

Process Safety

H 1.7

■ General Information

Are you sure your saved tightening data has been generated at the correct tightening points?

Our Ultrasonic Triangulation, iTeleskop, and RailNet process validation systems are available for all handheld or hand-guided tools. These apply to engine, transmission, or automobile assembly environments, whether in assembly line or fixed cycle production. We store the fastening locations and are able to use these to validate your process.

What are the risks if you work without process validation?

- Fastening operations can be overlooked
- Tightening sequences may not be followed correctly
- Pre-defined torques can be overlooked
- Correctly tightened fasteners can be loosened
- Fastening data can be allocated incorrectly

What are the risks for you and your organization?

- Costly errors that require rework or correction in the field (at customer site)
- Series problems during mass production can threaten your existence
- Products affected cannot be identified, wide range in recalls result in exploding costs
- Criminal consequences, in addition to damage and liability risks
- Damage to image

What can we do for you?

Our process validation systems allow you to locate the exact position of the nutrunner tool in space.

By calculating the X-, Y-, and Z-coordinates, it is possible to store fastening locations, pre-define operation sequences, check positions, and reliably allocate fastening results. The position records allow you to document the work based on fastening location, part, or vehicle. This is an effective way to address product liability problems. You protect the quality of your product, safeguarding its success.

The most important features of this system

- Can be used in line production and in fixed cycle production
- Setting of processing sequences
- Reduction of processing time by automatic parameter selection / change-over
- Increase in process safety by automatic activation of the correct tightening parameters
- Safe allocation of the tightening data to the tightening point, component or vehicle
- No socket selection necessary - therefore cost saving
- Process safety by identifying incorrect tightening operations and by the targeted loosening of the corresponding tightening operation
- Process safety by generating a total OK statement after all tightening operations have been carried out in the correct sequence

Advantages for your organization

- Potential savings in rework and test costs
- Reduced risk of product recalls
- Potential savings in warranty and good will costs
- Reduced scrap costs

Process Safety Ultrasonic Triangulation

H 1.7.1

■ General Information

The fascination of new possibilities led to the development of our 2nd generation Ultrasonic Triangulation. Tool ergonomics and design were improved considerably, while reducing the weight at the same time. Ultrasonic Triangulation offers you the ability to capture the exact position of the nutrunner in space.

Functioning

The operator actuates the start button at the handheld tool, an ultrasonic sender at the angle head of the handheld tool sends acoustic pulses to the ultrasonic receiver. The distance to the receivers is determined by the runtime of the acoustic pulses. The relative position is determined by angle relations in the triangle (triangulation). When the coordinates of the tightening point match the coordinates in the data base, the processing operation will be released. The correct tightening program will be automatically selected and processed. On completion of the tightening operation, the tightening data will be allocated to the particular tightening point and the component or vehicle. The nutrunner control system will issue a total evaluation on completion of the work content.

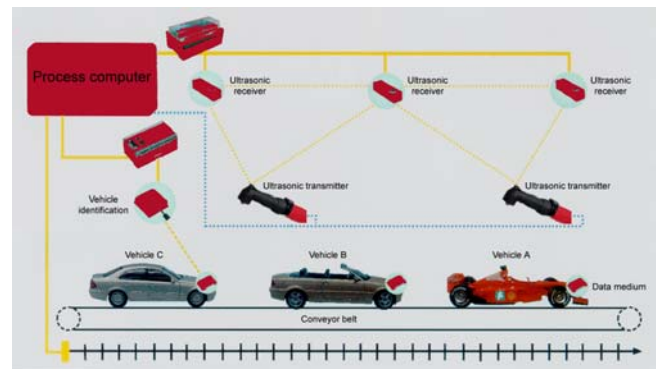
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Process safety – Quality – Success

More detailed information about these systems can be found in the appropriate product flyers. You can obtain these at <http://amt.alfing.de/de/support/download-area/>

■ Schematic diagram



Ultrasonic transmitter

X = 1500

Y = 1168

Z = 2348

