Valve Seals Help Control Oil Consumption and Valve Lubrication

Valves are an important part of regulation in any system, and their seals are designed to be used in different types of engines for controlling oil consumption, and valve lubrication. The design and manufacturing of the seal is the key to ensure seal performance and longevity.

Valves have many uses and are found in virtually every industrial process, including water & sewage processing, mining, power generation, processing of oil, gas & petroleum, food manufacturing, chemical & plastic manufacturing and many other fields.

Some examples of valve seals include: ball valve seats, globe valve discs, stem packing, stem seals, valve discs, valve packing, valve seals, and valve stem packing.

Having a proper valve seal can save you thousands of dollars in repairs at the end of the day, so it’s important to check them semi-regularly. For example purposes, we’ll focus on cars, but this can be translated across a variety of systems and industries. Here are some symptoms of a bad valve seal that may need to be replaced:

Performing the Cold Engine Test

One sure-fire way to tell if you have a faulty valve seal is to perform a cold engine test. When your vehicle has been sitting overnight or for a longer period of time, the top of the head of the valve cover will have some oil left over from the last time you drove. When you start the engine, the oil ends up getting sucked down through the bad seal into the combustion area, producing a blueish smoke out of the tailpipe. This may indicate that your valve is not securely sealed and that it’s time to get a new one.

Idling

Another way to test a bad valve seal is to be aware of what happens while your vehicle is idling. When your vehicle is stopped for a significant amount of time, high vacuum levels
will cause the oil to build up around the valve system while it is closed. In a faulty valve seal situation, when you begin to accelerate again, this oil can end up getting sucked past the seal an into the valve guide. This causes more of this blueish smoke, due to the burning of oil, to come out the tailpipe.

High Levels of Oil Consumption

High levels of oil consumption is another indicator that you have a bad valve seal. This is because oil is being leaked out or burned excessively and causing oil to decrease at a higher rate than normal. You can detect this loss of oil with a basic oil dipstick and keeping a regular log of oil levels. If no oil leaks can be found around the vehicle, you may still have a bad valve seal, as the oil will likely be burned up causing excessive smoke.

High Levels of Smoke

Another indicator of a faulty valve seal, as mentioned above, is the high presence of smoke. It’s common for some exhaust smoke to be present when you first start your vehicle, but if it begins to last longer than normal, your valve seal may be deteriorating. In addition, if you have a bad valve seal, the excessive smoke will tend to come in waves as an indicator of oil burning.

Engine Braking Test

Engine braking is when other ways besides external braking are used to slow down your vehicle within an engine. When you have a bad valve seal, the oil that collects at the front cover of the head will end up burning when you push on the accelerator after coasting for a while. This is apparent especially when going downhill and again will be indicated by the excessive smoke that leaves the tailpipe. The oil here burns longer than in normal cases.

Acceleration Power is Compromised

The final indicator of a poor valve seal is a lack of acceleration power. You can also perform a compression test to see if this is the case. A higher level of compression will indicate that it’s a valve seal problem, while a low level of compression will indicate a piston ring problem. These two areas can be very similar in their faulty symptoms so it’s best to be informed on their differences.

A badly designed seal can result in engine oil flooding, which can eventually cause a breakdown. Gallagher Fluid Seals understands the importance of a well-designed industrial seal and can help design a custom solution for you, or supply you with standard off-the-shelf seals from the world’s top suppliers.
For more information about valve seals what why they fail, or to find solutions, contact Gallagher’s engineering department.

The original article can be found on Real Seals’ website.