ARBO
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ARBO pump protection

Product group 4.0

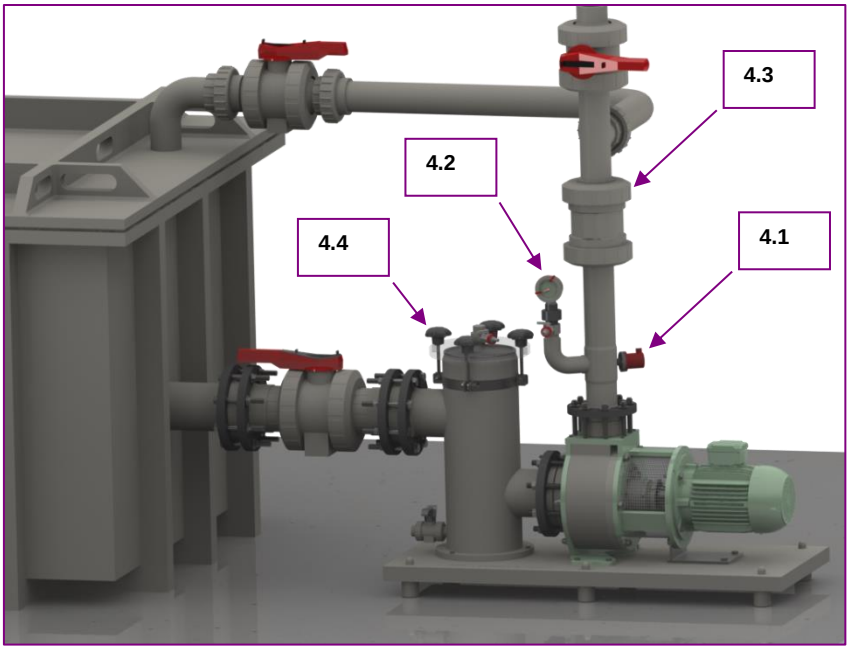
ARBO Pump protection

Protect your ARBO product!

In order to minimise maintenance cost and process losses, we strongly recommend to install some monitoring and protecting systems that we offer optional to your ARBO product:

4.1 Dry running protection
4.2 Pressure gauges
4.3 Priming units/ Non-return valves
4.4 Suction strainers

Each of these systems is explained further in separate leaflets.



General information

All products are machined of massive **PP** that covers a very wide range of duties – there is no metal to liquid contact. All reinforcement parts are made of SS-316.

For highly abrasive liquids (high % of solids) parts of High modulus **HMPE** may be ordered.

For highly corrosive mixtures at higher temperatures virgin **PVDF** is available.

Materials of construction	Abbreviation	T min. °C	T max. °C
Polypropylene	PP	0	80
High Modulus Polyethylene	HMPE	-50	80
Polyvinylidenfluoride	PVDF	-30	120
Polytetrafluorethene	PTFE	-30	120

Materials of elastomers	Abbreviation	T min. °C	T max. °C
EPDM	E	-40	150
Viton	V	-25	220
Polytetrafluorethene	T	-190	260

Materials of connections	Abbreviation
Male straight pipe thread	R
DIN2501 PN10 Flanges	F
3-D Unions +GF+	U

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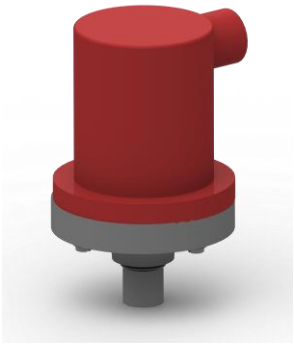
ARBO Dry running protector / Pressure Switch

High and low pressure safety cut-out

This compact, easily fitted pressure switch can be wired into control circuits or contactors to provide **high or low pressure safety cut-out.**



Alternatively, it can be wired to give an audible or visual high or low pressure alarm.
It is ideal for the protection of pumping equipment, which can be damaged by cavitation, dry running or pressure build-up.

The unit, which contains a diaphragm operated pressure switch, is mounted in the discharge pipe close to the pump by means of a tee fitting with a female threaded branch.

Materials:

- *Lower housing*
  - ***PP*** *max. 80 ºC*
  - ***PVC*** *max. 60 ºC*
  - ***PTFE*** *max. 120 ºC*
- *Diaphragm EPDM, Viton or Viton/PTFE*

Pressure rating:

- *Max. line pressure : 5 Bar*
- *Operating pressure : 0,1-2,0 Bar*

It must be wired to an electro-magnetic relay which can either be incorporated in or linked to the switchbox controlling the power supply to the pump motor.

It can be used with any single or 3 phase motor.

Installation tees for mounting the switch unit in the pipeline can be supplied in all sizes in metal or plastics materials.

Cavitation or Dry Running

If cavitation occurs or the pump runs dry, the discharge pressure will drop; this actuates the pressure switch and, through the electro-magnetic relay, cuts the power supply to the pump.

An adjustment screw, accessible beneath a cover on the head of the unit, enables the pressure switch to be set to operate at a given pressure drop. A minimum discharge pressure of 2m head is required.

The pressure switch is designed for use with clean, non-crystallizing liquids.

For liquids containing particles in suspension or which are liable to crystallization, the unit can be supplied with an intermediate chamber containing a diaphragm through which line pressure changes are transmitted to the switch. The advantage of the intermediate chamber is that it has larger and less restricted surface areas open to the line fluid, thus significantly reducing the likelihood of blockage.

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ARBO Diaphragm (switch) gauges

Visual monitoring system with optional safety cut-out

The **ARBO** diaphragm gauge can be used for **neutral or corrosive** media.

Diaphragm gauge (Code MM)

All wetted parts are made of **highly corrosion** resistant plastics or stainless steel.

There is no contact between gauge and liquid.

The gauge is separated from the chemical by a diaphragm. Pressure transmission takes place by means of a **buffer solution**.

The large diaphragm area in combination with the tiny compressibility of the buffer solution provides a very **accurate indication**.

The unit, is mounted in the discharge pipe close to the pump by means of a tee fitting with a male 1/2 “threaded branch.

Thanks to the special design, the gauge can be rotated 360° in order to put it in the best reading position.

Technical details:

Available materials:

Diaphragm housing	: PP, PVDF
Diaphragm/other gaskets	: PTFE covered

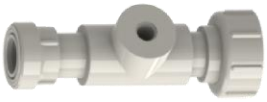
Max. operating temperature:

PP	: 0 to +80°C
PVDF	: -40 to +120°C

Max. operating pressure	**: PN 4**
Connections	**: R ½" inner R 1” or R 1¼" outer**
Ranges	**: 0-4 Bar**

- **Practically maintenance free.**
- **Easy to install.**
- **Also available with air release valve (code MMO).**

Installation tees for mounting the pressure switch in the pipeline can be supplied in several sizes in plastics materials.



Flow control or Dry Running

Also available with contact switches (code MKM) for **dry running protection of pumps or excess pressure control f.i. for filter systems.**

If the discharge pressure is increasing or dropping, this actuates the pressure switch and, through the electro-magnetic relay, cuts the power supply to the pump. It must be wired to an electro-magnetic relay which can either be incorporated in or linked to the switchbox controlling the power supply to the pump motor.

The pressure switch is designed for use with clean, non-crystallizing liquids.

For liquids containing particles in suspension or which are liable to crystallization, the unit can be supplied with an intermediate chamber containing a diaphragm through which line pressure changes are transmitted to the switch.
The advantage of the intermediate chamber is that it has larger and less restricted surface areas open to the line fluid, thus significantly reducing the likelihood of blockage.

Ordering code (P.I.C.)

Model	Pressure range Bar	Material wetted parts	Gaskets	Outer threaded connection "R"
MM	0-4	PP	E	1/2
MMO		PVDF	V	1
MKM			T	1 1/4
MKMO				

ARBO Priming Units

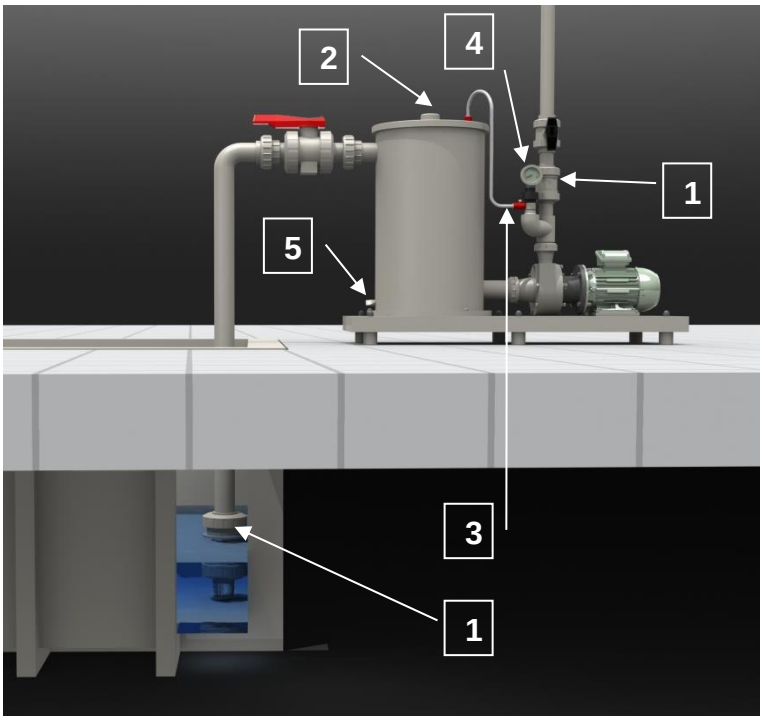
Applications

ARBO Priming units create self-priming capabilities for centrifugal pumps.

By means of a specific calculation, the necessary volume for every typical priming application may be calculated.

We offer a wide range of standard priming units but produce custom build units as well, even as big as 500 litre.

Once filled, the pump will be capable of priming the suction line and releasing the air through the discharge line.
In order to prime automatically every charge, it is necessary that the pump is switched off before it empties the priming unit. To ensure this and to protect your pump, we can advise on optional devices.



Materials

Standard is the material **PPH** that covers a very wide range of duties.
For highly corrosive mixtures at higher temperatures even a reservoir entirely made of **PVDF** may be offered.
The standard priming unit has **EPDM** gaskets.

Options

Pos.	Description	Standard	Alternatives		
1	Non-return valve	PPH	PVDF	PVC	PE
2	Transparent filler opening	PPH	PVDF	PVC	PE
3	Air release valve with hose adaptor for re-circulation line	PPH	PVDF		
4	Diaphragm gauge	PPH	PVDF		
5	Drain valve instead of plug	PPH	PVDF		

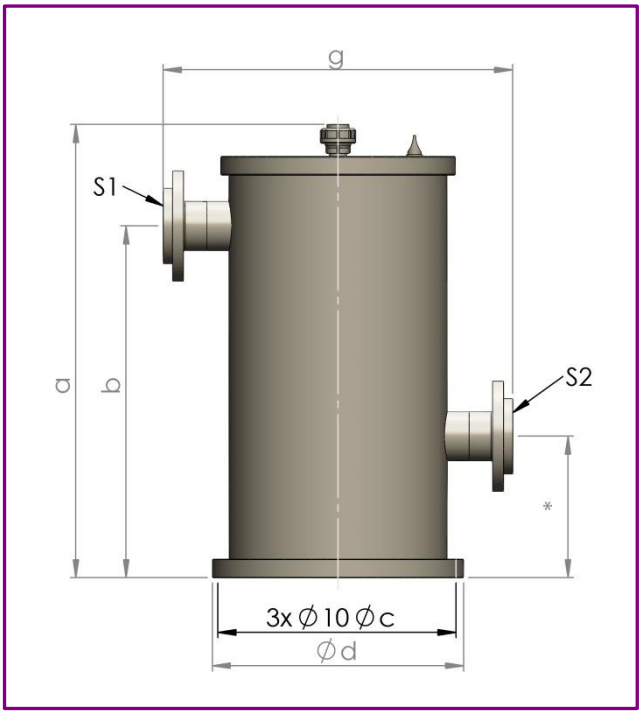
Max. operating pressure at 20°C : -0.8 to 2 Bar
Recommended flow velocity in suction line : 1 m/s.

Materials of construction	Abbreviation	T min. °C	T max. °C
Polypropylene	PP	0	80
Polyvinylidenfluoride	PVDF	-30	120
Polytetrafluorethene	PTFE	-30	120

Materials of elastomers	Abbreviation	T min. °C	T max. °C
EPDM	E	-40	150
Viton	V	-25	220
Polytetrafluorethene	T	-190	260

Materials of connections	Abbreviation
DIN2501 PN10 Flanges	F
3-D Unions +GF+	U

The system pressures mentioned, apply to the basic material only; the max. system pressure for your application can differentiate from this value. On doubt please contact our sales department.



Please advise most accurate data in order to give you the best advise!

Data for priming unit calculation				
1	Flow rate			m3/h
2	Suction pipe bore	Dn		mm
3	Suction lift required			m
4	Suction pipe total			m
5	Liquid density			kg/m3
6	Height dimension*	S2		mm

Other connections and/or capacities on request

Table of dimensions (L=Liter)

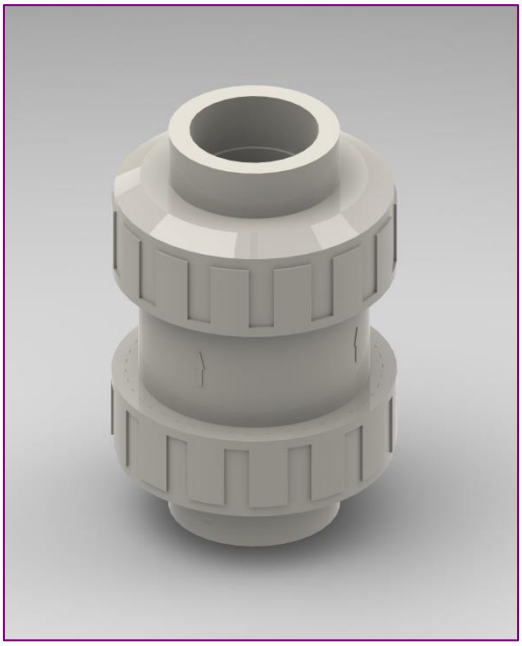
Type/ dim.	15L	25L	30L	40L	60L	80L
a	430	630	800	530	780	1060
b	300	500	670	400	650	930
c	320	320	320	440	440	440
d	340	340	340	460	460	460
g	490	490	490	610	610	640

Ordering code (P.I.C.)

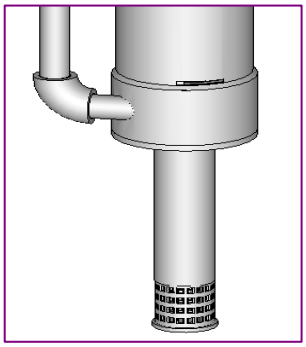
Model	Volume (L)	Type of connection	Connection S1	Connection S2	Material wetted parts	Gaskets
AZU	**15**	**F**	**Dn25**	**Dn25**	**PP**	**E**
	20	**U**	**Dn32**	**Dn32**	**PVDF**	**V**
	25		**Dn40**	**Dn40**	**PVC***	**T**
	30		**Dn50**	**Dn50**	**PE***	
	40		**Dn65**	**Dn65**		
	60		**Dn80**	**Dn80**		
	80		**Dn125**	**Dn125**		
	225		**Dn150**	**Dn150**		

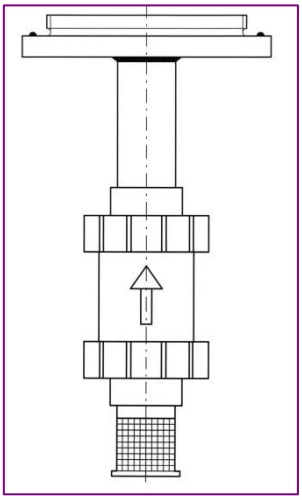
ARBO Non-return valves

Non return valve to be installed in the suction pipe extension to be able to start at any level without foot bearing !!!!



- **fully corrosion resistant PP, PVC or PVDF – no metal to liquid contact**
- **gaskets of EPDM (standard) or Viton**
- **with PTFE-encapsulated spring for maximum security**
- **absolutely leak free with clean liquids**
- **can be mounted horizontally or vertically in suction or discharge pipes of centrifugal pumps.**
- **Valve can be radially disassembled so piping can remain in position.**
- **Opening pressure 0.025 Bar**

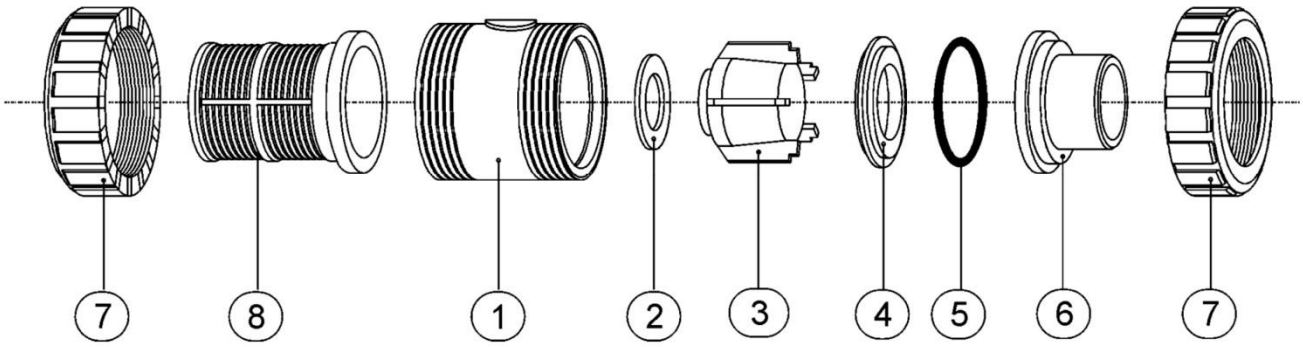




SumPro DO-BG1-2-3	d 50	DN 40
SumPro DO-BG4-5	d 50	DN 40
DO-32/40/50-160/200/250-HD	d 75	DN 65
DO-65-200/250-HD	d 90	DN 80

Exploded drawing:

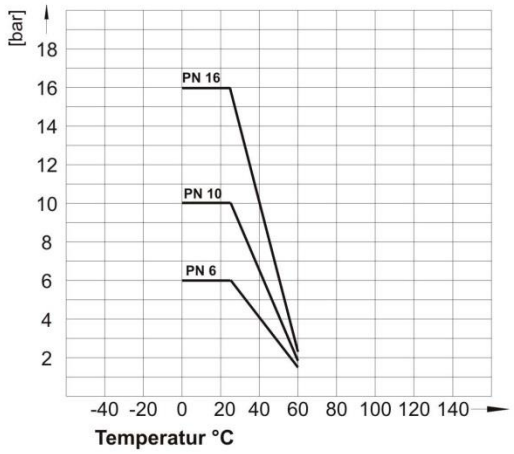
01. Body
02. Flat gasket
03. Cone
04. Thrust
05. O-Ring
06. Connector types
    - solvent socket
    - solvent spigot
    - threaded socket
    - fusion socket
    - fusion spigot
07. Union nut
08. Strainer



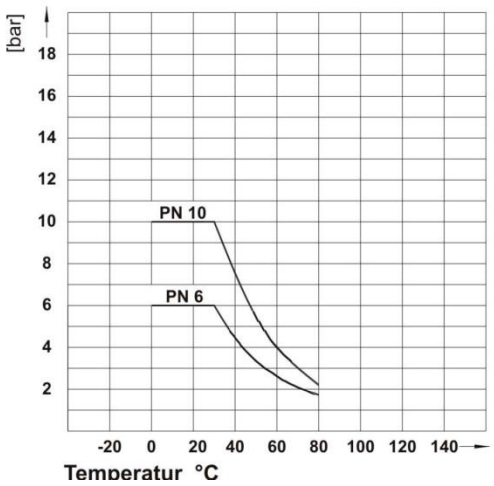
Diagrams

Pressure– Temperatur – Diagram

PVC



PP



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ARBO Suction strainers

Applications

ARBO suction strainers are primarily used to protect pumps against foreign particles.
This can prevent serious damage of your pumps and will therefore reduce maintenance cost and process down time.

All **ARBO** strainers are all designed under consideration of the recommended maximum flow velocity for centrifugal pumps.

The pressure drop over the strainer basket is very low, therefore **ARBO** strainers are well suitable for processes with higher liquid temperatures and low NPSH situations.

We offer a wide range of standard units but produce custom build units as well.

For situations where a limited suction lift is required, this unit may be suitable as well. Please consult our sales department for a specific calculation and quote.

Max. operating pressure at 20°C : -0.8 to 2 Bar;
Recommended flow velocity in suction line : 1 m/s.

Materials

Standard is the material **PPH** that covers a very wide range of duties. For highly corrosive mixtures at higher temperatures even a reservoir entirely made of **PVDF** may be offered.
The standard priming unit has **EPDM** gaskets.

Materials of construction	Abbreviation	T min. °C	T max. °C
Polypropylene	PP	0	80
Polyvinylidenfluoride	PVDF	-30	120

Materials of elastomers	Abbreviation	T min. °C	T max. °C
EPDM	E	-40	150
Viton	V	-25	220
Polytetrafluorethene	T	-190	260

Materials of connections	Abbreviation
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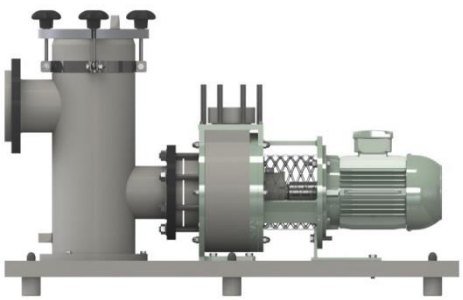
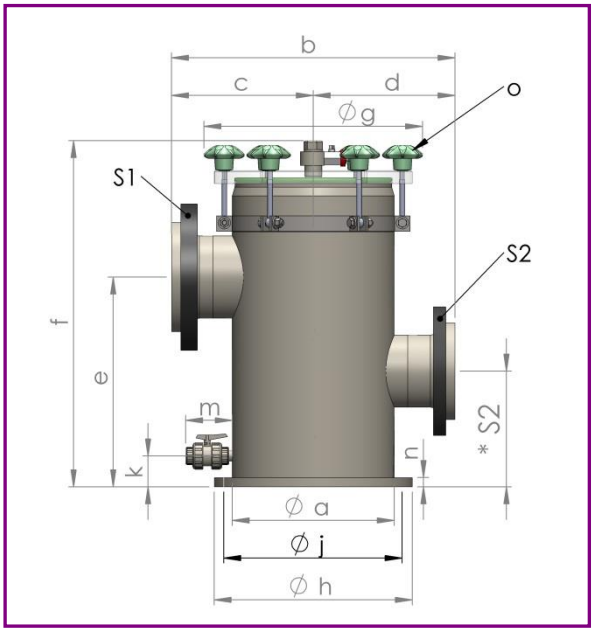


STANDARD STRAINERS

DIMENSIONS / WEIGHTS



Ordering code (P.I.C.)

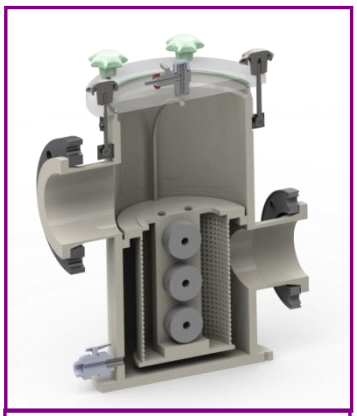
Product	S1 Inlet	S2 Outlet	Material wetted parts	Gaskets
Strainer	Dn40	Dn40	PP	E
	Dn50	Dn50	PVDF	V
	Dn65	Dn65		T
	Dn80	Dn80		
	Dn100	Dn100		
	Dn125	Dn125		
	Dn150	Dn150		
	Dn200	Dn200		

Type	m3/h	S1	S2	*S2		All dimensions in mm													priming
Dn	max.	Dn	Dn	min.	max.	a	b	c	d	e	f	g	h	j	k	m	n	o	volume L
40	6	40	40	80	230	225	470	235	235	343	569	337	285	3x09 PDC.262	60	145	18	4 x	9,3
50	10	50	50	90	220	225	470	235	235	343	569	337	285	3x09 PDC.262	60	145	18	4 x	9,1
65	20	65	65	100	215	225	470	235	235	343	569	337	285	3x09 PDC.262	60	145	18	4 x	8,9
80	30	80	80	105	210	225	470	235	235	353	589	337	285	3x09 PDC.262	60	145	18	4 x	8,9
100	40	100	100	115	200	225	470	235	235	353	589	337	285	3x09 PDC.262	60	145	18	4 x	8,6
125	60	125	125	115	200	225	470	235	235	408	668	337	285	3x09 PDC.262	60	145	18	4 x	8,6
150	90	150	150	150	200	315	551	258	258	408	668	427	385	6x09 PDC.355	60	145	18	6 x	18,8
200	160	200	200	200	600	400	760	380	380	784	1082	511	460	6x09 PDC.437	100	145	49	8 x	70

The iron catcher!

- *optional available with magnetic inserts*
- excellent to protect your
  - ✓ magnetic drive pump impellers and bearings
  - ✓ mechanical seal
- easy to dismantle and clean
- absolutely corrosion resistant!

Please advise most accurate data in order to give you the best advise! Order strainer basket separately and specify perforation 5mm or 2mm and with or without magnetic insert.



Data for priming unit calculation				
1	Flow rate			m3/h
2	Suction pipe bore	Dn		mm
3	Suction lift required			m
4	Suction pipe total			m
5	Liquid density			kg/m3
6	Height dimension*	S2		mm