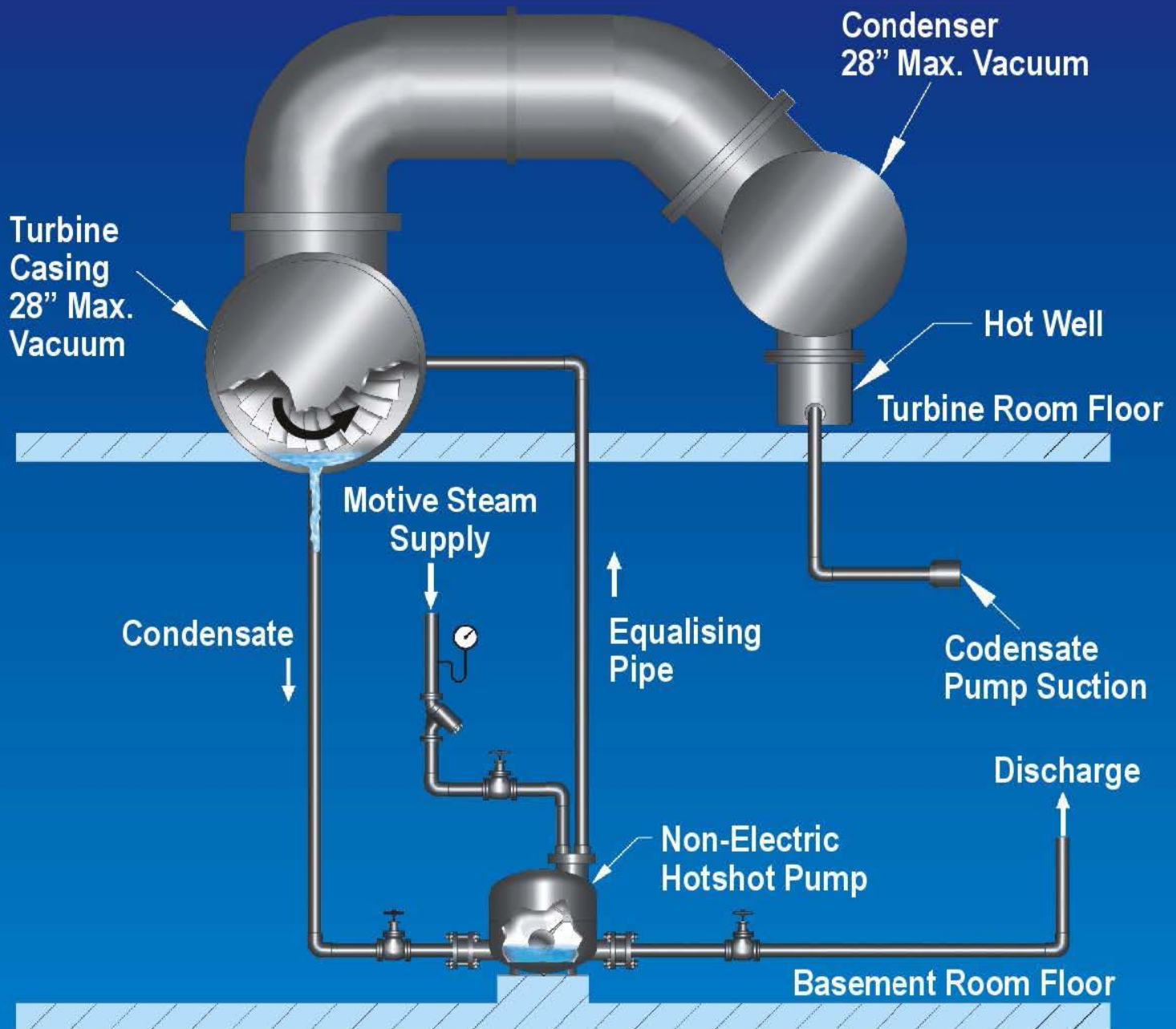


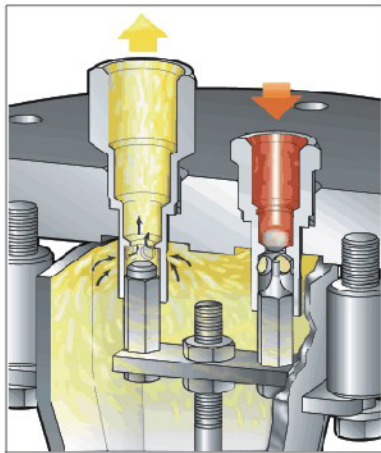
Mazda Hotshot turbine casing, Non-Electric automatic pump for condensate removal



Condensate removal from turbine casing to increase turbine life and power plant performance.

Hotshot-Mechanical Automatic Pumps Non-Electrical Solution for Returning Condensate and other Industrial Fluids

Discharge Cycle

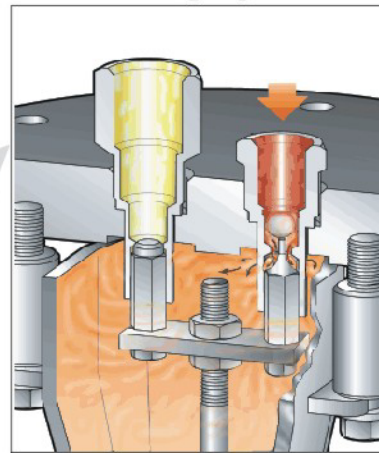


HOTSHOT Operation:

Hotshot pressure action pump (PAP) operates on a pressure displacement principal without the use of electricity and at a temperature above 99 °C (210 °F) limit of centrifugal pumps. Liquid enters the pump body by gravity through the inlet check valve causing the float to rise. As the liquid rises in the pump body a float actuated snap-action (trip mechanism) linkage closes the Exhaust valve and opens the Inlet valve for the driving gas (Steam / air / nitrogen / any other Pressurized gas).

The pressurized gas inside the pump increases above the total back pressure, liquid is forced out through the outlet check valve, until the descending float again trips the snap action mechanism completing the cycle.

Filling Cycle



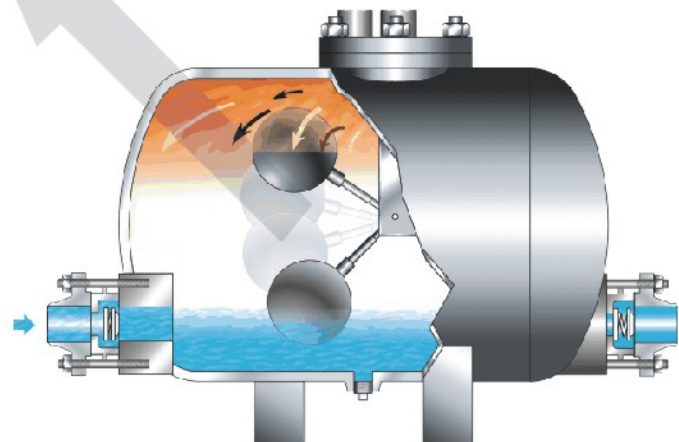
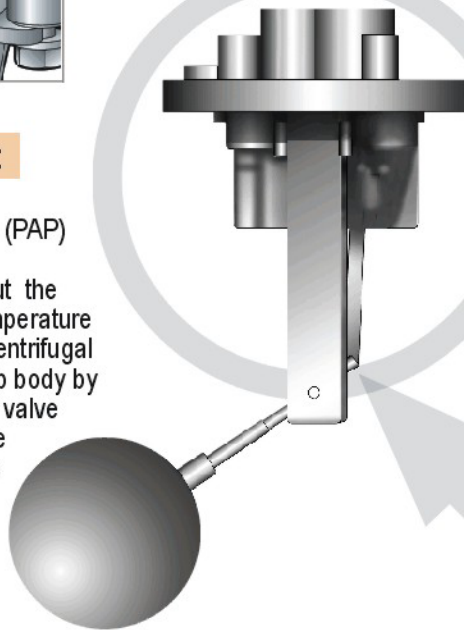
Unique Mono Spring Trip Mechanism

No pump break down due to spring failure. Valve is activated through a snap action mechanism.

Heavy duty spring in compression for extended service life and unaffected By turbulence.

All stainless steel for better corrosion Resistance.

Snap action linkage positioned above condensate level, minimizes corrosion.



Advantages of Mechanical Pumps

- On hot condensate applications, mechanical pumps have numerous advantages against electrical Pumps.
- **No cavitation** : there is no mechanical work, the pressure is given by a motive fluid.
- **NPSH is not needed** : the required distance between the receiver and the pump is maximum 300 mm.
- **Low maintenance costs** : cavitation does not occur that is why parts service life is much longer.
- **System can be closed** : save energy by using all the heat content of steam. Mechanical pumps can even work on vacuum.
- **Energy efficient** : do not use electrical energy Receiver size is smaller (condensate accumulation is not needed).
- **Non-electrical equipment** : can be used in explosive areas, lower installation costs.
- **Pump handles hot condensate** : as cavitation does not occur, condensate can be close to saturation temperature (more than the 99°C limit of electrical pumps). Higher condensate temperature decreases solubility of non-condensable gases.



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