

Modular S, Self-priming Centrifugal Pump

Stripping Pump for Ballast Tanks



The series of DESMI stripping pumps can be used for emptying ballast tanks, when main ballast pump is stopped. Many existing vessels use ejectors for stripping purposes, but the DESMI stripping pump is a cheaper and reliable alternative for this purpose.

The success of the DESMI stripping pump is among other things due to the priming principle, which means it is the right solution, when quick priming and stripping of ballast tanks are required. The very fast priming is achieved by mounting a star wheel on the same shaft as the impeller; the priming principle is described in detail on page 2.

This principle means that the DESMI stripping pump can pump a mixture of air and liquid and evacuate air from the suction pipe, and thereby create enough vacuum to empty ballast tanks on board vessels.

Various Combinations of Assembly

The DESMI stripping pumps can be supplied in various combinations: As free shaft end, mounted on base plate with diesel engine, hydraulic motor or in a close-coupled design with electric motor. Each version meets the requirements for compact and reliable pumps. For optimum flexibility, the pump is designed in such a way that only the coupling and the motor flange have to be changed in order to fit the selected motor.

Applications for DESMI Stripping Pumps

- Stripping pump for ballast tanks
- Bilge pump
- Fire pump
- Wash-deck pump
- General service pump

Material specification

| Materials | A | D |
|-----------------------|-------------------------------------|-------------------------------------|
| Pump casing | Cast Iron (GG20) | Bronze |
| Impeller & Wear ring | NiAlU-Bronze | NiAlU-Bronze |
| Shaft | Acid-proof stainless steel AISI 329 | Acid-proof stainless steel AISI 329 |
| Bearing housing | Cast Iron (GG20) | Cast Iron (GG20) |
| Suction piece | Cast Iron (GG20) | Bronze |
| Non-return flap | Nitrile rubber | Nitrile rubber |
| Shaft seal cover | Cast Iron (GG20) | Bronze |
| Mechanical shaft seal | Carbon/ceramics | Carbon/ceramics |

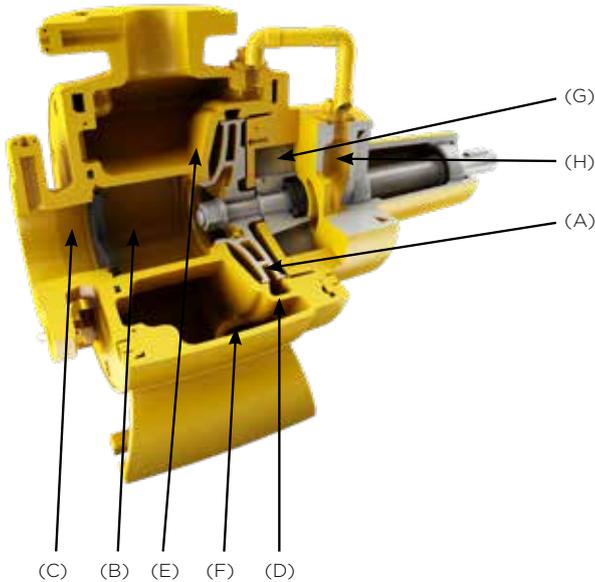
The DESMI stripping pump creates enough vacuum to evacuate all air from an empty suction pipe and lift the water 7 metres up to the pump

Priming Principle

The priming is based on the diffuser principle, which means that the priming ability is independent of valves and other mechanical elements as it is the flow of liquid that carries the air. In addition, the diffuser principle has the effect that the Modular S can pump slightly polluted as well as air-mixed liquids. Due to the non-return flap C, the suction chamber B is filled with water. When the pump has been started, the liquid begins to circulate in the pump casing and the impeller channels.

Thus, an air-mixed liquid is produced in the outer third of the impeller A and a vacuum is created in the suction piece of the impeller and the suction chamber B. This vacuum makes the non-return flap C open, and air is drawn from the suction pipe into the suction chamber. The air-mixed liquid is led through the channel D to the upper part of the pump casing E, where the flow velocity is low and the air separates from the liquid.

The air escapes through the pressure pipe and the air-separated liquid returns to the periphery of the impeller through channel F.



(A) Impeller

(B) Suction chamber

(C) Non-return flap

(D) Channel to upper part

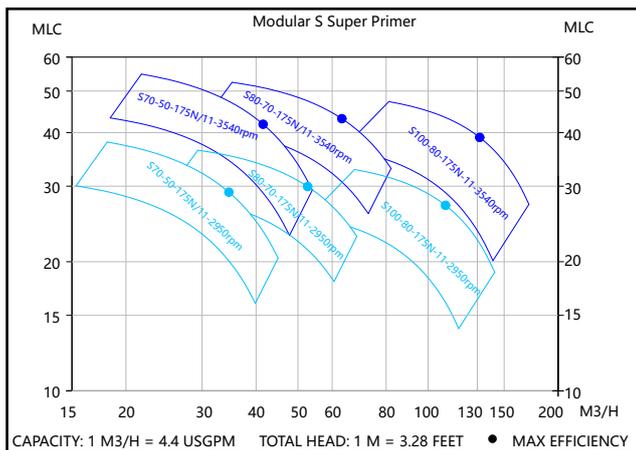
(E) Upper part of pump casing

(F) Return channel to impeller

(G) Star wheel for fast priming and to create extra vacuum in suction pipe

(H) Chamber for extra vacuum

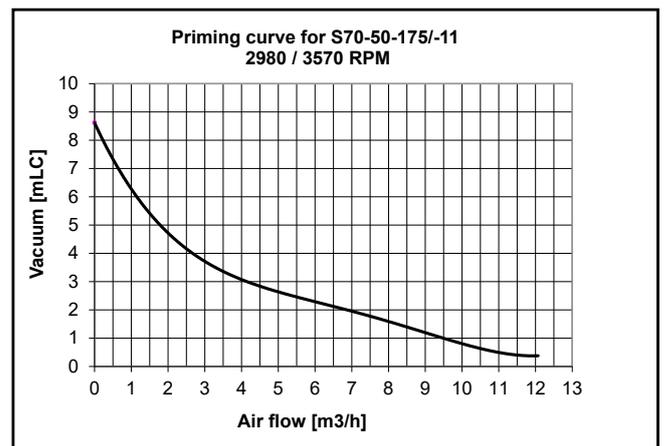
Capacity Curves of DESMI Stripping Pumps



Capacity range:
15-140 m³/h - 65-615 US gpm at 50 Hz
18-170 m³/h - 80-745 US gpm at 60 Hz

Pressure range:
14-38mLC- 45-125 ft at 50 Hz
20-55mLC - 65-180 ft at 60 Hz

Temperature range:
With standard mech. shaft seal max. 80°C - 176°F, with special mech. shaft seal max. 120°C - 248°F.



The DESMI stripping pump is available in 3 sizes:

- S70-50-175
- S80-70-175
- S100-80-175

The star wheel is the main air evacuator - so other Modular S Super Primer pump sizes have similar self-priming capacity.