

All Heaters
Part L2B Compliant



BENSON
HEATING



Technical Data – OUH² Oil Fired Unit Heaters

For Models

OUHA Axial Fan

OUHC Centrifugal Fan



Range & Configuration

Forced Draught Oil Fired Unit Heaters

Axial Fan 31kW to 103 kW

Centrifugal Fan 31kW to 103 kW

Specification

Cabinet: Low profile in design and robotically punched and formed from electro-zinc plated steel the heater cabinet presents a functional yet pleasing appearance. Access to the burner and controls compartment is via a full width side hinged door. The cabinet is stove hardened, epoxy powder coated with a durable Kestrel Grey paint finish.

Combustion Chamber/heat Exchanger:

The combustion chamber/heat exchanger assembly has been designed to combine optimum thermal efficiency with extended service life. Manufactured from 304/316 stainless and HR4 steel each fabricated assembly comprises of a drum type combustion chamber coupled to a tubular heat exchanger.

Burner: Each oil unit heaters has been carefully matched with a fully automatic packaged pressure jet oil burner and for the United Kingdom market each heater is supplied with a fire valve and oil line filter (both supplied loose).

Efficiency: Each heater within the range has been designed and developed with fuel efficiency in mind. For the United Kingdom market all heater efficiencies are compliant with the needs of Part L2B of the 2006 Building Regulations and certain models have been rated to meet the criteria necessary for inclusion into the Enhanced Capital Allowance (ECA) scheme.

Fuel: Heaters are design to operate on Class D light distillate 'gas oil' having a maximum viscosity of 4.5 c.St at 20°C (35 sec Redwood at 100°F). All models can be configured to operate on kerosene.

Air Distribution: Air movement for OUHA heaters is via dynamically balanced aerofoil type axial fans which discharge warmth directly into the space to be heated via a set of adjustable horizontal louvres. Heaters for ducted applications, type OUHC, are supplied with a centrifugal fan and outlet duct connection spigot.

Controls: OUH² heaters are complete with necessary safety controls including overheat protection as well as external control connections including 'fan only' for summer air movement. Automatic operation requires only the simple connection of time and temperature controls. Benson, as an option, can provide a number of alternative integrated control consoles with the choice ranging from simple digital/mechanical controls through to fully optimised systems. Benson control systems are for remote mounting with inter-connecting wiring by others.

Testing, Approvals & Certification: Benson Heating is accredited with ISO 9001 quality assurance certification – certificate number FM14923. Each heater is function tested and fired prior to despatch.

Guarantee: Benson OUH² oil unit heaters are provided with a comprehensive package of guarantees covering both the appliance and the combustion chamber/heat exchanger, which has the further benefit of an extended guarantee. For sales within the United Kingdom the guarantee includes a 'whole appliance' twelve months parts and labour guarantee supported by a further twelve months 'parts only' guarantee whilst the combustion chamber/heat exchanger assembly has a ten year time related warranty. For OUH² heaters supplied to overseas markets please refer to the relevant country documentation. All guarantees are subject to terms and conditions.

Specification

OUH² Axial and Centrifugal Fan Oil Unit Heaters OUHA/OUHC

Model			100	140	200	250	300	350
Output		kW	31	40	59	73	88	103
ECA Approved			✓		✓		✓	
Airside Data	Airflow	m ³ /s	0.90	1.02	1.60	1.90	2.40	2.63
	Throw OUHA	m	21	23	31	37	36	39
	Fan Static OUHC	Pa	150	150	180	150	180	180
Electrical Supply		V/ph/hz	230/1/50					
Overall Dimensions	All	Height	mm	780	780	780	780	980
		Width	mm	1050	1050	1475	1475	1750
	OUHA	Depth	mm	895	895	895	895	1025
	OUHC	Depth	mm	1175	1246	1175	1175	1376
Flue Diameter		mm ø	125	125	150	150	175	175
Combustion Air Spigot		mm ø	130	130	130	130	150	150
Noise Level		dBA	61	65	68	69	71	72
Nett Weight	OUHA	kg	116	116	177	177	240	240
	OUHC	kg	138	138	212	212	280	280



Note

Where heaters are selected for the UK Enhanced Capital Allowance (ECA)

scheme then they must be specified with CP4 controllers

All models have efficiency levels which meet with the minimum efficiency requirements of UK Part L2B Building Regulations

Air handling data is assessed at room ambient conditions

Throw figures provide the distance to the point where the average air velocity is 0.25 m/s

Combustion air spigot and connection not required when heater is used in 'flue only' configuration

Noise levels measured 3m from appliance.

Installation

Installation Standards: Benson OUH² oil fired unit heaters must be installed and commissioned by a competent person and in accordance with Benson's installation and commissioning instructions, relevant local and national standards, Codes of Practice, and any requirements of Local Authorities, Fire Officer or insurers.

Siting: The position chosen for the heater will need to take account of the following points -

Benson OUH² oil unit heaters can be positioned on flat non-combustible surface, located on or fixed to cantilever brackets or suspended by means of the M10 fixings. It is recommended that for the cantilever bracket or suspended applications that the manufacturer's purpose designed brackets be used. Care should always be taken to ensure that brackets fixing or other mounting points are structurally adequate.

Care should be taken to ensure that the recommended maximum/minimum mounting heights, clearances for maintenance, air discharge, return and re-circulation are observed.

Consideration should be given to the route and length of the flue, the provision and connection of oil and electrical supplies and protection from overhead cranes, fork lift trucks etc.

For effective warm air distribution free blowing axial fan heaters should be both selected and positioned to take account of the throw characteristics and sited such that the discharge avoids any immediate obstructions, partitions or other significant obstacles. In areas where it is proposed to install more than one heater then a general scheme of uniform air circulation should be employed to provide optimum distribution.

So far as controls are concerned siting will often depend upon the type selected. Where controls have in-built or remote temperature sensors then consideration should be given to ensure that the sensor is located in a position which adequately reflects the working zone serviced by the heater. Sensors should not be located in areas subject to cold draughts.

In case of doubt relating to any aspect of heater or control siting please consult with Benson.

Oil Pipework: The oil supply pipework must be sized and installed with due regard for all current standards and legislation, flow rates and the maximum/minimum inlet pressure requirements of the heater. Oil line gate valves and service unions should be provided adjacent to each heater.

Special Risk Areas: Where it is proposed to install a heater within a special risk area (including but not limited to areas containing flammable vapours, where petrol engined vehicles are stored, parked or serviced, where paint spraying occurs or where wood working or other flammable dust creating process are employed) then restrictions, additional regulations and requirements concerning the heater installation may apply. Additionally areas containing chlorinated or halogenated hydrocarbons, degreasing solvents,

styrene's, other laminating materials or airborne silicones can cause corrosion to combustion chambers and/or heat exchange surfaces and it is strongly recommended that you consult Benson before installation commences. Failure to do so may invalidate or reduce guarantee cover:

Caution: When specified in certain configurations it may be possible to install heaters in areas containing flammable vapours, high levels of airborne dust, combustible dust, chlorinated or halogenated hydrocarbons, degreasing solvents, styrene's, other laminating materials or airborne silicones however before doing so we recommend that you consult Benson.

Plant Room/Enclosure Siting: Provided certain criteria are met it is possible to install OUH²C (centrifugal fan) heaters within a plant room or enclosure. Where it is proposed to install a heater within such a location then the return air and discharge air arrangements must be such that they do not interfere with the operation of the flue or burner. Ideally both the warm air discharge and return air should be positively ducted to and from the heater:

Air Supply: Consideration for the provision of an air supply for combustion and appliance ventilation may be a mandatory requirement. For United Kingdom installations ventilation requirements vary according to heater location -

Where heaters are installed directly within the heated space (ie not in a plant room or enclosure) then combustion air or heater related ventilation air will generally not be required if the air change rate of the heated space is 0.5 air changes per hour or greater. Where the heated space has an air change rate of less than 0.5 air changes per hour then it will be necessary to provide either natural ventilation openings or mechanical ventilation.

Where heaters are installed within a plant room or enclosure then provision for both combustion air and air for general ventilation will be required by means of high and low level ventilation openings. Alternatively, the plant rooms or enclosures may be mechanically ventilated.

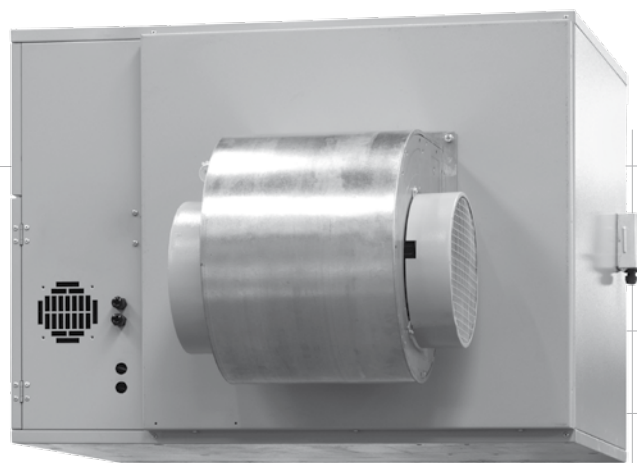
Flues: Each heater requires a separate flue of a diameter not less than that detailed in the data sections of this brochure. The minimum vertical length of the flue must not be less than 3 metres. Flue systems should ideally rise vertically from the heater and incorporate the minimum of bends and terminate with a suitable terminal. The flue route and exit point needs to be selected carefully and it is recommended that the installer consult the installation and commissioning instructions before commencing installation.

Further Information: The foregoing is given for guidance purposes. More detailed information can be found within the relevant installation, commissioning and servicing instructions or alternatively contact Benson.

Installation Data

OUH² Axial and Centrifugal Fan Oil Unit Heaters OUHA/OUHC

Model				100	140	200	250	300	350
Fuel Connection		BSP/Rc		¾	¾	¾	¾	¾	¾
Fuel Consumption		l/h		3.5	4.5	6.5	8.0	9.7	11.6
Electrics	OUHA/C	Supply	V/ph/hz	230/1/50					
	OUHA	FLC	amp	1.6	1.6	2.8	2.8	3.4	4.8
	OUHC	FLC	amp	8.0	8.0	11.0	11.0	15.0	15.0
Flue Diameter		mm ø		125	125	150	150	175	175
Combustion Air Spigot		mm ø		125	125	125	125	150	150
Mounting Height	OUHA	Min	m	2.0	2.0	2.4	2.4	2.4	2.4
		Max	m	3.2	4.0	5.0	5.0	5.0	5.0
Installation Clearances	OUHA OUHC	Lh side	mm	250	250	250	250	250	250
		Rh side	mm	680	680	680	680	810	810
		Above	mm	300	300	300	300	300	300
		Below	mm	300	300	300	300	300	300
	OUHA	Rear	mm	400	500	560	560	560	560
	OUHC	Rear	mm	200	200	200	200	200	200
Nett Weight	OUHA		kg	116	116	177	177	240	240
	OUHC		kg	138	138	212	212	280	280



Note

Fuel consumption and output figures based upon gross calorific values as -
Class D light distillate fuel oil @ 37.9 MJ/l

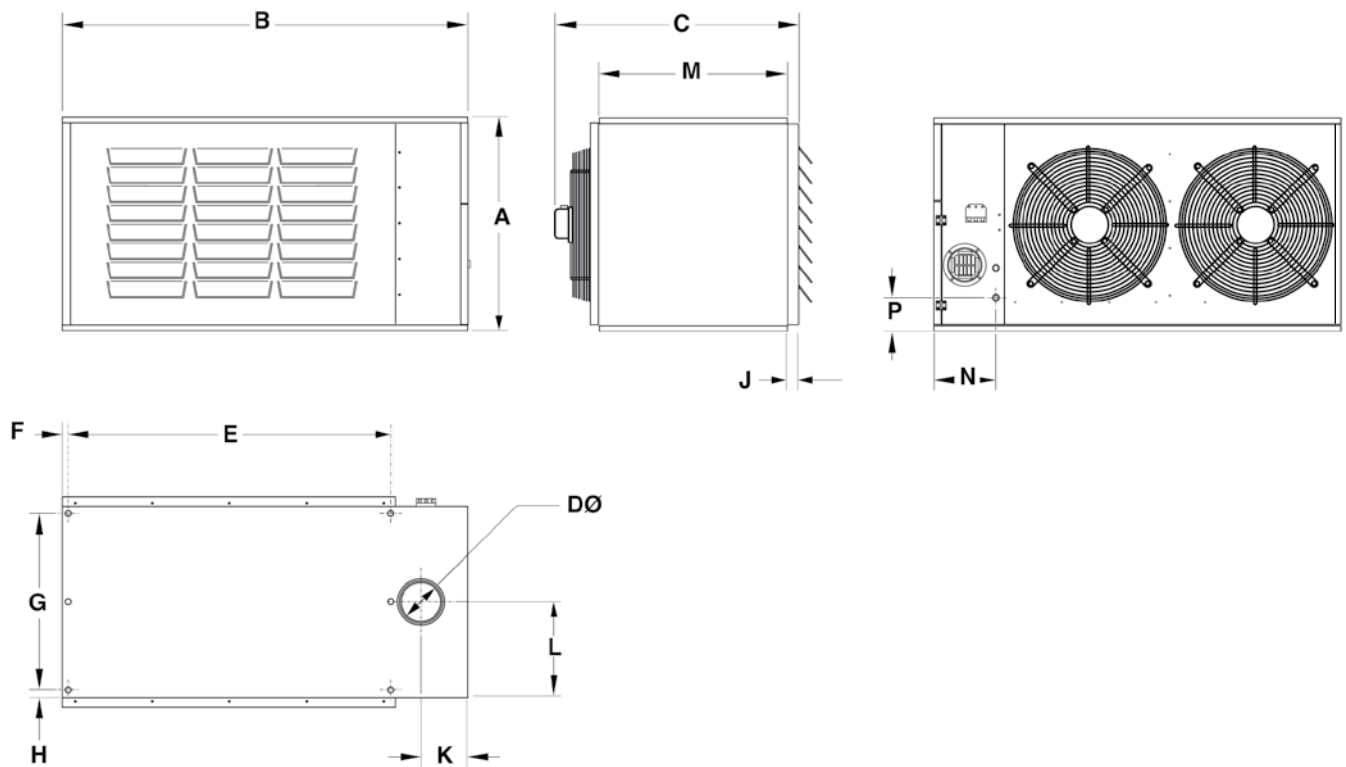
Combustion air spigot optional - when specified fitted to rear

Maximum mounting heights may exceed the figure recommended where, ductwork
systems, downflow heads or de-stratification fans are used

Rh side clearance (as viewed from front) = burner compartment side

Dimensions

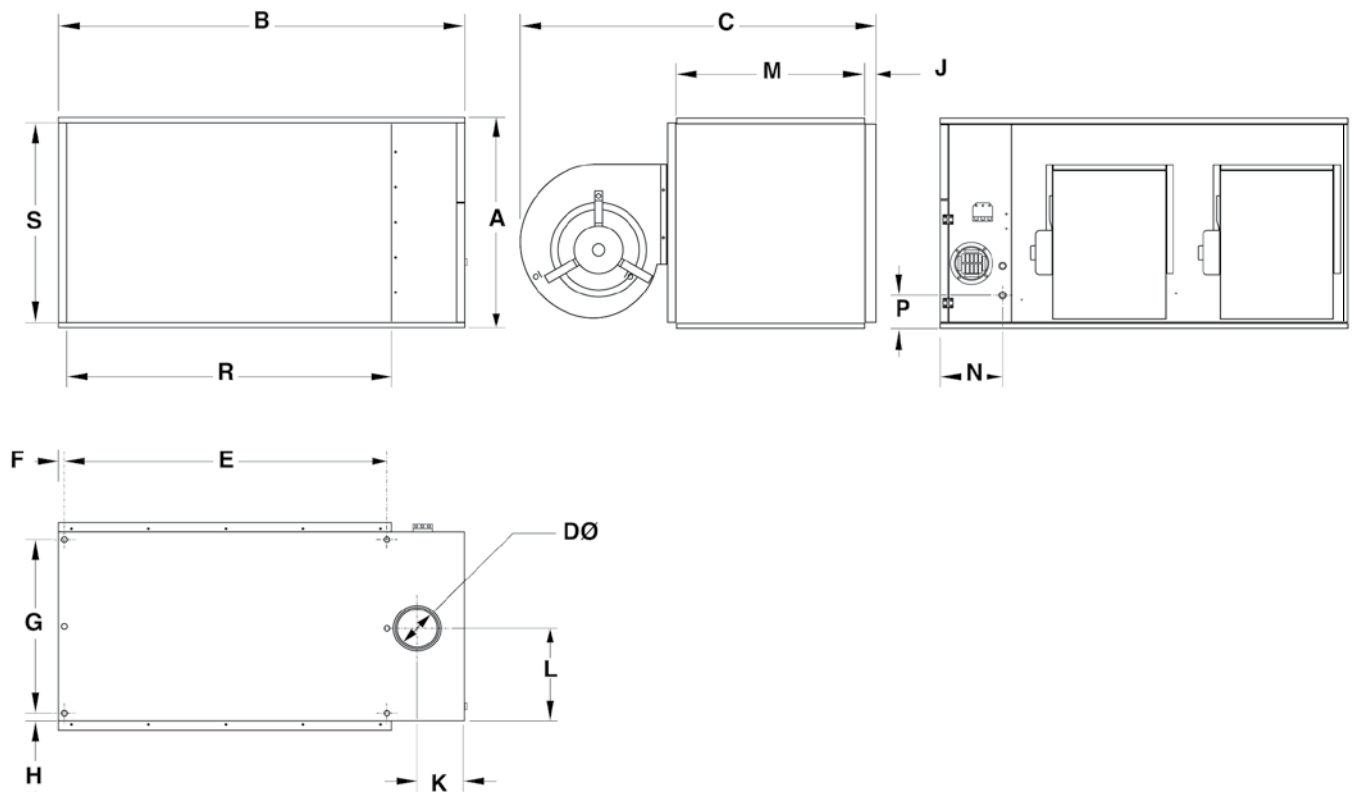
OUH² Axial Fan Oil Unit Heaters OUHA



Model			100	140	200	250	300	350
A	All	mm	780	780	780	780	980	980
B	All	mm	1050	1050	1475	1475	1750	1750
C	All	mm	895	895	895	895	1025	1025
D	All	mm ø	125	125	150	150	175	175
E	All	mm	755	755	1177	1177	1365	1365
F	All	mm	17	17	17	17	17	17
G	All	mm	640	640	640	640	770	770
H	All	mm	20	20	20	20	20	20
J	All	mm	36	36	36	36	36	36
K	All	mm	183	183	170	170	231	231
L	All	mm	340	340	340	340	405	405
M	All	mm	680	680	680	680	810	810
N	All	mm	212	212	212	212	300	300
P	All	mm	139	139	139	139	219	219

Dimensions

OUH² Centrifugal Fan Oil Unit Heaters OUHC



Model			100	140	200	250	300	350
A	All	mm	780	780	780	780	980	980
B	All	mm	1050	1050	1475	1475	1750	1750
C	All	mm	1175	1246	1175	1175	1376	1376
D	All	mm ø	125	125	150	150	175	175
E	All	mm	755	755	1177	1177	1365	1365
F	All	mm	17	17	17	17	17	17
G	All	mm	640	640	640	640	770	770
H	All	mm	20	20	20	20	20	20
J	All	mm	36	36	36	36	36	36
K	All	mm	183	183	170	170	231	231
L	All	mm	340	340	340	340	405	405
M	All	mm	680	680	680	680	810	810
N	All	mm	212	212	212	212	300	300
P	All	mm	139	139	139	139	219	219
R	All	mm	729	729	1151	1151	1339	1339
S	All	mm	730	730	730	730	930	930



**BENSON
HEATING**

Ludlow Road
Knighton
Powys
LD7 1LP

Telephone (main) + 44 (0)1547 528534

Facsimile (main) + 44 (0)1547 520399

Telephone (sales) + 44 (0)1547 529245

Facsimile (sales) + 44 (0)1547 529195

e.mail information@bensonheating.co.uk

sales@bensonheating.co.uk

exportsales@bensonheating.co.uk



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