



American Commercial Shaft Equipment

American Commercial Inc. (ACI), part of the DSI group since October 2006, has supplied ground control products for mining and tunneling around the world for almost 90 years. Steel Ribs, Liner Plates and Lattice Girders for tunnel lining are at the core of ACI's business. In addition, ACI also supplies DSI Group products such as DYWIDAG Bolts, DSI's AT-Systems and innovative rock bolt systems such as the CT-Bolt™.

In order to compliment its product range, ACI started supplying equipment and machinery for tunnel and shaft excavation in 1998. Today, in its role as a distributor, ACI offers a range of products by well-known international producers such as Wirth TBM's, Condat Ground Conditioners for tunnel advancement, injection equipment by Aliva, Hany, Mai and Sika, Muehlhaeuser Rolling Stock, Interoc Tie Back Rigs, and Promat Fire Protection systems.

ACI has been particularly successful in supplying shaft boring equipment manufactured by the German long-term specialist Wirth. Besides classical tunnel boring machines, exploration- and shaft boring machines, Pile Top Drilling Rigs for use on-shore and off-shore are especially sought after. The latter have been used successfully in more than 25 projects in North America.

In the summer of 2007, Wirth, ACI and Frontier-Kemper Constructors, Inc. formed a joint venture to build a Blind Shaft Boring machine. This boring machine is used underground and is particularly suitable for use in mining areas. In such applications, sinking separate blind shafts down to deeper levels which have no access roads had previously been impossible. Rock cuttings inside the drill rods are brought up to the surface using the pneumatically based RCD method (Reverse Circulation Drilling). Compressed air is

lead to the bottom of the borehole via a separate pressure line, and the flushing liquid (water) descends between the drill rod and the borehole wall. The discharge of the compressed air near the drill bit causes a drop in density of the water column inside the drilling rods – the flushing medium and the rock cuttings are brought to the surface by this differential pressure.

Wirth and ACI provided assistance and equipment to update and modify existing Frontier-Kemper machinery in order to allow drilling diameters of 2.5m to depths of roughly 300m. They were also involved in assisting with the design and the fabrication of a new rig for Frontier

Kemper (drilling diameters up to 5m to depths of roughly 400m in hard rock). Late in the first quarter of 2008, the first shaft was successfully drilled using this new rig.

More new rigs capable of drilling diameters of 6.5 or 8m to depths of 450 or 300m respectively are already in the planning stages. Wirth and ACI are proud to be part of this successful joint venture and are looking forward to continuing long-term activities and developments in this innovative business area.



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