





Fusion Hot Water Offering

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2025 McDonalds Offering

- 4 options
 - Internal / External
 - With or without heat pump

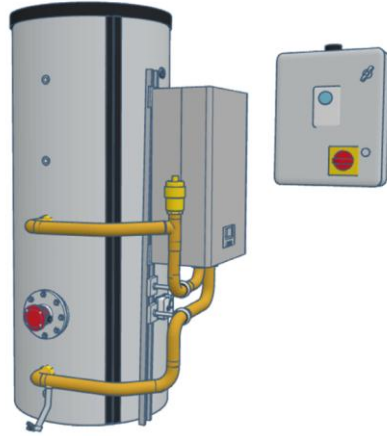


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2025 McDonalds Offering

- Offer 1. FUSION FESplus400-24
 - Electric boiler
 - Without Heat pump
 - Heat pump ready with twin coil
 - Immersion backup
 - Control panel
 - Destrat pump

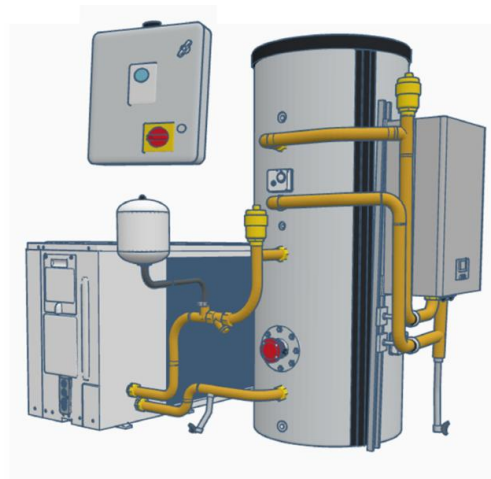


DETAILS IN YOUR BOOK



2025 McDonalds Offering

- Offer 2. FUSION FTWplus400-22
 - Electric boiler
 - With Heat pump
 - Immersion backup
 - Control panel
 - Destrat pump



DETAILS IN YOUR BOOK





2025 McDonalds Offering

- Offer 3. PPR0007
 - Electric boiler
 - Without Heat pump
 - Heat pump ready for future
 - Packaged plantroom
 - Immersion backup
 - Control panel
 - Destrat pump



DETAILS IN YOUR BOOK



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2025 McDonalds Offering

- Offer 4: PPR0008
 - Electric boiler
 - With Heat pump
 - Packaged plantroom
 - Immersion backup
 - Control panel
 - Destrat pump



DETAILS IN YOUR BOOK



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Features and Benefits



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Electric Boilers –why?



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Scale: **Just** a Maintenance issue?

Consequences of Scale



Consequences of Scale



Consequences of Scale

- Scale formation increases with high heat intensity heat exchangers
 - The BFC with an 11m long heat exchanger was very low intensity and did not have scale problems,
 - Immersion heaters do.
- Initially when McDonald's went all electric we specified the immersions to be only 6 W/cm²
- Scale was still a problem
- The maintenance requirement was still too high



Broadstairs after 7 months with a Kalguard

Consequences of Scale

- It is not ideal to expect the maintenance provider to descale every 6 months or less
- Scale 'conditioners' or 'inhibitors' are proven not to be effective countrywide
- Water softeners have their own set of problems
- A better way is needed

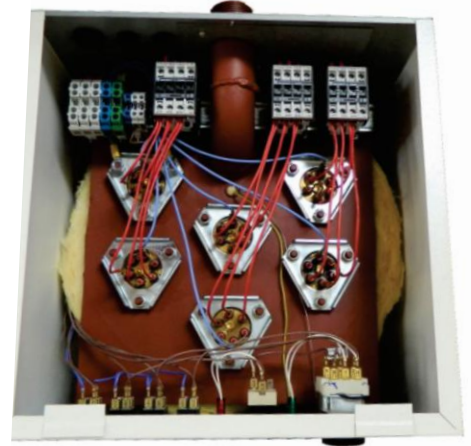
Electric Boiler Indirect Hot Water System



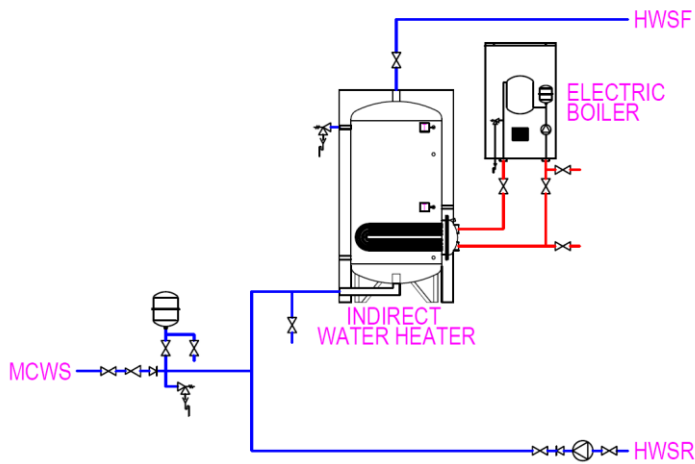
Electric Boiler Indirect Hot Water System

Electric boiler with Cylinder

- Utilises immersion heaters in a tank heat exchanger
- Primary loop separates immersion heaters from mains water – no scale buildup
- Indirect cylinders are long proven to not build up scale at the same rate as immersion heaters
- Provides a level of resiliency due to multiple immersion heaters
- Consumes same energy as a direct electric system (nominally)



Electric Boiler Indirect Hot Water System





Electric boiler vs. DRE

- We installed the first electric boiler/ indirect cylinder at King’s Cross.
- At a similar time we installed a DRE immersion based water heater at Five Guys King’s Cross



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Electric boiler vs. DRE

The Five Guys DRE was serviced after 11 months



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Electric boiler vs. DRE

We then inspected the cylinder at McDonald's King's Cross after 11 months.



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ORACLE, Reading

We then inspected the cylinder after 13 months.



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Electric boiler: No Scale

- Scale is the biggest problem in the water heating business.
- Electric boiler overcomes scale problems.
- There is no cost impact when the system changed from immersion to electric boiler.
- Boilers remove the 'Just a Maintenance issue'



Air Source Heat Pumps

ASHP

- The main issue with electric heating is the cost of the electricity.
- An ASHP cannot efficiently provide all of the hot water, a boiler is always needed
- An ASHP can reduce the energy used in the boiler in a very efficient way.
- The ASHP can provide up to 80% of the hot water (10 – 50C) at high COP.
- The boiler does the rest
- This will reduce running costs by over 50%
- Payback on the heat pump is 2-4 years.

Backup Immersion heater

Backup Immersion

- Immersion heaters are suitable for all water qualities as a backup
 - Operational time should be 5 days in 5 years
- Immersion heaters kick in when a lead heat source fails and provides hot water so the store can stay open
 - Better method than Burko boiler days
- Immersion heater is sized to be less than the store requires
 - It should run out at times of high demand in the store to encourage them to fix the lead source
- Control of Immersion is via the control panel

Control Panel

New Control Panel

- 810366
 - 3 phase Fusion Control Panel for T
- 810366K
 - 3 phase Fusion Control Panel for E+, T+, McDonalds (Fusionlike system)
 - Customer fits the GSM module (supplied loose)
- 810365
 - 1 phase Fusion Control Panel for T
 - For P9 but any heat pump
- 810365K
 - 1 phase Fusion Control Panel for E+, T+
 - For P9 but any heat pump
 - Customer fits the GSM module (supplied loose)

New Control Panel Features

- 810366(K)
 - Use with any heat pump
 - Fpi and **ADVS10** can be wired from the panel
 - ADVS12 and larger must have a dedicated supply to the heat pump
 - Use with **P12** or P24 boiler
 - Backup Immersion up to 12kW
 - Activated when either of boiler/ASHP go into fault
 - Option to prevent immersion activation when ASHP goes into fault to limit current
 - GMS fault notification option
 - Time control clock built in
 - Enable from BMS option
 - Time control clock for thermal disinfection built in
 - BMS disinfection enable is also optional
 - BMS high temp pasteurisation function available (BMS to monitor temperature when active)
 - Destrat pump output
 - Connections for: LLH pump, lighting, socket, heater bar, secondary return pump
 - BMS fault relay
- Wiring Station for Simple install, but someone has to wire it.

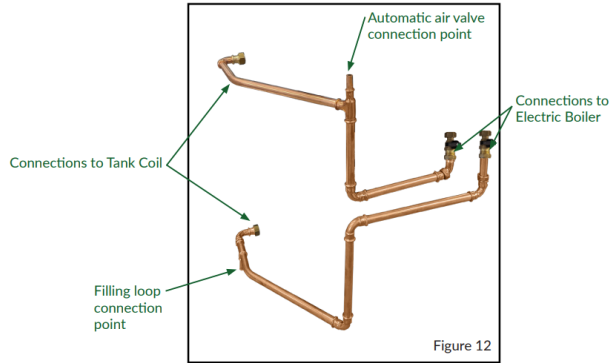
Offsite Manufacture

- Pipework kit
- Packaged plantroom



Pipework Kit

- Fusion Boiler pipework kit
 - Reduces installation time



Packaged Plantroom



2026: What does McDonalds want from their hot water system?

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Prevent the problem

- Limited Options (same system at every site)
- Simplify the install
 - Prewire
 - Preplumb
- Increase reliability
 - Decrease maintenance
 - Stop scale forming
 - Low watts density immersion
 - Electric boiler
 - Prewired Autochangeover to backup control panel
 - Email fault notification

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