



DONGFENG CUMMINS ENGINE
PERFORMANCE CURVE

Engine Model
6BTA5.9-C170

Curve No.
FR91342

CPL Code
8541

Date
2006-7

Displacement: 5.9L

Bore: 102mm

Stroke: 120mm

Fuel System: Weifu PW/RSV

Cylinders: 6 Cylinders, in Line

Advertised Power: 125kW@2300 rpm

170HP@2300 rpm

Aspiration: Turbocharged & Inter-cooled

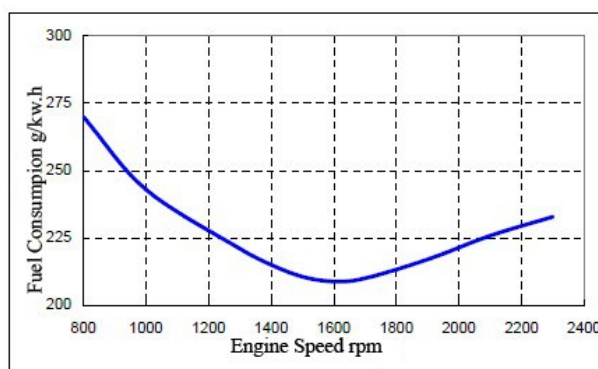
Rating Type: Continuous



Torque	
rpm	N.m
800	308
1000	428
1300	615
1400	630
1500	620
1600	603
1700	590
1900	565
2100	544
2300	518



Power	
rpm	kW
800	26
1000	45
1300	84
1400	92
1500	97
1600	101
1700	105
1900	112
2100	120
2300	125



Fuel Consumption	
rpm	g/kW.h
800	270
1000	243
1300	221
1400	215
1500	211
1600	209
1700	210
1900	217
2100	226
2300	233

All performance data based on the standard status and GB/T18297 conditions.



Cummins Engine Co. Ltd

Diesel Engine for Engineering Performance Data

General Engine Data

Engine Wet Weight (Pricing Configuration).....	443 kg
Moment of Inertia of Rotating Components (No Flywheel).....	0.25 kg·m ²
Center of Gravity from Front Face of Block.....	391 mm
Center of Gravity above Crankshaft Centerline.....	140 mm
Crankshaft Thrust Bearing Load Limit	
—Maximum Intermittent.....	3425 N
—Maximum Continuous.....	1112 N

Engine Mounting

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

Exhaust System

Maximum Back Pressure.....	76 mmHg
Exhaust Pipe Size Normally Acceptable.....	75 mm
Maximum Static Supported Weight at the Turbocharger Outlet Flange.....	13.5 N·m
Exhaust Manifold Insulation Acceptable.....	N/A
Turbocharger Insulation Acceptable.....	N/A

Air Intake System

Maximum Intake Air Restriction with Heavy Duty Air Cleaner	
— Clean Element.....	381 mmH ₂ O
— Dirty Element.....	635 mmH ₂ O
Minimum Dirt Holding Capacity with Heavy Duty Air Cleaner.....	53 g/litre/sec.
Maximum Temperature Rise from Ambient to the Inlet of the Turbocharger.....	17 °C
Maximum Pressure Drop from the Turbocharger Outlet to the Intake Manifold.....	TBD kPa

Lubrication System

Normal Operating Oil Pressure Range.....	69 – 345 kPa
Maximum Lube Oil Flow for Engine Accessories.....	4.0 litre/min.
Maximum Sump Oil Temperature.....	127 °C
Minimum Engine Oil Pressure for Engine Protection Devices:	
— At Rated Speed and Load.....	276 kPa
— At Torque Peak Speed and Load.....	207 kPa
— At Low Idle.....	69 kPa

Minimum Required Lube System Capacity - Sump plus Filters.....	16.3 litre
By-pass Filtration Required.....	No
Angularity of Standard Oil Pan: (Values stated are for intermittent operation only):	
— Front Down.....	45 °
— Front Up.....	45°
— Side to Side.....	45°
Cooling System	
Coolant Capacity - Engine Only.....	10.4 L
Maximum Engine Cooling Circuit External Resistance.....	34 kPa
Minimum Pump Inlet Pressure with Open Thermostat and no Pressure Cap.....	TBD
Maximum Static Head of Coolant Above Engine Crankshaft Centerline.....	TBD
Standard (modulating) Thermostat Range.....	82-93 °C
Maximum Block Coolant Pressure with Closed Thermostat and no Pressure Cap.....	276 kPa
Minimum Pressure Cap.....	50 kPa
Maximum Engine Coolant Temperature at Engine Outlet.....	100°C
Maximum Engine Coolant Temperature for Engine Protection Devices.....	101.6°C
Minimum Engine Coolant Temperature.....	71°C
Minimum Fill Rate.....	19 litre/min
Maximum Initial Fill Time.....	5 min
Minimum Coolant Expansion Space.....	6% of System Capacity
Maximum Deaeration Time.....	25 min.
Minimum Drawdown.....	11% of Total System Capacity
(Drawdown Must Exceed the Volume Not Filled at Initial Fill & Must Not Include Expansion Space)	
Fan-on Engine Coolant Outlet Temperature.....	93°C
Shutter Opening Coolant Outlet Temperature.....	85°C
Shutter Opening Intake Manifold Air Temperature.....	65.6
Fueling System	
Maximum Fuel Flow on the Supply Side of the Fuel Pump.....	193 kg/hr
— with clean fuel filter.....	102 mmHg
— with dirty fuel filter.....	203 mmHg
Maximum Fuel Drain Restriction	
— with check valves.....	TBD
— less check valves.....	510mmHg
Maximum Fuel Inlet Temperature.....	71°C
Minimum Fuel Tank Air Venting Capability Required at 6 in. H2O Back Pressure.....	340 litre/hr
Low Idle Set Speed.....	750 rpm
Maximum Governed Speed (10% of Rated Torque)	2450 rpm
Maximum Over speed Capability.....	3750 rpm
Emission	
Estimated Free Field Sound Pressure Level At 15 m (50 ft.) and Full-Load Governed Speed	
(Excludes Noise from Intake, Exhaust, Cooling System and Driven Components)	

—Right Side.....	N/A
—Left Side.....	N/A
—Front.....	N/A
—Rear.....	N/A

Fuel Rating Option used for these Data: FR91536

	Rated Power	Max. Power Point	Peak Torque
Engine Speed..... -rpm	2300		1400
Gross Power Output..... -kW	125		92.4
Torque..... -N.m	518		630
Intake Manifold Pressure..... -kPa	100		75
Motoring Friction Horsepower..... -kW	20		9
Turbocharger Compressor Outlet Pressure..... -kPa	105		75
Intake Air Flow..... -litre/sec	217		111
Exhaust Gas Flow..... -litre/sec	500		245
Exhaust Gas Temperature - Dry Stack..... -°C	450		530
Heat Rejection to Ambient (Dry Manifold)..... -kW	TBD		TBD
Heat Rejection to Coolant (Dry Manifold)..... -kW	80		50
Heat Rejection to Fuel..... -kW	0.7		0.3
Engine Coolant Flow..... -litre/sec	3.2		2.0
External Cooling Circuit Resistanc..... - Kpa△P	20.7		20.7
Altitude Limitations:	N/A		N/A
—Intermittent..... -m	3050		3050
—Continuous..... -m	TBD		TBD
Steady State Smoke..... -Bosch	1.5		2.5

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.