



When is a **Flush**

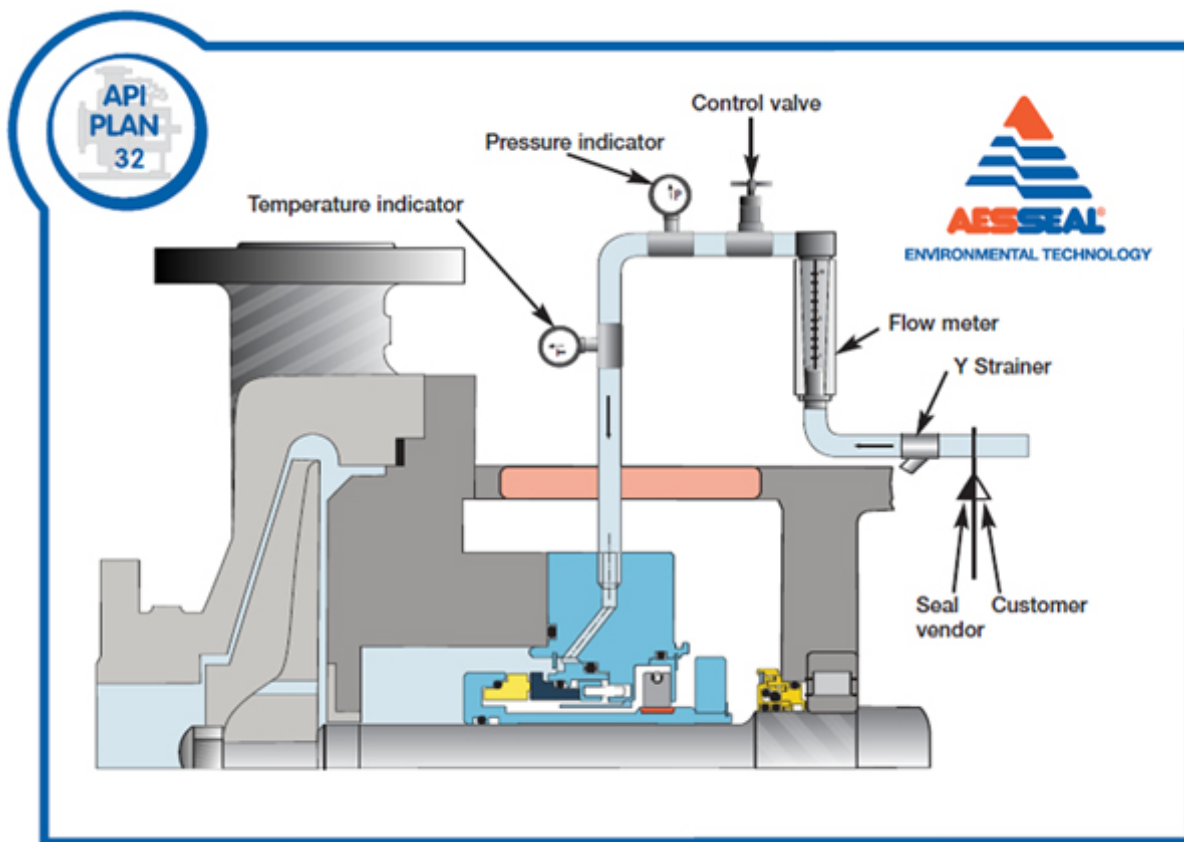
NOT a
FLUSH?



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We have all heard the term "**flush**" used when discussing mechanical seals. The definition of a flush is "*a stream brought in from an external source to the mechanical seal.*" This plan (API Plan 32) is almost always used in conjunction with a close clearance throat bushing. The flush fluid must be brought into the stuffing box at a minimum of 15 PSIG higher than stuffing box pressure.

The advantage is that the external flush fluid, when selected properly, can result in extended seal life. When an outside flush source is used, concerns regarding product dilution and/or economics must be considered by the user. The picture below shows API Plan 32 arrangement.

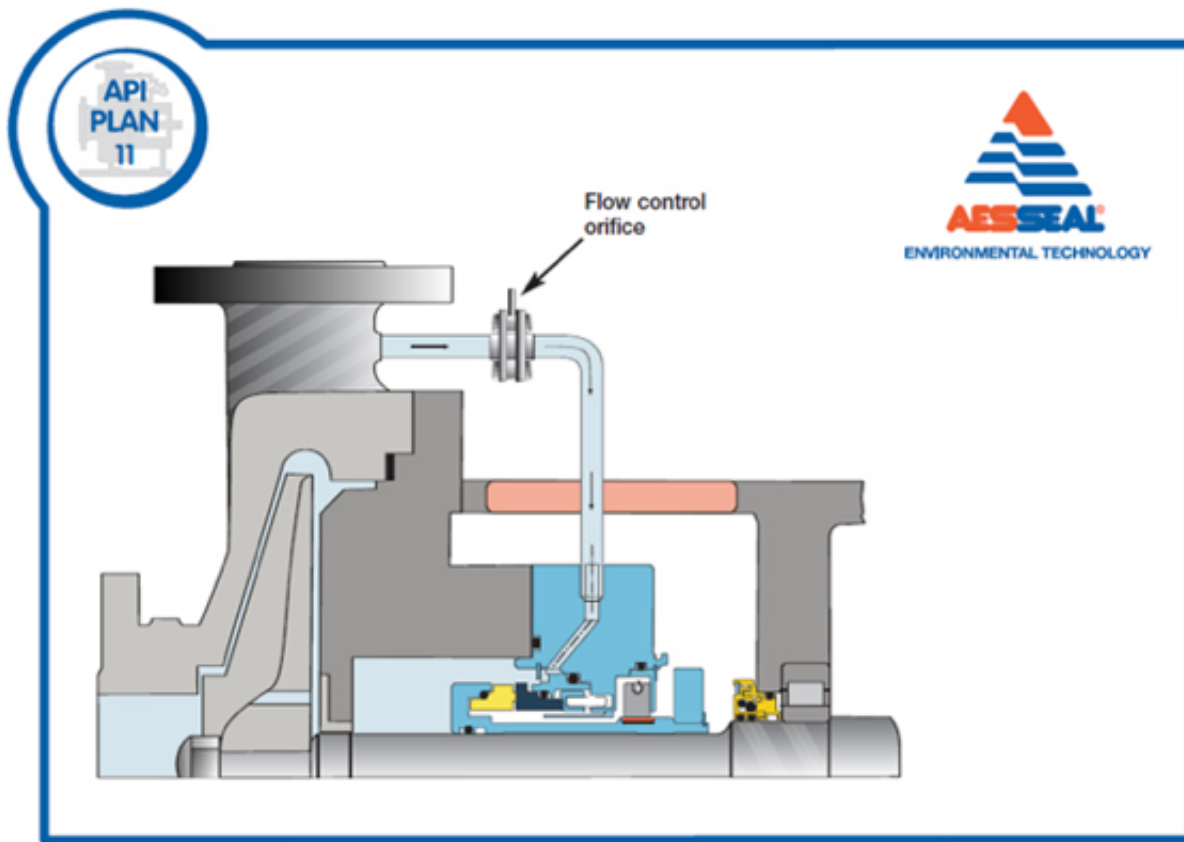


API Plan 32

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The confusion arises when our customers call a *discharge recirculation* (API Plan 11) a "flush". Although this terminology is often used, this is where the confusion lies. This plan takes fluid from the pump discharge (or from an intermediate stage), through an orifice(s) and directs it to the seal chamber to provide cooling and lubrication to the seal faces. The advantage is no product contamination and piping is simple.

You must remember the fluid is coming back to the seal at a higher pressure. If the fluid contains particulate, you are bringing dirt and contaminants to the seal at high pressure. Think *sandblaster*. This is a good piping plan to control vapor pressure. Think *hot water and flashing between the seal faces*. The picture below shows a Plan 11 arrangement.



API Plan 11

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A primary factor in achieving highly reliable, effective sealing performance is to create the best fluid environment around the seal. Selection of the right piping plan and associated fluid control equipment requires a knowledge and understanding of the seal design and arrangement. As well as awareness of the fluids in which the seals operate and the rotating equipment to which they are fitted.

Provision of clean, cool face lubrication, effective heat removal and consideration of personnel and environmental safety, leakage management and controlling system costs are among the specific factors that must be considered. It is proven to prevent premature mechanical seal failure you must use a reliable seal support system.

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