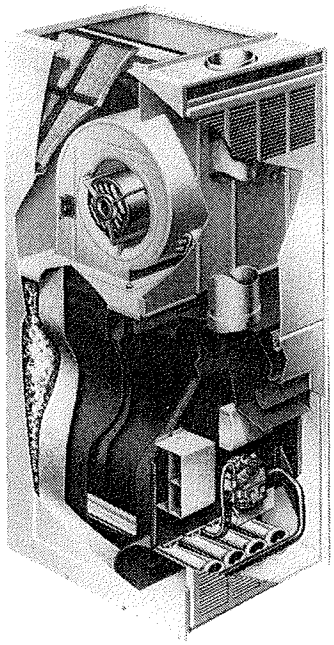
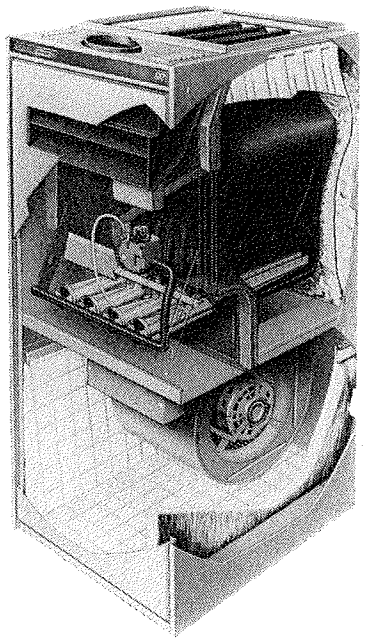
LENNOX

G12R AND G12 SERIES
GAS-FIRED WARM AIR HEATERS
Heating output 12.4 kW to 43.0 kW
Nominal Add-on cooling capacity 7 kW to 17.5 kW capacity.



G12R - downflow model



G12 - upflow model

Lennox G12/G12R warm air heaters can form the heart of a high quality ducted central heating system and are designed to replace early Lennox units, of similar output with minimum ductwork alteration.

Used with matching Lennox evaporator coils and condensing units they offer economic, adaptable split system air conditioning which is ideal for small commercial applications. The addition of optional Lennox humidifiers and electronic air cleaners complete a Total Comfort installation.

Because of their low compact lines, quietness of operation, and attractive cabinet design, they can be installed in a variety of indoor locations such as; cupboard, basement, spare room, shop staff area, or office storage room. Large removable front doors provide complete service access.

Down-flow models are designed for installations with distribution ductwork under a suspended floor or embedded in a concrete slab floor.

Units are factory assembled with controls installed, and each unit is test operated on the assembly line to ensure correct operation. An installer has only to position and connect the thermostat and make duct, flue, gas, and electric connections.

Lennox Duracurve heat exchanger
The Lennox-developed Duracurve heat exchanger reduces fatigue failure, ticking, resonance, and cleaning problems. In the unique design of this heat exchanger, the sides of the clam section form a flue restriction zone comprising sections of two concentric cylinders.

As the sides heat they expand and move, but in the same direction and at the same rate. Heavy gauge aluminised steel construction provides long service life and life cycle tests ensure long heat exchanger life.

The design allows cleaning with a flexible cleaning tool.

Low cabinet surface temperature
The cabinet is constructed of cold rolled steel and cabinet surface temperatures are low due to interior metal liners.

The draught diverter is aluminised to resist corrosion and prolong service life.

There is complete service access by removal of heater and fan compartment panels and the fan assembly itself can be removed for servicing.

Recirculating air is drawn in through the top of down-flow units and through the bottom or through either side into the fan section of up-flow units. Gas piping and electrical inlets are provided on both sides of the cabinet.
The cabinet and fan have a special 'electro deposition' process baked-on enamel finish.

Steel burners
Each burner has practically continuous ports which result in quiet and clean combustion. A cross-over ignitor of the burner ports, perpendicular to the main burner, carries a positive flame from burner to burner to achieve quiet and positive ignition.

Powerful fans
Model -55 to -165 are fitted with quiet, resiliently mounted direct drive fans. There is a choice of fan speeds by interchanging wiring connections on the fan case terminal block.

G12-200 units are belt driven with all moving parts mounted on a steel frame secured to the fan housing on resilient rubber mounts assuring quiet operation. Each fan is statically and dynamically balanced. Fan speed is selected by a motor pulley adjustment.

Wiring junction box
Power supply and thermostat wiring connections are made at the wiring junction box which is located in the fan

compartment of G12 units and on the heater vestibule panel of G12R units.

Provisions in the box allow for additional wiring for optional power humidifiers and electronic air cleaners if needed. A low voltage terminal strip is supplied.

Fan cooling relay
A fan cooling relay is supplied as standard on all models except the -55 series. The relay is factory installed in the wiring junction box and activates fan operation during cooling cycles.

Choice of filter arrangement
Upflow units are fitted with an internal glass fibre hammock filter (throwaway type). An alternative filter frame and slab filter is also provided for external fitting. If used, the internal hammock filter must be discarded.

Downflow units are fitted with an internal A - shaped filter frame and two slab filters. An alternative filter frame for either two of three hinged slab filters (depending on model) for downflow units is also provided for external fitting. If used, the internal filters must be discarded.

Transformer supplied
A 30 VA control transformer is supplied and factory installed in the wiring junction box.

Fan and limit controls
Dual limit controls are provided in down-flow units, one in the fan chamber with automatic reset and a second above the burner section with manual reset. Up-flow units have one limit control above the burner section with manual reset only. This arrangement protects the unit case of abnormal operating conditions.

Automatic gas controls
Silent operating gas controls provide 100% safety shut-off. A 24V combination gas control valve combines safety pilot, automatic electric valves, and gas pressure regulation. A manual shut-off is also included.

The pilot valve/main valve design ensures shut-off of gas to the main burners at the end of each heating cycle or if neither limit control opens. A manually-lit standing pilot provides sure and safe main burner ignition.

Safety spill switch
To meet improved standards, a thermal backflow prevention device to protect the user against flue blockage or excessive down-draught is incorporated in the draught diverter. When the spill switch senses adverse conditions, combustion is terminated. The control has manual reset.

Propane units (optional)
For propane applications a conversion kit is available and is usually factory fitted. For field conversion contact Lennox.

Thermostat (optional)
A thermostat is not supplied and must be ordered as an optional extra. Electro-mechanical 1-heat; order P-8-65385.

For add-on cooling installations:
Electro-mechanical 1-heat /1-cool; order SC12F99 with SC13F17 sub-base.
Electronic 1-heat /1-cool; order SC18H14.

Specifications

Model No. (G12/G12R)	-55	-82	-110	-137	-165	-200[1]
Heating input (kW)	16.5	24.0	32.0	40.0	50.0	56.0
Heating output (kW)	12.4	18.4	24.6	30.7	38.4	43.0
Flue diameter (mm)	100	125	125[2]	150[2]	150[2]	175[2]
Gas pipe connection (in)	1/2	1/2	1/2	1/2	3/4	3/4
Burner pressure (mbar)	8.1	8.1	8.1	8.1	8.1	8.1
Injector size (mm)	2.53	2.53	2.53	2.53	2.53	2.53
Propane burner pressure (mbar)	27.35	27.35	27.35	27.35	27.35	27.35
Propane injector size (in)	0.0595	0.0595	0.0595	0.0595	0.0595	0.0595
Fan wheel dia x width (mm)	229 x 178	254 x 178	254 x 203	254 x 203	305 x 305	320 x 320
Fan motor output W (hp)	124 (1/6)	124 (1/6)	186 (1/4)	249 (1/3)	373 (1/2)	373-560 (1/2-3/4)
Shipping weight (downflow) (kg)	73	83	98	123	137	-
Shipping weight (upflow) (kg)	63	77	90	108	140	150
Number of packages	1	1	1	1	1	1
Nom. add-on cooling (kW) [3]	7	7	10	11	17.5	17.5
Electrical rating (50Hz)	240 V 1-Phase					

1) Up-flow units only.
2) Flue spigot on unit is oval. An oval-to-round adapter is supplied with each unit.
3) For detailed performance figures see HS18 condenser and C16, CR16 and CH16 evaporator coil data sheets.

Filter sizes

Model Number	-55	-82	-110	-137	-165	-200
Upflow units						
Filters Standard glass fibre hammock throwaway	711 x 914 x 25	711 x 914 x 25	711 x 1016 x 25	711 x 1372 x 25	711 x 1473 x 25	711 x 1473 x 25
Filters Slab expamet in filter frame	601 x 400 x 25	601 x 400 x 25	601 x 400 x 25	601 x 500 x 25	601 x 500 x 25	601 x 500 x 25
Downflow units Filters Slab expamet internal rack	254 x 508 x 25 (2)	254 x 508 x 25 (2)	305 x 508 x 25 (2)	406 x 508 x 25 (2)	406 x 508 x 25 (2)	-
Filters Slab expamet in external frame (Overall dimensions)	500 x 335 x 25 (Two hinged sections)	500 x 335 x 25 (Two hinged sections)	500 x 490 x 25 (Two hinged sections)	500 x 580 x 25 (Two hinged sections)	500 x 740 x 25 (Two hinged sections)	-

Air volumes at different fan speeds (litres per second)

All air volume data is measured external to the unit with the air filter in position

Downflow models

External static pressure (Pascal)	G12RQ2-55			G12RQ2-82		G12RQ3-110				G12RQ3-137				G12RQ5-165			
	High	Med	Low	High	Med	High	Med high	Med low	Low	High	Med high	Med low	Low	High	Med high	Med low	Low
0	477	314	203	463	314	656	550	451	388	755	741	684	656	1104	1076	986	906
25	465	312	194	453	302	625	529	437	381	736	717	656	623	1066	1038	953	883
50	437	304		439	288	571	510	423		694	670	618	590	1019	996	911	850
75	401	293		418		559	489	406		637	623	571	543	972	949	873	817
100	354	264		394		524	461	383		576	562	510	481	898	868	823	765
125	302	224		349		472	418			505				859	798	760	708
150	253			293		354								793	769	684	637
175														708	680	609	562

Maximum temperature rise for G12R = 50°C.
Minimum allowable air temperature on heat exchanger 8°C

Upflow models

External static pressure (Pascal)	G12Q2-55			G12Q2-82		G12Q3-110				G12Q3-137				G12Q5-165		
	High	Med	Low	High	Med	High	Med high	Med low	Low	High	Med high	Med low	Low	High	Med	Low
0	477	314	203	463	314	656	550	451	388	694	675	623	585	1220	1156	982
25	465	312	194	453	302	625	529	437	381	684	660	609	571	1195	1128	945
50	437	304	184	439	288	571	510	423	367	670	642	595	552	1160	1095	902
75	401	293		418	271	559	489	406	352	632	612	566	519	1138	1038	864
100	354	264		394		524	461	383		595	576	530	472	1100	963	840
125	302	224		349		472	418	341		543	519	480		1025	897	760
150	253	177		293		354				472	458			953	812	675
175														835	708	585

Maximum temperature rise for G12 = 55°C.
Minimum allowable air temperature on heat exchanger 8°C

Fan performance table for G12-200 – belt-driven models

Air volume (l/s)	External static pressure external to unit* (Pascals)																					
	0		25		50		75		100		125		150		175		200		225		250	
	rpm	W	rpm	W	rpm	W	rpm	W	rpm	W	rpm	W	rpm	W	rpm	W	rpm	W	rpm	W	rpm	W
566	375	97	465	127	540	164	610	179	670	239	725	283	775	313	830	366	875	403	915	448	955	500
660	440	142	510	172	585	216	650	254	710	298	760	343	810	388	860	440	900	485	940	537	–	–
755	500	194	560	231	630	276	695	328	750	373	800	418	845	470	890	522	–	–	–	–	–	–
850	560	261	620	306	680	350	734	403	790	455	835	507	–	–	–	–	–	–	–	–	–	–
944	615	336	675	380	730	448	785	500	830	560	–	–	–	–	–	–	–	–	–	–	–	–
1030	685	433	730	485	790	560	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1130	755	560	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Maximum temperature rise for G12 = 55°C.
Figures above stepped line are from 1/2 hp drive. Figures below stepped line are from 3/4 hp drive.
Minimum allowable air temperature on heat exchanger 8°C

Maximum current draw information

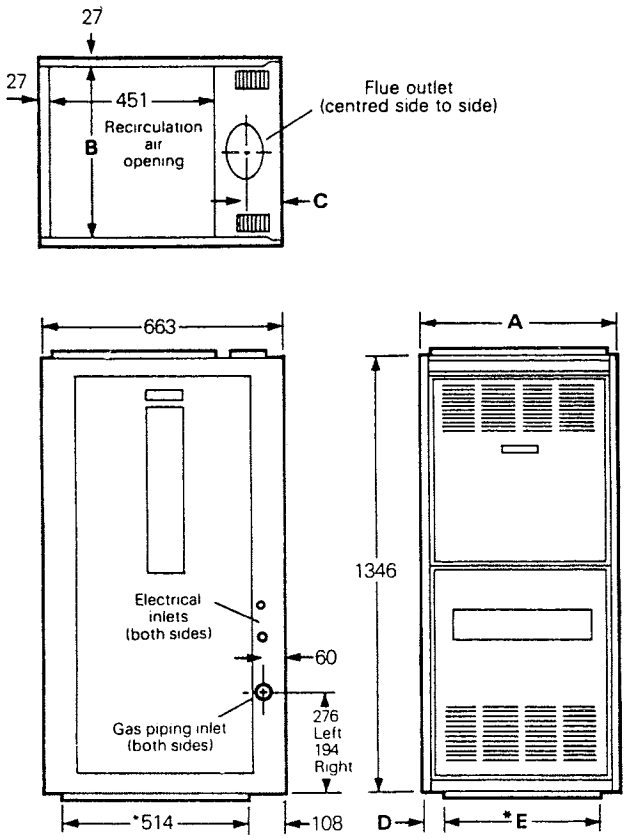
¼ hp fan motor drive kit	starting running	16.5A 2.50A
⅓ hp fan motor drive kit	starting running	18.2A 3.60A
½ hp fan motor drive kit	starting running	23.1A 2.65A
¾ hp fan motor drive kit	starting running	23.5A 5.20A

Combustion air & unit ventilation

When heater is installed in a confined space two openings must be provided, one at the top of the enclosure and one at the bottom for combustion and ventilation air in accordance to B.S. Code of Practice BS5440, Part 2.

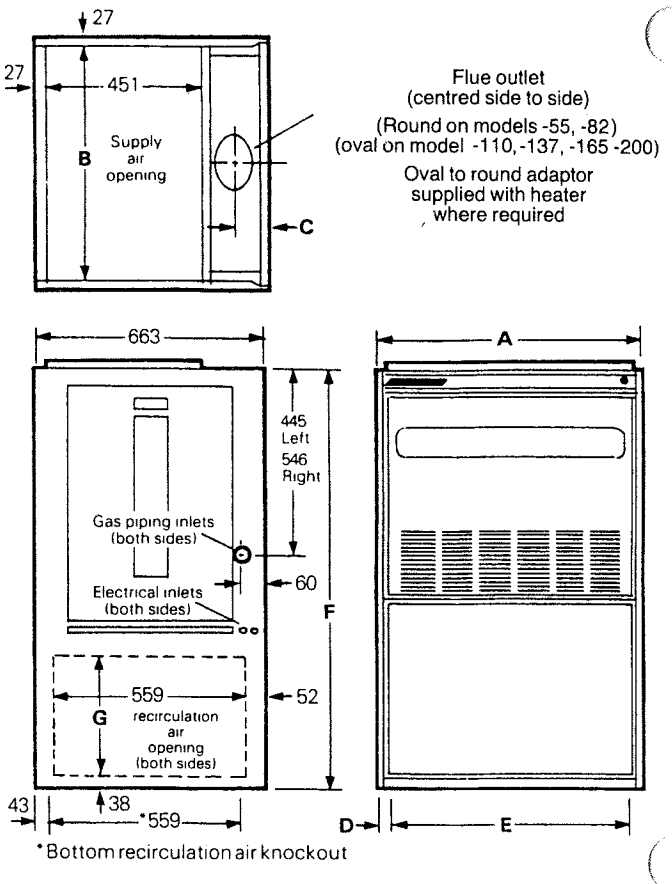
Dimensions (mm)

Downflow models



*Supply air opening

Upflow models



*Bottom recirculation air knockout

Downflow models

Model	A	B	C	D	E		
55 & 82	413	359	79	54	305		
110	540	486	83	54	432		
137	667	613	84	79	508		
165	794	740	86	89	616		

Upflow models

Model	A	B	C	D	E	F	G
55 & 82	413	359	79	67	279	1245	356
110	540	486	79	92	356	1245	356
137	667	613	86	67	533	1346	457
165	794	740	86	67	660	1346	457
200	794	740	86	67	660	1346	457

Installation clearances

Side, top and rear	25mm
Front (except G12-200)	152mm
Front (G12-200)	230mm
Flue	152mm

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