SOLVARO

5 EXAMPLES

OF HOW TO SUCCESSFULLY MANUFACTURE DURABLE PERFORATED METAL COMPONENTS

1

HIGH MATERIAL STRENGTH FOR THE VALTRA Q SERIES

The Valtra Q tractor series is an impressive example of the influence that material thickness has on the durability of perforated metal components. The powerful tractors in the series withstand extreme loads in everyday use, which is why the bodywork, including the deep drawn grilles, must be robustly designed.

The perforated metal component with a material thickness of 1.5 mm poses a particular challenge for production. From a manufacturing point of view, the smaller the perforation, the more demanding it is to produce. Thanks to its expertise and years of experience, Solvaro has succeeded in realising the complex Hv 2-2.5 perforation with a material thickness of 1.5 mm and 64 % free cross-section. A guarantee for durability.

HIGH-QUALITY COATING FOR MASSEY FERGUSON® 7S SERIES

2

The coating has a significant influence on the durability of perforated metal components. The main focus here is on rust protection. In the production of the front and side grilles for the Massey Ferguson® 7S Series, Solvaro has proven that undesirable edge thinning can be controlled using a sophisticated process including cathodic dip coating. The self-developed process is based on years of experience and expertise in dealing with the full-surface coating of complex shapes and structures. The example shows that durability is also a question of the right coating method.

3

LARGE HEXAGONAL PERFORATION FOR ZERO-TAIL EXCAVATORS

The durability of the body plays a key role in compact and powerful zero-tail excavators, as heavy stone impacts are commonplace in demanding construction site applications.

Together with a leading manufacturer of construction machinery, Solvaro has succeeded in mastering the challenging balancing act between modern design requirements and maximum durability. Instead of the usual 1.0 mm, a more resistant material thickness of 1.5 mm was chosen and perforated with a very large hexagonal perforation (hole width 4.5 / hole pitch 5.3). The result: an extremely resistant and durable deep drawn part that fits seamlessly into the design language of the zero-tail bagger.

3D FORMING FOR THE LIEBHERR TA 230 DUMP TRUCK

4

The example of the award-winning TA 230 dump truck from Liebherr shows impressively that the forming process also has a significant influence on the durability of perforated metal components. In order to achieve an 80 % free cross-section of the front and side grilles, Solvaro had to form narrow, long and geometrically complex metal components for this project.

In order to master the challenging balancing act between design and stability requirements, Solvaro relied on 3D forming by deep drawing. The result: a durable and maximally stable component with a material thickness of 1.2 mm and an 80 % free cross-section.

5

ENGINEERING FOR MAN TRUCKS

Early and intensive collaboration between customer and supplier is one of the key success factors in the design and production of perforated metal components. This was also the case with the joint project between MAN's truck division and Solvaro: thanks to the close cooperation, it was possible to jointly optimise 22 components in terms of durability and production costs.

Solvaro chose a larger round perforation for the perforated metal components instead of the usual hexagonal perforation. In addition, normal steel (DC04) was used as the material instead of galvanised steel (DX54), which was later powder-coated to meet the rust protection requirements. The result: perforated metal components that fulfil the highest durability requirements and can be produced in series at low cost.