

AC AND AD ENGINES

AC1, AD1

*Power range: 2.1—6.1 kW; 2.8—8.2 bhp
Variable or fixed speed; full-load speed range: 1500—3600 r/min*

AIR COOLED DIRECT INJECTION SINGLE CYLINDER DIESEL ENGINES

SPECIAL ATTRIBUTES

- low fuel consumption
- variable speed or G-build
- several starting options

BASIC ENGINE CHARACTERISTICS

- single cylinder
- diesel fuelled
- direct injection
- air cooled
- naturally aspirated
- hand start (electric optional)

DESIGN FEATURES AND EQUIPMENT

- lightweight aluminium alloy crankcase
- large bearing surfaces for low bearing loads and long life
- clockwise or anticlockwise rotation (AD1 clockwise only) looking on flywheel
- air cooling by means of a highly efficient flywheel-mounted fan
- designed for continuous operation in ambient temperatures up to 52°C (125°F).
- gear-driven lubricating oil pump which supplies oil at constant pressure to all important bearing surfaces
- replaceable cartridge-type oil filter
- mechanical governing provided for fixed or variable speed (depending on build)
- generating set governing available for 1500, 1800, 3000 and 3600 (AC1 only) r/min



A SERIES ENGINE

- full power available at both the flywheel and the gear end
- range of shafts, reduction gearboxes and hydraulic adaptations available
- hold-down feet integral with the sump, for base mounting
- decompressor lever
- inlet and exhaust manifolds
- lifting eye
- 250-hour service intervals
- operators' handbook
- SAE6 bell housing

STARTING

- hand starting on the camshaft extension at the gear end or from geared arrangement on the flywheel
- rope start at the flywheel end
- starting handles available in both limited or non-limited kickback versions.
- option of 12V electric starting

OPTIONAL ITEMS

- medium duty air cleaner
- exhaust silencers
- engine protection switches and solenoids
- fuel filters
- fuel tanks
- 12V starter motor

POWER OUTPUTS TO ISO 3046 ¹								
Variable Speed (r/min)			1500	1800	2100	2500	3000	3600
AC1	Continuous Power	kW	2.1	2.4	3.0	3.7	4.5	4.8
		bhp	2.8	3.2	4.0	5.0	6.0	6.5
	Fuel Stop	kW	2.3	2.7	3.3	4.1	4.9	5.3
		bhp	3.1	3.6	4.4	5.5	6.6	7.1
AD1	Continuous Power	kW	2.5	3.0	3.5	4.3	5.3	5.6 ²
		bhp	3.4	4.0	4.7	5.8	7.1	7.5 ²
	Fuel Stop	kW	2.8	3.3	3.9	4.8	5.8	6.1 ²
		bhp	3.7	4.4	5.2	6.4	7.8	8.2 ²

TORQUE TO ISO 3046 ¹								
Variable Speed (r/min)			1500	1800	2100	2500	3000	3600
AC1	Fuel Stop	Nm	14.6	14.4	14.9	15.7	15.7	14.1
		lbf ft	10.8	10.6	11.0	11.6	11.6	10.4
AD1		Nm	17.5	17.5	17.5	18.1	18.6	16.3 ²
		lbf ft	12.9	12.9	12.9	13.4	13.7	12.0 ²

Notes:

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

RATING DEFINITIONS TO ISO 3046

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 conditions of 100 kPa barometric pressure, 30% relative humidity and 25°C air inlet temperature, 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 the conditions 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 the conditions as specified in item 1, 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 1 hour in any period of 12 hours continuous running immediately after running at the Continuous Fuel Stop Power rating.

5. De-rating

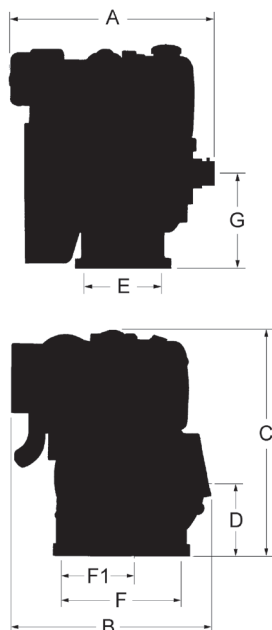
For non-standard site conditions, reference should be made to relevant BS, ISO and DIN standards. The overload capability applies to a fully run-in engine. This is normally attained after a running period of about 50 hours.

TECHNICAL DATA			
		AC1	AD1
Number of cylinders		1	1
Type of fuel injection		Direct	Direct
Aspiration		Natural	Natural
Direction of rotation, looking on the flywheel end		Clockwise or anticlockwise, according to build	Clockwise (looking on the flywheel)
Nominal cylinder bore	mm	76.2	80.0
	in	3.00	3.15
Stroke	mm	66.7	73.0
	in	2.62	2.87
Cylinder capacity	litre	0.304	0.367
	in ³	18.6	22.4
Lubricating oil capacity (including filter)	litre	2.7	2.7
	pint	4.8	4.8
Fuel consumption at 2500 r/min and 75% load	litre/h	0.9	1.0
	pint/h	1.6	1.8
Fuel consumption at maximum torque speed (5% tol.) and 100% load	g/kWh	268	265
	lb/hph	0.44	0.43
Angles of inclination: permanent (temporary) with flywheel end up (A) or down (B)	A	35° (40°)	40° (40°)
	B	40° (40°)	45° (45°)
Angles of inclination: permanent (temporary) with manifold side up (C) or down (D)	C	40° (40°)	45° (45°)
	D	40° (45°)	30° (32°)
Minimum idling speed	r/min	1000	1000
Combustion air required at 2100 r/min	l/s	5.7	6.4
	ft ³ /min	12.1	13.6
Minimum starting temperature*	°C	-15°	-15°
	°F	-5°	-5°
Starter motor battery cold cranking performance rating (BS 3911 Part 2)	Amp @ -8°C (18 °F)	115	125
	Amp @ -18°C (0 °F)	190	200
Starter motor power (if applicable)	kW	0.9	0.9
Alternator output (if applicable)	Amp	14	14

* Consult Lister Petter concerning performance at lower temperatures.

APPROXIMATE DIMENSIONS AND WEIGHT

Dimension	AC1		AD1	
	mm	in.	mm	in.
A	456	17.9	456	17.9
B	412	16.2	412	16.2
C	458	18.0	509	20
D	149	5.9	149	5.9
E	148	5.8	148	5.8
F	250	9.8	250	9.8
F1	148	5.8	148	5.8
G	194	7.6	194	7.6
Weight	kg	lb	kg	lb
	47	103	53	117



The figures given are for guidance only and should not be used for installation purposes.

A comprehensive range of options allows you to select a specification that matches your requirements. Please ask your Lister Petter distributor (see panel below left).

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