



# Induction Hardened and Ground Linear Shafts

DIAMETER 5 - 120 mm

## STEEL GRADES

Steel Grade	DIN	B.S	UNI	JIS	GOST	ASI/SAE/ASTM	Werkstoff
Cf53	Cf53(C53G)	070M55	C53	S50C	50	1050	1,1213

## CHEMICAL COMPOSITION - IN % BY WEIGHT

Steel Grade	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	V	N
Cf53	0.50-0.57	0.15-0.35	0.40-0.70	≤0.025	≤0.035	–	–	–	–	–	–

## MECHANICAL PROPERTIES

Steel Grade	Diameter	Tensile Strength N/mm <sup>2</sup>	Yield Strength N/mm <sup>2</sup>	Elongation A%	Hardness Brinell N/mm <sup>2</sup>	Norm	Tristar Steel Product Code
Cf53+N	∅≤16	610-760	Min. 340	Min. 16	Min. 183	DIN 17212	STAR W
	16<∅≤100	610-760	Min. 340	Min. 16	–		

### STRAIGHTNESS

5 ≤ ∅ ≤ 10mm: max. 0.3 mm/1000 mm  
 12 ≤ ∅ ≤ 18mm: max. 0.25 mm/1000 mm  
 20 ≤ ∅ ≤ 50mm: max. 0.20 mm/1000 mm  
 50 < ∅ ≤ 120mm: max. 0.15 mm/1000 mm

### ROUNDNESS

5 ≤ ∅ ≤ 10mm: max. 4 μm  
 12 ≤ ∅ ≤ 18mm: max. 5 μm  
 20 ≤ ∅ ≤ 30mm: max. 6 μm  
 30 < ∅ ≤ 50mm: max. 7 μm  
 50 < ∅ ≤ 80mm: max. 8 μm  
 80 < ∅ ≤ 120mm: max. 10 μm

### SURFACE HARDNESS

Surface hardness beneath  
 the chrome layer  
 Cf53 62±2 HRC

### TOLERANCE

h6, other on request

### SURFACE ROUGHNESS

Ra: max. 0.15 μm

### STANDARD LENGTH

5800- 7500 mm, other on request

Diameter (mm)	Hardening Depth (mm)
5 - 10	min. 0.4
12 - 18	min. 0.6
20 - 30	min. 0.9
32 - 50	min. 1.5
60 - 90	min. 2.2
100 - 120	min. 3.2