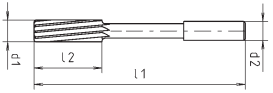


OVERVIEW OF NC MACHINE REAMERS

																						
	DIN/Type		WN																			
	Cutting material		HSCO																			
	Art. Pre-No.		0620 10 ...																			
	d1	h7																				
	d2	h6																				
	L1	Total length																				
	L2	Cutting edge length																				
	Z	Teeth	6																			
	Design		Left-hand spiral																			
Material group	Material examples	Tensile strength/ Hardness in Mpa (N/mm²)	Vc			Dia. 5.0			Dia. 8.0			Dia. 10.0			Dia. 15.0			Dia. 20.0				
			Min.	Start	Max.	f	n	Vf	f	n	Vf	f	n	Vf	f	n	Vf	f	n	Vf		
Conventional steels	General structural steels	ST 33, StE285, P265GH, ST50-2, rod steels, boiler plates	500-850	6	7	8	0.10	446	45	0.13	279	36	0.15	223	33	0.20	149	30	0.25	111	28	
	Non-alloyed tempering steels	C22, CK30	≤700	8	9	10	0.10	573	57	0.13	358	43	0.15	286	43	0.20	191	38	0.25	143	36	
		C45, CK45	700-850	6	7	8	0.10	446	45	0.13	279	36	0.15	223	33	0.20	149	30	0.25	111	28	
		C60, CK60	850 – 1,000	4	5	6	0.08	318	25	0.10	199	20	0.10	159	16	0.15	106	16	0.20	80	16	
	Alloyed tempering steels	50MnSi4, 38Cr2, 28Cr4	850 ≤1,000	3	4	5	0.08	255	20	0.10	159	16	0.10	127	13	0.15	85	13	0.20	64	13	
		36NiCr6, 41Cr4, 42CrMo4	1,000-1,200	3	4	5	0.08	255	20	0.10	159	16	0.10	127	13	0.15	85	13	0.20	64	13	
	Nitriding steels	34CrAl6	≥850 ≥1,000	4	5	6	0.08	318	25	0.10	199	20	0.10	159	16	0.15	106	16	0.20	80	16	
		31CrMoV9, 34CrAlNi7	>1,000-1,200	3	4	5	0.08	255	20	0.10	159	16	0.10	127	13	0.15	85	13	0.20	64	13	
Tool steels	C75W, 102Cr6, 29CrMoV9	≤850	6	7	8	0.10	446	45	0.13	279	36	0.15	223	33	0.20	149	30	0.25	111	28		
	X210CR12, X42Cr13, 105WCr6, X45NiCrMo4	> 850 – 1,000	4	5	6	0.08	318	25	0.10	199	20	0.10	159	16	0.15	106	16	0.20	80	16		
High-speed steels	S 6-5-2-5, S 6-5-2, S 6-5-3	≥ 650 – 1,000	4	5	6	0.08	318	25	0.10	199	20	0.10	159	16	0.15	106	16	0.20	80	16		
Titanium	Titanium and titanium alloys	Ti99.5, TiAl5Sn2.5,TiCu2	≤850	4	5	6	0.08	318	25	0.10	199	20	0.10	159	16	0.15	106	16	0.20	80	16	
		TiAl6Zr5, TiAl6V4, TiAl-4Mo4Sn2.5, – TiAl8Mo1V1	< 850 – 1,200	3	4	5	0.08	255	20	0.10	159	16	0.10	127	13	0.15	85	13	0.20	64	13	
Special alloys	Special alloys	Nimonic, Inconel, Monel, Hastelloy	≤ 1,200	3	4	5	0.08	255	20	0.10	159	16	0.10	127	13	0.15	85	13	0.20	64	13	
Difficult-to-machine steels	Hardox	Hardox 400-500, XAR 320, XAR 400																				
	Spring steels	55Si7,55Cr3,51CrV4	≤330 HB (hardness)																			
Stainless steel	Stainless steels, sulfurated	X12CrS13, X14CrMoS17, X8CrNiS18-9	≤ 850	3	4	5	0.08	255	20	0.10	159	16	0.10	127	13	0.15	85	13	0.20	64	13	
	Stainless steels, austenitic	X5CrNi18-10, X6CrNiTi18-10, X6CrNiMoTi17-12-2 (V4A)	≤ 850	3	4	5	0.08	255	20	0.10	159	16	0.10	127	13	0.15	85	13	0.20	64	13	
	Stainless steels, martensitic	X20CrNi 17 2 (X17CrNi16-2), X39CrMo17-1, X2CrMoTi18-2	≤ 850	3	4	5	0.08	255	20	0.10	159	16	0.10	127	13	0.15	85	13	0.20	64	13	
Cast iron	Cast iron	EN-GJL-100 (GG10), EN-GJL-200 (GG20)	≤ 240 HB	8	9	10	0.18	573	103	0.20	358	72	0.23	286	66	0.25	191	48	0.30	143	43	
		EN-GJL-250 (GG25), EN-GJL-350 (GG35)	< 300 HB	4	5	6	0.12	318	38	0.15	199	30	0.17	159	27	0.20	106	21	0.25	80	20	
	Spheroidal-graphite and malleable cast iron	EN-GJS-500-7 (GGG50), EN-GJMW 350-4 (GTW35)	≤ 240 HB	8	9	10	0.18	573	103	0.20	358	72	0.23	286	66	0.25	191	48	0.30	143	43	
		EN-GJS-700-2 (GGG70), ENGJMB-700-2 (GTS70)	< 300 HB	6	7	8	0.15	446	67	0.18	279	50	0.20	223	45	0.20	149	30	0.25	111	28	
	White cast iron		≤350 HB	4	5	6	0.12	318	38	0.15	199	30	0.17	159	27	0.20	106	21	0.25	80	20	
Non-ferrous metal	Aluminum and aluminum alloys	Al99.5, AlMgSi1, AlMg1,	≤ 400	15	18	20	0.18	1146	206	0.22	717	158	0.25	573	143	0.30	382	115	0.40	287	115	
	Aluminum wrought alloys	AlMgSiPb, AlCuMg1, AlMg3Si, AlZnMgCu1.5	≤ 450	18	20	22	0.18	1274	229	0.22	796	175	0.25	637	159	0.30	425	127	0.40	318	127	
	Aluminum cast alloys ≤10% Si	G-AlSi5Cu1, G-AlSi7Cu3, G-AlSi9	≤600	18	20	22	0.10	1274	127	0.15	796	119	0.20	637	127	0.25	425	106	0.30	318	95	
	Aluminum cast alloys >10% Si	G-AlSi12, G-AlSi12Cu, G-AlSi12CuNiMg	≤ 600	14	16	18	0.10	1020	102	0.15	637	96	0.20	510	102	0.25	340	85	0.30	255	76	
	Magnesium alloys	MgMn2, G-MgAl8Zn1, G-MgAl6Zn1	≤ 450	8	10	12	0.10	637	64	0.12	398	48	0.15	318	48	0.20	212	42	0.25	159	40	
	Copper, low-alloyed	Se-Cu, SuSn6, G-CuSn5Zn5Pb	≤400	8	10	12	0.15	637	95	0.18	398	72	0.20	318	64	0.25	212	53	0.30	159	48	
	Brass, short-chipping	CuZn39Pb2, CuZn39Pb3, CuZn43Pb2	≤ 600	12	13	14	0.20	828	166	0.25	517	129	0.30	414	124	0.35	276	97	0.40	207	83	
	Brass, long-chipping	Cu Zn20, CuZn33, CuZn37Pb0.5	≤ 600	10	11	12	0.20	700	140	0.25	438	109	0.30	350	105	0.35	233	62	0.40	175	70	
	Bronze, short-chipping	CuSn7Zn5Pb, CuPb5Sn5, CuPb10Sn	≤ 600	12	13	14	0.20	828	166	0.25	517	129	0.30	414	124	0.35	276	97	0.40	207	83	
		CuNi18Zn19Pb	>600-850	12	13	14	0.20	828	166	0.25	517	129	0.30	414	124	0.35	276	97	0.40	207	83	
	Bronze, long-chipping	CuAl5, CuAl9Mn, CuSn10, CuAl11Ni, CuBe2	≤ 850	10	11	12	0.20	700	140	0.25	438	109	0.30	350	105	0.35	233	62	0.40	175	70	
			>850-1,000	10	11	12	0.20	700	140	0.25	438	109	0.30	350	105	0.35	233	62	0.40	175	70	
Plastics	Plastics, duroplastic	Bakelite, Resopal, Pertinax, Moltopren		8	9	10	0.18	573	103	0.20	358	72	0.23	286	66	0.25	191	48	0.30	143	43	
	Plastics, thermoplastic	Plexiglas, Hostalen, Novodur, Makrolon		8	9	10	0.18	573	103	0.20	358	72	0.23	286	66	0.25	191	48	0.30	143	43	
	Plastics, aramide-fiber reinforced	Kevlar																				
	Plastics, fiberglass-/carbon fiber-reinforced	GFRP/CFRP																				

Vc: Cutting speed (m/min) f: Feed (mm/U) n: Speed (U/min) Vf: Feed speed (mm/min)