

CYCLOPS CAMERA



Summary

The 'Cyclops' camera has been designed principally to assist shotfirers in checking the quality of a drill hole. However due to its compact size and built in infrared light source, it can perform a variety of inspection tasks around the quarry, enabling them to be carried out safely and efficiently.

Impact of Innovation

In blasting operations, one of the most important factors is the quality of the drill hole. Whilst its depth, angle and direction can be obtained fairly easily and accurately, Knowledge of the actual state or condition of the hole is dependent on the information recorded in the driller's log. This information is critical to the success of the blast. It relies not just on the experience of the driller but his ability to interpret the hole conditions literally foot by foot and convey that on a piece of paper by means of symbols or colours.

Up to now there has not been a viable system that would allow the shotfirer to actually see inside the hole and check the validity of the data recorded in the driller's log. Where for example the driller has recorded a clay pocket or a cavity, the shotfirer can now visually check the hole and ascertain the extent of the problem. This enables the blast designer to draw up a suitable blasting specification taking into account any anomalies.

The system consists of a hand-held colour monitor and a small camera, mounted at the end of an aluminium tube. An infrared light source surrounds the lens of the camera, enabling it to be used in complete darkness. It is supplied with 20m of coaxial cable, which is strong enough to support the weight of the camera when lowered into a blast hole. Power can be provided either from a cigarette lighter socket in a vehicle or from a rechargeable 12v dc battery. The kit also contains a 12v charger and the complete system is housed in a robust box.

The compact design of the camera and mount allows it to be easily lowered into a drill hole. The camera can focus down to 10cm providing very clear pictures on the monitor. If required the pictures can be downloaded for future reference.

Due to its compact size and built in infrared light source, 'Cyclops' can also be used around the quarry plant for inspection purposes. The camera can easily be removed from the down hole mount and by means of a suitable bracket pointed in any direction. Being so lightweight it can be attached to a pole or rod, allowing inspection of difficult to reach areas, such as screens or feed hoppers.

Health & Safety Benefits

One of the main causes of flyrock is generally attributed to 'geological anomalies'. When these are located within the hole itself, such as cavities or clay pockets, the quality of the driller's log is crucial. Using 'Cyclops' to confirm the status of a drill hole will enable blasting operations to be conducted in a safer manner.

Inspection of plant and equipment can pose difficulties of access for quarry personnel with all the attendant risks involved 'Cyclops' can greatly assist in reducing such risks by allowing inspections to be carried out from a safe place.