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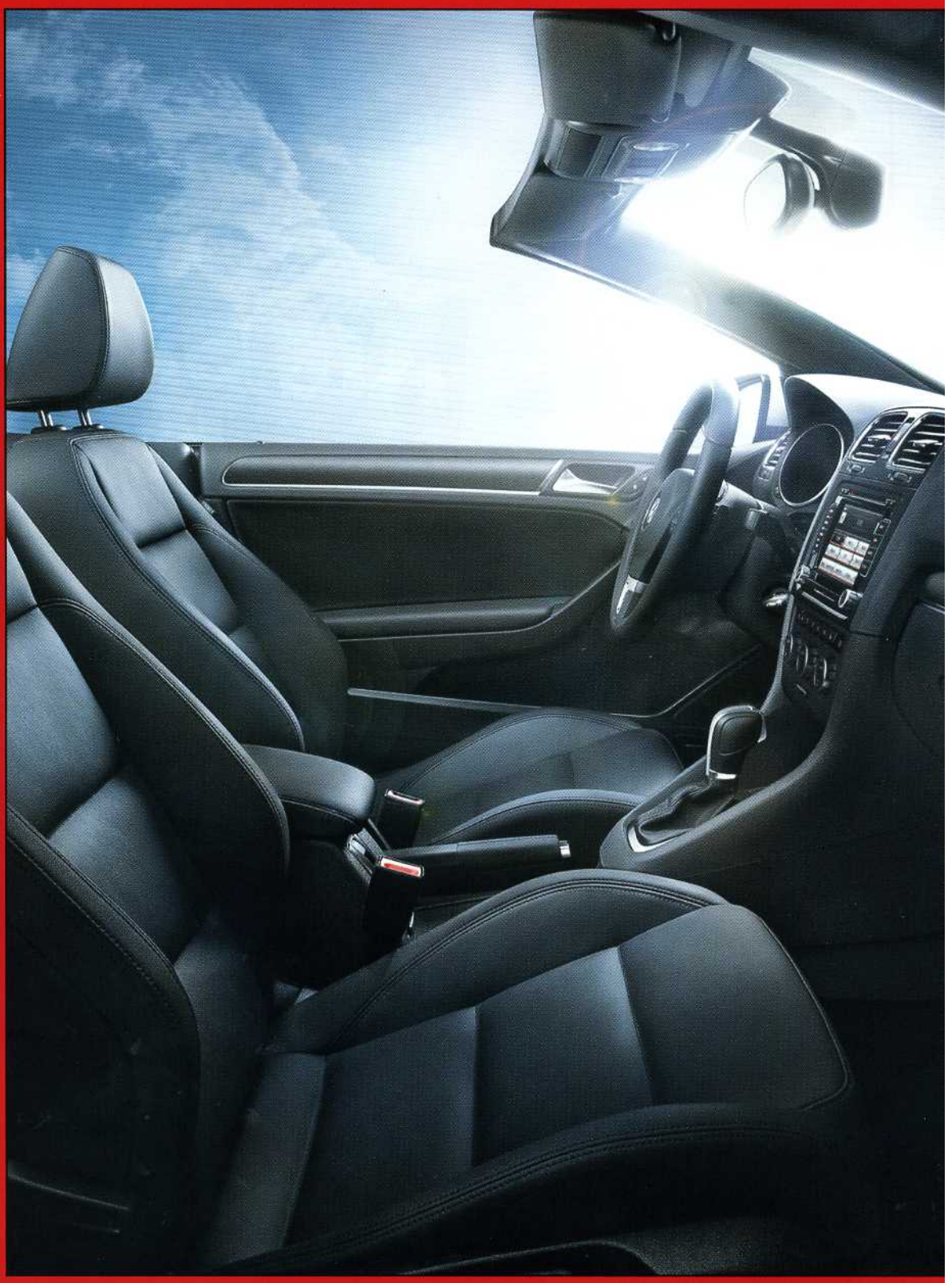
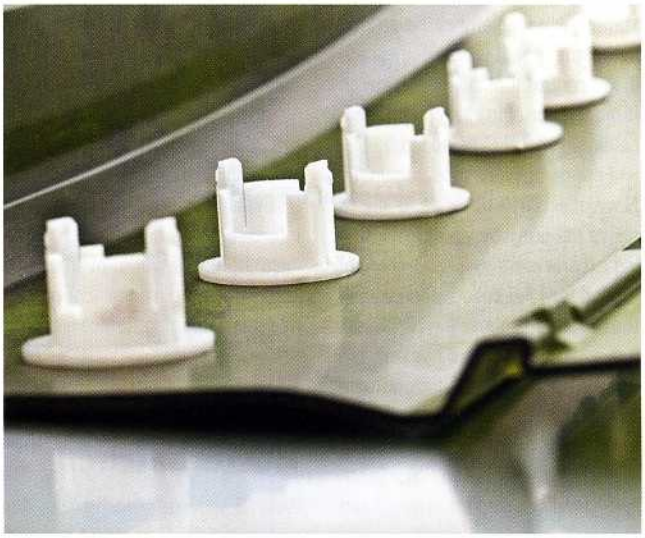


HANSER

Sensor Fixtures Welded into Varnished Bumpers

Torsional Ultrasonic Welding. Faurecia, Nanterre, France, is a producer of bumpers employing the Soniqtwist process of torsional ultrasonic welding supplied by Telsonic AG in Bronschhofen, Switzerland. The company uses this technique to integrate into varnished bumpers sensor fixtures of polypropylene (PP), some of them including shares of ethylene propylene dien rubber (EPDM), serving for the purpose of distance control and parking assistant. This way, also the headlamp cleaning units are fixed, which sit in the body below the Xenon headlamps. This welding process generates weld lines so strong they meet strength requirements of 250 to 300 N. The sonotrode does not penetrate the bumper's lower material layers during welding. The process of joining is due exclusively to friction in the interface between fixture and the bumper. On the visible side of the bumper, there are no undesired optical effects, and no marks are visible, according to supplier information.



The Soniqtwist torsional ultrasonic welding process serves to weld sensor fixtures into varnished bumpers (figure: Telsonic)

As part of a fully automatic special machine or a robot equipped with several feed units, the ultrasonic welding heads, at 1.2–2.4 kW, weld the sensor fixtures into the pre-cut hollows in the varnished bumpers. The time of a mere welding cycle is approx. 200 to 300 ms. A German vehicle manufacturer has successfully introduced this fully automatic joining process, which is suitable for serial production. He is using it for the models of his premium brand, and has just approved the technique for more of his brands.

The process of torsional ultrasonic welding makes use of interface friction, which is why it generates no marks on the visible side. As a result, users are now able to reduce the thicknesses of their bumpers. Material thickness may vary from 2.5 to 3.0 mm. The supplier says that this cuts costs and weight by around 20 %, which can then reduce CO_2 output.

→ www.telsonic.com

Translated from Kunststoffe 3/2014, p. 10

