

TECH TIPS

STATIC BURST PRESSURE

Proving Mechanical Integrity.

The primary function of an oil filter is to protect the engine from damage due to harmful wear particles within the fluid stream. The filter media is the component within the filter that is used to remove the wear particles.

In addition to removing wear particles from the fluid, the filter must be designed to structurally withstand the normal system operating pressures of the particular application(s) that it is supposed to be used on. The filter is a passive component of the lubrication system and is neither designed nor constructed with the capability of either increasing or decreasing the lubrication system pressure. The filter is subject to the pressure developed and regulated by the oil pump and its pressure regulating valve.

In some instances, the oil pressure regulating valve will stick in the closed position and cause excessive system pressure to go to the filter and other system components. Filter damage may occur as a direct result of this problem. The filter canister may become deformed, the gasket may become displaced or the filter seam may unroll. The filter damage is not the cause of the problem, but is an indicator of a faulty regulating valve.

Static burst pressure tests are performed on spin-on oil filters to prove their mechanical integrity. These tests simulate a maximum pressure surge condition caused by a faulty oil pressure regulating valve and are used to determine the ability of the filter to withstand the maximum pressure surge. This test is performed by properly installing a spin-on filter on a mounting base on a laboratory test stand, then adding pressurized fluid at a given rate until the filter reaches failure.

Baldwin performs several industry standardized static burst pressure tests including:

- ISO 4548-6
- SAE HS806

It is critical that the filter not only removes harmful contaminants from the fluid stream, but is designed to structurally withstand the normal system operating pressures of the application.



Deformed

Normal