

Knight & Charger Water Heaters



- From 127-1853 l/h recovery rate
- Storage capacities from 109-357 litres
- Fast recovery water heater
- 3 Year Storage Vessel warranty
- Conventional flued appliance



Lochinvar[®]
HIGH EFFICIENCY BOILERS & WATER HEATERS

Gas fired storage water heaters

Traditionally hot water systems in commercial and industrial buildings have been supplied indirectly by heating boilers and indirect cylinders - also referred to as calorifiers. This type of system had many operating and logistical inefficiencies especially during the summer months when the main heating boiler was required to run in order to deliver only the buildings hot water requirements. A number of Government sponsored energy saving campaigns have promoted system separation and de-centralization of the heating and hot water plant, a philosophy for which direct gas fired storage water heaters are ideally suited.



Knight CE
permanent pilot water heater

The design principles of Lochinvar Knight and Charger water heaters are based upon low storage capacity and fast recovery times. This means the water heaters can be sized to suit each individual application and sited close to the point of demand helping to reduce transmission losses and installation costs and enabling increased operating efficiencies and a reduction in energy usage.

Enamelled vessel for extended operating life

At the heart of both ranges is a heavy gauge welded steel vessel. The vessel is lined internally with a vitreous enamelled material, protecting it from any corrosive elements in the water and ensuring the water remains contaminant free. The lining has a coefficient of expansion similar to that of the vessel itself and therefore is not subjected to any stresses that could cause fracturing. To allow for inspection of the internal surfaces, all Charger models incorporate two 100mm clean out access points. The Knight LG75GCE, LGA75GCE, LG85GCE and LGA85GCE models incorporate one 100mm clean out access point.

Cathodic protection

Fitted as standard, magnesium sacrificial anodes prolong vessel life and inhibit corrosion. An alternative method of protection is available in the form of Correx® non sacrificial electrical anodes. These are available as an ancillary option.

High level of insulation minimises standing heat loss

A layer of cfc-free polyurethane foam envelops the storage vessel reducing standing heat losses to an absolute minimum, whilst further insulation encapsulates the combustion chamber, ensuring maximum heat transfer from the burner into the water vessel.

Baffled flueway for maximum heat transfer

Custom designed steel baffles suspended in the flueways increase the amount of heat transfer from the flue gases. This 'scrubbing' action helps to achieve fast recovery of hot water. All Knight water heaters have a single baffled flueway, Charger models have between 5 and 17 baffled flueways increasing the heat surface area by up to 35%.



Charger CE
permanent pilot water heater

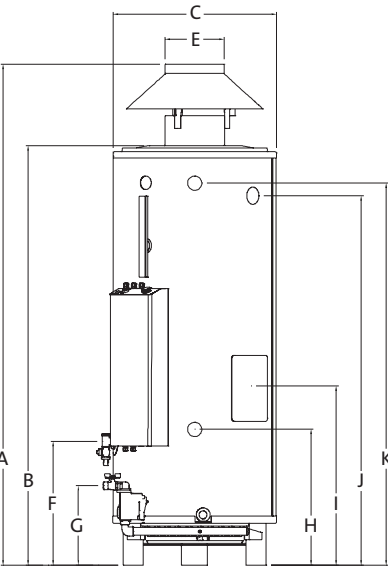
Charger water heaters

High outputs

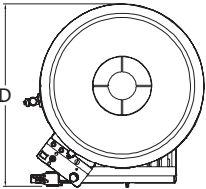
Lochinvar Charger water heaters incorporate multiple flue tubes rising vertically through the water vessel. This allows for higher rated burners to be used enabling faster heat up times and larger volumes of hot water to be available.

Choice of 15 models for specifying flexibility

There are 15 models available across the Charger range, 7 of which have permanent pilot and 8 having automatic ignition. Storage capacities range from 252 to 357 litres and recovery rates from 441 to 1853 litres/hour (based upon a temperature rise of 50j C) are achievable. All Charger models are available for Natural Gas or LPG.



Charger CE front view



Charger CE top view



Charger CE
automatic ignition water heater

Charger Features

- Vitreous enamel lined storage vessel
- CFC free foam insulation - reduces standing losses
- Suitable for unvented and open vented installation
- Available for Natural Gas or LPG
- All Charger models incorporate two 100mm clean out access points

Charger water heaters - dimensions (mm)

Model	CH100GCE CHA100GCE	CH155GCE CHA155GCE	CH200GCE CHA200GCE	CH300GCE CHA300GCE	CH400GCE CHA400GCE	CH500GCE CHA500GCE	CH600GCE CHA600GCE	CHA700GCE
A	1910	1910	1890	2155	2155	1950	2145	2145
B	1700	1700	1700	1900	1900	1735	1810	1810
C	710	710	710	710	710	710	710	710
D	800	800	800	800	800	800	800	800
E	130	130	150	180	180	200	250	250
F	440	440	440	455	455	465	540	535
G (PP)	145	145	145	145	145	145	145	n/a
G (Auto)	340	340	340	340	340	340	340	145
H	505	505	505	505	505	515	590	590
I	670	670	670	670	670	680	765	795
J	1490	1490	1490	1700	1700	1535	1600	1600
K	1545	1545	1545	1750	1750	1580	1655	1655
Service clearance above	1000	1000	1000	1000	1000	1000	1000	1000
Service clearance to rear	100	100	100	100	100	100	100	100
Service clearance to sides	500	500	500	500	500	500	500	500
Service clearance to front	600	600	600	600	600	600	600	600

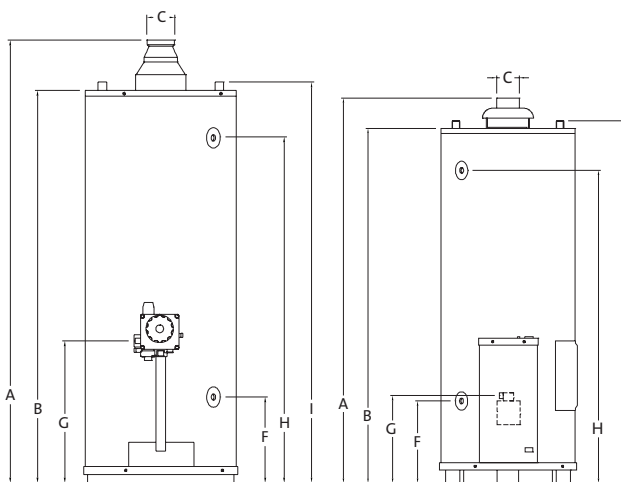
Knight water heaters

Choice of 7 models for specifying flexibility

There are 7 models available in the Knight range, 5 of which have permanent pilot and 2 with automatic ignition. Storage capacities range from 109 to 355 litres and recovery rates from 127 to 351 litres/hour (based upon a temperature rise of 50°C) are achievable. All Knight models are available for Natural Gas or LPG.

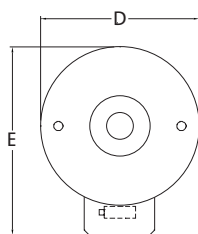
Clean out access

Knight LG75GCE, LGA75GCE, LG85GCE and LGA85GCE incorporate a 100mm clean out access allowing for inspection of the vessel and removal of any accumulated sediment.



permanent pilot front view

automatic ignition front view



Knight CE top view

Knight CE
automatic ignition water heater

Knight Features

- Vitreous enamel lined storage vessel
- CFC free foam insulation - reduces standing losses
- Suitable for unvented and open vented installation
- Available for Natural Gas or LPG

Knight water heaters - dimensions (mm)

Model	LG30GCE	LG40GCE	LG50GCE	LG75GCE	LG85GCE
A	1280	1370	1670	1585	1780
B	1120	1210	1540	1450	1640
C	80	80	100	130	130
D	465	515	515	645	675
E	545	595	605	770	765
F	250	250	255	285	285
G	325	325	380	375	375
H	965	1045	1380	1280	1480
I	1180	1270	1590	1505	1685
Service clearance above	1140	1140	1140	1140	1140
Service clearance to rear	150	150	150	150	150
Service clearance to sides	150	150	150	150	150
Service clearance to front	600	600	600	600	600

Note: Clean out access only available on models LG75GCE and LG85GCE

Knight automatic ignition water heaters - dimensions (mm)

Model	LGA75GCE	LGA85GCE
A	1585	1780
B	1450	1640
C	130	130
D	645	675
E	770	775
F	285	285
G	340	340
H	1280	1460
I	1505	1685
Service clearance above	1140	1140
Service clearance to rear	150	150
Service clearance to sides	150	150
Service clearance to front	600	600

Technical Specification

Water Heater Model		Knight								Charger							
		LG30GCE	LG40GCE	LG50GCE	LG75GCE	LG85GCE	LGA75GCE	LGA85GCE	CH/CHA100GCE	CH/CHA155GCE	CH/CHA200GCE	CH/CHA300GCE	CH/CHA400GCE	CH/CHA500GCE	CH/CHA600GCE	CH/CHA700GCE	
Nominal Input (net)	kW	8.5	10.1	16.3	22.6	24.1	22.6	24.1	30.5	37.9	48.1	53.9	74.9	92.3	115.7	128.3	
Nominal Input (gross)	kW	9.3	11.3	18.3	25.1	26.7	25.1	26.7	33.9	42.1	53.4	59.9	83.2	102.5	128.4	142.4	
Gas Flow Rate (natural gas)	m³/hr	0.9	1.1	1.7	2.4	2.5	2.4	2.5	3.2	4.0	5.1	5.7	7.9	9.8	12.2	13.6	
Nominal Output	kW	7.4	9.0	14.0	19.2	20.4	19.2	20.4	25.6	31.9	40.4	45.3	62.9	77.6	97.1	107.7	
EFFICIENCY DATA-Part L2																	
Seasonal Efficiency (Part L2 Gross CV)	%	79	79	76	77	77	77	77	76	76	76	76	76	76	76	76	
NOx emission @0% O₂	ppm	109	92	81	91	110	91	110	136	136	134	134	130	161	177	157	
NOx emission @0% O₂	mg/kWh	191	162	143	161	193	161	193	240	240	235	235	229	283	311	276	
EFFICIENCY DATA-ErP and Energy Label																	
Ecodesign Energy Label rating		B	B	B	C	C	B	B	C	C	C	C	C	n/a	n/a	n/a	
Water Heater efficiency	%	61	68	61	55	51	61	60	46(CH)/50(CHA)	48(CH)/49(CHA)	50(CH)/51(CHA)	40(CH)/40(CHA)	40(CH)/40(CHA)	45(CH)/46(CHA)	43(CH)/44(CHA)	46	
GENERAL DATA																	
Recovery Rate @ 44°C	l/hr	144	175	273	375	399	375	399	501	623	790	886	1230	1516	1898	2105	
Recovery Rate @ 50°C	l/hr	127	154	241	330	351	330	351	441	548	695	780	1083	1334	1670	1853	
Recovery Rate @ 56°C	l/hr	114	137	215	296	315	296	315	393	490	621	696	966	1192	1491	1654	
Dimensions (height)	mm	1280	1370	1670	1585	1780	1585	1780	1910	1910	1890	2155	2155	1950	2145	2145	
Dimensions (diameter)	mm	465	515	515	645	675	645	675	710	710	710	710	710	710	710	710	
Storage Capacity	litres	109	144	181	265	355	265	355	309	309	298	357	335	278	253	252	
Weight (Empty)	kg	47	52	75	144	162	144	162	198	198	212	224	241	247	273	332	
Weight (full)	kg	156	196	256	382	499	382	499	507	507	510	581	576	525	526	584	
Insulation Thickness	mm	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	
Insulation Material		Polyurethane															
Hot Outlet Connection (inches)	NPT	¾	¾	¾	1	1¼	1	1¼	RP1½	RP1½	RP1½	RP1½	RP1½	RP1½	RP1½	RP1½	
Cold Feed Connection (inches)	NPT	¾	¾	¾	1	1¼	1	1¼	RP1½	RP1½	RP1½	RP1½	RP1½	RP1½	RP1½	RP1½	
Gas Connection (inches)	BSP	Rp½	Rp½	Rp½	Rp½	Rp½	Rp½	Rp½	Rp¾	Rp¾	Rp¾	Rp¾	Rp¾	Rp¾	Rp¾	Rp1	
Electrical Requirements		N/A						230V/1PH/50HZ									
Power Consumption	W	-	-	-	-	-	30	30	30	30	30	30	30	30	30	60	
Sound Power Level	LWA(db)	55	55	55	55	55	55	55	56	56	56	56	56	56	56	56	
Max Flue Gas Temperature	°C	255	200	160	275	275	275	275	150	150	170	165	175	150	195	185	
Max Outlet Temperature	°C	71	71	71	80	80	80	80	73	73	73	73	73	73	73	73	
Maximum Working Pressure	bar	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	

Energy Label, Product Fiche and ErP Data Table are available at www.lochinvar.ltd.uk

* Note: Dimensions to top of draught divertor spigot

Knight water heater ancillary options

- Unvented system kits
- Correx® non sacrificial electrical anodes
- Direct storage vessels
- Solenoid valve kit- for timed control or safety interlock (permanent pilot models only)
- De-stratification pump kit

Charger water heater ancillary options

- Unvented system kits
- Correx® non sacrificial electrical anodes
- Direct storage vessels
- Terminals for remote control- for timed control or safety interlock
- De-stratification pump kit

Radisson SAS Waterfront Hotel, Jersey

Hot water for the 195 bedroom Hotel supplied by 5 x Charger water heaters.



Technical Information

Additional information, dimensional drawings and technical product submittals can be downloaded from our website: www.lochinvar.ltd.uk

