

Coating gas cylinders uniformly

SUCCESS STORY

A Graco rotary bell atomizer and proportioning system have reduced paint waste, improved uniformity of paint distribution, improved ultrasonic testing and reduced cleaning time and costs.

In a lifetime that can be ten years or more, gas cylinders must be capable of withstanding a variety of stresses, such as exposure to severe weather conditions, and resisting damage during transport and storage.

When it comes to coating gas cylinders so that they resist these stresses, Carbo Kohlensäurewerke from Bad Hönningen in Germany are experts. Every year, this producer and supplier of technical gases inspects and paints around 30,000 cylinders, from small cylinders measuring 20 cm in height and 50 mm in diameter, to large models as tall as a man and of diameter 230 mm.

TIME TO UPGRADE THE PAINT SHOP

In 2016 it became apparent that after ten years of faithful service, Carbo's paint shop was beginning to show signs of aging and needed upgrading. A temporary solution was put in place that allowed painting to continue using a paint gun without electrostatic technology. However, its high amount of overspray was increasing paint consumption and cleaning, which all added to the unit's operating costs. A new solution was needed and Graco was

Customer:	CARBO KOHLENSÄUREWERKE GMBH & CO. KG
Country:	GERMANY
Graco Distributor:	ATEG OBERFLÄCHENSYSTEME
Equipment:	PRO BELL, M2K
Material:	RAL 7037 DUSTY GREY
Industry:	OIL AND GAS
Application:	ELECTROSTATIC, AUTOMATIC PAINTING

invited to propose a solution. They recommended their ProBell high-speed rotary bell, which was first put in use at Carbo on a trial basis for four months before being purchased.

The painting of the gas cylinders involves a single colour – RAL 7037 dusty grey – and a 2K waterborne system. Different caps for the cylinders also have to be painted. For this application, a high-performance Graco ProBell rotary atomizer system was installed. It offers a high spray output and high transfer efficiency. Moreover, its light, compact design means that even reciprocators with a low lifting capacity can be used.

In addition, the Graco M2K proportioning system was installed at Carbo. This guarantees consistent mix ratios, minimizes flush times and material waste, and offers a compact, user-friendly design. Since an insulated set-up was required, the pump

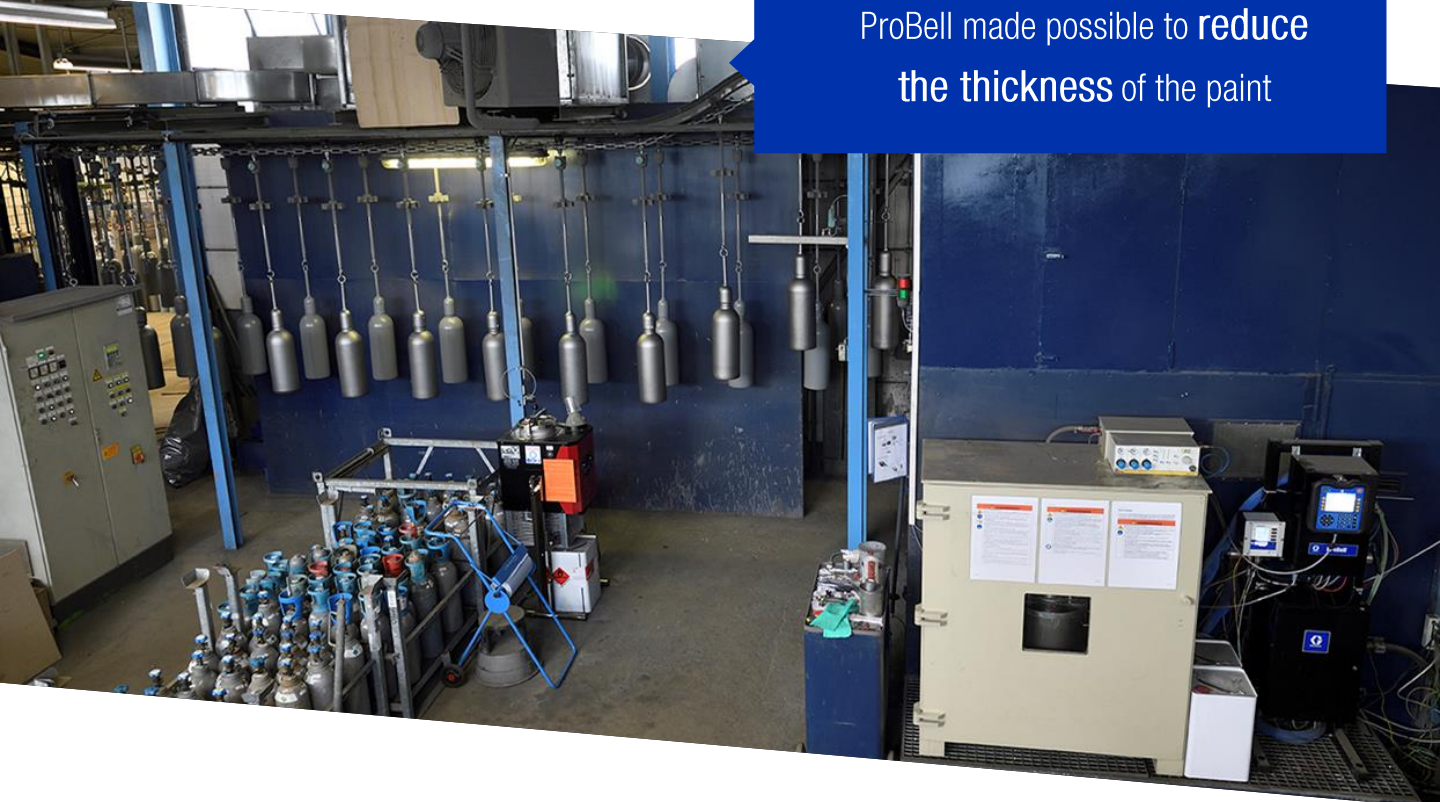
was housed in the existing plastic cabinet to prevent the electrostatic system from malfunctioning.

INCREASED QUALITY; REDUCED COSTS

Carbo are delighted with the coating results, because the ProBell rotary atomizer enables

stationary. The cylinder was painted in position 1, and the base area was then painted in position 2. The paint was applied without electrostatic technology, which meant that the paint coatings on the base of the cylinder were sometimes too thick. Now, the paint is applied to the base of the cylinder in even, reduced thicknesses in a single process step. As to the high amount of overspray,

ProBell made possible to **reduce** the thickness of the paint



repeatable, uniform paint application on the rounded contours of the cylinders, thus achieving a uniform and correct coating thickness. This is vital. An overly thick coating could create problems during ultrasonic testing of the cylinders.

On the other hand, a too thin coating could lead to mechanical damage during truck transportation as a result of the gas cylinders knocking against one another.

The move to ProBell also made it possible to permanently reduce the thickness of the paint coating on the base of the cylinders. Previously, the cylinders were painted with two paint guns – one attached to the reciprocator, the other

this has been significantly reduced, as has the need for almost continuous cleaning of the ventilation system.

Whereas previously up to 10 person-hours were spent each week to clean the interior walls and a weekly deep clean, now it only takes four person-hours to clean the installation every two weeks.

Overall, Carbo has been able to permanently reduce their costs while improving the quality of their painting process.

