Flaring

Keeping flexibility in reliable connections

A cold joining technique which provides flexibility to a car cushion. Enabling a broader scope of movement within a car seat. Not only is this process fast and easy, it is also environmental friendly, while there is no need for additional materials and the oil used to build up the pressure is being re-used.

Flaring, also known as 'cupping', is a joining technology for carbon and stainless steel pipes. Unlike some other joining technologies, such as welding and gluing, flaring does not use any additional materials to join parts together. This technology is commonly used in high-volume markets, like the automotive industry, particularly in the production of car seats.

Demand for flexibility in reliable connections

In the production of car seats, a demand for flexibility in the assembly is very useful. Nowadays most cars have height-adjustable seat structures, where a standard welding solution is not applicable, because it completely fixes the materials in place. A joining technology which keeps the parts in place, but still providing sufficient reliable flexibility to tilt the cushion is needed.

Flaring provides this solution. With flaring, the ends of the tubes are placed in a fixture and firmly clamped. A specially designed tool is pushed into the tube from both sides. The high forces used in this process enables that the ends of the tubes are bent outwards to 90° or even 180°. The main objective of flaring is to establish guaranteed high-strength assemblies, but still providing sufficient flexibility for rotating movements of the tubes. Of course it is also possible to flare a solid joined, in which case the materials are fixed in place and movement is no longer an option.

A part from car seat production, a variety of other components can be joined together using the flaring process. In each specific case where round ends need to be connected, flaring is a serious, reliable solution.

Flaring is a fast, easy and environmentally-friendly technology for producing a vital component of a car seat or other components without the use of welding.

AWL Research and Development

AWL has developed a standard flaring module which provides flexibility, speed and simplicity. The flaring unit can be integrated in a complete production line or used as a standalone component.

To ensure the right connection, AWL has developed the process in-house by using sophisticated censoring and software based on the Force-Stroke principle. During the actual flaring, both parameters are closely measured, controlled and visualised on the operator screen by means of a graph.

Fig 1. The dark blue line shows the actual position value. When it touches the orange line the flaring position is been reached. The light blue line is the amount of force.

Fig 2. The elaboration of the measurement data into numbers. It contains the value reached at the pre-print, and the final value for the flaring position.

Clean and environmentally friendly

The closed pneumatic hydraulic system makes flaring a very clean process, and the oil used to build up the pressure is re-used over and over again, ensuring extra environmental friendliness.

Keeps you ahead in automated welding

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