| | | | | | | | |
|---|---|---|---|---|---|---|---|
| CCEC | **Engine Data Sheet** | | | **Engine Family** | D35 | **Emission Level** | N/A |
| | | | | **Engine Model** | MTAA11-G3 | | |
| | **Advertised Horsepower** | STANDBY：310kW/1500r/min@50hz PRIME：282kW/1500r/min@50hz | | | | | |
| | **Curve Number** | FR-237 | **Data Sheet** | DS-237 | **CPL Code** | CQ223 | **Fuel System** | PT-STC |
| | **Engine Configuration** | D353009GX03 | | **Aspiration** | Turbo & Charge Air Cooling | Date Issued | 07/2008 |

## General Engine Data

Type …… 6 Cylinder, In-line, 4 Cycle

Aspiration …….. Turbocharged and Charge Air

Bore×Stroke -mm×mm ……..…… 125×147

Displacement –L ……...……..…….…. 10.8

Firing Order ……..…….…… 1-5-3-6-2-4

Compression Ratio ……..…… 15.0：1

Dry Weight (Including Flywheel and Generator,

Excluding other Electrical Component) -kg ……..……..…….… 973

Wet Weight -(kg) ……...……..……..…… 1007

Center of Gravity from Front Face of Block -mm ……..……...…..…… 450

Center of Gravity above Crankshaft Centerline -mm ……..…… 191

Moment of Inertia of Rotation Components (Excluding Flywheel) -kg • $m^2$ ……..……..…… 0.85

Installation Drawing ……..……..……..…… 4915163

## Engine Mounting

Maximum of Bending Moment @ RFOB -N.m ……..…… 1356

Moment of Inertia of Complete Engine (with FW2141) -kg • m2 ……...…… 2.63

## Performance Data

All data is based on：

The engine operating with fuel system, water pump, lubricating oil pump and air cleaner; not included alternator, compressor, fan, optional equipment and driven components.

The engine operating with No.0 diesel fuel which meets GB/T 252.

Standard Test Conditions (Refer to Part 1 of ISO 3046)：

—Barometric pressure： 100kPa

—Inlet air temperature： 25℃

—Altitude： 110m

—Relative Humidity： 30 %

Data represents gross engine performance capabilities obtained and corrected in accordance with SAE J1995.

Idle Speed -r/min……..……..……..……..……..……675–750

Minimum Engine Speed -r/min…..……..……..……..……500

Closed Throttle Torque at Minimum Engine Speed -N.m…..…….……340

Maximum Governed Speed -r/min ……..……..……..…….. 1800

Maximum Allowable Altitude –m ……..…….. 1500

Crankshaft Thrust Bearing load Limit：

—Maximum Intermittent -(N)……...…….……9000

—Maximum Continuous -(N) ...……...…….……4000

Steady State Stability Band at any Constant Load -% ……...… ±0.25

Maximum Over Speed Capability r/min ……..…… 1800

| **Performance Data（50HZ）** | **STANDBY** | **PRIME** |
|---|---|---|
| Engine Speed -r/min | 1500 | 1500 |
| Power Output –kW | 310 | 282 |
| Maximum Friction Power -kW | 22 | 22 |
| Engine Coolant Flow -L/s | 4.8 | 4.8 |
| **Engine Data with Dry Type Exhaust Manifold** | | |
| Intake Air Flow -L/s | 395 | 365 |
| Exhaust Gas Temperature (Before Turbo) -℃ | 595 | 580 |
| Exhaust Gas Temperature (After Turbo) -℃ | 440 | 435 |
| Exhaust Gas Flow -L/s | 950 | 850 |
| Radiated Heat to Ambient –kW | 43 | 40 |
| Heat Rejection to Coolant –kW | 95 | 83 |
| Heat Rejection to Exhaust –kW | 270 | 234 |
| Air to Fuel Ratio | 26:1 | 28:1 |

* Values are within ±5%.

# Coolant flow and heat rejection data are based on a coolant mixture of 50% water and 50% ethylene glycol.

## Exhaust System

Maximum Back Pressure –kPa ……..……..……..……..……..…. 10.0

Exhaust Pipe Size Normally Acceptable –mm ……..……..……..……..…. …….. 102

Maximum Bending Moment to the Turbo Flange -N.m ……..……..……..…….. 27

## Air Intake System

Maximum Temperature Rise Between Ambient Air and Engine Air Inlet -℃ …… 16

Maximum Allowable Intake Air Restriction With Heavy Duty Air Cleaner -kPa
—Clean Element ……..…..……..…… 2.5
—Dirty Element ……...……...……...… 6.2

Minimum Allowable Dirt Holding Capacity With Heavy Duty Air Cleaner -g/l/s ……..…. 6.3

## Charge Air Cooling

Design Parameters for Ambients:

Max. Inlet Manifold Temperature -℃ ……..……..…….. 55

Maximum △P Between Turbocharger Outlet with Intake Manifold –kPa …..…...…..……...….. 16.7

Intake Pipe Size Allowable –mm ……..……..……..... 100

## Cooling System

Coolant Capacity，Engine Only –L ……..……..……...… 9.5

Standard Thermostat (modulating) Range -℃ ….……..……..……..……..... 82–93

Maximum Coolant Friction Head External to Engine –kPa ……..……..……..... 34.5

Minimum Water Pump Inlet Pressure (Thermostat Full open and No Pressure Cap) –kPa ……..…… 8.5

Maximum Block Coolant Pressure with Closed Thermostat and no Pressure Cap –kPa ……..……..… 276

Maximum Pressure Cap –kPa ……..……..……..…….. 70

Maximum Engine Coolant temperature at Engine Outlet -℃

—Standby ……..…… 104

—Prime ……..…… 100

Minimum Engine Coolant temperature -℃ ….……..……...……..…... 70

Minimum Allowable Fill Rate -L/min .....……..……..……..…….. 19

Maximum Initial Fill Time –min. ……..……..……..……..…. 5

Minimum Coolant Expansion Space of System Capacity -%.…….…..... 5

Maximum Allowable Deaeration Time –min. …..……..…… 25

Minimum Allowable Drawdown –L …..……..……..……..… 7.1

Maximum Coolant Flow to Accessory -L/min. .……..……..…… 75

Minimum Coolant Capacity, Not Including Expansion Space –L ……..……..……..……. 9.5

## LUBRICATION SYSTEM

Oil Pan Capacity (OP2060):

—High –L ……34

—Low –L ……26

Total System Capacity with LF9009 Combine filter -L ……39

Angularity of Standard Oil Pan: OP 2060-Degrees: -Degree

—Front Down ……42

—Rear Down ……45

—Fuel Pump Side Down ……40

—Exhaust Side Down ……45

Normal Operate Oil Pressure Range –kPa ……207-276

Maximum Allowable Sump Oil Temperature -℃ ……121

Minimum Engine Oil Pressure for Engine Protection Devices -kPa:

—At Rated Speed and Load –kPa ……193

—At Low Idle –kPa ……69

Maximum Oil Consumption -g/kW.h ……0.24

## FUEL SYSTEM

Maximum allowable Restriction to PT Fuel Pump -kPa:

—With Clean Fuel Filter ……13.6

—With Dirty Fuel Filter ……27.1

Maximum Allowable Injector Return Line Restriction -kPa

—With Check Valves ……22

—Less Check Valves ……8.4

Minimum Allowable Fuel Tank Vent Capability -L/hr ……850

Maximum fuel Inlet Temperature -℃ ……71

## ELECTRICAL SYSTEM

**Battery Capacity (24V)**

Minimum Battery Capacity -Cold Soak at -18℃ or Above :

—Above 10℃ ……600

—0℃～10℃ ……640

—Less Than 0℃ ……900

Maximum Allowable Resistance of Starting Circuit With 24 volt Starter）-Ω …… 0.002

Maximum Starting Circuit Volt Drop @100 Amperes-Volt …… 0.2

## CRANKING SYSTEM

Minimum Cranking Speed Required for Unaided Cold Start -r/min ……..…….. 150

NOTE:

N/A = Not Applicable. TBD = To Be Determined.

**All Data is Subject to Change Without Notice.**

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