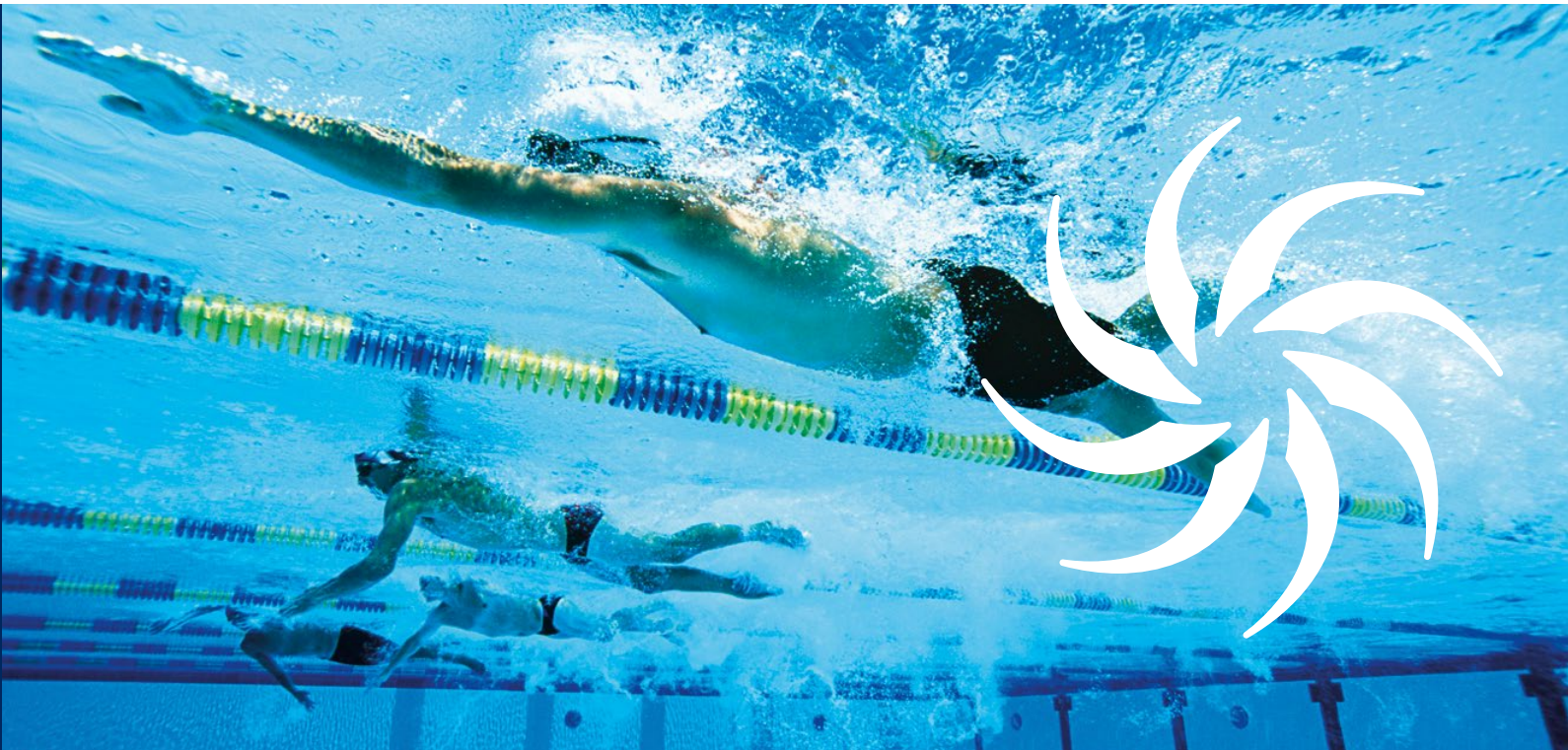




Pool technologies and solutions...



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.

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Current BADU news ...



speck-pumps.com
speck-wissenswelle.com



[YouTube.com](https://www.youtube.com)



[facebook.com](https://www.facebook.com)



[twitter.com](https://www.twitter.com)

BRAND PROMISE FIVE STAR POOL TECHNOLOGY.



BADU®



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, consistency 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.

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.

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.

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 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 BURJ AL ARAB
2 ZOO HAGENBECK

3 AIDA KREUZFAHRTEN
4 HAVEL-THERME

BADU® VARIETY FOR ALL REQUIREMENTS.

Rutsche
 $Q = 360 \text{ m}^3/\text{h}$

-0,00



ATTRAKTIONSPUMPE
SPECK BADU Block
Typ 150/250 W12
 $Q = 360 \text{ m}^3/\text{h}$
 $H = 12 \text{ mWS}$
 $P = 18,5 \text{ kW}$



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



Attraction pumps
Performance: 2-740 m³/h
Page 42



Metering water pumps
Performance: 0.2-6 m³/h
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Sample water return units
Performance: 0-7 m³/h
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Staged centrifugal pumps
Performance: 0.5-160 m³/h
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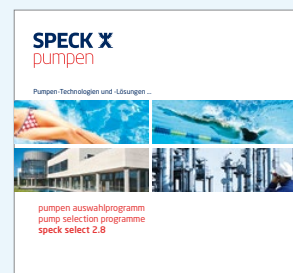
Booster units
Performance: 0.5-960 m³/h
Page 74



Sewage water pumps
Performance: 1-100 m³/h
Page 78



Accessories
Page 84



SPECK SELECT
The pump selection programme.
Page 94

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

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Sewage water pumps	78

BADU[®] BLOCK MULTI MAXIMUM INNOVATIVE.

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.



Benefits of the BADU Block Multi:

- > Pump in all-plastic design.
- > Wetted parts made of optimised high-performance technical plastic (THP) - permanently robust maintenance-free and economical.
- > Pump shaft does not come into contact with the pump liquid.
- > Corrosion-resistant and low-wear, even at high salt concentrations.
- > Maintenance-friendly plug-in shaft design.
- > Flexible attachment of IE3 and PM motors from 2.20 to 22.00 kW.
- > Plastic filter housing with transparent lid.
- > Strainer basket made from stainless steel.
- > Vent line made from plastic.
- > Individual mechanical seal versions for special water treatments.

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.



^
BADU Block Multi 125/250

BADU® Block Multi

Performance features

1 Motor

Standard brand motor, optimised for the operating point with ball bearings that are lubricated for their whole operating life.

Further motor variations on page 15.

2 Plug-in shaft system

Motor can be replaced without having to completely disassemble the pump or having to dismantel 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

Liquid cooling and lubrication of the maintenance-free bellow-type mechanical seal ensures long durability and maintenance intervals.

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.

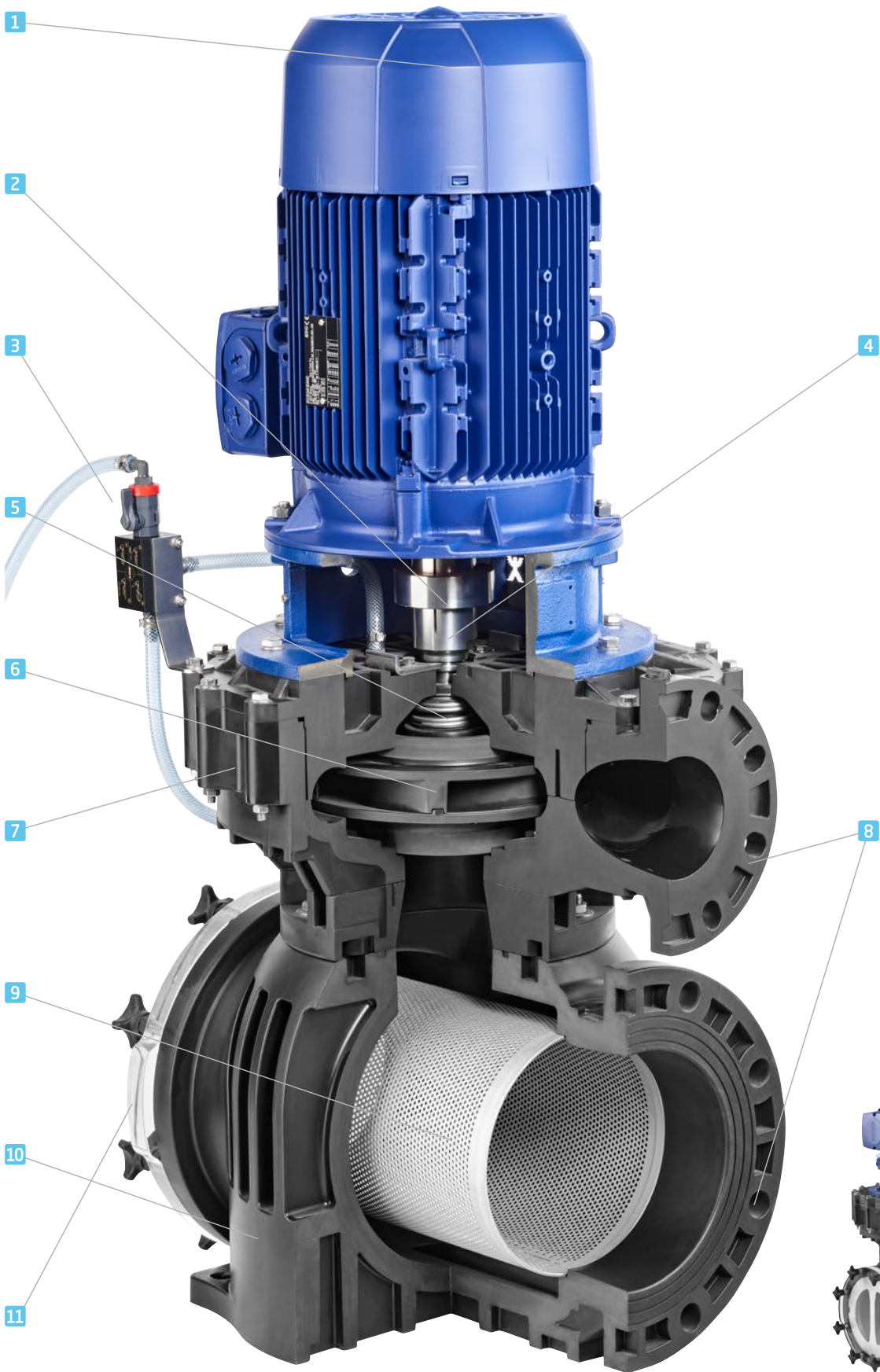
10 Filter housing

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.



^
Cross section



^
BADU Block Multi

BADU® Block Multi

Description

Field of application

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

- Open-air and indoor pools
- Thermal, therapeutic and health spas⁴⁾
- Pools with high salt concentrations⁴⁾
- Water treatment, e.g. filter unit construction
- Leisure facilities
- Attractions, e.g. water slides
- Shipbuilding⁴⁾
- Industry, e.g. cool water units⁴⁾
- 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 impeller can be individually adjusted to suit the respective operating conditions.

Filter housing capacity

BADU Block Multi 65/250 approx. 9 l
 BADU Block Multi 100/250, 125/250, 80/200 approx. 19 l
 Strainer basket mesh size approx. Ø 3 mm

> See page 17 for materials used.

Paintwork

RAL 5002, ultramarine blue.

> Customised paintwork on request.

Technical data at 50/60 Hz

Flow rate Q up to max. 330 m³/h
 Dynamic head H up to 24 m
 Water temperature t max. 40 °C
 Maximum 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 80/200 DND 80/DNS 150
 BADU Block Multi 100/250 DND 100/DNS 200
 BADU Block Multi 125/250 DND 125/DNS 200

Flange

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

Noise generation

Sound intensity and sound pressure level are mainly influenced by the motor and the pump and especially by the installation conditions and the respective installation situation. Special sound insulation measures are to be taken to reduce the transmission of structure-borne or airborne noise.

Types

BADU Block Multi 65/250
 BADU Block Multi 80/200
 BADU Block Multi 100/250
 BADU Block Multi 125/250

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



Motor

Motor

Directly-mounted, low noise, surface-cooled and removable DIN-IEC motor in German brand quality. Energy efficiency class IE3 from 0.75 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 grease lubrication.

1 Standard motor

IE3 motor from 0.75 kW.

Advantage: very high grade of efficiency.

2 PM motor

IE4/IE5 motor.

Advantage: very high grade of efficiency.

3 Water-cooled motor

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

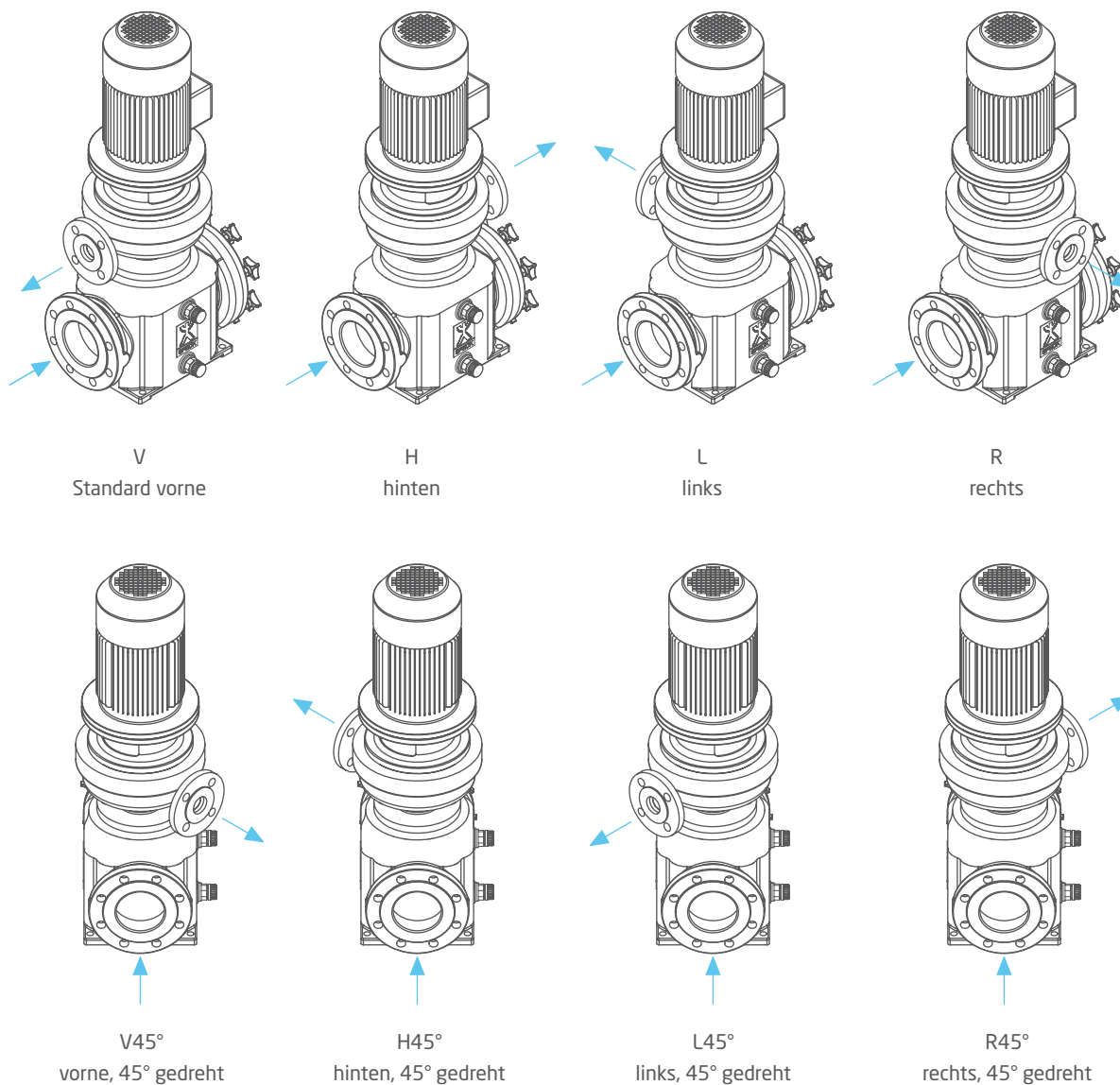
BADU® Block Multi

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°.





Materials used

Design	BADU Block Multi	BADU Block Multi S	BADU Block Multi Mar
Casing parts	THP, PPE GF 30, PP GF 30	THP, PPE GF 30, PP GF 30	THP, PPE GF 30, PP GF 30
Impeller	THP, PPE GF 30	THP, PPE GF 30	THP, PPE GF 30
Mechanical seal	carbon/SiC/EPDM	SiC/SiC/EPDM	SiC/SiC/EPDM
Pump shaft (no contact with pump liquid)	stainless steel 1.4057	stainless steel 1.4057	stainless steel 1.4057
Motor lantern	cast iron EN-JL 1040	cast iron EN-JL 1040	cast iron EN-JL 1040
Filter housing	THP	THP	THP
Strainer basket	stainless steel 1.4571	stainless steel 1.4571	PVC
Filter lid	acrylic glass	acrylic glass	acrylic glass

Subject to technical modifications.

Circulation line and ball valve vent made from plastic and PVC hose.

BADU BLOCK Multi S/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.

- > **BADU BLOCK Multi S** - Pools with thermal water and high salt concentrations⁴⁾
- > **BADU BLOCK Multi Mar** - 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

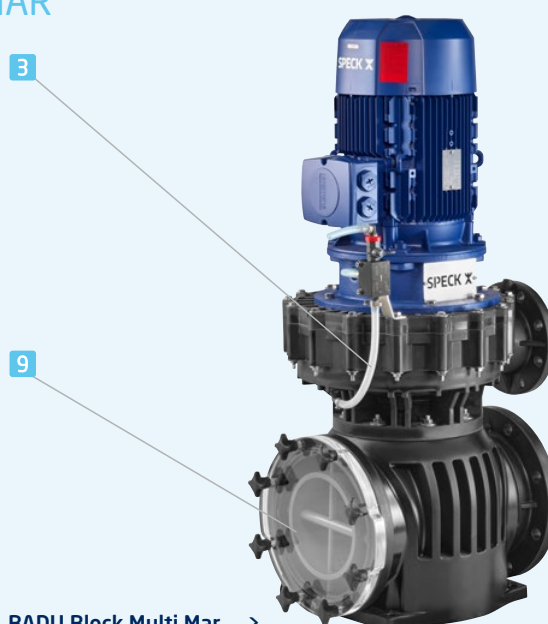
Made from plastic. Robust design with handles.

Strainer basket mesh size

BADU Block Multi Mar 65/250..... approx. Ø 6 mm

BADU Block Multi Mar 80/200, 100/250

and 125/250..... approx. Ø 10 mm



BADU Block Multi Mar >

BADU® BLOCK Binero MAXIMUM COATING.

AVAILABLE FROM SPRING 2022.

Energy-efficient and corrosion-resistant -
a reliable partner even at high salt concentrations.



The innovative and new series: BADU Block Binero.

BADU Block Binero lifts the proven BADU Block technology
to a higher level.

Benefits BADU Block Binero:

- > Pump in cast iron design with thermoplastic corrosion protection coating based on polyethylene. Filter housing made of optimised high-performance technical plastic (THP) with transparent lid up to 15.00 kW. Filter housing RILSAN-coated and transparent lid from 18.50 kW.
- > Full diameter bronze impeller. Operating point individually adjusted via frequency converter.
- > Robust construction and solid finish.
- > Flexible attachment of IE4-, IE 5- and PM motors from 55,00 kW.
- > Maintenance-friendly plug-in shaft design.
- > Plastic filter housing with transparent lid.
- > Strainer basket made from stainless steel.
- > Vent line made from plastic.
- > Mechanical seal versions for special water treatments.

WHY ANTI-CORROSION COATING?

The new thermoplastic anti-corrosion coating based on polyethylene ensures very good resistance to swimming pool and thermal water and bathing water with high salt concentration, as well as good UV and weather resistance. Thanks to the high surface quality of the anti-corrosion coating, the new BADU Block Binero can withstand different usage requirements while maintaining a high level of efficiency.

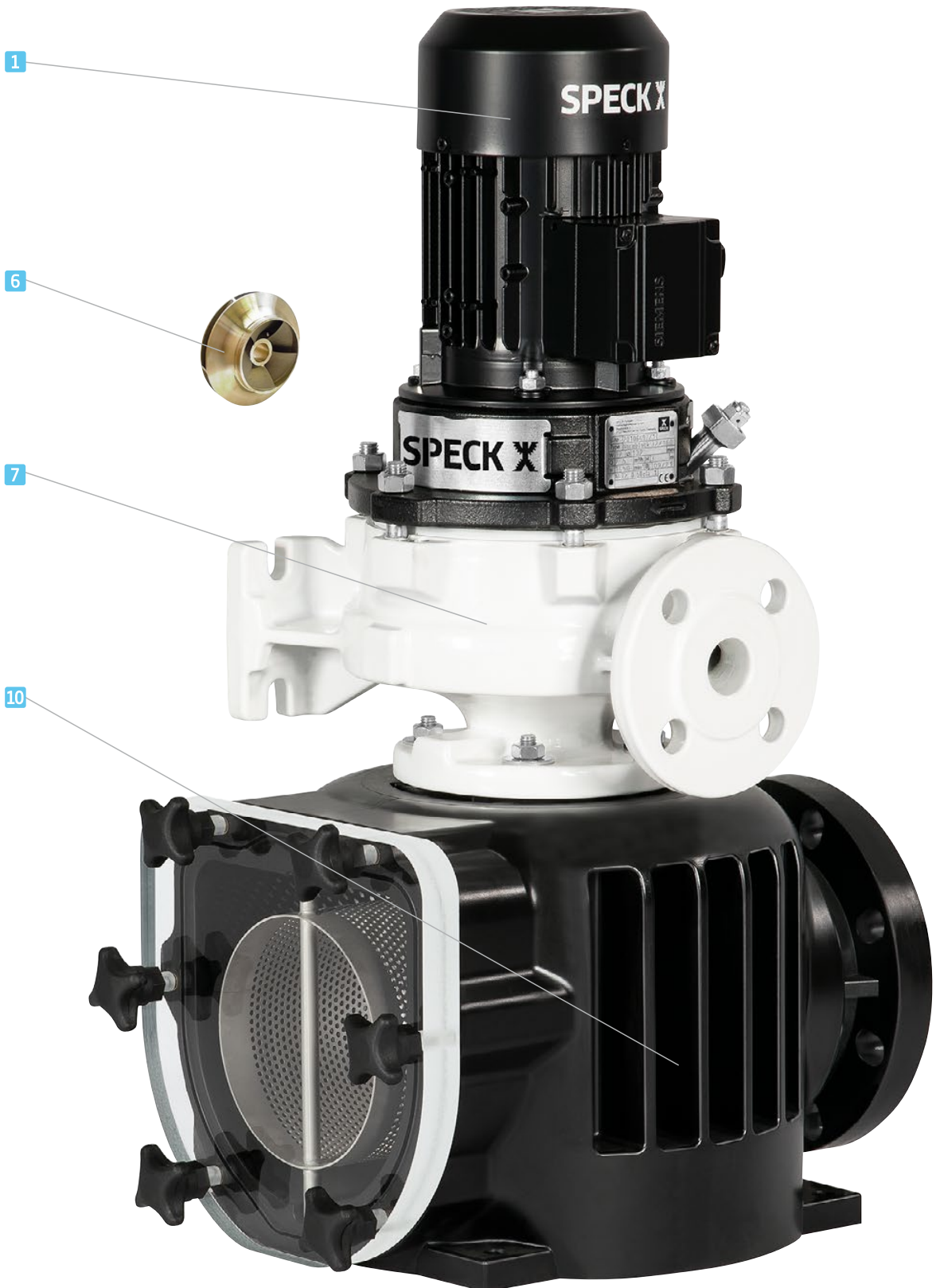


BADU® Block Binero

Performance features

- 1 Motor**
IE4-, IE5- and PM motor with ball bearings lubricated for their whole operational life.
- 2 Plug-in shaft system**
Motor can be replaced without having to completely disassemble the pump or dismantel the mechanical seal.
- 3 Ventilation**
An external vent line allows manual ventilation resulting in the long life of the mechanical seal.
- 4 Pump shaft**
Pump shaft made from stainless steel.
- 5 Mechanical seal**
Liquid cooling and lubrication of the maintenance-free bellow-type mechanical seal ensures long durability and maintenance intervals.
- 6 Impeller**
Closed full diameter bronze impeller for optimal smooth running and durability of the whole pump. The operating point is is individually adjusted to the respective operating conditions via a frequency converter.
- 7 Pump material**
Cast iron with thermoplastic corrosion protection coating based on polyethylene. Permanent corrosion protection and protection against aggressive media.
- 8 Connections**
Large dimension inlet connections allow 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**
All-plastic design or RILSAN-coated. Can be used with high salt concentrations. Hardwearing and robust.
- 11 Filter lid**
Transparent acrylic design for easy maintenance and visual checking from the outside. The amount of debris and turbulence is visible without removing the lid.

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



BADU Block Binero

BADU® Block Binero

Description

Field of application

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

- Open-air and indoor pools
- Thermal, therapeutic and health spas⁴⁾
- Pools with high salt concentrations⁴⁾
- Water treatment, e.g. filter unit construction
- Leisure facilities
- Attractions, e.g. water slides
- Shipbuilding⁴⁾
- Industry, e.g. cool water units⁴⁾
- 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 Binero 32/.. to 65/.. - THP approx. 9 l
 BADU Block Binero 32/.. to 65/.. - GGKS*) approx. 13 l
 BADU Block Binero 80/.. to 125/... - THP approx. 19 l
 BADU Block Binero 80/.. to 125/... - GGKS*) approx. 29 l
 BADU Block Binero 150/... - GGKS*) approx. 71 l
 Strainer basket mesh size approx. Ø 3 mm

*) GGKS = Cast iron plastic-coated

> See page 23 for materials used.

Paintwork

RAL 9016 white, RAL 9005 black.

> 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. 40 °C

Maximum operating pressure/temperature

Pump casing p 10 bar
 Filter housing
 with transparent lid p 2.5 bar

Speed variables n approx. 1450/1750 rpm

Construction size DN 32 up to 250

Flange

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

Noise generation

Sound intensity and sound pressure level are mainly influenced by the motor and the pump and especially by the installation conditions and the respective installation situation. Special sound insulation measures are to be taken to reduce the transmission of structure-borne or airborne noise.

Types

BADU Block Binero 32/ 160
 BADU Block Binero 40/ 160, 200
 BADU Block Binero 50/ 160
 BADU Block Binero 65/ 200, 250
 BADU Block Binero 80/ 160, 200, 250
 BADU Block Binero 100/ 200
 BADU Block Binero 125/ 200, 250
 BADU Block Binero 150/ 250

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



Materials used

Design	BADU Block Binero
Casing parts	cast iron EN-JL 1040 PE-coated
Impeller	tin bronze CC480K-GS
Mechanical seal	SiC/SiC/HNBR
Wear rings	CC495K-GS
Pump shaft	stainless steel 1.4571
Shaft protection sleeve	stainless steel 1.4571
Motor lantern	cast iron EN-JL 1040
Filter housing	cast iron EN-JL 1030 plastic-coated THP
Strainer basket	stainless steel 1.4571
Filter lid	acrylic glass

Subject to technical modifications.

Circulation line and ball valve vent made from plastic and PVC hose.

BADU[®] BLOCK

MAXIMUM
RELIABILITY.

Proven over decades and continually improving.
Energy efficient thanks to optimised efficiency rate.
Perfect all-metal concept of the BADU Block
unites reliability and durability.
At the cutting edge of development.



Benefits of the BADU Block:

- > Pump in cast iron or bronze design with RILSAN- coated filter housing.
- > Robust construction with above-average wall thickness and solid finish.
- > 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. e.g. tin bronze housing, plastic filter housing, transparent lid etc.



BADU® Block

Performance features

1 Motor

Standard brand motor, optimised for the operating point with ball bearings that are lubricated for their whole operating life.

Further motor variations on page 29.

2 Plug-in shaft system

Motor can be replaced without having to completely disassemble the pump or having to dismantel 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

Liquid cooling and lubrication of the maintenance-free bellow-type mechanical seal ensures long durability and maintenance intervals.

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/material 12, tin bronze/material 05.

8 Connections

Larger-dimension 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.

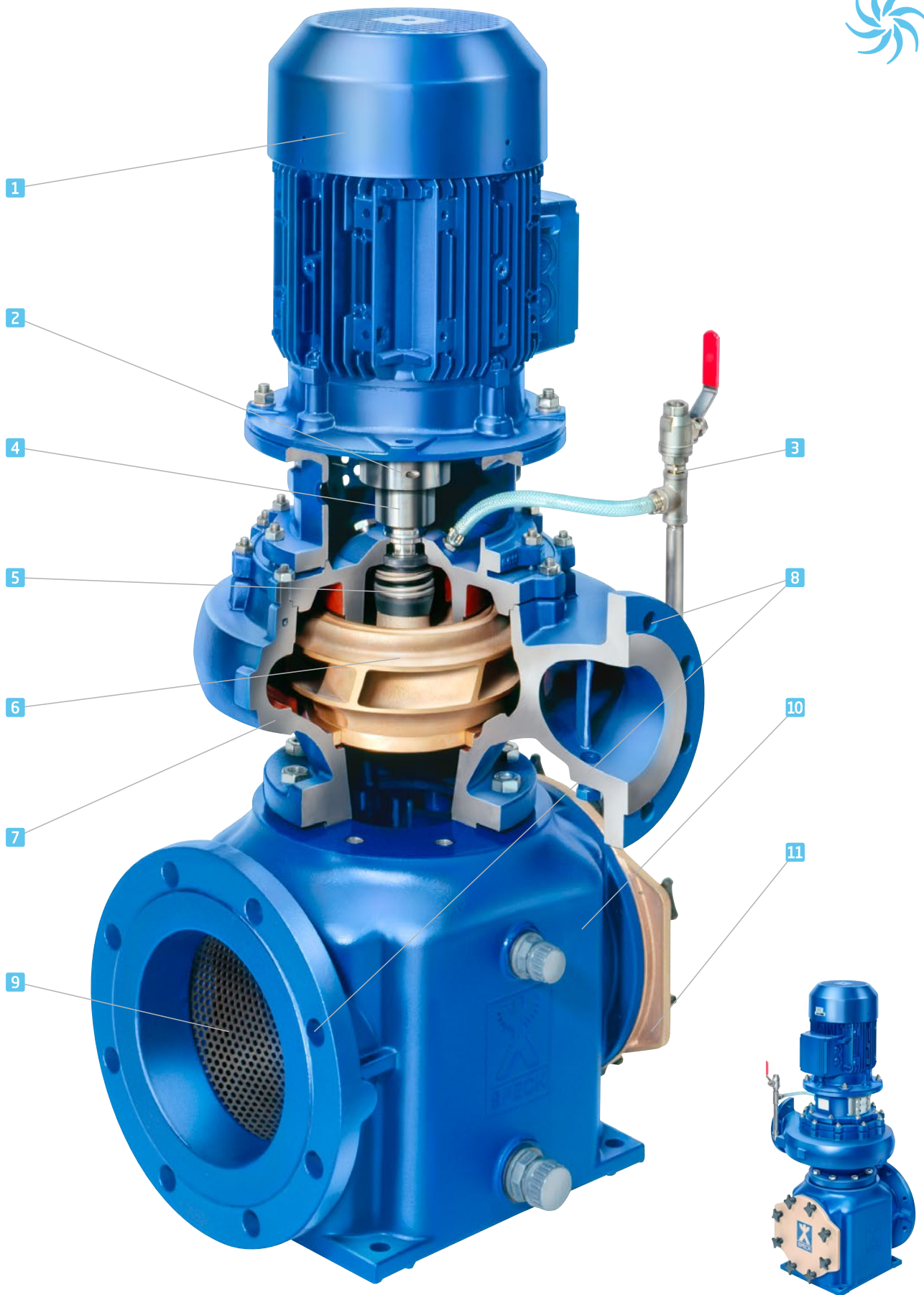
10 Filter housing

RILSAN-coated filter housing for optimal corrosion protection. Stain resistant. Also optionally available in a plastic version - see accessories on page 84.

11 Filter lid

Robust lid, extremely stable under pressure, made from bronze. Also optionally available in a transparent version - see accessories on page 84.

> Detailed information regarding the BADU Block can be found on page 28.



^
Cross section

^
BADU Block

BADU® Block

Description

Field of application

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

- Open-air and indoor pools
- Thermal, therapeutic and health spas⁴⁾
- Pools with high salt concentrations⁴⁾
- Water treatment, e.g. filter unit construction
- Leisure facilities
- Attractions, e.g. water slides
- Shipbuilding⁴⁾
- Industry, e.g. cool water units⁴⁾
- 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

> See page 31 for materials used.

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 THP
 BADU Block 32/.. to 125/.. p 2.5 bar
 t max. 40 °C
 - optional transparent lid p 2.5 bar
 t max. 40 °C

> Optional plastic filter housing can be found on page 84.

Speed variables n approx. 1450/1750 rpm

Construction size DN 32 up to 250

Flange

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

Noise generation

Sound intensity and sound pressure level are mainly influenced by the motor and the pump and especially by the installation conditions and the respective installation situation. Special sound insulation measures are to be taken to reduce the transmission of structure-borne or airborne noise.

Types

BADU Block 32/..... 160, 200, 250
 BADU Block 40/..... 160, 200, 250, 315
 BADU Block 50/..... 160, 200, 250, 315
 BADU Block 65/..... 160, 200, 250, 315
 BADU Block 80/..... 160, 200, 250, 315
 BADU Block 100/..... 160, 200, 250, 315
 BADU Block 125/..... 200, 250, 315
 BADU Block 150/..... 200, 250, 315

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



Motor

Motor

Directly-mounted, low noise, surface-cooled and removable DIN-IEC motor in German brand quality. Energy efficiency class IE3 from 0.75 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. Clockwise rotation.

Bearing/lubrication

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

1 Standard motor

IE3 motor from 0.75 kW.

Advantage: very high grade of efficiency.

2 PM motor

IE4/IE5 motor.

Advantage: very high grade of efficiency.

3 Water-cooled motor

Energy efficiency class depends on the temperature of the media.

Advantage: heat recovery.



1 Standard motor



2 PM motor



3 Water-cooled motor

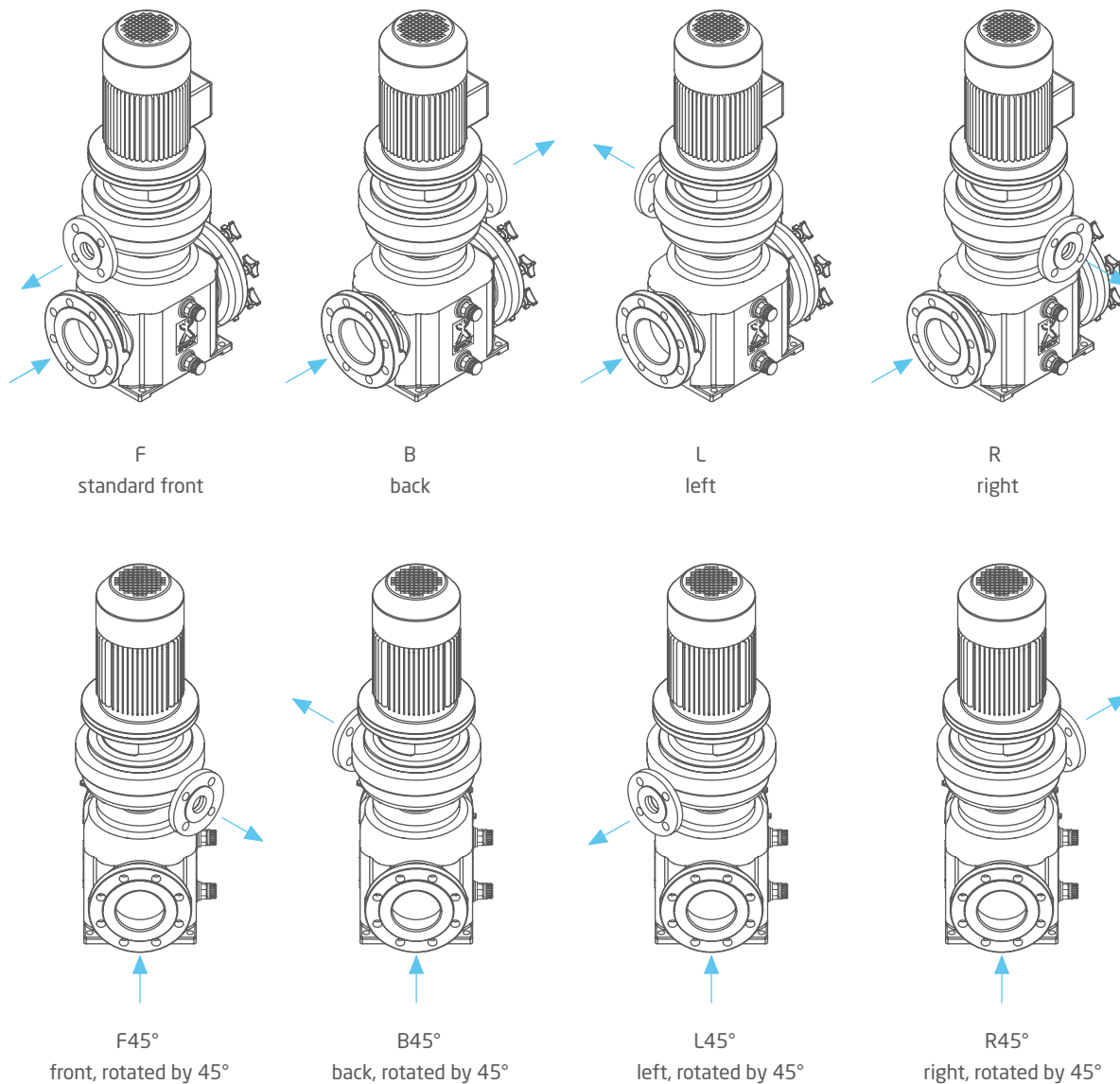
BADU® Block

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.





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 PA66 GF30 ¹⁾	tin bronze CC480K-GS PA66 GF30 ¹⁾

Subject to technical modifications.

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

¹⁾ 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

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 bellows-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
Elastomers NBR/Viton

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	0.54/0.30	0.65/0.45	0.87/0.55	1.10/0.75	1.40/1.00
Rated current (A)	1~ 230 V	2.40	2.90	4.00	5.20	6.70
Power input P ₁ /output P ₂ ¹⁾ (kW)	3~ Y/Δ 400/230 V	0.51/0.30	0.63/0.45	0.81/0.55	1.00/0.75	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
Net weight (kg)	1~/3~	10.00/9.00	10.00/10.00	11.00/11.50	13.00/12.00	16.50/13.50

For more detailed information regarding the motor protection please see page 96.

Technical data may vary.

Article no	Description	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

Universal opening device included in delivery.

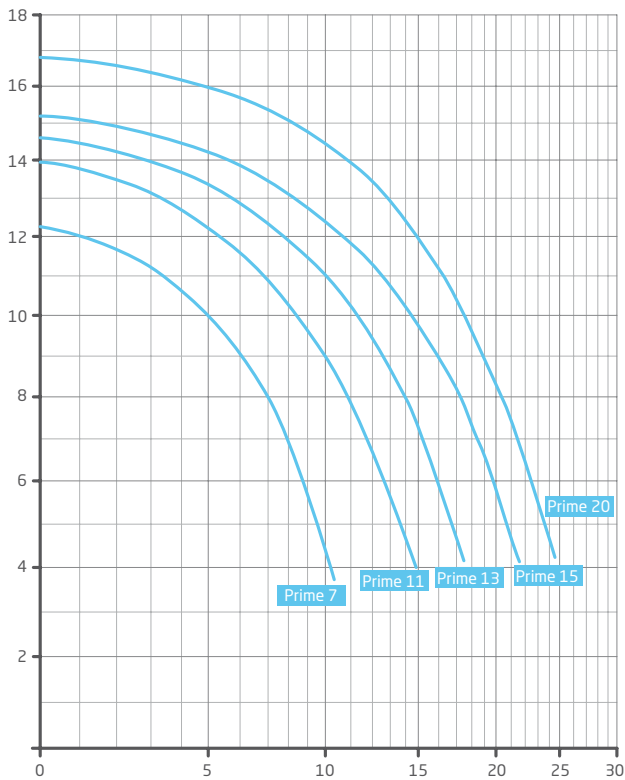
The above-mentioned pumps can be used for swimming pool water with a salt concentration of up to 0.5 % i.e. 5 g/l.
Please contact us for higher salt concentrations.



< Opening device included in delivery



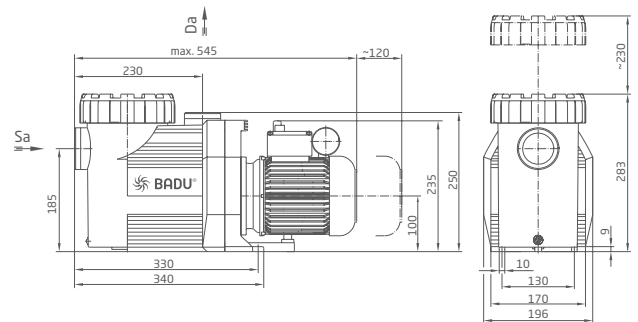
Performance



^ 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 bellows-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
Elastomers NBR/Viton

Technical data at 50 Hz	BADU Prime	25	30	40	48
Inlet Sa/outlet connection Da d ²⁾		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
Net weight (kg)	1~/3~	25.00/27.00	24.00/27.00	26.00/34.00	36.00/34.00

For more detailed information regarding the motor protection please see page 96.

Technical data may vary.

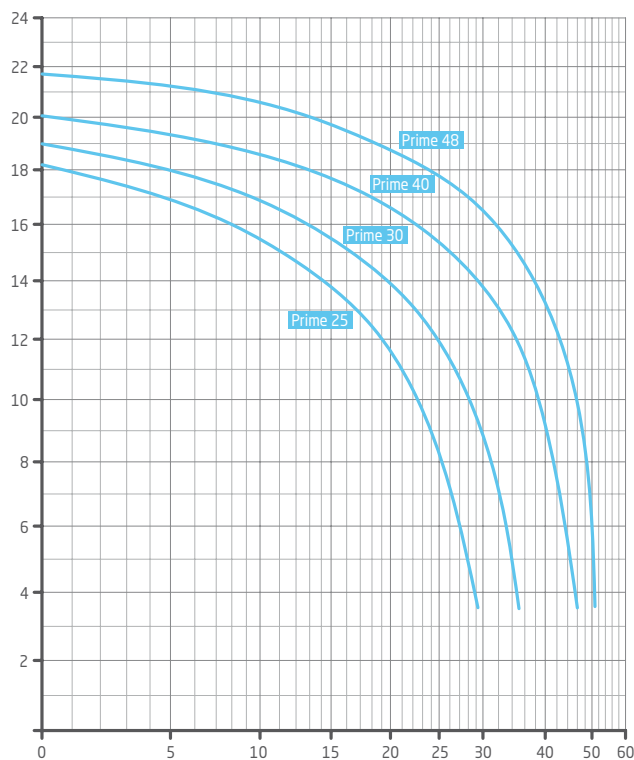
Article no	Description	Voltage	Power output P ₂
219.0258.038	BADU Prime 25	1~ 230 V	1.30 kW
219.0308.038	BADU Prime 30	1~ 230 V	1.50 kW
219.0408.038	BADU Prime 40	1~ 230 V	2.20 kW
219.0488.038	BADU Prime 48	1~ 230 V	2.60 kW
219.0258.037	BADU Prime 25	3~ Y/Δ 400/230 V	1.30 kW
219.0308.037	BADU Prime 30	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

Three-way 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.



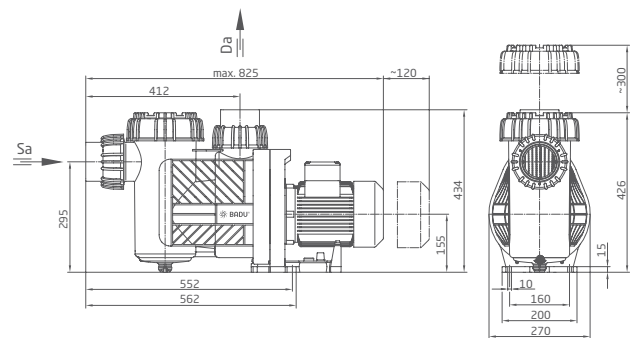
Performance



^ 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 bellows-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
Elastomers NBR/Viton

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 ²⁾		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
Net weight (kg)	3~	28.00	34.00	36.00	38.00	44.00	37.00	38.00	44.00	52.00

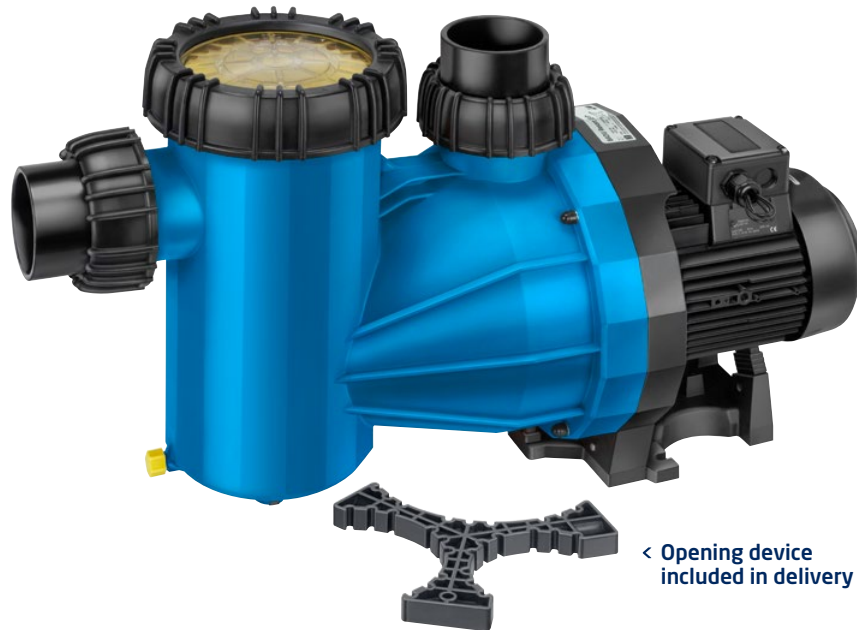
For more detailed information regarding the motor protection please see page 96.

Technical data may vary.

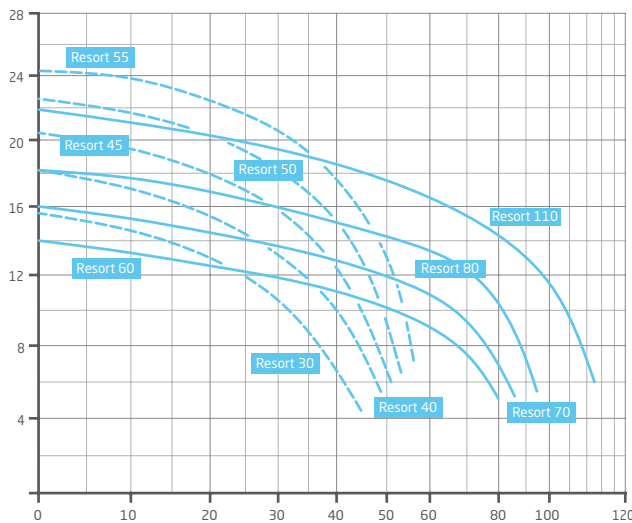
Article no	Description	Voltage	Power output P ₂
219.5308.037	BADU Resort 30	3~ Y/Δ 400/230 V	1.50 kW
219.5408.037	BADU Resort 40	3~ Y/Δ 400/230 V	2.20 kW
219.5458.037	BADU Resort 45	3~ Y/Δ 400/230 V	2.60 kW
219.5508.037	BADU Resort 50	3~ Y/Δ 400/230 V	3.00 kW
219.5558.037	BADU Resort 55	3~ Y/Δ 690/400 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

Three-way 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.



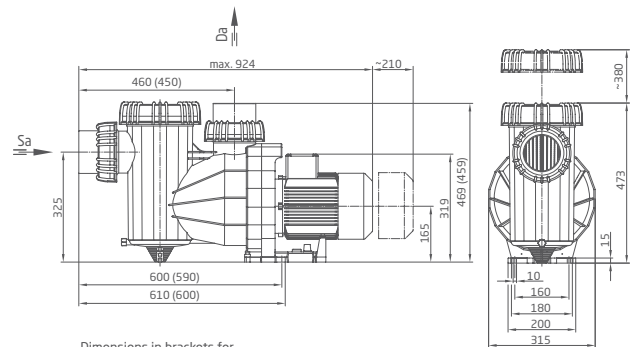
Performance



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

Dimensions

Detailed dimensions available on request or at badu.de



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 bellows-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 ²⁾		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	5.98/5.50
Rated current (A)	3~ 400 V	6.00	6.00	11.10
Net weight (kg)	3~	26.00	26.00	29.00

For detailed information regarding the motor protection please see page 96.

Can only be operated with a frequency converter. | Technical data may vary.

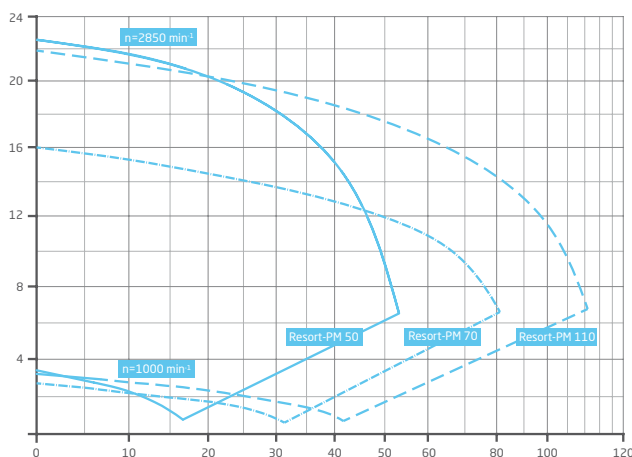
Article no	Type	Voltage	Power output P ₂
219.5508.137	BADU Resort 50-PM	3~ 400 V	3.00 kW
219.5708.137	BADU Resort 70-PM	3~ 400 V	3.00 kW
219.5118.137	BADU Resort 110-PM	3~ 400 V	5.50 kW
297.0075.402	Frequency converter BADU Eco Drive II for 0.75 kW	3~ 380-480 V	
297.0150.402	Frequency converter BADU 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		

Three-way 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.



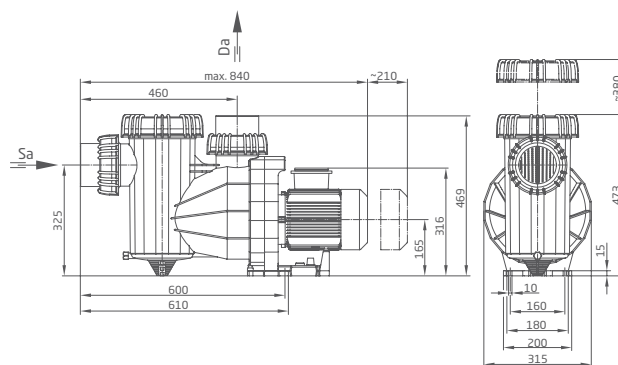
Performance



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

Dimensions

Detailed dimensions available on request or at badu.de



BADU® Delta-MK Eco VS

Sealless pump for the pool.
Speed controlled and quiet.

Fields of application

Swimming pool water circulation through a filter system.
The pump can be installed max. 1.5 m above or 3 m below water level.

Design

Monoblock-type pump with integrated strainer tank.
Motor/pump shaft has no contact with the pool water providing complete electrical separation.
Strainer tank capacity approx. 4 l
Strainer basket mesh size approx. 2.2 x 2.2 mm

Can be controlled with the BADU Eco Logic pump remote control.

Materials used

Pump casing PP GF 30
Intermediate housing/gland housing PP GF 30
Lid for gland housing PP GF 10
Can PP GF 30
Intermediate flange PP GF 30
Pump feet ABS GF 20
Unions/glue sockets ABS/PVC-U
Diffuser PP GF 30
Impeller PPE GF 30
Strainer basket PP
Lid PC, transparent/PA 66 GF 30
Slide bearing SiC/SiC
Elastomers NBR
Screws stainless steel

Technical data at 50/60 Hz	BADU Delta-MK Eco VS	
Inlet Sa/outlet connection Da ²⁾		63/63
Rec. inlet/outlet pipe, PVC pipe, d ²⁾		63/63
Power input P ₁ /output P ₂ ¹⁾ (kW)	1~ 230 V	0.48-1.80/0.37-1.40
Rated current (A)	1~ 230 V	2.15-7.80 ¹⁾
Net weight (kg)	1~	19.00

For more detailed information regarding the motor protection please see page 96.

¹⁾At speed n = 2000-3000 rpm | Technical data may vary.

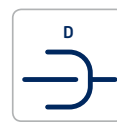
Article no	Description	Voltage	Power output P ₂
210.3281.438	BADU Delta-MK Eco VS	1~ 230 V	1.40 kW

Universal opening device included in delivery.

The above-mentioned pumps can be used for swimming pool water with a salt concentration of up to 8 % i.e. 5 g/l.
Please contact us for higher salt concentrations.



Transparent lid
with integrated
LED lighting

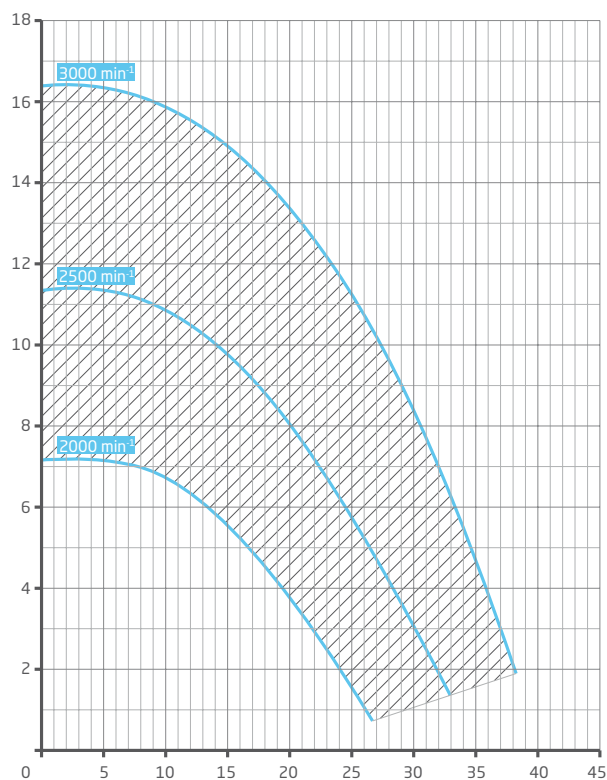


External motor control:
Digital potential-free

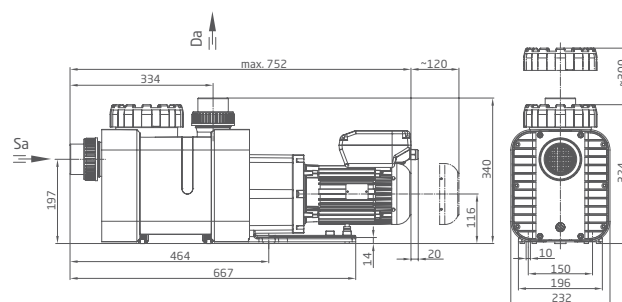
Performance

Dimensions

Detailed dimensions available on request or at badu.de



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



NORMBLOCK PE MAXIMUM COATED.

AVAILABLE FROM SPRING 2022.



Energy-efficient and corrosion-resistant -
a reliable partner even at high salt concentrations.

The innovative and new series: Normblock PE.

Normblock PE lifts the proven Normblock technology
to a higher level.

Benefits Normblock PE:

- > Pump in cast iron design with thermoplastic corrosion protection coating based on polyethylene.
- > Full diameter bronze impeller. Operating point individually adjusted via frequency converter.
- > Robust construction and solid finish.
- > Flexible attachment of IE3- and PM motors from 55,00 kW.
- > Maintenance-friendly plug-in shaft design.
- > Mechanical seal versions for special water treatments.

WHY ANTI-CORROSION COATING?

The new thermoplastic anti-corrosion coating based on polyethylene ensures very good resistance to swimming pool and thermal water and bathing water with high salt concentration, as well as good UV and weather resistance. Thanks to the high surface quality of the anti-corrosion coating, the new Normblock PE can withstand different usage requirements while maintaining a high level of efficiency.



Normblock PE

Performance features

1 Motor

Standard brand motor, optimised for the operating point with ball bearings that are lubricated for their whole operating life.

Further motor variations on page 47.

2 Plug-in shaft system

Motor can be replaced without having to completely disassemble the pump or having to dismantel the mechanical seal.

3 Pump shaft

Pump shaft made from stainless steel.

4 Mechanical seal

Liquid cooling and lubrication of the maintenance-free bellow-type mechanical seal ensures long durability and maintenance intervals.

5 Impeller

Closed full diameter bronze impeller for optimal smooth running and durability of the whole pump. The operating point is individually adjusted to the respective operating conditions via a frequency converter.

6 Pump material

Cast iron with thermoplastic corrosion protection coating based on polyethylene. Permanent corrosion protection and protection against aggressive media.

9 Drainage

Easy drainage without having to remove the pump.

> Detailed information regarding the Normblock Multi PE can be found on page 46.



^
Normblock PE

Normblock PE

Description

Field of application

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

- Open-air and indoor pools
- Thermal, therapeutic and health spas⁴⁾
- Pools with high salt concentrations⁴⁾
- Water treatment, e.g. filter unit construction
- Leisure facilities
- Attractions, e.g. water slides
- Shipbuilding⁴⁾
- Industry, e.g. cool water units⁴⁾
- Water supply, e.g. irrigation

Design

The Normblock PE 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).

> See page 48 for materials used.

Construction

Pump and replacable standard motor are flanged to one modular unit.

Paintwork

RAL 9016 white, RAL 9005 black.

Technical data

Flow rate Q up to max. 750 m³/h
 Dynamic head H up to 101 m
 Water temperature t max. 75 °C
 Maximum operating pressure .. p 10 bar
 Speed 50 Hz n approx. 1450 rpm/2900 rpm
 60 Hz n approx. 1750 rpm/3500 rpm

Construction sizes DN 32 up to 200

Flange

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

Noise generation

Sound intensity and sound pressure level are mainly influenced by the motor and the pump and especially by the installation conditions and the respective 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 PE is installed horizontally in the pipe network.
Vertical installation with the motor facing downwards is not permitted.

Types

Normblock PE 32/ 160
 Normblock PE 40/ 160, 200
 Normblock PE 50/ 160
 Normblock PE 65/ 200, 250
 Normblock PE 80/ 160, 200, 250
 Normblock PE 100/ 200
 Normblock PE 125/ 200, 250
 Normblock PE 150/ 250

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



Motor

Motor

Directly-mounted, low noise, surface-cooled and removable DIN-IEC motor in German brand quality. Energy efficiency class IE3 from 0.75 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/IM B 5
Protection class	IP 55
Idle speed	1450/1750 rpm 2900/3500 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. Clockwise rotation.

Bearing/lubrication

Motors up to construction size 180 have sufficiently dimensioned, maintenance-free, deep groove ball bearings according to DIN 625 with permanent grease lubrication.

1 Standard motor

IE3 motor from 0.75 kW.

Advantage: very high grade of efficiency.

2 PM motor

IE4/IE5 motor.

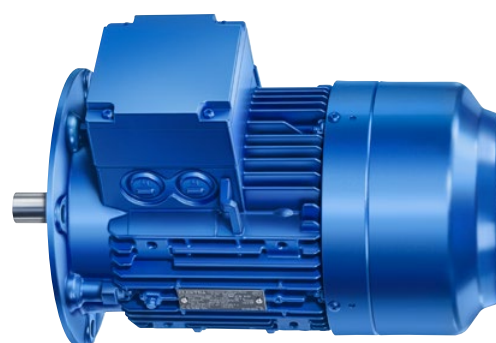
Advantage: very high grade of efficiency.

3 Water-cooled motor

Energy efficiency class depends on the temperature of the media.

Advantage: heat recovery.

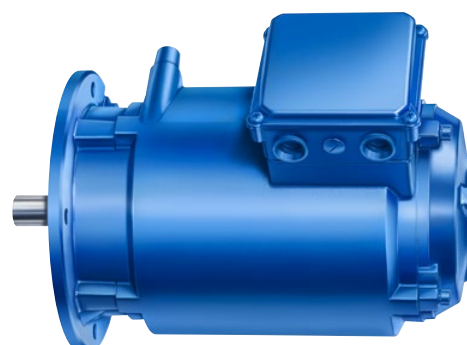
> Motor design only available on request.



1 Standard motor



2 PM motor



3 Water-cooled motor

Normblock PE

Materials used

Design	Normblock PE
Casing parts	cast iron EN-JL 1040 with PE-coating
Impeller	tin bronze CC480K-GS
Mechanical seal	SiC/SiC/HNBR
Wear rings	CC495K-GS
Pump shaft	stainless steel 1.4571
Shaft protection sleeve	stainless steel 1.4571
Motor lantern	cast iron EN-JL 1040

Subject to technical modifications.



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 for filtration and filter rinsing 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



Typs

Normblock 25/ 160, 200
 Normblock 32/ 125, 160, 200, 250
 Normblock 40/ 125, 160, 200, 250, 315
 Normblock 50/ 125, 160, 200, 250, 315

Normblock 65/ 125, 160, 200, 250, 315
 Normblock 80/ 160, 200, 250, 315, 400
 Normblock 100/ 160, 200, 250, 315, 400
 Normblock 125/ 200, 250, 315, 400
 Normblock 150/ 200, 250, 315, 400

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.

NORMBLOCK MULTI MAXIMUM STABILITY.



Corrosion-resistant - even at high salt concentrations.

Permanently improved efficiency due to new surface qualities.

The innovative, all-plastic concept of the Normblock Multi

lifts the proven Normblock technology,

to a completely unique level.

Benefits of the Normblock Multi:

- > Pump in all-plastic design.
- > Wetted parts made of optimised high-performance technical plastic (THP) - permanently robust, maintenance-free and economical.
- > Pump shaft does not come into contact with the pump liquid.
- > Corrosion-resistant and low-wear, even at high salt concentrations.
- > Maintenance-friendly plug-in shaft design.
- > Flexible attachment of IE3 and PM motors from 2.20 to 22.00 kW.
- > Individual mechanical seal versions for special water treatments.

WHY PLASTIC?

Our aim was to enhance the Normblock concept, which has proven itself thousands of times, and eliminate systemic disadvantages. Resistant to high salt concentrations, less weight, less wear, less maintenance - more flexibility. The all-plastic design of the new Normblock Multi offers better performance in every respect.



Normblock Multi

Performance features

1 Motor

Standard brand motor, optimised for the operating point with ball bearings that are lubricated for their whole operating life.

Further motor variations on page 55.

2 Plug-in shaft system

Motor can be replaced without having to completely disassemble the pump or having to dismantel 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

Liquid cooling and lubrication of the maintenance-free bellow-type mechanical seal ensures long durability and maintenance intervals.

5 Impeller

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

6 Pump material

THP (high-performance technical plastic).

Permanent corrosion protection and protection against aggressive media for all wetted parts due to all-plastic design.

7 Auxiliary connections

Holes for additional connections e.g. pressure gauge.

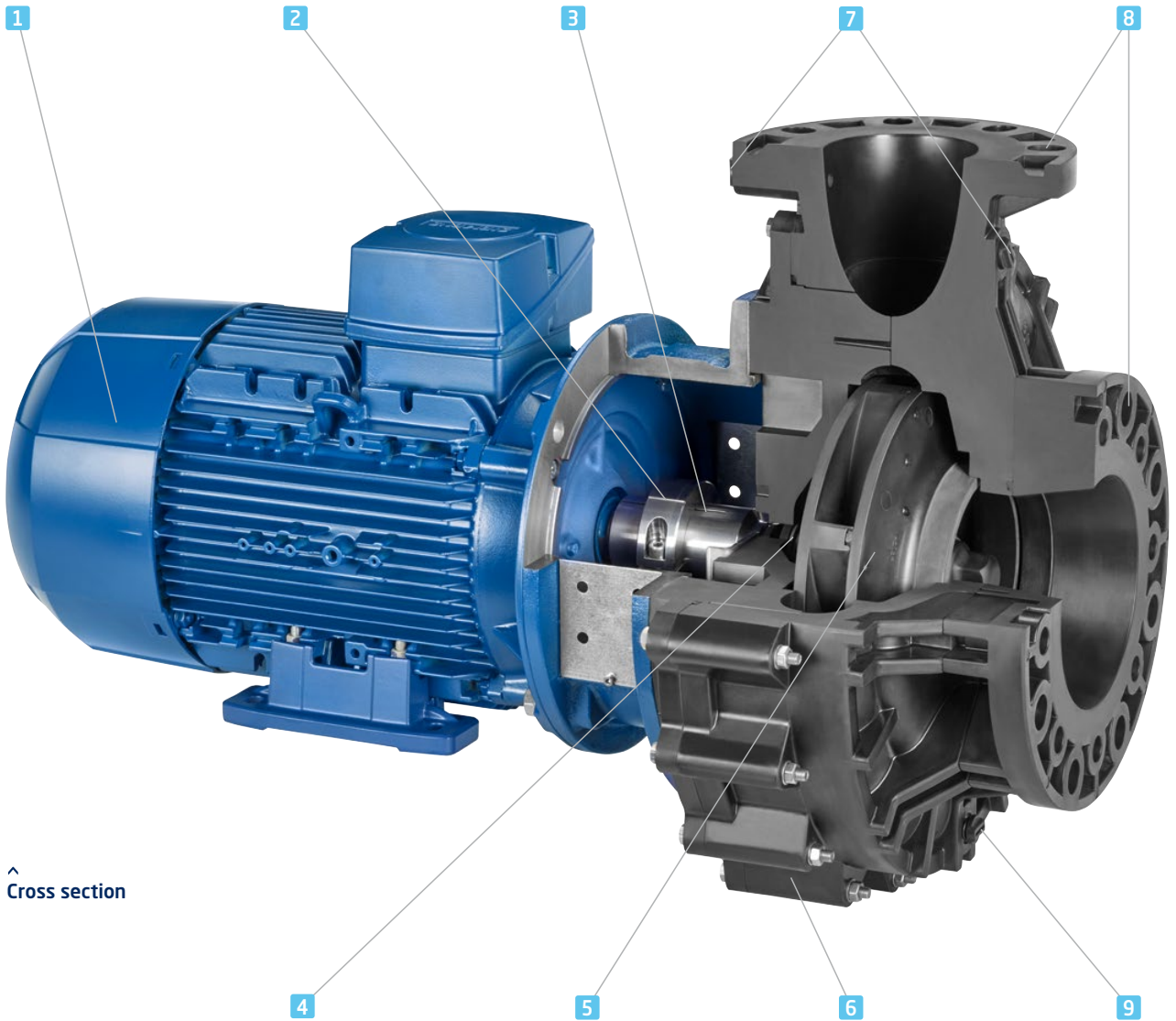
8 Connections

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

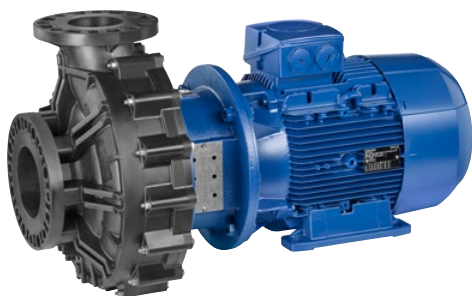
9 Drainage

Easy drainage without having to remove the pump.

> Detailed information regarding the Normblock Multi can be found on page 54.



^
Cross section



^
Normblock Multi

Normblock Multi

Description

Field of application

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

- Open-air and indoor pools
- Thermal, therapeutic and health spas⁴⁾
- Pools with high salt concentrations⁴⁾
- Water treatment, e.g. filter unit construction
- Leisure facilities
- Attractions, e.g. water slides
- Shipbuilding⁴⁾
- Industry, e.g. cool water units⁴⁾
- Water supply, e.g. irrigation

Design

The Normblock Multi 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).

> See page 56 for materials used.

Construction

Pump and replacable standard motor are flanged to one modular unit.

Paintwork

RAL 5002, ultramarine blue.

> Customised paintwork on request.

Technical data

Flow rate	Q	up to max. 450 m ³ /h
Dynamic head	H	up to 24 m
Water temperature	t	max. 40 °C
Maximum 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 80/200.....	DND 80/DNS 100
Normblock Multi 100/250.....	DND 100/DNS 125
Normblock Multi 125/250	DND 125/DNS 150

Flange

compatible with EN 1092-2 PN-16 and ASME

Noise generation

Sound intensity and sound pressure level are mainly influenced by the motor and the pump and especially by the installation conditions and the respective 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 Multi is installed horizontally in the pipe network. **Vertical installation with the motor facing downwards is not permitted.**

Types

Normblock Multi 65/250
Normblock Multi 80/200
Normblock Multi 100/250
Normblock Multi 125/250

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



Motor

Motor

Directly-mounted, low noise, surface-cooled and removable DIN-IEC motor in German brand quality. Energy efficiency class IE3 from 0.75 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. Clockwise rotation.

Bearing/lubrication

Motors up to construction size 180 have sufficiently dimensioned, maintenance-free, deep groove ball bearings according to DIN 625 with permanent grease lubrication.

1 Standard motor

IE3 motor from 0.75 kW.

Advantage: very high grade of efficiency.

2 PM motor

IE4/IE5 motor.

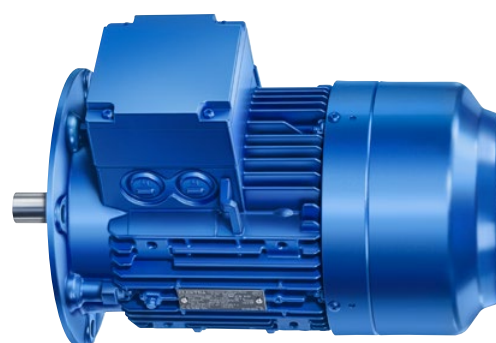
Advantage: very high grade of efficiency.

3 Water-cooled motor

Energy efficiency class depends on the temperature of the media.

Advantage: heat recovery.

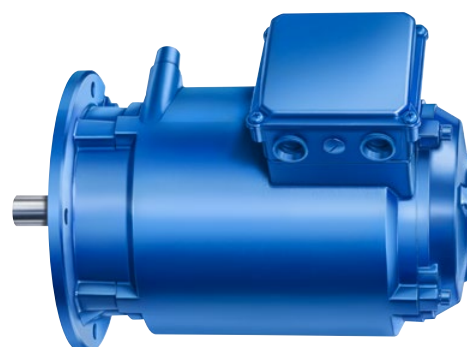
> Motor design only available on request.



1 Standard motor



2 PM motor



3 Water-cooled motor

Normblock Multi

Materials used

Design	Normblock Multi	Normblock Multi S
Casing parts	THP, PPE GF 30, PP GF 30	THP, PPE GF 30, PP GF 30
Impeller	THP, PPE GF 30	THP, PPE GF 30
Mechanical seal	carbon/SiC/EPDM	SiC/SiC/EPDM
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

Subject to technical modifications.

Normblock Multi S for the use with at high salt concentrations and with thermal water.

Normblock Multi FA/S FA



All-plastic monoblock pump with horizontal prefilter.
Innovative attraction pump with large filter volume.

Field of application

Swimming pool water circulation for filtration and filter rinsing 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 Multi FA pump is a non-self-priming, single-stage, volute casing pump including horizontal pre-filter with performance classification and main dimensions according to NF E 44-112 and DIN EN 733 (replacement for DIN 24255).

Performance

up to 450 m³/h

Typs

Normblock Multi FA 100/250
Normblock Multi FA 125/250
Normblock Multi S FA 100/250
Normblock Multi S FA 125/250



Materials used

Design	Normblock Multi FA	Normblock Multi S FA
Casing parts	THK, PPE GF 30	THK, PPE GF 30
Impeller	THK, PPE GF 30	THK, PPE GF 30
Mechanical seal	carbon/SiC/EPDM	SiC/SiC/EPDM
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	PP GF 30	PP GF 30
Lid	PC, transparent	PC, transparent
Strainer basket	PP GF 30	PP GF 30

Subject to technical modifications.

Normblock Multi S FA for the use with at high salt concentrations and with thermal water.

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	0.63/0.45	0.97/0.65
Rated current (A)	3~ Y/Δ 400/230 V	0.95/1.65	1.25/2.15	1.75/3.00
Net weight (kg)	1~/3~	7.00/6.00	7.00/6.00	9.00/9.00

For detailed information regarding the motor protection please see page 96.

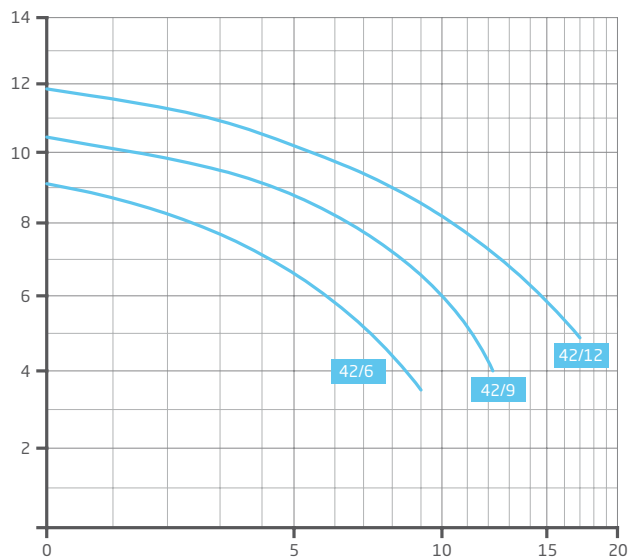
Technical data may vary.

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.



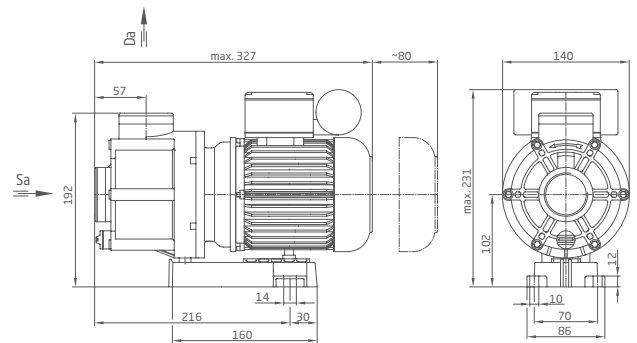
Performance



^ 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 bellows-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
Net weight (kg)	1~/3~	17.00/13.00	17.00/14.00	19.00/17.00	14.00/17.00	17.00/19.00	29.00/16.00

For detailed information regarding the motor protection please see page 96.

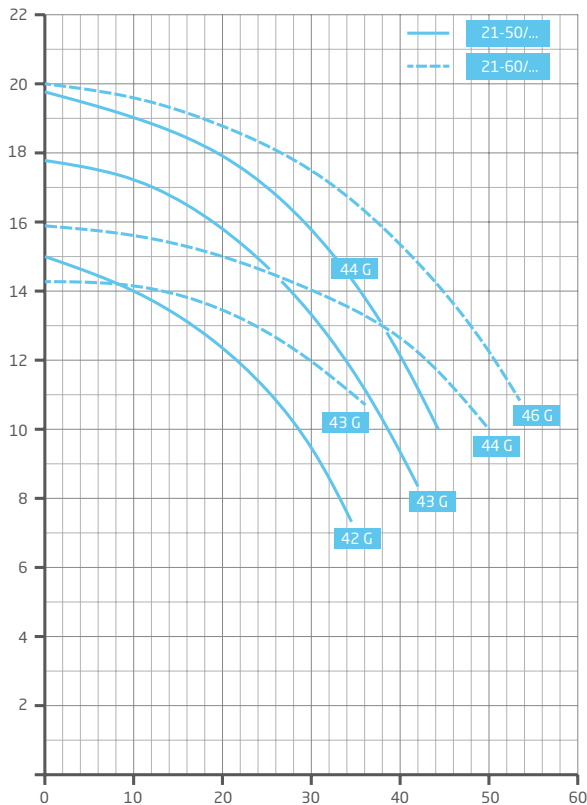
Technical data may vary.

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.



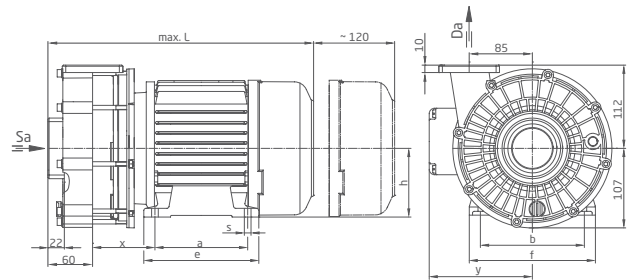
Performance



^ 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 ¹⁾	-/-
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
Net weight (kg)	1~/3~	17.00/15.00	18.00/24.00	-/19.00	30.00/27.00	-/35.00

For detailed information regarding the motor protection please see page 96.

¹⁾Start-up current approx. 82 A. | ²⁾Pumps also available with Ø 82 mm hose connections.

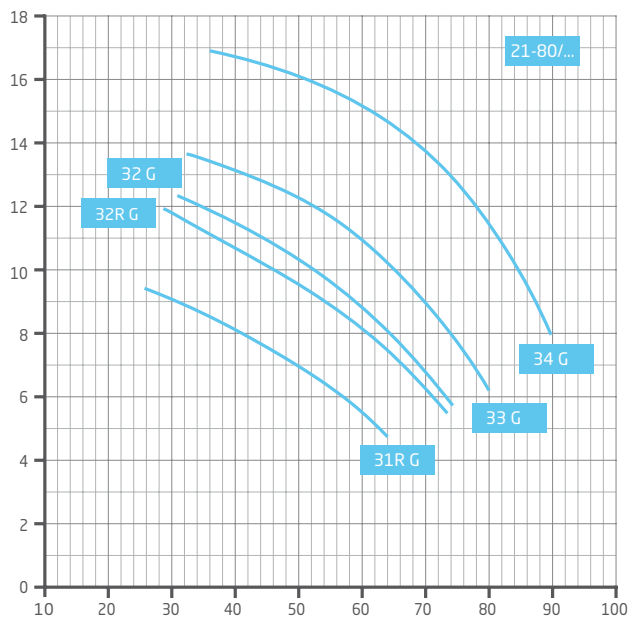
Technical data may vary.

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.



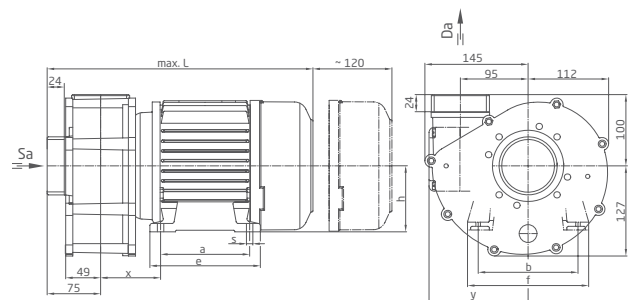
Performance



^ 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

BADU® M3 Eco Soft

Self-priming, corrosion-resistant, energy-efficient.
Speed-controlled metering water pump with different performance levels.

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. 1.0 l
Strainer basket mesh size approx. 2.8 x 2.8 mm

Materials used

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

Technische Daten bei 50 Hz/60 Hz	BADU	M3 Eco Soft
Inlet dS/outlet connection dD glue sockets		32/25
Rec. inlet/outlet pipe, PVC pipe, d		50/50
Power input P ₁ /output P ₂ ¹⁾ (kW)	1~ 230 V	0.04-0.75/0.02-0.50
Rated current (A)	1~ 230 V	0.30-3.20
Net weight (kg)	1~	7.00

For detailed information regarding the motor protection please see page 96.

¹⁾Special unions with glue sockets are included in delivery. | Technical data may vary.

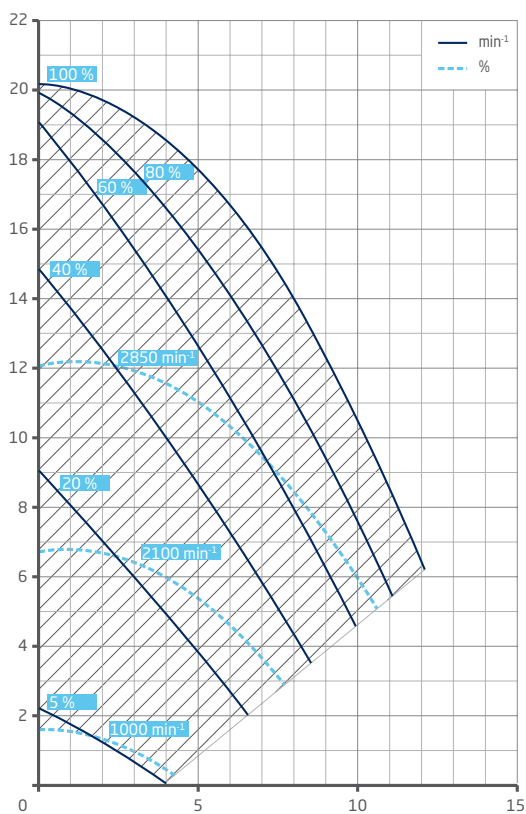
Article no	Type	Voltage	Power output P ₂
210.4004.038	BADU M3 Eco Soft	1~ 230 V	0.50 kW

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.



^ Highly efficient motor with built-in frequency converter. Can be controlled externally.

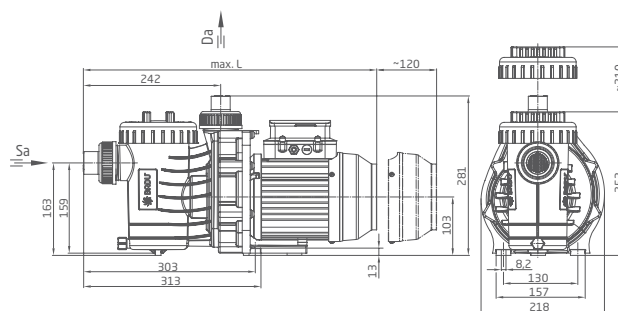
Performance



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

Dimensions

Detailed dimensions available on request or at badu.de



M1/M2

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

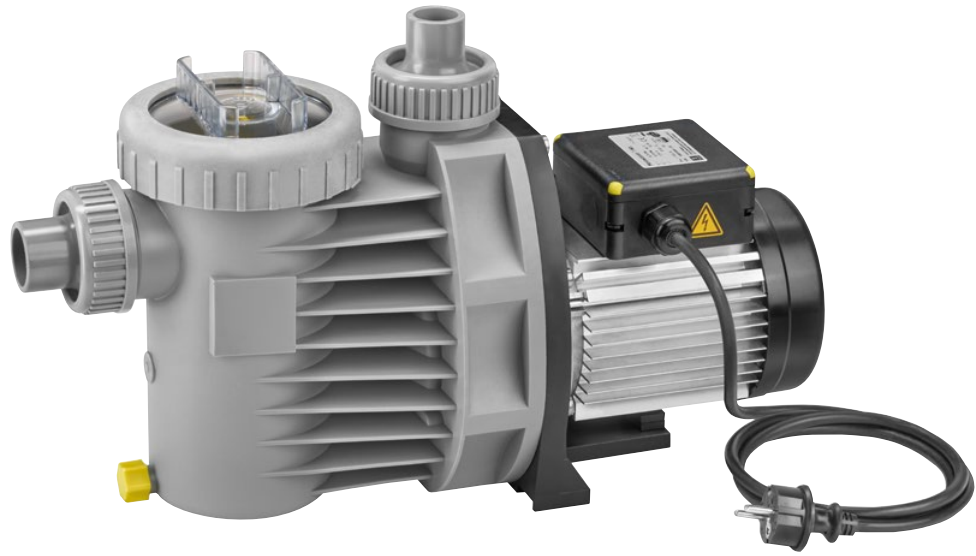
Technical data at 50 Hz	BADU	M1	M2
Inlet dS/outlet connection dD glue sockets		32/25 ^{*)}	32/25 ^{*)}
Rec. inlet/outlet pipe, PVC pipe, d		50/50	50/50
Power input P ₁ /output P ₂ ¹⁾ (kW)	1~ 230 V	0.35/0.18	0.45/0.25
Rated current (A)	1~ 230 V	1.95	2.30
Net weight (kg)	1~	8.00	8.00

For detailed information regarding the motor protection please see page 96.

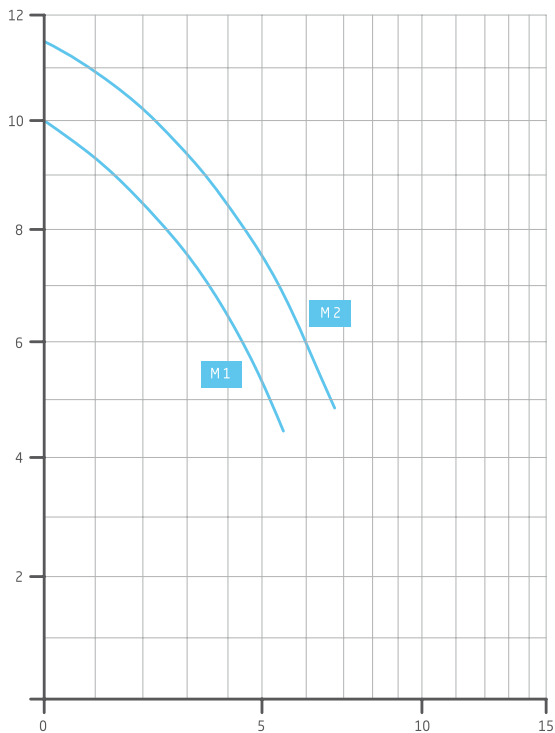
^{*)} Special unions with glue sockets are included in delivery. | Technical data may vary.

Article no	Type	Voltage	Power output P ₂
219.1040.838	M1	1~ 230 V	0.18 kW
219.1060.838	M2	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.



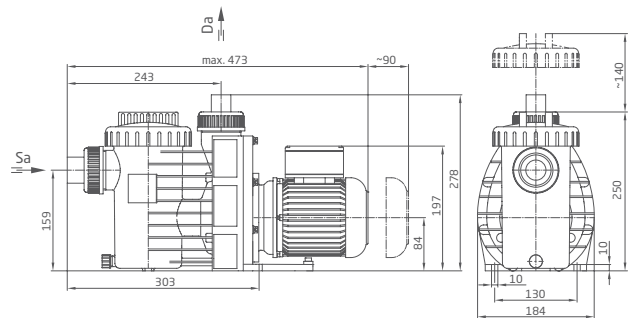
Performance



^ 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) ¹⁾		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
Net weight (kg)	1~	5.00

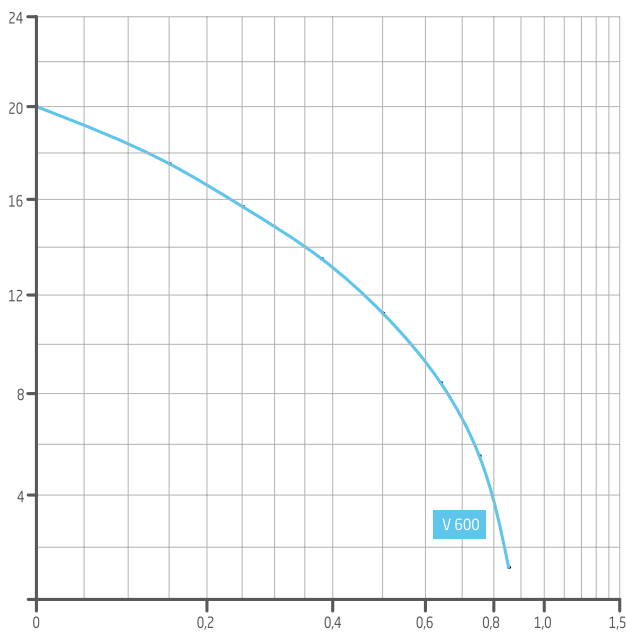
For detailed information regarding the motor protection please see page 96. ¹⁾Threads according to DIN ISO 228, part 1. Seal with additional sealing ring. | Technical data may vary.

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.



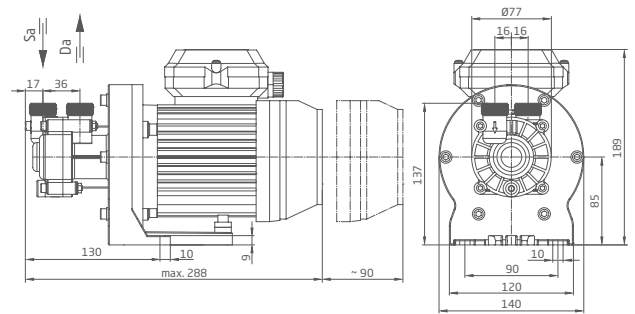
Performance



^ 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
Net weight (kg)	1~	12.50

For detailed information regarding the motor protection please see page 96.

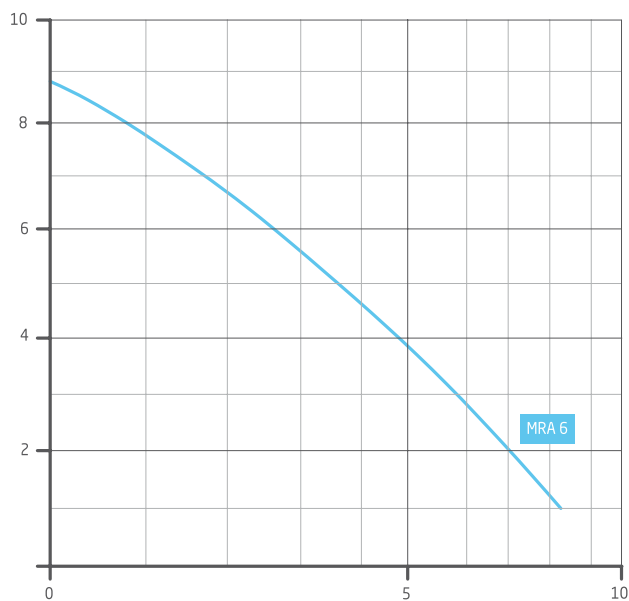
Technical data may vary.

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.



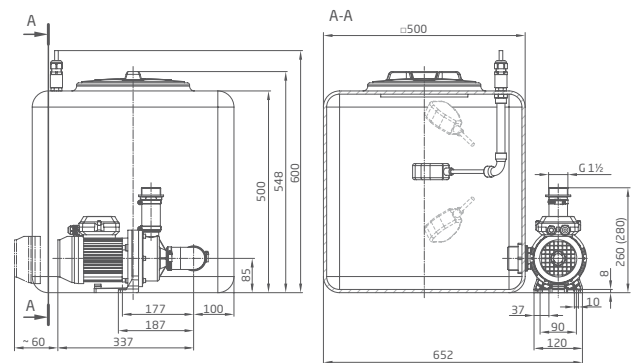
Performance



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

Dimensions

Detailed dimensions available on request or at badu.de



IN-VB/IN-VC/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	up to 2.20 kW: 230 V Δ/400 V Y
.....	+/- 10 %
Voltage	from 3.00 kW: 400 V Δ/690 V Δ
.....	+/- 10 %
Class of insulation	F
Cooling air temperature	max. 40 °C

Technical data

Flow rate	Q up to max. 160 m ³ /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/IN-VC

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/IN-VC-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/IN-VC

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.

Dry run protection

A dry run protection is included in delivery.

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.

Plant piping

Completely in stainless steel for swimming pool water*).

> *) Available optionally at an extra cost.

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

> 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 frequency. 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. The booster unit is equipped with dry run protection which 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 achieved using a frequency converter built onto the motor, display (from 5.50 kW) and keyboard.

Multicell 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 50 °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

A dry run protection is included in delivery.

Plant piping

Completely in stainless steel for swimming pool water*).

> *) Available optionally at an extra cost.

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



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 achieved 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.

BADU® 21-80/33 G-AK OL

Reliable, powerful and light in weight.
Sewage water pump made of plastic and in AK version.

Field of application

In corrosive environments and especially for brine water.

Design

Close-coupled pump with open impeller and closed bellow-type mechanical seal, mounted on a plastic shaft. Motor/pump shaft has no contact with the pool water providing complete electrical separation. Drive-pump separation for longer operating life. This means: The gland housing is not mounted directly to the A-side motor bearing, but is separated from the motor by an intermediate lantern and labyrinth disk. Thus, leaking medium and crystallizing minerals or salts cannot come into contact with the motor and its bearing.

Special sealing materials 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	SiC/SiC/Viton
Motor shaft	stainless steel
Screws	galvanised steel

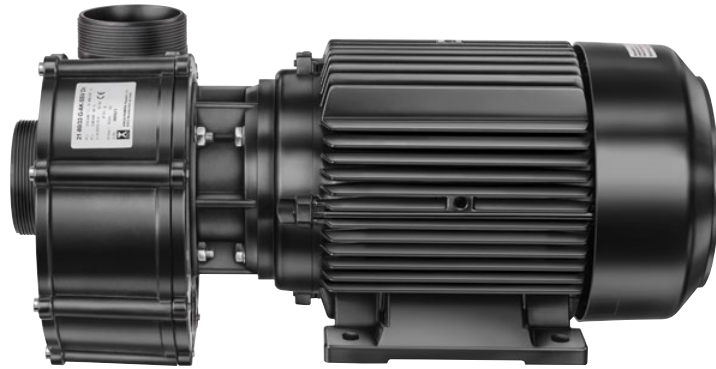
Technical data at 50 Hz	BADU 21-80/	33 G-AK OL
Inlet Sa/outlet connection Da R ²⁾		2 ³ / ₄ /2 ³ / ₄ ¹⁾
Rec. inlet/outlet pipe, PVC pipe, d		140/110
Power input P ₁ /output P ₂ ¹⁾ (kW)	3~ Y/Δ 400/230 V	3.45/3.00
Rated current (A)	3~ Y/Δ 400/230 V	6.20/10.70
Net weight (kg)	3~	32.00

For detailed information regarding the motor protection please see page 96.

¹⁾Pumps also available with Ø 82 mm hose connections. | Technical data may vary.

Article no	Type	Voltage	Power output P ₂
238.0333.243	BADU 21-80/33 G-AK OL	3~ Y/Δ 400/230 V	3.00 kW
238.0333.247	Version with PTC for frequency converter operation		

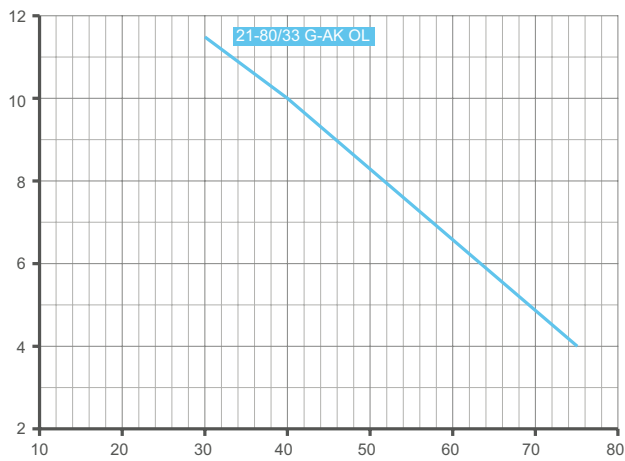
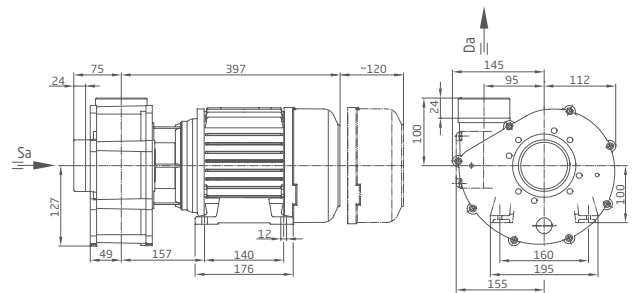
The above-mentioned pumps can be used for swimming pool water with a salt concentration of up to 0.5 % i.e. 5 g/l. Please contact us for higher salt concentrations.



Performance

Dimensions

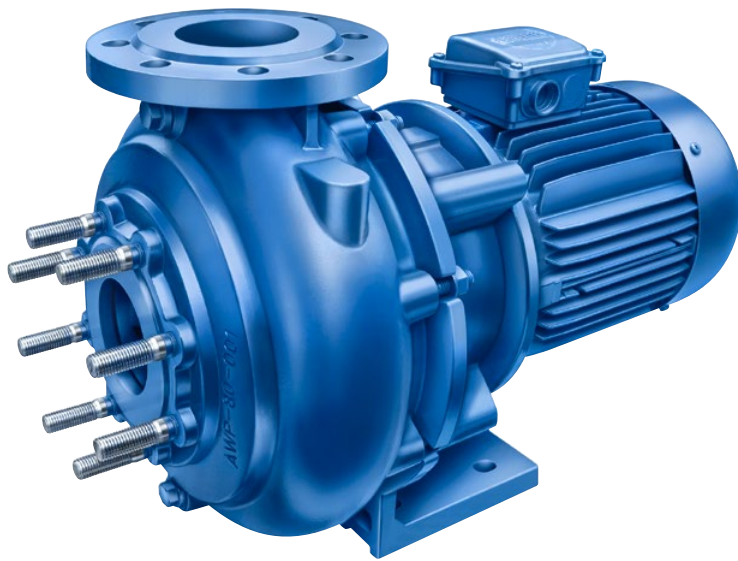
Detailed dimensions available on request or at badu.de



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

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 P₂ 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

Technical data

Flow rate Q up to max. 55 m³/h
Dynamic head H up to max. 21.5 mWs
Water temperature t up to max. 40 °C
Impeller grain size max. 50 mm

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

BADU[®] ADDED VALUE

Discover the difference with BADU. It all comes down to detail.

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 . BADU Block Multi .	
BADU Block Multi S . BADU Block Multi Mar	84
BADU Suction safety system	85
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BADU® Block / Block Multi (S) / 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



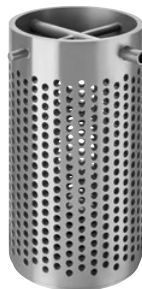
2



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 system 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 96.

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

BADU® VTLS

Fully automatic dry run protection -
automated venting.



Field of application

For attaching to the series

- BADU Block Multi
- BADU Block
- Normblock Multi
- Normblock

where the vent line has been led out to vent the mechanical seal.

Design

- Electronic control with modern terminal connection technology.
- Automatic venting via electric ball bearing.

Performance features

- Manual venting is no longer necessary.
- Fully automatic monitoring via the pump control because the unit is connected directly. This means that if air has accumulated in the pump via the suction line, the dry running protection switches it off and opens the vent valve.
- The control is carried out via conductive sensors and a control switch box.

Control functions

- Dry run protection and venting. Short venting intervals can also be programmed for example once a day or once a week.
- Manual quick venting is possible.
- potential-free contact for connection to the frequency converter.

Article no	Type	Voltage
271.6607.004	BADU VTLS	1~ 230 V

For detailed information regarding the motor protection please see page 96.



^
Switch box for connection to pump control

Vent line

Motor ball valve

Quick vent

Conductive probe control



^
BADU Block Multi with VTLS

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 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
Net weight (kg)		8.00	9.00	9.00	10.00	14.00

For detailed information regarding the motor protection please see page 96.

Article no	Type	Voltage
297.0075.412	Frequency converter BADU Eco Drive II for 0.75 kW	3~ 380-480 V
297.0150.412	Frequency converter BADU Eco Drive II for 1.50 kW	3~ 380-480 V
297.0220.412	Frequency converter BADU Eco Drive II for 2.20 kW	3~ 380-480 V
297.0400.412	Frequency converter BADU Eco Drive II for 4.00 kW	3~ 380-480 V
297.0550.412	Frequency converter BADU Eco Drive II for 5.50 kW	3~ 380-480 V
297.0000.001	Programming flat rate BADU Eco Drive II	3~ 380-480 V

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

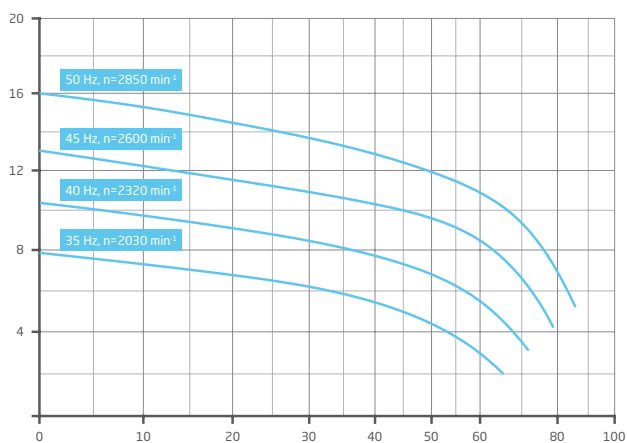


Graphic display >



Performance

Characteristics calculated for the BADU Resort 70 at different frequencies.



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

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.

BADU[®] FOR YOU

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 ...

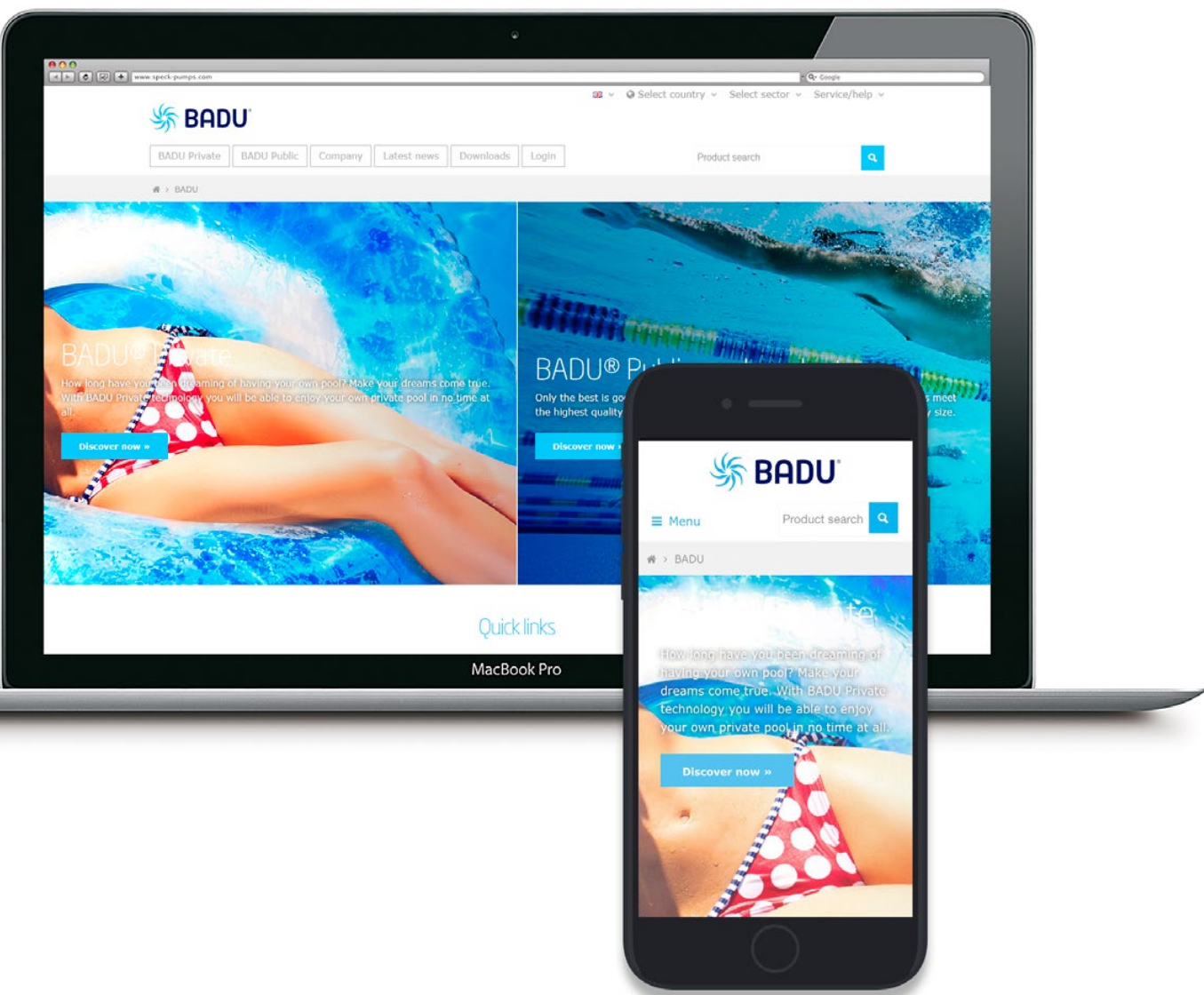


SERVICE

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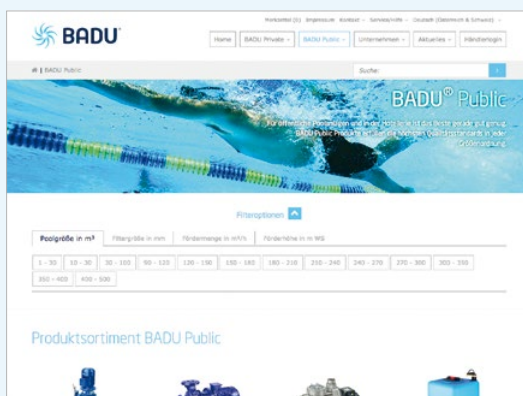
BADU.DE

POOL TECHNOLOGY ONLINE.



Simply scan the QR code and experience the new website.

In order to plan your project you need a sound knowledge.
 BADU is there for you, simply and flexibly; online, at your desk,
 on the go or on site; with know-how and competence
 based on over 50 years' experience.



1



2

BADU.DE ...

- > All BADU products for communal and public pools, in detail.
- > Modern design, clearly presented and simple to operate.
- > Useful tools for searching, planning and technical details.
- > Practical quicklinks to find important information quickly.
- > Upcoming trade fair dates.

1 PRODUCT SEARCH

Find BADU products for your field of application. With the filter options you can select the pool size, filter size, flow rate or dynamic head.

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 uncompromising quality and always has access to the entire content.

SPECK SELECT

PUMP

CONFIGURATION.

SPECK X
pumpen

Pumpen-Technologien und -Lösungen ...



pumpen auswahlprogramm
pump selection programme
speck select 2.8



Simply scan the QR code and request your download.



Simply scan the QR code and watch the tutorial.



The programme for professional pump configuration.

Configure the optimum pump for your project,

comfortably and easily.

For all SPECK Pumpen applications.

The programme is available for you to download from our website.

With YouTube video tutorial on how to use the software.

SPECK SELECT ...

- > For all application areas
 - BADU swimming pool private
 - BADU swimming pool public
 - Domestic technology
 - Industrial technology
 - Aquaculture.
- > Configuration programme with product descriptions, dimensional drawings and tender specifications for each product.
- > The programme can be
 - downloaded as a zip file from our website.
 - then installed on your computer.
- > System requirements
 - 500 MB RAM
 - approx. 1 GB hard drive space
 - Acrobat Reader 7.0 or newer
 - Windows 10, 8, 7, Vista, XP.

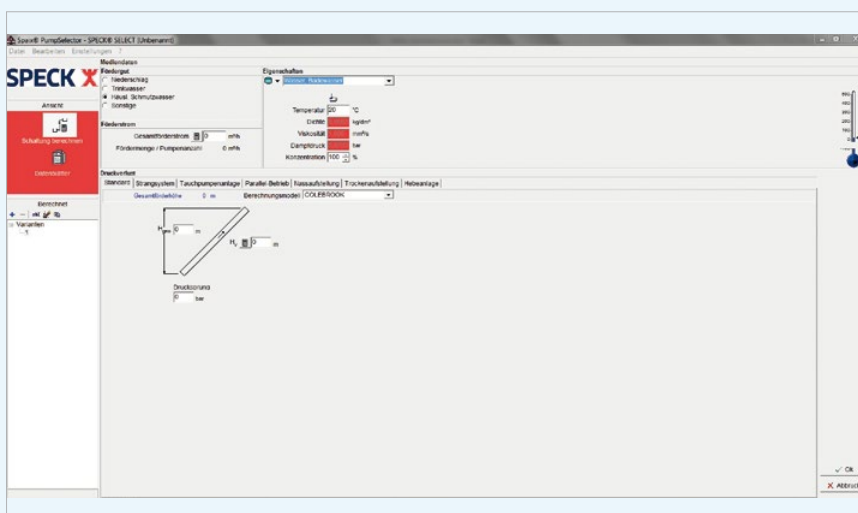
With the SPECK SELECT pump selection programme you can select and configure the optimum pump for every application comfortably and easily. Detailed product descriptions, dimensional drawings and tender specifications for the respective pumps are stored.

You can download SPECK Select free of charge from our website:

**www.speck-pumps.com | Latest news |
SPECK Select pump configuration**

Further pump types for a variety of specific applications can be found on our website:

speck-pumps.com



SPECK SELECT with Pipe Calc ...

Motor/device protection classifications

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

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 Resort-PM, BADU Delta-MK Eco VS, BADU M3 Eco Soft

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 21-50, BADU 21-60, BADU 21-80, BADU 21-80/33 G-AK OL

Motor protection class IP 55
 Class of insulation F
 Approx. motor speed (rpm) 2850
 Max. water temperature (°C) 60³⁾
 Max. casing pressure (bar) 2.5

M 1 / M 2

Motor protection class IP 55
 Class of insulation F
 Approx. motor speed (rpm) 2840
 Max. water temperature (°C) 60³⁾
 Max. casing pressure (bar) 2.5

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.

MRA 6

Motor protection class IP 55
 Class of insulation F
 Approx. motor speed (rpm) 2840
 Max. water temperature (°C) 60³⁾

BADU Suction safety system, BADU VTLS

Device protection class IP X4

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 over-load 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

Characteristics measured according to EN ISO 9906;

Flow rate Q = ± 10 %, total dynamic head H = ± 8 %.

Self priming pumps are tested according to DIN EN 16713-2.

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

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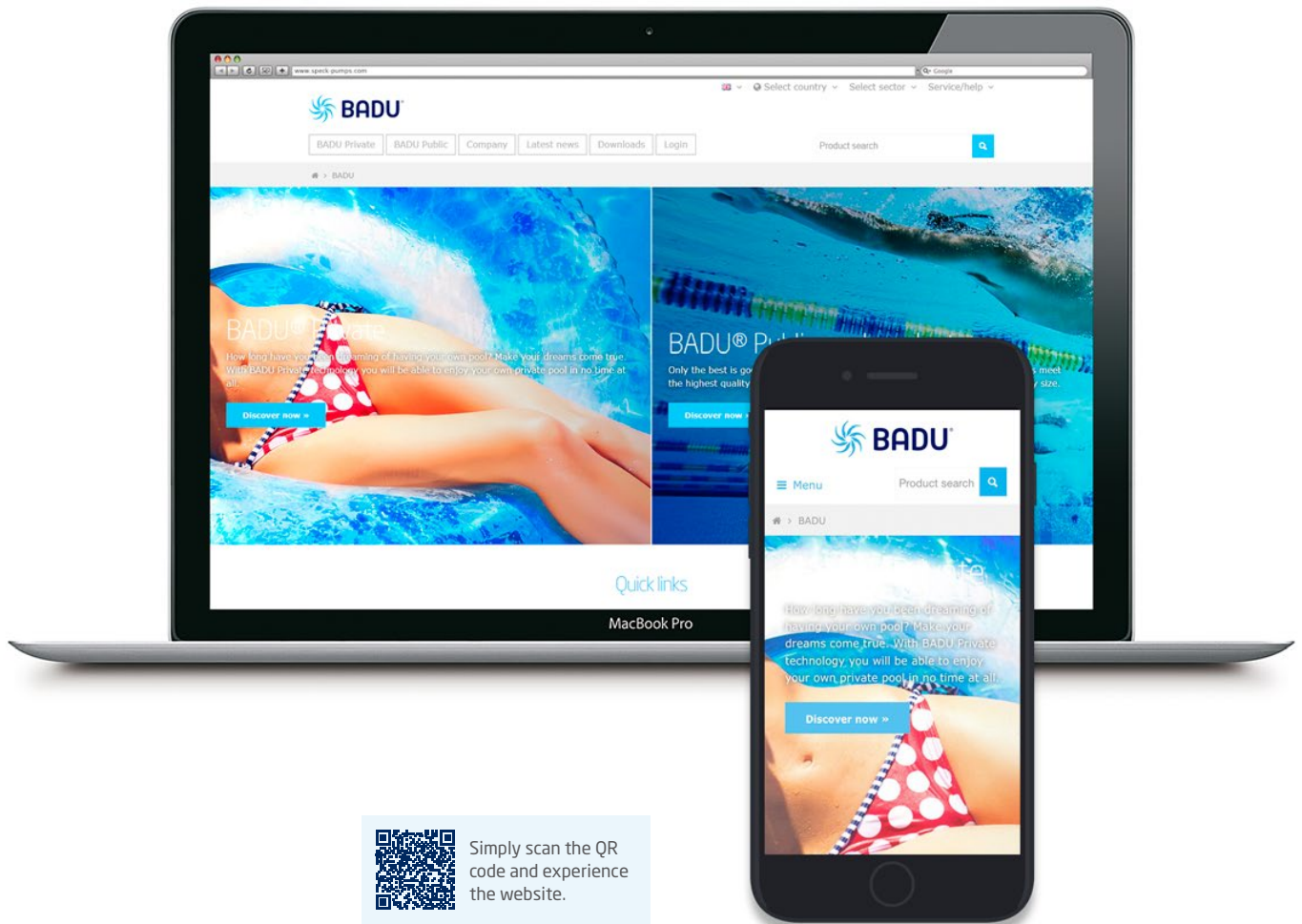
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