

SEMINARS



Statistical methods in design and production

Dimensions

- What is a dimension?
- Nominal dimension; dimensions; tolerance
- Why are tolerances necessary?

Entries in drawings

- Standards and guidelines

Fundamentals of statistics

- Statistical parameters: mean value, standard deviation, variance, skewness, kurtosis, quantile
- Example for statistical evaluation of a batch
- Mean value theorem
- Central limit theorem
- RSS (root sum square)

Distribution functions (distribution models)

- Histogram
- Gaussian distribution
- Uniform distribution
- Triangular distribution
- Trapezium distribution (process with trend)
- Skewed distribution
(Log standard distribution; Rayleigh distribution; Weibull distribution)
- Unsigned and mixed distribution types (1. And 2. type)
- 2D standard distribution
- Multi-dimensional distribution for eccentricity, coaxiality and positional tolerances
- Process time models according to DIN 55319
- Production- and assembly-specific assignment of distribution types

Quality control charts

- Shewhart and acceptance charts
- Intervention and alert trigger limits
- Keeping and interpreting quality control charts

Machine capability, process capability and their parameters

- Process capability C_m , P_p and C_p
- Process capability indices C_{mk} , P_{pk} und C_{pk}
- Determination of process capability and parameter

Statistical tolerance calculation

- Quadratic tolerance calculation DIN 7186
- Root sum square DIN 7186
- Calculation of linear dimension chains

Methods

Manuscripts containing theory, real-life case studies, sample calculation exercises, discussion.

Topic-related standards will be handled.

Target group

Engineers, technicians, employees from the areas of testing and quality assurance, specialists in mechanical engineering and from the automotive and aerospace industries and their associated fields.

General informations

Duration: 1 day

Location:

- In-house
(on your premises, date by prior arrangement)
- casim locations Kassel and Ingolstadt
(regular dates)

Training documents/manuscripts are provided.

Optional: Integration of company-specific content and issues.

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