



LPWS4 G BUILD ENGINE

LPWS4

Power range: 15.0—29.5 kW; 20.1—39.6 bhp
 Fixed speed; full-load speeds: 1500, 1800, 3000 r/min

EMISSION COMPLIANT, LIQUID COOLED, G BUILD DIESEL ENGINE

SPECIAL ATTRIBUTES

- fully emission compliant (see over)
- designed for continuous operation in ambient temperatures up to 52°C (122°F)
- cold start capability down to -32°C (-25.6°F)

DESIGN FEATURES AND EQUIPMENT

- heavy duty air cleaner
- inlet and exhaust manifolds
- inlet manifold heater plugs
- combustion-chamber glow plugs
- fuel lift pump
- self-vent fuel system with individual fuel injection pumps
- fuel filter/agglomerator
- gear-driven positive displacement type lubricating oil pump
- spin-on lubricating oil filter
- low oil pressure switch
- 12V electric start
- flywheel with ring gear
- SAE 5 flywheel housing
- operators' handbook

EMISSIONS

LPWS engines are compliant with the following:

- EU Stage 3A
- USA EPA Interim Tier 4
- India legislation GSR 448(E)

OPTIONAL ITEMS

- radiator options with choice of pusher or puller fan and full guarding
- oil cooler

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POWER OUTPUTS

Power	r/min	1500	1800	3000
Continuous	kW	15.0	18.6	26.8
	bhp	20.1	24.9	36.0
Fuel Stop	kW	16.5	20.3	29.5
	bhp	22.1	27.5	39.6

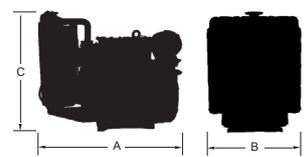
1. Power ratings measured at the flywheel, and fuel consumptions, apply to a fully run-in, non-derated engine without a radiator and fan fitted, and without power absorbing accessories or transmission equipment.

2. The overload capability applies to a fully run-in engine. This is normally attained after a running period of about 50 hours.

Key to Emissions Compliance

USA EPA Interim Tier 4 only	
EU Stage 3A, USA EPA Interim Tier 4	
EU Stage 3A, India GSR 448 (E)	
EU Stage 3A, USA EPA Interim Tier 4 and India GSR 448 (E)	

TECHNICAL DATA		
Number of cylinders		4
Fuel		Diesel
Cooling		Liquid
Fuel injection		Indirect
Aspiration		Natural
Direction of rotation, looking on flywheel		Anti clockwise
Cylinder bore	mm	86.0
	in	3.39
Stroke	mm	80.0
	in	3.15
Total cylinder capacity	litre	1.860
	in ³	113.50
Compression ratio		23.5 : 1
Firing order		1-3-4-2
Minimum full-load speed	r/min	1500
Number of flywheel ring-gear teeth		96
Maximum continuous crankshaft end thrust	kgf	180
	lbf	400
Maximum permissible intake restriction at full rated speed and load	mbar	25
	in H ₂ O	10
Maximum permissible exhaust back pressure	mbar	75
	in H ₂ O	30
Lubricating oil pressure with the oil at 110° C (230° F): 3000 r/min	bar	2.0
	lbf/in ²	29

APPROXIMATE DIMENSIONS AND WEIGHT			
	Dry weight	kg	180
		lb	396
	Length (A)	mm	909
		in	35.8
	Width (B)	mm	512
		in	20.2
Height (C)	mm	685	
	in	27	

RATING DEFINITIONS, TO ISO 3046

ISO Standard Conditions

Barometric pressure 100 kPa
 Relative humidity 30%
 Ambient temperature at air inlet manifold 25°C

Fixed speed power: continuous power (ICN)

The power in kW which the engine is capable of delivering continuously at the stated crankshaft speed, under ISO standard conditions, measured at the flywheel without power-absorbing accessories, provided that the engine is overhauled and maintained in good operating condition and that fuel to BS EN 590 Class A1 or A2, and lubricating oils to the correct performance specification and viscosity classification as recommended by Lister Petter Limited, are used.

Fixed speed power: overload power (ICXN)

The maximum power in kW which the engine is capable of delivering intermittently at the stated crankshaft speed for a period not exceeding one hour in any period of twelve hours' continuous running, immediately after working at the continuous power, under ISO standard conditions and with the provisions specified for continuous power above.

De-rating

For non-standard site conditions, reference should be made to relevant BS, ISO and DIN standards.

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