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
Rail-Net Assembly System

H 1.7.3

General Information

Our patented Rail-Net Assembly System allows you to configure assembly lines with wireless capabilities in order to link flexible nutrunner technology into the assembly lines and to validate the process. System advantages include low net weight, high load-bearing and warp resistance, as well as free and easy carriage movement, capable of bearing considerably higher loads than other commercially available track systems. This system allows you to economically configure nutrunner assembly lines. Nutrunner controls are easily added, removed, or cycled through. The integration of an absolute measuring system and additional capture of bandwidth allows error-free allocation of process data to vehicles. User-defined work areas and task assignments can be set and classified using the operator software. This provides maximum flexibility for process sequences on vehicles within the work area, with simultaneous, error-free allocation of fastening data.

Advantages:

- user-defined warning limits
- user-defined allocation of task assignments
- elimination of scanners, reader locations, proximity and intermediate switches
- rapid cycle expansion
- link with 3rd party equipment (e.g. Oetiker clamps)
- user-defined work area definition (less conveyor stops, less rework)
- elimination of idle time until vehicle has entered cycle
- handling devices can be moved simultaneously with flow speed (use of toothed belts)
- reduced number of nutrunner controls
- faster fault correction
- reliable allocation of fastening data

Important features:

- Enclosed guide rails
- Elimination of cable track assembly
- Nutrunner positioning with wireless power supply
- Wireless Ethernet network interface
  - data transfer between host computer, nutrunner data server and nutrunner control
- Integrated absolute encoder
  - determines position of nutrunner control
  - determines work areas with warning limits
  - assigns work content
- Reliable assignment of nutrunner data
  - determines part position using recorded transfer speed
  - continuous calculation of thread location coordinates

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/