

E110 Case hardening steel

Typical Analysis (Ave. values %)	C	Si	Mn	Ni	Cr	Mo	S	P
	0.18	0.30	0.50	1.50	1.70	0.30	0.025	0.025
NEAREST STANDARD	AS		DIN		BS		AISI	
	-		1.6587 17CrNiMo6		-		-	

DESCRIPTION	E110 is a 1.8% Nickel Chromium Molybdenum case hardening steel combining core toughness and high case hardness after carburising and quenching.
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APPLICATIONS	Components with large cross sections requiring high toughness and core strength, such as gears, crankshafts and heavy-duty gear shafts in aircraft and truck construction and mechanical engineering.
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HEAT TREATMENT	Forge	850-1150°C. Cool in furnace.
	Normalize	850-880°C. Air cool.
	Anneal	650-700°C. Cool slowly in controlled furnace.
	Carburize	900-950°C. Furnace or Air cool
	Core Refine	830-870°C. Oil quench or Air cool.
	Harden	780-820°C Oil quench.
	Temper	150-200°C air cool
	Annealed hardness	229 HB max

MECHANICAL PROPERTIES Heat Treated Condition	Tensile Strength MPa	Yield Strength MPa	Elong. %	Brinell Hardness
	980-1270	785	8	290-375

PHYSICAL PROPERTIES	Density (kg/dm ³)	7.85
	Modulus of elasticity 10 ³ N/mm ²	210
	Thermal conductivity W/(m.K)	38
	Electric resistivity Ohm.mm ² /m	0.18
	Specific heat capacity J/(kg.K)	460
	Thermal expansion 10 ⁶ m/(m.K) (Room temp.)	11.1

WELDING	Parts should be welded before Carburizing and Hardening. Preheat to 250-350°C. Filler metals:-Bohler FOX DCMS-KB or FOX 2.5 Ni electrodes. DCMS-IG wire.
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Round Peeled k12										
SIZE RANGE	25	51.5	82	120	170	230	330	420	570	
	28	55.5	87	127	175	250	350	425	630	
	33	58	92	136	182	260	360	430	670	
	36	60	97	146	195	280	370	470	720	
	39	65	102	152	200	300	380	500		
	42	70	106	162	210	315	390	530		
	45	75	116	165	220	320	410	540		

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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