

1. Drilling process

Please observe the applicable standards and regulations, accident prevention regulations and the regulations of the employers' liability insurance associations.

According to DVGW regulations, valves must be installed „stress-free“. Installation should only be carried out by appropriately trained personnel.

Please pay particular attention to DVGW Code of Practice W 333 for drilling water pipes.

1.1. Before drilling:

- Clean the pipe surface (the surface of the pipe must be free of dirt, soil or grease)
- Place the two half shells of the HAKU 45° - service valve (order no. 524-00) around the pipe
- Tighten the enclosed hexagonal bolts evenly crosswise to the metal stop with the torque specified below. (do not use an extension):
 - D 90 – D 140: max. torque: 32 Nm
 - D 160 – D 225: max. torque: 56 Nm
- Install waste water slide valve ZAK 69 (order no. 483-01) in the HAKU 45° and secure against unintentional unlocking with anti-twist protection
- Select the drilling adapter for ZAK 69 (12) and screw it into the drilling machine.
- Loosen the clamping screw (4) for the boring rod fixing
- Screw the drilling unit ZAK 69 (order no. 8312001100) onto (14) the boring bar
- Turn feed nut (8) up to the red marking
- Open the flushing tap (9)
- Milling cutter (15)
 - d 40 mm (Order No. 831.101.4000) for PE pipes d63 - d75 or
 - d 50 mm (Order No. 831 101 5000) for PE pipes d90 – d225 screw onto the drilling unit (14)

Comment: If possible, the pipeline to be drilled should be filled with water for the tapping process in order to ensure appropriate cooling of the drills/milling cutters.

- Move ZAK 69 waste water valve to open position
- Insert the drilling machine with the drilling adapter into the ZAK69 socket and lock it clockwise. Tighten the lock nut (12.1) of the transition piece with a hook spanner (Order No. 831.700.0601).

Guide the drill shaft (1) up to the pipe surface. Avoid hitting the cup drill on the pipe. The drill shaft must be aligned so that the detents are on the side of the clamping screw. Engage the clamping bolt (4.1) by moving the drill shaft back and forth. Then fix the drill shaft by hand with the clamping screw (4).

1.2 Drill

The drilling process must be carried out at a slow and as even a feed as possible. The feed motion tool (Order No. 831.700.0500) can be used for this purpose. The drill shaft can be manually operated with the ratchet (Order No 831.700.0400) for the drilling. Alternatively, other drives, e.g. (AKKU screwdrivers), can also be fitted. If actuators are used, a slow and more even rotation of the feed leads to less tool wear.

Caution:

If the feed nut (8) is positioned on the lower part (10) of the drilling machine, interrupt the drilling process, loosen the drill shaft (1) by opening the clamping screw (4) and turn the feed nut (8) back to the red marking. Make sure that the drill shaft is NOT pulled back with it. Then fix the drill shaft (1) again by tightening the clamping screw (4). Then continue the drilling process as described.

Caution:

When the clamping screw (4) is opened, the pressure of the medium can cause the drill shaft (1) to suddenly extend upwards. Therefore, make sure that the clamping screw is not opened unintentionally during the entire drilling process.

1.3 Flushing

During and after the tapping process, the flushing tap (9) must be held in the open position until all residual chips have flushed out.

1.4 After drilling

After drilling, pull the drill shaft (1) back a little by turning the feed nut (8) to the left, open the clamping screw (4) and pull back the drill spindle (1) completely. Flush again if necessary.

Caution: When the clamping screw (4) is opened, the pressure of the medium can cause the drill shaft (1) to suddenly extend upwards.

- Move ZAK 69 waste water valve to closed position
- Dismantle drilling machine (in reverse order to assembly)
- Check whether the drilled out „tablet“ has been held in the cup drill

1.5 Commissioning and pressure testing

After installation, please carry out a pressure test in an open pipe trench in accordance with the recognised rules of technology.

