

## > Advantages of the new communication device

- Constant contact between sandblasting worker and the people outside of the boiler or tank
- Allows rapid intervention in cases of emergency
- The sandblasting worker is immediately informed about a possible fire-alarm or other dangerous incidents outside of the boiler
- Several people in the same working zone can coordinate the relevant operational steps when visibility is poor
- New colleagues can be guided by experienced colleagues during the training phase



The distance between the boiler operator and the sandblaster can be up to 100m hose length

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## Communication device for sandblasting in confined spaces



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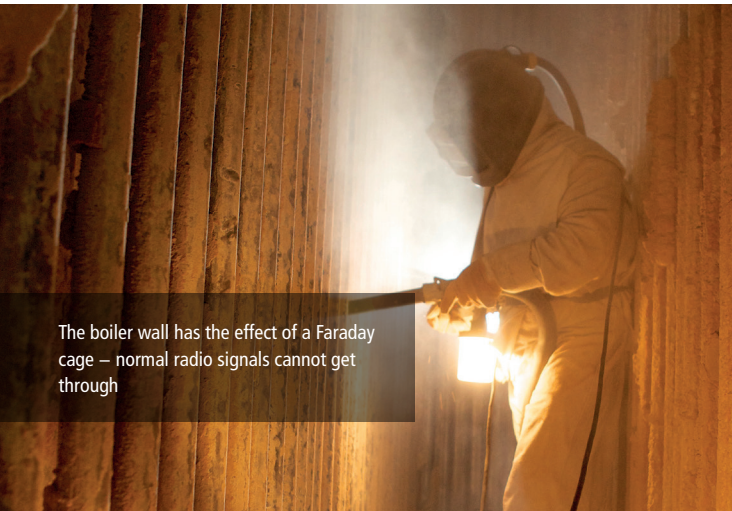
# Introduction of innovative communi- cation headset for sandblasting in confined spaces

German Social Accident Insurance (DGUV) Rule 113-004 determines by law that there has to be a constant connec-  
tion between the worker within the confined space as tanks  
and furnaces etc. and a safety guard outside.

For safety reasons, the access covers need to be closed throughout the  
whole sandblasting process, so that the safety guards can only keep  
contact acoustically. However the following aspects prevent acceptable  
communication:

- The noise levels during sandblasting exceed 120dB
- The sandblasting worker wears an integrated hearing protection within  
his blasting helmet
- Noises produced by the air supply within the blasting helmet

Furthermore due to heavy dust formation and hence poor visibility non-  
verbal communication between two or more blasting workers within a  
furnace or tank is very problematic. To make matters worse the radio signal  
is blocked off by the boiler tube walls. A standard voice radio system does  
not function properly under the above mentioned circumstances.



The boiler wall has the effect of a Faraday  
cage – normal radio signals cannot get  
through



Safety across the board – the patented and protected blasting protection equipment with commu-  
nication unit for working safely and effectively in conventional power plants and incineration plants

## The new development

As a result of our newly developed communication system the  
connection between the worker inside the boiler, tank etc. and  
the operating personnel on the outside, as well as the safety  
guards is now possible throughout the whole plant at all times.

The radio device can be equipped with a dead man’s control that  
sounds an alarm in case of immobility of the employee.

In comparison to existing systems we implemented a radio  
transmitter with a high transmitting power of 2.5 watts which  
enables the reception of the radio signal outside of the confined  
space. Due to the transmitting power, frequencies are assigned  
by the Federal Network Agency to prevent external interference.

The innovative headset can be easily integrated into the blasting  
helmet. The components for hearing and speaking are perma-  
nently installed and do not need to be put on separately. Thus  
the technology is also protected from dirt and dust. Due to its  
low weight (280 g), the headset is comfortable to wear. It serves  
the sandblasting worker as a means of communication and  
simultaneously protects the hearing. Two dynamic microphones,  
together with the radio device’s digital filter, effectively minimise  
the ambient noises.

Customer certification for  
innovative development in the  
area of Health and Safety for  
the introduction and further  
development of blasting helmets  
with communication unit in the  
process of boiler sandblasting

