ABS
COST-EFFECTIVE PUMPING

VUP 0400 to 1200

ABS Submersible Propeller Pumps for pumping large volumes of water up to 7000 l/s at heads up to 12 m

- for polder dewatering and coastal protection, for pumping of storm water as well as for industrial applications
- the well known ABS modular construction and the use of modern ABS motor technology together with high quality materials, ensure high operational reliability and long operating life

- completely newly designed hydraulics with high efficiencies
- avoidance of harmful vortices by anti-vortex-system

2.5100 GB 05.01

VUP 0400 to 1200

Areas of use
ABS Submersible Propeller Pumps of the VUP series are ideal for applications where large volumes of waste or process water have to be pumped up to heads of 12 m. They are compact and can be installed vertically in a space saving manner. They are ideal for storm water protection, for irrigation and dewatering, for cooling and process water and for a multitude of other applications.

Technology
By the use of an economical building block principle, we are able to select the best combination of hydraulics and motor with reference to output, speed, voltage and frequency in order to suit the particular application. The choice of between three and four adjustable propeller blades, and a motor range from 11 to 600 kW enables us to make a choice which fulfils both economical and technical criteria.

Motor
Water tight housing, protection type IP68 and insulation class F, with lubricated-for-life maintenance-free bearings and a high quality silicon carbide mechanical seal. These features ensure a long trouble-free running life! All motors can be supplied as explosion-proof versions.

Hydraulics
The blades have been designed with the aid of a computer program and incorporate the latest flow design principles. The blades have been designed as a laminar profile. The axes are tilted horizontally. The leading edge has a strong backward sweep, the wear ring has been designed as a spherical element. All these features ensure reliable operation, good running characteristics, and an unusually high efficiency.

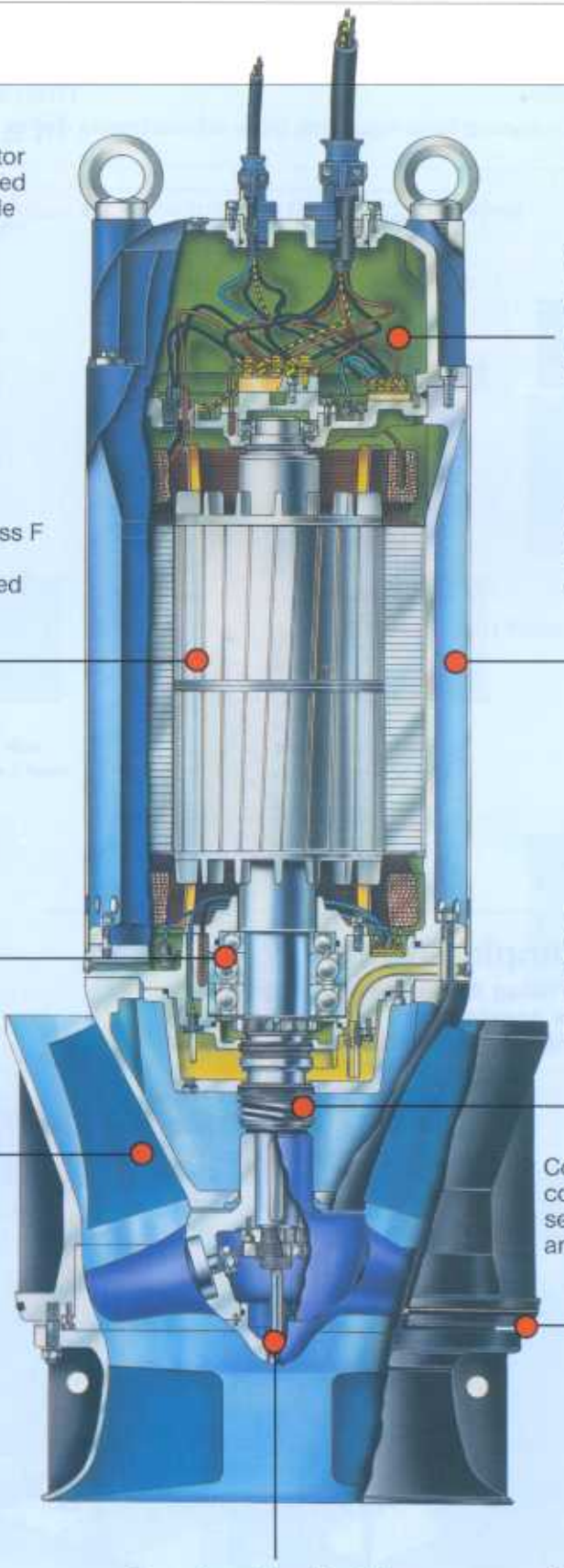
Civil Work
ABS Propeller Pumps, in contrast to conventional axial flow pumps, do not require expensive structures above ground level. A pump house and a load carrying intermediate floor are not required, and the construction time is drastically reduced.

Environmental Protection
The pumps are not seen, they can scarcely be heard. Both pump and pumping station are located below ground level.

Installation
We ask you to carefully examine our ABS Automatic Coupling System. Where else will you find a simpler or more reliable system? You simply lower the pump into the concrete sump or steel pipe. It couples itself automatically and is located securely in the discharge sump. There is no need to line up drive shafts, no need for personnel to enter the sump.

Maintenance
If maintenance is required you simply lift up the pump as a unit, without any need for disassembly, out of the flooded or dry pump sump. You can then carry out the maintenance work where ever is most convenient.

VUP internally



ABS Propeller Pump with motor and hydraulic section designed on the building block principle

Water tight enclosed connection chamber IP 68. Cable inlet with strain relief anti-kink device and double seal

Water tight motor enclosure to IP68; Stator: Insulation Class F with thermal sensors. Rotor and shaft dynamically balanced

Optimum motor cooling by directing the medium being pumped over the motor

Ball bearings, lubricated-for-life support the shaft at upper and lower ends

High quality mechanical seal with solid silicon carbide rotating seats ensure reliable shaft sealing

Coupling device with conical centering unit secured against rotation and water tight

Axial hydraulics with diffusers located at the suction and discharge sides. Replaceable wear ring of stainless steel
Material wear ring
G-X8CrNi13 (= 1.4008)

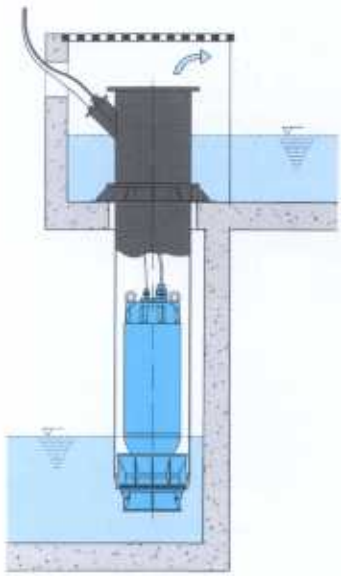
Propeller and blades also available made of sea-water resistant alloy
Material G-X5CrNiMoNb1810 (= 1.4581)

Propeller with adjustable blades of stainless steel
Material G-X40CrNi274 (= 1.4340)

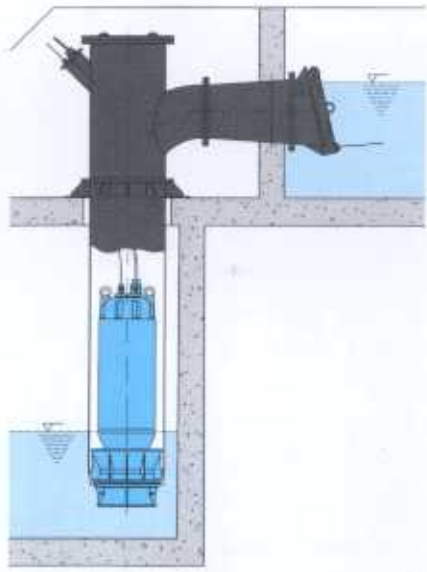
All motors can also be supplied to European Explosion Proof Standards

Types of Installations

In a steel sump

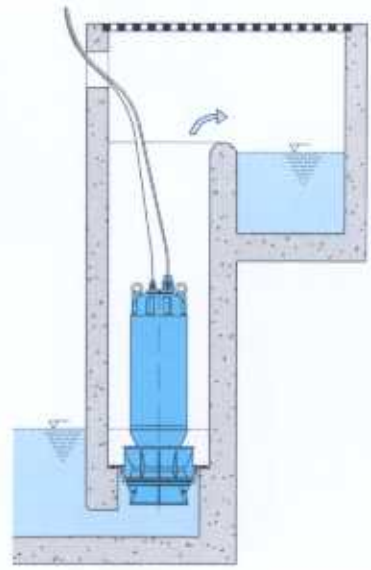


... with free outflow



... with pressurized outflow
and non-return valve

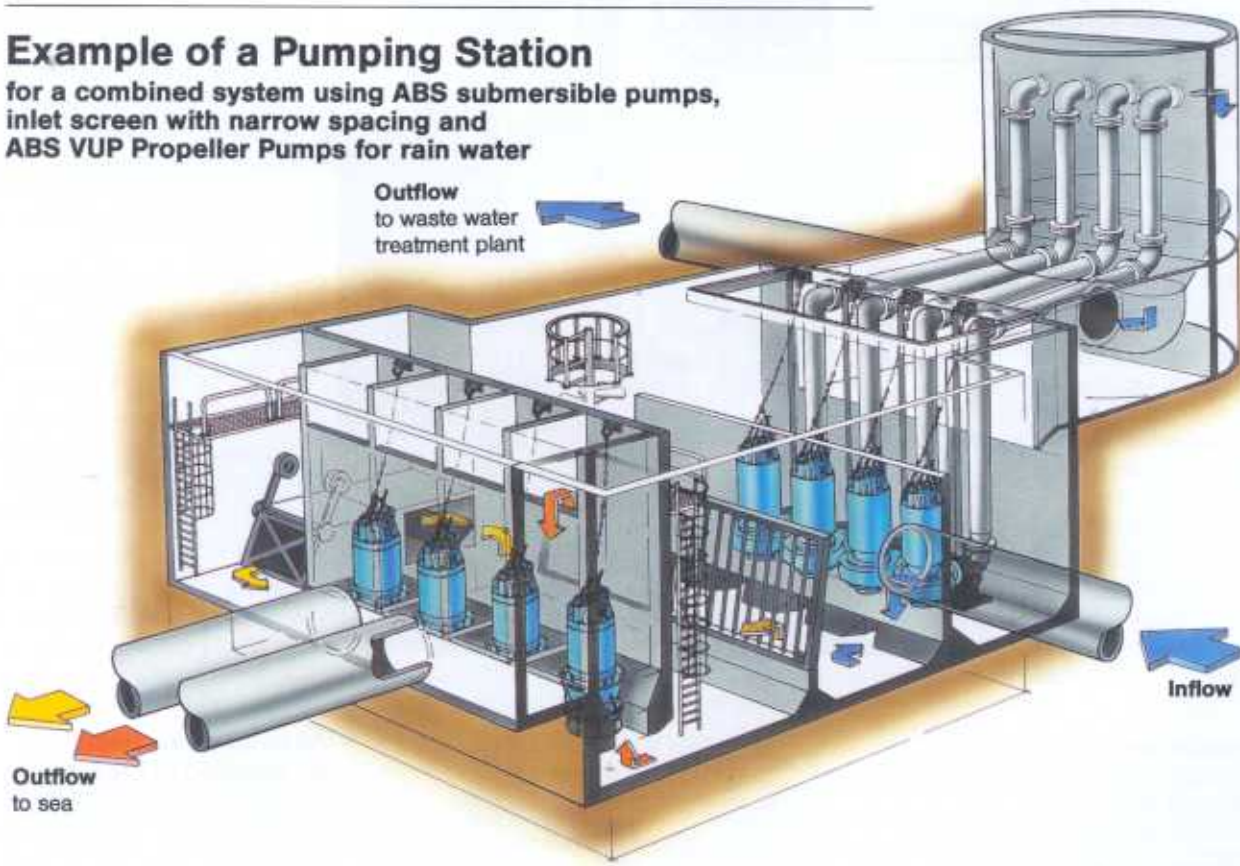
In a concrete sump



... with free outflow
over a weir

Example of a Pumping Station

for a combined system using ABS submersible pumps, inlet screen with narrow spacing and ABS VUP Propeller Pumps for rain water

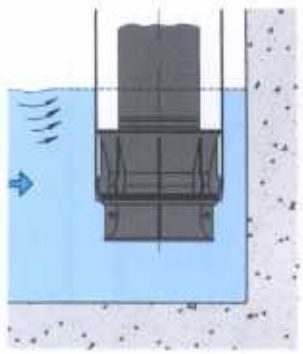


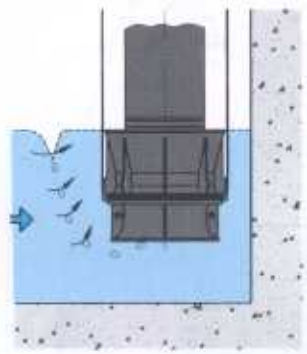
Comments on Vortex-Formation

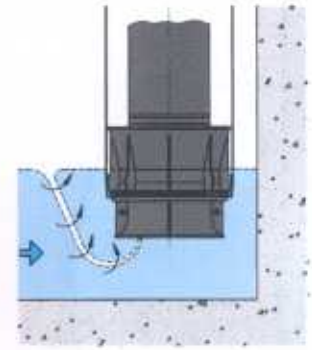
AVS Anti-Vortex-System

An end to the basic problem of inflow chambers for axial and semi-axial pumps – vortex and swirl formation.

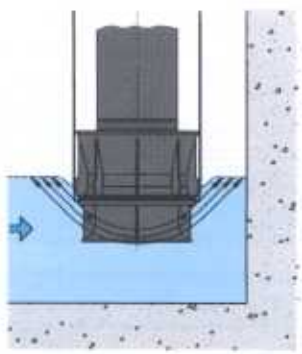
no air entraining surface swirl formation



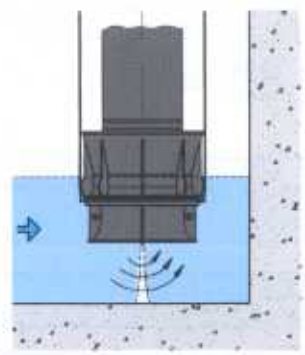


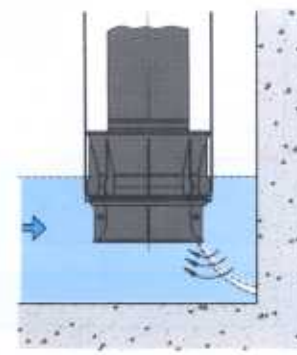


no asymmetrical swirls



no wall swirl formation



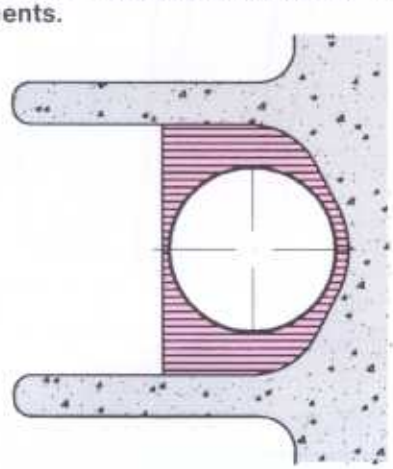


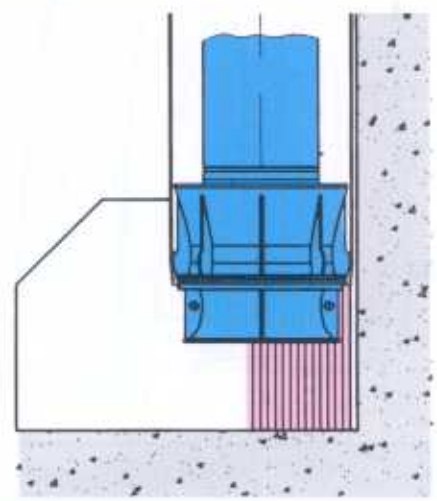
no round swirl formation

no swirls on side walls

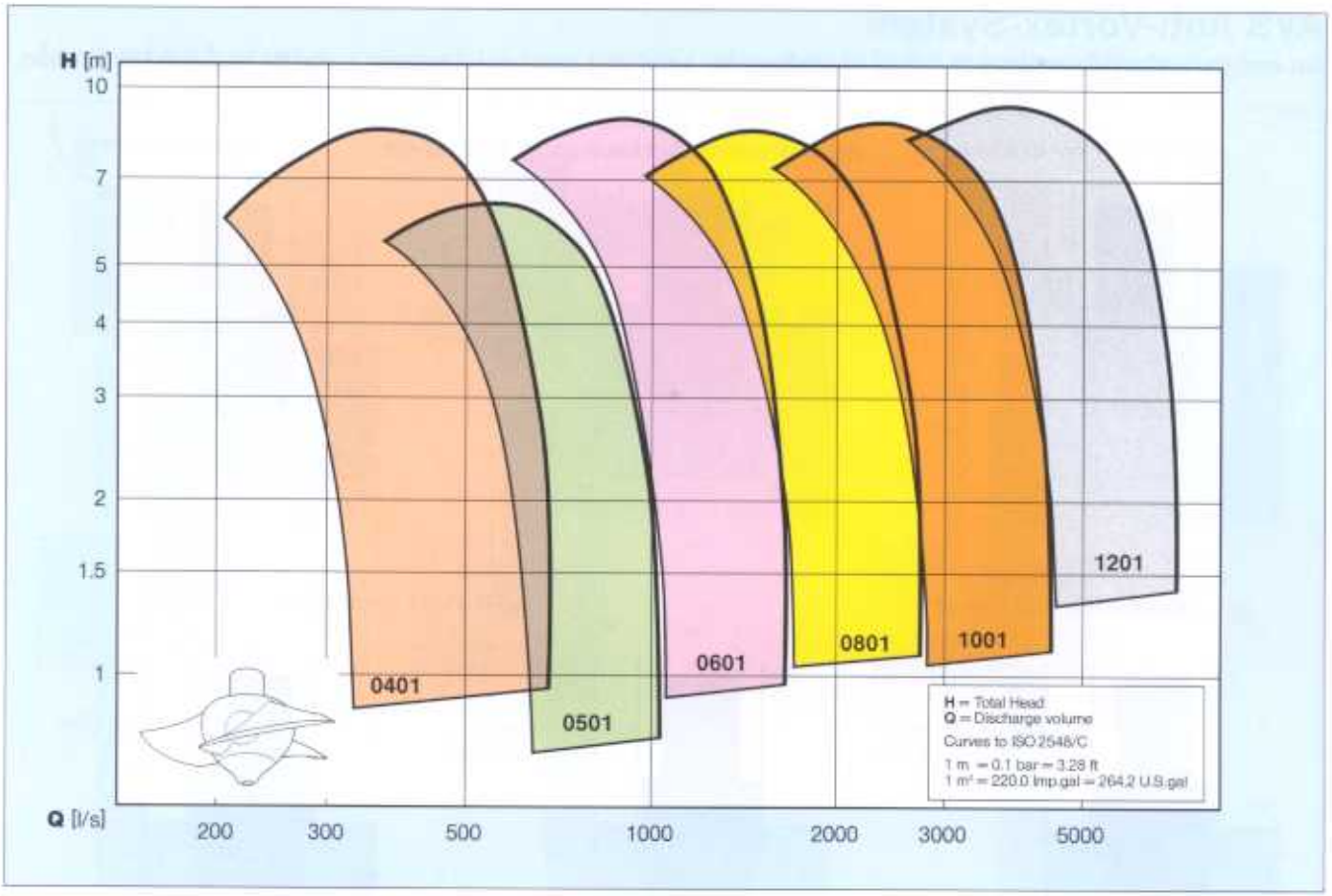
AVS Anti-Vortex-System

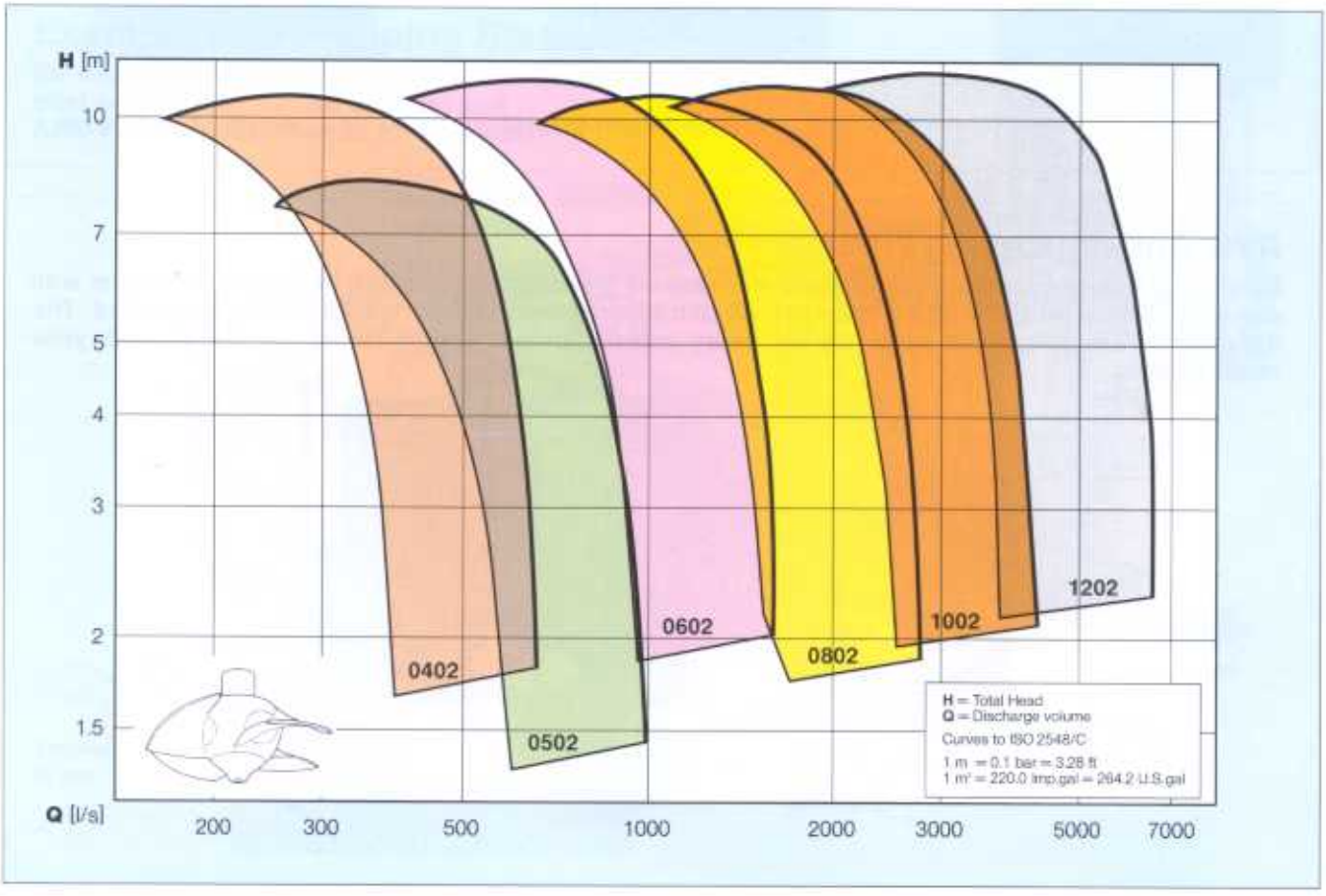
By making use of optimized pump sump dimensions (relationship of width to length), minimum wall distances and a profiled inflow chamber, all detrimental swirl and vortex formation is avoided. The dimensions are calculated precisely for every pump. Contact your ABS representative with your requirements.



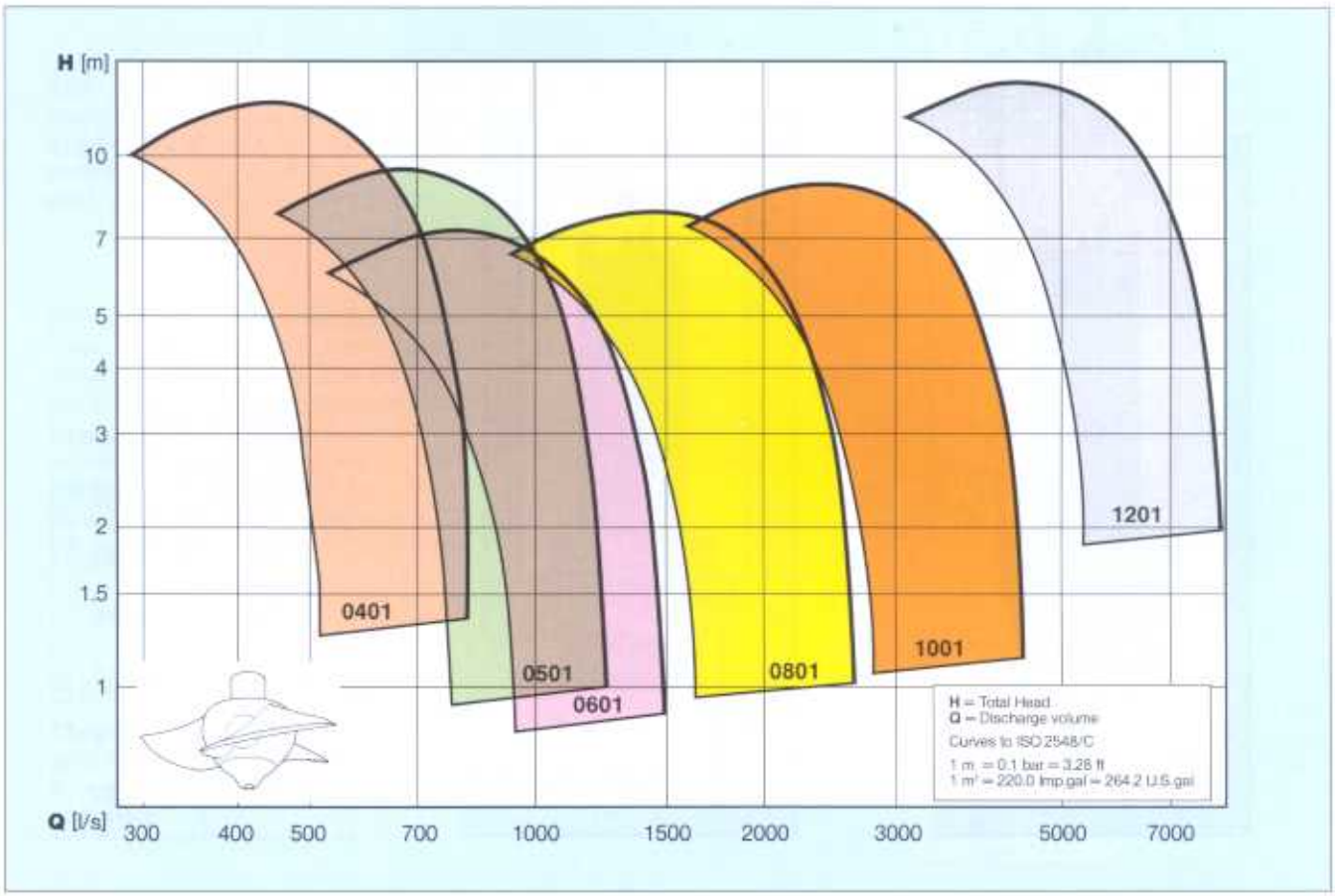


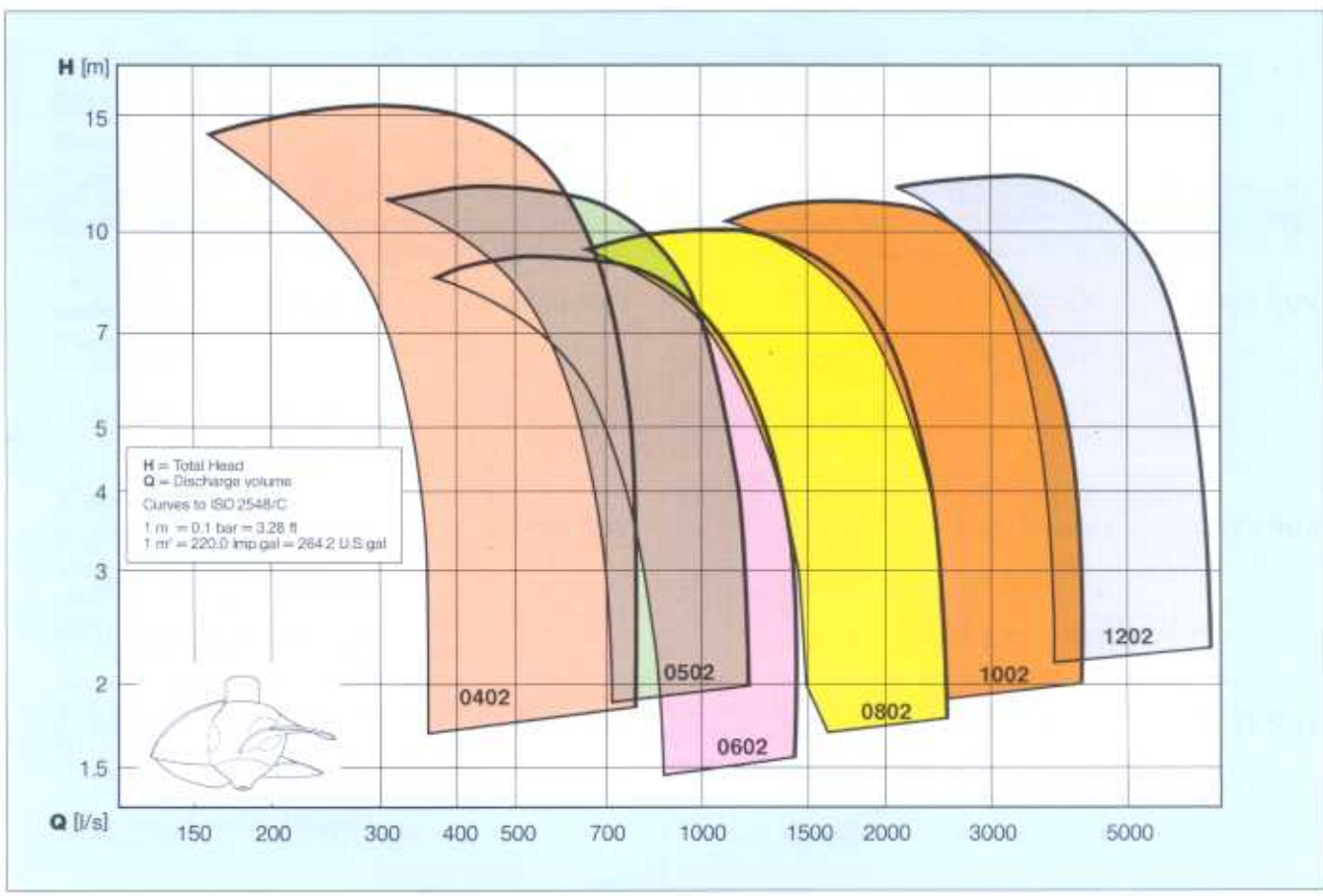
Curves VUP 0400 to 1200 — 50 Hz



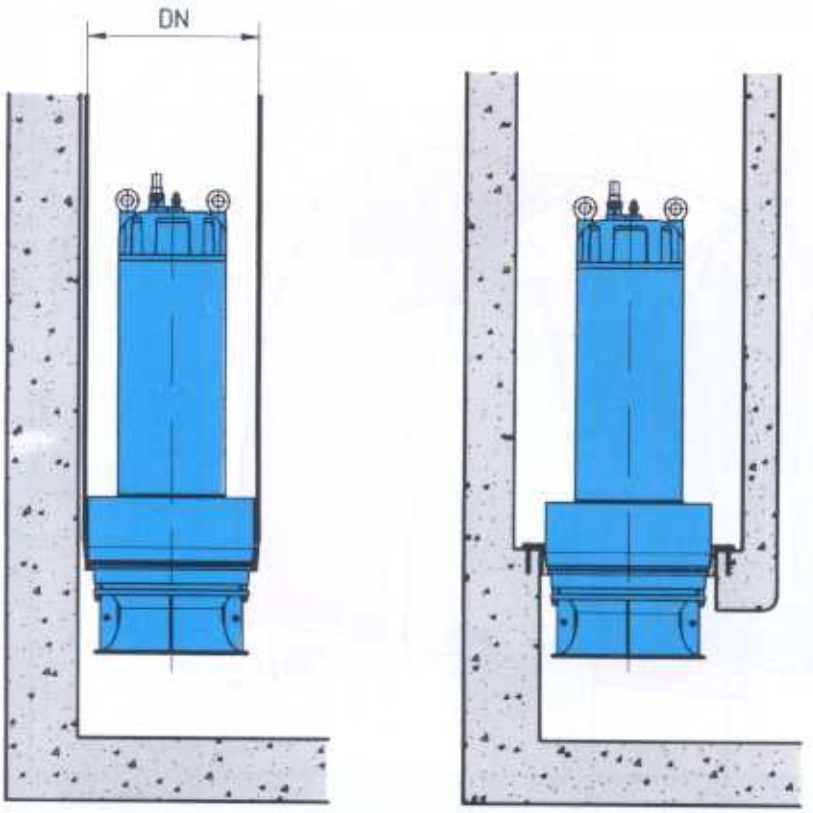


Curves VUP 0400 to 1200 — 60 Hz





Dimensions



VUP	DN (mm)
0400	600
0500	700
0600	800
0800	1000
1000	1200
1200	1400

Type	Power range	Pole number
VUP 0400	4.5– 37 kW	4-pole
	7.5– 22 kW	6-pole
	7.5–110 kW	8-pole
VUP 0500	22 –110 kW	6-pole
	15 – 37 kW	8-pole
	15 – 18.5 kW	10-pole
VUP 0600	37 –200 kW	6-pole
	30 – 75 kW	8-pole
	22 – 45 kW	10-pole

Type	Power range	Pole number
VUP 0800	75–250 kW	8-pole
	37–200 kW	10-pole
	30– 90 kW	12-pole
VUP 1000	100–650 kW	4-pole
	110–350 kW	10-pole
	75–300 kW	12-pole
VUP 1200	110–650 kW	4-pole
	160–350 kW	10-pole
	110–300 kW	12-pole

Safety Features

ABS submersible pumps have been designed for the toughest applications. They often are subjected to continuous running under difficult conditions.

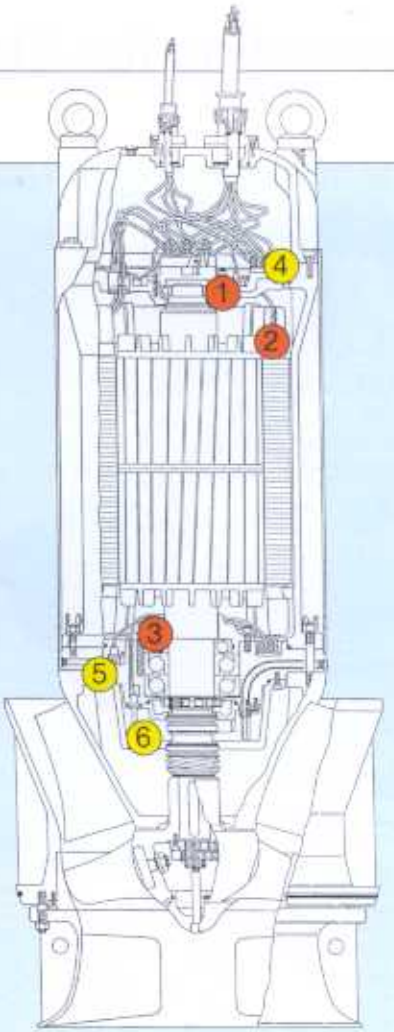
For optimum securtiy ABS provide a system of monitoring devices. The pumps are permanently monitored to ensure that faults or wear are reported in plenty of time. This means that major damage to these high quality submersible pumps can be avoided by timely inspection.

Thermal sensors

1. Upper bearing
2. Stator (3 sensors)
3. Lower bearing

DI-electrode

4. Connection chamber
5. Motor chamber
6. Oil chamber



Bearing Monitors

Thermal sensors at the upper and lower bearings give a signal if excessive temperatures are reached.

Motor Monitor

Thermal sensors in each phase of the stator switch the motor off before the maximum allowable temperatures are reached. This protects the motor against overloading, against excessive medium temperatures or other possible problems.

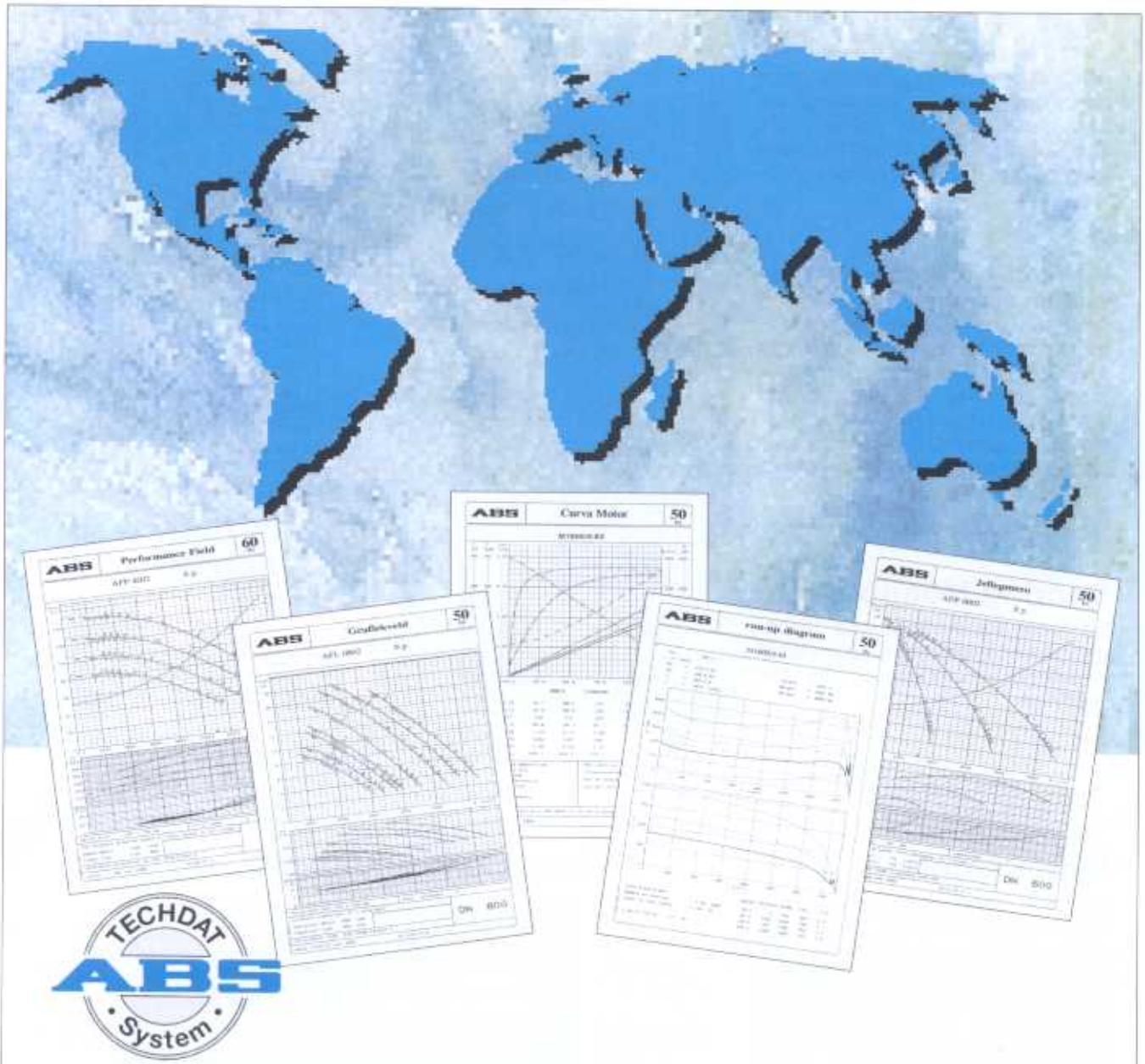
Seal Monitor

The sensors of the electronic seal monitoring system recognize the ingress of moisture into the water tight enclosures of the motor or connection chamber, as well as in the oil chamber of the shaft sealing unit. The ABS DI-System indicates, independently of the hours run, that an inspection is due, and gives a warning of water ingress.

Motor Control Unit MCU-33

ABS can also supply as an accessory the required electronic monitoring unit for installation in the control panel.
Sensors to give a continous indication of the temperature can also be supplied on special request.

Information for Station Designers



TECHDAT ABS System

COMPUTERAIDED

Selection aids
to assist you at the planning stage we are able to provide dimensional layouts of the pumps, pump curves with information on the efficiency, speed of rotation and number of pairs of poles in the motor, the power required, and the NPSH-curves for the VUP series. With the aid of the ABS-TECHDAT System we can assist you in the precise selection of hydraulics to suit the particular application and with the setting up of a system curve.

As an aid to the Project Design
The ABS-TECHDAT System contains all electrical and mechanical data on the motors available. A comprehensive data bank of test results and an effective computerized simulation program allow the assessment of all quasi-stationary and transient features. For example the system can assist you in the selection of starting transformers, soft start units, power factor correction equipment, etc.

To aid you in the design of Civil Work
Individual layout sheets of the pumps together with drawing stencils (scale 1:50) as well as dimensional sheets on all standard accessories are available. We can supply you with data on the dimensioning of pump inlet chambers, and tips for the design of the pump sump in order to give the most effective flow pattern. This information is available at any time and ensures the most effective design of the pumping station!

By making use of the ABS-TECHDAT System it is possible to provide design information to comply with the current requirements of the various Water Authorities.

AFL 0800 to 1200: The alternative for heavily polluted waste water

Application areas
AFL Submersible Pumps can be used everywhere where large volumes of process water or waste water containing solid effluent must be pumped.
Even liquids with fibrous components are no problem for this pump series.

Design
An economical modular system provides for optimum combination of hydraulics and motor to suit the required operating conditions.
The solution to all your dewatering problems.

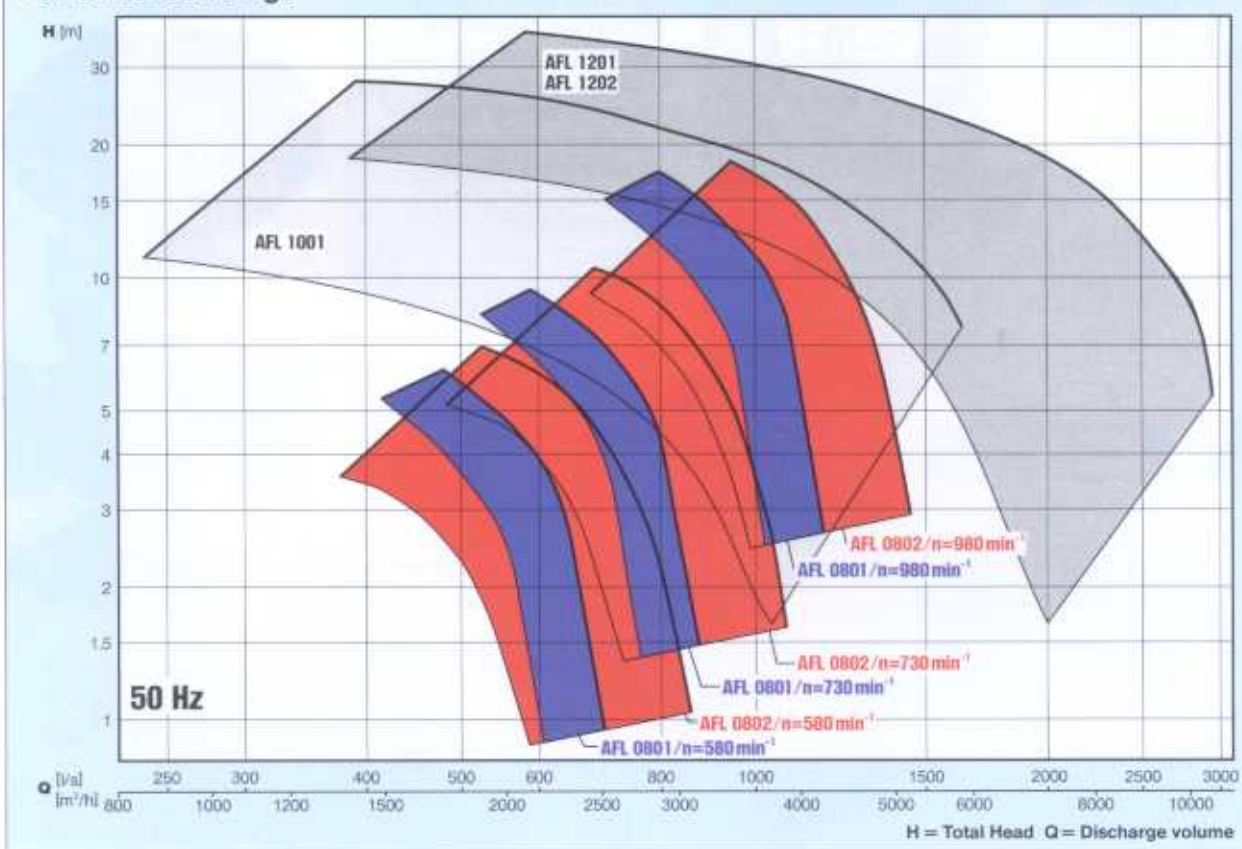
Motor
In water pressure-tight housing, protection type IP 68 and insulation Class F with lubricated for life maintenance free bearings and with high quality silicon carbide mechanical seal.
Your guarantee for a long reliable operating life.
Can also be supplied with explosion proof certification.

Hydraulics
Semi axial impellers with large free passage ensure blockage-free operation at high efficiencies.

Installation
Suitable for installation in steel or concrete riser pipes for economical and simple operation of the units.
The centering of the pump and sealing between pump and pipe line is carried out automatically by means of a conical coupling ring.
No additional installation work required.

Maintenance
Easy maintenance and flexibility are the characteristics of the AFL Pumps
Permanent bearing and seal monitoring systems allow continous effective checking of the unit.
All bearings are lubricated for life and maintenance free.
An oil change is only necessary if the DI sensor in the oil chamber has activated.
Flexibility instead of rigid inspection intervals.

Performance Range



ABS offers the complete range

AFP

Submersible pumps from 1.3 to 850 kW. Pressure-tight encapsulated fully flood-proof motors. Hydraulics with ContraBlock™-System or closed, single or multivane impellers for handling clear water, polluted water, sewage containing solids, faecal slurry and sludge.

Suitable for both wet well and dry well installation.

FlowBooster®

Low speed, highly efficient submersible mixer with a wide range of applications for use in industrial and municipal treatment plants.

Mono-cast propeller and patented mixer coupling system.

ECOMIX®
RW 300 - 900

Submersible mixers with motors from 1.5 to 22 kW for mixing, blending, dissolving and suspension of solids in municipal and industrial treatment plants.

HYPOMIX®

Submersible bottom mounted mixers for stirring activated sludge, particularly in square and round tanks.

The hyperboloid shape contributes to a very high efficiency and low energy consumption.

FR

Dry-installed clogless pumps for economic pumping of heavily polluted sewage and wastewater in municipal and industrial applications.

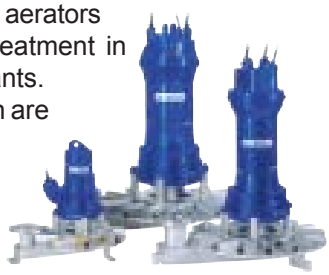
The pumps can be supplied with optional equipment where self-priming is required.

System Frings™

Self-aspirating submersible aerators for wastewater and water treatment in municipal and industrial plants.

Main areas of application are mixing and equalisation tanks, activated sludge tanks, SBR-reactors and sludge storage tanks.

Oxygen transfer up to 70 kgO_2/h, motor output, max 75 kW.



ABS reserves the right to alter specifications due to technical developments.

ABS
COST-EFFECTIVE PUMPING

Austria
Tel. +43 2236 642 61
Fax +43 2236 642 66

Belgium
Tel. +32 2 725 79 00
Fax +32 2 725 71 19

Brazil
Tel. +55 41 227 8100
Fax +55 41 348 1879

Canada
Tel. +1 905 670 4677
Fax +1 905 670 3709

China:
Tel. +86 21 5234 0472
Fax +86 21 5234 1179

Denmark
Tel. +45 48 17 11 10
Fax +45 48 17 19 11

Estonia
Tel. +372 656 3398
Fax +372 656 3385

Finland
Tel. +358 9 506 88 90
Fax +358 9 55 80 53

France
Tel. +33 1 49 35 24 50
Fax +33 1 48 54 42 82

Germany
Tel. +49 2246 13 0
Fax +49 2246 13 200

Great Britain
Tel. +44 1293 744 800
Fax +44 1293 543 392

Greece
Tel. +30 10 95 325 01/02/03
Fax +30 10 95 325 04

Hungary
Tel. +36 1 231 6070
Fax +36 1 231 6080

Ireland
Tel. +353 1 460 8888
Fax +353 1 460 8889

Italy
Tel. +39 051 89 00 911
Fax +39 051 86 18 48

Netherlands
Tel. +31 30 242 56 78
Fax +31 30 241 03 46

Norway
Tel. +47 67 554 700
Fax +47 67 554 750

Poland
Tel. +48 22 633 82 87
Fax +48 22 633 86 44

Portugal:
Tel. +351 21 495 01 57
Fax +351 21 495 53 64

Singapore
Tel. +65 6 4633 933
Fax +65 6 4622 122

South Africa
Tel. +27 11 397 1612
Fax +27 11 397 1795

Spain
Tel. +34 91 670 28 51
Fax +34 91 666 58 68

Sweden
Tel. +46 31 706 16 00
Fax +46 31 27 29 20

Switzerland
Tel. +41 71 694 6555
Fax +41 71 694 6556

Turkey
Tel. +90 216 455 2256
Fax +90 216 455 2265

USA
Tel. +1 203 238 2700
Fax +1 203 238 0738

All other countries
ABS Pumps International
Head Office, Sweden
Tel. +46 31 83 63 00
Fax +46 31 16 79 14

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www.abspumps.com

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