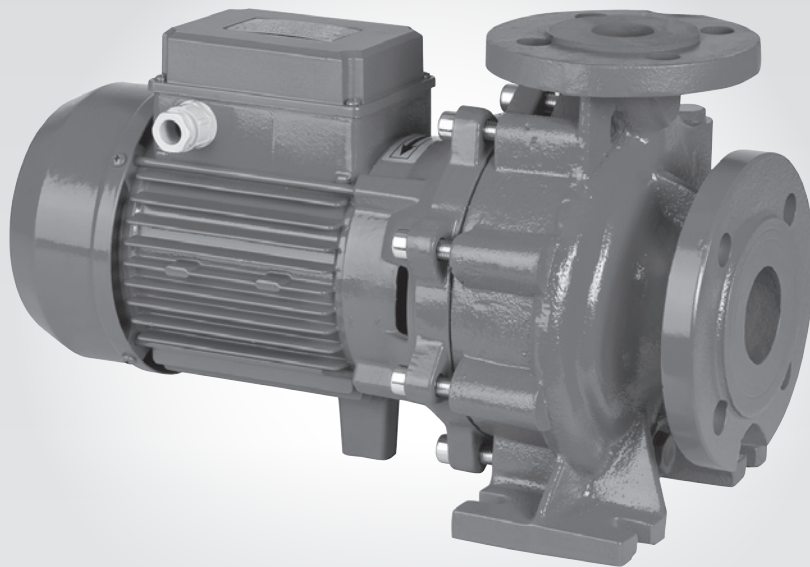
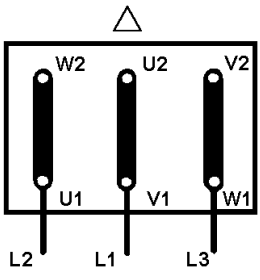


Wilo-BM, BM-B, BM-S

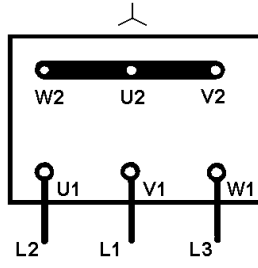


- de** Einbau- und Betriebsanleitung
- en** Installation and operating instructions
- fr** Notice de montage et de mise en service
- es** Instrucciones de instalación y funcionamiento
- el** Οδηγίες εγκατάστασης και λειτουργίας

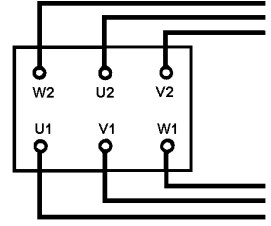
Fig.1:



1a



1b



1c

1 General

About this document

The language of the original operating instructions is German. All other languages of these instructions are translations of the original operating instructions.

These installation and operating instructions are an integral part of the product. They must be kept readily available at the place where the product is installed. Strict adherence to these instructions is a precondition for the proper use and correct operation of the product.

The installation and operating instructions correspond to the relevant version of the product and the underlying safety regulations and standards valid at the time of going to print.

EC declaration of conformity:

A copy of the EC declaration of conformity is a component of these operating instructions.

If a technical modification is made on the designs named there without our agreement or the declarations made in the installation and operating instructions on the safety of the product/personnel are not observed, this declaration loses its validity.

2 Safety

These operating instructions contain basic information which must be adhered to during installation, operation and maintenance. For this reason, these operating instructions must, without fail, be read by the service technician and the responsible specialist/operator before installation and commissioning.

It is not only the general safety instructions listed under the main point "safety" that must be adhered to but also the special safety instructions with danger symbols included under the following main points.

2.1 Indication of instructions in the operating instructions

Symbols



General danger symbol



Danger from electrical voltage



NOTE

Signal words

DANGER!

Acutely dangerous situation

Non-observance results in death or the most serious of injuries.

WARNING!

The user can suffer (serious) injuries. "Warning" implies that (serious) injury to persons is probable if this information is disregarded.

CAUTION!

There is a risk of damaging the product/unit. "Caution" implies that damage to the product is likely if this information is disregarded.

NOTE:

Useful information on handling the product. It draws attention to possible problems.

	<p>Information applied directly to the product, such as:</p> <ul style="list-style-type: none">• Arrows indicating the direction of rotation,• Identification for fluid connections,• Rating plates and• Warning stickers, <p>must be strictly complied with and kept in a fully legible condition.</p>
2.2 Personnel qualifications	<p>The installation, operating and maintenance personnel must have the appropriate qualifications for this work. The area of accountability, responsibility and personnel monitoring are to be ensured by the operator. If the personnel are not in possession of the necessary knowledge, they are to be trained and instructed. This can be accomplished if necessary by the manufacturer of the product at the request of the operator.</p>
2.3 Danger in the event of non-observance of the safety instructions	<p>Non-observance of the safety instructions can result in risk of injury to persons and damage to the product/unit as well as environmental hazards. Non-observance of the safety instructions results in the loss of any claims to damages.</p> <p>In particular, lack of care may lead to problems such as:</p> <ul style="list-style-type: none">• Danger to persons from electrical, mechanical and bacteriological influences.• Pollution of the environment due to leakage of hazardous materials• Damage to property• Failure of important product/unit functions• Failure of required maintenance and repair procedures
2.4 Safety consciousness on the job	<p>The safety instructions included in these installation and operating instructions, the existing national regulations on accident prevention together with any internal working, operating and safety regulations of the operator are to be complied with.</p>
2.5 Safety instructions for the operator	<p>This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.</p> <p>Children should be supervised to ensure that they do not play with the appliance.</p> <ul style="list-style-type: none">• If hot or cold components on the product/unit cause hazards, measures must be taken by the customer to prevent them from being touched.• Guards which prevent moving components (such as the coupling) from being touched must not be removed whilst the product is in operation.• Leakages (e.g. from a shaft seal) of hazardous fluids (e.g. explosive, toxic or hot) must be led away so that no danger to persons or to the environment arises. National statutory provisions are to be observed.• Danger from electrical current must be eliminated. Local directives or general directives [e.g. IEC, VDE etc.] and local power supply companies must be adhered to.
2.6 Safety instructions for installation and maintenance work	<p>The operator must ensure that all installation and maintenance work is carried out by authorised and qualified personnel, who are sufficiently informed from their own detailed study of the operating instructions.</p> <p>Work on the product/unit must only be carried out when at a standstill. It is mandatory that the procedure described in the installation and operating instructions for shutting down the product/unit be complied with.</p>

2.7 Unauthorised modification and manufacture of spare parts

Immediately on conclusion of the work, all safety and protective devices must be put back in position and/or recommissioned.

Unauthorised modification and manufacture of spare parts will put the safety of the product/personnel at risk and invalidate the statements on safety made by the manufacturer.

Modifications to the product are only permissible after consultation with the manufacturer. Original spare parts and accessories authorised by the manufacturer ensure safety. The use of other parts can nullify the liability from the results of the usage.

2.8 Improper use

The operating safety of the supplied product is only guaranteed when used properly in accordance with the section in the operating instructions titled "Intended use". The limit values must on no account fall under or exceed those specified in the catalogue/data sheet.

3 Transport and interim storage

3.1 Shipping

The pump is delivered from the factory packaged in a cardboard box or secured to a pallet and protected against dust and moisture.

Transport inspection

On arrival, inspect the pump immediately for any transport damage. If damage is found, the necessary procedure involving the forwarding agent must be taken within the specified period.

Storage

Before installation, the pump must be kept dry, frost-free and protected from mechanical damage.



CAUTION! Risk of damage due to incorrect packaging!
If the pump is transported again at a later time, it must be packaged so that it cannot be damaged during transport.

- Use the original packaging for this, or select equivalent packaging.

3.2 Transport for installation/removal purposes



WARNING! Risk of personal injury!
Improper transport can lead to personal injury.

- The pump must be transported using approved load-bearing equipment (e.g. block and tackle, crane, etc.). This must be secured to the pump flanges and, if necessary, to the external diameter of the motor (protection against slipping is required!).
- To lift with a crane, the pump must be supported by suitable belts, as shown. Place loops around the pump which tighten from the pump's own weight.
- The transport eyes on the motor are only for guiding while bearing the load (See Fig. 2).
- The transport eyes on the motor are only for transporting the motor, and are not approved for transporting the complete pump.

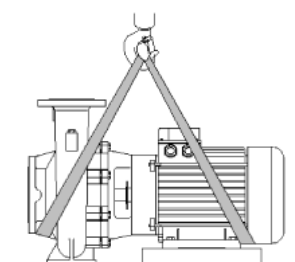


Fig. 2: Transporting the pump



WARNING! Risk of injury due to the weight of the pump!
The pump itself and the parts of pump can be extremely heavy. Falling parts pose a risk of cuts, crush injuries, bruises or impacts, which may lead to death.

- Always use suitable lifting equipment and secure parts against falling.
- Never stand underneath a suspended load.
- Make sure the pump is securely positioned and is stable during storage and transport as well as prior to all installation and other assembly work.

4 Intended use

Purpose

Glanded pumps in the BM series, BM-B series and BM-S series are intended for use as circulation pumps in building services.

Fields of application

They may be used for:

- Hot water heating systems
- Cooling and cold water circulation systems
- Industrial circulation systems
- Heat carrier circuits

Restrictions

The pumps are exclusively intended for installation and operation in enclosed rooms. Typical installation locations are technical rooms within the building with other domestic installations. No provision has been made for direct installation of the device in rooms used for other purposes (residential and work rooms). The following is not permitted:

- Outdoor installation and operation outdoors



CAUTION! Risk of property damage!

Unpermitted substances in the fluid can destroy the pump. Abrasive solids (e.g. sand) increase pump wear.

Pumps without an Ex certificate are not suitable for use in potentially explosive areas.

- **The correct use of the pump/installation also includes following these instructions.**
- **Any other use is considered to be incorrect use.**

5 Product information

5.1 Type key

The type key consists of the following elements:

Example:	BM 50/170-7,5/2
BM	In-line pump
BM-B	Bronze version
BM-S	Stainless steel version
50	Nominal diameter of the pipe connection [mm]
/170	Nominal diameter of the impeller [mm]
-7,5	Nominal power of the motor [kW]
/2	2- pole motor

5.2 Technical data

Property	Value	Remarks
Speed	2900, 1450 rpm	
Nominal diameters DN	2900 rpm: 32–80 1450 rpm: 32–125	
Pipe and pressure measurement connections	Flange PN 10	EN 1092–2
Permissible min./max. fluid temperature	–10 °C to +90 °C, +120 °C on request	Depending on fluid
Ambient temperature min./max.	0 °C to +40 °C	Lower or higher ambient temperature on request
Max. admissible operating pressure	10 bar	
Insulation class	F	
Protection class	55	
Approved fluids	Heating water according to VDI 2035 Cooling/cold water Water/glycol mixture with glycol up to 40% vol. at max. +30 °C fluid temperature Other fluids on request	Standard version Standard version Standard version
Electrical connection	3~400 V, 50 Hz 3~230 V, 50 Hz, up to 3 kW incl. 3~230 V, 50 Hz, from 4 kW 3~440 – 480 V, 60 Hz	Standard version Alternative application for standard version (no additional charge) Special version or auxiliary equipment (at additional charge)
PTC thermistor sensor		Special version or auxiliary equipment (at additional charge)
Speed control	Control devices (Wilo CC/SC system)	Standard version

When ordering spare parts be sure to state all the information given on the pump and motor type plates.

Fluids

If water/glycol mixtures with up to 40% glycol (or fluids with a different velocity to pure water) are used, the pump data must be corrected to match the higher viscosity, regardless of the percentage mixture relationship and the fluid temperature. The motor power must also be adjusted if necessary. Only use brand-name goods with corrosion protection inhibitors and observe the manufacturer's instructions.

- The fluid must be sediment-free.
- Wilo's approval must be obtained for use of other media.



NOTE
Always read and follow the material safety data sheet for the fluid being pumped!

5.3 Scope of delivery

- Monobloc pump
- Installation and operating instructions

5.4 Accessories

Accessories must be ordered separately:

- PTC thermistor tripping unit for switch cabinet installation

5.5 Expected noise emission (as orientation)

Motor power P_N [kW]	Sound pressure level pA [dB] *)	
	Pump with motor	
	1450 min ⁻¹	2900 min ⁻¹
≤ 4,00	64	70
5,50 - 18,5	66	75
22,0 - 37,0	70	77

*) Spatial mean value of sound pressure levels on a square plate at a distance of 1 m from the surface of the motor.

6 Description and function

Description of the product

All pumps described here are compact construction, single-stage low-pressure centrifugal pumps. The motor is connected to the pump with a one-piece shaft. The pumps can be installed both directly as a pipe installation pump in a sufficiently anchored pipe or placed on a foundation base.

In conjunction with a control device (Wilo-CC/SC system), the flow rate of the pumps can also be continuously controlled. This allows optimisation of the pump output for the demands of the installation and economically efficient pump operation.

The pump housing has a block design, i.e. the suction and pressure side flanges are arranged at 90° to each other. All pump housings are provided with pump bases. Mounting on a foundation base is recommended for nominal motor powers of 5.5 kW and higher.

7 Installation and electrical connection

Safety



DANGER! Danger of death!

Incorrect installation and improper electrical connections can result in a risk of fatal injury.

- **Have the electrical connections established by approved electricians only, in compliance with the applicable regulations.**
- **Accident prevention regulations must be observed!**
- **In the case of insulated systems, only the pump housing may be insulated, not the lantern and motor.**



CAUTION! Risk of property damage!

Danger of damage due to incorrect handling.

- **Have the pump installed by qualified personnel only.**
- **When pumping out of a tank, ensure that the liquid level is always high enough above the suction port of the pump so that the pump never runs dry. The minimum intake pressure must be observed.**

7.1 Installation

- A settling section must be provided before and after the pump, in the form of a straight pipe. The length of this settling section should be at least 5 x DN of the pump flange (See Fig. 3). This measure serves to avoid flow cavitation.

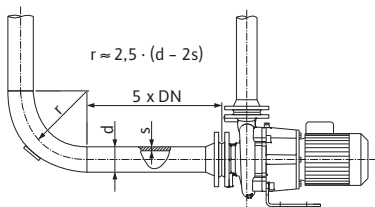


Fig. 3: Settling section before and after the pump

- The pump should only be installed after completion of all welding and soldering work and, if necessary, flushing of the pipe system. Dirt can prevent the pump, and especially the mechanical shaft seal, from functioning properly.
- The standard pumps must be protected from the weather and installed in a frost and dust-free, well-ventilated and non-explosive environment.
- Install the pump in an easily accessible location in order to make later inspection, maintenance work or replacement as easy as possible.
- A hook or a lug with sufficient bearing capacity should be installed vertically over the pump (for total weight of the pump: see catalogue/data sheet). This is to allow hoisting gear or similar aids to be attached during maintenance or repair work on the pump.
- Lift the pump using permitted load-bearing equipment (see section 3).
- Minimum axial distance between a wall and the fan cover of the motor: Free dismantling dimension of min. 250 mm + \varnothing of the fan cover.
- Shut-off devices must be installed without fail in front of and behind the pump in order to avoid the entire system being drained when the pump is inspected or exchanged.
- If there is a danger of return flow, a non-return valve must be used.
- Pipes and pumps should be installed in a stress-free condition. The pipes must be fixed in such a way that the pump is not supporting the weight of the pipes.
- The vent plugs should always point upwards.
Any installation position is allowed except for "motor facing down". The motor terminal box must not face downward. If necessary, the motor or motor impeller unit can be rotated once the necessary housing has been loosened.



CAUTION! Risk of property damage!
Danger of damage due to incorrect handling.

- **When rotating, take care not to damage the housing seal.**

7.2 Electrical connection

Safety



DANGER! Risk of fatal injury!
A fatal shock may occur if the electrical connection is not made correctly.

- **Only allow the electrical connection to be made by an electrician approved by the local electricity supplier and in accordance with the local regulations in force.**
- **Observe the installation and operating instructions for the accessories!**

Preparation/Notes

- Electrical connections must run [in accordance with VDE 0730/Part 1] via a fixed connection line equipped with a connector device or all-pole switch with at least 3 mm contact opening width.
- In order to ensure drip protection and the strain relief on the threaded cable connection, use connection lines with a sufficient outer diameter. Position the threaded cable connection or lay the cables accordingly to ensure that no drips can run into the terminal box.
- A sufficiently heat-resistant connection line must be used when the pumps are utilised in systems with water temperatures above 90 °C.
- The connection line is to be laid in such a way that it cannot under any circumstances come into contact with the pipe and/or the pump and motor housing.
- Check the current type and voltage of the mains connection.
- Observe the data on the name plate of the motor.

- Fuse on mains side: dependent on nominal motor current.
- Earth the pump/installation according to regulations.
- The connection diagram for electrical connections is in the cover of the terminal box (See Fig. 1).
- The motor must be secured against overloading using a motor protection switch or the PTC thermistor tripping unit.

Setting the motor protection switch:

Direct starting: Set according to the nominal motor currents specified on the name plate of the motor.

Y-Δ starting: If the motor protection switch is switched in the supply line to a Y-Δ contactor combination, set the switch as for direct starting. If the motor protection switch is switched in a thread of the motor supply line (U1/V1/W1 or U2/V2/W2), set the motor protection switch to 0.58 x nominal motor current.

- The special motor design is equipped with PTC thermistor sensors. Connect the PTC thermistor sensors to the PTC thermistor tripping unit.



CAUTION! Risk of property damage!

Danger of damage due to incorrect handling.

- **The PTC thermistor sensor terminals must not be supplied with more than 7.5 V. Higher voltages will destroy the PTC thermistor sensors.**
- The mains connection to the terminal board is dependent on the motor power P_2 , the mains voltage and the start-up type. The recommended switching arrangement of the connection table bridges in the terminal box should be taken from the following table and Fig. 1.

Start-up type	Motor power $P_2 \leq 3 \text{ kW}$		Motor power $P_2 \geq 4 \text{ kW}$
	Mains voltage		Mains voltage
	3~230 V	3~400 V	3~400 V
Direct	Δ switching (1a)	Y switching (1b)	Δ switching (1a)
Y-Δ starting	Remove connection bridges (1c)	Not possible	Remove connection bridges (1c)

8 Commissioning

- The pump and the suction and intake lines must be filled and bled.



CAUTION! Damage to the pump!

Dry running will destroy the mechanical seal.

- **Make sure that the pump does not run dry.**
- To avoid cavitation noises and damage, a minimum intake pressure must be guaranteed at the suction port of the pump. This minimum intake pressure depends on the operation situation and the duty point of the pump, and must be defined accordingly. The main parameters for defining the minimum intake pressure are the NPSH of the pump at its duty point and the vapour pressure of the fluid.
- Bleed the pump by loosening the vent plugs.



WARNING! Danger due to extremely hot or extremely cold pressurised fluid!

Depending on the temperature of the fluid and the system pressure, when the vent screw is opened completely, extremely hot or extremely cold fluid in liquid or vapour form may escape or shoot out at high pressure.

- **Always exercise caution when opening the vent screw.**

- Switch on briefly and check whether the direction of rotation corresponds to the arrow on the motor (fan cover or flange). If the direction of rotation is incorrect, proceed as follows:
- For direct starting: Swap the 2 phases on the motor terminal board (e.g. L1 for L2).
- For Υ - Δ starting: Swap the thread start and the thread end of 2 windings on the motor terminal board (e.g. V1 for V2 and W1 for W2).
- The volume flow should not fall below 10% of the maximum flow capacity.
- Check whether the current consumption exceeds the nominal current on the name plate.



CAUTION! Damage to the pump!
Dry running will destroy the mechanical seal.

- The pump must not be operated at volume flow $Q=0$ m³/h (closed stop valve) for more than 5 minutes.



WARNING! Risk of burns or freezing to the pump when body parts come into contact with the pump!
Depending on the pump or system operating conditions (fluid temperature), the entire pump can become very hot or very cold.

- Keep a safe distance during operation!
- Allow the pump/system to cool off/warm up before performing any work.
- Always wear protective clothing, protective gloves and protective goggles when working.

9 Maintenance

Safety

Maintenance and repairs may only be carried out by qualified experts!

It is recommended to have the pump serviced and checked by Wilo-Customer Service.



DANGER! Risk of fatal injury!
There is a mortal danger through shock when working on electrical equipment.

- Work on electrical equipment may only be done by electricians approved by the local electricity supplier.
- Before working on electrical equipment, switch it off and prevent it from being switched on again.
- Any damage to the connecting cable should always be rectified by a qualified electrician only.



DANGER! Risk of scalding!
Due to high fluid temperatures there is a risk of scalding.

- At high fluid temperatures, let the pump cool down before starting any work.

9.1 Mechanical seal

During running time, there may be a slight amount of drip leakage. However, a weekly visual inspection is required. If there is clearly detectable leakage (trickling), the seal is to be changed. Wilo offers a repair kit which contains the necessary parts for replacement.

Replacing the mechanical seal:

- Disconnect the system from the power and secure it against being switched on.
- Close the shut-off valves in front of and behind the pump.
- Depressurise the pump by opening the vent plug.



DANGER! Risk of scalding!

Due to high fluid temperatures there is a risk of scalding.

- **At high fluid temperatures, let the pump cool down before starting any work.**
- Disconnect the motor if the cable for dismantling the motor is too short.
- Loosen the motor fastening screws on the motor flange and lift the motor with the impeller and shaft seal from the pump using suitable hoisting gear.
- Loosen the impeller fastening nut, remove the washer beneath it and pull the impeller out of the pump shaft.
- Remove the mechanical seal from the shaft.
- Thoroughly clean the sliding/seat surfaces of the shaft.
- Remove the counter ring of the mechanical seal with the sealing collar from the lantern flange, together with the O-ring, and clean the seal seats.
- Press a new mechanical seal counter ring with sealing collar into the seal seat of the lantern flange. A commercially available dishwashing liquid can be used as a lubricant.
- Install a new O-ring in the groove of the O-ring seat of the lantern.
- Pull a new mechanical seal onto the shaft up to the end of the taper seat. A commercially available dishwashing liquid can be used as a lubricant.
- Mount the impeller with washer and nut, counteracting on the impeller's outer diameter while doing so. Avoid damage to the mechanical seal due to jamming.



NOTE:

- Observe the specified screw tightening torque (see 9.3).
- Slowly insert the motor with impeller and shaft seal into the pump housing using suitable hoisting gear and screw it into place.
- Connect the motor cable.



NOTE:

- Observe the specified screw tightening torque (see 9.3).

9.2 Motor

Increased bearing noises and unusual vibrations indicate bearing wear. The bearing or motor must then be changed.

Changing the motor:

- Disconnect the system from the power and secure it against being switched on.
- Close the shut-off valves in front of and behind the pump.
- Depressurise the pump by carefully opening the vent plug.



DANGER! Risk of scalding!

Due to high fluid temperatures there is a risk of scalding.

- **At high fluid temperatures, let the pump cool down before starting any work.**
- Disconnect the motor connection cables.
- Loosen the motor fastening screws on the motor flange and lift the motor with the impeller and shaft seal from the pump using suitable hoisting gear.
- Slowly insert the motor with impeller and shaft seal into the pump housing using suitable hoisting gear and screw it into place.



NOTE:

- Observe the specified screw tightening torque (see 9.3).
- Connect the motor cable.

9.3 Screw tightening torque

Screw connection		Tightening torque Nm $\pm 10\%$	Installation instruction
Impeller — Shaft	M10	30	
	M12	60	
Pump housing — Lantern	M16	90	• Evenly tighten on the diagonal

10 Faults, causes and remedies

Only have faults remedied by qualified personnel! Follow the safety instructions in section 9 Maintenance.

- **If the malfunction cannot be rectified, consult a specialist technician or the nearest customer service or representative office.**

Fault	Cause	Remedy
Pump does not start or stops working	Pump blocked	Disconnect motor from power supply, remove cause of blockage; if motor blocked, overhaul/replace motor/plugs
	Cable terminal loose	Tighten all terminal screws
	Fuses faulty	Check fuses; replace defective fuses
	Motor damaged	Contact after-sales service
	Motor protection switch has triggered	Throttle the pump to the rated volume flow on the pressure side
	Motor protection switch set incorrectly	Set the motor protection switch to the correct nominal current as shown on the name plate
	Motor protection switch affected by excessive ambient temperature	Move the motor protection switch or protect it using heat insulation
	PTC thermistor tripping unit has triggered	Check the motor and fan cover for contaminants and clean if necessary, check ambient temperature and ensure an ambient temperature of $\leq 40\text{ }^{\circ}\text{C}$ by forced venting if necessary
Pump runs at reduced output	Incorrect direction of rotation	Check direction of rotation, change if necessary
	Stop valve on the pressure side throttled	Slowly open the stop valve
	Speed too slow	Remedy incorrect terminal bridging (Υ instead of Δ)
	Air in the suction line	Seal leaks in at the flanges; bleed
Pump makes noises	Insufficient supply pressure	Increase supply pressure, observe minimum pressure at the suction port, check slide valve and filter on the suction side and clean if necessary
	Motor has bearing damage	Have the pump checked by WILO after-sales service or a specialised service centre and repaired if necessary
	Impeller grinding	Check faces and centrings and between lanterns and pump housing, clean if necessary

11 Disposal

Proper disposal and recycling of this product prevents damage to the environment and risks to personal health.

Disposal in accordance with the regulations requires the product to be drained and cleaned.

Lubricants must be collected. The pump components are to be separated according to material (metal, plastic, electronics).

1. Use public or private disposal organisations when disposing of all or part of the product.
2. For more information on proper disposal, please contact your local council or waste disposal office or the supplier from whom you obtained the product.



NOTE:

The product or any of its parts must not be disposed of with household waste! For further information on recycling, go to www.wilo-recycling.com

Subject to technical changes without prior notice!

D EG – Konformitätserklärung
GB *EC – Declaration of conformity*
F *Déclaration de conformité CE*

*(gemäß 2006/42/EG Anhang II,1A und 2004/108/EG Anhang IV,2,
according 2006/42/EC annex II,1A and 2004/108/EC annex IV,2,
conforme 2006/42/CE appendice II,1A et 2004/108/CE l'annexe IV,2)*

Hiermit erklären wir, dass die Bauart der Baureihe : **BM/BMB/BM-S**

Herewith, we declare that this pump type of the series:

Par le présent, nous déclarons que le type de pompes de la série:

(Die Seriennummer ist auf dem Typenschild des Produktes angegeben./

The serial number is marked on the product site plate./ Le numéro de série est inscrit sur la plaque signalétique du produit.)

in der gelieferten Ausführung folgenden einschlägigen Bestimmungen entspricht:

in its delivered state complies with the following relevant provisions:

est conforme aux dispositions suivantes dont il relève:

EG-Maschinenrichtlinie

2006/42/EG

EC-Machinery directive

Directive CE relative aux machines

Die Schutzziele der Niederspannungsrichtlinie 2006/95/EG werden gemäß Anhang I, Nr. 1.5.1 der 2006/42/EG Maschinenrichtlinie eingehalten.

The protection objectives of the low-voltage directive 2006/95/EC are realized according annex I, No. 1.5.1 of the EC-Machinery directive 2006/42/EC.

Les objectifs de protection (sécurité) de la directive basse-tension 2006/95/CE sont respectés conformément à l'annexe I, n° 5.1 de la directive CE relatives aux machines 2006/42/CE.

Elektromagnetische Verträglichkeit - Richtlinie

2004/108/EG

Electromagnetic compatibility - directive

Directive compatibilité électromagnétique

Richtlinie energieverbrauchsrelevanter Produkte

2009/125/EG

Energy-related products - directive

Directive des produits liés à l'énergie

Die verwendeten 50Hz Induktionselektromotoren - Drehstrom, Käfigläufer, einstufig - entsprechen den Ökodesign - Anforderungen der Verordnung 640/2009 und der Verordnung 547/2012 von Wasserpumpen.

This applies according to eco-design requirements of the regulation 640/2009 to the versions with an induction electric motor, squirrel cage, three-phase, single speed, running at 50 Hz and of the regulation 547/2012 for water pumps.

Qui s'applique suivant les exigences d'éco-conception du règlement 640/2009 aux versions comportant un moteur électrique à induction à cage d'écreuil, triphasé, mono-vitesse, fonctionnant à 50 Hz et, du règlement 547/2012 pour les pompes à eau,

und entsprechender nationaler Gesetzgebung,

and with the relevant national legislation,

et aux législations nationales les transposant,

angewendete harmonisierte Normen, insbesondere:

EN 809+A1

as well as following harmonized standards:

EN 60034-1

ainsi qu'aux normes (européennes) harmonisées suivantes:

Bevollmächtigter für die Zusammenstellung der technischen Unterlagen ist:

Authorized representative for the completion of the technical documentation:

Personne autorisée à constituer le dossier technique est:

WILO SE
Division Pumps & Systems
PBU Pumps - Quality
Nortkirchenstraße 100
44263 Dortmund
Germany

Dortmund, 15. Januar 2013



Holger Herchenhein
Group Quality Manager



WILO SE
Nortkirchenstraße 100
44263 Dortmund
Germany

<p>NL EG-verklaring van overeenstemming</p> <p>Hiermede verklaaren wij dat dit aggregaat in de geleverde uitvoering voldoet aan de volgende bepalingen:</p> <p>EG-richtlijnen betreffende machines 2006/42/EG</p> <p>De veiligheidsdoelstellingen van de laagspanningsrichtlijn worden overeenkomstig bijlage I, nr. 1.5.1 van de machinerichtlijn 2006/42/EG aangehouden.</p> <p>Elektromagnetische compatibiliteit 2004/108/EG</p> <p>Richtlijn voor energieverbruiksrelevante producten 2009/125/EG</p> <p>De gebruikte 50 Hz inductie-elektromotoren – draaistroom, kooianker, ééntraps – conform de ecodesign-vereisten van de verordening 640/2009.</p> <p>Conform de ecodesign-vereisten van de verordening 547/2012 voor waterpompen.</p> <p>gebruikte geharmoniseerde normen, in het bijzonder: zie vorige pagina</p>

<p>IT Dichiarazione di conformità CE</p> <p>Con la presente si dichiara che i presenti prodotti sono conformi alle seguenti disposizioni e direttive rilevanti:</p> <p>Direttiva macchine 2006/42/EG</p> <p>Gli obiettivi di protezione della direttiva macchine vengono rispettati secondo allegato I, n. 1.5.1 dalla direttiva macchine 2006/42/CE.</p> <p>Compatibilità elettromagnetica 2004/108/EG</p> <p>Direttiva relativa ai prodotti connessi all'energia 2009/125/CE</p> <p>I motori elettrici a induzione utilizzati da 50 Hz – corrente trifase, motore a gabbia di scioialtolo, monostadio – soddisfano i requisiti di progettazione ecocompatibile del regolamento 640/2009.</p> <p>Ai sensi dei requisiti di progettazione ecocompatibile del regolamento 547/2012 per le pompe per acqua.</p> <p>norme armonizzate applicate, in particolare: vedi pagina precedente</p>

<p>ES Declaración de conformidad CE</p> <p>Por la presente declaramos la conformidad del producto en su estado de suministro con las disposiciones pertinentes siguientes:</p> <p>Directiva sobre máquinas 2006/42/EG</p> <p>Se cumplen los objetivos en materia de seguridad establecidos en la Directiva de Baja tensión según lo especificado en el Anexo I, punto 1.5.1 de la Directiva de Máquinas 2006/42/CE.</p> <p>Directiva sobre compatibilidad electromagnética 2004/108/EG</p> <p>Directiva 2009/125/CE relativa a los productos relacionados con el consumo de energía</p> <p>Los motores eléctricos de inducción de 50 Hz utilizados (de corriente trifásica, rotores en jaula deardilla, motores de una etapa) cumplen los requisitos relativos al ecodiseño establecidos en el Reglamento 640/2009.</p> <p>De conformidad con los requisitos relativos al ecodiseño del Reglamento 547/2012 para bombas hidráulicas.</p> <p>normas armonizadas adoptadas, especialmente: véase página anterior</p>

<p>PT Declaração de Conformidade CE</p> <p>Pela presente, declaramos que esta unidade no seu estado original, está conforme os seguintes requisitos:</p> <p>Directivas CEE relativas a máquinas 2006/42/EG</p> <p>Os objectivos de protecção da directiva de baixa tensão são cumpridos de acordo com o anexo I, nº 1.5.1 da directiva de máquinas 2006/42/CE.</p> <p>Compatibilidade electromagnética 2004/108/EG</p> <p>Directiva relativa à criação de um quadro para definir os requisitos de concepção ecológica dos produtos relacionados com o consumo de energia 2009/125/CE</p> <p>Os motores eléctricos de indução de 50 Hz utilizados – corrente trifásica, com rotor em curto-circuito, monoclaural – cumprem os requisitos de concepção ecológica do Regulamento 640/2009.</p> <p>Cumprem os requisitos de concepção ecológica do Regulamento 547/2012 para as bombas de água.</p> <p>normas harmonizadas aplicadas, especialmente: ver página anterior</p>

<p>SV CE-försäkran</p> <p>Härmed förklarar vi att denna maskin i levererat utförande motsvarar följande tillämpliga bestämmelser:</p> <p>EG-Maskindirektiv 2006/42/EG</p> <p>Produkten uppfyller säkerhetsmålen i lägsäfningsdirektiv enligt bilaga I, nr 1.5.1 i maskindirektiv 2006/42/EG.</p> <p>EG-Elektromagnetisk kompatibilitet – riktlinje 2004/108/EG</p> <p>Direktivet om energirelaterade produkter 2009/125/EG</p> <p>De använda elektriska induktionsmotorerna på 50 Hz – trefas, kortslutningsmotor, enstegs – motsvarar kraven på ekodesign för elektriska motorer i förordning 640/2009.</p> <p>Motsvarande ekodesignkraven i förordning 547/2012 för vattenpumpar.</p> <p>tillämpade harmoniserade normer, i synnerhet: se föregående sida</p>
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<p>NO EU-Overensstemmelseserklæring</p> <p>Vi erklærer hermed at denne enheten i utførelse som levert er i overensstemmelse med følgende relevante bestemmelser:</p> <p>EG-Maskindirektiv 2006/42/EG</p> <p>Lavspenningsdirektivet vernemål overholdes i samsvar med vedlegg I, nr. 1.5.1 i maskindirektiv 2006/42/EF.</p> <p>EG-EMV-Elektromagnetisk kompatibilitet 2004/108/EG</p> <p>Direktiv energirelaterete produkter 2009/125/EF</p> <p>De 50 Hz induktionsmotorerene som finner anvendelse – trefasevekselstrøms kortslutningsmotor, etttråns – samsvarer med kravene til økodesign i forordning 640/2009.</p> <p>I samsvar med kravene til økodesign i forordning 547/2012 for vannpumper.</p> <p>anvendte harmoniserte standarder, særlig: se forrige side</p>

<p>FI CE-standardinmukaisseloste</p> <p>Ilmoittamme täten, että tämä laite vastaa seuraavia asiaankuluvia määräyksiä:</p> <p>EU-konedirektiivi: 2006/42/EG</p> <p>Pienjännitedirektiivin suojatavoitteita noudatetaan konedirektiivin 2006/42/EY liitteen I, nro 1.5.1 mukaisesti.</p> <p>Sähkömagneettinen soveltuvuus 2004/108/EG</p> <p>Energiaan liittyviä tuotteita koskeva direktiivi 2009/125/EY</p> <p>Käytettyvät 50 Hz:n induktio-sähkömoottorit (vaihevirta- ja oikosulkumoottori, yksivaiheinen moottori) vastaavat asetuksen 640/2009 ekologista suunnittelua koskevia vaatimuksia.</p> <p>Asetuksessa 547/2012 esitettyjä vesipumppujen ekologista suunnittelua koskevia vaatimuksia vastaava.</p> <p>käytetyt yhteysovitetut standardit, erityisesti: katso edellinen sivu.</p>

<p>DA EF-overensstemmelseserklæring</p> <p>Vi erklærer hermed, at denne enhed ved levering overholder følgende relevante bestemmelser:</p> <p>EU-maskindirektiv 2006/42/EG</p> <p>Lavspændingsdirektivets mål om beskyttelse overholdes i henhold til bilag I, nr. 1.5.1 i maskindirektiv 2006/42/EF.</p> <p>Elektromagnetisk kompatibilitet: 2004/108/EG</p> <p>Direktiv 2009/125/EF om energirelaterede produkter</p> <p>De anvendte 50 Hz induktionselektromotorer – trefasestrøm, kortslutningsmotor, et-trins - opfylder kravene til miljøvenligt design i forordning 640/2009.</p> <p>I overensstemmelse med kravene til miljøvenligt design i forordning 547/2012 for vandpumper.</p> <p>anvendte harmoniserede standarder, særligt: se forrige side</p>
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<p>HU EK-megfelelőeségi nyilatkozat</p> <p>Ezenmel kijelentjük, hogy az berendezés megfelel az alábbi irányelveknek:</p> <p>Gépek irányelv: 2006/42/EK</p> <p>A kifizetésűgépi irányelv védelmi előírásait a 2006/42/EK gépekre vonatkozó irányelv I. függelékének 1.5.1. sz. pontja szerint teljesíti.</p> <p>Elektromágneses összeférőesség irányelv: 2004/108/EG</p> <p>Energiaával kapcsolatos termékéről szóló irányelv: 2009/125/EK</p> <p>A használt 50 Hz-es indukciós villanymotorok – háromfázisú, kalickás forgórész, egyfokozatú – megfelelnek a 640/2009 rendelet környezetbarát tervezésre vonatkozó követelményeinek.</p> <p>A vízszivattyúkóról szóló 547/2012 rendelet környezetbarát tervezésre vonatkozó követelményeinek megfelelően.</p> <p>alkalmazott harmonizált szabványoknak, különösen: lásd az előző oldalt</p>
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<p>CS Prohlášení o shodě ES</p> <p>Prohláším tímto, že tento agregát v dodaném provedení odpovídá následujícím příslušným ustanovením:</p> <p>Směrnice ES pro strojní zařízení 2006/42/ES</p> <p>Cíle týkající se bezpečnosti stanovené ve směrnici o elektrických zařízeních nízkého napětí jsou dodrženy podle přílohy I, č. 1.5.1 směrnice o strojních zařízeních 2006/42/ES.</p> <p>Směrnice o elektromagnetické kompatibilitě 2004/108/EG</p> <p>Směrnice pro výrobky spojené se spotřebou energie 2009/125/ES</p> <p>Použité 50Hz třífázové indukční motory, s klesovým rotorem, jednostupňové – vyhovují požadavkům na ekodesign dle nařízení 640/2009.</p> <p>Vyhovuje požadavkům na ekodesign dle nařízení 547/2012 pro vodní čerpadla.</p> <p>použité harmonizační normy, zejména: viz předchozí stránka</p>

<p>PL Deklaracja Zgodności WE</p> <p>Niniejszym deklaruje się, że dostarczony sprzęt jest zgodny z następującymi dokumentami:</p> <p>dyrektywa maszynowa WE 2006/42/WE</p> <p>Przestrzegane są cele ochrony dyrektywy niskonapięciowej zgodnie z załącznikiem I, nr 1.5.1 dyrektywy maszynowej 2006/42/WE.</p> <p>dyrektywa dot. kompatybilności elektromagnetycznej 2004/108/WE</p> <p>Dyrektywa w sprawie ekoprojektu dla produktów związanych z energią 2009/125/WE.</p> <p>Stosowane elektryczne silniki indukcyjne 50 Hz – trójfazowe, wirniki klatkowe, jednostopniowe – spełniają wymogi rozporządzenia 640/2009 dotyczące ekoprojektu.</p> <p>Spełniają wymogi rozporządzenia 547/2012 dotyczącego ekoprojektu dla pomp wodnych.</p> <p>stosowanymi normami zharmonizowanymi, a w szczególności: patrz poprzednia strona</p>

<p>RU Декларация о соответствии Европейским нормам</p> <p>Настоящим документом заявляю, что данный агрегат в его объеме поставки соответствует следующим нормативным документам:</p> <p>Директивы ЕС в отношении машин 2006/42/EG</p> <p>Требования по безопасности, изложенные в директиве по низковольтному напряжению, соблюдаются согласно приложению I, № 1.5.1 директивы в отношении машин 2006/42/EG.</p> <p>Электромгнитная устойчивость 2004/108/EG</p> <p>Директива о продукции, связанной с энергопотреблением 2009/125/EC</p> <p>Используемые асинхронные электродвигатели 50 Гц – трехфазного тока, короткозамкнутые, одноступенчатые – соответствуют требованиям к экодизайну Соответствует требованиям к экодизайну предписания 547/2012 для водных насосов.</p> <p>Используемые согласованные стандарты и нормы, в частности : см. предыдущую страницу</p>

<p>EL Δηλώση συμμόρφωσης της ΕΕ</p> <p>Δηλώνουμε ότι το προϊόν αυτό ο' αυτή την κατάσταση παράδοσης ικανοποιεί τις ακόλουθες διατάξεις :</p> <p>Οδηγίες ΕΚ για μηχανήματα 2006/42/EK</p> <p>Αι απαιτήσεις προστασίας της οδηγίας χαμηλής τάσης τηρούνται σύμφωνα με το παράρτημα Ι, αρ. 1.5.1 της οδηγίας σχετικά με το μηχανήματα 2006/42/EG.</p> <p>Ηλεκτρομαγνητική συμβατότητα ΕΚ-2004/108/EK</p> <p>Ευρωπαϊκά οδηγία για συνδόμενα με την ενέργεια προϊόντα 2009/125/EK</p> <p>Οι χρησιμοποιούμενοι επαγωγικοί ηλεκτροκινητήρες 50 Ηz – τριφασικοί, βρομέας κλειστού, μονοβόθμιοι – ανταποκρίνονται στις απαιτήσεις οικολογικού σχεδιασμού του κανονισμού 640/2009.</p> <p>Σύμφωνα με τις απαιτήσεις οικολογικού σχεδιασμού του κανονισμού 547/2012 για υδραντλίες.</p> <p>Εναρμονισμένα χρησιμοποιούμενα πρότυπα, ιδιαίτερα: Βλέπε προηγούμενη σελίδα</p>
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<p>TR CE Uygunluk Teyid Belgesi</p> <p>Bu cihazın teslim edildiği şekliyle aşağıdaki standartlara uygun olduğunu teyid ederiz:</p> <p>AB-Makina Standartları 2006/42/EG</p> <p>Ayrıca gerilim yöneterinin koruma hedefleri, 2006/42/AT makine yöneterisi EK I, no. 1.5.1'e uygundur.</p> <p>Elektromanyetik Uyumluk 2004/108/EG</p> <p>Enerji ile ilgili ürünlerin çevreye duyarlı tasarımına ilişkin yönetmelik 2009/125/AT</p> <p>Kullanılan 50 Hz induksiyon elektromotorları – trefaze akım, sincap kafes motor, tek kademeli – 640/2009 Düzelenmesinde ekolojik tasarıma ilişkin gerekliliklere uygundur.</p> <p>Su pompaları ile ilgili 547/2012 Düzelenmesinde ekolojik tasarıma ilişkin gerekliliklere uygundur.</p> <p>İsмен kullanan standartlar için: bkz. bir önceki sayfa</p>

<p>RO EC-Declarație de conformitate</p> <p>Prin prezenta declarăm că acest produs așa cum este livrat, corespunde cu următoarele prevederi aplicabile:</p> <p>Directiva CE pentru mașini 2006/42/EG</p> <p>Sunt respectate obiectivele de protecție din directiva privind joasa tensiune conform Anexei I, Nr. 1.5.1 din directiva privind mașinile 2006/42/CE.</p> <p>Compatibilitatea electromagnetă – directiva 2004/108/EG</p> <p>Directivă privind produsele cu impact energetic 2009/125/CE</p> <p>Electromotoarele cu inducție, de 50 Hz, utilizate – curent alternativ, motor în scurtcircuit, cu o treaptă – sunt în conformitate cu parametrii ecologici cuprinși în Ordonanța 640/2009.</p> <p>În conformitate cu parametrii ecologici cuprinși în Ordonanța 547/2012 pentru pompe de apă.</p> <p>standard e armonizate aplicate, îndeosebi: vezi pagina precedentă</p>

<p>ET EÜ vastusdeklaratsioon</p> <p>Käesolevaga tõendame, et see toode vastab järgmistele asjakohastele direktiividele:</p> <p>Masindirektiiv 2006/42/EÜ</p> <p>Madalpingedirektiivi kaits-eesmärgid on täidetud vastavalt masinate direktiivi 2006/42/EÜ I lisa punktile 1.5.1.</p> <p>Elektromagnetilise ühilduvuse direktiiv 2004/108/EÜ</p> <p>Energiamõjuga toodete direktiiv 2009/125/EÜ</p> <p>Kasutatud 50 Hz vahelduvvoolu elektromootorid (vahelduvvool, lihisrootor, üheaastmeline) vastavad määruks 640/2009 sätestatud ökodisaini nõuetele.</p> <p>Kooskõlas veeumpade määruks 547/2012 sätestatud ökodisaini nõuega.</p> <p>kohaldatud harmoneeritud standardid, eriti: vt eelmist lk</p>
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<p>LV EC atbilstības deklarācija</p> <p>Ar šo mēs apliecinām, ka šis izstrādājums atbilst sekojošiem noteikumiem:</p> <p>Mašīnu direktīva 2006/42/EG</p> <p>Zemsprieguma direktīvas drošības mērķi tiek ievēroti atbilstoši Mašīnu direktīvas 2006/42/EK pielikumam I, Nr. 1.5.1.</p> <p>Elektromagnētiskās savietojamības direktīva 2004/108/EK</p> <p>Direktīva 2009/125/EG par enerģiju saistītiem produktiem</p> <p>Izmantotie 50 Hz indukcijas elektromotori – maiņstrāva, īslēguma rotora motors, vienpakāpes – atbilst Regulas Nr. 640/2009 ekodizaina prasībām.</p> <p>Atbilstoši Regulas Nr. 547/2012 ekodizaina prasībām ūdenssūkņiem.</p> <p>piemēroti harmonizēti standarti, tai skaitā: skatīt iepriekšējo lappusi</p>
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<p>LT EB atitikties deklaracija</p> <p>Šiuo pažymima, kad šis gaminyas atitinka šias normas ir direktyvas:</p> <p>Mašinių direktyvą 2006/42/EB</p> <p>Laikomaši žemos [tampos direktyvos keliamų saugos reikalavimų pagal Mašinių direktyvos 2006/42/EB I priedo 1.5.1 punktą.</p> <p>Elektromagnetinio suderinamumo direktyvą 2004/108/EB</p> <p>Su energija susijusių produktų direktyva 2009/125/EB</p> <p>Naudojami 50 Hz indukciniai elektriniai varikliai – trifazės [tampos, su narvelniu rotoriumi, vienos pakopos – atitinka ekologinio projektavimo reikalavimus pagal Reglamentą 640/2009.</p> <p>Atitinka ekologinio projektavimo reikalavimus pagal Reglamentą 547/2012 dėl vandens siurblių.</p> <p>pritaikytus vieningus standartus, o būtent: žr. ankstesniame puslapyje</p>

<p>SK ES vyhlášení o zhode</p> <p>Týmto vyhlasujeme, že konštrukcie tejto konštrukčnej série v dodanom vyhotovení vyhovujú nasledujúcim príslušným ustanoveniam:</p> <p>Stroje – smernica 2006/42/ES</p> <p>Bezpečnostné ciele smernice o nízkom napätí sú dodržiavané v zmysle prílohy I, č. 1.5.1 smernice o strojových zariadeniach 2006/42/ES.</p> <p>Elektromagnetická zhoda – smernica 2004/108/ES</p> <p>Smernica 2009/125/ES o energeticky významných výrobkoch</p> <p>Použitú 50 Hz indukčnú elektromotory – jednostupňové, na trojfázový striedavý prúd, s rotormi nakrátko – zodpovedajú požiadavkám na ekodizajn uvedeným v nariadení 640/2009.</p> <p>V súlade s požiadavkami na ekodizajn uvedenými v nariadení 547/2012 pre vodné čerpadlá.</p> <p>používané harmonizované normy, najmä: pozri predchádzajúcu stranu</p>
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<p>SL ES – izjava o skladnosti</p> <p>Izjavljamo, da dobavljene vrste izvedbe te serije ustrezajo sledečim zadevnim določilom:</p> <p>Direktiva o strojih 2006/42/EZ</p> <p>Cilji Direktive o nizkonapetosti opremljeni su u skladu s prilogom I, št. 1.5.1. Direktive o strojih 2006/42/EG doseženi.</p> <p>Direktiva o elektromagnetni združljivosti 2004/108/ES</p> <p>Direktiva 2009/125/EG za okoljsko primerno zasnovane izdelke, povezane z energijo</p> <p>Uporabljene 50 Hz indukcijске elektromotorji – trifazni tok, kletkasti rotor, enostopenjski – izpolnjujejo zahteve za okoljsko primerno zasnovano iz Uredbe 640/2009.</p> <p>Izpolnjujejo zahteve za okoljsko primerno zasnovano iz Uredbe 547/2012 za vodne črpalke.</p> <p>uporabljene harmonizirani standardi, predvsem: glejte prejšnjo stran</p>

<p>BG EO-Декларация за съответствие</p> <p>Декларираме, че продуктът отговаря на следните изисквания:</p> <p>Машина директива 2006/42/EO</p> <p>Целите за защита на разпоредбата за ниско напрежение са съставени съгласно Приложение I, № 1.5.1 от Директивата за машини 2006/42/ЕС.</p> <p>Електромагнитна съместимост – директива 2004/108/EO</p> <p>Директива за продуктите, свързани с енергопотреблението 2009/125/EO</p> <p>Използваните индукционни електродвигатели 50 Hz – трифазен ток, търкалящи се лагери, едноступенчати – отговарят на изискванията за екодизайн на Регламент 640/2009.</p> <p>Съгласно изискванията за екодизайн на Регламент 547/2012 за водни помпи.</p> <p>Хармонизирани стандарти: вж. предната страница</p>

<p>MT Dikjarazzjoni ta' konformità KE</p> <p>B'dan il-mezz, niddikjaraw li l-prodotti tas-serje jissodisfaw id-dispożizzjonijiet relevanti li jgejjin:</p> <p>Makkinjarju – Direttiva 2006/42/KE</p> <p>Il-obiettivi tas-sigurtà tad-Direttiva dwar il-Vultaġġ Baxx huma konformi mal-Anness I, Nru 1.5.1 tad-Direttiva dwar il-Makkinjarju 2006/42/KE.</p> <p>Kompatibilità elettromanjetika – Direttiva 2004/108/KE</p> <p>Linja Ġwida 2009/125/KE dwar prodotti relatati mal-użu tal-enerġija</p> <p>Il-moturi elettrici b'induzzjoni ta' 50 Hz użati – tliet fażijiet, squirrel-cage, singola – jissodisfaw ir-rekwiżiti tal-ekodisain tar-Regolament 640/2009.</p> <p>b'mod partikolari: ara l-paġna ta' qabel</p>
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<p>HR EZ izjava o skladnosti</p> <p>Ovim izjavljujemo da vrste konstrukcije serije u isporučenoj izvedbi odgovaraju sledećim važećim propisima:</p> <p>EZ smernica o strojevima 2006/42/EZ</p> <p>Ciljevi zaštite smjernice o niskom naponu ispunjeni su sukladno prilogu I, br. 1.5.1 smjernice o strojevima 2006/42/EZ.</p> <p>Elektromagnetna kompatibilnost – smjernica 2004/108/EZ</p> <p>Smjernica za proizvode relevantne u pogledu potrošnje energije 2009/125/EZ</p> <p>Korišteni 50 Hz-ni indukcijски elektromotori – trofazni, s kratko spojenim rotorom, jednostupanjanski – odgovaraju zahtjevima za ekološki dizajn iz uredbe 640/2009.</p> <p>primjenjeni harmonizirane norme, posebno: vidjeti prethodnu stranicu</p>
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<p>SR EZ izjava o uskladenosti</p> <p>Ovim izjavljujemo da vrste konstrukcije serije u isporučenoj verziji odgovaraju sledećim važećim propisima:</p> <p>EZ direktiva za mašine 2006/42/EZ</p> <p>Ciljevi zaštite direktive za niski napon ispunjeni su u skladu sa prilogom I, br. 1.5.1 direktive za mašine 2006/42/EZ.</p> <p>Elektromagnetna kompatibilnost – direktiva 2004/108/EZ</p> <p>Direktiva za proizvode relevantne u pogledu potrošnje energije 2009/125/EZ</p> <p>Korišćeni 50 Hz-ni indukcijски elektromotori – trofazni, s kratkospojenim rotorom, jednostepeni – odgovaraju zahtevima za ekološki dizajn iz uredbe 640/2009.</p> <p>primjenjeni harmonizovani standardi, a posebno: vidi prethodnu stranu</p>
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Wilo – International (Subsidiaries)

Argentina

WILO SALMSON
Argentina S.A.
C1295ABI Ciudad
Autónoma de Buenos Aires
T +54 11 4361 5929
carlos.musich@wilo.com.ar

Australia

WILO Australia Pty Limited
Murrarie, Queensland, 4172
T +61 7 3907 6900
chris.dayton@wilo.com.au

Austria

WILO Pumpen Österreich
GmbH
2351 Wiener Neudorf
T +43 507 507-0
office@wilo.at

Azerbaijan

WILO Caspian LLC
1065 Baku
T +994 12 5962372
info@wilo.az

Belarus

WILO Bel IOOO
220035 Minsk
T +375 17 3963446
wilo@wilo.by

Belgium

WILO NV/SA
1083 Ganshoren
T +32 2 4823333
info@wilo.be

Bulgaria

WILO Bulgaria EOOD
1125 Sofia
T +359 2 9701970
info@wilo.bg

Brazil

WILO Comercio e
Importacao Ltda
Jundiaí – São Paulo – Brasil
13.213-105
T +55 11 2923 9456
wilo@wilo-brasil.com.br

Canada

WILO Canada Inc.
Calgary, Alberta T2A 5L7
T +1 403 2769456
info@wilo-canada.com

China

WILO China Ltd.
101300 Beijing
T +86 10 58041888
wilobj@wilo.com.cn

Croatia

WILO Hrvatska d.o.o.
10430 Samobor
T +38 51 3430914
wilo-hrvatska@wilo.hr

Cuba

WILO SE
Oficina Comercial
Edificio Simona Apto 105
Siboney. La Habana. Cuba
T +53 5 2795135
T +53 7 272 2330
raul.rodriguez@wilo-cuba.com

Czech Republic

WILO CS, s.r.o.
25101 Cestlice
T +420 234 098711
info@wilo.cz

Denmark

WILO Danmark A/S
2690 Karlslunde
T +45 70 253312
wilo@wilo.dk

Estonia

WILO Eesti OÜ
12618 Tallinn
T +372 6 509780
info@wilo.ee

Finland

WILO Finland OY
02330 Espoo
T +358 207401540
wilo@wilo.fi

France

Wilo Salmson France S.A.S.
53005 Laval Cedex
T +33 2435 95400
info@wilo.fr

Great Britain

WILO (U.K.) Ltd.
Burton Upon Trent
DE14 2WJ
T +44 1283 523000
sales@wilo.co.uk

Greece

WILO Hellas SA
4569 Anixi (Attika)
T +302 10 6248300
wilo.info@wilo.gr

Hungary

WILO Magyarország Kft
2045 Törökbálint
(Budapest)
T +36 23 889500
wilo@wilo.hu

India

Wilo Mather and Platt Pumps
Private Limited
Pune 411019
T +91 20 27442100
services@matherplatt.com

Indonesia

PT. WILO Pumps Indonesia
Jakarta Timur, 13950
T +62 21 7247676
citrawilo@cbn.net.id

Ireland

WILO Ireland
Limerick
T +353 61 227566
sales@wilo.ie

Italy

WILO Italia s.r.l.
Via Novegro, 1/A20090
Segrate MI
T +39 25538351
wilo.italia@wilo.it

Kazakhstan

WILO Central Asia
050002 Almaty
T +7 727 312 40 10
info@wilo.kz

Korea

WILO Pumps Ltd.
20 Gangseo, Busan
T +82 51 950 8000
wilo@wilo.co.kr

Latvia

WILO Baltic SIA
1019 Riga
T +371 6714-5229
info@wilo.lv

Lebanon

WILO LEBANON SARL
Jdeideh 1202 2030
Lebanon
T +961 1 888910
info@wilo.com.lb

Lithuania

WILO Lietuva UAB
03202 Vilnius
T +370 5 2136495
mail@wilo.lt

Morocco

WILO Maroc SARL
20250 Casablanca
T +212 (0) 5 22 66 09 24
contact@wilo.ma

The Netherlands

WILO Nederland B.V.
1551 NA Westzaan
T +31 88 9456 000
info@wilo.nl

Norway

WILO Norge AS
0975 Oslo
T +47 22 804570
wilo@wilo.no

Poland

WILO Polska Sp. z o.o.
5-506 Lesznowola
T +48 22 7026161
wilo@wilo.pl

Portugal

Bombas Wilo-Salmson
Sistemas Hidraulicos Lda.
4475-330 Maia
T +351 22 2080350
bombas@wilo.pt

Romania

WILO Romania s.r.l.
077040 Com. Chiajna
Jud. Ilfov
T +40 21 3170164
wilo@wilo.ro

Russia

WILO Rus ooo
123592 Moscow
T +7 495 7810690
wilo@wilo.ru

Saudi Arabia

WILO Middle East KSA
Riyadh 11465
T +966 1 4624430
wshoula@wataniaind.com

Serbia and Montenegro

WILO Beograd d.o.o.
11000 Beograd
T +381 11 2851278
office@wilo.rs

Slovakia

WILO CS s.r.o., org. Zložka
83106 Bratislava
T +421 2 33014511
info@wilo.sk

Slovenia

WILO Adriatic d.o.o.
1000 Ljubljana
T +386 1 5838130
wilo.adriatic@wilo.si

South Africa

Wilo Pumps SA Pty LTD
1685 Midrand
T +27 11 6082780
patrick.hulley@salmson.co.za

Spain

WILO Ibérica S.A.
8806 Alcalá de Henares
(Madrid)
T +34 91 8797100
wilo.iberica@wilo.es

Sweden

WILO NORDIC AB
35033 Växjö
T +46 470 727600
wilo@wilo.se

Switzerland

Wilo Schweiz AG
4310 Rheinfelden
T +41 61 836 80 20
info@wilo.ch

Taiwan

WILO Taiwan CO., Ltd.
24159 New Taipei City
T +886 2 2999 8676
nelson.wu@wilo.com.tw

Turkey

WILO Pompa Sistemleri
San. ve Tic. A.Ş.
34956 İstanbul
T +90 216 2509400
wilo@wilo.com.tr

Ukraine

WILO Ukraina t.o.w.
08130 Kiev
T +38 044 3937384
wilo@wilo.ua

United Arab Emirates

WILO Middle East FZE
Jebel Ali Free zone – South
PO Box 262720 Dubai
T +971 4 880 91 77
info@wilo.ae

USA

WILO USA LLC
Rosemont, IL 60018
T +1 866 945 6872
info@wilo-usa.com

Vietnam

WILO Vietnam Co Ltd.
Ho Chi Minh City, Vietnam
T +84 8 38109975
nkminh@wilo.vn

wilo

Pioneering for You

WILO SE
Nortkirchenstraße 100
D-44263 Dortmund
Germany
T +49(0)231 4102-0
F +49(0)231 4102-7363
wilo@wilo.com
www.wilo.com