



钢铁之家  
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# 全球钢号百科!

Global Steel Grade Encyclopedia



涵盖的行业或国家与地区类别



美国材料与试验协会

GJB

国家军用标准



动力机械工程师协会

EU

前欧洲标准化

AISI

美国钢铁学会

DIN

德国工业标准

AMS

航空航天材料规范



国际标准

JASO

日本汽车标准组织

EN

欧洲标准

JB

机械行业标准

UNS

统一编号系统

UNI

意大利标准



美国机械工程师协会

SS

瑞典标准



国家标准



日本工业标准

## Rapidur 3333

HS3-3-2

C 1.00 Cr 4.00 Mo 2.60 V 2.30 W 3.00

**Steel properties** High-speed steel with economic use of alloys, universally applicable at medium performance. Suitable for series tooling.

**Applications** Twist drills, circular saws, hacksaws, reamers and milling cutters.

**Heat treatment**

<b>Soft annealing °C</b> 770 – 840	<b>Cooling</b> Furnace	<b>Hardness HB</b> max. 255
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<b>Stress-relief annealing °C</b> 630 – 650	<b>Cooling</b> Furnace
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1st pre-heating °C	2nd and 3rd pre-heating °C	Hardening <sup>1</sup> °C	Quenching	Tempering °C	Hardness after tempering HRC				
up to approx. 400 in an air-circulating furnace	a) 850 b) 850 and 1050	1180 – 1220	a) Saltbath, 550 °C b) Oil c) Air	at least twice 540 – 560	62 – 64				
<b>Tempering °C</b>	100	200	300	400	500	525	550	575	600
<b>HRC</b>	63	61	60	58	62	63	64	63	62

<sup>1</sup> For cold-forming tools with a complex geometry, a hardening temperature at the lower end of the quoted range is recommended. The stated hardening temperatures apply to saltbath hardening only. For vacuum hardening, we suggest a reduction of 10 °C to 30 °C.

