

VOITH STANDARD (VS)



Technical Drawings - Indication of Special Inspections in Drawings – Part 1: VP and VH

Published by Group Standardization / Former published as Voith Norm (VN)

VERSION: 2022-05

Changes to the previous version are marked in „*italics, highlighted in yellow*”

ICS-class: 01.140.30, 03.120.10

Descriptors: documentation requirement, inspection record, check gauge, inspection, drawing



**Abstract:**

This standard is used for the definition of inspections in drawings to ensure Voith's product standard.

	Name	Signature / Date
prepared by	Paulus, Murat – VPH –zqsh	Paulus, Murat / 2022-05-10
checked by	Wilms, Mark – VPH – zqg	Wilms, Mark / 2022-05-10
approved by	Straub, Markus – VPH – zqs	Straub, Markus / 2022-05-11

## Revisions

Compared to **VN 1631:2012-06**, the following changes have been made:

- a) **Complete transfer of the VN 1631:2012-06 to VS 1631-1**
- b) **Editorial revision; adaptation to new chapter structure and layout**
- c) **Symbol adjustment in Chapter 7: selection procedure adjusted**
- d) **Normative references added**
- e) **List of tables added**

## Previous editions

VN 1631: **2012-06**; 2010-03; 2009-06; 2008-03; 2007-05; 2000-12; 1982-08

Printed from wernst  
on 2023 - 08 - 31 at 09:47

# Contents

1	Scope	4
2	Area of application	4
3	Purpose	4
<b>3.1</b>	<b><i>National and international standards and regulations</i></b>	4
4	Terms and definitions	4
5	General information	5
6	Types of inspection	5
6.1	Operator self inspection	5
6.2	Special inspection without inspection record	5
6.3	Special inspection with inspection record	5
7	Entry in drawing	6
7.1	Drawing entry for operator self inspection	6
7.2	Drawing entry for the special inspection without inspection record	6
7.3	Drawing entry for the special inspection with inspection record	6
7.4	Note on component selection process	6
7.4.1	Component selection process	6
7.4.2	Sample selection process	7
7.5	Examples	7
7.6	Additional entry in drawing	8
8	Release of drawings	8
9	Inspection documentation	8
10	Regulation for Voith Turbo	8
11	Normative References	9
12	List of tables	9
13	Contact	10

# 1 Scope

*This standard applies to the Voith Group and their subcontractors Paper and Hydro. Usually, this standard is also valid for the companies of the Voith Group, unless otherwise contractually regulated. Applies to US group companies only if accepted by their respective responsible board of directors.*

*Specifications for Voith Group Division Turbo are defined in Part 2 of this series of standards.*

In the business divisions of Voith further regulations and details, if necessary, are regulated by QS documents.

# 2 Area 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 (**VS 1631-1**) 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.

## 3.1 National and international standards and regulations

*The application of standards and regulations declared binding by law is mandatory. For undated references, the latest version shall apply.*

*The minimum standard for Voith is described in this standard.*

# 4 Terms and definitions

*Table 1: Terms and definitions*

FAUF	Production order or <b>production plan</b>
VQS	<b>Voith Quality Specification</b>
VP	<b>Voith Paper</b>
VH	<b>Voith Hydro</b>
AVO	<b>Work operation</b>
VN / VS	<b>Voith Standard</b>

## 5 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, **form** 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 inspections **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.

## 6 Types of inspection

### 6.1 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 **work operation (AVO)** in the production order (FAUF).

### 6.2 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 <sup>1</sup>. 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 **Chapter 7.2, Table 2**.

### 6.3 Special inspection with inspection record

Special inspections are carried out by a QM Department or by personnel authorized to perform inspections<sup>1</sup> 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.

<sup>1</sup> Determination of the employees by the location QM manager in coordination with the person in charge in the specialist department (**at Voith Paper: depending on the respective existing inspector authorizations**).

The inspection is documented by systematic logoff of the inspection operation in the production plan (FAUF). The drawing is entered in accordance with **Chapter 7.3, Table 3.**

In addition an inspection record must be prepared.



## 7 Entry in drawing

### 7.1 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.

### 7.2 Drawing entry for the special inspection without inspection record



Table 2: Drawing entry **without** inspection record (similar to DIN 406-11<sup>2</sup> / Chapter 5.6)

Component selection process	Sample selection process
	

\*) consecutive number

### 7.3 Drawing entry for the special inspection with inspection record

Table 3: Drawing entry **with** inspection record (similar to DIN 30-10 / Chapter 4.1.3)

Component selection process	Sample selection process
	

\*) consecutive number

### 7.4 Note on component selection process

#### 7.4.1 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, **form, orientation, location and run out**, etc.) must be inspected and each part clearly documented so that it can be allocated.

<sup>2</sup> The DIN 406 series was transferred to ISO 129-1, but the inspection codes were **not** included.

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.

### 7.4.2 Sample selection process

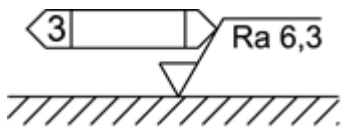
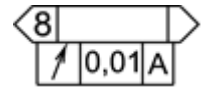

An inspection with the sample selection process always indicates a specific sample inspection (<100 %) without allocation of the performed inspection to the single part. Quality features (dimensions, surfaces, **form, orientation, location and run out**, etc.) must be inspected and can be documented jointly for all parts of the lot.

**Note:** *The specifications from the VQS are mandatory, each lot of the sample must comply with this.*

### 7.5 Examples

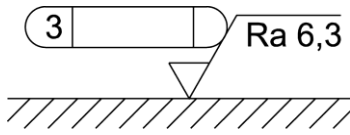
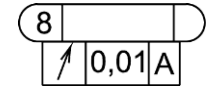
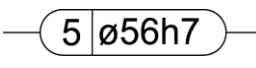
Drawing data that have to be inspected by the QM Department and are not subject to documentation, i.e. **do not receive** an inspection record.

Table 4: Examples of drawing entry **without** inspection record

Surface (Ra value)	<b>Form, orientation, location and run out</b>	Dimensions
<b>Sample selection process</b>	<b>Sample selection process</b>	<b>Component selection process</b>
		

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

Table 5: Examples of drawing entry **with** inspection record

Surface (Ra value)	<b>Form, orientation, location and run out</b>	Dimensions
<b>Sample selection process</b>	<b>Sample selection process</b>	<b>Component selection process</b>
		

**Important:** *For the automatic readout of inspection dimensions from drawings and their subsequent automatic import into inspection records, they must be defined as inspection dimensions in the CAD model. Instructions for this can be found in the relevant CAD manual. This automatic readout is currently not possible for " Form, orientation, location and run out " and "Surface".*

### 7.6 Additional entry in drawing

Drawings with inspection record (subject to documentation) are additionally marked. A defined CAD module is used for this. *The positioning is near the title block and must be filled by the designer, depending on the test requirements (see Figure 1).*

Test procedure to VN 1425	DIM	SRT	GTT		Document requirements to VS 1631-1		
No of measuring points	n	n	n		Type of documentation:	Marking of parts	YES <input type="checkbox"/> NO <input type="checkbox"/>

Figure 1: CAD-module drawing entry („test\_procedure\_en“)

## 8 Release of drawings

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

## 9 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.

## 10 Regulation for Voith Turbo

**Further regulations and specifications for the Voith Group Division Turbo are listed in VN 1631-2.**

Printed from wernst... on 2023-08-31 at 09:47

Observe Copyright - Only for intercompany use!



# 11 Normative References

The following documents are referred to in the text in such a way that some parts of them or their entire content constitute requirements of this document. In the case of dated references, only the referred edition applies. In the case of undated references, the last edition of the referenced document (including any amendments) shall apply.

Document	Title
VN 1425	Quality assurance; Tests and certifications; Specification of abbreviations
VN 1631-2	Voith Turbo; Technical Drawings; Indication of Special Inspections in Drawings
DIN 30-10	Technical drawings – Simplified drawing – Part 10: Simplified indications and collective indication, execution
DIN 406-11:1992-12	Technical drawings; Dimensioning; Rules for the application (withdrawn 2020-02; replacement ISO 129-1, see note 2 from Chapter 7.2)

Table 6: Normative references

# 12 List of tables

Table 1: Terms and definitions ..... 4

Table 2: Drawing entry without inspection record (similar to DIN 406-11 / Chapter 5.6) ..... 6

Table 3: Drawing entry with inspection record (similar to DIN 30-10 / Chapter 4.3.1) ... 6

Table 4: Examples of drawing entry without inspection record ..... 7

Table 5: Examples of drawing entry with inspection record ..... 7

Table 6: Normative references ..... 9

Printed from Weissta...  
on 2023 - 08 - 24 09:47

## 13 Contact

Voith Group | Division Paper  
St. Pöltener Straße 43  
89522 Heidenheim, Germany

Tel. + 49 7321 37-7060

**GroupStandardization@voith.com**

[www.voith.com](http://www.voith.com)

Printed from wernst  
on 2023 - 08 - 31 at 09:47



Copyright © by  
Voith

**CAUTION: THIS PUBLICATION IS COPYRIGHT PROTECTED**  
**Confidential, all rights reserved. Observe copyright notice ISO 16016.**

The application of the Voith Standard is for all defined parties at Voith mandatory. If specified the Voith Standard is also mandatory for the suppliers and customers of Voith. It may not be translated, mechanically or electronically duplicated or made available to third parties, whether wholly or partially, without the written consent of the publisher.  
**Original language of the Document: de**

**In case of doubt -respectively legal cases- the original language of the document has to be applied.**