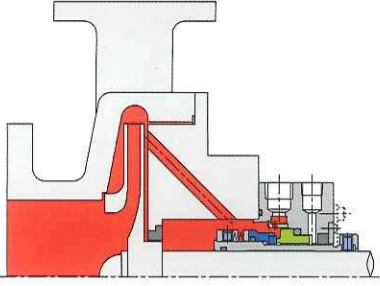
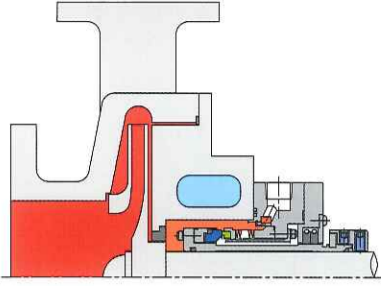


**PLAN 01 ( Internal Flushing )**



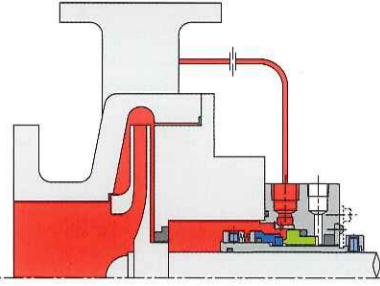
- PLAN01 is similar to a PLAN11 except internal port.
- PLAN01 is useful with liquids that thicken or solidify at ambient temperatures to minimize freezing the fluid.

**PLAN 02 ( Dead end )**



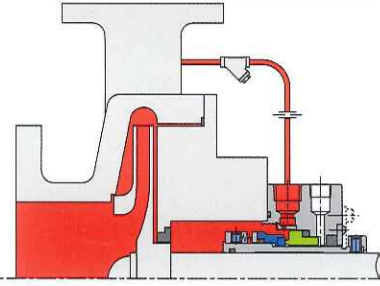
- Cooling/Heating with pump jacket.
- PLAN02 is more common in hot oil service of low seal chamber pressure.
- PLAN02 is common in the Chemical industry.

**PLAN 11 ( Self Flushing )**



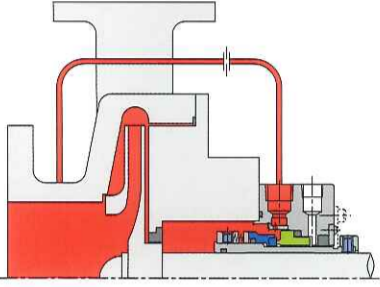
- PLAN11 is the default plan for single sale.
- Recirculation from pump discharge through a orifice to the seal.

**PLAN 12 ( PLAN11 + Strainer )**



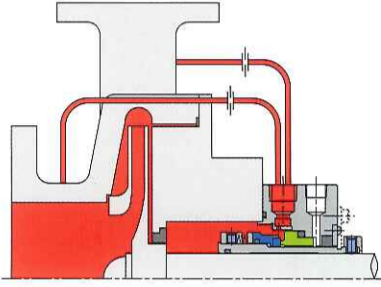
- PLAN12 is used to protect orifice and seal face in service including solids.
- Clean strainer regularly to preventing blockage.

**PLAN 13 ( Reverse Flushing )**



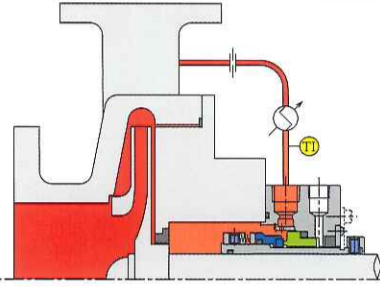
- Standard selection for vertical pumps.
- Product is routed from the seal chamber back to the pump suction to provide cooling and to vent air from the seal chamber.

**PLAN 14 ( Through flushing )**



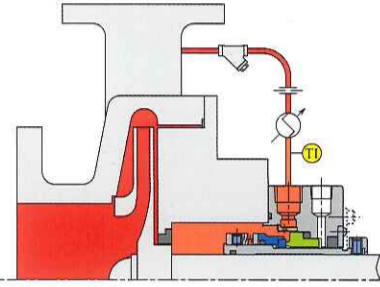
- PLAN14 is the combination of PLAN11 and PLAN13 to enhance cooling.
- Commonly used on vertical pumps and/or LPG application.

**PLAN 21 ( PLAN11 + Cooler )**



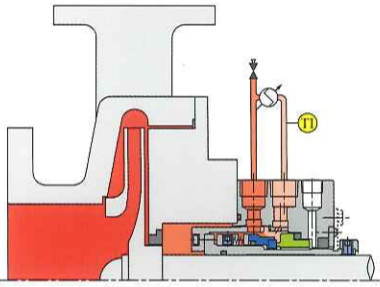
- Plan21 provides a discharge cool flush to the seal.
- This is chosen to improve the margin to vapour formation, to meet secondary sealing element temperature limits, or to improve lubricity.

**PLAN 22 ( PLAN12 + Cooler )**



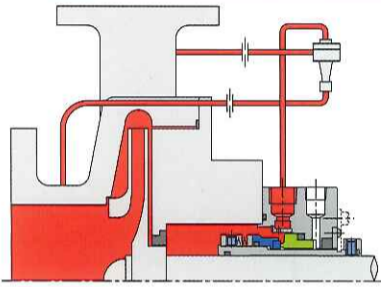
- PLAN22 is added a cooler to the orifice down stream of Plan12.
- Common in seal fluid is a high temperature, and solids.

**PLAN 23 ( Partial Circulation )**



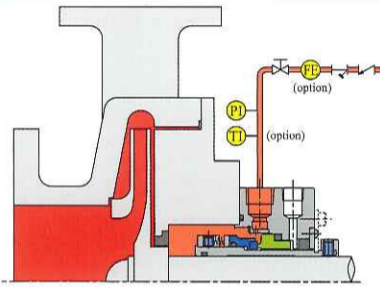
- Recirculation from a pumping ring in the seal chamber through a cooler and back into the seal chamber.
- The cooler only removes seal face-generated heat plus heat soak from the process.

**PLAN 31 ( PLAN11 + Cyclone separator )**



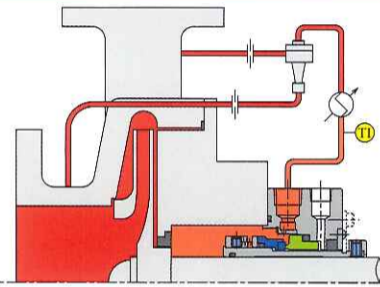
- Recirculation from discharge through a cyclone separator delivering the clean fluid to seal chamber for heat removal and solids removal.
- The solids are delivered to pump suction line.

**PLAN 32 ( External Flushing )**



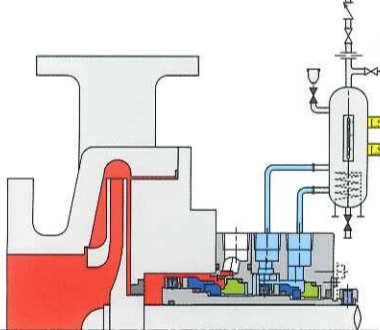
- Clean flush is injected into the seal chamber from external source.
- Commonly used for hot oil services such as the residue oil including solids at high temperature services.

**PLAN 41 ( PLAN21 + Cyclone separator )**



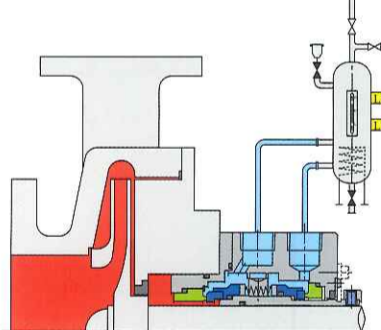
- PLAN41 is combination of PLAN21 and PLAN31 and is specified only for hot services containing solids.

**PLAN 52 ( Unpressurized buffer fluid )**



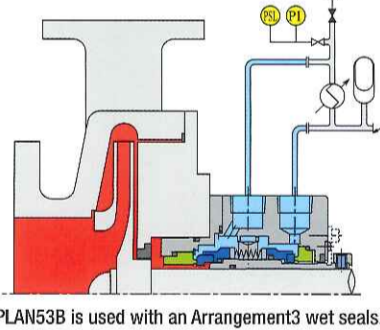
- PLAN52 is used with Arrangement2 wet seals (2CW-CW).
- It is normally used in services where process fluid leakage to atmosphere must be minimized.

**PLAN 53A ( Pressurized barrier fluid )**



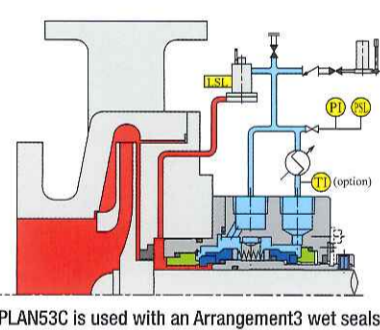
- PLAN53A is used with an Arrangement3 wet seals.
- Barrier fluid reservoir supplying clean fluid to the seal chamber.

**PLAN 53B ( Pressurized barrier fluid )**



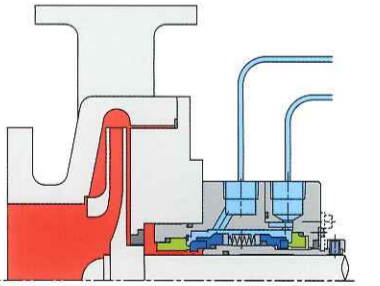
- PLAN53B is used with an Arrangement3 wet seals.
- Pre-pressurized bladder accumulator provides pressure to the circulation system.

**PLAN 53C ( Pressurized barrier fluid )**



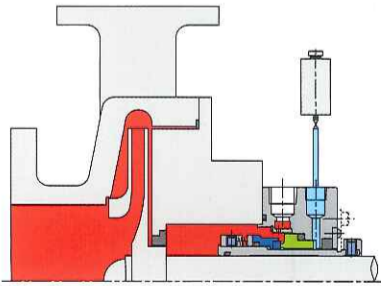
- PLAN53C is used with an Arrangement3 wet seals.
- Piston accumulator provides pressure to the circulation system (Dynamic tracking of process pressure).

**PLAN 54 ( Pressurized barrier fluid )**



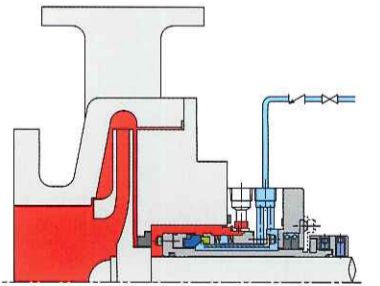
- PLAN54 is used with an Arrangement3 wet seals.
- In a PLAN54, a cool clean product from an external source is supplied to the seal as a barrier fluid.

**PLAN 51 ( Quench Pot )**



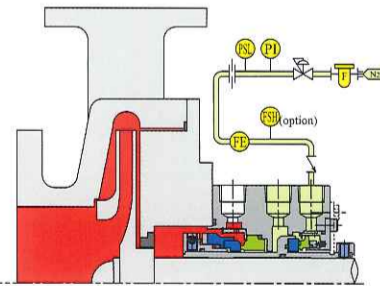
- PLAN51 supplies a fluid in the atmosphere side of mechanical seal with a quench pot.
- This is often for thawing mechanical seal in freezing temperature before pump start-up.

**PLAN 62 ( External Quench )**



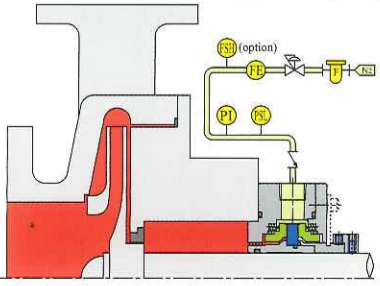
- A quench stream is brought from an external source to atmospheric side of the seal faces.
- To prevent solids buildup on the atmospheric side of the seal.

**PLAN 72 ( Unpressurized buffer gas )**



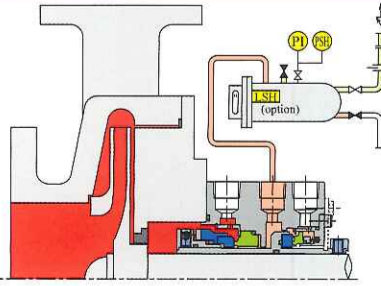
- PLAN72 can be used on Arrangement2 that use a dry-running containment seal.
- Buffer gas can be used to dilute seal leakage or in conjunction with PLAN75 or 76 to help sweep leakage into a closed collection system.

**PLAN 74 ( Pressurized barrier gas )**



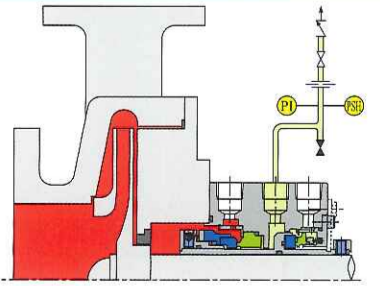
- PLAN74 is used on Arrangement3 where the barrier fluid is a gas.
- This is used in services which may contain toxic or hazardous materials whose leakage cannot be tolerated.

**PLAN 75 ( Drain tank )**



- PLAN75 is used on Arrangement2 which utilize a dry-containment seal and where the leakage from the inner seal may condense.
- A large quantity of leaks of the inner seal detect it in LSH or PSH of the Drain tank.

**PLAN 76 ( Leakage collection )**



- PLAN76 is used on Arrangement2 which utilize a dry-containment seal and where the leakage from the inner seal will not condense.
- A large quantity of leaks of the seal detect it in PSH of the Flare line.

**SYMBOL**

	Flow control orifice		Pressure switch low
	Check valve		Level switch high
	Pressure control valve		Level switch low
	Temperature indicator		Filter
	Pressure indicator		Flow meter
	Pressure switch high		Flow switch high