

Precision Hollow Shaft with:

- Good hardening properties
- Excellent ground finish

For use in Quality Linear Bearing, Guide and Slideway systems.

Chemical Analysis in %:

Designation	C	Si	Mn	P	S
C 60	0.50	Max.	0.60	Max.	Max.
	0.65	0.40	0.90	0.035	0.035

To EN 10083

Mechanical Properties:

Ø mm	Re (N/mm ²)	Rm (N/mm ²)	A %
- 17	= > 360	= > 670	= > 5
> 17 - 41	= > 325	= > 630	= > 6
> 41 – 110	= > 325	= > 630	= > 8

Mechanical properties to DIN 2391/C parts 1 + 2
Manufactured BK+S, NBK or GBK according to size

Density: 785 kg/m³

Roundness: ½ diameter

Surface Finish: Polished, Ra ≤ 0,30 µm

Straightness:

=> Ø 12 mm – Ø 20 mm = 0.30 mm/m

Deflection of dial gauge max. 0.60 mm/m.

=> Ø 20 mm – Ø 40 mm = 0.20 mm/m

Deflection of dial gauge max. 0.40 mm/m.

=> Ø 40 mm – Ø 80 mm = 0.10 mm/m

Deflection of dial gauge max. 0.20 mm/m

Bore Concentricity:

=> 5 % of the wall thickness

Induction hardened: Surface Hardness 60 – 66 HRC

Ø mm	Depth of Hardness at ends Rht 550 HV1 DIN 50190
= > 12-18	0,80 mm + 0,50 mm
> 18-28	1,20 mm + 0,80 mm
> 28-60	1,50 mm + 1,00 mm
> 60-80	2,20 mm + 1,00 mm

Non Standard Sizes

Other hardness depths and diameter tolerances are available. Please contact us for detailed information, dimensions and minimum order quantities.

Standard Diameters

Standard Ø mm	Tolerance in µm		Random length In mm *
	h6	h7	
12	0	0	6000 + 400
16	- 11	- 18	
20	0	0	6300 + 400
25	- 13	- 21	7600 ± 200
30			
40	0	0	6800 + 200
50	- 16	- 25	
60	0	0	7600 + 200
80	- 19	- 30	

*) 'Stock' material – The bar ends are not hardened for 60mm and up to 150mm length of a production bar may not be within dimensional tolerance. When providing material for stock this material may amount to 10%, we do not invoice this material.

Bore Diameter

Outer Ø mm	Inner Ø mm	Inner Ø Tolerances
12	4	± 0,45
16	7	± 0,15
20	14	± 0,15
25	15.4	± 0,15
30	18	± 0,15
40	26	± 0,15
50	28	± 0,25
60	36	± 0,30
80	55	± 0,35

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