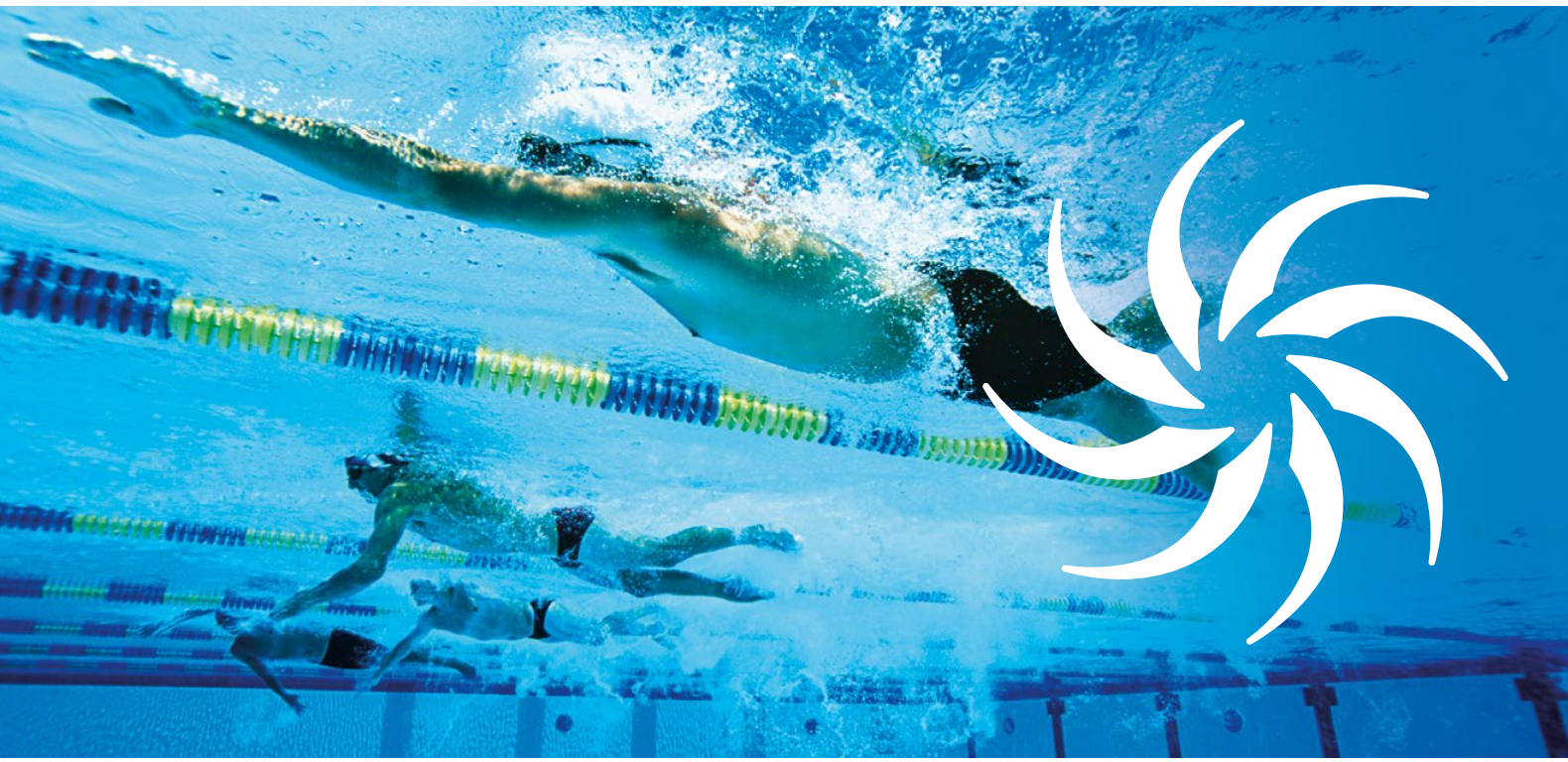
BADU®

Pool technologies and solutions ...



swimming pool
public

badu

experience water

Water has its own language and to use it requires a lot of experience and know-how. BADU makes it possible with pool technologies and solutions that impress. For public facilities and hotels, even in tough conditions.

Energy saving and environmentally friendly; robust and durable.

Each pump a true innovation in its field.

Experience water with BADU ...

You will find detailed information on all our products at badu.de
or simply contact our BADU team.

All prices on request.

CONTENTS

Current BADU news ...

badu.de YouTube.com facebook.com

BRAND PROMISE

FIVE STAR POOL TECHNOLOGY.

We are very passionate about the power of water and have been for over 50 years. The result of this enthusiasm is successful pool technologies and solutions.
With BADU you get the brand quality of an owner-managed company and everything that goes with it: lifelong innovation, consistancy and reliability.

QUALITY
We know what is important when selecting perfect pool technology: the long service life of each individual pump. As brand manufacturers we guarantee reliable water attractions. BADU products meet these requirements.

FLEXIBILITY
Each pump has special requirements and is designed individually for you. Therefore our pumps have to have the greatest possible flexibility. We offer products that can be perfectly implemented in existing and newly designed units.

INNOVATION
As well as the longevity of a swimming pool unit, other economic factors are also crucial. Therefore our development team works daily to further optimise innovative materials and efficient technology for you.

SERVICE
Choose a manufacturer who is there for you in the long term. For years we have been partners with our customers and are well known for our fast, excellent service. Our technicians are always there for you on site when you need them.

BADU Block Multi
The new circulation pump made from technically high-performance plastic.
Page 10

BADU® QUALITY

CONVINCING.
FIRST-CLASS.

With BADU you will be well-advised in all areas.

Our quality and competence have been convincing people all over the world for decades. That's how impressive projects such as leisure complexes, wellness spas or the polar sea at Hagenbeck Zoo come about. BADU provides optimal water movement everywhere ...

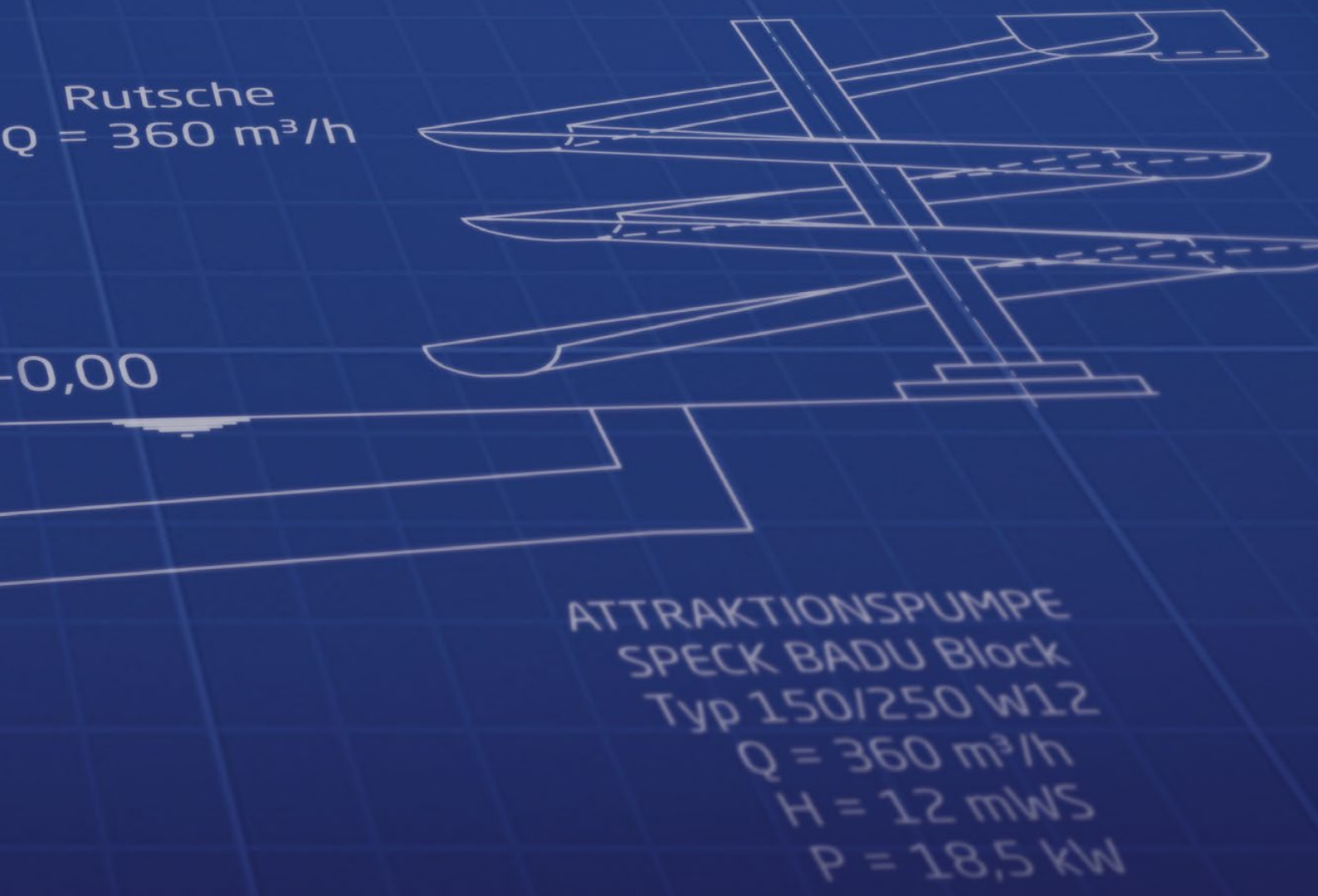
1 OBERMAINTHERME STAFFELSTEIN
For over 30 years the thermal spa has trusted in BADU pool technology. Why? The source in Bad Staffelstein is one of the warmest and strongest thermal springs in Bavaria. With a brine concentration of 12 % it has extreme requirements in both treatment and pump technology.

2 HAGENBECK ZOO
Optimal living conditions for arctic animals are maintained using a sophisticated cooling and water treatment system. Providing sea water, fresh water and integrating rain and process water requires excellent performance from the whole system.

3 AIDA CRUISES
Pool technology on board requires a robust construction, flexible application potential, low-noise operation and easy maintenance. Wellness islands, swimming pools, two of which are salt water pools, and whirlpools on deck have to work flawlessly whilst at sea.

For detailed information call us on ...
+49 9123 949-400

BADU® VARIETY FOR ALL REQUIREMENTS.



Circulation pumps
Performance: 4-750 m³/h
Page 10

Attraction pumps
Performance: 2-740 m³/h
Page 34

Metering water pumps
Performance: 0.2-6 m³/h
Page 48

Sample water return units
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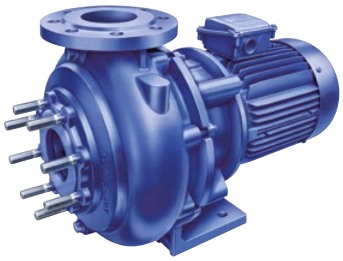
Staged centrifugal pumps
Performance: 0.5-160 m³/h
Page 54

Booster units
Performance: 0.5-960 m³/h
Page 56



Sewage water pumps
Performance: 1-100 m³/h
Page 60

Accessories

Page 62

SPECK SELECT
The pump selection programme.
Page 77

BADU®

Our solutions are as varied as your requests are individual.
It all comes down to the perfect combination. BADU pumps provide efficient units, either alone or as part of a team. Bring on the water ...

On the following pages you will find detailed information regarding measurements, performance, materials and application areas for the respective BADU products. We are happy to discuss further variations such as colour and material with you personally. Call us on +49 9123 949-400.

TECHNOLOGY

BADU® BLOCK MULTI

MAXIMUM STABILITY 1.

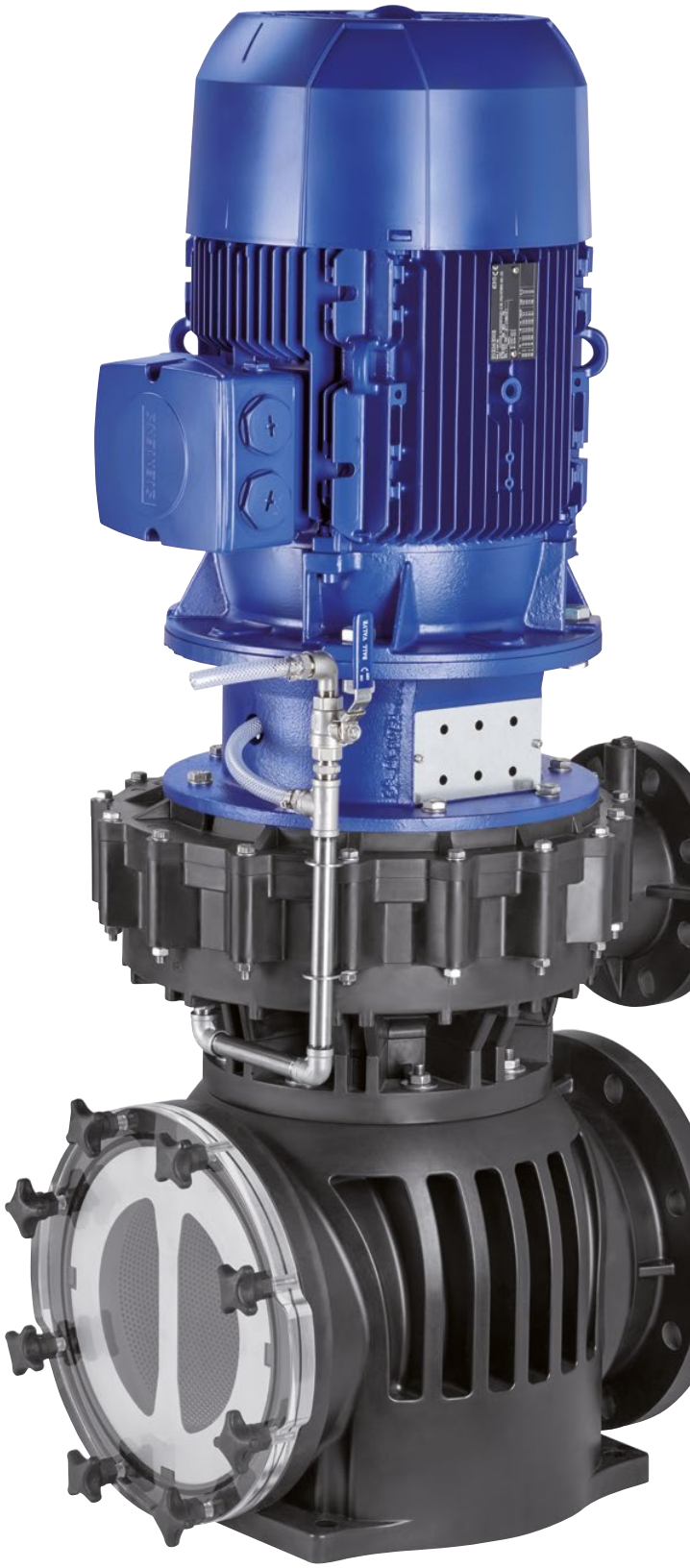
Corrosion-resistant – even with high brine concentrations.

Permanently improved rate of efficiency due to new surface qualities.

The innovative, completely plastic concept of the BADU Block Multi enhances the proven BADU Block technology, taking it to a completely unique level.

Benfits of the BADU Block Multi:

- Internal coating is unnecessary for the completely plastic pump.
- Wetted pump parts are made from optimised technically high-performance plastic (THP) – constantly robust, maintenance-free and economical.
- Pump shaft does not come into contact with the pump liquid.
- Corrosion-resistant and low-wear, even with high brine concentrations.
- Maintenance-friendly plug-in shaft design.
- Flexible attachment of IE3 and PM motors from 2.20 to 11.00 kW.
- Plastic filter housing with transparent lid.
- Filter basket and vent line made from stainless steel.



WHY PLASTIC?

We wanted to improve the performance and eliminate systemic disadvantages of the BADU Block concept, which has already been proven a thousand times over. Robust with high brine concentrations, lighter, less wear, less maintenance – more flexibility. The THP plastic construction of the new BADU Block Multi achieves more in every respect.

For further questions or an individual consultation ...
call us on: +49 9123 949-400

BADU® Block Multi

Performance features

1 Motor
Standard trademark motor, optimised for the operating point with ball bearings that are lubricated for life.
Further motor variations on page 15.

2 Plug-in shaft system
Motor can be replaced without having to completely disassemble the pump or without having to dismantle the mechanical seal.

3 Ventilation
An external vent line allows manual ventilation and results in the long life of the mechanical seal.

4 Pump shaft
Pump shaft made from stainless steel. Motor/pump shaft has no contact with the medium providing complete electrical separation.

5 Mechanical seal
Maintenance-free bellow-type mechanical seal is cooled and lubricated by the pumping liquid. This allows long durability and long intervals between maintenance periods.

6 Impeller
Closed impeller for optimal smooth running and durability of the whole pump.

7 Pump material
THP (technically high-performance plastic).
Permanent corrosion protection and protection against aggressive media for all relevant wetted parts due to completely plastic version.

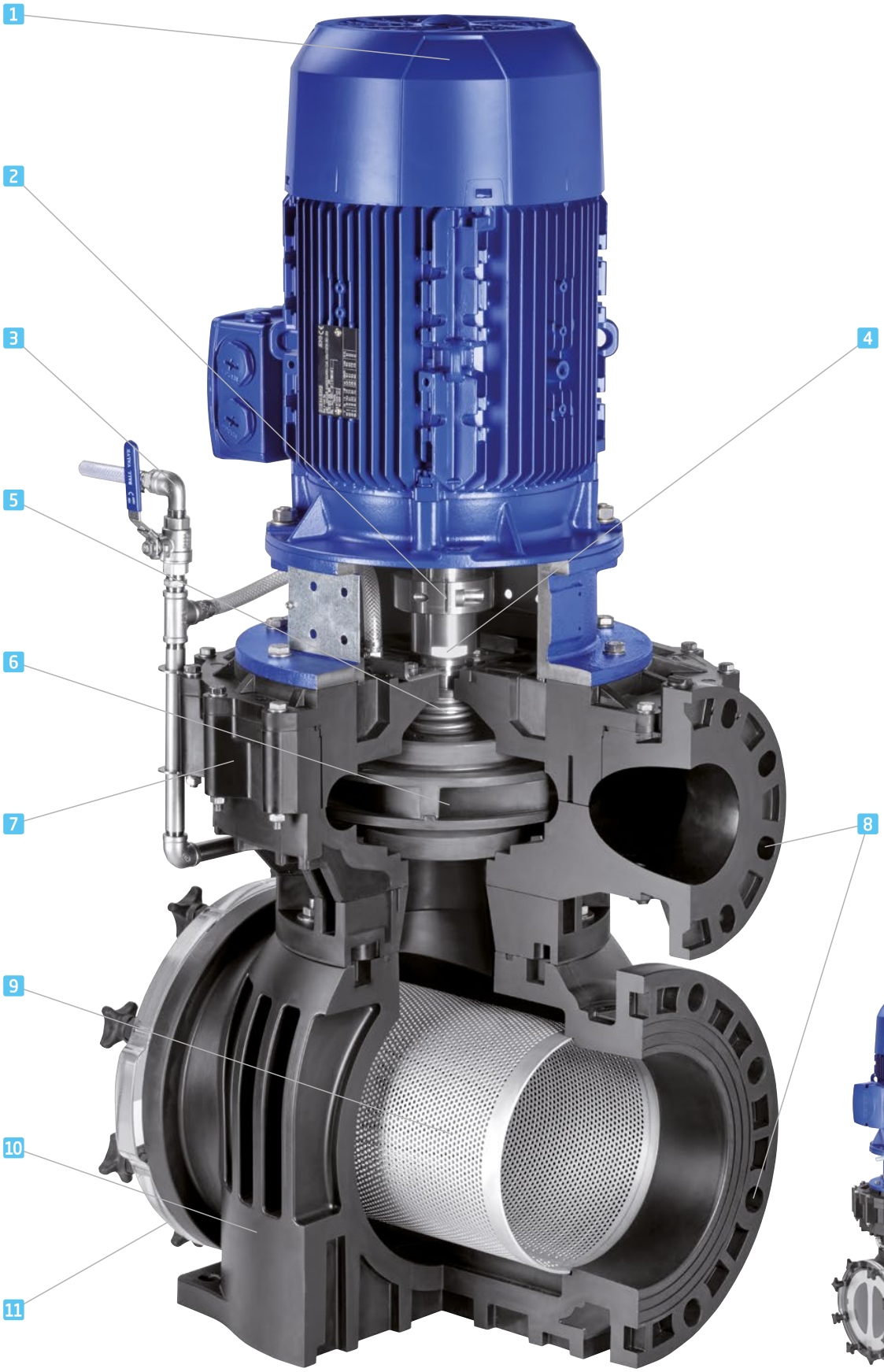
8 Connections
Standardised connections, compatible with DIN and ASME (American standard).

9 Strainer basket
Low-wear with retaining plate as a handle and rotation lock. Robust welding seals. Curved edges for more stability.

10 Filter housing
Completely plastic version. Corrosion-resistant without elaborate internal coating and can be used with high brine concentrations. Low-wear, robust and light.

11 Filter lid
Transparent, lightweight lid for convenient cleaning. Simple level control for drainage and visual checking of the level of pollution without having to open the lid.

> Detailed information regarding the BADU Block Multi can be found on page 14.



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Cross section

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BADU Block Multi

Accessories – for the BADU Block Multi can be found on page 64.

BADU® Block Multi

Description

Field of application
Swimming pool water circulation and filtration as well as operation of swimming pool attractions in public swimming pools.

- Open-air and indoor pools
- Spas[4)]
- Pools with high salt concentrations[4)]
- Water treatment, e.g. filter unit construction
- Leisure facilities
- Attractions, e.g. water slides
- Shipbuilding[4)]
- Industry, e.g. cool water units[4)]
- Water supply, e.g. irrigation

Design
Non-self-priming, single-stage, volute casing pump in vertical monoblock design. The process design allows easy replacement of the motor without disassembling the pipes. Due to the low motor speed, pump operation is quiet with very little wear and tear.
The closed, well-balanced impeller can be individually adjusted to suit the respective operating conditions. Balancing is carried out in quality class 6.3 according to DIN ISO 1940. This ensures optimal smooth running and durability of the whole pump.

Filter housing capacity

BADU Block Multi 65/250	approx. 9 l
BADU Block Multi 100/250	approx. 19 l
Strainer basket mesh size	approx. Ø 3 mm

> **Materials used can be found on page 17.**

Paintwork
RAL 5002, ultramarine blue.

> **Customised paintwork on request.**

Technical data at 50/60 Hz

Flow rate	Q	up to max. 250 m³/h
Dynamic head	H	up to 24 m
Water temperature	t	max. 40 °C
Maximal operating pressure	p	2.5 bar
Speed variables	n	approx. 1450/1750 rpm

Construction sizes

BADU Block Multi 65/250	DND 65/DNS 125
BADU Block Multi 100/250	DND 100/DNS 200

Flange
up to DN 150 compatible with EN 1092-2 PN-16 and ASME
up to DN 200 compatible with EN 1092-2 PN-10 and ASME

Noise generation
The sound power or sound pressure level is largely determined by both the motor and the pump and especially by the installation conditions and relevant installation situation. Special sound insulation measures are to be taken to reduce the transmission of structure-borne or airborne noise.

> More details regarding all designs, characteristics and dimensional drawings on request or at badu.de

Motor

Motor

Directly mounted, DIN-IEC three-phase, low-noise operation, surface-cooled, removable motor in German brand quality. Energy efficiency class IE3 from 0.55 kW, including PTC resistor sensor with fixed bearings on the pump side. The motors are produced in the factory with closed condensation drain holes.

Construction	IM B 5
Protection class	IP 55
Idle speed	1450/1750 rpm
Frequency	50/60 Hz
Voltage 50 Hz	up to 2.20 kW: 230 V Δ/400 V Y
60 Hz	up to 2.60 kW: 265 V Δ/460 V Y
Voltage 50 Hz	from 3.00 kW: 400 V Δ/690 V Y
60 Hz	from 3.60 kW: 460 V Δ
Class of insulation	F
Cooling air temperature	max. 40 °C

> **Special motors on request.**

Direction of rotation

Clockwise, as seen on the motor fan.

Bearing/lubrication

Motors up to construction size 160 have sufficiently dimensioned, maintenance-free, deep groove ball bearings according to DIN 625 with permanent lubrication.

1 Standard motor

Make: Siemens IE3 motor from 0.55 kW.
Advantage: very high grade of efficiency.

2 PM motor

Make: VEM IE4 motor.
Advantage: very high grade of efficiency.

3 Water-cooled motor

Make: EMOD. Energy efficiency class depends on the temperature of the media.
Advantage: heat recovery.
> **Motor design only available on request.**

1 Standard motor

2 PM motor

3 Water-cooled motor

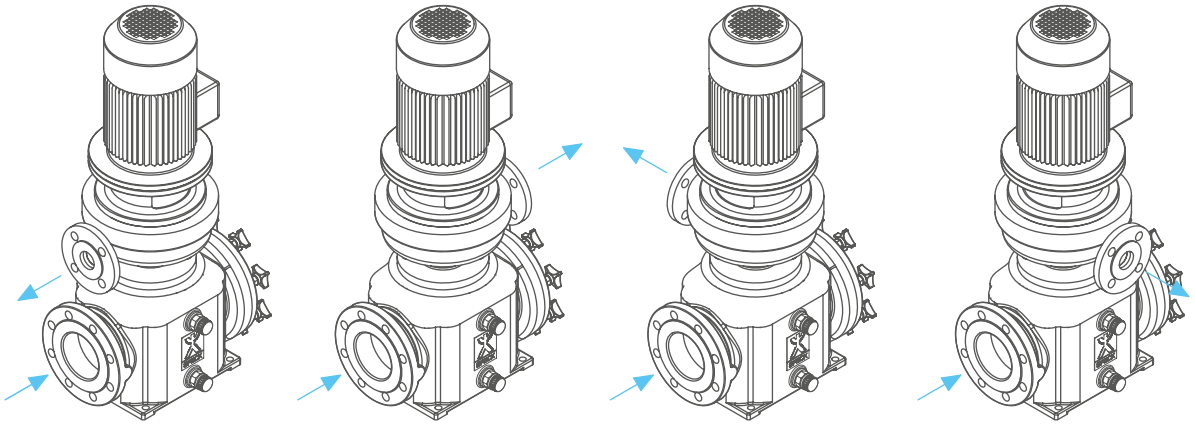
BADU® Block Multi

Connection positions

Variable outlet connection positions

The outlet connection positions can be arranged flexibly where the installation conditions are less convenient. Therefore the pump can be adapted depending on the situation in the engineering room and installation area.

All pump types can be rotated on the filter housing by 45° and 90°.

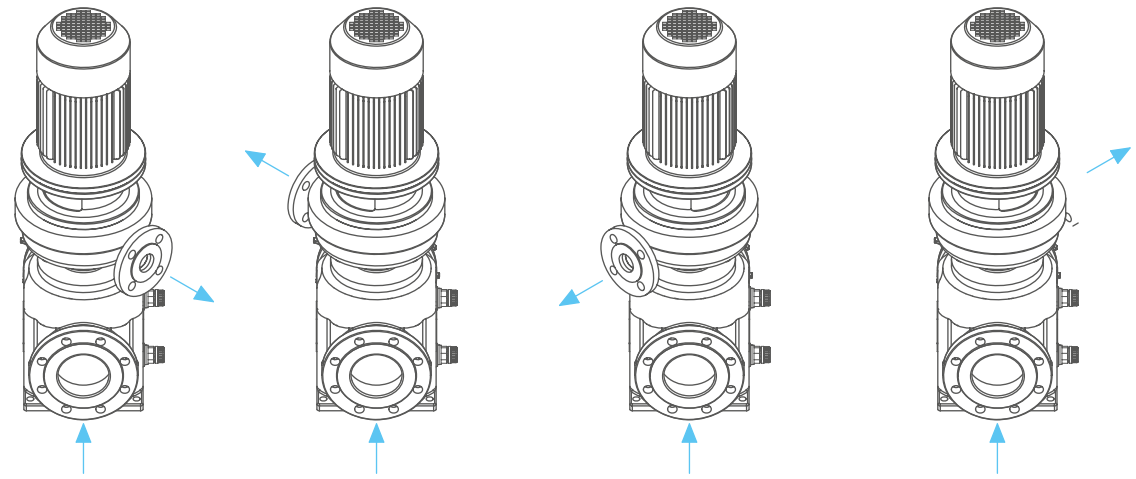


V
Standard front

H
back

L
left

R
right



V45°
front, rotated 45°

H45°
back, rotated 45°

L45°
left, rotated 45°

R45°
right, rotated 45°

Materials used

Design	BADU Block Multi	BADU Block Multi Mar
Casing parts	THP technically high-performance plastic	THP technically high-performance plastic
Impeller	THP technically high-performance plastic	THP technically high-performance plastic
Mechanical seal	carbon/SiC/EPDM	SiC/SiC/HNBR
Pump shaft (no contact with pump liquid)	stainless steel 1.4057	stainless steel 1.4057
Motor lantern	cast iron EN-JL 1040	cast iron EN-JL 1040
Filter housing	THP technically high-performance plastic	THP technically high-performance plastic
Strainer basket	stainless steel 1.4571	PVC
Filter lid	acrylic glass	acrylic glass

Subject to technical modifications.

BADU Block Multi > Circulation line and ball valve vent made from stainless steel and PVC hose.
BADU Block Multi Mar > Circulation line and ball valve vent made from PVC and PVC hose.

BADU BLOCK MULTI MAR

Field of application

Swimming pool water circulation and filtration as well as operation of swimming pool attractions in public swimming pools.

- Pools with thermal water and high salt concentrations[4)]
- Water treatment, e.g. fish farming

3 Ventilation

An external ventilation line allows manual ventilation and thus leads to a long service life for the mechanical seal. External ventilation made from plastic.

9 Strainer basket

Made from plastic. Robust design with handles.
Strainer basket mesh size
BADU Block Multi Mar 65/250..... approx. Ø 6 mm
BADU Block Multi Mar 100/250..... approx. Ø 10 mm

BADU Block Multi Mar

Accessories – for the BADU Block Multi and BADU Block Multi Mar can be found on page 64.

BADU® BLOCK

MAXIMAL RELIABILITY.

Proven over decades and continually improving.

Energy efficient with optimised rate of efficiency.

The perfect, completely metal concept of the BADU Block unites reliability and durability.

Based on current development levels.

Benfits of the BADU Block:

- Pump in cast iron or bronze version with RILSAN-coated filter housing. Optionally available with CDP internal coating for all wetted pump parts for optimal corrosion protection.
- Robust construction with oversized wall thickness and solid workmanship.
- Material and seal combinations can be selected depending on the pump media.
- Flexible attachment of IE3 and PM motors up to 55.00 kW.
- Various material and equipment combinations can be selected e.g. housing in tin bronze, plastic filter housing, transparent lid etc.

OPTIMAL CORROSION PROTECTION

We are able to implement a modern and advanced procedure, as an option: cathodic dip painting (CDP). For high process safety, even layer thickness and high fitting accuracy. Temperature resistant up to 50 °C and permanently durable.

For further questions or an individual consultation ...
call us on: +49 9123 949-400

BADU® Block

Performance features

1 Motor
Standard trademark motor, optimised for the operating point with ball bearings that are lubricated for life.
Further motor variations on page 23.

2 Plug-in shaft system
Motor can be replaced without having to completely disassemble the pump or without having to dismantle the mechanical seal.

3 Ventilation
An external vent line allows manual ventilation and results in the long life of the mechanical seal.

4 Pump shaft
Pump shaft made from stainless steel.

5 Mechanical seal
Maintenance-free bellow-type mechanical seal is cooled and lubricated by the pumping liquid. This allows long durability and long intervals between maintenance periods.

6 Impeller
Closed impeller, well-balanced, for optimal smooth running and durability of the whole pump. Individual adjustment of the impeller diameter for the respective operating points.

7 Pump material
Various materials can be selected e.g. cast iron, tin bronze. Permanent corrosion protection and protection against aggressive media due to optional CDP coating of all relevant wetted parts (volute casing, discharge cover).

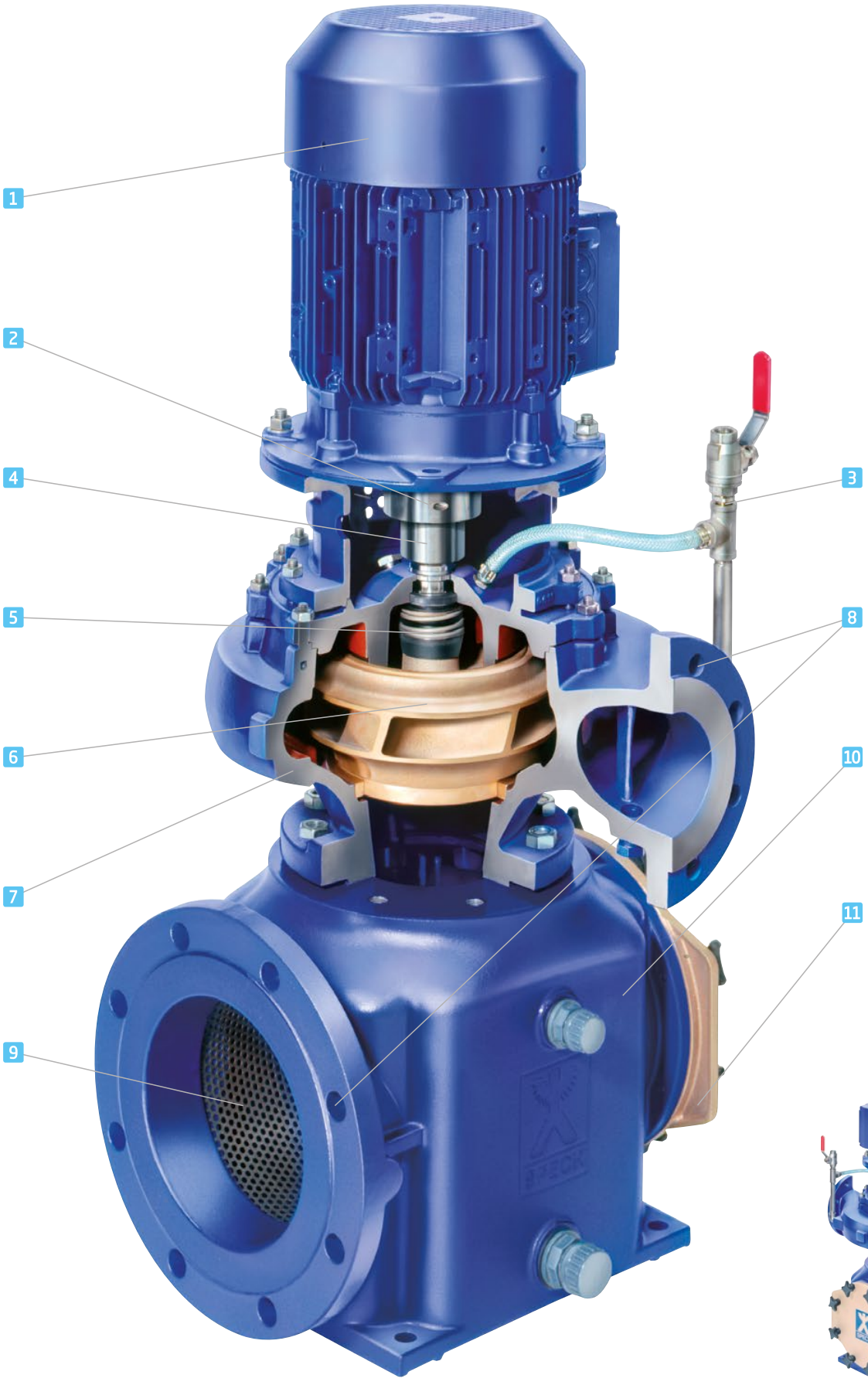
8 Connections
Largely dimensioned inlet connections result in low flow speeds.

9 Strainer basket
Low-wear with retaining plate and handle welded into the basket. Robust welding seals. Curved edges for more stability.

10 Filter housing
RILSAN-coated filter housing for optimal corrosion protection. Stain resistant. Also optionally available in a plastic version – see accessories on page 64.

11 Filter lid
Robust lid, extremely stable under pressure, made from bronze. Also optionally available in a transparent version – see accessories on page 64.

> Detailed information regarding the BADU Block can be found on page 22.



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Cross section

^
BADU Block

Accessories – for the BADU Block can be found on page 64.

BADU® Block

Description

Field of application
Swimming pool water circulation and filtration as well as operation of swimming pool attractions in public swimming pools.

- Open-air and indoor pools
- Spas[4)]
- Pools with high salt concentrations[4)]
- Water treatment, e.g. filter unit construction
- Leisure facilities
- Attractions, e.g. water slides
- Shipbuilding[4)]
- Industry, e.g. cool water units[4)]
- Water supply, e.g. irrigation

Design
Non-self-priming, single-stage, volute casing pump in vertical monoblock design. The process design allows easy replacement of the motor without disassembling the pipes. Due to the low motor speed, pump operation is quiet with very little wear and tear.
The pump is equipped with replaceable, corrosion-resistant wear rings. The closed, well-balanced impeller can be individually adjusted to suit the respective operating conditions. Balancing is carried out in quality class 6.3 according to DIN ISO 1940. This ensures optimal smooth running and durability of the whole pump.

Filter housing capacity

BADU Block 32/.. to 65/..	approx. 13 l
BADU Block 80/.. to 125/...	approx. 29 l
BADU Block 150/...	approx. 71 l
Strainer basket mesh size	approx. Ø 3 mm

> **Materials used can be found on page 25.**

Paintwork
RAL 5002, ultramarine blue.

> **Customised paintwork on request.**

Technical data at 50/60 Hz

Flow rate	Q	up to max. 600/750 m³/h
Dynamic head	H	up to 40/55 m
Water temperature	t	max. 50 °C

Maximum operating pressure/temperature

Pump casing	p	10 bar
Filter housing		
- cast iron	p	5 bar
- **optional** plastic		
BADU Block 32/.. to 125/...	p	2.5 bar
	t	max. 40 °C
- **optional** tranparent lid	p	2.5 bar
	t	max. 40 °C

> **Optional plastic filter housing can be found on page 64.**

Speed variables	n	approx. 1450/1750 rpm
Construction size		DND 32 up to 200

Flange
up to DN 150 according to EN 1092-2 PN-16
up to DN 200 according to EN 1092-2 PN-10

Noise generation
The sound power or sound pressure level is largely determined by both the motor and the pump and especially by the installation conditions and relevant installation situation. Special sound insulation measures are to be taken to reduce the transmission of structure-borne or airborne noise.

> More details regarding all designs, characteristics and dimensional drawings on request or at badu.de

Motor

Motor

Directly mounted, DIN-IEC three-phase, low-noise operation, surface-cooled, removable motor in German brand quality. Energy efficiency class IE3 from 0.55 kW, including PTC resistor sensor with fixed bearings on the pump side. The motors are produced in the factory with closed condensation drain holes.

Construction	IM B 5
Protection class	IP 55
Idle speed	1450/1750 rpm
Frequency	50/60 Hz
Voltage 50 Hz	up to 2.20 kW: 230 V Δ/400 V Y
60 Hz	up to 2.60 kW: 265 V Δ/460 V Y
Voltage 50 Hz	from 3.00 kW: 400 V Δ/690 V Y
60 Hz	from 3.60 kW: 460 V Δ
Class of insulation	F
Cooling air temperature	max. 40 °C

> **Special motors on request.**

Direction of rotation

Clockwise, as seen on the motor fan.

Bearing/lubrication

Motors up to construction size 160 have sufficiently dimensioned, maintenance-free, deep groove ball bearings according to DIN 625 with permanent lubrication.

1 Standard motor

Make: Siemens IE3 motor from 0.55 kW.
Advantage: very high grade of efficiency.

2 PM motor

Make: VEM IE4 motor from 0.37 kW.
Advantage: very high grade of efficiency.

3 Water-cooled motor

Make: EMOD. Energy efficiency class depends on the temperature of the media.
Advantage: heat recovery.

1 **Standard motor**

2 **PM motor**

3 **Water-cooled motor**

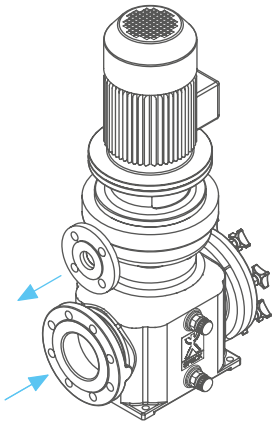
BADU® Block

Connection positions

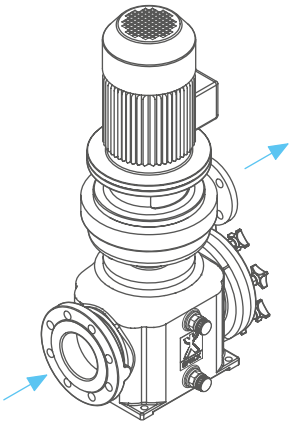
Variable outlet connection positions

The outlet connection positions can be arranged flexibly where the installation conditions are less convenient. Therefore the pump can be adapted depending on the situation in the engineering room and installation area. A spacer is not necessary, even if the inlet and outlet connections are arranged above each other.

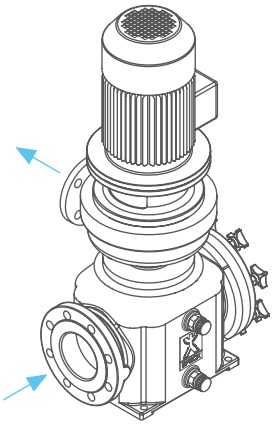
All pump types can be rotated on the filter housing by 90°.
The following pump types can be rotated by 90° and 45°:
BADU Block 65/160, 65/200, 65/250, 65/315, 80/160, 80/200, 80/250, 80/315, 100/160, 100/200, 100/250, 100/315, 125/200, 125/250, 125/315, 150/200, 150/250, 150/315.



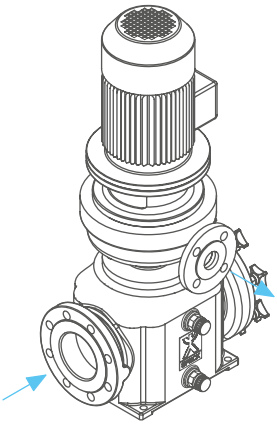
V
Standard front



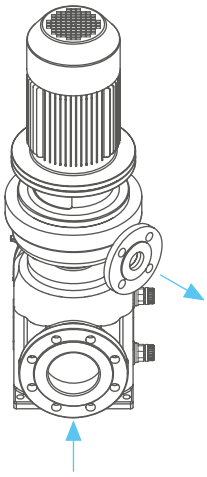
H
back



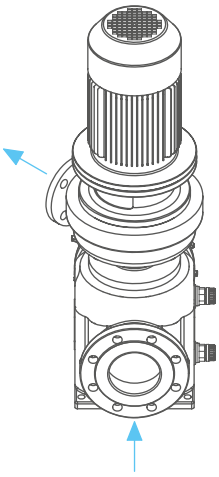
L
left



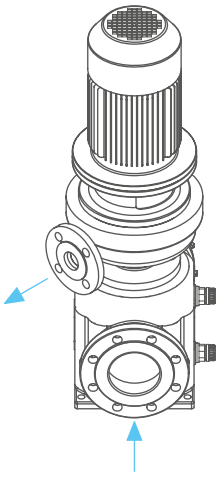
R
right



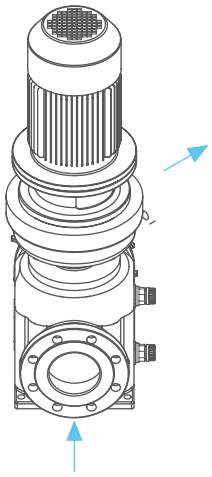
V45°
front, rotated 45°



H45°
back, rotated 45°



L45°
left, rotated 45°



R45°
right, rotated 45°

Materials used

Design	12	05
Casing parts	cast iron EN-JL 1040	tin bronze CC480K-GS
Impeller	tin bronze CC480K-GS	tin bronze CC480K-GS
Mechanical seal	carbon/SiC/EPDM optional SiC/SiC/HNBR	SiC/SiC/HNBR
Wear rings	CC495K-GS	CC495K-GS
Pump shaft	stainless steel 1.4571	stainless steel 1.4571
Shaft protection sleeve	stainless steel 1.4571	stainless steel 1.4571
Motor lantern	cast iron EN-JL 1040	cast iron EN-JL 1040
Filter housing	cast iron EN-JL 1030 plastic-coated	cast iron EN-JL 1030 plastic-coated
Strainer basket	stainless steel 1.4571	stainless steel 1.4571
Filter lid	tin bronze CC480K-GS PA6.6 GF30*)	tin bronze CC480K-GS PA6.6 GF30*)

Subject to technical modifications.

Circulation line and ball valve vent made from stainless steel and PVC hose.

*) Only for BADU Block 32/160, 32/200, 32/250, 40/160, 40/200, 40/250, 40/315, 50/160, 50/200, 50/250, 50/315, 65/160, 65/200, 65/250, 65/315

Accessories – for the BADU Block can be found on page 64.

BADU® Prime

Extra quiet, high quality bestseller.
Premium circulation pump for discerning customers.

Field of application
Swimming pool water circulation through a filter system.
The pump can be installed max. 3 m above or below water level.

Design
Monoblock-type pump with integrated strainer tank.
The bellow-type mechanical seal is mounted on a plastic shaft protector sleeve. Motor/pump shaft has no contact with the pool water providing complete electrical separation.
Strainer tank capacity ..... approx. 3 l
Strainer basket mesh size ..... approx. 3.2 x 2.6 mm

Materials used
Pump casing ..... PP GF 30
Intermediate housing ..... PP TV 40
Gland housing ..... PP TV 40
Diffuser ..... PA 66 GF 30/PP GF 30
Impeller ..... PP GF 30
Strainer basket ..... PP
Lid ..... PC, transparent/PA 66 GF 30
Mechanical seal ..... carbon/ceramic/NBR
Screws ..... stainless steel

Technical data at 50 Hz	BADU Prime	7	11	13	15	20
Inlet Sa/outlet connection Da Rp[2)]		1½/1½	1½/1½	2/1½	2/1½	2/1½
Rec. inlet/outlet pipe, PVC pipe, d		50/50	50/50	63/50	63/50	63/63
Power input P_1/output P_2[1)] (kW)	1~ 230 V	0.50/0.30	0.69/0.45	0.87/0.55	1.10/0.75	1.40/1.00
Rated current (A)	1~ 230 V	2.40	3.00	4.00	5.20	6.70
Power input P_1/output P_2[1)] (kW)	3~ Y/Δ 400/230 V	0.44/0.30	0.63/0.45	0.75/0.55	0.93/0.75	1.26/1.00
Rated current (A)	3~ Y/Δ 400/230 V	0.95/1.65	1.25/2.15	1.55/2.70	1.95/3.40	2.25/3.90

For detailed information regarding the motor protection please see page 73.

Article no	Type	Voltage	Power output P_2
219.0078.038	BADU Prime 7	1~ 230 V	0.30 kW
219.0118.038	BADU Prime 11	1~ 230 V	0.45 kW
219.0138.038	BADU Prime 13	1~ 230 V	0.55 kW
219.0158.038	BADU Prime 15	1~ 230 V	0.75 kW
219.0208.038	BADU Prime 20	1~ 230 V	1.00 kW
219.0078.037	BADU Prime 7	3~ Y/Δ 400/230 V	0.30 kW
219.0118.037	BADU Prime 11	3~ Y/Δ 400/230 V	0.45 kW
219.0138.037	BADU Prime 13	3~ Y/Δ 400/230 V	0.55 kW
219.0158.037	BADU Prime 15	3~ Y/Δ 400/230 V	0.75 kW
219.0208.037	BADU Prime 20	3~ Y/Δ 400/230 V	1.00 kW

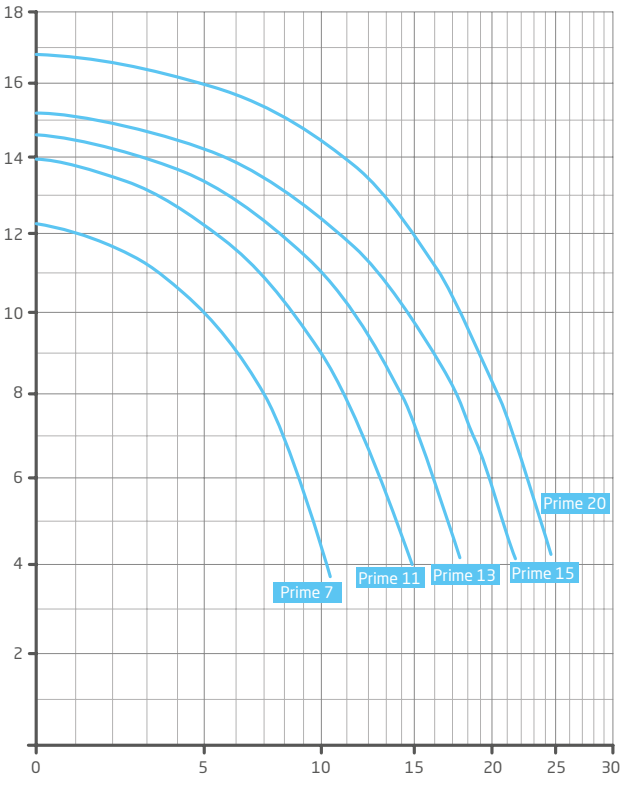
Opening device included in delivery.

The above-mentioned pumps can be used for swimming pool water with a salt concentration of up to 0.5 % i.e. 5 g/l.
Please contact us for higher salt concentrations.

< Opening device included in delivery

www.tuv.com
ID 0000021507

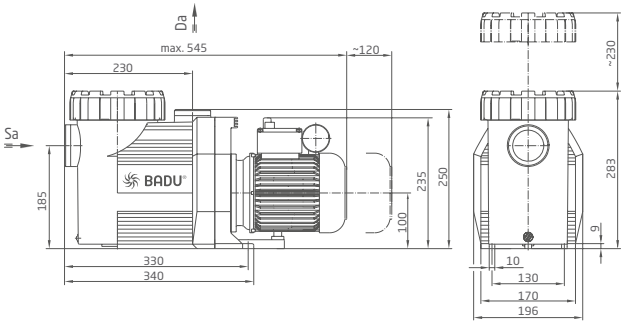
Performance



Total dynamic head H (m) / Flow rate Q (m³/h) >

Dimensions

Detailed dimensions available on request or at badu.de



BADU® Prime

Highly efficient. With a motor suitable for use with a frequency converter. For large pools, swimming baths and solar panel units.

Field of application

Swimming pool water circulation through a filter system.
The pump can be installed max. 3 m above or below water level.

Design

Monoblock-type pump with integrated strainer tank.
The bellow-type mechanical seal is mounted on a plastic shaft protector sleeve. Motor/pump shaft has no contact with the pool water providing complete electrical separation.

Strainer tank capacity ..... approx. 6 l
Strainer basket mesh size ..... approx. 3.0 x 2.8 mm

Materials used

Pump casing ..... PP GF 30
Intermediate housing ..... PP GF 30
Gland housing ..... PP TV 40
Diffuser ..... PP GF 30
Impeller ..... PPE GF 30
Strainer basket ..... PP
Lid ..... PC, transparent/PA 66 GF 30
Glue socket ..... ABS
Mechanical seal ..... carbon/ceramic/NBR
Screws ..... stainless steel

Technical data at 50 Hz	BADU Prime	25	30	40	48
Inlet Sa/outlet connection Da d		75/75	75/75	90/90	90/90
Rec. inlet/outlet pipe, PVC pipe, d		75/75	75/75	90/90	110/110
Power input P_1/output P_2[1)] (kW)	1~ 230 V	1.85/1.30	2.00/1.50	2.90/2.20	3.45/2.60
Rated current (A)	1~ 230 V	7.70	8.80	13.00	15.00
Power input P_1/output P_2[1)] (kW)	3~ Y/Δ 400/230 V	1.55/1.30	1.77/1.50	2.55/2.20	3.00/2.60
Rated current (A)	3~ Y/Δ 400/230 V	2.95/5.10	3.30/5.72	4.60/8.00	5.50/9.50

For detailed information regarding the motor protection please see page 73.

Article no	Type	Voltage	Power output P_2
219.0258.038	BADU Prime 25	1~ 230 V	1.30 kW
219.0308.038	BADU Prime 30	1~ 230 V	1.50 kW
219.0408.038	BADU Prime 40	1~ 230 V	2.20 kW
219.0488.038	BADU Prime 48	1~ 230 V	2.60 kW
219.0258.037	BADU Prime 25	3~ Y/Δ 400/230 V	1.30 kW
219.0308.037	BADU Prime 30	3~ Y/Δ 400/230 V	1.50 kW
219.0408.037	BADU Prime 40	3~ Y/Δ 400/230 V	2.20 kW
219.0488.037	BADU Prime 48	3~ Y/Δ 400/230 V	2.60 kW

Opening device included in delivery.

The above-mentioned pumps can be used for swimming pool water with a salt concentration of up to 0.5 % i.e. 5 g/l.
Please contact us for higher salt concentrations.

< Opening device included in delivery

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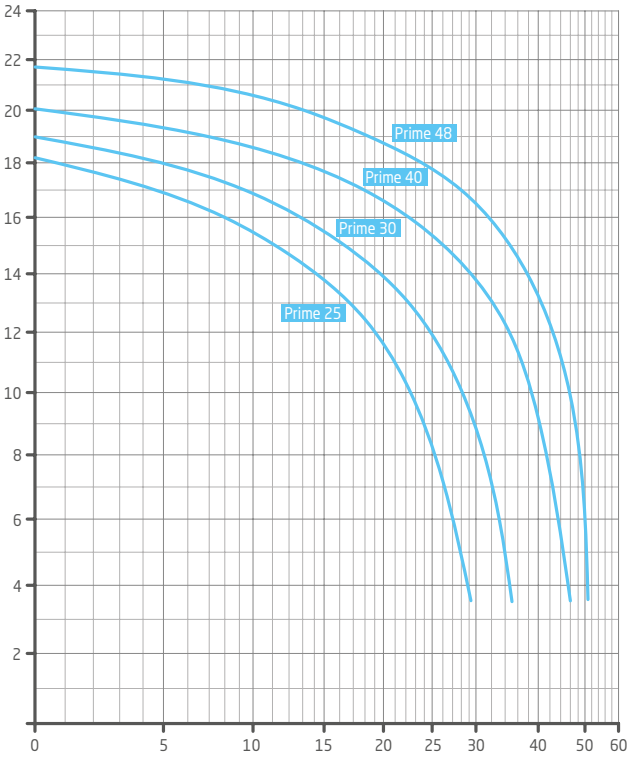
ID 0000021507

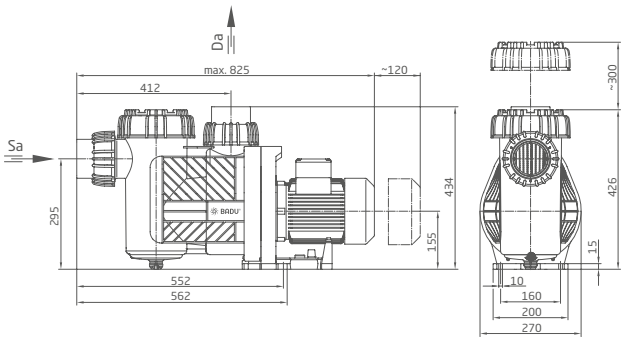
Performance



Total dynamic head H (m) / Flow rate Q (m³/h) >

Dimensions

Detailed dimensions available on request or at badu.de



BADU® Resort

Cost saving pump for large units. Light and powerful. For wellness oases, hotel swimming pools or special pools.

Field of application

Swimming pool water circulation through a filter system.
The pump can be installed max. 3 m above or below water level.

Design

Monoblock-type pump with integrated strainer tank.
The bellow-type mechanical seal is mounted on a plastic shaft protector sleeve. Motor/pump shaft has no contact with water providing complete electrical separation.

Strainer tank capacity ..... approx. 10 l
Strainer basket mesh size ..... approx. 3.4 x 3.2 mm

Materials used

Pump casing ..... PP GF 30
Intermediate housing ..... PP TV 40
Gland housing ..... PP TV 40
Diffuser ..... PP GF 30
Impeller ..... PPE GF 30/PP GF 30
Impeller nut ..... PP GF 30
Strainer basket ..... PP
Lid ..... PC, transparent/PA 66 GF 30
Glue socket ..... ABS
Mechanical seal ..... carbon/ceramic/NBR
Screws ..... stainless steel

Glue sockets made from PVC suitable for
BADU Resort 50 to BADU Resort 110 available.

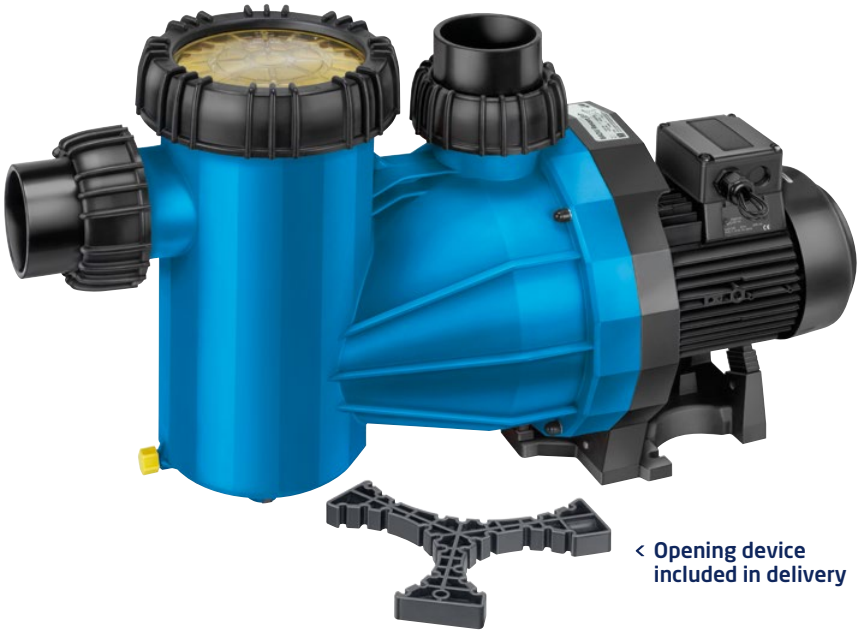
Technical data at 50 Hz	BADU Resort	30	40	45	50	55	60	70	80	110
Inlet Sa/outlet connection Da d		75/75	90/90	90/90	110/110	110/110	110/110	110/110	110/110	110/110
Rec. inlet/outlet pipe, PVC pipe, d		75/75	90/90	90/90	110/110	110/110	110/110	110/110	140/140	160/140
Power input P_1/output P_2[1)] (kW)	3~ Y/Δ 400/230 V	1.77/1.50	2.55/2.20	3.00/2.60	3.45/3.00	-/-	3.00/2.60	3.45/3.00	-/-	-/-
Rated current (A)	3~ Y/Δ 400/230 V	3.30/5.72	4.60/8.00	5.50/9.50	6.20/10.70	-/-	5.50/9.50	6.20/10.70	-/-	-/-
Power input P_1/output P_2[1)] (kW)	3~ Y/Δ 690/400 V	-/-	-/-	-/-	-/-	4.55/4.00	-/-	-/-	4.55/4.00	6.15/5.50
Rated current (A)	3~ Y/Δ 690/400 V	-/-	-/-	-/-	-/-	4.60/7.90	-/-	-/-	4.60/7.90	6.00/10.40

For detailed information regarding the motor protection please see page 73.

Article no	Type	Voltage	Power output P_2
219.5308.037	BADU Resort 30	3~ Y/Δ 400/230 V	1.50 kW
219.5408.037	BADU Resort 40	3~ Y/Δ 400/230 V	2.20 kW
219.5458.037	BADU Resort 45	3~ Y/Δ 400/230 V	2.60 kW
219.5508.037	BADU Resort 50	3~ Y/Δ 400/230 V	3.00 kW
219.5558.037	BADU Resort 55	3~ Y/Δ 690/400 V	4.00 kW
219.5608.037	BADU Resort 60	3~ Y/Δ 400/230 V	2.60 kW
219.5708.037	BADU Resort 70	3~ Y/Δ 400/230 V	3.00 kW
219.5808.037	BADU Resort 80	3~ Y/Δ 690/400 V	4.00 kW
219.5118.037	BADU Resort 110	3~ Y/Δ 690/400 V	5.50 kW

Opening device included in delivery.

The above-mentioned pumps can be used for swimming pool water with a salt concentration of up to 0.5 % i.e. 5 g/l.
Please contact us for higher salt concentrations.



< Opening device included in delivery

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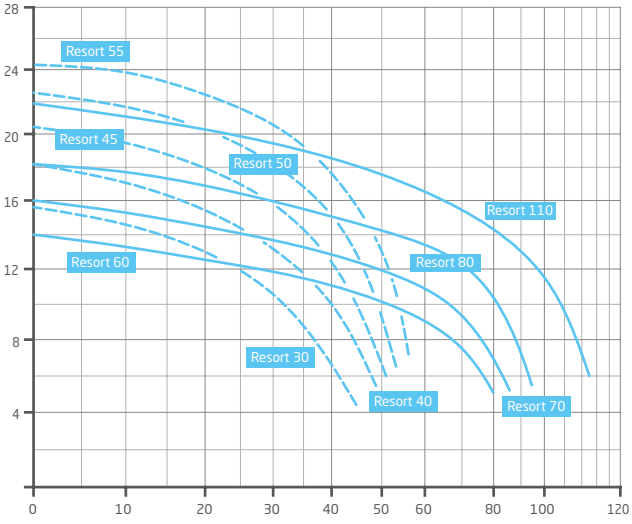
ID 0000021507

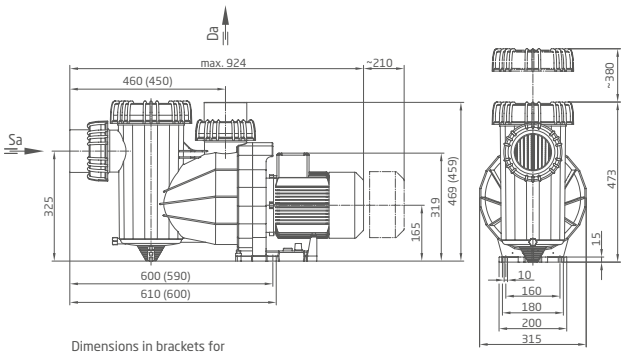
Performance



Total dynamic head H (m) / Flow rate Q (m³/h) >

Dimensions

Detailed dimensions available on request or at badu.de



Dimensions in brackets for
BADU Resort 30 to BADU Resort 45.

BADU® Resort-PM

Synchronous drive for external control units. Efficient circulation pump for large pools.

Field of application
Swimming pool water circulation through a filter system.
The pump can be installed max. 3 m above or below water level.

Design
Monoblock-type pump with integrated strainer tank.
The bellow-type mechanical seal is mounted on a plastic shaft protector sleeve. Motor/pump shaft has no contact with the pool water providing complete electrical separation.
Strainer tank capacity ..... approx. 10 l
Strainer basket mesh size ..... approx. 3.4 x 3.2 mm

Materials used
Pump casing ..... PP GF 30
Intermediate housing ..... PP TV 40
Gland housing ..... PP TV 40
Diffuser ..... PP GF 30
Impeller ..... PPE GF 30/PP GF 30
Impeller nut ..... PP GF 30
Strainer basket ..... PP
Lid ..... PC, transparent/PA 66 GF 30
Glue socket ..... ABS
Mechanical seal ..... carbon/ceramic/NBR
Screws ..... stainless steel

Technical data at 50 Hz	BADU Resort	50-PM	70-PM	110-PM
Inlet Sa/outlet connection Da d		110/110	110/110	110/110
Rec. inlet/outlet pipe, PVC pipe, d		110/110	110/110	160/140
Power input P_1/output P_2[1)] (kW)	3~ 400 V	3.28/3.00	3.28/3.00	5.93/5.50
Rated current (A)	3~ 400 V	5.10	5.10	8.90

For detailed information regarding the motor protection please see page 73.

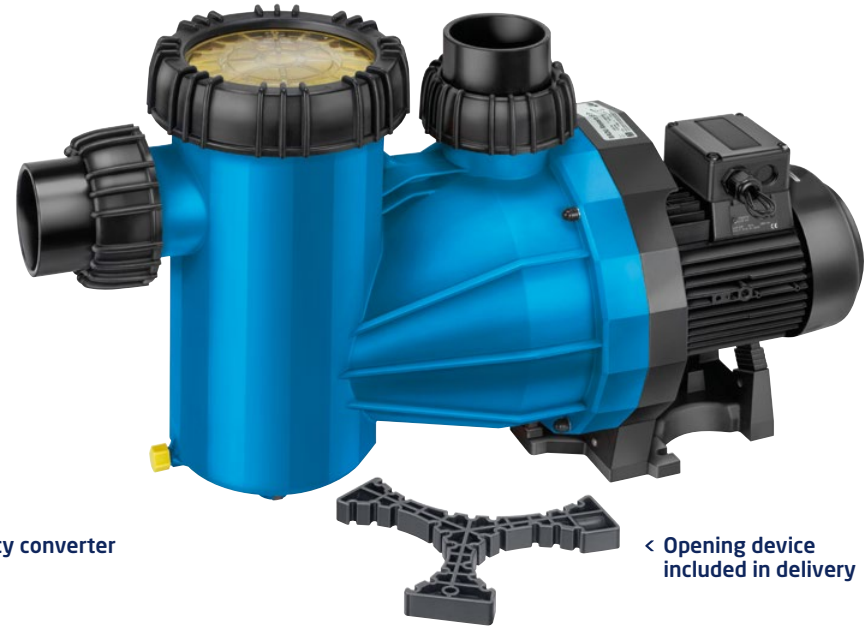
1) Can only be operated with a frequency converter.

Article no	Type	Voltage	Power output P_2
219.5508.137	BADU Resort 50-PM	3~ 400 V	3.00 kW
219.5708.137	BADU Resort 70-PM	3~ 400 V	3.00 kW
219.5118.137	BADU Resort 110-PM	3~ 400 V	5.50 kW
297.0075.402	Frequency converter BADU Eco Drive II for 0.75 kW	3~ 380-480 V	
297.0150.402	Frequency converter BADU Eco Drive II for 1.50 kW	3~ 380-480 V	
297.0220.402	Frequency converter BADU Eco Drive II for 2.20 kW	3~ 380-480 V	
297.0400.402	Frequency converter BADU Eco Drive II for 4.00 kW	3~ 380-480 V	
297.0550.402	Frequency converter BADU Eco Drive II for 5.50 kW	3~ 380-480 V	
297.0000.001	Programming flat rate for BADU Eco Drive II		

Opening device included in delivery.

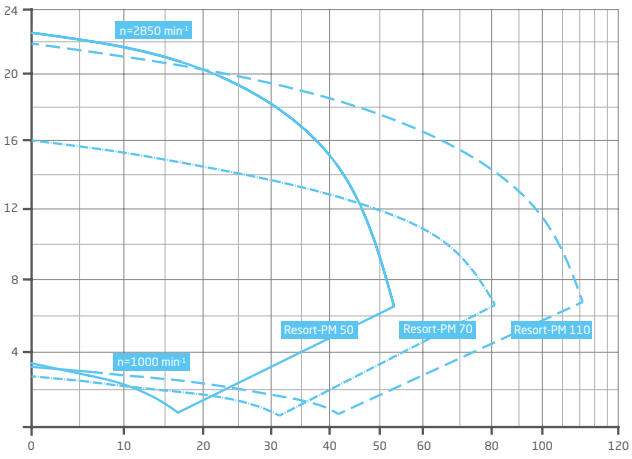
The above-mentioned pumps can be used for swimming pool water with a salt concentration of up to 0.5 % i.e. 5 g/l.
Please contact us for higher salt concentrations.

^
Optional frequency converter



< Opening device included in delivery

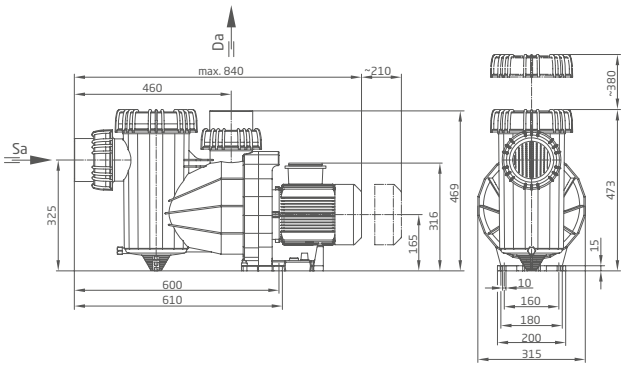
Performance



^
Total dynamic head H (m) / Flow rate Q (m³/h) >

Dimensions

Detailed dimensions available on request or at badu.de



NORMBLOCK MULTI

MAXIMUM STABILITY 2.

Corrosion-resistant – even with high brine concentrations.

Permanently improved rate of efficiency due to new surface qualities.

The innovative, completely plastic concept of the Normblock Multi enhances the proven Normblock technology, taking it to a completely unique level.

Benfits of the Normblock Multi:

- Internal coating is unnecessary for the complete plastic pump.
- Wetted parts are made from optimised technically high-performance plastic (THP) – constantly robust, maintenance-free and economical.
- Pump shaft does not come into contact with the pump liquid.
- Corrosion-resistant and low-wear, even with high brine concentrations.
- Maintenance-friendly plug-in shaft design.
- Flexible attachment of IE3 and PM motors from 2.20 to 11.00 kW.

WHY PLASTIC?

We wanted to eliminate systemic disadvantages of the Normblock concept, which has already been proven a thousand times over, and to develop it further. Robust with high brine concentrations, lighter, less wear, less maintenance – more flexibility. The THP plastic construction of the new Normblock Multi achieves more in every respect.

For further questions or an individual consultation …
call us on: +49 9123 949-400

Normblock Multi

Performance features

1 Motor
Standard trademark motor, optimised for the operating point with ball bearings that are lubricated for life.
Further motor variations on page 39.

2 Plug-in shaft system
Motor can be replaced without having to completely disassemble the pump or without having to dismantle the mechanical seal.

3 Pump shaft
Pump shaft made from stainless steel. Motor/pump shaft has no contact with the medium providing complete electrical separation.

4 Mechanical seal
Maintenance-free bellow-type mechanical seal is cooled and lubricated by the pumping liquid. This allows long durability and long intervals between maintenance periods.

5 Impeller
Closed impeller for optimal smooth running and durability of the whole pump.

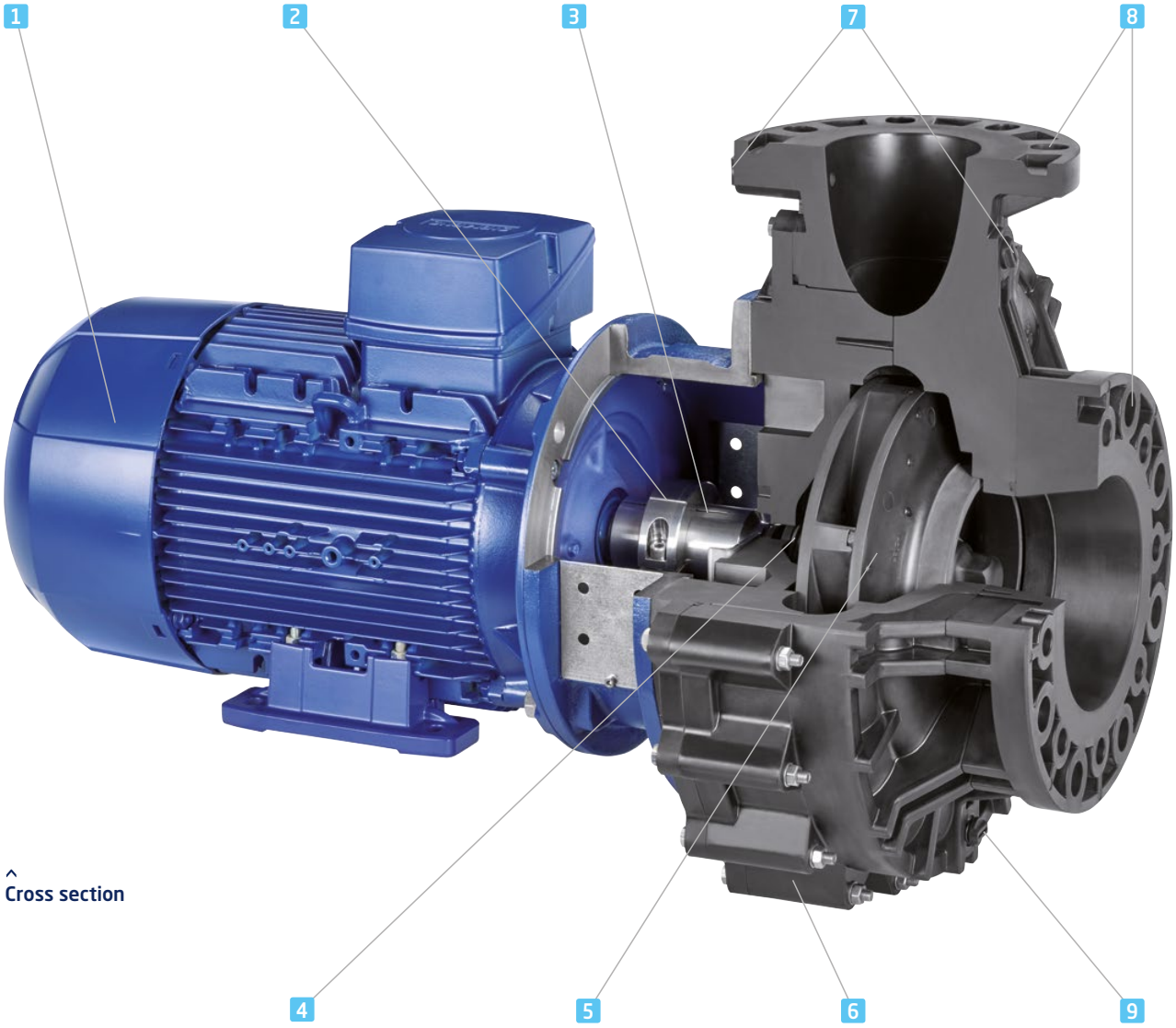
6 Pump material
THP (technically high-perforamce plastic).
Permanent corrosion protection and protection against aggressive media for all wetted parts due to completely plastic version.

7 Auxiliary connections
Holes for additional connections e.g. pressure gauge.

8 Connections
Standardised connections, compatible with DIN and ASME (American standard).

9 Drainage
Simple drainage without having to remove the pump.

> Detailed information regarding the Normblock Multi can be found on page 38.



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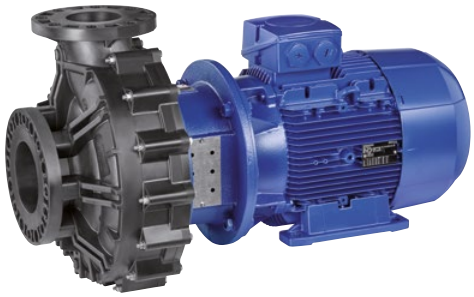
Cross section



^
Normblock Multi

Normblock Multi

Description

Field of application
Swimming pool water circulation and filtration as well as operation of swimming pool attractions in public swimming pools.

- Open-air and indoor pools
- Spas[4)]
- Pools with high salt concentrations[4)]
- Water treatment, e.g. filter unit construction
- Leisure facilities
- Attractions, e.g. water slides
- Shipbuilding[4)]
- Industry, e.g. cool water units[4)]
- Water supply, e.g. irrigation

Design
The Normblock pump is a non-self-priming, single-stage, volute casing pump with performance classification and main dimensions according to NF E 44-112 and DIN EN 733 (replacement for DIN 24255).

Construction
Pump and removable, standard motor are flanged into a modular unit.

Paintwork
RAL 5002, ultramarine blue.

> **Customised paintwork on request.**

Technical data
Flow rate ..... Q up to max. 250 m³/h
Dynamic head ..... H up to 24 m
Water temperature ..... t max. 40 °C
Maximal operating pressure .... p 3 bar
Speed 50 Hz ..... n approx. 1450 rpm
60 Hz ..... n approx. 1750 rpm

Construction sizes
Normblock Multi 65/250..... DND 65/DNS 80
Normblock Multi 100/250..... DND 100/DNS 125

Flange
compatible with EN 1092-2 PN-16 and ASME

Noise generation
The sound power or sound pressure level is largely determined by both the motor and the pump and especially by the installation conditions and relevant installation situation. Special sound insulation measures are to be taken to reduce the transmission of structure-borne or airborne noise.

Connection positions
Inlet connection ..... axial
Outlet connection ..... radial upwards, side option

Installation
The Normblock pump can be installed horizontally or vertically in the pipe network. **Vertical installation with the motor facing downwards is not permitted.**

> More details regarding all designs, characteristics and dimensional drawings on request or at badu.de

Motor

Motor

Directly mounted, DIN-IEC three-phase, low-noise operation, surface-cooled, removable motor in German brand quality. Energy efficiency class IE3 from 0.55 kW, including PTC resistor sensor with fixed bearings on the pump side. The motors are produced in the factory with closed condensation drain holes.

Construction	IM B 35
Protection class	IP 55
Idle speed	1450/1750 rpm
Frequency	50/60 Hz
Voltage 50 Hz	up to 2.20 kW: 230 V Δ/400 V Y
60 Hz	up to 2.60 kW: 265 V Δ/460 V Y
Voltage 50 Hz	from 3.00 kW: 400 V Δ/690 V Y
60 Hz	from 3.60 kW: 460 V Δ
Class of insulation	F
Cooling air temperature	max. 40 °C

> **Special motors on request.**

Direction of rotation

Clockwise, as seen on the motor fan.

Bearing/lubrication

Motors up to construction size 160 have sufficiently dimensioned, maintenance-free, deep groove ball bearings according to DIN 625 with permanent lubrication.

1 Standard motor

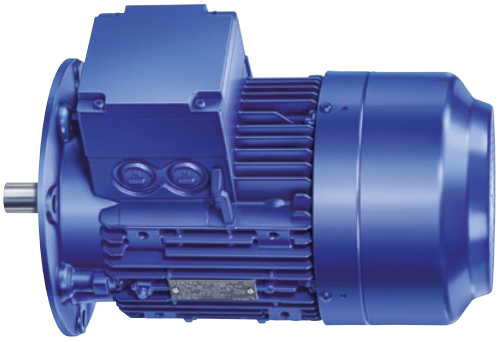
Make: Siemens IE3 motor from 0.55 kW.
Advantage: very high grade of efficiency.

2 PM motor

Make: VEM IE4 motor.
Advantage: very high grade of efficiency.

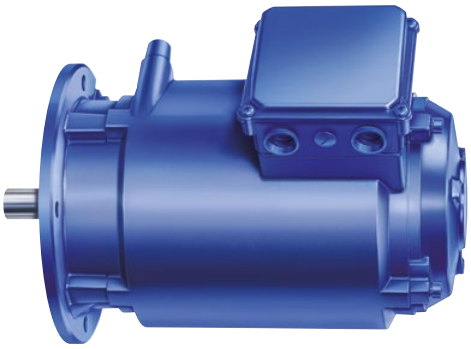
3 Water-cooled motor

Make: EMOD. Energy efficiency class depends on the temperature of the media.
Advantage: heat recovery.
> **Motor design only available on request.**



1 Standard motor

2 PM motor



3 Water-cooled motor

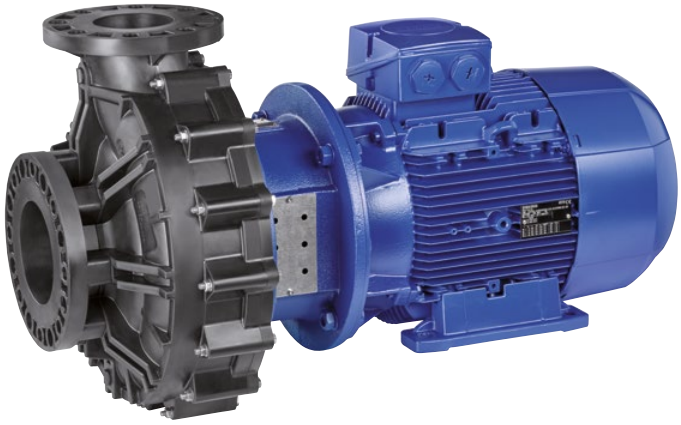
Normblock Multi

Horizontal, completely plastic block pump with permanently improved rate of efficiency. Innovative attraction pump with a thousandfold proven concept.

Field of application
Swimming pool water circulation and filtration as well as operation of swimming pool attractions in public swimming pools. Can also be used for irrigation, drainage, water supply, shipbuilding and industry.

Design
The Normblock pump is a non-self-priming, single-stage, volute casing pump with performance classification and main dimensions according to NF E 44-112 and DIN EN 733 (replacement for DIN 24255).

Performance
up to 250 m³/h



Materials used

Design	
Casing parts	THP technically high-performance plastic
Impeller	THP technically high-performance plastic
Mechanical seal	SiC/SiC/HNBR
Pump shaft (no contact with pump liquid)	stainless steel 1.4057
Motor lantern	cast iron EN-JL 1040

Subject to technical modifications.

Normblock

Horizontal, completely metal block pump with optimised rate of efficiency. Classic attraction pump with a thousandfold proven concept.

Field of application
Swimming pool water circulation and filtration as well as operation of swimming pool attractions in public swimming pools. Can also be used for irrigation, drainage, water supply, shipbuilding and industry.

Design
The Normblock pump is a non-self-priming, single-stage, volute casing pump with performance classification and main dimensions according to NF E 44-112 and DIN EN 733 (replacement for DIN 24255).

Performance
2-740 m³/h

Materials used

Design	05	11	12
Casing parts	tin bronze CC480K-GS	cast iron EN-JL 1040	cast iron EN-JL 1040
Impeller	tin bronze CC480K-GS	cast iron EN-JL 1040	tin bronze CC480K-GS
Mechanical seal	SiC/SiC/HNBR	carbon/SiC/EPDM SiC/SiC/HNBR optional	carbon/SiC/EPDM SiC/SiC/HNBR optional
Wear rings	CC495K-GS	cast iron EN-JL 1040	CC495K-GS
Pump shaft	stainless steel 1.4571	stainless steel 1.4571	stainless steel 1.4571
Shaft protection sleeve	stainless steel 1.4571	stainless steel 1.4571	stainless steel 1.4571
Motor lantern	cast iron EN-JL 1040	cast iron EN-JL 1040	cast iron EN-JL 1040

Subject to technical modifications.

BADU® 42

Small jet pump and additional pump, available in 3 designs. For bath tubs and small whirlpools.

Field of application
BADU 42/6, BADU 42/9 and BADU 42/12 are the perfect jet pumps for bath tubs and whirlpools.

Design
Monoblock-type pump with a closed bellow-type mechanical seal mounted on a plastic shaft protector sleeve.
Motor/pump shaft has no contact with the pool water providing complete electrical separation.

Materials used
Pump casing ..... PP GF 30
Housing cover ..... PP GF 30
Impeller (BADU 42/6, BADU 42/9) ..... PP GF 30
Impeller (BADU 42/12) ..... PA 66 GF 30
Mechanical seal ..... carbon/ceramic/NBR
Screws ..... galvanised steel

Technical data at 50 Hz	BADU 42/	6	9	12
Inlet Sa/outlet connection Da Rp[2]		1½/1½	1½/1½	1½/1½
Rec. inlet/outlet pipe, PVC pipe, d		50/50	50/50	50/50
Power input P_1/output P_2[1] (kW)	1~ 230 V	0.50/0.30	0.69/0.45	0.97/0.65
Rated current (A)	1~ 230 V	2.40	3.00	4.70
Power input P_1/output P_2[1] (kW)	3~ Y/Δ 400/230 V	0.44/0.30	0.66/0.45	0.98/0.65
Rated current (A)	3~ Y/Δ 400/230 V	0.95/1.65	1.25/2.15	1.75/3.00

For detailed information regarding the motor protection please see page 73.

Article no	Type	Voltage	Power output P_2
204.2060.138	BADU 42/6	1~ 230 V	0.30 kW
204.2090.138	BADU 42/9	1~ 230 V	0.45 kW
204.2120.138	BADU 42/12	1~ 230 V	0.65 kW
204.2060.137	BADU 42/6	3~ Y/Δ 400/230 V	0.30 kW
204.2090.137	BADU 42/9	3~ Y/Δ 400/230 V	0.45 kW
204.2120.137	BADU 42/12	3~ Y/Δ 400/230 V	0.65 kW

The above-mentioned pumps can be used for swimming pool water with a salt concentration of up to 0.5 % i.e. 5 g/l.
For higher salt concentrations please contact the company SPECK Pumpen.

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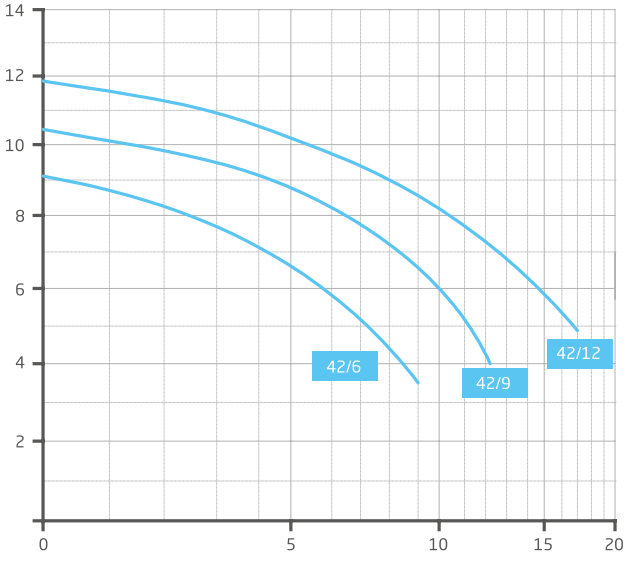
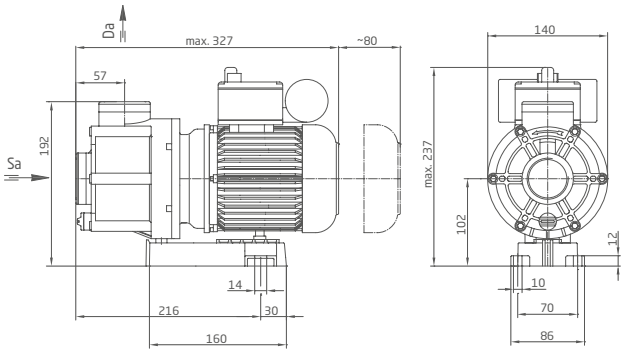
Performance



Total dynamic head H (m) / Flow rate Q (m³/h) >

Dimensions

Detailed dimensions available on request or at badu.de



BADU® 21-50/21-60

Universal, medium-size circulation pump. Reliable and flexible. For whirlpools, counter swim units and massage units.

Field of application

Large whirlpools, hotel pools, swimming pools and industrial filter units, counter swim units, massage units, air conditioning units, pool cleaning devices and many other applications with a flow rate of up to 54 m³/h.

Design

The bellow-type mechanical seal is mounted on a plastic shaft protector sleeve.
Motor/pump shaft has no contact with the pool water providing complete electrical separation.
Discharge outlet swivels infinitely.

Materials used

Pump casing ..... PP GF 30
Housing cover ..... PPE GF 30
Impeller BADU 21-50 ..... POM GF 30
Impeller BADU 21-60 ..... PP GF 30
Wear ring ..... stainless steel
Mechanical seal ..... carbon/ceramic/NBR
Impeller nut ..... PP GF 30
Clamping ring ..... aluminium
Screws ..... galvanised steel
Motor shaft ..... stainless steel

Suitable unions available on request.

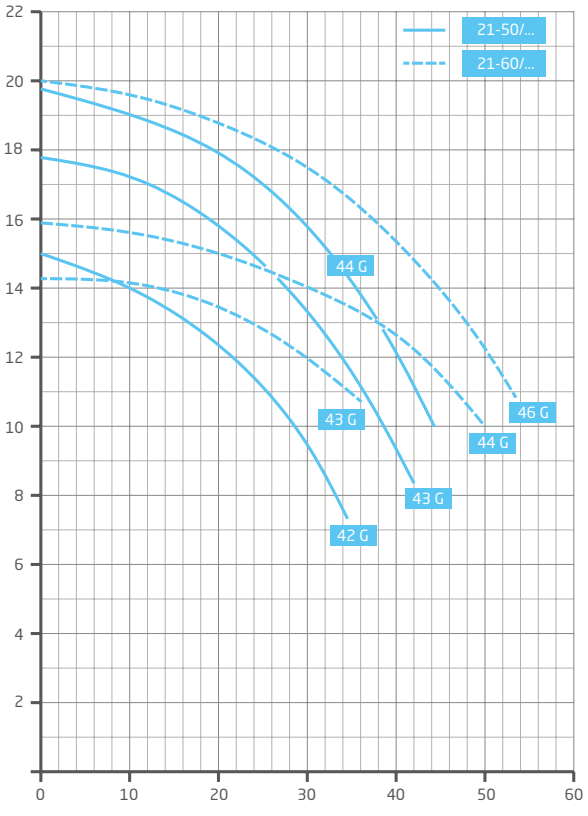
Technical data at 50 Hz	BADU 21-	50/42 G	50/43 G	50/44 G	60/43 G	60/44 G	60/46 G
Inlet Sa/outlet connection Da G[2]		2¾/2¾	2¾/2¾	2¾/2¾	2¾/2¾	2¾/2¾	2¾/2¾
Rec. inlet/outlet pipe, PVC pipe, d		90/75	90/75	90/75	90/75	90/75	90/75
Power input P_1/output P_2[1] (kW)	1~ 230 V	1.63/1.10	2.27/1.60	2.90/2.20	2.27/1.60	2.90/2.20	3.90/3.00
Rated current (A)	1~ 230 V	7.20	10.00	13.00	10.00	13.00	17.00
Power input P_1/output P_2[1] (kW)	3~ Y/Δ 400/230 V	1.33/1.10	1.90/1.60	2.55/2.20	1.90/1.60	2.55/2.20	3.45/3.00
Rated current (A)	3~ Y/Δ 400/230 V	2.40/4.15	3.30/5.70	4.60/8.00	3.30/5.70	4.60/8.00	6.20/10.70

For detailed information regarding the motor protection please see page 73.

Article no	Type	Voltage	Power output P_2
235.0420.138	BADU 21-50/42 G	1~ 230 V	1.10 kW
235.0430.138	BADU 21-50/43 G	1~ 230 V	1.60 kW
235.0440.138	BADU 21-50/44 G	1~ 230 V	2.20 kW
236.0430.138	BADU 21-60/43 G	1~ 230 V	1.60 kW
236.0440.138	BADU 21-60/44 G	1~ 230 V	2.20 kW
236.0460.138	BADU 21-60/46 G	1~ 230 V	3.00 kW
235.0420.137	BADU 21-50/42 G	3~ Y/Δ 400/230 V	1.10 kW
235.0430.137	BADU 21-50/43 G	3~ Y/Δ 400/230 V	1.60 kW
235.0440.137	BADU 21-50/44 G	3~ Y/Δ 400/230 V	2.20 kW
236.0430.137	BADU 21-60/43 G	3~ Y/Δ 400/230 V	1.60 kW
236.0440.137	BADU 21-60/44 G	3~ Y/Δ 400/230 V	2.20 kW
236.0460.137	BADU 21-60/46 G	3~ Y/Δ 400/230 V	3.00 kW

The above-mentioned pumps can be used for swimming pool water with a salt concentration of up to 0.5 % i.e. 5 g/l.
Please contact us for higher salt concentrations.

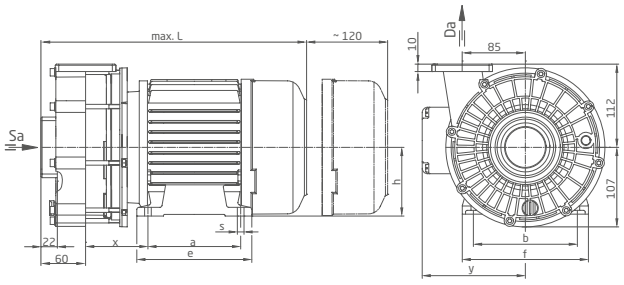
Performance



Total dynamic head H (m) / Flow rate Q (m³/h) >

Dimensions

Detailed dimensions available on request or at badu.de



Type	a	b	e	f	h	s	x	y	L
BADU 21-50/42 G 1~	125	140	155	170	90	9	85	139	358
BADU 21-50/42 G 3~	100	125	125	156	80	9	94	129	333
BADU 21-50/43 G 1~	125	140	155	170	90	9	85	139	358
BADU 21-50/43 G 3~	125	140	155	170	90	9	100	139	382
BADU 21-50/44 G 1~	125	140	155	170	90	9	100	139	373
BADU 21-50/44 G 3~	140	160	176	195	100	12	107	155	407
BADU 21-60/43 G 1~	125	140	155	170	90	9	85	139	358
BADU 21-60/43 G 3~	125	140	155	170	90	9	100	139	382
BADU 21-60/44 G 1~	125	140	155	170	90	9	100	139	373
BADU 21-60/44 G 3~	140	160	176	195	100	12	107	155	407
BADU 21-60/46 G 1~	140	160	176	195	100	12	107	154	427
BADU 21-60/46 G 3~	140	160	176	195	100	12	107	155	407

BADU® 21-80

Universal, large circulation pump. Reliable and high-powered. For whirlpools, counter swim units and swimming pool attractions.

Field of application
Swimming pools and industrial filter units, counter swim units, air conditioning units, pool cleaning devices and many more applications with a flow rate of up to 90 m³/h.

Design
The bellow-type mechanical seal is mounted on a plastic shaft protector sleeve.
Motor/pump shaft has no contact with the pool water providing complete electrical separation.
Discharge outlets swivel gradually by 90° each and by 29° clockwise when viewing the pump from the suction side.

BADU 21-80/... SG conditionally self-priming up to 0.5 m, on request.
Suitable unions available on request.

Materials used
Pump casing ..... PPE GF 30
Wear ring ..... stainless steel
Housing cover ..... PPE GF 30
Impeller ..... PP GF 30
Impeller nut ..... PP GF 30
Mechanical seal ..... carbon/ceramic/NBR
Motor shaft ..... stainless steel
Screws ..... galvanised steel

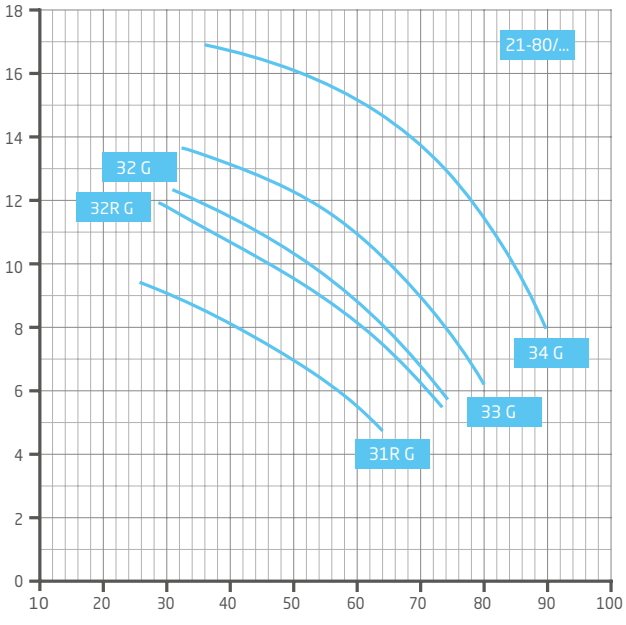
Technical data at 50 Hz	BADU 21-80/	31R G	32R G	32 G	33 G	34 G
Inlet Sa/outlet connection Da R[2)]		2¾/2¾[**)]	2¾/2¾[**)]	2¾/2¾[**)]	2¾/2¾[**)]	2¾/2¾[**)]
Rec. inlet/outlet pipe, PVC pipe, d		110/110	110/110	110/110	140/110	140/110
Power input P_1/output P_2[1)] (kW)	1~ 230 V	2.27/1.60	2.90/2.20	-/-	3.90/3.00	-/-
Rated current (A)	1~ 230 V	10.00	13.00	-/-	17.00[*)]	-/-
Power input P_1/output P_2[1)] (kW)	3~ Y/Δ 400/230 V	1.90/1.60	2.55/2.20	3.00/2.60	3.45/3.00	-/-
Rated current (A)	3~ Y/Δ 400/230 V	3.30/5.70	4.60/8.00	5.50/9.50	6.20/10.70	-/-
Power input P_1/output P_2[1)] (kW)	3~ Y/Δ 690/400 V	-/-	-/-	-/-	-/-	4.55/4.00
Rated current (A)	3~ Y/Δ 690/400 V	-/-	-/-	-/-	-/-	4.60/7.90

For detailed information regarding the motor protection please see page 73.
[*)]Start-up current approx. 82 A. [**)]Pumps also available with Ø 82 mm hose connections.

Article no	Type	Voltage	Power output P_2
238.0310.138	BADU 21-80/31R G	1~ 230 V	1.60 kW
238.0320.138	BADU 21-80/32R G	1~ 230 V	2.20 kW
238.0330.138	BADU 21-80/33 G	1~ 230 V	3.00 kW
238.0310.137	BADU 21-80/31R G	3~ Y/Δ 400/230 V	1.60 kW
238.0320.537	BADU 21-80/32R G	3~ Y/Δ 400/230 V	2.20 kW
238.0320.137	BADU 21-80/32 G	3~ Y/Δ 400/230 V	2.60 kW
238.0330.137	BADU 21-80/33 G	3~ Y/Δ 400/230 V	3.00 kW
238.0340.137	BADU 21-80/34 G	3~ Y/Δ 690/400 V	4.00 kW

The above-mentioned pumps can be used for swimming pool water with a salt concentration of up to 0.5 % i.e. 5 g/l.
Please contact us for higher salt concentrations.

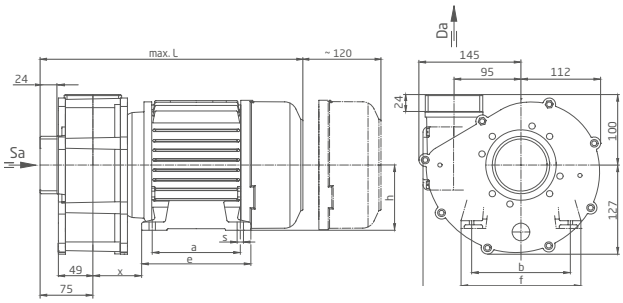
Performance



Total dynamic head H (m) / Flow rate Q (m³/h) >

Dimensions

Detailed dimensions available on request or at badu.de



Type	a	b	e	f	h	s	x	y	L
BADU 21-80/31R G 1~	125	140	155	170	90	9	85	139	373
BADU 21-80/31R G 3~	125	140	155	170	90	9	100	139	397
BADU 21-80/32R G 1~	125	140	155	170	90	9	100	139	388
BADU 21-80/32R G 3~	140	160	176	195	100	12	107	155	422
BADU 21-80/32 G 3~	140	160	176	195	100	12	107	155	422
BADU 21-80/33 G 1~	140	160	176	195	100	12	107	154	442
BADU 21-80/33 G 3~	140	160	176	195	100	12	107	155	422
BADU 21-80/34 G 3~	140	160	176	195	100	12	107	155	439

M 1/M 2

Durable, reliable and efficient.
Corrosion resistant metering water pump for continuous analysis.

Field of application
Metering water pump for continuous analysis of pool water in public swimming pools.

Design
Monoblock-type pump with integrated strainer tank.
Bellow-type mechanical seal mounted on a plastic impeller hub.
Motor/pump shaft has no contact with the pool water providing complete electrical separation.
Strainer tank capacity ..... approx. 0.5 l
Strainer basket mesh size ..... approx. 2.8 x 2.8 mm

Materials used
Pump casing ..... PP
Gland housing ..... PP TV 40
Impeller ..... PP 66 GF 30/PC
Strainer basket ..... PP
Lid ..... PC, transparent/PA 66 GF 30
Glue socket ..... PVC
Mechanical seal ..... carbon/ceramic/NBR
Screws ..... stainless steel

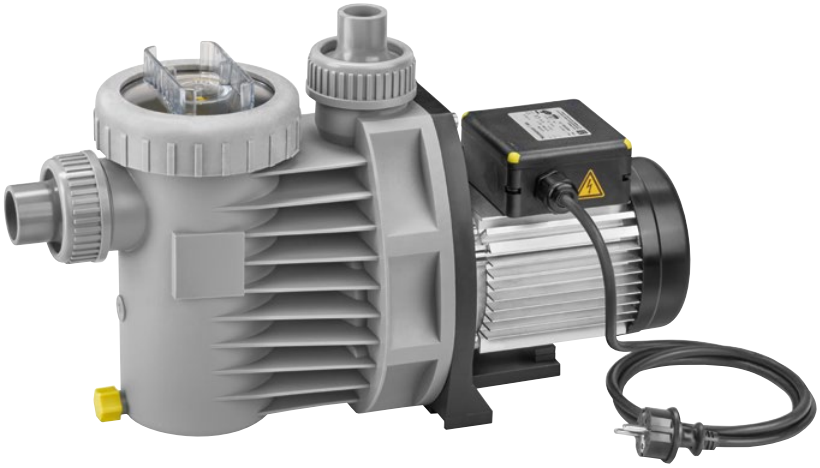
Technical data at 50 Hz		M 1	M 2
Inlet dS/outlet dD glue sockets		32/25*)	32/25*)
Rec. inlet/outlet pipe, PVC pipe, d		50/50	50/50
Power input P_1/output P_2[1)] (kW)	1~ 230 V	0.35/0.18	0.45/0.25
Rated current (A)	1~ 230 V	1.95	2.30

For detailed information regarding the motor protection please see page 73.

*) Special unions with glue sockets are included in delivery.

Article no	Type	Voltage	Power output P_2
219.1040.838	M 1	1~ 230 V	0.18 kW
219.1060.838	M 2	1~ 230 V	0.25 kW

The above-mentioned pumps can be used for swimming pool water with a salt concentration of up to 0.5 % i.e. 5 g/l.
For higher salt concentrations please contact the company SPECK Pumpen.



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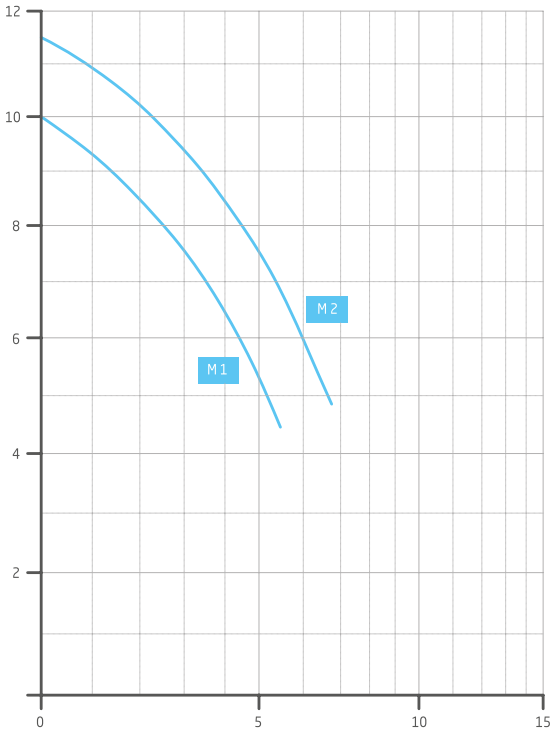
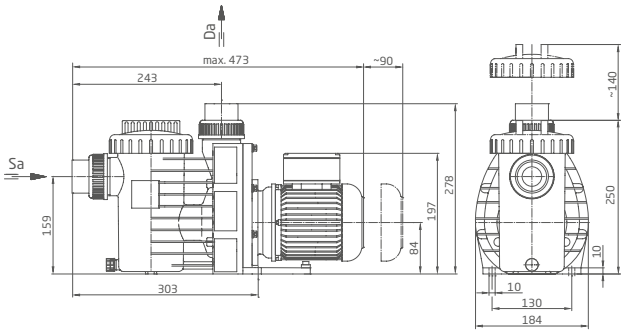
Performance



Total dynamic head H (m) / Flow rate Q (m³/h) >

Dimensions

Detailed dimensions available on request or at badu.de



V 600

Safe, reliable and efficient.
Power adapted metering water pump with low capacity range.

Field of application
Metering water pump for continuous analysis of pool water in public swimming pools.

Design
Centrifugal pump with peripheral impeller.
Bellow-type mechanical seal mounted on a plastic impeller hub.
Motor/pump shaft has no contact with the pool water providing complete electrical separation.

Materials used
Pump casing ..... PPS GF 40
Housing cover ..... PPS GF 40
Pump shaft ..... PPS GF 40
Impeller ..... PEEK
Mechanical seal ..... carbon/ceramic/NBR
Screws ..... stainless steel

Technical data at 50 Hz		V 600
Inlet/outlet (G)*)		¾ / ¾
Rec. inlet/outlet pipe, PVC pipe, d		12.5/12.5
Power input P_1/output P_2[1)] (kW)	1~ 230 V	0.28/0.14
Rated current (A)	1~ 230 V	1.35

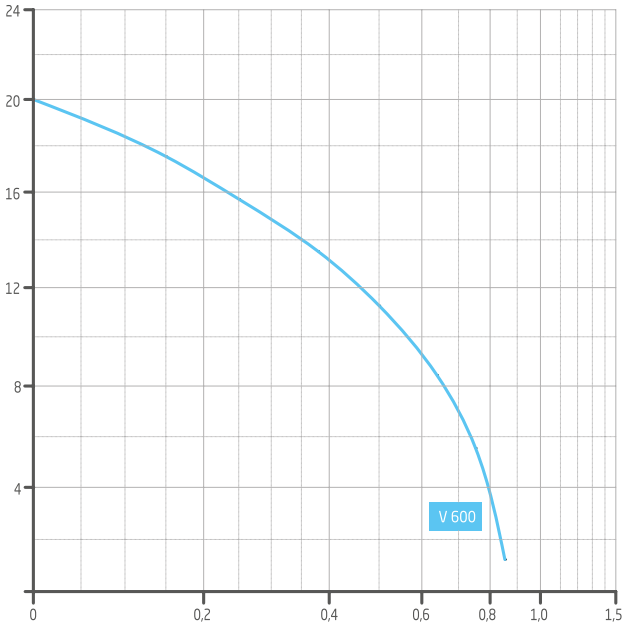
For detailed information regarding the motor protection please see page 73.

*) Threads according to DIN ISO 228, part 1. Seal with additional sealing ring.

Article no	Type	Voltage	Power output P_2
219.2060.838	V 600	1~ 230 V	0.14 kW

The above-mentioned pumps can be used for swimming pool water with a salt concentration of up to 0.5 % i.e. 5 g/l.
For higher salt concentrations please contact the company SPECK Pumpen.

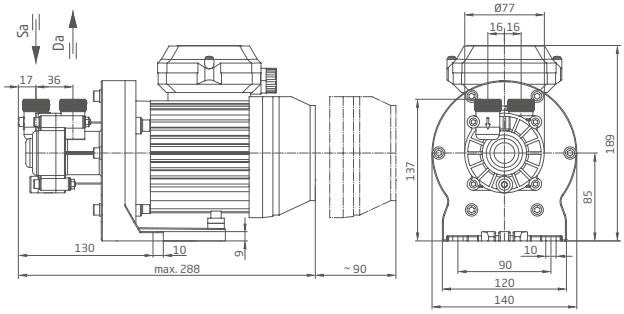
Performance



Total dynamic head H (m) / Flow rate Q (m³/h) >

Dimensions

Detailed dimensions available on request or at badu.de



MRA 6

Intelligently designed, independent and very flexible. With large collecting tank and reduced switching frequency.

Field of application
For trouble-free disposal of pure or slightly contaminated water where there is no shaft and also for returning sample water in public swimming pools.

Design
100 litre polyethylene container. Lid with integrated ventilation, including pump, float switch and non-return valve. Ready for connection with 3 m cable and plug.

> **Further designs on request**.

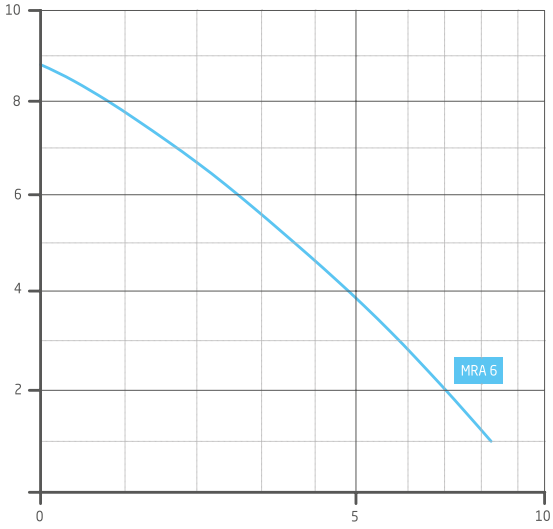
Technical data at 50 Hz		MRA 6
Container capacity		100 l
Motor output P_2[1)] (kW)	1~ 230 V	0.20
Connection intake/pressure side		on site/G 1½
Switch volume		adjustable, max. 80 l

For detailed information regarding the motor protection please see page 73.

Article no	**Type**	**Voltage**	**Power output P_2**
219.1076.338	MRA 6	1~ 230 V	0.20 kW

The above-mentioned pumps can be used for swimming pool water with a salt concentration of up to 0.5 % i.e. 5 g/l.
For higher salt concentrations please contact the company SPECK Pumpen.

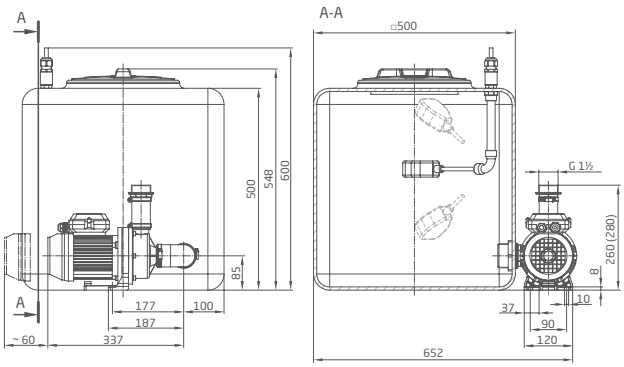
Performance



Total dynamic head H (m) / Flow rate Q (m³/h) >

Dimensions

Detailed dimensions available on request or at badu.de



IN-VB / IN-VB-S

Durable, low-noise, stainless steel hydraulics with a high performance range. Staged centrifugal booster pump for swimming pools.

Field of application
Staged centrifugal pump.
Booster pump for chlorine and ozone dosage.

- Booster units
- Water supply units

Design
Multistage, vertical, centrifugal pump suitable for pure, watery liquids. Equipped with ceramic, wear-resistant, liquid lubricated bearings. Shaft is sealed using a mechanical seal. The pump has the CE seal of approval and corresponds to the newest safety guidelines.

Drive
Specially developed three-phase motors. Motors with 3.00 kW and above are equipped with a PTC thermistor. Also available with a 230 V, 50 Hz single-phase motor up to 2.20 kW.

Construction	IM V1/V18
Protection class	IP 55
Idle speed	2850 rpm
Frequency	50/60 Hz
Voltage 50 Hz	up to 2.20 kW: 230 V Δ/400 V Y
60 Hz	up to 2.60 kW: 265 V Δ/460 V Y
Voltage 50 Hz	from 3.00 kW: 400 V Δ/690 V Δ
60 Hz	from 3.60 kW: 460 V Δ
Class of insulation	F
Cooling air temperature	max. 40 °C

Technical data
Flow rate	Q	up to max. 160 m³/h
Dynamic head	H	up to max. 240 m
Water temperature	t	-15 °C to +100 °C
Casing pressure (PN)	p	max. 25 bar
Speed variables 50 Hz	n	2850 rpm
60 Hz	n	3420 rpm

Direction of rotation
Clockwise, viewed from the drive end.

Materials used IN-VB
Pump casing	stainless steel 1.4301
Sleeve	stainless steel 1.4301
Impellers	stainless steel 1.4301
Diffusers	stainless steel 1.4301
Stages	stainless steel 1.4301
Shaft	stainless steel 1.4057
Shaft protection sleeve	tungsten carbide
O-rings	EPDM
Shaft seal	mechanical seal
Support plate	cast iron JS 1030

Materials used IN-VB-S
Pump casing	stainless steel 1.4408
Sleeve	stainless steel 1.4404
Impellers	stainless steel 1.4404
Diffusers	stainless steel 1.4404
Stages	stainless steel 1.4404
Shaft	stainless steel 1.4460
Shaft protection sleeve	tungsten carbide
O-rings	Viton
Shaft seal	mechanical seal
Support plate	cast iron JS 1030

Performance features
1. **Plug-in shaft system**
   Motor can be replaced without having to completely dismantle the pump or remove the mechanical seal.
2. **Hydraulics**
   Highly efficient stainless steel hydraulics.
3. **Connections**
   Wide variety of connection options.

> More details regarding all designs, characteristics and dimensional drawings on request or at badu.de

^
IN-VB

Aquacell A / AE

Compact, low-noise operation and easy to assemble.
Fully automatic booster unit for swimming pool and drinking water.

Field of application
Pressure boosting for swimming pool and drinking water.

Design
Fully automatic booster unit, supplied wired ready for connection, with the pipes in place and on base frames with rubber buffers. Including fully automatic pump controls. AE series units also have a frequency converter.

Technical data
Flow rate	Q	up to max. 160 m³/h
Dynamic head	H	up to max. 250 m
Water temperature	t	up to 70 °C
Max. unit pressure	p	max. 25 bar

Materials used
Pump casing	stainless steel 1.4301
Impellers	stainless steel 1.4301
Diffusers	stainless steel 1.4301
Shaft	stainless steel 1.4305
Shaft seal	mechanical seal
O-ring	EPDM
Piping	stainless steel 1.4571
Fittings	copper alloy/stainless steel
Base frame	stainless steel 1.4301

Dry run protection
1. For intake mode from a tank with a single pole float switch including 10 m cable.
2. For static pressure operation with a flow pressure over 1 bar with a single pole pressure control in the feed line.
3. For static pressure operation with a flow pressure below 1 bar and suction operation with a single pole pressure control in the pressure line. Manual resetting.

> **Available optionally at an extra cost.**

Connection options
When planning to use a booster unit it is absolutely necessary that planners and operators adhere to the rules and regulations of the local water supply company. The unit can be used for indirect or direct connection to the local network.

> More details regarding all designs, characteristics and dimensional drawings on request or at badu.de

Aquacell A

With a non-self-priming, centrifugal pump and constant speed drive.

Mode of operation

The unit is automatically switched on and off using a pressure switch situated on the discharge side. An 18 l diaphragm pressure vessel is installed as a control cylinder in the pressure line, up to PN 10. Above that 8 l, PN 16 or PN 25.
The unit is fitted with an electronic turn-off relay (follow-up) in order to minimise the switching frequecny. The electronic turn-off can be manually set from 5 to 100 seconds and has been preset to 40 seconds, thus ensuring a low switching frequency.
If required our booster unit is available, at an extra cost, with dry run protection which automatically turns the device off in case of water deficiency.

Aquacell AE

With a non-self-priming, centrifugal pump and speed regulation (frequency converter).

Mode of operation

The unit is automatically switched on and off using a pressure switch situated on the discharge side. An 18 l diaphragm pressure vessel is installed as a control cylinder in the pressure line, up to PN 10. Above that 8 l, PN 16 or PN 25.
The speed control is acheived using a frequency converter built onto the motor, including a microprocessor control, display and keyboard. If required our booster unit is available with dry run protection at an extra cost which automatically turns the device off in case of water deficiency.

Multicell S / SFE

Fail-safe, compact, low-noise operation and easy to assemble. Fully automatic booster unit for higher performance.

Field of application
Pressure boosting for swimming pools and drinking water.

Design
Fully automatic booster unit, supplied wired ready for connection, with the pipes in place and on base frames with rubber buffers. Including fully automatic pump controls.

Technical data
Flow rate ..... Q up to max. 960 m³/h
Dynamic head ..... H up to max. 250 m
Water temperature ..... t up to 70 °C
Max. unit pressure ..... p max. 25 bar

Materials used
Pump casing ..... stainless steel 1.4301
Impellers ..... stainless steel 1.4301
Diffusers ..... stainless steel 1.4301
Shaft ..... stainless steel 1.4305
Shaft seal ..... mechanical seal
O-ring ..... EPDM
Piping ..... stainless steel 1.4571
Fittings ..... copper alloy/stainless steel
Base frame ..... stainless steel 1.4301

Dry run protection
Suitable dry run protection is included in delivery.

Connection options
When planning to use a booster unit it is absolutely necessary that planners and operators adhere to the rules and regulations of the local water supply company. The unit can be used for indirect or direct connection to the local network.

> More details regarding all designs, characteristics and dimensional drawings on request or at badu.de

Multicell S

With 2 to 6 non-self-priming, centrifugal pumps and constant speed drive.

Mode of operation

The unit consists of two to six pumps whereby one is designated as the reserve pump. The automatic switching between pumps guarantees an even load on all pumps. The unit is switched on and off, depending on the pressure, using a pressure switch or transmitter. Switching additional operational pumps on or off is acheived in cascade form and electronically delayed, depending on water extraction. The microprocessor controlled central unit determines the optimal number of pumps required. The relevant operating conditions are displayed on the central unit. Distance monitoring from a supervision centre is also possible using a potential-free collective fault signal. Should one of the operating pumps fail, a reserve pump is automatically switched on.

Multicell SFE

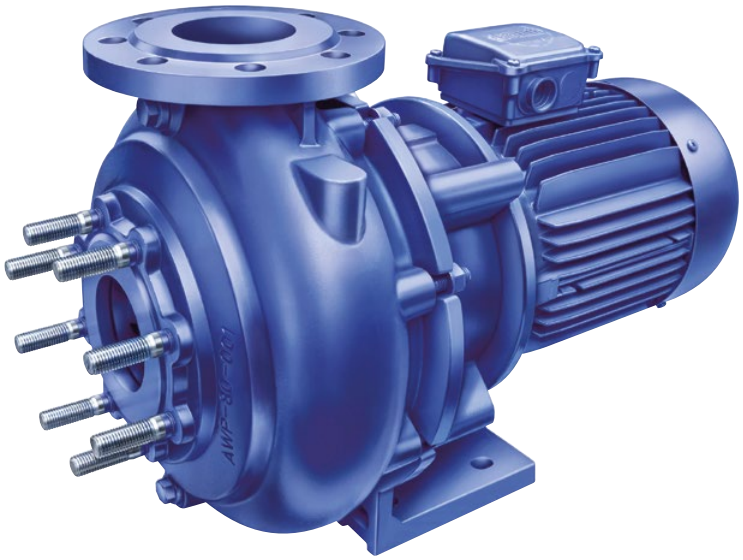
With 2 to 6 non-self-priming, centrifugal pumps and speed regulation (frequency converter).

Mode of operation

The unit consists of two to six pumps whereby one is designated as the reserve pump. The automatic switching between pumps guarantees an even load on all pumps. The unit is switched on and off, depending on the pressure, using a pressure switch or transmitter. Each pump is speed controlled. Switching additional operational pumps on or off is acheived steplessly and with speed regulation, depending on water extraction and pressure loss. The microprocessor controlled central unit determines the optimal number of pumps required.The relevant operating conditions are displayed on the control cabinet. Three floating signals are included as standard. These can be forwarded to a central supervision centre. Should one of the operating pumps fail, a reserve pump is automatically switched on.

AWP

Very flexible and tough. Powerful sewage water pump for media with a high proportion of solid material.



Field of application
Filter drainage in swimming pools, communal sewage treatment plants, compact sewage treatment plants and waste water systems for shipbuilding.

Design
Horizontal, single-stage, non-self-priming, centrifugal pump in monoblock design. Depending on the design, the pump can be installed in dry locations, partly covered by water or completely submerged.

Because of the large, free transits of the various impeller geometries, untreated sewage with a high proportion of solid material can also be carried, such as waste water from swimming pools with long, fibrous components e.g. hair. A three-phase asynchronous motor with a special shaft is used as a drive motor. Depending on the pump design, this is suitable for assembly in dry locations or flooded/submerged installations. Motors set up in dry locations are designed as standard in efficiency class IE3. The submersible motors are also designed corresponding to IE3.

Technical data
Flow rate ..... Q up to max. 480 m³/h
Dynamic head ..... H up to max. 90 m
Motor capacity ..... P_2 0.25 - 55.00 kW
Protection class ..... p IP 55 or IP 68

Flange
According to EN 1092-2 PN-16

> More details regarding all designs, characteristics and dimensional drawings on request or at badu.de

TOP 71 – TOP 300

Full strength and quiet as a whisper.
Stainless steel submersible pump for drainage.

TOP 71 WS

TOP 300

Field of application
Drainage.

Design
The stainless steel submersible pumps from the TOP 71 – TOP 300 range are suitable for handling swimming pool water. All wetted parts are made from stainless steel 1.4301. The three-phase version is also available with integrated float switch.

Materials used
Pump/exterior casing ..... stainless steel 1.4301
Impeller ..... stainless steel 1.4301
Inlet grille ..... stainless steel 1.4301
Pump shaft ..... stainless steel 1.4305
Motor casing ..... stainless steel 1.4301
Shaft seal ..... mechanical seal in oil bath
O-rings ..... NBR
Shaft end in media ..... stainless steel 1.4305
Cable ..... 3 x 0.75 mm² H05RN-F (1~) with shock-proof plug
Cable ..... 4 x 1.00 mm² H07RN-F (3~) without plug

> More details regarding all designs, characteristics and dimensional drawings on request or at badu.de

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The right components provide for the flawless constant operation of your unit.

We have the right accessories for you – in BADU quality of course.

So that you will always be completely satisfied …

ACCESSORIES

BADU® Block / Block Multi / Block Multi Mar

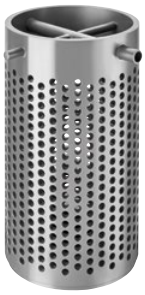
Even more flexibility for the BADU Block / BADU Block Multi / BADU Block Multi Mar. Transparent lid, plastic filter housing and strainer basket.

1

2

3

4



5

6

1 Transparent lid
- Amount of debris and turbulence is visible without removing the lid.
- Easy to maintain and control.
- Can be used for high brine concentrations.
- Available for: BADU Block 80/.. to BADU Block 150/...

2 Plastic filter housing
- Corrosion-resistant and low-wear.
- Additional internal coating no longer necessary.
- Can be used for high brine concentrations.
- Available for: BADU Block 32/.. to BADU Block 65/.. up to maximum 11.00 kW. Generally installed in: BADU Block Multi 65/250.
- Strainer basket made from stainless steel 1.4571.

3 Plastic filter housing
- Corrosion-resistant and low-wear.
- Additional internal coating no longer necessary.
- Can be used for high brine concentrations.
- Available for: BADU Block 80/.. to BADU Block 125/... up to maximum 11.00 kW. Generally installed in: BADU Block Multi 100/250.
- Strainer basket made from stainless steel 1.4571.

4 Strainer basket BADU Block / BADU Block Multi
- Low wear.
- Retaining plate and handle welded into the basket.
- Robust welding seams.
- Curved edges for more stability.
- Made from stainless steel 1.4571.

5 Strainer basket BADU Block Multi Mar
- Low wear.
- With handle.
- Robust design.
- Made from PVC.

6 Opening device for T-handle BADU Block / BADU Block Multi / BADU Block Multi Mar
- Adapter for electric screwdriver.
- To screw and unscrew the T-handle.

BADU® Suction safety system

Safety with automatic shut-down technology. For reliable protection in swimming pools.

Sensors >

Field of application
The BADU Suction safety system can be integrated into all existing systems.

Mode of operation
The BADU Suction safety system eliminates the hidden risk posed by suction points to users in public facilities, e.g. hotel pools, wellness spas or in private pools. The fitting of redundant sensors further increases the reliability of the system. The potential risk at suction points was known even before the publication of the bulletin 60.03 "Avoidance of risks at suction, drain and intake points in swimming pools" issued by the German Swimming Pool Association [Deutschen Gesellschaft für das Badewesen e. V.]. In extreme cases pool users can be sucked in and trapped by their swimwear, hair or limbs, which can lead to serious physical injury or even death by drowning.

The BADU Suction safety sytem reliably eliminates this hazard. As specified in bulletin 60.03, it demonstrates "safe characteristics" instead of indirectly creating other safety gaps.

Performance characteristics
- Redundant sensors.
- Prevention of accidental restart.

In this case the BADU Suction safety system control box immediately switches the pump off and a signal is displayed. The trapped person is released without delay.
In order to ensure maximum functional reliability the sensors are made from materials suitable for use in swimming pool water. They are also protected from overload as a result of over pressure and under pressure.

Article no	Type	Connections	Voltage
230.0000.801	BADU Suction safety system for emergency-off system	d 63**)	1~ 230 V
230.0000.803	BADU Suction safety system up to 4.00 kW with low voltage coil	d 63**)	1~ 230 V

For detailed information regarding the motor protection please see page 73.

**) Glue socket; other sizes to be provided on site.

BADU® Eco Drive II

It's all go. Compact frequency converter for optimal working conditions.

Field of application
Due to the pump capacity the BADU Eco Drive II frequency converter is ideally suited for use with the BADU Prime 25 to BADU Prime 48, BADU Resort, BADU 93 and BADU Resort-PM as well as with the Normblock, Normblock Multi, BADU Block and BADU Block Multi.

Mode of operation
There are various operating conditions in swimming pool water treatment, for example filtering - swimming pool water circulation - backwashing and rinsing. Depending on pipe friction loss and filter speed, different operating points have to be set. This can be conveniently ensured by controlling the pump's operating points via a frequency converter. Therefore the pump's motor speed is electronically adjusted as necessary.

Performance characteristics
- Unnecessary energy loss, e.g. through a shut-off valve, is avoided.
- Energy saving potential through adjustable flow rate, e.g. in public pools with low pool usage or outside pool operating hours.
- Pump is always run at its optimal and most economic operating point.

Control
The frequency converter offers a wide range of control options: direct control via buttons, digital inputs to approach fixed speeds or external control via the 0-10 V or 4-20 mA interface. It can therefore be integrated into building control systems. Relay output functions e.g. indicating operational readiness or motor overload, relay input functions e.g. "start" or "stop", PTC thermistor sensor evaluation and time functions round up its range of applications.
Please check special on site requirements on the next page.

Technical data at 50 Hz	BADU Eco Drive II for	0.75 kW	1.50 kW	2.20 kW	4.00 kW	5.50 kW
Frequency		50-60 Hz	50-60 Hz	50-60 Hz	50-60 Hz	50-60 Hz
Voltage		3~ 380-480 V	3~ 380-480 V	3~ 380-480 V	3~ 380-480 V	3~ 380-480 V
Analog input		0-10 V/4-20 mA	0-10 V/4-20 mA	0-10 V/4-20 mA	0-10 V/4-20 mA	0-10 V/4-20 mA
Cooling		ventilation	ventilation	ventilation	ventilation	ventilation
Max. ambient temperature		50 °C	50 °C	50 °C	50 °C	50 °C

For detailed information regarding the motor protection please see page 73.

Article no	Type	Voltage
297.0075.402	Frequency converter BADU Eco Drive II for 0.75 kW	3~ 380-480 V
297.0150.402	Frequency converter BADU Eco Drive II for 1.50 kW	3~ 380-480 V
297.0220.402	Frequency converter BADU Eco Drive II for 2.20 kW	3~ 380-480 V
297.0400.402	Frequency converter BADU Eco Drive II for 4.00 kW	3~ 380-480 V
297.0550.402	Frequency converter BADU Eco Drive II for 5.50 kW	3~ 380-480 V
297.0000.001	Programming flat rate BADU Eco Drive II	

Frequency converter BADU Eco Drive II up to 55.00 kW and special editions on request.

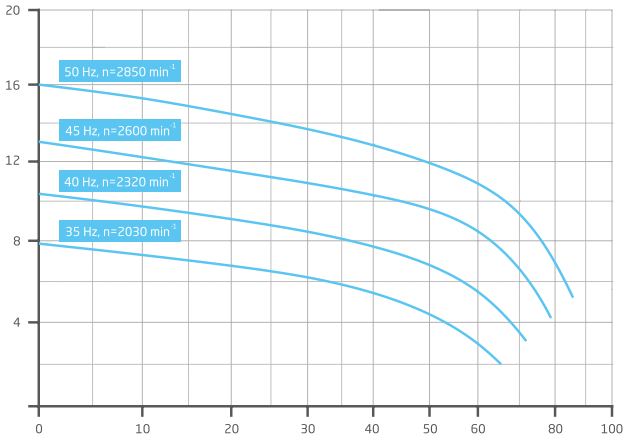
Graphic display >

Performance

Characteristics calculated for the BADU Resort 70
at different frequencies.

Special on site requirements

- Protected cable between motor and frequency converter.
- We recommend providing a PTC thermistor sensor for the motor winding.
- We recommend not running the motor below 30 Hz.
- Residual current circuit breaker type B.



Total dynamic head H (m) / Flow rate Q (m³/h) >

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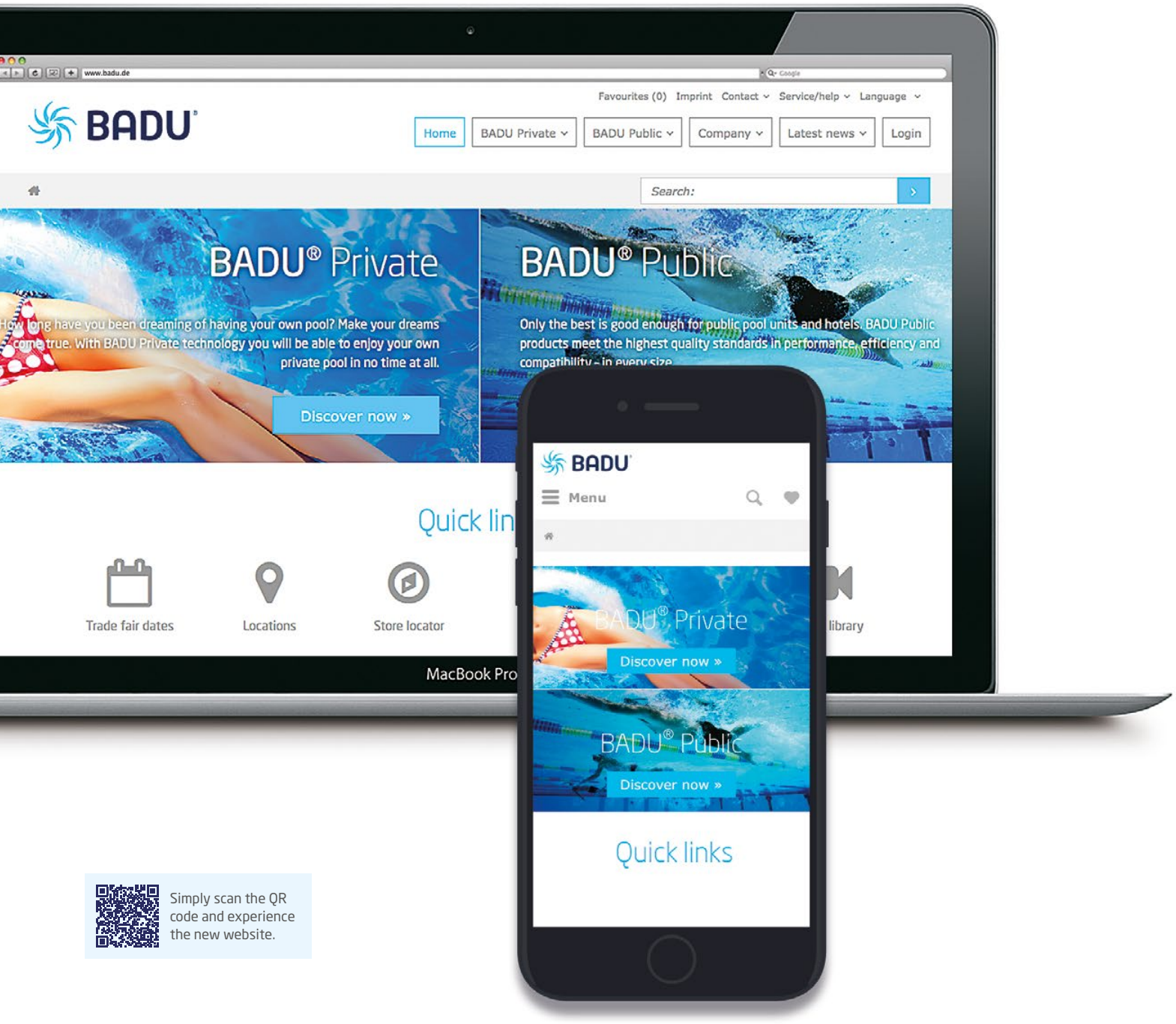
Quality is the reason customers buy BADU products.
Service is the reason customers are always happy.
We are motivated to always give more than you expect.
That's why we're always there for you with help and solutions,
from planning to implementation. And of course with our
after sales service including customer and repair services:
personally, in store and online ...

SERVICE

BADU.DE

POOL TECHNOLOGY ONLINE.



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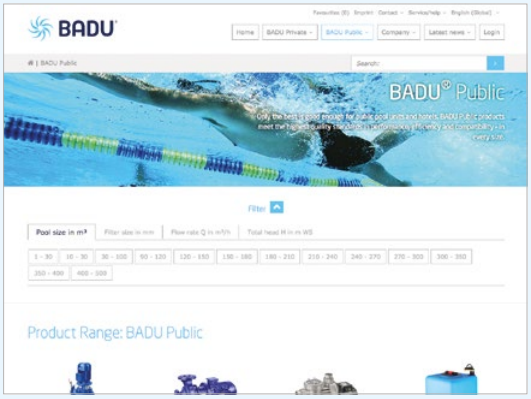

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2

BADU.DE ...

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- Upcoming trade fair dates.

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2 PRODUCT DOWNLOADS

To help with planning your work using BADU products we provide comprehensive material online for you to download. Product descriptions, tender documents and even 3D CAD data that can be processed in all common applications:
Product > Download > 3D model.

MODERN WEBSITE

Computer, tablet, mobile phone – the BADU website works with uncomprimising quality and always has access to the entire content.

Motor/device protection classifications

This overview shows the safety classifications of all motors that are used in BADU pumps.

BADU products: BADU Prime, BADU Resort, BADU 42

Motor protection class	IP 55
Class of insulation	F
Approx. motor speed (rpm)	2840
Max. water temperature (°C)	40 (60)[3)]
Max. casing pressure (bar)	2.5

BADU product: BADU Resort-PM

Motor protection class	IP 55
Class of insulation	F
Approx. motor speed (rpm)	variable
Max. water temperature (°C)	40 (60)[3)]
Max. casing pressure (bar)	2.5

BADU products: BADU 21-50, BADU 21-60, BADU 21-80

Motor protection class	IP 55
Class of insulation	F
Approx. motor speed (rpm)	2850
Max. water temperature (°C)	60[3)]
Max. casing pressure (bar)	2.5

BADU product: M 1 / M 2

Motor protection class	IP 55
Class of insulation	F
Approx. motor speed (rpm)	2840
Max. water temperature (°C)	60[3)]
Max. casing pressure (bar)	2.5

BADU product: V 600

Motor protection class	IP 55
Class of insulation	F
Approx. motor speed (rpm)	2840
Max. water temperature (°C)	40 (60)[3)]
Continuous sound pressure level dB (A)	63.3[*)]
Max. casing pressure (bar)	4.0

[*)] Measured with a phonometer according to DIN 45635.

BADU product: MRA 6

Motor protection class	IP 55
Class of insulation	F
Approx. motor speed (rpm)	2840
Max. water temperature (°C)	60[3)]

BADU product: BADU Suction safety system

Device protection class	IP X4

BADU product: BADU Eco Drive II

Device protection class	IP 55

Maximum permitted ambient temperature 40 °C.

Footnotes/abbreviations

On this page you will find all notes and explanations.

1) **Single phase motors**
1~ 230 V single phase motors are fitted with a built-in overload switch or winding protection as a series feature. Further information can be found in the pump data sheet.
Three-phase motors are not fitted with a motor protection device.

Special voltage, special frequency, 2-speed or direct current motors on request.

Suitable for standard voltage according to DIN IEC 60038 and DIN EN 60034 (euro voltage),
i.e. suitable for continuous operation at:
1~ 220-240 V.
3~ Y/Δ 380-420 V/220-240 V.
3~ Y/Δ 660-725 V/380-420 V.
Tolerances ± 5 %.
GS approved pumps according to EN 60335-1.

2) **Thread**
according to DIN EN 10226-1 and ISO 7-1.
Description for pipe thread **sealing inside the thread**.
Internal pipe thread: e.g. Rp 1½,
External pipe thread: e.g. R 1½.
(Sealed with teflon tape only.)

according to DIN ISO 228-1.
Description for pipe thread **sealing on the end**.
Internal pipe thread: e.g. G 2,
External pipe thread: e.g. G 2.
(Sealed with additional sealing ring.)

3) **Clarification of water temperature 40 °C (60 °C)**
40 °C: The maximum water temperature allowed according to GS approval.
(60 °C): The pump is suitable/configured for a maximum water temperature of 60 °C.

4) A water analysis is necessary prior to the selection of materials used.

Materials used

ABS	Acrylonitrile butadiene styrene copolymer
CrNi	Chrome nickel steel (stainless steel)
EPDM	Ethylene-propylene-diene rubber
FKM	Fluoroelastomer (Viton)
G-Cu Sn 10	Cast bronze
GG-20	Cast iron
HNBR	Hydrogenated acrylonitrile butadiene rubber
NBR	Acrylonitrile butadiene rubber (Perbunan)
PA	Polyamide
PA 66 GF 30	Polyamide, glass fibre reinforced
PC	Polycarbonate
PEEK	Polyether ether ketone
POM GF 30	Polyoxymethylene, glass fibre reinforced
PP	Polypropylene
PP GF 30	Polypropylene, glass fibre reinforced
PP TV 40/PP TV 20	Polypropylene, talc reinforced
PPE GF 30	Polyphenylene Ether, glass fibre reinforced
PPS GF 40	Polyphenylene sulfide, glass fibre reinforced
PVC	Polyvinyl chloride
SAN	Styrene-acrylonitrile copolymer
SiC	Silicon carbide
THP	Technically high-performance plastic

1 bar = 100,000 Pa
1 bar = 10.2 m water column

All characteristics are measured according to EN ISO 9906.

Pumps classified as **self-priming** have a suction height of approx. 3 m geodetic. The pumps must be filled with water when priming.

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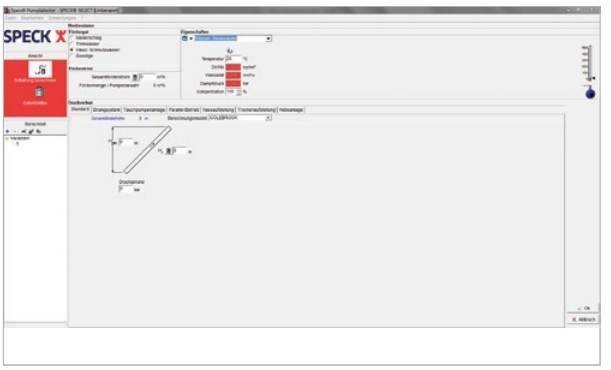

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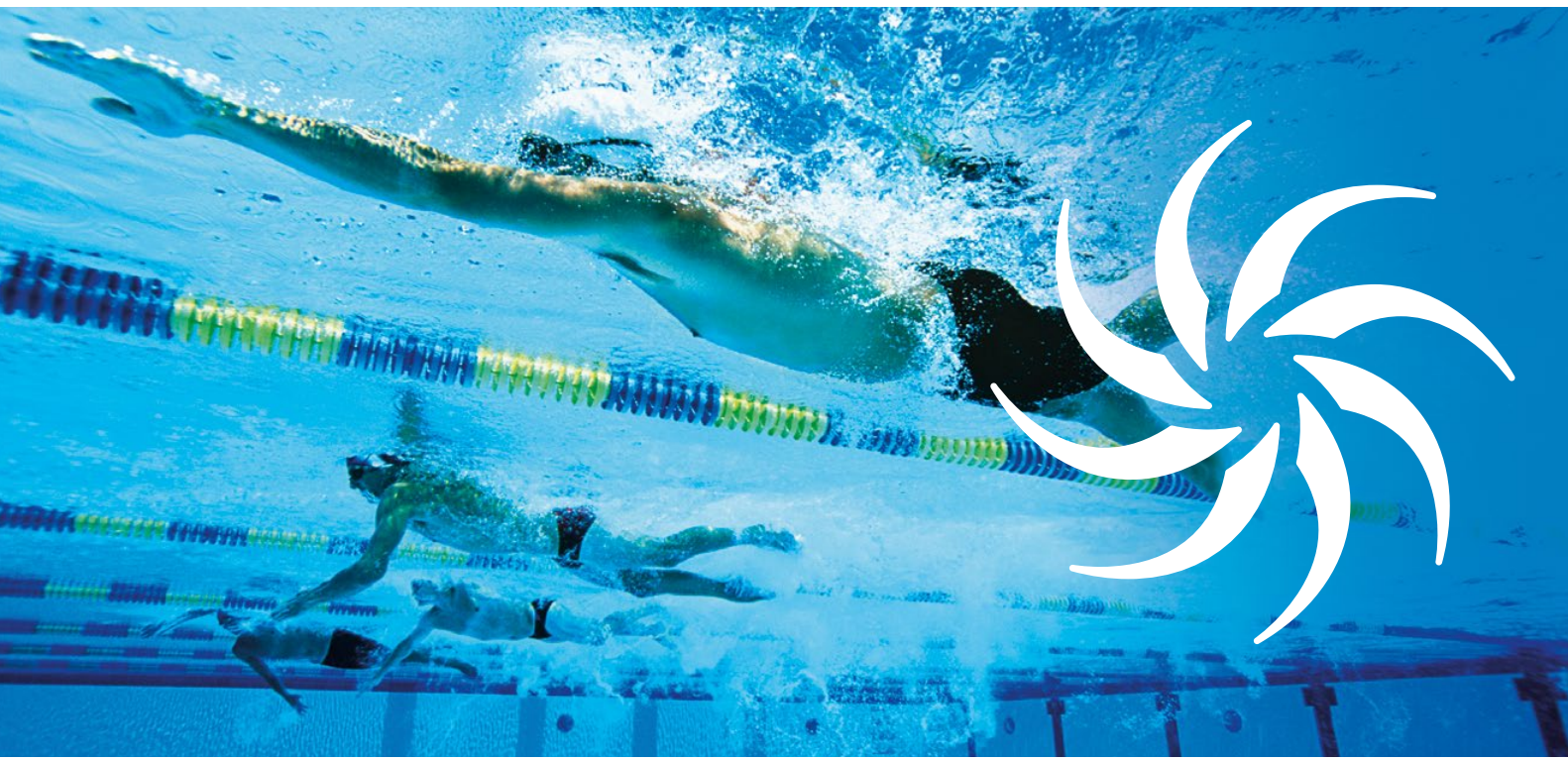

SPECK pumpen

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