CASTLE PUMPS LTD

azcue pumps

Refrigeration - Case Study

Case Study Information

Customer	Refrigeration Engineers
Location	United Kingdom

Equipment Supplied:

2 x Horizontal Close Coupled Centrifugal Pumps w/ Air Priming Ejectors - Azcue SP-MN Range

Application	Refrigeration Cooling
Fluid	Sea Water
Temperature	Ambient
Flow	500 m3/h
Total Head	16.4m
IE2 Motor	30kW / 400v / 3 Phase / 50Hz / 1450 rpm
NPSHr	3.68m, Isol/Prot. F/IP-55
Seal	Mechanical
Pump Casing	Bronze
Impeller	Bronze
S/discharge Ø	200/150
Shaft	Stainless Steel
Impeller Ø	269

Enquiry:

- ✓ A UK based engineering firm was looking to purchase several centrifugal pumps to install on their new gas refrigeration system. The aim of this new system was to demonstrate to their customers how much energy they could potentially save by upgrading their dated refrigeration setup. They were struggling to find a reliable self priming centrifugal pump that could handle the requested 8,300 l/min.
- ✓ A reliable pump was vital for this system as the pump would be working 24 hours a day; its function was to keep the heat exchanger cool as the refrigeration gas was circulating through it.

Solution:

- ✓ We quoted two high flow centrifugal self priming pumps with air priming ejectors. The MN-VP close coupled centrifugal water pumps have a unique feature whereby they have an air operated self-priming pump attached to the main pump which starts intermittently operated via a pressure switch. This ensures a completely automatic system, as they would automatically re-prime the pump should there be any loss of prime, and no need to manually operate the pumps.
- ✓ The additional second pump provides a backup to the main pump to ensure the cooling of the heat exchanger should the main pump require maintaining or worst case fails. This duty / standby arrangement is the safest and most efficient way to ensure the refrigeration system is never down.
- ✓ Typically with a self priming centrifugal water pump only flows of up to 300M^{3}H (5000L/min) are possible which makes the MN SP an excellent choice given its high flow range.