



INFO + Important NOTES

on Drilling with Diamond Core Drill Bits

For Your SAFETY:

1. **Use only a securely mounted, precisely running drill press.** Under no circumstances use a hand-held machine!
2. **Wear safety goggles.**
3. **Sit in front of the drill press** and operate the feed lever with the fingertips of a steady hand.
4. **For LONG hair:** Tie it back or wear a hairnet. (To prevent hair from getting tangled in the rotating parts of the drill).
5. **Place the object to be drilled firmly and immovably** underneath the drill bit.
6. **ELECTRICITY:** Operate or touch the On/Off switch, as well as all other electrical components, only with **DRY hands**. Use a residual current device (RCD / PRCD safety switch)!

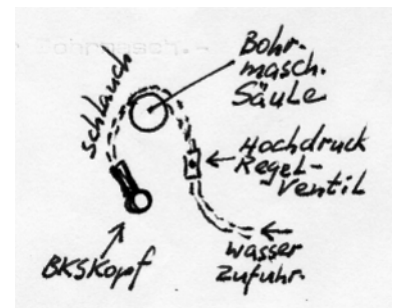
Types of Drill Bits

We distinguish between solid and core (hollow) drill bits. The type of drill bit used depends, among other things, on the material of the object, the quantity, the hole diameter, the drilling depth, etc. Continuous and proper cooling is always critical. This can be applied from the outside or from the inside (through the core drill bit).

Using our DRILLING FLUSHING & COOLING HEADS (abbreviated as DFCH)

(= for better water flow through the core drill bit)

- a) The **MAXI-DFCH** requires a conical B16 spindle end on the drill press.
- b) The **MINI-DFCH** is simply clamped into the drill chuck (7mm shank). For the MAXI version, the drill chuck of the machine must be removed and the head is pressed onto the conical (B16) shaft end of the drill press. (Attention: The shaft end and the inner cone must be absolutely clean).
- c) The water supply tube on the DFCH must point to the left side of the drill press column (when sitting in front of it. See sketch).
- d) Route the hose connected to the DFCH (see assembly instructions below) along the column of the drill press.
- e) **BEFORE EVERY START** of the drill press, ensure that the aforementioned water supply hose is positioned against the drill press column.
- f) Never operate the drilling flushing heads above **3000 RPM!** (Due to the integrated seals).



Drilling Procedure and Techniques

Starting the Drill (Depth Adjustment)

Drill depth adjustment: When sitting in front of the drill press, you will see a scale on the left side of the machine head. Adjust the drilling depth so that there is still approximately 2 mm of clearance between the drill bit and the pin of the drilling jig when you pull the feed lever on the right side all the way down.

This is critical, as otherwise the drill bit can be damaged. The drill bit must never come into direct contact with the pin of the drilling jig.

The Starting Sequence:

1. **FIRST**, open the water supply so that cooling water flows through the core drill bit.
2. **IMMEDIATELY AFTER** (with a dry hand), switch on the drill press and begin drilling (see instructions below).

Ending the Drilling Process:

1. **FIRST** (ensuring your hand is completely dry), turn off the drill press power.
2. **THEN**, shut off the cooling water supply.

Drilling Technique and Safety

- Ensure you are wearing appropriate Personal Protective Equipment (PPE), including safety goggles and hearing protection.
- Maintain a stable, seated position in front of the drill press.
- Operate the feed lever with precision and care, following the manufacturer's specific safety guidelines for your machine model.
- With the machine running, lower the drill tip slowly and begin the drilling process gently with very light pressure to avoid bit binding or material fracture.

The Flushing Cycle (Interval Drilling):

To maintain tool integrity and safety, use a pulsed drilling method:

1. Drill for approximately **two to three seconds**, then lift the drill bit out of the borehole for **one second**. This allows the water to flush the borehole, cooling the bit and removing debris.
2. Lower the bit and repeat this cycle until the desired depth is reached. Continuous monitoring of the machine and material is essential.

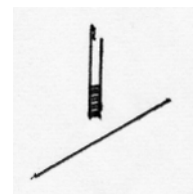
⚠ Warning:

When drilling through-holes in stone or glass, excessive pressure near the exit point can cause the material to chip or shatter. To minimize this risk:

- Secure the workpiece firmly to a backing plate (such as glass or stone) using appropriate industrial cement or clamps.
- Reduce drilling pressure significantly as you approach the exit of the hole to ensure a clean breakthrough.

Drilling Spheres:

For spherical objects, using a specialized "Sphere Drilling Jig" is recommended to ensure stability. Drilling from both sides to meet in the center is a standard professional technique to prevent material breakout.



Surface Alignment:

For safety and precision, the drilling surface should be perpendicular (90°) to the drill bit. If the surface is uneven, use a specialized starter or pilot bit to create a guide hole before proceeding with a core drill.

Maintenance and Clogging:

Monitor the cooling water flow constantly. If the water flow decreases, the bit may be clogged. Turn off the machine completely before attempting to clear the bit with a professional ejector tool. Always consult your machine's manual for specific maintenance and safety procedures.

RPM Guidelines, Maintenance, and Accessories

Approximate RPM Guidelines

- **Diamond Solid Drill Bits:**
 - **1–2 mm Ø:** Minimum 2000 RPM; up to 5000 or even 8000 RPM possible depending on the object's material.
 - **3–6 mm Ø:** Minimum 1500 RPM; up to 3000 RPM possible.
- **Diamond Core (Hollow) Drill Bits:**
 - Same as above, but **do not exceed 5000 RPM.**
 - If used with a Drilling Flushing & Cooling Head (DFCH), **never exceed 3000 RPM!**
- **Material-Specific Guidelines:**
 - **Glass:** For a 6 mm Ø drill bit, use 3000 RPM.
 - **Stone:** Lower RPM than glass.
 - **10 mm Ø Drill Bits (General):** 500 to 1500 RPM.

Attention: Never operate Drilling Flushing & Cooling Heads above a maximum of 3000 RPM! The drill bit must never "squeal" or whistle. If it does, the RPM is too high and must be reduced.

Cleaning and Sharpening Stone

It is highly recommended to "dress" or "refresh" the drill bit when it is brand new (to remove the protective factory coating) as well as periodically during use. To do this, drill a hole into this specialized stone. *Note: Always drill into the wet sharpening stone with plenty of water flushing!* This exposes new diamond grit and tips, making the drill bit sharp and ready to bite into the material again.

Maintenance

After finishing your work, thoroughly clean and dry the machine and tools to prevent the formation of rust.

Available Accessories

- **Sphere Drilling Jig:** For pilot-drilling or drilling completely through spheres. This device allows you to drill spheres from two sides, preventing material breakout at the exit point of the borehole.
- **Small Clamping Device:** For securely clamping workpieces to be drilled.
- **High-Pressure Control Valve:** A practical valve for regulating and shutting off the cooling water flow directly at the drilling site.
- **Faucet Connector Fitting:** For connecting to your water faucet (with a 3/4-inch thread). For even greater independence, we recommend the...
- **Manual High-Pressure Pump:** Provides high pressure for enhanced cooling and cleaner flushing of the core drill bit. Can be set up anywhere, even where no faucet is available.