



CHONGQING CUMMINS ENGINE COMPANY LTD.

CONSTRUCTION PERFORMANCE CURVE

CONFIGURATION
D233047CX03

BASIC ENGINE MODEL:
KTA38-P1300

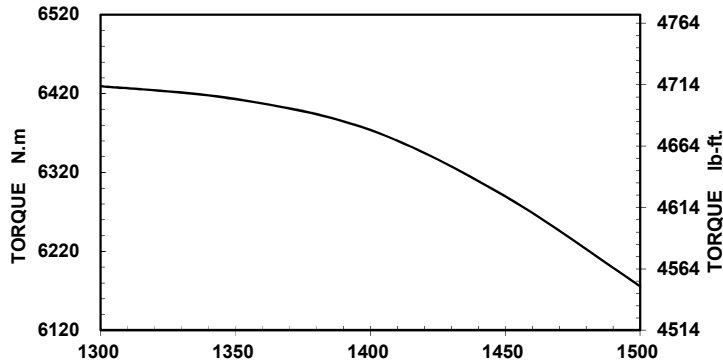
CURVE NUMBER:
C-624

CPL No.: 1543
DATE: 2018/7/6

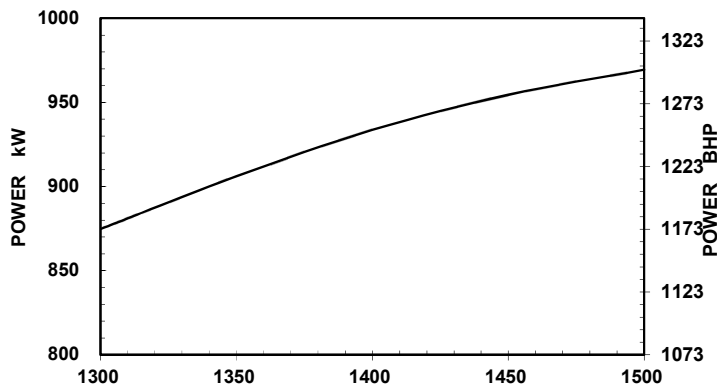
Displacement: 38L Aspiration: Turbocharged , Aftercooled RATING:
BoreXStroke: 159X159mm (6.25X6.25 in.) Fuel System: Cummins PT 1300BHP(970kW)@1500r/min
Compression Ratio: Emission Certification: N.A.

All data is based on the engine operating with fuel system, water pump, and 20 in. H₂O(4.98kPa) inlet air restriction with 5.8 in.(147mm) inner diameter, and with 2 in. Hg(7kPa) exhaust restriction with 8 in.(203mm) inner diameter; not included are alternator, fan, optional equipment and driven components. Coolant flows and heat rejection data based on coolant as 50% ethylene glycol/50% water. All data is subject to change without notice.

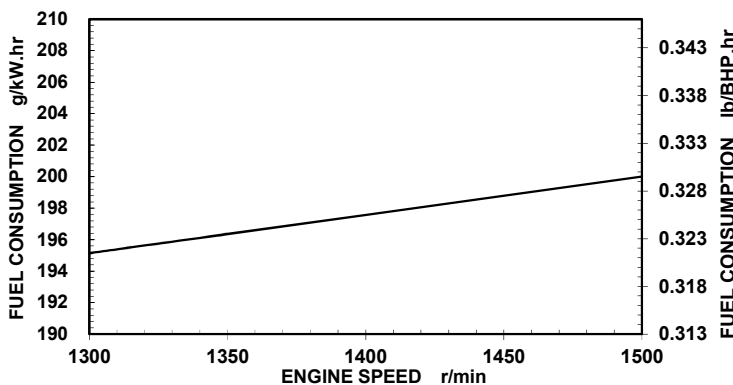
Rating Type: Intermittent



SPEED RPM	TORQUE		CONTINUOUS ---	
	MAXIMUM lb-ft.	--- N-m	lb-ft.	N-m
1500	4555	6176		
1450	4639	6290		
1400	4701	6374		
1350	4730	6413		
1300	4742	6429		



SPEED RPM	POWER OUTPUT		CONTINUOUS ---	
	MAXIMUM BHP	--- KW	BHP	KW
1500	1300	969		
1450	1280	954		
1400	1252	934		
1350	1215	906		
1300	1173	875		



RPM	FUEL CONSUMPTION	
	lb/BHP-HR	g/KW-HR
1500	0.329	200.0
1450	0.327	198.8
1400	0.325	197.6
1350	0.323	196.4
1300	0.321	195.1

Status for Corves and Data:
Tolerance: Within +/- 5%

Curves shown above represent gross engine performance capabilities obtained and corrected in accordance with SAE J1995 conditions of 29.61 in. Hg(100kPa) barometric pressure [300ft.(91m) altitude] 77deg F (25 deg C) inlet temperature, and 0.30 in. Hg(1kPa) water vapor pressure with No.2 diesel fuel.



CHONGQING CUMMINS ENGINE COMPANY LTD. ENGINE DATA SHEET

Data Sheet: DS-347
Date: 2018/7/6

ENGINE MODEL(S): KTA38-P1300

**MAXIMUM RATING: 1300BHF @1500r/min
970kW**

REFERENCE INFORMATION:

CONTINUOUS RATING:

EMISSION CERTIFICATION..... N.A.

CONFIGURATION..... D233047CX03

**MAXIMUM TORQUE AT
MAXIMUM RATING:**

CPL NUMBER 1543

PERFORMANCE CURVE NUMBER..... C-624

**MAXIMUM TORQUE AT
CONTINUOUS RATING:**

INSTALLATION DIAGRAM.....

GENERALENGINE DATA

Type.....	4 Cycle , 60° Vee , 12 Cylinder	
Aspiration.....	Turbocharged , Aftercooled	
Bore—in.(mm)×stroke—in.(mm).....	6.25×6.25	(159×159)
Displacement—in ³ (L).....	2300	(38)
Compression Ratio.....	14.5 :1	
Dry Weight		
Fan Hub to Flywheel Engine —lb(kg).....	8200	3719
Radiator Cooled Engine —lb(kg).....		
Wet Weight		
Fan Hub to Flywheel Engine —lb(kg).....	8854	(4016)
Radiator Cooled Engine —lb(kg).....		
Moment of Inertia of Rotating Components (Excluding Flywheel) —lb _m .ft ² (kg•m ²).....	94.0	(3.96)
C.G. Distance From Front Face of Block (Engine Only) —in(mm).....	32.0	(813)
C.G. Distance Above Crank Centerline (Engine Only) —in(mm).....	11.0	(279)
Firing Order.....	1R-6L-5R-2L-3R-4L-6R-1L-2R-5L-4R-3L	

ENGINE MOUNTING

Maximum Allowable Bending Moment at Rear Face of Block —lb.ft(N•m).....4500 (6101)

Moment of Inertia About Roll Axis —lb.ft²(kg•m²).....

EXHAUST SYSTEM

Maximum Allowable Back Pressure —in.Hg(kPa)..... 3 (10)

Exhaust Pipe Size Normally Acceptable —in(mm)..... 6 (152)

AIR INDUCTION SYSTEM

Maximum Allowable Intake Air Restriction With Heavy Duty Air Cleaner

 Clean Element —in.H₂O(kPa)..... 15 (3.74)

 Dirty Element —in.H₂O(kPa)..... 25 (6.23)

Minimum Allowable Dirt Holding Capacity With Heavy Duty Air Cleaner - gm/CFM(gm•L/s)... 25 (53)



**CHONGQING CUMMINS ENGINE COMPANY LTD.
ENGINE DATA SHEET**

**Data Sheet: DS-347
Date: 2018/7/6**

COOLING SYSTEM

Coolant Capacity

Engine Only —U.S.Gal(L).....	31	(117)
Radiator With 100°F —U.S.Gal(L).....	29.5	(111.7)
Maximum Coolant Friction Heat External to Engine —PSI(kPa).....	5.0	(34.5)
Maximum Static Head of Coolant Above Engine Crank Centerline —ft.(m).....	25	(7.6)
Standard Thermostat (modulating) Range— °F(°C).....	175-195	(80-90)
Maximum Coolant Pressure (Exclusive of Pressure Cap) —PSI(kPa).....	35	(241)
Minimum Allowable Pressure Cap— PSI(kPa).....	7	(48)
Maximum Allowable Top Tand Temperature —°F(°C).....	200	(93.3)
Minimum Recommended Top Tank Temperature —°F(°C).....	160	(71.1)
Minimum Allowable Fill Rate —U.S.GPM(L/min).....	5	(18.9)
Maximum Allowable Initial Fill Time —min.....	5	
Minimum Allowable Coolant Expansion Space —% of System Capacity.....	5	
Maximum Allowable Deaeration Time —min.....	25	
Minimum Allowable Drawdown —U.S.Gal(L).....	5.5	(20.8)

(Drawdown Must Exceed the Volume Not Filled at Initial Fill & Must Not Include Expansion Space)

LUBRICATION SYSTEM

Oil Pressure

@ Idle —PSI(kPa).....	20	(138)
@ Rated Speed —PSI(kPa).....	45-65	(310-448)
Oil Flow at Rated Speed —U.S.GPM(L/min).....	124	(469.4)
Maximum Allowable Oil Temperature —°F(°C).....	225	(124.0)
Maximum Oil Consumption —U.S.Gal/h(L/h).....		

By-Pass Filter Capacity

Spin-on Cartridge Type —U.S.Gal(L).....	2 X 0.7	(2 X 2.6)
---	---------	-----------

Oil Pan Capacity

High —U.S.Gal(L).....	49.0	(185.5)
Low —U.S.Gal(L).....	34.0	(128.7)

Total System Capacity (Excluding By-Pass Filter) —U.S.Gal(L).....	53.0	(201.0)
---	------	---------

Angularity of Standard Oil Pan (Option OP

Front Down.....	30°
Front Up.....	30°



**CHONGQING CUMMINS ENGINE COMPANY LTD.
ENGINE DATA SHEET**

**Data Sheet: DS-347
Date: 2018/7/6**

FUEL SYSTEM

Maximum allowable Restriction to PT Fuel Pump		
With Clean Fuel Filter —in.Hg(kPa).....	4	(13.55)
With Dirty Fuel Filter —in.Hg(kPa).....	8	(27.09)
Maximum Allowable Injector Return Line Restriction		
With Check Valves —in.Hg(kPa).....	6.5	(22)
Less Check Valves —in.Hg(kPa).....	2.5	(8)
Minimum Allowable Fuel Tank Vent Capability —ft ³ /h (L/h)	30	(850)
(With 2.5 in. Hg (63 mm Hg) or Less Back Pressure)		

ELECTRICAL SYSTEM

Minimum Recommended Battery Capacity (Cold Soak at 0°F(-18 °C) or Above V.....			24
Engine Only (De-clutched Load)			
Cold Cranking Amperes —CCA.....			1800
Reserve Capacity min.....			640
Engine With Connected Drive Train			
Cold Cranking Amperes —CCA.....			1900
Reserve Capacity min.....			640
Maximum Allowable Resistance of Starting Circuit			
With 24 volt Starter—Ω.....			0.002

PERFORMANCE DATA

Idle —r/min.....	625	
Maximum No-Load Governed Speed —r/min.....	1770	
Crankshaft Thrust Bearing Load		
Maximum Intermittent —lb(N).....	1500	(6672)
Maximum Continuous —lb(N).....	750	(3336)
Maximum Allowable Power From Front of Crankshaft —BHP(kW).....		
Maximum Allowable Power From Accessory Drive —BHP(kW).....		

All data is based on the engine operating with fuel system, water pump, lubricating oil pump, air cleaner, and muffler, not included are alternator, compressor, fan, optional equipment and driven components. Data represents gross engine performance capabilities obtained and corrected in accordance with SAE J1349 conditions for 29.61 in Hg(100 kPa) barometric pressure[300ft. (90 m) altitude], 77°F (25 °C) inlet air temperature, and 0.30 in. Hg (1kPa) water vapor pressure with No. 2 diesel fuel or a fuel corresponding to ASTM D2. All data is subject to change without notice.



**CHONGQING CUMMINS ENGINE COMPANY LTD.
ENGINE DATA SHEET**

Data Sheet: DS-347
Date: 2018/7/6

	MAXIMUM		CONTINUOUS	
	FULL POWER	PEAK TORQUE	FULL POWER	PEAK TORQUE
Engine Speed r/min.....	1500			
Gross Power Output BHP(kW).....	1300(970)			
Torque lb.ft(N·m).....	4552(6172)			
Nominal Rail Pressure PSI(kPa).....	172(1189)			
Intake Manifold Pressure in.Hg(kPa).....	60(203)			
Brake Mean Effective Pressure PSI(kPa).....	298(2055)			
Piston Speed ft/min(m/s).....	1562(7.9)			
Friction Horsepower BHP(kW).....	115(86)			
Intake Air FlowCFM(L/s).....	2570(1213)			
Exhaust Gas Flow				
Dry ManifoldCFM(L/s).....	7005(3306)			
Exhaust Gas Temperat				
Dry Manifold °F(°C).....	955(513)			
Heat Rejection to Ambient				
Dry Manifold BTU/min(kW).....	7820(137)			
Heat Rejection to Coolant				
Dry Manifold BTU/min(kW).....	33800(594)			
Engine Water Flow U.S.GPM(L/s).....	411(26)			

Change Log		
Date	Author	Change Description
2018/7/5	Zhu Jiang	Compile