



# Chongqing Cummins Engine Co. Ltd.

## Engine Data Sheet

**MODEL:** NTA855-G1A  
**CONFIGURATION NO.:** D092473DX02  
**CPL NUMBER:** CQ103

**DATA SHEET:** DS-172E  
**PERFORMANCE CURVE:** C-172E  
**INSTALLATION DIAGRAM:** 4061365

**PRIME POWER:** 350 HP (261 kW) at 1500 r/min  
**STANDBY POWER:** 390 HP (291 kW) at 1500 r/min

**DATE:** 2006-9-22  
**REVISION:** 04

### 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. <sup>3</sup> (L).....	855	( 14 )
Compression Ratio .....	14.5:1	
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. <sup>2</sup> (kg·m)	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 <sub>2</sub> O (kPa).....	15	( 3.74 )
--With Dirty Filter Element - in. H <sub>2</sub> 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).....	71	( 270 )
Fuel Rail Pressure - PSI (kPa).....	201	( 1382.5 )
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 .....	1800	
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.....	1500		1500	
Gross Engine Power Output - HP (kW) .....	350	(261)	390	(291)
Torque lb.-ft. (N·m).....	1226	(1662)	1367	(1853)
Brake Mean Effective Pressure - PSI (kPa) .....	216	(1491)	241	(1663)
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) .....	747	(353)	802	(379)
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).....	16.2	(61)	18.0	(68)
Oil Flow - GPM (L/s) .....	35	(2.2)	35	(2.2)
Exhaust Gas Temperature (After Turbine) - °F (°C).....	904	(484)	928	(498)
Exhaust Gas Flow (After Turbine) - CFM (L/s).....	1751	(826)	1984	(936)
Air to Fuel Ratio.....	27.3 : 1		26.3 : 1	
Heat Radiation - BTU (kW).....	1860	(33)	2070	(36)
Heat Rejection to Coolant - BTU (kW).....	11140	(196)	12420	(218)
Heat Rejection to Ambient - BTU (kW).....	9290	(163)	10350	(182)

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Date: 2006-9-22

**CHONGQING CUMMINS ENGINE CO. LTD.**

CHONGQING, CHINA, 400031

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