BOHLER UDDEHOLM
AUSTRALIA

630 *(17/4 PH)* Precipitation hardening stainless steel

Typical Analysis (Ave. values %)	C	Si	Mn	Cr	Ni	Cu	Nb	S	P
	0.04	0.6	0.3	16.0	4.2	3.3	0.3	0.03	0.03
NEAREST STANDARD	DIN			UNS			AISI		
	1.4542 X5CrNiCuNb17-4			S17400			630		

DESCRIPTION	**ASSAB 630** is Martensitic precipitation hardenable chromium, nickel, copper steel possessing high strength and toughness. Further strength increments can be obtained by cold forming, followed by a precipitation hardening treatment. **ASSAB 630** has similar corrosion resistance to ASSAB 304 and is produced by the electro slag refining process.

APPLICATIONS	Industries including marine, aerospace, petrochemical, chemical, food processing. Applications including propeller shafts, highly strength shafts, hydraulic fittings, fasteners etc.

HEAT TREATMENT	Forge	850-1150°C.
	Solution Anneal	1030-1060°C air, Oil
	Temper (Artificial ageing)	480°C Air cool 500°C Air cool 550°C Air cool 580°C Air cool 600°C Air cool 620°C Air cool 760°C + 620°C Air cool
	Nitriding	The nitriding process reduces the steel's corrosion resistance. It is applied in cases where increased friction and wear is required. Plasma nitriding in combination with precipitation hardening will result in a hardness depth of 0.1- 0.15mm. A surface hardness of 67 HRC can be achieved.

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MECHANICAL PROPERTIES	Condition	Hardness HB	Tensile Strength MPa	Yield Strength MPa	Elong %
	Solution. Annealed	365	1100	900	10
	PH480	400-450	1310	1170	8
	PH500	375-430	1170	1070	10
	PH550	330-390	1080	1000	12
	PH580	300-370	1000	900	13
	PH600	290-360	965	800	14
	PH620	270-340	930	750	16
	PH620	260-310	790	590	18
	PH = Precipitation Hardened				

PHYSICAL PROPERTIES		
	Density (kg/dm^3)	7.78
	Nodulus of elasticity 10^3 N/mm^2	196
	Thermal conductivity W/(m.K)	17
	Electric resistivity Ohm.mm^2/m	0.77
	Specific heat capacity J/(kg.K)	400
	Thermal expansion 10^6 m/(m.K)	10.8

WELDING	
	ASSAB 630 can be welded using either TIG or electric arc, but should be conducted in the solution annealed condition only. Keep heat input as low as possible preheat to 100 - 200ºC only if component thickness exceeds 25mm or for welding heavy castings. Post-weld heat treatment can be varied as required by the specified mechanical properties and may consist in a solution anneal, a precipitation hardening treatment or a combination of both. Filler materials upon request.

SIZE RANGE		
	Round	38.1 to 88.9 mm Peeled & Polished to h9 88.9 to 250 mm Machined Other sizes on request

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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 Amsted Rd Bayswater	3153	Ph (03) 9739 8022	Fax (03) 9739 8033
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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