



the EcoForce range

Our high performance wall hung and floor standing gas-fired stainless steel condensing water heaters



Lochinvar[®]
High Efficiency Water Heaters and Boilers

Lochinvar

EcoForce water heaters

EcoForce is a range of fully condensing gas-fired water heaters available in 8 models with hot water recovery rates ranging from 716 to 3400 litres/hour (based upon a temperature rise of 44°C). Three of these models are floor standing and complete with integral storage tanks and primary pump. The other five wall hung models are supplied for installation with separate storage tanks. EcoForce water heaters offer a highly efficient solution for a wide variety of commercial/industrial applications.

EcoForce+ – 3 models

The three EcoForce+ models are supplied complete with integral storage tank (150 or 230 litres), primary pump and inter-connecting pipework. Hot water outputs range from 716 to 1110 litres per hour at a temperature rise of 44°C.



EcoForce+ features

- Stainless steel heat exchanger and storage tank
- Integral pump and pipework
- Balanced or conventional flued installation
- Anti-legionellae function (optional)
- RCW remote water heater controller (optional)
- Suitable for unvented and open vented installation
- Available for Natural Gas or LPG

EcoForce wall hung – 5 models

EcoForce wall hung models offer a compact solution where plant room space is restricted and provide hot water recovery rates ranging from 1,524 to 3,400 litres per hour based upon a temperature rise of 44°C. Wall hung models should be supplied with separate storage tanks.



EcoForce wall hung features

- Stainless steel heat exchanger
- Balanced or conventional flued installation
- Anti-legionellae function (optional)
- RCW remote water heater controller (optional)
- Pre-fabricated inter-connecting pipework (optional)
- Suitable for unvented and open vented installation
- Available for Natural Gas or LPG



SST 300 and 450 Stainless steel storage tanks with patented cold water injection design

Stainless steel heat exchanger

At the heart of each EcoForce water heater is a grade 316L stainless steel heat exchanger, with a design which incorporates superior resistance to corrosion caused by condensation from low water temperature. EcoForce water heaters operate at high efficiencies throughout the life of the product.



Fully modulating pre-mix burner

EcoForce is equipped with a pre-mix burner having a design which constantly matches optimum gas/air ratio. The fully modulating burner allows operation at 25% of maximum input when hot water demand is at its lowest and increasing up to 100% as demand increases. Both features contribute to the superior overall operating efficiencies.

SST stainless steel storage tanks

SST stainless steel storage tanks are available in 3 sizes, with capacities of 300, 450 and 750 litres. They are specifically designed for use with EcoForce water heaters and incorporate a patented cold water injection system, which optimises performance by enabling maximum operation in condensing mode.

Model	SST300	SST450	SST750
Capacity litres	300	450	750
Height mm	1780	1680	1889
Diameter mm	605	733	950
Weight Empty kg	42	45	82
Flow/Return BSP ins	1½	1½	1½
Hot Outlet BSP ins	1½	1½	1½
Relief Valve Tapping BSP ins	1	1	1

In addition to the SST range of stainless steel storage tanks, Lochinvar can also offer a wide range of higher capacity storage tanks made from copper or lined steel, which may be suitable for large hot water demand applications.

Flue options

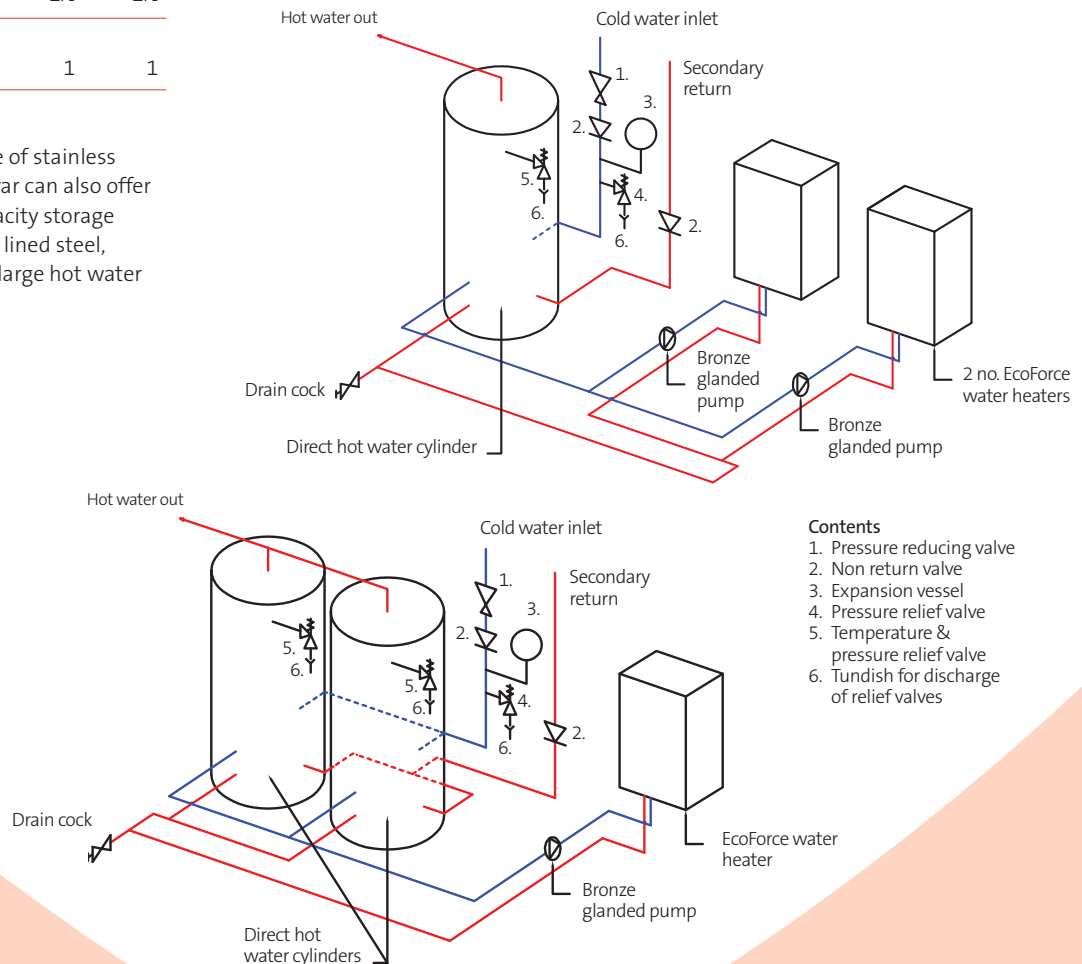
A wide range of flue options are available, including:

- Room sealed concentric balanced flue
- Room sealed twin pipe balanced flue (Wall hung models only)
- Conventional flue.

Balanced flue assemblies of up to 50m equivalent length are achievable in addition to common flue arrangements.

EcoForce	Concentric Flue Dia. (mm)	Twin-pipe Flue Dia. (mm)
EF+35/150	80/125	n/a
EF+35/230	80/125	n/a
EF+55/230	80/125	n/a
EF 80	80/125	80-80
EF 100	100/150	100-100
EF 120	100/150	100-100
EF 150	100/150	130-130
EF 180	100/150	130-130

Water heater / storage tank combinations





Lochinvar®

High Efficiency Water Heaters and Boilers



Two EcoForce wall-hung models with two SST stainless steel storage tanks

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Data table

Gas Classification		II _{2HBP}								
Gas Appliance Type		B ₂₃ C ₁₃ C ₂₃ C ₃₃			B ₂₃ C ₁₃ C ₂₃ C ₃₃ C ₄₃ C ₅₃ C ₈₃					
Water Heater Model		EF+35/150	EF+35/230	EF+55/230	EF 80	EF 100	EF 120	EF 150	EF 180	
Dimensions (Height)	mm	1400	1420	1420	835	835	835	890	890	
Dimensions (Width)	mm	510	610	610	458	458	458	458	458	
Dimensions (Depth)	mm	870	920	920	485	485	485	670	670	
Water Content	Litre	150	230	230	5.0	6.5	8.3	10.4	12.9	
Weight (empty)	Kg	97	114	117	67	71	77	84	93	
Flow Connection	BSP	1½"	1½"	1½"	1½"	2"	2"	2"	2"	
Gas Connection	BSP	R ¾"	R ¾"	R ¾"	R ¾"	R ¾"	R ¾"	R 1"	R 1"	
Flue Sizes		(see data table on page 3)								
Power Consumption	W	140	140	200	170	170	170	250	250	
Protection Class	Class	IP40	IP40	IP40	IP40	IP40	IP40	IP40	IP40	

Performance

		EF+35/150	EF+35/230	EF+55/230	EF 80	EF 100	EF 120	EF 150	EF 180
Nominal Input (net)	kW	34.0	34.0	53.0	74	92	111	138	166
Nominal Input (gross)	kW	37.7	37.7	58.8	82	102	124	153	185
Gas Flow Max. (G20)	m ³ /hr	3.6	3.6	5.6	7.9	9.8	11.8	14.7	17.6
Efficiency	%	108	108	107	105.4	105.4	104.5	104.3	104.8
Nominal output	kW	36.7	36.7	56.8	78	97	116	144	174
NOx Emission, RAL 61	mg/kWh	<15	<15	<15	<15	<15	<15	<15	<15
CO Emission, RAL 61	mg/kWh	<20	<20	<20	<20	<20	<20	<20	<20
Recovery rate @ 44°C	l/hr	716	716	1110	1524	1895	2267	2813	3400
Recovery rate @ 50°C	l/hr	630	630	977	1341	1667	1995	2475	2992
Recovery rate @ 56°C	l/hr	563	563	872	1198	1489	1781	2210	2671

Technical details

		EF+35/150	EF+35/230	EF+55/230	EF 80	EF 100	EF 120	EF 150	EF 180
CO ₂ - Flue Gas	%	9	9	9	9	9	9	9	9
Flue Gas Temperature	°C	80	80	80	80	80	80	80	80
Available Pressure for Flue System	Pa	200	200	200	250	250	250	350	350
Waterside pressure loss @ 15K ΔT	m WC	n/a	n/a	n/a	8.5	6.5	7.5	8.0	8.5
Max. Outlet Temp.	°C	75	75	75	75	75	75	75	75
Working Pressure Min/Max	bar	0.2-10.0			0.5-10.0				

EcoForce ancillary options:

- Primary circulating pump
- Flow sensor
- RCW controller
- Unvented / boosted water system kits
- Pre-fabricated interconnecting pipework
- Mounting frames (multiple installations)
- Condensate neutralisation kits
- Concentric or twin-pipe balanced flue assemblies

Lochinvar Limited reserve the right to change specifications without prior notice.