



UH

STEEL AND HARDENED STEEL < 70 HRC

✚ Nano micrograin and UH RED TiSi base coating for high performance milling on hardened steel up to 70 HRC. High reliability and long life in dry milling operation adopting high speed or high feed strategy. The cutting geometry has been specifically designed to obtain high precision and high quality surface finishing.

🇮🇹 Nano micrograna e rivestimento UH RED a base TiSi per la fresatura di materiali temprati sino a 70 HRC. Grande affidabilità e durata nell'utilizzo di strategie di lavorazione ad alta velocità o alto avanzamento e con la possibilità di evitare l'utilizzo del refrigerante. Le geometrie di taglio specifiche garantiscono elevata precisione ed eccellente finitura della superficie lavorata.

🇩🇪 Nano-Mikrokörnung und Beschichtung UH RED auf TiSi-Basis für das Fräsen von gehärteten Materialien bis zu 70 HRC. Hohe Zuverlässigkeit und lange Standzeit auch bei Bearbeitungsverfahren mit hoher Geschwindigkeit und großem Vorschub und mit der Möglichkeit, ohne Kühlmittel zu arbeiten. Die spezifischen Schnittgeometrien gewährleisten eine hohe Präzision und eine hervorragende Endbearbeitung der bearbeiteten Fläche.

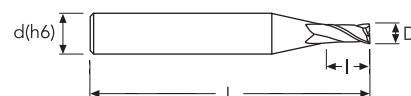
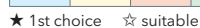
🇫🇷 Nano micrograin et revêtement UH RED à base TiSi pour le fraisage de matériaux trempés jusqu'à 70 HRC. Grande fiabilité et durée dans l'utilisation stratégique d'usinage à haute vitesse ou avancement élevé et avec la possibilité d'éviter l'utilisation de lubrifiant. Les géométries de coupe spécifiques garantissent une précision élevée et une excellente finition de la surface usinée.

🇪🇸 Nano micrograno y revestimiento UH RED a base de TiSi para el fresado de materiales templados hasta 70 HRC. Gran fiabilidad y duración en la utilización de estrategias de elaboración a alta velocidad o alto avance con la posibilidad de evitar la utilización del refrigerante. Las geometrías de corte específicas garantizan una elevada precisión y excelente acabado de la superficie trabajada.

🇷🇺 Микрозернистая наноструктура твердого сплава и покрытие UH RED на основе TiSi служат для фрезерования закалённых сталей с твёрдостью до 70 HRC. Высокая надёжность и стойкость при работе с высокой скоростью резания и подачи без использования СОЖ. Режущая геометрия специально создана для достижения высокой точности и низкой шероховатости обработанной поверхности.

INFO
TYPHOON TA-HTA-4HTA
TYPHOON PU-HPU
TYPHOON SUH
TYPHOON ALH
TYPHOON HRC
TYPHOON SUH MINI
TYPHOON HL
C-SD-TA
LFTA
SUTA
HSS-HSS/CO DRILLS
G2
MDTA
HF VH/UP
MEF
ALU
MEX
UH
HSS/CO-HSSP END MILLS
CARBIDE BURRS

cylindrical shank, 2F, miniature

[illegible]

CUTTING PARAMETERS

UHM204

 SLOTTING	Material Group ISO 513	P3P4P5K2K3					P6K4H1H4H5					H2			H3		
	Hardness/Rm	< 45 HRC					45 - 55 HRC					55 - 60 HRC			60 - 65 HRC		
	ap x ae	ap x D					ap x D					ap x D			ap x D		
	Vc (m/min)	80-120					60-100					50-70			30-50		
	D (mm)	ap (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)			
	0.1	0.01	40000	0.002	160	40000	0.002	140	40000	0.002	130	40000	0.001	110			
	0.2	0.01	40000	0.003	240	40000	0.003	220	40000	0.002	190	40000	0.002	170			
	0.3	0.02	40000	0.004	320	40000	0.004	290	40000	0.003	255	40000	0.003	225			
	0.4	0.02	40000	0.006	480	40000	0.005	430	40000	0.005	385	31850	0.004	270			
	0.5	0.03	40000	0.007	560	40000	0.006	500	38220	0.006	430	25480	0.005	250			
0.6	0.03	40000	0.008	640	40000	0.007	580	31850	0.006	410	21230	0.006	240				
0.8	0.04	39810	0.010	800	31850	0.009	570	23890	0.008	380	15920	0.007	225				
0.9	0.05	35390	0.012	850	28310	0.011	610	21230	0.010	410	14150	0.008	240				

INFO

TYPHOON
TA-HTA-4HTATYPHOON
PU-HPUTYPHOON
SUHTYPHOON
ALHTYPHOON
HRCTYPHOON
SUH MINITYPHOON
HL

C-SD-TA

LFTA

SUTA

HSS-HSS/CO
DRILLS

G2

MDTA

HF VH/UP

MEF

ALU

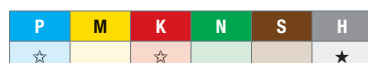
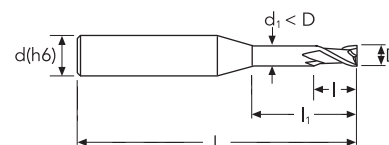
MEX

UH

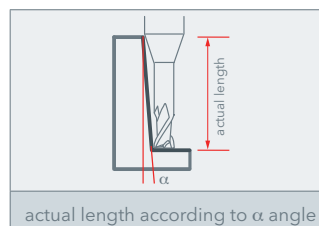
HSS/CO-HSSP
END MILLSCARBIDE
BURRS

UHLN2

cylindrical shank, 2F, extended and reduced neck



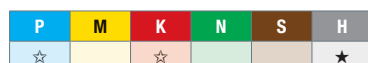
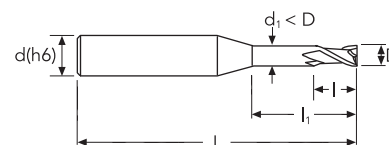
★ 1st choice ☆ suitable



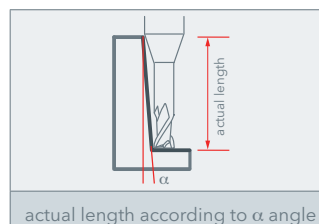
D	D Tol.	CR	CR Tol.	d(h6)	I	I1	d1	L	z	30°	1°	1°30'	2°	3°	EDP No.	Stock
0.2	0/-0.020			4	0.3	0.5	0.16	50	2	0.57	0.59	0.61	0.63	0.68	UHLN2002005	●
0.2	0/-0.020			4	0.3	1	0.16	50	2	1.09	1.12	1.16	1.21	1.30	UHLN200201	●
0.2	0/-0.020			4	0.3	1.5	0.16	50	2	1.60	1.66	1.72	1.78	1.91	UHLN2002015	●
0.3	0/-0.020			4	0.4	1	0.26	50	2	1.09	1.12	1.16	1.21	1.30	UHLN200301	●
0.3	0/-0.020			4	0.4	2	0.26	50	2	2.12	2.19	2.27	2.35	2.53	UHLN200302	●
0.3	0/-0.020			4	0.4	3	0.26	50	2	3.15	3.26	3.38	3.50	3.76	UHLN200303	●
0.4	0/-0.020			4	0.6	2	0.37	50	2	2.12	2.19	2.27	2.35	2.53	UHLN200402	●
0.4	0/-0.020			4	0.6	3	0.37	50	2	3.15	3.26	3.38	3.50	3.76	UHLN200403	●
0.4	0/-0.020			4	0.6	4	0.37	50	2	4.19	4.33	4.49	4.65	5.00	UHLN200404	●
0.4	0/-0.020			4	0.6	5	0.37	50	2	5.22	5.40	5.59	5.79	6.23	UHLN200405	●
0.5	0/-0.020			4	0.7	2	0.45	50	2	2.16	2.23	2.31	2.40	2.57	UHLN200502	●
0.5	0/-0.020			4	0.7	4	0.45	50	2	4.23	4.37	4.53	4.69	5.04	UHLN200504	●
0.5	0/-0.020			4	0.7	6	0.45	50	2	6.29	6.51	6.74	6.98	7.51	UHLN200506	●
0.5	0/-0.020			4	0.7	8	0.45	50	2	8.36	8.65	8.96	9.28	9.98	UHLN200508	●
0.6	0/-0.020			4	0.9	2	0.55	50	2	2.16	2.23	2.31	2.40	2.57	UHLN200602	●
0.6	0/-0.020			4	0.9	4	0.55	50	2	4.23	4.37	4.53	4.69	5.04	UHLN200604	●
0.6	0/-0.020			4	0.9	6	0.55	50	2	6.29	6.51	6.74	6.98	7.51	UHLN200606	●
0.6	0/-0.020			4	0.9	8	0.55	50	2	8.36	8.65	8.96	9.28	9.98	UHLN200608	●
0.6	0/-0.020			4	0.9	10	0.55	50	2	10.43	10.79	11.17	11.57	12.44	UHLN200610	●
0.7	0/-0.020			4	1.0	2	0.65	50	2	2.16	2.23	2.31	2.40	2.57	UHLN200702	●
0.7	0/-0.020			4	1.0	4	0.65	50	2	4.23	4.37	4.53	4.69	5.04	UHLN200704	●
0.7	0/-0.020			4	1.0	6	0.65	50	2	6.29	6.51	6.74	6.98	7.51	UHLN200706	●
0.7	0/-0.020			4	1.0	8	0.65	50	2	8.36	8.65	8.96	9.28	9.98	UHLN200708	●
0.7	0/-0.020			4	1.0	10	0.65	50	2	10.43	10.79	11.17	11.57	12.44	UHLN200710	●
0.8	0/-0.020			4	1.2	4	0.75	50	2	4.23	4.37	4.53	4.69	5.04	UHLN200804	●
0.8	0/-0.020			4	1.2	6	0.75	50	2	6.29	6.51	6.74	6.98	7.51	UHLN200806	●
0.8	0/-0.020			4	1.2	8	0.75	50	2	8.36	8.65	8.96	9.28	9.98	UHLN200808	●
0.8	0/-0.020			4	1.2	10	0.75	50	2	10.43	10.79	11.17	11.57	12.44	UHLN200810	●
0.8	0/-0.020			4	1.2	12	0.75	50	2	12.49	12.93	13.38	13.87	14.91	UHLN200812	●
0.9	0/-0.020			4	1.4	6	0.85	50	2	6.29	6.51	6.74	6.98	7.51	UHLN200906	●
0.9	0/-0.020			4	1.4	8	0.85	50	2	8.36	8.65	8.96	9.28	9.98	UHLN200908	●
0.9	0/-0.020			4	1.4	10	0.85	50	2	10.43	10.79	11.17	11.57	12.44	UHLN200910	●
0.9	0/-0.020			4	1.4	15	0.85	50	2	15.6	16.14	16.71	17.31	18.61	UHLN200915	●
1	0/-0.020			4	1.5	6	0.95	50	2	6.39	6.61	6.84	7.09	7.62	UHLN201006	●
1	0/-0.020			4	1.5	8	0.95	50	2	8.46	8.75	9.06	9.38	10.09	UHLN201008	●
1	0/-0.020			4	1.5	10	0.95	50	2	10.52	10.89	11.27	11.68	12.56	UHLN201010	●
1	0/-0.020			4	1.5	12	0.95	50	2	12.59	13.03	13.49	13.97	15.02	UHLN201012	●
1	0/-0.020			4	1.5	14	0.95	50	2	14.66	15.17	15.70	16.27	17.49	UHLN201014	●
1	0/-0.020			4	1.5	16	0.95	50	2	16.73	17.30	17.92	18.56	19.96	UHLN201016	●

UHLN2

cylindrical shank, 2F, extended and reduced neck



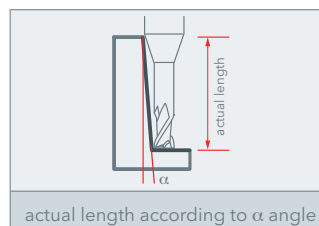
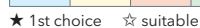
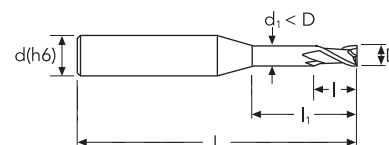
★ 1st choice ☆ suitable



D	D Tol.	CR	CR Tol.	d(h6)	l	l1	d1	L	z	30°	1°	1°30'	2°	3°	EDP No.	Stock
1.2	0/-0.020			4	1.8	6	1.15	50	2	6.39	6.61	6.84	7.09	7.62	UHLN201206	●
1.2	0/-0.020			4	1.8	8	1.15	50	2	8.46	8.75	9.06	9.38	10.09	UHLN201208	●
1.2	0/-0.020			4	1.8	10	1.15	50	2	10.52	10.89	11.27	11.68	12.56	UHLN201210	●
1.2	0/-0.020			4	1.8	12	1.15	50	2	12.59	13.03	13.49	13.97	15.02	UHLN201212	●
1.4	0/-0.020			4	2.1	6	1.35	50	2	6.39	6.61	6.84	7.09	7.62	UHLN201406	●
1.4	0/-0.020			4	2.1	8	1.35	50	2	8.46	8.75	9.06	9.38	10.09	UHLN201408	●
1.4	0/-0.020			4	2.1	10	1.35	50	2	10.52	10.89	11.27	11.68	12.56	UHLN201410	●
1.4	0/-0.020			4	2.1	12	1.35	50	2	12.59	13.03	13.49	13.97	15.02	UHLN201412	●
1.4	0/-0.020			4	2.1	14	1.35	50	2	14.66	15.17	15.70	16.27	17.49	UHLN201414	●
1.4	0/-0.020			4	2.1	16	1.35	50	2	16.73	17.30	17.92	18.56	19.96	UHLN201416	●
1.5	0/-0.020			4	2.3	6	1.45	50	2	6.39	6.61	6.84	7.09	7.62	UHLN201506	●
1.5	0/-0.020			4	2.3	8	1.45	50	2	8.46	8.75	9.06	9.38	10.09	UHLN201508	●
1.5	0/-0.020			4	2.3	10	1.45	50	2	10.52	10.89	11.27	11.68	12.56	UHLN201510	●
1.5	0/-0.020			4	2.3	12	1.45	50	2	12.59	13.03	13.49	13.97	15.02	UHLN201512	●
1.5	0/-0.020			4	2.3	14	1.45	50	2	14.66	15.17	15.7	16.27	17.49	UHLN201514	●
1.5	0/-0.020			4	2.3	16	1.45	50	2	16.73	17.30	17.92	18.56	19.96	UHLN201516	●
1.5	0/-0.020			4	2.3	18	1.45	60	2	18.79	19.44	20.13	20.86	22.43	UHLN201518	●
1.5	0/-0.020			4	2.3	20	1.45	60	2	20.86	21.58	22.35	23.15	-	UHLN201520	●
1.6	0/-0.020			4	2.4	6	1.55	50	2	6.39	6.61	6.84	7.09	7.62	UHLN201606	●
1.6	0/-0.020			4	2.4	8	1.55	50	2	8.46	8.75	9.06	9.38	10.09	UHLN201608	●
1.6	0/-0.020			4	2.4	10	1.55	50	2	10.52	10.89	11.27	11.68	12.56	UHLN201610	●
1.6	0/-0.020			4	2.4	12	1.55	50	2	12.59	13.03	13.49	13.97	15.02	UHLN201612	●
1.6	0/-0.020			4	2.4	14	1.55	50	2	14.66	15.17	15.70	16.27	17.49	UHLN201614	●
1.6	0/-0.020			4	2.4	16	1.55	50	2	16.73	17.30	17.92	18.56	19.96	UHLN201616	●
1.6	0/-0.020			4	2.4	18	1.55	60	2	18.79	19.44	20.13	20.86	22.43	UHLN201618	●
1.6	0/-0.020			4	2.4	20	1.55	60	2	20.86	21.58	22.35	23.15	-	UHLN201620	●
1.8	0/-0.020			4	2.7	6	1.75	50	2	6.39	6.61	6.84	7.09	7.62	UHLN201806	●
1.8	0/-0.020			4	2.7	8	1.75	50	2	8.46	8.75	9.06	9.38	10.09	UHLN201808	●
1.8	0/-0.020			4	2.7	10	1.75	50	2	10.52	10.89	11.27	11.68	12.56	UHLN201810	●
1.8	0/-0.020			4	2.7	12	1.75	50	2	12.59	13.03	13.49	13.97	15.02	UHLN201812	●
1.8	0/-0.020			4	2.7	14	1.75	50	2	14.66	15.17	15.70	16.27	17.49	UHLN201814	●
1.8	0/-0.020			4	2.7	16	1.75	50	2	16.73	17.30	17.92	18.56	19.96	UHLN201816	●
1.8	0/-0.020			4	2.7	18	1.75	60	2	18.79	19.44	20.13	20.86	-	UHLN201818	●
1.8	0/-0.020			4	2.7	20	1.75	60	2	20.86	21.58	22.35	23.15	-	UHLN201820	●
2	0/-0.020			4	3	6	1.95	50	2	6.39	6.61	6.84	7.09	7.62	UHLN202006	●
2	0/-0.020			4	3	8	1.95	50	2	8.46	8.75	9.06	9.38	10.09	UHLN202008	●
2	0/-0.020			4	3	10	1.95	50	2	10.52	10.89	11.27	11.68	12.56	UHLN202010	●
2	0/-0.020			4	3	12	1.95	50	2	12.59	13.03	13.49	13.97	15.02	UHLN202012	●
2	0/-0.020			4	3	14	1.95	50	2	14.66	15.17	15.70	16.27	17.49	UHLN202014	●

● stock standard ○ non-standard stock ▽ stock exhaustion

cylindrical shank, 2F, extended and reduced neck

[illegible]

● stock standard ○ non-standard stock ▽ stock exhaustion

CUTTING PARAMETERS

UHLN2

SQUARE RIB

Material Group ISO 513			P3 P4 P5 K2 K3					P6 K4 H1 H4 H5					H2			H3		
Hardness/Rm			< 45 HRC					45 - 55 HRC					55 - 60 HRC			60 - 65 HRC		
ap x ae			ap x D					ap x D					ap x D			ap x D		
Vc (m/min)			80-120					60-100					50-70			30-50		
D (mm)	l1 (mm)	ap (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	
0.2	≤ 6D	0.01	40000	0.003	240	40000	0.003	220	40000	0.002	190	40000	0.002	170	40000	0.002	170	
	≤ 8D	0.01	40000	0.003	200	40000	0.002	180	40000	0.002	165	40000	0.002	145	40000	0.002	145	
	≤ 10D	0.01	40000	0.002	170	40000	0.002	150	40000	0.002	135	40000	0.002	120	40000	0.001	120	
	≤ 12D	0.01	40000	0.002	130	40000	0.001	120	40000	0.001	105	40000	0.001	90	40000	0.001	90	
0.3	≤ 6D	0.02	40000	0.004	320	40000	0.004	290	40000	0.003	255	40000	0.003	225	40000	0.003	225	
	≤ 8D	0.01	40000	0.003	270	40000	0.003	240	40000	0.003	220	38200	0.002	180	34000	0.002	180	
	≤ 10D	0.01	40000	0.003	220	40000	0.003	200	40000	0.002	180	34000	0.002	135	34000	0.002	135	
	≤ 12D	0.01	40000	0.002	180	40000	0.002	160	40000	0.002	140	29700	0.002	90	29700	0.002	90	
0.4	≤ 6D	0.02	40000	0.006	480	40000	0.005	430	40000	0.005	385	31800	0.004	265	31800	0.004	265	
	≤ 8D	0.02	40000	0.005	410	40000	0.005	370	40000	0.004	325	28700	0.004	205	28700	0.004	205	
	≤ 10D	0.01	40000	0.004	340	40000	0.004	300	38200	0.003	255	25500	0.003	150	25500	0.003	150	
	≤ 12D	0.01	40000	0.003	260	40000	0.003	240	33400	0.003	175	22300	0.002	105	22300	0.002	105	
0.5	≤ 6D	0.03	40000	0.007	560	40000	0.006	500	38200	0.006	430	25500	0.005	250	25500	0.005	250	
	≤ 8D	0.02	40000	0.006	480	40000	0.005	430	34400	0.005	325	22900	0.004	190	22900	0.004	190	
	≤ 10D	0.02	40000	0.005	390	40000	0.004	350	30600	0.004	240	20400	0.003	140	20400	0.003	140	
	≤ 12D	0.01	35000	0.004	270	35700	0.003	250	26800	0.003	165	17800	0.003	95	17800	0.003	95	
0.6	≤ 6D	0.03	40000	0.008	640	40000	0.007	580	31800	0.006	405	21200	0.006	235	21200	0.006	235	
	≤ 8D	0.03	40000	0.007	540	38200	0.006	470	28700	0.005	310	19100	0.005	180	19100	0.005	180	
	≤ 10D	0.02	40000	0.006	450	34000	0.005	340	25500	0.004	230	17000	0.004	135	17000	0.004	135	
	≤ 12D	0.02	37200	0.004	330	29700	0.004	240	22300	0.004	155	14900	0.003	90	14900	0.003	90	
0.8	≤ 6D	0.04	39800	0.010	800	31800	0.009	570	23900	0.008	380	15900	0.007	225	15900	0.007	225	
	≤ 8D	0.03	35800	0.009	610	28700	0.008	440	21500	0.007	290	14300	0.006	170	14300	0.006	170	
	≤ 10D	0.03	31800	0.007	450	25500	0.006	320	19100	0.006	215	12700	0.005	125	12700	0.005	125	
	≤ 12D	0.02	27900	0.006	310	22300	0.005	220	16700	0.004	145	11100	0.004	85	11100	0.004	85	
1	≤ 6D	0.05	31800	0.012	760	25500	0.011	550	19100	0.010	365	12700	0.008	215	12700	0.008	215	
	≤ 8D	0.04	28700	0.010	590	22900	0.009	420	17200	0.008	280	11500	0.007	165	11500	0.007	165	
	≤ 10D	0.04	25500	0.008	430	20400	0.008	310	15300	0.007	205	10200	0.006	120	10200	0.006	120	
	≤ 12D	0.03	22300	0.007	290	17800	0.006	210	13400	0.005	140	8900	0.005	80	8900	0.005	80	
1.2	≤ 6D	0.06	26500	0.022	1170	21200	0.020	840	15900	0.018	560	10600	0.015	325	10600	0.015	325	
	≤ 8D	0.05	23900	0.019	890	19120	0.017	640	14340	0.015	430	9560	0.013	250	9560	0.013	250	
	≤ 10D	0.04	21200	0.015	650	16960	0.014	470	12720	0.012	315	8480	0.011	185	8480	0.011	185	
	≤ 12D	0.03	18600	0.012	450	14880	0.011	320	11160	0.010	215	7440	0.008	125	7440	0.008	125	
1.4	≤ 6D	0.07	22700	0.024	1090	18160	0.022	780	13620	0.019	525	9080	0.017	305	9080	0.017	305	
	≤ 8D	0.06	20500	0.020	840	16400	0.018	600	12300	0.016	400	8200	0.014	235	8200	0.014	235	
	≤ 10D	0.05	18200	0.017	610	14560	0.015	440	10920	0.013	295	7280	0.012	170	7280	0.012	170	
	≤ 12D	0.04	15900	0.013	420	12720	0.012	300	9540	0.011	200	6360	0.009	120	6360	0.009	120	
	≤ 15D	0.03	13600	0.011	290	10880	0.010	210	8160	0.009	140	5440	0.008	80	5440	0.008	80	
	> 15D	0.02	11400	0.007	160	9120	0.006	120	6840	0.006	80	4560	0.005	45	4560	0.005	45	
1.5	≤ 6D	0.08	21200	0.025	1060	16960	0.023	760	12720	0.020	510	8480	0.018	295	8480	0.018	295	
	≤ 8D	0.06	19100	0.021	810	15280	0.019	580	11460	0.017	390	7640	0.015	225	7640	0.015	225	
	≤ 10D	0.05	17000	0.018	590	13600	0.016	430	10200	0.014	285	6800	0.012	165	6800	0.012	165	
	≤ 12D	0.04	14900	0.014	410	11920	0.012	300	8940	0.011	195	5960	0.010	115	5960	0.010	115	
	≤ 15D	0.03	12700	0.011	290	10160	0.010	210	7620	0.009	135	5080	0.008	80	5080	0.008	80	
	> 15D	0.02	10600	0.008	160	8480	0.007	110	6360	0.006	75	4240	0.005	45	4240	0.005	45	
1.6	≤ 6D	0.08	19900	0.026	1030	15920	0.023	750	11940	0.021	495	7960	0.018	290	7960	0.018	290	
	≤ 8D	0.07	17900	0.022	790	14320	0.020	570	10740	0.018	380	7160	0.015	220	7160	0.015	220	
	≤ 10D	0.06	15900	0.018	580	12720	0.016	420	9540	0.015	280	6360	0.013	160	6360	0.013	160	
	≤ 12D	0.04	13900	0.014	400	11120	0.013	290	8340	0.011	190	5560	0.010	110	5560	0.010	110	
	≤ 15D	0.04	11900	0.012	280	9520	0.011	200	7140	0.009	135	4760	0.008	80	4760	0.008	80	
	> 15D	0.02	10000	0.008	160	8000	0.007	110	6000	0.006	75	4000	0.005	45	4000	0.005	45	



INFO
TYPHOON TA-HTA-4HTA
TYPHOON PU-HPU
TYPHOON SUH
TYPHOON ALH
TYPHOON HRC
TYPHOON SUH MINI
TYPHOON HL
C-SD-TA
LFTA
SUTA
HSS-HSS/CO DRILLS
G2
MDTA
HF VH/UP
MEF
ALU
MEX
UH
HSS/CO-HSSP END MILLS
CARBIDE BURRS

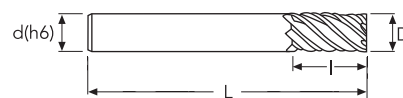
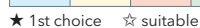
CUTTING PARAMETERS

UHLN2

SQUARE RIB

	Material Group ISO 513			P3 P4 P5 K2 K3					P6 K4 H1 H4 H5					H2			H3		
	Hardness/Rm			< 45 HRC					45 - 55 HRC					55 - 60 HRC			60 - 65 HRC		
	ap x ae			ap x D					ap x D					ap x D			ap x D		
	Vc (m/min)			80-120					60-100					50-70			30-50		
	D (mm)	l1 (mm)	ap (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	
1.8	≤ 6D	0.09	17700	0.028	990	14160	0.025	710	10620	0.022	475	7080	0.020	280					
	≤ 8D	0.08	15900	0.024	760	12720	0.021	540	9540	0.019	365	6360	0.017	210					
	≤ 10D	0.06	14200	0.020	560	11360	0.018	400	8520	0.016	265	5680	0.014	155					
	≤ 12D	0.05	12400	0.015	380	9920	0.014	270	7440	0.012	185	4960	0.011	105					
	≤ 15D	0.04	10600	0.013	270	8480	0.011	190	6360	0.010	130	4240	0.009	75					
	> 15D	0.03	8800	0.008	150	7040	0.008	110	5280	0.007	70	3520	0.006	40					
2	≤ 6D	0.10	15900	0.030	950	12720	0.027	690	9540	0.024	460	6360	0.021	265					
	≤ 8D	0.09	14300	0.026	730	11440	0.023	530	8580	0.020	350	5720	0.018	205					
	≤ 10D	0.07	12700	0.021	530	10160	0.019	380	7620	0.017	255	5080	0.015	150					
	≤ 12D	0.06	11100	0.017	370	8880	0.015	260	6660	0.013	175	4440	0.012	105					
	≤ 15D	0.05	9600	0.014	260	7680	0.012	190	5760	0.011	125	3840	0.009	75					
	> 15D	0.03	9600	0.009	170	7680	0.008	120	5760	0.007	85	3840	0.006	50					
2.5	≤ 6D	0.13	12700	0.035	890	10160	0.032	640	7620	0.028	425	5080	0.025	250					
	≤ 8D	0.11	11500	0.030	680	9200	0.027	490	6900	0.024	330	4600	0.021	190					
	≤ 10D	0.09	10200	0.025	500	8160	0.022	360	6120	0.020	240	4080	0.017	140					
	≤ 12D	0.07	8900	0.019	340	7120	0.017	250	5340	0.015	165	3560	0.013	95					
	≤ 15D	0.06	7600	0.016	240	6080	0.014	170	4560	0.013	115	3040	0.011	65					
	> 15D	0.04	7600	0.011	160	6080	0.009	110	4560	0.008	75	3040	0.007	45					
3	≤ 6D	0.15	10600	0.040	850	8480	0.036	610	6360	0.032	405	4240	0.028	235					
	≤ 8D	0.13	9600	0.034	650	7680	0.031	470	5760	0.027	315	3840	0.024	185					
	≤ 10D	0.11	8500	0.028	480	6800	0.025	340	5100	0.022	230	3400	0.020	135					
	≤ 12D	0.08	7400	0.022	330	5920	0.020	230	4440	0.018	155	2960	0.015	90					
	≤ 15D	0.07	6400	0.018	230	5120	0.016	170	3840	0.014	110	2560	0.013	65					
	> 15D	0.05	6400	0.012	150	5120	0.011	110	3840	0.010	75	2560	0.008	45					
4	≤ 6D	0.20	8000	0.050	800	6400	0.045	580	4800	0.040	385	3200	0.035	225					
	≤ 8D	0.17	7200	0.043	610	5760	0.038	440	4320	0.034	295	2880	0.030	170					
	≤ 10D	0.14	6400	0.035	450	5120	0.032	320	3840	0.028	215	2560	0.025	125					
	≤ 12D	0.11	5600	0.028	310	4480	0.025	220	3360	0.022	150	2240	0.019	85					
	≤ 15D	0.09	4800	0.023	220	3840	0.020	160	2880	0.018	105	1920	0.016	60					
	> 15D	0.06	4800	0.015	140	3840	0.014	100	2880	0.012	70	1920	0.011	40					

cylindrical shank, multi flute

[illegible]

● stock standard ○ non-standard stock ▽ stock exhaustion

INFO

TYPHOON
TA-HTA-4HTA

TYPHOON
PU-HPU

TYPHOON
SUH

TYPHOON
ALH

TYPHOON
HRC

TYPHOON
SUH MINI

TYPHOON
HL

C-SD-TA

LFTA

SUTA

HSS-HSS/CO
DRILLS

G2

MDTA

HF VH/UP

MEF

ALU

MEX

UH

HSS/CO-HSSP
END MILLS

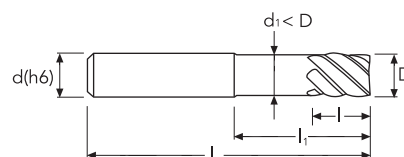
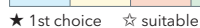
CARBIDE
BURRS

CUTTING PARAMETERS

UH600

SIDE MILLING	Material Group ISO 513	P3P4P5K2K3					P6K4H1H4H5					H2			H3		
	Hardness/Rm	< 45 HRC					45 - 55 HRC					55 - 60 HRC			60 - 65 HRC		
	ap x ae	1.5D x 0.1D					1.5D x 0.05D					1.5D x 0.05D			1.5D x 0.05D		
	Vc (m/min)	140-180					100-140					80-100			60-80		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)				
	3	16990	0.008	860	12740	0.008	580	9550	0.007	390	7430	0.006	260				
	4	12740	0.012	920	9550	0.011	620	7170	0.010	410	5570	0.008	280				
	5	10190	0.014	880	7640	0.013	590	5730	0.012	400	4460	0.010	270				
	6	8490	0.018	920	6370	0.016	620	4780	0.014	410	3720	0.013	280				
	8	6370	0.028	1050	4780	0.025	710	3580	0.022	470	2790	0.019	320				
	10	5100	0.034	1030	3820	0.030	690	2870	0.027	460	2230	0.024	310				
	12	4250	0.041	1040	3180	0.037	700	2390	0.033	470	1860	0.029	320				
	14	3640	0.048	1050	2730	0.043	710	2050	0.038	470	1590	0.034	320				
	16	3180	0.056	1080	2390	0.051	730	1790	0.045	480	1390	0.039	330				
	18	2830	0.066	1120	2120	0.059	760	1590	0.053	500	1240	0.046	340				
	20	2550	0.078	1190	1910	0.070	800	1430	0.062	540	1110	0.055	360				

cylindrical shank, multi flute, long

[illegible]

● stock standard ○ non-standard stock ▽ stock exhaustion

INFO

TYPHOON
TA-HTA-4HTA

TYPHOON
PU-HPU

TYPHOON
SUH

TYPHOON
ALH

TYPHOON
HRC

TYPHOON
SUH MINI

TYPHOON
HL

C-SD-TA

LFTA

SUTA

HSS-HSS/CO
DRILLS

G2

MDTA

HF VH/UP

MEF

ALU

MEX

UH

HSS/CO-HSSP
END MILLS

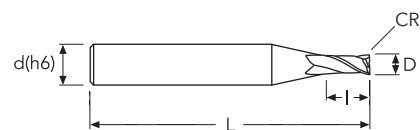
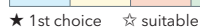
CARBIDE
BURRS

CUTTING PARAMETERS

UH612

SIDE MILLING	Material Group ISO 513	P3P4P5K2K3					P6K4H1H4H5					H2			H3		
	Hardness/Rm	< 45 HRC					45 - 55 HRC					55 - 60 HRC			60 - 65 HRC		
	ap x ae	1.5D x 0.05D					1.5D x 0.05D					1.5D x 0.05D			1.5D x 0.05D		
	Vc (m/min)	90-130					70-110					50-70			20-40		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)				
	3	11680	0.007	500	9550	0.006	370	6370	0.006	220	3180	0.005	100				
	4	8760	0.010	540	7170	0.009	390	4780	0.008	230	2390	0.007	100				
	5	7010	0.012	510	5730	0.011	380	3820	0.010	220	1910	0.009	100				
	6	5840	0.015	540	4780	0.014	390	3180	0.012	230	1590	0.011	100				
	8	4380	0.023	620	3580	0.021	450	2390	0.019	270	1190	0.016	120				
	10	3500	0.029	600	2870	0.026	440	1910	0.023	260	960	0.020	120				
	12	2920	0.035	610	2390	0.031	450	1590	0.028	260	800	0.024	120				
	14	2500	0.041	610	2050	0.037	450	1360	0.033	270	680	0.029	120				
	16	2190	0.048	630	1790	0.043	460	1190	0.038	270	600	0.034	120				
	18	1950	0.056	660	1590	0.050	480	1060	0.045	290	530	0.039	120				
	20	1750	0.066	700	1430	0.060	510	960	0.053	310	480	0.046	130				

cylindrical shank, 2F, miniature, 6 mm. shank

[illegible]

● stock standard ○ non-standard stock ▽ stock exhaustion

INFO

TYPHOON
TA-HTA-4HTA

TYPHOON
PU-HPU

TYPHOON
SUH

TYPHOON
ALH

TYPHOON
HRC

TYPHOON
SUH MINI

TYPHOON
HL

C-SD-TA

LFTA

SUTA

HSS-HSS/CO
DRILLS

G2

MDTA

HF VH/UP

MEF

ALU

MEX

UH

HSS/CO-HSSP
END MILLS

CARBIDE
BURRS

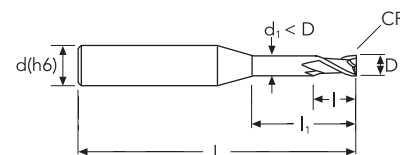
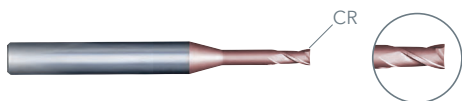
CUTTING PARAMETERS

UHM206

	Material Group ISO 513	P3 P4 P5 K2 K3					P6 K4 H1 H4 H5					H2			H3		
	Hardness/Rm	< 45 HRC					45 - 55 HRC					55 - 60 HRC			60 - 65 HRC		
	ap x ae	ap x D					ap x D					ap x D			ap x D		
	Vc (m/min)	80-120					60-100					50-70			30-50		
	D (mm)	ap (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
	0.3	0.02	40000	0.004	320	40000	0.004	290	40000	0.003	255	40000	0.003	225			
	0.4	0.02	40000	0.006	480	40000	0.005	430	40000	0.005	385	31850	0.004	270			
	0.5	0.03	40000	0.007	560	40000	0.006	500	38220	0.006	430	25480	0.005	250			
	0.6	0.03	40000	0.008	640	40000	0.007	580	31850	0.006	410	21230	0.006	240			
	0.8	0.04	39810	0.010	800	31850	0.009	570	23890	0.008	380	15920	0.007	225			
	1	0.05	31850	0.012	760	25480	0.011	550	19110	0.010	365	12740	0.008	215			
	1.5	0.08	21230	0.025	1060	16990	0.023	760	12740	0.020	510	8490	0.018	295			
	2	0.10	15920	0.030	960	12740	0.027	690	9550	0.024	460	6370	0.021	270			

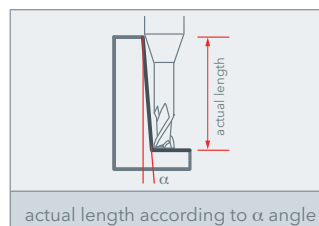
UH211

cylindrical shank, 2F, extended and reduced neck, corner radius



P	M	K	N	S	H
☆		☆			★

★ 1st choice ☆ suitable



D	D Tol.	CR	CR Tol.	d(h6)	l	l1	d1	L	z	30°	1°	1°30'	2°	3°	EDP No.	Stock
1	0/-0.012	0.10	+/-0.010	4	2	4	0.95	50	2	4.36	4.60	4.86	5.16	5.89	UH2110100104	●
1	0/-0.012	0.10	+/-0.010	4	2	6	0.95	50	2	6.46	6.82	7.21	7.66	8.74	UH2110100106	●
1	0/-0.012	0.10	+/-0.010	4	2	8	0.90	50	2	8.45	8.73	9.00	9.27	9.81	UH2110100108	●
1	0/-0.012	0.20	+/-0.010	4	2	4	0.95	50	2	4.36	4.60	4.86	5.16	5.89	UH2110100204	●
1	0/-0.012	0.20	+/-0.010	4	2	8	0.95	50	2	8.57	9.04	9.56	10.15	11.18	UH2110100208	●
1	0/-0.012	0.30	+/-0.010	4	2	4	0.90	50	2	4.31	4.44	4.57	4.70	4.97	UH2110100304	●
1	0/-0.012	0.30	+/-0.010	4	2	8	0.95	50	2	8.57	9.04	9.56	10.15	11.18	UH2110100308	●
1.5	0/-0.012	0.10	+/-0.010	4	2.5	6	1.45	50	2	6.30	6.52	6.75	7.01	7.57	UH2110150106	●
1.5	0/-0.012	0.10	+/-0.010	4	2.5	10	1.45	50	2	10.43	10.8	11.19	11.61	12.55	UH2110150110	●
1.5	0/-0.012	0.20	+/-0.010	4	2.5	8	1.45	50	2	8.37	8.66	8.97	9.31	10.06	UH2110150208	●
1.5	0/-0.012	0.20	+/-0.010	4	2.5	12	1.45	50	2	12.50	12.94	13.40	13.91	15.03	UH2110150212	●
2	0/-0.012	0.10	+/-0.010	4	3	6	1.95	50	2	6.30	6.52	6.75	7.01	7.57	UH2110200106	●
2	0/-0.012	0.10	+/-0.010	4	3	12	1.95	50	2	12.50	12.94	13.40	13.91	15.03	UH2110200112	●
2	0/-0.012	0.20	+/-0.010	4	3	6	1.95	50	2	6.30	6.52	6.75	7.01	7.57	UH2110200206	●
2	0/-0.012	0.20	+/-0.010	4	3	12	1.95	50	2	12.50	12.94	13.40	13.91	15.03	UH2110200212	●
2	0/-0.012	0.30	+/-0.010	4	3	8	1.95	50	2	8.37	8.66	8.97	9.31	10.06	UH2110200308	●
2	0/-0.012	0.30	+/-0.010	4	3	12	1.95	50	2	12.50	12.94	13.40	13.91	15.03	UH2110200312	●
2	0/-0.012	0.30	+/-0.010	4	3	16	1.95	50	2	16.64	17.21	17.84	18.50	-	UH2110200316	●
2	0/-0.012	0.50	+/-0.010	4	3	6	1.95	50	2	6.30	6.52	6.75	7.01	7.57	UH2110200506	●
2	0/-0.012	0.50	+/-0.010	4	3	12	1.95	50	2	12.50	12.94	13.40	13.91	15.03	UH2110200512	●
3	0/-0.012	0.30	+/-0.010	6	4.5	10	2.80	55	2	10.71	11.04	11.38	11.72	12.40	UH2110300310	●
3	0/-0.012	0.30	+/-0.010	6	4.5	16	2.85	55	2	16.83	17.41	18.04	18.72	20.24	UH2110300316	●
3	0/-0.012	0.50	+/-0.010	6	4.5	10	2.85	55	2	10.63	11.00	11.39	11.82	12.78	UH2110300510	●
3	0/-0.012	0.50	+/-0.010	6	4.5	16	2.85	55	2	16.83	17.41	18.04	18.72	20.24	UH2110300516	●
4	0/-0.012	0.20	+/-0.010	6	6	20	3.85	60	2	20.96	21.69	22.48	23.32	-	UH2110400220	●
4	0/-0.012	0.30	+/-0.010	6	6	12	3.85	55	2	12.69	13.14	13.61	14.12	15.27	UH2110400312	●
4	0/-0.012	0.30	+/-0.010	6	6	20	3.85	60	2	20.96	21.69	22.48	23.32	-	UH2110400320	●
4	0/-0.012	0.50	+/-0.010	6	6	12	3.85	55	2	12.69	13.14	13.61	14.12	15.27	UH2110400512	●
4	0/-0.012	0.50	+/-0.010	6	6	20	3.85	60	2	20.96	21.69	22.48	23.32	-	UH2110400520	●
4	0/-0.012	1.00	+/-0.010	6	6	16	3.85	55	2	16.83	17.41	18.04	18.72	-	UH2110401016	●
6	0/-0.015	0.50	+/-0.015	6	9	15	5.85	60	2	-	-	-	-	-	UH2110600520	●
6	0/-0.015	1.00	+/-0.015	6	9	15	5.85	60	2	-	-	-	-	-	UH2110601020	●
6	0/-0.015	2.00	+/-0.015	6	9	15	5.85	60	2	-	-	-	-	-	UH2110602020	●

INFO
TYPHOON TA-HTA-4HTA
TYPHOON PU-HPU
TYPHOON SUH
TYPHOON ALH
TYPHOON HRC
TYPHOON SUH MINI
TYPHOON HL
C-SD-TA
LFTA
SUTA
HSS-HSS/CO DRILLS
G2
MDTA
HF VH/UP
MEF
ALU
MEX
UH
HSS/CO-HSSP END MILLS
CARBIDE BURRS

CUTTING PARAMETERS

UH211

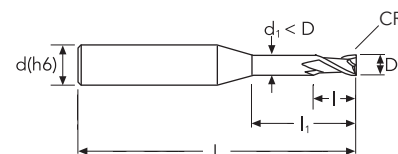
SQUARE RIB

	Material Group ISO 513			P3P4P5K2K3					P6K4H1H4H5					H2			H3		
	Hardness/Rm			< 45 HRC					45 - 55 HRC					55 - 60 HRC			60 - 65 HRC		
	ap x ae			ap x D					ap x D					ap x D			ap x D		
	Vc (m/min)			80-120					60-100					50-70			30-50		
	D (mm)	l1 (mm)	ap (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	
1	≤ 6D	0.05		30000	0.012	720	24000	0.011	520	18000	0.010	345	12000	0.008	200				
	≤ 8D	0.04		28700	0.010	590	22960	0.009	420	17220	0.008	280	11480	0.007	165				
	≤ 10D	0.04		25500	0.008	430	20400	0.008	310	15300	0.007	205	10200	0.006	120				
	≤ 12D	0.03		22300	0.007	290	17840	0.006	210	13380	0.005	140	8920	0.005	80				
1.5	≤ 6D	0.08		21200	0.025	1060	16960	0.023	760	12720	0.020	510	8480	0.018	295				
	≤ 8D	0.06		19100	0.021	810	15280	0.019	580	11460	0.017	390	7640	0.015	225				
	≤ 10D	0.05		17000	0.018	590	13600	0.016	430	10200	0.014	285	6800	0.012	165				
	≤ 12D	0.04		14900	0.014	410	11920	0.012	300	8940	0.011	195	5960	0.010	115				
	≤ 15D	0.03		12700	0.011	290	10160	0.010	210	7620	0.009	135	5080	0.008	80				
	> 15D	0.02		10600	0.008	160	8480	0.007	110	6360	0.006	75	4240	0.005	45				
	≤ 6D	0.10		15900	0.030	950	12720	0.027	690	9540	0.024	460	6360	0.021	265				
2	≤ 8D	0.09		14300	0.026	730	11440	0.023	530	8580	0.020	350	5720	0.018	205				
	≤ 10D	0.07		12700	0.021	530	10160	0.019	380	7620	0.017	255	5080	0.015	150				
	≤ 12D	0.06		11100	0.017	370	8880	0.015	260	6660	0.013	175	4440	0.012	105				
	≤ 15D	0.05		9600	0.014	260	7680	0.012	190	5760	0.011	125	3840	0.009	75				
	> 15D	0.03		9600	0.009	170	7680	0.008	120	5760	0.007	85	3840	0.006	50				
	≤ 6D	0.13		12700	0.035	890	10160	0.032	640	7620	0.028	425	5080	0.025	250				
	≤ 8D	0.11		11500	0.030	680	9200	0.027	490	6900	0.024	330	4600	0.021	190				
2.5	≤ 10D	0.09		10200	0.025	500	8160	0.022	360	6120	0.020	240	4080	0.017	140				
	≤ 12D	0.07		8900	0.019	340	7120	0.017	250	5340	0.015	165	3560	0.013	95				
	≤ 15D	0.06		7600	0.016	240	6080	0.014	170	4560	0.013	115	3040	0.011	65				
	> 15D	0.04		7600	0.011	160	6080	0.009	110	4560	0.008	75	3040	0.007	45				
	≤ 6D	0.15		10600	0.040	850	8480	0.036	610	6360	0.032	405	4240	0.028	235				
	≤ 8D	0.13		9600	0.034	650	7680	0.031	470	5760	0.027	315	3840	0.024	185				
	≤ 10D	0.11		8500	0.028	480	6800	0.025	340	5100	0.022	230	3400	0.020	135				
3	≤ 12D	0.08		7400	0.022	330	5920	0.020	230	4440	0.018	155	2960	0.015	90				
	≤ 15D	0.07		6400	0.018	230	5120	0.016	170	3840	0.014	110	2560	0.013	65				
	> 15D	0.05		6400	0.012	150	5120	0.011	110	3840	0.010	75	2560	0.008	45				
	≤ 6D	0.20		8000	0.050	800	6400	0.045	580	4800	0.040	385	3200	0.035	225				
	≤ 8D	0.17		7200	0.043	610	5760	0.038	440	4320	0.034	295	2880	0.030	170				
4	≤ 10D	0.14		6400	0.035	450	5120	0.032	320	3840	0.028	215	2560	0.025	125				
	≤ 12D	0.11		5600	0.028	310	4480	0.025	220	3360	0.022	150	2240	0.019	85				
	≤ 15D	0.09		4800	0.023	220	3840	0.020	160	2880	0.018	105	1920	0.016	60				
	> 15D	0.06		4800	0.015	140	3840	0.014	100	2880	0.012	70	1920	0.011	40				
	6	≤ 6D	0.30		5300	0.070	740	4240	0.063	530	3180	0.056	355	2120	0.049	210			
≤ 8D		0.26		4800	0.060	570	3840	0.054	410	2880	0.048	275	1920	0.042	160				
≤ 10D		0.21		4200	0.049	410	3360	0.044	300	2520	0.039	200	1680	0.034	115				
≤ 12D		0.17		3700	0.039	280	2960	0.035	210	2220	0.031	135	1480	0.027	80				
> 12D		0.14		3200	0.032	200	2560	0.028	150	1920	0.025	95	1280	0.022	55				



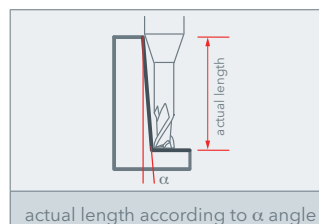
UH212

cylindrical shank, 2F, extended and reduced neck,
corner radius



P	M	K	N	S	H
☆		☆			★

★ 1st choice ☆ suitable

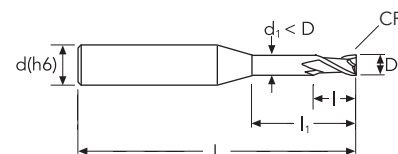


D	D Tol.	CR	CR Tol.	d(h6)	l	l1	d1	L	z	30°	1°	1°30'	2°	3°	EDP No.	Stock
0.2	0/-0.020	0.02	+/-0.010	4	0.3	0.5	0.16	50	2	0.57	0.59	0.6	0.62	0.66	UH21200202005	●
0.2	0/-0.020	0.02	+/-0.010	4	0.3	1	0.16	50	2	1.09	1.12	1.16	1.19	1.26	UH2120020201	●
0.2	0/-0.020	0.02	+/-0.010	4	0.3	1.5	0.16	50	2	1.60	1.65	1.71	1.76	1.86	UH21200202015	●
0.3	0/-0.020	0.03	+/-0.010	4	0.4	1	0.26	50	2	1.09	1.12	1.15	1.19	1.26	UH21200300301	●
0.3	0/-0.020	0.03	+/-0.010	4	0.4	2	0.26	50	2	2.12	2.19	2.26	2.32	2.46	UH21200300302	●
0.3	0/-0.020	0.03	+/-0.010	4	0.4	3	0.26	50	2	3.15	3.25	3.36	3.46	3.66	UH21200300303	●
0.4	0/-0.020	0.03	+/-0.010	4	0.6	2	0.37	50	2	2.12	2.19	2.26	2.32	2.46	UH21200400302	●
0.4	0/-0.020	0.03	+/-0.010	4	0.6	3	0.37	50	2	3.15	3.25	3.36	3.46	3.66	UH21200400303	●
0.4	0/-0.020	0.03	+/-0.010	4	0.6	4	0.37	50	2	4.19	4.32	4.46	4.59	4.86	UH21200400304	●
0.4	0/-0.020	0.03	+/-0.010	4	0.6	5	0.37	50	2	5.22	5.39	5.56	5.73	6.07	UH21200400305	●
0.5	0/-0.020	0.05	+/-0.010	4	0.7	2	0.45	50	2	2.16	2.23	2.29	2.36	2.50	UH21200500502	●
0.5	0/-0.020	0.05	+/-0.010	4	0.7	4	0.45	50	2	4.22	4.36	4.50	4.63	4.90	UH21200500504	●
0.5	0/-0.020	0.05	+/-0.010	4	0.7	6	0.45	50	2	6.29	6.49	6.70	6.90	7.31	UH21200500506	●
0.5	0/-0.020	0.05	+/-0.010	4	0.7	8	0.45	50	2	8.36	8.63	8.90	9.17	9.71	UH21200500508	●
0.6	0/-0.020	0.05	+/-0.010	4	0.9	2	0.55	50	2	2.16	2.23	2.29	2.36	2.50	UH21200600502	●
0.6	0/-0.020	0.05	+/-0.010	4	0.9	4	0.55	50	2	4.22	4.36	4.50	4.63	4.90	UH21200600504	●
0.6	0/-0.020	0.05	+/-0.010	4	0.9	6	0.55	50	2	6.29	6.49	6.70	6.90	7.31	UH21200600506	●
0.6	0/-0.020	0.05	+/-0.010	4	0.9	8	0.55	50	2	8.36	8.63	8.90	9.17	9.71	UH21200600508	●
0.6	0/-0.020	0.05	+/-0.010	4	0.9	10	0.55	50	2	10.43	10.76	11.10	11.44	12.12	UH21200600510	●
0.7	0/-0.020	0.08	+/-0.010	4	1.0	2	0.65	50	2	2.16	2.22	2.29	2.36	2.49	UH21200700802	●
0.7	0/-0.020	0.08	+/-0.010	4	1.0	4	0.65	50	2	4.22	4.36	4.49	4.63	4.90	UH21200700804	●
0.7	0/-0.020	0.08	+/-0.010	4	1.0	6	0.65	50	2	6.29	6.49	6.69	6.90	7.30	UH21200700806	●
0.7	0/-0.020	0.08	+/-0.010	4	1.0	8	0.65	50	2	8.36	8.63	8.90	9.17	9.71	UH21200700808	●
0.7	0/-0.020	0.08	+/-0.010	4	1.0	10	0.65	50	2	10.42	10.76	11.10	11.44	12.11	UH21200700810	●
0.8	0/-0.020	0.08	+/-0.010	4	1.2	4	0.75	50	2	4.22	4.36	4.49	4.63	4.90	UH21200800804	●
0.8	0/-0.020	0.08	+/-0.010	4	1.2	6	0.75	50	2	6.29	6.49	6.69	6.90	7.30	UH21200800806	●
0.8	0/-0.020	0.08	+/-0.010	4	1.2	8	0.75	50	2	8.36	8.63	8.90	9.17	9.71	UH21200800808	●
0.8	0/-0.020	0.08	+/-0.010	4	1.2	10	0.75	50	2	10.42	10.76	11.10	11.44	12.11	UH21200800810	●
0.8	0/-0.020	0.08	+/-0.010	4	1.2	12	0.75	50	2	12.49	12.90	13.30	13.7	14.51	UH21200800812	●
0.9	0/-0.020	0.08	+/-0.010	4	1.4	6	0.85	50	2	6.29	6.49	6.69	6.90	7.30	UH21200900806	●
0.9	0/-0.020	0.08	+/-0.010	4	1.4	8	0.85	50	2	8.36	8.63	8.90	9.17	9.71	UH21200900808	●
0.9	0/-0.020	0.08	+/-0.010	4	1.4	10	0.85	50	2	10.42	10.76	11.10	11.44	12.11	UH21200900810	●
0.9	0/-0.020	0.08	+/-0.010	4	1.4	15	0.85	50	2	15.59	16.1	16.60	17.11	18.12	UH21200900815	●
1.0	0/-0.020	0.10	+/-0.010	4	1.5	6	0.95	50	2	6.39	6.59	6.80	7.00	7.41	UH2120100106	●
1.0	0/-0.020	0.10	+/-0.010	4	1.5	8	0.95	50	2	8.45	8.73	9.00	9.27	9.81	UH2120100108	●
1.0	0/-0.020	0.10	+/-0.010	4	1.5	10	0.95	50	2	10.52	10.86	11.20	11.54	12.22	UH2120100110	●
1.0	0/-0.020	0.10	+/-0.010	4	1.5	12	0.95	50	2	12.59	12.99	13.40	13.81	14.62	UH2120100112	●
1.0	0/-0.020	0.10	+/-0.010	4	1.5	14	0.95	50	2	14.66	15.13	15.60	16.08	17.03	UH2120100114	●
1.0	0/-0.020	0.10	+/-0.010	4	1.5	16	0.95	50	2	16.72	17.26	17.80	18.35	19.43	UH2120100116	●

INFO
TYPHOON TA-HTA-4HTA
TYPHOON PU-HPU
TYPHOON SUH
TYPHOON ALH
TYPHOON HRC
TYPHOON SUH MINI
TYPHOON HL
C-SD-TA
LFTA
SUTA
HSS-HSS/CO DRILLS
G2
MDTA
HF VH/UP
MEF
ALU
MEX
UH
HSS/CO-HSSP END MILLS
CARBIDE BURRS

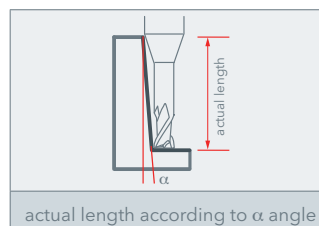
UH212

cylindrical shank, 2F, extended and reduced neck, corner radius



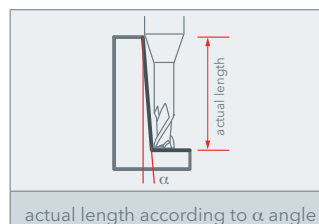
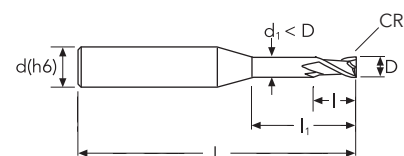
P	M	K	N	S	H
☆		☆			★

★ 1st choice ☆ suitable



D	D Tol.	CR	CR Tol.	d(h6)	l	l1	d1	L	z	30°	1°	1°30'	2°	3°	EDP No.	Stock
1.2	0/-0.020	0.10	+/-0.010	4	1.8	6	1.15	50	2	6.39	6.59	6.80	7.00	7.41	UH2120120106	●
1.2	0/-0.020	0.10	+/-0.010	4	1.8	8	1.15	50	2	8.45	8.73	9.00	9.27	9.81	UH2120120108	●
1.2	0/-0.020	0.10	+/-0.010	4	1.8	10	1.15	50	2	10.52	10.86	11.20	11.54	12.22	UH2120120110	●
1.2	0/-0.020	0.10	+/-0.010	4	1.8	12	1.15	50	2	12.59	12.99	13.40	13.81	14.62	UH2120120112	●
1.4	0/-0.020	0.15	+/-0.010	4	2.1	6	1.35	50	2	6.38	6.59	6.79	6.99	7.40	UH21201401506	●
1.4	0/-0.020	0.15	+/-0.010	4	2.1	8	1.35	50	2	8.45	8.72	8.99	9.26	9.80	UH21201401508	●
1.4	0/-0.020	0.15	+/-0.010	4	2.1	10	1.35	50	2	10.52	10.86	11.19	11.53	12.21	UH21201401510	●
1.4	0/-0.020	0.15	+/-0.010	4	2.1	12	1.35	50	2	12.59	12.99	13.40	13.80	14.61	UH21201401512	●
1.4	0/-0.020	0.15	+/-0.010	4	2.1	14	1.35	50	2	14.65	15.13	15.60	16.07	17.02	UH21201401514	●
1.4	0/-0.020	0.15	+/-0.010	4	2.1	16	1.35	50	2	16.72	17.26	17.80	18.34	19.42	UH21201401516	●
1.5	0/-0.020	0.15	+/-0.010	4	2.3	6	1.45	50	2	6.38	6.59	6.79	6.99	7.40	UH21201501506	●
1.5	0/-0.020	0.15	+/-0.010	4	2.3	8	1.45	50	2	8.45	8.72	8.99	9.26	9.80	UH21201501508	●
1.5	0/-0.020	0.15	+/-0.010	4	2.3	10	1.45	50	2	10.52	10.86	11.19	11.53	12.21	UH21201501510	●
1.5	0/-0.020	0.15	+/-0.010	4	2.3	12	1.45	50	2	12.59	12.99	13.40	13.80	14.61	UH21201501512	●
1.5	0/-0.020	0.15	+/-0.010	4	2.3	14	1.45	50	2	14.65	15.13	15.60	16.07	17.02	UH21201501514	●
1.5	0/-0.020	0.15	+/-0.010	4	2.3	16	1.45	50	2	16.72	17.26	17.80	18.34	19.42	UH21201501516	●
1.5	0/-0.020	0.15	+/-0.010	4	2.3	18	1.45	60	2	18.79	19.39	20.00	20.61	21.82	UH21201501518	●
1.5	0/-0.020	0.15	+/-0.010	4	2.3	20	1.45	60	2	20.86	21.53	22.20	22.88	24.23	UH21201501520	●
1.6	0/-0.020	0.15	+/-0.010	4	2.4	6	1.55	50	2	6.38	6.59	6.79	6.99	7.40	UH21201601506	●
1.6	0/-0.020	0.15	+/-0.010	4	2.4	8	1.55	50	2	8.45	8.72	8.99	9.26	9.80	UH21201601508	●
1.6	0/-0.020	0.15	+/-0.010	4	2.4	10	1.55	50	2	10.52	10.86	11.19	11.53	12.21	UH21201601510	●
1.6	0/-0.020	0.15	+/-0.010	4	2.4	12	1.55	50	2	12.59	12.99	13.40	13.80	14.61	UH21201601512	●
1.6	0/-0.020	0.15	+/-0.010	4	2.4	14	1.55	50	2	14.65	15.13	15.60	16.07	17.02	UH21201601514	●
1.6	0/-0.020	0.15	+/-0.010	4	2.4	16	1.55	50	2	16.72	17.26	17.80	18.34	19.42	UH21201601516	●
1.6	0/-0.020	0.15	+/-0.010	4	2.4	18	1.55	60	2	18.79	19.39	20.00	20.61	21.82	UH21201601518	●
1.6	0/-0.020	0.15	+/-0.010	4	2.4	20	1.55	60	2	20.86	21.53	22.20	22.88	24.23	UH21201601520	●
1.8	0/-0.020	0.20	+/-0.010	4	2.7	6	1.75	50	2	6.38	6.58	6.79	6.99	7.39	UH2120180206	●
1.8	0/-0.020	0.20	+/-0.010	4	2.7	8	1.75	50	2	8.45	8.72	8.99	9.26	9.79	UH2120180208	●
1.8	0/-0.020	0.20	+/-0.010	4	2.7	10	1.75	50	2	10.52	10.85	11.19	11.52	12.20	UH2120180210	●
1.8	0/-0.020	0.20	+/-0.010	4	2.7	12	1.75	50	2	12.58	12.99	13.39	13.79	14.60	UH2120180212	●
1.8	0/-0.020	0.20	+/-0.010	4	2.7	14	1.75	50	2	14.65	15.12	15.59	16.06	17.01	UH2120180214	●
1.8	0/-0.020	0.20	+/-0.010	4	2.7	16	1.75	50	2	16.72	17.26	17.79	18.33	19.41	UH2120180216	●
1.8	0/-0.020	0.20	+/-0.010	4	2.7	18	1.75	60	2	18.79	19.39	20.00	20.6	21.81	UH2120180218	●
1.8	0/-0.020	0.20	+/-0.010	4	2.7	20	1.75	60	2	20.85	21.53	22.20	22.87	24.22	UH2120180220	●
2	0/-0.020	0.20	+/-0.010	4	3	6	1.95	50	2	6.38	6.58	6.79	6.99	7.39	UH2120200206	●
2	0/-0.020	0.20	+/-0.010	4	3	8	1.95	50	2	8.45	8.72	8.99	9.26	9.79	UH2120200208	●
2	0/-0.020	0.20	+/-0.010	4	3	10	1.95	50	2	10.52	10.85	11.19	11.52	12.20	UH2120200210	●
2	0/-0.020	0.20	+/-0.010	4	3	12	1.95	50	2	12.58	12.99	13.39	13.79	14.60	UH2120200212	●
2	0/-0.020	0.20	+/-0.010	4	3	14	1.95	50	2	14.65	15.12	15.59	16.06	17.01	UH2120200214	●

Diagram illustrating the corner radius (CR) of a drill bit. The main image shows a side view of a drill bit with a label 'CR' pointing to the rounded tip. An inset circular image provides a magnified view of the corner radius, showing the transition from the cutting edge to the flute.



INFO
TYPHOON TA-HTA-4HTA
TYPHOON PU-HPU
TYPHOON SUH
TYPHOON ALH
TYPHOON HRC
TYPHOON SUH MINI
TYPHOON HL
C-SD-TA
LFTA
SUTA
HSS-HSS/CO DRILLS
G2
MDTA
HF VH/UP
MEF
ALU
MEX
UH
HSS/CO-HSSP END MILLS
CARBIDE BURRS

CUTTING PARAMETERS

UH212

SQUARE RIB

Material Group ISO 513			P3P4P5K2K3					P6K4H1H4H5					H2			H3		
Hardness/Rm			< 45 HRC					45 - 55 HRC					55 - 60 HRC			60 - 65 HRC		
ap x ae			ap x D					ap x D					ap x D			ap x D		
Vc (m/min)			80-120					60-100					50-70			30-50		
D (mm)	l1 (mm)	ap (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)				
0.2	≤ 6D	0.01	40000	0.003	240	40000	0.003	220	40000	0.002	190	40000	0.002	170				
	≤ 8D	0.01	40000	0.003	200	40000	0.002	180	40000	0.002	165	40000	0.002	145				
	≤ 10D	0.01	40000	0.002	170	40000	0.002	150	40000	0.002	135	40000	0.001	120				
	≤ 12D	0.01	40000	0.002	130	40000	0.001	120	40000	0.001	105	40000	0.001	90				
0.3	≤ 6D	0.02	40000	0.004	320	40000	0.004	290	40000	0.003	255	40000	0.003	225				
	≤ 8D	0.01	40000	0.003	270	40000	0.003	240	40000	0.003	220	38200	0.002	180				
	≤ 10D	0.01	40000	0.003	220	40000	0.003	200	40000	0.002	180	34000	0.002	135				
	≤ 12D	0.01	40000	0.002	180	40000	0.002	160	40000	0.002	140	29700	0.002	90				
0.4	≤ 6D	0.02	40000	0.006	480	40000	0.005	430	40000	0.005	385	31800	0.004	265				
	≤ 8D	0.02	40000	0.005	410	40000	0.005	370	40000	0.004	325	28700	0.004	205				
	≤ 10D	0.01	40000	0.004	340	40000	0.004	300	38200	0.003	255	25500	0.003	150				
	≤ 12D	0.01	40000	0.003	260	40000	0.003	240	33400	0.003	175	22300	0.002	105				
0.5	≤ 6D	0.03	40000	0.007	560	40000	0.006	500	38200	0.006	430	25500	0.005	250				
	≤ 8D	0.02	40000	0.006	480	40000	0.005	430	34400	0.005	325	22900	0.004	190				
	≤ 10D	0.02	40000	0.005	390	40000	0.004	350	30600	0.004	240	20400	0.003	140				
	≤ 12D	0.01	35000	0.004	270	35700	0.003	250	26800	0.003	165	17800	0.003	95				
0.6	≤ 6D	0.03	40000	0.008	640	40000	0.007	580	31800	0.006	405	21200	0.006	235				
	≤ 8D	0.03	40000	0.007	540	38200	0.006	470	28700	0.005	310	19100	0.005	180				
	≤ 10D	0.02	40000	0.006	450	34000	0.005	340	25500	0.004	230	17000	0.004	135				
	≤ 12D	0.02	37200	0.004	330	29700	0.004	240	22300	0.004	155	14900	0.003	90				
0.8	≤ 6D	0.04	39800	0.010	800	31840	0.009	570	23880	0.008	380	15920	0.007	225				
	≤ 8D	0.03	35800	0.009	610	28640	0.008	440	21480	0.007	290	14320	0.006	170				
	≤ 10D	0.03	31800	0.007	450	25440	0.006	320	19080	0.006	215	12720	0.005	125				
	≤ 12D	0.02	27900	0.006	310	22320	0.005	220	16740	0.004	145	11160	0.004	85				
1	≤ 6D	0.05	31800	0.012	760	25440	0.011	550	19080	0.010	365	12720	0.008	215				
	≤ 8D	0.04	28700	0.010	590	22960	0.009	420	17220	0.008	280	11480	0.007	165				
	≤ 10D	0.04	25500	0.008	430	20400	0.008	310	15300	0.007	205	10200	0.006	120				
	≤ 12D	0.03	22300	0.007	290	17840	0.006	210	13380	0.005	140	8920	0.005	80				
1.2	≤ 6D	0.06	26500	0.022	1170	21200	0.020	840	15900	0.018	560	10600	0.015	325				
	≤ 8D	0.05	23900	0.019	890	19120	0.017	640	14340	0.015	430	9560	0.013	250				
	≤ 10D	0.04	21200	0.015	650	16960	0.014	470	12720	0.012	315	8480	0.011	185				
	≤ 12D	0.03	18600	0.012	450	14880	0.011	320	11160	0.010	215	7440	0.008	125				
1.4	≤ 6D	0.07	22700	0.024	1090	18160	0.022	780	13620	0.019	525	9080	0.017	305				
	≤ 8D	0.06	20500	0.020	840	16400	0.018	600	12300	0.016	400	8200	0.014	235				
	≤ 10D	0.05	18200	0.017	610	14560	0.015	440	10920	0.013	295	7280	0.012	170				
	≤ 12D	0.04	15900	0.013	420	12720	0.012	300	9540	0.011	200	6360	0.009	120				
	≤ 15D	0.03	13600	0.011	290	10880	0.010	210	8160	0.009	140	5440	0.008	80				
	> 15D	0.02	11400	0.007	160	9120	0.006	120	6840	0.006	80	4560	0.005	45				
1.5	≤ 6D	0.08	21200	0.025	1060	16960	0.023	760	12720	0.020	510	8480	0.018	295				
	≤ 8D	0.06	19100	0.021	810	15280	0.019	580	11460	0.017	390	7640	0.015	225				
	≤ 10D	0.05	17000	0.018	590	13600	0.016	430	10200	0.014	285	6800	0.012	165				
	≤ 12D	0.04	14900	0.014	410	11920	0.012	300	8940	0.011	195	5960	0.010	115				
	≤ 15D	0.03	12700	0.011	290	10160	0.010	210	7620	0.009	135	5080	0.008	80				
	> 15D	0.02	10600	0.008	160	8480	0.007	110	6360	0.006	75	4240	0.005	45				
1.6	≤ 6D	0.08	19900	0.026	1030	15920	0.023	750	11940	0.021	495	7960	0.018	290				
	≤ 8D	0.07	17900	0.022	790	14320	0.020	570	10740	0.018	380	7160	0.015	220				
	≤ 10D	0.06	15900	0.018	580	12720	0.016	420	9540	0.015	280	6360	0.013	160				
	≤ 12D	0.04	13900	0.014	400	11120	0.013	290	8340	0.011	190	5560	0.010	110				
	≤ 15D	0.04	11900	0.012	280	9520	0.011	200	7140	0.009	135	4760	0.008	80				
	> 15D	0.02	10000	0.008	160	8000	0.007	110	6000	0.006	75	4000	0.005	45				



CUTTING PARAMETERS

UH212

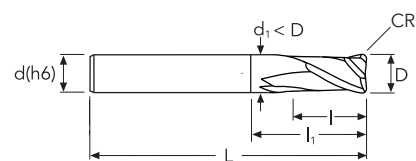
SQUARE RIB

Material Group ISO 513			P3 P4 P5 K2 K3					P6 K4 H1 H4 H5					H2			H3		
Hardness/Rm			< 45 HRC					45 - 55 HRC					55 - 60 HRC			60 - 65 HRC		
ap x ae			ap x D					ap x D					ap x D			ap x D		
Vc (m/min)			80-120					60-100					50-70			30-50		
D (mm)	l1 (mm)	ap (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)				
1.8	≤ 6D	0.09	17700	0.028	990	14160	0.025	710	10620	0.022	475	7080	0.020	280				
	≤ 8D	0.08	15900	0.024	760	12720	0.021	540	9540	0.019	365	6360	0.017	210				
	≤ 10D	0.06	14200	0.020	560	11360	0.018	400	8520	0.016	265	5680	0.014	155				
	≤ 12D	0.05	12400	0.015	380	9920	0.014	270	7440	0.012	185	4960	0.011	105				
	≤ 15D	0.04	10600	0.013	270	8480	0.011	190	6360	0.010	130	4240	0.009	75				
	> 15D	0.03	8800	0.008	150	7040	0.008	110	5280	0.007	70	3520	0.006	40				
2	≤ 6D	0.10	15900	0.030	950	12720	0.027	690	9540	0.024	460	6360	0.021	265				
	≤ 8D	0.09	14300	0.026	730	11440	0.023	530	8580	0.020	350	5720	0.018	205				
	≤ 10D	0.07	12700	0.021	530	10160	0.019	380	7620	0.017	255	5080	0.015	150				
	≤ 12D	0.06	11100	0.017	370	8880	0.015	260	6660	0.013	175	4440	0.012	105				
	≤ 15D	0.05	9600	0.014	260	7680	0.012	190	5760	0.011	125	3840	0.009	75				
	> 15D	0.03	9600	0.009	170	7680	0.008	120	5760	0.007	85	3840	0.006	50				
2.5	≤ 6D	0.13	12700	0.035	890	10160	0.032	640	7620	0.028	425	5080	0.025	250				
	≤ 8D	0.11	11500	0.030	680	9200	0.027	490	6900	0.024	330	4600	0.021	190				
	≤ 10D	0.09	10200	0.025	500	8160	0.022	360	6120	0.020	240	4080	0.017	140				
	≤ 12D	0.07	8900	0.019	340	7120	0.017	250	5340	0.015	165	3560	0.013	95				
	≤ 15D	0.06	7600	0.016	240	6080	0.014	170	4560	0.013	115	3040	0.011	65				
	> 15D	0.04	7600	0.011	160	6080	0.009	110	4560	0.008	75	3040	0.007	45				
3	≤ 6D	0.15	10600	0.040	850	8480	0.036	610	6360	0.032	405	4240	0.028	235				
	≤ 8D	0.13	9600	0.034	650	7680	0.031	470	5760	0.027	315	3840	0.024	185				
	≤ 10D	0.11	8500	0.028	480	6800	0.025	340	5100	0.022	230	3400	0.020	135				
	≤ 12D	0.08	7400	0.022	330	5920	0.020	230	4440	0.018	155	2960	0.015	90				
	≤ 15D	0.07	6400	0.018	230	5120	0.016	170	3840	0.014	110	2560	0.013	65				
	> 15D	0.05	6400	0.012	150	5120	0.011	110	3840	0.010	75	2560	0.008	45				
4	≤ 6D	0.20	8000	0.050	800	6400	0.045	580	4800	0.040	385	3200	0.035	225				
	≤ 8D	0.17	7200	0.043	610	5760	0.038	440	4320	0.034	295	2880	0.030	170				
	≤ 10D	0.14	6400	0.035	450	5120	0.032	320	3840	0.028	215	2560	0.025	125				
	≤ 12D	0.11	5600	0.028	310	4480	0.025	220	3360	0.022	150	2240	0.019	85				
	≤ 15D	0.09	4800	0.023	220	3840	0.020	160	2880	0.018	105	1920	0.016	60				
	> 15D	0.06	4800	0.015	140	3840	0.014	100	2880	0.012	70	1920	0.011	40				



INFO
TYPHOON TA-HTA-4HTA
TYPHOON PU-HPU
TYPHOON SUH
TYPHOON ALH
TYPHOON HRC
TYPHOON SUH MINI
TYPHOON HL
C-SD-TA
LFTA
SUTA
HSS-HSS/CO DRILLS
G2
MDTA
HF VH/UP
MEF
ALU
MEX
UH
HSS/CO-HSSP END MILLS
CARBIDE BURRS

cylindrical shank, 2F, reduced neck, corner radius



● stock standard ○ non-standard stock ▽ stock exhaustion

CUTTING PARAMETERS

UHCS2

 SLOTTING	Material Group ISO 513	P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3								
	Hardness/Rm	< 45 HRC			45 - 55 HRC			55 - 60 HRC			60 - 65 HRC		
	ap x ae	0.3D x D			0.2D x D			0.2D x D			0.1D x D		
	Vc (m/min)	80-120			60-100			50-70			30-50		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
	1	30000	0.007	420	25480	0.006	320	19110	0.006	215	12740	0.005	125
	2	15920	0.012	380	12740	0.011	280	9550	0.010	185	6370	0.008	105
	3	10620	0.017	360	8490	0.015	260	6370	0.014	175	4250	0.012	100
	4	7960	0.023	370	6370	0.021	260	4780	0.018	175	3180	0.016	100
	5	6370	0.030	380	5100	0.027	280	3820	0.024	185	2550	0.021	105
	6	5310	0.038	400	4250	0.034	290	3180	0.030	195	2120	0.027	115
	8	3980	0.050	400	3180	0.045	290	2390	0.040	190	1590	0.035	110
	10	3180	0.065	410	2550	0.059	300	1910	0.052	200	1270	0.046	115
	12	2650	0.080	420	2120	0.072	310	1590	0.064	205	1060	0.056	120

INFO

TYPHOON
TA-HTA-4HTATYPHOON
PU-HPUTYPHOON
SUHTYPHOON
ALHTYPHOON
HRCTYPHOON
SUH MINITYPHOON
HL

C-SD-TA

LFTA

SUTA

HSS-HSS/CO
DRILLS

G2

MDTA

HF VH/UP

MEF

ALU

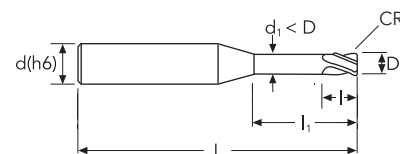
MEX

UH

HSS/CO-HSSP
END MILLSCARBIDE
BURRS

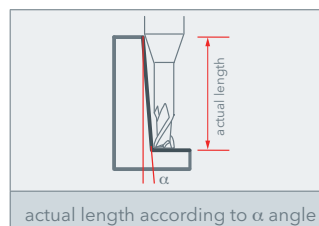
UHF4LN

cylindrical shank, 4F Unequal Pitch,
extended and reduced neck, corner radius



P	M	K	N	S	H
☆		☆			★

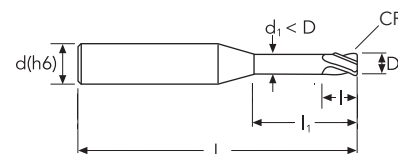
★ 1st choice ☆ suitable



D	D Tol.	CR	CR Tol.	d(h6)	l	l1	d1	L	z	30°	1°	1°30'	2°	3°	EDP No.	Stock
1	0/-0.020	0.10	+/-0.010	4	1	4	0.90	50	4	4.32	4.46	4.62	4.78	5.13	UHF4LN0100104	●
1	0/-0.020	0.10	+/-0.010	4	1	6	0.90	50	4	6.39	6.60	6.83	7.08	7.60	UHF4LN0100106	●
1	0/-0.020	0.10	+/-0.010	4	1	8	0.90	50	4	8.45	8.74	9.05	9.37	10.07	UHF4LN0100108	●
1	0/-0.020	0.10	+/-0.010	4	1	10	0.90	50	4	10.52	10.88	11.26	11.66	12.53	UHF4LN0100110	●
1	0/-0.020	0.10	+/-0.010	4	1	12	0.90	50	4	12.59	13.02	13.48	13.96	15.00	UHF4LN0100112	●
1	0/-0.020	0.10	+/-0.010	4	1	14	0.90	50	4	14.66	15.16	15.69	16.25	17.47	UHF4LN0100114	●
1	0/-0.020	0.10	+/-0.010	4	1	16	0.90	50	4	16.72	17.30	17.91	18.55	19.94	UHF4LN0100116	●
1	0/-0.020	0.10	+/-0.010	4	1	20	0.90	75	4	20.86	21.57	22.33	23.14	24.87	UHF4LN0100120	●
1	0/-0.020	0.20	+/-0.010	4	1	4	0.90	50	4	4.32	4.46	4.61	4.77	5.11	UHF4LN0100204	●
1	0/-0.020	0.20	+/-0.010	4	1	6	0.90	50	4	6.38	6.60	6.82	7.06	7.57	UHF4LN0100206	●
1	0/-0.020	0.20	+/-0.010	4	1	8	0.90	50	4	8.45	8.73	9.04	9.35	10.04	UHF4LN0100208	●
1	0/-0.020	0.20	+/-0.010	4	1	10	0.90	50	4	10.52	10.87	11.25	11.65	12.51	UHF4LN0100210	●
1	0/-0.020	0.20	+/-0.010	4	1	12	0.90	50	4	12.58	13.01	13.47	13.94	14.98	UHF4LN0100212	●
1	0/-0.020	0.20	+/-0.010	4	1	14	0.90	50	4	14.65	15.15	15.68	16.24	17.45	UHF4LN0100214	●
1	0/-0.020	0.20	+/-0.010	4	1	16	0.90	50	4	16.72	17.29	17.89	18.53	19.91	UHF4LN0100216	●
1	0/-0.020	0.20	+/-0.010	4	1	20	0.90	60	4	20.85	21.57	22.32	23.12	24.85	UHF4LN0100220	●
1	0/-0.020	0.30	+/-0.010	4	1	6	0.90	50	4	6.38	6.59	6.81	7.05	7.55	UHF4LN0100306	●
1	0/-0.020	0.30	+/-0.010	4	1	10	0.90	50	4	10.51	10.87	11.24	11.63	12.49	UHF4LN0100310	●
1	0/-0.020	0.30	+/-0.010	4	1	16	0.90	50	4	16.72	17.28	17.88	18.52	19.89	UHF4LN0100316	●
1	0/-0.020	0.30	+/-0.010	4	1	20	0.90	60	4	20.85	21.56	22.31	23.11	24.82	UHF4LN0100320	●
1.5	0/-0.020	0.10	+/-0.010	4	1.5	6	1.40	50	4	6.39	6.60	6.83	7.08	7.60	UHF4LN0150106	●
1.5	0/-0.020	0.10	+/-0.010	4	1.5	8	1.40	50	4	8.45	8.74	9.05	9.37	10.07	UHF4LN0150108	●
1.5	0/-0.020	0.10	+/-0.010	4	1.5	12	1.40	50	4	12.59	13.02	13.48	13.96	15.00	UHF4LN0150112	●
1.5	0/-0.020	0.10	+/-0.010	4	1.5	16	1.40	50	4	16.72	17.3	17.91	18.55	19.94	UHF4LN0150116	●
1.5	0/-0.020	0.10	+/-0.010	4	1.5	20	1.40	60	4	20.86	21.57	22.33	23.14	-	UHF4LN0150120	●
1.5	0/-0.020	0.20	+/-0.010	4	1.5	6	1.40	50	4	6.38	6.60	6.82	7.06	7.57	UHF4LN0150206	●
1.5	0/-0.020	0.20	+/-0.010	4	1.5	8	1.40	50	4	8.45	8.73	9.04	9.35	10.04	UHF4LN0150208	●
1.5	0/-0.020	0.20	+/-0.010	4	1.5	10	1.40	50	4	10.52	10.87	11.25	11.65	12.51	UHF4LN0150210	●
1.5	0/-0.020	0.20	+/-0.010	4	1.5	12	1.40	50	4	12.58	13.01	13.47	13.94	14.98	UHF4LN0150212	●
1.5	0/-0.020	0.20	+/-0.010	4	1.5	14	1.40	50	4	14.65	15.15	15.68	16.24	17.45	UHF4LN0150214	●
1.5	0/-0.020	0.20	+/-0.010	4	1.5	16	1.40	50	4	16.72	17.29	17.89	18.53	19.91	UHF4LN0150216	●
1.5	0/-0.020	0.20	+/-0.010	4	1.5	18	1.40	60	4	18.79	19.43	20.11	20.83	22.38	UHF4LN0150218	●
1.5	0/-0.020	0.20	+/-0.010	4	1.5	20	1.40	60	4	20.85	21.57	22.32	23.12	-	UHF4LN0150220	●
1.5	0/-0.020	0.30	+/-0.010	4	1.5	8	1.40	50	4	8.45	8.73	9.03	9.34	10.02	UHF4LN0150308	●
1.5	0/-0.020	0.30	+/-0.010	4	1.5	16	1.40	50	4	16.72	17.28	17.88	18.52	19.89	UHF4LN0150316	●
1.5	0/-0.020	0.30	+/-0.010	4	1.5	20	1.40	60	4	20.85	21.56	22.31	23.11	-	UHF4LN0150320	●
2	0/-0.020	0.20	+/-0.010	4	2	6	1.90	50	4	6.38	6.60	6.82	7.06	7.57	UHF4LN0200206	●
2	0/-0.020	0.20	+/-0.010	4	2	8	1.90	50	4	8.45	8.73	9.04	9.35	10.04	UHF4LN0200208	●
2	0/-0.020	0.20	+/-0.010	4	2	10	1.90	50	4	10.52	10.87	11.25	11.65	12.51	UHF4LN0200210	●

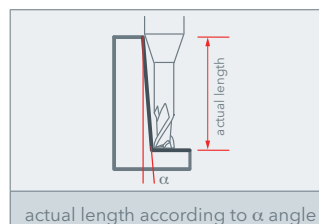
UHF4LN

cylindrical shank, 4F Unequal Pitch,
extended and reduced neck, corner radius



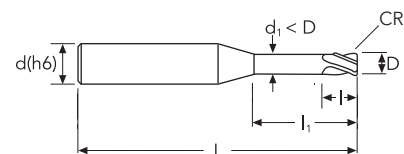
P	M	K	N	S	H
☆		☆			★

★ 1st choice ☆ suitable



D	D Tol.	CR	CR Tol.	d(h6)	l	l1	d1	L	z	30°	1°	1°30'	2°	3°	EDP No.	Stock
2	0/-0.020	0.20	+/-0.010	4	2	12	1.90	50	4	12.58	13.01	13.47	13.94	14.98	UHF4LN0200212	●
2	0/-0.020	0.20	+/-0.010	4	2	14	1.90	50	4	14.65	15.15	15.68	16.24	17.45	UHF4LN0200214	●
2	0/-0.020	0.20	+/-0.010	4	2	16	1.90	50	4	16.72	17.29	17.89	18.53	-	UHF4LN0200216	●
2	0/-0.020	0.20	+/-0.010	4	2	18	1.90	60	4	18.79	19.43	20.11	20.83	-	UHF4LN0200218	●
2	0/-0.020	0.20	+/-0.010	4	2	20	1.90	60	4	20.85	21.57	22.32	23.12	-	UHF4LN0200220	●
2	0/-0.020	0.20	+/-0.010	4	2	25	1.90	75	4	26.02	26.91	27.86	-	-	UHF4LN0200225	●
2	0/-0.020	0.20	+/-0.010	4	2	30	1.90	75	4	31.19	32.26	33.40	-	-	UHF4LN0200230	●
2	0/-0.020	0.30	+/-0.010	4	2	8	1.90	50	4	8.45	8.73	9.03	9.34	10.02	UHF4LN0200308	●
2	0/-0.020	0.30	+/-0.010	4	2	16	1.90	50	4	16.72	17.28	17.88	18.52	-	UHF4LN0200316	●
2	0/-0.020	0.30	+/-0.010	4	2	20	1.90	60	4	20.85	21.56	22.31	23.11	-	UHF4LN0200320	●
2	0/-0.020	0.50	+/-0.010	4	2	6	1.90	50	4	6.37	6.58	6.79	7.02	7.50	UHF4LN0200506	●
2	0/-0.020	0.50	+/-0.010	4	2	8	1.90	50	4	8.44	8.71	9.00	9.31	9.97	UHF4LN0200508	●
2	0/-0.020	0.50	+/-0.010	4	2	12	1.90	50	4	12.57	12.99	13.43	13.9	14.91	UHF4LN0200512	●
2	0/-0.020	0.50	+/-0.010	4	2	16	1.90	50	4	16.71	17.27	17.86	18.49	-	UHF4LN0200516	●
2	0/-0.020	0.50	+/-0.010	4	2	20	1.90	60	4	20.84	21.55	22.29	23.08	-	UHF4LN0200520	●
2	0/-0.020	0.50	+/-0.010	4	2	25	1.90	75	4	26.01	26.89	27.83	28.82	-	UHF4LN0200525	●
2	0/-0.020	0.50	+/-0.010	4	2	30	1.90	75	4	31.18	32.24	33.36	-	-	UHF4LN0200530	●
2.5	0/-0.020	0.30	+/-0.010	4	2.5	8	2.40	50	4	8.45	8.73	9.03	9.34	10.02	UHF4LN0250308	●
2.5	0/-0.020	0.30	+/-0.010	4	2.5	10	2.40	50	4	10.51	10.87	11.24	11.63	12.49	UHF4LN0250310	●
2.5	0/-0.020	0.30	+/-0.010	4	2.5	12	2.40	50	4	12.58	13.01	13.45	13.93	-	UHF4LN0250312	●
2.5	0/-0.020	0.30	+/-0.010	4	2.5	14	2.40	50	4	14.65	15.14	15.67	16.22	-	UHF4LN0250314	●
2.5	0/-0.020	0.30	+/-0.010	4	2.5	16	2.40	50	4	16.72	17.28	17.88	18.52	-	UHF4LN0250316	●
2.5	0/-0.020	0.30	+/-0.010	4	2.5	18	2.40	60	4	18.78	19.42	20.10	20.81	-	UHF4LN0250318	●
2.5	0/-0.020	0.30	+/-0.010	4	2.5	20	2.40	60	4	20.85	21.56	22.31	-	-	UHF4LN0250320	●
2.5	0/-0.020	0.30	+/-0.010	4	2.5	25	2.40	60	4	26.02	26.91	27.85	-	-	UHF4LN0250325	●
2.5	0/-0.020	0.30	+/-0.010	4	2.5	30	2.40	75	4	31.19	32.25	-	-	-	UHF4LN0250330	●
2.5	0/-0.020	0.50	+/-0.010	4	2.5	8	2.40	50	4	8.44	8.71	9.00	9.31	9.97	UHF4LN0250508	●
2.5	0/-0.020	0.50	+/-0.010	4	2.5	12	2.40	50	4	12.57	12.99	13.43	13.90	-	UHF4LN0250512	●
2.5	0/-0.020	0.50	+/-0.010	4	2.5	16	2.40	50	4	16.71	17.27	17.86	18.49	-	UHF4LN0250516	●
2.5	0/-0.020	0.50	+/-0.010	4	2.5	20	2.40	60	4	20.84	21.55	22.29	-	-	UHF4LN0250520	●
2.5	0/-0.020	0.50	+/-0.010	4	2.5	25	2.40	60	4	26.01	26.89	27.83	-	-	UHF4LN0250525	●
2.5	0/-0.020	0.50	+/-0.010	4	2.5	30	2.40	75	4	31.18	32.24	-	-	-	UHF4LN0250530	●
3	0/-0.025	0.20	+/-0.010	6	3	8	2.80	50	4	8.64	8.93	9.24	9.57	10.27	UHF4LN0300208	●
3	0/-0.025	0.20	+/-0.010	6	3	10	2.80	50	4	10.71	11.07	11.46	11.86	12.73	UHF4LN0300210	●
3	0/-0.025	0.20	+/-0.010	6	3	12	2.80	50	4	12.78	13.21	13.67	14.16	15.20	UHF4LN0300212	●
3	0/-0.025	0.20	+/-0.010	6	3	14	2.80	50	4	14.84	15.35	15.89	16.45	17.67	UHF4LN0300214	●
3	0/-0.025	0.20	+/-0.010	6	3	16	2.80	60	4	16.91	17.49	18.10	18.74	20.14	UHF4LN0300216	●
3	0/-0.025	0.20	+/-0.010	6	3	18	2.80	60	4	18.98	19.63	20.31	21.04	22.60	UHF4LN0300218	●
3	0/-0.025	0.20	+/-0.010	6	3	20	2.80	60	4	21.05	21.77	22.53	23.33	25.07	UHF4LN0300220	●

cylindrical shank, 4F Unequal Pitch,
extended and reduced neck, corner radius



actual length according to α angle



● stock standard ○ non-standard stock ▽ stock exhaustion

CUTTING PARAMETERS

UHF4LN

Material Group ISO 513		P3 P4 P5 K2 K3					P6 K4 H1 H4 H5					H2			H3		
		< 45 HRC					45 - 55 HRC					55 - 60 HRC			60 - 65 HRC		
ap x ae		ap x D					ap x D					ap x D			ap x D		
Vc (m/min)		80-120					60-100					50-70			30-50		
D (mm)	l1 (mm)	ae (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
1	≤ 6D	0.05	31800	0.010	1300	25440	0.009	930	19080	0.008	625	12720	0.007	365			
	≤ 8D	0.04	28700	0.009	1000	22960	0.008	720	17220	0.007	480	11480	0.006	280			
	≤ 10D	0.04	25500	0.007	730	20400	0.006	520	15300	0.006	350	10200	0.005	205			
	≤ 12D	0.03	22300	0.006	500	17840	0.005	360	13380	0.004	240	8920	0.004	140			
1.5	≤ 6D	0.08	21200	0.021	1800	16960	0.019	1300	12720	0.017	865	8480	0.015	505			
	≤ 8D	0.06	19100	0.018	1380	15280	0.016	990	11460	0.014	660	7640	0.013	385			
	≤ 10D	0.05	17000	0.015	1010	13600	0.013	730	10200	0.012	485	6800	0.010	285			
	≤ 12D	0.04	14900	0.012	700	11920	0.011	500	8940	0.009	335	5960	0.008	195			
	≤ 15D	0.03	12700	0.010	490	10160	0.009	350	7620	0.008	235	5080	0.007	135			
	> 15D	0.02	10600	0.006	270	8480	0.006	190	6360	0.005	130	4240	0.004	75			
2	≤ 6D	0.10	15900	0.026	1620	12720	0.023	1170	9540	0.020	780	6360	0.018	455			
	≤ 8D	0.09	14300	0.022	1240	11440	0.020	890	8580	0.017	595	5720	0.015	345			
	≤ 10D	0.07	12700	0.018	910	10160	0.016	650	7620	0.014	435	5080	0.012	255			
	≤ 12D	0.06	11100	0.014	620	8880	0.013	450	6660	0.011	300	4440	0.010	175			
	≤ 15D	0.05	9600	0.011	440	7680	0.010	320	5760	0.009	210	3840	0.008	125			
	> 15D	0.03	9600	0.008	290	7680	0.007	210	5760	0.006	140	3840	0.005	80			
2.5	≤ 6D	0.13	12700	0.030	1510	10160	0.027	1090	7620	0.024	725	5080	0.021	425			
	≤ 8D	0.11	11500	0.025	1160	9200	0.023	840	6900	0.020	560	4600	0.018	325			
	≤ 10D	0.09	10200	0.021	850	8160	0.019	610	6120	0.017	410	4080	0.015	240			
	≤ 12D	0.07	8900	0.016	580	7120	0.015	420	5340	0.013	280	3560	0.011	165			
	≤ 15D	0.06	7600	0.013	410	6080	0.012	290	4560	0.011	195	3040	0.009	115			
	> 15D	0.04	7600	0.009	270	6080	0.008	200	4560	0.007	130	3040	0.006	75			
3	≤ 6D	0.15	10600	0.034	1440	8480	0.031	1040	6360	0.027	690	4240	0.024	405			
	≤ 8D	0.13	9600	0.029	1110	7680	0.026	800	5760	0.023	535	3840	0.020	310			
	≤ 10D	0.11	8500	0.024	810	6800	0.021	580	5100	0.019	390	3400	0.017	225			
	≤ 12D	0.08	7400	0.019	550	5920	0.017	400	4440	0.015	265	2960	0.013	155			
	≤ 15D	0.07	6400	0.015	390	5120	0.014	280	3840	0.012	190	2560	0.011	110			
	> 15D	0.05	6400	0.010	260	5120	0.009	190	3840	0.008	125	2560	0.007	75			
4	≤ 6D	0.20	8000	0.043	1360	6400	0.038	980	4800	0.034	655	3200	0.030	380			
	≤ 8D	0.17	7200	0.036	1040	5760	0.033	750	4320	0.029	500	2880	0.025	290			
	≤ 10D	0.14	6400	0.030	760	5120	0.027	550	3840	0.024	365	2560	0.021	215			
	≤ 12D	0.11	5600	0.023	520	4480	0.021	380	3360	0.019	250	2240	0.016	145			
	≤ 15D	0.09	4800	0.019	370	3840	0.017	260	2880	0.015	175	1920	0.013	105			
	> 15D	0.06	4800	0.013	240	3840	0.011	180	2880	0.010	120	1920	0.009	70			



INFO
TYPHOON TA-HTA-4HTA
TYPHOON PU-HPU
TYPHOON SUH
TYPHOON ALH
TYPHOON HRC
TYPHOON SUH MINI
TYPHOON HL
C-SD-TA
LFTA
SUTA
HSS-HSS/CO DRILLS
G2
MDTA
HF VH/UP
MEF
ALU
MEX
UH
HSS/CO-HSSP END MILLS
CARBIDE BURRS

cylindrical shank, 4F corner radius



CUTTING PARAMETERS

UHF4

	Material Group ISO 513	P3 P4 P5 K2 K3			P6 K4 H1 H4 H5			H2			H3		
	Hardness/Rm	< 45 HRC			45 - 55 HRC			55 - 60 HRC			60 - 65 HRC		
	ap x ae	0.03D x 0.4D			0.03D x 0.3D			0.02D x 0.3D			0.02D x 0.3D		
	Vc (m/min)	110-150			90-130			60-100			50-70		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
	2	20700	0.033	2710	17520	0.029	2070	12740	0.026	1335	9550	0.023	875
	3	13800	0.050	2730	11680	0.045	2080	8490	0.040	1345	6370	0.035	885
	4	10350	0.068	2790	8760	0.061	2130	6370	0.054	1375	4780	0.047	905
	5	8280	0.086	2830	7010	0.077	2160	5100	0.068	1395	3820	0.060	915
	6	6900	0.104	2860	5840	0.093	2180	4250	0.083	1410	3180	0.072	920
	8	5180	0.122	2520	4380	0.109	1920	3180	0.097	1235	2390	0.085	815
	10	4140	0.140	2310	3500	0.126	1760	2550	0.112	1140	1910	0.098	745
	12	3450	0.158	2170	2920	0.142	1660	2120	0.126	1070	1590	0.110	700
ap x ae		D2 - D3	0.02D x 0.3D			0.02D x 0.25D			0.01D x 0.02D			0.01D x 0.02D	

INFO

TYPHOON
TA-HTA-4HTATYPHOON
PU-HPUTYPHOON
SUHTYPHOON
ALHTYPHOON
HRCTYPHOON
SUH MINITYPHOON
HL

C-SD-TA

LFTA

SUTA

HSS-HSS/CO
DRILLS

G2

MDTA

HF VH/UP

MEF

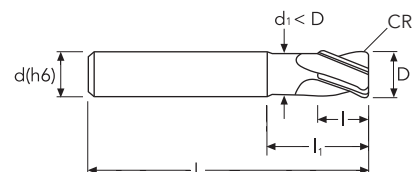
ALU

MEX

UH

HSS/CO-HSSP
END MILLSCARBIDE
BURRS

cylindrical shank, 4F, reduced neck, corner radius



● stock standard ○ non-standard stock ▽ stock exhaustion

CUTTING PARAMETERS

UHCS4

	Material Group ISO 513	P3P4P5K2K3					P6K4H1H4H5					H2			H3		
	Hardness/Rm	< 45 HRC					45 - 55 HRC					55 - 60 HRC			60 - 65 HRC		
	ap x ae	0.3D x D					0.2D x D					0.2D x D			0.1D x D		
	Vc (m/min)	90-130					60-100					50-70			30-50		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)				
	1	30000	0.010	1200	25480	0.009	920	19110	0.008	610	12740	0.007	355				
	2	17520	0.020	1400	12740	0.018	920	9550	0.016	610	6370	0.014	355				
	3	11680	0.030	1400	8490	0.027	920	6370	0.024	610	4250	0.021	355				
	4	8760	0.040	1400	6370	0.036	920	4780	0.032	610	3180	0.028	355				
	5	7010	0.045	1260	5100	0.041	830	3820	0.036	550	2550	0.032	320				
6	5840	0.050	1170	4250	0.045	770	3180	0.040	510	2120	0.035	295					
8	4380	0.065	1140	3180	0.059	740	2390	0.052	495	1590	0.046	290					
10	3500	0.085	1190	2550	0.077	780	1910	0.068	520	1270	0.060	300					
12	2920	0.100	1170	2120	0.090	760	1590	0.080	510	1060	0.070	295					

INFO

TYPHOON
TA-HTA-4HTATYPHOON
PU-HPUTYPHOON
SUHTYPHOON
ALHTYPHOON
HRCTYPHOON
SUH MINITYPHOON
HL

C-SD-TA

LFTA

SUTA

HSS-HSS/CO
DRILLS

G2

MDTA

HF VH/UP

MEF

ALU

MEX

UH

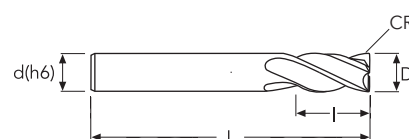
HSS/CO-HSSP
END MILLSCARBIDE
BURRS

UH410

cylindrical shank, 4F, corner radius

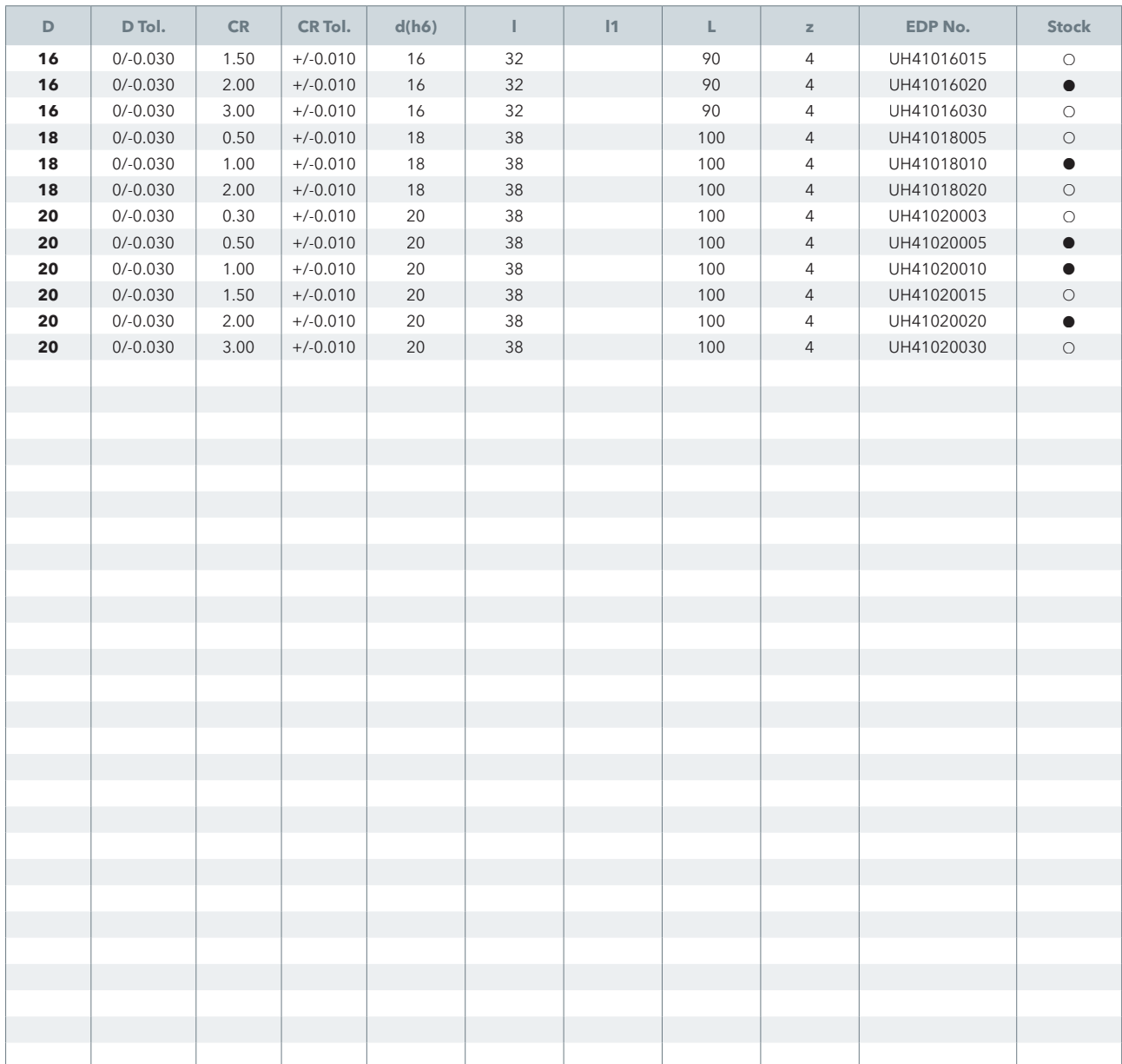


★ 1st choice ☆ suitable



D	D Tol.	CR	CR Tol.	d(h6)	l	l1	L	z	EDP No.	Stock
1	0/-0.020	0.20	+/-0.010	6	3		50	4	UH41001002	●
1.5	0/-0.020	0.20	+/-0.010	6	4.5		50	4	UH41001502	●
2	0/-0.020	0.30	+/-0.010	6	6.5		50	4	UH41002003	●
2.5	0/-0.020	0.30	+/-0.010	6	6.5		50	4	UH41002503	●
2.5	0/-0.020	0.50	+/-0.010	6	6.5		50	4	UH41002505	●
3	0/-0.025	0.20	+/-0.010	6	9		50	4	UH41003002	●
3	0/-0.025	0.30	+/-0.010	6	9		50	4	UH41003003	●
3	0/-0.025	0.50	+/-0.010	6	9		50	4	UH41003005	●
4	0/-0.025	0.30	+/-0.010	6	12		50	4	UH41004003	●
4	0/-0.025	0.50	+/-0.010	6	12		50	4	UH41004005	●
4	0/-0.025	1.00	+/-0.010	6	12		50	4	UH41004010	●
5	0/-0.025	0.30	+/-0.010	6	15		50	4	UH41005003	●
5	0/-0.025	0.50	+/-0.010	6	15		50	4	UH41005005	●
5	0/-0.025	1.00	+/-0.010	6	15		50	4	UH41005010	●
6	0/-0.025	0.30	+/-0.010	6	16		50	4	UH41006003	●
6	0/-0.025	0.50	+/-0.010	6	16		50	4	UH41006005	●
6	0/-0.025	1.00	+/-0.010	6	16		50	4	UH41006010	●
8	0/-0.030	0.30	+/-0.010	8	20		64	4	UH41008003	●
8	0/-0.030	0.50	+/-0.010	8	20		64	4	UH41008005	●
8	0/-0.030	1.00	+/-0.010	8	20		64	4	UH41008010	●
8	0/-0.030	1.50	+/-0.010	8	20		64	4	UH41008015	●
8	0/-0.030	2.00	+/-0.010	8	20		64	4	UH41008020	●
10	0/-0.030	0.30	+/-0.010	10	22		70	4	UH41010003	●
10	0/-0.030	0.50	+/-0.010	10	22		70	4	UH41010005	●
10	0/-0.030	1.00	+/-0.010	10	22		70	4	UH41010010	●
10	0/-0.030	1.50	+/-0.010	10	22		70	4	UH41010015	●
10	0/-0.030	2.00	+/-0.010	10	22		70	4	UH41010020	●
12	0/-0.030	0.30	+/-0.010	12	25		75	4	UH41012003	●
12	0/-0.030	0.50	+/-0.010	12	25		75	4	UH41012005	●
12	0/-0.030	1.00	+/-0.010	12	25		75	4	UH41012010	●
12	0/-0.030	1.50	+/-0.010	12	25		75	4	UH41012015	●
12	0/-0.030	2.00	+/-0.010	12	25		75	4	UH41012020	●
12	0/-0.030	3.00	+/-0.010	12	25		75	4	UH41012030	●
14	0/-0.030	0.50	+/-0.010	14	32		90	4	UH41014005	●
14	0/-0.030	1.00	+/-0.010	14	32		90	4	UH41014010	●
14	0/-0.030	2.00	+/-0.010	14	32		90	4	UH41014020	○
16	0/-0.030	0.30	+/-0.010	16	32		90	4	UH41016003	○
16	0/-0.030	0.50	+/-0.010	16	32		90	4	UH41016005	●
16	0/-0.030	1.00	+/-0.010	16	32		90	4	UH41016010	●

CR

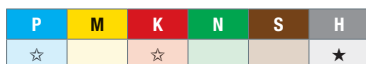


CUTTING PARAMETERS

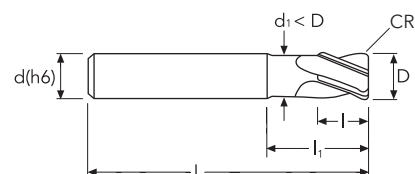
UH410

SIDE MILLING

	Material Group ISO 513	P3P4P5K2K3					P6K4H1H4H5					H2			H3		
	Hardness/Rm	< 45 HRC					45 - 55 HRC					55 - 60 HRC			60 - 65 HRC		
	ap x ae	D x 0.05D					D x 0.05D					D x 0.05D			D x 0.05D		
	Vc (m/min)	90-130					60-100					50-70			30-50		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)				
1	35030	0.010	1400	25480	0.009	920	19110	0.008	575	12740	0.007	330					
2	17520	0.018	1260	12740	0.016	830	9550	0.014	550	6370	0.013	320					
3	11680	0.027	1260	8490	0.024	830	6370	0.022	550	4250	0.019	320					
4	8760	0.036	1260	6370	0.032	830	4780	0.029	550	3180	0.025	320					
5	7010	0.041	1140	5100	0.036	740	3820	0.032	495	2550	0.028	290					
6	5840	0.045	1050	4250	0.041	690	3180	0.036	460	2120	0.032	265					
8	4380	0.059	1020	3180	0.053	670	2390	0.047	445	1590	0.041	260					
10	3500	0.077	1070	2550	0.069	700	1910	0.061	470	1270	0.054	270					
12	2920	0.090	1050	2120	0.081	690	1590	0.072	460	1060	0.063	265					
14	2500	0.102	1020	1820	0.092	670	1360	0.082	445	910	0.071	260					
16	2190	0.114	1000	1590	0.103	650	1190	0.091	435	800	0.080	255					
18	1950	0.126	980	1420	0.113	640	1060	0.101	425	710	0.088	250					
20	1750	0.138	970	1270	0.124	630	960	0.110	425	640	0.097	245					



SIDE MILLING



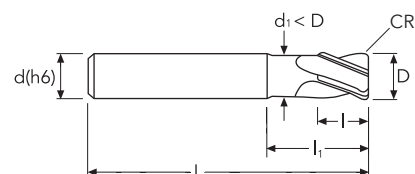
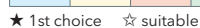
INFO
TYPHOON TA-HTA-4HTA
TYPHOON PU-HPU
TYPHOON SUH
TYPHOON ALH
TYPHOON HRC
TYPHOON SUH MINI
TYPHOON HL
C-SD-TA
LFTA
SUTA
HSS-HSS/CO DRILLS
G2
MDTA
HF VH/UP
MEF
ALU
MEX
UH
HSS/CO-HSSP END MILLS
CARBIDE BURRS

CUTTING PARAMETERS

UH411

SIDE MILLING	Material Group ISO 513	P3P4P5K2K3				P6K4H1H4H5					H2			H3		
	Hardness/Rm	< 45 HRC				45 - 55 HRC					55 - 60 HRC			60 - 65 HRC		
	ap x ae	D x 0.05D				D x 0.05D					D x 0.05D			D x 0.05D		
	Vc (m/min)	90-130				60-100					50-70			30-50		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)			
	3	11680	0.027	1260	8490	0.024	830	6370	0.022	550	4250	0.019	320			
	4	8760	0.036	1260	6370	0.032	830	4780	0.029	550	3180	0.025	320			
	5	7010	0.041	1140	5100	0.036	740	3820	0.032	495	2550	0.028	290			
6	5840	0.045	1050	4250	0.041	690	3180	0.036	460	2120	0.032	265				
8	4380	0.059	1020	3180	0.053	670	2390	0.047	445	1590	0.041	260				
10	3500	0.077	1070	2550	0.069	700	1910	0.061	470	1270	0.054	270				
12	2920	0.090	1050	2120	0.081	690	1590	0.072	460	1060	0.063	265				

cylindrical shank, 4F, reduced neck, corner radius, long



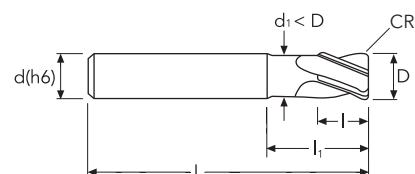
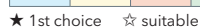
INFO
TYPHOON TA-HTA-4HTA
TYPHOON PU-HPU
TYPHOON SUH
TYPHOON ALH
TYPHOON HRC
TYPHOON SUH MINI
TYPHOON HL
C-SD-TA
LFTA
SUTA
HSS-HSS/CO DRILLS
G2
MDTA
HF VH/UP
MEF
ALU
MEX
UH
HSS/CO-HSSP END MILLS
CARBIDE BURRS

CUTTING PARAMETERS

UH412

	Material Group ISO 513	P3P4P5K2K3			P6K4H1H4H5			H2			H3		
	Hardness/Rm	< 45 HRC			45 - 55 HRC			55 - 60 HRC			60 - 65 HRC		
	ap x ae	D x 0.05D			D x 0.05D			D x 0.05D			D x 0.05D		
	Vc (m/min)	80-120			60-100			50-70			30-50		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
	2	15920	0.016	1030	12740	0.015	740	9550	0.013	495	6370	0.011	290
	3	10620	0.024	1030	8490	0.022	740	6370	0.019	495	4250	0.017	290
	4	7960	0.032	1030	6370	0.029	740	4780	0.026	495	3180	0.023	290
	5	6370	0.036	930	5100	0.033	670	3820	0.029	445	2550	0.026	260
	6	5310	0.041	860	4250	0.036	620	3180	0.032	410	2120	0.028	240
8	3980	0.053	840	3180	0.047	600	2390	0.042	405	1590	0.037	235	
10	3180	0.069	880	2550	0.062	630	1910	0.055	420	1270	0.048	245	
12	2650	0.081	860	2120	0.073	620	1590	0.065	410	1060	0.057	240	

cylindrical shank, 4F, reduced neck, corner radius, long



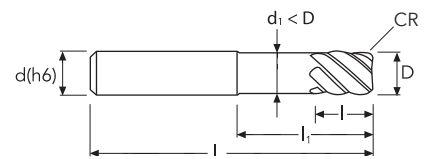
INFO
TYPHOON TA-HTA-4HTA
TYPHOON PU-HPU
TYPHOON SUH
TYPHOON ALH
TYPHOON HRC
TYPHOON SUH MINI
TYPHOON HL
C-SD-TA
LFTA
SUTA
HSS-HSS/CO DRILLS
G2
MDTA
HF VH/UP
MEF
ALU
MEX
UH
HSS/CO-HSSP END MILLS
CARBIDE BURRS

CUTTING PARAMETERS

UH413

	Material Group ISO 513	P3 P4 P5 K2 K3			P6 K4 H1 H4 H5			H2			H3		
	Hardness/Rm	< 45 HRC			45 - 55 HRC			55 - 60 HRC			60 - 65 HRC		
	ap x ae	D x 0.05D			D x 0.05D			D x 0.05D			D x 0.05D		
	Vc (m/min)	70-110			60-80			40-60			30-50		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
	6	4780	0.041	770	3720	0.036	540	2650	0.032	345	2120	0.028	240
	8	3580	0.053	750	2790	0.047	530	1990	0.042	335	1590	0.037	235
	10	2870	0.069	790	2230	0.062	550	1590	0.055	350	1270	0.048	245
	12	2390	0.081	770	1860	0.073	540	1330	0.065	345	1060	0.057	240
	16	1790	0.095	680	1390	0.086	480	1000	0.076	305	800	0.067	215

cylindrical shank, multi flute, reduced neck, corner radius



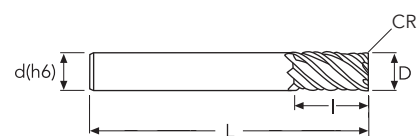
INFO
TYPHOON TA-HTA-4HTA
TYPHOON PU-HPU
TYPHOON SUH
TYPHOON ALH
TYPHOON HRC
TYPHOON SUH MINI
TYPHOON HL
C-SD-TA
LFTA
SUTA
HSS-HSS/CO DRILLS
G2
MDTA
HF VH/UP
MEF
ALU
MEX
UH
HSS/CO-HSSP END MILLS
CARBIDE BURRS

CUTTING PARAMETERS

UH610R

SIDE MILLING	Material Group ISO 513	P3P4P5K2K3			P6K4H1H4H5			H2			H3		
	Hardness/Rm	< 45 HRC			45 - 55 HRC			55 - 60 HRC			60 - 65 HRC		
	ap x ae	D x 0.1D			D x 0.05D			D x 0.05D			D x 0.05D		
	Vc (m/min)	140-180			100-140			70-110			60-80		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
	6	8490	0.018	920	6370	0.016	620	4780	0.014	410	3720	0.013	280
	8	6370	0.028	1050	4780	0.025	710	3580	0.022	470	2790	0.019	320
10	5100	0.034	1030	3820	0.030	690	2870	0.027	460	2230	0.024	310	
12	4250	0.041	1040	3180	0.037	700	2390	0.033	470	1860	0.029	320	

cylindrical shank, multi flute, long, corner radius



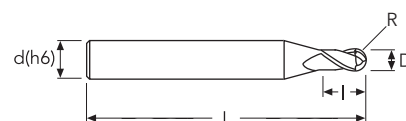
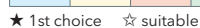
INFO
TYPHOON TA-HTA-4HTA
TYPHOON PU-HPU
TYPHOON SUH
TYPHOON ALH
TYPHOON HRC
TYPHOON SUH MINI
TYPHOON HL
C-SD-TA
LFTA
SUTA
HSS-HSS/CO DRILLS
G2
MDTA
HF VH/UP
MEF
ALU
MEX
UH
HSS/CO-HSSP END MILLS
CARBIDE BURRS

CUTTING PARAMETERS

UH611R

SIDE MILLING	Material Group ISO 513	P3P4P5K2K3					P6K4H1H4H5					H2			H3		
	Hardness/Rm	< 45 HRC					45 - 55 HRC					55 - 60 HRC			60 - 65 HRC		
	ap x ae	1.5D x 0.05D					1.5D x 0.05D					1.5D x 0.05D			1.5D x 0.05D		
	Vc (m/min)	110-150					90-130					60-80			40-60		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)				
	6	6900	0.015	630	5840	0.014	480	3720	0.012	270	2650	0.011	170				
	8	5180	0.023	730	4380	0.021	550	2790	0.019	310	1990	0.016	200				
	10	4140	0.029	710	3500	0.026	540	2230	0.023	310	1590	0.020	190				
	12	3450	0.035	720	2920	0.031	550	1860	0.028	310	1330	0.024	190				
	14	2960	0.041	720	2500	0.037	550	1590	0.033	310	1140	0.029	200				
16	2590	0.048	740	2190	0.043	570	1390	0.038	320	1000	0.034	200					
18	2300	0.056	770	1950	0.050	590	1240	0.045	330	880	0.039	210					
20	2070	0.066	820	1750	0.060	630	1110	0.053	350	800	0.046	220					

cylindrical shank, 2 flutes ball nose, miniature

[illegible]

● stock standard ○ non-standard stock ▽ stock exhaustion

INFO

TYPHOON
TA-HTA-4HTA

TYPHOON
PU-HPU

TYPHOON
SUH

TYPHOON
ALH

TYPHOON
HRC

TYPHOON
SUH MINI

TYPHOON
HL

C-SD-TA

LFTA

SUTA

HSS-HSS/CO
DRILLS

G2

MDTA

HF VH/UP

MEF

ALU

MEX

UH

HSS/CO-HSSP
END MILLS

CARBIDE
BURRS

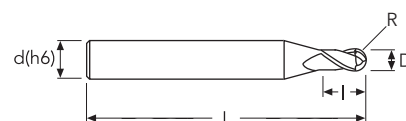
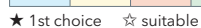
CUTTING PARAMETERS

UHMB204

	Material Group ISO 513	P3P4P5K2K3					P6K4H1H4H5					H2			H3		
	Hardness/Rm	< 45 HRC					45 - 55 HRC					55 - 60 HRC			60 - 65 HRC		
	ap x ae	0.05D x 0.1D					0.05D x 0.1D					0.05D x 0.1D			0.05D x 0.1D		
	Vc (m/min)	80-120					60-100					50-70			30-50		
	D (mm)	D (eff.) (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)			
	0.1	0.04	40000	0.004	320	40000	0.004	290	40000	0.003	255	40000	0.003	225			
	0.2	0.09	40000	0.006	480	40000	0.005	430	40000	0.005	385	40000	0.004	335			
	0.3	0.13	40000	0.008	640	40000	0.007	580	40000	0.006	510	40000	0.006	450			
	0.4	0.17	40000	0.010	800	40000	0.009	720	40000	0.008	640	31850	0.007	445			
	0.5	0.22	40000	0.012	960	40000	0.011	860	38220	0.010	735	25480	0.008	430			
	0.6	0.26	40000	0.015	1200	40000	0.014	1080	31850	0.012	765	21230	0.011	445			
	0.7	0.31	40000	0.018	1440	36400	0.016	1180	27300	0.014	785	18200	0.013	460			
0.8	0.35	39810	0.020	1590	31850	0.018	1150	23890	0.016	765	15920	0.014	445				
0.9	0.39	35390	0.023	1630	28310	0.021	1170	21230	0.018	780	14150	0.016	455				

	α	n (rpm)	Vf (mm/min)
	15°	x 1.1	x 1.1

cylindrical shank, 2 flutes ball nose, miniature, 6 mm. shank

[illegible]

● stock standard ○ non-standard stock ▽ stock exhaustion

INFO
TYPHOON TA-HTA-4HTA
TYPHOON PU-HPU
TYPHOON SUH
TYPHOON ALH
TYPHOON HRC
TYPHOON SUH MINI
TYPHOON HL
C-SD-TA
LFTA
SUTA
HSS-HSS/CO DRILLS
G2
MDTA
HF VH/UP
MEF
ALU
MEX
UH
HSS/CO-HSSP END MILLS
CARBIDE BURRS

CUTTING PARAMETERS

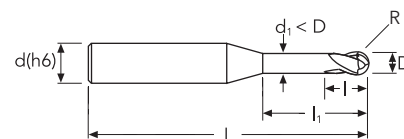
UHMB206

	Material Group ISO 513	P3P4P5K2K3					P6K4H1H4H5					H2			H3		
	Hardness/Rm	< 45 HRC					45 - 55 HRC					55 - 60 HRC			60 - 65 HRC		
	ap x ae	0.05D x 0.2D					0.05D x 0.2D					0.05D x 0.2D			0.05D x 0.2D		
	Vc (m/min)	80-120					60-100					50-70			30-50		
	D (mm)	D (eff.) (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)			
	0.4	0.17	40000	0.010	800	40000	0.009	720	40000	0.008	640	31850	0.007	445			
0.5	0.22	40000	0.012	960	40000	0.011	860	38220	0.010	735	25480	0.008	430				
0.6	0.26	40000	0.015	1200	40000	0.014	1080	31850	0.012	765	21230	0.011	445				
0.8	0.35	39810	0.020	1590	31850	0.018	1150	23890	0.016	765	15920	0.014	445				

	α	n (rpm)	Vf (mm/min)
	15°	x 1.1	x 1.1

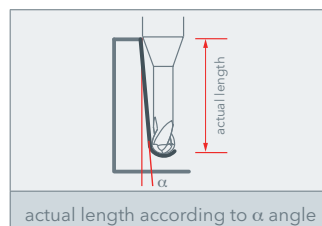
UHLNB2

cylindrical shank, 2 flutes ball nose, extended and reduced neck, miniature



P	M	K	N	S	H
☆		☆			★

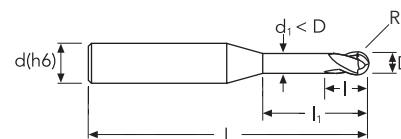
★ 1st choice ☆ suitable



D	D Tol.	R	R Tol.	d(h6)	l	l1	d1	L	z	30°	1°	1°30'	2°	3°	EDP No.	Stock
0.2	0/-0.020	0.10	0/-0.020	4	0.2	0.5	0.15	50	2	0.57	0.58	0.60	0.62	0.66	UHLNB2002005	●
0.2	0/-0.020	0.10	0/-0.020	4	0.2	1	0.15	50	2	1.08	1.12	1.15	1.19	1.27	UHLNB200201	●
0.2	0/-0.020	0.10	0/-0.020	4	0.2	1.5	0.15	50	2	1.60	1.65	1.71	1.76	1.89	UHLNB2002015	●
0.3	0/-0.020	0.15	0/-0.020	4	0.3	1	0.25	50	2	1.08	1.11	1.15	1.18	1.26	UHLNB200301	●
0.3	0/-0.020	0.15	0/-0.020	4	0.3	2	0.25	50	2	2.12	2.18	2.25	2.33	2.49	UHLNB200302	●
0.3	0/-0.020	0.15	0/-0.020	4	0.3	3	0.25	50	2	3.15	3.25	3.36	3.48	3.73	UHLNB200303	●
0.4	0/-0.020	0.20	0/-0.020	4	0.4	1	0.35	50	2	1.08	1.11	1.14	1.18	1.25	UHLNB200401	●
0.4	0/-0.020	0.20	0/-0.020	4	0.4	2	0.35	50	2	2.11	2.18	2.25	2.32	2.48	UHLNB200402	●
0.4	0/-0.020	0.20	0/-0.020	4	0.4	3	0.35	50	2	3.15	3.25	3.36	3.47	3.72	UHLNB200403	●
0.4	0/-0.020	0.20	0/-0.020	4	0.4	4	0.35	50	2	4.18	4.32	4.46	4.62	4.95	UHLNB200404	●
0.4	0/-0.020	0.20	0/-0.020	4	0.4	5	0.35	50	2	5.21	5.39	5.57	5.77	6.18	UHLNB200405	●
0.5	0/-0.020	0.25	0/-0.020	4	0.4	2	0.45	50	2	2.15	2.22	2.29	2.36	2.52	UHLNB200502	●
0.5	0/-0.020	0.25	0/-0.020	4	0.4	3	0.45	50	2	3.18	3.29	3.39	3.51	3.75	UHLNB200503	●
0.5	0/-0.020	0.25	0/-0.020	4	0.4	4	0.45	50	2	4.22	4.35	4.50	4.65	4.98	UHLNB200504	●
0.5	0/-0.020	0.25	0/-0.020	4	0.4	5	0.45	50	2	5.25	5.42	5.61	5.80	6.22	UHLNB200505	●
0.5	0/-0.020	0.25	0/-0.020	4	0.4	6	0.45	50	2	6.28	6.49	6.71	6.95	7.45	UHLNB200506	●
0.5	0/-0.020	0.25	0/-0.020	4	0.4	8	0.45	50	2	8.35	8.63	8.93	9.24	9.92	UHLNB200508	●
0.6	0/-0.020	0.30	0/-0.020	4	0.5	2	0.55	50	2	2.15	2.21	2.28	2.35	2.50	UHLNB200602	●
0.6	0/-0.020	0.30	0/-0.020	4	0.5	3	0.55	50	2	3.18	3.28	3.39	3.50	3.74	UHLNB200603	●
0.6	0/-0.020	0.30	0/-0.020	4	0.5	4	0.55	50	2	4.22	4.35	4.49	4.65	4.97	UHLNB200604	●
0.6	0/-0.020	0.30	0/-0.020	4	0.5	5	0.55	50	2	5.25	5.42	5.60	5.79	6.21	UHLNB200605	●
0.6	0/-0.020	0.30	0/-0.020	4	0.5	6	0.55	50	2	6.28	6.49	6.71	6.94	7.44	UHLNB200606	●
0.6	0/-0.020	0.30	0/-0.020	4	0.5	8	0.55	50	2	8.35	8.63	8.92	9.23	9.91	UHLNB200608	●
0.8	0/-0.020	0.40	0/-0.020	4	0.6	2	0.75	50	2	2.15	2.21	2.27	2.34	2.48	UHLNB200802	●
0.8	0/-0.020	0.40	0/-0.020	4	0.6	4	0.75	50	2	4.21	4.34	4.48	4.63	4.95	UHLNB200804	●
0.8	0/-0.020	0.40	0/-0.020	4	0.6	6	0.75	50	2	6.28	6.48	6.70	6.93	7.42	UHLNB200806	●
0.8	0/-0.020	0.40	0/-0.020	4	0.6	8	0.75	50	2	8.35	8.62	8.91	9.22	9.88	UHLNB200808	●
0.8	0/-0.020	0.40	0/-0.020	4	0.6	10	0.75	50	2	10.41	10.76	11.13	11.51	12.35	UHLNB200810	●
1	0/-0.020	0.50	0/-0.020	4	0.8	3	0.95	50	2	3.27	3.37	3.47	3.57	3.80	UHLNB201003	●
1	0/-0.020	0.50	0/-0.020	4	0.8	4	0.95	50	2	4.31	4.44	4.58	4.72	5.04	UHLNB201004	●
1	0/-0.020	0.50	0/-0.020	4	0.8	5	0.95	50	2	5.34	5.51	5.68	5.87	6.27	UHLNB201005	●
1	0/-0.020	0.50	0/-0.020	4	0.8	6	0.95	50	2	6.37	6.58	6.79	7.02	7.50	UHLNB201006	●
1	0/-0.020	0.50	0/-0.020	4	0.8	8	0.95	50	2	8.44	8.71	9.00	9.31	9.97	UHLNB201008	●
1	0/-0.020	0.50	0/-0.020	4	0.8	10	0.95	50	2	10.51	10.85	11.22	11.61	12.44	UHLNB201010	●
1	0/-0.020	0.50	0/-0.020	4	0.8	12	0.95	50	2	12.57	12.99	13.43	13.90	14.91	UHLNB201012	●
1	0/-0.020	0.50	0/-0.020	4	0.8	14	0.95	50	2	14.64	15.13	15.65	16.19	17.37	UHLNB201014	●
1	0/-0.020	0.50	0/-0.020	4	0.8	16	0.95	50	2	16.71	17.27	17.86	18.49	19.84	UHLNB201016	●
1	0/-0.020	0.50	0/-0.020	4	0.8	20	0.95	60	2	20.84	21.55	22.29	23.08	24.78	UHLNB201020	●
1.2	0/-0.020	0.60	0/-0.020	4	1	6	1.15	50	2	6.37	6.57	6.78	7.00	7.48	UHLNB201206	●

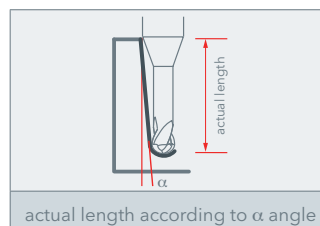
UHLNB2

cylindrical shank, 2 flutes ball nose, extended and reduced neck, miniature



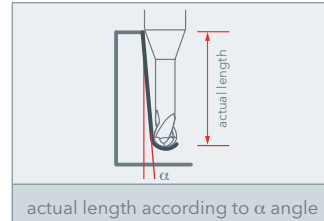
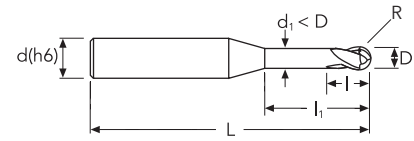
P	M	K	N	S	H
☆		☆			★

★ 1st choice ☆ suitable



D	D Tol.	R	R Tol.	d(h6)	l	l1	d1	L	z	30°	1°	1°30'	2°	3°	EDP No.	Stock
1.2	0/-0.020	0.60	0/-0.020	4	1	8	1.15	50	2	8.44	8.71	8.99	9.30	9.95	UHLNB201208	●
1.2	0/-0.020	0.60	0/-0.020	4	1	10	1.15	50	2	10.50	10.85	11.21	11.59	12.42	UHLNB201210	●
1.2	0/-0.020	0.60	0/-0.020	4	1	12	1.15	50	2	12.57	12.98	13.42	13.89	14.88	UHLNB201212	●
1.4	0/-0.020	0.70	0/-0.020	4	1.1	8	1.35	50	2	8.43	8.70	8.98	9.28	9.93	UHLNB201408	●
1.4	0/-0.020	0.70	0/-0.020	4	1.1	12	1.35	50	2	12.57	12.98	13.41	13.87	14.86	UHLNB201412	●
1.4	0/-0.020	0.70	0/-0.020	4	1.1	16	1.35	50	2	16.70	17.26	17.84	18.46	19.80	UHLNB201416	●
1.5	0/-0.020	0.75	0/-0.020	4	1.2	8	1.45	50	2	8.43	8.70	8.98	9.27	9.91	UHLNB201508	●
1.5	0/-0.020	0.75	0/-0.020	4	1.2	12	1.45	50	2	12.57	12.97	13.41	13.86	14.85	UHLNB201512	●
1.5	0/-0.020	0.75	0/-0.020	4	1.2	16	1.45	50	2	16.70	17.25	17.84	18.45	19.78	UHLNB201516	●
1.5	0/-0.020	0.75	0/-0.020	4	1.2	18	1.45	60	2	18.77	19.39	20.05	20.75	22.25	UHLNB201518	●
1.5	0/-0.020	0.75	0/-0.020	4	1.2	20	1.45	60	2	20.84	21.53	22.26	23.04	24.72	UHLNB201520	●
1.6	0/-0.020	0.80	0/-0.020	4	1.3	8	1.55	50	2	8.43	8.69	8.97	9.27	9.90	UHLNB201608	●
1.6	0/-0.020	0.80	0/-0.020	4	1.3	12	1.55	50	2	12.56	12.97	13.40	13.86	14.84	UHLNB201612	●
1.6	0/-0.020	0.80	0/-0.020	4	1.3	16	1.55	50	2	16.70	17.25	17.83	18.45	19.77	UHLNB201616	●
1.6	0/-0.020	0.80	0/-0.020	4	1.3	20	1.55	60	2	20.83	21.53	22.26	23.03	-	UHLNB201620	●
1.8	0/-0.020	0.90	0/-0.020	4	1.4	8	1.75	50	2	8.43	8.69	8.96	9.25	9.88	UHLNB201808	●
1.8	0/-0.020	0.90	0/-0.020	4	1.4	12	1.75	50	2	12.56	12.96	13.39	13.84	14.81	UHLNB201812	●
1.8	0/-0.020	0.90	0/-0.020	4	1.4	16	1.75	50	2	16.70	17.24	17.82	18.43	19.75	UHLNB201816	●
1.8	0/-0.020	0.90	0/-0.020	4	1.4	20	1.75	60	2	20.83	21.52	22.25	23.02	-	UHLNB201820	●
2	0/-0.020	1.00	0/-0.020	4	1.6	4	1.95	50	2	4.29	4.40	4.52	4.65	4.92	UHLNB202004	●
2	0/-0.020	1.00	0/-0.020	4	1.6	6	1.95	50	2	6.36	6.54	6.74	6.94	7.39	UHLNB202006	●
2	0/-0.020	1.00	0/-0.020	4	1.6	8	1.95	50	2	8.42	8.68	8.95	9.24	9.86	UHLNB202008	●
2	0/-0.020	1.00	0/-0.020	4	1.6	10	1.95	50	2	10.49	10.82	11.17	11.53	12.32	UHLNB202010	●
2	0/-0.020	1.00	0/-0.020	4	1.6	12	1.95	50	2	12.56	12.96	13.38	13.83	14.79	UHLNB202012	●
2	0/-0.020	1.00	0/-0.020	4	1.6	14	1.95	50	2	14.62	15.10	15.59	16.12	17.26	UHLNB202014	●
2	0/-0.020	1.00	0/-0.020	4	1.6	16	1.95	50	2	16.69	17.23	17.81	18.42	19.73	UHLNB202016	●
2	0/-0.020	1.00	0/-0.020	4	1.6	18	1.95	60	2	18.76	19.37	20.02	20.71	-	UHLNB202018	●
2	0/-0.020	1.00	0/-0.020	4	1.6	20	1.95	60	2	20.83	21.51	22.24	23.00	-	UHLNB202020	●
2	0/-0.020	1.00	0/-0.020	4	1.6	22	1.95	60	2	22.89	23.65	24.45	25.30	-	UHLNB202022	●
2	0/-0.020	1.00	0/-0.020	4	1.6	25	1.95	75	2	25.99	26.86	27.77	28.74	-	UHLNB202025	●
2	0/-0.020	1.00	0/-0.020	4	1.6	30	1.95	75	2	31.16	32.21	33.31	-	-	UHLNB202030	●
3	0/-0.025	1.50	0/-0.020	6	2.4	8	2.85	50	2	8.60	8.84	9.10	9.37	9.96	UHLNB203008	●
3	0/-0.025	1.50	0/-0.020	6	2.4	10	2.85	50	2	10.67	10.98	11.32	11.67	12.43	UHLNB203010	●
3	0/-0.025	1.50	0/-0.020	6	2.4	12	2.85	50	2	12.73	13.12	13.53	13.96	14.90	UHLNB203012	●
3	0/-0.025	1.50	0/-0.020	6	2.4	16	2.85	60	2	16.87	17.40	17.96	18.55	19.83	UHLNB203016	●
3	0/-0.025	1.50	0/-0.020	6	2.4	20	2.85	60	2	21.00	21.68	22.39	23.14	24.77	UHLNB203020	●
3	0/-0.025	1.50	0/-0.020	6	2.4	25	2.85	75	2	26.17	27.02	27.93	28.88	-	UHLNB203025	●
3	0/-0.025	1.50	0/-0.020	6	2.4	30	2.85	75	2	31.34	32.37	33.46	34.62	-	UHLNB203030	●
3	0/-0.025	1.50	0/-0.020	6	2.4	35	2.85	75	2	36.51	37.72	39.00	40.35	-	UHLNB203035	●

The image shows a long, thin, cylindrical metal rod, likely a probe or needle. It has a wider base and a circular inset showing a magnified view of the tip, which appears to be a small, rounded, metallic structure.



INFO
TYPHOON TA-HTA-4HTA
TYPHOON PU-HPU
TYPHOON SUH
TYPHOON ALH
TYPHOON HRC
TYPHOON SUH MINI
TYPHOON HL
C-SD-TA
LFTA
SUTA
HSS-HSS/CO DRILLS
G2
MDTA
HF VH/UP
MEF
ALU
MEX
UH
HSS/CO-HSSP END MILLS
CARBIDE BURRS

CUTTING PARAMETERS

UHLNB2

ROUND RIB	Material Group ISO 513				P3 P4 P5 K2 K3					P6 K4 H1 H4 H5					H2			H3		
	Hardness/Rm				< 45 HRC					45 - 55 HRC					55 - 60 HRC			60 - 65 HRC		
	ap x ae				ap x 0.2D					ap x 0.2D					ap x 0.2D			ap x 0.2D		
	Vc (m/min)				140-160					110-130					80-100			50-70		
	D (mm)	l1 (mm)	ap (mm)	D (eff.) (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	
0.2	≤ 6D	0.01	0.09		40000	0.008	640	40000	0.007	580	40000	0.006	510	40000	0.005	415	40000	0.005	365	
	≤ 8D	0.01	0.08		40000	0.007	580	40000	0.006	470	40000	0.005	415	40000	0.005	415	40000	0.005	365	
	≤ 10D	0.01	0.07		40000	0.006	510	40000	0.005	370	40000	0.004	330	40000	0.004	330	40000	0.004	285	
0.3	≤ 6D	0.02	0.13		40000	0.010	800	40000	0.009	720	40000	0.008	640	40000	0.007	560	40000	0.007	560	
	≤ 8D	0.01	0.12		40000	0.009	720	40000	0.007	580	40000	0.006	520	40000	0.006	520	40000	0.006	455	
	≤ 10D	0.01	0.11		40000	0.008	640	40000	0.006	460	40000	0.005	410	40000	0.004	360	40000	0.004	360	
0.4	≤ 6D	0.02	0.17		40000	0.013	1040	40000	0.012	940	40000	0.010	830	40000	0.009	730	40000	0.009	730	
	≤ 8D	0.02	0.16		40000	0.012	940	40000	0.009	760	40000	0.008	675	40000	0.007	590	40000	0.007	590	
	≤ 10D	0.01	0.15		40000	0.010	830	40000	0.007	600	40000	0.007	530	38220	0.006	445	38220	0.006	445	
0.5	≤ 6D	0.03	0.22		40000	0.017	1360	40000	0.015	1220	40000	0.014	1090	40000	0.014	1090	38220	0.012	910	
	≤ 8D	0.02	0.20		40000	0.015	1220	40000	0.012	990	40000	0.011	880	34390	0.010	665	34390	0.010	665	
	≤ 10D	0.02	0.18		40000	0.014	1090	40000	0.010	780	40000	0.009	695	30570	0.008	465	30570	0.008	465	
0.6	≤ 6D	0.03	0.26		40000	0.021	1680	40000	0.019	1510	40000	0.017	1345	31850	0.015	935	31850	0.015	935	
	≤ 8D	0.03	0.24		40000	0.019	1510	40000	0.015	1220	40000	0.014	1090	28660	0.012	685	28660	0.012	685	
	≤ 10D	0.02	0.22		40000	0.017	1340	40000	0.012	970	38220	0.011	820	25480	0.009	480	25480	0.009	480	
0.8	≤ 6D	0.04	0.35		40000	0.025	2000	40000	0.023	1800	35830	0.020	1435	23890	0.018	835	23890	0.018	835	
	≤ 8D	0.03	0.32		40000	0.023	1800	40000	0.018	1460	32250	0.016	1045	21500	0.014	610	21500	0.014	610	
	≤ 10D	0.03	0.29		40000	0.020	1600	38220	0.014	1100	28660	0.013	735	19110	0.011	430	19110	0.011	430	
1	≤ 6D	0.05	0.44		40000	0.030	2400	38220	0.027	2060	28660	0.024	1375	19110	0.021	805	19110	0.021	805	
	≤ 8D	0.04	0.40		40000	0.027	2160	34390	0.022	1500	25800	0.019	1005	17200	0.017	585	17200	0.017	585	
	≤ 10D	0.04	0.37		38220	0.024	1830	30570	0.017	1060	22930	0.015	705	15290	0.013	410	15290	0.013	410	
1.2	≤ 12D	0.03	0.33		33440	0.021	1400	26750	0.013	710	20060	0.012	470	13380	0.010	275	13380	0.010	275	
	> 12D	0.02	0.30		28660	0.018	1030	22930	0.010	450	17200	0.009	295	11460	0.008	175	11460	0.008	175	
	≤ 6D	0.06	0.52		39810	0.035	2790	31850	0.032	2010	23890	0.028	1340	15920	0.025	780	15920	0.025	780	
1.5	≤ 8D	0.05	0.48		35830	0.032	2260	28660	0.026	1460	21500	0.023	975	14330	0.020	570	14330	0.020	570	
	≤ 10D	0.04	0.44		31850	0.028	1780	25480	0.020	1030	19110	0.018	685	12740	0.016	400	12740	0.016	400	
	≤ 12D	0.03	0.39		27870	0.025	1370	22290	0.015	690	16720	0.014	460	11150	0.012	270	11150	0.012	270	
2	> 12D	0.03	0.36		23890	0.021	1000	19110	0.011	430	14330	0.010	290	9550	0.009	170	9550	0.009	170	
	≤ 6D	0.08	0.65		31850	0.045	2870	25480	0.041	2060	19110	0.036	1375	12740	0.032	805	12740	0.032	805	
	≤ 8D	0.06	0.61		28660	0.041	2320	22930	0.033	1500	17200	0.029	1005	11460	0.026	585	11460	0.026	585	
2.5	≤ 10D	0.05	0.55		25480	0.036	1830	20380	0.026	1060	15290	0.023	705	10190	0.020	410	10190	0.020	410	
	≤ 12D	0.04	0.49		22290	0.032	1400	17830	0.020	710	13380	0.018	470	8920	0.015	275	8920	0.015	275	
	> 12D	0.03	0.44		19110	0.027	1030	15290	0.015	450	11460	0.013	295	7640	0.011	175	7640	0.011	175	
3	≤ 6D	0.10	0.87		23890	0.060	2870	19110	0.054	2060	14330	0.048	1375	9550	0.042	800	9550	0.042	800	
	≤ 8D	0.09	0.81		21500	0.054	2320	17200	0.044	1500	12900	0.039	1005	8600	0.034	585	8600	0.034	585	
	≤ 10D	0.07	0.74		19110	0.048	1830	15290	0.035	1060	11460	0.031	705	7640	0.027	410	7640	0.027	410	
3.5	≤ 12D	0.06	0.65		16720	0.042	1400	13380	0.026	710	10030	0.024	470	6690	0.021	275	6690	0.021	275	
	> 12D	0.05	0.59		14330	0.036	1030	11460	0.019	450	8600	0.017	295	5730	0.015	175	5730	0.015	175	
	≤ 6D	0.13	1.09		19110	0.060	2290	15290	0.054	1650	11460	0.048	1100	7640	0.042	640	7640	0.042	640	
4	≤ 8D	0.11	1.01		17200	0.054	1860	13760	0.044	1200	10320	0.039	800	6880	0.034	470	6880	0.034	470	
	≤ 10D	0.09	0.92		15290	0.048	1470	12230	0.035	850	9170	0.031	565	6110	0.027	330	6110	0.027	330	
	≤ 12D	0.07	0.82		13380	0.042	1120	10700	0.026	570	8030	0.024	380	5350	0.021	220	5350	0.021	220	
4.5	> 12D	0.06	0.74		11460	0.036	830	9170	0.019	360	6880	0.017	240	4590	0.015	140	4590	0.015	140	
	≤ 6D	0.15	1.31		15920	0.075	2390	12740	0.068	1720	9550	0.060	1145	6370	0.053	670	6370	0.053	670	
	≤ 8D	0.13	1.21		14330	0.068	1930	11460	0.055	1250	8600	0.049	835	5730	0.043	485	5730	0.043	485	
5	≤ 10D	0.11	1.10		12740	0.060	1530	10190	0.043	880	7640	0.038	585	5100	0.034	345	5100	0.034	345	
	≤ 12D	0.08	0.98		11150	0.053	1170	8920	0.033	590	6690	0.029	395	4460	0.026	230	4460	0.026	230	
	> 12D	0.07	0.89		9550	0.045	860	7640	0.024	370	5730	0.022	250	3820	0.019	145	3820	0.019	145	

	α	n (rpm)	Vf (mm/min)
	45°	x 1.65	x 1.65
	30°	x 1.30	x 1.30
	15°	x 1.15	x 1.15

CUTTING PARAMETERS

UHLNB2

	Material Group ISO 513				P3 P4 P5 K2 K3					P6 K4 H1 H4 H5					H2			H3		
	Hardness/Rm				< 45 HRC					45 - 55 HRC					55 - 60 HRC			60 - 65 HRC		
	ap x ae				ap x 0.2D					ap x 0.2D					ap x 0.2D			ap x 0.2D		
	Vc				140-160					110-130					80-100			50-70		
	D (mm)	l1 (mm)	ap (mm)	D (eff.) (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)				
	4				11940	0.095	2270	9550	0.086	1630	7170	0.076	1090	4780	0.067	635				
≤ 6D				0.20	1.74	10750	0.086	1840	8600	0.069	1190	6450	0.062	795	4300	0.054	465			
≤ 8D				0.17	1.61	9550	0.076	1450	7640	0.055	840	5730	0.049	555	3820	0.043	325			
≤ 10D				0.14	1.47	8360	0.067	1110	6690	0.042	560	5020	0.037	375	3340	0.033	220			
≤ 12D				0.11	1.31	7170	0.057	820	5730	0.031	350	4300	0.027	235	2870	0.024	135			
> 12D				0.09	1.19															

	α	n (rpm)	Vf (mm/min)
	45°	x 1.65	x 1.65
	30°	x 1.30	x 1.30
	15°	x 1.15	x 1.15

INFO

TYPHOON
TA-HTA-4HTATYPHOON
PU-HPJTYPHOON
SUHTYPHOON
ALHTYPHOON
HRCTYPHOON
SUH MINITYPHOON
HL

C-SD-TA

LFTA

SUTA

HSS-HSS/CO
DRILLS

G2

MDTA

HF VH/UP

MEF

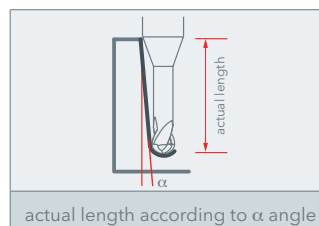
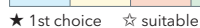
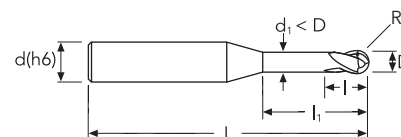
ALU

MEX

UH

HSS/CO-HSSP
END MILLSCARBIDE
BURRS

cylindrical shank, 2 flutes ball nose, extended and reduced neck, miniature, 6 mm. shank



D	D Tol.	R	R Tol.	d(h6)	l	l1	d1	L	z	30'	1°	1°30'	2°	3°	EDP No.	Stock
0.5	0/-0.012	0.25	+/-0.005	6	0.5	2	0.45	50	2	2.15	2.22	2.29	2.36	2.52	UHCRB20050156	●
0.5	0/-0.012	0.25	+/-0.005	6	0.5	4	0.45	50	2	4.22	4.35	4.50	4.65	4.98	UHCRB20050336	●
0.6	0/-0.012	0.30	+/-0.005	6	0.5	2	0.55	50	2	2.15	2.21	2.28	2.35	2.50	UHCRB20060206	●
0.6	0/-0.012	0.30	+/-0.005	6	0.5	4	0.55	50	2	4.22	4.35	4.49	4.65	4.97	UHCRB20060406	●
0.6	0/-0.012	0.30	+/-0.005	6	0.5	6	0.55	50	2	6.28	6.49	6.71	6.94	7.44	UHCRB20060606	●
0.8	0/-0.012	0.40	+/-0.005	6	0.8	2	0.75	50	2	2.15	2.21	2.27	2.34	2.48	UHCRB20080256	●
0.8	0/-0.012	0.40	+/-0.005	6	0.8	4	0.75	50	2	4.21	4.34	4.48	4.63	4.95	UHCRB20080406	●
0.8	0/-0.012	0.40	+/-0.005	6	0.8	6	0.75	50	2	6.28	6.48	6.70	6.93	7.42	UHCRB20080556	●
1	0/-0.012	0.50	+/-0.005	6	1	3	0.90	50	2	3.27	3.37	3.47	3.57	3.80	UHCRB20100336	●
1	0/-0.012	0.50	+/-0.005	6	1	6	0.90	50	2	6.37	6.58	6.79	7.02	7.50	UHCRB20100676	●
1	0/-0.012	0.50	+/-0.005	6	1	8	0.90	50	2	8.44	8.71	9.00	9.31	9.97	UHCRB20100806	●
1	0/-0.012	0.50	+/-0.005	6	1	10	0.90	50	2	10.51	10.85	11.22	11.61	12.44	UHCRB20101206	●
1.2	0/-0.012	0.60	+/-0.005	6	1.2	6	1.10	50	2	6.37	6.57	6.78	7.00	7.48	UHCRB20120606	●
1.2	0/-0.012	0.60	+/-0.005	6	1.2	8	1.10	50	2	8.44	8.71	8.99	9.30	9.95	UHCRB2012086	●
1.2	0/-0.012	0.60	+/-0.005	6	1.2	10	1.10	50	2	10.50	10.85	11.21	11.59	12.42	UHCRB20121006	●
1.5	0/-0.012	0.75	+/-0.005	6	1.5	4	1.40	50	2	4.30	4.42	4.55	4.68	4.98	UHCRB2015056	●
1.5	0/-0.012	0.75	+/-0.005	6	1.5	8	1.40	50	2	8.43	8.70	8.98	9.27	9.91	UHCRB20150806	●
1.5	0/-0.012	0.75	+/-0.005	6	1.5	10	1.40	50	2	10.50	10.84	11.19	11.57	12.38	UHCRB20150976	●
1.5	0/-0.012	0.75	+/-0.005	6	1.5	12	1.40	50	2	12.57	12.97	13.41	13.86	14.85	UHCRB2015156	●
1.5	0/-0.012	0.75	+/-0.005	6	1.5	16	1.40	50	2	16.70	17.25	17.84	18.45	19.78	UHCRB20151606	●
2	0/-0.012	1.00	+/-0.005	6	3	6	1.90	50	2	6.36	6.54	6.74	6.94	7.39	UHCRB2020066	●
2	0/-0.012	1.00	+/-0.005	6	3	8	1.90	50	2	8.42	8.68	8.95	9.24	9.86	UHCRB20200806	●
2	0/-0.012	1.00	+/-0.005	6	3	10	1.90	50	2	10.49	10.82	11.17	11.53	12.32	UHCRB20201006	●
2	0/-0.012	1.00	+/-0.005	6	3	12	1.90	50	2	12.56	12.96	13.38	13.83	14.79	UHCRB2020136	●
2	0/-0.012	1.00	+/-0.005	6	3	16	1.90	50	2	16.69	17.23	17.81	18.42	19.73	UHCRB20201606	●
2	0/-0.012	1.00	+/-0.005	6	3	20	1.90	50	2	20.83	21.51	22.24	23.00	24.66	UHCRB2020206	

CUTTING PARAMETERS

UHCRB2

	Material Group ISO 513				P3 P4 P5 K2 K3					P6 K4 H1 H4 H5					H2			H3		
	Hardness/Rm				< 45 HRC			45 - 55 HRC			55 - 60 HRC			60 - 65 HRC						
	ap x ae				ap x 0.2D			ap x 0.2D			ap x 0.2D			ap x 0.2D						
	Vc (m/min)				140-160			110-130			80-100			50-70						
	D (mm)	l1 (mm)	ap (mm)	D (eff.) (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)				
0.5	≤ 6D	0.03	0.22	40000	0.020	1600	40000	0.018	1440	40000	0.016	1280	38220	0.014	1070					
	≤ 8D	0.02	0.20	40000	0.018	1440	40000	0.015	1170	40000	0.013	1035	34390	0.011	780					
	≤ 10D	0.02	0.18	40000	0.016	1280	40000	0.012	920	40000	0.010	820	30570	0.009	550					
0.6	≤ 6D	0.03	0.26	40000	0.022	1760	40000	0.020	1580	40000	0.018	1410	31850	0.015	980					
	≤ 8D	0.03	0.24	40000	0.020	1580	40000	0.016	1280	40000	0.014	1140	28660	0.012	715					
	≤ 10D	0.02	0.22	40000	0.018	1410	40000	0.013	1010	38220	0.011	860	25480	0.010	500					
0.8	≤ 6D	0.04	0.35	40000	0.025	2000	40000	0.023	1800	35830	0.020	1435	23890	0.018	835					
	≤ 8D	0.03	0.32	40000	0.023	1800	40000	0.018	1460	32250	0.016	1045	21500	0.014	610					
	≤ 10D	0.03	0.29	40000	0.020	1600	38220	0.014	1100	28660	0.013	735	19110	0.011	430					
1	≤ 6D	0.05	0.44	40000	0.030	2400	38220	0.027	2060	28660	0.024	1375	19110	0.021	805					
	≤ 8D	0.04	0.40	40000	0.027	2160	34390	0.022	1500	25800	0.019	1005	17200	0.017	585					
	≤ 10D	0.04	0.37	38220	0.024	1830	30570	0.017	1060	19110	0.015	585	15290	0.013	410					
	≤ 12D	0.03	0.33	33440	0.021	1400	26750	0.013	710	16720	0.012	395	13380	0.010	275					
	> 12D	0.02	0.30	28660	0.018	1030	22930	0.010	450	14330	0.009	250	11460	0.008	175					
1.2	≤ 6D	0.06	0.52	39810	0.035	2790	31850	0.032	2010	23890	0.028	1340	15920	0.025	780					
	≤ 8D	0.05	0.48	35830	0.032	2260	28660	0.026	1460	21500	0.023	975	14330	0.020	570					
	≤ 10D	0.04	0.44	31850	0.028	1780	25480	0.020	1030	19110	0.018	685	12740	0.016	400					
	≤ 12D	0.03	0.39	27870	0.025	1370	22290	0.015	690	16720	0.014	460	11150	0.012	270					
	> 12D	0.03	0.36	23890	0.021	1000	19110	0.011	430	14330	0.010	290	9550	0.009	170					
1.5	≤ 6D	0.08	0.65	31850	0.045	2870	25480	0.041	2060	19110	0.036	1375	12740	0.032	805					
	≤ 8D	0.06	0.61	28660	0.041	2320	22930	0.033	1500	17200	0.029	1005	11460	0.026	585					
	≤ 10D	0.05	0.55	25480	0.036	1830	20380	0.026	1060	15290	0.023	705	10190	0.020	410					
	≤ 12D	0.04	0.49	22290	0.032	1400	17830	0.020	710	13380	0.018	470	8920	0.015	275					
	> 12D	0.03	0.44	19110	0.027	1030	15290	0.015	450	11460	0.013	295	7640	0.011	175					
2	≤ 6D	0.10	0.87	23890	0.060	2870	19110	0.054	2060	14330	0.048	1375	9550	0.042	800					
	≤ 8D	0.09	0.81	21500	0.054	2320	17200	0.044	1500	12900	0.039	1005	8600	0.034	585					
	≤ 10D	0.07	0.74	19110	0.048	1830	15290	0.035	1060	11460	0.031	705	7640	0.027	410					
	≤ 12D	0.06	0.65	16720	0.042	1400	13380	0.026	710	10030	0.024	470	6690	0.021	275					
	> 12D	0.05	0.59	14330	0.036	1030	11460	0.019	450	8600	0.017	295	5730	0.015	175					

	α	n (rpm)	Vf (mm/min)
	45°	x 1.65	x 1.65
	30°	x 1.30	x 1.30
	15°	x 1.15	x 1.15

INFO

TYPHOON
TA-HTA-4HTATYPHOON
PU-HPUTYPHOON
SUHTYPHOON
ALHTYPHOON
HRCTYPHOON
SUH MINITYPHOON
HL

C-SD-TA

LFTA

SUTA

HSS-HSS/CO
DRILLS

G2

MDTA

HF VH/UP

MEF

ALU

MEX

UH

HSS/CO-HSSP
END MILLSCARBIDE
BURRS

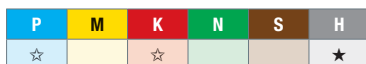
cylindrical shank, 2 flutes ball nose



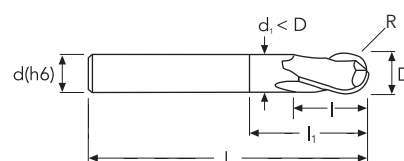
114



**<70
HRC**



★ 1st choice ☆ suitable

[illegible]

● stock standard ○ non-standard stock ▽ stock exhaustion

CUTTING PARAMETERS

UHCSB2

	α	n (rpm)	Vf (mm/min)
	15°	x 1.1	x 1.1

INFO

TYPHOON
TA-HTA-4HTATYPHOON
PU-HPUTYPHOON
SUHTYPHOON
ALHTYPHOON
HRCTYPHOON
SUH MINITYPHOON
HL

C-SD-TA

LFTA

SUTA

HSS-HSS/CO
DRILLS

G2

MDTA

HF VH/UP

MEF

ALU

MEX

UH

HSS/CO-HSSP
END MILLSCARBIDE
BURRS

cylindrical shank, 2 flutes ball nose, long reach
and reduced neck

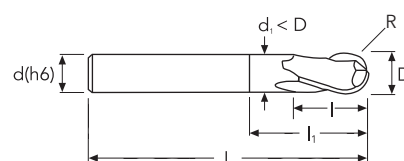
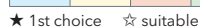


UH

NMG

UH RED

**<70
HRC**



● stock standard ○ non-standard stock ▽ stock exhaustion

CUTTING PARAMETERS

UH250

	Material Group ISO 513													
	P3 P4 P5 K2 K3				P6 K4 H1 H4 H5				H2			H3		
	Hardness/Rm				< 45 HRC				45 - 55 HRC			55 - 60 HRC		
	ap x ae				0.05D x 0.2D				0.05D x 0.2D			0.05D x 0.2D		
	Vc (m/min)				120-160				90-130			70-90		
	D (mm)	D (eff.) (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
1	0.44		30000	0.015	900	30000	0.014	810	25480	0.012	610	19110	0.011	400
2	0.87		22290	0.021	950	17520	0.019	670	12740	0.017	430	9550	0.015	280
3	1.31		14860	0.027	810	11680	0.024	570	8490	0.022	370	6370	0.019	240
4	1.74		11150	0.037	820	8760	0.033	580	6370	0.029	370	4780	0.026	240
5	2.18		8920	0.045	800	7010	0.041	570	5100	0.036	370	3820	0.032	240
6	2.62		7430	0.051	760	5840	0.046	540	4250	0.041	350	3180	0.036	230
8	3.49		5570	0.060	660	4380	0.054	470	3180	0.048	300	2390	0.042	200
10	4.36		4460	0.068	610	3500	0.061	430	2550	0.054	280	1910	0.048	180
12	5.23		3720	0.077	570	2920	0.069	400	2120	0.061	260	1590	0.054	170
14	6.10		3180	0.089	570	2500	0.080	400	1820	0.071	260	1360	0.062	170
16	6.97		2790	0.102	570	2190	0.092	400	1590	0.082	260	1190	0.071	170
18	7.85		2480	0.115	570	1950	0.103	400	1420	0.092	260	1060	0.080	170
20	8.72		2230	0.132	590	1750	0.119	420	1270	0.106	270	960	0.092	180

	α	n (rpm)	Vf (mm/min)
	30°	x 0.8	x 0.8
	15°	x 0.7	x 0.7
	0°	x 0.6	x 0.6

INFO

TYPHOON
TA-HTA-4HTATYPHOON
PU-HPUTYPHOON
SUHTYPHOON
ALHTYPHOON
HRCTYPHOON
SUH MINITYPHOON
HL

C-SD-TA

LFTA

SUTA

HSS-HSS/CO
DRILLS

G2

MDTA

HF VH/UP

MEF

ALU

MEX

UH

HSS/CO-HSSP
END MILLSCARBIDE
BURRS

cylindrical shank, 2 flutes ball nose, extra-long reach
and reduced neck

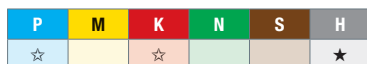


UH

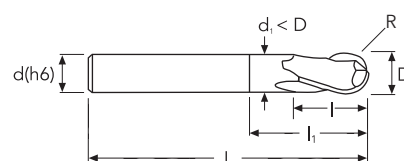
NMG

UH RED

<70
WPO

HRC

★ 1st choice ☆ suitable



● stock standard ○ non-standard stock ▽ stock exhaustion

CUTTING PARAMETERS

UH253

	Material Group ISO 513	P3 P4 P5 K2 K3					P6 K4 H1 H4 H5					H2			H3		
	Hardness/Rm	< 45 HRC					45 - 55 HRC					55 - 60 HRC			60 - 65 HRC		
	ap x ae	0.05D x 0.2D					0.05D x 0.2D					0.05D x 0.2D			0.05D x 0.2D		
	Vc (m/min)	110-150					80-120					60-80			40-60		
	D (mm)	D (eff.) (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
1	0.44		30000	0.021	1280	30000	0.019	1150	22290	0.017	760	15920	0.015	470			
2	0.87		20700	0.021	880	15920	0.019	610	11150	0.017	380	7960	0.015	240			
3	1.31		13800	0.027	750	10620	0.024	520	7430	0.022	320	5310	0.019	200			
4	1.74		10350	0.037	760	7960	0.033	520	5570	0.029	330	3980	0.026	200			
5	2.18		8280	0.045	750	6370	0.041	520	4460	0.036	320	3180	0.032	200			
6	2.62		6900	0.051	700	5310	0.046	490	3720	0.041	300	2650	0.036	190			
8	3.49		5180	0.060	620	3980	0.054	430	2790	0.048	270	1990	0.042	170			
10	4.36		4140	0.068	560	3180	0.061	390	2230	0.054	240	1590	0.048	150			
12	5.23		3450	0.077	530	2650	0.069	360	1860	0.061	230	1330	0.054	140			
14	6.10		2960	0.089	530	2270	0.080	360	1590	0.071	230	1140	0.062	140			
16	6.97		2590	0.102	530	1990	0.092	370	1390	0.082	230	1000	0.071	140			
18	7.85		2300	0.115	530	1770	0.103	370	1240	0.092	230	880	0.080	140			
20	8.72		2070	0.132	550	1590	0.119	380	1110	0.106	230	800	0.092	150			

	α	n (rpm)	Vf (mm/min)
	30°	x 0.8	x 0.8
	15°	x 0.7	x 0.7
	0°	x 0.6	x 0.6

INFO

TYPHOON
TA-HTA-4HTATYPHOON
PU-HPUTYPHOON
SUHTYPHOON
ALHTYPHOON
HRCTYPHOON
SUH MINITYPHOON
HL

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