ALPHA Series

LPW Engines

LPW2, LPW3, LPW4, LPWT4

Power ranges: 6.8—41.3 kW; 9.1—55.4 bhp
Variable or fixed speed; full load speed range: 1500—3600 r/min

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Durable, reliable, easy to maintain liquid-cooled diesel engines

Special Attributes

- ✓ variable and fixed-speed builds available
- ✓ 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 or turbocharged (LPWT4)

Design Features and Equipment

- heavy-duty air cleaner
- 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
- low oil-pressure switch
- 12V electric start
- flywheel with ring gear
- SAE 5 flywheel housing
- operators' handbook

Emissions

- models under 19 kW comply with EU Stage 3A exhaust emissions regulations

Optional Items

- radiator options with choice of pusher or puller fan and full guarding
- extended warranty (see below)

Variable Speed: Power Outputs to ISO 3046[1]								
Model	Power	r/min:	1500	1800	2000	2500	3000	3600
LPW2	Continuous	kW	6.8	8.5	9.6	11.8	13.4	N/A
		bhp	9.1	11.4	12.9	15.8	18.0	
	Intermittent (Fuel Stop)	kW	7.5	9.4	10.6	13.0	14.7	
		bhp	10.0	12.6	14.2	17.4	19.7	
LPW3	Continuous	kW	10.3	12.8	14.5	17.7	20.1	
		bhp	13.8	17.2	19.4	23.7	27.0	
	Intermittent (Fuel Stop)	kW	11.3	14.1	15.9	19.5	22.1	
		bhp	15.1	18.9	21.3	26.1	29.6	
LPW4	Continuous	kW	13.6	17.0	19.3	23.6	26.8	
		bhp	18.2	22.7	25.9	31.6	35.9	
	Intermittent (Fuel Stop)	kW	15.0	18.7	21.2	26.0	29.5	
		bhp	20.1	25.1	28.4	34.8	39.5	
LPWT4	Continuous	kW	20.7	26.4	28.7	34.3	37.5	
		bhp	27.7	35.3	38.5	46.0	50.2	
	Intermittent (Fuel Stop)	kW	22.3	28.5	31.0	36.7	40.2	
		bhp	29.9	38.2	41.5	49.1	53.9	

Fixed Speed: Power Outputs to ISO 3046[1]								
Model	Power	r/min	1500	1800	2000	2500	3000	3600
LPW2	Continuous	kW	7.5	9.3	N/A	N/A	13.4	14.0
		bhp	10.1	12.5			18.0	18.8
	Intermittent (Fuel Stop)	kW	8.2	10.2			14.7	15.4
		bhp	11.0	13.7			19.7	20.6
LPW3	Continuous	kW	11.3	13.9			20.1	21.0
		bhp	15.2	18.6			26.9	28.1
	Intermittent (Fuel Stop)	kW	12.4	15.3			22.1	23.1
		bhp	16.6	20.5			29.6	31.0
LPW4	Continuous	kW	15.0	18.6			26.8	28.0
		bhp	20.1	24.9			35.9	37.5
	Intermittent (Fuel Stop)	kW	16.5	20.3			29.5	30.8
		bhp	22.1	27.2			39.5	41.3
LPWT4	Continuous	kW	18.9	23.8			37.5	
		bhp	25.3	31.9			50.3	
	Intermittent (Fuel Stop)	kW	20.8	26.2			41.3	
		bhp	27.8	35.1			55.4	

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. **For rating definitions see page 4.**
2. The overload capability applies to a fully run-in engine. This is normally attained after a running period of about 50 hours.

Variable Speed: Torque								
Model	Power	r/min:	1500	1800	2000	2500	3000	3600
LPW2	Intermittent (Fuel Stop)	Nm	47.7	49.4	50.6	49.7	46.8	N/A
		lbf ft	35.2	36.4	37.3	36.7	34.5	
LPW3		Nm	71.9	74.9	75.9	74.5	70.4	
		lbf ft	53.0	55.2	56.0	54.9	51.9	
LPW4		Nm	95.5	99.2	101.9	99.3	93.9	
		lbf ft	70.4	73.2	75.1	73.2	69.3	
LPWT4		Nm	142.0	151.2	148.0	140.2	128.0	
		lbf ft	104.7	111.5	109.1	103.4	94.4	

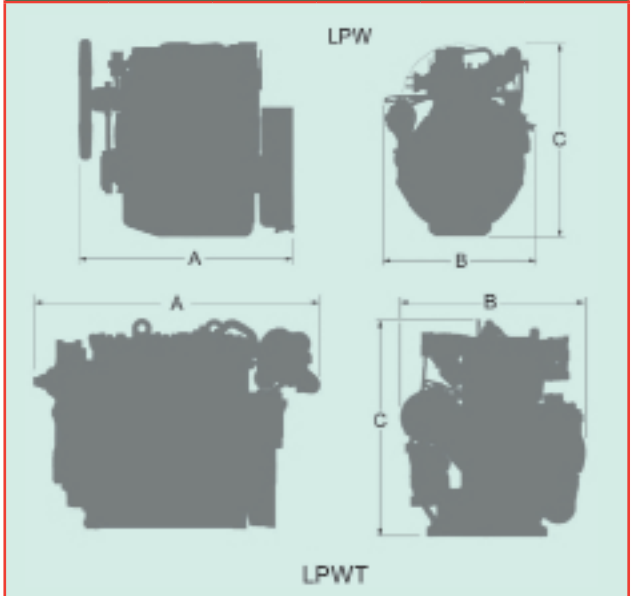
Complies with EU Stage 3A Emissions Legislation

Technical Data					
		LPW2	LPW3	LPW4	LPWT4
Type of fuel injection		Direct	Direct	Direct	Direct
Number of cylinders		2	3	4	4
Aspiration		Natural	Natural	Natural	Turbocharged
Direction of rotation (flywheel end)		Anticlockwise	Anticlockwise	Anticlockwise	Anticlockwise
Nominal cylinder bore	mm	86.0	86.0	86.0	86.0
	in	3.39	3.39	3.39	3.39
Stroke	mm	80.0	80.0	80.0	80.0
	in	3.15	3.15	3.15	3.15
Total cylinder capacity	litre	0.930	1.395	1.860	1.860
Total cylinder capacity	in^3	56.75	85.13	113.50	113.50
Compression ratio		18.5:1	18.5:1	18.5:1	16.2:1
Firing order (number 1 cylinder is at the gear end)		1 – 2	1 – 2 – 3	1 – 3 – 4 – 2	1 – 3 – 4 – 2
Minimum idling speed		Dependent on build	Dependent on build	Dependent on build	Dependent on build
Minimum full load speed	r/min	1500	1500	1500	1500
Number of flywheel ring gear teeth		96	96	96	96
Gear end power take-off[3] - maximum inline - maximum side load using a drive belt	kW	12	12	12	12
	bhp	16	16	16	16
	kW	0.8	0.8	0.8	0.8
	bhp	10.7	10.7	10.7	10.7
Maximum continuous crankshaft end thrust	kgf	180	180	180	180
	lbf	400	400	400	400
Maximum permissible intake restriction at full rated speed and load	mbar	25	25	25	25
	in	10	10	10	10
Maximum permissible exhaust back pressure	mbar	75	75	75	50
	in	30	30	30	20
Lubricating oil pressure at 3000r/min and with the oil at 110°C (230°F)	bar	2.0	2.0	2.0	2.0
	lbf/in^2	29	29	29	29
Lubricating oil pressure at idle	bar	1.0	1.0	1.0	1.0
	lbf/in^2	14.5	14.5	14.5	14.5

3. Subject to Lister Petter approval.

Variable Speed: Maximum Fuel Consumption								
The figures given are for 100% load and are subject to 5% tolerance.								
Model	Power	r/min	1500	1800	2000	2500	3000	3600
LPW2	Continuous	litre/hr	1.9	2.3	2.5	3.2	3.9	N/A
		US gal/hr	0.50	0.60	0.67	0.84	1.03	
LPW3		litre/hr	2.8	3.4	3.8	4.7	5.9	
		US gal/hr	0.75	0.90	1.00	1.25	1.55	
LPW4		litre/hr	3.8	4.6	5.0	6.3	7.8	
		US gal/hr	1.0	1.2	1.33	1.67	2.07	
LPWT4		litre/hr	4.9	6.0	7.1	8.8	10.6	
		US gal/hr	1.29	1.58	1.87	2.32	2.79	

Approximate Dimensions and Weight



		LPW2	LPW3	LPW4	LPWT4
Dry weight	kg	112	150	180	186
	lb	247	330	396	409
Length (A)	mm	496	596	696	786
	in	19.5	23.5	27.4	30.9
Width (B)	mm	470	470	470	480
	in	18.5	18.5	18.5	18.9
Height (C)	mm	574	574	574	574
	in	22.6	22.6	22.6	22.6

Rating Definitions, to ISO 3046

ISO Standard Conditions

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

1. 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.

2. 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 in (1) above.

3. Variable speed: fuel-stop power, continuous power (IFN)

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

4. Variable speed: fuel-stop power, intermittent power (IOFN)

The maximum power in kW which an 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, with the fuel limited so that the fuel stop power cannot be exceeded, immediately after running at the rating in (3) above, under ISO standard conditions and with the provisions specified in (1) above.

5. De-rating

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

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