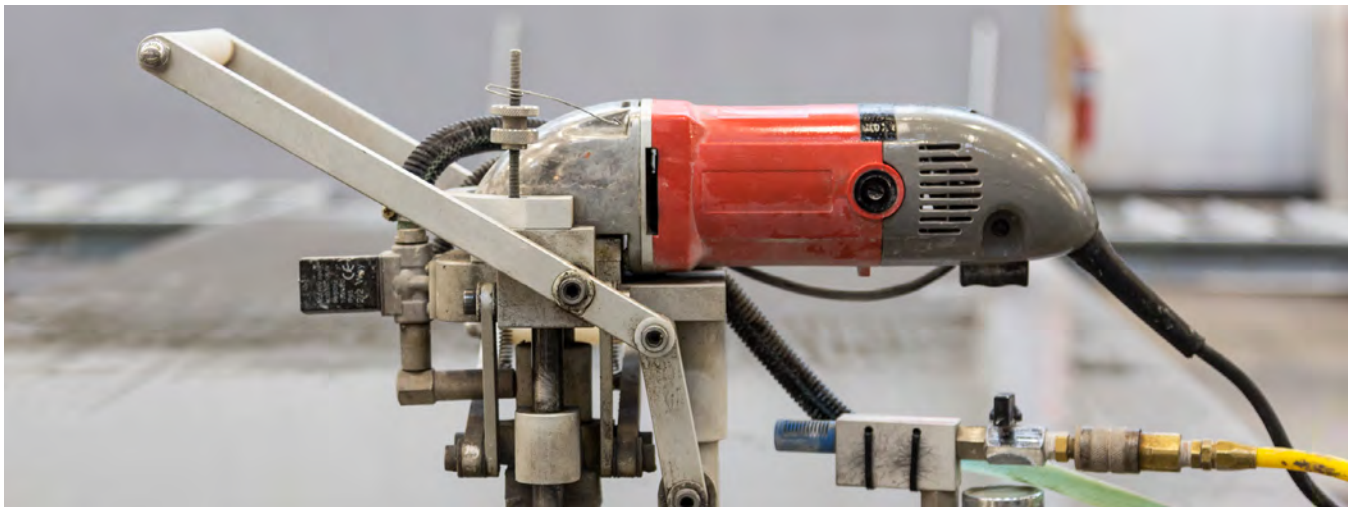
Concealed Fastener (KEIL Anchor): Field Drilling Instructions

Video Instructions



Installers for projects with concealed anchors should be prepared to drill panels in the field. The KEIL Portable Drilling Machine is REQUIRED for drilling concealed anchor attachment holes. Drilling machines can be purchased or rented through TAKTL. Please contact your TAKTL Project Manager for more information and review the following instructions thoroughly before operating the machine.

REQUIRED TOOLS AND EQUIPMENT
KEIL Portable Drilling Machine
Tri Flow Lubricating Oil
Lithium Grease
Clean Drilling Surface Waist-high Tables
Air Compressor + Hose with 1/4 in. Coupler
Water source + standard garden hose
Electrical source and small extension cord with circuit breaker provided with drilling machine
Depth Gauge and shim for measuring hole dimensions
Safety glasses
Waterproof apron, boots, and gloves
SAFETY + WORK GEAR
Wear gloves as well as eye and respiratory protection when cutting TAKTL panels. Safety Data Sheets for TAKTL panels are available on request.
ENVIRONMENT
Please adhere to all local, state, and federal regulations pertaining to the treatment and discharge of wastewater generated as a result of cutting and drilling TAKTL material. TAKTL is a non-hazardous material for the purpose of wastewater classification. Requirements for treatment of wastewater will be specific to project, site location, and cutting/drilling conditions.

REQUIRED DRILL CONNECTIONS

Air The KEIL Portable Drilling Machine utilizes a vacuum seal to maintain stability while drilling. In order for the vacuum seal to function, an air compressor hose with a 1/4in coupler is required.

Water The KEIL Portable Drilling Machine incorporates a water cooling system to prevent overheating and to facilitate the cleaning of slurry from holes as they are being drilled. A standard garden hose will fit the water supply line on the drill. Water can be turned on at the source and will only flow through the machine when the drill trigger is depressed. Water will spray out of the center of the drill bit while the machine is running. The water flow will shut off once the drill trigger is released.

NOTE: If water does not flow from the drill bit when the trigger is depressed, please follow the steps outlined in the section 6 of this document.

Electricity Each KEIL Portable Drilling Machine is supplied with a small extension cord, equipped with a built-in circuit breaker. The machine must be plugged into this cord, then plugged into the power source to operate. Check the reset button on the circuit breaker before use.

IMPORTANT

Before Drilling

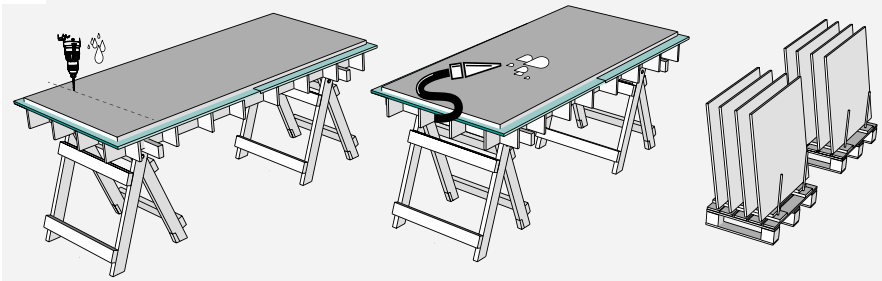
Wet drilling is required to reduce heat build up, sustain drill bit life, and produce clean holes with the least amount of chatter.

Remember to maintain all TAKTL handling instructions while staging, moving, thoroughly drying, and storing panels.

01 Securing the Panel

Lay the panel face down on the clean foam sheeting provided in the shipping crate. Prep a clean secondary table for washing and drying panels after drilling. Set up staging rack for completed panels (FIG. A).

A



02 Preparing the Drill

Lubricate the slide rails with Tri Flow lubricating oil and drill bit attachment areas with litihium grease as shown. Parts should be lubricated every two hours when using the drilling machine and at the start of each work day (FIG. B).

B

03 Calibration

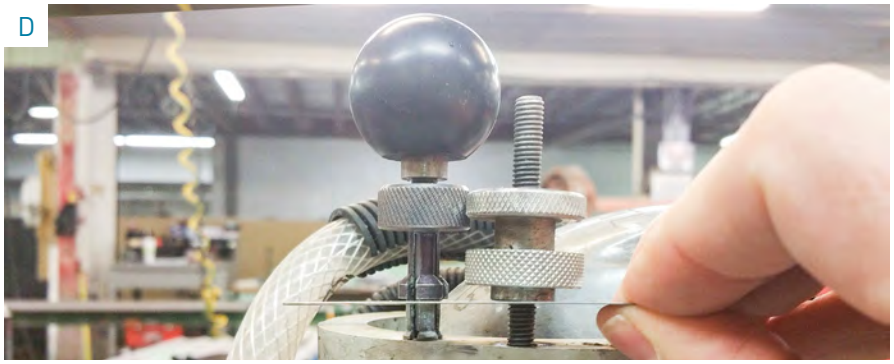
To set the desired hole depth, locate the depth adjustment bolt (FIG. C).

C

04 Adjusting the Depth

Turn on the valve to actuate the vacuum seal. Depress the front lever until the drill bit touches the surface of the material to be drilled. While the bit is touching the material, place the depth gauge next to the adjustment bolt and turn the stop washer until the bottom lines up with the flange of the depth gauge (FIG. D).

D



05 Confirming the Depth

When satisfied with the adjustment, tighten down the lock nut to secure in place. Drill several practice holes on a scrap piece of material to tune the machine and make any adjustments by quarter turns to the stop washer. Turning the stop washer clockwise will drill a more shallow hole, counter-clockwise will drill a deeper hole (FIG. E).

E

06 Preparing to Drill

Locate the hole markings or mark the panel back with an X at the exact hole location. Place the machine over the X marking the hole location, depress the lever until the drill bit touches the surface of the panel. Adjust until the bit is centered over the X marking as shown (FIG. F).

F

07 Drilling the Undercut

Once the machine is in place, turn the valve to actuate the vacuum seal. Squeeze the trigger to start the drill. With the trigger fully depressed, press the black button on the side of the machine to hold the trigger in the ON position. Gently push the lever down toward the panel surface (FIG. G).

G

7.1 Drilling the Undercut

Drill small amounts of the material, then slightly release the level to allow the bit to retreat from the panel so water can spray out any slurry from the hole. Continue to pump the lever until it bottoms out (FIG. H).

H

7.2 Drilling the Undercut

While holding the front lever down (FIG. G), depress the side toggle lever (FIG. I) to kick the drill bit for the undercut. Release the side toggle lever before raising the bit out of the panel with the front lever.

I

08 Using the Depth Gauge

After drilling each hole, review the depth to ensure the anchor will engage properly. Insert the end of the depth gauge into the hole, then depress the plunger as far as it will go. Twisting in a clockwise motion will help to seat the plunger. Don't be afraid to use some force (FIG. J).

J

09 Checking the Hole Depth

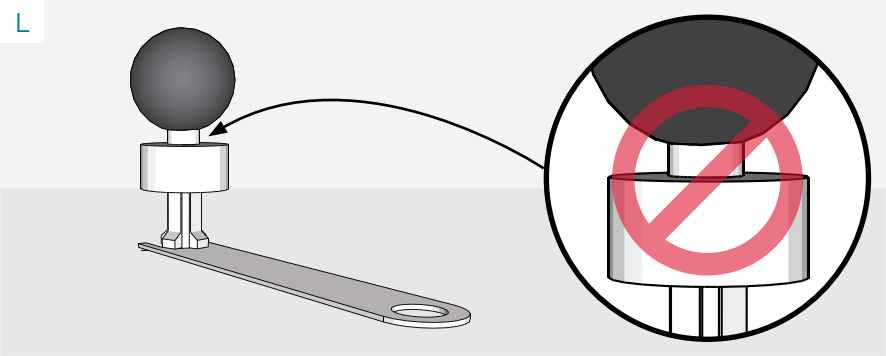
The amount of exposed shaft will determine a passing or failing hole as shown. If the plunger seats down completely, remove the gauge and place the U-shaped notch of the shim under the flange (FIG. K).

K

9.1 Hole Fails

Depress the plunger again. If the plunger seats fully with the shim in place, the hole fails (FIG. L).

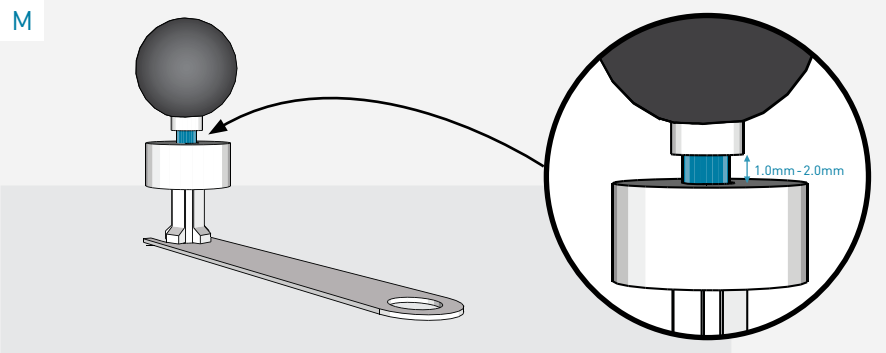
L



9.2 Hole Passes

If there is some of the shaft exposed (1mm-2mm) with the shim in place, the hole passes (FIG. M).

M



DAMAGE PREVENTION

Water Damage

- Keep panels uniformly wet during processing.
- Minimize the time panels are exposed to saw slurry water – do not leave panels sitting in cut water for more time than is necessary.
- Thoroughly rinse panels after cutting, scrubbing with a plastic brush if necessary to completely remove saw water residue.
- Dry panels with compressed air or an electric leaf blower after they have been rinsed.
- Store cut panels in a vertical position with nothing touching the face or back until they are completely dry.

Portable Drilling Machine User Guide: Maintenance

01 Clearing a Clog

Turn the machine on its side. Press the trigger and insert a small wire (such as a paperclip) into the tip of the spinning drill bit (FIG. A).

WARNING: Water will spray from the bit when the clog is cleared. If the bit has been clogged for any length of time, the initial burst of water may be hot.

A

02 Removing Drill Bit O-Ring

Turn the machine on its side. Roll the black O-ring (around the drill bit shaft holding two set pins in place) off of the shaft (FIG. B).

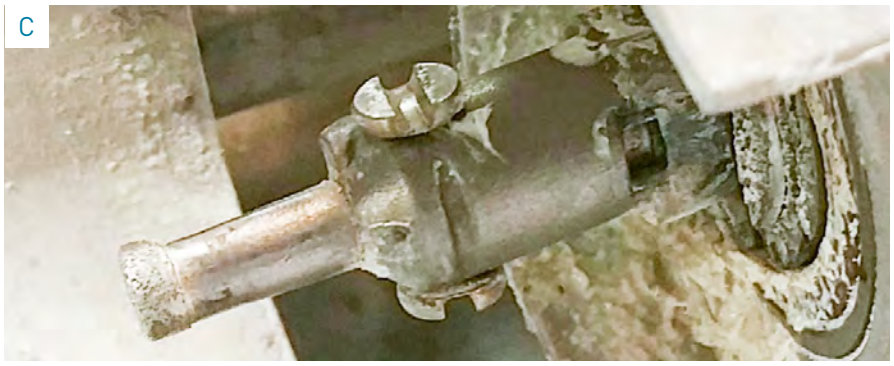
B

03 Removing the Pin Set

Gently remove the two set pins from the shaft of the drill bit. These will appear to be slot head screws, but there are no threads and they can be removed by hand (FIG. C).

WARNING: Do NOT operate the machine without both set pins in place and the black O-ring holding them securely.

C



04 Removing Old Bit

Slide the bit out of the machine. If the bit is stuck, gently push down on the side toggle lever to loosen it. When the drill bit is removed from the mounting pin, make sure the small gasket is still in place in the tip. If it is not, it will also need to be replaced (FIG. D).

D

05 Attaching New Bit

Place the new drill bit over the mounting pin and align the set pin holes with the recesses in the mounting pin.

Insert the set pins into the shaft of the drill bit, making sure they seat firmly in place (FIG. E).

E

06 Re-attaching Black O-ring

Roll the black O-ring over the shaft so that it seats into the notches on the heads of the set pins (FIG. F).

F

07 Test

Turn the drill upright and gently push the side toggle lever down. If the toggle does not move, remove the O-ring and set pins, turn the drill bit 180 degrees and reinstall the pins and O-ring. Over time, the black gasket around the base of the drill may begin to wear (FIG. G).

G

08 Removing Faulty Gasket

Pull the gasket out of the groove around the base of the machine and secure a new one into place. It may have to be worked a bit to seat completely into the groove (FIG. H).

H

09 Inserting New Gasket

Once replaced, test for vacuum capability and adjust as necessary. (FIG. I).

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