

V820 Nitriding steel

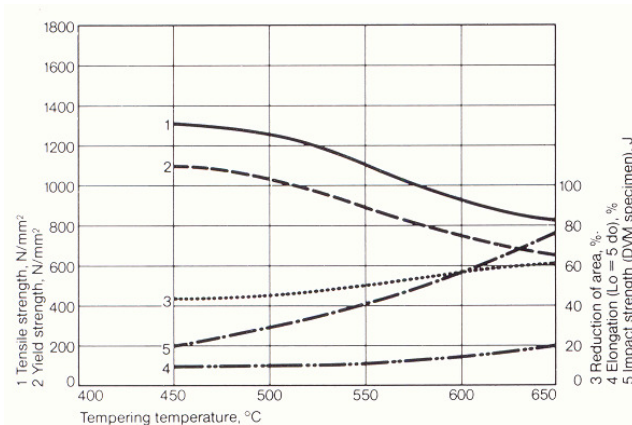
Typical Analysis (Ave. values %)	C	Si	Mn	Ni	Cr	Mo	Al		
	0.36	0.30	0.55	1.00	1.70	0.20	0.95		
NEAREST STANDARD	AS		W. No.		BS		AISI		
	-		1.8550		-		-		

DESCRIPTION	Chromium, Nickel, Aluminium steel for applications requiring very high surface hardness and wear resistance, in particular in large cross sections, in the hardened and tempered condition.
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APPLICATIONS	Cam discs, Cams, Pinion shafts, Measuring tools. Injection pump parts, Valve spools and Gudgeon pins.
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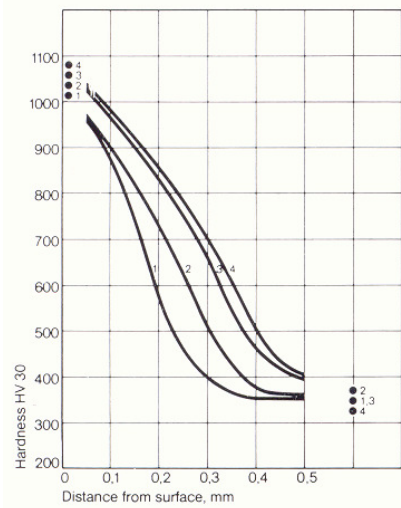
HEAT TREATMENT	Forge	850-1050°C, slow furnace cool.
	Normalize	870-900°C air cool.
	Anneal	650-700°C slow cool in controlled furnace.
	Stress relieve	In the hardened and tempered condition, approx. 30-50°C below tempering temperature. In the annealed condition 550-600°C 1 hour min. at temperature, air cool.
	Harden	850-900°C oil quench.
	Temper	580-660°C air cool (refer to Harden and temper graph.)
	Nitride	Gas, 510°C Salt, 570°C Surface hardness after nitriding, approx. 950 VH.

Harden and Temper graph



Hardening temperature: 870°C
 Quenched and tempered
 Specimen size: 60 mm diameter

Hardness after gas nitriding



Nitriding temperature: 510° C
 Nitriding time:
 curve 1 40 hrs
 curve 2 60 hrs
 curve 3 85 hrs
 curve 4 100 hrs

MECHANICAL PROPERTIES	Diameter		Tensile Strength MPa	Yield Strength MPa	Elong %	Impact Strength J
	Over	Up to				
	70	250				

PHYSICAL PROPERTIES	Density (kg/dm ³)	7.85				
	Modulus of elasticity 10 ³ N/mm ²	210				
	Thermal conductivity W/(m.K)	35				
	Electric resistivity Ohm.mm ² /m	0.31				
	Specific heat capacity J/(kg.K)	460				
	Modulus of elasticity 10 ³ N/mm ²	100°C	200°C	300°C	400°C	500°C
	Thermal expansion 10 ⁶ m/(m.K)	100°C	200°C	300°C	400°C	500°C

WELDING	Limited to minor repair work, please consult our welding engineers.
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Round peeled k12 Forged sizes +2-4mm										
SIZE RANGE	30	40	50	60	70	80	95	110		
	35	45	55	65	75	90	100	130		

Sizes normally stocked in Australia. Some branches may not hold the entire range.
 Other sizes available on request.

LOCATIONS

Bohler Uddeholm Australia Pty Ltd ABN 15000013052

Sydney	129-135 McCredie Rd Guildford	2161	Ph (02) 8724 5554	Fax (02) 8724 5555
Newcastle	3 Pavilion Pl Cardiff	2285	Ph (02) 4954 6611	Fax (02) 4956 5773
Albury	1 Eames St Albury	2640	Ph (02) 6041 3399	Fax (02) 6041 1820
Wollongong	40 Doyle Ave Unanderra	2526	Ph (02) 4272 6544	Fax (02) 4272 7563
Marayong	1/21 Binney Rd Marayong	2148	Ph (02) 9831 4431	Fax (02) 9671 1682
Melbourne	282-290 Greens Rd Dandenong	3175	Ph (03) 9767 5554	Fax (03) 9767 5555
Bayswater	4 Ramage St Bayswater	3153	Ph (03) 9729 7356	Fax (03) 9738 0850
Adelaide	1 Williams Cir Pooraka	5095	Ph (08) 8368 4554	Fax (08) 8368 4555
Brisbane	12-18 Limestone St Darra	4076	Ph (07) 3712 9554	Fax (07) 3712 9555
Townsville	9-11 Caldwell St Garbutt	4814	Ph (07) 4479 4800	Fax (07) 4725 1316
Perth	29-33 Gauge Cir Canningvale	6155	Ph (08) 9455 8672	Fax (08) 9455 8673
Kewdale	5 Beete St Welshpool	6106	Ph (08) 9350 9582	Fax (08) 9350 9683
Launceston	20 Murphy St Invermay	7248	Ph (03) 6334 3542	Fax (03) 6331 4001

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