



CHRONIFER® M-17B martensitic Hardenable Stainless Steel

Material No.	DIN Abbreviation	AFNOR	AISI/SAE/ASTM	ISO	Euro Standard EN	Others
1.4112	X90CrMoV18	X90CrMoV18 (X89CrMoV18-1) (former Z 90 CDV 18)	AISI ~ 440B	7153-1 (R)	X90CrMoV18	JIS ~ SUS 440B

Distinctive feature & main attribute: a temperable, alloyed stainless steel, precedingly refined by electro-slag remelting process (ESR) and optimized for high hardness, characterized by its good corrosion and abrasion resistance unless the final part has been polished properly (without pores). Due to its higher carbon content, it is superior to Chronifer® Labor M-13, achieved by a rigorouser acceptance referring to cutting hardness. However, the machinability is strongly limited whereas corrosion resistance to water and steam is fine.

Use & application range: this alloy meets the requirement of medical instruments and dental cutting tools such as bone drills, knives or cutlery, punch disks, ball bearings, screw extruders and spray nozzles.

REFERENCE ANALYSIS %	C	Si	Mn	P	S	Cr	Mo	V	Fe
		0.85 0.95	max. 1.00	max. 1.00	max. 0.04	max. 0.03	17.00 19.00	0.90 1.30	0.07 0.12

EXECUTION DELIVERY FORM STANDARD SIZES AVAILABILITY	<ul style="list-style-type: none"> Execution in 3 m (2 m) round bars as well as in coils for Escomatic Standard size in stock: see Product range Other sizes on request
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TOLERANCES	<ul style="list-style-type: none"> Ø < 2.00 mm, cold drawn, polished; ISO h8 Ø ≥ 2.00 mm, cold drawn, ground, polished; ISO h7 (h6), surface finish Ra 0.4 (N5) Tighter tolerances on request
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MECHANICAL PROPERTIES	At delivery status: <ul style="list-style-type: none"> Tensile strength (R_m): 750 – 950 MPa, size depending Hardness after tempering: ~ 60 HRC
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HEAT TREATMENT	<ul style="list-style-type: none"> Vacuum tempering: 1000 – 1050 °C, cooling in oil or in water (Annealing as required see chart)
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CUTTING RATES	$v_c \sim 25 - 40 \text{ m/min}$, long-chipping, value depending on the lubrication oil, cutting tools and shape of parts. <ul style="list-style-type: none"> Cutting oil: e.g. INOX or ORTHO NFX of Motorex
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Modifications will not be adjusted automatically

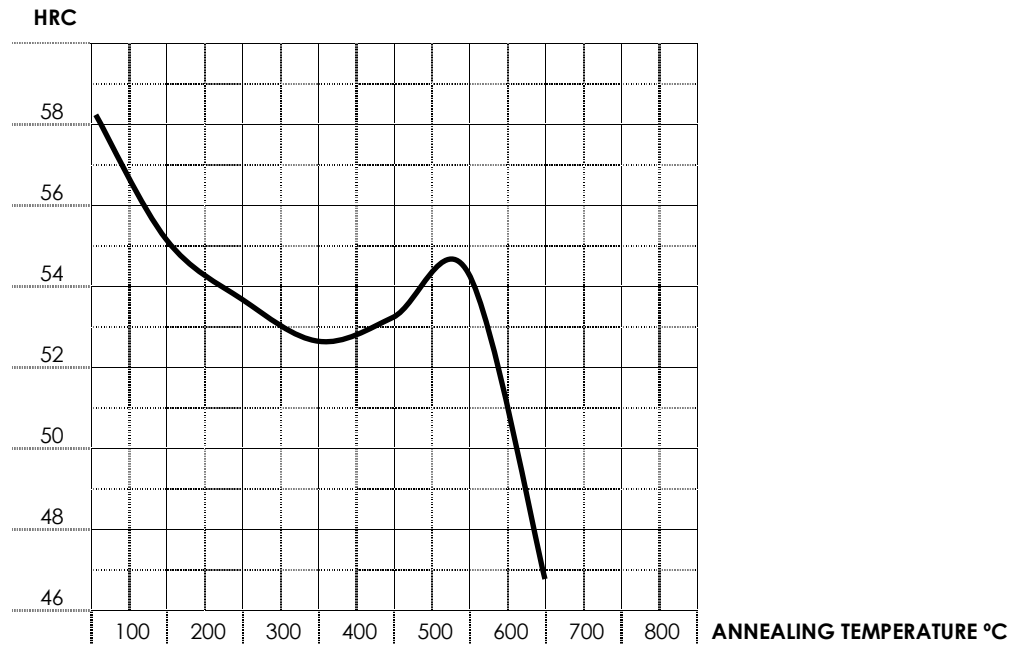
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ANNEALING CURVE



The above curve indicates the results of determinate section of a curtain size of 5 mm. The result after heat treatment can be slightly different than shown on this curve, depending on the shape and size of the part.

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Last update 10/2010
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