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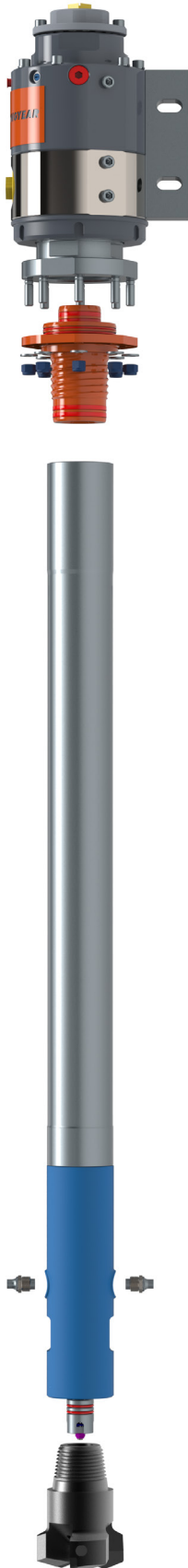
JET GROUTING TOOLING

SINGLE PHASE TYPE

03/2026



DRILLING SYSTEM

**APPLICATION**

Jet grouting or high-pressure Injection is a ground stabilization technique as well as a sealing method used in soil conditions ranging from loose sediment up to soft rock structures.

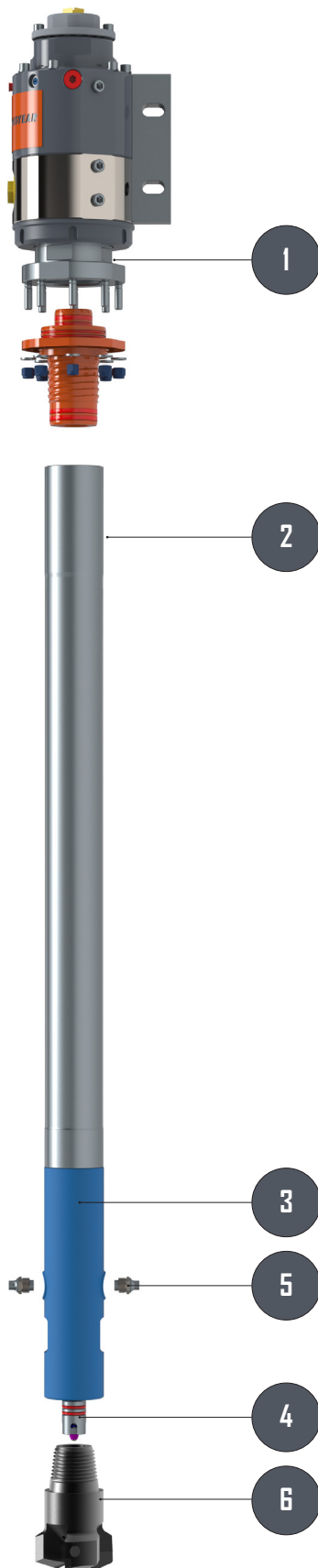
In the jet grouting process, a cement suspension is injected at pressures of 100-600 bar (1,450-8,700 psi) through the jet grouting tooling and into the soil in the drilled hole. The cement suspension mixes with the surrounding soil as the jet grouting tool string is slowly rotated and retracted from the hole. The result is a subsurface grout column.

Jet grouting is performed with either single, double, or triple tube jet grouting systems based on the ground conditions, the grout injection, air and/or water for the ground jetting and mixing.

DRILLING SYSTEMS



JET GROUTING- SINGLE TYPE

**FLUSHING HEAD (1)**

Flushing heads for single tube jet grouting systems provide the connection point to the drill string for both the flushing media during drilling and the high-pressure grout during grout injection. Heads are mounted to a flushing head carrier which travels up the mast extension on the jet grouting rig.

ROD (2)

Single tube jet grouting rods provide the drill string for drill rotation and flushing as well as the path to the nozzles for the high-pressure grout injection. Rod ends are constructed of high strength nitrided steel and friction welded to an annealed mid-body. Rods come with special seals between rods which resist damage from abrasive grouts and multiple cycles of making and breaking rod joints.

VALVE FASTENER (MONITOR) (3)

The valve fastener (also called a monitor) mounts between the drill rod string and the drill bit. The valve fastener contains the injection nozzles as well as the automatic valve.

AUTOMATIC VALVE (4)

The automatic valve is located within the valve fastener and controls the flow of both low-pressure flushing fluids and high-pressure grouting media. During drilling operations, the spring loaded automatic valve allows for flushing fluids to pass out through the drill bit. When high-pressure grout is introduced into the drill string the automatic valve will close directing the jet grouting media out through the injection nozzles in the valve fastener. The pressure can be adjusted in front of the drilling start when the valve closes for jet grouting.

INJECTION NOZZLE (5)

The grout injection nozzles mounted in the valve fastener are the exit point for the high-pressure grout into the grouting zone. Injection nozzles are constructed with a tungsten carbide body with a threaded steel base. The nozzles are available with various sizes of a standard round injection orifice or a ribbed injection orifice. The ribbed orifice creates an injection with less turbulence by a more compact jet.

ROTARY BIT (6)

The rotary bit for a single tube jet grouting system mounts below the valve fastener. Designed for rotary drilling only in overburden, rotary bits come in a variety of winged bit designs with tungsten carbide inserts and flushing ports.

JET GROUTING- SINGLE TYPE





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