

CASE STUDY



Compressed air helps create a work of (sound) art

Christof Schläger composes and performs urban music – using a CompAir screw compressor

In the machine hall of a former coal mine in Herne, Germany, impressive sound sculptures are born. They are part of a machine orchestra built by concept artist Christof Schläger who composes music reminiscent of urban and industrial soundscapes. The compressed air driven ship horns play a key role in his orchestra. To provide them with sufficient energy, CompAir has provided the artist with a regulated speed type L07RS screw compressor.

Application Details

When musician Christof Schläger performs one of his compositions, the audience is confronted with strong sound pressure – at least when they are standing close to the orchestra. Schläger composes music designed to fill large open spaces and also develops and builds the necessary instruments.

Alongside pneumatically-controlled percussion instruments, he also uses horns from ships – with compressed air supplying the required “sound”. The bells of the horns are made or modified by the sound artist in his own workshop so that the “horn orchestra” produces the desired sound.

Overview

▶ Client

Concept artist Christof Schläger

▶ Location

Herne, Germany

▶ Application

Screw compressor provides compressed air for concerts

▶ Product

Regulated speed screw compressor type L07RS

▶ Customer Benefits

Low noise level: the regulated speed version is a whole 7 dB quieter than the fixed speed L07 at 70% of the nominal rating



Both acoustically and visually impressive: Christof Schläger's instruments.
Up to 128 compressed air horns are used to fill large open spaces with sound.

The instruments that are driven by compressed air range from a 20 cm long horn to a 4 meter high trumpet with multiple coils – all perfectly coordinated, just like a more traditional orchestra. And it's an impressive sight to behold too – they are real sound sculptures.

Industrial soundscape becomes art

The pieces, which are performed at large open air events such as "port birthdays" or "city birthdays" and industrial sites, are beautifully melodic. From the perspective of the audience, special sound effects arise as the individual instruments are up to 2 kilometres away from one another – at these distances, sound requires five seconds to travel through the air.

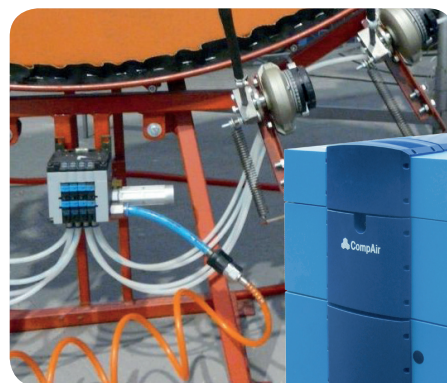
At the same time, however, the concerts also conjure up typical every day and industrial noises, and this is what the artist intended. As the son of a mining engineer, Christof Schläger grew up in a mining region: "I have always been fascinated by the world of industrial sounds. My aim is to transform the industrial environment into art."

To do so, he has a well-equipped workshop in a former machine hall of the Zeche Teutoburgia mine in Herne, where he puts his expertise in metalworking (Schläger studied process engineering and civil engineering) and industrial automation tools to use. Festo valve clusters are used to supply the individual horns or the striking tools' pneumatic drives with compressed air, and these are, in turn, connected to the artist's laptop. This is where the score is saved.

Modern electro-pneumatics turn the score saved on the laptop into an auditory experience.



A regulated speed CompAir screw compressor provides the necessary compressed air.



The bells of the compressed air horns are built by Christof Schläger himself.



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Sound clips: music in an urban environment

If you are interested in Christof Schläger's art – both his music and sound sculptures – you can listen to parts of his concerts on YouTube, such as the one in Helsinki:

▶ www.youtube.com/watch?v=4ppfhtL42E0

or an "Urban horn concert" in the Ruhr, Germany:

▶ www.youtube.com/watch?v=14YxIL40UTk

A TV report (in German) provides an overview of the sound sculptures and instruments on "Planet Wissen":

▶ www.christofschlaeger.de/multimedia_en.htm

More videos and sound clips can be found on the artist's website:

▶ www.christofschlaeger.de

Concert for 128 compressed air horns

The ambitious projects of Christof Schläger are in demand worldwide, including in Shanghai, Helsinki, and Krakow where he performed a concert called "Gegen den Strom" (Against the flow) with 100 ship horns on two boats on the banks of the Vistula river. The artist is currently working on compositions for a new instrument with a total of 128 chromatically matched compressed air horns.

Before, the artist had to design his concerts in an "economical" manner so that he did not exceed a specific amount of compressed air. This was because he was generating compressed air using several small rotary vane compressors from Hydro-vane, which he had purchased bit by bit as second-hand equipment.

More air for the musical art

Only recently has this restriction been lifted, since CompAir provided the artist with a type L07RS screw compressor

with a regulated speed 7.5 kW drive. The compressor supplies up to 1.26 m³ of compressed air per minute, more than enough to supply the entire compressed air orchestra with energy.

The regulated speed drive was requested by Christof Schläger. This was less to do with energy saving, as the machine is not used for large numbers of hours – it is only in operation during tests and the performance – and more to do with the low noise level. After all, compressor noise should not diminish the art experience. The L07RS can handle this requirement: the regulated speed version is a whole 7 dB quieter than the fixed speed L07 at 70% of the nominal rating.

The new compressor was used for the first time in September 2015. To round off the 300th city birthday of Karlsruhe, Christof Schläger performed a new piece in the castle park along with a pyrotechnician to mark the end of a series of events held in the extensive castle grounds.