



CUMMINS ENGINE CO.LTD

Model: **STARPAC 4 CYLINDER B SERIES** 1500 rpm
 Data sheet:001 Jan 98

Rev03

GENERAL ENGINE DATA

Type: 4 cycle,in-line,3.9 litres	CPL 1522	CPL 1521/6	CPL 1520/5	CPL 2246	
Engine Model	4B3.9G	4BT3.9G1	4BT3.9G2	4BTA3.9G1	
Aspiration	Nat Asp	Turbo	Turbo	Turbo and Aftercooled	
Bore/Stroke	mm	All Models : 102/120			
Compression Ratio	17.3:1	16.5:1	16.5:1	16.5:1	
Firing Order	1-3-4-2	1-3-4-2	1-3-4-2	1-3-4-2	
Rotation (viewed from front)	All Models : Clockwise Rotation				
Weight Dry	kg	390	402	402	457
Weight Wet	kg	418	430	430	500
C of G from FFOB	mm	206.5	210.5	210.5	210.5
Installation Diagram	3276870	3276871	3276871	3673746	

ENGINE MOUNTING

Maximum Bending Moment @ Rear
 Face of Block Nm(lb.ft) All Models:1350 (1000)
 4 CYLINDER B SERIES ENGINES MUST **NOT** BE SOLID MOUNTED TO BASE RAILS

AIR INDUCTION SYSTEM

Maximum Air Intake Restriction;					
With Dirty Filter Element	mmH ₂ O	508	635	635	635
With Normal Duty Air Cleaner and Clean Element	mmH ₂ O	254	254	254	254
Minimum Dirt Holding Capacity	g/CFM	All Models:3			

Exhaust System

Maximum Back Pressure mmHg All Models:75

COOLING SYSTEM

Maximum Top Tank Temp	Standby	104	104	104	104
°C		100	100	100	100
	Prime				
Minimum Pressure Cap Setting	Kpa(psi)	69(10)	69(10)	69(10)	69(10)
Standard Thermostat Setting (modulating)	°C	82-95	82-95	82-95	82-95

STANDARD COOLING WITH 20" FAN

Maximum Air Restriction On Discharge					
Side of Radiator	mmH ₂ O	10	10	10	10
Limiting Ambient Temperature	°C	52	52	52	52
Total Coolant Capacity	Litres	21.2	21.2	21.2	22.9
Cooling Fan Air Flow with Maximum Duct Restriction	M ³ /sec	2.0	2.0	2.0	2.0

LUBRICATION SYSTEM

Oil Pressure @ Rated Speed	Kpa(psi)	345(50)	345(50)	345(50)	345(50)
Oil Pan Capacity (OP 9003)	Litres				
	High(Low)	9.5(7.6)	9.5(7.6)	9.5(7.6)	9.5(7.6)

FUEL SYSTEM

Type of Injection System	Standyne DB4 Direct Injection			
Maximum Restriction to Lift Pump	mmHg	All Models:102		
Maximum Return Line Restriction	mmHg	All Models:508		
Total Return Line Flow	litres/hr	All Loads : 30 (Constant for all loads)		

ALL DATA SUBJECT TO CHANGE WITHOUT NOTICE

FUEL CONSUMPTION DATA

Maximum Power Brake Specific Fuel Consumption	g/Kwm-Hr	220	215	221	200
Fuel Consumption	litres/hour				
	100% Standby	10.60	13.89	16.88	17.0
	100% Prime	9.65	12.76	15.37	15.0
	75% Prime	7.53	9.9	11.47	12.0
	50% Prime	5.41	7.42	7.76	8.0
	25% Prime	3.71	4.84	4.43	5.0
	0% Prime	2.73	2.73	2.73	2.73
Performance Curve		FR-9578	FR-9604	FR-9605	FR-90221

OPERATION AT ELEVATED TEMPERATURE AND ALTITUDE**Normal Operation**

Maximum Altitude Before Derate	m	150	610	150	150
Maximum Temperature Before Derate	°C	25	40	40	40

For Sustained Operation Above These Conditions

Derate Factor per 1000ft(300m)	%	3	4	4	4
Derate factor per 10°F(5°C)	%	1	1	1	1
Derate Factor per 10% Relative Humidity Above 30%	%	1.5	N/A	N/A	N/A

NOTE

- 5, Fuel consumption data taken from the relevant performance curve, and is based on a specific gravity of #2-D diesel of 0.85 Kg/litre.
- 6, Tabulation quotes typical fuel consumption within 5%
- 7, Reference data obtained and corrected in accordance with ISO 3046 conditions of 100Kpa barometric pressure, 110m altitude, 25°C air inlet temperature and relative humidity of 30%.
- 8, Net engine outputs quoted are based on maximum engine ratings less deductions for the standard STARPAC fan arrangement etc at standard operating conditions.
- 9, Typical Generator set outputs are based on an alternator efficiency range of 87-89% and 0.8 p.f.
- 10, All engines use dry type exhaust manifolds.

CAUTION

Engines supplied without regard for the attached ratings guidelines may not be covered by warranty.

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