


| | | | | |
|---|---|-------------------------------------|------------------------------|--------------------------|
|  | CHONGQING CUMMINS ENGINE PERFORMANCE CURVE | Engine Model KT38-D(M) | Curve No. D(M)-643 | |
| | | Configuration D232018DX02 | CPL Code CQ606 | Date 18-Dec-08 |

Displacement: **38L [2300 in.³]**
 Bore: **159mm [6.25 in.]**
 Stroke: **159mm [6.25 in.]**
 Fuel System: **PT**
 Cylinders: **12**

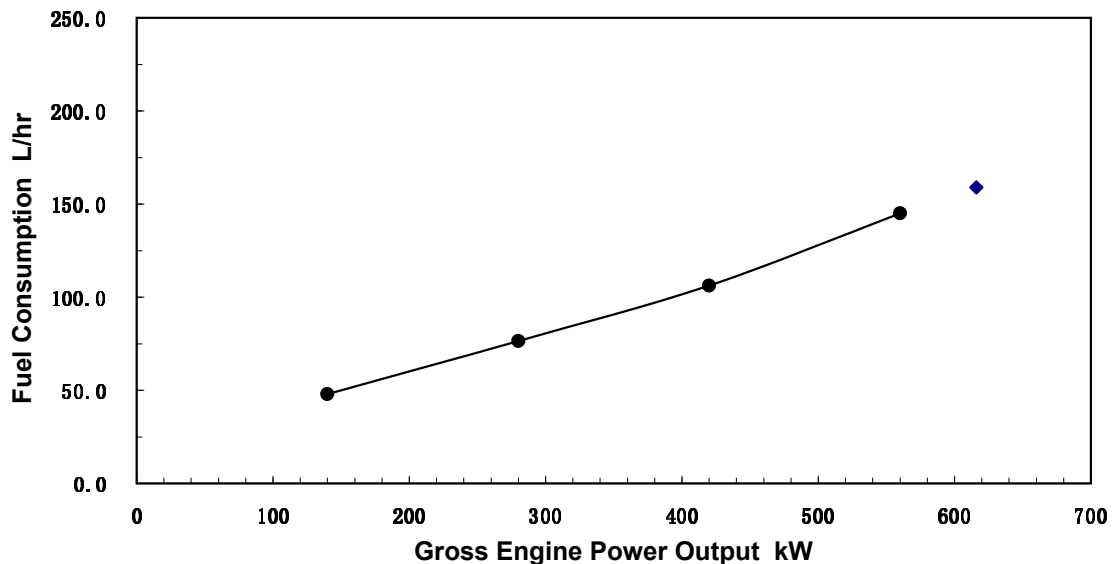
Prime Power: **560 [750] @1500 kW [HP]**
 Aspiration: **Turbocharged**
 Exhaust: **Dry**

CERTIFIED: This marine diesel engine complies with or is certified to the: IMO-NOx requirements of the International Maritime Organization (IMO), MARPOL 73/78 Annex VI, Regulation 13

| Engine Speed | Overload Capacity | | Prime Power | |
|--------------|-------------------|-----|-------------|-----|
| r/min | kW | bhp | kW | bhp |
| 1500 | 616 | 825 | 560 | 750 |

Engine Performance Data @ 1500 r/min

| OUTPUT POWER | | | FUEL CONSUMPTION | | | |
|------------------------------|-----|-----|------------------|----------|-------|--------|
| % | kW | bhp | kg/kW.h | lb/bhp.h | l/hr | gal/hr |
| 10% Overload Capacity | | | | | | |
| 110 | 616 | 825 | 0.219 | 0.361 | 159.0 | 42.0 |
| Prime Power | | | | | | |
| 100 | 560 | 750 | 0.220 | 0.363 | 145.0 | 38.3 |
| 75 | 420 | 563 | 0.215 | 0.354 | 106.2 | 28.1 |
| 50 | 280 | 375 | 0.232 | 0.382 | 76.4 | 20.2 |
| 25 | 140 | 188 | 0.291 | 0.479 | 47.9 | 12.7 |



Rating Conditions: Ratings are in accordance with ISO-3046 reference conditions; air pressure at 100 kPa (29.61.in Hg.), air temperature 25°C (77°F), and 30% relative humidity. The fuel consumption data is based on GB252 No.0 diesel fuel (No. 2 diesel fuel in U.S.) weight at 0.85 kg/litre (7.1 lb/U.S. gal).

Power output curves are based on the engine operating with fuel system, water pump, and lubricating oil pump; not included are battery charging alternator, fan, optional equipment, and driven components.

Operation at Elevated Temperatures for sustained operation above 40°C (104°F), derate 2% per 11°C (1% per 10°

Prime Power Rating is applicable for supplying continual electrical power at varied load. The following are the Prime Rating parameters:

* Prime Power is available for an unlimited number of hours per year in a variable load application. Variable load should not exceed a 70% average of the Prime Power rating during any operating period of 250 hours.

* The total operating time at 100% Prime Power shall not exceed 500 hours per year.

* There is a 10% overload capability for a period of 1 hour within a 12 hour period of operation. Total operating time at 10% overload shall not exceed 25 hours per year.



Chongqing Cummins Engine Co. Ltd.

Auxiliary Marine Engine Performance Data

Curve No.: D(M)-643
DS: DS-4983
CPL: CQ606
DATE: 18-Dec-08

General Engine Data¹

| | | |
|--|---------------|---------------|
| Engine Model..... | KT38-D(M) | |
| Rating Type | Prime Power | Overload |
| Rated Engine Power..... hp [kW] | 750 [560] | 825 [616] |
| Governed Engine Speed..... rpm | 1500 | |
| Rated HP Production Tolerance..... | ±2% | |
| Rated Engine Torque.....lb. ft. [N·m] | 2629 [3565] | 2892 [3921] |
| Idle Speed Range..... rpm | 575-650 | |
| Brake Mean Effective Pressure..... psi [kPa] | 171 [1179] | 188 [1297] |
| Compression Ratio | 15.5:1 | |
| Piston Speed..... ft/min [m/sec] | 1565 [7.95] | |
| Friction Power..... hp [kW] | 115 [86] | |

Fuel System¹

| | | |
|---|--------------|--------------|
| Fuel Consumption.....gal/hr [l/hr] | 38.3 [145] | 42 [159] |
| Approximate Fuel Flow to Pump.....gal/hr [l/hr] | 153 [580] | 168 [636] |
| Maximum Allowable Fuel Supply to Pump Temperature.....°F [°C] | 140 [60] | 140 [60] |
| Approximate Fuel Flow Return to Tank..... gal/hr | 115 [435] | 126 [477] |
| Fuel Rail Pressure.....psi [kPa] | 135 [930] | 148 [1020] |

Weight ¹

| | | |
|--|------------------|---------------|
| Dry - Engine Only | lb. [kg] | 8200 [3723] |
| Dry - Engine With Heatexchanger | lb. [kg] | 8641 [3923] |
| Installation Diagram No..... | 4915140 | |
| Hookup Diagram & Drawing, electrical circuit No..... | 4061349, 4061350 | |

Air System¹

| | | |
|--|--------------|--------------|
| Intake Manifold Pressure.....in. Hg [kPa] | 36 [122] | 38 [129] |
| Intake Air Flow.....cfm [l/sce] | 1699 [802] | 1849 [873] |
| Heat Rejection to Ambient.....BTU/min [kW] | 5464 [96] | 5977 [105] |

Exhaust System¹

| | | |
|---|---------------|---------------|
| Exhaust Gas Flow.....cfm [l/sec] | 4749 [2242] | 5348 [2525] |
| Exhaust Gas Temperature (Turbine Out).....°F [°C] | 1000 [538] | 1015 [546] |
| Heat Rejection to Exhaust.....BTU/min [kW] | 30737 [540] | 34038 [598] |

Cooling System¹

| | | |
|--|-----------------|---------------|
| Coolant Flow to Engine Heat Exchanger/Keel Cooler | | |
| Jacket Water Aftercooled Engines (JWAC) | | |
| Coolant Flow to Main Cooler (with open thermostat).....l/min [gal/min] | 409 [108] | |
| Standard Thermostat Operating Range (Min).....°F [°C] | 180 [82] | |
| Standard Thermostat Operating Range (Max).....°F [°C] | 199 [93] | |
| Heat Rejection to Engine Coolant ³BTU/min [kW] | 22142 [389] | 24476 [430] |
| Heat Rejection to LTA Coolant ³BTU/min [kW] | N.A. | |
| Sea Water Flow @ 10 psi Pump Discharge Pressure | l/min [gal/min] | |
| Pressure Cap Rating (With Heat Exchanger Option).....psi [kPa] | 7 [50] | |

TBD = To Be Determined

N/A = Not Applicable

N.A. = Not Available

1. All Data at Rated Conditions.
2. Consult Installation Direction Booklet for Limitations.
3. Heat rejection to coolant values are based on 50% water/50% ethylene glycol mix and do NOT include fouling factors. If sourcing your own cooler, a service fouling factor should be applied according to the cooler manufacturer's recommendation.
4. Consult option notes for flow specifications of optional Cummins seawater pumps (if applicable).

CHONGQING CUMMINS ENGINE CO. LTD.

CHONGQING, P.R.CHINA, 400031

All Data is Subject to Change Without Notice - contact CCEC for most recent data .