

Quality	X15Cr13
According to Standard	EN 10088-3:2005 (E)
Number	1.4024



Comparable Standards	EN	W.N.	AISI
	X15CrMo13	1.4024	403

Chemical Analysis	C %	Si % max	Mn %	P% max	S%	Cr %
	0,12 to 0,14	1,00	≤ 1,00	0,040	≤ 0,030 <sup>b</sup>	12,0 to 14,0
	Cu	Mo %	Nb	Ni %	Others	
	—	—	—	—	—	

### Hot Work and Heat Treatment Temperatures

Heat Treatment Symbol	Hot Forming		Annealing		Quenching		Tempering Temperature °C
	Temperature °C	Type of cooling	Temperature °C	Type of cooling	Temperature °C	Type of cooling	
+A	1100 to 800	slow cooling	745 to 825	air	—	—	—
+QT 700	1100 to 800	slow cooling	—	—	950 to 1050	oil, air	650 to 750
+QT 800	1100 to 800	slow cooling	—	—	950 to 1050	oil, air	600 to 700

### Mechanical Properties at Room Temperature

Heat Treatment Condition	Ø	Hardness	Rp0,2 <sup>d</sup> min.	Rm <sup>d</sup>	A <sup>d</sup> min. %	KV min. J
	mm.	HB <sup>c</sup> max	N/mm2	N/mm2		
+A	—	220	—	max 730	—	—
+QT 650	≤ 160	—	450	650 to 850	15	—