

KTA38GC

Gas Compression Applications



Gathering and midstream compression requires power that is reliable, durable and has world-class support. It calls for the Cummins KTA38GC – an emissions compliant, high-performance natural gas engine that shares the proven heritage of the Cummins K Series diesel engines and many of the same heavy-duty components. It is no surprise that the KTA38GC has low maintenance cost, stays emissions compliant and keeps the gas flowing. Every day.

General Specifications V-12, 4-Cycle, Natural Gas

<u>Bore</u>	<u>6.25 in (159 mm)</u>
<u>Stroke</u>	<u>6.25 in (159 mm)</u>
<u>Displacement</u>	<u>37.7 L (2300 cubic in)</u>
<u>Engine Power*</u>	<u>635-850 hp (474-634 kW)</u>
<u>Compression Ratio</u>	<u>8.5:1</u>
<u>Aspiration</u>	<u>Turbocharged and aftercooled</u>
<u>Exhaust Type</u>	<u>Watercooled manifold</u>
<u>Weight**</u>	<u>11,932 lb (5,412 kg)</u>
<u>Coolant Capacity</u>	<u>32.7 gal (123.8 L)</u>
<u>Lube Oil Capacity</u>	<u>89.0 gal (336.9 L)</u>
<u>Rotation</u>	<u>Counterclockwise</u>

* Rating dependent

** Weight is approximate and varies with options.

Features

Designed for the gas compression market, the KTA38GC delivers exceptional reliability and low cost of operation.

Base Engine – Most major components, including block, crank, cam, gears and liners, are common with the proven K38 diesel. Common gas unique components on the KTA19GC and KTA38GC lower your operating cost.

Emissions – Two configurations: Simple Lean-Burn (SLB) or rich burn with catalyst. The SLB engine-out emissions meet current EPA NSPS regulations at 2-gr/hp-hr NOx. The rich-burn configuration operates with a Cummins 3-way catalyst down to 0.5-gr/hp-hr NOx.

Air/Fuel Ratio Control – Oxygen sensor-based air/fuel ratio control maintains emissions rate and fuel consumption. Display shows O₂, control valve position and fault codes and provides for user input.

Air Handling – Twin turbocharger design delivers maximum performance and life.

Fuel System – Impco varifuel carburetors provide stable operation and fuel tracking through all load ranges.

Speed Control – Integral-throttle body electronic governor provides precise and stable rpm control under all load conditions.

Ignition System – Cummins Gas Compression Ignition Module provides precision control and low maintenance with sealed construction and high-voltage output.

Lubrication System – Deep, full-length, high-capacity oil pan. Combine full-flow and bypass oil filters reduce maintenance costs while extending service intervals.

Warranty – Cummins one year, unlimited hours. Backed by a worldwide distributor network.

Rating Details.

Model	Curve Number	Rating	NOx / CO / VOC (g/hp-hr)	Lean / Rich Burn
KTA38GCSLB	FR-6475	850 hp @ 1800	2.0 / 4.0 / 1.0	Lean
KTA38GCSLB	FR-6484	710 hp @ 1500	2.0 / 4.0 / 1.0	Lean
KTA38GCE	FR-6403	760 hp @ 1800	Catalyst Dependent	Rich
KTA38GCE	FR-6485	635 hp @ 1500	Catalyst Dependent	Rich

* EPA requires site validation testing.

Standard Equipment.

Air Inlet system

- Factory-installed dual heavy-duty air cleaners

Cooling System

- Gear-driven jacket water pump
- Gear-driven aftercooler centrifugal pump
- Corrosion-resistant coating aftercooler cores
- Thermostat-controlled jacket water and aftercooler circuits

Exhaust System

- Watercooled manifolds reduce surface and exhaust gas temperatures and extend turbocharger life

Fuel System

- Dual Impco carburetors
- Engine-mounted Fisher S-201 regulator
- Cummins proprietary air-fuel ratio control with optimized control algorithm
- Full-authority AFR fuel control valve

Ignition System

- Cummins Gas Compression Ignition Module (GCIM)
- Shielded Ignition System option available

Speed Control System

- Single-throttle body to control both right and left banks
- Woodward electronic integral-throttle body

Digital Display

- AFR system status
- Engine fault codes with history
- Warning and shutdown information
- User interface eliminates need for laptop for engine adjustment or commissioning
- Ignition display

Interface Panel

- Provides simple connection between engine and compressor controls
- Meets CSA specifications

Lube Oil System

- Crankcase breather – block-mounted
- High-capacity structural oil pan
- Oil filter – spin-on combination full-flow and bypass

Safety Shutoff Protection

- Intake manifold temperature
- Intake manifold temperature change rate
- Intake manifold pressure
- Overspeed
- ECM temperature
- O₂ sensor out of range

Mounting Arrangement

- Four-point mounting on structural oil pan
- Mounting feet designed for use with Vibracon ® chocks
- Lift provisions on engine

Flywheels and Flywheel Housings

- Flywheel SAE #00 machined for 21" over-center clutch
- Flywheel housing – SAE #00 cast-iron, including provisions for 1 3/4"-16 magnetic pickup and machined to accommodate starter mounting

Electrical System

- Delco Remy 24V alternator
- CSA alternator option available

Starter

- Dual 24V electric starters
- Gas starter optional

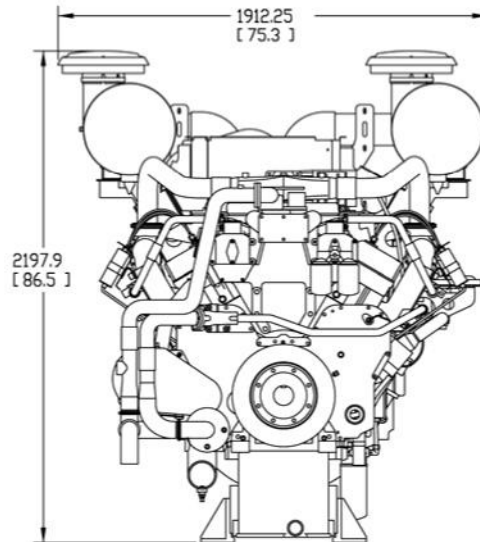
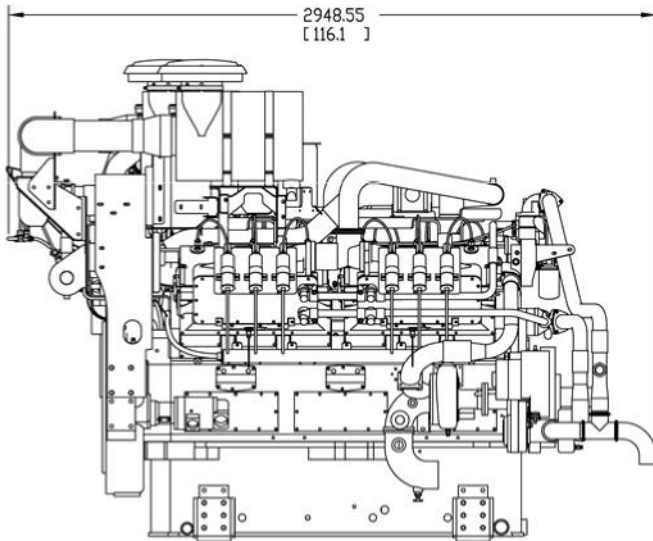
Power Take-off

- Front stub shaft

Engine Technical Data.

Model		KTA38GCE	KTA38GCSLB
Curve Number		FR-6403	FR-6475
Output Power (1)			
100%	HP (kW)	760 (567)	850 (634)
75%	HP (kW)	570 (425)	638 (476)
Engine Speed			
100%	RPM	1800	1800
Max Turn Down	RPM	1500	1500
Aftercooler Water Inlet Temperature			
	°F (°C)	130 (54.4)	130 (54.4)
Compression Ratio		8.5:1	8.5:1
Emissions Data – Engine-Out Emissions (1)			
NOx	g/hp-hr (g-kW-hr)	11 (14.75)	1.5 (2.01)
CO	g/hp-hr (g-kW-hr)	6.8 (9.12)	1.4 (1.88)
NMHC	g/hp-hr	0.1	0.1
THC	g/hp-hr	1.1	3.1
Fuel Consumption (1)			
100%	BTU/hp-hr (MJ/kW-hr)	7942 (11)	7860 (11)
75%	BTU/hp-hr (MJ/kW-hr)	8408 (12)	8516 (12)
Heat Rejection (1)			
Jacket Water	BTU/min (kW)	35646 (627)	35344 (621)
Aftercooler	BTU/min (kW)	1883 (33)	6880 (121)
Exhaust	BTU/min (kW)	26377 (464)	31781 (559)
Exhaust System (1)			
Flow Rate	ft ³ /min (L/s)	3589 (1694)	4719 (2227)
Stack Temp	°F (°C)	1197 (647)	877 (469)
Max Back Pres.	in-Hg	2	2
Intake System (1)			
Flow Rate	ft ³ /min (L/s)	1123 (530)	1962 (926)
Max Restriction	in-H ₂ O	15	15
Gas Pressure			
Min - Max	psi	7 - 25	7 - 25

General Dimensions.



Dimensions		TA
Length	Inches (mm)	116.1(2948)
Width	Inches (mm)	75.3(1912)
Height	Inches (mm)	86.5(2198)

* Dimensions are approximate and vary with options.

Disclaimers.

(1) All data is based on the engine operating with fuel system, water pump, and 9 in H₂O (2.24 kPa) inlet air restriction with 6 in (152 mm) inner diameter, and with 2 in Hg (7 kPa) exhaust restriction with 8 in (203 mm) inner diameter; not included are alternator, fan, optional equipment and driven components. Coolant flows and heat rejection data based on coolants as 50% ethylene glycol/50% water. All data is subject to change without notice.



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