

Crawler Drills - Mining

Crawler Drills, also known as Blast Hole Drill Rigs, are used extensively in the mining, quarry and construction industries.

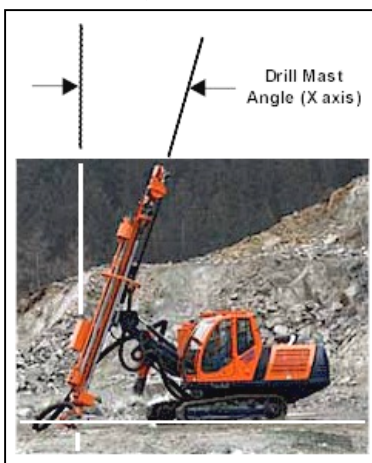


They are primarily employed for surface drilling and/or 'drill and blast' tunneling tasks, usually through solid rock. Working under a Geologists direction, these rig operators drill blast holes up to 100 feet deep, at precise

coordinates, to accept explosive charges. If the charge is not properly positioned, the rock which is separated is either too large (thereby requiring secondary processing), or worse yet, fragments into small unusable pieces.

Regardless of the exact application, the need to precisely position the drill mast, and hence the blast hole, is paramount. Where the bottom of the blast hole will end up inside the rock face, is a function of the angle of the drill mast (X and Y) and the depth from the surface. The drill mast angle is normally measured using two single axis inclinometers, mounted perpendicular to each other. The required measurement range is typically +/-45 degrees maximum, with an accuracy of less than 3 degrees acceptable.

Although dual axis inclinometers are available which can meet the angular measurement range, few if any can meet the accuracy requirement, particularly at the measurement range extremes.



This is an excellent application for the SPECTROTILT™ *Electronic Inclinometer*. Not only can it meet the measurement range and accuracy requirements, its rugged packaging, hermetically sealed sensing element and potted electronics are an attractive feature, considering the working environment.

One big concern in this type application is vibration, which can be severe during the actual drilling process. This will cause large sensor output variations. Although most operators simply set the drill mast angle prior to drilling (little or no vibration present), some prefer to do active monitoring during the drilling process, as the drill may tend to 'walk'. Increasing the viscosity of the electrolyte in the sensing element will dampen vibration sensitivity, and most readily solves this problem.