Case study 2

Bilge, GS and Fire pump self priming pump problem

CMA CGM THALASSA

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Item YS80302 VNF 7/420

Service Type: Bilge, Fire & GS pump

Description Vertical axial split centrifugal pump

Priming unit Type : priming unit AELE - 55 air driven priming unit with level switch for dry running protection, mounted on pump

Description of the problem:

Solenoid valve for air powered priming pump will not close(always open). Pump starts but dry running protection is not working.

The liquid seal priming pump consists of the air pump housing and bladed air pump impeller. The bladed impeller is mounted on the same shaft as the rotor . It is fitted into the air pump housing but with sufficient clearance to prevent wear of the housing walls . After the priming pump has been primed with the medium to be handled , a ring of liquid is formed in the pump housing as a result of the centrifugal force set up by the rotation of the bladed impeller , and a sickle-shaped working space is formed around the hub of the impeller . This working space is divided by the blades into individual chambers , the liquid ring being first enlarged and then reduced during rotation . With cubical expansion the air or the liquid is drawn in through the suction slot , and with cubical contraction it is ejected through the pressure slot . The air pump is set in such a way that it can withdraw from the rear of the rotor through ducts provided for the purpose , the control cock being set to "Ansaugen"(suction). At first , an air/water mixture is forcefully ejected ; this continues until a regular flow of water establishes itself . The pump is now filled with water and delivery starts automatically .This is the end of the priming period , the control cock is set to "Betrieb"(operation) and the water drawn in is constantly circulated through the pump.