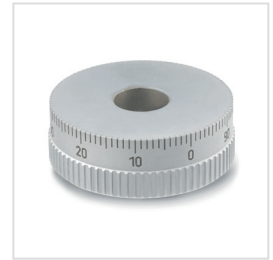
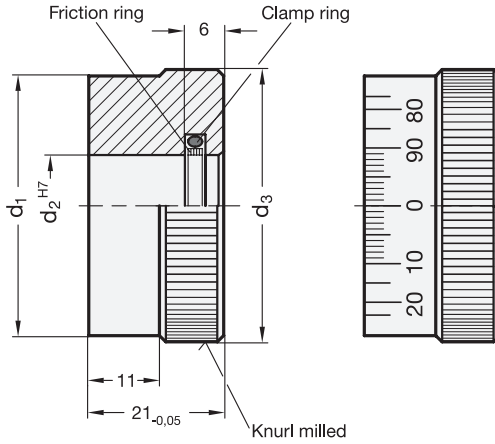
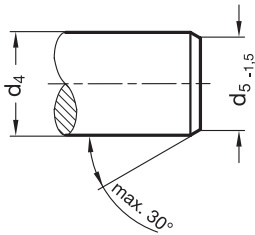


Shaft details for version with friction ring



- 2 Bore code**  
**B** without friction ring  
**R** with friction ring
- 4 Type**  
**MCR** matt chrome plated  
**MCRS** matt chrome plated, standard scale 0...90, 100 graduations, acc. scale scheme d<sub>1</sub>/100 A RA 0-10 20...90/10

<b>1</b> $d_1 \pm 0,02$	<b>3</b> $d_2$ H7 Bore	$d_3$	$d_4$ <sup>-0,02</sup> / <sub>-0,05</sub>	$d_5$		
30	12	14	31,7	12	14	10,5
40	14	16	41,3	14	16	12,5
50	16	18	51,8	16	18	14,5
60	18	20	61,4	18	20	16,5

**Specification**

- Steel
  - Knurl milled
  - Scale lug d<sub>1</sub> fine turned
  - blank (standard version)
  - matt chrome plated
  - matt chrome plated with std. scale
- Scale engraved with laser precision, black
- Clamp ring Rubber
- Friction ring Polyamide
- ISO-Fundamental tolerances → Page 1479
- RoHS compliant

**On request**

- special graduations see „How to order Graduations“ → Page 252

**Information**

The non-wearing friction ring ensures perfect engagement of the scale ring when re-aligning the spindle. In addition it allows the setting of the scale ring on a static shaft.

Besides the standard scale (Type MCRS) the scale rings can be supplied with any type of graduation. It is suggested to use the matt chrome plated version (MCR) so that a nice discrepancy in color is given.

Regarding design, numbering run, numbering position and numbering sequence of the scale please see the layout for scale rings on the order sheet „How to order Graduations“ → Page 252

see also...

- Control handwheels GN 736.1 (Aluminum black, anodized) → Page 213
- Scale rings GN 264 (with and without scale) → Page 255

How to order (Scale ring without scale)	<b>1</b> $d_1$
<b>GN 164-40-R14</b>	<b>2 Bore code</b>
	<b>3</b> $d_2$

How to order (Scale ring with scale)	<b>1</b> $d_1$
<b>GN 164-50-R16-MCRS</b>	<b>2 Bore code</b>
	<b>3</b> $d_2$
	<b>4 Type</b>

1.1  
1.2  
1.3  
1.4  
2.1  
2.2  
2.3  
2.4