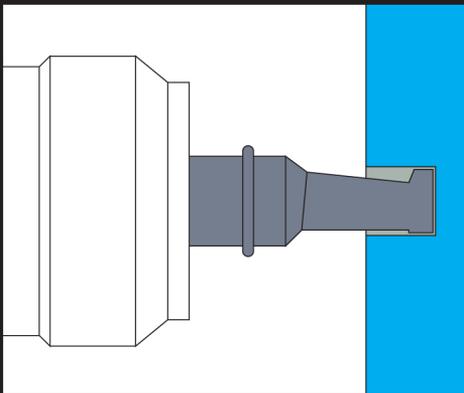


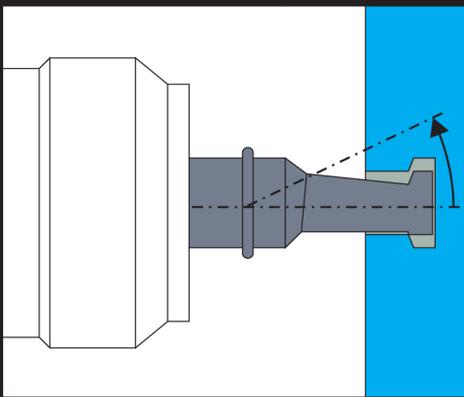
The undercut anchor

quick – easy - safe

Drilling



Undercutting

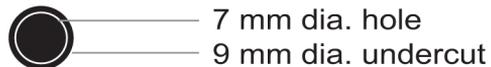


- A cylindrical hole is drilled and then conically undercut in one step with only one tool.

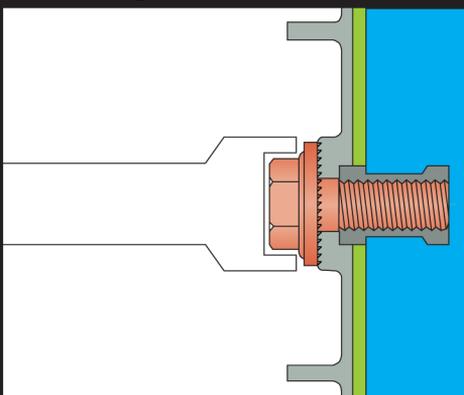
Different levels of automation are possible depending on machine type and material.

The drilling time in ceramics is less than 10 seconds.

Panels of any size or weight are given an undercut of precise and uniformly symmetrical shape.



Fitting



- To prepare for installation, an undercut anchor is inserted into the hole and tightened to a positive fit using a screw.

Quick, simple and safe with normal tools, e.g. a rechargeable screwdriver.

Safety and product liability require that the KEIL undercut attachment system is always used as a unit. Correct functioning is ensured only if matching KEIL products (anchor with screw or threaded pin, drill head and facade drill) are used together. Their use as a system has also been stipulated in the approvals granted and applied for. The components of the KEIL undercut attachment system are protected by patent.

KEIL concealed anchor: drilling hole and inserting anchors.

1. Place the material (stone / tile) face down on a clean, smooth, flat surface Support the material as necessary.
2. Check the product thickness to determine the anchor depth. Select largest Anchor available according to stone thickness.
3. Mark locations for anchor hole drilling. Be sure to drill the correct number of Holes.
4. Weight load on marble and granite material with a thickness of over 18 to 20mm or $\frac{3}{4}$ inch are no concern. Minimum pull “out load” per anchor is at least 250 kg – up to 1000 kg.
5. Attach the Drilling Machine to compressed air, water and electricity. See manufacturer’s instructions. Allow for constant water pressure, use potable or clean filtered water.
6. Adjust the Drilling Depth: set the drilling depth according to the anchor depth. Facing the front of the Drill machine – on the upper right side is a threaded road with two knurled disc nuts. Place the KEIL Anchor below the outer edge of the lower knurled disc nut and adjust the disc nut until the anchor fits tight between the frame and the disc nut. Then hold the lower disc nut in position and screw the top disc nut tight to the lower one to secure the selected position. The lower disc nut has an extrusion to allow for the thickness of the anchor head.
7. When adjusting drilling depth, the Drilling machine: should sit on a flat and even surface, the air valve open to allow suction to hold the Drilling Machine down on the surface and the main lever in pulled down. The KEIL Drill bit must touch the surface.
8. Briefly turn on the Drilling Machine to check for proper water flow at the end of the diamond bit. Recommended water pressure is around 3 to 4 bar.
9. Machine has an electric water valve. It will allow water flow only when power is turned on. Always check for unobstructed water flow.
10. Start drilling: Set the Drilling Machine Bit over the marked point; pull the depth handle down to line up drill with the marked point. Release the depth handle.
11. Open Air valve to hold vacuum foot down on material surface.
12. Turn electric power on then pull depth handle down slowly until it is fully extended. This moves the diamond drill into the stone. Watch the water flow from the drill bit while drilling.
13. While keeping the front depth handle fully down, take the second handle to your left and push it down until stop, stay down 1 second and release handle back to original position.
14. Now release depth handle – the drill retracts. Water should exit the drill bit. (Never release the depth handle when the “undercutting” -2nd – handle is pressed down!)
15. Turn off Drilling Machine – hole is done. Water flow stops.

16. Shut the air valve off. Stop suction.
17. Insert depth measuring guide into the drilled hole. Control the correct drilling depth.
18. Use only original KEIL tools to ensure proper anchor setting.
19. Adjust drilling depth accordingly if hole is too deep or too shallow. Depth measuring guide is inserted in hole; a 0.4mm metal blade is laid between the material surface and the head of the anchor guide. When hole is correct, the guide pin will not go fully down into the drilled hole.
20. Insert the KEIL anchor. Hold anchor head using a 9mm open jaw wrench. Insert Stud and use correct insertion tool to screw stud into anchor.
21. Anchor must be able to freely turn after stud is fully inserted.

Remark:

Drilling time per 15.0 mm anchor is 6 second, undercutting 1 second. Diamond drill bit lifetime depends on the hardness of the material.

Hard stone – granite from 180 to 280 holes, softer stone i.e. marble up to 400 to 600 holes.

Speed:

Speed adjustable KEIL Drill machines: use highest speed for wet drilling with diamond drill bits.

Diamond Bit:

To sharpen the diamond bit just drill several times into a 60 grit grinding stone. This will expose diamonds embedded in the drill bit head.

Water Flow:

When water flow is interrupted the drill bit may get overheated and will deteriorate and break off.

Air Pressure:

When air pressure is interrupted and the “undercut” lever is pulled down, the drill bit will break away.

Electric Power:

All KEIL Drilling machines are powered by either a Fein or Flex Grinder Motor For 100 – 120 Volt 60 Hz.

Maintenance:

Before and after use, use silicone spray on all aluminum parts and drill shaft. Rinse machine parts after use. Be careful not to spray any water in the motor. Unplug the machine from electricity outlet before cleaning.