

# Concentric Folding Overburden Drill Bit

For rotary percussive drilling through overburden with DTH and Top hammer (patent pending).

When it is required to support a hole drilled through overburden overlying bedrock in order to avoid the hole collapsing casing is normally installed. This is normally achieved by using an "overburden drilling system".

An "overburden drilling system" normally consists of an outer casing to support the borehole and an inner drill string. Another name for this is a duplex drilling system. In a single drifter Top Hammer system both outer casing and inner drill string are driven by a hydraulic rock drill through an ejector flushing head at the top of both strings. This application is normally used in relatively shallow overburden depths as the impact energy to drive the duplex system is reduced due to the friction of the borehole wall on the outer casing.

When deeper overburden has to be drilled normally an "overburden drilling system" that utilises a drill bit system driven by the inner drill string drills a hole larger than the outside diameter of the outer casing being used. Where a Double Head drilling system is used consisting of two rotary heads normally a DTH hammer is used on the inner drill string to drill in front of the outer casing. In the application of a

Double Head with a rotary head and a hydraulic rock drill then the drill bit system would require to be fitted to the inner drill rod.

In order to facilitate duplex drilling through overburden Sysbohr GmbH has developed a Folding Concentric Overburden Drill Bit (patent pending) that drills a larger diameter hole than the outer casing and can be used with both DTH and Top Hammer applications. When the concentric folding bit is pushed against the bottom of the borehole it expands in diameter to a larger diameter than the corresponding casing outer diameter being used and when the inner string is pulled back the concentric folding drill bit collapses to a diameter smaller than the inner diameter of the outer casing so that it can be pulled out. The folding segments can be replaced to avoid replacing the complete drill bit to keep costs to a minimum. The quality of the drill bit system is supplied based upon the hardness of the overburden being drilled.

The Folding Concentric Drill Bit System will also be available to suit a DTH application using a single rotary head. The outer casing being driven by a steel shoe welded to the bottom of the outer casing.

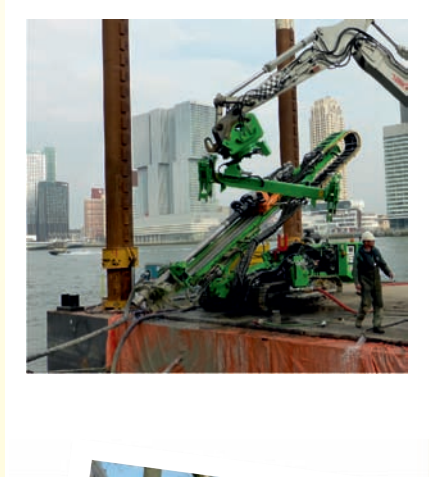
## Concentrix Folding Overburden Drill Bit Standard Versions

Outside diameter of the outer casings/wall thickness. Dimensions in mm	139.7/10	152.4/10	177.8/10	219.1/10
Inside diameter of the outer casings. Dimensions in mm	117	130	155	196
Diameter retracted. Dimensions in mm	114	127	152	192
Diameter extended. Dimensions in mm	148	165	190	230
Shank design for DTH	DHD340	DHD340	DHD350	DHD350
Recommended inner rods diameter when working with DTH. Dimensions in mm.	88.9	88.9	114.3	152.4
Thread connection DTH	2 3/8" API Reg.	2 3/8" API Reg.	3 1/2" API Reg.	4 1/2" API Reg.
Recommended inner rods diameter when working with hydraulic hammer. Dimensions in mm.	88.9	101.6	114.3	152.4
Thread type of the inner rods for hydraulic hammer use.	1 start cyl.	3 start cyl.	3 start cyl.	3 start cyl.
<b>Other dimensions on request.</b>				



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**Retracted**



**Extended**