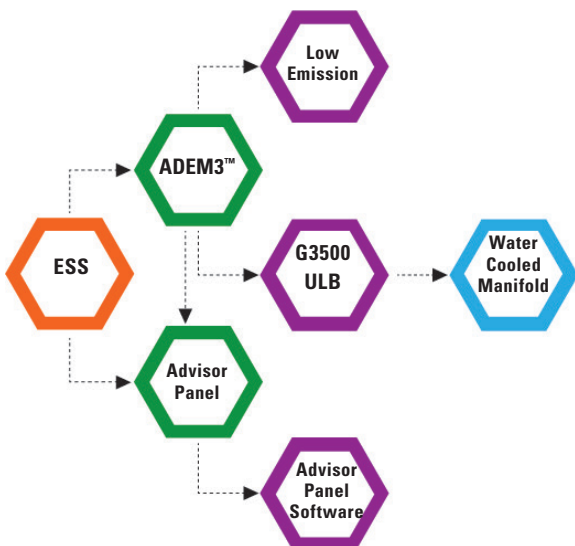


Keep Your Investment Running Strong...

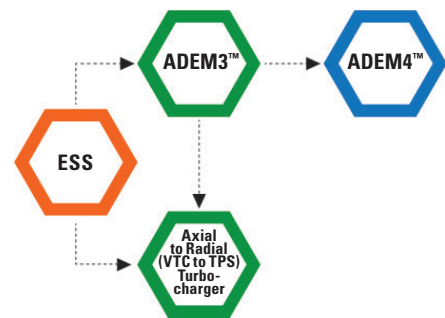
Cat® Gas Compression Engine Upgrade Kits



G3500 GAS ENGINE UPGRADES



G3600 GAS ENGINE UPGRADES





G3500 UPGRADES

KEY CUSTOMER

Decision Factors

FLEET FLEXIBILITY

Customers have more operating flexibility as they move through the upgrade offerings. The combinations of technology allows greater efficiency, increased altitude capability, and improved emissions flexibility. Customers can choose which options are best suited for their diverse applications.

COST

Upgrade options will vary in cost, as a percent of the cost of a new engine, depending on the level of upgrade.

IMPROVED CONTROLS

Integrated controls technology enables improved diagnostic capability and enhanced troubleshooting, engine configuration, and tuning capabilities.

FUEL EFFICIENCY

The combination of technologies enables more precise fuel delivery and complete combustion for higher operating efficiencies and improved fuel economy.

ALTITUDE

Upgrade options allow for increased altitude capabilities.

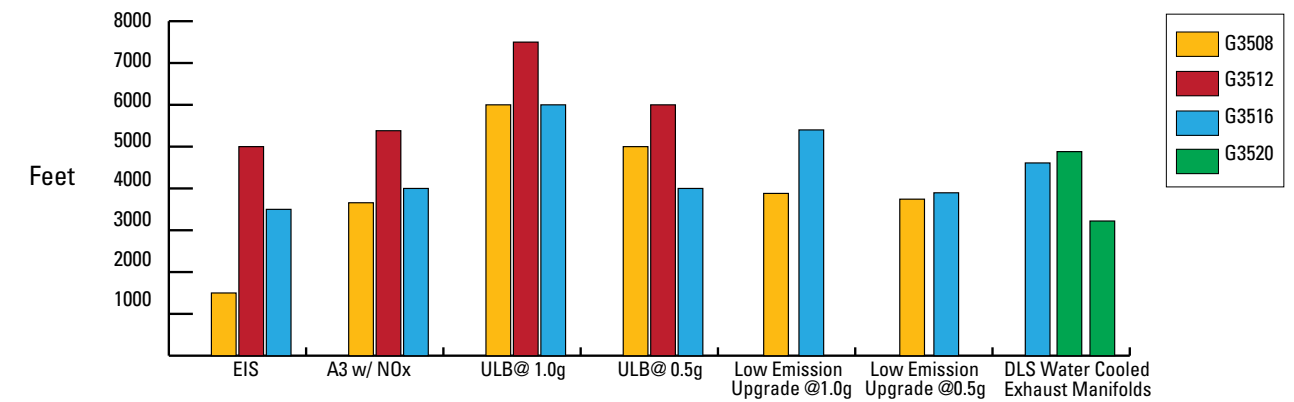
TURNDOWN

Upgrade options allow for enhanced torque speed turn-down.

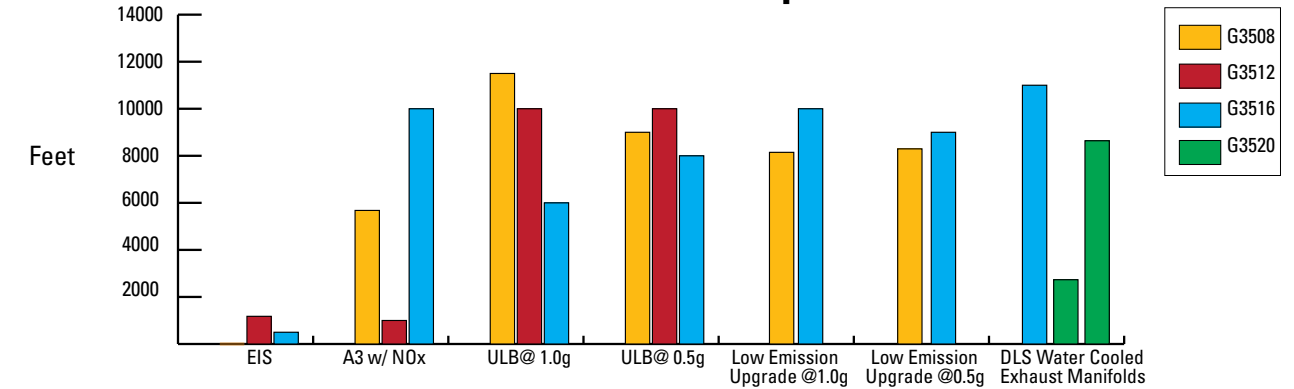
EMISSIONS

Upgrade options offer the ability to reach emission levels and compliance for critical areas.

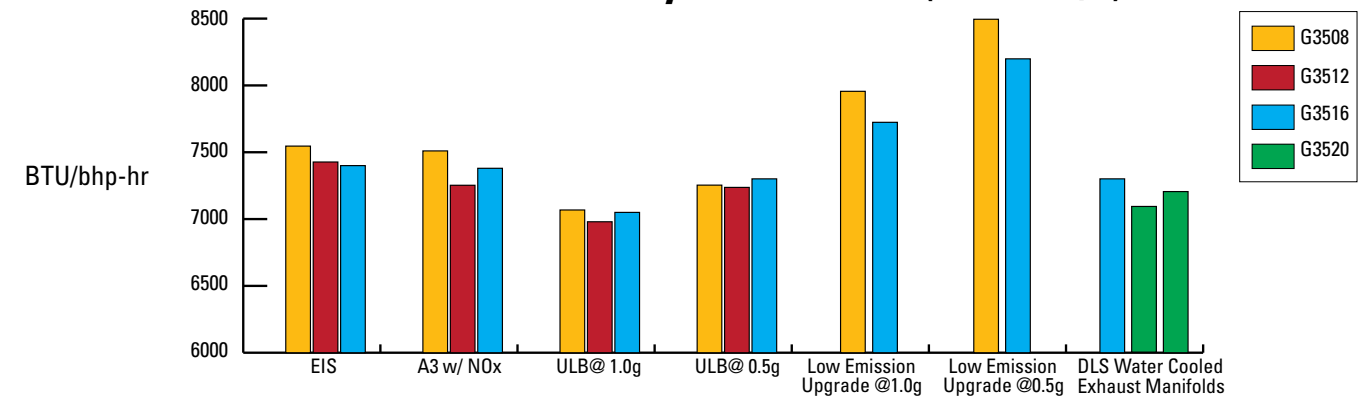
Max Altitude without Derate



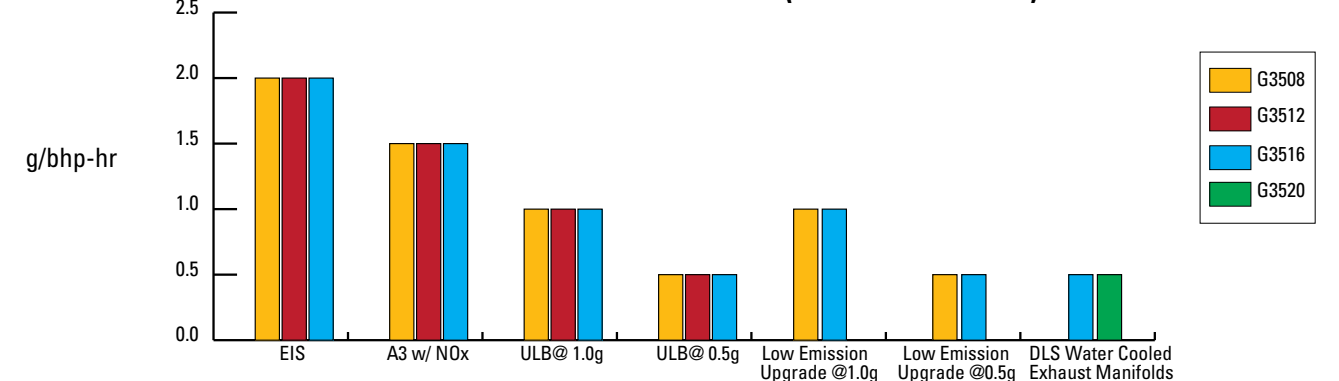
Max Altitude with 25% Speed Turndown



Fuel Efficiency @ 100% Load (ISO 3046/1)



NOx Emission Levels (Not to Exceed)



ADEM3 UPGRADE

	G3508	G3508 Low Emission Upgrade			G3508J
	DM5888 DM8621 DM8827	DM8826	EM2115	EM2114	EM 2758
Ambient Temp	100° F (38° C)	100° F (38° C)	100° F (38° C)	100° F (38° C)	100° F (38° C)
Max Altitude w/o Derate,	1500 ft to 6000 ft (457 m) (1829m)	5000 ft (1524 m)	3658 ft (1115 m)	3658 ft (1115 m)	5000 ft (1524 m)
Max Altitude with 25% Turndown	0 ft to 11500 ft (0 m) (3505 m)	9000 ft (2743 m)	8254 ft (2516 m)	8254 ft (2516 m)	
Max Rating, bhp (kW) @ rpm	630 bhp to 690 bhp (470 kW) (515 kW) @ 1400 rpm	690 bhp (515 kW) @ 1400 rpm	670 bhp (500 kW) @ 1400 rpm	670 bhp (500 kW) @ 1400 rpm	690 bhp (515 kW) @ 1400 rpm
Availability	Now	Now	Now	Now	Now



G3512 and G3516 Conversion to ADEM3™ with AFRC and NOx Sensor

Upgrade your G3512 and G3516 engines in the field to the ADEM3 system which integrates engine sensing and monitoring, AFRC (air/fuel ratio control) with NOx sensors, ignition timing, and detonation control in to one comprehensive engine control system.

- Finer Engine Control
- Extended Engine Life
- Improved Diagnostics and Interface
- Expanded Safety and Shutdown Capability
- Remote Monitoring Capability

G3508 Conversion to ADEM3 and AFRC with NOx Sensor Including Twin to Single Turbocharger/G3508 Conversion to ADEM3 and AFRC with O₂ Sensor

Upgrade your G3508 engines in the field to the ADEM3 system which integrates engine sensing and monitoring, (AFRC) air/fuel ratio control with NOx sensors, ignition timing, and detonation control in to one comprehensive engine control system. There is also an option to convert the twin turbocharger configuration to a single turbocharger.

- Increased Power
- Improved Turndown
- Improved Altitude Capability
- Improved NOx Emissions
- Improved Reliability
- Simplified Controls

	G3512	G3512J
	DM5118 DM5120 DM8829 DM8828	EM4557
Ambient Temp	100° F (38° C)	100° F (38° C)
Max Altitude w/o Derate,	5000 ft to 6000 ft (1524 m) (1829 m)	5217 ft (1590 m)
Max Altitude with 25% Turndown	1177 ft to 10,000 ft (359 m) (3048 m)	
Max Rating, bhp (kW) @ rpm	945 bhp to 1035 bhp (705 kW) (772 kW) @ 1400 rpm	1035 bhp (772 kW) @ 1400 rpm
Availability	Now	Now

ULTRA LEAN BURN UPGRADE



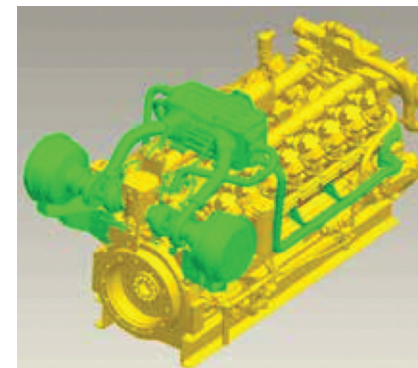
G3500B Ultra Lean Burn (ULB) Upgrade

Upgrade your G3500 engines to Ultra Lean Burn technology. This proven technology utilizes state of the art ADEM3 systems, air/fuel ratio control, and NOx sensors to operate at not-to-exceed 0.5 or 1.0 g/bhp-hr NOx levels with higher altitude capability throughout the total speed range.

- G3508, G3512, G3516
- Lower Operating Costs
- Higher ROI
- Increased Horsepower
- Fleet Flexibility
- Lower Lifecycle Cost
- Done in conjunction with Major Overhaul
- Improved Efficiency and Altitude Capability
- 0.5g NOx Emissions Without Use of 3-way-Catalyst

	G3516	G3516 Low Emission Upgrade	G3516J	G3516 TA	G3520J	
	DM5155, DM5215 DM8543, DM8618 EM1748, EM1749	DM9400 DM9401	EM1495	EM1440	EM2413	EM2502
Ambient Temp	100° F (38° C)	100° F (38° C)	100° F (38° C)	100° F (38° C)	100° F (38° C)	100° F (38° C)
Max Altitude w/o Derate,	3500 ft to 6000 ft (1067 m) (1829m)	3800 ft to 5400 ft (1158 m) (1646 m)	4610 ft (1405 m)	5000 ft	3281 ft (1000 m)	4921 ft (1500 m)
Max Altitude with 25% Turndown	500 ft to 8000 ft (1524 m) (2439 m)	9000 ft to 10,000 ft (2743 m) (3048 m)	11000 ft (3353 m)	(1524 m)	9022 ft (2750 m)	2460 ft (750 m)
Max Rating, bhp (kW) @ rpm	1340 bhp (1000 kW) @ 1400 rpm	1340 bhp (1000 kW) @ 1400 rpm	1380 bhp (1030 kW) @ 1400 rpm		1725 bhp (1286 kW) @ 1400 rpm	1480 bhp (1104 kW) @ 1200 rpm
Availability	Now	Now	Now	Now	Now	Now

LOW EMISSION UPGRADE



G3508 and G3516 Low Emission Upgrade

Upgrade your G3508 and G3516 engines to low emission configuration enabling 0.5 or 1.0 g/bhp-hr NOx performance.

- Applicable for G3508 and G3516 with ADEM3, AFRC and NOx sensor
- 0.5 g/bhp-hr or 1.0 g/bhp-hr NOx Emissions
- Improved Altitude and Speed Turndown Capability
- Horsepower rating remains the same
- Components: Turbocharger(s) (including oil and water lines), 2-Stage Aftercooler, Air Cleaner(s), Water lines, Oil Cooler
- Radiator Cooling Capacity must be evaluated
- G3508 must have Single Turbocharger – Upgrade Kit is available

For more information on the performance data of each, please contact your local dealer or review the associated spec sheet.

WATER COOLED MANIFOLD UPGRADE



G3500 Water Cooled Exhaust Manifold Upgrade

Upgrade your G3500 engine with the new water cooled, dual layered exhaust manifolds similar to G3500J engines.

- Maintains HP
- Lower Lifecycle Costs
- Achieve 0.5 g/bhp-hr NOx emissions
- Provides lower surface temperatures on engine exhaust system
- Radiator cooling capacity must be evaluated

G3500 ADVISOR PANEL



G3500 Advisor Panel / Software Upgrade

Upgrade your engine with Remote Advisor Panels. The additional software upgrade will allow for enhanced engine setup, troubleshooting, and diagnostics.

- Engine Setup and Troubleshooting Without Cat® Electronic Technician (ET)
- Set Up Engine from Operator Interface Panel
- Complete Fault Code Text (Actual Text, Not Just Numbers)

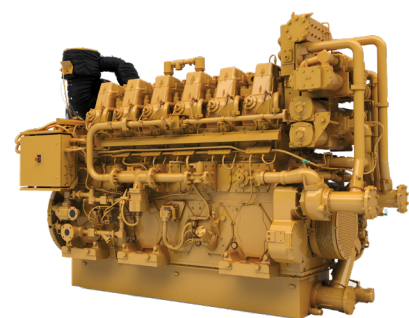
G3600 UPGRADES



G3600 ADEM3 Upgrade

Upgrade your G3600 engines in the field to the ADEM3 system which integrates engine sensing and monitoring, air/fuel ratio control, ignition timing, and detonation control in to one comprehensive engine control system.

- Significantly Improved Uptime
- Improved Troubleshooting
- Available for All G3600 Models



G3600 ADEM4 Upgrade

Upgrade your G3600 to ADEM A4 technology for increased power, better altitude capability, improved fuel tolerance, and lower emissions.

- Greatly expands fuel tolerance range
- Improved emissions tracking during load changes
- Optimized turbocharger trim and two-stage aftercooler design
- Improved piston design with an optimized swirl ratio
- Optimized cam events utilizing the Miller Cycle
- Enhanced engine software with direct NOx control



G3600 VTC to TPS Turbocharger Upgrade

Upgrade your existing TPS turbocharger to the VTC turbocharger.

- Upgrade Turbo, Aftercooler, and ECM with Latest Software to get 0.5g NOx
- Compatible with ESS or ADEM3 Engine Controllers (Hydrax System only)
- Reduced Fouling Risk
- Up to double the time between service intervals
- Improved Uptime
- Improved Altitude and Turndown Capability



G3600 HMI Panel

Upgrade your G3600 engines with the new HMI panel, the easy to use touchscreen display that performs the functions of the customer version of Cat ET.

- Commonality will allow for similar user experience across products
- Additional features include the ability to remotely reset the engine, log data, and view histograms and snapshot data
- Perform alarm and shutdown resets without having to power cycle the engine when ready to be used

Advantages of Cat® Engine Upgrade

With these options, you can bring your older engine up to the latest technology level to improve operating efficiencies, including lower operating costs, improved fleet flexibility, and increased sustainability.



Greater Return on Investment

By extending the useful lives of existing assets, customers realize greater returns on their initial capital investments.



Lower Owning & Operating Costs

Through higher efficiency, improved capabilities, and the reliability and durability provided by genuine Cat parts, owning and operating costs are lowered.



Increased Engine Uptime

Through improved diagnostic and troubleshooting capabilities in combination with genuine Cat parts, engine up-times are increased.



Enhanced Performance

Customers benefit from higher horsepower, lower emissions, better fuel efficiency, and higher altitude capability.



Environmental Sustainability

Improved fuel efficiency, lower emissions, and extending the useful life of older assets reduces the impact on our environment.



Safety

Upgrades that lower engine surface temperatures increase the safety of the environments in which the engines are located.

Caterpillar Competitive Advantage

Guaranteed for fit and function, Genuine Cat Parts offer the right combination of quality and price for your commercial engine. Coupled with a world class dealer service network, Caterpillar and Cat dealers provide unmatched service and total parts support. Please contact your Cat dealer for details and confirmation of availability. They will help you make an informed decision.

For ordering and pricing contact your Cat dealer.

LET'S DO THE WORK.™

https://www.cat.com/en_US/by-industry/oil-and-gas/gas-compression/gas-compression.html

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