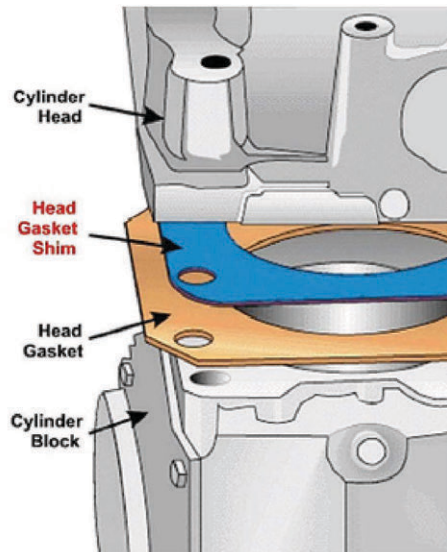


## Diesel Engine Head-Saver Shim Availability

The AERA Technical Committee offers the following information on head-saver shims availability for various diesel engines. In recent years, the tendency for diesel engine manufacturers has trended to incorporate an overhead camshaft design. In some engines, the drive gear design extremely limits the allowable cylinder head thickness.

To allow for additional cylinder head use when the head deck requires re-surfacing, head-saver shims have been developed to provide an ability to maintain drive gear backlash clearance. Although the list of available engines is currently somewhat limited, a shim can be developed for almost any engine from the engines head gasket.



**Figure 1. Typical Shim-Saver Installation**

Engine Australia has developed a range of steel head gasket shims to suit selected Hino, Isuzu, Mitsubishi, Nissan and Toyota engines. They are mostly used on diesel engines where the distance between a block mounted gear axis and overhead camshaft gear axis must be maintained. If the cylinder block and/or cylinder head on these engines are machined, the mesh of the camshaft gear and the block gear will be compromised. By using a head-saver shim, the critical camshaft gear backlash and alignment and the engine compression ratio can be maintained.

These head gasket shims are laser-cut from steel to match the corresponding cylinder head gasket profile and are available in .010 & .022" (.25 & .55 MM) thicknesses – unless indicated otherwise. Depending on whether the engine is fitted with thin wall liners or not, will determine which side of the head gasket the shim is installed. A sealant (such as Hylomar) can be used on the cylinder head or block side, but not on the gasket side, as the gasket will already have a sealant coating.



Current Head-Saver Shims are available for:

- **Hino:** S05C/T, S05D, J05C/T, J07C/T, J08C/T
- **Isuzu:** 4HF1, 4HG1/T, 4HE1T, 4HK1T
- **Isuzu:** 6HE1/TC, 6HH1, 6SA1/T, 6SD1/TC, 6HK1T
- **Mitsubishi:** 6M60-1AT1/T2, 6M60-3AT1/T2
- **Nissan:** PE6/T (0.25), TD42/T/Ti (0.25)
- **Toyota:** 1HZ/T & 1HDT (.25 MM), 1VD-FTV (.25 & .40 MM), S05C/T, S05D, J05C