Press Release

44TC16

Current

June 2016

Automotive: manufacturers and suppliers approve the SONIQTWIST® technology from Telsonic

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OEM approval for SONIQTWIST®

(Bronschhofen) The torsional ultrasonics welding process SONIQTWIST®, developed by Swiss Telsonic AG, has now been approved by further OEMs and 1st tier suppliers from the automotive industry. After internal checks with comprehensive and practically-oriented tests, one major German automotive manufacturer and two key suppliers have now approved this revolutionary process. SONIQTWIST® will also shortly go into series production as a process for the fastening of sensor brackets with a third supplier.

"The tests for the results of our torsional ultrasonics welding process SONIQTWIST® have been carried out with OEM-specific precision and thoroughness," explained Dirk Bücker from the German subsidiary of Telsonic AG in Erlangen. These include test drives in different climate zones, in desert areas and on ice. Only in this way was it possible to ensure that the brackets for the sensors of automobile parking assistance systems are also firmly fixed to the bumpers. The test results convinced the OEM to the extent that they have now approved the process for all the group brands. Two 1st tier suppliers have reached the same conclusion, and the process is on the brink of approval at a third.

Contact and information:

TELSONIC AG
Axel Schneider
Industriestrasse 6b
CH-9552 Bronschhofen
Head office
Tel +41 (0)71 913 98 39
axel.schneider{at}telsonic.com
www.telsonic.com

Telsonic in Germany
TELSONIC GmbH
Dirk Bücker
Gundstraße 15
D-91056 Erlangen
Tel. +49 (0) 9131 68789 0
Fax +49 (0) 9131 68789 77
info@telsonic.com
www. telsonic.com

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image: sensor brackets

Welding on painted bumpers

With the SONIQTWIST® torsional ultrasonics welding process, brackets are welded onto pre-painted, thin-walled bumpers for the sensors that are fitted to distance control and parking assistance systems. In this context, nothing should be visible on the outside. Despite this, the process which connects the sensor bracket to the bumper has to be completely reliable and provide a strong, secure and permanent hold. In the same way, the extending and retracting headlight cleaning units are attached in the bodywork area underneath the Xenon headlights.

SONIQTWIST® achieves welds which safely comply with the stability requirements of 250 to 450 Newtons. In this respect, the sonotrode does not penetrate the base material of the bumper, but transfers the resonance energy through the welded component into the separating plane. Welding on overspray is possible, while dispensing with the need for the obligatory care necessary for a clean surface during adhesion. The assembly process, which is also known as friction welding based on ultrasonics, reduces the applied heat and therefore the post-shrinkage effects to a minimum. In this way, it is also possible to achieve invisible connections on thin-walled Class A bumpers (e.g. <2.8 mm).
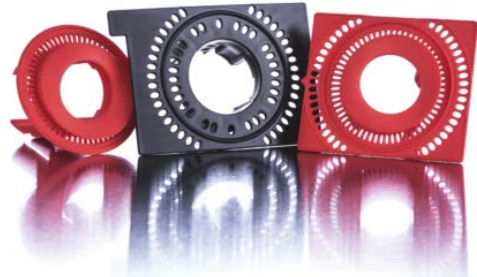
Rapid, reliable, fully automatic

At 200-300 milliseconds the welding time is therefore extremely low, and enables a large number of welds with few generators. Since cooling and hold times can be dispensed with, the cycle time of less than one second is also very low. This is of huge importance to the automotive sector. This means that the process can be completed fully automatically, with repeat accuracy, and with process safety in what is known as multi-point systems which are equipped with several actuator units.

A welcome side effect: if the sensor brackets are welded with SONIQTWIST® the material thickness of the bumper can be more than 20 % lower. Firstly, this saves weight, which reduces CO_2 emissions. This means that SONIQTWIST® also makes an important contribution to compliance with the appropriate emissions standards. Secondly, the low wall thickness reduces the materials requirement as well as the cycle time during the injection molding of the bumpers.

More information about the SONIQTWIST technology you will find here:

SONIQTWIST®