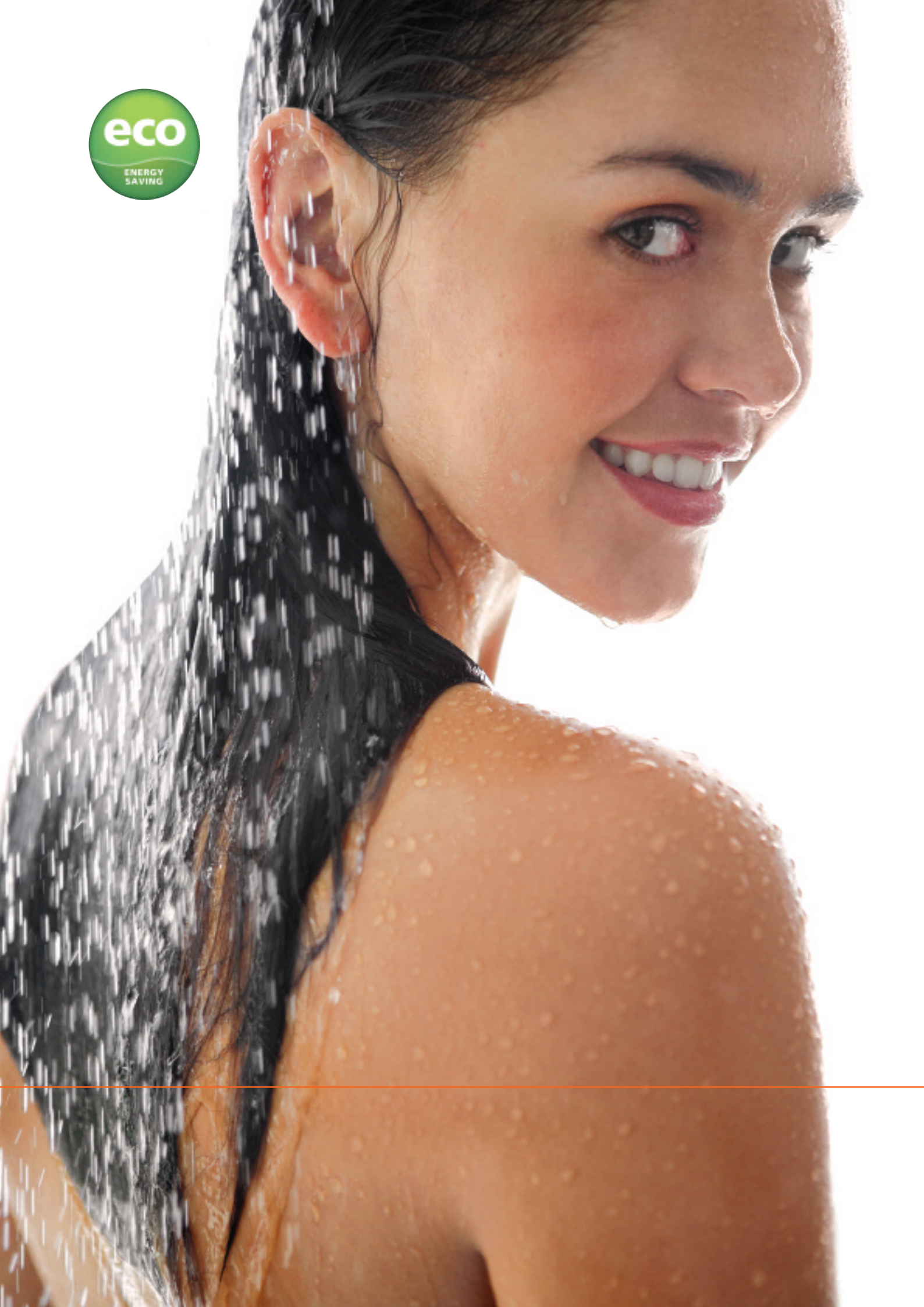




MegaFlo eco

Unvented hot water cylinders





Megaflo eco.

Better for you, your customers and your environment.

Our new 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...

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

Patented internal floating baffle system to accommodate water expansion.

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 CHESS* Best Practice for recovery times and insulation.

Improved insulation for maximum heat retention.

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

Improved performance at low pressures down to 1 bar.

Installer friendly design.

Complies with future European Energy Using Products Directive.

New splash-proof IPX4-rated wiring centre gives greater choice of installation location.



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.



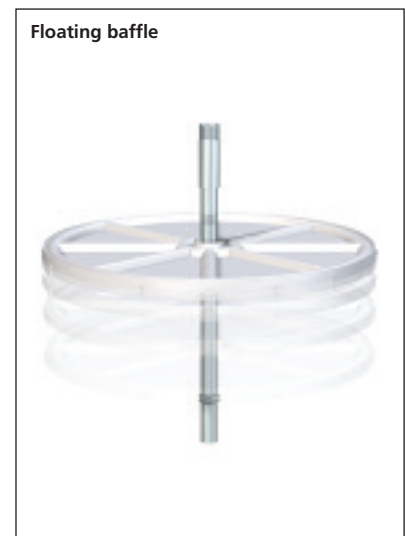
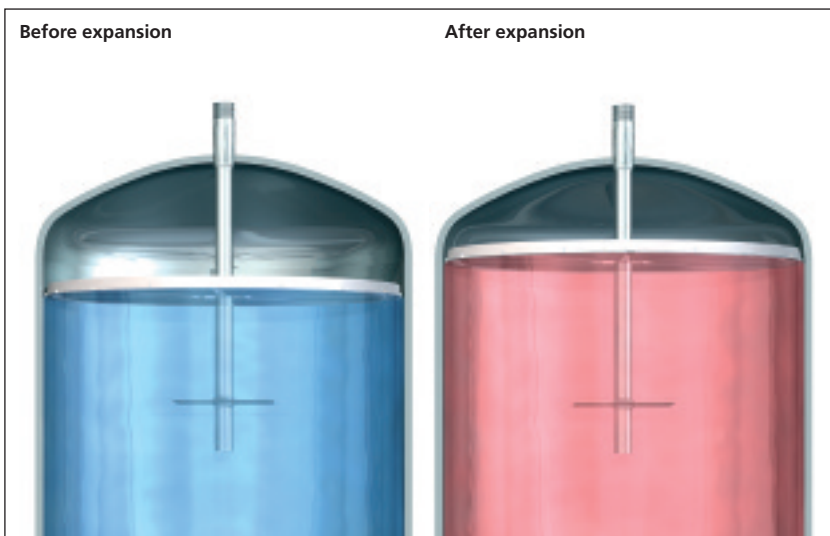
Specification comparison to a copper unit with air gap

	Megaflo	Copper
Typical maximum working pressure	10 bar	4.5 bar
Typical operating pressure	3 bar	2.1 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.

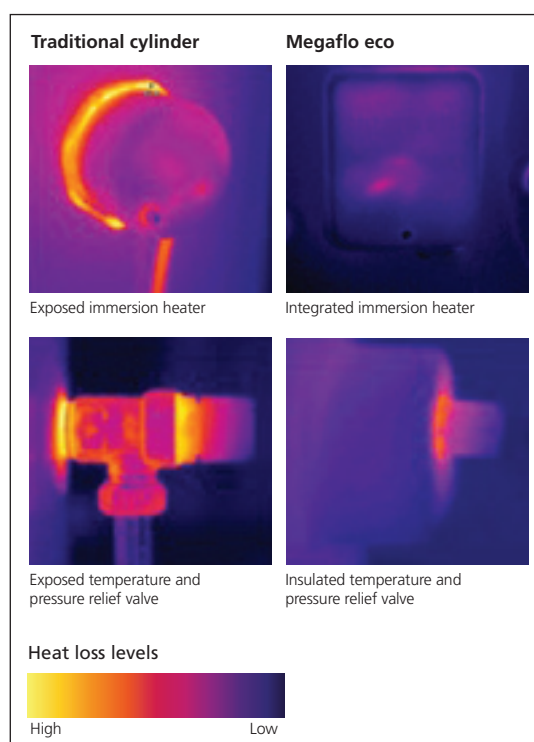
Unlike other designs which rely on butt jointing of sheet materials, Megaflo eco's carefully moulded one-piece insulation cannot separate in transit to ensure that its effectiveness is maintained. Megaflo eco is supplied with an innovative casing which insulates the temperature and pressure relief valve.

The base is fully insulated and the unit stands on three moulded feet to minimise heat losses 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

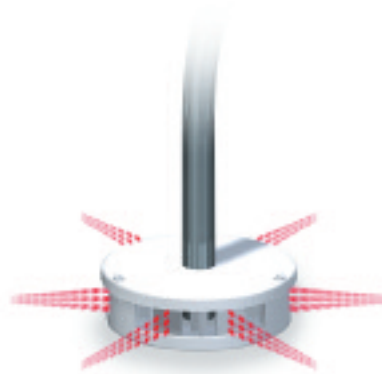
Coil-in-coil heat exchanger



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.

Cold water inlet diffuser



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.

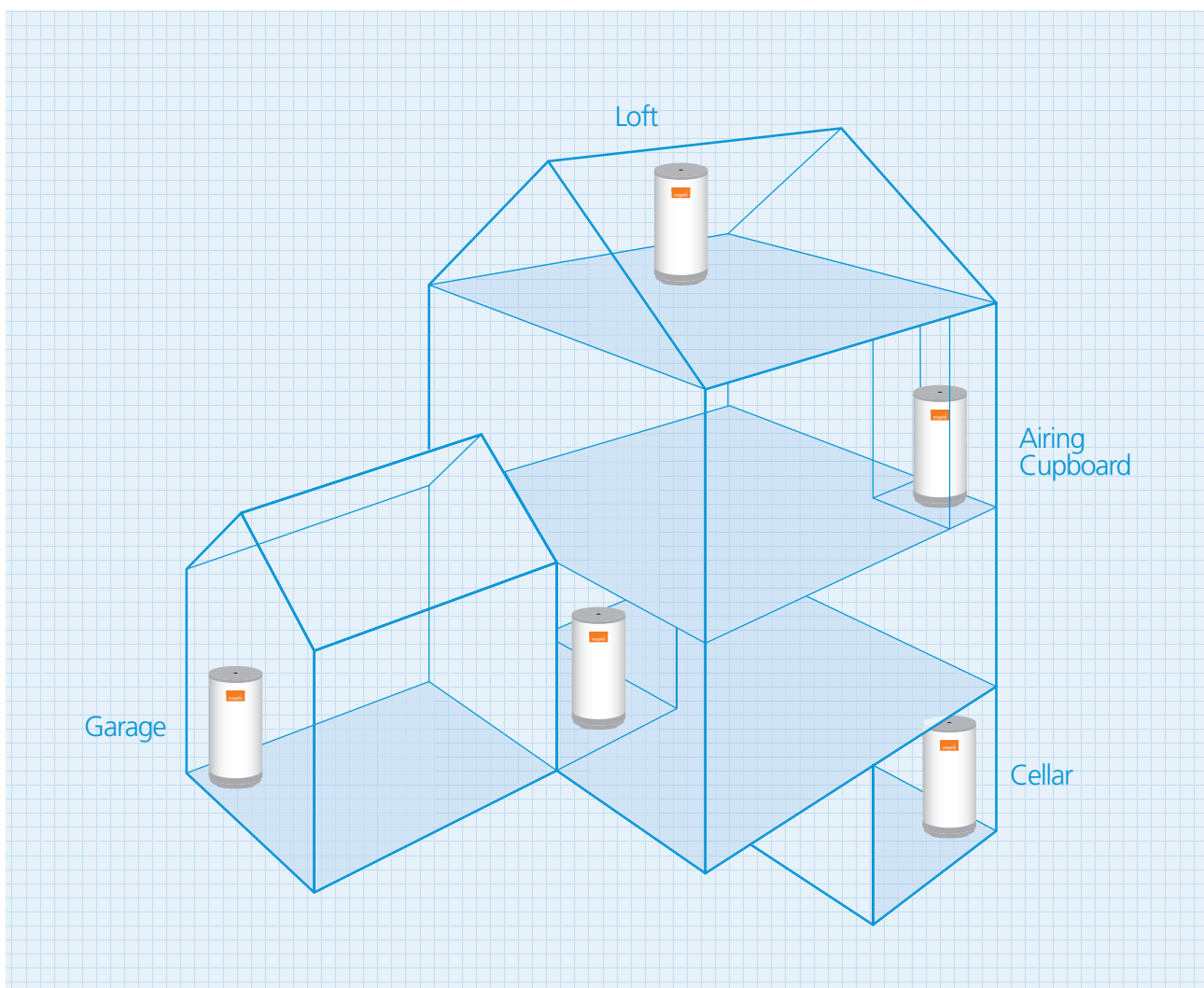


System benefits

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 CHESS* 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.



Product design

Megaflo

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.

Splash proof (IPX4-rated) integral cylinder wiring centre for controls.

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 / $\frac{3}{4}$ " 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 / $\frac{3}{4}$ " BSP cold water inlet.
- 6 Integral feet.
- 7 22mm compression / $\frac{3}{4}$ " BSP primary flow.
- 8 22mm compression / $\frac{3}{4}$ " 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 indirect pipework for professional finish.

High performance

- 13 Totally insulated with 100% CFC-free (ODP zero) polyurethane to minimise heat loss (60mm thick).
- 14 Long-life 3kW Superloy 825 immersion heater.
- 15 Titanium elements as standard on all direct models.

Safety controls

- 16 $\frac{1}{2}$ " temperature and pressure relief valve with innovative insulation casing, operating at 90°C / 10 bar.
- 17 Indirect thermal controls (i models only).
- 18 Drain valve.
- 19 Wiring centre for indirect controls (i models only).



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
300i cylinder	75	67	57	51	46	42	39	36	33	31	28	28	28
250i cylinder	64	56	49	44	39	35	31	30	28	26	25	24	24
210i cylinder	54	48	40	36	31	30	26	24	24	22	21	20	20
170i cylinder	43	39	34	29	27	25	23	21	21	21	21	21	21
145i cylinder	37	33	29	25	22	20	19	19	19	19	19	19	19
125i cylinder	31	29	26	22	19	18	17	16	16	16	16	16	16
70i cylinder	18	16	14	13	12	11	10	10	10	10	10	10	10

Megaflo eco cylinder performance

Nominal capacity	Model CL (indirect)	Model D (direct 3kW)	Model DD (direct 6kW)	Model DDD (direct 9kW)	Model DDDD (direct 12kW)	Model DD & DDD	Heat loss in 24 hours
(litres)	Recovery (mins)	Heat up (mins)	Heat up (mins)	Heat up (mins)	Heat up (mins)	Boost heat top element (mins)	(kWh)
70	10	92	-	-	-	-	0.93
125	15	142	71	-	-	66	1.19
145	17	158	79	-	-	72	1.32
170	16	186	93	-	-	79	1.42
210	19	204	102	68	51	85	1.57
250	23	245	121	81	60	92	1.67
300	27	292	146	97	73	97	1.89

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.

Applications and installation

Which unit to use

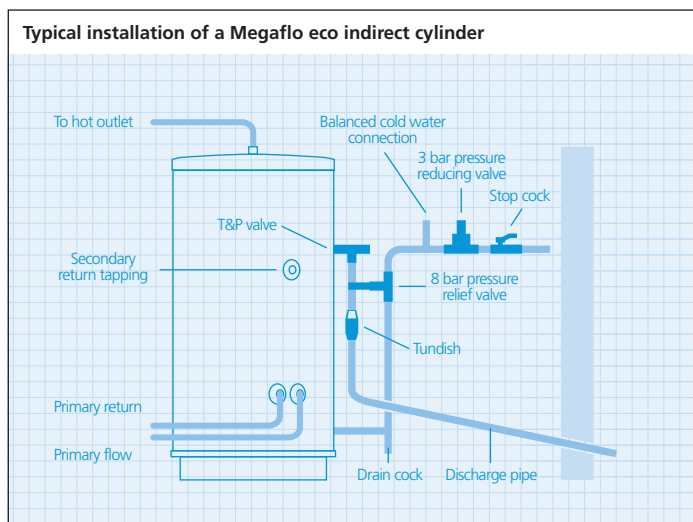
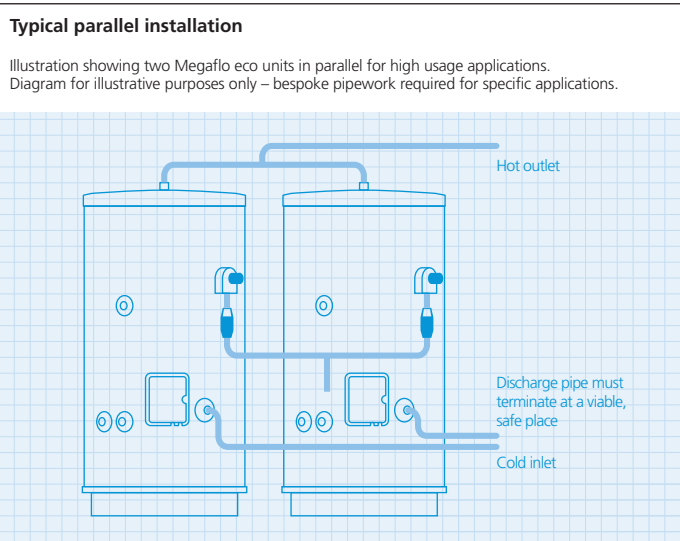
High usage applications

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: specifier@heatraesadia.com

Commercial installation		
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.

Domestic installation		
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.

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.



Full specifications

Cylinder specification

Capacities

70, 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-proofed 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 to 68°C.

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 and CE listed. Manufactured in the UK in a BS EN ISO 9001:2008 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: 3/4" BSP male parallel and 22mm compression fittings supplied. Indirect coil: 3/4" BSP male parallel and 22mm compression fittings supplied. 1/2" temperature and pressure relief valve: 15mm compression outlet supplied.

Cold water control

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

Fitted to inlet pipework (circulating pump not supplied). Secondary circulation is not recommended for direct electric units being used on off-peak electricity tariffs.

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

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.

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.

Heatrae Sadia guarantees the Megaflo 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 control valve 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.

These guarantees are valid provided that:

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

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

The Megaflo eco has not been subjected to frost, 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 Megaflo 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 Megaflo eco spare parts. Annual Services are available from heateam, the service division of Heatrae Sadia. 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 Megaflo eco. Evidence of purchase and date of supply must be submitted upon making a claim.

This guarantee is not valid for installations outside the United Kingdom.

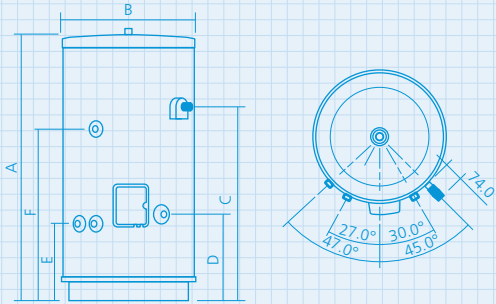
For installations outside of the United Kingdom, please contact either the Heatrae Sadia Heating Export Department on Tel: +44 1603 420191 or Baxi International on Tel: +44 1926 478323 for further details of the guarantee terms and conditions applicable. This guarantee does not affect your statutory rights.

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

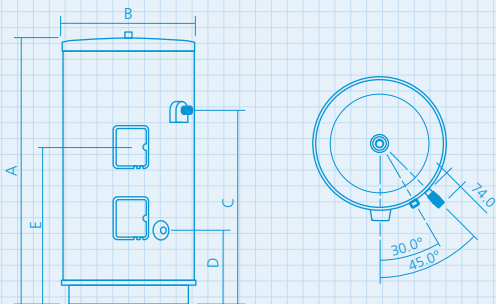
*Lifetime is defined as for as long as the original owner who purchased the Megaflo eco / New Home continues to own the property. If the owner sells the property, the new owner (and any future owners) will receive a 30 year warranty from the time the original owner purchased the Megaflo eco or new property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

Dimensions and ordering

Megaflo eco indirect



Megaflo eco direct



Cylinder dimensions

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

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	295	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

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



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

Vented

Contact

Specification

Tel: 01603 420220

Fax: 01603 420229

enquiries@megaflo.com

www.megafloeco.com

After Sales Service

Tel: 0844 871 1535

Fax: 0844 871 1528

heatraesadiaservice@heateam.co.uk

Consumer Website

www.megaflo.com

Servicing

National service network

Megaflo products are inherently reliable and are designed to meet the demanding needs of all users.

A nationwide network of experienced engineers is available to provide fast and efficient on-site service support.

In addition, spare parts for the complete range of products are readily available through a wide variety of stockists.

Megaflo, Hurricane Way, Norwich, Norfolk NR6 6EA.

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Heatrae Sadia Heating 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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