



AL-KO launches next generation caravan chassis

Lightness combined with strength have been hallmarks of AL-KO's chassis designs for many years but with the new Vario X design, AL-KO has taken chassis technology to a whole new level. First seen as a small sample at the Caravan Salon last year the Vario X design saves up to 30% of the frame weight without compromising on stiffness.

Words Terry Owen

When embarking on this new design concept AL-KO set itself five key development goals. The new chassis design had to be:

- Light – with a minimum 20% reduction in weight
- Innovative – but with the same considerations for the overall caravan system
- Strong – the same overall stiffness as current designs
- Eco-friendly – minimum impact on the environment and the Earth's resources
- Economic – able to be produced at a cost that would make good commercial sense for OEM's



"We were looking for a chassis solution that would allow even more payload by reducing the weight – while maintaining the same stiffness, of course. We have tested various lightweight construction strategies and materials. In the end, steel proved to be ideal in terms of weight, economy and stability. The result is our Vario X chassis that perfectly combines state-of-the-art technology with intelligent designs from nature", explains Dr. Frank Sager, Senior Vice President R&D at AL-KO Vehicle Technology.

Materials considered included high strength steel alloys, aluminium, and plastic hybrids. Eventually, and perhaps surprisingly, as Dr Sager says, mild steel proved to be the best solution. The tricky part was working out how the traditional steel chassis could be lightened without losing strength. The answer lay in removing metal from those parts of the chassis under least strain whilst leaving key, stress bearing, sections in place.

The design was arrived at following numerous analyses and simu-



AL-KO



lation-based developments, all backed up by many experiments and track testing. The whole process took about three years from the first ideas to the production stage.

Ultimately a load bearing structure with a modern, slimline look was created. Interestingly it is not dissimilar to the what is found in the natural world. Thanks to this honeycomb construction, it is possible to save up to 35 kilogrammes on the chassis, depending on the size and permissible total weight of the caravan. This offers manufacturers significant scope to enhance their offerings. These include reduced weight, increased payload, higher efficiency through reduced CO2 emissions and greater sustainability.

Whilst designing the Vario X it was felt important to retain existing facilities such as the ability to fit lifting points and movers whilst minimising changes to their implementation. Indeed, the mounts for all the AL-KO accessories such as the Mammut mover and underslung wheel carrier, remain exactly the same. It was also important to maintain AL-KO's high standards for comfort, safety and durability.

The Vario X marks a significant multi-stage investment from AL-KO. Development, launch and roll out have all been carefully planned to ensure that supplies will be there as demand increases. At the Caravan Salon 2019, AL-KO's first customer to present the Vario X will be Knaus Tabbert on their Sport&Fun Black Selection, where it will form part of the standard specification.

Of course, that is just the beginning, with much more already in the pipeline. Indeed AL-KO is in the early stages of a major roll out programme. Various big OEM's are already building their first projects and prototypes. AL-KO is convinced that, in time, the new chassis concept will significantly change

their portfolio in the future.

It remains to be seen what impact the bionic Vario X design will have in AL-KO's other product areas. Our understanding is that various studies are currently ongoing to extend the concept to these areas.

Lightweight solutions typically tend to be pricey and so AL-KO has been mindful from the outset to keep costs as low as possible. It was one reason to stay with steel and its proven track record. It gave AL-KO the chance to reduce weight within an acceptable cost margin compared to other materials. As volumes increase it is expected that costs will reduce due to economies of scale. Steel also has the advantage that from an ecological and recycling perspective it is a very sustainable material.

"With Vario X, we are providing the market with another first-class product that meets our high standards of comfort, safety and lightweight construction. At the same time, Vario X is a milestone on the way to even lighter caravans. This means that either the end customer can carry more or the manufacturer can use the weight reduction to increase the comfort features", says Mirko Trefzer, Head of Sales and Marketing at AL-KO Vehicle Technology.

Conclusion

AL-KO can be proud of the fact that it really has taken chassis design to a whole new level. The design is striking, not just for its relative simplicity (compared to other possibilities), but that it has met all its design goals using existing technology. There is therefore no need for OEMs or workshops to invest in new technologies or training. It's just the sort of fillip our industry needs at a time when pressures, particularly on the touring caravan market, have never been greater.



Frank Sager



Company Profile

DexKo Global Inc.

DexKo Global is the world's leading supplier of advanced chassis technology, chassis assemblies and related components with more than 130 years of experience in trailer and caravan components. DexKo Global was founded at the end of 2015 through the combination of Dexter and AL-KO Vehicle Technology. With its headquarters in Novi, Michigan, the company employs more than 5,000 associates with 42 production facilities and 22 distribution centers. DexKo Global has a turnover of more than US\$ 1.5 billion.

ALOIS KOBER GMBH

Founded in 1931, AL-KO Vehicle Technology is now a global technology company with sites in Europe, South America, Asia and Australia. A supplier of high quality chassis components for trailers, leisure vehicles and light commercial vehicles, AL-KO is synonymous with ergonomic and functional excellence, superb comfort as well as innovations to enhance road safety. The company specialises in sophisticated innovation processes and has received many awards for this. ALOIS KOBER GMBH is a wholly owned subsidiary of DexKo Global Inc., a portfolio company of KPS Capital Partners, LP.