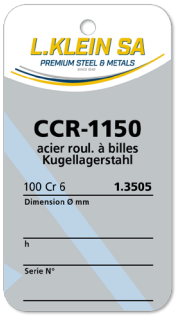
L.KLEIN SA
PREMIUM STEEL & METALS
SINCE 1946



CCR-1150

Roller bearing steel

Distinctive feature and main attributes

A temperable ball bearing steel, showing unease of machining. However, it has a high hardness and a good resistance to deformation with an excellent wearing.

Use and application range

This quality is universally deployed in the ball and roller bearing industry including antifriction bearing such as balls, sheaves and links.

Norms

Material No.	1.3505
DIN Abbreviation	100Cr6
AFNOR	~ 100C6
AISI/SAE/ASTM	AISI ~ 52100
ISO	100Cr6
Euro Standard EN	~ 100Cr6
Others	JIS ~ SUJ2 / JIS ~ SUJ4

Chemical composition (% wt)

C	Si	Mn	P	S
0.93 – 1.05	0.15 – 0.35	0.25 – 0.45	max. 0.025	max. 0.015

Cr	Cu	Al	Fe
1.35 – 1.60	max. 0.30	max. 0.05	balance

Execution, delivery conditions, standard sizes and availability

- Execution in 3 m (2 m) round or square and hexagonal bars as well as in coils
- **Standard size in stock:** see product range

Other sizes on request

Tolerances

- Ø < 3.00 mm, cold drawn; ISO h8
- Ø ≥ 3.00 mm, cold drawn, ground, polished; ISO h7 (h8); surface finish Ra 0.4 – 0.8 (N5 / N6) for ground surface

Tighter tolerances (up to +/- 0.002 mm) on request

Mechanical properties

At delivery status:

- **Tensile strength (Rm):** 600 – 800 MPa, size depending
- **Hardness after tempering:** max. 65 HRc

Heat treatment

- **Tempering in oil:** 830 – 870°C
- **Tempering in air:** 800 – 830°C
- **Soft annealing:** 730 – 760°C
- **Normalizing annealing:** 870 – 900°C
- Annealing as required see charts

Cutting rates

V_c ~ 25 – 40 m / min, long-chipping, value depending on the lubrication oil, cutting tools and shape of parts.

Modifications will not be adjusted automatically. Last update 05 / 2024

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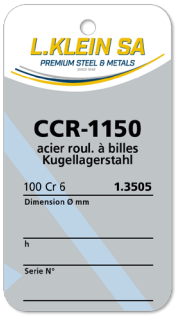

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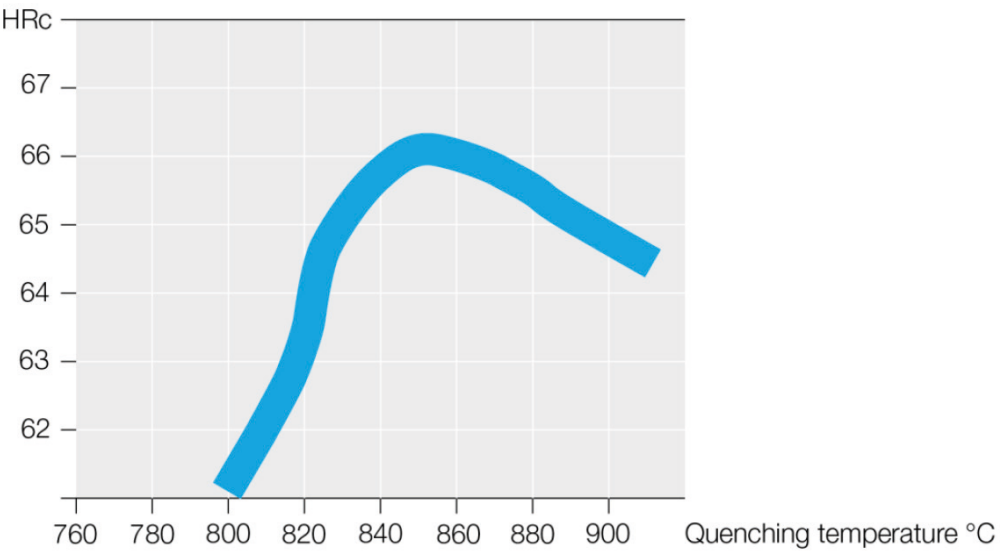
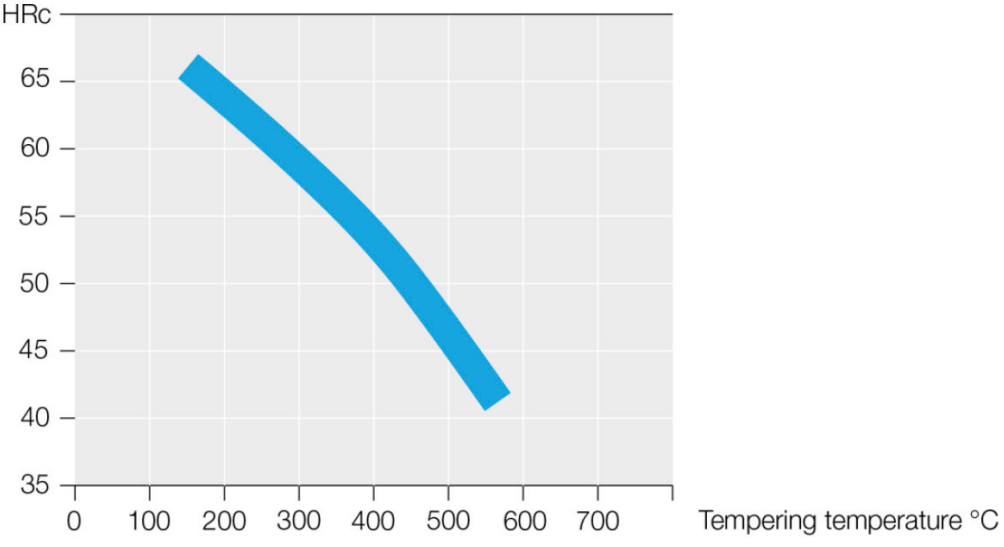
Roller bearing steel

Hardening curve



Annealing curve 30 min



If your harden in oil, we recommend to not pass over the annealing temperature of 820°C to avoid cracks. The water should be pre-heated at about 50°C. The above curves indicate the results of determinate section of a curtain size of 5 mm. The result after heat treatment can be slightly different than shown on this curve, depending on the shape and size of the part.

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