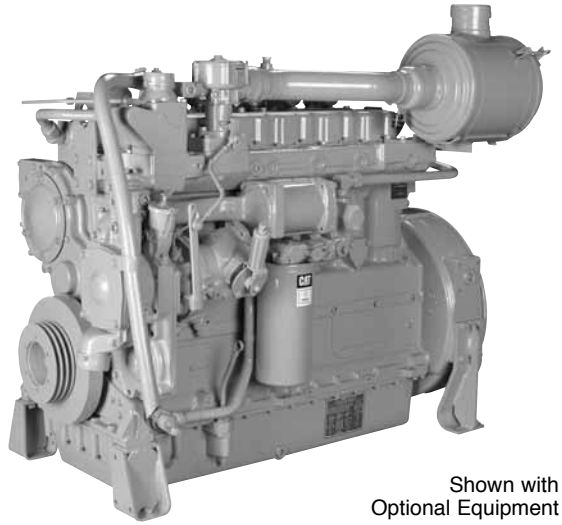
CATERPILLAR®

G3306 Gas Petroleum Engine

108 (NA)/151 (TA) bkW
[145 (NA)/203 (TA) bhp]
1800 rpm

0.5% O_2 Rating



Shown with
Optional Equipment

CAT® ENGINE SPECIFICATIONS

In-Line 6, 4-Stroke-Cycle

Bore	121 mm (4.75 in.)
Stroke	152 mm (6.0 in.)
Displacement	10.5 L (638 cu. in.)
Aspiration	Naturally Aspirated or Turbocharged-Aftercooled
Governor and Protection	Hydra-mechanical
Combustion	Catalyst
Engine Weight, net dry (approx)	948 kg (2090 lb)
Power Density	6.3 kg/kW (10.3 lb/bhp)
Power per Displacement	19.3 bhp/L
Jacket Water Capacity	20 L (5.3 gal)
Lube Oil System (refill)	45.1 L (11.9 gal)
Oil Change Interval	750 hours
Rotation (from flywheel end)	Counterclockwise
Flywheel and Flywheel Housing	SAE No. 1
Flywheel Teeth	156

FEATURES

Engine Design
- Proven reliability and durability
- Ability to burn a wide spectrum of gaseous fuels
- Robust diesel strength design prolongs life and lowers owning and operating costs
- Broad operating speed range

Emissions
- Rich burn engine design easily meets emission requirements
- Meets U.S. EPA Spark Ignited Stationary NSPS emissions for 2007/8 and 2010/11 with the use of aftermarket AFRC and TWC

Full Range of Attachments

Large variety of factory-installed engine attachments reduces packaging time

Testing

Every engine is full-load tested to ensure proper engine performance.

Gas Engine Rating Pro

GERP is a PC-based program designed to provide site performance capabilities for Cat® natural gas engines for the gas compression industry. GERP provides engine data for your site's altitude, ambient temperature, fuel, engine coolant heat rejection, performance data, installation drawings, spec sheets, and pump curves.

Product Support Offered Through Global Cat Dealer Network

More than 2,200 dealer outlets

Cat factory-trained dealer technicians service every aspect of your petroleum engine

Cat parts and labor warranty

Preventive maintenance agreements available for repair-before-failure options

S•O•S℠ program matches your oil and coolant samples against Caterpillar set standards to determine:
- Internal engine component condition
- Presence of unwanted fluids
- Presence of combustion by-products
- Site-specific oil change interval

Over 80 Years of Engine Manufacturing Experience

Over 60 years of natural gas engine production

Ownership of these manufacturing processes enables Caterpillar to produce high quality, dependable products.
- Cast engine blocks, heads, cylinder liners, and flywheel housings
- Machine critical components
- Assemble complete engine

Web Site

For all your petroleum power requirements, visit www.catoilandgas.cat.com.

STANDARD EQUIPMENT

Air Inlet System
Air cleaner — intermediate duty, dry
Air cleaner rain cap (shipped loose)
Service indicator

Control System
Governor — hydra-mechanical (optional on TA)
Throttle control, mechanical
Slide and lock (non-governed units)

Cooling System
Thermostats and housing — full open temperature 97° C (207° F)
Jacket water pump — gear-driven, centrifugal, non-self-priming
Aftercooler water pump — gear-driven, centrifugal, non-self-priming
Aftercooler core, for treated water

Exhaust System
Exhaust manifolds, watercooled
Exhaust elbow — dry, 127 mm (5 in)

Flywheels and Flywheel Housings
Flywheel — SAE No. 1
Flywheel housing — SAE No. 1
SAE standard rotation

Fuel System
Gas pressure regulator
Requires 12-25 psi gas
Natural gas carburetor

Ignition System
Altronic V ignition system

Instrumentation
Instrument panel, LH
Oil pressure
Coolant temperature
Hour meter
Inlet air temperature

Lube System
Crankcase breather — top mounted
Oil cooler
Oil filter
Oil pan — full sump
Oil filler and dipstick

Mounting System
Shutoffs
Low oil pressure
High coolant temperature
High inlet air temperature
Overspeeds — 2
Electronic
Mechanical speed switch

Protection System
See Mandatory Attachments

General
Paint — Cat yellow
Crankshaft vibration damper and drive pulley
Lifting eyes

OPTIONAL EQUIPMENT

Charging System
Battery chargers
Charging alternators
Charging alternators f/u/w agricultural engine
Ammeter gauge
Ammeter gauge and wiring

Control System
PSG Woodward governor
Hydra-mechanical governor f/u/w agricultural engines
Vernier and positive locking control
Carburetor control removal

Cooling System
Air-to-Air aftercooler conversion
Aftercooler group
Expansion tank
Heat exchanger and expansion tank
Radiators
Blower fans
Suction fans
Fan drives
Fan adapters
Belt tightener

Exhaust System
Flexible fittings
Elbows
Flanges
Pipes
Rain caps
Mufflers

Fuel System
Catalyst conversion group
Low pressure gas conversion
Fuel filter

Ignition System
Altronic III
CSA shielded ignition
Wiring harness
Dual timing

Instrumentation
Gauges and instrument panels

Lube System
Lubricating oil

Mounting System
Vibration isolators

Power Take-Offs
Auxiliary drive pulleys
Auxiliary pump
Enclosed clutch
Clutch support
Flywheel stub shaft
Front stub shaft

Protection System
Mechanical shutoff

Starting System
Air pressure regulator
Air silencer
Starting aids
Battery sets — 12-volt, dry
Battery sets — 24-volt, dry
Battery cables
Battery rack
Gas starting motor
Electric starting motor

General
Tool set

TECHNICAL DATA

G3306 Gas Petroleum Engine (0.5% O_2 Rating) — 1800 rpm

		DM5053-07	DM5202-04
Aspiration		Naturally Aspirated	Turbocharged/Aftercooled
Engine Power			
@ 100% Load	bkW (bhp)	108 (145)	151 (203)
@ 75% Load	bkW (bhp)	81 (109)	113 (152)
Engine Speed	rpm	1800	1800
Max Altitude @ Rated Torque and 38°C (100°F)	m (ft)	0	0
Speed Turndown @ Max Altitude, Rated Torque, and 38°C (100°F)	%	44	33
AC Temperature	°C (°F)	N/A	54 (130)
Emissions*			
NOx	g/bkW-hr (g/bhp-hr)	18.08 (13.48)	22.22 (16.57)
CO	g/bkW-hr (g/bhp-hr)	18.05 (13.46)	22.22 (16.57)
NMHC	g/bkW-hr (g/bhp-hr)	130 (0.33)	0.24 (0.18)
Exhaust O_2	% dry	0.5	0.5
CO_2	g/bkW-hr (g/bhp-hr)	651 (485)	685 (571)
VOC**	g/bkW-hr (g/bhp-hr)	0.3 (0.22)	0.16 (0.12)
Fuel Consumption***			
@ 100% Load	MJ/bkW-hr (Btu/bhp-hr)	11 (7775)	11.46 (8098)
@ 75% Load	MJ/bkW-hr (Btu/bhp-hr)	11.77 (8318)	11.95 (8444)
Heat Balance			
Heat Rejection to Jacket Water			
@ 100% Load	bkW (Btu/min)	106.27 (6049)	158.9 (9045)
@ 75% Load	bkW (Btu/min)	91.99 (5236)	132.4 (7534)
Heat Rejection from Aftercooler			
@ 100% Load	bkW (Btu/min)	N/A	9.05 (515)
@ 75% Load	bkW (Btu/min)	N/A	3.65 (208)
Heat Rejection to Exhaust			
@ 100% Load (LHV to 77° F / 25° C)	bkW (Btu/mn)	84.98 (4837)	117.62 (6695)
@ 75% Load (LHV to 77°) (LHV to 77° F / 25° C)	bkW (Btu/mn)	66.01 (3757)	90.39 (5145)
Exhaust System			
Exhaust Gas Flow Rate			
@ 100% Load	m^3/min (cfm)	19.2 (678)	27.47 (970)
@ 75% Load	m^3/min (cfm)	15.06 (532)	21.38 (755)
Exhaust Stack Temperature			
@ 100% Load	°C (°F)	593.9 (1101)	573.3 (1064)
@ 75% Load	°C (°F)	575 (1067)	554.4 (1030)
Intake System			
Air Inlet Flow Rate			
@ 100% Load	m^3/min (scfm)	5.89 (208)	8.64 (305)
@ 75% Load	m^3/min (scfm)	4.73 (167)	6.88 (243)
Gas Pressure	kPag (psig)	10.3-69 (1.5-10)	82.7-172.4 (12-24.9)

*at 100% load and speed, all values are listed as not to exceed

**Volatile organic compounds as defined in U.S. EPA 40 CFR 60, subpart JJJJ

***ISO 3046/1

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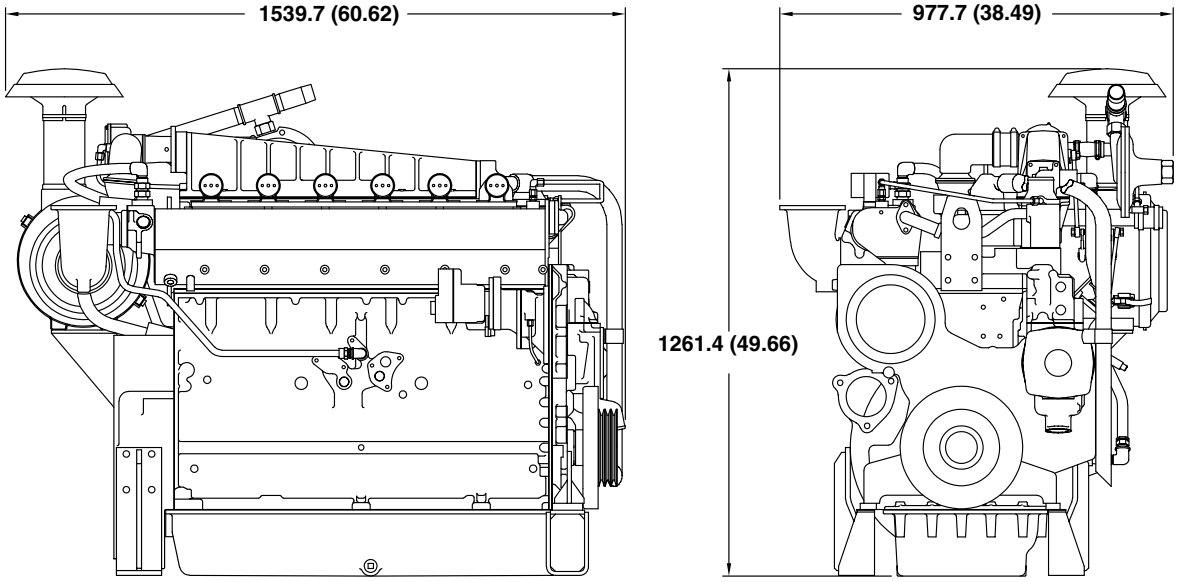

DIMENSIONS		
Length	mm (in)	1505 (59)
Width	mm (in)	1208 (48)
Height	mm (in)	978 (39)
Shipping Weight	kg (lb)	948 (2090)

Note: General configuration not to be used for installation. See general dimension drawing 5N-6097 for detail.

Dimensions are in mm (inches).

RATING DEFINITIONS AND CONDITIONS

Engine performance is obtained in accordance with SAE J1995, ISO3046/1, BS5514/1, and DIN6271/1 standards.

Transient response data is acquired from an engine/generator combination at normal operating temperature and in accordance with ISO3046/1 standard ambient conditions. Also in accordance with SAE J1995, BS5514/1, and DIN6271/1 standard reference conditions.

Conditions: Power for gas engines is based on fuel having an LHV of 83.74 kJ/L (905 Btu/cu ft) at 101 kPa (29.91 in. Hg) and 15° C (59° F). Fuel rate is based on a cubic meter at 100 kPa (29.61 in. Hg) and 15.6° C (60.1° F). Air flow is based on a cubic foot at 100 kPa (29.61 in. Hg) and 25° C (77° F). Exhaust flow is based on a cubic foot at 100 kPa (29.61 in. Hg) and stack temperature.

TMI Reference No.: DM5053-07, DM5202-04
LEHW0026-00 (11-09)
Supersedes LEHW7566-01