



CHONGQING CUMMINS ENGINE PERFORMANCE CURVE

Engine Model
NTA855-G2A

Curve No.
C-173E

Rev
01

CPL Code
CQ130

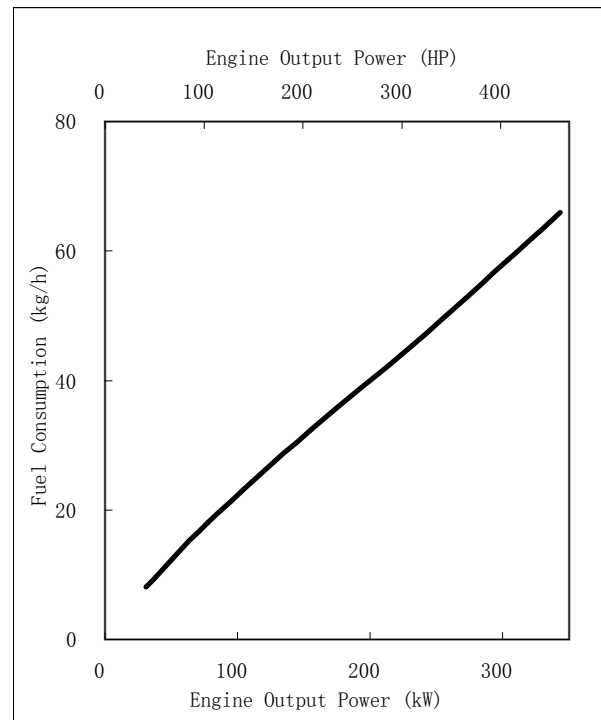
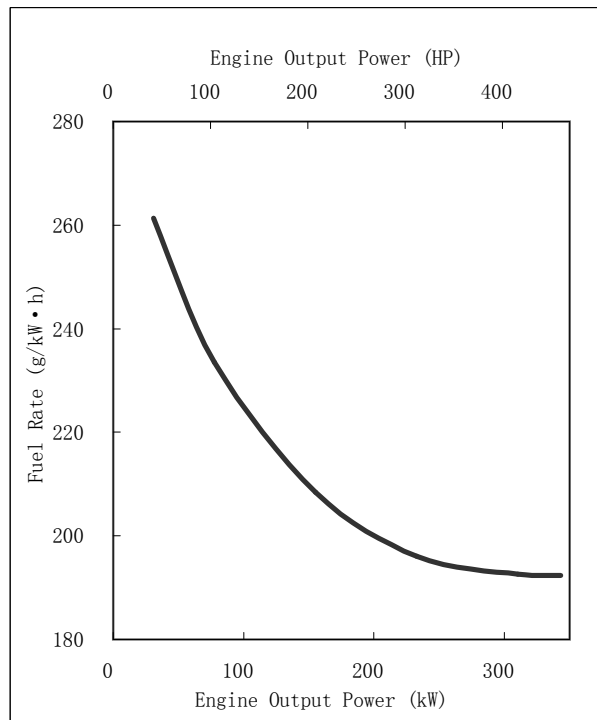
Data Sheet
DS-173E

Description
FR-173E

Date
2006-9-22

Displacement: **14L** [855 in.³] Cylinders: **6** Fuel System: **PT**
Bore: **140mm** [5.50 in.] Speed: **1500 r/min** Cfg. Number: **D093517DX02**
Stroke: **152mm** [6.00in.] Aspiration: **Turbocharged & Aftercooled**

Standby Power		Prime Power		Continuous Power	
kW	HP	kW	HP	kW	HP
343	460	310	415		



	Output Power		Fuel Consumption		Fuel Rate
	HP	kW	kg/h	L/h	g/kW·h
110%	460	343	66.0	79.5	192.4
100%	415	310	59.7	71.9	192.6
75%	311	233	45.6	54.9	196.1
50%	208	155	32.3	38.9	208.4
25%	104	78	18.1	21.8	233.5
10%	42	31	8.1	9.8	261.3

All data is based on :

--Engine Operating with fuel system, water pump, lubricating oil pump, air cleaner and exhaust silencer, fan, and optional driven components.

--Engine operating with fuel corresponding to grade No.2-D per ASTM D975.

--ISO 3046, Part1, Standard Reference Conditions of : Barometric Pressure:100kPa(29.5in.Hg); Altitude: 110m (361ft.); Air Temperature: 25℃ (77°F) ; Relative Humidity: 30% .

All Data is Subject to Change Without Notice - contact CCEC for latest data . Tel : 86-400-889-9990



Chongqing Cummins Engine Co. Ltd.

Engine Data Sheet

MODEL: NTA855-G2A
CONFIGURATION NO.: D093517DX02

DATA SHEET: DS-173E

PERFORMANCE CURVE: C-173E

CPL NUMBER: CQ130

INSTALLATION DIAGRAM: 4061365

PRIME POWER: 415 HP (310 kW) at 1500 r/min

DATE: 2006-9-22

STANDBY POWER: 460 HP (343 kW) at 1500 r/min

REVISION: 02

GENERAL ENGINE DATA

Type.....	4-Cycle;In-line;6-Cylinder
Aspiration	Turbocharged,Aftercooled
Bore x Stroke - in.×in. (mm×mm).....	5.5 ×6 (140 × 152)
Displacement - in. ³ (L).....	855 (14)
Compression Ratio	14.0:1
Firing Order	1-5-3-6-2-4

Dry Weight

--Fan to Flywheel Engine - lb. (kg).....	2870 (1300)
--Heat Exchanger Cooled Engine - lb. (kg).....	3095 (1410)

Wet Weight

--Fan to Flywheel Engine - lb. (kg).....	2970 (1350)
--Heat Exchanger Cooled Engine - lb. (kg).....	3320 (1510)

Moment of Inertia of Rotating Components - With FW1109 flywheel - lb.·ft. ² (kg·n	118.5 (4.99)
Center of Gravity from Rear Face of Flywheel Housing - in.(mm)	27.7 (704)
Center of Gravity Above Crankshaft Centerline - in.(mm)	5.5 (140)

ENGINE MOUNTING

Maximum Allowable Bending Moment at Rear Face of Block - lb.·ft. (N·m).....	1000 (1356)
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EXHAUST SYSTEM

Maximum Allowable Back Pressure - in.Hg (kPa).....	3.0 (10)
Standard Exhaust Pipe Diameter - in. (mm).....	5.0 (127)

AIR INDUCTION SYSTEM

Maximum Allowable Intake Air Restriction

--With Clean Filter Element - in. H ₂ O (kPa).....	15 (3.74)
--With Dirty Filter Element - in. H ₂ O (kPa)	25 (6.22)
Minimum Dirt Holding Capacity - g/CFM (g/L/s).....	25 (53)
Maximum Allowable Intake Air Temperature ΔT - °F (°C).....	30 (17)

COOLING SYSTEM

Coolant Capacity - Engine Only - U.S. gal (L).....	5.5 (20.8)
- With Radiator - U.S. gal (L).....	16.0 (60.6)
- With Heat Exchanger - U.S. gal (L).....	13.0 (49.2)
Maximum Coolant Friction Head External to Engine - PSI (kPa).....	6 (41)
Maximum Static Head of Coolant (exclusive of Pressure Cap) - PSI (kPa)	15 (103)
Maximum Static Head of Coolant Above Engine Crank Centerline -ft. (m)	46 (14.0)
Standard Thermostat (Modulating) Range - °F (°C)	180 - 202 (82 - 94)
Minimum Allowable Pressure Cap -PSI (kPa).....	7.0 (48.2)
Maximum Coolant Temperature - °F (°C).....	205 (96)
Maximum Top Tank Temperature - °F (°C).....	212 (100)
Minimum Top Tank Temperature - °F (°C).....	160 (71)
Maximum Allowable Top Tank Temperature for Standby / Prime Power - °F (°C).	220 / 212 (104 / 100)
Minimum Recommended Top Tank Temperature - °F (°C).....	160 (71)

Minimum Coolant Expansion Space - % of System Capacity	5	
Minimum Coolant Makeup Capacity - U.S. gal (L).....	1.1	(4.2)
Maximum Raw Water Pressure at Engine Outlet -PSI (kPa).....	15	(103)
Maximum Inlet Restriction at Raw Water Pump - in.Hg (kPa).....	10	(34)
Maximum Raw Water Pump Initial Suction Lift- ft. (m).....	3.05	(10)
Minimum Raw Water Pipe Size - in. (mm).....	2	(51)
Allowable Pressure Drop Across Keel Cooler -PSI (kPa).....	4	(28)

LUBRICATION SYSTEM

Oil Pressure @ Idle Speed - PSI (kPa).....	15 Min	(103) Min
@ Governed Speed - PSI (kPa).....	35-50	(241 - 345)
Maximum Allowable Oil Temperature - °F (°C).....	250	(121)
Maximum Oil Consumption - U.S.qt./h (L/h).....	0.25	(0.24)
Oil Pan Capacity - Low / High - U.S. gal. (L).....	7.5 / 9.5	(28.4 / 36.0)
Total System Capacity - U.S. gal. (L).....	10.2	(38.6)
Angularity of Oil Pan - Front Down/Front Up/Side to Side.....	38°/38°/38°	

FUEL SYSTEM

Type Injection System.....	Direct Injection Cummins PT	
Maximum Allowable Restriction to Fuel Pump		
-- With Clean Fuel Filter - in.Hg (kPa).....	4.0	(13.5)
-- With Dirty Fuel Filter - in.Hg (kPa).....	8.0	(27.1)
Maximum Allowable Head on Injector Return Line		
-- With Check Valve - in.Hg (kPa).....	6.5	(22.0)
-- Without Check Valve - in.Hg (kPa).....	2.5	(8.5)
Minimum Fuel Supply Line Size - in. (mm).....	0.625	(16)
Minimum Fuel Return Line Size - in. (mm).....	0.5	(13)
Maximum Fuel Pump Supply - U.S.gal/h (L).....	83	(314)
Fuel Rail Pressure - PSI (kPa).....	204	(1407)
Maximum Fuel Temperature °F (°C).....	160	(71)

ELECTRICAL SYSTEM

Minimum Recommended Battery Capacity (24V)		
-- Cold Soak (No Load) - CCA.....	900	
- Minimum Reserved Capacity - CCA.....	320	
-- Cold Soak (With Load) - CCA.....	900	
- Minimum Reserved Capacity - CCA.....	320	
Maximum Allowable Resistance of Cranking Circuit - ohm.....	0.002	
Standard Cranking Motor (Heavy Duty , Positive Engagement) - volt.....	24	
Standard Battery Charging System , Negative Ground - ampere.....	35	

PERFORMANCE DATA

Idle Speed - r/min	575 - 650	
Maximum No-Load Governed Speed - r/min	1850	
Maximum over Speed Capability - r/min	2700	
Minimum Crankshaft Rotation for unaided Cold Start - r/min.....	150	
Minimum Torque for unaided Cold Start - lb.·ft. (N·m).....	375	(509)
Exhaust Sound Pressure at 1m from Exhaust Outlet -1500r/min -dBA.....	N/A	

All data is based on :

--Engine Operating with fuel system, water pump, lubricating oil pump, air cleaner and exhaust silencer, fan, and optional driven components.

--Engine operating with fuel corresponding to grade No.2-D per **ASTM D975**.

--**ISO 3046**, Part1, Standard Reference Conditions of : Barometric Pressure:100kPa(29.5in.Hg); Altitude: 110m (361ft.); Air Temperature: 25°C (77°F) ; Relative Humidity: 30% .

--This Data Sheet includes both air-cooled (Fan/Radiator) & raw water cooled (Heatexchanger/Raw Water Pump) type engine.

	Rated Condition		Max Condition	
	50Hz		50Hz	
	1500		1500	
Governed Engine Speed - r/min.....				
Gross Engine Power Output - HP (kW)	415	(310)	460	(343)
Torque lb.-ft. (N·m).....	1456	(1974)	1611	(2184)
Brake Mean Effective Pressure - PSI (kPa)	257	(1771)	284	(1960)
Piston Speed - ft./min (m/s).....	1500	(7.62)	1500	(7.62)
Friction Horsepower - HP (kW).....	30	(22)	30	(22)
Intake Air Flow - CFM (L/s)	795	(375)	850	(401)
Engine Water Flow - GPM (L/min.)	79	(5)	79	(5)
Raw Water Flow - GPM (L/s)	54	(3.4)	54	(3.4)
Fuel Consumption - U.S.gal/h (L/h).....	19.0	(72)	21.0	(80)
Oil Flow - GPM (L/s)	35	(2.2)	35	(2.2)
Exhaust Gas Temperature (After Turbine) - °F (°C).....	1027	(553)	1036	(558)
Exhaust Gas Flow (After Turbine) - CFM (L/s).....	2090	(986)	2320	(1095)
Air to Fuel Ratio.....	24.8 : 1		24 : 1	
Heat Radiation - BTU (kW).....	2210	(39)	2440	(43)
Heat Rejection to Coolant - BTU (kW).....	13230	(233)	14640	(257)
Heat Rejection to Ambient - BTU (kW).....	11030	(194)	12200	(214)

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Data Sheet: DS-173E

Date: 2006-9-22

CHONGQING CUMMINS ENGINE CO. LTD.

CHONGQING, CHINA, 400031

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