

CASE STUDY

TurboScrew C200TS-24



**van Elewout
Kompressoren**

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Operation at high altitude for two compressors on
Plaine Morte Glacier

A helicopter flew the machines to the Glacier

Switzerland: The rear valley floor of the municipality of Lenk has been affected by flooding almost every summer since 2011 caused by bursting of the glacial lakes on the Plaine Morte plateau. Work has therefore taken place on Plaine Morte to construct the ice channel which aims to achieve a partial diversion to the west of the rising levels of Faverges Lake as a result of melt water during summer.

Project overview

- ▶ **Customer**
Microtunnel AG
- ▶ **Location**
Kleindietwil, Switzerland
- ▶ **Application**
Microtunneling
- ▶ **Machine used**
C200TS-24
- ▶ **Customer Benefit**
 - Low weight below 3.500 kg
 - Up to 25% less fuel consumption

The applications in detail

Firstly, a 500-metre long channel was dug into the glacial ice in order to discharge the meltwater in a controlled manner. Horizontal test drilling operations also took place over a length of several hundred metres in order to examine further ways of draining the melt water from a certain water level to a glacial mill to the west. The project was a groundbreaking one.

Horizontal drilling into glacial ice is a world first. two CompAir C200 TS24 units were flown to the Glacier by helicopter for the test drilling operations. The turbo compressor designs from CompAir feature the lowest dead weight compared with machines from other suppliers with the same performance levels.

A 10-inch drill bit from the Imloch system was used as the drilling tool. The compressors were connected in parallel to supply the energy. The compressors delivered enough power to operate the drill, even at extreme altitudes of 2,800 metres above sea level. This was thanks to the high-pressure design of the Bi-TurboScrew machines with a maximum operating overpressure of 24 bar.

The drilling was carried out by drilling company Microtunnel.ch AG in Kleindietwil. Microtunnel.ch AG is a customer of CompAir Partners Rubag AG. "The compressors and drilling systems worked perfectly, even under these extreme conditions", said Andreas Bernhard, owner of Microtunnel.ch AG. CompAir TurboScrew compressors have already proven how reliable they are in the Antarctic. A research project run by the German Alfred Wegener Institute (AWI) in Bremerhaven required drilling work to be carried out in Antarctica. The compressed air was needed in order to drive the drill. The holes for measuring explosive charges were drilled to depths of up to 20m.

A borehole is needed to ensure that energy is transferred into the ice as efficiently as possible, as the upper 50-100m of ice sheets in polar latitudes consist of porous firn. The C250TS-12 compressor model from the standard TurboScrew range can be used at temperatures as low as -30°C. Temperatures rarely climb above -10°C, even during the Antarctic summer.

CompAir's TurboScrew compressors offer numerous design innovations to help operators reduce maintenance concerns and make significant fuel cost savings. Compared with conventional portable compressors, this range can deliver up to 26% better fuel efficiency, helping site managers reduce both the cost of diesel used and the frequency at which the machines need to be refuelled.



Drilling work is also carried out in winter conditions, demonstrating the reliability of the compressor used.

CASE STUDY

Complete TurboScrew Series

GERMAN 
ENGINEERING
 & DESIGN

Your benefits at a glance

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

**LOW
EMISSION
ZONE**

**UP TO
24
BAR**



Technical Data - C200TS-24 to C270TS-9

Type		C200TS-14	C210TS-12	C220TS-10	C230TS-9	C240TS-14	C250TS-12	C260TS-10	C270TS-9	C200TS-24	C210TS-21	C230TS-17	
Operational data													
Volume flow ¹⁾	m ³ /min	20	21	22	23	24	25	26	27	20	21	23	
	cfm	706	741.6	776.9	812	847.5	882.8	918	953	706	741.6	812	
Operating pressure	bar	14	12	10	9	14	12	10	9	24	21	17	
	psi	203	174	145	130.5	203	174	145	130.5	348	304.5	246.5	
Engine		GD-M2											
Installed engine power	kW	180					224						
Engine off load speed	1/min	1200						2400					
Engine full load speed	1/min	2400											
Operating weight ²⁾													
Portable compressor adjustable towbar braked	kg	3300					3340						
Skid mount	kg	3545					3585						
Base mount	kg	3385					3425						
Dimensions & connections													
Length	mm	5198 - 5424											
Width	mm	1960											
Height	mm	2636											
Compressed air outlet		3 x 3/4" and 1 x 2"									1 x 2"		
Sound level													
Sound pressure level ³⁾ dB(A) LPA		71											

¹⁾ Acc. to ISO 1217 Ed. 4 2009 Annex D

²⁾ Operating weight without options

³⁾ Noise level acc. to PNEUROP PN8NTC.2.2 at 7 m