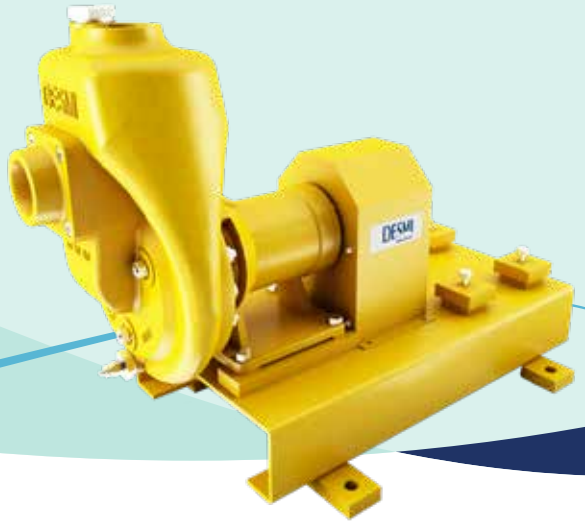
SA

Horizontal Self-priming Centrifugal Pumps



The DESMI SA pump is used for contaminated liquids as well as liquids containing air or gas for sumps, gullies and many other applications where suction lift is required.

The pump can handle clean and polluted liquids that are non-corrosive to cast iron and bronze, plus oils, petrol, diesel, and a number of chemicals.

- Excellent self-priming ability
- Ideal for handling contaminated liquids
- Easy maintenance with replaceable wear plate
- Open impeller design for handling of particles

Industry Applications:

- Draining building excavations
- Emptying ponds, drains, and swimming pools
- Water extraction for irrigation and watering
- General service pumps
- Fuel handling
- Condensate extraction pumps

Marine Applications:

- Bilge pumps
- Ballast pumps
- Fire pumps
- Cooling water pumps
- Wash-deck pumps
- Fuel pumps
- Wellpoint pumps
- Irrigation pumps
- Circulation pumps

Material specification

Materials	A	D
Pump casing	Cast Iron	Bronze
Impeller	Bronze	Bronze
Sealing ring	Bronze	Bronze
Rear cover	Cast iron	Bronze
Shaft	St. steel	St. steel
Shaft seal	Mechanical	Mechanical

Flow rate	Up to 650 m³/h (2900 US gpm)
Head	Up to 110 m (360 ft)
Temperature	Up to 120°C (248°F)
Motor	Standard and Ex motor
VFD	Direct or Bulkead/ Wall-mounted

Applications:
Water, water with additives, seawater and oils up to 500 cSt.

Advantages

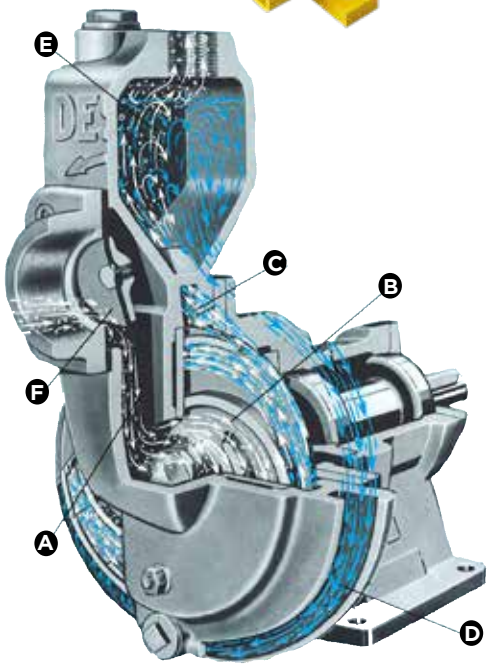
- **Open impeller design**
  Semi-open, non-clogging high efficiency impeller allowing the pump to operate on dirty water.

- **Replaceable wear plate**
  To keep the pump at max. capacity even after working with abrasive fluids for a long time, the tolerance between impeller and wear plate may be adjusted by way of shims behind the replaceable wear plate.

- **Mechanical shaft seal**
  A reliable, spring-loaded, mechanical shaft seal ensures rapid suction, and shaft wear and stuffing box tightening are avoided.

- **Check valve mounted at a high level**
  The pump check valve is mounted well above the impeller inlet. Consequently, the pump will not - in case of a check valve leakage - lose the priming water which would result in a loss of priming ability.

- **Heavy bearing design**
  Heavy shaft and bearing design provide long life even in case of belt drive.



Operation Principle

Rapid and Safe Priming

The priming principle of the DESMI self-priming centrifugal pumps is based on the diffuser principle. This means that the priming capacity is not dependent on valves or other mechanical elements as it is the liquid flow that carries the air.

For priming, the pump casing is filled with liquid prior to starting. Due to the rotation of the impeller the liquid is immediately pumped from suction chamber **A** through impeller **B** into the air separating chamber **E**.

Due to the negative pressure thus created in the impeller eye, liquid is drawn through return passage **D** into the impeller. Due to the negative pressure in the pump, check valve **F** opens so as to draw air from the suction line into the pump where liquid and air are mixed and proceed through passage C into air separating chamber **E**.

The water velocity of the air purging space is so low that the air is separated from the liquid, and the vented water carries on the circuit through the return passage and the impeller until the total air content of the suction pipe has been separated in space **E**.