

SALES BULLETIN

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|---------|------------|---------|--|
| Part #: | Various | Engine: | Various |
| Date: | 05/01/2020 | Part: | Heavy Duty Camshaft—Valve Relief Upgrade |

Heavy Duty Camshaft



**Inline 6 Cylinder
Upgraded Camshaft &
Valve Relief**

**V8 Upgraded Camshaft
& Valve Relief**

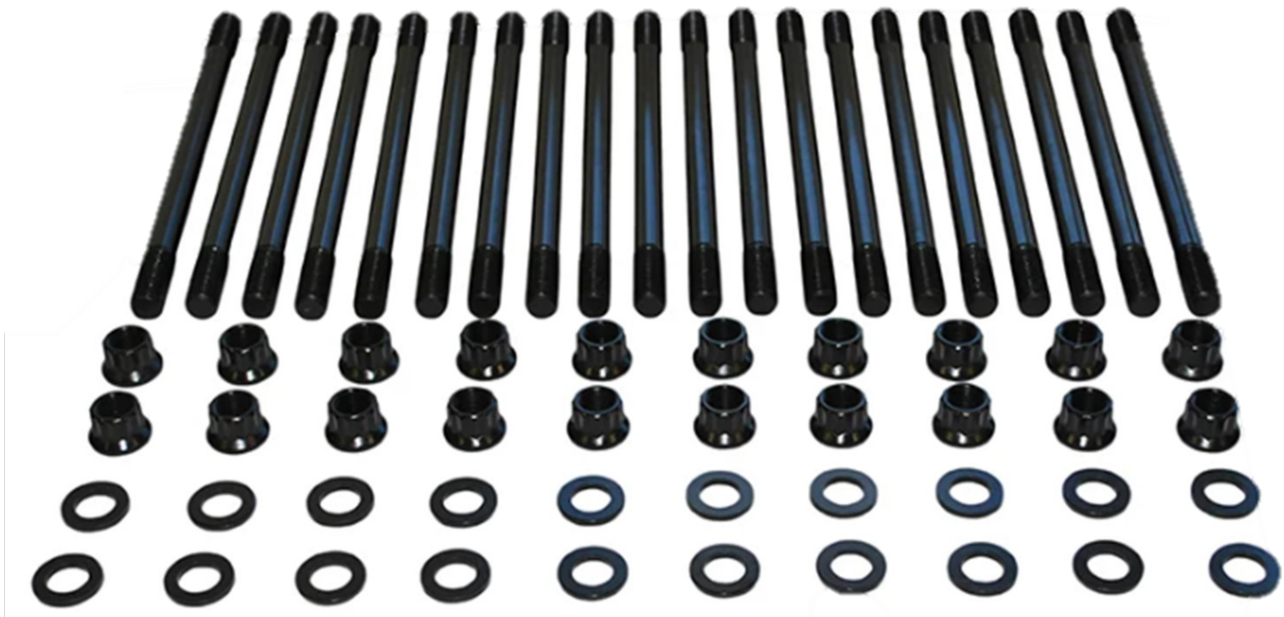
- **American made.**
- These cams are designed to take advantage of the lost opportunities the factories cams didn't seize and to remedy any engineering design flaws.
- Quicker spool up for better throttle response - Lower EGT's for durability.
- Stage 1 specifications - Good for towing applications.
- Duramax camshafts have keys that index the cam gear, instead of dowel pins that shear and break.
- Improved airflow for more torque and horsepower - Great for heavy duty use.
- New ductile iron (Cummins) or billet steel (Powerstroke - Duramax) Camshaft. Not a regrind.
- Great durability upgrade for towing and heavy duty use.

CNC machined valve reliefs in most applications put the piston-to-valve clearance specifications back to OE standards.

SALES BULLETIN

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| Part #: | Various | Engine: | Various |
| Date: | 05/01/2020 | Part: | Head Studs |

Head Studs Upgrade



- Head Stud upgrade—This is a durability upgrade and it increases the clamping force of the head to the block by 15% to 20%. We highly recommend the head stud upgrade on all diesel engines if available.
- Now diesel engines make over two to four times as much power as they did 20 yrs. ago, but the OE never upgraded the head bolt to a stud. The head to block fastener is under more stress than any other fastener in the entire truck so a stud is a vast improvement. The stud also puts considerably less stress on the threads in the block & it does not distort the cylinder bore as much as a bolt would, which can help with blow by issues. This upgrade is highly recommended if you do any heavy towing.

SALES BULLETIN

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| Part #: | PU-1833995C1 | Engine: | 6.4L Powerstroke |
| Date: | 05/08/2020 | Part: | HD Piston Upgrade |

6.4L Powerstroke HD Piston Upgrade



Stock OE



Heavy Duty Upgrade

- The piston on the left is a representation of an optional piston bowl design that is sometimes referred to as a “Delipped Piston”. Note the bowl wall with no negative overhang. Now there are no overhanging areas inside the bowl that would normally be exposed to flame travel and exhaust gas temperatures on three sides. This is now a “Delipped Piston”, and this design greatly reduces the likelihood of the piston overheating or breaking.
- The piston on the right is a representation of a stock OE piston bowl design that is sometimes referred to as a “Lipped Piston”. Note the aggressive re-entrant bowl design with negative bowl wall angles, sometimes referred to as the “Lip”. This design has been known to fail under severe duty usage. The bowl is exposed to flame travel and exhaust gas temperatures on three sides. This has led to piston overheating and metal fatigue issues that cause catastrophic engine failure.
- A great upgrade for adding durability to your diesel rig. Highly recommended for towing, 4WD applications, high turbo boost levels, high exhaust gas temperature applications, or just peace of mind in today’s demanding diesel engine applications.

SALES BULLETIN

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| Part #: | Various | Engine: | Various |
| Date: | 05/01/2020 | Part: | ARP High Performance Rod Bolts Upgrade |

Rod Bolts Upgrade



- A premium grade chrome-moly steel is used to manufacture ARP High Performance connecting rod bolts. This is heat-treated to provide a tensile strength in the 200,000 psi range, which is substantially stronger than the OEM bolts. Cycle testing shows High Performance rod bolts to be nearly five times more reliable than stock bolts.
- The ARP Rod Bolt Upgrade is less likely to break or stretch in heavy duty applications. A good durability upgrade in all applications for peace of mind!

SALES BULLETIN

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| Part #: | Various | Engine: | Various |
| Date: | 05/05/2020 | Part: | Upgrade |

Valve Upgrade



- The stainless steel used in the valve upgrade is a higher quality steel than supplied from the OE.
- These valves help prevent burnt and cracked valves.
- This upgrade adds durability to your diesel engine. Highly recommended for towing, 4WD applications, high turbo boost levels, high exhaust gas temperature applications, or just peace of mind in today's demanding diesel engine applications.

SALES BULLETIN

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|---------|------------|---------|----------------------|
| Part #: | Various | Engine: | Various |
| Date: | 05/05/2020 | Part: | Valve Spring Upgrade |

Valve Spring Upgrade



- A 25% to 50% increase in closed valve spring pressure will greatly reduce valve bounce, which is a situation where the valve doesn't close against the valve seat securely and compression is lost. This means lost cylinder pressure, lost HP and the potential for valvetrain damage.
- These springs are given an extra Nitriding surface hardening process that is above and beyond the OE manufacturing process.
- A must with a camshaft upgrade, high boost levels, or heavy duty applications.

SALES BULLETIN

| | | | |
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| Part #: | MPL-201 | Engine: | All Engines |
| Date: | 11/06/2017 | Part: | Priming System |

Melling Oil Primer MPL-201

WARNING!

Failure to properly prime oil system will damage engine and void your warranty. Do not use starter to prime oil system. Use an engine oil priming tank such as **MPL-201**.



To order this tool contact your sales associate.

SALES BULLETIN

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|---------|------------|---------|------------------------------|
| Part #: | ZDDP0616 | Engine: | All Engines |
| Date: | 06/16/2016 | Part: | Zinc/Phosphorus Oil Additive |

ZDDP ZINC AND PHOSPHORUS OIL ADDITIVE

ZDDP (Zinc Dialkyldithiophosphates) is an additive found in motor oils that serve as an anti-wear agent where any metal to metal contact is made in an engine. Flat tappet camshafts, timing gears, piston skirts, piston rings, bearings, rocker arms, etc. are some of the high wear metal to metal contact points that benefit from the ZDDP protection.

In recent years, the EPA has mandated the critical anti-wear additive ZDDP be reduced in motor oils, much like removing lead from gasoline. Back in the 1980s, motor oil typically contained around 1500 PPM (parts per million) of ZDDP. In the 1990s, that was reduced to 1200 PPM, then down to around 800 PPM in 2005.

The demand for longer drain intervals has also caused the amount of detergent to increase, which interferes with the anti-wear protection provided by ZDDP and compounds the problem.

The target range of ZDDP should be 1800 PPM to 2000 PPM for maximum protection.

Adding a 4oz bottle of ZDDPlus® Oil additive to every 5 quarts of your typical diesel motor oil will increase the ZDDP levels by 1256 PPM (Phosphorus) and 1751 PPM (Zinc). 1 to 2 bottles per oil change will put the levels back where they should be.

1 - 4oz bottle of ZDDPlus® oil additive has the same concentration of ZDDP as two quarts of the

| Product | Amount Used | Phosphorus (ppm) | Zinc (ppm) |
|--------------------------|-------------|------------------|------------|
| ZDDPlus® | 4 | 51,500 | 71,800 |
| Lucas® | 16 | 5,000 | 43,000 |
| Typical Diesel Motor Oil | 160 | 600 | 800 |

| Target ppm Zinc & Phosphorus Concentration | Ounces of ZDDPlus® | Ounces of Lucas® |
|--|--------------------|------------------|
| 1000 | 1.3 | 11.4 |
| 1100 | 1.7 | 14.3 |
| 1200 | 2.0 | 17.2 |
| 1300 | 2.3 | 20.0 |
| 1400 | 2.7 | 22.9 |
| 1500 | 3.0 | 25.7 |
| 1600 | 3.3 | 28.6 |
| 1700 | 3.7 | 31.5 |
| 1800 | 4.0 | 34.3 |
| 1900 | 4.3 | 37.2 |
| 2000 | 4.7 | 40.0 |

— 1 bottle Lucas®

— 2 bottles Lucas®

— 1 bottle ZDDPlus®