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Operating Manual

Mixer



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1. Safety instructions



➤ **The mixer is not approved for mixing inflammable liquids classified A1, AII and B.**

- Only use the mixer for its designed purpose.
- Install the mixer so it cannot fall in the container.



➤ **Comply with all working procedures.**



➤ **Wear personal protective equipment.**

(Face protection, safety goggles, safety gloves, safety clothing etc.)

- Observe the electrical connection schematic from the motor. The schematic is located in the junction box of the motor.
- For outdoor use, equip the motor with a weather shield.
- The mixer motor or parts of it shall not be immersed in corrosive substances nor stored or installed unprotected over or in the vicinity of corrosive vapour.



➤ **Before switching on the motor, make sure the impeller is entirely immersed.**



➤ **For Gearbox size ESG 110 and higher. Prior to the commissioning, remove the transport screw and insert the bleeding screw.**



➤ **Gearbox factory oil filling: SHELL Tivela Oil SC 320. Refill only with the same oil.**



➤ **Comply with the operating manual when using spare parts or loose parts. The warranty is void if damage occurs due to inappropriate installation, handling or maintenance!**



➤ **Do not switch on the mixer if others are present in or in the vicinity of the danger zone. The operator and others must be protected from dangerous hazards, which may occur from mechanical actions and motions, electrical power etc.**

➤ **Safeguards are essential for protecting operators and others in the vicinity from preventable injuries. The safeguard must prevent hands, arms, and any other part of an operator's body from making contact with dangerous moving parts. If necessary, install safeguards for example, a protection hood or adapt the construction.**

- Prior to the commissioning of the mixer, the EC label must be delivered to the whole plant. See also Chapter 11.

2. General

- WES products are manufactured with great care.
- WES warrants flawless quality. The warranty does not cover the normal wear of parts and inappropriate installation, handling and/or maintenance of parts.

3. Transport and storage

- The mixer is shipped in several pieces and must be assembled on site. Pay attention to the Operating Manual, Chapter 6.
- Handle the mixer with care. Make sure the mixer cannot fall, tumble, slide etc.
- Only unpack the mixer shaft before use. Keep the mixer shaft as long as possible in the original packing.
- The mixer shaft should be stored or laid on a flat hard and clean surface. Incorrectly storing or laying of shafts, especially long mixer shafts or assembled shafts could result in bent shafts. Do not apply any side force to the mixer shaft to avoid out-of-round in operation.
- Beware of any sharp or pointy item when handling mixer shafts with protection coating. A damaged coating will lead to early failure of the mixer!

4. Electrical motor

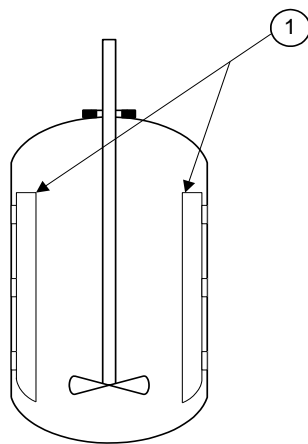


- **Only qualified personnel are allowed to perform installation work on the electrical motor.**
- Always use a motor breaker for the motor.
- The power supply i.e. voltage and frequency must match the data on the motor rating plate.

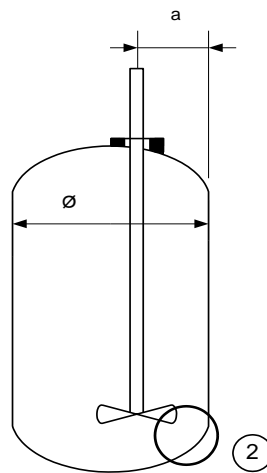
5. Installation indications

- To avoid a strong vortex of the liquid in a cylindrical container, place at least two plates Pos.1 on the wall as shown in picture A.
- Installing the mixer in a vertical and eccentric position may be sufficient to avoid a strong vortex, see picture B. Use the rule below to determine the position.

Picture A



Picture B



$$\text{Distance to the wall [a]} \approx \frac{\text{Diameter } [\varnothing]}{3,5}$$



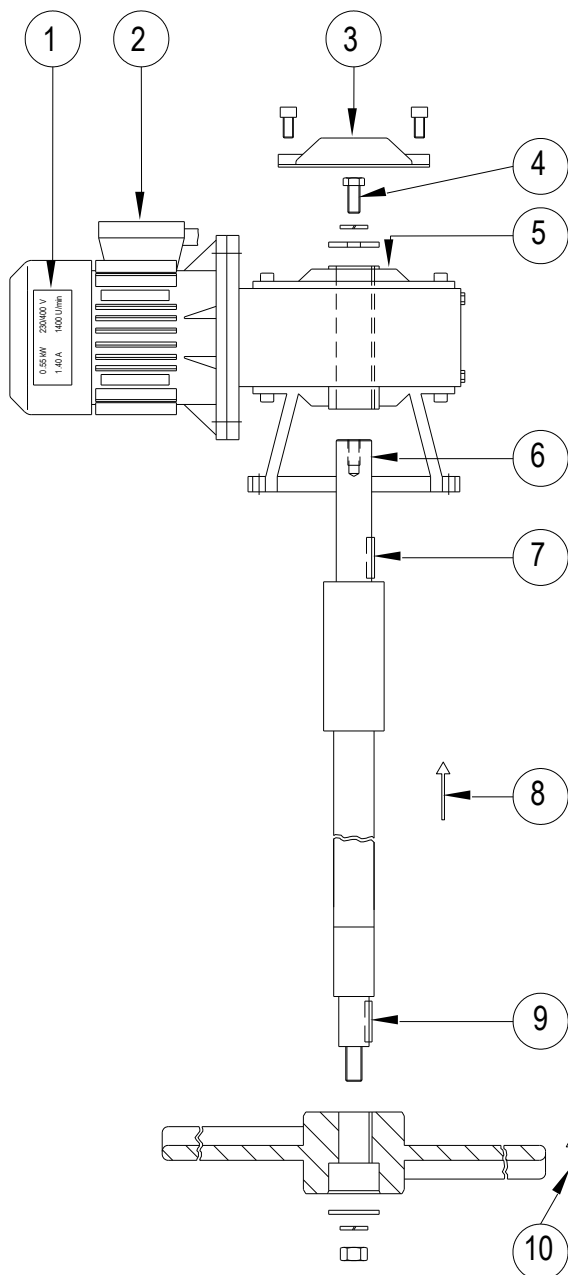
➤ **Caution:** pay attention to the wall distance and the impeller diameter. See picture B Pos.2.

6. Mixer assembly


6.1 WES -mixer Shaft stainless steel




➤ **Before switching on the motor, make sure the impeller is entirely immersed.**




- 1) Control the rating plate – Only connect the motor to a power supply matching the data on the rating plate.
- 2) Only qualified personnel are authorized to perform electrical installation. The electrical schematic is located in the junction box.
- 3) Protection lid.
- 4) Max. tightening torque of the hex-head screws:
 - M 8: max. 7Nm
 - M10: max. 14Nm
 - M12: max. 25Nm
 - M16: max. 50Nm

5)  **For Gearbox size ESG 110 and higher. Prior to the commissioning, remove the transport screw and insert the bleeding screw.**

6) Apply grease sparingly to the shaft end prior to assembly.

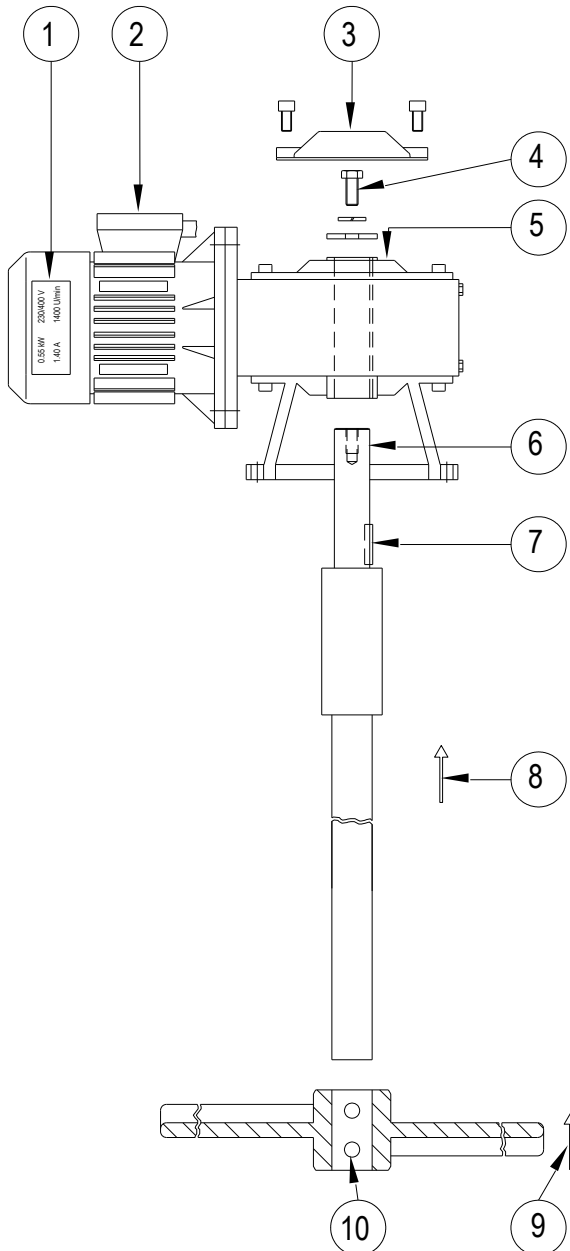
7)  **Check the sit of the parallel key prior to the assembly.**



8) Slide the shaft into the gearbox.

9)  **Check the sit of the parallel key prior to the assembly.**

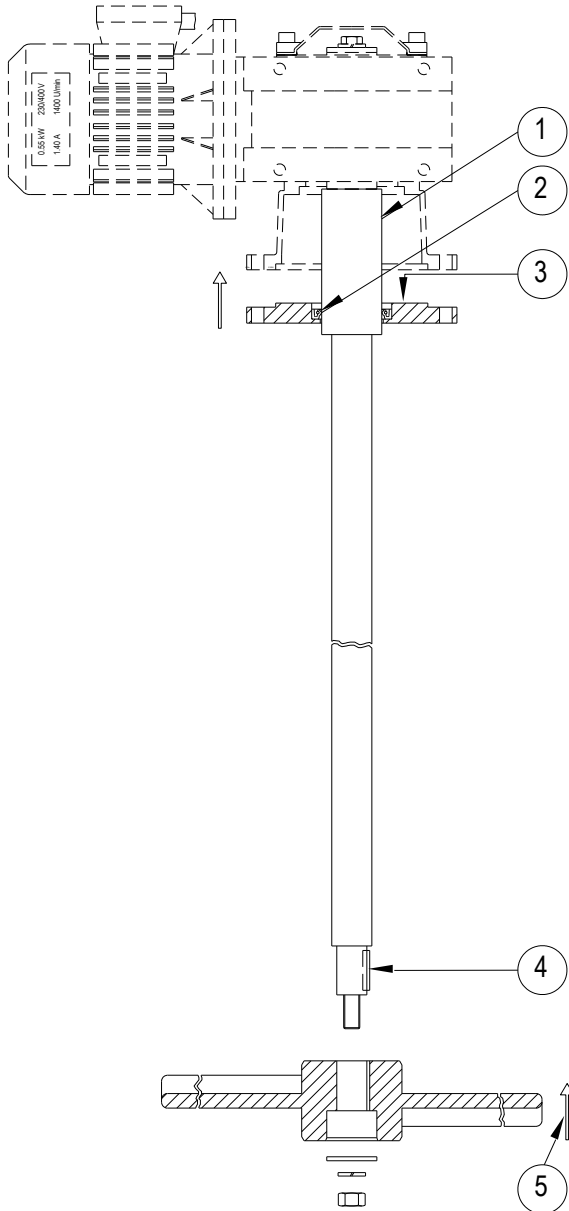
10) Slide the impeller onto the shaft, tighten the screw.


6.2 WES-Mixer, movable impeller Shaft and impeller stainless steel



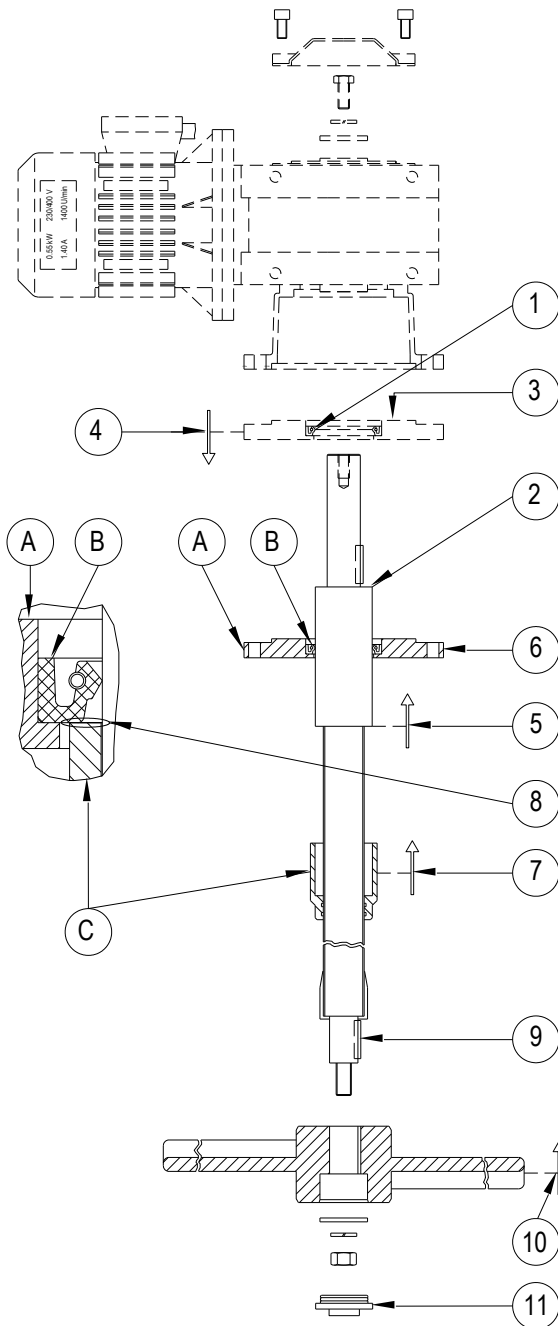
- 1) Control the rating plate – Only connect the motor to a power supply matching the data on the rating plate.
- 2) Only qualified personnel are authorized to perform electrical installation. The electrical schematic is located in the junction box.
- 3) Protection lid.
- 4) Max. tightening torque of the hex-head screws:
 - M 8: max. 7Nm
 - M10: max. 14Nm
 - M12: max. 25Nm
 - M16: max. 50Nm
- 5)  **For Gearbox size ESG 110 and higher. Prior to the commissioning, remove the transport screw and insert the bleeding screw.**
- 6) Apply grease sparingly to the shaft end prior to assembly.
- 7)  **Check the sit of the parallel key prior to the assembly.**
- 8) Slide the shaft into the gearbox.
- 9) Slide the impeller onto the shaft, tighten the screw.
- 10) Max. tightening torque of the headless screws:
 - M 10: max. 16Nm
 - M 16: max. 65Nm



6.3 WES- Mixer with sealing flange Shaft stainless steel



- 1) Apply grease sparingly to the coupling of the mixer shaft prior to assembly.
- 2) Apply grease sparingly to the radial shaft seal prior to assembly.
- 3) Make sure the centring of the flange faces the gearbox. Slide the flange onto the gearbox flange.
- 4)  **Check the sit of the parallel key prior to the assembly.**
- 5) Slide the impeller onto the shaft, tighten the screw.

6.4 WES-mixer with plastic coated shaft



- 1) Apply grease sparingly to the radial shaft seal prior to assembly.
- 2) Apply grease sparingly to the coupling of the mixer shaft prior to assembly.
- 3) Make sure the centring of the flange faces the gearbox.
- 4) Slide the sealing flange on the coupling.
- 5) Slide the shaft into the gearbox. See also chapter 6.1
- 6) Slide the flange onto the gearbox flange.
- 7) Slide gently the protective sleeve over the coupling.
- 8)  **Gently and without pressure, push the protective sleeve of the coupling onto the radial shaft seal.**
- 9)  **Check the sit of the parallel key prior to the assembly.**
- 10) Slide the impeller onto the shaft, tighten the screw.
- 11) Screw tight the protection cap.

Legend:

- Pos.A: Sealing flange
 Pos.B: Radial shaft seal
 Pos.C: Protective sleeve of the coupling

7. Commissioning / Maintenance / Overhaul

- Observe the safety instructions in Chapter 1.
- Perform the oil change of the gearbox according to the spare part list.
- After maintenance or overhaul of the mixer, proceed to assembly and commissioning according to the instructions in Chapters 6 to 8.
- Be cautious of rotating and driven parts.
- Pay attention to gas and odours emanating from the liquid. Always observe safety and protection procedures.

8. Normal operation

- Observe the safety instructions in Chapter 1.
- (1) Safeguards are essential for protecting operators and others in the vicinity from preventable injuries. The safeguards must prevent hands, arms, and any other part of an operator's body from making contact with dangerous moving parts. If necessary, install safeguards for example, a protection hood or adapt the construction.
 - (2) Insure that the rotating parts of the mixer, such as the shaft and the coupling cannot be accessed to prevent accidental contact with it.
 - (3) The mixer's container must be steady on the ground.
 - (4) If the mixer is installed on a movable actuated lid, it is necessary to provide safeguards to avoid injury, which may occur when the lid is moved onto the container.
The control and surveillance system must include the 2 following safety measures:
 1. Two hand control with self-surveillance and control of the simultaneous action of the controller's input.
 2. Control system with a reset outside the danger zone or a switching device affixed to the lid.
 - (5) Mixers where the impeller can be moved out of the liquid or the container moved away, must be equipped with safeguards, which enables switching on only when the impeller is in the container.
 - (6) Ensure that the mobile mixer cannot be switched on unintentionally.
 - (7) The controller of the machines in paragraph 3, 4 and 5 must comply with the current regulations.

Pay attention to gas and odours emanating from the liquid. Always observe safety and protection procedures.

9. Disassembling

- Beware of released heavy loads when loosening screws! Physical injury and damage to the equipment such as impeller, container, mixer shaft etc. may occur.
- Pay attention to gas and odours emanating from the liquid. Always observe safety and protection procedures.

10. Disposal

- The local waste treatment regulations are to be followed. Depending on the use of the mixer, parts or the entire mixer must be considered as hazardous waste.