

Intelli-Fin™

GAS-FIRED CONDENSING WATER HEATERS



Lochinvar Corporation has been designing, manufacturing and distributing water heating products in USA since 1919 and has built an enviable reputation for reliable, efficient and cost effective water heaters and boilers.



In the UK the company is based in Banbury, ideally located to support its established products with a service which is second to none with Area Sales Managers and a head office staff covering Technical support, Service Technicians, Accounts and General Administration.

Water heating equipment was first sold in the UK under the Lochinvar name in 1976. The "Knight" and "Charger" ranges of direct gas fired Storage Water Heater were among the first of their type to be sold in this country and their popularity has continued to grow due to their suitability for the concept of System Separation and Decentralisation.

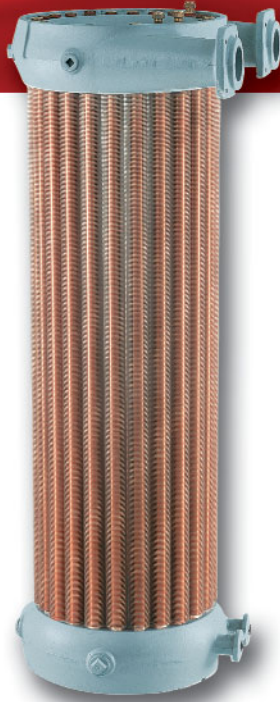
In 1981 Lochinvar introduced Copper-Fin® Water Heaters and Boilers and with various models available can offer outputs of up to 568kW. Most recent addition to the Copper-Fin® series is Intelli-Fin™, which has net thermal efficiencies of up to 108% from an incredibly small footprint.

The addition of the Condensa and CP-M Boiler ranges offer further flexibility of choice, offering wall-hung boilers with outputs from 23 to 180kW, all of which offer high levels of efficiency.

All Lochinvar water heaters and boilers have a range of ancillary equipment designed for the specific needs of the UK market, are CE marked and WRAS (Water Research Advisory Service) listed.



WHY Intelli-Fin™?



The Intelli-Fin™ range of gas fired, wet recuperative, condensing Water Heaters is the latest addition to Lochinvar's highly successful Copper-Fin® series. Copper is an excellent conductor of heat, having a heat transfer rate 9 times better than steel and cast iron and 1½ times better than aluminium. At the heart of each Lochinvar Water Heater and Boiler lies a copper heat exchanger with a substantial difference - extruded copper fin tubes, that offer 9 times the heat absorption of plain tubes. This means a rapid response to heat demand, a major factor in the thermal efficiencies provided.

Intelli-Fin™ is highly efficient (up to 108% net thermal efficiency), flexible, extremely quiet in operation and 'intelligent' thanks to its integrated control system and dual heat exchanger arrangement.

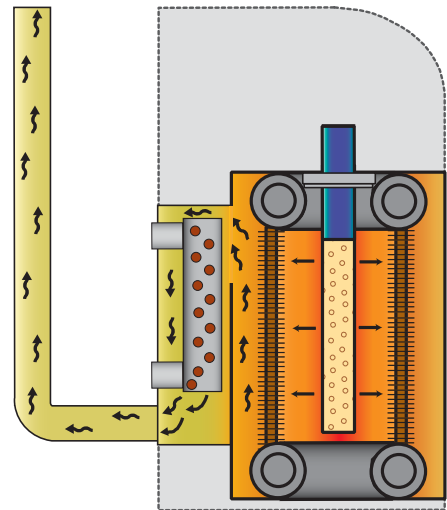
5 YEAR HEAT EXCHANGER WARRANTY

VARIABLE FREQUENCY DRIVE

Intelli-Fin™ is the first Water Heater in the Copper-Fin series to feature Variable Frequency Drive, which increases thermal efficiencies by supplying precisely the correct amount of gas and air to the burner, minimising 'cycling' and limiting excessive heat. This results in complete combustion thereby increasing hot water output, whilst at the same time it also adjusts output to meet demand.

The Variable Frequency Drive allows Intelli-Fin™ to modulate down to 25% of output responding instantly to any change in system requirements.

Intelli-Fin™ DUAL HEAT EXCHANGER ARRANGEMENT



Intelli-Fin™ dual heat exchanger arrangement creates a heat trap to capture convective heat flow. Trapping this latent heat reduces flue losses, increases efficiency and saves energy.

HIGH THERMAL EFFICIENCIES – LOW NO_x EMISSIONS

Intelli-Fin™ operates with net thermal efficiencies of up to 108%. As a fully recuperative Water Heater high efficiencies are achieved even if system return temperature is higher than the optimum.

With ultra low NO_x emissions of 31mg/kWh Intelli-Fin™ is environmentally friendly too.

3 MODELS RECOVERY RATES UP TO 11,000 LITRES/HOUR

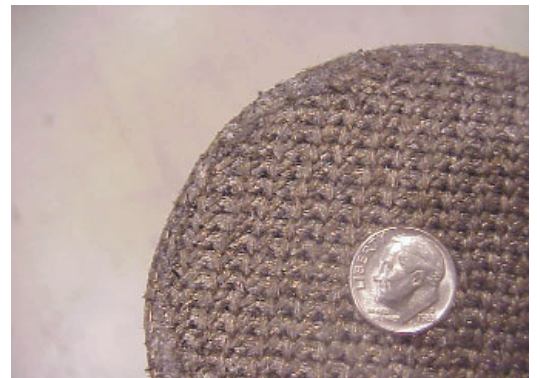


COMPACT SIZE

Intelli-Fin™ is compact. So compact in fact that 10,728 litres/hr is available from a foot print of just 0.65m². This makes *Intelli-Fin*™ Water Heaters ideal for both retrofit and new installations.

ALCROMESH BURNER WITH 5-YEAR WARRANTY

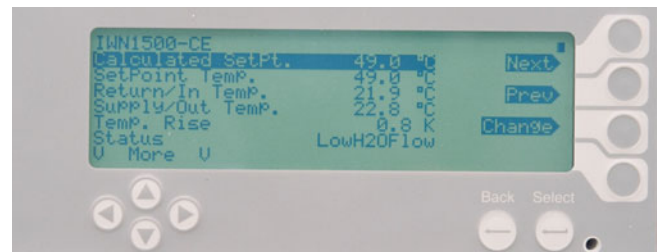
The aluminium/chromium alloy burner disperses the flame through 360° improving heat transfer. Quiet operation is assured and its durability results in a 5-year warranty.



ADVANCED CONTROLS

Intelli-Fin™ features advanced controls, which can be interfaced with Building Management Systems it can provide a remarkable amount of information and the ability to adapt for specific applications.

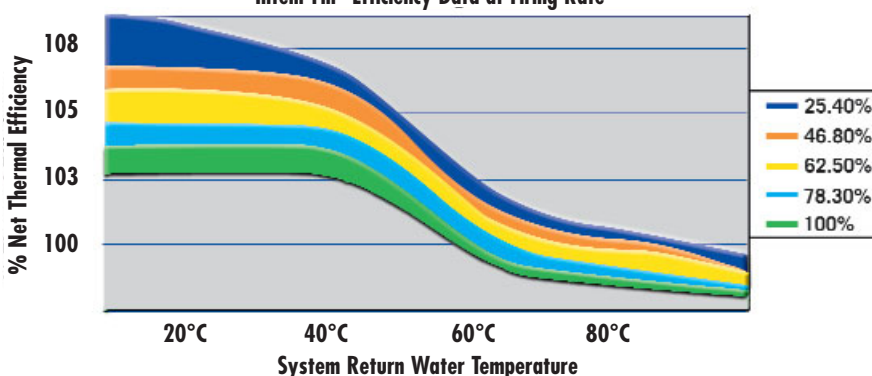
Up to 21 diagnostic points and 6 operational characteristics can be locally or remotely monitored.



SCALE FREE OPERATION

Each Lochinvar *Intelli-Fin*™ Water Heater comes complete with Bronze Glanded pump and Flow switch. The pump gives an even distribution of heat across the heat exchanger and also ensures that any scale is kept in suspension, guaranteeing "scale free" operation, even in hard water areas. Any scale present will usually settle in the storage vessel, which is not harmful to the operation of the water heater and can be easily cleaned. This maintains the high operating efficiency and a prolonged working life for the water heater.

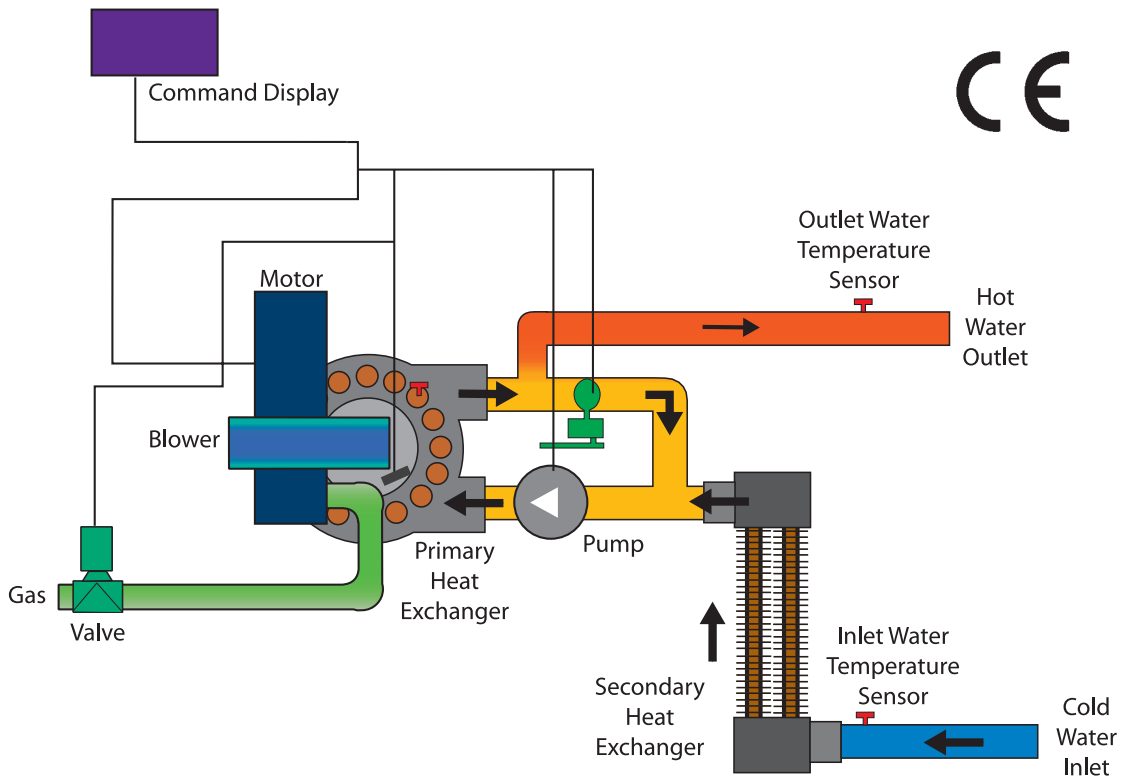
Intelli-Fin™ Efficiency Data at Firing Rate



Intelli-Fin™ EFFICIENCY

RETURN WATER TEMPERATURE	INTELLI-FIN™ EFFICIENCY (NET)
20°C	108%
50°C	104%
70°C	103%

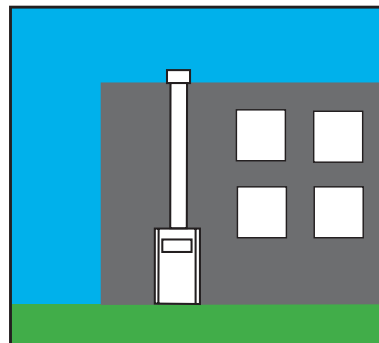
OPERATING AND INSTALLATION FLEXIBILITY



Intelli-Fin™ can operate with a broad range of gas pressure and water temperature situations thanks to its intelligent controls and unique heat exchanger arrangement. This prevents nuisance 'lockout' problems in applications with varying gas pressures as *Intelli-Fin™* can operate under low supply pressure conditions. The dual heat exchanger arrangement preheats return water to control condensate formation. Using a pumped bypass, a portion of the heated supply water is recirculated to raise inlet temperature to a point where condensation on the primary heat exchanger is avoided. In addition, gas and air supply for combustion are also adjusted to ensure sufficient hot water output is available to raise supply water temperature to the prescribed set point.

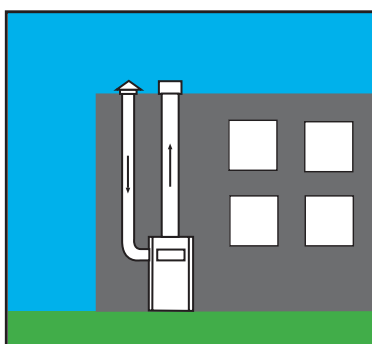
FLUEING OPTIONS

Intelli-Fin™ Water Heaters offer a choice of three flueing options and have extremely small flue diameters. The 586kW model, for example, has a flue diameter of just 200mm - half that of a similar output conventional unit. This makes for real savings in installation costs.



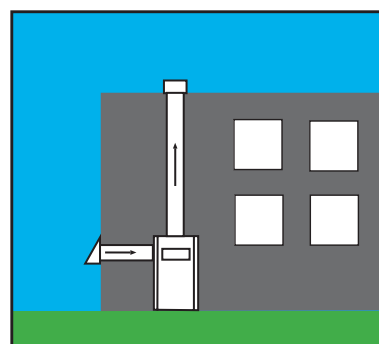
Conventional

Flues vertically using IGE/UP/10 approved flue material.



Vertical Balanced Flue

Flues vertically using IGE/UP/10 approved flue material. Directly draws combustion air with runs of 30 metres from the roof top.



Balanced Flue with Horizontal Air Intake

Flues vertically using IGE/UP/10 approved flue material. Directly draws combustion from a side wall with a horizontal run of up to 30 metres.

ENERGY SAVING HOT WATER CYLINDERS – 11 MODELS



LST RANGE

Lochinvar LST Energy Saving Cylinders are constructed from A1 glass lined steel and are available in 5 models with capacities from 297 litres to 1155 litres.

Cathodic protection is provided by magnesium anodes or maintenance - free Correx anodes, which are available as an ancillary option.

Foam insulation keeps standing losses to an absolute minimum and the units can operate to a maximum pressure of 10.5 bar. A unique distribution baffle maximises water delivery, allowing as much available hot water as possible for immediate draw down which is important in "peak demand" applications.

All models are covered by a five year warranty against tank leakage.

CST RANGE

Lochinvar CST range of energy saving storage tanks, have capacities ranging from 210 to 1500 litres.

As with the LST range they are fitted with a specially designed distribution baffle, which gives the maximum available hot water for immediate draw down.

CST storage tanks have a maximum working pressure of 3.5bar, and feature a facility for immersion heater installation, which gives an alternative fuel "standby".

Being constructed from copper, they offer a natural resistance against corrosion caused by electrolytic action without the requirement for sacrificial anodes. In addition to providing this protection the maintenance requirement is also minimal.

All models are covered by a 5-year warranty against tank leakage.

Model No.		LST66	LST70	LST100	LST166	LST250	CST210	CST450	CST750	CST1000	CST1200	CST1500
Storage Capacity	(Litres)	297	315	450	747	1155	210	450	750	1000	1200	1500
	(gallons)	66	70	100	166	254	46	99	165	220	264	330
Diameter	(mm)	609	711	711	812	1016	550	700	850	900	900	1150
Height	(mm)	1492	1232	1587	1955	2082	1600	1758	1967	1970	2210	2100
Weight (empty)	(kg)	84	87	157	227	451	90	180	295	310	380	450
Weight (full)	(kg)	381	402	607	974	1606	300	630	1045	1310	1580	1950

LST166 and LST250 and all CST models are now supplied complete with facility for immersion heater installation

UNVENTED SYSTEM KITS

For Direct Mains feed or Pressurised system installations. Unvented systems offer many advantages to installers, specifiers and end users and kits are available for each model.

DIRECT HOT WATER

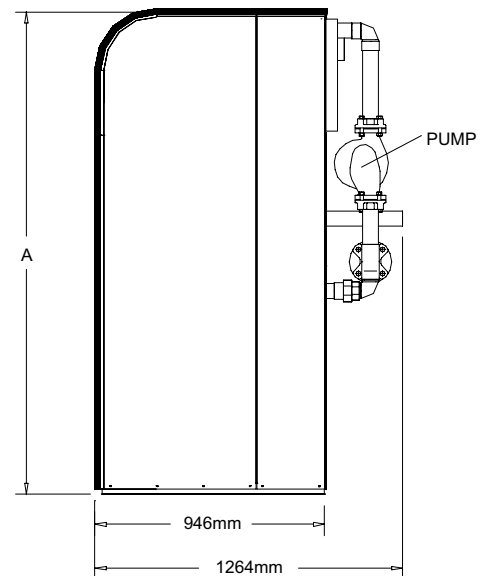
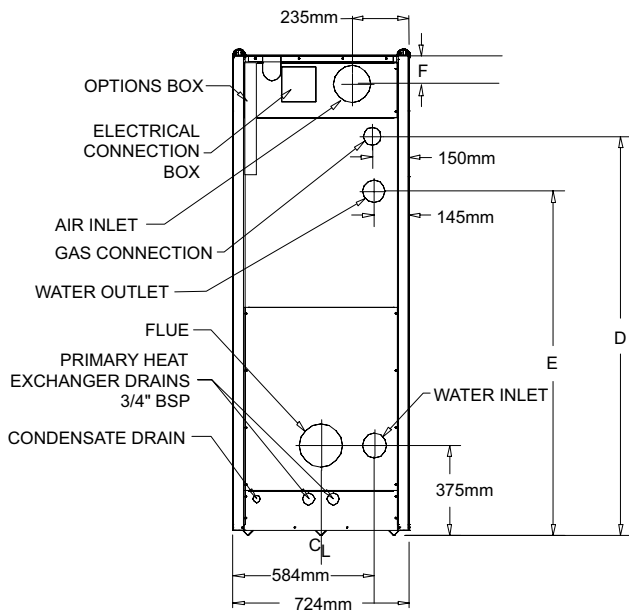
When linked to a Direct Storage vessel Lochinvar Water Heaters give a reliable, efficient supply of direct hot water, on the principle of system separation. "On-site" storage cylinders can be used and Lochinvar also offer the LST/CST ranges of energy saving storage vessels which are designed for use with Copper-Fin® products.

UNVENTED KIT COMPONENTS

- ▼ Pressure regulator with built in strainer
- ▼ Non-return valve
- ▼ Expansion vessel(s)
- ▼ Pressure relief valve
- ▼ Combined temperature and pressure relief valve
- ▼ Tundishes (2)

Intelli-Fin™ WATER HEATERS

DIMENSIONS & SPECIFICATIONS



Model Number	Input Gross kW	Input (Net) kW	RECOVERY RATE litres/hr		A	D	E	F	Air Inlet Size mm	Flue Size mm	Weight kg
			at 44°C rise	at 50°C rise							
IFW1500CE	440	397	8051	7084	1720	1340	1035	114	150	150	520
IFW1700CE	498	449	9106	8013	1835	1454	1149	114	175	175	545
IFW2000CE	586	528	10,728	9440	2007	1626	1321	165	200	200	575

All gas connections are 1/2" BSP.

All water connections are 76mm copper tube.

Standard Features

- ▼ Up to 108% net Thermal Efficiency
- ▼ 25 - 100% Infinitely Proportional Firing Rate
- ▼ Command Display - 21 Point Diagnostic Control
- ▼ Variable Frequency Drive Fan
- ▼ Digital Temperature Control Accurate to 0.5°C
- ▼ Alcomesh Burner with 5-Year Limited Warranty
- ▼ Ultra Low NO_x Operation Exceeds the most Stringent Air Quality Requirements
- ▼ Enamel Lined Heat Exchanger Headers
- ▼ 10.5 bar Working Pressure
- ▼ Gasketless Heat Exchanger Design
- ▼ Fitted Bronze Circulating Pump Mounted and Wired
- ▼ Lined Heat Exchanger Headers
- ▼ Stainless Steel Combustion Chamber
- ▼ Low Gas Pressure Operation
- ▼ Corrosion Protection on secondary Heat Exchanger
- ▼ Zero Clearance to Combustible Materials
- ▼ Volt-Free Alarm Contacts on any Failure
- ▼ Temperature and Pressure Relief Valve
- ▼ Adjustable High Limit Thermostat with Manual Reset
- ▼ Flow Switch
- ▼ Small Footprint
- ▼ Whisper Quiet Operation
- ▼ Frost Protection
- ▼ Inlet Air Filter
- ▼ Manual Operation Override
- ▼ 4-20 ma Control (Stand alone Water Heaters only)
- ▼ 5-Year Warranty on Heat Exchanger

Monitoring Options

- ▼ Local Monitoring via Personal Computer includes serial LonTalk adapter & serial cable
- ▼ Remote Monitoring via Personal Computer includes serial LonTalk adapter, approved network modem and adapter cable

Optional Equipment

- ▼ Neutralisation Kit for Condensate Discharge



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