

CASE STUDY

Use on high-altitude mountains subject to special requirements

Usually only transported by helicopter

The planning for construction sites which are remote from paved access roads poses particular challenges for the company carrying out the work. If the construction site is at sea, then the effort and expense are lower since it is often possible to take more than enough material and supplies. However, if the construction site can only be reached by air, then it is a completely different story. In this case, the transport costs soon stack up and represent the largest cost in the total bill. Austrian company HTB Baugesellschaft mbH has plenty of experience with such challenges, especially on high-altitude mountains.

Overview

▶ Client

HTB Baugesellschaft mbH, Austria

▶ Locations

High altitudes throughout the whole Alpine region

▶ Applications

Breaking and drilling work along with slope stabilisation and rock consolidation

▶ Products

DLT 0408 and DLT 0705 series

▶ Customer Benefits

Compact dimensions, light skid mount and outstanding power-to-weight ratio make air transport easier. Optional equipment, such as closed base tub, diesel particle filter or cold start device, enable use in sensitive areas as well as under extreme climatic conditions.

Application details

No matter whether it is rock consolidation, avalanche protection equipment, construction or repair of cable cars and lifts or the renovation or construction of hiking lodges – HTB can provide

references for work on high-altitude mountains across Europe, and particularly in the Alps. Material and equipment often has to be transported to the construction site by helicopter.

"The construction compressor is an important machine on site. Ideally it will also supply electricity for light and other electrical equipment, as well as compressed air," says the company. During the planning phase, everything must be assessed and taken into account, right down to the expected fuel consumption. The company opts for compressors from CompAir Drucklufttechnik, not least due to their outstanding power-to-weight ratio. In general, the CompAir compressors still have a lot of reserves.

It is quite something to carry out rock consolidation work or provide avalanche protection in a location that no truck can access, such as locations 3,000 metres above sea level. The means of transport for people, equipment and material is the helicopter. "When it comes to equipment for such projects, every kilogramme of weight counts. For example, in the case of compressors, you need a lot of power with a low weight." A range of compressor configurations are therefore available in the machine fleet for these diverse application requirements.

Base-mounted, skid-mounted or chassis-built versions; equipment such as a generator, hose reel, aftercooler, including compressed air heating or extra cold start device can all be found among the 50 compressors as well as different pressure and volume flow versions. Physics makes the rules and, as well as the engine, the compaction power of the screw also inevitably declines when used at great altitudes. Both must be compensated by dimensioning the machine accordingly so that the team on location at the construction site can call up the compressed air power that they need.

Due to cost/benefit considerations, the Ecureuil B3 helicopter is a popular choice for transporting to construction sites on high-altitude mountains. Despite this, sometimes it is still necessary for the compressor tank to be emptied and the battery to be removed to reduce the transport weight. This is because it is cheaper to make several flights than use a more powerful helicopter at a considerably higher hourly rate.



- ▶ **Location:**
"Waltenberger-Haus", 2,085 m,
Oberstdorf, Germany
- ▶ **Product:**
C65-10
- ▶ **Application:**
 - Breaking work
 - Construction of new foundations
- ▶ **AirPlus Options:**
 - Cold start device
 - Oil thermostatic valve
 - Mist lubricator
 - Tool oiler



- ▶ **Location:**
Stubai Gletscher, approximately 3,000 m,
Tirol, Austria
- ▶ **Product:**
C50
- ▶ **Application:**
 - Drilling work
 - Rock consolidation
- ▶ **AirPlus Options:**
 - Cold start device
 - Mist lubricator
 - Tool oiler



An extra cold start device, shown here in use on a construction site at an altitude of more than 2,000 m in the Allgäu Alps, ensures that the engine starts even in adverse weather conditions.



Smaller helicopters, such as the Aérospatiale SA-315 shown here, are cheaper per hour. Air transport represents one of the main costs on construction sites at high altitude.

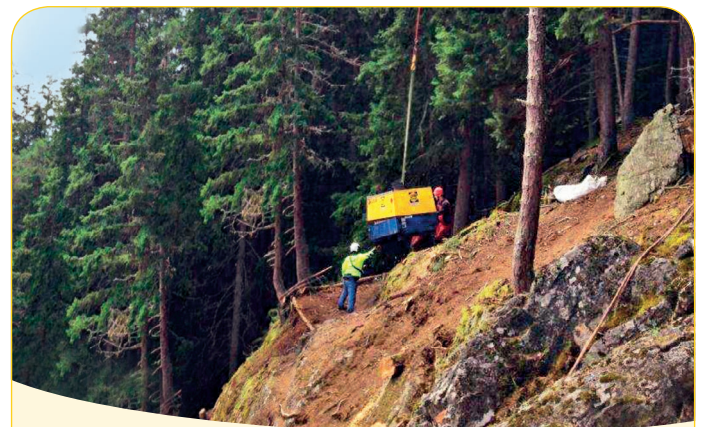
A look at HTB

HTB Baugesellschaft m.b.H. is a subsidiary company of the SWIETELSKY construction group - one of the most important companies in Austria, with approximately 7,400 employees. The company has many years of experience in alpine construction, specialist underground construction, geothermal energy, water jet procedures (WJP), tunnel construction, carpentry, dry

construction and tiling. In these sectors, over 400 employees currently work for the company, which is certified according to EN ISO 9001, EN ISO 14001 and OHSAS 8001. The company and its employees are characterised by technical expertise, flexibility, excellent performance and innovative ideas.



- ▶ **Location:**
Bettmeralp, approximately 2,000 m, Valais, Switzerland
- ▶ **Product:**
C50
- ▶ **Application:**
– Avalanche blasting
- ▶ **AirPlus Options:**
– Cold start device
– Mist lubricator
– Tool oiler
– G-15 kVA



- ▶ **Location:**
Passtraße L237 at Kühtai (approximately 2,020 m), Tirol, Austria
- ▶ **Product:**
C50
- ▶ **Application:**
– Slope stabilisation and rock consolidation
- ▶ **AirPlus Options:**
– Skid mount with low weight
– Mist lubricator
– Tool oiler

CASE STUDY

New series DLT 0705

GERMAN
ENGINEERING
& DESIGN



Your benefits at a glance

- ▶ **Economical, reliable and robust diesel engine**
for approximately 10% less fuel consumption in comparison to the predecessor model
- ▶ **DPF Diesel Particulate Filter**
fulfils the current EU emission standard, Stage IIIB and enables use in environmental zones
- ▶ **Easy, clear operation**
for constant information about the operating state
- ▶ **Air and fuel filter, water separator as well as control valves**
ensure smooth operation and increase the service life

Technical data

Type		DLT0705					
Trade name		C55-14 ¹⁾	C60-12 ¹⁾	C65-10 ¹⁾	C65-HS ^{1) 2)}	C76 ¹⁾	
Operating data	Volume flow ³⁾	m ³ /min	5.5	6	6.5	6.5	7.6
	Positive operating pressure	bar	14	12	10	7	7
	Pressure range	bar	5–14	5–12	5–10	5–7	5–7
Engine	Propulsion engine	YANMAR 4TNV98CT-NCP					
	Cylinders	4					
	EU emission stage	IIIB					
	Engine cooling	Water cooling					
	Engine power	kW	53.7				
	Speed range	min ⁻¹	1,500 - 2,500				

¹⁾ Also available with generator (C55-14G, C60-12G, C65-10G, C65HSG, C76G)

²⁾ HS high-altitude use

³⁾ According to ISO 1217 Ed. 1996 Appendix D