



Manual for
driving machines

bel uga wx2 **230 V**
bel uga wx8 **400 V**

			1750	1500	2400	3750	min ⁻¹
Valid from 11.2003	WX2	Art.-No.		101187	101188		Subject to alterations
	WX2 FH	Art.-No.		101096	101092		
	WX2 B	Art.-No.	101382				
	WX8	Art.-No.		101085	101183		
	WX8 FH	Art.-No.		101118	101093		
	WX8 B	Art.-No.	101305				

BELUGA WX2 230V



BELUGA WX8 400V



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DR. BENDER GmbH & Co. KG • D-75382 Althengstett • Tel 07051-9291-0 • Fax 07051-9291-91

Our website address is: <http://www.dr-bender.de> • e-mail: info@dr-bender.de

Conformity Declaration

DR.BENDER *GmbH & Co. KG*

Innovative Elektrowerkzeuge



EC Conformity Declaration

for the following DR.BENDER stone processing machines

BELUGA WX2, WX2 FH, WX2 B
BELUGA WX8, WX8 FH, WX8 B

DR.BENDER GmbH & Co. KG, as manufacturer, hereby declares that the electrical stone drilling machines mentioned above comply with the requirements of the following guidelines:

- Machine guidelines (98/37/EC)
- Electromagnetic compatibility (EMC) (89/336/EEC)
- Low voltage guideline (73/23/EEC)

The following standards were applied for evaluating the machines:

- a) with regard to the machine guidelines:
VDE 0740 21-22: 1994-1991
VDE 0701 Part 1: 1993
VDE 0702 Part 1: 1995
DIN EN 50144-1: 1999
DIN EN 50144-2-1: 2000
- b) with regard to electromagnetic compatibility
Interfering emissions
DIN EN 55014-1: 2000 + A1: 2001 = VDE 0875 Part 14-1
DIN EN 61000-3-2: 2000
DIN EN 61000-3-3: 1995 + Cor.1: 1997 + A1: 2001

Interference immunity
DIN EN 55014-2: 1997 + A1: 2001 = VDE 0875 Part 14-2
- c) with regard to the low voltage guideline
EN 61029-1: 2001

DR.BENDER GmbH & Co. KG

Industriestraße 22
D-75382 Althengstett
Tel. 07051/9291-0, Fax 07051/9291-91

Althengstett, 26.05.2003

A handwritten signature in blue ink, appearing to read 'B. Brehm'.

B. Brehm, Management

This declaration implies no assurance of properties.
Please observe the safety regulations of the attached product documentation.

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Warning

It is compulsory to observe the safety instructions included in this manual!

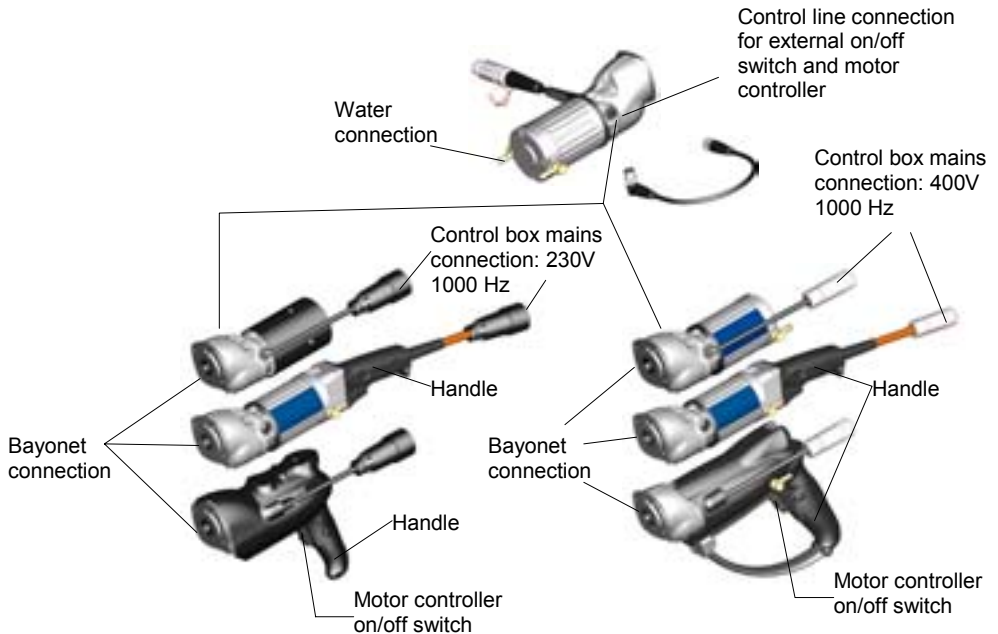
Special designs and versions may differ from the standard models in terms of their technical details. If any points are unclear, we urgently recommend that you contact DR.BENDER GmbH & Co. KG, indicating the machine type and machine number.

1.0 Symbol- and Pictograph description



This sign tells you rules, if you not pay attention for this your health and the function of the machine is in danger. You have no warranty if the machine breaks down because you not looking about this.

1.1 Function description



2.0 General instructions

2.1 Technical description

BELUGA represents a completely new generation of driving machines used for stone processing. The highly extensive modular design principle provides the nowadays so important flexibility in performing cutting operations in concrete and stone. In the process, quite newly developed high frequency elements are employed in the motor. The frequency range is adjusted within 0 – 1000 Hz by means of the frequency changer integrated in the Powerbox. At 1000 Hz, the rotor reaches a speed of 30,000 min⁻¹. A main advantage results from a weight / performance ratio (motor output = 11 kW / weight = 21.5 kg -> 0.51) so far unequaled with the conventional technology, such as the BBM33extra type (motor output = 2.4 kW / weight = 13.5 kg -> 0.17). This means that the weight of the machine could be reduced three times by means of the high frequency technology. Further advantages result from the infinitely variable speed regulation. Thus, each tool diameter may be assigned its optimum speed, in order to achieve the best cutting speed possible at the tool. Furthermore, the speed may be continuously reduced in the process when steel reinforcements appear, thus providing its optimum adaptation to the working progress. In this case, it is possible to run at much higher cutting speeds (Caution! They depend on the tool), achieving an up to 150% faster working progress. In the case of conventional machines, the torque dramatically decreases at high speeds, rendering this advantage impossible.

2.2 Application

The BELUGA driving machines and the appropriate Powerboxes can be used for the purposes outlined by the data on the model plate. If you are using special machines, the details in the quotation and order confirmation also apply.

The driving machines and the Powerboxes are supplied as standard in protection class I; only this can guarantee the full high quality protection of the FI switch.

If you use suitable saw blades and core bits, you will be able to cut in the most diverse material types:

- concrete (even if it contains thick reinforcement steel)
- sandstone and limestone
- all building materials for solid walls
- asphalt carpets

The machines must be connected as follows:

- BELUGA WX2:
to the PB WX2 type Powerbox;
- BELUGA WX8:
to the PB WX8/10 or PB WX8/10 VB type Powerboxes.

2.3 Safety



Warning

Before using the machine for the first time, check the conformity of the data on the model plate with the mains voltage and frequency. Voltage deviations of $\pm 5\%$ and/or voltage deviations of $\pm 2\%$ are permissible. Repairs may be carried out only by adequately qualified persons, based on their training and experience.

The following points are to be given special attention:

- the technical data and information on the permitted use of the machine (commissioning, ambient and operating conditions) which are set out, among others, in the catalogue, the operating manual, the model plate data and the other product information;
- the relevant accident prevention regulations;
- the professional use of tools;
- the use of personal safety equipment.

3.0 Transport and storage

3.1 Transport



Warning

The driving machines are to be checked for signs of transport damage on receipt. Possibly existing damages must be basically documented in writing.

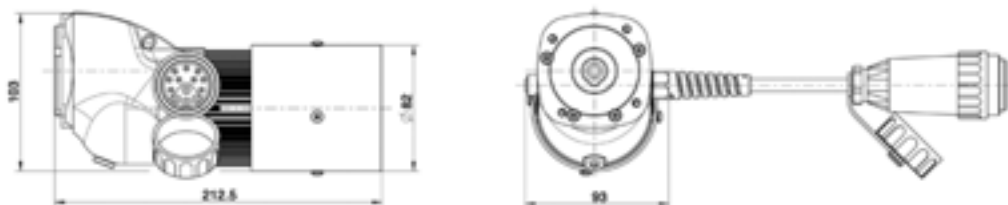
3.2 Storage

If possible, the storage site should be dry, clean and have a constant temperature. To ensure that the film of lubricant in the bearings and sealing system is not lost, the motor shaft should be turned through several revolutions by hand after a lengthy period of storage, for example at monthly intervals. The roller bearings in the motors should be replaced (or re-greased) if the period between delivery and commissioning is over four years. If the machines are stored in adverse conditions, this period will be considerably reduced.

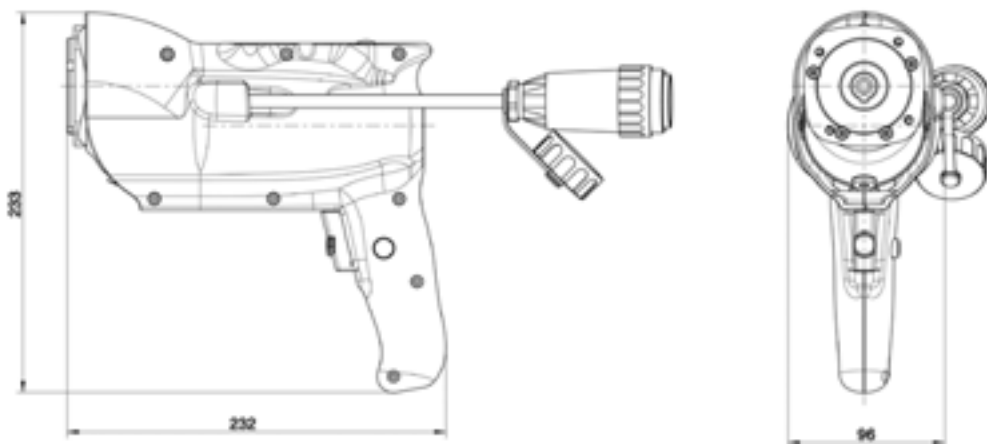
4.0 Main dimensions and technical data

4.1 Dimensions

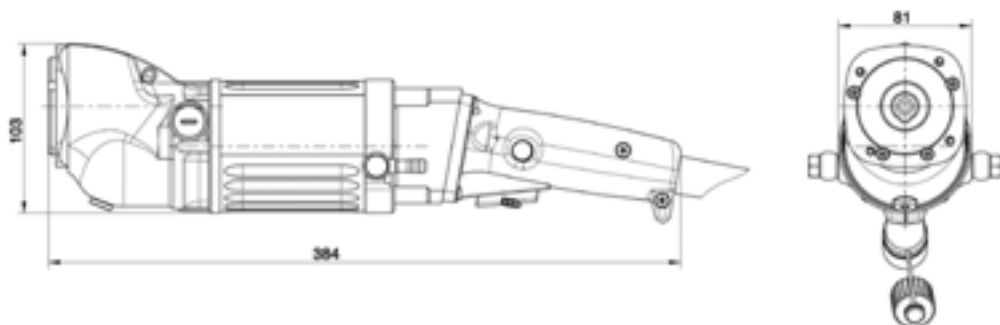
4.1.1 Beluga WX2, 230V



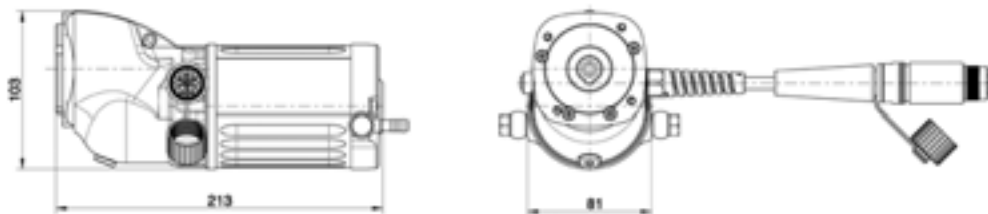
4.1.2 Beluga WX2 FH, 230V



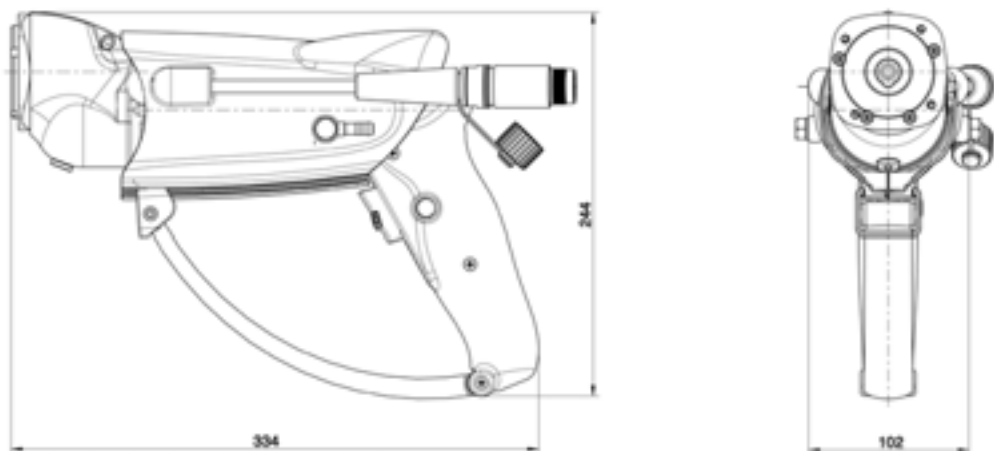
4.1.3 Beluga WX2 B, 230V



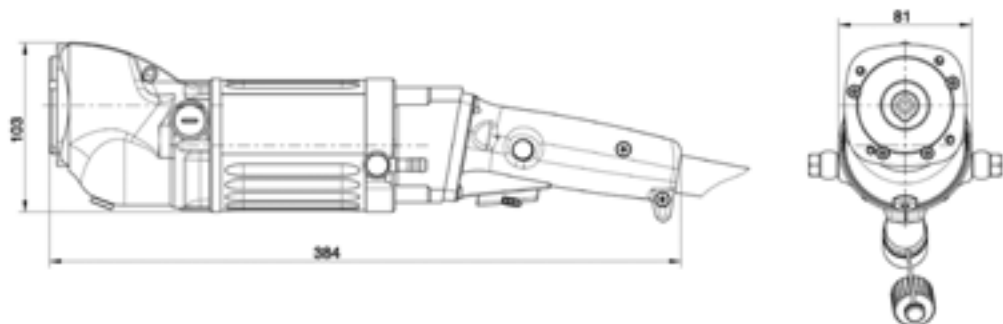
4.1.4 Beluga WX8, 400V



4.1.5 Beluga WX8 FH, 400V



4.1.6 Beluga WX8 B, 400V



4.2 Technical Data

4.2.1 Beluga WX2, WX2 FH, WX2 B, 230V

Gearbox variant		1500	1750	2400	3750	min^{-1}
Rated voltage	230					V
Current consumption	16					A
Power requirement	3,500					W
Frequency	1000					Hz
Idling speed		0 - 1500	0 - 1750	0 - 2400	0 - 3750	min^{-1}
Full speed		0 - 1500	0 - 1750	0 - 2400	0 - 3750	min^{-1}
Output rating	2.400					W
Torque		20	17.5	12.5	8	Nm
Protection class	IP 67					-
Cooling medium		air	water	air	air	-
Weight WX2	3.0					kg
Weight WX2 FH	3.1					kg
Weight WX2 B	3.6					kg

4.2.2 Beluga WX8, WX8 FH, WX8 B, 400V

Gearbox variant		1500	1750	2400	3750	min^{-1}
Rated voltage	400					V
Current consumption	15					A
Power requirement	8,000					W
Frequency	1000					Hz
Idling speed		0 - 1500	0 - 1750	0 - 2400	0 - 3750	min^{-1}
Full speed		0 - 1500	0 - 1750	0 - 2400	0 - 3750	min^{-1}
Output rating	5,400					W
Torque		40	35	25	16	Nm
Protection class	IP 67					-
Cooling medium	water					-
Weight WX8	3.3					
Weight WX8 FH	3.5					
Weight WX8 B	3.6					kg

4.3 Noise emissions and vibrations [EN 50144] WX2, WX2 FH

Noise pressure level	Noise power level	Vibration
db(A)	dB	m/s^2
84	98	< 2.5

4.4 Noise emissions and vibrations [EN 50144] WX2 B, WX8, WX8 FH, WX8 B

Noise pressure level	Noise power level	Vibration
db(A)	dB	m/s^2
72	84	< 2.5

4.5 Operating temperatures

In case of sufficient cooling of the system, the Beluga WX8, WX8 FH, WX8 B and WX2 B take on the cooling water temperature. The plastic casing of the hand-guided Beluga WX2 and WX2 FH take on temperatures of up to 35°C. The gear box of Beluga may take on temperatures of up to 80°C. You should not worry about this, as it is normal. That is why you should hold the machine by the handles.

5.0 Commissioning

5.1 Mains connection



Important

Check that the mains voltage is identical to the voltage specified on the model plate. Also check that the frequency is identical to the frequency specified on the model plate. Use only original mains cables:

230V connection cable - WX2, WX2 FH Art.-No. 801806
400V connection cable - WX8, WX8 FH Art.-No. 801792

The Beluga WX2 B and WX8 B type driving machines are designed for freehand cutting applications in terms of their sense of rotation. This means that in case of a drilling application, there appears an incorrect sense of rotation for drilling. For this purpose, a small phase changer is available, which is simply screwed in between the plug connection of the Beluga and the Powerbox. Always pay attention to the correct sense of rotation for each application.

230V phase changer - Art.-No. 802097
400V phase changer - Art.-No. 801812



Remove the protecting caps from the plug connections. These protecting caps prevent the penetration of water in unplugged condition, thus increasing the service life of the high-grade cable connections considerably.

Connect the lead of the Beluga driving machine (e.g. Squatina 400, see illustration on the right) to

the round socket situated on the front side of the Powerbox. Tighten up the castle nut of the screwed cable joint in order to obtain the required IP 67 protection.



5.2 Control connecting sleeve - WX2, WX8



The Beluga WX2 and WX8 type driving machines are not provided with on/off switch and speed control system. That is why they have a control connecting sleeve. It is through this sleeve that the driving machines may be supplied with the on/off and speed control functions. This control cable will be used, for instance, when employing the built-on gearbox or the Squatina 350.

Use only original control lines:

Control cable – WX2, WX8 Art.-No. 802096

5.3 Water connection



The water should flow first through the Powerbox, then through the driving machine and only afterwards reach the saw blade or core bit. Therefore, connect the water supply to the water inlet (with ball plug valve) provided on the Powerbox. The water outlet of the Powerbox will be connected to the water inlet of the Beluga (for instance Squatina 400, see illustration on the left).

Caution: if possible, do not exceed the maximum water pressure of 3 bar.

The Powerbox and the Beluga WX2 B, WX8, WX8 FH, WX8 B type driving machines are water-cooled. Therefore, make sure to provide sufficient cold water in operation (the cooling water should not exceed 30°C). The machine must be operated with at least 1/2 liter water per minute at full load. Use only pure tap water, no dirty water or sewage, otherwise the

heat transfer at the cooling surfaces is no longer ensured and the motor may be damaged irreparably. The PB WX2 type Powerbox and the Beluga WX2, WX2 FH type driving machines are air-cooled and consequently require no water connection.

5.4 Bayonet catch

The Beluga driving machines are provided with bayonet catch. Consequently, several mounted tools may be operated.

Grease the shaft connecting joint.

Insert the shaft connecting joint with the adjusting spring in the bore of Beluga's output shaft. Turn the mounted tool so that the screw heads may fit in the slots of the bayonet.



Join the mounted tool to the Beluga.

Turn the mounted tool by 12° to the right, up to the limit.



Tighten the four M5 Allen screws by means of a plug spanner. The water connection ring of the mounted tool may be turned by 360°; arrange the grooves as required in order to provide the optimum access of the plug spanner to the screw heads.

Disassembly is performed in reverse order.



5.5 Handle adjustment - WX8 FH

5.6 Saw blades and core bits

You may use any saw blade having a connection bore of 1" (25.4 mm). Use only saw blades that are suitable for the type of stone. You will keep the driving machine in good condition if you use only saw blades that are concentric and not deformed ones. Make sure that the diamond segments have an adequate undercut against the saw blade.

You may use any core bits having a connection thread of 1 ¼ " UNC or R ½ ". Use only core bits that are suitable for the type of stone.

You will keep the driving machine in good condition if you use only core bits that are concentric and not deformed ones.

Make sure that the diamond segments have an adequate undercut against the core bit body.

6.0 Safety instructions



Important

Only use the hand saw under supervision. Disconnect the mains plug and check that the switch has been turned off,

- when the tools remain unsupervised,
- during setup and disassembly works,
- in case of voltage drops (PB WX8/10 below 340V),(PB WX2 below 200V),
- in case of uneven mains voltage (phase dissymmetry) or interruption of a phase (phase failure),
- for adjusting or fitting an accessory,

Switch off the machine if it stops for any reason. This will prevent its sudden starting when unsupervised.

Do not use the tool if

- a part of the casing is missing or defective,
- the switch, lead or plug connector has suffered damage (conduct a visual inspection every day!),
- when operating the equipment, no cooling water may penetrate into the motor or the electrical components in any position of employment,
- if water drips out of the tool, stop working and have the tool inspected by an authorized service workshop,
- after a fault, switch on the machine again only when the saw blade or the core bit can be turned easily,
- Check the working area with a line detector to prevent cutting through electric cables, water or gas lines, etc.

7.0 Maintenance and care



Warning

Pull out the mains plug before beginning any maintenance or repair work. You must have the equipment checked by a specialized electrician after every repair (statutory regulation pursuant to VBG4 since 1.1.1990).

7.1 Daily care

Make sure no water flows out of the tool. This will cause gear damage and may adversely affect the electrical safety of the equipment. In this case, please seek assistance from an authorized service workshop.

Visually inspect the switch, supply lead or plug connector for damage.

After completing the work, clean the equipment.

Make sure that no water penetrates into the tools during the cleaning process.

Empty the cooling water after using the machine. (For this, open the ball cock and completely blow off the cooling water with compressed air). This is very important particularly in winter months because of ice formation.

7.2 After approx. 150 hours of use

After the first 150 hours of use, the gearbox lubricant must be changed.

7.3 Quarterly

Have the cable, switch and plug connectors inspected by a specialist (regulation pursuant to VBG4) and document this inspection. Changing the gearbox lubricant will produce a considerable increase in the service life of the gear.

8.0 Speed adjustment dependent on the cutting speed

The driving machines of the Beluga type series allow for an infinitely variable speed regulation. Herewith you may adjust the optimum cutting speed of your saw blade or core bit. This also ensures a perfect rapid cut and it is quite easy on the tool.

9.0 Warranty

In keeping with our terms of sale, we offer a warranty for twelve months from the date of sale. This refers to the free repair of material and workmanship defects, which were verifiably caused before the sale.

An original purchase document must always be submitted in case of a warranty claim. It has to contain the full address of the dealer, the date of purchase and the type designation of the product. The operating instructions of the particular product and the safety instructions must have been followed.

Damages resulting from operational faults cannot be acknowledged as warranty cases.

The products of the manufacturer have been developed and produced for specific applications. No warranty claim is accepted in case of non-compliance with the due employment according to the operating instructions, in case of the employment for other purposes than originally intended or the employment of inadequate accessories.

The periodical maintenance and cleaning of the products according to the directions of the operating instructions is absolutely necessary. The intervention of third persons (opening the machine) renders any warranty claim void.

Maintenance and cleaning operations cannot be claimed on the basis of warranty.

Make sure only original spare parts and original accessories are used. They are available at the authorized specialized product dealer. If non-original parts are used, consequential damages and increased hazard cannot be ruled out. The producer is not liable for such damages. Disassembled or partially disassembled hand saws and those repaired with non-original parts are excluded from the warranty.

Certain components, such as carbon brushes, ball bearings, switches, power-supply lines, gaskets, etc., are exposed to usage dependent or to normal wear. These wearing parts are not object of this warranty. Wearing parts are marked on the spare parts lists.

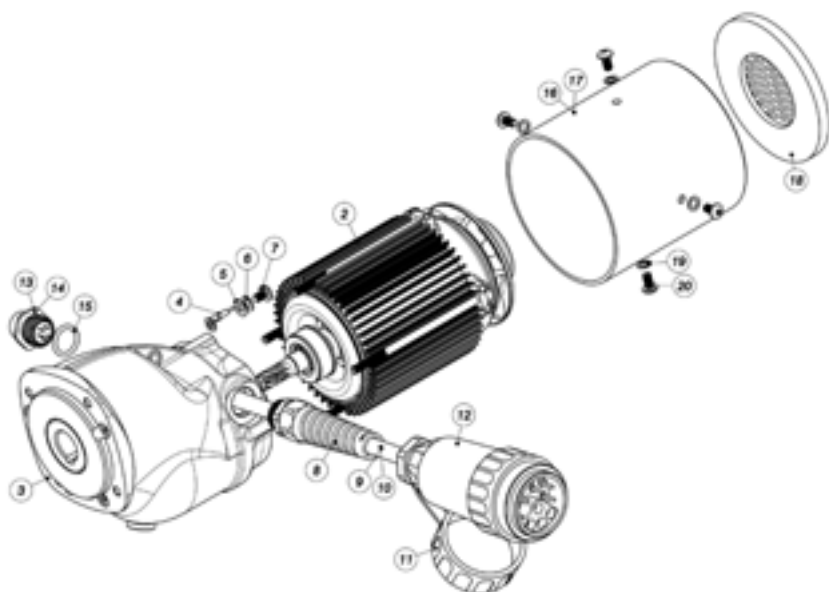
10.0 General safety instructions

1. Read and follow these instructions before you use the tool. Keep these safety instructions in a safe place.
2. Keep your workplace tidy. Untidiness in the workplace can cause accidents.
3. Protect yourself from electric shocks. Observe the applicable regulations. Avoid physical contact with earthed parts, such as pipes, heaters, furnaces and refrigerators.
4. Keep children away. Do not allow other people to touch the tool or cable, keep away from your work area.
5. Keep your tools in a safe place. Unused tools should be kept in a dry, locked room out of the reach of children.
6. Do not overload your tool. It will work better and more safely in the specified capacity range.
7. Use the correct tool. Do not use tools that are too weak or mounted tools for heavy work. Do not use tools for purposes and work they have not been designed for.
8. Wear suitable working clothes. Do not wear excessively baggy clothing or jewelry, which may be caught by moving parts. For working outdoors, we recommend the use of rubber gloves and sturdy shoes. Wear a hairnet if you have long hair.
9. Use goggles. Use a breathing mask for work that generates dust.
10. Do not use the cable for any purpose other than that for which it is designed. Do not carry the tool by the cable and do not use it to pull the plug out of the socket. Protect the cable from heat, oil and sharp edges.
11. Every time before you use the tool, check the connection cable and plug for signs of damage. If they are damaged, have them replaced by a specialist. Always keep the connection cable away from the working area of the machine.
12. Secure the work piece. Use clamps or a vice to hold the work piece. Thus it will be held more securely than in your hand and it will allow you to use both hands to control the machine.
13. Do not overstretch yourself. Avoid abnormal body positions. Ensure that you have a stable standing position and keep your balance at all times.
14. Look after your materials with care. Keep your tools sharp and clean so that they may work well and safely. Follow the maintenance instructions and the tool changing indications. Check the plug and cable at regular intervals and have them replaced by a specialist if they suffer any damage. Check the extension cable at regular intervals and replace damaged cables. Keep the handles dry and free of oil and grease.
15. Disconnect the mains plug from the supply when the machine is not in use, before performing maintenance operations and when changing the tool.
16. Do not leave tool spanners on the machine. Before switching it on, check that the wrenches and setting tools have been removed.
17. Avoid unintentional starting. Do not carry a tool that is connected to the mains supply with your finger on the switch. Ensure that the switch is turned off when you connect the tool to the mains supply.
18. Electric tools used outdoors and in wet areas: for additional safety, mobile tools used outdoors should be connected to the mains supply using stray current circuit breakers (FI or DI). This is particularly important when working with freehand tools.
19. For outdoor work, use only extension cables, which are approved for this purpose and marked accordingly.
20. Be vigilant at all times. Watch your work. Proceed sensibly. Do not use the tool if you are not concentrating fully on what you are doing.

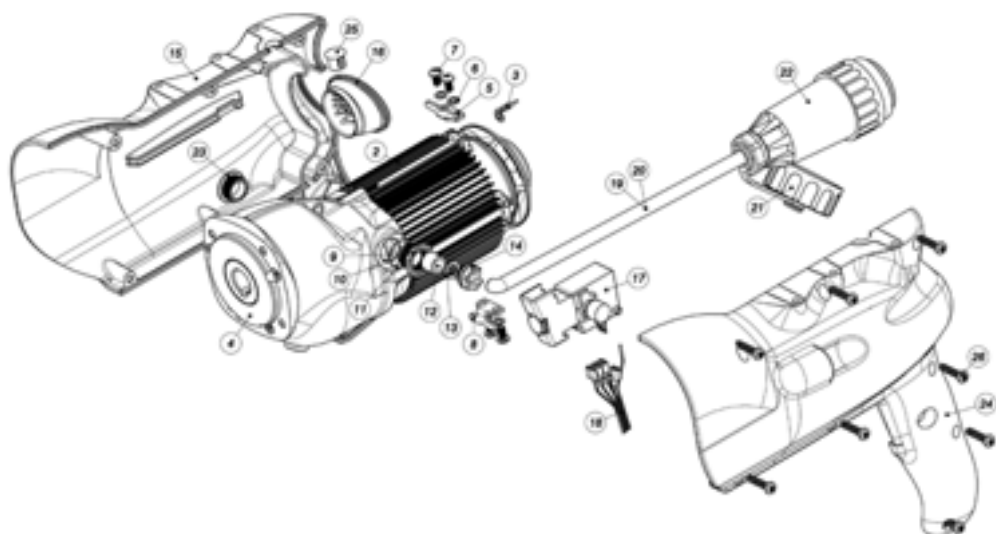
21. Important:
Safety equipment (such as overcurrent protection devices, undervoltage trips, safety couplings etc.) are aids, yet they do not offer guaranteed safety. As a responsible manufacturer, we tailor these tools to each other so that they offer the best possible protection. But without the care and caution of the operator, these aids may even cause damage if they are used thoughtlessly. Have the slip couplings, in particular, checked during the quarterly inspection to ensure that they are correctly adjusted and function properly. This inspection should be conducted by the manufacturer or by an authorized service outlet and documented.
22. Check the machine every day for signs of damage, conduct a visual inspection:
Before reusing the tool, carefully check the safety equipment or slightly damaged parts to ensure that they offer perfect and proper function. Check that all moving parts function correctly, that they do not jam and that none of the parts are damaged. All parts must be correctly fitted and satisfy all the conditions to ensure the perfect operation of the tool. Damaged safety equipment and parts must be repaired or replaced properly by a specialist service contractor. Do not use any tools, which cannot be turned on and off using the switch. Pay particular attention to ensuring electrical safety: Cables? Plugs? Switches? Do all the components satisfy safety regulations?
23. Repairs may only be carried out by trained personnel. Before being used for the first time and after all repair work, the safety of electric tools must be checked by an electrician pursuant to VBG 4, § 5. This inspection must also be conducted and documented at regular intervals – at least once per year.
24. Please note that as an operator, you are responsible for complying with any additional regulations. For example, if electric tools are used in a wet and/or damp environment, the regulations of the "Stone and Earth" Professional Association must be satisfied.
25. Electrical safety and fire safety: just as DR. BENDER did in the last 20 years, the new version of VDE 0100 also recommends the additional safety protection and fire protection of each tool achieved by using low cost FI and DI/PRCD circuit-breakers.

11.0 Spare parts lists

11.1 Beluga WX2, 230V



11.2 Beluga WX2 FH, 230V



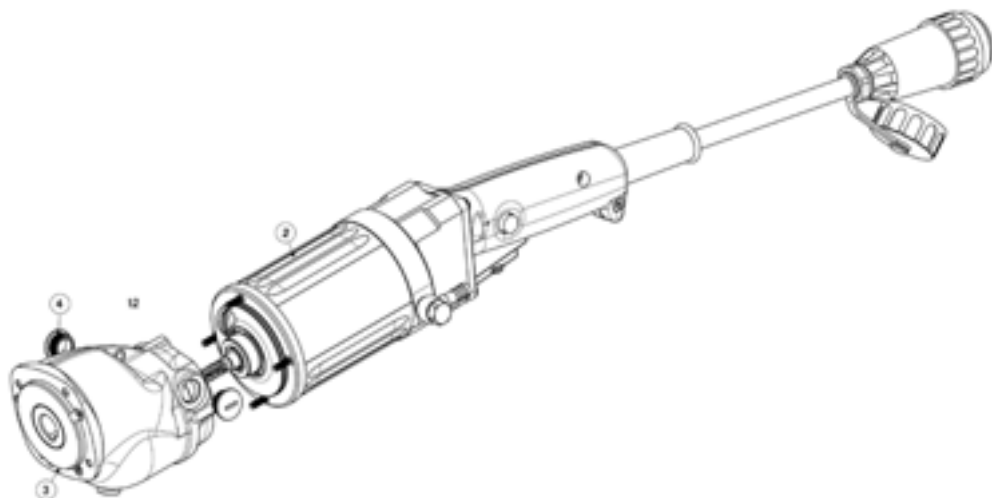
Pos.	Art.-No.	Art.-No.	Art.-No.		Description	Pcs.
Grb.	1500	2400	3750			min ⁻¹
1	101187	101188	-		Driving machine, compl.	1
2	101185				Motor, compl.	1
3	101181	100292	101378		Gear, compl.	1
4	801754				Earth cable	1
5	900231				Washer	1
6	900181				Elastic washer	1
7	900412				Countersunk screw	1
8	802081				Screwed cable joint	1
9	101383				Connection cable, compl.	1
10	802068				Heat shrink hose	1
11	802049				Plug cap	1
12	802024				Connection plug, compl.	1
13	401428				Socket, compl.	1
14	802027				Plug-in socket	1
15	801841				O-Ring	1 **
16	301427				Pipe, compl.	1
17	301425				Pipe	1
18	301426				Cover	1
19	800076				Lock washer	4
20	801699				Fillister screw	4

Wearing parts **

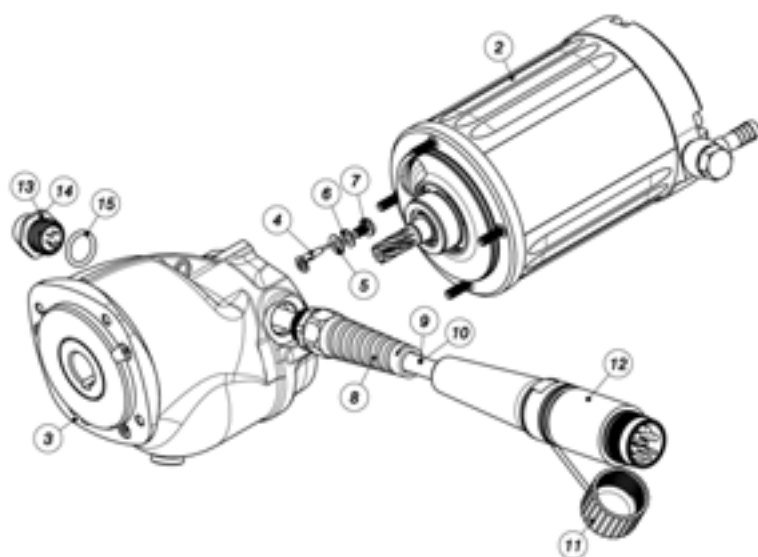
Pos.	Art.-No.	Art.-No.	Art.-No.		Description	Pcs.
Grb.	1500	2400	3750			min ⁻¹
1	101096	101092	-		Driving machine, compl.	1
2	101185				Motor, compl.	1
3	801754				Earth cable	1
4	101181	100292	101378		Gear, compl.	1
5	301423				Strap	1
6	800076				Lock washer	4
7	801699				Fillister screw	4
8	301424				Strap	1
9	401426				Screwed cable joint	1
10	401540				Threaded bushing	1
11	902088				O-Ring	1 **
12	802009				Rubber sealing	1 **
13	800162				Shim	1
14	401539				Clamping screw	1
15	100851				R casing	1
16	100986				Fan insert	1
17	801473				Plug switch	1
18	101384				Cable harness	1
19	101383				Connection cable, compl.	1
20	802068				Heat shrink hose	1
21	802049				Plug cap	1
22	802024				Connection plug, compl.	1
23	801785				Blank cover	1
24	100852				L casing	1
25	801361				Cap	1
26	801755				Cylindrical screw	8

Wearing parts **

11.3 Beluga WX2 B, 230V



11.4 Beluga WX8, 400V



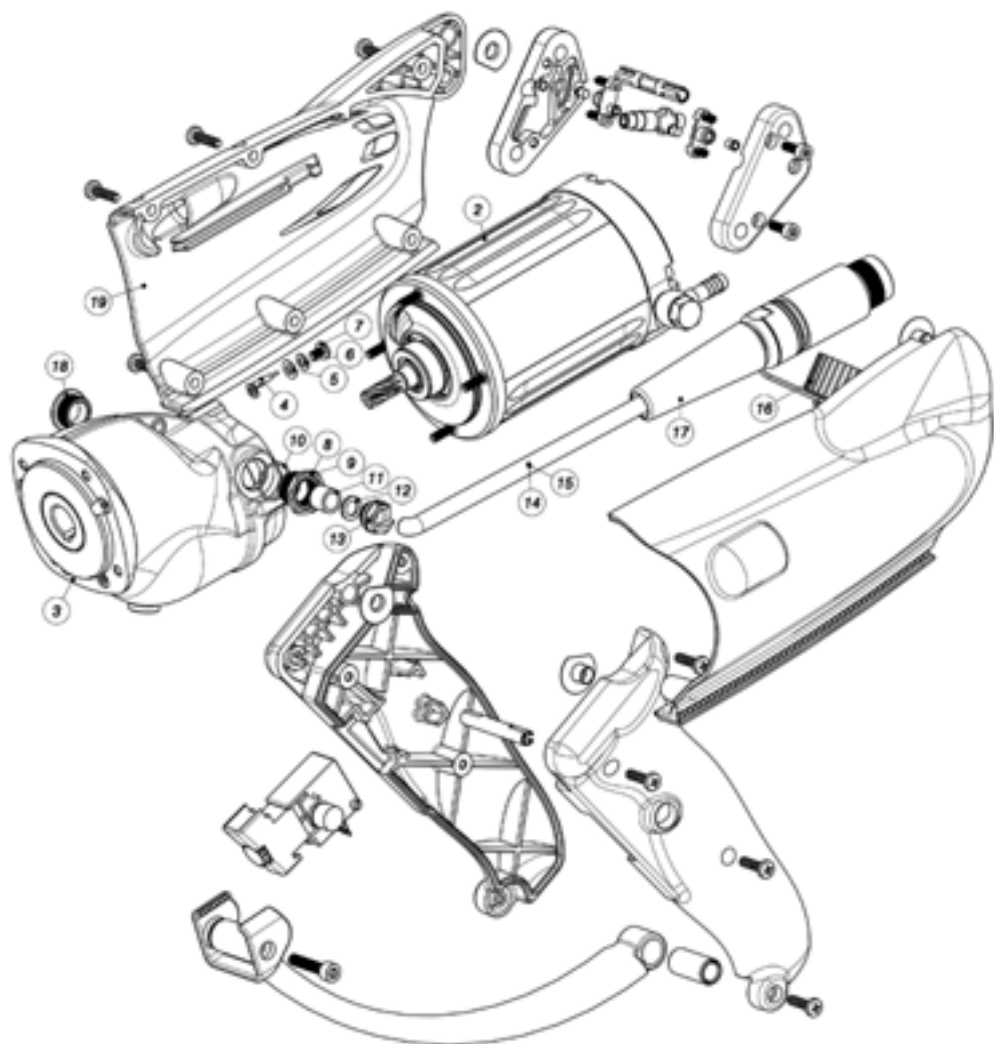
Pos.	Art.-No.						Description	Pcs.
Grb.	1750							min ⁻¹
1	101382						Driving machine, compl.	1
2	101380						Motor, compl.	1
3	101350						Gear, compl.	1
4	802082						Blank cover	2

Wearing parts **

Pos.	Art.-No.		Art.-No.	Art.-No.			Description	Pcs.
Grb.	1500		2400	3750				min ⁻¹
1	101085		101183	-			Driving machine, compl.	1
2	101089						Motor, compl.	1
3	101181		100292	100378			Gear, compl.	1
4	801754						Earth cable	1
5	900231						Washer	1
6	900181						Elastic washer	1
7	900412						Countersunk screw	1
8	802081						Screwed cable joint	1
9	101385						Connection cable, compl.	1
10	802068						Heat shrink hose	1
11	802066						Plug cap	1
12	802059						Plug, compl.	1
13	401428						Socket, compl.	1
14	802027						Plug-in socket	1
15	801841						O-Ring	1 **

Wearing parts **

11.5 Beluga WX8 FH, 400V



Pos.	Art.-No.		Art.-No.	Art.-No.		Description	Pcs.
Grb.	1500		2400	3750			min ⁻¹
1	101118		101093	-		Driving machine	1
2	101089					Motor, compl.	1
3	101181		100292	101378		Gear, compl.	1
4	801754					Earth cable	1
5	900231					Washer	1
6	900181					Elastic washer	1
7	900412					Countersunk screw	1
8	401426					Screwed cable joint	1
9	401540					Threaded bushing	1
10	902088					O-Ring	1 **
11	802009					Rubber sealing	1
12	800162					Shim	1
13	401539					Clamping screw	1
14	101385					Connection cable, compl.	1
15	802068					Heat shrink hose	1
16	802066					Plug cap	1
17	802059					Plug, compl.	1
18	802082					Blank cover	1
19	101095					Casing, compl.	1
							Wearing parts **

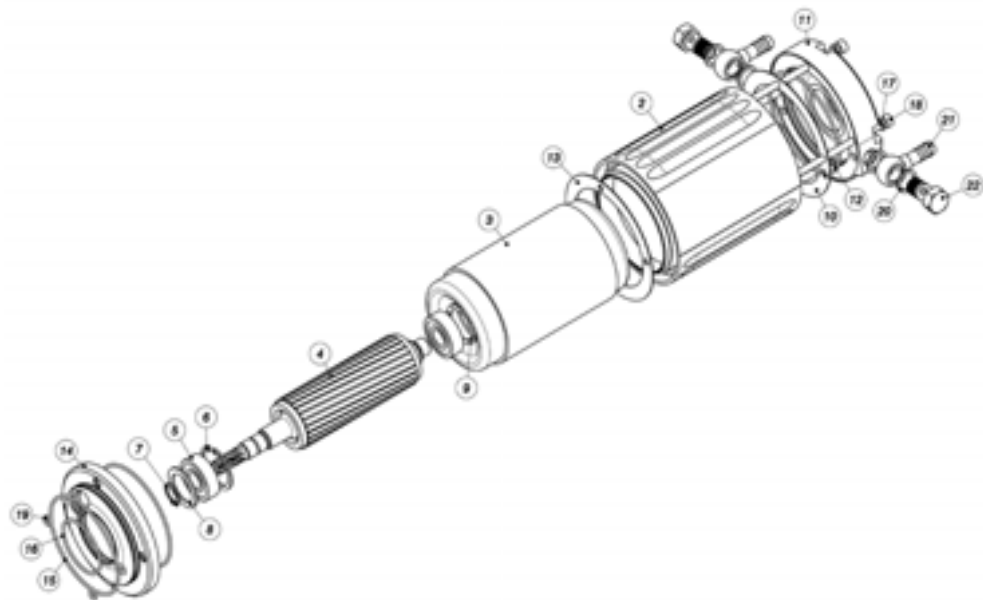
Pos.	Art.-No.					Description	Pcs.
<i>Grb.</i>	1750						<i>min⁻¹</i>
1	101305					Driving machine, compl.	1
2	101306					Motor, compl..	1
3	101350					Gear, compl.	1
4	802082					Blank cover	2

Wearing parts **

Pos.	Art.-No.					Description	Pcs.
1	101185					Motor, compl.	1
2	100738					Motor casing	1
3	801545					Stator	1
4	101184					Rotor, compl.	1
5	901015					Deep-groove ball bearing	2
6	900801					Circlip	1
7	900215					Circlip	1
8	901030					Adjusting spring	1
9	101186					Bearing cap	1
10	800036					Shim	1
11	802025					Shaft sealing ring	1
12	100985					Fan	1
13	900181					Elastic washer	1
14	902026					Allen screw	1
15	901012					Allen screw	4

Wearing parts **

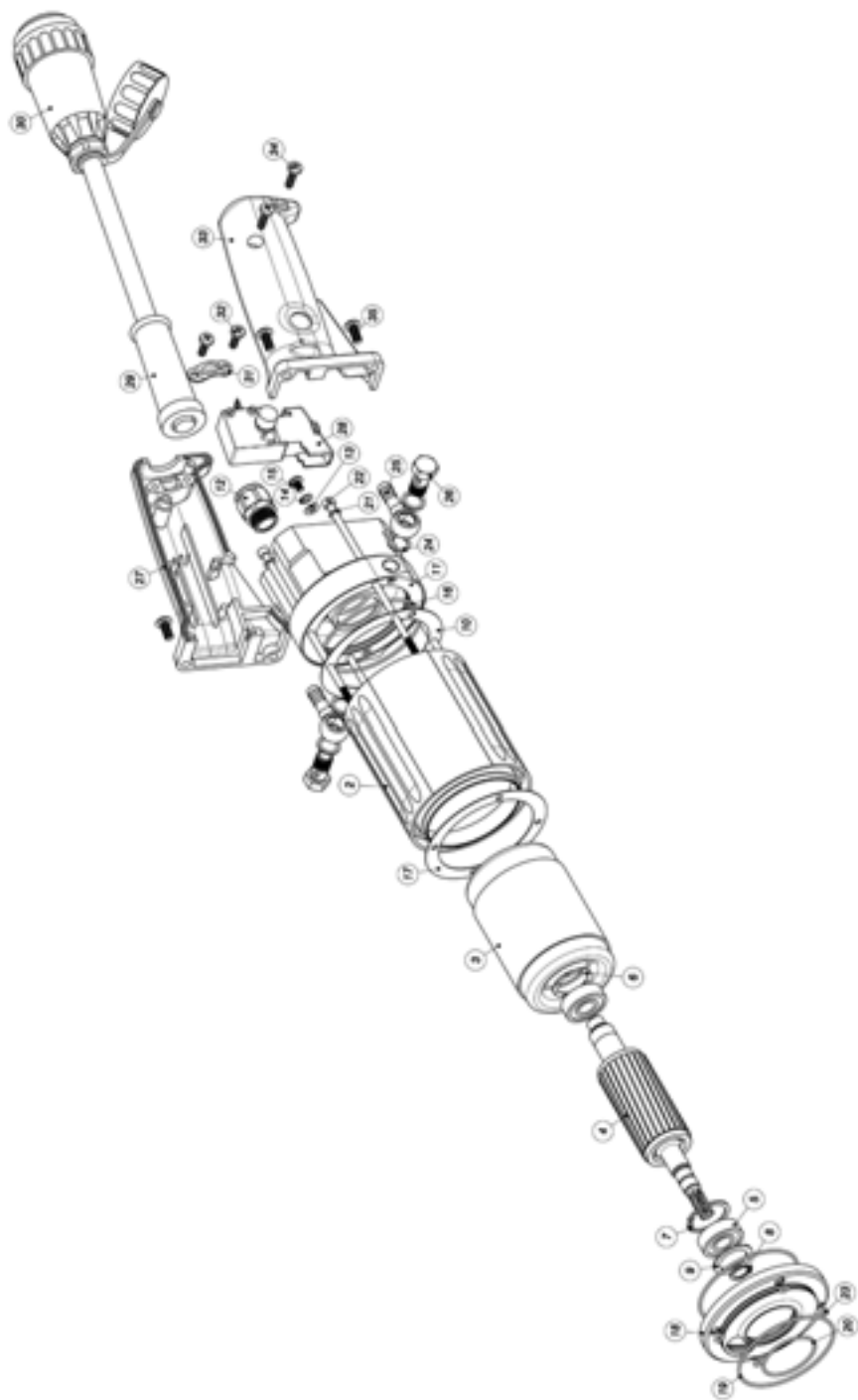
11.8 Motor compl. WX8, WX8 FH, 400V



Pos.	Art.-No.					Description	Pcs.
1	101089					Motor, compl.	1
2	101090					Motor casing	1
3	802022					Stator	1
4	101087					Rotor compl.	1
5	901015					Deep-groove ball bearing	2 **
6	900801					Circlip	1
7	900215					Circlip	1
8	901030					Adjusting spring	1
9	801574					Ball bearing shim	1
10	401429					Flat gasket	1
11	101091					Bearing cap	1
12	802028					O-Ring	2 **
13	401421					Flat gasket	1 **
14	101086					Intermediate cover	1
15	802029					O-Ring	1 **
16	802030					O-Ring	1 **
17	800391					Sealing ring	4 **
18	801814					Allen screw	4
19	802023					O-Ring	4 **
20	800027					Sealing ring	4 **
21	100500					Ring eye nipple	2
22	100501					Hollow screw	2

Wearing parts **

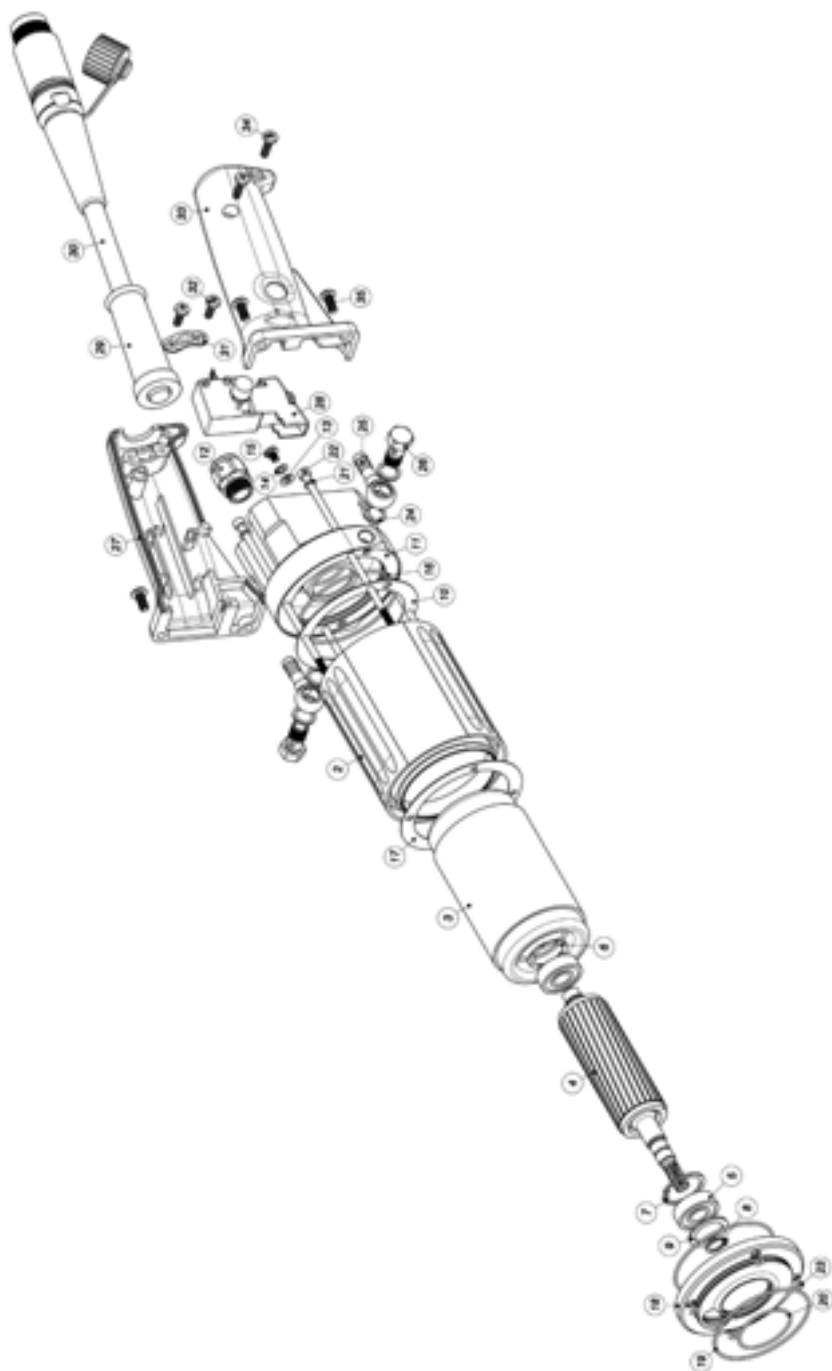
11.9 Motor compl. WX2 B, 230V



Pos.	Art.-No.					Description	Pcs.
1	101306					Motor, compl.	1
2	101090					Motor casing	1
3	801545					Stator	1
4	101381					Rotor compl.	1
5	901015					Deep-groove ball bearing	2 **
6	801574					Ball bearing shim	1
7	900801					Circlip	1
8	900215					Circlip	1
9	901030					Adjusting spring	1
10	401429					Flat gasket	1
11	101307					Bearing cap	1
12	900571					Screwed cable joint	1
13	900231					Washer	1
14	900181					Elastic washer	1
15	900412					Countersunk screw	1
16	802028					O-Ring	2 **
17	401421					Flat gasket	1 **
18	101086					Intermediate cover	1
19	802029					O-Ring	1 **
20	802030					O-Ring	1 **
21	800391					Sealing ring	4 **
22	801814					Allen screw	4
23	802023					O-Ring	4 **
24	800027					Sealing ring	4 **
25	100500					Ring eye nipple	2
26	100501					Hollow screw	2
27	801210					Handle half	1
28	801473					Plug switch	1
29	801311					Strain relief sleeve	1
30	802091					Cable, compl.	1
31	801221					Strain relief sleeve	1
32	900699					Fillister self-tapping screw	2
33	801211					Handle half	1
34	900623					Fillister self-tapping screw	2
35	801700					Fillister screw	4

Wearing parts **

11.10 Motor compl. WX8 B, 400V



Pos.	Art.-No.					Description	Pcs.
1	101306					Motor, compl.	1
2	101090					Motor casing	1
3	802022					Stator	1
4	101087					Rotor compl.	1
5	901015					Deep-groove ball bearing	2 **
6	801574					Ball bearing shim	1
7	900801					Circlip	1
8	900215					Circlip	1
9	901030					Adjusting spring	1
10	401429					Flat gasket	1 **
11	101307					Bearing cap	1
12	900571					Screwed cable joint	1
13	900231					Washer	1
14	900181					Elastic washer	1
15	900412					Countersunk screw	1
16	802028					O-Ring	2 **
17	401421					Flat gasket	1 **
18	101086					Intermediate cover	1
19	802029					O-Ring	1 **
20	802030					O-Ring	1 **
21	800391					Sealing ring	4 **
22	801814					Allen screw	4
23	802023					O-Ring	4 **
24	800027					Sealing ring	4 **
25	100500					Ring eye nipple	2
26	100501					Hollow screw	2
27	801210					Handle half	1
28	801473					Plug switch	1
29	801311					Strain relief sleeve	1
30	801803					Cable, compl.	1
31	801221					Strain relief clamp	1
32	900699					Fillister self-tapping screw	2
33	801211					Handle half	1
34	900623					Fillister self-tapping screw	2
35	801700					Fillister screw	4

Wearing parts **

Pos.	Art.-No.	Art.-No.	Art.-No.	Art.-No.		Description	Pcs.
<i>Gear</i>	1500	1750	2400	3750			<i>min⁻¹</i>
1	101181	101350	100292	101378		Gear, compl.	1
2	200750					Gear casing	1
3	900639					Ball bearing shim	1 **
4	900737					Deep-groove ball bearing	2 **
5	901031					Shaft sealing ring	1 **
6	800001					Circlip	1
7	900000					Deep-groove ball bearing	1 **
8	301163					Drive spindle	1
9	800000					Circlip	1
10	900120					Adjusting spring	1
11	301416	301475	301419	301419		Ground wheel	1
12	900211					Circlip	1
13	301258					Flange	1
14	800076					Lock washer	4
15	900689					Allen screw	4
16	301417	301476	301420	301420		Pinion shaft	1
17	900128					Adjusting spring	1
18	301168	301168	301168	301257		Pinion wheel	1
19	801756					Snap ring	1
20	301166	301166	301166	301256		Countershaft	1
21	301169	301169	301169	301169		Countershaft wheel	1
22	200751					Intermediate cover	1
23	401383					Sleeve	3
24	801575					O-Ring	1 **
25	900167					Needle sleeve	1 **
26	801573					Axial bearing disk	2 **
27	900800					Axial needle cage	1 **
28	900038					Needle sleeve	1 **
29	900802					Shaft sealing ring	1 **
30	800391					Sealing ring	3 **
31	902026					Allen screw	3
32	800027					Sealing ring	1 **
33	800026					Screw plug	1
34	801757					Transmission oil	1 **

Wearing parts **