

# EFW

## WALL HUNG, GAS-FIRED CONDENSING WATER HEATER



### KEY FEATURES

- Outputs from 83kW to 147kW
- High efficiency condensing technology
- Stainless steel heat exchanger
- Integral controls
- Cascade control for up to 16 units
- Ultra low NO<sub>x</sub> emissions <24mg/kWh (2 BREEAM points available)
- Cost effective solutions
- Compact design where plantroom access is tight



# Lochinvar EFW

## Wall hung, gas-fired condensing water heaters

With 4 models to choose from, EFW wall hung, gas-fired condensing water heaters are available in outputs ranging from 83 to 147kW. Operating at seasonal efficiencies of up to 96% (Gross CV), all models feature a pre-mixed burner, which will modulate down to 20% of output and accurately matches heat output to demand. This ensures that optimum efficiency is maintained even in part load demand periods.

EFW water heaters can be either wall or frame mounted and at only 440mm wide and 539mm deep, provide a compact, space-saving solution for commercial, industrial and large residential buildings.



### Stainless Steel Heat Exchanger

At the heart of the EFW water heater is a high quality heat exchanger made from stainless steel; a material which provides high levels of resistance to corrosion. The heat exchanger can operate at working pressures of up to 8 bar and peace of mind is provided with our 5 heat exchanger warranty; in addition to the 5-year warranty on the heat exchanger we also provide 2 years on all other components.



Integral controls for efficient operation system design and control are both vitally important aspects of achieving operating efficiencies for which most modern gas-fired water heaters are capable; the integral controls within the EFW range provides a cost effective solution, with or without the requirement for BMS Key features of the integral EFB controls include as standard.

- Cascade control – up to 16 boilers in one cascade
- Modbus connection, remote fault signal
- Modulating pump control
- Remote enable via Modbus

The EFW water heater has ultra low NO<sub>x</sub> levels below 24mg/kWh making them suitable for projects which require BREEAM approval gaining the maximum 2 credits available.

## Technical specifications

Water heater model		EFW 85	EFW 105	EFW 125	EFW 155
Heating data					
Nominal input (net) min-max	kW	15.4 - 81.7	18.6 - 97.3	23.6 - 119.4	35.0 - 145.3
Nominal input (gross) min-max	kW	17.1 - 90.7	20.7 - 108.1	26.2 - 132.6	38.9 - 161.4
Gas flow rate (natural gas)	m³/hr	1.6 - 8.5	1.9 - 10.2	2.5 - 12.5	3.7 - 15.3
Nominal output	kW	83.4	99.2	121.7	147.5
Efficiency data - building regulations					
Heat generator seasonal efficiency (gross CV)	%	96.5%	96.5%	96.5%	96.5%
Efficiency data - ErP					
Ecodesign energy label rating	-	N/A	N/A	N/A	N/A
Seasonal space heating energy efficiency	%	85.9	85.6	89.6	89.1
NOx emmissions					
NOx emission (according to EN15502)@0% O2	-	23.1	21.3	23.9	20.1
NOx class according to EN15502	-	6			
General data					
Recovery rate @ 44°C	l/hr	1625	1943	2386	2886
Recovery rate @ 50°C	l/hr	1430	1710	2100	2540
Recovery rate @ 56°C	l/hr	1276	1526	1875	2267
Dimensions (height)	mm	845	845	845	845
Dimensions (width)	mm	440	440	440	440
Dimensions (depth)	mm	539	539	539	539
Water content	litres	5.0	6.5	8.3	10.4
Weight (empty)	kg	77	79	83	86
Weight (full)	kg	82.0	85.5	91.3	96.4
Flow connection (inches)	BSP	R 1"	R 1"	R 1"	R 1½"
Return connection (inches)	BSP	R 1"	R 1"	R 1"	R 1½"
Gas connection (inches)	BSP	R ¾"	R ¾"	R ¾"	R 1"
Flue connection (concentric)	mm	100/150	100/150	100/150	N/A
Flue connection (twin-pipe)	mm	100	100	100	150
Electrical requirements	-	230V /1Ph/ 50hz			
Power consumption	W	190	280	280	280
Sound power level	LWA(db)	65.8	68.0	67.8	73.0
Nominal flue gas temperature	°C				
Max. outlet temperature	°C	85	85	85	85
Working pressure minimum	bar	1.0	1.0	1.0	1.0
Working pressure maximum	bar	8.0	8.0	8.0	8.0

## ErP data / Energy Labeling Data

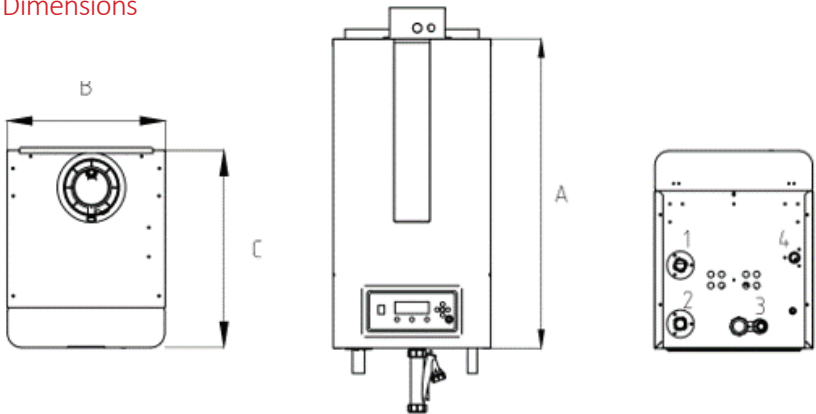
Water heater model		EFW 85	EFW 105	EFW 125	EFW 155
Load profile	-	XXL	XXL	3XL	3XL
Water heating energy efficiency (η <sub>wh</sub> )	%	85.9	85.6	89.6	89.1
Daily fuel consumption (Q <sub>fuel</sub> )	kWh	27.84	27.80	51.54	51.73
Daily electricity consumption (Q <sub>elec</sub> )	kWh	0.292	0.346	0.260	0.289
Emissions of nitrogen oxides (EN15502-1:2012+A1:2015)	mg/kWh	23.1	21.3	23.9	20.1
Sound power level, indoors (LWA) (EN 15036-1:2006)	dB(A)	65.8	68.0	67.8	73

Installation

Packaging

The unit is supplied mounted on a pallet with a cardboard outer surrounding the unit. This packaging should be removed as close as possible to the installation point to reduce the chances of damage while manoeuvring into position.

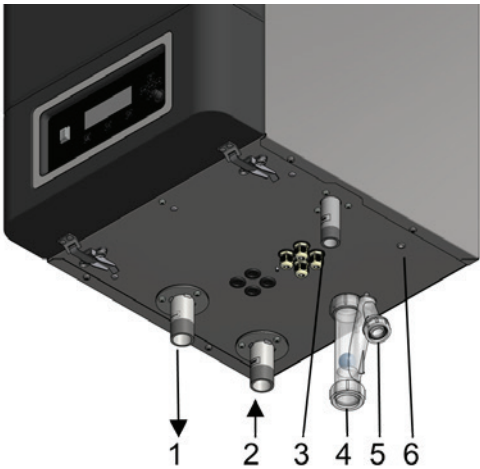
Dimensions



Item	Description	Unit	EFW 85	EFW 105	EFW 125	EFW 155
A	Unit height	mm	845	845	845	845
B	Unit width	mm	440	440	440	440
C	Unit depth	mm	539	539	539	539
1	Hot water outlet	BSP	R 1"	R 1"	R 1"	R 1¼"
2	Cold water inlet	BSP	R 1"	R 1"	R 1"	R 1¼"
3	Condensate	BSP	Flexible hose Ø 25 / 21 mm			
4	Gas	BSP	R ¾"	R ¾"	R ¾"	R 1"
Concentric		mm	100/150	100/150	100/150	N/A
Twin-Pipe		mm	100/100	100/100	100/100	150/150

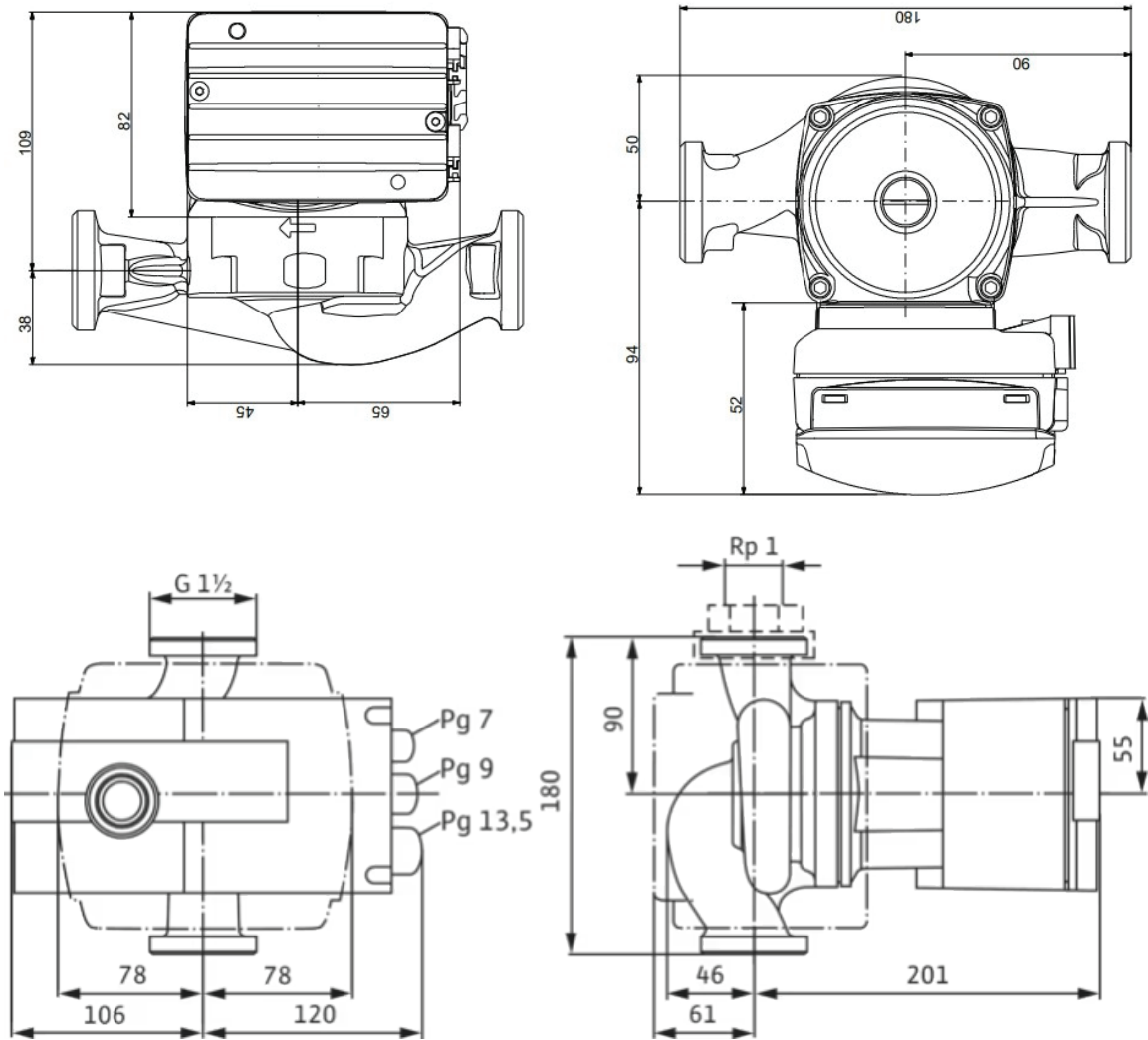
Water heater connections

1	Hot Water / Supply
2	Cold Water / Return
3	Gas
4	Condensate trap clean out
5	Condensate drain
6	Automatic air drain



## Ancillary items

Lochinvar will provide a suitably matched bronze domestic hot water primary pump for standard installations.



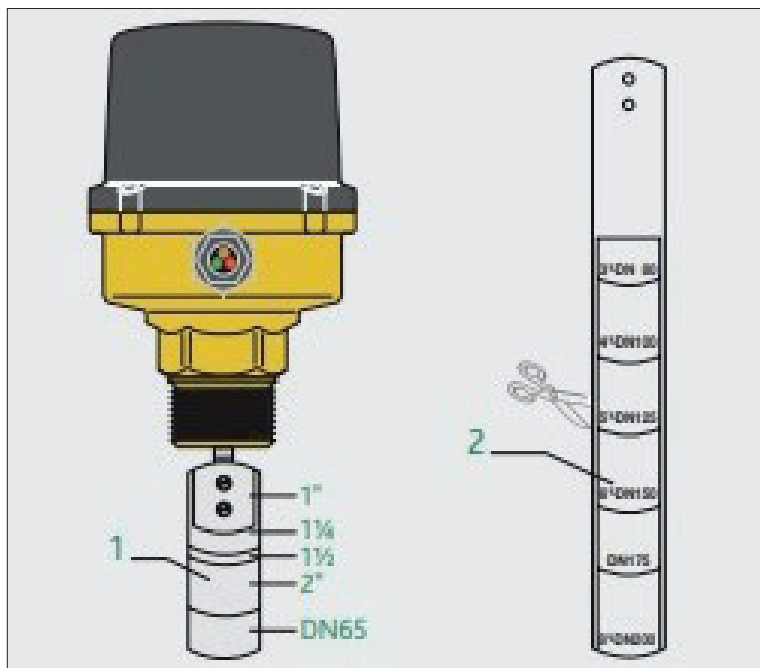
EFW85-105 – LE022500026901

EFW125-155 – LE022500024901

## Flow switch

To protect the water heater a flow switch must be fitted to the heater return, failure of the heat exchanger due to low or no flow is not covered by the heat xchanger warranty a flow switch will protect the heater from low flow conditions.

A suitable unit is available from Lochinvar, item number LM900442P.



## Flue Options

Another feature of the EFW water heater range is its ability to be installed with a range of flue types, including room-sealed concentric or twin pipe and traditional conventional flue systems. Most flue options are available from Lochinvar, contact our head office or your local area sales manager for more details.

**B23** An appliance intended to be connected to a flue that evacuates the products of combustion to the outside of the room containing the appliance.  
The combustion air is drawn directly from the room.

**C13** An appliance connected to either a concentric or twin-pipe flue system with a Horizontal flue terminal. Both the air inlet and flue exhaust must be in the same pressure zone.

**C33** An appliance connected to either a concentric or twin-pipe flue system with a Vertical flue terminal. Both the air inlet and flue exhaust must be in the same pressure zone.

**C43** An appliance connected to a common air inlet and flue exhaust system, which is designed for more than one appliance. This common system has a single air inlet and flue exhaust and is part of the building not the appliance.

**C53** An appliance connected to a twin-pipe flue system with a Horizontal or Vertical flue terminal. Both air inlet and flue exhaust may be in different pressure zones.

**C63** An appliance intended to be connected to a separately approved and marketed system for the supply of combustion air and discharge of combustion products (i.e. other than that supplied by the water heater manufacturer).

**C83** An appliance connected via one of its ducts to a single or common duct system. This duct system consists of a single natural draught duct (i.e. not incorporating a fan) that evacuates the products of combustion. The appliance is connected via a second of its ducts to a terminal, which supplies air to the appliance from outside the building.

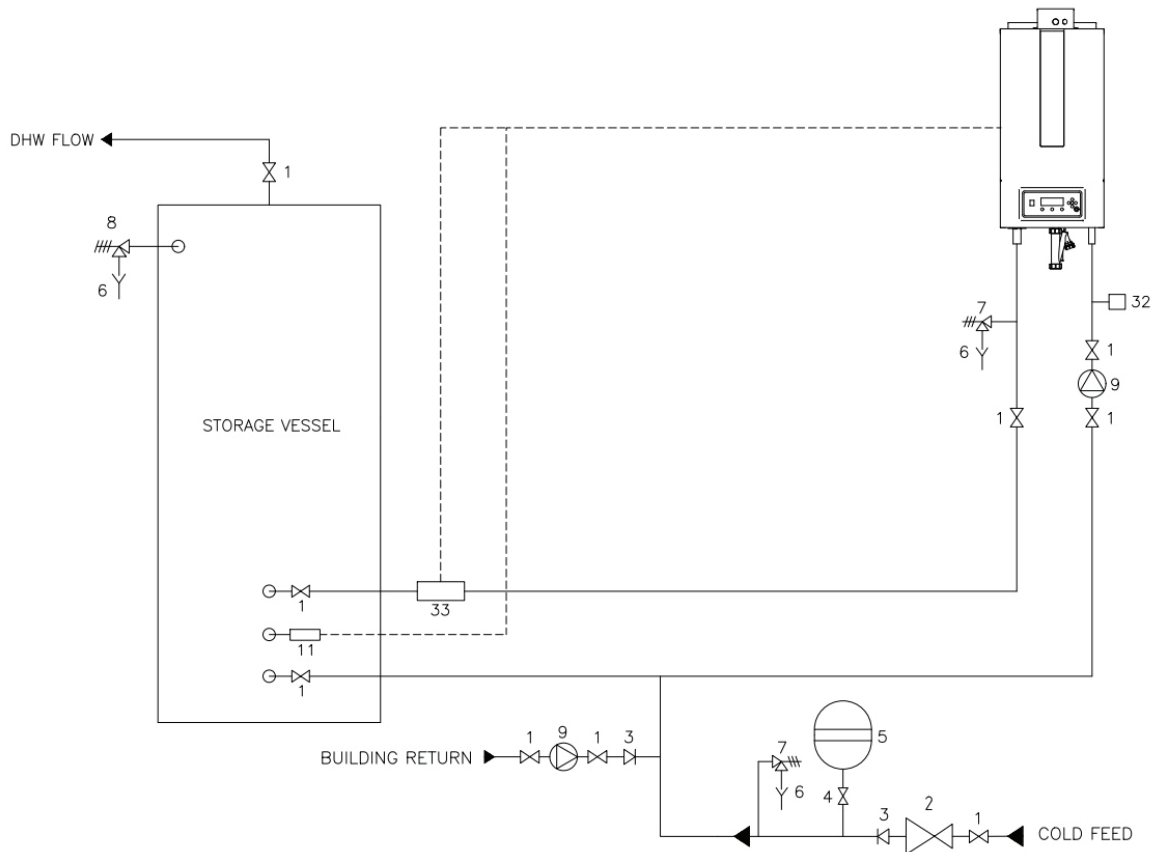
The EFW water heaters are approved for use with C10 & C11 common flue systems. The EFW water heater is equipped as standard with a flue gas non-return valve to allow the unit to be fitted on a positive pressure common flue system.

## Un-vented installation

When installing an EcoForce water heater on an unvented system a suitable kit of components is available from Lochinvar as an extra ancillary. This will be sized according to individual project requirements.

The unvented kit will include:

- Non return valve
- Pressure relief valve
- Pressure reducing valve
- T&P Valve
- Tundish
- A suitable sized expansion vessel (Dependent on system volume)





### LPG Conversion Kit

The EFW water heater can operate on both natural gas and LPG. An LPG conversion kit is available from Lochinvar.

### Storage vessels

EFW water heaters are designed for installation with a separate storage vessel; this provides a great deal of installation flexibility as multiple storage and hot water recovery combinations are available. Our LST and LSTR range are specifically designed for use with circular water heaters and are available with storage capacity ranging from 312-2820 litres. If a complete stainless option is required, the EFW water heater can be paired with our SST range providing storage capacities from 300-1000 litres.



## Mounting Frames

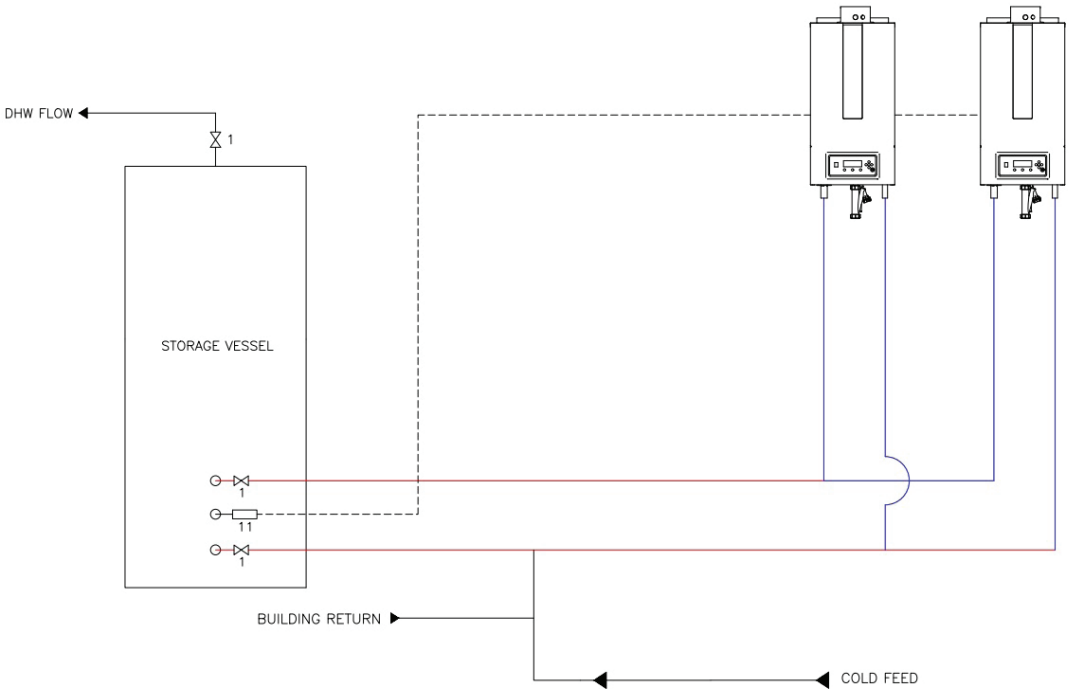
To add additional flexibility to the EFW, Lochinvar offers mounting frames for when mounting on plantroom walls is not an option.

A key feature of EFW mounting frame assemblies is that the **total frame height is less than 1.8m**. This can provide key assistance with installation and maintenance especially in plant rooms with restricted height.

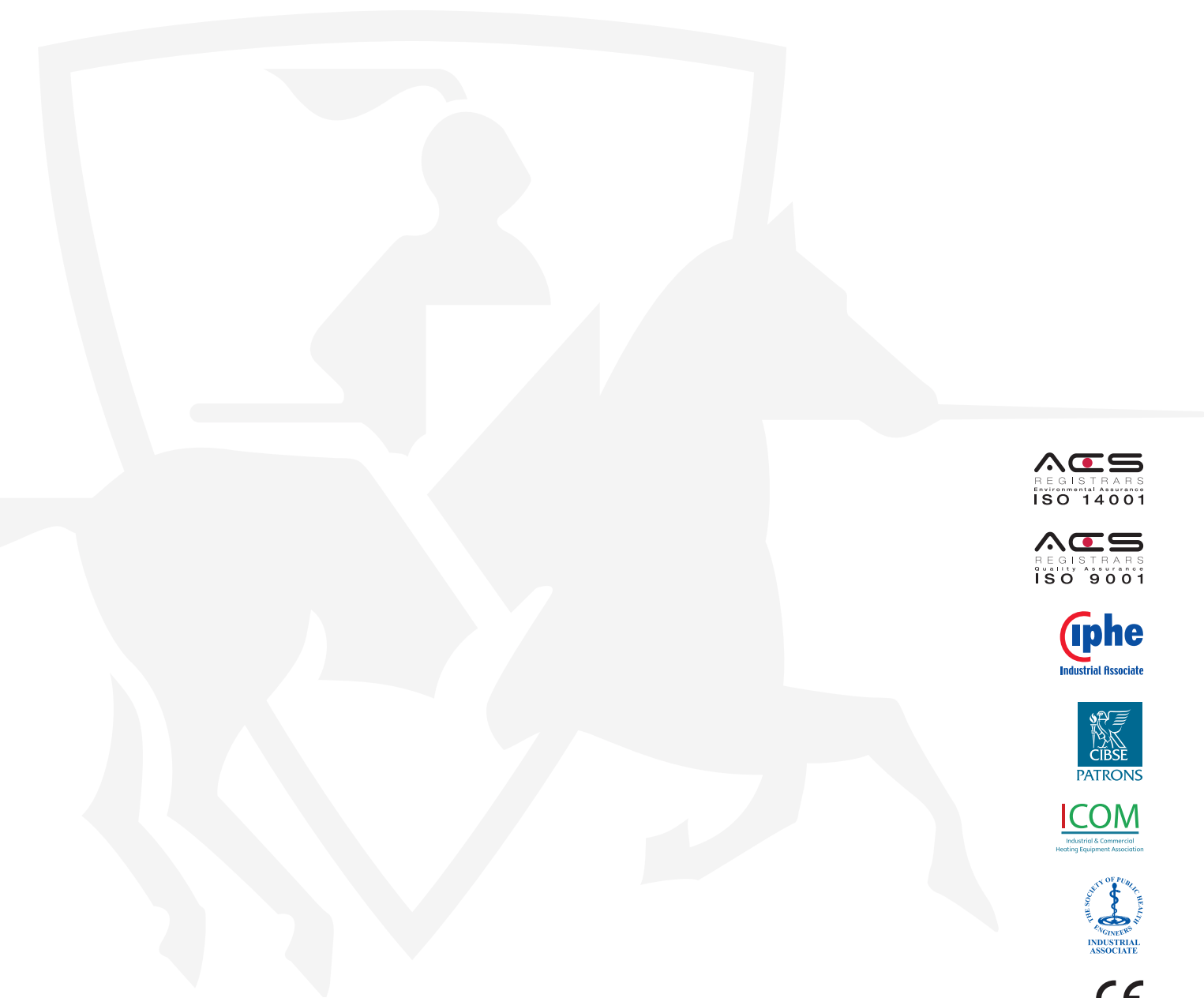


Pipework Sizing

The values shown in the table below are based on a maximum pipework run between the water heater(s) and vessel(s) of 20 meters equivalent length.  
For installations outside these parameters please see detailed guidance in the installation manual or contact Lochinvar Technical support



Model	Pipework A blue size (mm)	Pipework B red size (mm)			
	Number of water heaters				
	1	2	3	4	
EFW85	42mm	54mm	67mm	76mm	
EFW105	42mm	54mm	67mm	76mm	
EFW125	42mm	67mm	76mm	108mm	
EFW155	54mm	67mm	76mm	108mm	



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Energy label, product fiche and ErP data table are available at [www.lochinvar.ltd.uk](http://www.lochinvar.ltd.uk)  
For further information on the EFW water heaters, including ICM & user instructions  
and our full warranty terms and conditions, please visit our website: [www.lochinvar.ltd.uk](http://www.lochinvar.ltd.uk)



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*Lochinvar Ltd reserves the right to change  
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