Dongfeng Cummins

Techical Operations

ENGINE MODEL： 4B3.9-G2

CURVE & DATASHEET： FR92539

REV 00 15APR2009

Generator Engine Performance Data	Basic Engine Model:	FR92539 @ 1500 RPM		
DONGFENG CUMMINS ENGINE Co.,LTD Xiangfan, Hubei Province, China http://www.dcec.com.cn	**4B3.9-G2** **FR92539**	**Configuration** **D381004GX02**	**CPL Code** **CPL: 3114**	**Revision** **2009-4-15**

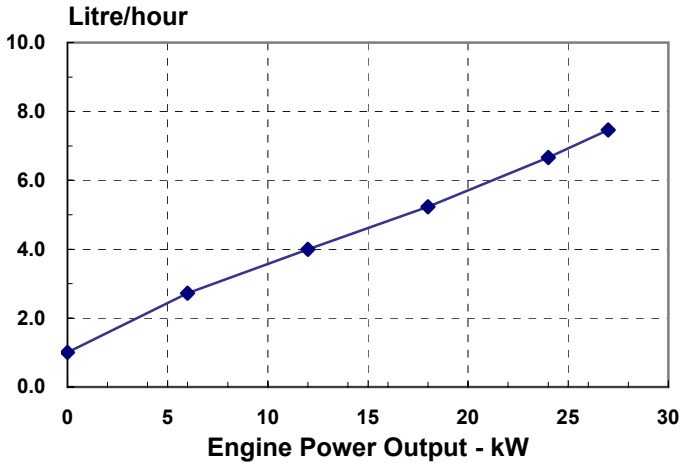
Compression Ratio:	**17.3:1**	Aspiration:	**Naturally Aspirated**
Bore:	**102 mm**	Displacement:	**3.9 L**
Storke:	**120 mm**	No. of Cylinders:	**4**
Governor Regulation:	**≤5%**	Fuel System:	**BYC A/GAC 24V**

All data is based on the engine operating with fuel system, water pump, and 10 in H_2O (2.488 kPa) inlet air restriction with 5.98 in (152mm) inner diameter, and with 2.01 in Hg (7 kPa) exhaust restriction with 4.02 in (102 mm) inner diameter; not included are alternator, fan, optional equipment and driven components. Coolant flows and heat rejection data based on coolants as 50% ethylene glycol/50% water. All data is subject to change without notice.

Engine Speed	Standby Power		Prime Power		Continuous Power	
RPM	kW	HP	kW	HP	kW	HP
1500	27	36	24	32	TBD	TBD

Engine Performance Data @ 1500 RPM

OUTPUT POWER			FUEL CONSUMPTION	
%	kW	HP	g/kW.h	L/h
STANDBY POWER				
100	27	36	228	7.5
PRIME POWER				
100	24	32	229	6.7
75	18	24	240	5.2
50	12	16	275	4.0
25	6	8	374	2.7
CONTINUOUS POWER				
TBD	TBD	TBD	TBD	TBD



Engine Performance Data @ 1800 RPM

Not Available at 1800 RPM

Not Available at 1800 RPM

Curves shown above represent gross engine performance capabilities obtained and corrected in accordance with GB/T18297 conditions of 100kPa (29.61 in. Hg) barometric pressure [80 m (263 ft.) altitude], 25°C (77°F) inlet air temperature, and 1 kPa (0.30 in. Hg) water vapor pressure with No.0 diesel fuel. The engine may be operated without changing the fuel setting up to 2200 m (7218ft.) altitude.

GENERAL ENGINE DATA

Approximate Engine Weight (wet)	-kg	308
Mass Moment of Inertia of Rotating Components (No Flywheel)	-kg·m^2	0.143
Center of Gravity from Rear Face of Block	-mm	373
Center of Gravity above Crankshaft Centerline	-mm	163
Crankshaft Thrust Bearing Load Limit		
—Maximum Intermittent	-N	3425
—Maximum Continuous	-N	1112

ENGINE MOUNTING

Maximum (Static) Bending Moment at Front Support Mounting Surface	-N.m	435
Maximum (Static) Bending Moment at Side Pad Mounting Surface	-N.m	TBD
Maximum (Static) Bending Moment at Rear Face of Block	-N.m	1356
Moment of Inertia of Complete Engine		
— Roll Axis	-kg·m^2	16.5
— Pitch Axis	-kg·m^2	41.1
— Yaw Axis	-kg·m^2	35.4

EXHAUST SYSTEM

Maximum Back Pressure	-kPa	10
Exhaust Pipe Size Normally Acceptable	-mm	75
Maximum Static Supported Weight at the Turbocharger Outlet Flange	-N.m	13.5
Exhaust Manifold Insulation Acceptable	-Yes/No	No
Turbocharger Insulation Acceptable	-Yes/No	No

AIR INTAKE SYSTEM

Maximum Intake Air Restriction with Heavy Duty Air Cleaner		
— Dirty Element	-kPa	6
— Clean Element	-kPa	4
Minimum Dirt Holding Capacity with Heavy Duty Air Cleaner	-g/cfm	53
Maximum Temperature Rise from Ambient to the Inlet of the Turbocharger	-℃	17
Recommended intake piping size (inner diameter)	-mm	76

LUBRICATION SYSTEM

Minimum Engine Oil Pressure for Engine Protection Devices:		
-Idle Speed	-kPa	207
-Governed Speed	-kPa	345
Maximum Oil Temperature	-℃	121
Oil Capacity with OP 9006 Oil Pan : High - Low	-litre	9.5 - 8.5
Minimum Required Lube System Capacity - Sump plus Filters	-litre	10.9
Angularity of Standard Oil Pan: (Values stated are for intermittent operation only):		
— Front Down	- º	40
— Front Up	- º	40
— Side to Side	- º	40

FUEL SYSTEM

Type Injection System		BYC A Direct Injection
Maximum Restriction at Lift Pump	-mmHg	102
Maximum Allowable Head on Injector Return Line (Consisting of Friction Head and Static Head)	-mmHg	508
Total Drain Flow (constant for all loads)	-litre/hr	30

COOLING SYSTEM

Coolant Capacity - Engine Only	-litre	7.2
Maximum Coolant Friction Head External to Engine -1800 rpm	-kPa	35
-1500 rpm	-kPa	28
Maximum Static Head of Coolant Above Engine Crank Centerline	-m	14
Standard Thermostat (Modulating) Range	-℃	82 - 95
Minimum Pressure Cap	-kPa	69
Maximum Top Tank Temperature for Standby / Prime Power	-℃	104 / 100

ELECTRICAL SYSTEM

Cranking Motor (Heavy Duty, Positive Engagement)……	-volt	12V	24V
Battery Charging System, Negative Ground……	-ampere	63	40
Maximum Allowable Resistance of Cranking Circuit……	-ohm	0.00075	0.002
Minimum Recommended Battery Capacity			
• Cold Soak @ 10 °F (-12 °C) and Above……	-0°F CCA	625	(312)

Fuel Rating Option used for these Data: **FR92539**

		STANDBY POWER		PRIME POWER	
		1800	1500	1800	1500
Governed Engine Speed……	-rpm				
Engine Idle Speed……	-rpm		950 - 1050		950 - 1050
Gross Engine Power Output……	-kW		27		24
Piston Speed.....	-m/s		6		6
Friction Horsepower……	-kW		8.2		8.2
Engine Water Flow to Engine:……	-litre/sec.		2.2		2.2
Intake Air Flow……	-litre/sec.	**N/A**	33	**N/A**	33
Exhaust Gas Temperature……	-℃		410		380
Exhaust Gas Flow……	-litre/sec.		71		68
Radiated Heat to Ambient……	-kW		TBD		TBD
Heat Rejection to Coolant……	-kW		29		25.9
Heat Rejection to Exhaust……	-kW		TBD		TBD

ALL DATA CERTIFIED WITHIN 5%

TBD = To Be Decided N/A = Not Applicable N.A. = Not Available

All data is subject to change without notice, sorry for inform.

Dongfeng Cummins Engine Co., Ltd.