

## HERMETIC THE PREMIER CHOICE FOR REFRIGERATION



Installed Hermetic Refrigeration Pumps (image courtesy of Hermetic)

Australian Fluid Handling (AFH) has a long and successful history supplying the refrigeration industry with canned motor pump technology.

AFH has developed a system for easily replacing competitor products. The Hermetic units are compact allowing them to easily fit where competitor pumps are installed. AFH supply units with counter flanges and a specially design base plate for the flanges to line up with existing pump suction centreline.

This system has seen our clients receive higher quality equipment and better support at competitive pricing with minimal on-site changes.

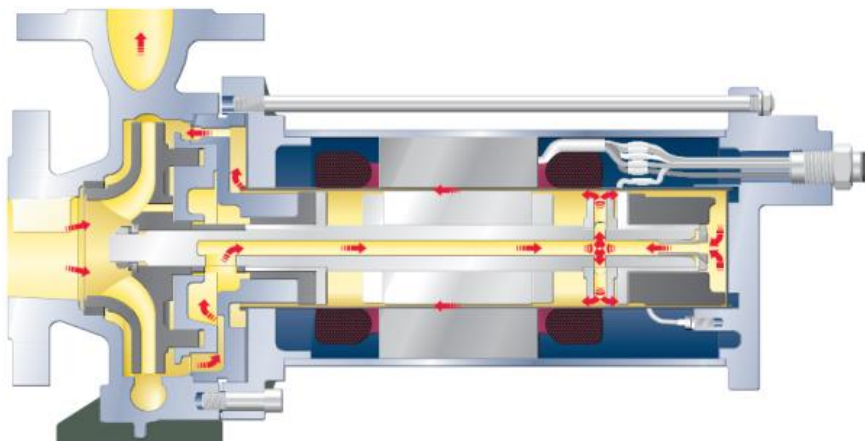
## THE CHALLENGE

The pumping of refrigerants provides many challenges. Typically, fluids are at or near boiling point causing low NPSHA values. Fluids may also be at elevated system pressures. Fluids such as ammonia add additional complexity of needing to be contained for health and safety reasons. For containment, safety and reliability the long-term choice for pumping refrigerants has been canned motor pumps.

## THE SOLUTION

### ***Hermetic S-Line***

The Hermetic S-Line is a specially designed pump for the refrigeration industry. This pump is a perfect blend of Hermetic quality with clever economic design.

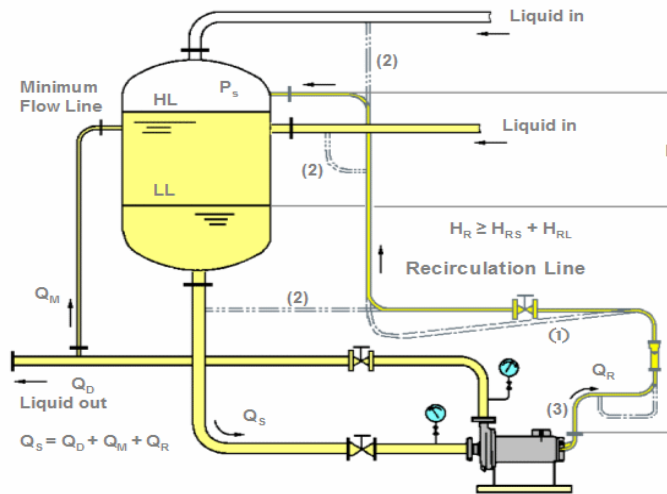


**Figure 1:** Hermetic CNF designed. Auxiliary impeller in the motor area stops flashing (image courtesy of Hermetic Pumpen)

### ***Advantages of Hermetic S-Line***

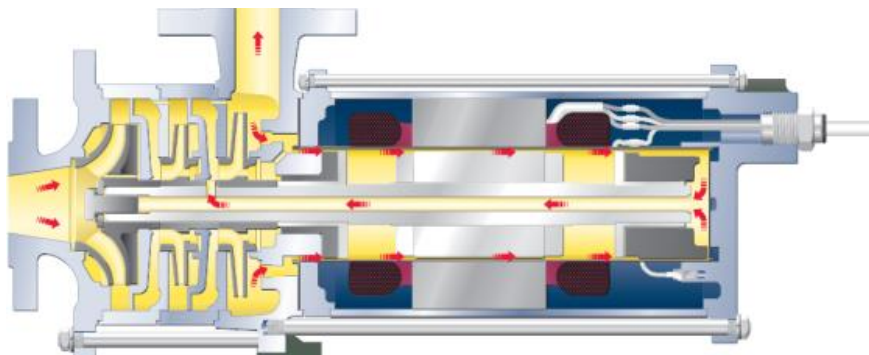
- Low NPSH values, Hermetic units are designed for minimal NPSH values avoiding cavitation. Inducers can be added to further reduce NPSH values and assist in breaking down vapour bubbles. Superior NPSH performance may allow heights of separators to be at lower heights.
- 25 / 40 bar rated pumps. Hermetic have higher pressure ratings on their pumps compared with competitors. This enables higher system pressures but is also a safety requirement, the vapour pressure of ammonia at 35°C is 15bar, CO<sub>2</sub> at 0°C is 35bar. Should fluids boil these pressures will need to be withstood by the pump.
- Hermetic casings are foot mounted compared to an overhung design. This is a stronger design less susceptible to forces and moments on the casing.

- CNF design for single stage pumps. Hermetic pumps do not require a balance line to stop flashing in the motor area. Single stage pumps use an auxiliary impeller to pressurise the motor area and prevent flashing, this is shown in Figure 1. Not requiring a balance line saves significant installation costs as no extra piping is necessary. A typical installation with balance line is shown in Figure 2.



**Figure 2:** Balance line in competitor pumps, extra piping must be run on site.

- Hermetic bearings run on a fluid film and are considered non-wear parts.
- CAM design multistage pumps. A typical CAM unit is shown in Figure 3. Hermetic are specialists in multistage design. This allows pumps to achieve higher heads whilst maintaining low NPSH values.



**Figure 3:** Hermetic multistage CAM pump (image courtesy of Hermetic Pumpen)

- As a leader in this market AFH have stock of these superior units with highly competitive pricing compared to competitors.

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