

<b>Quality</b>	X12CrS13
<b>According to Standard</b>	EN 10088-3:2005 (E)
<b>Number</b>	1.4005

<b>Comparable Standards</b>	<b>EN</b>	<b>W.N.</b>	<b>AISI</b>	<b>SS (Sweden)</b>
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X12CrS13	1.4005	416	2380
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<b>Chemical Analysis</b>	<b>C %</b>	<b>Si % max</b>	<b>Mn %</b>	<b>P% max</b>	<b>S%</b>	<b>Cr %</b>
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0,06 to 0,15	1,00	≤ 1,50	0,040	0,15 to 0,35	12,0 to 14,0
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<b>Cu</b>	<b>Mo %</b>	<b>Nb</b>	<b>Ni %</b>	<b>Others</b>
—	≤ 0,60	—	—	—

<b>Hot Work and Heat Treatment Temperatures</b>
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Heat Treatment Symbol	Hot Forming		Annealing		Quenching		Tempering
	Temperature °C	Type of cooling	Temperature °C	Type of cooling	Temperature °C	Type of cooling	Temperature °C
+A	1100 to 800	air	745 to 825	air	—	—	—
+QT 650	1100 to 800	air	—	—	950 to 1000	oil, air	680 to 780

<b>Mechanical Properties at Room Temperature</b>
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Heat Treatment Condition	Ø mm.	Hardness HB <sup>c</sup> max	Rp0,2 <sup>d</sup> min. N/mm2	Rm <sup>d</sup> N/mm2	A <sup>d</sup> min. %	KV min. J
+A	—	220	—	max 730	—	—
+QT650	≤ 160	—	450	650 to 850	12	—