



## INTRODUCING: IPD'S ADVANCED CRYO-TREATED VALVETRAIN COMPONENTS FOR THE CATERPILLAR G3500 ENGINE SERIES



### Revolutionize Your Engine's Performance with Cryogenic Treatment!

**IPD** proudly presents our latest innovation designed for demanding natural gas, methane, biogas and landfill applications: Cryo-Treated Valvetrain Components for the Caterpillar G3500 engine series. Our offering includes precision-engineered cryo-treated valves and seats, tailored to enhance the durability and performance of your engine in the most demanding applications.

### Why Cryo-Treated?

Cryogenic heat treatment is a cutting-edge process that enhances the durability and effectiveness of engine components. Here's how it works:

- Cryogenic Treatment: Materials are cooled to approximately -310°F using liquid nitrogen, which removes residual stresses.
- Controlled Reheating: Temperature is then gradually increased back to room temperature, followed by a mild heat treatment process.

### Key features of G3500 Cryo-Treated valvetrain:

#### Cryo-Treated Valve Seats:

**Enhanced Wear Resistance:** The cryo-treatment introduces microstructural changes in the tungsten steel valve seat, significantly reducing wear.

**Increased Thermal Stability:** The process improves the seat's ability to withstand high temperatures, ensuring consistent performance.

#### Cryo-Treated Valves:

**Reduced Wear and Valve Seat Recession:** Microstructure changes in the cobalt-chromium super alloy hard face of the valve minimize wear and valve seat recession.

**Superior Wear/Corrosion Resistance:** Enhanced resistance in the valve head (Inconel or valve steel) and valve stem (typically steel) translates to a longer lifespan and reliable operation.

## KEY BENEFITS:

<b>Extended Valve Life:</b>	Our cryo-treated components result in a notable increase in valve wear life, especially crucial for high-stress applications.
<b>Improved Engine Reliability:</b>	With enhanced wear resistance and thermal stability, your engine performs better and more consistently.
<b>Cost Efficiency:</b>	Reduced maintenance and replacement intervals mean lower operational costs and fewer downtime periods.

## APPLICATIONS:

Ideal for natural gas, biogas and landfill applications where reliability and performance are critical such as Caterpillar G3508, G3512, G3516 and G3520. Our cryo-treated valvetrain components are engineered to handle extreme conditions, delivering exceptional results.

IPD part number	Part description
<a href="#">1047184FR</a>	VALVE, INTAKE & EXHAUST CRYO TREATED
<a href="#">4688824FR</a>	VALVE, INTAKE, CRYO TREATED
<a href="#">3089177FR</a>	VALVE, EXHAUST, CRYO TREATED
<a href="#">1225963FR</a>	INSERT, VALVE SEAT, INTAKE CRYO TREATED
<a href="#">2668718FR</a>	INSERT, VALVE SEAT, INTAKE CRYO TREATED
<a href="#">1916760FR</a>	INSERT, VALVE SEAT, EXHAUST CRYO TREATED
<a href="#">2668719FR</a>	INSERT, VALVE SEAT, INTAKE 0.254MM O/S CRYO TREATED
<a href="#">2061546FR</a>	INSERT, VALVE SEAT, EXHAUST 0.254MM O/S CRYO TREATED
<a href="#">2668720FR</a>	INSERT, VALVE SEAT, INTAKE 0.508MM O/S CRYO TREATED
<a href="#">2061547FR</a>	INSERT, VALVE SEAT, EXHAUST 0.508 MM O/S CRYO TREATED
<a href="#">611713FR</a>	INSERT, VALVE SEAT, NAT GAS CRYO TREATED



check out our YouTube channel  
to see the video explaining the  
benefits of cryo-treating valvetrain.  
<https://www.youtube.com/@IPDParts>

All existing IPD customers can order IPD products through IPDNet at [store.ipdparts.com](https://store.ipdparts.com), or contact your IPD customer service representative at +1 310-530-1900 or email [service@ipdparts.com](mailto:service@ipdparts.com). For IPD Europe customers, you can order using [eustore.ipdparts.com](https://eustore.ipdparts.com). For IPD Australia you can email [ipdaust@ipdparts.com](mailto:ipdaust@ipdparts.com).

For new inquiries please reach out to your local distributor.



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