




















































	Material	Condition	Hardness		GUHRING COLOR RING		
			HRC	Brinell	Recommended	Alternate(s)	
 Boron Treated Steels	Low Carbon Alloyed Steels	32B15, 41B18, 51B15, 51B17, 51B20, 86B20, 86B22, 94B15, 94B17	Hot rolled, Annealed, Cold drawn	≤ 20	≤ 230		
			Hot rolled, Annealed, Cold drawn, Normalized	≤ 30	≤ 280		
		Normalized, Quenched and Tempered		≤ 35	≤ 320		
				≤ 38	≤ 350		
	Medium Carbon Alloyed Steels	51B30, 51B32, 51B40, 51B55, 92B55, 50B40, 50B44, 50B46, 50B50, 50B60, 51B60, 81B45, 86B45, 94B30, 94B40	Hot rolled, Annealed, Cold drawn	≤ 20	≤ 230		
			Normalized, Cold drawn, Annealed, Quenched and Tempered	≤ 30	≤ 280		
		Normalized, Quenched and Tempered		≤ 35	≤ 320		
				≤ 38	≤ 350		

Alloy Steels	Low Carbon	2317, 2512, 2515, 2517, 3115, 3120, 3215, 3220, 3312, 3316, 3325, 4012, 4023, 4024, 4027, 4028, 4118, 4119, 4125, 4317, 4320, 4419, 4422, 4427, 4608, 4615, 4617, 4620, 4621, 4626, 4718, 4720, 4815, 4817, 4820, 5015, 5115, 5117, 5120, 6115, 6118, 6120, 6125, 8115, 8615, 8617, 8620, 8622, 8625, 8627, 8720, 8822, 9310, 9315, 9317	Hot rolled, Annealed, Cold drawn	≤ 20	≤ 230		
			Hot rolled, Normalized, Annealed, Cold drawn	≤ 30	≤ 280		
		Normalized, Quenched and Tempered		≤ 35	≤ 320		
				≤ 38	≤ 350		
	Medium Carbon	1330, 1335, 1340, 1345, 3140, 3145, 3150, 3230, 3240, 3335, 3340, 3435, 3450, 4032, 4037, 4063, 4130, 4135, 4137, 4140, 4142, 4145, 4147, 4150, 4161, 4337, 4340, 4640, 5045, 5046, 5060, 5130, 5132, 5135, 5140, 5145, 5157, 5150, 5155, 5160, 6130, 6135, 6140, 6145, 6150, 7140, 6145, 6150, 7140, 8630, 8632, 8635, 8637, 8640, 8642, 8645, 8650, 8650, 8660, 8735, 8740, 8742, 9250, 9254, 9255, 9260, 9262, 9840, 9850, 2340	Hot rolled, Annealed, Cold drawn	≤ 20	≤ 230		
			Annealed, Normalized, Cold drawn, Quenched and Tempered	≤ 30	≤ 280		
		Normalized, Quenched and Tempered		≤ 35	≤ 320		
				≤ 38	≤ 350		

Stainless Steels, Wrought	Ferritic	405, 409, 429, 430, 434, 436, 442, 446	Annealed	-	≤ 185		
	Austenitic	201, 202, 301, 302B, 304, 304L, 305, 308, 309, 309S, 310, 310S, 314, 316, 316L, 317, 321, 330, 347, 348, 384, 385, Nitronic 32, Nitronic 33, Nitronic 40, Nitronic 50, Nitronic 60		-	≤ 180		
			Annealed, Cold drawn	≤ 20	≤ 230		
			Cold drawn	≤ 30	≤ 280		
	Martensitic	1403, 410, 414, 420, 422, 431, 440A, 440B, 440C, 501, 502, Greek Ascology	Annealed	-	≤ 180		
				≤ 20	≤ 230		
				≤ 30	≤ 280		
			Quenched and Tempered	≤ 35	≤ 320		
				≤ 38	≤ 350		
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