

Components For Refuse Collection Vehicles - Efficient Blasting Of Highly Stressed Parts

Lifters for emptying waste containers and waste compactors are among the most highly stressed components on refuse collection vehicles. Continuous mechanical handling of bins and containers mean that paint finishes must be highly durable to provide long-term weather protection for these assemblies.

"Zoeller Systems spol. s ro. was established in 1992 as a subsidiary of Zöller - Kipper GmbH. It built its production plant for lifters and compactors in the Czech town of Říčany", CEO Karl-Heinz Wider informed us. "This location in the region south-east of Prague was selected due to the favourable transport connection. Another reason was the availability of well-trained skilled labour."

From modest beginnings, Zoeller Systems has developed in the last 25 years to occupy a site with an overall area of 28,000 m², 10,000 m² of which is dedicated to production. The number of employees has risen to 290.

A new surface treatment line was commissioned early this year. Raw components for compactors and lifters are first welded and machined, followed by surface treatment and subsequent completion of all production processes and test routines.

"We opted for pretreatment of parts using the new blasting technology because customers expect a superior surface quality, even on highly stressed parts", says Josef Burian, head of the paint shop. Initial experience has now been gained with the system.

When asked for the reason to choose AGTOS as a blasting system supplier, Burian emphasises the persuasive AGTOS concept and system flexibility. This ensures the achievement of consistent quality for both small and large parts. A variety of investigations were conducted prior to the acquisition of the new line in order to determine the best pretreatment and coating. This involved salt spray testing of surfaces coated through the new system. In addition, the appearance of the lifters under practical conditions was compared to results achieved on workpieces coated using the old method. This also convinced the management of the effectiveness of the new technology.

Concept

Machined areas of the workpieces are covered prior to the blasting process to protect them. The precision of these components is crucial if the final product is to function perfectly.

The parts are suspended and conveyed to the AGTOS hanger-type shot blast



AGTOS HT 10-20-3.6-08-07.5 hanger-type shot blast machine with a blasted workpiece

machine. They are then fed in manually. The automatic feed unit takes charge of the holder in front of the blasting chamber and advances the workpieces individually into the chamber. They are blasted there for 3 to 10 minutes, depending on the blasting program selected. Workpieces exit the blasting chamber optimally prepared for subsequent wet painting.

The new type HT 10-20-3.6-08-07.5 shot blast machine has eight frequency controlled AGTOS high-performance turbines, each delivering 7.5 KW of drive power. This ensures that the abrasive reaches every surface, even where complicated geometries are involved. Easily replaceable wearing plates made of tool steel protect the manganese housing of the high-performance turbines. Manganese steel wearing plates also provide optimum protection for the blasting chamber itself against the effects of the abrasive.

The abrasive completes a cycle. It is collected following the blasting process, cleaned and metered back into the

process again. Dust created during the blasting process is fed through negative pressure to a cartridge filter unit where it is extracted from the air. It is disposed of in a big bag. An automatic abrasive refill hopper ensures a uniform process. A maintenance platform facilitates maintenance and adjustment work. It is reached using a safety ladder with handrails and foot protection.

The shot blast machine can accommodate and process workpieces with dimensions of up to 1 x 2 m (W x H). A double bucket elevator reduces the installation height, ensuring it fitted in the production hall. The customer attached particular importance to a dust-free process which is ensured by means of the effective AGTOS cartridge filter unit. It is designed to facilitate the return of cleaned air to the hall. This contributes to energy efficiency and also reduces heating costs.

If necessary, a manual blow-off station allows the operator to remove any abrasive that is still in cavities. Falling abrasive is collected in an 8 m long hop-

per and also fed back into the blasting process. Manual tasks are reduced to a minimum as a result. Thus, the new process differs strikingly from the previous version. Before, large components were first subjected to complete manual blasting in a blasting chamber, while small parts were not blasted at all. A remote maintenance module enables external access to the blast machine's electronic components. It therefore aids and simplifies troubleshooting.



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