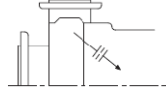
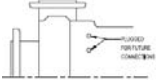
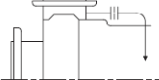
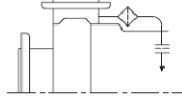
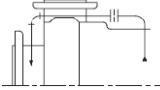
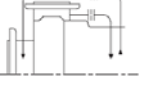
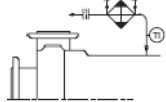

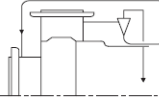
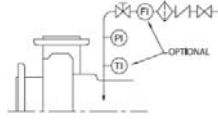
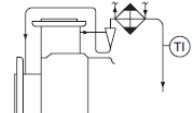

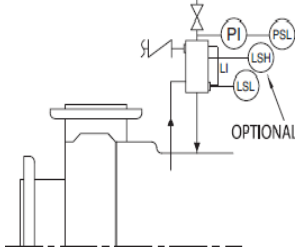
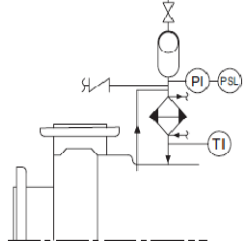
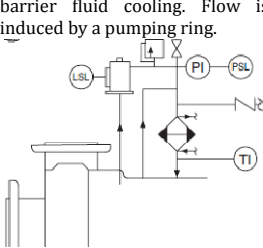
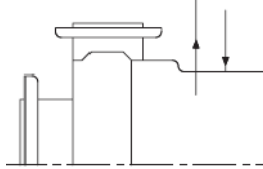
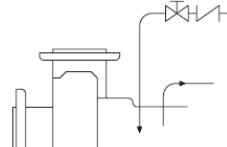
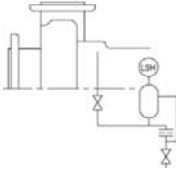
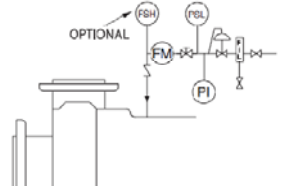
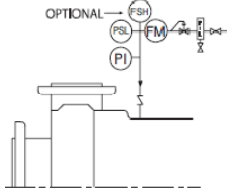


Mechanical Seal Piping Plans

	<p>Plan 01 (Single Seals) Plan 01 is an internal recirculation from the pump discharge area of the pump into the seal chamber, similar to a Plan 11 but with no exposed piping.</p> 	<p>Plan 02 (Single Seals) Plan 02 is a non circulating flush plan where adequate vapor suppression can be assured.</p> 	<p>Plan 11 (Single Seals) Plan 11 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.</p>
	<p>Plan 12 (Single Seals) Plan 12 is similar to Plan 11, except that a strainer or filter is added to the flush line.</p> 	<p>Plan 13 (Single Seals) In a Plan 13 the flow exits the seal chamber and is routed back to pump suction.</p> 	<p>Plan 14 (Single Seals) Plan 14 is a combination of Plans 11 and 13. Flush is taken off of pump discharge, sent to the seal chamber, and piped back to pump suction.</p>
	<p>Plan 21 (Single Seals) Plan 21 is a cooled version of Plan 11. The product from pump discharge is directed through an orifice, then to a heat exchanger to lower the temperature before being introduced into the seal chamber.</p> 	<p>Plan 23 (Single Seals) Plan 23 is a closed loop system using a pumping ring to circulate product through a heat exchanger and back to the seal chamber.</p> 	<p>Plan 31 (Single Seals) Plan 31 is variation of Plan 11, where an abrasive separator is added to the flush line. In this plan, the product is introduced to the abrasive separator from the discharge of the pump.</p>
	<p>Plan 32 (Single Seals) Plan 32 uses a flush stream brought in from an external source to the seal. This plan is almost always used in conjunction with a close clearance throat bushing.</p> 	<p>Plan 41 (Single Seals) In Plan 41, product from pump discharge is first put through an abrasive separator and then to the heat exchanger and back to the seal chamber.</p> 	<p>Plan 52 (Dual Seals) Plan 52 uses an external reservoir to provide buffer fluid for the outer seal of an unpressurised dual seal arrangement.</p>

Mechanical Seal Piping Plans

<p>Plan 53A (Dual Seals) Plan 53A uses an external reservoir to provide barrier fluid for a pressurized dual seal arrangement. Reservoir pressure is produced by a gas, usually nitrogen. Flow is induced by a pumping ring.</p> 	<p>Plan 53B (Dual Seals) Plan 53B uses an accumulator to isolate the pressurizing gas from the barrier fluid. A heat exchanger is included in the circulation loop to cool the barrier fluid. Flow is induced by a pumping ring.</p> 	<p>Plan 53C (Dual Seals) Plan 53C uses a piston accumulator to provide pressure to the system. It uses a reference line from the seal chamber to provide a constant pressure differential over the chamber's pressure. A water- or air-cooled heat exchanger provides for barrier fluid cooling. Flow is induced by a pumping ring.</p> 
<p>Plan 54 (Dual Seals) Plan 54 utilizes an external source to provide a clean pressurized barrier fluid to a dual pressurized seal.</p> 	<p>Plan 62 (Quench Seals) Plan 62 is a common plan to improve the environment on the atmospheric side of single seals by quenching with steam, nitrogen or water.</p> 	<p>Plan 65 (Single Seals) Plan 65 is a liquid leakage detection plan normally used for single seals. It utilizes a level switch on a reservoir to set off an alarm when excess leakage is detected.</p> 
<p>Plan 72 (Secondary Containment Seals) Plan 72 for secondary containment uses an external low pressure buffer gas, usually nitrogen, regulated by a control panel that injects it into the outer seal cavity.</p> 	<p>Plan 74 (Dual Gas Seals) Plan 74 provides a pressurized gas, typically nitrogen, to dual gas seals through the use of a control panel that removes moisture, filters the gas, and regulates the barrier pressure.</p> 	<p>Plan 53A (Secondary Containment Seals) Plan 75 is a collection system used with secondary containment seals for process fluid that will condense at lower temperatures or is always in a liquid state.</p> 