

### FEATURES

- **CATERPILLAR® QUALITY THROUGHOUT**

Cat gas engines incorporate many of the same proven components as their diesel counterparts – including the block, crankshaft, main bearings, camshaft and connecting rods. However, by operating at 40 to 50 % lower cylinder pressure and bearing loads than diesels, they offer the extra benefit of prolonged life.

Caterpillar gas engines inherit more from their diesel counterparts than just strength. They are backed by the same support system recognized as one of the most sophisticated and dependable in the world.

- **APPLICATION FLEXIBILITY**

Broad operating speed range and the ability to burn a wide spectrum of fuels.

- **LOW EMISSIONS**

0.7 gram/hp hr NOx level at 900 RPM.

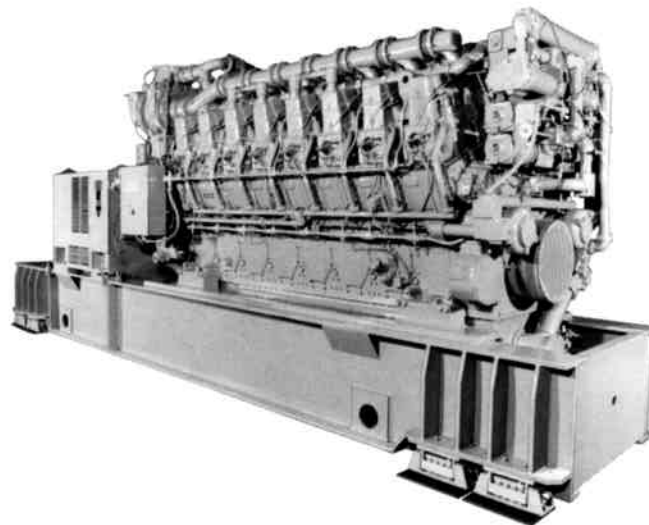
- **SUPERIOR TECHNOLOGY**

Represent the latest technology in engine design. The engine is offered in a low emission turbocharged and aftercooled configuration only. This configuration offers:

- High energy ignition systems for consistent firing
- Highly efficient enriched prechamber design for complete combustion
- Modern component design such as deep cup, oil gallery piston
- Electronic controls to optimize performance.

- **RESULT**

Low emissions and BSFC under all operating conditions.



Arrangement may be shown with optional equipment

### STANDARD PACKAGE ARRANGEMENT

#### GENERAL

Flywheel and Ring Gear  
Crankcase Explosion Doors  
High Efficiency Turbos  
Aftercooler  
Engine Barring Device  
Torsional Vibration Damper  
Protective Guards

#### COOLING SYSTEM

Jacket Water Pump  
Water Regulators, 189° F  
Separate Circuit Gear Driven Pump For Aftercooler/Oil Cooler Circuit  
Expansion Tank  
Jacket Water Heater

#### IGNITION SYSTEM

Altronic III Ignition with Variable Timing

#### CONTROLS

**Electronic Supervisory System:**  
Governing  
Air/Fuel Ratio Control  
Timing Optimization

#### Instrument Panel to Monitor:

Oil Pressure and Temperature  
Oil Pressure Differential  
Intake Manifold Pressure  
Intake Manifold Temperature

Crankcase Pressure  
Water Temperature  
Exhaust Temperature  
Service Meter Hours  
Engine Speed

#### FUEL SYSTEM

Fuel Filter  
Shipped Loose Gas  
Pressure Regulator

#### PROTECTION

Misfire Sensing  
Detonation Sensing and Compensation  
**Energized to Run Shutdowns For:**  
Engine Overspeed

Oil Pressure  
Water Pressure  
Crankcase Pressure

#### LUBE OIL SYSTEM

Gear Driven Lube Oil Pump  
Engine Mounted Lube Oil Filters  
Engine Mounted Lube Oil Cooler  
Prelube/Postlube System  
Sump Pump Connections

#### AIR INTAKE SYSTEM

Shipped Loose Air Cleaners  
Installed Turbo Air Inlet Adapters

#### OPTIONAL ATTACHMENTS

Caterpillar Installed Generators  
Generator Set Base

## G3616 GENERAL SPECIFICATIONS - 60 Hz

### CAT 3616 ENGINE

Type — Spark Ignited  
 Displacement — 20,700 cu in  
 Compression Ratio — 9.2:1

No. of Cylinders — 16  
 Bore — 300 mm  
 Stroke — 300 mm

Brushless revolving field generator with rotating brushless exciter. 90°C rise over 40°C ambient for use up to 1000 meters altitude. Insulation Class F. Open drip proof IP23 construction with terminal box sealed to IP44. Output 6 leads in terminal box designed for bottom entry cables. Includes two self lubricated sleeve bearings, 100 ohm RTD's, two per phase in stator and one per bearing. Electrical features include voltage regulator with three phase sensing, cross current compensation, underfrequency protection with automatic reset, volts per hertz operation, overvoltage protection with manual reset, permanent magnet exciter, space heaters installed with thermostat, 96% minimum efficiency at .8 power factor.

### GENERATOR AND GENERATOR ATTACHMENTS

Caterpillar gen sets are available with a variety of generators, matched by Caterpillar. The description here is typical.

Available voltages includes 480, 4160, and 13,800.

## TECHNICAL DATA

			Continuous	
			TA 90 LE	TA 130 LE
<b>Rating Information</b>	Electrical Output @ 0.8PF w/o Fan	kW	3049	2880
	Voltage	V	480	480
	Compression Ratio		9.2	9.2
<b>Package Dimensions</b>	Min Gas Pressure Required	PSI	45	45
	Shipping Weight w/Generator and Base	lb	141,840	141,840
	Gen Set Length	in	366.7	366.7
	Gen Set Width	in	83.5	83.5
<b>Engine Performance Data @ Rated Conditions</b>	Fuel Consumption (100% Load)	Btu/hp-hr	6575	6590
	Fuel Consumption (75% Load)	Btu/hp-hr	6800	6805
	Air Inlet Flow Rate	scfm	11434	10612
	Exhaust Gas Flow Rate @ Stack Temp	cfm	26902	25278
	Heat Rejection to Jacket Water (Total)	Btu/min	43205	43990
	Heat Rejection to Exhaust (To 350°)	Btu/min	100004	96071
	Heat Rejection to Aftercooler	Btu/min	33740	26126
	Heat Rejection to Atmosphere From Engine	Btu/min	18101	18891
Exhaust Gas Stack Temperature	Deg. F	810	825	

90 refers to aftercooler water inlet temperature in °F (32°C).

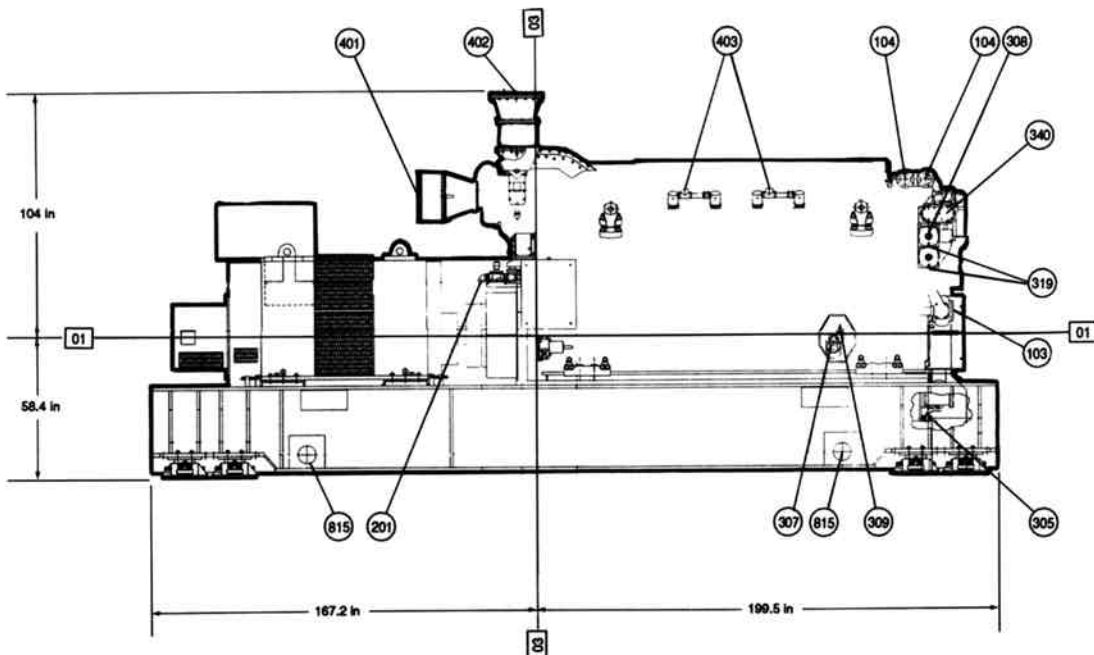
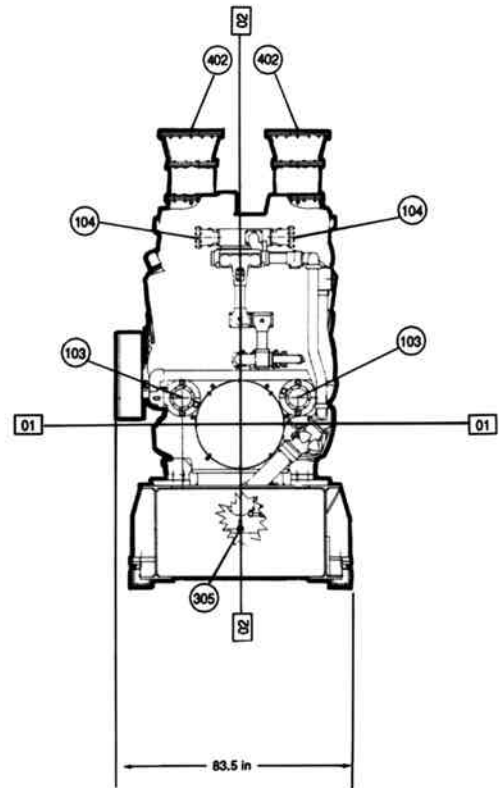
130 refers to aftercooler water inlet temperature in °F (54°C).

All data is based on standard conditions.

These ratings do not allow for overload capability.

# G3616 GAS ENGINE GENERATOR SET PACKAGE

- 01 - CENTERLINE OF CRANKSHAFT
- 02 - CENTERLINE OF ENGINE
- 03 - REAR FACE OF CYL BLOCK
- 103 WATER INLET
- 104 WATER OUTLET
- 201 FUEL INLET
- 305 OIL DRAIN
- 307 OIL FILLER
- 308 OIL FILTER
- 309 OIL LEVEL GAUGE
- 319 OIL FILTER DRAIN
- 340 OIL COOLER
- 401 AIR INLET
- 402 EXHAUST
- 403 BREATHER OUTLET
- 815 LIFTING LOCATION



Note: General Configuration not to be used for installation.

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### CONDITIONS & DEFINITIONS

Ratings are based on SAE J1349 standard conditions of 100 kPa (29.92 in)Hg and 25°C (77°F); ISO 3046, DIN 6271, BS 5514 Standard conditions of 100 kPa (29.61 in)Hg, 27°C (81°F); and API 7B-11C standard conditions of 99 kPa (29.38 in)Hg, 29°C (85°F) also apply.

Ratings are based on dry natural gas having a low heat value of 35.22 MJ/m<sup>3</sup> (905 btu/ft<sup>3</sup>). Variations in altitude, temperature and gas composition from standard conditions may require a reduction in engine horsepower.

Turbocharged-aftercooled ratings apply to 1525 m (5,000 ft) and 25°C (77°F). For applications which exceed these limits contact your Caterpillar Dealer.

Materials and specifications are subject to change without notice. The International System of Units (SI) is used in this publication.

**CATERPILLAR<sup>®</sup>**