

JETcam NOZZLES BY ENZ®



Safety instructions

General safety instructions

For proper and intended use of the product, the following points must be observed:

- The product may only be used in pipes or pipe-like ducts. The profile to be cleaned must be closed at the top and be completely surrounded by material.
- The product is suitable for operation in all common pipe materials.
- The product may only be operated with correct and intact hose connections.
- Cleaning areas (shaft, inlet, etc.) must be adequately secured during operation.
- No persons are allowed in the pipes or at the pipe ends during operation.
- The max. pressure indicated on the nozzle must not be exceeded.
- The waste water must not be discharged into streams or rivers.
- Before each usage, check that the product is in a proper condition.
- Defects must be rectified before being used.
- Only proper tools may be used. (For nuts, only use matching spanners)
- Only the accessories provided and approved by Optronic GmbH may be used.



1. Steering part WDS
2. Cleaning nozzle 6-jets
3. Cleaning nozzle 12-jets
4. KBR-Rotor 40 mm WDS
5. Rotopuls-Rotor 40 mm WDS
6. Extension rotation nozzle WDS
7. HRH Rotation nozzle WDS
8. Front jet nozzle with protection
9. Maintenance oil
10. Nozzle cleaning set

11. Bit hand holder
12. Bit 2mm/ 6,3 mm
13. Adapter bit-socket
14. 14. 3.5 mm socket
15. Torque adapter 1.2 Nm
16. 5 mm long socket
17. Open-ended spanner 24 mm
18. Open-ended spanner 19 mm
19. Open-ended spanner 8 mm
20. 20 Precision Bit hexagon 3 mm/6.3 mm

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To equip the steering part with a cleaning nozzle, you only have to screw the selected 6- or 12-jet nozzle onto the steering part and then secure it with the grub screw.

To secure the grub screw, the **Bit hand holder** is used in combination with the **Torque adapter 1.2 Nm** and the **2 mm Bit insert Allen key**.



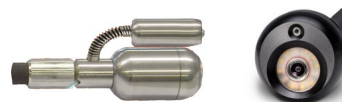
VORSICHT!

Only the prescribed tools may be used



To mount the front jet nozzle, the M6 grub screw must first be removed using the 3mm Allen bit insert.

Afterwards, the front spray nozzle can be used instead of the grub screw. With the help of the 8 mm open-ended spanner the front spray nozzle is tightened hand-tight.



The camera head and the front spray nozzle are inserted into the two recesses of the muzzle and then plugged and screwed together with the lower and upper sides.



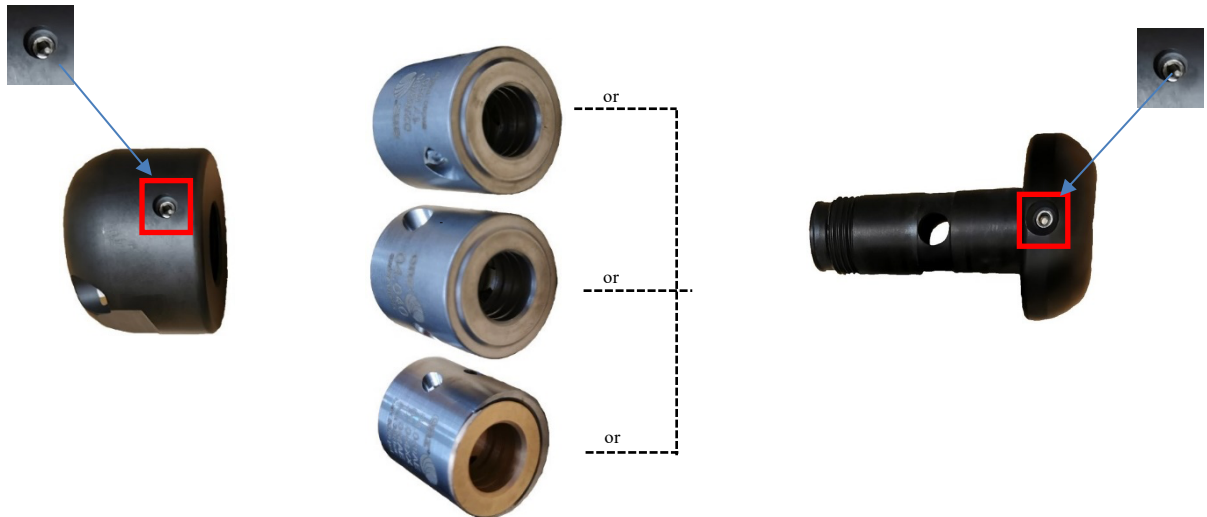
The front spray nozzle is activated at a pressure of 0~90 bar, closed at ~90 bar. To reactivate the front spray nozzle, the operating pressure must be reduced to 0 bar and increased again.



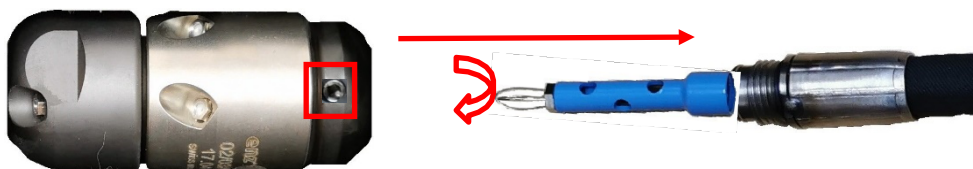
To equip the steering part with a rotation nozzle, the whisk must first be fitted with the **whisk extension**. This is plugged over the whisk and hand-tightened in a clockwise direction.



The stator is fitted with the desired rotation nozzle, hand-tightened and then secured with the grub screw. To secure the grub screw, the **Bit hand holder** is used in combination with the **Torque adapter 1.2 Nm** and the **2 mm Bit insert Allen key** is used.



The complete rotation nozzle can now be screwed hand-tight onto the steering piece and secured with the grub screw. To secure the grub screw, the **Bit hand holder** is used in combination with the **Torque adapter 1.2 Nm** and the **2mm Bit insert Allen key**.





Make sure that no dirt gets into the tool when unscrewing it. This can lead to clogging of the inserts

Set up workplace

Before working with the nozzle set, take the following measures:

The work area must be cordoned off in such a way that there is no danger of falling and no danger from road traffic.

Obtain the necessary information about the waste water discharged into the shaft (chemical substances, gases, vapours) The necessary measuring devices such as explosimeter, oxygen meter, gas warning device, etc. must be ready for use.

Ensure that the appropriate nozzles are available.

Operation

Insert the tool into the pipe to be cleaned.

Slowly increase the pressure to 100-150 bar at the nozzle.

Drive the tool carefully to the end of the area to be cleaned.

Pull the tool back slowly to clean the pipe and flush loosened dirt to the shaft. After finishing the cleaning work close all manhole covers again.