LPWX ENGINES

LPWX2, LPWX3, LPWX4

Power range: 7.9-30.0 kW; 10.6-40.0 bhp
Variable speed; full-load speed range: 1500-2800 r/min
Fixed speed; full-load speed range: 1500, 1800 r/min

DURABLE, RELIABLE, EASY TO MAINTAIN LIQUID COOLED DIESEL ENGINES

OVERVIEW

The LPWX Series has been developed to deliver a compact, high power density engine with improved fuel consumption. Through development and use of the Lister Petter Power Systems HRCS advanced combustion system additional attributes have also been achieved. These combine to give a smoother, quieter and more powerful engine coupled with our world famous reliability.

SPECIAL ATTRIBUTES

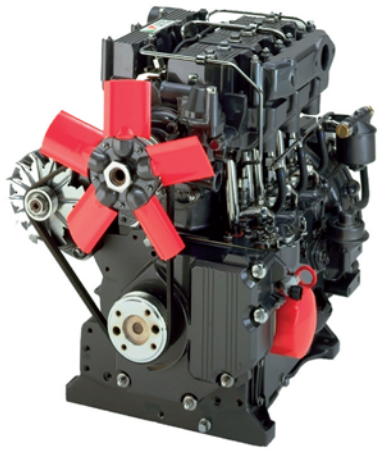
- LP-HRCS (High Re-Entrant Combustion System)
- multi-hole fuel injection system
- hydro-honed injector hole conditioning
- increased power density
- reduced fuel consumption and Noise
- 500-hour service intervals
- designed for continuous operation in ambient temperatures up to 52°C (122°F)
- cold start capability down to -32°C (-25.6°F)

BASIC ENGINE CHARACTERISTICS

- diesel fuelled
- direct injection
- 2, 3 or 4 cylinders
- liquid cooled
- naturally aspirated

DESIGN FEATURES AND EQUIPMENT

- heavy duty air cleaner*
- Polyvee fan/alternator drive belt*
- inlet and exhaust manifolds*
- inlet manifold heater 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



LPWX4 ENGINE

- 12V starter motor*
- 12V battery charge alternator*
- safety switches*
- fuel control solenoid (energised to run)*
- mechanical governing
- radiator with fan and belt guard*
- flywheel with ring gear
- SAE 5 flywheel housing (SAE 4 optional)
- standard skid base packing
- operators' handbook

OPTIONAL ITEMS

- oil cooler
- 24V electrics
- deep sump

See also items with asterisk under Design Features and Equipment.

A range of options allows you to select a specification that matches your requirements; please consult your Lister Petter Power Systems distributor.

* Optional items standard on most builds

VARIABLE SPEED POWER OUTPUTS TO ISO 3046[1]

Model	Power	r/min	1500	1800	2000	2200	2500	2800
LPWX2	Continuous [1]	kW	7.9	9.8	10.8	11.7	12.9	13.5
		bhp	10.6	13.1	14.5	15.7	17.2	18.1
	Fuel Stop [2]	kW	8.8	10.9	12.1	13.0	14.3	14.9
		bhp	11.8	14.6	16.2	17.5	19.1	20.0
LPWX3	Continuous [1]	kW	11.9	14.7	16.3	17.6	19.3	20.3
		bhp	15.9	19.7	21.8	23.6	25.8	27.1
	Fuel Stop [2]	kW	13.2	16.4	18.1	19.5	21.4	22.4
		bhp	17.7	22.0	24.2	26.2	28.7	30.0
LPWX4	Continuous [1]	kW	15.8	19.6	21.7	23.4	25.7	27.0
		bhp	21.2	26.3	29.1	31.4	34.4	36.1
	Fuel Stop [2]	kW	17.6	21.8	24.1	26.0	28.5	29.9
		bhp	23.6	29.3	32.3	34.9	38.2	40.0

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 other power absorbing accessories or transmission equipment.
2. The overload (intermittent) capability applies to a fully run-in engine. This is normally attained after a running period of about 50 hours.

Key to Emissions Compliance

EU Stage 3A only	

TECHNICAL DATA

Model		LPWX2	LPWX3	LPWX4
Type of fuel injection		Direct	Direct	Direct
Number of cylinders		2	3	4
Aspiration		Natural	Natural	Natural
Direction of rotation (flywheel end)		Anti clockwise	Anti clockwise	Anti clockwise
Nominal cylinder bore	mm	86.0	86.0	86.0
	in	3.39	3.39	3.39
Stroke	mm	86.0	86.0	86.0
	in	3.39	3.39	3.39
Total cylinder capacity	litre	0.999	1.499	1.998
	in^3	60.96	91.47	121.93
Compression ratio		18.5:1	18.5:1	18.5:1
Firing order (number 1 cylinder is at the gear end)		1 - 2	1 - 2 - 3	1 - 3 - 4 - 2
Number of flywheel ring gear teeth		96	96	96
Maximum continuous crankshaft end thrust	kgf	180	180	180
	lbf	400	400	400
Maximum permissible intake restriction at full rated speed and load	mbar	25	25	25
	in	10	10	10
Maximum permissible exhaust back pressure	mbar	75	75	75
	in	30	30	30
Lubricating oil pressure at 3000r/min and with the oil at 110°C (230°F)	bar	2.0	2.0	2.0
	lbf/in^2	29	29	29

RATING DEFINITIONS, TO ISO 3046

ISO Standard Conditions

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

1. Fixed Speed: Continuous Power (ICN)

The power in kW which the engine is capable of delivering continuously at the stated crankshaft speed, under ISO 3046 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 Power Systems are used.

2. Fixed Speed (Fuel Stop): 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 of continuous running, immediately after working at the continuous power, under ISO 3046 standard conditions and with the provisions specified for continuous power in item (1) above, but with the fuel limited so that the fuel stop power cannot be exceeded.

3. Variable Speed (Fuel Stop): Continuous Power (IFN)

The maximum power in kW which the engine is capable of delivering continuously at the stated crankshaft speed, under ISO 3046 standard conditions, and with the provisions specified in item (1) above, but with the fuel limited so that the fuel stop power cannot be exceeded.

4. Variable Speed (Fuel Stop): Overload Power (IOFN)

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 of continuous running, immediately after working at the continuous power, under ISO 3046 standard conditions and with the provisions specified for continuous power in item (3) above, but with the fuel limited so that the fuel stop power cannot be exceeded.

5. Derating

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

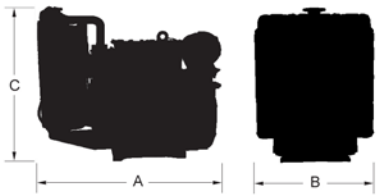
TORQUE

Model		1500	1800	2000	2200	2500	2800
LPWX2	Nm	56	58	57	57	55	51
	lbf ft	41	43	42	42	40	37
LPWX3	Nm	84	87	86	85	82	77
	lbf ft	62	65	64	62	60	56
LPWX4	Nm	112	116	115	113	109	102
	lbf ft	83	86	85	83	80	75

FIXED SPEED POWER OUTPUTS TO ISO 3046[1]

Model	Power	r/min	1500	1800
LPWX2	Continuous [1]	kW	8.3	10.3
		bhp	11.1	13.8
	Fuel Stop [2]	kW	9.1	11.3
		bhp	12.1	15.1
LPWX3	Continuous [1]	kW	12.5	15.5
		bhp	16.7	20.7
	Fuel Stop [2]	kW	13.7	17.0
		bhp	18.4	22.7
LPWX4	Continuous [1]	kW	17.7	22.1
		bhp	23.7	29.6
	Fuel Stop [2]	kW	19.5	24.3
		bhp	26.1	32.6

APPROXIMATE DIMENSIONS AND WEIGHT



		LPWX2	LPWX3	LPWX4
Dry weight	kg	112	150	180
	lb	247	330	396
Length (A)	mm	699	809	909
	in	27.5	31.9	35.8
Width (B)	mm	512	512	512
	in	20.2	20.2	20.2
Height (C)	mm	647	685	685
	in	25.5	27.0	27.0