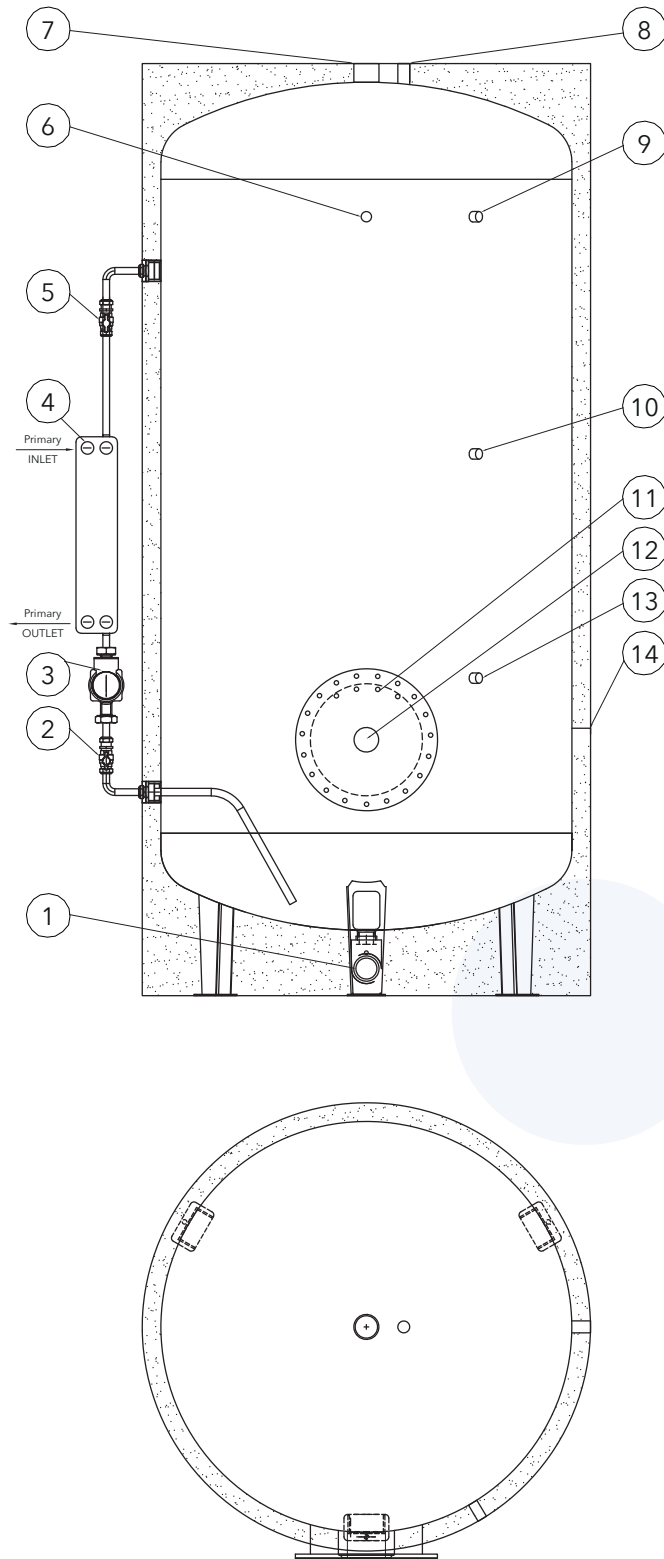
Technical Specification

| | |
|---|--------------------------|
| Capacity | 1980 litres |
| Heat Input | 175 kw |
| Orientation | Vertical |
| Construction Materials: Shell | Duplex Stainless Steel |
| Construction Material: Plate Heat Exchanger | AISI 316 Stainless Steel |
| Insulation Material & Thickness | 50 mm Hard Polyurethane |
| Standing Energy Losses | 112 watts |
| Total Diameter with Insulation | 1200 mm |
| Total Diameter without Insulation | 1100 mm |
| Total Height with Insulation | 2495 mm |
| Weight Empty | 300 kg |
| Maximum working pressure - Vessel | 8 bar |
| Maximum working temperature | 99°C |

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ProRapid 2000 - Semi Instantaneous DHW Generator



Performance @ Flow & Return -

80°C/60°C

| | |
|------------------------------------|--------------|
| Heat Input | 175 kW |
| 1st Hour Hot Water ΔT 50°C | 5010 litres |
| DHW Flow Rate ΔT 50°C | 3010 litres |
| Vessel Recovery Rate | 40 mins |
| Primary Flow Rate Required | 2.08 lit/sec |
| Exchanger Pressure Loss | 50 kpa |
| Standing Energy Loss | 112 watts |

Connections (BSP/mm)

| | | |
|----|------------------------------------|------------|
| 1 | Cold water inlet / Drain | 2" |
| 2 | Water Inlet to Brazed Plate | 1" |
| 3 | Charging Pump | |
| 4 | Primary Connections | 1" |
| 5 | Hot Water Outlet from Brazed Plate | 1" |
| 6 | Control Panel Connections | 1/2" |
| 7 | Domestic Hot Water Outlet | 2" |
| 8 | T & P Valve | 3/4" |
| 9 | Sensor Tapping | 1/2" |
| 10 | Sensor Tapping | 1/2" |
| 11 | Inspection Hatch | 300/380 mm |
| 12 | Optional Immersion Heater | 2" |
| 13 | Sensor Tapping | 1/2" |
| 14 | Domestic Hot Water Return | 3/4" |



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TECHNICAL PRODUCT SUBMITTAL

ProRapid 2000 - Semi Instantaneous DHW Generator

Product Description

The ProRapid Semi-Instantaneous DHW Generator is a duplex stainless steel buffer vessel with an externally mounted stainless steel Brazen Plate Heat Exchanger, which is able to generate large amounts of Domestic Hot Water very quickly with rapid recovery times for a variety of commercial applications. The plate heat exchanger is connected to a heat source such as a boiler which provides the heat energy driving the heat exchanger.

The ProRapid is supplied with various sized buffer vessels and brazed plate heat exchangers to suit the required application, also included is a suitably sized charging pump, a control panel incorporating a visual temperature gauge, and a high temperature thermostat. The ProRapid is supplied complete with a removable Hard polyurethane insulation jacket with a grey external finish.

ProRapid Range: Features

- Inspection Access
- Factory fitted temperature and pressure relief valve
- Visual DHW temperature gauge
- High temperature thermostat
- Potable water unvented system kit and expansion vessel
- Delivery to a mainland UK site address

ProRapid Range: Options

- Single or three phase electric immersion elements
- Surface mounted clips or immersed tapings for BMS probes
- Larger services connections



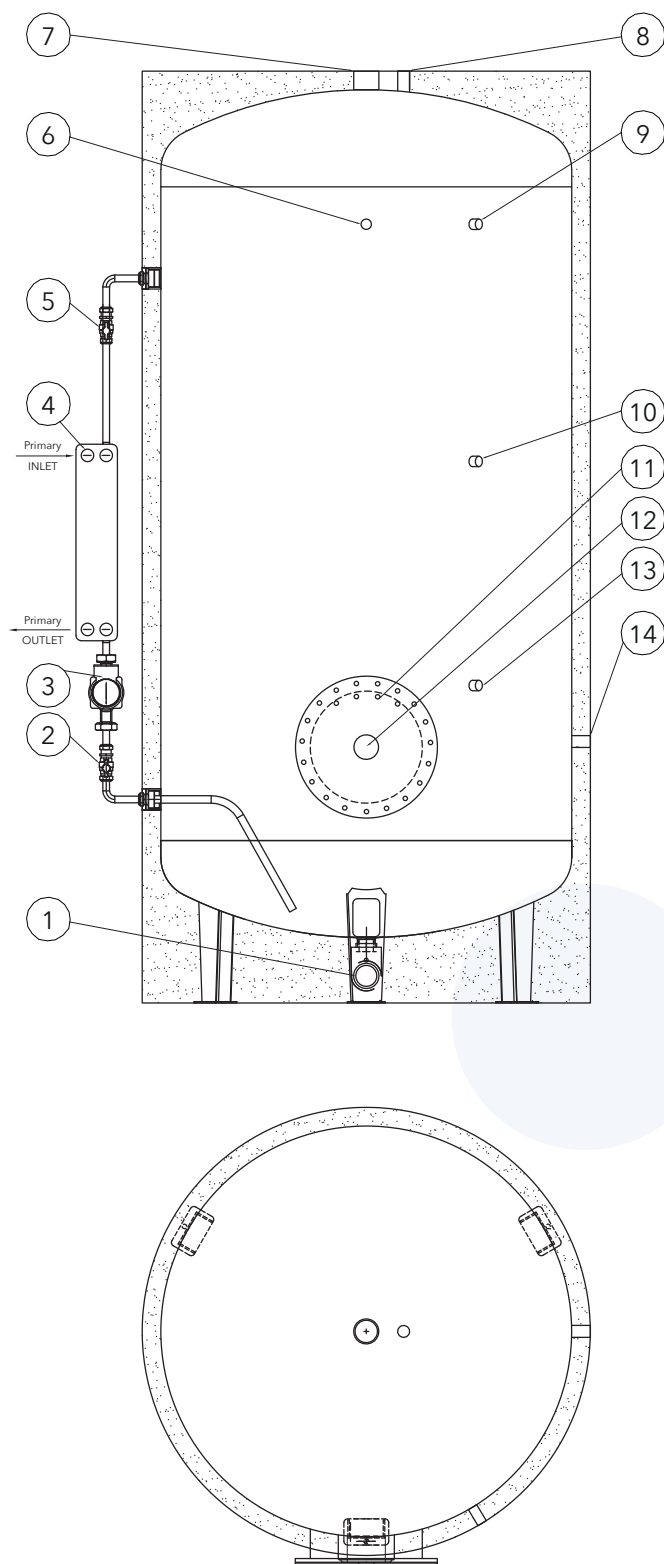
Technical Specification

| | |
|---|--------------------------|
| Capacity | 1980 litres |
| Heat Input | 250 kw |
| Orientation | Vertical |
| Construction Materials: Shell | Duplex Stainless Steel |
| Construction Material: Plate Heat Exchanger | AISI 316 Stainless Steel |
| Insulation Material & Thickness | 50 mm Hard Polyurethane |
| Standing Energy Losses | 112 watts |
| Total Diameter with Insulation | 1200 mm |
| Total Diameter without Insulation | 1100 mm |
| Total Height with Insulation | 2495 mm |
| Weight Empty | 300 kg |
| Maximum working pressure - Vessel | 8 bar |
| Maximum working temperature | 99°C |

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ProRapid 2000 - Semi Instantaneous DHW Generator



Performance @ Flow & Return -

80°C/60°C

| | |
|------------------------------------|--------------|
| Heat Input | 250 kW |
| 1st Hour Hot Water ΔT 50°C | 6300 litres |
| DHW Flow Rate ΔT 50°C | 4300 litres |
| Vessel Recovery Rate | 28 mins |
| Primary Flow Rate Required | 2.98 lit/sec |
| Exchanger Pressure Loss | 50 kpa |
| Standing Energy Loss | 112 watts |

Connections (BSP/mm)

| | | |
|----|------------------------------------|------------|
| 1 | Cold water inlet / Drain | 2" |
| 2 | Water Inlet to Brazed Plate | 1" |
| 3 | Charging Pump | |
| 4 | Primary Connections | 1" |
| 5 | Hot Water Outlet from Brazed Plate | 1" |
| 6 | Control Panel Connections | 1/2" |
| 7 | Domestic Hot Water Outlet | 2" |
| 8 | T & P Valve | 3/4" |
| 9 | Sensor Tapping | 1/2" |
| 10 | Sensor Tapping | 1/2" |
| 11 | Inspection Hatch | 300/380 mm |
| 12 | Optional Immersion Heater | 2" |
| 13 | Sensor Tapping | 1/2" |
| 14 | Domestic Hot Water Return | 3/4" |

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"Commercial Hot Water Solutions Ltd (CHWS Ltd) are a Bosch recognised supplier of high quality commercial and industrial hot water generators and storage vessels for use with the Bosch Commercial and Industrial range of boilers and water heaters"