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Changes

On the basis of requirements made by QM Management at Voith Paper, a new inspection variant of components has been launched. This variant covers inspection by the QM Department without documentation requirements.

This allows costs and lead times in some cases to be significantly reduced.

The standard has been structurally fundamentally revised as compared with the previous version of March 2011. This encompasses all previous chapters. New chapters have been added, and the title has also been updated.

Nevertheless, all existing inspection procedures and their requirements from the previous version continue to remain unlimited.

Earlier editions: 1982-08, 2000-12, 2007-05, 2008-03, 2009-06, 2010-03

Revision: see "Revisions".

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1 Scope of validity

The standard applies Group-wide in all business divisions of Voith.
In the business divisions of Voith further regulations and details, if necessary, are regulated by QS documents.

2 Scope of application

This standard is used for the definition of inspections in drawings to ensure Voith's product standard. Additional customer requirements going beyond the Voith standard (VN 1631) or deviating from it must be processed in an order-related manner.

In the case of outsourcing of drawings with documentation requirements this standard must be made available.

3 Purpose

This standard established the mode of entry for data in drawings that have to be specially inspected and regulates the responsibility for the performance of inspections. The designer thus indicates all quality features in the drawings that have to be specially inspected in the production of design components and whose results also have to be documented, depending on requirements.

4 General information

In general, all design parts must be manufactured in accordance with the drawing, i.e. all data (specifications) such as dimensions, dimensional tolerances, shape and position tolerances, weld seams, surface data on the drawings are binding and must be observed. Production is independently responsible to ensure design in accordance with the drawing without requiring a special inspection by the design engineer (operator self inspection = own inspection of Production without records).

The special inspection by the quality personnel with and without a record of the quality features to be inspected is an additional effort and must therefore be restricted to the absolutely necessary minimum by the design engineer. If special inspections are taken over from existing drawings, they must always be checked whether they are necessary.

The type of inspection to be carried out is established in the order documents /e.g. VQS at Voith Paper).

There are special inspection without and with inspection record (documentation required).

Special inspections with inspection record are in any case to be entered if they are expressly demanded by the legislator, by third-parties inspection offices or customers.

5 Types of inspections**5.1 Operator self inspection**

The documentation of the inspection carried out by Production (design in conformity with the drawing) is created by systematic logoff of the operation in the production order (FAUF).

5.2 Special inspection without inspection record

Special inspections are performed by a QM Department or by personnel authorized to carry out inspections that are independent of Production (1). This does not in any way exonerate the production personnel from their responsibility to produce quality. These inspections take place additionally for the operator self inspection.

The inspection is documented by systematic logoff of the inspection operation in the production plan (FAUF). The drawing is entered in accordance with Chap. 6.2 / Table 1.

5.3 Special inspection with inspection record

Special inspections are carried out by a QM Department or by personnel authorized to perform inspections (1) that are independent of Production. This does not in any way exonerate the production personnel from their responsibility to produce quality. These inspections take place additionally for the operator self inspection.

The inspection is documented by systematic logoff of the inspection operation in the production plan (FAUF). The drawing is entered in accordance with Chap. 6.3 / Table 2.

In addition an inspection record must be prepared.

(1) Determination of the employees by the location QM manager in coordination with the person in charge in the specialist department.


6 Entry in drawing

6.1 Drawing entry for operator self inspection

In the operator self inspection no special information is put on the drawing. All information is to be used bindingly.

6.2 Drawing entry for the special inspection without inspection record



Table 1: Drawing entry without inspection record (similar to DIN 406-10 (1992-10) / Item 3.2.6.1)

Component selection process	Sample selection process
	

*) consecutive number

6.3 Drawing entry for the special inspection with inspection record

Table 2: Drawing entry with inspection record (similar to DIN 406-10 (1992-10) / Item 3.2.6.1)

Component selection process	Sample selection process
	

*) consecutive number

6.4 Note on component selection process

6.4.1 Component selection process

An inspection with the component selection process (=100%) always indicates an inspection with a clear allocation between documentation and component, this also includes assemblies. This can be done by the permanent identification of the material with serial numbers or other appropriate identification, with which an allocation of the documentation to the inspected material is created.

The identification point on the component must be entered in the drawing.

Quality features (dimensions, surfaces, shape and position, etc.) must be inspected and each part clearly documented so that it can be allocated.

The documentation can also be done in a collective record for several components provided that a clear allocation of the inspection results to the components is ensured.

6.4.2 Sample selection process

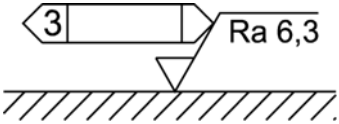
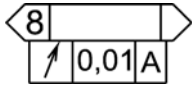
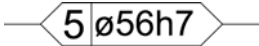
An inspection with the sample selection process always indicates a specific sample inspection (<100 %) without allocation of the performed inspection to the single part.

Quality features (dimensions, surfaces, shape and position, etc.) must be inspected and can be documented jointly for all parts of the lot.

6.5 Examples

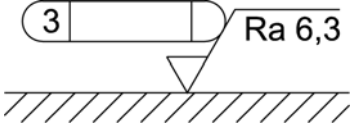
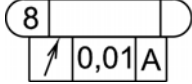
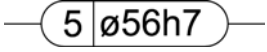
Drawing data that have to be inspected by the QM Department and are not subject to documentation, i.e. do not receive an inspection record.

Table 3: Examples of drawing entry without inspection record

Surface (Ra value)	Shape and position	Dimensions
Component selection process	Component selection process	Sample selection process
		

Drawing data that have to be inspected by the QM Department and are subject to documentation, i.e. receive an inspection record.

Table 4:

Surface (Ra value)	Shape and position	Dimensions
Component selection process	Component selection process	Sample selection process
		

6.6 Additional entry in drawing

Drawings with inspection record (subject to documentation) are additionally marked. A defined CAD module is used for this.

Fig. 1: Drawing entry (CAD module 430)

Prüfverfahren nach VN 1425	DIM	SRT	GTT	Dokumentationsforderungen nach VN 1631	
Anzahl der Meßstellen	n	n	n	Dokumentationsart:	Bauteil kennzeichnen JA <input type="checkbox"/> NEIN <input type="checkbox"/>

The number of measuring point(s) must be entered, if available.
An entry in the Documentation type field is required only for Voith Turbo.

7 Release of drawings

The inspection and release of drawings is regulated in the respective QS regulations. For drawings with documentation requirements special release authorizations can be established.

8 Inspection documentation

The marking of the measuring points must tally with the inspection record.
Filing/archiving must be done in accordance with the QS regulations/provisions.

9 Regulation for Voith Turbo

9.1 Parts subject to documentation, D parts

Parts whose failure can lead to significant property damage and/or if the function is dependent on compliance with these dimensions. A marking of the drawings for D parts can be stipulated, application, e.g. Voith Turbo.

9.2 Safety parts subject to documentation, DS parts

Parts on whose failure significant property damage/personal injury (fatal injury) must be expected. Strict inspections and careful documentation of the results are required. Safety parts subject to documentation, DS parts. Marking of the drawings for DS parts can be stipulated, application, e.g. Voith Turbo.

9.3 Marking of D and DS parts

D and DS parts with component inspection are marked with punched numbers by engraving or permanently with electric engraver. There is also an additional possibility of marking the parts with a permanent felt pen (temporarily), with an acid stamp or by a coat of paint. The point of the "direct marking" on the product must be indicated in the technical drawing. If parts do not have to be marked, this must be stated in the drawing in CAD module 430.

Entry in type of documentation:

- D for parts subject to documentation parts
- DS for safety parts subject to documentation

9.4 Determination of relevant parts and dimensions

Components which are subject to a special inspection with documentation requirement are determined on the basis of results from risk assessments such as FMEAs, reports and information about damage that has occurred, feedback from production, the test field and service as well as special customer requirements.