Self-priming Centrifugal Pump
MODULAR S

DESMI

MODULAR S

Material specification	A	C	D
Pump casing	Cast iron GG 20	Cast iron GG 20	Bronze
Impeller and wear ring	NiAlu-bronze	Cast iron GG 20	NiAlu-bronze
Shaft	Acid-proof stainless steel AISI 329	Acid-proof stainless steel AISI 329	Acid-proof stainless steel AISI 329
Bearing houseing	Cast iron GG 20	Cast iron GG 20	Cast iron GG 20
Suction piece	Cast iron GG 20	Cast iron GG 20	Cast iron GG 20
Non-return flap	Nitrile rubber	Nitrile rubber	Nitrile rubber
Shaft seal cover	Cast iron GG 20	Cast iron GG 20	Bronze
Mechanical shaft seal	Carbon/ceramics	Carbon/ceramics	Carbon/ceramics

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

Capacity range:
1-350 m^3/h ~ 5-1500 US gpm at 50 cycles
2-400 m^3/h ~ 10-1760 US gpm at 60 cycles

Pressure range:
1-100 mLC~ 3-330 ft at 50 Hz
2-150 mLC ~ 6-490 ft at 60 Hz

Data sheets with dimension sketches and information of capacity and delivery head at different pump speeds with NPSH-values for each pump type can be obtained from your own pump dealer or from DESMI.

Self-priming Centrifugal pump

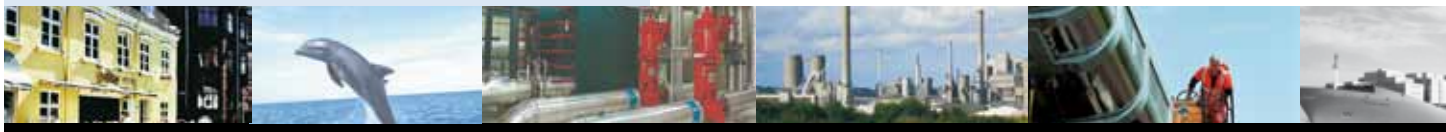
The series of DESMI MODULAR S pumps represents one of the most distinctive developments in self/priming pumps. Based on many years of experience in the production of self/priming pumps we supply a pump series that meets the future demands for economical and reliable pumps. The individual design, compact with a clear-cut cylindrical form, together with the practical advantages such as easy assembling and MODULAR construction of all components ensure a long a unproblematic operation.
The success of the DESMI pumps is among other things due to the priming principle which is thoroughly described on the opposite page.
This principle means that the MODULAR S can pump a mixture of air and liquid and thus evacuate air from the suction pipe. Thus, priming can be avoided and a foot valve is not necessary.
The DESMI MODULAR S series comprises totally 14 types and the series will be successively extended.

Various combinations of assembling

The pumps of the MODULAR S series can be supplied as free shaft end, mounted on the base plate with petrol or diesel engine, hydraulic or electric motor or in a close-coupled design with electric motor. They can also be fitted with a manual friction clutch and V-belt pulley and with step/up bevel gear ratio 1:2.

MODULAR S/02 Self-priming centrifugal pumps in close-coupled design

This version of the well-known MODULAR S pumps meets the requirements for compact and reliable pumps and does not need special alignment. The pumps is connected to the electric motor via a rigid coupling and can be mounted with any standard electric motor.
The MODULAR S pumps are constructed of standard components and this principle has been further emphasized in the monobloc version.
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 electric motor.
The monobloc version is equipped with a separate bearing house with only one bearing, and the rigid coupling is mounted on the short shaft.



MODULAR S

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.

Before first starting the pump, the casing must be filled with liquid. When the pump has been started, the liquid begins to circulate in the pump casing and the impellar canals.

Thus, an air-mixed liquid is produced in the outer third of the impellar A and a vacuum is created in the suction piece of the impellar 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.

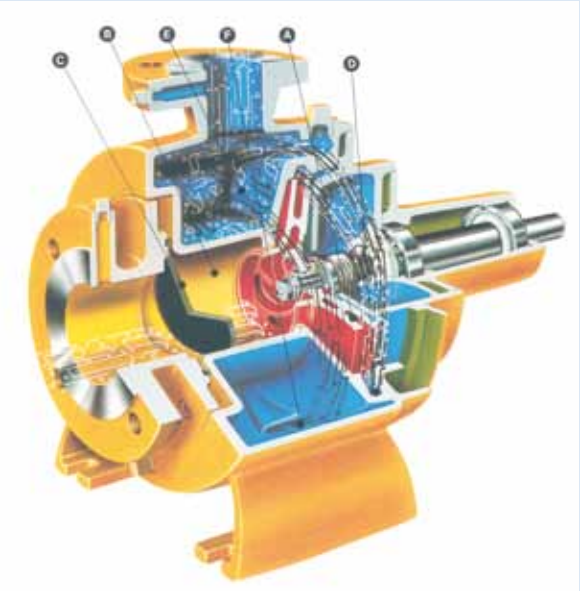
The air-mixed liquid is led through the canal D to the upper part of the pump casing E, where the flow velocity is low and the air separates from the liquid.

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

The direction of the flow is indicated by the arrows. To allow free passage of the air through the pressure pipe ensure that valves, if any, are not closed during the priming.

The liquid circulation continues until the air has been removed from the suction pipe and the pump will then function as a normal centrifugal pump.

If for some reason, air penetrates into the suction pipe and the pump stops pumping, the priming process starts again and described above, and continues until normal pumping has been resumed.



Applications for MODULAR S and S/02

Marine pumps:
- Bilge pumps
- Ballast pumps
- Fire pumps
- Cooling-water pumps
- Wash-deck pumps
- General service pumps

Industrial pumps:
- Ground water pumps
- Fire pumps
- Wash-down pumps
- Cooling-water pumps
- Circulation pumps
- Fuel pumps
- Filling of tanks and wagons

Also suitable for “Contractors” and “Agricultural” use.

MODULAR S
- a theme in MODULAR construction

Irrespective of size and capacity the whole MODULAR S series is constructed of 5 standard components:

1. Pump casing
2. Impeller
3. Bearing housing
4. Suction cover
5. Shaft seal cover

The standardisation of these 5 components aids a minimum stockholding as some of the components are commom to the different pump sizes. Furthermore, this standardisation means low production costs from which you will benefit in the form of competitive prices. The pump casing is designed with a double, twisted flute which ensures efficient priming.

The impeller, which is closed, is manufactured with single curved blades and relief blades on the back. This leads to a balancing of the hydraulic longitudinal forces, and therefore the pump accepts high rotational speeds.

Because of the casting technique used, a few of the smaller size pumps have been designed with open impellers. The bearing housing is fitted with single grooved radial ball bearings dimensioned to a life of more than 25,000 working hours.

Suction and pressure branches are designed as flange connections according to Danish Standard 552 and ISO/R 2084. A few of the small sizes have been designed with pipe thread branches.

The pump is fitted with mechanical shaft seal to ISO standard with a ceramic seat ring which has excellent wear qualities and is self adjusting. This excludes the shaft wear, pump leakage and increased power consumption often found with manually adjusted packed gland seals.

Max. liquid temperature 80°C - 176°F.

DESMI A/S
Tagholm 1
DK-9400 Nørresundby
Phone: + 45 96 32 81 11
Fax: + 45 98 17 54 99
Internet: www.desmi.com
E-mail: desmi@desmi.com

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