

# Megaflō eco

Unvented hot water cylinders





# Megaflo eco.

Better for you, your customers and your environment.

Our Megaflo eco range is the best choice for conserving energy while providing superior performance.

How do we guarantee our customers' needs – the best possible performance, quality and reliability – when developing unvented water heating systems?

How do we ensure our system provides powerful mains pressure showers and faster-filling baths and with maximum reliability and efficiency?

The answer is simple. We use only the most advanced unvented water heating technology available. And, where this doesn't meet the standards of performance, efficiency and reliability we insist upon, we develop innovative new technologies of our own to bridge the gap.

These advances can come in many forms. Sophisticated Duplex stainless steel cylinder construction for maximum strength and corrosion resistance; CFC / HCFC-free injected foam, encasing the entire system including the bosses and valves, for the best possible heat insulation; a floating baffle system to replace a conventional external expansion vessel – for quicker and simpler installation. And to prove our confidence in this advanced new technology, we provide every new system with a lifetime cylinder guarantee with on-site service support.

Then we detail precisely what sets the Megaflo eco apart from everything else...



Installer-friendly design.

Fully indemnified design service.

Improved performance at low pressures down to 1 bar.

New water inlet controls increase flow rates by up to 20%.

Improved insulation for maximum heat retention.

Reduction in heat loss of up to 17%.

No anode – eliminates costly anode maintenance.

Insulated casing for the temperature and pressure relief valve to minimise heat loss.

Unique 'L-shaped' long-life Superloy immersion heater reaches deeper into the tank giving more hot water.

Titanium immersions as standard on all direct models.

Patented cold water inlet diffuser minimises mixing of cold and hot water.

High performance 'coil-in-coil' heat exchanger.

Exceeds CH<sub>e</sub>SS\* Best Practice for recovery times and insulation.

Complies with future Energy Related Products Directive.

Constructed in Duplex stainless steel for maximum strength – pressure tested to 15 bar.

Compatible with a wide range of UK solar systems.

Second purpose-designed solar coil to ensure maximum heat input and solar efficiency.

\*Energy Efficiency Partnership: Central Heating System Specifications.



# Innovative technology

For domestic and commercial applications

## Cylinder construction

Duplex stainless steel offers a superior resistance to corrosion especially in aggressive water areas, compared with some grades of stainless steel, glass-lined steel and copper. Because Duplex is a low carbon, high chromium content alloy, it resists all forms of corrosion including pitting, crevice corrosion, uniform corrosion and stress corrosion cracking without the use of a sacrificial anode. In addition, the tungsten inert gas welding coupled with the special post-weld processes ensures the welded area has the same level of corrosion resistance and mechanical strength as the parent metal. This ensures the longest possible working life for every cylinder.

The combination of its lightweight yet very strong construction makes Megaflo eco easier to handle on-site. Every unit is pressure tested in the factory to 15 bar – five times the normal operating pressure – making Megaflo eco suitable for all domestic and commercial applications.

No sacrificial anode is required with Megaflo eco. With inferior grades of stainless steel, glass-lined steel and copper, sacrificial anodes are required to achieve a degree of corrosion resistance. However they require regular replacement which, if not carried out can result in premature cylinder failure. Megaflo eco overcomes any need for this by using top quality Duplex stainless steel.

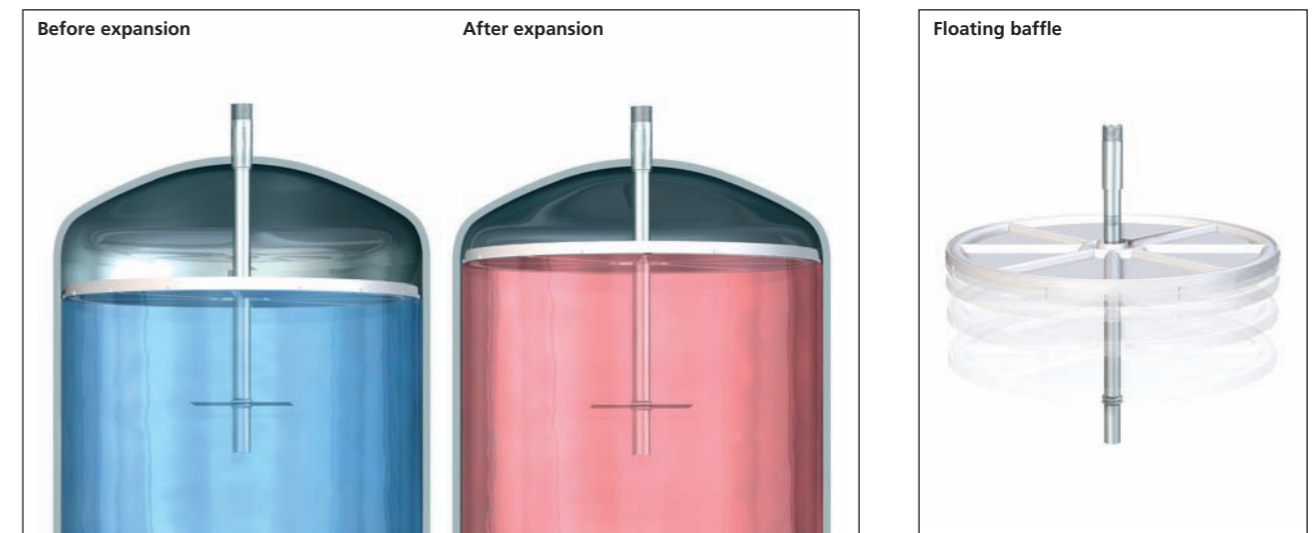
Specification comparison to a copper unit with air gap		
	Megaflo	Copper
Typical maximum working pressure	10 bar	3.5 bar
Typical operating pressure	3 bar	1 bar
Material	Duplex stainless steel	Copper



## Internal air gap and floating baffle

The internal air gap and floating baffle system allows for a compact self-contained unit which eliminates the need for an external expansion vessel and allows for a quicker and simplified installation.

Expanded water is accommodated within the cylinder using an internal air gap maintained by a patented floating baffle. This baffle floats on the surface of the water within the cylinder to maintain the integrity of the air gap.



# Commanding performance

## Minimal heat loss

To minimise heat loss, a 60mm thick void-free layer of high-performance polyurethane foam fills the space between the inner vessel and outer casing for maximum insulation efficiency and compliancy with future European-wide legislation.

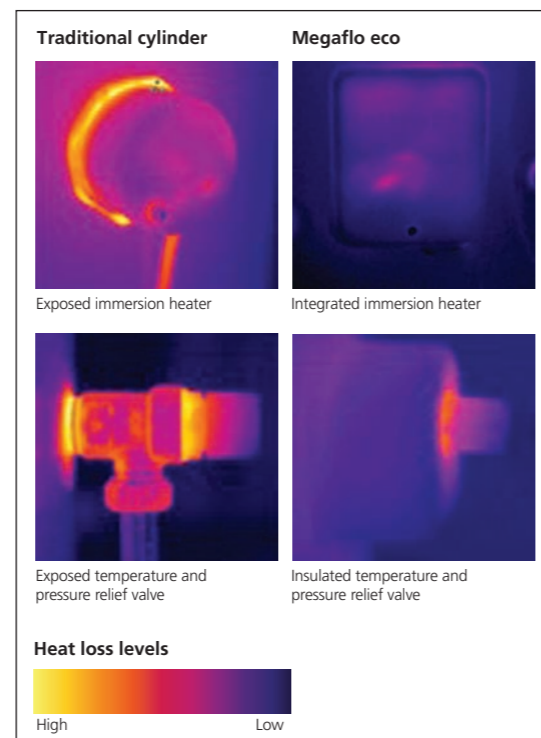
Unlike other designs which rely on butt jointing of sheet materials, Megaflo eco's carefully moulded one-piece insulation cannot separate in transit thus ensuring its effectiveness is maintained. Megaflo eco is supplied with an innovative casing which insulates the temperature and pressure relief valve.

The base is fully insulated and the unit stands on three moulded feet to minimise heat loss to the supporting floor. Immersion heaters and controls are fully integrated with no large external bosses to radiate heat.

## Thermal imaging

Using thermal imaging cameras the benefits of Megaflo eco's minimal heat loss design are easily seen.

The images show the relatively low levels of heat loss from Megaflo eco compared to traditional cylinders in the high heat radiating areas of the immersion heater boss and temperature and pressure relief valves.

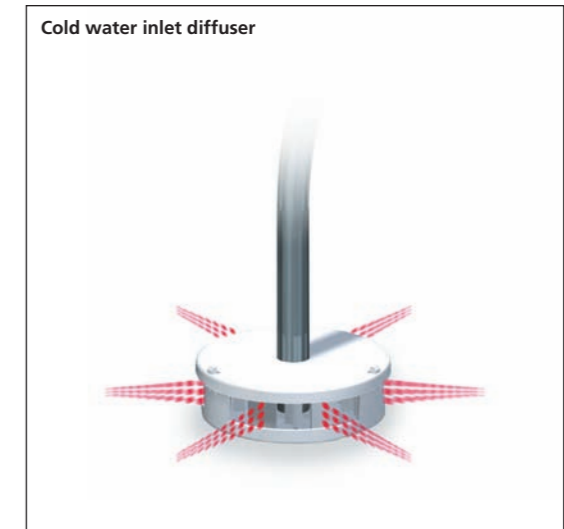


## Improved efficiency



With high output ratings from 15.4 to 24.5kW and a highly efficient transfer of energy, Megaflo eco indirect offers very fast heat recovery times.

Furthermore, the heating coil and 'L'-shaped immersion heater are positioned low in the cylinder to ensure more of the water is heated to maximise the usable hot water available.



The patented cold water inlet diffuser reduces turbulence to minimise the mixing of cold and hot water.

This ensures that the heated water remains hot and therefore maximises the usable hot water delivered by Megaflo eco.

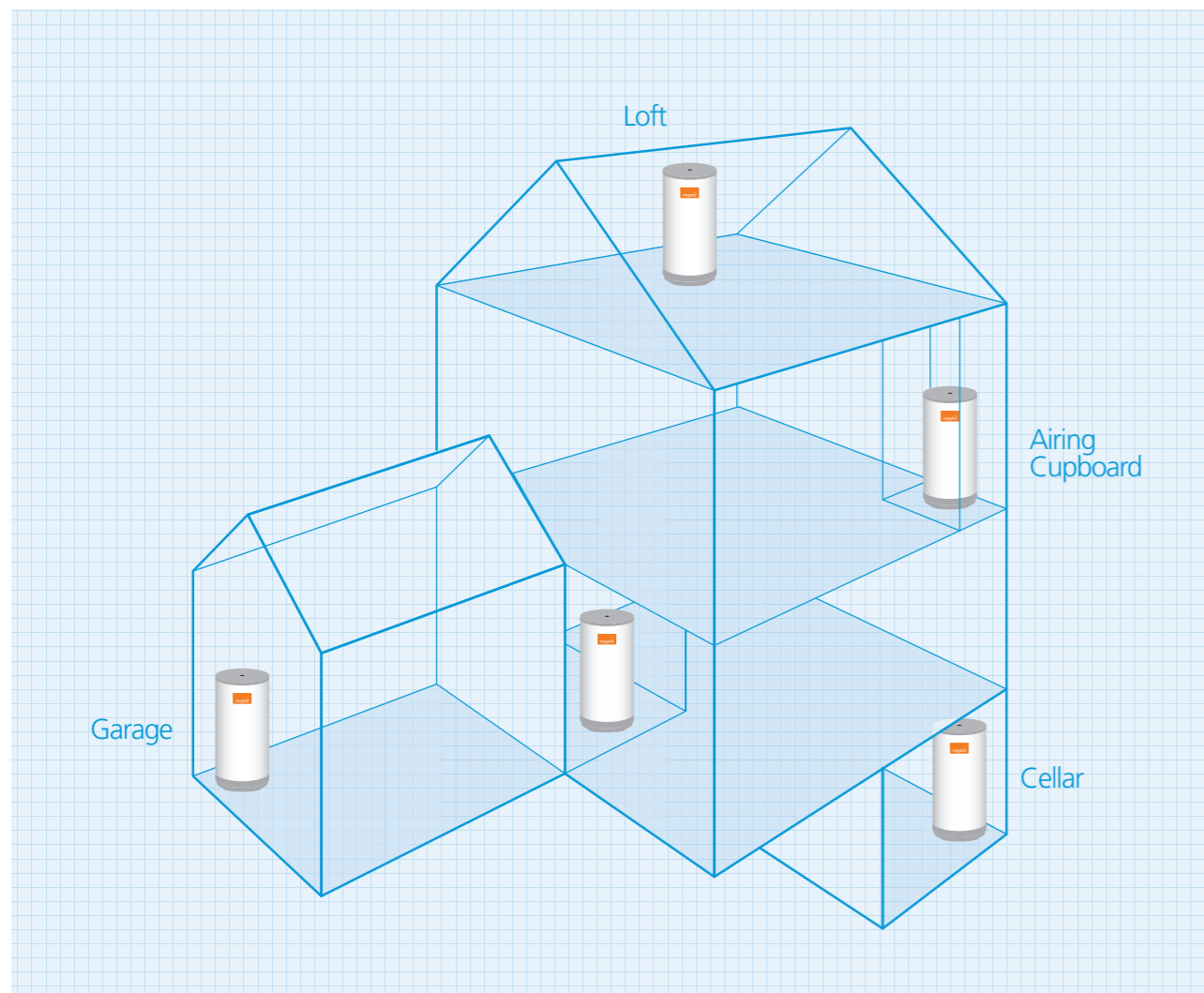


# System benefits

In addition to the performance benefits of fast filling baths and powerful showers, unvented hot water systems offer many features and benefits over other types of hot water systems.

## Flexible siting

Unlike traditional vented systems, there is no requirement for a cistern tank in the loft, giving users a quiet hot water system. Installation locations are also flexible, so the cylinder can be installed in an airing cupboard, loft, cellar, utility room or even in a garage.



End user Specifier / developer Installer	Features and benefits
■	Higher flow rates for efficient hot water delivery
■	High performance showering – throughout the home
■	Fast-filling baths
■	Quieter mains pressure system (no noisy cistern in the loft)
■ ■	Balanced water pressure – no surprises
■ ■ ■	Patented cold water inlet diffuser minimises mixing of cold and hot water
■ ■	Exceeds CHES <sup>+</sup> Best Practice for heat recovery
■	Fast recovery rates (eg. 15 minutes for 125i unit)
■ ■ ■	CFC / HCFC free (ODP zero) insulation and insulated temperature and pressure relief valve for maximum heat retention
■ ■	No fear of frozen loft pipes**
■ ■	No anode to check or replace
■ ■	Mains-fed hygienic hot water
■	Appliance quality, easy-clean finish
■	Long-life Duplex stainless steel interior
■ ■ ■	Lifetime cylinder guarantee
■ ■ ■	Patented internal expansion system
■ ■ ■	No external expansion vessel
■ ■ ■	Complete with mains water isolating valve
■ ■ ■	Flexibility in cylinder siting**
■	Dry roof space increases design options†
■ ■	Cost effective installer friendly connections
■	No reduction in operating pressure or flow rates
■ ■	Supplied with safety and hot water controls, wiring centre for indirect models and drain valve
■ ■	No cold feed cistern to install for the hot water supply
■ ■ ■	Neater and quicker installation
■ ■	Easy to commission
■ ■	No costly shower pump to install
■ ■	Lightweight, installer friendly design
■ ■	Stronger construction for durability and high pressure performance
■ ■ ■	All units fully factory tested to ensure reliability
■ ■ ■	Fully indemnified design service††

\*Energy Efficiency Partnership: Central Heating System Specifications. \*\*Assumes sealed system boiler with Megaflo eco in frost-free position. †Assumes no loft conversion. ††Conditions apply.



# Megaflo eco

## Installer friendly design

Megaflo eco has been designed to facilitate a trouble-free installation. Compact and rounded in design, with all connections accessible at the front of the unit. Megaflo eco's lightweight construction means it's easy to handle and convenient to site almost anywhere in a building.

Strong feet for additional stability.

All plumbing connections are colour coded and accessible at the front of the cylinder.

Lightweight construction.

Drain valve supplied loose with every cylinder.

Base moulding with integral hand grips.

Detachable lifting handle.

## Key product features

### Construction

- 1** Internal air gap to accommodate expanded water.
- 2** Patented floating baffle maintains the air gap.
- 3** 22mm compression / 3/4" BSP hot water outlet.
- 4** Cylinder manufactured from top grade Duplex stainless steel – specially selected for its high strength and resistance to stress and crevice corrosion.
- 5** 22mm compression / 3/4" BSP cold water inlet.
- 6** Base mouldings with integral hand grips.
- 7** 22mm compression / 3/4" BSP primary flow.
- 8** 22mm compression / 3/4" BSP primary return.
- 9** Primary heating coil for use with indirect systems (i models only).
- 10** Patented cold water diffuser.
- 11** White plastic-coated, corrosion-proofed outer case with grey moulded top and bottom covers and electrical housings for neat and attractive finish.
- 12** Grommets on pipework for professional finish.
- 13** 15mm connection for secondary return (supplied capped) – indirect models only.

### High performance

- 14** Totally insulated with 100% CFC-free (ODP zero) polyurethane to minimise heat loss (60mm thick).
- 15** Long-life 3kW Superloy 825 immersion heater with integral thermostat and thermal cut-out.
- 16** Titanium elements as standard on all direct models.
- 17** Drain valve.
- 18** Wiring centre for indirect controls (i models only).

### Safety controls

- 19** 1/2" temperature and pressure relief valve (supplied with innovative insulation casing supplied loose) operating at 90°C / 10 bar.
- 20** Indirect thermal controls.



# Megaflo eco systemfit

## Installer friendly design

This time-saving Megaflo eco systemfit package not only speeds installation but significantly enhances the quality and integrity of the central heating system, thus eliminating costly call backs.

Strong feet for additional stability.

All plumbing connections are colour coded and accessible at the front of the cylinder.

Lightweight construction.

Factory-fitted drain valve.

Base moulding with integral hand grips.

Detachable lifting handle.

## Key product features

Separate Central Heating & Hot Water Configuration

- 1 Motorised valve to radiator circuit – 22mm on 125 and 145 litre models. 28mm on other models.
- 2 22mm motorised valve to Megaflo eco coil heat exchanger.
- 3 Wiring centre.
- 4 Programmable thermostat and room sensor with timed Domestic Hot Water (DHW) Control.
- 5 Hot water temperature thermostat.

High performance configuration

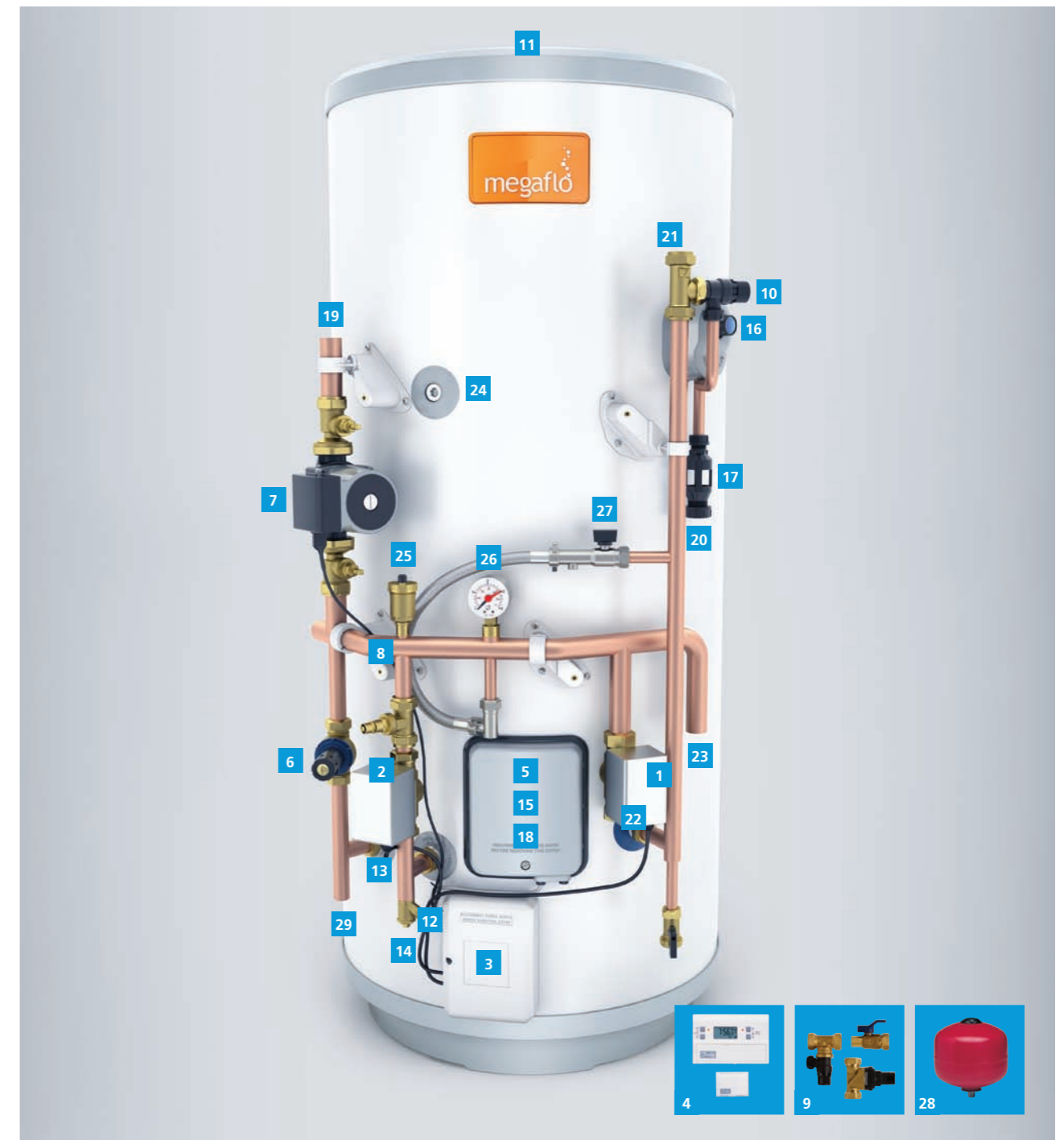
- 6 Automatic bypass valve.
- 7 3 speed circulator pump with quality isolating valves.
- 8 Balancing valve.
- 9 3 piece inlet control kit consisting of:
  - 3 bar pressure reducing valve
  - 8 bar pressure relief valve
  - Stopcock.
- 10 Combined expansion valve / check valve housing.
- 11 22mm or ¾" BSP hot outlet to taps.
- 12 22mm primary flow to Megaflo eco coil heat exchanger.
- 13 22mm primary return from Megaflo eco coil heat exchanger.
- 14 Drain cocks.
- 15 Long-life 2kW Superloy 825 immersion heater with integral thermostat and thermal cut-out.

Safety controls

- 16 ½" temperature and pressure relief valve (with innovative insulation casing supplied loose) operating at 90°C / 10 bar.
- 17 Tundish.
- 18 High limit hot water thermal cut-out.

Connections

- 19 Primary flow connection from boiler – 22mm on 125 and 145 litre models. 28mm on other models.
- 20 Discharge pipe connection 22mm.
- 21 Cold water inlet connection 22mm.
- 22 Primary flow to radiators (CH circuit).
- 23 28mm connection for 2nd CH zone (supplied capped) 170 litre and above only.
- 24 15mm connection for secondary return (supplied capped).
- 25 Auto air vent.
- 26 Primary system pressure gauge.
- 27 Primary system filling loop.
- 28 Primary system expansion vessel.
- 29 Primary circuit return connection.



# Megaflo eco

## Applications and installation

### Which unit to use

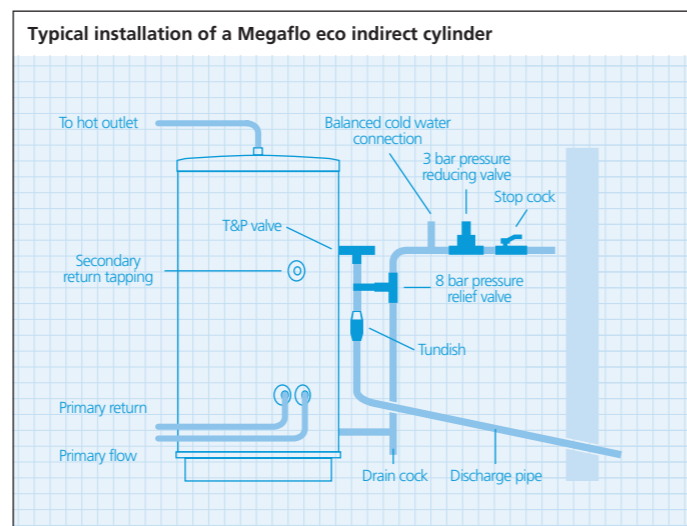
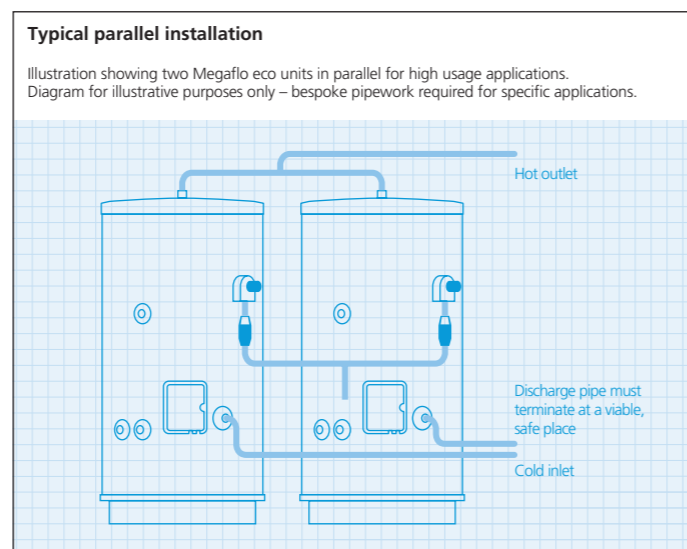
#### High usage applications

When it comes to meeting the needs of demanding applications, e.g. rugby club shower rooms, two or more Megaflo eco units can be installed in parallel. Detailed specifications and designs, including comprehensive plumbing information, are available by contacting our Specification Advice Team on tel: 01603 420220, by fax: 01603 420229 or by email: enquiries@megafloeco.com

Commercial installation examples		
Application	Indirect	Direct
Nursing home (27 beds)		3x 250DDD
Student accommodation (18 showers)	2x 300i	
Sports club (13 showers)	6x 210i (2x 3)	
Rugby club (max. 80 showers per hour)		6x 300DDD (2x 3)
House (5 bed & 5 bath)	2x 250i	
Bar with food servery (300 persons)	3x 300i	
Hotel (8 bed & 6 bath)	2x 300i	
Guest house (4 bath & 3 shower)	3x 145i	

Note: These example recommendations are for guidance only, the Megaflo Specification Advice Team should be contacted to discuss requirements and designs for specific sites.

Which cylinder to use		
Application	Indirect	Direct
Bedsit	70i	70D
1 bed 1 bath & shower	125i	125DD / 145DD
2 bed 1 bath & shower	125i	145DD / 170DD
3 bed 1 bath & shower	145i	210DD
4 bed 1 bath & shower	170i	210DD
4/5 bed 2 bath & shower	210i	250DD
4/5 bed 3 bath & shower	250i	300DD
Light commercial uses	250i	250DDD / 250DDDD / 300DDD / 300DDDD
Other commercial uses	300i	250DDD / 250DDDD / 300DDD / 300DDDD



#### Installer training

Approved courses are available nationwide for operative training. For further details of such courses, call 0845 600 7402.

# Megaflo eco

## Performance

Megaflo eco's pressure and flow rate performance will exceed those available from comparable vented systems, thermal store units, multi-point instantaneous gas heaters or combination boilers. It offers flexibility in cylinder siting as it can be positioned in any convenient location that allows a suitable routing of the discharge pipe from its safety valve. It should not be installed in areas that are subject to freezing.

Megaflo eco unvented water systems deliver hot water at flow rates up to 72 litres per minute and offer one of the most rapid heat up and recovery rates available, making it ideally suited to a wide variety of applications. Available in seven capacities, ranging from 70 to 300 litres, in both direct and indirect systems, there is a model to suit every environment.

Outlet flow from cold water combination valve (l/min)										
Inlet flow to cold water combination valve (l/min)	10	20	30	40	50	60	70	80	90	
1 bar static pressure	10	18	26	34	34	37	38	40	41	
2 bar static pressure	10	20	28	35	40	45	49	51	51	
3 bar static pressure	10	20	29	37	44	49	53	57	60	
4 bar static pressure	10	20	29	38	46	52	57	61	64	
6 bar static pressure	10	20	30	39	47	56	61	66	72	

Recovery times for indirect models with various boiler outputs based on 70% recovery (mins)													
Boiler output (kW)	8.8	10.25	11.7	13.2	14.7	16.1	17.6	19.1	20.5	22	23.4	24.9	26.4
Boiler output (Btu)	30k	35k	40k	45k	50k	55k	60k	65k	70k	75k	80k	85k	90k
70i cylinder	18	16	14	13	12	11	10	10	10	10	10	10	10
125i cylinder	31	29	26	22	19	18	17	16	16	16	16	16	16
145i cylinder	37	33	29	25	22	20	19	19	19	19	19	19	19
170i cylinder	43	39	34	29	27	25	23	21	21	21	21	21	21
210i cylinder	54	48	40	36	31	30	26	24	24	22	21	20	20
250i cylinder	64	56	49	44	39	35	31	30	28	26	25	24	24
300i cylinder	75	67	57	51	46	42	39	36	33	31	28	28	28

Megaflo eco cylinder performance									
Nominal capacity	Model i	Model D	Model DD	Model DDD	Model DDDD	Model DD & DDD	Heat loss in 24 hours		
	(indirect)	(direct 3kW)	(direct 6kW)	(direct 9kW)	(direct 12kW)			Recovery (mins)	Heat up (mins)
70								10	92
125								15	142
145								17	158
170								16	186
210								19	204
250								23	245
300								27	292

In addition to the lower 3kW heating element which is fitted to all indirect models, the 210i, 250i and 300i have the facility to also have an upper boost element fitted. This boost element is available as an accessory.

Figures are for guidance only and are based on BS 6700 recommendations. D = one element, DD = two elements, DDD = three elements, DDDD = four elements, i = Indirect with one element supplied.





# Dimensions and ordering

## Megafllo eco

**Megafllo eco indirect**

**Megafllo eco direct**

**Cylinder dimensions**

Model	A	B	C	D	E	F	G
70i	802	579	495	354	316	-	393
125i	1102	579	794	354	316	709	393
145i	1229	579	895	354	316	810	393
170i	1384	579	1020	354	316	934	393
210i	1486	579	1095	354	316	1011	393
250i	1738	579	1323	354	316	1238	393
300i	2053	579	1574	354	316	1526	393
70D	802	579	495	308	-	-	375
125DD	1102	579	794	308	-	-	375
145DD	1229	579	895	308	-	-	375
170DD	1384	579	1020	308	-	-	375
210DD / 210DDD	1486	579	1095	308	-	-	375
250DD / 250DDD	1738	579	1323	308	-	-	375
300DD / 300DDD / 300DDDD	2053	579	1574	308	-	-	375

**Ordering guide**

Model	Nominal capacity (litre)	Element rating @240V (kW)	Coil rating (kW)	Weight empty (kg)	Weight full (kg)	Product code
70i	70	1x 3	15.4	25	125	95:050:461
125i	125	1x 3	18.3	31	180	95:050:463
145i	145	1x 3	18.7	35	204	95:050:465
170i	170	1x 3	24.3	38	233	95:050:467
210i	210	1x 3	24.3	45	253	95:050:469
250i	250	1x 3	23.9	55	300	95:050:472
300i	300	1x 3	24.5	58	358	95:050:475
70D	70	1x 3	-	23	123	95:050:460
125DD	125	2x 3	-	25	174	95:050:462
145DD	145	2x 3	-	31	200	95:050:464
170DD	170	2x 3	-	34	228	95:050:466
210DD	210	2x 3	-	38	248	95:050:468
210DDD	210	3x 3	-	40	251	95:050:480
210DDDD	210	4x 3	-	42	253	95:050:476
250DD	250	2x 3	-	46	296	95:050:470
250DDD	250	3x 3	-	48	298	95:050:471
250DDDD	250	4x 3	-	50	300	95:050:477
300DD	300	2x 3	-	56	355	95:050:473
300DDD	300	3x 3	-	58	358	95:050:474
300DDDD	300	4x 3	-	60	360	95:050:478

**Accessory ordering guide**

Description	Product code
Titanium Indirect Control and Immersion Heater Accessory Pack	95:970:554

For 210 Litre and above a further Indirect Control Assembly accessory is available 95:970:554

# Dimensions and ordering

## Megafllo eco systemfit

**Megafllo eco systemfit**

**Cylinder dimensions**

Model	A	B	C	D
125sf S22	1180	600	896	542
145sf S22	1307	600	997	643
170sf S28	1462	600	1122	768
210sf S28	1564	600	1198	844
250sf S28	1816	600	1425	1071
300sf S28	2131	600	1676	1322

**Ordering guide**

Model	Nominal capacity (litre)	Element rating @240V (kW)	Coil rating (kW)	Weight empty (kg)	Weight full (kg)	Product code
125sf S22	125	1x 3	18.3	43	183	95:050:482
145sf S22	145	1x 3	18.7	48	208	95:050:484
170sf S28	170	1x 3	24.3	52	234	95:050:493
210sf S28	210	1x 3	24.3	55	254	95:050:494
250sf S28	250	1x 3	23.9	61	297	95:050:495
300sf S28	300	1x 3	24.5	69	352	95:050:496

Optional boost element available for 210 to 300 units. For a Titanium Indirect Control and Immersion Heater Accessory Pack, order product code 95:970:554.



# Megaflo eco solar

## Installer friendly design

Developed to our exacting performance and reliability standards, the Megaflo eco solar technology provides up to 60% annual hot water requirement by solar energy.\*

Lightweight construction.

Strong feet for additional stability.

Base moulding with integral hand grips.

All plumbing connections are colour coded and accessible at the front of the cylinder.

Drain valve supplied loose with every cylinder.

Factory-fitted control pockets suitable for insertion of solar controller and temperature control probe.

Detachable lifting handle.

Cylinder manufactured from top grade Duplex stainless steel – specially selected for its high strength and resistance to stress and crevice corrosion.

Totally insulated with 100% CFC-free (ODP zero) polyurethane to minimise heat loss (60mm thick).

Choice of direct or indirect auxiliary heat input.

Specially designed solar coil for maximum solar efficiency.

Remote expansion vessel.

High flow rates for improved hot water delivery.

Megaflo eco solar models are compatible with a wide range of UK solar systems.

Equally suited for new build or refurbishment projects.

Environmentally friendly – reduced carbon emissions.

Lower running costs and reduced energy bills.

Fully indemnified design service.

Lifetime cylinder guarantee with on-site service support.

Cylinder capacities sized to ensure sufficient hot water on days of limited solar gain, offering the correct choice when specifying for Building Regulations\*\* via SAP.\*\*\*

## Key product features

Construction

- 1 22mm compression / 3/4" BSP hot water outlet.
- 2 22mm compression / 3/4" BSP cold water inlet.
- 3 Integral feet.
- 4 22mm compression / 3/4" BSP primary flow (solar).
- 5 22mm compression / 3/4" BSP primary return (solar).
- 6 Patented cold water diffuser.
- 7 White plastic-coated, corrosion-proofed outer case with grey moulded top and bottom covers and electrical housings for neat and attractive finish.
- 8 Grommets on pipework for professional finish.

High performance

- 9 Long-life 3kW Superloy 825 immersion heater with integral thermostat and thermal cut-out.
- 10 Titanium elements as standard on all direct models.
- 11 Wiring centre for indirect controls.
- 12 Additional solar probe pocket.
- 13 Drain valve.

Safety controls

- 14 1/2" temperature and pressure relief valve (supplied with innovative insulation casing supplied loose) operating at 90°C / 10 bar.
- 15 Indirect thermal controls.

\* This is an average figure for the year, with savings varying depending on the type of solar system used, its location and usage pattern.

\*\* Part L (England and Wales), Section 6 (Scotland) and Part F (Northern Ireland).

\*\*\* Standard Assessment Procedure for Energy Rating of Dwellings.



# Megaflo eco solar

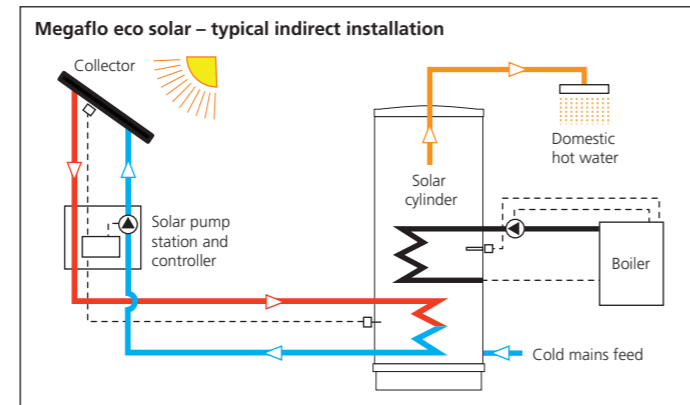
## Applications and installation

### Which unit to use

The choice of capacity for traditional cylinders is based on the hot water requirements of the dwelling. With solar cylinders the usable hot water will vary due to a number of factors such as siting of solar panels, time of year and weather conditions. For this reason, when choosing a solar cylinder you should ensure that sufficient usable hot water will be available during winter months where solar gain is at its lowest.

For example a non-solar dwelling of three inhabitants with a bath and a shower would normally require a 145 litre indirect cylinder.

A portion of the cylinder capacity must be dedicated to solar only, therefore the same dwelling with a solar system would require a 250 litre indirect solar cylinder which would provide 145 litres of hot water during periods where there is little or no solar gain. Some applications may require larger water quantities or higher recovery rates, therefore it is important to calculate the hot water requirement before selecting the cylinder capacity.



Indirect cylinder												
No. of beds	No. of baths / showers	Max. occupancy	On-roof panels	In-roof panels	Tube	Cylinder volume (litre)	Dedicated solar (litre)	On-roof (l/m <sup>2</sup> )	In-roof (l/m <sup>2</sup> )	Tube (l/m <sup>2</sup> )	Max. property size (m <sup>2</sup> )	Auxiliary volume (litre)
1	1	2	1	1	20	190	70	38	31	35	60	120
2	1	2	1	1	20	210	90	49	39	45	95	120
3	1	3	2	1	20	250	105	29	46	53	123	145
3	2	4	2	2	20	250	105	29	23	53	123	145
4	1	4 or 5	2	2	30	300	125	34	27	42	164	175
4	2	4 or 5	3	2	30	300	125	23	27	42	164	175
4 or 5	2	5	3	2	30	300	125	23	27	42	164	175

Direct cylinder												
No. of beds	No. of baths / showers	Max. occupancy	On-roof panels	In-roof panels	Tube	Cylinder volume (litre)	Dedicated solar (litre)	On-roof (l/m <sup>2</sup> )	In-roof (l/m <sup>2</sup> )	Tube (l/m <sup>2</sup> )	Max. property size (m <sup>2</sup> )	Auxiliary volume (litre)
1	1	1	1	1	10	170	70	38	31	70	60	100
1	2	2	1	1	20	210	70	38	31	35	60	140
2	2	3	2	1	20	210	70	19	31	35	60	140
2	2	4	2	2	20	260	90	24	20	45	60	170
3	2	4	2	2	20	260	90	24	20	45	95	170
3	3	4	3	2	30	300	100	18	22	33	95	200
4	3	5	3	2	30	300	100	18	22	33	113	200

On-roof absorber area – 1.84; in roof absorber area – 2.28; tube absorber area – 1.00. All cylinders are SAP compliant provided the maximum property size is not exceeded.



# Megaflo eco solar

## Performance

Megaflo eco solar's pressure and flow rate performance will exceed those available from comparable vented systems, thermal store units, multi-point instantaneous gas heaters or combination boilers. It offers flexibility in cylinder siting as it can be positioned in any convenient location that allows a suitable routing of the discharge pipe from its safety valve. It should not be installed in areas that are subject to freezing.

Megaflo eco solar unvented water systems deliver hot water at flow rates up to 72 litres per minute and offer one of the most rapid heat up and recovery rates available, making it ideally suited to a wide variety of applications. Available in six capacities, ranging from 170 to 300 litres, in both direct and indirect systems, there is a model to suit every environment.

Megaflo eco solar cylinder performance					
Nominal capacity	Model Si (indirect)	Model SD (direct 3kW)	Model SDD (direct 6kW)	Model DD & DDD	Heat loss in 24 hours
(litres)	Recovery (mins)	Heat up (mins)	Heat up (mins)	Boost heat top element (mins)	(kWh)
190Si	14.5	-	-	60	1.32
210Si	14.5	-	-	60	1.41
250Si	20	-	-	60	1.56
300Si	19	-	-	60	1.84
170SD	-	126	-	-	1.25
210SDD	-	-	75	60	1.41
260SDD	-	-	89	60	1.63
300SDD	-	-	110	60	1.84

In addition to the lower 3kW heating element which is fitted to all indirect models, the 210i, 250i and 300i have the facility to also have an upper boost element fitted. This boost element is available as an accessory.

# Dimensions and ordering

## Megaflo eco solar

**Megaflo eco solar indirect**

**Megaflo eco solar direct**

**Cylinder dimensions**

Model	A	B	C	D	E	F
190Si	1387	579	1020	414	373	925
210Si	1489	579	1184	414	373	1095
250Si	1738	579	1378	414	373	1258
300Si	2053	579	1693	414	373	1573
170SD	1229	579	925	414	373	-
210SDD	1489	579	1184	414	373	-
260SDD	1802	579	1441	414	373	-
300SDD	2053	579	1693	414	373	-

**Ordering guide**

Model	Nominal capacity (litre)	Element rating @240V (kW)	Coil rating (kW)	Weight empty (kg)	Weight full (kg)	Product code
190Si	120	-	18	45.5	235.5	95:050:511
210Si	120	-	18	47.5	257.5	95:050:513
250Si	145	-	18.7	56.5	306.5	95:050:515
300Si	175	-	24.5	66.5	366.5	95:050:517
170SD	120	1x 3	-	37.8	207.8	95:050:527
210SDD	140	2x 3	-	42.5	252.5	95:050:512
260SDD	170	2x 3	-	47.3	307.3	95:050:528
300SDD	200	2x 3	-	61.5	361.5	95:050:516

**Baxi Solarflo**

The Megaflo eco solar cylinders are ideal companions for the Baxi Solarflo system.

On-roof, in-roof, flat roof solar collector and evacuated tube packages available.

Reduces CO<sub>2</sub> emissions and domestic fuel bills.

National technical support and after sales service from a single source.



# Full specifications

## Megaflo eco / systemfit

### Cylinder specification

#### Capacities – Megaflo eco

70, 125, 145, 170, 210, 250 and 300 litre.

#### Capacities – Megaflo eco systemfit

125, 145, 170, 210, 250 and 300 litre.

#### Rating

Immersion heater(s) 3kW @ 240V. Up to four are fitted dependent on model.

#### Outer casing

White plastic-coated corrosion-protected steel.

#### Thermal insulation

CFC/HCFC-free (ODP zero) flame-retardant expanded polyurethane (60mm thick). GWP 3.1 (Global Warming Potential).

#### Water container

Duplex stainless steel with internal air-gap system.

#### Pressure testing

To 15 bar.

#### Heat unit

Long-life Superloy 825 alloy sheathed element(s), incorporated into an easily removable heater plate, should replacement be necessary. Rated 3kW @ 240V. Titanium immersion as standard on all direct models and available as an accessory on indirect models.

#### Primary coil

22mm diameter stainless steel.

#### Thermostat

Direct models: Element thermostat adjustable from 12°C to 68°C.

Indirect models: Factory-fitted cylinder thermostat adjustable from 12°C to 68°C.

Capillary-type thermostats now used on all models.

#### Factory-fitted safety features

Direct models: Manually resettable cut-out on heating element operates at 85°C.

Indirect models: High limit thermal cut-out operates at 90°C. Wired in series with two-port motorised valve (supplied) to provide primary over temperature protection.

All models: Temperature and pressure relief valve, factory set to operate at 10 bar and 90°C (insulation casing supplied loose). Wiring centre for indirect controls (supplied loose).

#### Anode

Not required.

#### Approvals

Nemko and Kiwa approved, CE marked. Manufactured in the UK in a BS EN ISO 9001:2008, ISO 14001:2004 and BS OHSAS 18001:2007 registered factory.

### Installation

Must be installed by a competent installer in accordance with Local Regulations. England and Wales – Building Regulations G3. Scotland – Technical Standards P3. N. Ireland – Building Regulations P5.

#### Fixing

Built-in feet for floor mounting.

#### Plumbing

Inlet / outlet: ¾" BSP male parallel and 22mm compression fittings supplied. Indirect coil: ¾" BSP male parallel and 22mm compression fittings supplied. ½" temperature and pressure relief valve: 15mm compression outlet supplied.

#### Cold water control

Cold water control 22mm HiFlo cold water valve assembly comprising 3 bar pressure reducer, ¼ turn isolating ball valve, line strainer, non-return valve and expansion valve (8 bar).

Cold water control valve (3 bar) is supplied for use with mains pressure of 20 bar to 1.5 bar, at the lower pressure, performance will be reduced accordingly. Normal working pressure is 3 bar.

#### 22mm cold water inlet control kit comprising of 8 bar pressure relief valve, 3 bar pressure reducing valve and stopcock which enables the Megaflo eco to be isolated from the mains supply for maintenance and servicing. The 3 bar pressure reducing valve can be installed as a complete one piece unit or incorporated into the stopcock.

22mm cold water inlet control kit comprising of 8 bar pressure relief valve, 3 bar pressure reducing valve and stopcock which enables the Megaflo eco to be isolated from the mains supply for maintenance and servicing. The 3 bar pressure reducing valve can be installed as a complete one piece unit or incorporated into the stopcock.

#### Water expansion

Via air gap built into the top of the cylinder. The patented floating baffle maintains the air gap.

#### Flow rates

Up to 72 litres per minute (depending on adequate supply conditions).

#### Minimum water supply requirements

20 litres per minute flow and 1.5 bar pressure (at lesser values, the unit will operate but outlet flow rates may be unacceptable, especially with multiple draw-offs). Please contact our Specification Advice Team to discuss specific site conditions if the above minimum requirement cannot be met.

#### Secondary circulation

½" BSP female connection provided (circulating pump not supplied). Secondary circulation is not recommended for units using off-peak electrical elements for auxiliary heating.

#### Compatible boilers

Gas, electric or oil-fired – sealed system or open vent type, fitted with integral control thermostat and thermal cut-out.

#### Tundish – Megaflo eco

15mm inlet and 22mm compression outlet.

#### Tundish – Megaflo eco systemfit

15mm inlet and 22mm compression outlet factory-fitted.

#### Electrical

Connection is direct to terminals in the immersion heater which must be permanently connected to the supply through a double-pole linked isolating switch with a minimum breaking capacity of 13A. On indirect models, controls should be wired to the boiler, programmer etc. in accordance with the control scheme being used. All electrical installations must conform to the latest IEE Wiring Regulations.

### Systemfit components

#### Danfoss TP9000 Programmable Room Thermostat with Domestic Hot Water (DHW) Control.

Built in hot water time control. Remote room temperature sensor. Chrono-proportional control on / off. Frost protection setting. Easy to use overrides. Up to 6 time / temperature changes per day. 7 day, 5 / 2 or 24 hour operation. Wallplate construction. Room temperature control range from 5°C to 30°C. Holiday mode.

Programmer dimensions: Width 135mm, height 88mm, depth 32mm.

Sensor dimensions: Width 61mm, height 45mm, depth 22mm.

Designed to meet BS EN60730-2-7 and EN60730-2-9.

Maximum ambient temperature: 45°C. Timing accuracy: ±1 minute. Switch rating: 230 Vac, 50 / 60Hz, 3(1)A. Switching action: 2x SPDT, type 1BS. Power supply: 230Vas, 50H. Memory back up retained for life of product.

#### Honeywell two-port valve:

For the central heating and domestic hot water. Model no.: V4043H. Voltage rating: 230V ac 50Hz. Power consumption: 6W. Primary water temperature range: from 5°C to 88°C. Max ambient temperature: 50°C.

#### Automatic bypass valve:

Model no.: RWC Diff 391 901. Working pressure: 10 bar. Setting range: 0.1 to 0.5 bar differential pressure. Maximum primary water temperature: 120°C.

#### Pump:

Model: Grundfos UPS15-60. Working pressure: 10 bar max. Voltage rating: 230V ac 50Hz. Starting capacitor: 2µF.

Power consumption: Speed setting I – 40W. Speed setting II – 65W. Speed setting III – 95W.

Enclosure protection: IP42.

# Full specifications

## Megaflo eco solar

### Cylinder specification

#### Capacities

190, 210, 250 and 300 litre – indirect. 170, 210, 260 and 300 litre – direct.

#### Immersion heater ratings

1x 3kW @ 240V – indirect models and 170 litre direct. 2x 3kW @ 240V – direct models above 170 litre.

#### Outer casing

White plastic-coated corrosion-protected steel.

#### Thermal insulation

CFC/HCFC-free (ODP zero) flame-retardant expanded polyurethane (60mm thick). GWP 3.1 (Global Warming Potential).

#### Water container

Duplex stainless steel.

#### Pressure testing

To 15 bar.

#### Heat unit

Long-life Superloy 825 alloy sheathed element(s), incorporated into an easily removable heater plate, should replacement be necessary. Rated 3kW @ 240V. Titanium immersion as standard on all direct models and available as an accessory on indirect models.

#### Primary coil

(For auxiliary boiler heating) 22mm diameter stainless steel. Coil-in-coil design for improved performance.

#### Solar coil

25mm diameter stainless steel. Coil-in-coil design and large surface area for improved performance.

#### Thermostat

Direct models: Element thermostat adjustable from 12°C to 68°C.

Indirect models: Factory-fitted cylinder thermostat adjustable from 12°C to 68°C.

All models: Factory-fitted control pocket suitable for insertion of solar controller temperature probe.

#### Factory-fitted safety features

Direct models: Manually resettable cut-out on heating element operates at 85°C.

Indirect models: High limit thermal cut-out operates at 85°C. Wired in series with two-port motorised valve (supplied) to provide primary over-temperature protection when using the auxiliary (boiler) coil.

All models: Temperature and pressure relief valve, factory set to operate at 10 bar and 90°C. Factory-fitted thermal cut-out for integration into a solar circuit.

#### Anode

Not required.

#### Approvals

Nemko and Kiwa approved, CE marked. Manufactured in the UK in a BS EN ISO 9001:2008, ISO 14001:2004 and BS OHSAS 18001:2007 registered factory.

### Installation

Must be installed by a competent installer in accordance with Local Regulations. England and Wales – Building Regulations G3. Scotland – Technical Standards P3. N. Ireland – Building Regulations P5.

#### Fixing

Built-in feet for floor mounting.

#### Plumbing

Must be installed by a competent installer in accordance with Local Regulations. England and Wales – Building Regulations G3. Scotland – Technical Standards P3. N. Ireland – Building Regulations P5.

Inlet / outlet: ¾" BSP male parallel and 22mm compression fittings supplied.

Indirect primary coil: ¾" BSP male parallel and 22mm compression fittings supplied. ½" T&P relief valve: 15mm compression outlet supplied.

Solar coil: ¾" BSP male parallel and 22mm compression fittings supplied.

#### Cold water control

Cold water control 22mm HiFlo cold water valve assembly comprising 3 bar pressure reducer, ¼ turn isolating ball valve, line strainer, non-return valve and expansion valve (8 bar).

Cold water control valve (3 bar) is supplied for use with mains pressure of 20 bar to 1.5 bar, at the lower pressure, performance will be reduced accordingly. Normal working pressure is 3 bar.

22mm cold water inlet control kit comprising of 8 bar pressure relief valve, 3 bar pressure reducing valve and stopcock which enables the Megaflo eco solar to be isolated from the mains supply for maintenance and servicing. The 3 bar pressure reducing valve can be installed as a complete one piece unit or incorporated into the stopcock.

#### Water expansion

Via remote 25 litre expansion vessel (supplied).

#### Flow rates

Up to 72 litres per minute (depending on adequate supply conditions).

#### Minimum water supply requirements

20 litres per minute flow and 1.5 bar pressure (at lesser values, the unit will operate but outlet flow rates may be unacceptable, especially with multiple draw-offs). Please contact our Specification Advice Team to discuss specific site conditions if the above minimum requirement cannot be met.

#### Secondary circulation

½" BSP female connection provided (circulating pump not supplied). Secondary circulation is not recommended for units using off peak electric elements for auxiliary heating.

#### Compatible boilers

Gas, electric or oil-fired – sealed system or open vent type, fitted with integral control thermostat and thermal cut-out.

#### Tundish

15mm inlet and 22mm compression outlet.

#### Electrical

Each immersion heater must be permanently connected to the electrical supply through a double-pole linked switch with a minimum breaking capacity of 13A. The indirect thermal controls should be wired into a suitable indirect control system to ensure optimum control of the Megaflo Solar and auxiliary boiler. The solar coil must be connected to a fully pumped solar primary system that should be controlled by a suitable solar controller and hydraulic set. The solar controller cylinder temperature sensor must be inserted in the pocket supplied on the heater. The solar thermal cut-out (factory-fitted) should be wired in series with the solar controls (not supplied).

All electrical work must conform to current IEE wiring regulations. Megaflo's Specification Advice Hotline is available to discuss requirements for specific projects, applications and product selection on Tel: 01603 420220.



# Guarantee

WARNING: Should the factory-fitted temperature and pressure relief valve be tampered with or removed your guarantee will be invalidated. Neither the Distributor nor Manufacturer shall be responsible for any consequential damage howsoever caused.

Megaflor guarantees the Megaflor eco against faulty manufacture or materials for a period of two years from the date of purchase including parts and labour. This two year guarantee is extended to five years for the cold water inlet control kit and to lifetime\* for the stainless steel inner vessel in domestic properties and to 30 years for the stainless steel inner vessel in commercial buildings.

The Megaflor eco systemfit components, immersion heater and thermal controls are guaranteed for a period of 2 years from the date of purchase. 5 years for the cold water inlet control kit and systemfit primary expansion vessel.

The Megaflor eco solar expansion vessel comes with a 5 year guarantee.

These guarantees are valid provided that:

The Megaflor eco has been correctly installed by a competent installer and as per the instructions contained in the Product Guide and all relevant Codes of Practice and Regulations in force at the time of installation.

Any disinfection has been carried out in accordance with BS 6700.

The Megaflor eco has not been modified in any way other than by Heatrae Sadia Heating or Heatrae Sadia Heating approved engineers.

The Megaflor eco has only been used for the storage of wholesome water (max. 250mg/l chloride).

The Megaflor eco has not been subjected to frost, scaling, nor has it been tampered with or been subjected to misuse or neglect.

No factory-fitted parts have been removed for unauthorised repair or replacement.

The Benchmark Commissioning Checklist and Service Record included in the Megaflor eco Product Guide has been completed.

Regular maintenance has been carried out by a competent person in accordance with the requirements set out in the maintenance section of the Product Guide and any replacement parts used should be authorised Heatrae Sadia Megaflor eco spare parts. Annual Services are available from heateam, the service division of Megaflor. Please contact heateam on Tel: 0844 8711 535 for further details.

Within 60 days of purchase the owner registers the product via telephone, email or completes the guarantee form supplied with the Megaflor eco. Evidence of purchase and date of supply must be submitted upon making a claim.

It has been installed in the UK. This guarantee is not valid for installations outside the United Kingdom.

For installations outside of the United Kingdom, please contact either the Heatrae Sadia Heating Export Department on Tel: +44 1603 420271 for further details of the guarantee terms and conditions applicable. This guarantee does not affect your statutory rights.

The unit is not guaranteed against damage due to frost. This guarantee does not affect your statutory rights.

\*Lifetime is defined as for as long as the original owner who purchased the Megaflor eco / New Home continues to own the property. If the owner sells the property, the new owner (and any future owners) will receive a 30 year warranty from the time the original owner purchased the Megaflor eco or new property with Megaflor eco installed.





heateam is Megaflo's very own service division. With us on your side, you can be sure that your customers are in the very best hands. Totally committed to quality and safety, heateam is open 7 days a week, for 363 days a year, and offers:

- **Dedicated Trade Advice Line** – our helpful and qualified specialists are always on hand to help you with even the most complex technical query.
- **Installer Priority Call-Outs** – our 280 strong team of specifically trained expert heating engineers covers the UK, no one is better qualified to look after Megaflo's products for the duration of the guarantee.
- **Fully Stocked Vans** – a nationwide fleet of vans, fully stocked with spare parts – meaning we can repair our appliances on the first visit in 95% of call-outs.
- **Exclusive Service Plans** – heateam also offer Megaflo's customers a range of exclusive annual service plans.

Opening Times: Monday-Friday 8am-6pm, weekends and Bank Holidays\* 8.30am-2pm

\*excluding Christmas Day and New Year's Day.

Simply call **0844 8711535** Or visit our website at [www.heateam.co.uk](http://www.heateam.co.uk)



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## Products

A wide range of Megaflo eco cylinders are currently available and further lines are in development. Please contact Megaflo or your nearest stockists for further details.

These include:

Unvented – Indirect and direct

Unvented – Indirect systemfit

Unvented – Indirect and direct solar

## Contact

### Specification Advice Hotline

Tel: 01603 420220

Fax: 01603 420229

[enquiries@megaflo.com](mailto:enquiries@megaflo.com)

[www.megafloeco.com](http://www.megafloeco.com)

### Servicing

Tel: 0844 871 1535

[megafloservice@heateam.co.uk](mailto:megafloservice@heateam.co.uk)

### Consumer Website

[www.megaflo.com](http://www.megaflo.com)



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Megaflo may introduce modifications to their products from time to time. Consequently, the details given in this brochure are subject to alteration without notice.

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