MEX AND MH

STEEL AND HARDENED STEEL
30÷55 HRC (MEX) AND 30÷70 HRC (MH)

MEX: Ultra-fine micrograin and Endless Orange coating for high perfromance machining on 30÷55 HRC materials.
MH: Wide range of tools available for general milling, copying and super finishing (30÷70 HRC).

MEX: Micrograna ultrafine e rivestimento Endless Orange per lavorazione ad alto rendimento di materiali con durezza compresa tra 30÷55 HRC.
MH: Ampia gamma per soddisfare applicazioni di copiatura e super finitura (30÷70 HRC).

MEX: Besonders feine Mikrokörnung und Beschichtung Endless Orange für Hochleistungsbearbeitungen von Materialien mit einer Härte zwischen 30 und 55 HRC.
MH: Große Produktpalette für Anwendungen zum Fräsen im Allgemeinen, Kopierfräsen und Schlichtbearbeitung (30÷70 HRC).

MEX: Ultra Micrograin et revêtement Endless Orange pour un usinage à rendement élevé de matériaux ayant une dureté comprise entre 30÷55 HRC.
MH: Une large gamme pour satisfaire les applications de fraisage général, copiage et super finition (30÷70 HRC).

MEX: Micrograno ultrafino y revestimiento Endless Orange para el mecanizado a alto rendimiento de materiales con una dureza comprendida entre 30 y 55 HRC.
MH: Amplia gama para satisfacer aplicaciones de fresado general, copiado y súper acabado (30÷70 HRC).

MEX: Микрозернистая структура твердого сплава и покрытие Endless Orange служат для высокоэффективной обработки материалов с твёрдостью 30÷55 HRC.
MH: Широкий ассортимент для профилированной и суперфинишной обработки (30 ÷ 70 HRC).

INFO

CARBIDE DRILLS

PU-HPU
TA-4HTA
SUH
ALH
HRC
SUH MINI
HL
HSD
C-SD-TA

HSS DRILLS

LFTA
SUTA
HSS-HSS/CO

CARBIDE END-MILLS

G2
MDTA
HF VH/UP
MEF
ALU
MEX/MH
UH/MH

HSS END-MILLS

CARBIDE BURRS

MEXM2

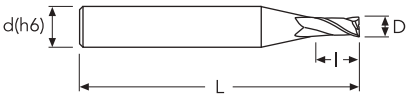
cylindrical shank, 2 flutes, miniature

OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 40° | SQUARE | Z2

P	M	K	N	S	H
★		★			★

★ 1st choice ☆ suitable

SLOTTING



D	D Tol.	C	C Tol.	d(h6)	l	l1	L	z	EDP No.	Stock
0.3	0/-0.010			4	0.6		40	2	MEXM20030	●
0.4	0/-0.010			4	0.8		40	2	MEXM20040	●
0.5	0/-0.010			4	1		40	2	MEXM20050	●
0.6	0/-0.010			4	1.2		40	2	MEXM20060	●
0.7	0/-0.010			4	1.4		40	2	MEXM20070	●
0.8	0/-0.010			4	1.6		40	2	MEXM20080	●
0.9	0/-0.010			4	1.8		40	2	MEXM20090	●
1	0/-0.015			3	2		40	2	MEXM20100	●
1.1	0/-0.015			3	2.2		40	2	MEXM20110	●
1.2	0/-0.015			3	2.4		40	2	MEXM20120	●
1.3	0/-0.015			3	2.6		40	2	MEXM20130	●
1.4	0/-0.015			3	2.8		40	2	MEXM20140	●
1.5	0/-0.015			3	3		40	2	MEXM20150	●
1.6	0/-0.015			3	3.2		40	2	MEXM20160	●
1.7	0/-0.015			3	3.4		40	2	MEXM20170	●
1.8	0/-0.015			3	3.6		40	2	MEXM20180	●
1.9	0/-0.015			3	3.8		40	2	MEXM20190	●
2	0/-0.015			3	4		40	2	MEXM20200	●

● stock standard ○ non-stock standard ∇ stock exhaustion

CUTTING PARAMETERS

MEXM2

SLOTTING	Material Group ISO 513		P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
	Hardness/Rm		≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
	ap x ae		**ap x D**	**ap x D**	**ap x D**	**ap x D**
	Vc (m/min)		**70÷90**	**50÷70**	**30÷50**	**20÷40**
	D (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	0.3	0.02	0.004	0.004	0.003	0.003
	0.4	0.02	0.006	0.005	0.005	0.004
	0.5	0.03	0.007	0.006	0.006	0.005
	0.6	0.03	0.008	0.007	0.006	0.006
	0.8	0.04	0.010	0.009	0.008	0.007
	1	0.05	0.012	0.011	0.010	0.008
	1.2	0.06	0.022	0.020	0.018	0.015
	1.4	0.07	0.024	0.022	0.019	0.017
	1.5	0.08	0.025	0.023	0.020	0.018
	1.6	0.08	0.026	0.023	0.021	0.018
	1.8	0.09	0.028	0.025	0.022	0.020
	2	0.10	0.030	0.027	0.024	0.021

INFO

CARBIDE DRILLS

PU-HPU
TA-4HTA
SUH
ALH
HRC
SUH MINI
HL
HSD
C-SD-TA

HSS DRILLS

LFTA
SUTA
HSS-HSS/CO

CARBIDE END-MILLS

G2
MDTA
HF VH/UP
MEF
ALU
MEX/MH
UH/MH

HSS END-MILLS

CARBIDE BURRS

MEXM2SC

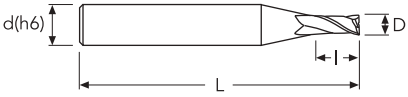
cylindrical shank, 2 flutes, short cutting length, miniature

OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 40° | SQUARE | Z2

P	M	K	N	S	H
★		★			★

★ 1st choice ☆ suitable

SLOTTING



D	D Tol.	C	C Tol.	d(h6)	l	l1	L	z	EDP No.	Stock
0.2	0/-0.010			4	0.3		50	2	MEXM2SC0020	●
0.3	0/-0.010			4	0.4		50	2	MEXM2SC0030	●
0.4	0/-0.010			4	0.6		50	2	MEXM2SC0040	●
0.5	0/-0.010			4	0.7		50	2	MEXM2SC0050	●
0.6	0/-0.010			4	0.9		50	2	MEXM2SC0060	●
0.7	0/-0.010			4	1		50	2	MEXM2SC0070	●
0.8	0/-0.010			4	1.2		50	2	MEXM2SC0080	●
0.9	0/-0.010			4	1.4		50	2	MEXM2SC0090	●

● stock standard ○ non-stock standard ∇ stock exhaustion

CUTTING PARAMETERS

MEXM2SC

SLOTTING	Material Group ISO 513		P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
	Hardness/Rm		≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
	ap x ae		**ap x D**	**ap x D**	**ap x D**	**ap x D**
	Vc (m/min)		**70÷110**	**50÷90**	**40÷60**	**20÷40**
	D (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	0.2	0.01	0.003	0.003	0.002	0.002
	0.3	0.02	0.004	0.004	0.003	0.003
	0.4	0.02	0.006	0.005	0.005	0.004
	0.5	0.03	0.007	0.006	0.006	0.005
	0.6	0.03	0.008	0.007	0.006	0.006
	0.8	0.04	0.010	0.009	0.008	0.007
	0.9	0.05	0.012	0.011	0.010	0.008

INFO

CARBIDE DRILLS

PU-HPU
TA-4HTA
SUH
ALH
HRC
SUH MINI
HL
HSD
C-SD-TA

HSS DRILLS

LFTA
SUTA
HSS-HSS/CO

CARBIDE END-MILLS

G2
MDTA
HF VH/UP
MEF
ALU
MEX/MH
UH/MH

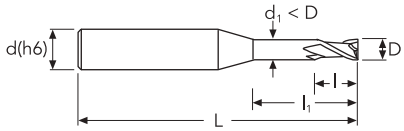
HSS END-MILLS

CARBIDE BURRS

MEXLN2

cylindrical shank, 2 flutes, extended and reduced neck

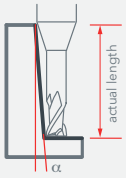
OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 40° | SQUARE | Z2



P	M	K	N	S	H
★		★			★

★ 1st choice ☆ suitable

SQUARE RIB



actual length according to α angle

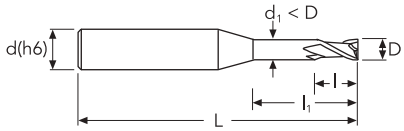
D	D Tol.	C	C Tol.	d(h6)	l	l1	d1	L	z	30′	1°	1°30′	2°	3°	EDP No.	Stock
0.2	0/-0.010			4	0.3	0.5	0.16	50	2	0.57	0.59	0.61	0.63	0.68	MEXLN2002005	●
0.2	0/-0.010			4	0.3	1	0.16	50	2	1.09	1.12	1.16	1.21	1.30	MEXLN200201	●
0.2	0/-0.010			4	0.3	1.5	0.16	50	2	1.60	1.66	1.72	1.78	1.91	MEXLN2002015	●
0.3	0/-0.010			4	0.4	1	0.26	50	2	1.09	1.12	1.16	1.21	1.30	MEXLN200301	●
0.3	0/-0.010			4	0.4	2	0.26	50	2	2.12	2.19	2.27	2.35	2.53	MEXLN200302	●
0.3	0/-0.010			4	0.4	3	0.26	50	2	3.15	3.26	3.38	3.50	3.76	MEXLN200303	●
0.4	0/-0.010			4	0.6	2	0.37	50	2	2.12	2.19	2.27	2.35	2.53	MEXLN200402	●
0.4	0/-0.010			4	0.6	3	0.37	50	2	3.15	3.26	3.38	3.50	3.76	MEXLN200403	●
0.4	0/-0.010			4	0.6	4	0.37	50	2	4.19	4.33	4.49	4.65	5.00	MEXLN200404	●
0.4	0/-0.010			4	0.6	5	0.37	50	2	5.22	5.40	5.59	5.79	6.23	MEXLN200405	●
0.5	0/-0.010			4	0.7	2	0.45	50	2	2.16	2.23	2.31	2.40	2.57	MEXLN200502	●
0.5	0/-0.010			4	0.7	4	0.45	50	2	4.23	4.37	4.53	4.69	5.04	MEXLN200504	●
0.5	0/-0.010			4	0.7	6	0.45	50	2	6.29	6.51	6.74	6.98	7.51	MEXLN200506	●
0.5	0/-0.010			4	0.7	8	0.45	50	2	8.36	8.65	8.96	9.28	9.98	MEXLN200508	●
0.6	0/-0.010			4	0.9	2	0.55	50	2	2.16	2.23	2.31	2.40	2.57	MEXLN200602	●
0.6	0/-0.010			4	0.9	4	0.55	50	2	4.23	4.37	4.53	4.69	5.04	MEXLN200604	●
0.6	0/-0.010			4	0.9	6	0.55	50	2	6.29	6.51	6.74	6.98	7.51	MEXLN200606	●
0.6	0/-0.010			4	0.9	8	0.55	50	2	8.36	8.65	8.96	9.28	9.98	MEXLN200608	●
0.6	0/-0.010			4	0.9	10	0.55	50	2	10.43	10.79	11.17	11.57	12.44	MEXLN200610	●
0.7	0/-0.010			4	1.0	2	0.65	50	2	2.16	2.23	2.31	2.40	2.57	MEXLN200702	●
0.7	0/-0.010			4	1.0	4	0.65	50	2	4.23	4.37	4.53	4.69	5.04	MEXLN200704	●
0.7	0/-0.010			4	1.0	6	0.65	50	2	6.29	6.51	6.74	6.98	7.51	MEXLN200706	●
0.7	0/-0.010			4	1.0	8	0.65	50	2	8.36	8.65	8.96	9.28	9.98	MEXLN200708	●
0.7	0/-0.010			4	1.0	10	0.65	50	2	10.43	10.79	11.17	11.57	12.44	MEXLN200710	●
0.8	0/-0.010			4	1.2	4	0.75	50	2	4.23	4.37	4.53	4.69	5.04	MEXLN200804	●
0.8	0/-0.010			4	1.2	6	0.75	50	2	6.29	6.51	6.74	6.98	7.51	MEXLN200806	●
0.8	0/-0.010			4	1.2	8	0.75	50	2	8.36	8.65	8.96	9.28	9.98	MEXLN200808	●
0.8	0/-0.010			4	1.2	10	0.75	50	2	10.43	10.79	11.17	11.57	12.44	MEXLN200810	●
0.8	0/-0.010			4	1.2	12	0.75	50	2	12.49	12.93	13.38	13.87	14.91	MEXLN200812	●
0.9	0/-0.010			4	1.4	6	0.85	50	2	6.29	6.51	6.74	6.98	7.51	MEXLN200906	●
0.9	0/-0.010			4	1.4	8	0.85	50	2	8.36	8.65	8.96	9.28	9.98	MEXLN200908	●
0.9	0/-0.010			4	1.4	10	0.85	50	2	10.43	10.79	11.17	11.57	12.44	MEXLN200910	●
0.9	0/-0.010			4	1.4	15	0.85	50	2	15.6	16.14	16.71	17.31	18.61	MEXLN200915	●
1.0	0/-0.015			4	1.5	6	0.95	50	2	6.39	6.61	6.84	7.09	7.62	MEXLN201006	●
1.0	0/-0.015			4	1.5	8	0.95	50	2	8.46	8.75	9.06	9.38	10.09	MEXLN201008	●
1.0	0/-0.015			4	1.5	10	0.95	50	2	10.52	10.89	11.27	11.68	12.56	MEXLN201010	●
1.0	0/-0.015			4	1.5	12	0.95	50	2	12.59	13.03	13.49	13.97	15.02	MEXLN201012	●
1.0	0/-0.015			4	1.5	14	0.95	50	2	14.66	15.17	15.70	16.27	17.49	MEXLN201014	●
1.0	0/-0.015			4	1.5	16	0.95	50	2	16.73	17.3	17.92	18.56	19.96	MEXLN201016	●

● stock standard ○ non-stock standard ∇ stock exhaustion

MEXLN2

cylindrical shank, 2 flutes, extended and reduced neck

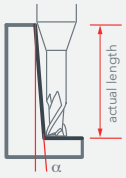
OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 40° | SQUARE | Z2



P	M	K	N	S	H
★		★			★

★ 1st choice ☆ suitable

SQUARE RIB



actual length according to α angle

D	D Tol.	C	C Tol.	d(h6)	l	l1	d1	L	z	30′	1°	1°30′	2°	3°	EDP No.	Stock
1.2	0/-0.015			4	1.8	6	1.15	50	2	6.39	6.61	6.84	7.09	7.62	MEXLN201206	●
1.2	0/-0.015			4	1.8	8	1.15	50	2	8.46	8.75	9.06	9.38	10.09	MEXLN201208	●
1.2	0/-0.015			4	1.8	10	1.15	50	2	10.52	10.89	11.27	11.68	12.56	MEXLN201210	●
1.2	0/-0.015			4	1.8	12	1.15	50	2	12.59	13.03	13.49	13.97	15.02	MEXLN201212	●
1.4	0/-0.015			4	2.1	6	1.35	50	2	6.39	6.61	6.84	7.09	7.62	MEXLN201406	●
1.4	0/-0.015			4	2.1	8	1.35	50	2	8.46	8.75	9.06	9.38	10.09	MEXLN201408	●
1.4	0/-0.015			4	2.1	10	1.35	50	2	10.52	10.89	11.27	11.68	12.56	MEXLN201410	●
1.4	0/-0.015			4	2.1	12	1.35	50	2	12.59	13.03	13.49	13.97	15.02	MEXLN201412	●
1.4	0/-0.015			4	2.1	16	1.35	50	2	16.73	17.3	17.92	18.56	19.96	MEXLN201416	●
1.5	0/-0.015			4	2.3	6	1.45	50	2	6.39	6.61	6.84	7.09	7.62	MEXLN201506	●
1.5	0/-0.015			4	2.3	8	1.45	50	2	8.46	8.75	9.06	9.38	10.09	MEXLN201508	●
1.5	0/-0.015			4	2.3	10	1.45	50	2	10.52	10.89	11.27	11.68	12.56	MEXLN201510	●
1.5	0/-0.015			4	2.3	12	1.45	50	2	12.59	13.03	13.49	13.97	15.02	MEXLN201512	●
1.5	0/-0.015			4	2.3	14	1.45	50	2	14.66	15.17	15.70	16.27	17.49	MEXLN201514	●
1.5	0/-0.015			4	2.3	16	1.45	50	2	16.73	17.30	17.92	18.56	19.96	MEXLN201516	●
1.5	0/-0.015			4	2.3	18	1.45	60	2	18.79	19.44	20.13	20.86	22.43	MEXLN201518	●
1.5	0/-0.015			4	2.3	20	1.45	60	2	20.86	21.58	22.35	23.15	-	MEXLN201520	●
1.6	0/-0.015			4	2.4	6	1.55	50	2	6.39	6.61	6.84	7.09	7.62	MEXLN201606	●
1.6	0/-0.015			4	2.4	8	1.55	50	2	8.46	8.75	9.06	9.38	10.09	MEXLN201608	●
1.6	0/-0.015			4	2.4	10	1.55	50	2	10.52	10.89	11.27	11.68	12.56	MEXLN201610	●
1.6	0/-0.015			4	2.4	12	1.55	50	2	12.59	13.03	13.49	13.97	15.02	MEXLN201612	●
1.6	0/-0.015			4	2.4	14	1.55	50	2	14.66	15.17	15.70	16.27	17.49	MEXLN201614	●
1.6	0/-0.015			4	2.4	16	1.55	50	2	16.73	17.30	17.92	18.56	19.96	MEXLN201616	●
1.6	0/-0.015			4	2.4	18	1.55	60	2	18.79	19.44	20.13	20.86	22.43	MEXLN201618	●
1.6	0/-0.015			4	2.4	20	1.55	60	2	20.86	21.58	22.35	23.15	-	MEXLN201620	●
1.8	0/-0.015			4	2.7	6	1.75	50	2	6.39	6.61	6.84	7.09	7.62	MEXLN201806	●
1.8	0/-0.015			4	2.7	8	1.75	50	2	8.46	8.75	9.06	9.38	10.09	MEXLN201808	●
1.8	0/-0.015			4	2.7	10	1.75	50	2	10.52	10.89	11.27	11.68	12.56	MEXLN201810	●
1.8	0/-0.015			4	2.7	12	1.75	50	2	12.59	13.03	13.49	13.97	15.02	MEXLN201812	●
1.8	0/-0.015			4	2.7	16	1.75	50	2	16.73	17.30	17.92	18.56	19.96	MEXLN201816	●
1.8	0/-0.015			4	2.7	20	1.75	60	2	20.86	21.58	22.35	23.15	-	MEXLN201820	●
2	0/-0.015			4	3	6	1.95	50	2	6.39	6.61	6.84	7.09	7.62	MEXLN202006	●
2	0/-0.015			4	3	8	1.95	50	2	8.46	8.75	9.06	9.38	10.09	MEXLN202008	●
2	0/-0.015			4	3	10	1.95	50	2	10.52	10.89	11.27	11.68	12.56	MEXLN202010	●
2	0/-0.015			4	3	12	1.95	50	2	12.59	13.03	13.49	13.97	15.02	MEXLN202012	●
2	0/-0.015			4	3	14	1.95	50	2	14.66	15.17	15.70	16.27	17.49	MEXLN202014	●
2	0/-0.015			4	3	16	1.95	50	2	16.73	17.30	17.92	18.56	-	MEXLN202016	●
2	0/-0.015			4	3	18	1.95	60	2	18.79	19.44	20.13	20.86	-	MEXLN202018	●
2	0/-0.015			4	3	20	1.95	60	2	20.86	21.58	22.35	23.15	-	MEXLN202020	●

● stock standard ○ non-stock standard ∇ stock exhaustion

INFO

CARBIDE DRILLS

PU-HPU
TA-4HTA
SUH
ALH
HRC
SUH MINI
HL
HSD
C-SD-TA

HSS DRILLS

LFTA
SUTA
HSS-HSS/CO

CARBIDE END-MILLS

G2
MDTA
HF VH/UP
MEF
ALU
MEX/MH
UH/MH

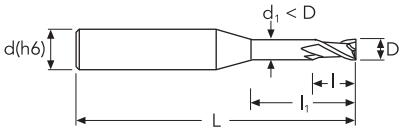
HSS END-MILLS

CARBIDE BURRS

MEXLN2

cylindrical shank, 2 flutes, extended and reduced neck

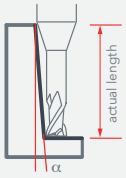
OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 40° | SQUARE | Z2



P	M	K	N	S	H
★		★			★

★ 1st choice ☆ suitable

SQUARE RIB



actual length according to α angle

D	D Tol.	C	C Tol.	d(h6)	l	l1	d1	L	z	30′	1°	1°30′	2°	3°	EDP No.	Stock
2	0/-0.015			4	3	25	1.95	75	2	26.03	26.93	27.88	-	-	MEXLN202025	●
2	0/-0.015			4	3	30	1.95	75	2	31.20	32.28	33.42	-	-	MEXLN202030	●
2.5	0/-0.020			4	3.7	8	2.40	50	2	8.46	8.75	9.06	9.38	10.09	MEXLN202508	●
2.5	0/-0.020			4	3.7	10	2.40	50	2	10.52	10.89	11.27	11.68	12.56	MEXLN202510	●
2.5	0/-0.020			4	3.7	12	2.40	50	2	12.59	13.03	13.49	13.97	-	MEXLN202512	●
2.5	0/-0.020			4	3.7	16	2.40	50	2	16.73	17.3	17.92	18.56	-	MEXLN202516	●
2.5	0/-0.020			4	3.7	20	2.40	60	2	20.86	21.58	22.35	-	-	MEXLN202520	●
2.5	0/-0.020			4	3.7	25	2.40	60	2	26.03	26.93	27.88	-	-	MEXLN202525	●
2.5	0/-0.020			4	3.7	30	2.40	75	2	31.20	32.28	-	-	-	MEXLN202530	●
3	0/-0.025			6	4.5	8	2.85	50	2	8.65	8.95	9.26	9.60	10.31	MEXLN203008	●
3	0/-0.025			6	4.5	10	2.85	50	2	10.72	11.09	11.48	11.89	12.78	MEXLN203010	●
3	0/-0.025			6	4.5	12	2.85	50	2	12.78	13.23	13.69	14.18	15.25	MEXLN203012	●
3	0/-0.025			6	4.5	14	2.85	50	2	14.85	15.36	15.91	16.48	17.72	MEXLN203014	●
3	0/-0.025			6	4.5	16	2.85	60	2	16.92	17.50	18.12	18.77	20.18	MEXLN203016	●
3	0/-0.025			6	4.5	18	2.85	60	2	18.99	19.64	20.34	21.07	22.65	MEXLN203018	●
3	0/-0.025			6	4.5	20	2.85	60	2	21.05	21.78	22.55	23.36	25.12	MEXLN203020	●
3	0/-0.025			6	4.5	25	2.85	75	2	26.22	27.13	28.09	29.10	-	MEXLN203025	●
4	0/-0.025			6	4.5	10	3.85	60	2	10.91	11.29	11.68	12.10	13.00	MEXLN204010	●
4	0/-0.025			6	4.5	15	3.85	60	2	16.08	16.63	17.22	17.84	19.17	MEXLN204015	●
4	0/-0.025			6	4.5	20	3.85	60	2	21.25	21.98	22.76	23.57	-	MEXLN204020	●
4	0/-0.025			6	4.5	25	3.85	75	2	26.41	27.33	28.29	-	-	MEXLN204025	●
4	0/-0.025			6	4.5	30	3.85	75	2	31.58	32.67	33.83	-	-	MEXLN204030	●
4	0/-0.025			6	4.5	40	3.85	75	2	41.92	43.37	-	-	-	MEXLN204040	●

● stock standard ○ non-stock standard ∇ stock exhaustion

MEXLN2

	Material Group ISO 513			P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
	Hardness/Rm			≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
	ap x ae			**ap x D**	**ap x D**	**ap x D**	**ap x D**
	Vc (m/min)			**70÷110**	**50÷90**	**40÷60**	**20÷40**
	D (mm)	l1 (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
SQUARE RIB	**0.2**	≤ 6D	0.01	0.003	0.003	0.002	0.002
		≤ 8D	0.01	0.003	0.002	0.002	0.002
		≤ 10D	0.01	0.002	0.002	0.002	0.001
		≤ 12D	0.01	0.002	0.001	0.001	0.001
	0.3	≤ 6D	0.02	0.004	0.004	0.003	0.003
		≤ 8D	0.01	0.004	0.003	0.003	0.003
		≤ 10D	0.01	0.003	0.003	0.003	0.002
		≤ 12D	0.01	0.003	0.003	0.002	0.002
	0.4	≤ 6D	0.02	0.006	0.005	0.005	0.004
		≤ 8D	0.02	0.005	0.005	0.004	0.004
		≤ 10D	0.01	0.005	0.004	0.004	0.003
		≤ 12D	0.01	0.004	0.004	0.003	0.003
	0.5	≤ 6D	0.03	0.007	0.006	0.006	0.005
		≤ 8D	0.02	0.006	0.006	0.005	0.004
		≤ 10D	0.02	0.006	0.005	0.004	0.004
		≤ 12D	0.01	0.005	0.004	0.004	0.003
	0.6	≤ 6D	0.03	0.008	0.007	0.006	0.006
		≤ 8D	0.03	0.007	0.006	0.006	0.005
		≤ 10D	0.02	0.006	0.006	0.005	0.004
		≤ 12D	0.02	0.006	0.005	0.004	0.004
	0.8	≤ 6D	0.04	0.010	0.009	0.008	0.007
		≤ 8D	0.03	0.009	0.008	0.007	0.006
		≤ 10D	0.03	0.008	0.007	0.006	0.006
		≤ 12D	0.02	0.007	0.006	0.006	0.005
	1	≤ 6D	0.05	0.012	0.011	0.010	0.008
		≤ 8D	0.04	0.011	0.010	0.009	0.008
		≤ 10D	0.04	0.010	0.009	0.008	0.007
		≤ 12D	0.03	0.008	0.008	0.007	0.006
	1.2	≤ 6D	0.06	0.022	0.020	0.018	0.015
		≤ 8D	0.05	0.020	0.018	0.016	0.014
		≤ 10D	0.04	0.018	0.016	0.014	0.012
		≤ 12D	0.03	0.015	0.014	0.012	0.011
	1.4	≤ 6D	0.07	0.024	0.022	0.019	0.017
		≤ 8D	0.06	0.022	0.019	0.017	0.015
		≤ 10D	0.05	0.019	0.017	0.015	0.013
		≤ 12D	0.04	0.017	0.015	0.013	0.012
		≤ 15D	0.03	0.014	0.013	0.012	0.010
		≥ 15D	0.02	0.012	0.011	0.010	0.008
	1.5	≤ 6D	0.08	0.025	0.023	0.020	0.018
		≤ 8D	0.06	0.023	0.020	0.018	0.016
		≤ 10D	0.05	0.020	0.018	0.016	0.014
		≤ 12D	0.04	0.018	0.016	0.014	0.012
		≤ 15D	0.03	0.015	0.014	0.012	0.011
		≥ 15D	0.02	0.013	0.011	0.010	0.009
	1.6	≤ 6D	0.08	0.026	0.023	0.021	0.018
		≤ 8D	0.07	0.023	0.021	0.019	0.016
		≤ 10D	0.06	0.021	0.019	0.017	0.015
		≤ 12D	0.04	0.018	0.016	0.015	0.013
		≤ 15D	0.04	0.016	0.014	0.012	0.011
		≥ 15D	0.02	0.013	0.012	0.010	0.009

INFO

CARBIDE DRILLS

PU-HPU
TA-4HTA
SUH
ALH
HRC
SUH MINI
HL
HSD
C-SD-TA

HSS DRILLS

LFTA
SUTA
HSS-HSS/CO

CARBIDE END-MILLS

G2
MDTA
HF VH/UP
MEF
ALU
MEX/MH
UH/MH

HSS END-MILLS

CARBIDE BURRS

CUTTING PARAMETERS

MEXLN2

SQUARE RIB

Material Group ISO 513			P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
Hardness/Rm			≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
ap x ae			**ap x D**	**ap x D**	**ap x D**	**ap x D**
Vc (m/min)			**70÷110**	**50÷90**	**40÷60**	**20÷40**
D (mm)	l1 (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
1.8	≤ 6D	0.09	0.028	0.025	0.022	0.020
	≤ 8D	0.08	0.025	0.023	0.020	0.018
	≤ 10D	0.06	0.022	0.020	0.018	0.016
	≤ 12D	0.05	0.020	0.018	0.016	0.014
	≤ 15D	0.04	0.017	0.015	0.013	0.012
	≥ 15D	0.03	0.014	0.013	0.011	0.010
2	≤ 6D	0.10	0.030	0.027	0.024	0.021
	≤ 8D	0.09	0.027	0.024	0.022	0.019
	≤ 10D	0.07	0.024	0.022	0.019	0.017
	≤ 12D	0.06	0.021	0.019	0.017	0.015
	≤ 15D	0.05	0.018	0.016	0.014	0.013
	≥ 15D	0.03	0.018	0.016	0.014	0.013
2.5	≤ 6D	0.13	0.035	0.032	0.028	0.025
	≤ 8D	0.11	0.032	0.028	0.025	0.022
	≤ 10D	0.09	0.028	0.025	0.022	0.020
	≤ 12D	0.07	0.025	0.022	0.020	0.017
	≤ 15D	0.06	0.021	0.019	0.017	0.015
	≥ 15D	0.04	0.021	0.019	0.017	0.015
3	≤ 6D	0.15	0.040	0.036	0.032	0.028
	≤ 8D	0.13	0.036	0.032	0.029	0.025
	≤ 10D	0.11	0.032	0.029	0.026	0.022
	≤ 12D	0.08	0.028	0.025	0.022	0.020
	≤ 15D	0.07	0.024	0.022	0.019	0.017
	≥ 15D	0.05	0.024	0.022	0.019	0.017
4	≤ 6D	0.20	0.050	0.045	0.040	0.035
	≤ 8D	0.17	0.045	0.041	0.036	0.032
	≤ 10D	0.14	0.040	0.036	0.032	0.028
	≤ 12D	0.11	0.035	0.032	0.028	0.025
	≤ 15D	0.09	0.030	0.027	0.024	0.021
	≥ 15D	0.06	0.030	0.027	0.024	0.021

MEXCS2

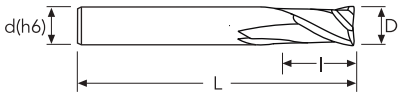
cylindrical shank, 2 flutes

OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 40° | SQUARE | Z2

P	M	K	N	S	H
★		★			★

★ 1st choice ☆ suitable

SLOTTING



D	D Tol.	C	C Tol.	d(h6)	l	l1	L	z	EDP No.	Stock
1	0/-0.012			4	2.5		40	2	MEXCS2010	●
1.5	0/-0.012			4	4		40	2	MEXCS2015	●
2	0/-0.012			4	6		40	2	MEXCS2020	●
2.5	0/-0.012			4	8		40	2	MEXCS2025	●
3	0/-0.012			6	8		55	2	MEXCS2030	●
3.5	0/-0.012			6	10		55	2	MEXCS2035	●
4	0/-0.012			6	10		55	2	MEXCS2040	●
4.5	0/-0.012			6	12		55	2	MEXCS2045	●
5	0/-0.012			6	13		55	2	MEXCS2050	●
5.5	0/-0.012			6	14		55	2	MEXCS2055	●
6	0/-0.015			6	15		60	2	MEXCS2060	●
6.5	0/-0.015			8	17		65	2	MEXCS2065	●
7	0/-0.015			8	18		65	2	MEXCS2070	●
8	0/-0.015			8	20		70	2	MEXCS2080	●
8.5	0/-0.015			10	21		70	2	MEXCS2085	●
9	0/-0.015			10	23		70	2	MEXCS2090	●
10	0/-0.015			10	22		75	2	MEXCS2100	●
11	0/-0.015			12	28		75	2	MEXCS2110	●
12	0/-0.015			12	26		80	2	MEXCS2120	●
14	0/-0.020			14	32		90	2	MEXCS2140	●
16	0/-0.020			16	32		90	2	MEXCS2160	●
18	0/-0.020			18	38		100	2	MEXCS2180	●
20	0/-0.020			20	38		100	2	MEXCS2200	●

● stock standard ○ non-stock standard ∇ stock exhaustion

INFO

CARBIDE DRILLS

PU-HPU
TA-4HTA
SUH
ALH
HRC
SUH MINI
HL
HSD
C-SD-TA

HSS DRILLS

LFTA
SUTA
HSS-HSS/CO

CARBIDE END-MILLS

G2
MDTA
HF VH/UP
MEF
ALU
MEX/MH
UH/MH

HSS END-MILLS

CARBIDE BURRS

CUTTING PARAMETERS

MEXCS2

SLOTTING

Material Group ISO 513	P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
Hardness/Rm	≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
ap x ae	**0.5D x D**	**0.3D x D**	**0.2D x D**	**0.1D x D**
Vc (m/min)	**70÷110**	**50÷90**	**40÷60**	**20÷40**
D (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
1	0.006	0.005	0.005	0.004
2	0.010	0.009	0.008	0.007
3	0.014	0.013	0.012	0.010
4	0.020	0.018	0.016	0.014
5	0.026	0.023	0.020	0.018
6	0.032	0.029	0.026	0.023
8	0.038	0.034	0.031	0.027
10	0.046	0.041	0.037	0.032
12	0.055	0.050	0.044	0.039
14	0.064	0.057	0.051	0.045
16	0.072	0.065	0.058	0.051
18	0.082	0.074	0.066	0.058
20	0.094	0.084	0.075	0.065

< D3 mm: ap = 0.1D ÷ 0.2D

MEXCL2

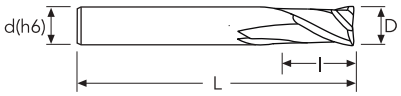
cylindrical shank, 2 flutes, long

OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 40° | SQUARE | Z2

P	M	K	N	S	H
★		★			★

★ 1st choice ☆ suitable

SLOTTING



D	D Tol.	C	C Tol.	d(h6)	l	l1	L	z	EDP No.	Stock
1	0/-0.030			6	8		60	2	MEXCL2010	●
1.5	0/-0.030			6	12		60	2	MEXCL2015	●
2	0/-0.030			6	12		60	2	MEXCL2020	●
3	0/-0.030			6	15		60	2	MEXCL2030	●
4	0/-0.030			6	20		60	2	MEXCL2040	●
5	0/-0.030			6	25		70	2	MEXCL2050	●
6	0/-0.030			6	25		70	2	MEXCL2060	●
8	0/-0.030			8	30		80	2	MEXCL2080	●
10	0/-0.030			10	35		90	2	MEXCL2100	●
12	0/-0.030			12	40		90	2	MEXCL2120	●

● stock standard ○ non-stock standard ∇ stock exhaustion

INFO

CARBIDE DRILLS

PU-HPU
TA-4HTA
SUH
ALH
HRC
SUH MINI
HL
HSD
C-SD-TA

HSS DRILLS

LFTA
SUTA
HSS-HSS/CO

CARBIDE END-MILLS

G2
MDTA
HF VH/UP
MEF
ALU
MEX/MH
UH/MH

HSS END-MILLS

CARBIDE BURRS

CUTTING PARAMETERS

MEXCL2

	Material Group ISO 513	P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
	Hardness/Rm	≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
	ap x ae	**0.5D x D**	**0.3D x D**	**0.2D x D**	**0.1D x D**
	Vc (m/min)	**70÷110**	**50÷90**	**40÷60**	**20÷40**
L SIDE MILLING	D (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.005	0.005	0.004	0.004
	1.5	0.006	0.005	0.005	0.004
	2	0.009	0.008	0.007	0.006
	3	0.012	0.011	0.010	0.008
	4	0.018	0.016	0.014	0.013
	5	0.024	0.022	0.019	0.017
	6	0.029	0.026	0.023	0.020
	8	0.035	0.032	0.028	0.025
	10	0.041	0.037	0.033	0.029
	12	0.050	0.045	0.040	0.035

≤ D3 mm: ap = 0.4 mm

MEX400

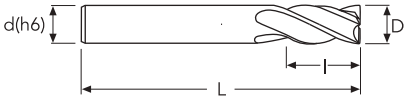
cylindrical shank, 4 flutes unequal pitch

OSAWA NORM | MEX | NMG ENDLESS ORANGE | <55 HRC | 40° | SQUARE | Z4 UP

P	M	K	N	S	H
★		★			★

★ 1st choice ✯ suitable

SIDE MILLING



D	D Tol.	C	C Tol.	d(h6)	l	l1	L	z	EDP No.	Stock
1	0/-0.010			4	3		50	4	MEX400010	●
1.5	0/-0.010			4	4.5		50	4	MEX400015	●
2	0/-0.015			4	6		40	4	MEX400020	●
2.5	0/-0.015			4	8		40	4	MEX400025	●
3	0/-0.015			6	8		55	4	MEX400030	●
3.5	0/-0.020			6	10		55	4	MEX400035	●
4	0/-0.020			6	11		55	4	MEX400040	●
4.5	0/-0.020			6	11		45	4	MEX400045	●
5	0/-0.020			6	13		55	4	MEX400050	●
5.5	0/-0.020			6	13		55	4	MEX400055	●
6	0/-0.020			6	15		60	4	MEX400060	●
6.5	0/-0.020			8	17		65	4	MEX400065	●
7	0/-0.020			8	18		65	4	MEX400070	●
8	0/-0.020			8	20		70	4	MEX400080	●
9	0/-0.020			10	23		70	4	MEX400090	●
10	0/-0.020			10	22		75	4	MEX400100	●
11	0/-0.020			12	28		75	4	MEX400110	●
12	-0.005/-0.025			12	26		80	4	MEX400120	●
14	-0.010/-0.025			14	35		90	4	MEX400140	●
16	-0.010/-0.025			16	32		100	4	MEX400160	●
20	-0.010/-0.025			20	40		100	4	MEX400200	●
25	-0.010/-0.025			25	40		100	4	MEX400250	●

● stock standard ○ non-stock standard ∇ stock exhaustion

CUTTING PARAMETERS

MEX400

SIDE MILLING

Material Group ISO 513	P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
Hardness/Rm	≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
ap x ae	**D x 0.05D**	**D x 0.05D**	**D x 0.05D**	**D x 0.05D**
Vc (m/min)	**120÷160**	**100÷140**	**90÷120**	**80÷100**
D (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
1	0.007	0.006		0.006
2	0.010	0.010	0.010	0.010
3	0.016	0.016	0.016	0.016
4	0.027	0.027	0.027	0.027
5	0.036	0.036	0.036	0.036
6	0.043	0.043	0.043	0.043
8	0.060	0.060	0.060	0.060
10	0.085	0.085	0.085	0.085
12	0.100	0.100	0.100	0.100
14	0.120	0.120	0.120	0.120
16	0.150	0.150	0.150	0.150
18	0.175	0.175	0.175	0.175
20	0.200	0.200	0.200	0.200
22	0.215	0.215	0.215	0.215
25	0.225	0.225	0.225	0.225

MEXCL4

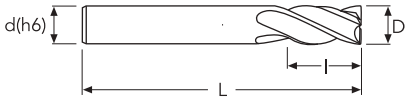
cylindrical shank, 4 flutes, long

OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 40° | SQUARE | Z4

P	M	K	N	S	H
★		★			★

★ 1st choice ☆ suitable

SIDE MILLING



D	D Tol.	C	C Tol.	d(h6)	l	l1	L	z	EDP No.	Stock
2	0/-0.020			6	8		60	4	MEXCL4020	●
3	0/-0.020			6	15		60	4	MEXCL4030	●
4	0/-0.020			6	20		60	4	MEXCL4040	●
5	0/-0.020			6	25		70	4	MEXCL4050	●
6	0/-0.020			6	25		70	4	MEXCL4060	●
8	0/-0.020			8	30		80	4	MEXCL4080	●
10	0/-0.020			10	35		90	4	MEXCL4100	●
12	0/-0.020			12	40		90	4	MEXCL4120	●
14	0/-0.020			16	50		110	4	MEXCL4140	●
16	0/-0.020			16	50		110	4	MEXCL4160	●
20	0/-0.020			20	50		110	4	MEXCL4200	●
25	0/-0.050			25	70		130	4	MEXCL4250	●
3	0/-0.030			6	25		100	4	MEXCL4030100	●
4	0/-0.030			6	31		100	4	MEXCL4040100	●
5	0/-0.030			6	31		100	4	MEXCL4050100	●
6	0/-0.030			6	38		100	4	MEXCL4060100	●
8	0/-0.030			8	41		100	4	MEXCL4080100	●
10	0/-0.035			10	57		125	4	MEXCL4100125	●
12	0/-0.035			12	75		150	4	MEXCL4120150	●
14	0/-0.035			14	75		150	4	MEXCL4140150	●
16	0/-0.035			16	75		150	4	MEXCL4160150	●
20	0/-0.035			20	75		150	4	MEXCL4200150	●

● stock standard ○ non-stock standard ∇ stock exhaustion

INFO

CARBIDE DRILLS

PU-HPU
TA-4HTA
SUH
ALH
HRC
SUH MINI
HL
HSD
C-SD-TA

HSS DRILLS

LFTA
SUTA
HSS-HSS/CO

CARBIDE END-MILLS

G2
MDTA
HF VH/UP
MEF
ALU
MEX/MH
UH/MH

HSS END-MILLS

CARBIDE BURRS

CUTTING PARAMETERS

MEXCL4

	Material Group ISO 513	P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
	Hardness/Rm	≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 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)	**60÷100**	**50÷70**	**30÷50**	**20÷40**
L SIDE MILLING	D (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	2	0.014	0.013	0.012	0.010
	3	0.022	0.020	0.017	0.015
	4	0.029	0.026	0.023	0.020
	5	0.033	0.029	0.026	0.023
	6	0.036	0.033	0.029	0.025
	8	0.047	0.042	0.038	0.033
	10	0.060	0.054	0.048	0.042
	12	0.072	0.065	0.058	0.051
	14	0.083	0.075	0.066	0.058
	16	0.094	0.084	0.075	0.065
	20	0.119	0.107	0.095	0.083
	25	0.150	0.135	0.120	0.105

MEXCSHM

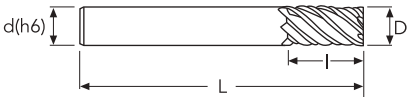
cylindrical shank, multi flute

OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 50° | SQUARE | Z6~Z8

P	M	K	N	S	H
★		★			★

★ 1st choice ☆ suitable

SIDE MILLING



D	D Tol.	C	C Tol.	d(h6)	l	l1	L	z	EDP No.	Stock
3	0/-0.020			6	8		50	6	MEXCSHM030	●
4	0/-0.020			6	11		50	6	MEXCSHM040	●
5	0/-0.020			6	13		50	6	MEXCSHM050	●
6	0/-0.020			6	15		60	6	MEXCSHM060	●
8	0/-0.020			8	20		70	6	MEXCSHM080	●
10	0/-0.020			10	25		80	6	MEXCSHM100	●
12	0/-0.020			12	30		80	6	MEXCSHM120	●
14	0/-0.020			14	30		90	6	MEXCSHM140	●
16	0/-0.020			16	40		100	6	MEXCSHM160	●
18	0/-0.020			18	35		100	8	MEXCSHM180	●
20	0/-0.020			20	50		100	8	MEXCSHM200	●

● stock standard ○ non-stock standard ∇ stock exhaustion

INFO

CARBIDE DRILLS

PU-HPU
TA-4HTA
SUH
ALH
HRC
SUH MINI
HL
HSD
C-SD-TA

HSS DRILLS

LFTA
SUTA
HSS-HSS/CO

CARBIDE END-MILLS

G2
MDTA
HF VH/UP
MEF
ALU
MEX/MH
UH/MH

HSS END-MILLS

CARBIDE BURRS

MEXCSHM

	Material Group ISO 513	P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
	Hardness/Rm	≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
	ap x ae	**1.5D x 0.1D**	**1.5D x 0.1D**	**1.5D x 0.05D**	**1.5D x 0.05D**
	Vc (m/min)	**120÷160**	**90÷130**	**60÷100**	**50÷70**
L SIDE MILLING	D (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.008	0.008	0.007	0.006
	4	0.012	0.011	0.010	0.008
	5	0.014	0.013	0.012	0.010
	6	0.018	0.016	0.014	0.013
	8	0.028	0.025	0.022	0.019
	10	0.034	0.030	0.027	0.024
	12	0.041	0.037	0.033	0.029
	14	0.048	0.043	0.038	0.034
	16	0.056	0.051	0.045	0.039
	18	0.065	0.059	0.052	0.046
	20	0.073	0.066	0.058	0.051

MEXCLHM

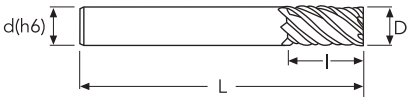
cylindrical shank, multi flute, long

OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 50° | SQUARE | Z6~Z8

P	M	K	N	S	H
★		★			★

★ 1st choice ☆ suitable

SIDE MILLING



D	D Tol.	C	C Tol.	d(h6)	l	l1	L	z	EDP No.	Stock
3	0/-0.030			6	19		75	6	MEXCLHM030	●
4	0/-0.030			6	19		75	6	MEXCLHM040	●
5	0/-0.030			6	19		75	6	MEXCLHM050	●
6	0/-0.030			6	25		80	6	MEXCLHM060	●
8	0/-0.030			8	40		100	6	MEXCLHM080	●
10	0/-0.030			10	45		120	6	MEXCLHM100	●
12	0/-0.030			12	60		120	6	MEXCLHM120	●
16	0/-0.030			16	80		150	6	MEXCLHM160	●
20	0/-0.030			20	80		150	8	MEXCLHM200	●

● stock standard ○ non-stock standard ∇ stock exhaustion

INFO

CARBIDE DRILLS
PU-HPU
TA-4HTA
SUH
ALH
HRC
SUH MINI
HL
HSD
C-SD-TA

HSS DRILLS
LFTA
SUTA
HSS-HSS/CO

CARBIDE END-MILLS
G2
MDTA
HF VH/UP
MEF
ALU
MEX/MH
UH/MH

HSS END-MILLS

CARBIDE BURRS

CUTTING PARAMETERS

MEXCLHM

	Material Group ISO 513	P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
	Hardness/Rm	≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 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)	**80÷120**	**50÷90**	**40÷60**	**20÷40**
L SIDE MILLING	D (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	3	0.007	0.006	0.006	0.005
	4	0.010	0.009	0.008	0.007
	5	0.012	0.011	0.010	0.009
	6	0.015	0.014	0.012	0.011
	8	0.023	0.021	0.019	0.016
	10	0.029	0.026	0.023	0.020
	12	0.035	0.031	0.028	0.024
	14	0.041	0.037	0.033	0.029
	16	0.048	0.043	0.038	0.034
	18	0.055	0.050	0.044	0.039
	20	0.063	0.057	0.050	0.044

MEXCSFR

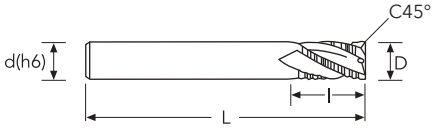
cylindrical shank, roughing

OSAWA NORM | MEX | UMG ENDLESS | <55 HRC | 20° | C45° | HR FINE | Z3~Z4

P	M	K	N	S	H
★		★			★

★ 1st choice ☆ suitable

SLOTTING | SIDE MILLING



D	D Tol.	C45°	C45° Tol.	d(h6)	l	l1	L	z	EDP No.	Stock
6	0/-0.048	0.40	+/-0.020	6	15		60	3	MEXCSFR060	●
8	0/-0.058	0.40	+/-0.020	8	20		65	3	MEXCSFR080	●
10	0/-0.058	0.50	+/-0.020	10	25		70	4	MEXCSFR100	●
12	0/-0.070	0.50	+/-0.020	12	30		80	4	MEXCSFR120	●
14	0/-0.070	0.50	+/-0.020	14	25		100	4	MEXCSFR140	●
16	0/-0.070	0.50	+/-0.020	16	40		100	4	MEXCSFR160	●
20	0/-0.084	0.50	+/-0.020	20	50		100	4	MEXCSFR200	●

INFO

CARBIDE DRILLS

PU-HPU
TA-4HTA
SUH
ALH
HRC
SUH MINI
HL
HSD
C-SD-TA

HSS DRILLS

LFTA
SUTA
HSS-HSS/CO

CARBIDE END-MILLS

G2
MDTA
HF VH/UP
MEF
ALU
MEX/MH
UH/MH

HSS END-MILLS

CARBIDE BURRS

CUTTING PARAMETERS

MEXCSFR

SLOTTING

Material Group ISO 513	P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
Hardness/Rm	≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
ap x ae	**0.5D x D**	**0.5D x D**	**0.3D x D**	**0.1D x D**
Vc (m/min)	**70÷90**	**50÷70**	**40÷60**	**20÷40**
D (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
6	0.043	0.038	0.034	0.030
8	0.055	0.050	0.044	0.039
10	0.071	0.064	0.057	0.050
12	0.085	0.077	0.068	0.060
14	0.098	0.088	0.078	0.068
16	0.110	0.099	0.088	0.077
20	0.140	0.126	0.112	0.098

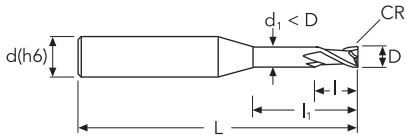
SIDE MILLING

Material Group ISO 513	P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
Hardness/Rm	≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
ap x ae	**1.5D x 0.3D**	**1.5D x 0.3D**	**D x 0.1D**	**D x 0.05D**
Vc (m/min)	**80÷100**	**60÷80**	**50÷70**	**30÷50**
D (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
6	0.047	0.042	0.037	0.033
8	0.061	0.055	0.049	0.043
10	0.078	0.070	0.062	0.055
12	0.094	0.084	0.075	0.065
14	0.108	0.097	0.086	0.075
16	0.121	0.109	0.097	0.085
20	0.154	0.139	0.123	0.108

MEXLN2R

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

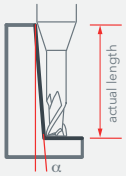
OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 40° | RADIUS | Z2



P	M	K	N	S	H
★		★			★

★ 1st choice ☆ suitable

SQUARE RIB



actual length according to α angle

D	D Tol.	CR	CR Tol.	d(h6)	l	l1	d1	L	z	30′	1°	1°30′	2°	3°	EDP No.	Stock
0.3	0/-0.010	0.05	0/-0.010	4	0.4	1	0.26	50	2	1,08	1,12	1,15	1,19	1,25	MEXLN20030001	●
0.3	0/-0.010	0.05	0/-0.010	4	0.4	1.5	0.26	50	2	1,60	1,65	1,70	1,75	1,85	MEXLN20030065	●
0.3	0/-0.010	0.05	0/-0.010	4	0.4	2	0.26	50	2	2,12	2,19	2,25	2,32	2,46	MEXLN20030002	●
0.3	0/-0.010	0.05	0/-0.010	4	0.4	3	0.26	50	2	3,15	3,25	3,35	3,46	3,66	MEXLN20030003	●
0.3	0/-0.010	0.10	0/-0.010	4	0.4	1	0.26	50	2	1,08	1,12	1,15	1,18	1,24	MEXLN20030101	●
0.3	0/-0.010	0.10	0/-0.010	4	0.4	1.5	0.26	50	2	1,60	1,65	1,70	1,75	1,84	MEXLN20030165	●
0.3	0/-0.010	0.10	0/-0.010	4	0.4	2	0.26	50	2	2,12	2,18	2,25	2,31	2,45	MEXLN20030102	●
0.3	0/-0.010	0.10	0/-0.010	4	0.4	3	0.26	50	2	3,15	3,25	3,35	3,45	3,65	MEXLN20030103	●
0.4	0/-0.010	0.05	0/-0.010	4	0.6	1	0.37	50	2	1,08	1,12	1,15	1,19	1,25	MEXLN20040001	●
0.4	0/-0.010	0.05	0/-0.010	4	0.6	2	0.37	50	2	2,12	2,19	2,25	2,32	2,46	MEXLN20040002	●
0.4	0/-0.010	0.05	0/-0.010	4	0.6	3	0.37	50	2	3,15	3,25	3,35	3,46	3,66	MEXLN20040003	●
0.4	0/-0.010	0.05	0/-0.010	4	0.6	4	0.37	50	2	4,19	4,32	4,46	4,59	4,86	MEXLN20040004	●
0.4	0/-0.010	0.10	0/-0.010	4	0.6	1	0.37	50	2	1,08	1,12	1,15	1,18	1,24	MEXLN20040101	●
0.4	0/-0.010	0.10	0/-0.010	4	0.6	2	0.37	50	2	2,12	2,18	2,25	2,31	2,45	MEXLN20040102	●
0.4	0/-0.010	0.10	0/-0.010	4	0.6	3	0.37	50	2	3,15	3,25	3,35	3,45	3,65	MEXLN20040103	●
0.4	0/-0.010	0.10	0/-0.010	4	0.6	4	0.37	50	2	4,18	4,32	4,45	4,58	4,85	MEXLN20040104	●
0.5	0/-0.010	0.05	0/-0.010	4	0.7	2	0.45	50	2	2,16	2,23	2,29	2,36	2,50	MEXLN20050002	●
0.5	0/-0.010	0.05	0/-0.010	4	0.7	4	0.45	50	2	4,22	4,36	4,50	4,63	4,90	MEXLN20050004	●
0.5	0/-0.010	0.05	0/-0.010	4	0.7	6	0.45	50	2	6,29	6,49	6,70	6,90	7,31	MEXLN20050006	●
0.5	0/-0.010	0.10	0/-0.010	4	0.7	2	0.45	50	2	2,16	2,22	2,29	2,36	2,49	MEXLN20050102	●
0.5	0/-0.010	0.10	0/-0.010	4	0.7	4	0.45	50	2	4,22	4,36	4,49	4,63	4,89	MEXLN20050104	●
0.5	0/-0.010	0.10	0/-0.010	4	0.7	6	0.45	50	2	6,29	6,49	6,69	6,89	7,30	MEXLN20050106	●
0.6	0/-0.010	0.10	0/-0.010	4	0.9	2	0.55	50	2	2,16	2,22	2,29	2,36	2,49	MEXLN20060102	●
0.6	0/-0.010	0.10	0/-0.010	4	0.9	4	0.55	50	2	4,22	4,36	4,49	4,63	4,89	MEXLN20060104	●
0.6	0/-0.010	0.10	0/-0.010	4	0.9	6	0.55	50	2	6,29	6,49	6,69	6,89	7,30	MEXLN20060106	●
0.7	0/-0.010	0.10	0/-0.010	4	1.0	4	0.65	50	2	4,22	4,36	4,49	4,63	4,89	MEXLN20070104	●
0.7	0/-0.010	0.10	0/-0.010	4	1.0	6	0.65	50	2	6,29	6,49	6,69	6,89	7,30	MEXLN20070106	●
0.8	0/-0.010	0.05	0/-0.010	4	1.2	4	0.75	50	2	4,22	4,36	4,50	4,63	4,90	MEXLN20080004	●
0.8	0/-0.010	0.05	0/-0.010	4	1.2	6	0.75	50	2	6,29	6,49	6,70	6,90	7,31	MEXLN20080006	●
0.8	0/-0.010	0.05	0/-0.010	4	1.2	8	0.75	50	2	8,36	8,63	8,90	9,17	9,71	MEXLN20080008	●
0.8	0/-0.010	0.10	0/-0.010	4	1.2	4	0.75	50	2	4,22	4,36	4,49	4,63	4,89	MEXLN20080104	●
0.8	0/-0.010	0.10	0/-0.010	4	1.2	6	0.75	50	2	6,29	6,49	6,69	6,89	7,30	MEXLN20080106	●
0.8	0/-0.010	0.10	0/-0.010	4	1.2	8	0.75	50	2	8,36	8,63	8,89	9,16	9,70	MEXLN20080108	●
0.9	0/-0.010	0.10	0/-0.010	4	1.4	8	0.85	50	2	8,36	8,63	8,89	9,16	9,70	MEXLN20090108	●
0.9	0/-0.010	0.10	0/-0.010	4	1.4	15	0.85	50	2	15,59	16,10	16,60	17,11	18,12	MEXLN20090115	●
1	0/-0.015	0.10	0/-0.010	4	1.5	4	0.95	50	2	4,32	4,46	4,59	4,73	5,01	MEXLN20100104	●
1	0/-0.015	0.10	0/-0.010	4	1.5	6	0.95	50	2	6,39	6,59	6,80	7,00	7,41	MEXLN20100106	●
1	0/-0.015	0.10	0/-0.010	4	1.5	8	0.95	50	2	8,45	8,73	9,00	9,27	9,81	MEXLN20100108	●
1	0/-0.015	0.10	0/-0.010	4	1.5	10	0.95	50	2	10,52	10,86	11,20	11,54	12,22	MEXLN20100110	●

● stock standard ○ non-stock standard ∇ stock exhaustion

INFO

CARBIDE DRILLS
PU-HPU
TA-4HTA
SUH
ALH
HRC
SUH MINI
HL
HSD
C-SD-TA

HSS DRILLS
LFTA
SUTA
HSS-HSS/CO

CARBIDE END-MILLS
G2
MDTA
HF VH/UP
MEF
ALU
MEX/MH
UH/MH

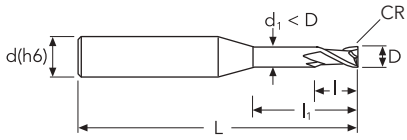
HSS END-MILLS

CARBIDE BURRS

MEXLN2R

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

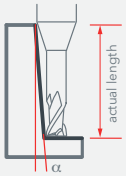
OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 40° | RADIUS | Z2



P	M	K	N	S	H
★		★			★

★ 1st choice ☆ suitable

SQUARE RIB



actual length according to α angle

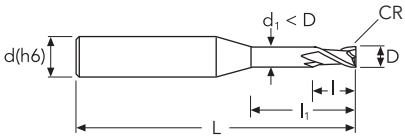
D	D Tol.	CR	CR Tol.	d(h6)	l	l1	d1	L	z	30′	1°	1°30′	2°	3°	EDP No.	Stock
1	0/-0.015	0.10	0/-0.010	4	1.5	12	0.95	50	2	12,59	12,99	13,40	13,81	14,62	MEXLN20100112	●
1	0/-0.015	0.10	0/-0.010	4	1.5	16	0.95	50	2	16,72	17,26	17,80	18,35	19,43	MEXLN20100116	●
1	0/-0.015	0.10	0/-0.010	4	1.5	20	0.95	50	2	20,86	21,53	22,21	22,88	24,24	MEXLN20100120	●
1	0/-0.015	0.20	0/-0.010	4	1.5	4	0.95	50	2	4,32	4,45	4,58	4,72	4,99	MEXLN20100204	●
1	0/-0.015	0.20	0/-0.010	4	1.5	6	0.95	50	2	6,38	6,58	6,79	6,99	7,39	MEXLN20100206	●
1	0/-0.015	0.20	0/-0.010	4	1.5	8	0.95	50	2	8,45	8,72	8,99	9,26	9,79	MEXLN20100208	●
1	0/-0.015	0.20	0/-0.010	4	1.5	10	0.95	50	2	10,52	10,85	11,19	11,52	12,20	MEXLN20100210	●
1	0/-0.015	0.20	0/-0.010	4	1.5	12	0.95	50	2	12,58	12,99	13,39	13,79	14,60	MEXLN20100212	●
1	0/-0.015	0.20	0/-0.010	4	1.5	16	0.95	50	2	16,72	17,26	17,79	18,33	19,41	MEXLN20100216	●
1	0/-0.015	0.20	0/-0.010	4	1.5	20	0.95	50	2	20,85	21,53	22,20	22,87	24,22	MEXLN20100220	●
1	0/-0.015	0.30	0/-0.010	4	1.5	6	0.95	50	2	6,38	6,58	6,78	6,97	7,37	MEXLN20100306	●
1	0/-0.015	0.30	0/-0.010	4	1.5	10	0.95	50	2	10,51	10,85	11,18	11,51	12,18	MEXLN20100310	●
1	0/-0.015	0.30	0/-0.010	4	1.5	16	0.95	50	2	16,72	17,25	17,78	18,32	19,39	MEXLN20100316	●
1	0/-0.015	0.30	0/-0.010	4	1.5	20	0.95	50	2	20,85	21,52	22,19	22,86	24,20	MEXLN20100320	●
1.2	0/-0.015	0.10	0/-0.010	4	1.8	6	1.15	50	2	6,39	6,59	6,80	7,00	7,41	MEXLN20120106	●
1.2	0/-0.015	0.10	0/-0.010	4	1.8	8	1.15	50	2	8,45	8,73	9,00	9,27	9,81	MEXLN20120108	●
1.2	0/-0.015	0.10	0/-0.010	4	1.8	10	1.15	50	2	10,52	10,86	11,20	11,54	12,22	MEXLN20120110	●
1.2	0/-0.015	0.10	0/-0.010	4	1.8	12	1.15	50	2	12,59	12,99	13,40	13,81	14,62	MEXLN20120112	●
1.4	0/-0.015	0.10	0/-0.010	4	2.1	6	1.35	50	2	6,39	6,59	6,80	7,00	7,41	MEXLN20140106	●
1.4	0/-0.015	0.10	0/-0.010	4	2.1	8	1.35	50	2	8,45	8,73	9,00	9,27	9,81	MEXLN20140108	●
1.4	0/-0.015	0.10	0/-0.010	4	2.1	10	1.35	50	2	10,52	10,86	11,20	11,54	12,22	MEXLN20140110	●
1.4	0/-0.015	0.10	0/-0.010	4	2.1	12	1.35	50	2	12,59	12,99	13,40	13,81	14,62	MEXLN20140112	●
1.4	0/-0.015	0.10	0/-0.010	4	2.1	16	1.35	50	2	16,72	17,26	17,80	18,35	19,43	MEXLN20140116	●
1.5	0/-0.015	0.10	0/-0.010	4	2.3	4	1.45	50	2	4,32	4,46	4,59	4,73	5,01	MEXLN20150104	●
1.5	0/-0.015	0.10	0/-0.010	4	2.3	8	1.45	50	2	8,45	8,73	9,00	9,27	9,81	MEXLN20150108	●
1.5	0/-0.015	0.10	0/-0.010	4	2.3	12	1.45	50	2	12,59	12,99	13,40	13,81	14,62	MEXLN20150112	●
1.5	0/-0.015	0.10	0/-0.010	4	2.3	16	1.45	50	2	16,72	17,26	17,80	18,35	19,43	MEXLN20150116	●
1.5	0/-0.015	0.10	0/-0.010	4	2.3	20	1.45	60	2	20,86	21,53	22,21	22,88	24,24	MEXLN20150120	●
1.5	0/-0.015	0.20	0/-0.010	4	2.3	8	1.45	50	2	8,45	8,72	8,99	9,26	9,79	MEXLN20150208	●
1.5	0/-0.015	0.20	0/-0.010	4	2.3	10	1.45	50	2	10,52	10,85	11,19	11,52	12,20	MEXLN20150210	●
1.5	0/-0.015	0.20	0/-0.010	4	2.3	12	1.45	50	2	12,58	12,99	13,39	13,79	14,60	MEXLN20150212	●
1.5	0/-0.015	0.20	0/-0.010	4	2.3	16	1.45	50	2	16,72	17,26	17,79	18,33	19,41	MEXLN20150216	●
1.5	0/-0.015	0.20	0/-0.010	4	2.3	20	1.45	60	2	20,85	21,53	22,20	22,87	24,22	MEXLN20150220	●
1.5	0/-0.015	0.30	0/-0.010	4	2.3	8	1.45	50	2	8,45	8,71	8,98	9,24	9,77	MEXLN20150308	●
1.5	0/-0.015	0.30	0/-0.010	4	2.3	16	1.45	50	2	16,72	17,25	17,78	18,32	19,39	MEXLN20150316	●
1.5	0/-0.015	0.30	0/-0.010	4	2.3	20	1.45	60	2	20,85	21,52	22,19	22,86	24,20	MEXLN20150320	●
1.6	0/-0.015	0.10	0/-0.010	4	2.4	8	1.55	50	2	8,45	8,73	9,00	9,27	9,81	MEXLN20160108	●
1.6	0/-0.015	0.10	0/-0.010	4	2.4	12	1.55	50	2	12,59	12,99	13,40	13,81	14,62	MEXLN20160112	●
1.6	0/-0.015	0.10	0/-0.010	4	2.4	16	1.55	50	2	16,72	17,26	17,80	18,35	19,43	MEXLN20160116	●

● stock standard ○ non-stock standard ∇ stock exhaustion

MEXLN2R

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

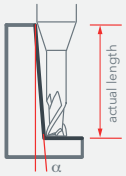
OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 40° | RADIUS | Z2



P	M	K	N	S	H
★		★			★

★ 1st choice ☆ suitable

SQUARE RIB



actual length according to α angle

D	D Tol.	CR	CR Tol.	d(h6)	l	l1	d1	L	z	30′	1°	1°30′	2°	3°	EDP No.	Stock
1.8	0/-0.015	0.20	0/-0.010	4	2.7	8	1.75	50	2	8,45	8,72	8,99	9,26	9,79	MEXLN20180208	●
1.8	0/-0.015	0.20	0/-0.010	4	2.7	12	1.75	50	2	12,58	12,99	13,39	13,79	14,60	MEXLN20180212	●
1.8	0/-0.015	0.20	0/-0.010	4	2.7	16	1.75	50	2	16,72	17,26	17,79	18,33	19,41	MEXLN20180216	●
2	0/-0.015	0.20	0/-0.010	4	3	6	1.95	50	2	6,38	6,58	6,79	6,99	7,39	MEXLN20200206	●
2	0/-0.015	0.20	0/-0.010	4	3	8	1.95	50	2	8,45	8,72	8,99	9,26	9,79	MEXLN20200208	●
2	0/-0.015	0.20	0/-0.010	4	3	10	1.95	50	2	10,52	10,85	11,19	11,52	12,20	MEXLN20200210	●
2	0/-0.015	0.20	0/-0.010	4	3	12	1.95	50	2	12,58	12,99	13,39	13,79	14,60	MEXLN20200212	●
2	0/-0.015	0.20	0/-0.010	4	3	14	1.95	50	2	14,65	15,12	15,59	16,06	17,01	MEXLN20200214	●
2	0/-0.015	0.20	0/-0.010	4	3	16	1.95	50	2	16,72	17,26	17,79	18,33	19,41	MEXLN20200216	●
2	0/-0.015	0.20	0/-0.010	4	3	20	1.95	60	2	20,85	21,53	22,20	22,87	-	MEXLN20200220	●
2	0/-0.015	0.20	0/-0.010	4	3	25	1.95	75	2	26,02	26,86	27,70	28,54	-	MEXLN20200225	●
2	0/-0.015	0.20	0/-0.010	4	3	30	1.95	75	2	31,19	32,20	33,21	-	-	MEXLN20200230	●
2	0/-0.015	0.50	0/-0.010	4	3	6	1.95	50	2	6,37	6,56	6,75	6,95	7,33	MEXLN20200506	●
2	0/-0.015	0.50	0/-0.010	4	3	8	1.95	50	2	8,44	8,70	8,96	9,22	9,73	MEXLN20200508	●
2	0/-0.015	0.50	0/-0.010	4	3	12	1.95	50	2	12,57	12,97	13,36	13,75	14,54	MEXLN20200512	●
2	0/-0.015	0.50	0/-0.010	4	3	16	1.95	50	2	16,71	17,24	17,76	18,29	19,35	MEXLN20200516	●
2	0/-0.015	0.50	0/-0.010	4	3	20	1.95	60	2	20,84	21,51	22,17	22,83	-	MEXLN20200520	●
2	0/-0.015	0.50	0/-0.010	4	3	25	1.95	75	2	26,01	26,84	27,67	28,50	-	MEXLN20200525	●
2	0/-0.015	0.50	0/-0.010	4	3	30	1.95	75	2	31,18	32,18	33,18	-	-	MEXLN20200530	●
2.5	0/-0.020	0.30	0/-0.015	4	3.7	8	2.40	50	2	8,45	8,71	8,98	9,24	9,77	MEXLN20250308	●
2.5	0/-0.020	0.30	0/-0.015	4	3.7	12	2.40	50	2	12,58	12,98	13,38	13,78	14,58	MEXLN20250312	●
2.5	0/-0.020	0.30	0/-0.015	4	3.7	16	2.40	50	2	16,72	17,25	17,78	18,32	-	MEXLN20250316	●
2.5	0/-0.020	0.30	0/-0.015	4	3.7	20	2.40	60	2	20,85	21,52	22,19	-	-	MEXLN20250320	●
2.5	0/-0.020	0.30	0/-0.015	4	3.7	25	2.40	60	2	26,02	26,86	27,69	-	-	MEXLN20250325	●
2.5	0/-0.020	0.30	0/-0.015	4	3.7	30	2.40	75	2	31,19	32,19	-	-	-	MEXLN20250330	●
2.5	0/-0.020	0.50	0/-0.015	4	3.7	8	2.40	50	2	8,44	8,70	8,96	9,22	9,73	MEXLN20250508	●
2.5	0/-0.020	0.50	0/-0.015	4	3.7	12	2.40	50	2	12,57	12,97	13,36	13,75	14,54	MEXLN20250512	●
2.5	0/-0.020	0.50	0/-0.015	4	3.7	16	2.40	50	2	16,71	17,24	17,76	18,29	-	MEXLN20250516	●
2.5	0/-0.020	0.50	0/-0.015	4	3.7	20	2.40	60	2	20,84	21,51	22,17	-	-	MEXLN20250520	●
2.5	0/-0.020	0.50	0/-0.015	4	3.7	25	2.40	60	2	26,01	26,84	27,67	-	-	MEXLN20250525	●
2.5	0/-0.020	0.50	0/-0.015	4	3.7	30	2.40	75	2	31,18	32,18	-	-	-	MEXLN20250530	●
3	0/-0.025	0.20	0/-0.015	6	4.5	10	2.85	50	2	10,71	11,05	11,39	11,74	12,42	MEXLN20300210	●
3	0/-0.025	0.20	0/-0.015	6	4.5	12	2.85	50	2	12,78	13,19	13,60	14,00	14,82	MEXLN20300212	●
3	0/-0.025	0.20	0/-0.015	6	4.5	16	2.85	60	2	16,91	17,46	18,00	18,54	19,63	MEXLN20300216	●
3	0/-0.025	0.20	0/-0.015	6	4.5	20	2.85	60	2	21,05	21,72	22,40	23,08	24,44	MEXLN20300220	●
3	0/-0.025	0.20	0/-0.015	6	4.5	25	2.85	75	2	26,21	27,06	27,91	28,75	30,45	MEXLN20300225	●
3	0/-0.025	0.30	0/-0.015	6	4.5	10	2.85	50	2	10,71	11,04	11,38	11,72	12,40	MEXLN20300310	●
3	0/-0.025	0.30	0/-0.015	6	4.5	12	2.85	50	2	12,77	13,18	13,59	13,99	14,80	MEXLN20300312	●
3	0/-0.025	0.30	0/-0.015	6	4.5	16	2.85	60	2	16,91	17,45	17,99	18,53	19,61	MEXLN20300316	●

● stock standard ○ non-stock standard ∇ stock exhaustion

INFO

CARBIDE DRILLS
PU-HPU
TA-4HTA
SUH
ALH
HRC
SUH MINI
HL
HSD
C-SD-TA

HSS DRILLS
LFTA
SUTA
HSS-HSS/CO

CARBIDE END-MILLS
G2
MDTA
HF VH/UP
MEF
ALU
MEX/MH
UH/MH

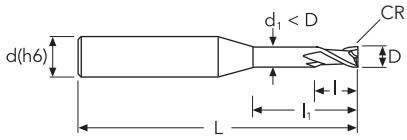
HSS END-MILLS

CARBIDE BURRS

MEXLN2R

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

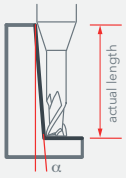
OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 40° | RADIUS | Z2



P	M	K	N	S	H
★		★			★

★ 1st choice ☆ suitable

SQUARE RIB



actual length according to α angle

D	D Tol.	CR	CR Tol.	d(h6)	l	l1	d1	L	z	30′	1°	1°30′	2°	3°	EDP No.	Stock
3	0/-0.025	0.30	0/-0.015	6	4.5	20	2.85	60	2	21,04	21,72	22,39	23,07	24,42	MEXLN20300320	●
3	0/-0.025	0.30	0/-0.015	6	4.5	25	2.85	75	2	26,21	27,05	27,90	28,74	30,43	MEXLN20300325	●
3	0/-0.025	0.50	0/-0.015	6	4.5	10	2.85	50	2	10,70	11,03	11,36	11,70	12,36	MEXLN20300510	●
3	0/-0.025	0.50	0/-0.015	6	4.5	12	2.85	50	2	12,77	13,17	13,57	13,96	14,76	MEXLN20300512	●
3	0/-0.025	0.50	0/-0.015	6	4.5	16	2.85	60	2	16,90	17,44	17,97	18,50	19,57	MEXLN20300516	●
3	0/-0.025	0.50	0/-0.015	6	4.5	20	2.85	60	2	21,04	21,70	22,37	23,04	24,38	MEXLN20300520	●
3	0/-0.025	0.50	0/-0.015	6	4.5	25	2.85	75	2	26,20	27,04	27,88	28,71	30,39	MEXLN20300525	●
4	0/-0.025	0.30	0/-0.015	6	4.5	10	3.85	60	2	10,90	11,24	11,59	11,93	12,62	MEXLN20400310	●
4	0/-0.025	0.30	0/-0.015	6	4.5	15	3.85	60	2	16,07	16,58	17,09	17,61	18,63	MEXLN20400315	●
4	0/-0.025	0.30	0/-0.015	6	4.5	20	3.85	60	2	21,24	21,92	22,60	23,28	-	MEXLN20400320	●
4	0/-0.025	0.30	0/-0.015	6	4.5	25	3.85	75	2	26,40	27,25	28,10	28,95	-	MEXLN20400325	●
4	0/-0.025	0.30	0/-0.015	6	4.5	30	3.85	75	2	31,57	32,59	33,61	-	-	MEXLN20400330	●
4	0/-0.025	0.30	0/-0.015	6	4.5	40	3.85	75	2	41,91	43,26	-	-	-	MEXLN20400340	●
4	0/-0.025	0.50	0/-0.015	6	4.5	10	3.85	60	2	10,89	11,23	11,57	11,91	12,58	MEXLN20400510	●
4	0/-0.025	0.50	0/-0.015	6	4.5	15	3.85	60	2	16,06	16,57	17,07	17,58	18,59	MEXLN20400515	●
4	0/-0.025	0.50	0/-0.015	6	4.5	20	3.85	60	2	21,23	21,90	22,58	23,25	-	MEXLN20400520	●
4	0/-0.025	0.50	0/-0.015	6	4.5	25	3.85	75	2	26,40	27,24	28,08	28,92	-	MEXLN20400525	●
4	0/-0.025	0.50	0/-0.015	6	4.5	30	3.85	75	2	31,57	32,58	33,59	-	-	MEXLN20400530	●
4	0/-0.025	0.50	0/-0.015	6	4.5	40	3.85	75	2	41,90	43,25	-	-	-	MEXLN20400540	●

● stock standard ○ non-stock standard ∇ stock exhaustion

MEXLN2R

	Material Group ISO 513			P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
	Hardness/Rm			≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
	ap x ae			**ap x D**	**ap x D**	**ap x D**	**ap x D**
	Vc (m/min)			**70÷110**	**50÷90**	**40÷60**	**20÷40**
	D (mm)	l1 (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
SQUARE RIB	**0.3**	≤ 6D	0.02	0.004	0.004	0.003	0.003
		≤ 8D	0.01	0.004	0.003	0.003	0.003
		≤ 10D	0.01	0.003	0.003	0.003	0.002
		≤ 12D	0.01	0.003	0.003	0.002	0.002
	0.4	≤ 6D	0.02	0.006	0.005	0.005	0.004
		≤ 8D	0.02	0.005	0.005	0.004	0.004
		≤ 10D	0.01	0.005	0.004	0.004	0.003
		≤ 12D	0.01	0.004	0.004	0.003	0.003
	0.5	≤ 6D	0.03	0.007	0.006	0.006	0.005
		≤ 8D	0.02	0.006	0.006	0.005	0.004
		≤ 10D	0.02	0.006	0.005	0.004	0.004
		≤ 12D	0.01	0.005	0.004	0.004	0.003
	0.6	≤ 6D	0.03	0.008	0.007	0.006	0.006
		≤ 8D	0.03	0.007	0.006	0.006	0.005
		≤ 10D	0.02	0.006	0.006	0.005	0.004
		≤ 12D	0.02	0.006	0.005	0.004	0.004
	0.8	≤ 6D	0.04	0.010	0.009	0.008	0.007
		≤ 8D	0.03	0.009	0.008	0.007	0.006
		≤ 10D	0.03	0.008	0.007	0.006	0.006
		≤ 12D	0.02	0.007	0.006	0.006	0.005
	1	≤ 6D	0.05	0.012	0.011	0.010	0.008
		≤ 8D	0.04	0.011	0.010	0.009	0.008
		≤ 10D	0.04	0.010	0.009	0.008	0.007
		≤ 12D	0.03	0.008	0.008	0.007	0.006
	1.2	≤ 6D	0.06	0.022	0.020	0.018	0.015
		≤ 8D	0.05	0.020	0.018	0.016	0.014
		≤ 10D	0.04	0.018	0.016	0.014	0.012
		≤ 12D	0.03	0.015	0.014	0.012	0.011
	1.4	≤ 6D	0.07	0.024	0.022	0.019	0.017
		≤ 8D	0.06	0.022	0.019	0.017	0.015
		≤ 10D	0.05	0.019	0.017	0.015	0.013
		≤ 12D	0.04	0.017	0.015	0.013	0.012
		≤ 15D	0.03	0.014	0.013	0.012	0.010
		≥ 15D	0.02	0.012	0.011	0.010	0.008
	1.5	≤ 6D	0.08	0.025	0.023	0.020	0.018
		≤ 8D	0.06	0.023	0.020	0.018	0.016
		≤ 10D	0.05	0.020	0.018	0.016	0.014
		≤ 12D	0.04	0.018	0.016	0.014	0.012
		≤ 15D	0.03	0.015	0.014	0.012	0.011
		≥ 15D	0.02	0.013	0.011	0.010	0.009
	1.6	≤ 6D	0.08	0.026	0.023	0.021	0.018
		≤ 8D	0.07	0.023	0.021	0.019	0.016
		≤ 10D	0.06	0.021	0.019	0.017	0.015
		≤ 12D	0.04	0.018	0.016	0.015	0.013
		≤ 15D	0.04	0.016	0.014	0.012	0.011
		≥ 15D	0.02	0.013	0.012	0.010	0.009

INFO

CARBIDE DRILLS

PU-HPU
TA-4HTA
SUH
ALH
HRC
SUH MINI
HL
HSD
C-SD-TA

HSS DRILLS

LFTA
SUTA
HSS-HSS/CO

CARBIDE END-MILLS

G2
MDTA
HF VH/UP
MEF
ALU
MEX/MH
UH/MH

HSS END-MILLS

CARBIDE BURRS

CUTTING PARAMETERS

MEXLN2R

SQUARE RIB

Material Group ISO 513			P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
Hardness/Rm			≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
ap x ae			**ap x D**	**ap x D**	**ap x D**	**ap x D**
Vc (m/min)			**70÷110**	**50÷90**	**40÷60**	**20÷40**
D (mm)	l1 (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
1.8	≤ 6D	0.09	0.028	0.025	0.022	0.020
	≤ 8D	0.08	0.025	0.023	0.020	0.018
	≤ 10D	0.06	0.022	0.020	0.018	0.016
	≤ 12D	0.05	0.020	0.018	0.016	0.014
	≤ 15D	0.04	0.017	0.015	0.013	0.012
	≥ 15D	0.03	0.014	0.013	0.011	0.010
2	≤ 6D	0.10	0.030	0.027	0.024	0.021
	≤ 8D	0.09	0.027	0.024	0.022	0.019
	≤ 10D	0.07	0.024	0.022	0.019	0.017
	≤ 12D	0.06	0.021	0.019	0.017	0.015
	≤ 15D	0.05	0.018	0.016	0.014	0.013
	≥ 15D	0.03	0.018	0.016	0.014	0.013
2.5	≤ 6D	0.13	0.035	0.032	0.028	0.025
	≤ 8D	0.11	0.032	0.028	0.025	0.022
	≤ 10D	0.09	0.028	0.025	0.022	0.020
	≤ 12D	0.07	0.025	0.022	0.020	0.017
	≤ 15D	0.06	0.021	0.019	0.017	0.015
	≥ 15D	0.04	0.021	0.019	0.017	0.015
3	≤ 6D	0.15	0.040	0.036	0.032	0.028
	≤ 8D	0.13	0.036	0.032	0.029	0.025
	≤ 10D	0.11	0.032	0.029	0.026	0.022
	≤ 12D	0.08	0.028	0.025	0.022	0.020
	≤ 15D	0.07	0.024	0.022	0.019	0.017
	≥ 15D	0.05	0.024	0.022	0.019	0.017
4	≤ 6D	0.20	0.050	0.045	0.040	0.035
	≤ 8D	0.17	0.045	0.041	0.036	0.032
	≤ 10D	0.14	0.040	0.036	0.032	0.028
	≤ 12D	0.11	0.035	0.032	0.028	0.025
	≤ 15D	0.09	0.030	0.027	0.024	0.021
	≥ 15D	0.06	0.030	0.027	0.024	0.021

MEXLS2R

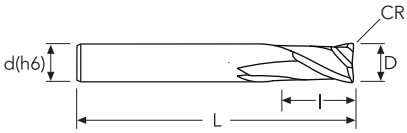
cylindrical shank, 2 flutes, long, corner radius

OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 40° | RADIUS | Z2

P	M	K	N	S	H
★		★			★

★ 1st choice ☆ suitable

SLOTTING



D	D Tol.	CR	CR Tol.	d(h6)	l	l1	L	z	EDP No.	Stock
2	0/-0.015	0.30	0/-0.010	6	4		75	2	MEXLS2R03020	●
3	0/-0.020	0.30	0/-0.015	6	5		75	2	MEXLS2R03030	●
3	0/-0.020	0.50	0/-0.015	6	5		75	2	MEXLS2R05030	●
4	0/-0.020	0.30	0/-0.015	6	8		75	2	MEXLS2R03040	●
4	0/-0.020	0.50	0/-0.015	6	8		75	2	MEXLS2R05040	●
5	0/-0.020	0.30	0/-0.015	6	9		75	2	MEXLS2R03050	●
5	0/-0.020	0.50	0/-0.015	6	9		75	2	MEXLS2R05050	●
6	0/-0.020	0.30	0/-0.015	6	10		75	2	MEXLS2R03060	●
6	0/-0.020	0.50	0/-0.015	6	10		75	2	MEXLS2R05060	●
6	0/-0.020	1.00	0/-0.015	6	10		75	2	MEXLS2R10060	●
8	0/-0.020	0.30	0/-0.015	8	12		75	2	MEXLS2R03080	●
8	0/-0.020	0.50	0/-0.015	8	12		75	2	MEXLS2R05080	●
8	0/-0.020	1.00	0/-0.015	8	12		75	2	MEXLS2R10080	●
10	0/-0.020	0.50	0/-0.020	10	14		100	2	MEXLS2R05100	●
10	0/-0.020	1.00	0/-0.020	10	14		100	2	MEXLS2R10100	●
12	0/-0.020	0.50	0/-0.020	12	16		100	2	MEXLS2R05120	●
12	0/-0.020	1.00	0/-0.020	12	16		100	2	MEXLS2R10120	●
16	0/-0.020	0.50	0/-0.020	16	22		125	2	MEXLS2R05160	●
16	0/-0.020	1.00	0/-0.020	16	22		125	2	MEXLS2R10160	●

● stock standard ○ non-stock standard ∇ stock exhaustion

INFO

CARBIDE DRILLS

PU-HPU
TA-4HTA
SUH
ALH
HRC
SUH MINI
HL
HSD
C-SD-TA

HSS DRILLS

LFTA
SUTA
HSS-HSS/CO

CARBIDE END-MILLS

G2
MDTA
HF VH/UP
MEF
ALU
MEX/MH
UH/MH

HSS END-MILLS

CARBIDE BURRS

CUTTING PARAMETERS

MEXLS2R

SLOTTING	Material Group ISO 513	P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
	Hardness/Rm	≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
	ap x ae	**0.3D x D**	**0.3D x D**	**0.2D x D**	**0.05D x D**
	Vc (m/min)	**70÷110**	**50÷90**	**40÷60**	**20÷40**
	D (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	2	0.005	0.005	0.004	0.004
	3	0.006	0.005	0.005	0.004
	4	0.009	0.008	0.007	0.006
	5	0.012	0.011	0.010	0.008
	6	0.018	0.016	0.014	0.013
	8	0.024	0.022	0.019	0.017
	10	0.029	0.026	0.023	0.020
	12	0.035	0.032	0.028	0.025
	16	0.041	0.037	0.033	0.029

≤ D3 mm: ap = 0.4 mm

MEXCS4R

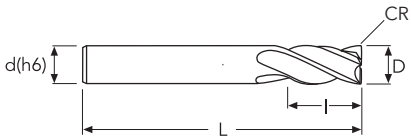
cylindrical shank, 4 flutes, corner radius

OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 40° | RADIUS | Z4

P	M	K	N	S	H
★		★			★

★ 1st choice ☆ suitable

SIDE MILLING



D	D Tol.	CR	CR Tol.	d(h6)	l	l1	L	z	EDP No.	Stock
1	0/-0.015	0.20	0/-0.010	4	3		50	4	MEXCS4R01002	●
1.5	0/-0.015	0.20	0/-0.010	4	4.5		50	4	MEXCS4R01502	●
2	0/-0.015	0.20	0/-0.010	4	6.5		50	4	MEXCS4R02002	●
2	0/-0.015	0.30	0/-0.010	4	6.5		50	4	MEXCS4R02003	●
2.5	0/-0.020	0.20	0/-0.015	4	6.5		50	4	MEXCS4R02502	●
2.5	0/-0.020	0.50	0/-0.015	4	6.5		50	4	MEXCS4R02505	●
3	0/-0.020	0.20	0/-0.015	4	9		50	4	MEXCS4R03002	●
3	0/-0.020	0.30	0/-0.015	4	9		50	4	MEXCS4R03003	●
3	0/-0.020	0.50	0/-0.015	4	9		50	4	MEXCS4R03005	●
4	0/-0.020	0.30	0/-0.015	4	12		50	4	MEXCS4R04003	●
4	0/-0.020	0.50	0/-0.015	4	12		50	4	MEXCS4R04005	●
4	0/-0.020	1.00	0/-0.015	4	12		50	4	MEXCS4R04010	●
5	0/-0.020	0.30	0/-0.015	5	15		50	4	MEXCS4R05003	●
5	0/-0.020	0.50	0/-0.015	5	15		50	4	MEXCS4R05005	●
5	0/-0.020	1.00	0/-0.015	5	15		50	4	MEXCS4R05010	●
6	0/-0.020	0.30	0/-0.015	6	16		50	4	MEXCS4R06003	●
6	0/-0.020	0.50	0/-0.015	6	16		50	4	MEXCS4R06005	●
6	0/-0.020	1.00	0/-0.015	6	16		50	4	MEXCS4R06010	●
8	0/-0.020	0.30	0/-0.015	8	20		64	4	MEXCS4R08003	●
8	0/-0.020	0.50	0/-0.015	8	20		64	4	MEXCS4R08005	●
8	0/-0.020	1.00	0/-0.015	8	20		64	4	MEXCS4R08010	●
8	0/-0.020	1.50	0/-0.015	8	20		64	4	MEXCS4R08015	●
8	0/-0.020	2.00	0/-0.015	8	20		64	4	MEXCS4R08020	●
10	0/-0.020	0.30	0/-0.020	10	22		75	4	MEXCS4R10003	●
10	0/-0.020	0.50	0/-0.020	10	22		75	4	MEXCS4R10005	●
10	0/-0.020	1.00	0/-0.020	10	22		75	4	MEXCS4R10010	●
10	0/-0.020	1.50	0/-0.020	10	22		75	4	MEXCS4R10015	●
10	0/-0.020	2.00	0/-0.020	10	22		75	4	MEXCS4R10020	●
12	0/-0.020	0.30	0/-0.020	12	25		75	4	MEXCS4R12003	●
12	0/-0.020	0.50	0/-0.020	12	25		75	4	MEXCS4R12005	●
12	0/-0.020	1.00	0/-0.020	12	25		75	4	MEXCS4R12010	●
12	0/-0.020	1.50	0/-0.020	12	25		75	4	MEXCS4R12015	●
12	0/-0.020	2.00	0/-0.020	12	25		75	4	MEXCS4R12020	●
12	0/-0.020	3.00	0/-0.020	12	25		75	4	MEXCS4R12030	●
14	0/-0.020	0.50	0/-0.020	14	32		90	4	MEXCS4R14005	○
14	0/-0.020	1.00	0/-0.020	14	32		90	4	MEXCS4R14010	●
14	0/-0.020	2.00	0/-0.020	14	32		90	4	MEXCS4R14020	○
16	0/-0.020	0.50	0/-0.020	16	32		90	4	MEXCS4R16005	●
16	0/-0.020	1.00	0/-0.020	16	32		90	4	MEXCS4R16010	●

● stock standard ○ non-stock standard ∇ stock exhaustion

INFO

CARBIDE DRILLS

PU-HPU
TA-4HTA
SUH
ALH
HRC
SUH MINI
HL
HSD
C-SD-TA

HSS DRILLS

LFTA
SUTA
HSS-HSS/CO

CARBIDE END-MILLS

G2
MDTA
HF VH/UP
MEF
ALU
MEX/MH
UH/MH

HSS END-MILLS

CARBIDE BURRS

MEXCS4R

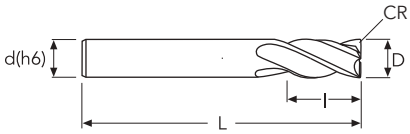
cylindrical shank, 4 flutes, corner radius

OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 40° | RADIUS | Z4

P	M	K	N	S	H
★		★			★

★ 1st choice ☆ suitable

L SIDE MILLING



D	D Tol.	CR	CR Tol.	d(h6)	l	l1	L	z	EDP No.	Stock
16	0/-0.020	2.00	0/-0.020	16	32		90	4	MEXCS4R16020	●
16	0/-0.020	3.00	0/-0.020	16	32		90	4	MEXCS4R16030	●
18	0/-0.020	0.50	0/-0.020	18	38		100	4	MEXCS4R18005	●
18	0/-0.020	1.00	0/-0.020	18	38		100	4	MEXCS4R18010	●
20	0/-0.020	0.50	0/-0.020	20	38		100	4	MEXCS4R20005	●
20	0/-0.020	1.00	0/-0.020	20	38		100	4	MEXCS4R20010	●
20	0/-0.020	2.00	0/-0.020	20	38		100	4	MEXCS4R20020	●
20	0/-0.020	3.00	0/-0.020	20	38		100	4	MEXCS4R20030	●

● stock standard ○ non-stock standard ∇ stock exhaustion

CUTTING PARAMETERS

MEXCS4R

	Material Group ISO 513	P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
	Hardness/Rm	≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
	ap x ae	**D x 0.1D**	**D x 0.1D**	**D x 0.05D**	**D x 0.05D**
	Vc (m/min)	**80÷120**	**50÷90**	**40÷60**	**20÷40**
	D (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
L SIDE MILLING	**1**	0.009	0.008	0.007	0.006
	2	0.017	0.015	0.014	0.012
	3	0.026	0.023	0.020	0.018
	4	0.034	0.031	0.027	0.024
	5	0.038	0.034	0.031	0.027
	6	0.043	0.038	0.034	0.030
	8	0.055	0.050	0.044	0.039
	10	0.071	0.064	0.057	0.050
	12	0.085	0.077	0.068	0.060
	14	0.098	0.088	0.078	0.068
	16	0.110	0.099	0.088	0.077
	18	0.125	0.113	0.100	0.088
	20	0.140	0.126	0.112	0.098

INFO

CARBIDE DRILLS

PU-HPU
TA-4HTA
SUH
ALH
HRC
SUH MINI
HL
HSD
C-SD-TA

HSS DRILLS

LFTA
SUTA
HSS-HSS/CO

CARBIDE END-MILLS

G2
MDTA
HF VH/UP
MEF
ALU
MEX/MH
UH/MH

HSS END-MILLS

CARBIDE BURRS

MEX410R

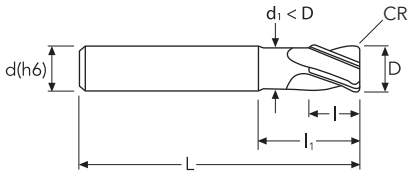
cylindrical shank, 4 flutes, short, corner radius

OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 40° | RADIUS | Z4

P	M	K	N	S	H
★		★			★

★ 1st choice ☆ suitable

SIDE MILLING



D	D Tol.	CR	CR Tol.	d(h6)	l	l1	d1	L	z	EDP No.	Stock
2	0/-0.012	0.20	+/-0.020	6	2.5	5	1.90	50	4	MEX410R02020	●
2.5	0/-0.012	0.25	+/-0.020	6	3	6	2.40	50	4	MEX410R025025	●
3	0/-0.012	0.30	+/-0.020	6	4	7	2.85	50	4	MEX410R03030	●
4	0/-0.012	0.50	+/-0.020	6	5	9	3.85	50	4	MEX410R05040	●
5	0/-0.015	0.50	+/-0.020	6	6	12	4.85	50	4	MEX410R05050	●
6	0/-0.015	0.50	+/-0.020	6	7	14	5.80	60	4	MEX410R05060	●
8	0/-0.015	1.00	+/-0.020	8	10	18	7.80	70	4	MEX410R10080	●
10	0/-0.015	1.00	+/-0.020	10	12	25	9.80	75	4	MEX410R10100	●
12	0/-0.015	1.00	+/-0.020	12	15	30	11.80	80	4	MEX410R10120	●

● stock standard ○ non-stock standard ∇ stock exhaustion

CUTTING PARAMETERS

MEX410R

	Material Group ISO 513	P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
	Hardness/Rm	≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
	ap x ae	**D x 0.1D**	**D x 0.1D**	**D x 0.05D**	**D x 0.05D**
	Vc (m/min)	**80÷120**	**50÷90**	**40÷60**	**20÷40**
SIDE MILLING	D (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	2	0.015	0.014	0.012	0.011
	3	0.023	0.021	0.018	0.016
	4	0.031	0.028	0.024	0.021
	5	0.034	0.031	0.028	0.024
	6	0.038	0.034	0.031	0.027
	8	0.050	0.045	0.040	0.035
	10	0.065	0.059	0.052	0.046
	12	0.077	0.069	0.061	0.054

INFO

MEXLS4R

cylindrical shank, 4 flutes, long, corner radius

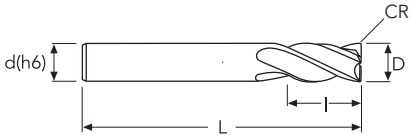
OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 40° | RADIUS | Z4

CARBIDE DRILLS
PU-HPU
TA-4HTA
SUH
ALH
HRC
SUH MINI
HL
HSD
C-SD-TA

P	M	K	N	S	H
★		★			★

★ 1st choice ☆ suitable

L SIDE MILLING



D	D Tol.	CR	CR Tol.	d(h6)	l	l1	L	z	EDP No.	Stock
2	0/-0.015	0.30	0/-0.010	6	4		75	4	MEXLS4R03020	●
3	0/-0.020	0.30	0/-0.015	6	5		75	4	MEXLS4R03030	●
3	0/-0.020	0.50	0/-0.015	6	5		75	4	MEXLS4R05030	●
4	0/-0.020	0.30	0/-0.015	6	8		75	4	MEXLS4R03040	●
4	0/-0.020	0.50	0/-0.015	6	8		75	4	MEXLS4R05040	●
5	0/-0.020	0.30	0/-0.015	6	9		75	4	MEXLS4R03050	●
5	0/-0.020	0.50	0/-0.015	6	9		75	4	MEXLS4R05050	●
6	0/-0.020	0.30	0/-0.015	6	10		75	4	MEXLS4R03060	●
6	0/-0.020	0.50	0/-0.015	6	10		75	4	MEXLS4R05060	●
6	0/-0.020	1.00	0/-0.015	6	10		75	4	MEXLS4R10060	●
8	0/-0.020	0.30	0/-0.015	8	12		75	4	MEXLS4R03080	●
8	0/-0.020	0.50	0/-0.015	8	12		75	4	MEXLS4R05080	●
8	0/-0.020	1.00	0/-0.015	8	12		75	4	MEXLS4R10080	●
10	0/-0.020	0.50	0/-0.020	10	14		100	4	MEXLS4R05100	●
10	0/-0.020	1.00	0/-0.020	10	14		100	4	MEXLS4R10100	●
12	0/-0.020	0.50	0/-0.020	12	16		100	4	MEXLS4R05120	●
12	0/-0.020	1.00	0/-0.020	12	16		100	4	MEXLS4R10120	●
16	0/-0.020	0.50	0/-0.020	16	22		125	4	MEXLS4R05160	●
16	0/-0.020	1.00	0/-0.020	16	22		125	4	MEXLS4R10160	●

HSS DRILLS
LFTA
SUTA
HSS-HSS/CO
CARBIDE END-MILLS
G2
MDTA
HF VH/UP
MEF
ALU
MEX/MH
UH/MH
HSS END-MILLS
CARBIDE BURRS

● stock standard ○ non-stock standard ∇ stock exhaustion

CUTTING PARAMETERS

MEXLS4R

	Material Group ISO 513	P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
	Hardness/Rm	≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
	ap x ae	**D x 0.1D**	**D x 0.05D**	**D x 0.05D**	**D x 0.05D**
	Vc (m/min)	**70÷110**	**50÷90**	**40÷60**	**20÷40**
L SIDE MILLING	D (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	2	0.014	0.013	0.012	0.010
	3	0.022	0.020	0.017	0.015
	4	0.029	0.026	0.023	0.020
	5	0.033	0.029	0.026	0.023
	6	0.036	0.033	0.029	0.025
	8	0.047	0.042	0.038	0.033
	10	0.060	0.054	0.048	0.042
	12	0.072	0.065	0.058	0.051
	16	0.094	0.084	0.075	0.065

INFO

MEX610R

cylindrical shank, multi flute, short, corner radius

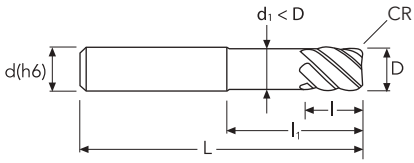
OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 45° | RADIUS | Z6

CARBIDE DRILLS
PU-HPU
TA-4HTA
SUH
ALH
HRC
SUH MINI
HL
HSD
C-SD-TA

P	M	K	N	S	H
★		★			★

★ 1st choice ☆ suitable

L SIDE MILLING



D	D Tol.	CR	CR Tol.	d(h6)	l	l1	d1	L	z	EDP No.	Stock
6	0/-0.030	0.50	+/-0.020	6	6	14	5.80	50	6	MEX610R05060	●
8	0/-0.030	0.50	+/-0.020	8	8	24	7.80	60	6	MEX610R05080	●
10	0/-0.030	1.00	+/-0.020	10	10	30	9.80	70	6	MEX610R10100	●
12	0/-0.030	1.00	+/-0.020	12	12	30	11.80	75	6	MEX610R10120	●

HSS DRILLS
LFTA
SUTA
HSS-HSS/CO
CARBIDE END-MILLS
G2
MDTA
HF VH/UP
MEF
ALU
MEX/MH
UH/MH
HSS END-MILLS
CARBIDE BURRS

● stock standard ○ non-stock standard ∇ stock exhaustion

CUTTING PARAMETERS

MEX610R

	Material Group ISO 513	P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
	Hardness/Rm	≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
	ap x ae	**D x 0.1D**	**D x 0.1D**	**D x 0.05D**	**D x 0.05D**
SIDE MILLING	Vc (m/min)	**120÷160**	**90÷130**	**60÷100**	**50÷70**
	D (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.018	0.016	0.014	0.013
	8	0.028	0.025	0.022	0.019
	10	0.034	0.030	0.027	0.024
	12	0.041	0.037	0.033	0.029

INFO

CARBIDE DRILLS
PU-HPU
TA-4HTA
SUH
ALH
HRC
SUH MINI
HL
HSD
C-SD-TA

HSS DRILLS
LFTA
SUTA
HSS-HSS/CO

CARBIDE END-MILLS
G2
MDTA
HF VH/UP
MEF
ALU
MEX/MH
UH/MH

HSS END-MILLS

CARBIDE BURRS

MEX611R

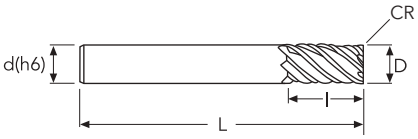
cylindrical shank, multi flute, long, corner radius

OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 45° | RADIUS | Z6

P	M	K	N	S	H
★		★			★

★ 1st choice ☆ suitable

SIDE MILLING



D	D Tol.	CR	CR Tol.	d(h6)	l	l1	L	z	EDP No.	Stock
6	0/-0.030	0.50	+/-0.020	6	15		90	6	MEX611R05060	●
8	0/-0.030	0.50	+/-0.020	8	20		100	6	MEX611R05080	●
10	0/-0.030	0.50	+/-0.020	10	25		100	6	MEX611R05100	●
10	0/-0.030	1.00	+/-0.020	10	25		100	6	MEX611R10100	●
12	0/-0.030	0.50	+/-0.020	12	30		100	6	MEX611R05120	●
12	0/-0.030	1.00	+/-0.020	12	30		100	6	MEX611R10120	●

● stock standard ○ non-stock standard ∇ stock exhaustion

CUTTING PARAMETERS

MEX611R

	Material Group ISO 513	P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
	Hardness/Rm	≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 HRC
	ap x ae	**1.5D x 0.05D**	**1.5D x 0.05D**	**1.5D x 0.05D**	**1.5D x 0.05D**
SIDE MILLING	Vc (m/min)	**100÷140**	**80÷120**	**50÷70**	**30÷50**
	D (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	6	0.015	0.014	0.012	0.011
	8	0.023	0.021	0.019	0.016
	10	0.029	0.026	0.023	0.020
	12	0.035	0.031	0.028	0.024

INFO

CARBIDE DRILLS

PU-HPU
TA-4HTA
SUH
ALH
HRC
SUH MINI
HL
HSD
C-SD-TA

HSS DRILLS

LFTA
SUTA
HSS-HSS/CO

CARBIDE END-MILLS

G2
MDTA
HF VH/UP
MEF
ALU
MEX/MH
UH/MH

HSS END-MILLS

CARBIDE BURRS

MHMB204

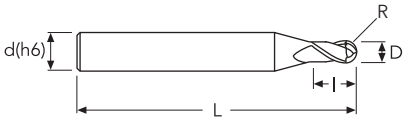
cylindrical shank, 2 flutes ball nose, miniature

OSAWA NORM | MH | NMG MH COAT | 30÷70 HRC | 30° | BALL NOSE | Z2 BALL

P	M	K	N	S	H
★		★			★

★ 1st choice ☆ suitable

COPYING



D	D Tol.	R	R Tol.	d(h6)	l	l1	d1	L	z	EDP No.	Stock
0.2	0/-0.015	0.10	0/-0.020	4	0.2			50	2	MHMB200204	●
0.3	0/-0.015	0.15	0/-0.020	4	0.3			50	2	MHMB200304	●
0.4	0/-0.015	0.20	0/-0.020	4	0.4			50	2	MHMB200404	●
0.5	0/-0.015	0.25	0/-0.020	4	0.4			50	2	MHMB200504	●
0.6	0/-0.015	0.30	0/-0.020	4	0.5			50	2	MHMB200604	●
0.7	0/-0.015	0.35	0/-0.020	4	0.6			50	2	MHMB200704	●
0.8	0/-0.015	0.40	0/-0.020	4	0.6			50	2	MHMB200804	●
0.9	0/-0.015	0.45	0/-0.020	4	0.8			50	2	MHMB200904	●
1.0	0/-0.015	0.50	0/-0.020	4	0.8			50	2	MHMB201004	●
1.5	0/-0.015	0.75	0/-0.020	4	1.35			50	2	MHMB201504	●
2	0/-0.015	1	0/-0.020	4	1.7			50	2	MHMB202004	●

● stock standard ○ non-standard stock ∇ stock exhaustion

CUTTING PARAMETERS

MHMB204

	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 0.1D**	**0.05D x 0.1D**	**0.05D x 0.1D**	**0.05D x 0.1D**
	Vc (m/min)		**80÷120**	**60÷100**	**40÷80**	**20÷60**
	D (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
COPYING	**0.1**	0.04	0.004	0.004	0.003	0.003
	0.2	0.09	0.006	0.005	0.005	0.004
	0.3	0.13	0.008	0.007	0.006	0.006
	0.4	0.17	0.010	0.009	0.008	0.007
	0.5	0.22	0.012	0.011	0.010	0.008
	0.6	0.26	0.015	0.014	0.012	0.011
	0.7	0.31	0.018	0.016	0.014	0.013
	0.8	0.35	0.020	0.018	0.016	0.014
	0.9	0.39	0.023	0.021	0.018	0.016
	1	0.44	0.026	0.023	0.020	0.017
	1.5	0.79	0.040	0.036	0.030	0.026
	2	1.20	0.055	0.050	0.041	0.036

α	n (rpm)	Vf (mm/min)
15°	x 1.1	x 1.1

INFO

CARBIDE DRILLS

PU-HPU
TA-4HTA
SUH
ALH
HRC
SUH MINI
HL
HSD
C-SD-TA

HSS DRILLS

LFTA
SUTA
HSS-HSS/CO

CARBIDE END-MILLS

G2
MDTA
HF VH/UP
MEF
ALU
MEX/MH
UH/MH

HSS END-MILLS

CARBIDE BURRS

MHMB206

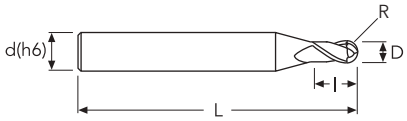
cylindrical shank, 2 flutes ball nose, miniature, 6 mm. shank

OSAWA NORM | MH | NMG MH COAT | 30÷70 HRC | 30° | BALL NOSE | Z2 BALL

P	M	K	N	S	H
★		★			★

★ 1st choice ☆ suitable

COPYING



D	D Tol.	R	R Tol.	d(h6)	l	l1	d1	L	z	EDP No.	Stock
0.4	0/-0.0020	0.20	+/-0.005	6	0.4			50	2	MHMB200406	●
0.5	0/-0.0020	0.25	+/-0.005	6	0.5			50	2	MHMB200506	●
0.6	0/-0.0020	0.30	+/-0.005	6	0.6			50	2	MHMB200606	●
0.8	0/-0.0020	0.40	+/-0.005	6	0.8			50	2	MHMB200806	●

● stock standard ○ non-standard stock ∇ stock exhaustion

CUTTING PARAMETERS

MHMB206

COPYING	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)		**80÷120**	**60÷100**	**40÷80**	**20÷60**
	D (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	0.4	0.17	0.010	0.009	0.008	0.007
	0.5	0.22	0.012	0.011	0.010	0.008
	0.6	0.26	0.015	0.014	0.012	0.011
	0.8	0.35	0.020	0.018	0.016	0.014

α	n (rpm)	Vf (mm/min)
15°	x 1.1	x 1.1

INFO

CARBIDE DRILLS

PU-HPU
TA-4HTA
SUH
ALH
HRC
SUH MINI
HL
HSD
C-SD-TA

HSS DRILLS

LFTA
SUTA
HSS-HSS/CO

CARBIDE END-MILLS

G2
MDTA
HF VH/UP
MEF
ALU
MEX/MH
UH/MH

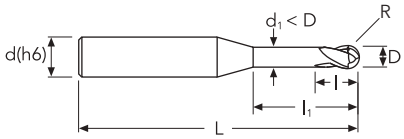
HSS END-MILLS

CARBIDE BURRS

MHLNB2

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

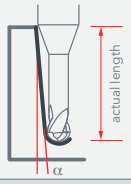
OSAWA NORM | MH | NMG MH COAT | 30÷70 HRC | 30° | BALL NOSE | Z2 BALL



P	M	K	N	S	H
★		★			★

★ 1st choice ✯ suitable

ROUND RIB



actual length according to α angle

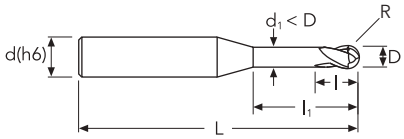
D	D Tol.	R	R Tol.	d(h6)	l	l1	d1	L	z	30′	1°	1°30′	2°	3°	EDP No.	Stock
0.2	0/-0.015	0.10	0/-0.020	4	0.2	0.5	0.17	50	2	0.57	0.58	0.60	0.62	0.66	MHLNB2002005	●
0.2	0/-0.015	0.10	0/-0.020	4	0.2	1	0.17	50	2	1.08	1.12	1.15	1.19	1.27	MHLNB200201	●
0.2	0/-0.015	0.10	0/-0.020	4	0.2	1.5	0.17	50	2	1.60	1.65	1.71	1.76	1.89	MHLNB2002015	●
0.3	0/-0.015	0.15	0/-0.020	4	0.3	1	0.27	50	2	1.08	1.11	1.15	1.18	1.26	MHLNB200301	●
0.3	0/-0.015	0.15	0/-0.020	4	0.3	2	0.27	50	2	2.12	2.18	2.25	2.33	2.49	MHLNB200302	●
0.3	0/-0.015	0.15	0/-0.020	4	0.3	3	0.27	50	2	3.15	3.25	3.36	3.48	3.73	MHLNB200303	●
0.4	0/-0.015	0.20	0/-0.020	4	0.4	1	0.37	50	2	1.08	1.11	1.14	1.18	1.25	MHLNB200401	●
0.4	0/-0.015	0.20	0/-0.020	4	0.4	2	0.37	50	2	2.11	2.18	2.25	2.32	2.48	MHLNB200402	●
0.4	0/-0.015	0.20	0/-0.020	4	0.4	3	0.37	50	2	3.15	3.25	3.36	3.47	3.72	MHLNB200403	●
0.4	0/-0.015	0.20	0/-0.020	4	0.4	4	0.37	50	2	4.18	4.32	4.46	4.62	4.95	MHLNB200404	●
0.4	0/-0.015	0.20	0/-0.020	4	0.4	5	0.37	50	2	5.21	5.39	5.57	5.77	6.18	MHLNB200405	●
0.5	0/-0.015	0.25	0/-0.020	4	0.4	2	0.45	50	2	2.15	2.22	2.29	2.36	2.52	MHLNB200502	●
0.5	0/-0.015	0.25	0/-0.020	4	0.4	3	0.45	50	2	3.18	3.29	3.39	3.51	3.75	MHLNB200503	●
0.5	0/-0.015	0.25	0/-0.020	4	0.4	4	0.45	50	2	4.22	4.35	4.50	4.65	4.98	MHLNB200504	●
0.5	0/-0.015	0.25	0/-0.020	4	0.4	5	0.45	50	2	5.25	5.42	5.61	5.80	6.22	MHLNB200505	●
0.5	0/-0.015	0.25	0/-0.020	4	0.4	6	0.45	50	2	6.28	6.49	6.71	6.95	7.45	MHLNB200506	●
0.5	0/-0.015	0.25	0/-0.020	4	0.4	8	0.45	50	2	8.35	8.63	8.93	9.24	9.92	MHLNB200508	●
0.6	0/-0.015	0.30	0/-0.020	4	0.5	2	0.55	50	2	2.15	2.21	2.28	2.35	2.50	MHLNB200602	●
0.6	0/-0.015	0.30	0/-0.020	4	0.5	3	0.55	50	2	3.18	3.28	3.39	3.50	3.74	MHLNB200603	●
0.6	0/-0.015	0.30	0/-0.020	4	0.5	4	0.55	50	2	4.22	4.35	4.49	4.65	4.97	MHLNB200604	●
0.6	0/-0.015	0.30	0/-0.020	4	0.5	5	0.55	50	2	5.25	5.42	5.60	5.79	6.21	MHLNB200605	●
0.6	0/-0.015	0.30	0/-0.020	4	0.5	6	0.55	50	2	6.28	6.49	6.71	6.94	7.44	MHLNB200606	●
0.6	0/-0.015	0.30	0/-0.020	4	0.5	8	0.55	50	2	8.35	8.63	8.92	9.23	9.91	MHLNB200608	●
0.8	0/-0.015	0.40	0/-0.020	4	0.6	2	0.75	50	2	2.15	2.21	2.27	2.34	2.48	MHLNB200802	●
0.8	0/-0.015	0.40	0/-0.020	4	0.6	4	0.75	50	2	4.21	4.34	4.48	4.63	4.95	MHLNB200804	●
0,8	0/-0.015	0.40	0/-0.020	4	0.6	5	0.75	50	2	5.25	5.41	5.59	5.78	6.18	MHLNB200805	●
0.8	0/-0.015	0.40	0/-0.020	4	0.6	6	0.75	50	2	6.28	6.48	6.70	6.93	7.42	MHLNB200806	●
0,8	0/-0.015	0.40	0/-0.020	4	0.6	7	0.75	50	2	7.31	7.55	7.81	8.07	8.65	MHLNB200807	●
0.8	0/-0.015	0.40	0/-0.020	4	0.6	8	0.75	50	2	8.35	8.62	8.91	9.22	9.88	MHLNB200808	●
0.8	0/-0.015	0.40	0/-0.020	4	0.6	10	0.75	50	2	10.41	10.76	11.13	11.51	12.35	MHLNB200810	●
1	0/-0.015	0.50	0/-0.020	4	0.8	3	0.9	50	2	3.27	3.37	3.47	3.57	3.80	MHLNB201003	●
1	0/-0.015	0.50	0/-0.020	4	0.8	4	0.9	50	2	4.31	4.44	4.58	4.72	5.04	MHLNB201004	●
1	0/-0.015	0.50	0/-0.020	4	0.8	5	0.9	50	2	5.34	5.51	5.68	5.87	6.27	MHLNB201005	●
1	0/-0.015	0.50	0/-0.020	4	0.8	6	0.9	50	2	6.37	6.58	6.79	7.02	7.50	MHLNB201006	●
1	0/-0.015	0.50	0/-0.020	4	0.8	7	0.9	50	2	7.41	7.64	7.90	8.16	8.74	MHLNB201007	●
1	0/-0.015	0.50	0/-0.020	4	0.8	8	0.9	50	2	8.44	8.71	9.00	9.31	9.97	MHLNB201008	●
1	0/-0.015	0.50	0/-0.020	4	0.8	9	0.9	50	2	9.47	9.78	10.11	10.46	11.21	MHLNB201009	●
1	0/-0.015	0.50	0/-0.020	4	0.8	10	0.9	50	2	10.51	10.85	11.22	11.61	12.44	MHLNB201010	●
1	0/-0.015	0.50	0/-0.020	4	0.8	12	0.9	50	2	12.57	12.99	13.43	13.90	14.91	MHLNB201012	●

● stock standard ○ non-standard stock ∇ stock exhaustion

MHLNB2

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

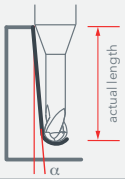
OSAWA NORM | MH | NMG MH COAT | 30÷70 HRC | 30° | BALL NOSE | Z2 BALL



P	M	K	N	S	H
★		★			★

★ 1st choice ✯ suitable

ROUND RIB



actual length according to α angle

D	D Tol.	R	R Tol.	d(h6)	l	l1	d1	L	z	30′	1°	1°30′	2°	3°	EDP No.	Stock
1	0/-0.015	0.50	0/-0.020	4	0.8	14	0.9	50	2	14.64	15.13	15.65	16.19	17.37	MHLNB201014	●
1	0/-0.015	0.50	0/-0.020	4	0.8	16	0.9	50	2	16.71	17.27	17.86	18.49	19.84	MHLNB201016	●
1	0/-0.015	0.50	0/-0.020	4	0.8	20	0.9	60	2	20.84	21.55	22.29	23.08	24.78	MHLNB201020	●
1.2	0/-0.015	0.60	0/-0.020	4	1.0	6	1.1	50	2	6.37	6.57	6.78	7.00	7.48	MHLNB201206	●
1.2	0/-0.015	0.60	0/-0.020	4	1.0	8	1.1	50	2	8.44	8.71	8.99	9.30	9.95	MHLNB201208	●
1.2	0/-0.015	0.60	0/-0.020	4	1.0	10	1.1	50	2	10.50	10.85	11.21	11.59	12.42	MHLNB201210	●
1.2	0/-0.015	0.60	0/-0.020	4	1.0	12	1.1	50	2	12.57	12.98	13.42	13.89	14.88	MHLNB201212	●
1.4	0/-0.015	0.70	0/-0.020	4	1.1	8	1.3	50	2	8.43	8.70	8.98	9.28	9.93	MHLNB201408	●
1.4	0/-0.015	0.70	0/-0.020	4	1.1	12	1.3	50	2	12.57	12.98	13.41	13.87	14.86	MHLNB201412	●
1.4	0/-0.015	0.70	0/-0.020	4	1.1	16	1.3	50	2	16.70	17.26	17.84	18.46	19.80	MHLNB201416	●
1.5	0/-0.015	0.75	0/-0.020	4	1.2	8	1.4	50	2	8.43	8.70	8.98	9.27	9.91	MHLNB201508	●
1.5	0/-0.015	0.75	0/-0.020	4	1.2	12	1.4	50	2	12.57	12.97	13.41	13.86	14.85	MHLNB201512	●
1.5	0/-0.015	0.75	0/-0.020	4	1.2	16	1.4	50	2	16.70	17.25	17.84	18.45	19.78	MHLNB201516	●
1.5	0/-0.015	0.75	0/-0.020	4	1.2	18	1.4	60	2	18.77	19.39	20.05	20.75	22.25	MHLNB201518	●
1.5	0/-0.015	0.75	0/-0.020	6	2.4	20	1.4	50	2	20.84	21.53	22.26	23.04	24.72	MHLNB201520	●
1.6	0/-0.015	0.80	0/-0.020	4	1.3	8	1.5	50	2	8.43	8.69	8.97	9.27	9.90	MHLNB201608	●
1.6	0/-0.015	0.80	0/-0.020	4	1.3	12	1.5	50	2	12.56	12.97	13.40	13.86	14.84	MHLNB201612	●
1.6	0/-0.015	0.80	0/-0.020	4	1.3	16	1.5	50	2	16.70	17.25	17.83	18.45	19.77	MHLNB201616	●
1.6	0/-0.015	0.80	0/-0.020	4	1.3	20	1.5	60	2	20.83	21.53	22.26	23.03	-	MHLNB201620	●
1.8	0/-0.015	0.90	0/-0.020	4	1.4	8	1.7	50	2	8.43	8.69	8.96	9.25	9.88	MHLNB201808	●
1.8	0/-0.015	0.90	0/-0.020	4	1.4	12	1.7	50	2	12.56	12.96	13.39	13.84	14.81	MHLNB201812	●
1.8	0/-0.015	0.90	0/-0.020	4	1.4	16	1.7	50	2	16.70	17.24	17.82	18.43	19.75	MHLNB201816	●
1.8	0/-0.015	0.90	0/-0.020	4	1.4	20	1.7	60	2	20.83	21.52	22.25	23.02	-	MHLNB201820	●
2	0/-0.015	1.00	0/-0.020	4	1.6	4	1.9	50	2	4.29	4.40	4.52	4.65	4.92	MHLNB202004	●
2	0/-0.015	1.00	0/-0.020	4	1.6	6	1.9	50	2	6.36	6.54	6.74	6.94	7.39	MHLNB202006	●
2	0/-0.015	1.00	0/-0.020	4	1.6	8	1.9	50	2	8.42	8.68	8.95	9.24	9.86	MHLNB202008	●
2	0/-0.015	1.00	0/-0.020	4	1.6	10	1.9	50	2	10.49	10.82	11.17	11.53	12.32	MHLNB202010	●
2	0/-0.015	1.00	0/-0.020	4	1.6	12	1.9	50	2	12.56	12.96	13.38	13.83	14.79	MHLNB202012	●
2	0/-0.015	1.00	0/-0.020	4	1.6	14	1.9	50	2	14.62	15.10	15.59	16.12	17.26	MHLNB202014	●
2	0/-0.015	1.00	0/-0.020	4	1.6	16	1.9	50	2	16.69	17.23	17.81	18.42	19.73	MHLNB202016	●
2	0/-0.015	1.00	0/-0.020	4	1.6	18	1.9	60	2	18.76	19.37	20.02	20.71	-	MHLNB202018	●
2	0/-0.015	1.00	0/-0.020	4	1.6	20	1.9	60	2	20.83	21.51	22.24	23.00	-	MHLNB202020	●
2	0/-0.015	1.00	0/-0.020	4	1.6	22	1.9	60	2	22.89	23.65	24.45	25.30	-	MHLNB202022	●
2	0/-0.015	1.00	0/-0.020	4	1.6	25	1.9	75	2	25.99	26.86	27.77	28.74	-	MHLNB202025	●
2	0/-0.015	1.00	0/-0.020	4	1.6	30	1.9	75	2	31.16	32.21	33.31	-	-	MHLNB202030	●
3	0/-0.020	1.50	0/-0.020	6	2.4	8	2.8	50	2	8.60	8.84	9.10	9.37	9.96	MHLNB203008	●
3	0/-0.020	1.50	0/-0.020	6	2.4	10	2.8	50	2	10.67	10.98	11.32	11.67	12.43	MHLNB203010	●
3	0/-0.020	1.50	0/-0.020	6	2.4	12	2.8	50	2	12.73	13.12	13.53	13.96	14.90	MHLNB203012	●
3	0/-0.020	1.50	0/-0.020	6	2.4	16	2.8	60	2	16.87	17.40	17.96	18.55	19.83	MHLNB203016	●

● stock standard ○ non-standard stock ∇ stock exhaustion

INFO

CARBIDE DRILLS

PU-HPU
TA-4HTA
SUH
ALH
HRC
SUH MINI
HL
HSD
C-SD-TA

HSS DRILLS

LFTA
SUTA
HSS-HSS/CO

CARBIDE END-MILLS

G2
MDTA
HF VH/UP
MEF
ALU
MEX/MH
UH/MH

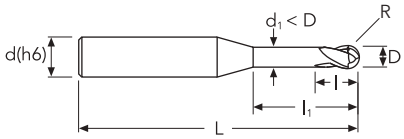
HSS END-MILLS

CARBIDE BURRS

MHLNB2

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

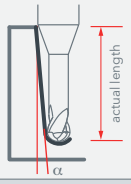
OSAWA NORM | MH | NMG MH COAT | 30÷70 HRC | 30° | BALL NOSE | Z2 BALL



P	M	K	N	S	H
★		★			★

★ 1st choice ✯ suitable

ROUND RIB



actual length according to α angle

D	D Tol.	R	R Tol.	d(h6)	l	l1	d1	L	z	30′	1°	1°30′	2°	3°	EDP No.	Stock
3	0/-0.020	1.50	0/-0.020	6	2.4	20	2.8	60	2	21.00	21.68	22.39	23.14	24.77	MHLNB203020	●
3	0/-0.020	1.50	0/-0.020	6	2.4	25	2.8	75	2	26.17	27.02	27.93	28.88	-	MHLNB203025	●
3	0/-0.020	1.50	0/-0.020	6	2.4	30	2.8	75	2	31.34	32.37	33.46	34.62	-	MHLNB203030	●
3	0/-0.020	1.50	0/-0.020	6	2.4	35	2.8	75	2	36.51	37.72	39.00	40.35	-	MHLNB203035	●
4	0/-0.020	2.00	0/-0.020	6	3.2	10	3.7	50	2	10.84	11.15	11.47	11.81	12.54	MHLNB204010	●
4	0/-0.020	2.00	0/-0.020	6	3.2	16	3.7	60	2	17.04	17.56	18.11	18.69	19.94	MHLNB204016	●
4	0/-0.020	2.00	0/-0.020	6	3.2	20	3.7	60	2	21.18	21.84	22.54	23.28	-	MHLNB204020	●
4	0/-0.020	2.00	0/-0.020	6	3.2	25	3.7	75	2	26.35	27.19	28.08	29.02	-	MHLNB204025	●
4	0/-0.020	2.00	0/-0.020	6	3.2	30	3.7	75	2	31.51	32.53	33.61	-	-	MHLNB204030	●
4	0/-0.020	2.00	0/-0.020	6	3.2	35	3.7	75	2	36.68	37.88	39.15	-	-	MHLNB204035	●
4	0/-0.020	2.00	0/-0.020	6	3.2	40	3.7	100	2	41.85	43.23	-	-	-	MHLNB204040	●
4	0/-0.020	2.00	0/-0.020	6	3.2	45	3.7	100	2	47.02	48.57	-	-	-	MHLNB204045	●
4	0/-0.020	2.00	0/-0.020	6	3.2	50	3.7	100	2	52.19	53.92	-	-	-	MHLNB204050	●

● stock standard ○ non-standard stock ∇ stock exhaustion

MHLNB2

	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)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
ROUND RIB	**0.2**	≤ 6D	0.01	0.09	0.008	0.007	0.006	0.006
		≤ 8D	0.01	0.08	0.007	0.006	0.005	0.005
		≤ 10D	0.01	0.07	0.006	0.005	0.004	0.004
	0.3	≤ 6D	0.02	0.13	0.010	0.009	0.008	0.007
		≤ 8D	0.01	0.12	0.009	0.007	0.006	0.006
		≤ 10D	0.01	0.11	0.008	0.006	0.005	0.004
	0.4	≤ 6D	0.02	0.17	0.013	0.012	0.010	0.009
		≤ 8D	0.02	0.16	0.012	0.009	0.008	0.007
		≤ 10D	0.01	0.15	0.010	0.007	0.007	0.006
	0.5	≤ 6D	0.03	0.22	0.017	0.015	0.014	0.012
		≤ 8D	0.02	0.20	0.015	0.012	0.011	0.010
		≤ 10D	0.02	0.18	0.014	0.010	0.009	0.008
	0.6	≤ 6D	0.03	0.26	0.021	0.019	0.017	0.015
		≤ 8D	0.03	0.24	0.019	0.015	0.014	0.012
		≤ 10D	0.02	0.22	0.017	0.012	0.011	0.009
	0.8	≤ 6D	0.04	0.35	0.025	0.023	0.020	0.018
		≤ 8D	0.03	0.32	0.023	0.018	0.016	0.014
		≤ 10D	0.03	0.29	0.020	0.014	0.013	0.011
	1	≤ 6D	0.05	0.44	0.030	0.027	0.024	0.021
		≤ 8D	0.04	0.40	0.027	0.022	0.019	0.017
		≤ 10D	0.04	0.37	0.024	0.017	0.015	0.013
		≤ 12D	0.03	0.33	0.021	0.013	0.012	0.010
		>12D	0.02	0.30	0.018	0.010	0.009	0.008
	1.2	≤ 6D	0.06	0.52	0.035	0.032	0.028	0.025
		≤ 8D	0.05	0.48	0.032	0.026	0.023	0.020
		≤ 10D	0.04	0.44	0.028	0.020	0.018	0.016
		≤ 12D	0.03	0.39	0.025	0.015	0.014	0.012
		>12D	0.03	0.36	0.021	0.011	0.010	0.009
	1.5	≤ 6D	0.08	0.65	0.045	0.041	0.036	0.032
		≤ 8D	0.06	0.61	0.041	0.033	0.029	0.026
		≤ 10D	0.05	0.55	0.036	0.026	0.023	0.020
		≤ 12D	0.04	0.49	0.032	0.020	0.018	0.015
		>12D	0.03	0.44	0.027	0.015	0.013	0.011
	2	≤ 6D	0.10	0.87	0.060	0.054	0.048	0.042
		≤ 8D	0.09	0.81	0.054	0.044	0.039	0.034
		≤ 10D	0.07	0.74	0.048	0.035	0.031	0.027
		≤ 12D	0.06	0.65	0.042	0.026	0.024	0.021
		>12D	0.05	0.59	0.036	0.019	0.017	0.015
	2.5	≤ 6D	0.13	1.09	0.060	0.054	0.048	0.042
		≤ 8D	0.11	1.01	0.054	0.044	0.039	0.034
		≤ 10D	0.09	0.92	0.048	0.035	0.031	0.027
		≤ 12D	0.07	0.82	0.042	0.026	0.024	0.021
		>12D	0.06	0.74	0.036	0.019	0.017	0.015
	3	≤ 6D	0.15	1.31	0.075	0.068	0.060	0.053
		≤ 8D	0.13	1.21	0.068	0.055	0.049	0.043
		≤ 10D	0.11	1.10	0.060	0.043	0.038	0.034
		≤ 12D	0.08	0.98	0.053	0.033	0.029	0.026
		>12D	0.07	0.89	0.045	0.024	0.022	0.019

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

CARBIDE DRILLS

PU-HPU
TA-4HTA
SUH
ALH
HRC
SUH MINI
HL
HSD
C-SD-TA

HSS DRILLS

LFTA
SUTA
HSS-HSS/CO

CARBIDE END-MILLS

G2
MDTA
HF VH/UP
MEF
ALU
MEX/MH
UH/MH

HSS END-MILLS

CARBIDE BURRS

CUTTING PARAMETERS

MHLNB2

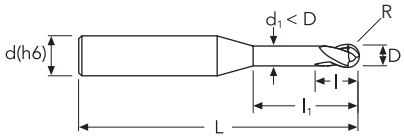
ROUND RIB	Material Group ISO 513				P3 P4 P5 K2 K3	P6 K4 H1 H4 H5	H2	H3
	Hardness/Rm				≤45 HRC	45÷55 HRC	55÷60 HRC	60÷65 HRC
	ap x ae				**ap x 0.2D**	**ap x 0.2D**	**ap x 0.2D**	**ap x 0.2D**
	Vc (m/min)				**140÷160**	**110÷130**	**80÷100**	**50÷70**
	D (mm)	l1 (mm)	ap (mm)	D(eff.) (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	4	≤ 6D	0.20	1.74	0.095	0.086	0.076	0.067
		≤ 8D	0.17	1.61	0.086	0.069	0.062	0.054
		≤ 10D	0.14	1.47	0.076	0.055	0.049	0.043
		≤ 12D	0.11	1.31	0.067	0.042	0.037	0.033
		>12D	0.09	1.19	0.057	0.031	0.027	0.024

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

MHCRB2

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

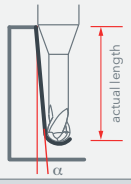
OSAWA NORM | MH | NMG MH COAT | 30÷70 HRC | 30° | BALL NOSE | Z2 BALL



P	M	K	N	S	H
★		★			★

★ 1st choice ☆ suitable

ROUND RIB



actual length according to α angle

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	MHCRB20050206	●
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	MHCRB20050406	●
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	MHCRB20060206	●
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	MHCRB20060406	●
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	MHCRB20060606	●
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	MHCRB20080206	●
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	MHCRB20080406	●
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	MHCRB20080606	●
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	MHCRB20100306	●
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	MHCRB20100606	●
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	MHCRB20100806	●
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	MHCRB20101006	●
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	MHCRB20120606	●
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	MHCRB20120806	●
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	MHCRB20121006	●
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	MHCRB20150406	●
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	MHCRB20150806	●
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	MHCRB20151006	●
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	MHCRB20151206	●
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	MHCRB20151606	●
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	MHCRB20200606	●
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	MHCRB20200806	●
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	MHCRB20201006	●
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	MHCRB20201206	●
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	MHCRB20201606	●
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	MHCRB20202006	●

● stock standard ○ non-standard stock ∇ stock exhaustion

INFO

CARBIDE DRILLS

PU-HPU
TA-4HTA
SUH
ALH
HRC
SUH MINI
HL
HSD
C-SD-TA

HSS DRILLS

LFTA
SUTA
HSS-HSS/CO

CARBIDE END-MILLS

G2
MDTA
HF VH/UP
MEF
ALU
MEX/MH
UH/MH

HSS END-MILLS

CARBIDE BURRS

CUTTING PARAMETERS

MHCRB2

	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)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
ROUND RIB	**0.5**	≤ 6D	0.03	0.22	0.020	0.018	0.016	0.014
		≤ 8D	0.02	0.20	0.018	0.015	0.013	0.011
		≤ 10D	0.02	0.18	0.016	0.012	0.010	0.009
	0.6	≤ 6D	0.03	0.26	0.022	0.020	0.018	0.015
		≤ 8D	0.03	0.24	0.020	0.016	0.014	0.012
		≤ 10D	0.02	0.22	0.018	0.013	0.011	0.010
	0.8	≤ 6D	0.04	0.35	0.025	0.023	0.020	0.018
		≤ 8D	0.03	0.32	0.023	0.018	0.016	0.014
		≤ 10D	0.03	0.29	0.020	0.014	0.013	0.011
	1	≤ 6D	0.05	0.44	0.030	0.027	0.024	0.021
		≤ 8D	0.04	0.40	0.027	0.022	0.019	0.017
		≤ 10D	0.04	0.37	0.024	0.017	0.015	0.013
		≤ 12D	0.03	0.33	0.021	0.013	0.012	0.010
		>12D	0.02	0.30	0.018	0.010	0.009	0.008
	1.2	≤ 6D	0.06	0.52	0.035	0.032	0.028	0.025
		≤ 8D	0.05	0.48	0.032	0.026	0.023	0.020
		≤ 10D	0.04	0.44	0.028	0.020	0.018	0.016
		≤ 12D	0.03	0.39	0.025	0.015	0.014	0.012
		>12D	0.03	0.36	0.021	0.011	0.010	0.009
	1.5	≤ 6D	0.08	0.65	0.045	0.041	0.036	0.032
		≤ 8D	0.06	0.61	0.041	0.033	0.029	0.026
		≤ 10D	0.05	0.55	0.036	0.026	0.023	0.020
		≤ 12D	0.04	0.49	0.032	0.020	0.018	0.015
		>12D	0.03	0.44	0.027	0.015	0.013	0.011
	2	≤ 6D	0.10	0.87	0.060	0.054	0.048	0.042
		≤ 8D	0.09	0.81	0.054	0.044	0.039	0.034
		≤ 10D	0.07	0.74	0.048	0.035	0.031	0.027
		≤ 12D	0.06	0.65	0.042	0.026	0.024	0.021
		>12D	0.05	0.59	0.036	0.019	0.017	0.015
		≥ 15D	0.06	0.06	0.030	0.027	0.024	0.021

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

MEXCSB2

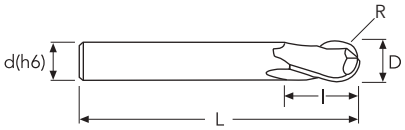
cylindrical shank, 2 flutes ball nose

OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 30° | BALL NOSE | Z2 BALL

P	M	K	N	S	H
★		★			★

★ 1st choice ☆ suitable

COPYING



D	D Tol.	R	R Tol.	d(h6)	l	l1	L	z	EDP No.	Stock
1	0/-0.020	0.50	0/-0.010	3	3		38	2	MEXCSB2010	●
1.5	0/-0.020	0.75	0/-0.010	3	3		38	2	MEXCSB2015	●
2	0/-0.020	1.00	0/-0.010	6	3		50	2	MEXCSB2020	●
2.5	0/-0.020	1.25	0/-0.015	4	4		50	2	MEXCSB202550	●
3	0/-0.020	1.50	0/-0.010	6	4		50	2	MEXCSB2030	●
4	0/-0.020	2.00	0/-0.010	6	5		54	2	MEXCSB2040	●
5	0/-0.020	2.50	0/-0.010	6	6		54	2	MEXCSB2050	●
6	0/-0.020	3.00	0/-0.010	6	12		60	2	MEXCSB2060	●
8	0/-0.020	4.00	0/-0.010	8	14		60	2	MEXCSB2080	●
10	0/-0.020	5.00	0/-0.010	10	18		70	2	MEXCSB2100	●
12	0/-0.020	6.00	0/-0.010	12	22		80	2	MEXCSB2120	●
14	0/-0.020	7.00	0/-0.020	14	32		90	2	MEXCSB2140	●
16	0/-0.020	8.00	0/-0.020	16	32		90	2	MEXCSB2160	●
18	0/-0.020	9.00	0/-0.020	18	38		100	2	MEXCSB2180	●
20	0/-0.020	10.00	0/-0.020	20	38		100	2	MEXCSB2200	●

● stock standard ○ non-stock standard ∇ stock exhaustion

INFO

CARBIDE DRILLS

PU-HPU
TA-4HTA
SUH
ALH
HRC
SUH MINI
HL
HSD
C-SD-TA

HSS DRILLS

LFTA
SUTA
HSS-HSS/CO

CARBIDE END-MILLS

G2
MDTA
HF VH/UP
MEF
ALU
MEX/MH
UH/MH

HSS END-MILLS

CARBIDE BURRS

CUTTING PARAMETERS

MEXCSB2

	Material Group ISO 513		P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
	Hardness/Rm		≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 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)		**120÷160**	**80÷120**	**60÷100**	**50÷70**
	D (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
COPYING	**1**	0.44	0.009	0.008	0.007	0.006
	1.5	0.79	0.012	0.011	0.010	0.008
	2	1.20	0.012	0.011	0.010	0.008
	2.5	1.65	0.015	0.014	0.012	0.011
	3	2.14	0.018	0.016	0.014	0.013
	4	3.20	0.025	0.023	0.020	0.018
	5	4.33	0.032	0.029	0.026	0.022
	6	5.50	0.038	0.034	0.030	0.027
	8	7.84	0.048	0.043	0.038	0.034
	10	10.00	0.057	0.051	0.046	0.040
	12	11.76	0.067	0.060	0.054	0.047
	14	12.83	0.080	0.072	0.064	0.056
	16	12.80	0.095	0.086	0.076	0.067
	18	10.80	0.108	0.097	0.086	0.076
	20	12.00	0.108	0.097	0.086	0.076

α	n (rpm)	Vf (mm/min)
15°	x 1.1	x 1.1

MEXCLSB2

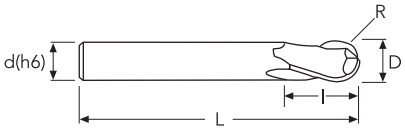
cylindrical shank, 2 flutes ball nose, long reach

OSAWA NORM | MEX | UMG ENDLESS ORANGE | <55 HRC | 30° | BALL NOSE | Z2 BALL

P	M	K	N	S	H
★		★			★

★ 1st choice ☆ suitable

COPYING



D	D Tol.	R	R Tol.	d(h6)	l	l1	L	z	EDP No.	Stock
1	0/-0.012	0.50	0/-0.010	4	2.5		50	2	MEXCLSB2010	●
1.2	0/-0.012	0.60	0/-0.010	4	3		50	2	MEXCLSB2012	●
1.5	0/-0.012	0.75	0/-0.010	4	4		50	2	MEXCLSB2015	●
2	0/-0.012	1.00	0/-0.010	6	5		50	2	MEXCLSB2020	●
2.5	0/-0.012	1.25	0/-0.010	6	6		60	2	MEXCLSB2025	●
3	0/-0.012	1.50	0/-0.010	6	8		60	2	MEXCLSB2030	●
4	0/-0.012	2.00	0/-0.010	6	8		70	2	MEXCLSB2040	●
5	0/-0.012	2.50	0/-0.010	6	10		80	2	MEXCLSB2050	●
6	0/-0.015	3.00	0/-0.010	6	12		90	2	MEXCLSB2060	●
8	0/-0.015	4.00	0/-0.010	8	14		100	2	MEXCLSB2080	●
10	0/-0.015	5.00	0/-0.010	10	18		100	2	MEXCLSB2100	●
12	0/-0.015	6.00	0/-0.010	12	22		110	2	MEXCLSB2120	●
14	0/-0.035	7.00	0/-0.020	14	32		125	2	MEXCLSB2140	●
16	0/-0.035	8.00	0/-0.020	16	32		150	2	MEXCLSB2160	●
20	0/-0.035	10.00	0/-0.020	20	38		150	2	MEXCLSB2200	●

● stock standard ○ non-stock standard ∇ stock exhaustion

INFO

CARBIDE DRILLS

PU-HPU
TA-4HTA
SUH
ALH
HRC
SUH MINI
HL
HSD
C-SD-TA

HSS DRILLS

LFTA
SUTA
HSS-HSS/CO

CARBIDE END-MILLS

G2
MDTA
HF VH/UP
MEF
ALU
MEX/MH
UH/MH

HSS END-MILLS

CARBIDE BURRS

CUTTING PARAMETERS

MEXCLSB2

	Material Group ISO 513		P2 P3 P4 K1 K2	P4 P5 K3	P6 K4	H1 H4 H5
	Hardness/Rm		≤1000 N/mm²	≤35 HRC	35÷45 HRC	45÷55 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)		**100÷140**	**80÷120**	**60÷80**	**40÷60**
α 45°	D (mm)	ap (mm)	fz (mm/z)	fz (mm/z)	fz (mm/z)	fz (mm/z)
	1	0.44	0.015	0.014	0.012	0.011
	2	0.87	0.021	0.019	0.017	0.015
	3	1.31	0.027	0.024	0.022	0.019
	4	1.74	0.037	0.033	0.029	0.026
	5	2.18	0.045	0.041	0.036	0.032
	6	2.62	0.051	0.046	0.041	0.036
	8	3.49	0.060	0.054	0.048	0.042
	10	4.36	0.068	0.061	0.054	0.048
	12	5.23	0.077	0.069	0.061	0.054
	14	6.10	0.089	0.080	0.071	0.062
	16	6.97	0.102	0.092	0.082	0.071
	18	7.85	0.115	0.103	0.092	0.080
	20	8.72	0.132	0.119	0.106	0.092

COPYING	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