

DATASHEET

'S' Series Burners™

Gas, Oil & Dual Fuel Burners



S SERIES BURNERS Gas & Oil (Input 58 – 1465 kW)

This well-established range of Hamworthy monobloc burners has been designed for gas and light oil firing on small to medium sized boilers, as well as a variety of process applications, including stoving ovens, incinerators, furnaces and immersion tables.

Designed for worldwide acceptability and made to the highest engineering standards allied to proven technology, all burners comply with the requirements of British Standard 799, Part 2:1972 and British Standard 5885, Part 1:1968.

All burners offer maximum combustion efficiencies with minimum pollution levels.

As exhaust emissions are dependent on fuel and furnace design, as well as that of the burner, compliance with existing and proposed European directives has easily been achieved when firing current fuels on appliances designed to present day standards.

Hi-Low burners have energy saving motorised air dampers fitted as standard, which fully close on shutdown, thus receding heat loss due to natural draught conditions through the appliance.

Fully modulating versions using proven technology of variable speed motor control and fuel/air ratio gas control valves are also available in the Hamworthy range of monobloc burners.

Oil and gas fired versions also incorporate a suitable oil pump and gas train respectively, the latter including governor, automatic shut-off valves, gas cock and test point. Pilot assemblies, where fitted, also include governor, automatic shut-off valves and gas cock.



Model	Maximum Input		Minimum Input		Max. Oil Usage			Maximum Gas Usage		Minimum Gas Input Pressure				Typical Gas Train Size	
	kW	Btu/hr x10 ³	kW	Btu/hr x10 ³	Imp GPH	US GPH	Litres	Nat Gas m ³ /h	Propane m ³ /h	Natural Gas		Propane		Natural Gas	Propane
										ins. w.g.	mbar	ins. w.g.	mbar		
S1/100	102	350	58	200	N/A	N/A	N/A	9.6	4.0	7	17.5	11	27.5	25 mm 1.0"	20 mm ¾"
S1/160	155	530	105	358	N/A	N/A	N/A	14.5	6.0	7	17.5	11	27.5	25 mm 1.0"	20 mm ¾"
S1/190	190	650	129	440	N/A	N/A	N/A	17.8	7.4	7	17.5	11	27.5	25 mm 1.0"	20 mm ¾"
S2/180	176	600	117	400	N/A	N/A	N/A	16.4	6.8	7	17.5	11	27.5	25 mm 1.0"	20 mm ¾"
S2/260	263	900	176	600	N/A	N/A	N/A	24.6	10.2	7	17.5	11	27.5	40 mm 1.5"	25 mm 1.0"
S2/350	350	1200	263	900	N/A	N/A	N/A	32.8	13.6	7	17.5	11	27.5	40 mm 1.5"	25 mm 1.0"
S3/350	350	1200	176	600	N/A	N/A	N/A	32.8	13.6	7	17.5	11	27.5	40 mm 1.5"	25 mm 1.0"
S3/470	470	1600	234	800	N/A	N/A	N/A	43.7	18.1	7	17.5	11	27.5	40 mm 1.5"	25 mm 1.0"
S3/590	586	2000	293	1000	N/A	N/A	N/A	54.6	22.7	7	17.5	11	27.5	40 mm 1.5"	25 mm 1.0"
S4/800	790	2700	365	1250	16.3	19.5	74.0	73.7	30.6	7	17.5	11	27.5	50 mm 2.0"	40 mm 1.5"
S4/1000	967	3300	425	1450	19.8	23.9	90.3	90.0	37.4	7	17.5	11	27.5	50 mm 2.0"	40 mm 1.5"
S4/1200	1245	4250	570	1950	25.6	30.8	116	116	48.2	7	17.5	11	27.5	50 mm 2.0"	40 mm 1.5"
S4/1450	1465	5000	665	2270	30.2	37.75	137	137	56.5	7	17.5	11	27.5	50 mm 2.0"	40 mm 1.5"

NOTE: Oil fuel based on class 'D' Gas Oil 3.2 cSt @ 40°C. Natural Gas: G.C.V. 40.74 MJ/m³ (1035 Btu/ft³). Propane: G.C.V 93.1 MJ/m³ (2500 Btu/ft³).
*Where system resistance exceeds 5 mbar, minimum gas pressure is 7.6 ins w.g. (19 mbar).

Typical weight – 30-150kg (dependant on size)

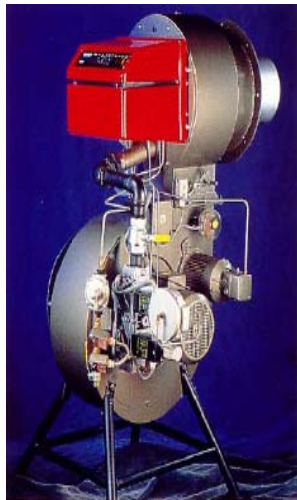
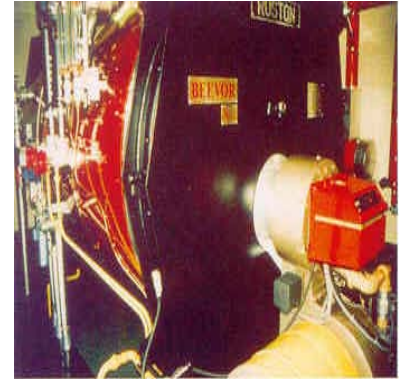
S SERIES BURNERS Gas, Oil & Dual Fuel (Input 1200 – 4800 kW)

Hamworthy's Superjet range of gas, light oil and dual fuel burners is further extended by the introduction of the S5-S7 fabricated models.

These incorporate separate windbox and fan assemblies, which offer maximum flexibility as regards application. The generous windbox volumes made available by this design ensure excellent air distribution and contribute to the burner's low excess air performance throughout the operating range.

With exhaust emissions dependent on fuel and appliance furnace design, as well as that of the burner, compliance with existing and proposed European directives has been achieved when firing current fuels on boilers designed to BS.2790:1989 or equivalent standards. All burners comply with British Standards 799, Part 2:1972 and 5885, Part 1:1988.

Fully modulating on gas, with low or three stage operation on oil, the burners are supplied fully assembled and pre-wired for fitting to the appliance.



All burners have separate igniters and flame ionisation proving systems fitted with ultraviolet monitoring of the main flame a standard feature.

All management and supervisory controls are included in separately mounted panels, however, S5 versions can be supplied with the controls mounted on the burner front, along with an integral gas train.

Maintenance considerations have also been carefully assessed to ensure that those items requiring regular attention, such as atomisers, igniters and flame monitoring equipment are easily accessed. Indeed, the whole combustion head assembly can be removed from the windbox without the need to remove the burner from the appliance.

Benefits & Features

- Saves Fuel – operation at low excess air levels reduces stack losses to a minimum
- Saves Energy – combustion air fans sized to suit individual applications
- Saves Costs - when upgrading from single to dual fuel operation
- Reduced Noise Level – with optional setting
- Reduced Emission Levels – complies with European directives

Model	Maximum Input		lb/hr Steam F&A, 100°C at 83% Gross Effy.	Max. Oil Usage			Maximum Usage Natural Gas		Maximum Usage Propane		Minimum Gas Inlet Pressure				Typical Gas Train Size	
	kW	Btu/hr x10 ³		Imp GPH.	US GPH	l/h	ft ³ /hr	m ³ /h	ft ³ /hr	m ³ /h	Natural Gas		Propane		Natural Gas	Propane
											ins. w.g.	mbar	ins. w.g.	mbar		
S5/1200	1236	4.217	3600	25	30	114	4061	115	1687	48	20	50	60	150	40 mm 1.5"	22 mm ¾"
S5/1900	1900	6.483	5500	40	48	182	6250	177	2593	73	20	50	60	150	50 mm 2"	28 mm 1"
S5/2500	2500	8.530	7300	52	62	236	8228	233	3412	97	26	65	70	175	50 mm 2"	28 mm 1"
S6/2700	2700	9.212	7900	55	66	250	8912	252	3685	104	28	70	70	187	50 mm 2"	28 mm 1"
S6/3400	3400	11.60	9900	69	83	313	11170	317	4640	131	28	70	70	137	65 mm 2.5"	40 mm 1.5"
S6/4100	4100	14.00	12000	83	100	377	13480	382	5600	159	28	70	70	150	65 mm 2.5"	40 mm 1.5"
S7/4400	4400	15.00	12850	89	107	404	14450	409	6000	170	28	70	70	150	80 mm 3"	40 mm 1.5"
S7/5100	5100	17.40	14900	103	124	468	16750	474	6960	197	28	70	70	150	80 mm 3"	40 mm 1.5"
S7/5900	5900	20.13	17250	120	144	545	19390	549	8052	228	28	70	70	150	80 mm HIGH FLOW 3"	50 mm 2"

NOTE: Oil fuel based on class '0' Gas Oil 3.2 cSt @ 40°C. Natural Gas: G.C.V. 40.74 MJ/m³ (1035 Btu/ft³). Propane: G.C.V 93.1 MJ/m³ (2500 Btu/ft³).

For further information on combustion equipment please contact the head office:

Hamworthy Combustion Engineering Limited
Fleets Corner
Poole Dorset BH17 0LA
Tel: +44 1202 662700
Fax: +44 1202 665333
Email: info@hamworthy-combustion.com
Website: <http://www.hamworthy-combustion.com>

©2008 Hamworthy Combustion Engineering Limited – All rights reserved

Packaged/S' Series/February 2008/Rev. 1

Hamworthy Combustion Engineering Limited reserve the right to make changes and improvements which may necessitate alteration to the specification without prior notice

HAMWORTHY
COMBUSTION

Incorporating:

PEABODY ENGINEERING
AIROIL - FLAREGAS
CENTRONICS