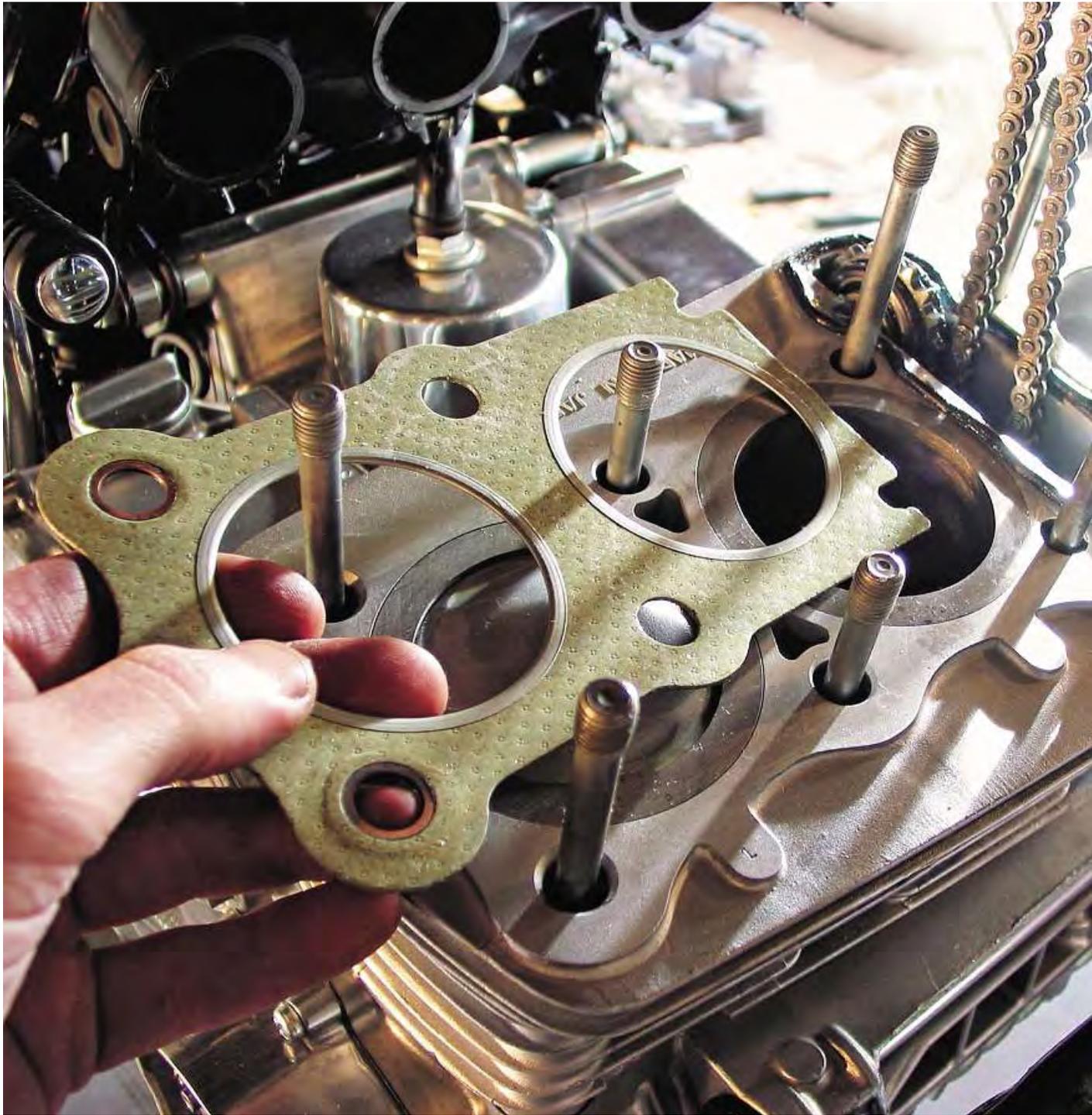


The Knowledge



WORDS/PHOTOS: Mark Haycock

If you're buying, making or choosing gaskets they need not only to fit, but to be made from the right materials. Mark Haycock tells you what you need to know.

A typical bike engine contains around three litres of oil, and one of the biggest challenges to engineers over the years has been to keep that oil where it should be.

There are many joints between the various engine castings, and nearly every one needs some means of preventing fluids from escaping. In an ideal world, every joint face would be perfectly flat, smooth and perfectly aligned with its opposite number. Furthermore, when the bolts were tightened

no distortion of the joint would take place and they would remain perfectly tightened throughout the life of the bike. Unfortunately, we do not live in an ideal world and this is where gaskets come in.

The aim of a gasket is to provide a little elasticity to absorb the imperfections found at the joint surfaces. Typically, gaskets are made from a mixture of fibres, such as paper or asbestos, held within synthetic rubber such as nitrile. Nowadays asbestos is no longer

favoured and more use is made from up-to-date materials such as carbon fibre, PTFE and Kevlar.

When rebuilding an engine, the first thing you should bear in mind is the fact that (with certain exceptions) you should never reuse old gaskets. The reason for this is that the tightening process tends to cause a permanent distortion so they never work properly a second time. Your first job then is to get hold of a gasket set as this is more



1. A typical engine gasket set, this for a Honda 400/4. This is not genuine Honda, but a pattern set. These usually seem to produce satisfactory results but are rather cheaper than the genuine items.



2. Three different types of gasket from the set: asbestos for the exhaust, cork for the contact breaker points cover and asbestos/rubber for an outer case.



3. The usual problem when rebuilding an engine: how do you get the old gaskets off? With patience is the usual answer.



4. The camchain tunnel has this rather narrow joint face: a thin smear of sealant will help the gasket stay oil tight.



5. This oil restrictor jet should be sealed adequately by its surrounding O-ring.

POINTS TO NOTE WHEN FITTING GASKETS:

Make sure that all locating dowels are in place as these help not only to locate the metallic components, they also stop the gasket from being displaced. Pic 8 shows a hollow dowel, though this is a fairly special one as it has an extra rubber seal.

Fixing screws or nuts should be tightened to the correct torque setting in the correct sequence. This is always specified in the workshop manual in the case of the cylinder head, but in case you cannot find the information, the sequence is usually working evenly from the inside outwards, using at least three successive levels of tightness.

Lastly, ensure that the gasket is the right way round. It is easy to imagine that a component is symmetrical when it is not as Pics 9 and 10 demonstrate.

