

New Victor Reinz® MLS Head Gaskets for Ford Modular Engines Provide Tight, Flexible Combustion Seal with Advanced Wave-Stopper™ Technology

Ann Arbor, MI – Jan. 31, 2008 – MAHLE Clevite Inc. a leading supplier of Victor Reinz® automotive engine gaskets for the aftermarket, has developed new multi-layer steel (MLS) head gaskets featuring advanced Wave-Stopper™ technology for Ford Modular engines. The MLS head gaskets have – surrounding the combustion chamber – four individual concentric waves, stamped from spring steel. They provide a constant, tight, flexible combustion seal that compensates for the range of motion caused by cylinder head lift-off and thermal expansion and contraction occurring during engine operation.

The design of these new MLS head gaskets, offered as replacement parts for Ford engines, also provides improved heat transfer between the engine block and cylinder head.

MAHLE Clevite currently offers the Victor Reinz Wave-Stopper - MLS head gaskets for a range of Ford engines. They include:

- Ford passenger car 4.6L (2V) SOHC 1991 - 2006
- Ford passenger car 4.6L (4V) DOHC 1993 – 2002 (all), and 2003 – 2004 Vin “V”
- Ford truck 4.6L (2V) SOHC 1997 – 2006
- Ford truck 5.4L (2V) SOHC 1997 – 2006
- Ford truck 5.4L (4V) DOHC 1999 – 2005

Duane Bethke, Gasket Product Development Manager for Victor Reinz, says they are replacing their Victor Reinz 5931(LH)/5932(RH) Nitroseat/Graphite head gaskets with the new standard thickness MLS “Wave-Stopper” gaskets as a running change throughout the line.

In addition to the standard gasket configuration, MAHLE Clevite is also offering a specially engineered Victor Reinz four-layer (thicker by .010 inch) version. It is designed to accommodate those Ford

engines in which the combustion chamber volume needs to be restored after the engine head or block has been milled. The thicker .010 inch MLS gaskets are part numbers 54457(RH) and 54458(LH). Both the standard and optional thicker head gaskets can accommodate a .060 inch overbore.

The topographic design of the Wave-Stopper sealing beads, which are a significant part of the Victor Reinz MLS gasket construction, is lower in height (.0007 inch - .0011 inch) at each head bolt (about one-half the thickness of a human hair). "Without this technology, you would have more force at the bolt area and less force between the bolts," Bethke explains.

The reduced height of the sealing beads at the head bolts provides superior distribution of the head bolt clamping force around the combustion chamber. There are, practically, four sealing points around the combustion chamber, therefore the increase in sealing capacity is almost proportional to the number of beads. According to Bethke, head gaskets offered by competitors have only one combustion sealing bead (folded over), which is only one sealing point.

"One of the biggest challenges faced when designing MLS head gaskets is the need to seal against water and oil, as well as internal combustion—the most abusive aspect of the engine," says Bethke. "The Wave-Stopper design does not compromise. Compared to the single bead design found in competitors' head gaskets, our Victor Reinz MLS head gaskets have four combustion sealing beads that give the entire head gasket a much better balance. We wanted to offer the best head gasket possible when we designed and tooled this gasket, and I truly believe we achieved our goal."

The Wave-Stopper technology featured in the new Victor Reinz MLS head gaskets is the same technology used to seal the engine in the world's most powerful production car, the 16 cylinder Bugatti Veyron® with 1000 horsepower. Victor Reinz is the automotive gasket brand for MAHLE Clevite Inc.

MAHLE Clevite Inc. is one of the world's largest suppliers of pistons, valve train parts, engine bearings, piston rings, and engine gaskets. MAHLE Clevite brands include MAHLE Original[®] pistons, assemblies, valves, cylinder liners, Clevite[®] engine bearings and engine parts, Victor Reinz[®] gaskets and Perfect Circle[®] piston rings. In addition, Clevite[®], Victor Reinz[®] and Perfect Circle[®] are official NASCAR[®] Performance Products. MAHLE Clevite's Internet address is www.mahleclevite.com.

The MAHLE Group is one of the 30 largest automotive suppliers worldwide. As the leading manufacturer of components and systems for the internal combustion engine and its peripherals, MAHLE is among the top 3 systems suppliers for piston systems, cylinder components, valve train systems, air management systems, and liquid management systems. With more than 40,000 employees in 110 production plants and seven research and development centers, MAHLE generated sales in excess of EUR 4.3 billion (USD 5.8 billion) in 2006.

For further information:

MAHLE Clevite Inc.
Ted Hughes
Marketing
1350 Eisenhower Place
Ann Arbor, MI 48108, U.S.A.
Phone: +1 734/975-7936
Fax: +1 734/975-7820
ted.hughes@us.mahle.com