



Chongqing Cummins Engine Co. Ltd.

Engine Data Sheet

MODEL: NTAA855-G7
CONFIGURATION NO.: D093629DX02
CPL NUMBER: CQ122

DATA SHEET: DS-164E
PERFORMANCE CURVE: C-164E
INSTALLATION DIAGRAM: 4061323

PRIME POWER 460 HP (343 kW) at 1500 r/min
STANDBY POWER: 505 HP (377 kW) at 1500 r/min

DATE: 2006-9-22

REVISION: 04

GENERAL ENGINE DATA

| | | |
|---|-----------------------------|---------------|
| Type..... | 4-Cycle;In-line;6-Cylinder | |
| Aspiration | Turbocharged,Air-Air Cooled | |
| 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 | | |
| --Engine Only - lb. (kg)..... | 2800 | (1270) |
| Wet Weight | | |
| --Engine Only - lb. (kg)..... | 2910 | (1320) |
| Moment of Inertia of Rotating Components - With FW1109 flywheel - lb.ft. ² (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) |
|--|------|----------|

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) |
| Maximum Intake Pressure Fall from Turbo to Intake Manifold - PSI (kPa)..... | 5.0 | (17) |
| Maximum Intake Manifold Temperature Rise - °F (°C)..... | 43 | (24) |
| 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) |
| 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) |
| Minimum Coolant Expansion Space - % of System Capacity | 5 | |
| Minimum Coolant Makeup Capacity - U.S. gal (L)..... | 1.1 | (4.2) |

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)..... | 98 | (371) |
| Fuel Rail Pressure - PSI (kPa)..... | 149 | (1028) |
| 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.

| | Prime Power | | Standby Power | |
|--|-------------|--------|---------------|--------|
| | 50Hz | | 50Hz | |
| | 1500 | | 1500 | |
| Governed Engine Speed - r/min..... | | | | |
| Gross Engine Power Output - HP (kW) | 460 | (343) | 505 | (377) |
| Torque lb.-ft. (N·m)..... | 1611 | (2184) | 1770 | (2400) |
| Brake Mean Effective Pressure - PSI (kPa) | 284 | (1960) | 312 | (2154) |
| 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) | 1081 | (510) | 1028 | (485) |
| 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)..... | 22.6 | (86) | 24.8 | (94) |
| Oil Flow - GPM (L/s) | 35 | (2.2) | 35 | (2.2) |
| Exhaust Gas Temperature (After Turbine) - °F (°C)..... | 843 | (451) | 926 | (497) |
| Exhaust Gas Flow (After Turbine) - CFM (L/s)..... | 2432 | (1150) | 2313 | (1090) |
| Air to Fuel Ratio..... | 28.3 : 1 | | 24.5 : 1 | |
| Heat Radiation - BTU (kW)..... | 2440 | (43) | 2680 | (47) |
| Heat Rejection to Coolant - BTU (kW)..... | 14640 | (257) | 16090 | (283) |
| Heat Rejection to Ambient - BTU (kW)..... | 12200 | (214) | 13410 | (236) |

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CHONGQING, CHINA, 400031

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