DELTA Series

DWS4 Engine

DWS4

Power ranges: 23.7—48.5 kW; 31.8—65.0 bhp
Variable or fixed speed; full load speed range: 1200—2500 r/min

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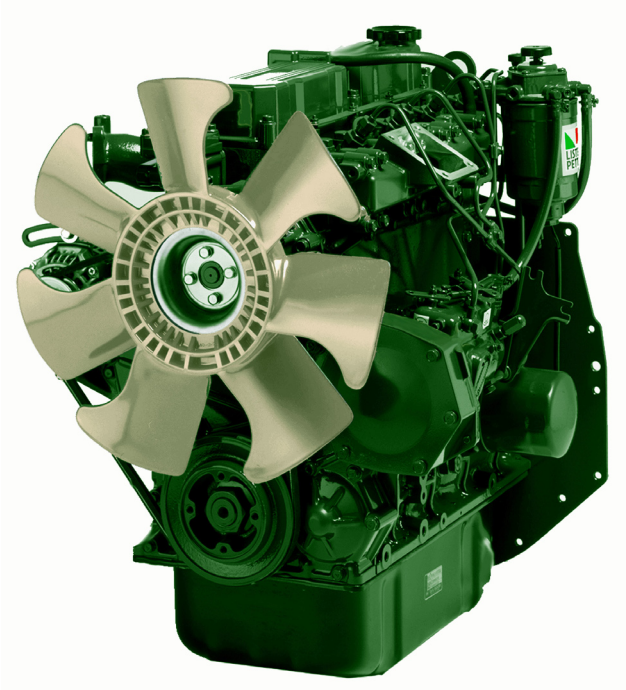
Heavy-duty, indirect-injection emission compliant diesel engine

Special Attributes

- ✓ designed for continuous operation in ambient temperatures up to 52 °C (122 °F)
- ✓ tropical radiator with pusher fan and full guarding



Engine Characteristics

- four cylinders
- diesel-fuelled
- liquid-cooled
- indirect injection
- naturally aspirated

Design Features and Equipment

- self--vent fuel system with rotary fuel injection pump and integrated fuel control solenoid
- gear-driven positive displacement type lubricating oil pump)
- standard oil and fuel filters
- heavy-duty air cleaner
- 12V electric starting with a 55 Amp alternator
- flywheel with ring gear
- SAE 3 flywheel housing
- inlet and exhaust manifolds
- combustion chamber glow plugs
- engine temperature switch
- low oil-pressure switch
- 250-hour service intervals
- operators' handbook

Emissions Compliance

- compliant to EU Stage 2 at 1500 r/min

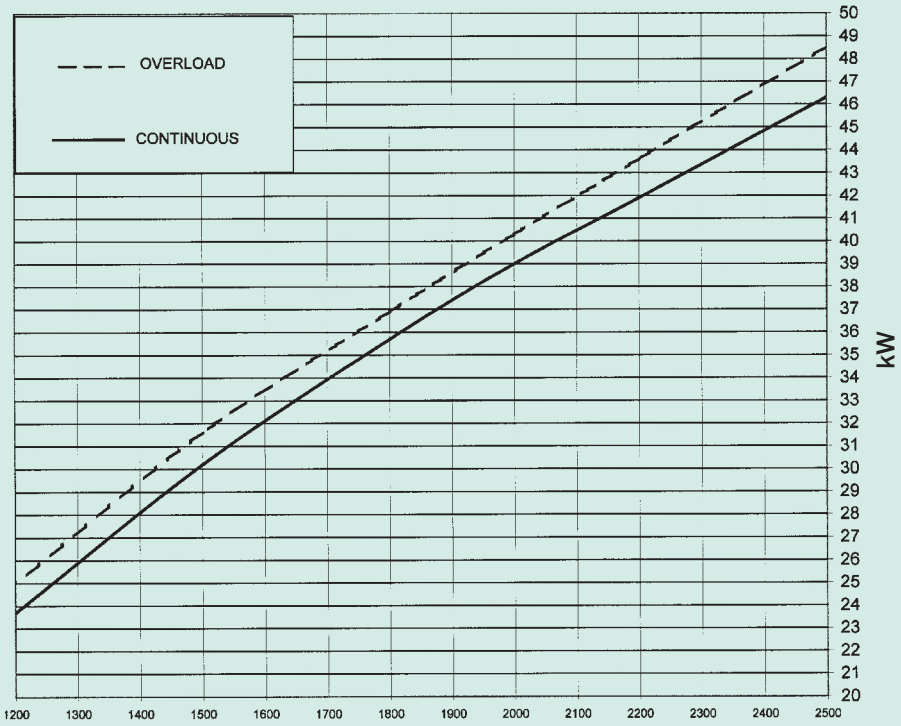
Optional Items

- optional 5-year extended warranty

A range of options enables you to select a specification that matches your requirements. Please consult your Lister Petter distributor.

Power Outputs to ISO 3046

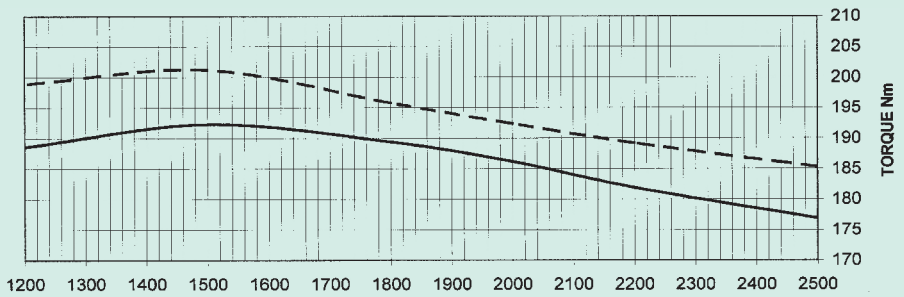
r/min			1200	1500	1800	2000	2200	2500
Fixed Speed	Continuous Power	kW		28.7	33.2			
		bhp		38.5	44.5			
	Overload Power[1]	kW		31.6	36.5			
		bhp		42.3	48.9			
Variable Speed	Continuous Power	kW	23.7	30.2	35.7	39.0	41.9	46.3
		bhp	31.4	40.5	47.9	52.3	56.2	62.1
	Overload Power[1]	kW	25.0	31.6	36.9	40.3	43.6	48.5
		bhp	33.5	42.4	49.5	54.0	58.4	65.0



Torque to ISO 3046[2]

Variable Speed, Continuous Power

r/min	1200	1500	1800	2000	2200	2500
Nm	188.6	192.3	189.4	186.2	181.9	176.9
lbf ft	139.1	141.8	139.7	137.4	134.2	130.5



Emission compliant: EU (Stage 2)

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.

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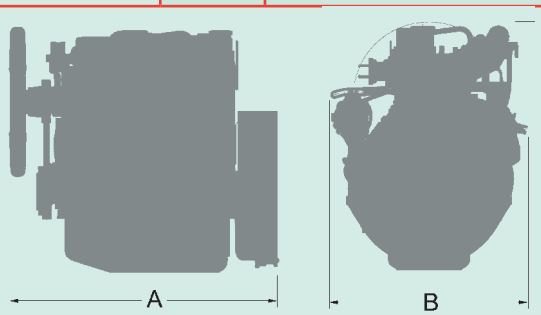
2. Power ratings measured at the flywheel, performance curves and fuel consumptions, apply to a fully run-in, non derated engine without a radiator and fan fitted, and without power absorbing accessories or transmission equipment.

Technical Data			
Number of cylinders			4
Type of fuel injection			Indirect
Aspiration			Natural
Direction of rotation (flywheel end)			Anticlockwise
Nominal cylinder bore		mm	94.00
		in	3.7
Stroke		mm	120.00
		in	4.7
Total cylinder capacity		litre	3.33
		in^3	203.3
Compression ratio			22:1
Firing order (number 1 cylinder is at the gear end)			1 - 3 - 4 - 2
Idling speed (minimum)		r/min	700
Full-load speed (minimum)		r/min	1200
Number of flywheel ring gear teeth			122
Number of starter motor pinion gear teeth			10
Intermittent end thrust (maximum)	Forwards towards the flywheel	N	2160
		lbf	485.0
	Rearwards away from the flywheel	N	1080
		lbf	242.5
Continuous end thrust (maximum)	Forwards towards the flywheel	N	1080
		lbf	242.5
	Rearwards away from the flywheel	N	540
		lbf	121.3
Axial PTO from crankshaft pulley (maximum)		Nm	20.0
		lbf ft	44.1
Auxiliary hydraulic PTP drive ratio			1:1
Auxiliary hydraulic PTO maximum permissible torque		Nm	125
		lbf ft	276
Intake restriction at full rated speed and load (maximum permissible)		mbar	63.5
		in H_2O	25.0
Exhaust back pressure (maximum permissible)		mbar	68.0
		in H_2O	27.2

Fuel Consumption							
Full Load Continuous Power	r/min	1200	1500	1800	2000	2200	2500
	g/kWh	230	235	242	242	240	245

Approximate Dimensions and Weight		
Dry weight	kg	245
	lb	539
Length (A)	mm	781
	in	30.7
Width (B)	mm	570
	in	22.4
Height (C)	mm	712
	in	28.0



Emissions

- EPA Tier 2 compliant (1800 r/min fixed speed)

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