THERM FLOW

THERMAL STORE BESPOKE RANGE FOR MULTIPLE HEAT SOURCE INPUTS





Hot Water Storage Solutions

Our THERM**FLOW** thermal store, works at the heart of your heating and hot water system to provide a high performance, mains pressure solution which delivers enormous benefits.

Our thermal store approach can incorporate multiple energy sources to heat the home as well as meet hot water demand to achieve improved efficiencies and cost savings. And with our unique design and manufacturing solution, we can offer significant cost savings both during installation and ongoing running costs.

DISCOVER THE BENEFITS OF A THERMFLOW THERMAL STORE

- → No costly pumps and electronic controls required
 providing piping hot water even during a power outage
- → Delivers mains pressure hot water with scald protection and inherent safety of vented system
- → Can incorporate multiple fuel sources
- → ALL energy inputs can be transferred to heating AND hot water circuits
- → Perfect partner for solid fuel with copper feed and expansion tanks
- ightarrow Fit and forget solution with no G3 certification required
- → Being copper provides complete peace of mind
 killing 99% of bacteria
- → Available in any shape and any size including like for like replacements

WHY THERMFLOW

Manufactured from premium grade copper, our THERM**FLOW** mains pressure hot water system delivers unrivalled performance thanks, in part, to copper's superior thermal transfer properties.

One of our key advantages is the extra long finned copper coil which we incorporate into every THERM**FLOW** cylinder. This ensures greater flow rates, improves efficiency and reduces ongoing costs.

This means our THERM**FLOW** thermal store cylinder is designed to achieve a consistently high water temperature due to a combination of our unique design and copper's increased efficiency.

With a comprehensive range of thermal store solutions and the ability to have your cylinder any size, any shape and with any fuel sources, you can be assured of the optimum hot water storage solution

THERM **FLOW**

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McDonald Water Storage To discuss your requirements contact us on T: 01592 611123



www.mcdonaldwaterstorage.com



- 1. Ballvalve
- 2. Hot Draw Out (c/w TMV)
- 3. **Expansion Chamber**
- 4. Cold Mains In
- 5. Drain
- **Central Heating Flow** 6.
- 7. **Central Heating Return**
- 8 Solar Probe Pocket

Standing Heat Loss (watts)

9 Solar Coil

ERP Class

Bedrooms

Baths & Showers

Max Heating Load (kW)

Dimension Including

Insulation (mm)

- Immersion Heater 10.
- Control Stat 11.
- High-Limit Stat 12.
- 13. **Temperature Gauge**
- **Boiler Flow**
- 15. Boiler Return
- 16. Solid Fuel Flow
- 17. Solid Fuel Return

С

80

2 - 3

2

16

1500

x 570

18. 1/2" Female for Relief Valve

С

85

2 - 3

3

19

1700

x 570

С

69

3 - 4

4

23

1700

x 640

С

76

4 - 5

5

27

2050

x 640

THERM **FLOW**

Multifuel Combination Type

The multi-fuel thermal store allows the incorporation of multiple heat sources into a single tank. Using your solid fuel appliance along with solar thermal, the system can be heated without the need for gas, oil or electric. Only at times where the other heat sources are unable to cope with demand, will the boiler come on to top up the temperature.

The combination type can be installed anywhere in the property, normally the top floor or attic. Providing the primary feed and expansion tank is at the highest level, the entire system can remain open vented. The minimum gap between highest radiator and base of header tank is 500mm. If this minimum distance can not be achieved then a sealed heating coil can be specified, or alternatively select the Cylinder Type.

The THERMflow is a bespoke designed product with indicative sizes for reference shown below.

KEY BENEFITS

- Incorporates multiple heat inputs
- Connections positioned for optimum performance
- Solar thermal can contribute to hot water and space heating

All Units to Following Specification:

- Maintenance Free Ball Valve & Copper Float
- 22mm DHW Coil & Mixing Valve
- 1.2m sq solar coil (larger coils are available)
- 2no. 10mm Solar Probe Pockets
- 22mm Flow & Return for Vented Boiler¹
- 28mm Flow & Return for Solid Fuel
- 22mm Flow & Return for Central Heating
- 3kW LWD Immersion Heater Fitted²
- 2no. Thermostats

С

89

5-6

5

35

1950

x 740

- 2" Dial Thermometer
- 60mm Polyurethane Foam Lagging (70mm on 250+)
- 1. If sealed system boiler then coil required.
- 2. Extra immersions can be included

^{3.} Optional DHW pipework insulation available on request

A WIDE RANGE OF
OTHER CAPACITIES AND
SIZES ARE AVAILABLE
INCLUDING SLIMLINE
MODELS

Sizes shown are indicative only, including insulation and standard heating expansion, which can be increased at the time of order



14

С

72

2

1

13

1250

x 570

С

68

1

1

11

1130

x 570



- 1. Vent to Header Tank
- 2. Hot Draw Out (c/w TMV)
- 3. Expansion Chamber
- 4. Cold Mains In
- 5 Drain/ Feed from Header Tank
- 6. Central Heating Flow
- Central Heating Return 7.
- 8 Solar Coil
- Solar Probe Pocket 9.

- 10. Immersion Heater
- 14. Boiler Flow
- 15. Boiler Return
- 16. Solid Fuel Flow
- 17. Solid Fuel Return
- 18. 1/2" Female for Relief Valve

THERM FLOW

Multi-fuel Cylinder Type

The multi-fuel thermal store allows the incorporation of multiple heat sources into a single tank. Using your solid fuel appliance along with solar thermal, the system can be heated without the need for gas, oil or electric. Only at times where the other heat sources are unable to cope with demand, will the boiler come on to top up the temperature.

The cylinder type can be installed anywhere in the property, and is linked with a separate copper feed and expansion tank which is normally located in an attic space.

The THERMflow is a bespoke designed product with indicative sizes for reference shown below.

KEY BENEFITS

- Incorporates multiple heat inputs
- Connections positioned for optimum performance
- Solar thermal can contribute to hot water and space heating

All Units to Following Specification:

- 22mm DHW Coil & Mixing Valve
- 1.2m sq solar coil (larger coils are available)
- 2no. 10mm Solar Probe Pockets
- 22mm Flow & Return for Vented Boiler¹
- 28mm Flow & Return for Solid Fuel
- 22mm Flow & Return for Central Heating
- 3kW LWD Immersion Heater Fitted²
- 2no. Thermostats
- 2" Dial Thermometer
- 60mm Polyurethane Foam Lagging (70mm on 250+)

A WIDE RANGE OF

OTHER CAPACITIES AND

SIZES ARE AVAILABLE **INCLUDING SLIMLINE**

- 1. If sealed system boiler then coil required.
- 2. Extra immersions can be included.
- 3. Use with our copper high temp header tank on page 14.
- 4. Optional DHW pipework insulation available on request.

STORAGE CAPACITY		140	180		250	300	400
ERP Class	С	С	С	С	С	С	С
Standing Heat Loss (watts)	68	72	80	85	69	76	89
Bedrooms	1	2	2 - 3	2 - 3	3 - 4	4 - 5	5 - 6
Baths & Showers	1	1	2	3	4	5	5
Max Heating Load (kW)	11	13	16	19	23	27	35
Dimension Including Insulation (mm)	960 x 570	1110 x 570	1360 x 570	1560 x 570	1870 x 590	1870 x 640	1670 x 740

Sizes shown are indicative only, including insulation



MODELS

11. Control Stat 12. High-Limit Stat 13. Temperature Gauge



- 1. Ballvalve
- 2. Hot Draw Out (c/w TMV)
- 3. Expansion Chamber
- 4. Cold Mains In
- 5. Drain
- 6. Central Heating Flow
- 7. Central Heating Return
- 8. Immersion Heater
- 9. Temperature Gauge
- 10. Thermostat
- 11. Boiler Flow
- 12. Boiler Return

THERM **FLOW**

Open Vented Boiler Combination

This thermal store simply accepts heat input from an open vented boiler to provide domestic hot water and central heating throughout the property.

The combination tank is best installed on an upper floor or in a loft or attic space keeping the primary feed and expansion tank at the highest level, keeping the entire system open vented. If the gap between highest radiator and base of header tank is less than 500mm then you will require a sealed heating coil.

An ideal alternative to a combi boiler, with the major benefit being high flow rate, mains pressure hot water with increased reliability and no annual service.

The THERM*flow* is a bespoke designed product with indicative sizes for reference shown below.

KEY BENEFITS

- No annual service
- Mains pressure hot water
- Immersion heater backup for entire system
- Expertly positioned connections for optimum performance

All Units to Following Specification:

- 22mm DHW Coil & TMV
- 22mm Flow & Return for Boiler
- · 22mm Flow & Return for Central Heating
- 3kW LWD Immersion Heater Fitted
- 1no. Thermostat
- 2" Dial Thermometer
- 60mm Polyurethane Foam Lagging (70mm on 250+)

1. Optional DHW pipework insulation available on request.

STORAGE CAPACITY	120	140	180	210	250	300	400
ERP Class	С	С	С	С	С	С	С
Standing Heat Loss (watts)	68	72	80	85	69	76	89
Bedrooms	1	2	2 - 3	2 - 3	3 - 4	4 - 5	5 - 6
Baths & Showers	1	1	2	3	4	5	5
Max Heating Load (kW)	11	13	16	19	23	27	35
Dimension Including Insulation (mm)	1130 x 570	1250 x 570	1500 x 570	1700 x 570	1700 x 640	2050 x 640	1950 x 740

A WIDE RANGE OF OTHER CAPACITIES AND SIZES ARE AVAILABLE INCLUDING SLIMLINE MODELS

Sizes shown are indicative only, including insulation and standard heating expansion, which can be increased at the time of order





- Vent to Header Tank 1.
- 2. Hot Draw Out (c/w TMV)
- 3. Expansion Chamber 4 Cold Mains In
- 5.
- Drain/ Feed from Header Tank 6
- **Central Heating Flow**
- Central Heating Return 7.
- 8. Immersion Heater
- 9. Temperature Gauge
- 10. Thermostat
- 11. Boiler Flow
- 12. Boiler Return

THERM **FLOW**

Open Vented Boiler Cylinder

This thermal store simply accepts heat input from an open vented boiler to provide domestic hot water and central heating throughout the property.

The cylinder type can be installed almost anywhere in the property and requires a separate high temperature header tank installed at the highest point in the property, keeping the entire system open vented.

An ideal alternative to a combi boiler, with the major benefit being high flow rate, mains pressure hot water with increased reliability and no annual service.

The THERMflow is a bespoke designed product with indicative sizes for reference shown below.

KEY BENEFITS

- No annual service
- Mains pressure hot water
- Immersion heater backup for entire system
- Expertly positioned connections for optimum performance

All Units to Following Specification:

- 22mm DHW Coil & TMV
- 22mm Flow & Return for Boiler
- 22mm Flow & Return for Central Heating
- 3kW LWD Immersion Heater Fitted
- 1no. Thermostat
- 2" Dial Thermometer
- 60mm Polyurethane Foam Lagging (70mm on 250+)
- 1. Optional DHW pipework insulation available on request.

STORAGE CAPACITY		140	180		250	300	400
ERP Class	С	С	С	С	С	С	С
Standing Heat Loss (watts)	68	72	80	85	69	76	89
Bedrooms	1	2	2 - 3	2 - 3	3 - 4	4 - 5	5 - 6
Baths & Showers	1	1	2	3	4	5	5
Max Heating Load (kW)	11	13	16	19	23	27	35
Dimension Including Insulation (mm)	960 x 570	1110 x 570	1360 x 570	1560 x 570	1870 x 590	1870 x 640	1670 x 740

A WIDE RANGE OF OTHER CAPACITIES AND SIZES ARE AVAILABLE **INCLUDING SLIMLINE MODELS**

Sizes shown are indicative only, including insulation





- 1. Ballvalve
- 2. Hot Draw Out (c/w TMV)
- 3. Expansion Chamber
- 4. Cold Mains In
- 5. Drain
- 6. Central Heating Flow
- 7. Central Heating Return
- 8. Immersion Heater
- 9. Temperature Gauge
- 10. Thermostat
- 11. Sealed Boiler Coil Flow
- 12. Sealed Boiler Coil Return

THERM FLOW

Sealed System Boiler Combination

This thermal store simply accepts heat input from a pressurised boiler to provide domestic hot water and central heating throughout the property.

The combination tank is best installed on an upper floor or in a loft or attic space keeping the primary feed and expansion tank at the highest level, to keep the central heating system open vented. If the gap between highest radiator and base of header tank is less than 500mm then you will require a sealed heating coil. Alternatively have a look at our pressurised thermal store on page 11.

The THERM*flow* is a bespoke designed product with indicative sizes for reference shown below.

KEY BENEFITS

- No annual service
- · Mains pressure hot water
- · Immersion heater backup for entire system
- Expertly positioned connections for optimum performance

All Units to Following Specification:

- 22mm DHW Coil & TMV
- 22mm Flow & Return for Sealed Boiler Coil
- 22mm Flow & Return for Central Heating
- 3kW LWD Immersion Heater Fitted
- 1no. Thermostat
- 2" Dial Thermometer
- 60mm Polyurethane Foam Lagging (70mm on 250+)
- 1. Optional DHW pipework insulation available on request.

STORAGE CAPACITY	120	140	180	210	250	300	400
ERP Class	С	С	С	С	С	С	С
Standing Heat Loss (watts)	68	72	80	85	69	76	89
Bedrooms	1	2	2 - 3	2 - 3	3 - 4	4 - 5	5 - 6
Baths & Showers	1	1	2	3	4	5	5
Max Heating Load (kW)	11	13	16	19	23	27	35
Dimension Including Insulation (mm)	1130 x 570	1250 x 570	1500 x 570	1700 x 570	1700 x 640	2050 x 640	1950 x 740

A WIDE RANGE OF OTHER CAPACITIES AND SIZES ARE AVAILABLE

Sizes shown are indicative only, including insulation and standard heating expansion, which can be increased at the time of order



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- 1. Vent to Header Tank
- 2. Hot Draw Out (c/w TMV)
- 3. Expansion Chamber
- 4. Cold Mains In
- 5. Drain/ Feed from Header Tank
- 6. Central Heating Flow
- 7. Central Heating Return
- 8. Immersion Heater
- 9. Temperature Gauge
- 10. Thermostat
- Sealed Boiler Coil Flow
 Sealed Boiler Coil Return

THERM **FLOW**

Sealed System Boiler Cylinder

This thermal store simply accepts heat input from a pressurised boiler to provide domestic hot water and central heating throughout the property.

The cylinder type can be installed almost anywhere in the property and requires a separate high temperature header tank installed at the highest point in the property, keeping the entire system open vented.

The THERM*flow* is a bespoke designed product with indicative sizes for reference shown below.

KEY BENEFITS

- Mains pressure hot water
- Immersion heater backup for entire system
- Expertly positioned connections for optimum performance

All Units to Following Specification:

- 22mm DHW Coil & TMV
- 22mm Flow & Return for Sealed Boiler Coil
- · 22mm Flow & Return for Central Heating
- 3kW LWD Immersion Heater Fitted
- 1no. Thermostat
- 2" Dial Thermometer
- 60mm Polyurethane Foam Lagging (70mm on 250+)
- 1. Optional DHW pipework insulation available on request.

STORAGE CAPACITY	120	140	180		250	300	400
ERP Class	С	С	С	С	С	С	С
Standing Heat Loss (watts)	68	72	80	85	69	76	89
Bedrooms	1	2	2 - 3	2 - 3	3 - 4	4 - 5	5 - 6
Baths & Showers	1	1	2	3	4	5	5
Max Heating Load (kW)	11	13	16	19	23	27	35
Dimension Including Insulation (mm)	960 x 570	1110 x 570	1360 x 570	1560 x 570	1870 x 590	1870 x 640	1670 x 740

Sizes shown are indicative only, including insulation

A WIDE RANGE OF OTHER CAPACITIES AND SIZES ARE AVAILABLE





- 1. Ballvalve
- 2. Hot Draw Out (c/w TMV)
- 3. Expansion Chamber
- 4. Cold Mains In
- 5. Drain
- 6. Off-Peak Immersion Heater
- Boost Immersion Heater
 Temperature Gauge

THERM FLOW

Electric Combination

This thermal store only provides hot water from a minimum of 2no 3kW immersion heaters, normally one using off-peak, cheaper, electricity while the other acts as a boost 24 hours a day.

The tank can be installed almost anywhere within the property, provided an overflow pipe can be safely routed away.

Commonly used in apartments where an unvented cylinder cannot be installed due to strict G3 guidelines surrounding discharge pipework.

The THERM*flow* is a bespoke designed product with indicative sizes for reference shown below.

KEY BENEFITS

- No annual service
- Mains pressure hot water
- Utilises off-peak electricity for reduced running costs
- Connections located centrally for ease of installation
- Boost and immersion
- Option for solid fuel input

All Units to Following Specification:

- 22mm DHW Coil & TMV
- 2no. 3kW LWD Immersion Heaters Fitted
- 2" Dial Thermometer
- 60mm Polyurethane Foam Lagging (70mm on 250+)
- 1. Optional DHW pipework insulation available on request.

STORAGE CAPACITY	120	140	180		250	300	400
ERP Class	С	С	С	С	С	С	С
Draw Off Profile	М	М	L	L	L	L	L
Annual Consumption (kWh)	1444	1922	2456	2813	3172	3374	4596
dB Rating	15	15	15	15	15	15	15
Bedrooms	1	2	2 - 3	2 - 3	3 - 4	4 - 5	5 - 6
Baths & Showers	1	1	2	3	4	5	5
Max Heating Load (kW)	11	13	16	19	23	27	35
Dimension Including Insulation (mm)	1130 x 570	1250 x 570	1500 x 570	1700 x 570	1700 x 640	2050 x 640	1950 x 740

A WIDE RANGE OF OTHER CAPACITIES AND SIZES ARE AVAILABLE

Sizes shown are indicative only, including insulation and standard heating expansion, which can be increased at the time of order





- 1. Auto Air Vent
- 2. Hot Draw Out (c/w TMV)
- 3. Expansion Chamber
- 4. Cold Mains In
- 5. Drain
- 6. Central Heating Flow
- 7. Central Heating Return
- 8. Immersion Heater

- 9. Thermostat
- 10. Temperature Gauge
- 11. Boiler Flow
- 12. Boiler Return
- 13. Temperature & Pressure Relief Valve
- 14. Expansion Relief Valve
- 15. Tundish
- 16. High Limit Thermostat

THERM FLOW

Pressurised Thermal Store

This thermal store accepts heat input from a pressurised boiler, often a biomass boiler, to provide domestic hot water and central heating throughout the property.

It allows the store to be installed almost anywhere in the property and creates a fully pressurised system, which requires a suitably sized heating expansion vessel. Where a boiler is the only heat source, and locating a header tank is not an option this could be the ideal solution.

Consideration must be taken for the relief valves that come factory fitted, and will operate the same as an unvented cylinder.

The THERM*flow* is a bespoke designed product with indicative sizes for reference shown below.

KEY BENEFITS

- Mains pressure hot water
- · Immersion heater backup for entire system
- Expertly positioned connections for optimum performance

All Units to Following Specification:

- Maximum Primary Working Pressure of 2.5 Bar
- Relief Valves & Tundish Factory Fitted
- 22mm DHW Coil & TMV
- 22mm Flow & Return for Boiler
- 22mm Flow & Return for Central Heating
- 3kW LWD Immersion Heater Fitted
- 1no. Thermostat
- 2" Dial Thermometer
 - 60mm Polyurethane Foam Lagging (70mm on 250+)
- 1. Optional DHW pipework insulation available on request.

STORAGE CAPACITY		140	180		250	300	400
ERP Class	С	С	С	С	С	С	С
Standing Heat Loss (watts)	68	72	80	85	69	76	89
Bedrooms	1	2	2 - 3	2 - 3	3 - 4	4 - 5	5 - 6
Baths & Showers	1	1	2	3	4	5	5
Max Heating Load (kW)	11	13	16	19	23	27	35
Dimension Including Insulation (mm)	960 x 570	1110 x 570	1360 x 570	1560 x 570	1570 x 640	1870 x 640	1670 x 740

A WIDE RANGE OF OTHER CAPACITIES AND SIZES ARE AVAILABLE

Sizes shown are indicative only, including insulation





- 1. Ballvalve
- 2. Hot Draw Out (c/w TMV)
- 3. Expansion Chamber
- 4. Cold Mains In
- 5. Drain
- 6. Central Heating Flow
- 7. Central Heating Return
- 8. Immersion Heater
- 9. Temperature Gauge

- 10. Control Stat
- 11. High-Limit Stat
- 12. Boiler Flow
- 13. Boiler Return
- Solid Fuel Flow
 Solid Fuel Return
- 16. Overflow
- 17. ½" Female for Relief Valve

Rectangular Thermal Store

Our thermal store range, excluding the pressurised model, can also be supplied as a rectangular tank. This range is manufactured under our CUBE*flow* brand, speak to our technical desk for further details.

The CUBE*flow* units offer fantastic space saving solutions, typically providing the same capacity in up to 27% less space. Whilst we list a few typical examples of sizes, our bespoke manufacturing ability enables us to manufacture any shape or size.

ADDITIONAL OPTIONS

- Solar Coil
- Solid Fuel Connections
- Extra Immersions
- Available with steel frame to elevate tank

KEY BENEFITS

- Excellent space saving solution for tight spaces
- White cased as standard for superior quality finish
- The most customisable thermal store on the market
- 1. Optional DHW pipework insulation available on request.

STORAGE CAPACITY	150		250	300
Width mm	495	585	615	640
Depth mm	525	570	615	640
Height mm	1285	1285	1285	1285

A WIDE RANGE OF OTHER CAPACITIES AND SIZES ARE AVAILABLE







Solid Fuel

Our THERM**FLOW** Solid Fuel thermal store enables you to harness the energy generated by your wood burning stove, AGA or Rayburn and integrate it with other energy sources such as your gas or oil burner or even an electric immersion.

COMPONENTS

- 1. Solid Fuel Flow 28mm
- 2. Solid Fuel Return 28mm
- 3. High Limit Stat
- 4. ½" Female for Temperature Relief Valve



Sealed Combination Boiler



Cylinder Boiler



Cylinder Boiler



Open Vented Combination Boiler

THERM **FLOW**

- Discover the Most Customisable Thermal Store on the Market

Our unique approach to manufacturing our THERM**FLOW** thermal stores enables you select from virtually endless options to ensure your cylinder meets your exact requirements.

Every thermal store can be supplied with custom connections, positioned exactly where you need them to minimise pipework and installation costs.

Plus, we can design them to fit in even the tightest spaces and supply them as rectangular units.

McDonald Water Storage









- 1. Ballvalve
- 2. Expansion from Cylinder / Overflow
- 3. Expansion from Cylinder / Overflow
- 4. Feed to Cylinder

Copper High Temperature Feed and Expansion Tanks

Our high temperature feed and expansion tanks are designed to be used with open vented thermal storage systems, especially when combined with additional fuel sources such as wood burning stoves, where high temperatures are prevalent.

Manufactured from premium grade copper to withstand temperatures of over 100°C, our feed and expansion tanks can be manufactured to any shape and size to suit your requirements.

KEY BENEFITS

- Can cope with temperatures over 100°C
- No chance of meltdown in an overheat situation
- Factory fitted insulation minimises dangers of freezing
- Proven to be healthy and safe
- Copper is 100% recyclable, benefiting the environment

All Units to Following Specification:

- Maintenance free ball valve
- 4.5" float
- 35mm polyurethane foam lagging
- Alloy lid

Additional Options Available:

- · Different sizes to suit space restrictions
- Any capacity
- Compression Connections
- · Connection sizes and positions adjusted to suit

DIMENSIONS CAPACITY (LITRES) SIZE INCLUDING INSULATION

STORAGE CAPACITY	30	40	50	60	70	100
Diameter mm	470	470	520	520	520	520
Height mm	375	470	500	570	650	850







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