

Cat® G3508 Engine Upgrade

Conversion to ADEM III & AFRC with NO_x Sensor including Twin to Single Turbocharger



Enhanced Performance and Reliability

Caterpillar® continues to power the world with gas engine innovations that deliver high performance and fuel economy, as well as clean emissions. The ADEM III electronic controls, which integrates governing, engine sensing & monitoring, air/fuel ratio control, ignition timing, and detonation control, offers improved performance and reliability for your G3508 engines. The upgrade also converts the twin turbo configuration to a single turbocharger. This newest conversion offering is a clear example of our ongoing commitment to lead the industry in customer satisfaction by providing the best customer satisfaction and value.

Your Cat® Dealer has all the information and equipment you need to take advantage of Caterpillar's advanced engine technology. Upgrade your G3508 engines with the Caterpillar ADEM III system, and harness the power of enhanced performance and reliability.

CATERPILLAR®

ADEM III Makes All The Difference

Performance Benefits

Performance Summary with the Conversion (100°F/38C ambient)	Before	After
Power, bHp (bkW) @1400 RPM	630 (470)	670 (500)
Engine Efficiency BTU/bHp-hr (MJ/kW-hr) ISO 3046/1	7546 (10.80)	7510 (10.64)
Maximum Operating Altitude without derate, ft (m)	<500 (<152)	2600 (783)
Max Operating Altitude with 25% Speed Turndown (ft) (m)	0 (0)	5700 (1737)
Fuel Methane Number Range without Derate (CAT MN)	45-100	45-100
NOx Not-To-Exceed Emissions Level, g/bHp-hr (g/k W-hr)	4.2 (5.6)	2 (2.7)
Nominal NOx Emissions Level, g/HP-hr (g/k W-Hr)	2 (2.7)	1.5 (2.0)

Reliability

New simplified control system architecture has fewer independent control modules and wiring harnesses, and provides easier troubleshooting and more reliable engine monitoring. The single turbocharger has been proven to allow more flexible performance without sacrificing reliability.

Simplicity

No governor options, simplifying the system. Governor is integrated into ADEM III and provides 4-20ma or 0-5 volts remote speed input standard on all product. A 0-5 V DC speed potentiometer is provided on the ADEM III advisor panel. This will give packagers greater flexibility designing their packages. The single turbo reduces maintenance cost and simplifies product support.

Control Terminal Points

Improved wiring harnesses with fewer terminal connections provide improved reliability by reducing the number of potential electrically related faults.

Single Turbocharger

Reduced maintenance, improved power, improved speed turndown, improved altitude capability and reduced NOx emission.

Exhaust Temperature Monitor (ETM)

The ETM and Thermocouples are standard on every engine. The exhaust temperature is monitored at individual cylinder exhaust ports and a turbocharger outlet. This feature now includes the capability to communicate back to the advisor panel using the J1939 data link. This information can now be sent to a customer PLC via the PL1000. This is a new feature, with the benefit of simplifying the packaging control strategy.

Air Fuel Ratio Control with NOx sensor

Using state of the art technology, finer control of fuel to air mixture allows more complete and cleaner combustion thereby reducing NOx emissions.

Remote Monitoring

Remote monitoring can maximize efficiency and availability when used effectively. The added benefit of ADEM III combined with remote Advisor is that critical engine operating information can now be transmitted to a PLC via the Caterpillar PL 1000E communication module using MODBUS or with the PL1000T using M5X.

G3508 Single Turbocharger Features and Benefits:

- Power increase @1400 RPM (630 bHp to 670 bHp)
- Turndown from Rated Speed @ Rated Load with 5700 ft altitude and 38°C ambient temperature (>25%)
- Altitude at Rated Speed & Load (2600 ft/783 M)
- NOx Emission (Not to exceed 2 g/bH)

G3508 EIS to ADEM III Features and Benefits:

- Improved reliability by reducing the number of electrically related faults (wiring harness with fewer terminal connections)
- Extended engine life
- Finer control of fuel to air mix allowing for more complete and cleaner combustion (air fuel ratio control with NOx Sensor)
- Monitoring of exhaust temperature in several locations (Pyrometer)

Advantage

Guaranteed for fit and function, Genuine Cat Parts offer the right combination of quality and price for your G3508 engines. Plus, Cat Parts provide something that other brands can never match...the total support of your Caterpillar Authorized Service Locations.

See your Caterpillar Authorized Service location for specific part numbers.

CAT® DEALERS DEFINE WORLD-CLASS PRODUCT SUPPORT.

We offer you the right parts and service solutions, when and where you need them.

The Cat Dealer network of highly trained experts keeps your entire fleet up and running to maximize your equipment investment.

