

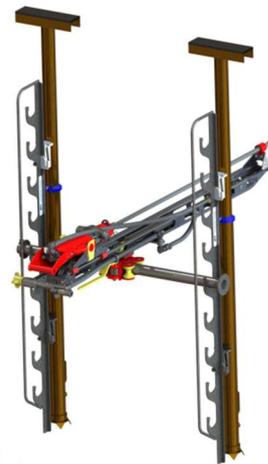
P.I. 352 HPE DRILL GUIDE



Low Stope



High Stope



Gully

PURPOSE

The purpose of the HPE Drill Guide (HDG) is to drill the required pattern of holes safely, quickly and accurately in order to achieve an optimum advance with every shift in a stope. This advance is larger than the average achieved by hand-held drilling and the final excavation is of better standard.

BACKGROUND

To access narrow tabular ore body reserves it is necessary to mine stopes. This is a slow, labour intensive process. The HDG is a mechanization tool designed to allow for drilling time, costs and physical effort to be substantially reduced while improving drilling accuracy and advance per blast.

The controlled accuracy greatly improves the excavation roof, face and footwall condition.

DESCRIPTION

The HDG consists of a rail, which connect to Camlock props and a boom containing a thrust cylinder, mounted on top.

For stope applications, the rail and boom can drill all the holes in low stopes up to 1.4 m high, or by addition of a lift mechanism between the rail and the boom, the top holes can be reached in higher stopes up to 2 m height. The stope rails connect to the props close to the face through chains and hooks.

For gully and raise applications, the pipe rail is connected to the props with hook plates that are fixed to the props. This allows vertical movement of the rail.

FEATURES

- The key design feature of the HDG is the control of the blast hole drilling. This promotes:
 - Good advances, due to accurate drilling
 - Minimum blast damage to the existing excavation
 - Minimum over-break
 - Excavations of the desired size
 - Minimum fragmented rock to be cleaned
 - Controlled fragmentation
 - Smooth hanging, side and footwalls
 - Minimum narrowing/deterioration of the stope with time
 - Radius action of boom for top-middle-bottom holes
- The optimization of the drill pattern allows an optimum advance to be consistently achieved. Typically, this advance will be about 1.2 m depending on the straightness of the face and the cleaning cycle. This advance is larger than the average achieved by hand-held drilling and the final excavation is of a better standard
- The simple mechanization approach adopted in this design means that only one person is required to operate the HDG and that the physical effort involved in the job is substantially reduced
- During the sideways movement of the rail, the boom and drill can be isolated to allow easy movement of only the rail, preventing any dis-assembly of components.

PRODUCT INFORMATION

- Structurally, the HDG is designed to be simple, lightweight and robust. All modules can be removed and refitted with the use of tools already available in the face. The boom is made of lightweight metal and can be easily replaced if damaged.
- The hydro powered drill operation is quiet, cool, fog and oil-mist free
- The straight inline optimum thrust ensures best drill steel and drilling machine performance
- Boom pivots and rotates on the rail
- Integrated cam lock on carriage of boom
- Low stope, high stope and gully variations available

TECHNICAL SPECIFICATIONS

Mass of Boom (excluding the drill)	37 kg
Mass of the Rail and Carriage	39 kg
Mass of the lift mechanism	14 kg
Mass of Gully Rail and Carriage	16 kg
Length (including boom)	2280 mm
Width	2700 mm
Height (mounted on low rail)	690 mm
Low Stope height (Rail only)	0.8 m - 1.4 m
High Stope height (Rail + lift mechanism)	1.4 m – 2.0 m
Water pressure	15 - 18 MPa
Drill	HHH1 / HHH3
Drill steel length	1800 mm
Max Stroke	1400 mm
Max pull force on temporary support	2.5 kN
Materials of construction	Mild steel, Stainless Steel
Surface finishes	Hot dip galvanized, Painted