

## CASE STUDY

### TurboScrew C200TS-24



Brunnenbau Aichinger – well drilling and more

## Well drilling – 24-bar compressor providing power reserves

It is impossible to build a well without drilling, and Brunnenbau Aichinger has developed a reputation as experts in the field. In addition to well and geothermal drilling, horizontal drilling and drainage drilling are also carried out by the company. Operating throughout Austria and Germany, the company uses the Nordmeyer drilling rig alongside the TurboScrew Type C 200TS-24 CompAir compressor – machines with a maximum working pressure of 24 bars. Underground rockets are used for horizontal drilling. Whether for freshwater or heat wells, the company based in Frankenmarkt, Austria, carries out all necessary drilling on a project in a professional and timely manner.

### Project overview

- ▶ **User**  
Brunnenbau Aichinger
- ▶ **Usage site**  
Krenglbach, Upper Austria
- ▶ **Application**  
Drilling a well down to a depth of 60m
- ▶ **Machine used**  
TurboScrew C200TS-24 series
- ▶ **Added value**
  - The patented pre-compression by way of two turbo chargers results in minimal fuel requirements and therefore low operating costs
  - Sufficient compressed air for driving the hammer drill and blowing out the drillings from the borehole: up to 21 bar positive operating pressure at 20m<sup>3</sup>/min volume flow

## The applications in detail

“We recently completed a typical contract in Krenglbach, Upper Austria. The contract was to install an industrial water well. To do this, we had to drill down to approximately 60 metres. For well

drilling, the large drill rod has an outer diameter of 220mm. We set the compressed air supply for the drill truck to 17 bar, a good compromise between the required supply level and favourable

energy usage”, reports owner Günter Aichinger. The ground on site is very clayey on the surface turning to sandstone further down.

Only a small proportion of the compressed air is used to operate the hammer drill. The vast majority of the compressed air is used to blow the bore hole clear and send the drillings to the earth’s surface. After sinking the drill, the scope of work for the well construction includes installation of the filter and pump, connection of the supply to a utility room and if required, all other works.

The CompAir TurboScrew compressor series represents an unbeatable combination of positive operating pressure, volume flow and economical performance. The compressor used by Aichinger delivers 24 bar at a volume flow of 20m<sup>3</sup>/min, whereby values can be set from 14 bar positive pressure. The unique and patented bi-turbo technology pre-compresses the suction inlet air before it enters the compression chamber, which when combined with effective machine control, delivers market-leading levels of effectiveness for compressor systems. No machine with a comparable performance produces more compressed air from one litre of diesel. After all, safeguarding the environment also involves the careful use of resources. The new TurboScrew compressors are equipped with a recognised SCRT® system (Selective Catalytic Reduction Technology) that removes virtually all particulates and nitric oxides from the diesel exhaust fumes, therefore fulfilling the tightened stipulations of TIER IV Final (USA) and EU97/68 Stage 3b (EU norm) for off-highway engines.

The lightweight TurboScrew compressors can be towed by a vehicle with a maximum towing weight of 3,500kg and are therefore great for getting to hard-to-access sites – less mass is moved, which also offers potential for fuel savings. Large and wide-opening doors provide good access to all service points.

## Household water wells in Austria and Germany

Around 10% of the population in Austria source their drinking water from their own domestic wells. An announcement from the Lower Austria government has highlighted the importance of this form of water supply, saying that in the future, it will continue to be vital in isolated locations. While public water suppliers are subject to strict legal controls, private wells are the responsibility of the owner and it is in their own interest to operate the well carefully and maintain it in perfect condition.

The Federal Environment Agency in Germany has made the following statement on the subject: more than 700,000 people in Germany source their drinking water from their own wells or springs. This roughly equates to the population of Frankfurt am Main and around 1% of the overall German population. Even for these very small water supply facilities, the Drinking Water Ordinance (TrinkwV) sets out clear quality requirements for drinking water. These facilities are typically found in rural areas.



17 bar of a possible 24 bar positive pressure were enough to drill down to a depth of 60 m.

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## TurboScrew C200TS-24

GERMAN  
ENGINEERING  
& DESIGN

### Your benefits at a glance

- ▶ **Reliable Cummins motor with exhaust gas treatment (SCRT®)**  
fulfils thresholds for level 4 in accordance with 97/68/EC and is permitted for use in low-emissions zones
- ▶ **Patented pre-compression using additional turbo charger**  
for high fuel savings (up to 30% compared to conventional compressors)
- ▶ **Further control range**  
from 1,000 to 2,400U/min – to adjust to fluctuating compressed air requirements
- ▶ **Unsurpassed efficiency weight below 3,500kg**  
Can be moved with transporter or SUV.  
Only overrun brake required

**LOW  
EMISSION  
ZONE**

**LOW  
EMISSION  
ZONE**

**UP TO  
24  
BAR**



### Technical data

Type		DLT 2702			
Model		C 200 TS-24	C 210 TS-21	C 230 TS-17	
Operating data	Volume flow <sup>1)</sup>	m <sup>3</sup> /min	20	21	23
	Positive operating pressure	bar	24	21	17
	Pressure range	bar	13–24	13–21	13–17
Engine	Propulsion engine		Cummins QSB 6,7		
	Cylinders		6		
	EU emissions stage		IV		
	Engine cooling		Water cooling		
	Engine power	kW	224		
	Speed range	min <sup>-1</sup>	1.000–2.400		

<sup>1)</sup> according to ISO 1217 Ed. 3 1996 Appendix D