



LP BURNER SERIES





BURNER RANGE

The Limpsfield LP burner series is characterised by a monoblock structure meaning all necessary components can be combined into a single unit, making installation and set-up easier and faster, whilst maintaining highly efficient combustion.

The LP series covers a firing range from 220kW (0.75MBtu) through to 2930kW (10MBtu), and have been designed for use on hot water boilers or industrial steam generators. All burners are available as single or dual fuel, whether it be natural gas or light fuel oil.

The combustion adjustment is fully modulating, through the use of an Auto-flame micro modulation unit which is prewired on the burner. The combination of high precision servo motors and fuel valves, gives the user total control of the air/fuel ratio. Employing a sophisticated PID philosophy, the burner firing rate is modulated to satisfy plant demand. Regardless of your load requirements the system can be set up to respond quickly and effectively.

The LP burner series includes a built-in combustion air fan, designed and calculated to deliver 15% excess combustion air at a specified burner output.

As with all Limpsfield burner's efficiency is key, therefore we guarantee that the

burner will operate at 3% O₂ and <10ppm CO throughout the complete firing range, from low to high fire. Add to this a high turndown of 4:1 on gas, and 3:1 on oil, the LP series can therefore supply demanded power, high efficiency, low emissions, reduction in fuel consumption and reliability for a cost effective price tag, with a typical payback of less than 2 years.

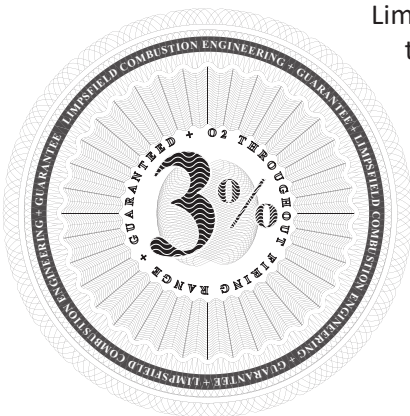
We guarantee to supply the highest performance and technical solution to any combustion and control application.



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EMISSIONS



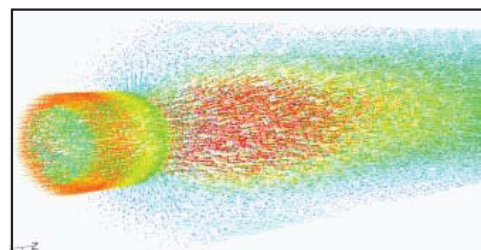
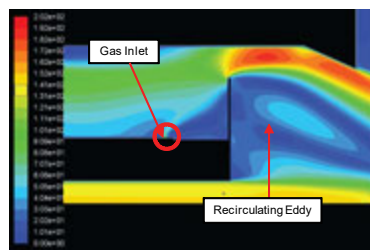
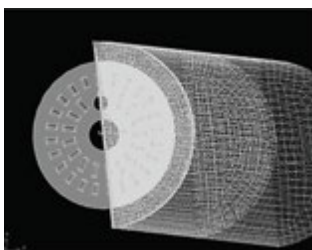
Limpsfield burners have been designed to ensure minimal emissions are released into the atmosphere. This means less harmful emissions are created, but also means greater efficiency of the burner due to good combustion, which in turn creates great fuel savings. Limpsfield LP burners are guaranteed to operate at <3% O₂ and <10ppm of CO. These figures continue throughout the firing range, from low fire to high fire (when firing Natural gas). As standard the LP burner range comes as Low Nox. The burners are designed to operate at sub 60ppm Nox whilst maintaining <3% O₂ and <10ppm of CO throughout the firing range.

Limpsfield Engineering is devoted to continuously improving the product to meet and exceeding everchanging stringent international emission regulations.

Detailed research and experiments have taken place during the design process of the Limpsfield burner to ensure the lowest emissions are achieved. Many CFD 'computational fluid dynamics' projects have been completed to gain an accurate representation of the flow and mixing of the gases in the burner.

	Amb	Exhaust	Delta	EO %	O ₂ %	CO ₂ %	CO ppm
High	82 °F	253 °F	203 °F	86.3	2.8	10.1	1.0
Lower 1	82 °F	248 °F	198 °F	86.4	2.8	10.0	1.0
Lower 2	82 °F	244 °F	194 °F	86.5	2.9	10.0	1.0
Lower 3	82 °F	248 °F	198 °F	86.4	2.9	10.0	2.0
Lower 4	82 °F	241 °F	190 °F	86.7	2.8	10.1	1.0
Lower 5	81 °F	240 °F	188 °F	86.9	2.8	10.1	2.0
Lower 6	81 °F	221 °F	172 °F	87.1	2.7	10.1	2.0
Lower 7	81 °F	217 °F	169 °F	87.2	2.7	10.1	2.0
Lower 8	81 °F	203 °F	154 °F	87.5	2.9	10.0	2.0
Lower 9	-	-	-	-	-	-	-
Lower 10	-	-	-	-	-	-	-
Lower 11	-	-	-	-	-	-	-
Lower 12	-	-	-	-	-	-	-
Lower 13	-	-	-	-	-	-	-
Lower 14	-	-	-	-	-	-	-
Lower 15	-	-	-	-	-	-	-

Figure: Typical combustion emission values





CONTROL

As standard the Limpsfield LP burner series comes complete with the Autoflame combustion control system.

Built with end users in mind, Autoflame controls are simple and straightforward to use. All MM controls employ a simple intuitive user interface with clear backlit touch screen LCD displays. An option for either the Mini Mk8 or the Mk8 Micro modulation units is available.

The Micro modulation unit controls the Air / Fuel ration through the use of highly accurate, direct coupled servo motors capable of achieving repeatable tolerances to within 0.1 angular degrees.

Using direct coupled servo motors along with high quality fuel valves ensures that repeatable combustion is achieved at every point throughout the firing range irrespective of which fuel is being fired.

For Dual fuel burners we utilize the “Piggy back” feature of the Gas and oil control valves, meaning that only 1 servo motor is required to control either fuel

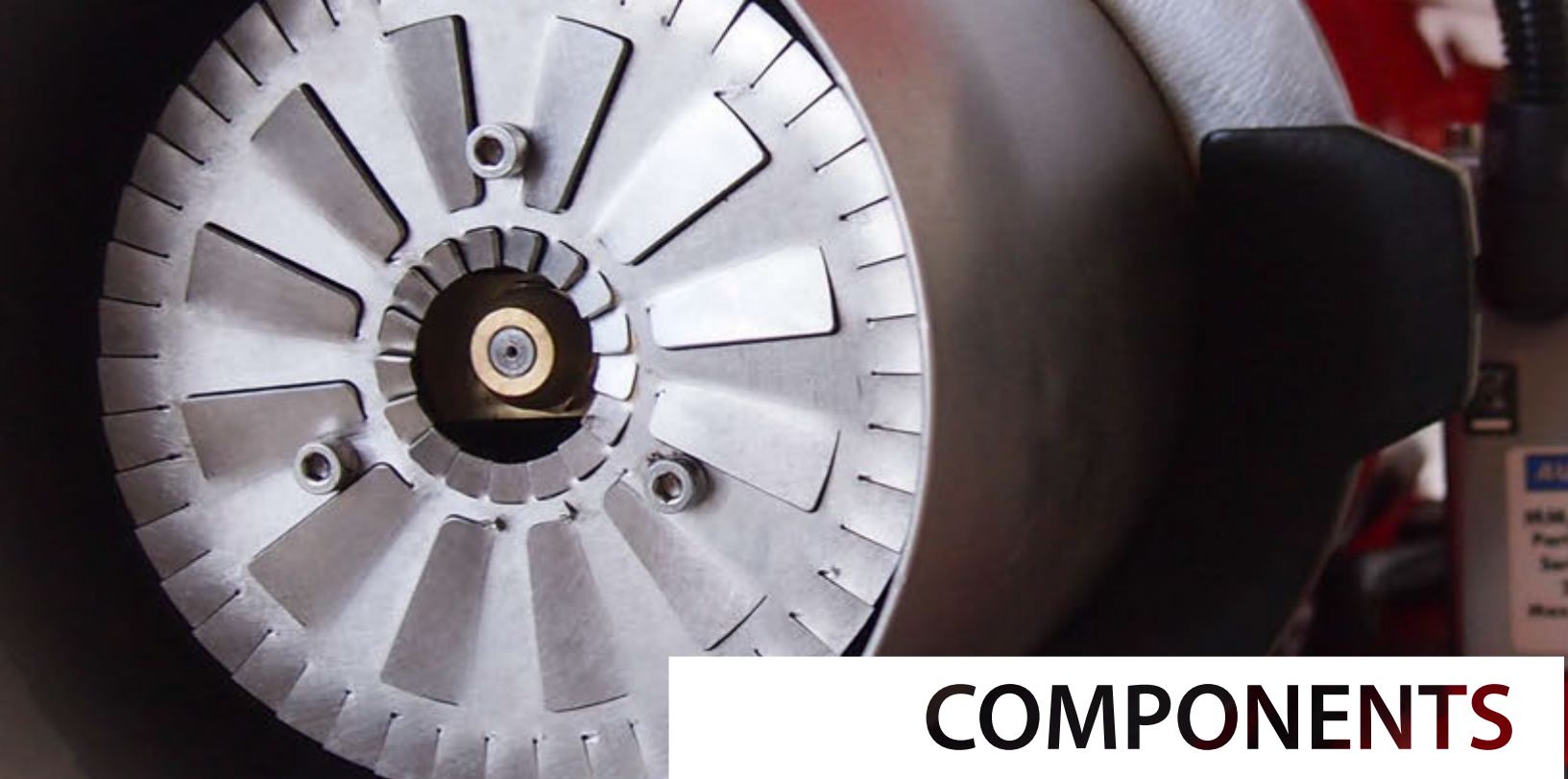
The Limpsfield LP series burner is supplied with a complete Gas train and Oil train designed and tested to CE and UL approvals.

On the LP1 Oil and Dual fuel burner the oil pump is driven directly from the main combustion air fan motor via a removable flexible coupling. (LP2/LP3 range supply loose)

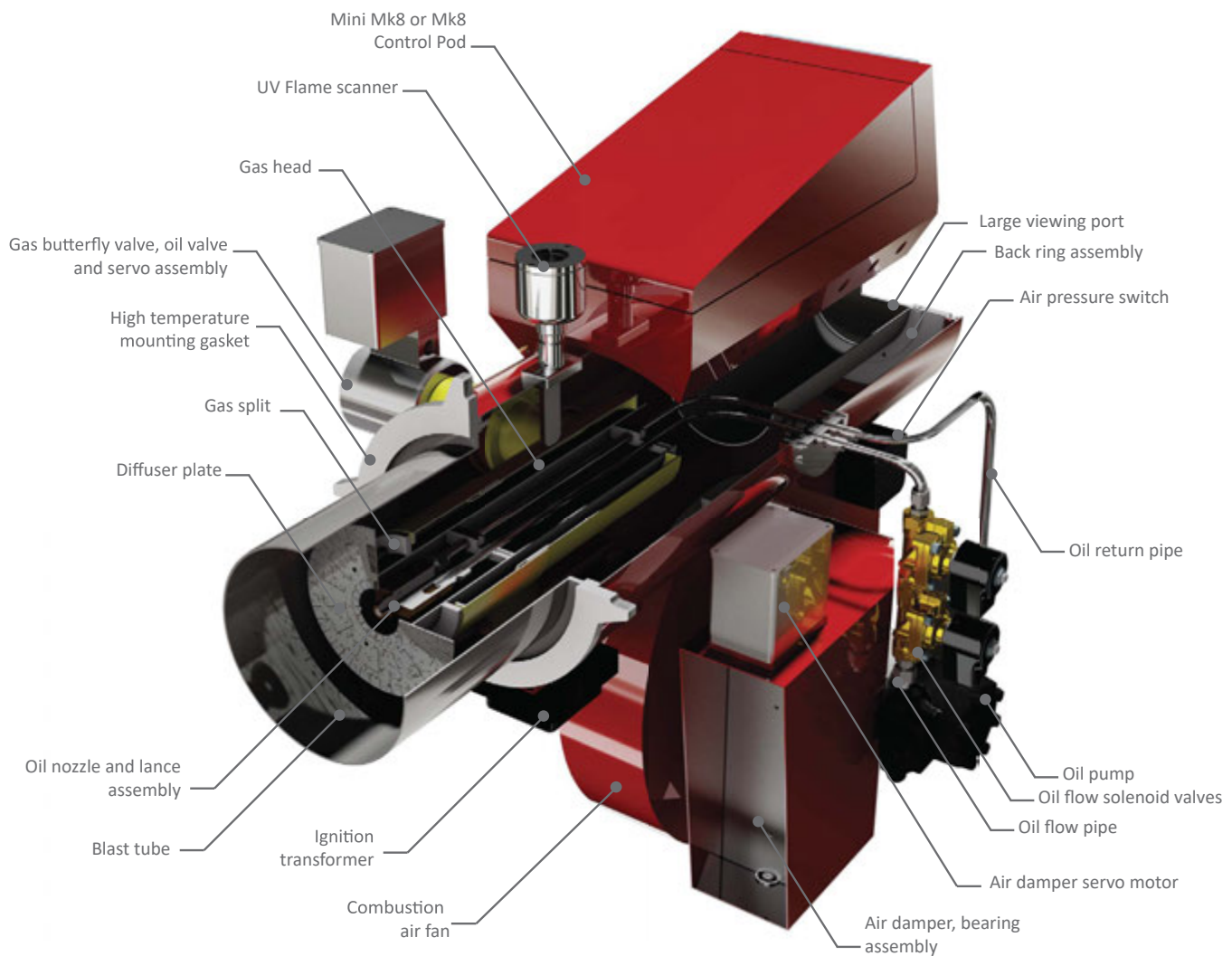
This neat solution gives the customer the flexibility to add oil onto a gas burner at a later date, if required.



For further information please contact our sales department.



COMPONENTS



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TECHNICAL DATA

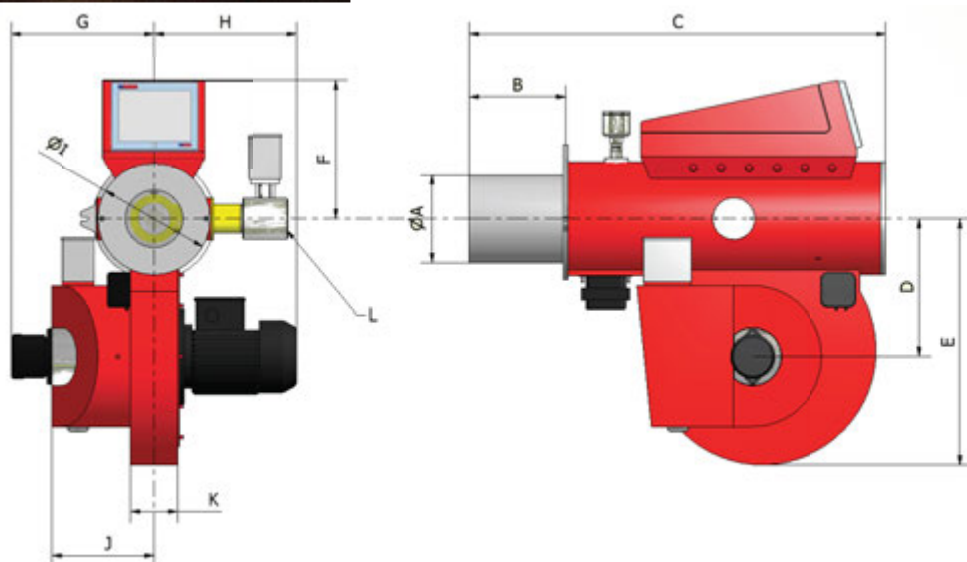
Details	Units	LP1/220	LP1/440	LP2/586	LP2/880	LP2/1465	LP3/2051	LP3/2930
Burner Rating	kW	220	440	586	880	1465	2051	2930
	Mmbtu	0.75	1.50	2.00	3.00	5.00	7.00	10.00
Air at 15% Excess	m3/hr	237	474	632	948	1,580	2211	3159
	Cuft/hr	8366	16733	22310	33465	55775	78085	111550
Min Oil	uk gal/hr	1.98	4.60	6.60	8.62	15.45	16.97	20.68
	us gal/hr	2.38	5.52	7.93	10.35	18.55	20.38	24.84
Max Oil	uk gal/hr	4.58	9.17	12.87	18.36	30.61	42.82	61.22
	us gal/hr	5.50	11.01	15.46	22.05	36.76	51.42	73.52
Min Gas	m3/hr	7.08	14.16	14.80	21.20	28.32	39.64	56.64
	Cuft/hr	250.0	500.0	522.6	748.6	1000.0	1399.7	2000.0
Max Gas	m3/hr	21.24	42.48	59.47	84.96	141.6	198.24	283.20
	Cuft/hr	750	1500	2100	3000	5000	7000	10000
Start Gas rate	kW	50	75	100	100	100	100	100
	Mmbtu	0.17	0.26	0.34	0.34	0.34	0.34	0.34
Minimum Gas supply Pressure at burner inlet	mbar	15	15	25	25	37.5	52.5	70
	"WG	6	6	10	10	15	21	28
Minimum Pilot pressure	mbar	10	10	10	10	30	30	30
	"WG	4	4	4	4	12	12	12
Ignition system		Direct spark					Pilot	
Delta P Air	mbar	4	4	5	5	22.5	30	30
	"WG	1.6	1.6	2	2	9	12	12
Blast tube O.D.	mm	116	138	164	182	203	254	270
	Inches	4.57	5.43	6.46	7.17	7.99	10.00	10.63
Gas inlet (BSP or NPT)	mm	25	38	50	50	50	65	65
	Inches	1	1.5	2	2	2	2.5	2.5
Mounting P.C.D.	mm	196	196	280	280	280	394.25	394.25
	Inches	7.72	7.72	11.02	11.02	11.02	15.52	15.52
Mounting hole Ø	mm	8.5	8.5	8.5	8.5	8.5	10.5	10.5
	Inches	0.33	0.33	0.33	0.33	0.33	0.41	0.41
Quantity of mounting holes		3	3	3	3	3	3	3
Fan O.D.	mm	180	180	330	330	330	490	530
	Inches	7.1	7.1	13.0	13.0	13.0	19.3	20.9
Motor rating	kW	0.55	0.55	1.1	1.5	2.2	5.5	7.5
	HP	0.75	0.75	1.5	2.0	3	7.5	10
Control Voltage (optional)	V	240	240	240	240	240	240	240
	V	110	110	110	110	110	110	110
Motor Voltage (optional)	V	240/1/50	240/1/50	240/1/50	240/1/50	415/3/50	415/3/50	415/3/50
	V	110/1/60	110/1/60	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60



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DIMENSIONS



Burner Model Number	A	B	C	D	E	F (Mini Mk8)	F (Mk8)	G	H	I	J	K	L
All Dimensions in mm and (Inches) unless otherwise stated													
LP1/220	116 (4.57)	160 (6.3)	595 (23.43)	172 (6.77)	312 (12.28)	250 (9.84)	N/A	N/A	226 (8.9)	175 (6.9)	170 (6.69)	98 (3.86)	25 (1)
LP1/440	138 (5.43)	160 (6.3)	595 (23.43)	172 (6.77)	312 (12.28)	250 (9.84)	N/A	N/A	226 (8.9)	175 (6.9)	170 (6.69)	98 (3.86)	40 (1.5)
LP2/586	164 (6.46)	200 (7.87)	865 (34.05)	248 (9.76)	525 (21)	287 (11.3)	365 (14.37)	296 (11.65)	296 (11.65)	233 (9.17)	211 (8.31)	98 (3.86)	50 (2)
LP2/880	182 (7.17)	200 (7.87)	865 (34.05)	248 (9.76)	525 (21)	287 (11.3)	365 (14.37)	296 (11.65)	296 (11.65)	233 (9.17)	211 (8.31)	98 (3.86)	50 (2)
LP2/1465	203 (7.99)	205 (8.07)	865 (34.05)	248 (9.76)	525 (21)	287 (11.3)	365 (14.37)	296 (11.65)	296 (11.65)	233 (9.17)	211 (8.31)	98 (3.86)	50 (2)
LP3/2051	254 (10)	348 (13.7)	1253 (49.33)	446 (17.56)	793 (31.22)	353 (13.9)	430 (16.93)	440 (17.32)	395 (15.55)	333 (13.11)	331 (13.03)	144 (5.67)	65 (2.5)
LP3/2930	270 (10.63)	348 (13.7)	1253 (49.33)	446 (17.56)	793 (31.22)	353 (13.9)	430 (16.93)	440 (17.32)	395 (15.55)	333 (13.11)	331 (13.03)	144 (5.67)	65 (2.5)





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