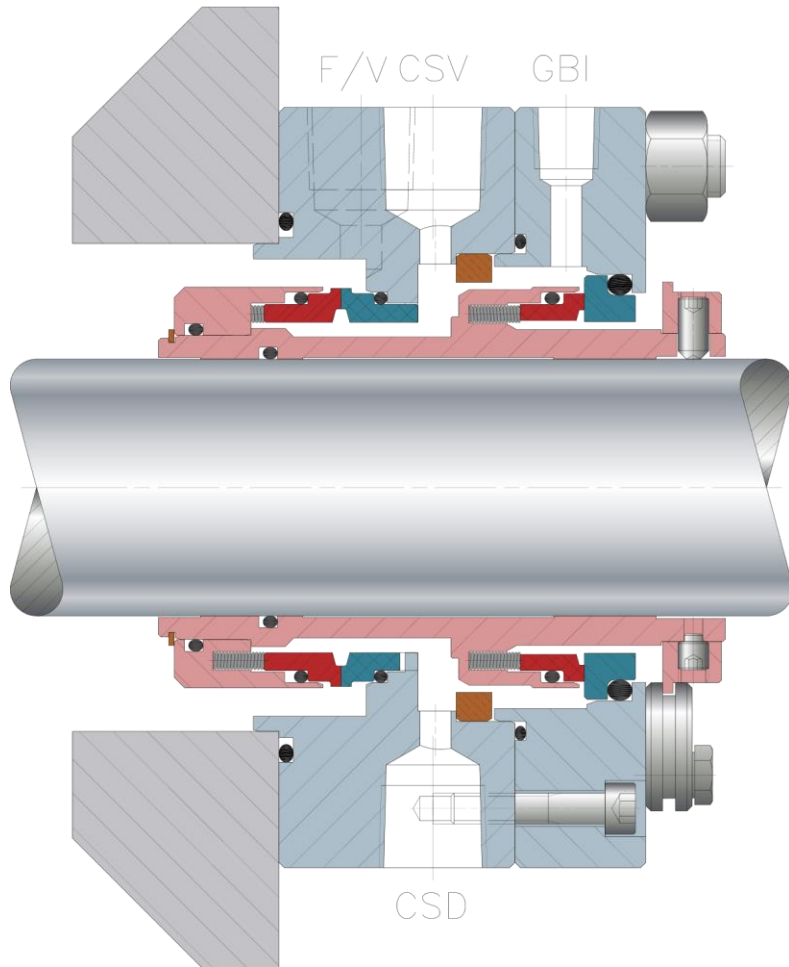




Mechanical seals for containment and emissions control





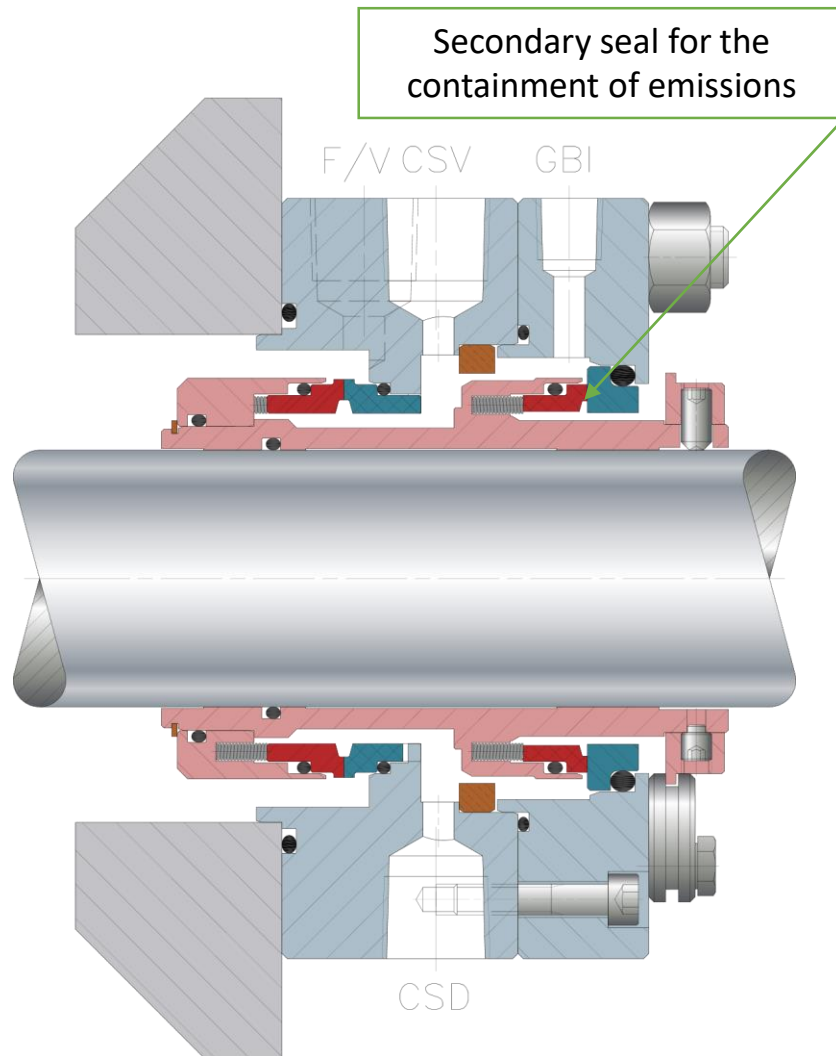
Mechanical seals for containment and emissions control

The emissions control is a critical topic for technicians and plant engineers whenever new plants or revamping have to be developed.

Type of mechanical seal selected on a pump is very important for controlling emissions, that could be dangerous for environment, people and general safety of the plants.

Fluitten has a wide range of solutions suitable for centrifugal pumps according to ISO and API standards, including all the categories stated by **API 682 (I, II, III)**.





Mechanical seals for containment and emissions control

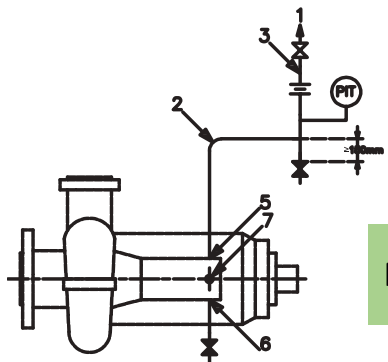
This **solution** developed by **Fluiten technicians** is simple, reliable and cost effective, since allows to limit the capex of first installation, which is generally heavily influenced by auxiliary systems installation.

In this **dual arrangement**, secondary seal is suitable for dry running (**2CW-CS**) and allows **containment of physiological leakage** coming from the primary seal, which is working in wet conditions.

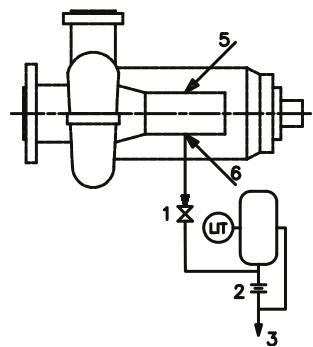
When leakage from primary seal does not condense, gas leakage can be directed to the flare or to the gas treatment plant.

If leakage is liquid or mixed phase (liquid and gas), they are directed to a small tank, where it is possible to know the leakage rate and, in case it is very high, to stop the pump safely.

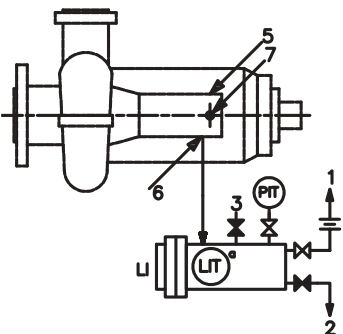




Plan 76 gas leaks



Plan 65 A-B liquid leaks



Plan 75 liquid and gas leaks

* Limits are expected in relation to regional rules or end-user specifications

Mechanical seals for containment and emissions control

This solution applied by **API 682** standard, is suitable for light hydrocarbons, gasolines, solvents and liquids containing **H₂S** (hydrogen sulphide):

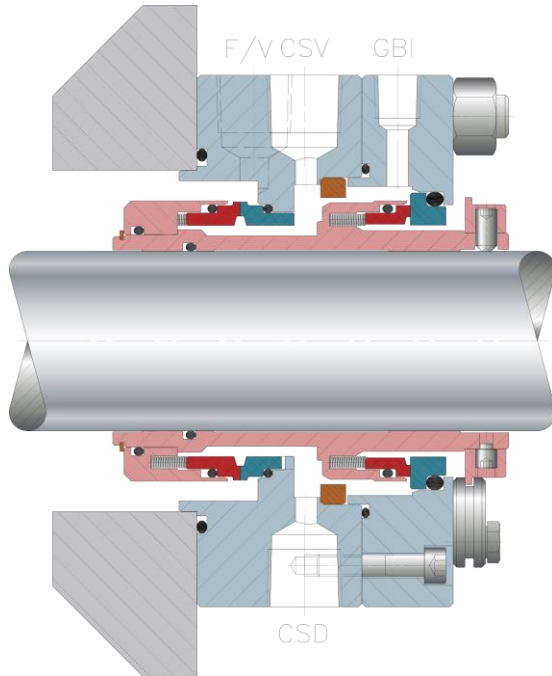
- 50ppm-100ppm *: Possibility to select **Plan 65** with secondary "segmental bushing" seal as an alternative to a secondary complete mechanical seal
- 100ppm-600ppm *: **Plan 75** or **Plan 76** with secondary dry running "mechanical" seal

Whenever H₂S concentration is higher than **600ppm**, for highly flammable liquids and operating temperatures above 176 °C, **Fluitten** recommends a double pressurized seal with barrier fluid: **API Plan 53A, 53B or 54**.



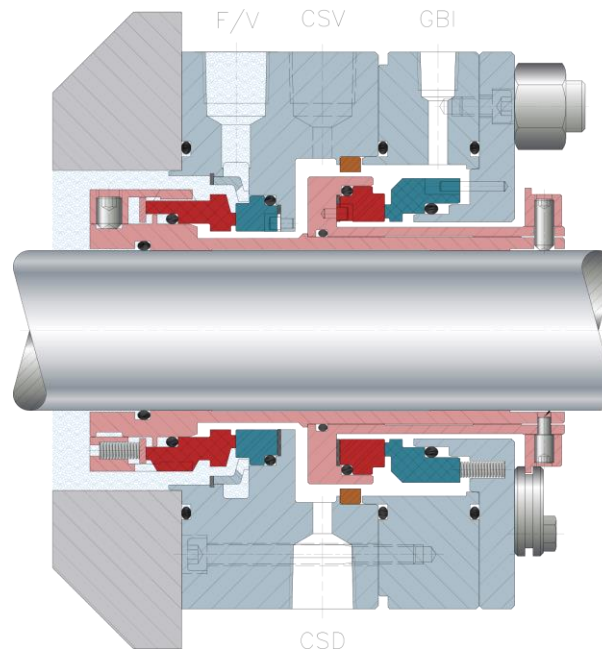
CB8L

Double Cartridge Seal with dry running secondary containment seal, **cat I, for API/ISO Pumps.**

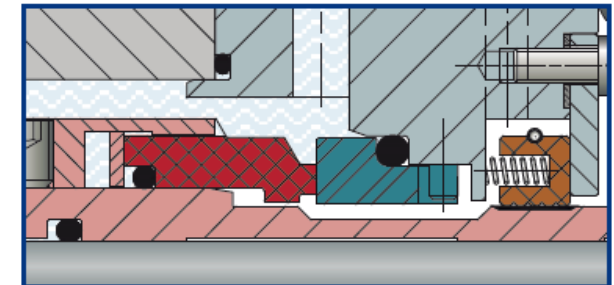


BM6L

Double Cartridge Seal with dry running secondary containment seal, **cat II & III, for API Pumps.**



API 682 cat I and II Seals are available in alternative arrangement with Single Seal and auxiliary segmental bushing.



Fluitten Sales Engineers are available for additional information

