

# Datenblatt | Data sheet

## Data sheet Dimensional shape accuracy and roughness DIN 5402-3:2012-04

### Needle rollers

Grade	VDwpa	VDwLa	$\Delta Rwa$	Konkavität <sup>b</sup>	Sorting <sup>c</sup>			Ra Surface
	$\mu\text{m}$	$\mu\text{m}$	$\mu\text{m}$	$\mu\text{m}$	$\mu\text{m}$			$\mu\text{m}$
<b>G2</b>	1	2	1	0,5	0 / -2	-1 / -3	-2 / -4	0,2
					-3 / -5	-4 / -6	-5 / -7	
					-6 / -8	-7 / -9	-8 / -10	
<b>G5</b>	2,5	5	2,5	1,0	0 / -5	-3 / -8	-5 / -10	0,25

<sup>a</sup> The values apply in the center of the needle roller.  
<sup>b</sup> Maximum permissible concavity of the surface line in the cylindrical area of the needle roller.  
<sup>c</sup> A grade is identified by the upper and lower diameter deviation ( $\mu\text{m}$ ). The values apply in the center of the needle roller.

#### Nominal diameter of the roller $D_w$

Diameter value used for general designation of a needle roller diameter

#### Nominal length of the roller $L_w$

Length value used for the general designation of a needle roller length

#### Sorting

Dimension range of the nominal diameter in which the diameter of a needle roller may be

#### Single needle roller diameter $D_{ws}$

Distance between two planes parallel to the needle roller axis, which touch the needle roller jacket

#### Mean needle roller diameter in a radial plane $D_{wmp}$

Arithmetic mean value of largest and smallest individual needle roll diameter  $D_{ws}$  in a radial plane

#### Variation of needle roller diameter in one plane $V_{Dwp}$

Difference between the largest and smallest individual needle roll diameter  $D_{ws}$  in a radial plane

#### Variation of needle roll diameter in one grade $V_{Dwl}$

Difference between the largest and smallest needle roll diameters within a grade

#### Roundness $\Delta_{RW}$

Largest radial distance between the needle roller surface and a concentrically arranged circumscribing circle, measured in needle roller center

#### Axial runout relative to the needle roller shell surface $S_{Dw}$

Difference between the largest and smallest axial distance between the needle roller end face and a plane perpendicular to the needle roller axis measured at a specific radial distance from the needle roller axis during one complete revolution of the needle roller

#### Radial edge distance $r_1$

Distance measured in an axial plane between the imaginary sharp edge of a needle roller and the intersection line between the surface of the edge rounding and the face of the needle roller

#### Radial edge distance $r_2$

Distance measured in an axial plane between the imaginary sharp edge of a needle roller and the intersection line between the surface of the edge rounding and the shell surface of the needle roller

#### Single edge distance $r_3$

(radial) distance measured in a single axial plane between the imaginary sharp edge of a needle roller and the intersection line between the surface of the edge rounding and the end face of the needle roller

(axial) distance measured in a single axial plane between the imaginary sharp edge of a needle roller and the intersection line between the surface of the edge rounding and the lateral surface of the needle roller

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**Smallest single radial edge distance**  $r_{1s \min}$

Smallest permissible single radial edge distance of a needle roller

**Largest single radial edge distance**  $r_{1s \max}$

Largest permissible single radial edge distance of a needle roller

**Smallest single axial edge distance**  $r_{2s \min}$

Kleinster zulässiger einzelner axialer Kantenabstand einer Nadelrolle

**Größter einzelner axialer Kantenabstand**  $r_{2s \max}$

Größter zulässiger einzelner axialer Kantenabstand einer Nadelrolle

**Dome radius** P

Radius of the end cap profile of the needle roller design A

**Surface roughness** Ra

For the purposes of this part of the standard, deviations from a geometrically perfect surface, whereby deviations in shape and waviness are not taken into account