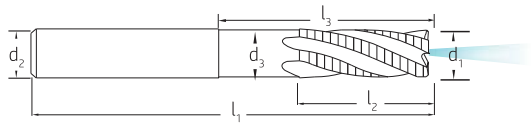
RHINO-X

4 Flute 38° Helix & Unequal Pitch Roughing Profile Endmills, Corner Radius Cup Centre with Axial Coolant Hole



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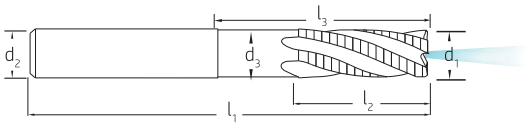
Steels	Stainless Steels	Cast Irons	Hardened Steels	Titaniums	Super Alloys	Aluminiums
<50HRC	<1400 N/mm²	<390 HB	-	<1400 N/mm²	<1400 N/mm²	-

d_1	d_1	d_2	d_3	l_2	l_3	l_1	r	z	EDP No. HA	EDP No. HA
	tol.	*h6*	*-0.2*	*±0.50*	*±0.50*	*±0.80*	*±0.015*		AlCrN	GX
6.0	-0.025	6	5.8	10.0	16	54	0.10	4	100HCA 0600 010	100HCT 0600 010
8.0	-0.025	8	7.6	12.0	20	58	0.15	4	100HCA 0800 015	100HCT 0800 015
10.0	-0.035	10	9.5	14.0	24	66	0.20	4	100HCA 1000 020	100HCT 1000 020
12.0	-0.035	12	11.5	16.0	26	73	0.20	4	100HCA 1200 020	100HCT 1200 020
16.0	-0.035	16	15.5	22.0	32	82	0.20	4	100HCA 1600 020	100HCT 1600 020
20.0	-0.035	20	19.5	26.0	40	92	0.20	4	100HCA 2000 020	100HCT 2000 020
12.0	-0.035	12	11.5	16.0	26	73	2.50	4	100HCA 1200 250	100HCT 1200 250
12.0	-0.035	12	11.5	16.0	26	73	3.00	4	100HCA 1200 300	100HCT 1200 300
12.0	-0.035	12	11.5	16.0	26	73	4.00	4	100HCA 1200 400	100HCT 1200 400
16.0	-0.035	16	15.5	22.0	32	82	2.50	4	100HCA 1600 250	100HCT 1600 250
16.0	-0.035	16	15.5	22.0	32	82	3.00	4	100HCA 1600 300	100HCT 1600 300
16.0	-0.035	16	15.5	22.0	32	82	4.00	4	100HCA 1600 400	100HCT 1600 400
20.0	-0.035	20	19.5	26.0	40	92	2.50	4	100HCA 2000 250	100HCT 2000 250
20.0	-0.035	20	19.5	26.0	40	92	3.00	4	100HCA 2000 300	100HCT 2000 300
20.0	-0.035	20	19.5	26.0	40	92	4.00	4	100HCA 2000 400	100HCT 2000 400
6.0	-0.025	6	5.8	13.0	21	57	0.10	4	110HCA 0600 010	110HCT 0600 010
8.0	-0.025	8	7.6	19.0	26	63	0.15	4	110HCA 0800 015	110HCT 0800 015
10.0	-0.035	10	9.5	22.0	31	72	0.20	4	110HCA 1000 020	110HCT 1000 020
12.0	-0.035	12	11.5	26.0	37	83	0.20	4	110HCA 1200 020	110HCT 1200 020
16.0	-0.035	16	15.5	32.0	43	92	0.20	4	110HCA 1600 020	110HCT 1600 020
20.0	-0.035	20	19.5	40.0	53	104	0.20	4	110HCA 2000 020	110HCT 2000 020

HB Weldon Shank available on request. Order Code for AlCrN Coated : 110HWA | Order Code for GX Coated: 110HWT



Technical Info. Page No. ***136***

Steels	Stainless Steels	Cast Irons	Hardened Steels	Titaniums	Super Alloys	Aluminiums
<50HRC	<1400 N/mm²	<390 HB	-	<1400 N/mm²	<1400 N/mm²	-

d_1	d_1	d_2	d_3	l_2	l_3	l_1	r	z	EDP No. HA	EDP No. HA
	tol.	*h6*	*-0.2*	*±0.50*	*±0.50*	*±0.80*	*±0.015*		AlCrN	GX
12.0	-0.035	12	11.5	26.0	35	83	2.50	4	110HCA 1200 250	110HCT 1200 250
12.0	-0.035	12	11.5	26.0	35	83	3.00	4	110HCA 1200 300	110HCT 1200 300
12.0	-0.035	12	11.5	26.0	35	83	4.00	4	110HCA 1200 400	110HCT 1200 400
16.0	-0.035	16	15.5	32.0	40	92	2.50	4	110HCA 1600 250	110HCT 1600 250
16.0	-0.035	16	15.5	32.0	40	92	3.00	4	110HCA 1600 300	110HCT 1600 300
16.0	-0.035	16	15.5	32.0	40	92	4.00	4	110HCA 1600 400	110HCT 1600 400
20.0	-0.035	20	19.5	38.0	50	104	2.50	4	110HCA 2000 250	110HCT 2000 250
20.0	-0.035	20	19.5	38.0	50	104	3.00	4	110HCA 2000 300	110HCT 2000 300
20.0	-0.035	20	19.5	38.0	50	104	4.00	4	110HCA 2000 400	110HCT 2000 400
6.0	-0.025	6	5.8	13.0	25	62	0.10	4	120HCA 0600 010	120HCT 0600 010
8.0	-0.025	8	7.6	19.0	30	68	0.15	4	120HCA 0800 015	120HCT 0800 015
10.0	-0.035	10	9.5	22.0	35	80	0.20	4	120HCA 1000 020	120HCT 1000 020
12.0	-0.035	12	11.5	26.0	45	93	0.20	4	120HCA 1200 020	120HCT 1200 020
16.0	-0.035	16	15.5	32.0	55	108	0.20	4	120HCA 1600 020	120HCT 1600 020
20.0	-0.035	20	19.5	38.0	70	126	0.20	4	120HCA 2000 020	120HCT 2000 020
6.0	-0.025	6	5.8	13.0	25	62	0.50	4	120HCA 0600 050	120HCT 0600 050
6.0	-0.025	6	5.8	13.0	25	62	1.00	4	120HCA 0600 100	120HCT 0600 100
8.0	-0.025	8	7.6	19.0	30	68	1.00	4	120HCA 0800 100	120HCT 0800 100
8.0	-0.025	8	7.6	19.0	30	68	2.00	4	120HCA 0800 200	120HCT 0800 200
10.0	-0.035	10	9.5	22.0	35	80	2.00	4	120HCA 1000 200	120HCT 1000 200

HB Weldon Shank available on request. Order Code for AlCrN Coated : 120HWWA | Order Code for GX Coated: 120HWT

	MATERIAL	Hardness	ap max xD	ae max xD	Vc (m/min)	fz (mm/z) Ø 6	8	10	12	16	20
	SLOTTING										
P	Steels, Alloy Steels and Tool Steels	<850 N/mm²									
	Steels, Alloy Steels and Tool Steels	850-1200 N/mm²	1	1	80	0.030	0.040	0.050	0.055	0.055	0.060
	Steels, Alloy Steels and Tool Steels	<1400 N/mm²	1	1	60	0.030	0.040	0.050	0.055	0.055	0.060
M	Stainless Steel : Easy To Machine	<750 N/mm²									
	Stainless Steel : Difficult To Machine	<950 N/mm²	1	1	50	0.025	0.030	0.040	0.045	0.045	0.050
K	Cast Irons, Grey, Spher., Melleable	<300 HB	1	1	80	0.030	0.040	0.050	0.055	0.055	0.060
N	Aluminiums, Aluminiums Alloys	<6% Si									
S	Titanium , Titanium Alloys	<1100N/mm²	0.5	1	35	0.025	0.030	0.040	0.045	0.045	0.050
S	HRSA (Nickel Alloys, Co. Alloys)	<1300N/mm²	0.5	1	25-35	0.025	0.030	0.040	0.045	0.045	0.050
	SIDE MILLING										
P	Steels, Alloy Steels and Tool Steels	<850 N/mm²									
	Steels, Alloy Steels and Tool Steels	850-1200 N/mm²	1	0.3	130	0.030	0.040	0.050	0.055	0.055	0.060
	Steels, Alloy Steels and Tool Steels	<1400 N/mm²	1	0.3	80	0.030	0.040	0.050	0.055	0.055	0.060
M	Stainless Steel : Easy To Machine	<750 N/mm²									
	Stainless Steel : Difficult To Machine	<950 N/mm²	1	0.3	60	0.025	0.030	0.040	0.045	0.045	0.050
K	Cast Irons, Grey, Spher., Melleable	<300 HB	1	0.3	130	0.030	0.040	0.050	0.055	0.055	0.060
N	Aluminiums, Aluminiums Alloys	<6% Si									
S	Titanium , Titanium Alloys	<1100N/mm²	1	0.2	45	0.025	0.030	0.040	0.045	0.045	0.050
S	HRSA (Nickel Alloys, Co. Alloys)	<1300N/mm²	1	0.2	35	0.025	0.030	0.040	0.045	0.045	0.050
	RAMPING										
P	Steels, Alloy Steels and Tool Steels	<850 N/mm²									
	Steels, Alloy Steels and Tool Steels	850-1200 N/mm²	10°	1	150	0.030	0.040	0.050	0.055	0.055	0.060
	Steels, Alloy Steels and Tool Steels	<1400 N/mm²	10°	1	80	0.030	0.040	0.050	0.055	0.055	0.060
M	Stainless Steel : Easy To Machine	<750 N/mm²									
	Stainless Steel : Difficult To Machine	<950 N/mm²	7°	1	50	0.025	0.030	0.040	0.045	0.045	0.050
K	Cast Irons, Grey, Spher., Melleable	<300 HB	10°	1	150	0.030	0.040	0.050	0.055	0.055	0.060
N	Aluminiums, Aluminiums Alloys	<6% Si									
S	Titanium , Titanium Alloys	<1100N/mm²	5°	1	35	0.025	0.030	0.040	0.045	0.045	0.050
S	HRSA (Nickel Alloys, Co. Alloys)	<1300N/mm²	5°	1	35	0.025	0.030	0.040	0.045	0.045	0.050
	HELICAL MILLING										
P	Steels, Alloy Steels and Tool Steels	<850 N/mm²									
	Steels, Alloy Steels and Tool Steels	850-1200 N/mm²									
	Steels, Alloy Steels and Tool Steels	<1400 N/mm²									
M	Stainless Steel : Easy To Machine	<750 N/mm²									
	Stainless Steel : Difficult To Machine	<950 N/mm²									
K	Cast Irons, Grey, Spher., Melleable	<300 HB									
N	Aluminiums, Aluminiums Alloys	<6% Si									
S	Titanium , Titanium Alloys	<1100N/mm²									
S	HRSA (Nickel Alloys, Co. Alloys)	<1300N/mm²									
	DRILLING										
P	Steels, Alloy Steels and Tool Steels	<850 N/mm²									
	Steels, Alloy Steels and Tool Steels	850-1200 N/mm²									
	Steels, Alloy Steels and Tool Steels	<1400 N/mm²									
M	Stainless Steel : Easy To Machine	<750 N/mm²									
	Stainless Steel : Difficult To Machine	<950 N/mm²									
K	Cast Irons, Grey, Spher., Melleable	<300 HB									
N	Aluminiums, Aluminiums Alloys	<6% Si									
S	Titanium , Titanium Alloys	<1100N/mm²									
S	HRSA (Nickel Alloys, Co. Alloys)	<1300N/mm²									
	TROCHOIDAL MILLING										
P	Steels, Alloy Steels and Tool Steels	<850 N/mm²									
	Steels, Alloy Steels and Tool Steels	850-1200 N/mm²									
	Steels, Alloy Steels and Tool Steels	<1400 N/mm²									
M	Stainless Steel : Easy To Machine	<750 N/mm²									
	Stainless Steel : Difficult To Machine	<950 N/mm²									
K	Cast Irons, Grey, Spher., Melleable	<300 HB									
N	Aluminiums, Aluminiums Alloys	<6% Si									
S	Titanium , Titanium Alloys	<1100N/mm²									
S	HRSA (Nickel Alloys, Co. Alloys)	<1300N/mm²									

Technical Data provided should be considered advisory only as variations may be necessary depending on the particular application