

“How to Run Rock Drills”

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This article begins:

“There are few more striking contrasts between old time and modern methods of doing business than is furnished by what may be called trade literature, that is, the publications put forth in the way of catalogues, price lists, etc. Issues of this kind are no longer confined to a mere enumeration of goods for sale, prices, etc. Invaluable suggestions as to installation, care of equipment, repairs, etc., as well as standard tables, supplement what is purely personal to the house making the issue. As an illustration in point, there are the following instructions for users of rock drills, issued by the Sullivan Machinery Company....”

This article, which begins on the next page,
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HOW TO RUN ROCK DRILLS.



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"Whatever the mounting, it must be firmly secured. If the drill is mounted on a tripod or quarry bar, set the mounting in the desired position and the 'spot' a small hole in the rock with a hand drill for each leg, and place the weights on the legs. Where the rock is so soft that the jar of the machine causes the legs to cut into the stone, and thereby throw the drill out of line with the hole, it is necessary to put a wooden block under each leg; an iron plate, with a hole in it for the leg, should be screwed on each block. In setting up a mining column or shaft bar it is well to have the foot-plates for the jacks riveted or bolted to a piece of hardwood plank. Run the jackscrews back as far as possible and place the column or bar in position, and place blocks or wedges tightly between the top plate and the rock. Draw up on the jackscrews, and as the drill is started, keep tightening the screws until the column or bar is secure. The mounting being in place, fasten the machine rigidly to it. Always blow out the hose before connecting it to the drill. Before starting, the rock should be leveled off where the hole is to be put.

"Where compressed air is used the drill will start at once; but with steam it will take a few minutes for the machine to become equally heated. Do not strike the steam chest or any other part of the drill, or loosen any bolt or side rod, for when the steam chest and cylinder become sufficiently heated the drill will start. Start the drill slowly and on a short stroke. When the hole is about five inches deep give the machine full head of air or steam, and feed it down corresponding to the rate at which it cuts into the rock. When the first steel has cut to its depth remove it and put in the next length, and so on to the final depth of the hole.

"All down or 'wet' holes should be kept partly filled with water, and if the mud should clog the drill steel, remove it and clean out the hole with a 'sand pump.' In drilling up, or 'dry' holes, it is a good plan to place the bit end of the next length drill in such a position that the dry dust from the

hole will fall on it and keep it dry, for if a wet drill steel be put into a dry hole the dust adheres to it and clogs it. When the drill strikes a cavity or seam in the rock, crank the machine down to a short stroke until the bit has started in the next ledge.

“Start dry holes as near as possible on a level. When the hole is 4 or 5 inches deep, loosen the clamp or saddle nuts and raise the drill to the highest point of the hole; then tighten first the back clamp nut, then the front nut. This makes the drill cut down, and in ordinary rock the hole may be drilled without again moving the machine. The drill should be given as long a stroke as possible without injury to the machine. In drilling back holes through damp ground, do not run the full length of the feed-screw. In working the drill back, give it sufficient air to prevent the cuttings from packing round the bit, and bring it back quickly. Very often ground is encountered which drills fast, but in water holes does not splash the mud from the bottom. In this case give the machine a half head of air and a very long stroke, so that the piston lightly taps the front head, giving a slight jar to the drill, which prevents the mud from clogging the bit.

“Do not keep the machine running if the piston stops rotating, or if the drill stops cutting. If a tripod leg has worked low, causing the steel to bind in the hole, straighten it up. If a column arm is too high, let it down, or vice versa. Always keep the drill steel in the center of the hole, even if it necessitates readjusting the mounting, and avoid running with crooked drill steels or shanks. Have the steel tight in the chuck or it will rapidly wear the chuck bushing, which causes the drill to run out of center, and results in excessive friction and wearing of the bit on the sides of the hole. In starting a steam machine which has been shut down some time, do not oil until the water is all out of it, then oil often and in small quantities, through the oiler which is furnished with each machine. Also remove the plug in the top head and oil frequently. Use a good grade of cylinder oil when running with steam, and a zero black oil when running with air. Do not use any heavy grade of oil when using air, as such oil freezes and readily retards the drill.”

