AQUASEAL AND CHEMSEAL LIQUID RING VACUUM SYSTEMS

The AquaSeal is a direct-drive, gravity-feed, water-cooled, water-sealed vacuum system utilizing a liquid ring vacuum pump. AquaSeal systems can incorporate either a single stage or a two stage vacuum pump.

ChemSeal is a full recovery system which utilizes solvents as the seal fluid instead of water.

AquaSeal systems are available in full recovery, partial recovery, or no recovery versions.

Full Recovery Systems

The discharge/separator holds the seal fluid and separates the seal fluid from the air or gases discharged from the pump.

On full recovery systems, the tank incorporates a low-level switch in series with a makeup fluid solenoid valve. The normal tank fluid level is at the same level at the pump centerline, ensuring that the pump cannot be flooded.

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The vacuum system is started via a control panel, manual motor starter, or by other customer-supplied means.

The head pressure of the reservoir / separator tank, along with the suction of the pump, brings the seal fluid from the tank across the Y-strainer, through the heat exchanger, up to the pump.

Not shown is the customer supplied fluid cooling line that must be fed to the heat exchanger. This cools the circulated vacuum system seal fluid and can be once through or be used in conjunction with a separate cooling process such as a chiller or cooling tower. This fluid does not come in contact with the process.

Seal fluid enters the liquid ring pump and circulates as described in Principles of Operation - Liquid Ring Pumps. Discharged seal fluid exits the discharge manifold and back into the reservoir / separator tank.

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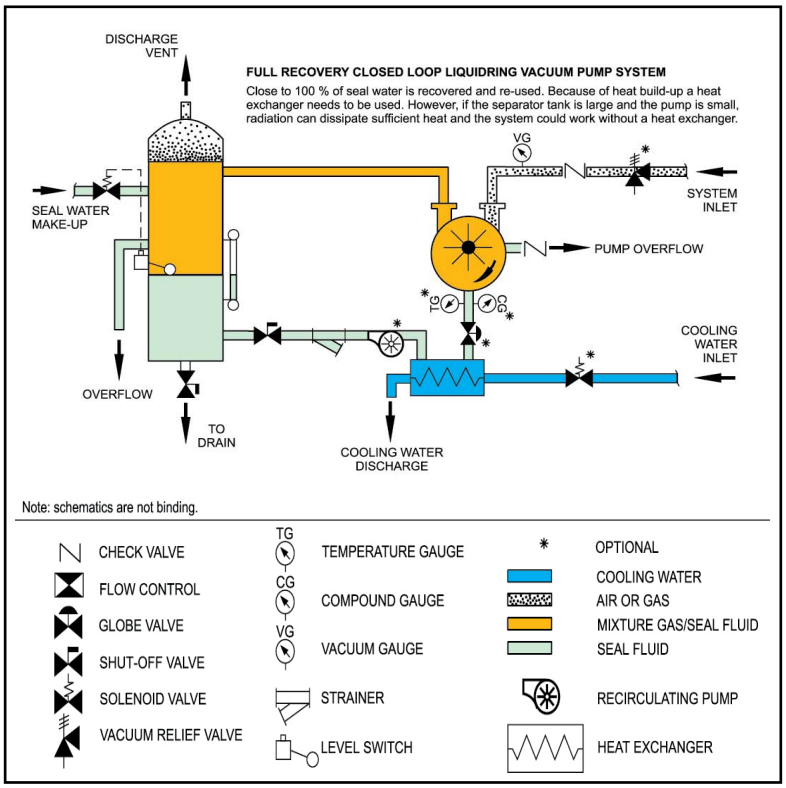
If the fluid level were to get low, the low-level switch would close, which will supply power to the makeup solenoid. This allows fluid to enter the reservoir tank until the level switch opens, stopping power to the solenoid valve. This stops the flow of liquid into the tank.



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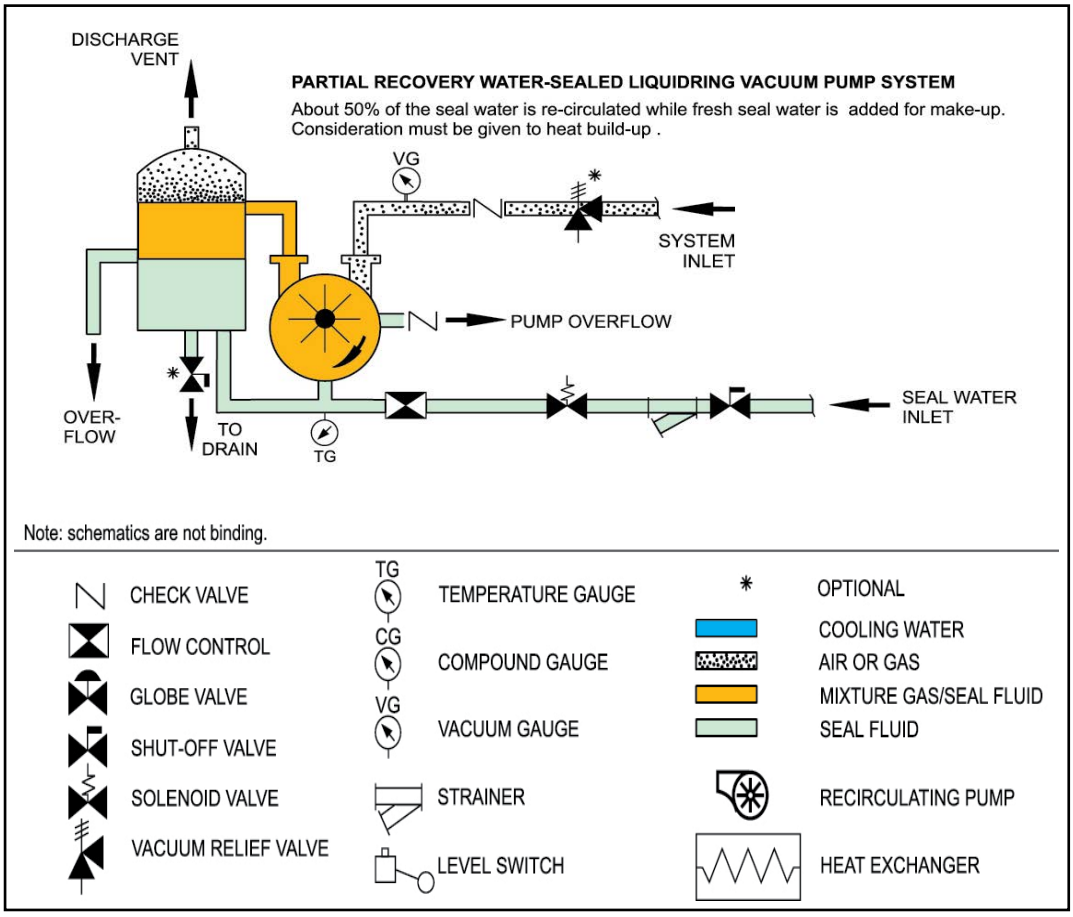
Partial Recovery Systems

A partial recovery system would include a seal-fluid solenoid, additional Y-strainer and flow valve teed into the line supplying the vacuum pump. The vacuum pump would then be supplied by a ratio of new fluid and recirculated fluid. Under normal operating conditions, a 50/50 mix of new and recirculated seal fluid will eliminate the need for a heat exchanger.



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AQUASEAL AND CHEMSEAL LIQUID RING VACUUM SYSTEMS

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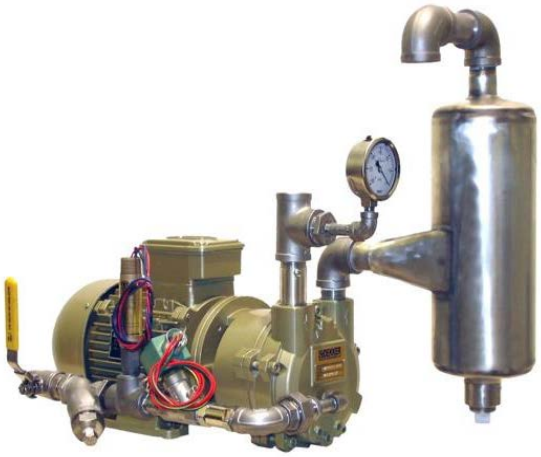
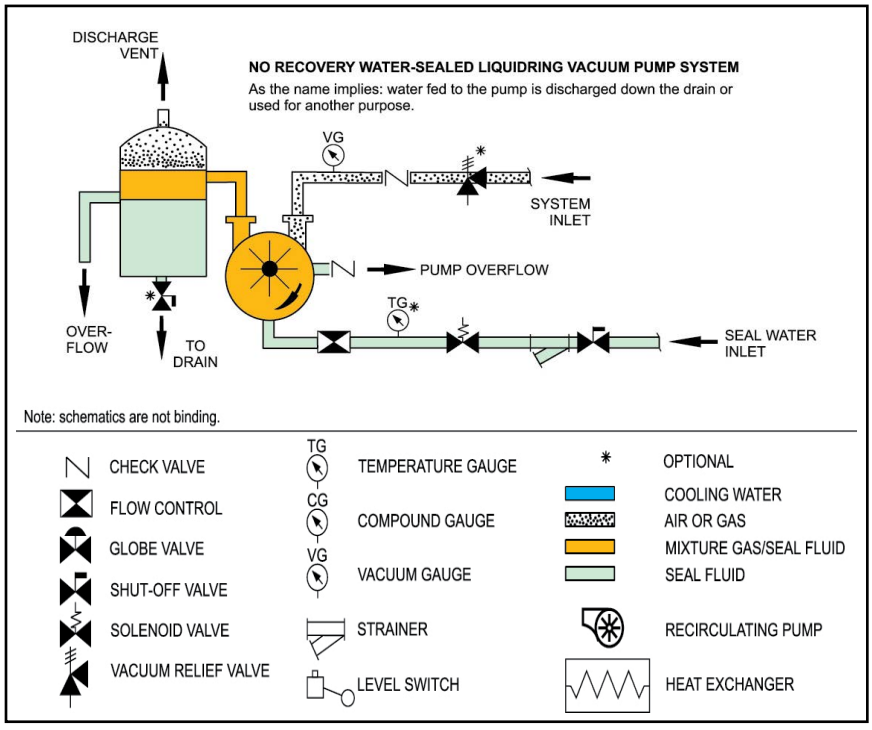
No Recovery System



A no recovery system is very simplistic in that the system is a once-through process. The pump includes a seal-fluid solenoid valve, Y-strainer and flow valve. The fluid and gas stream is usually discharged through a small discharge tank.



Click here to find your local authorized distributor

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