

CASE STUDY CONSTRUCTION

EB-Elm Bau's down-to-earth heating system

As climate change continues to drive innovations in energy efficiency, the use of pollution-free earth heating systems for new residential building schemes is booming. For German drilling technology contractor, EB-Elm Bau, its portable CompAir C200TS-14 TurboScrew compressor plays a vital role in ensuring that the pipework is installed safely and cleanly – without contaminating the valuable ground water sources.

Overview

▶ Client

EB-Elm Bau GmbH

▶ Location

Helmstedt, Germany

▶ Application

Drilling technology for the installation of earth heating systems

▶ Products

C200TS-14 TurboScrew compressor

▶ Customer Benefits

Economical and reliable source of air/best-in-class fuel efficiency

Application Details

In a typical order for heating a detached house, two earth warming pipes are installed 60 metres below ground. These are connected to a ground source heat pump, which can save up to 5.5 tonnes of CO₂ being released into the atmosphere each year. The nationwide contractor uses a metal drilling carriage with a cutter head to create the hole and compressed air to transport and deposit the drilled mud and sludge away from the area.

Safety First

EB-Elm Bau's Project Leader, Wieland v.d. Oelsnitz explains, "A great deal of skill and attention is required when using this technology as we are literally drilling into our valuable underground water reserves. The hydraulic oil used to drive the cutter head must present no threat to the ground water if contamination occurs.

Equally important is the availability and quality of the compressed air. In the final drilling stage, air is blown up to

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Benefits at a glance

- ▶ **Lightweight, portable compressor - easily hitched to a variety of vehicles and transported between construction sites, saving on equipment hire costs**
- ▶ **Guaranteed compressed air availability at the minimum required pressure - essential for the final drilling stage when water contamination can occur**
- ▶ **Up to 30% less diesel consumption - saving fuel costs and reducing environmental impact**
- ▶ **Quietest operation in its class - limiting noise pollution**
- ▶ **Simple to use with intuitive electronic controls - reduces operator error and enables easier fault-finding**
- ▶ **Unrestricted engineer access to all components - for quicker maintenance**

100 metres below ground and, in order to drive the hammer in the cutter head efficiently, a minimum pressure of 12 bar is required.”

The C200TS-14 compressor delivers 20 m³/ min of compressed air at 14 bar as standard, making the TurboScrew range unbeatable in terms of volume flow, efficiency and working excess pressure.

Energy Efficiency

CompAir’s TurboScrew portable compressors use patented Energy Saving Compressor System technology to offer best-in-class low fuel consumption and quiet operation.

Using a small and light Cummins diesel engine, two exhaust turbo chargers supercharge the intake air for the screw compressor. This delivers major efficiency improvements, especially in half-load mode. Compared to a machine with a similar volume flow intake, the C200TS-14 is proven to use up to 30% less diesel fuel than any other comparable compressor on the market.

Clean and Effective

After drilling is completed, the pipes are joined together in the drilled hole. The hole is closed up with a special bentonite cement mixture and the earth pipes are fixed in place. At this point, water contamination is ruled out and the project is handed over to the heating company to connect the installation to the house.



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Wieland v.d. Oelsnitz
Project Leader, EB-Elm Bau