



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



中国材料与试验协会

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



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

中国机械行业标准

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 3202

(HS12-1-4-5)

C 1.35 Cr 4.10 Mo 0.80 V 3.80 W 12.00 Co 4.80

**Steel properties** High-performance high-speed steel featuring an extremely good cutting edge retention and wear resistance due to its high vanadium content. A high cobalt content contributes to a high red hardness and tempering resistance.

**Standards** AISI ~T15

**Applications** Machining of hard materials which wear cutting edges such as highly quenched and tempered chromium-nickel grades and non-ferrous metals, mother-of-pearl, paper, hard rubber, synthetic resins, marble, slate and the like. Ideally suited for turning and finishing tools, forming tools of all kinds, heavy-duty milling cutters and automatic lathes.

<b>Heat treatment</b>	<b>Soft annealing °C</b> 820 – 860	<b>Cooling</b> Furnace	<b>Hardness HB</b> max. 280			
	<b>Stress-relief annealing °C</b> 630 – 650	<b>Cooling</b> Furnace				
	<b>1st pre-heating °C</b> up to approx. 400 in an air-circulating furnace	<b>2nd and 3rd pre-heating °C</b> a) 850 b) 850 and 1050	<b>Hardening<sup>1</sup> °C</b> 1190 – 1240	<b>Quenching</b> a) Saltbath, 550 °C b) Oil c) Air	<b>Tempering °C</b> at least three times 540 – 580	<b>Hardness after tempering HRC</b> 64 – 67

<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.

