



MDTA

GENERAL PURPOSE

✚ MDTA is the Osawa range of micrograin carbide end mills with PV200 coating. MDTA endmills have been developed for general purpose milling up to 45 HRC. The exclusive and innovative PV200 coating (3500HV) ensures the best performance, even in applications with air blow or MQL (Minimum Quantity Lubrication).

🇮🇹 MDTA sono le frese Osawa in metallo duro micrograna con rivestimento PV200 sviluppate per la fresatura di materiali generici sino a 45 HRC. L'esclusivo e innovativo rivestimento PV200 (3500HV) garantisce performance elevate anche in lavorazioni con impiego di refrigerazione con getto d'aria o MQL (Minimum Quantity Lubrication).

🇩🇪 MDTA sind Fräser von Osawa aus Mikrokörnungs-Hartmetall mit Beschichtung PV200, die für das Fräsen von allgemeinen Materialien bis zu 45 HRC entwickelt wurden. Die exklusive und innovative Beschichtung PV200 (3500HV) gewährleistet auch bei Bearbeitungen mit Kühlung durch Luftstrahl oder MQL (Minimum Quantity Lubrication) hohe Leistungen.

🇫🇷 MDTA sont les fraises Osawa en carbure micrograin avec revêtement PV200 développées pour le fraisage de matériaux génériques jusqu'à 45 HRC. Le revêtement PV200 (3500HV) exclusif et innovant garantit des performances élevées même pour les usinages employant un système de lubrification avec jet d'air ou MQL (Minimum Quantity Lubrication).

🇪🇸 MDTA son las fresas Osawa de metal duro micrograno con revestimiento PV200 desarrolladas para el fresado de materiales genéricos hasta 45 HRC. Su exclusivo e innovador revestimiento PV200 (3500HV) garantiza rendimientos elevados incluso en elaboraciones con el uso de refrigeración con chorro de aire o MQL (Minimum Quantity Lubrication).

🇷🇺 MDTA - это фрезы фирмы Osawa из твёрдого сплава с мелкозернистой структурой и покрытием PV200, предназначенные для стандартной обработки материалов с твёрдостью до 45 HRC. Эксклюзивное и инновационное покрытие PV200 (3500HV) гарантирует высокую производительность, даже, при обработке с обдувом воздухом или с масляным туманом.

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

MDTACS2

<p>SLOTTING</p>	Material Group ISO 513	P1 P2 K1			P3 P4 M1 M2 K2			P5 M3 K3			N1 N2 N3 N4		
	Hardness/Rm	< 700 N/mm ²			700-1000 N/mm ²			< 40 HRC					
	ap x ae	0.5D x D			0.5D x D			0.5D x D			0.5D x D		
	Vc (m/min)	80-100			50-70			30-50			100-120		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
	1	28660	0.004	230	19110	0.003	130	12740	0.003	80	35030	0.005	360
	2	14330	0.008	230	9550	0.007	130	6370	0.006	80	17520	0.010	360
	3	9550	0.012	230	6370	0.010	130	4250	0.009	80	11680	0.016	360
	4	7170	0.016	230	4780	0.014	130	3180	0.012	80	8760	0.021	360
	5	5730	0.020	230	3820	0.017	130	2550	0.015	80	7010	0.026	360
	6	4780	0.025	240	3180	0.021	140	2120	0.019	80	5840	0.033	380
	8	3580	0.032	230	2390	0.027	130	1590	0.024	80	4380	0.042	360
	10	2870	0.038	220	1910	0.032	120	1270	0.029	70	3500	0.049	350
	12	2390	0.045	220	1590	0.038	120	1060	0.034	70	2920	0.059	340
14	2050	0.052	210	1360	0.044	120	910	0.039	70	2500	0.068	340	
16	1790	0.060	210	1190	0.051	120	800	0.045	70	2190	0.078	340	
18	1590	0.070	220	1060	0.060	130	710	0.053	70	1950	0.091	350	
20	1430	0.080	230	960	0.068	130	640	0.060	80	1750	0.104	360	

< D3 mm: ap = 0.2D

<p>SIDE MILLING</p>	Material Group ISO 513	P1 P2 K1			P3 P4 M1 M2 K2			P5 M3 K3			N1 N2 N3 N4		
	Hardness/Rm	< 700 N/mm ²			700-1000 N/mm ²			< 40 HRC					
	ap x ae	1.5D x 0.5D			1.5D x 0.5D			1.5D x 0.5D			1.5D x 0.5D		
	Vc (m/min)	80-100			50-70			30-50			100-120		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
	1	28660	0.005	280	19110	0.004	160	12740	0.004	90	35030	0.006	440
	2	14330	0.010	280	9550	0.008	160	6370	0.007	90	17520	0.012	440
	3	9550	0.014	280	6370	0.012	160	4250	0.011	90	11680	0.019	440
	4	7170	0.019	280	4780	0.016	160	3180	0.014	90	8760	0.025	440
	5	5730	0.024	280	3820	0.020	160	2550	0.018	90	7010	0.031	440
	6	4780	0.030	290	3180	0.026	160	2120	0.023	100	5840	0.039	460
	8	3580	0.038	270	2390	0.033	160	1590	0.029	90	4380	0.050	440
	10	2870	0.046	260	1910	0.039	150	1270	0.034	90	3500	0.059	410
	12	2390	0.054	260	1590	0.046	150	1060	0.041	90	2920	0.070	410
14	2050	0.062	260	1360	0.053	140	910	0.047	90	2500	0.081	410	
16	1790	0.072	260	1190	0.061	150	800	0.054	90	2190	0.094	410	
18	1590	0.084	270	1060	0.071	150	710	0.063	90	1950	0.109	430	
20	1430	0.096	270	960	0.082	160	640	0.072	90	1750	0.125	440	

< D3 mm: ae = 0.2D

<p>DRILLING</p>	Material Group ISO 513	P1 P2 K1			P3 P4 M1 M2 K2			P5 M3 K3			N1 N2 N3 N4		
	Hardness/Rm	< 700 N/mm ²			700-1000 N/mm ²			< 40 HRC					
	ap x ae	D x D			D x D			0.5D x D			D x D		
	Vc (m/min)	70-90			40-60			25-35			80-100		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
	1	25480	0.002	120	15920	0.002	60	9550	0.002	30	28660	0.003	180
	2	12740	0.005	120	7960	0.004	60	4780	0.004	30	14330	0.006	180
	3	8490	0.007	120	5310	0.006	60	3180	0.005	30	9550	0.009	180
	4	6370	0.010	120	3980	0.008	60	2390	0.007	30	7170	0.012	180
	5	5100	0.012	120	3180	0.010	60	1910	0.009	30	5730	0.016	180
	6	4250	0.015	130	2650	0.013	70	1590	0.011	40	4780	0.020	190
	8	3180	0.019	120	1990	0.016	60	1190	0.014	30	3580	0.025	180
	10	2550	0.023	120	1590	0.019	60	960	0.017	30	2870	0.030	170
	12	2120	0.027	110	1330	0.023	60	800	0.020	30	2390	0.035	170
14	1820	0.031	110	1140	0.027	60	680	0.023	30	2050	0.041	170	
16	1590	0.036	110	1000	0.031	60	600	0.027	30	1790	0.047	170	
18	1420	0.042	120	880	0.036	60	530	0.032	30	1590	0.055	170	
20	1270	0.048	120	800	0.041	70	480	0.036	30	1430	0.062	180	

< D3 mm: ap = 0.5D

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

CUTTING PARAMETERS

MDTA210

	Material Group ISO 513	P1 P2 K1			P3 P4 M1 M2 K2			P5 M3 K3			N1 N2 N3 N4		
	Hardness/Rm	< 700 N/mm ²			700-1000 N/mm ²			< 40 HRC					
	ap x ae	0.5D x D			0.5D x D			0.5D x D			0.5D x D		
	Vc (m/min)	60-80			40-60			30-40			70-80		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
	3	7430	0.011	160	5310	0.009	100	3720	0.008	60	8490	0.014	240
	4	5570	0.014	160	3980	0.012	100	2790	0.011	60	6370	0.019	240
	5	4460	0.018	160	3180	0.015	100	2230	0.014	60	5100	0.023	240
	6	3720	0.023	170	2650	0.019	100	1860	0.017	60	4250	0.029	250
	8	2790	0.029	160	1990	0.024	100	1390	0.022	60	3180	0.037	240
10	2230	0.034	150	1590	0.029	90	1110	0.026	60	2550	0.044	230	
12	1860	0.041	150	1330	0.034	90	930	0.030	60	2120	0.053	220	

	Material Group ISO 513	P1 P2 K1			P3 P4 M1 M2 K2			P5 M3 K3			N1 N2 N3 N4		
	Hardness/Rm	< 700 N/mm ²			700-1000 N/mm ²			< 40 HRC					
	ap x ae	1.5D x 0.5D			1.5D x 0.5D			1.5D x 0.5D			1.5D x 0.5D		
	Vc (m/min)	60-80			40-60			30-40			70-80		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
	3	7430	0.014	200	5310	0.011	120	3720	0.010	80	8490	0.018	300
	4	5570	0.018	200	3980	0.015	120	2790	0.014	80	6370	0.023	300
	5	4460	0.023	200	3180	0.019	120	2230	0.017	80	5100	0.029	300
	6	3720	0.028	210	2650	0.024	130	1860	0.021	80	4250	0.037	310
	8	2790	0.036	200	1990	0.031	120	1390	0.027	80	3180	0.047	300
10	2230	0.043	190	1590	0.036	120	1110	0.032	70	2550	0.056	280	
12	1860	0.051	190	1330	0.043	110	930	0.038	70	2120	0.066	280	

	Material Group ISO 513	P1 P2 K1			P3 P4 M1 M2 K2			P5 M3 K3			N1 N2 N3 N4		
	Hardness/Rm	< 700 N/mm ²			700-1000 N/mm ²			< 40 HRC					
	ap x ae	D x D			D x D			0.5D x D			D x D		
	Vc (m/min)	50-70			35-45			25-35			60-80		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
	3	6370	0.007	90	4250	0.006	50	3180	0.005	30	7430	0.009	130
	4	4780	0.009	90	3180	0.008	50	2390	0.007	30	5570	0.012	130
	5	3820	0.011	90	2550	0.010	50	1910	0.008	30	4460	0.015	130
	6	3180	0.014	90	2120	0.012	50	1590	0.011	30	3720	0.018	140
	8	2390	0.018	90	1590	0.015	50	1190	0.014	30	2790	0.023	130
10	1910	0.021	80	1270	0.018	50	960	0.016	30	2230	0.028	120	
12	1590	0.025	80	1060	0.022	50	800	0.019	30	1860	0.033	120	

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

CUTTING PARAMETERS

MDCL2

	Material Group ISO 513	P1 P2 K1			P3 P4 M1 M2 K2			P5 M3 K3			N1 N2 N3 N4		
	Hardness/Rm	< 700 N/mm ²			700-1000 N/mm ²			< 40 HRC					
	ap x ae	0.3D x D			0.3D x D			0.3D x D			0.3D x D		
	Vc (m/min)	40-50			25-35			20-30			60-80		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
	3	4780	0.010	90	3180	0.008	50	2650	0.007	40	7430	0.011	160
	4	3580	0.013	90	2390	0.011	50	1990	0.010	40	5570	0.014	160
	5	2870	0.016	90	1910	0.014	50	1590	0.012	40	4460	0.018	160
	6	2390	0.020	100	1590	0.017	50	1330	0.015	40	3720	0.022	160
	8	1790	0.026	90	1190	0.022	50	1000	0.019	40	2790	0.033	190
10	1430	0.030	90	960	0.026	50	800	0.023	40	2230	0.040	180	
12	1190	0.036	90	800	0.031	50	660	0.027	40	1860	0.047	170	

	Material Group ISO 513	P1 P2 K1			P3 P4 M1 M2 K2			P5 M3 K3			N1 N2 N3 N4		
	Hardness/Rm	< 700 N/mm ²			700-1000 N/mm ²			< 40 HRC					
	ap x ae	1.5D x 0.3D			1.5D x 0.3D			1.5D x 0.3D			1.5D x 0.3D		
	Vc (m/min)	45-55			30-40			25-35			70-90		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
	3	5310	0.012	120	3720	0.010	70	3180	0.009	50	8490	0.013	220
	4	3980	0.015	120	2790	0.013	70	2390	0.012	60	6370	0.017	220
	5	3180	0.019	120	2230	0.016	70	1910	0.014	60	5100	0.021	220
	6	2650	0.024	130	1860	0.020	80	1590	0.018	60	4250	0.027	230
	8	1990	0.031	120	1390	0.026	70	1190	0.023	50	3180	0.040	250
10	1590	0.036	120	1110	0.031	70	960	0.027	50	2550	0.047	240	
12	1330	0.043	110	930	0.037	70	800	0.032	50	2120	0.056	240	

INFO

TYPHOON TA-HTA-4HTA

TYPHOON PU-HPU

TYPHOON SUH

TYPHOON ALH

TYPHOON HRC

TYPHOON SUH MINI

TYPHOON HL

C-SD-TA

LFTA

SUTA

HSS-HSS/CO DRILLS

G2

MDTA

HF VH/UP

MEF

ALU

MEX

UH

HSS/CO-HSSP END MILLS

CARBIDE BURRS

CUTTING PARAMETERS

MDTACS3

	Material Group ISO 513	P1 P2 K1			P3 P4 M1 M2 K2			P5 M3 K3			N1 N2 N3 N4		
	Hardness/Rm	< 700 N/mm ²			700-1000 N/mm ²			< 40 HRC					
	ap x ae	0.5D x D			0.5D x D			0.5D x D			0.5D x D		
	Vc (m/min)	80-100			50-70			30-50			100-120		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
	1	28660	0.004	330	19110	0.003	190	12740	0.003	110	35030	0.005	530
	2	14330	0.008	330	9550	0.007	190	6370	0.006	110	17520	0.010	530
	3	9550	0.011	320	6370	0.009	180	4250	0.008	110	11680	0.014	500
	4	7170	0.014	310	4780	0.012	170	3180	0.011	100	8760	0.019	490
	5	5730	0.018	300	3820	0.015	170	2550	0.013	100	7010	0.023	480
	6	4780	0.021	300	3180	0.018	170	2120	0.016	100	5840	0.027	480
	8	3580	0.028	300	2390	0.023	170	1590	0.021	100	4380	0.036	470
	10	2870	0.035	300	1910	0.030	170	1270	0.026	100	3500	0.046	480
	12	2390	0.044	320	1590	0.037	180	1060	0.033	100	2920	0.057	500
14	2050	0.052	320	1360	0.044	180	910	0.039	110	2500	0.067	500	
16	1790	0.059	320	1190	0.050	180	800	0.045	110	2190	0.077	510	
18	1590	0.066	310	1060	0.056	180	710	0.050	110	1950	0.086	500	
20	1430	0.072	310	960	0.061	180	640	0.054	100	1750	0.093	490	

< D3 mm: ap = 0.2D

	Material Group ISO 513	P1 P2 K1			P3 P4 M1 M2 K2			P5 M3 K3			N1 N2 N3 N4		
	Hardness/Rm	< 700 N/mm ²			700-1000 N/mm ²			< 40 HRC					
	ap x ae	1.5D x 0.3D			1.5D x 0.3D			1.5D x 0.3D			1.5D x 0.3D		
	Vc (m/min)	80-100			50-70			30-50			100-120		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
	1	28660	0.005	400	19110	0.004	230	12740	0.003	130	35030	0.006	630
	2	14330	0.009	400	9550	0.008	230	6370	0.007	130	17520	0.012	630
	3	9550	0.013	380	6370	0.011	210	4250	0.010	130	11680	0.017	600
	4	7170	0.017	370	4780	0.015	210	3180	0.013	120	8760	0.022	590
	5	5730	0.021	360	3820	0.018	210	2550	0.016	120	7010	0.027	580
	6	4780	0.025	360	3180	0.021	200	2120	0.019	120	5840	0.033	570
	8	3580	0.033	350	2390	0.028	200	1590	0.025	120	4380	0.043	560
	10	2870	0.042	360	1910	0.036	210	1270	0.032	120	3500	0.055	580
	12	2390	0.053	380	1590	0.045	210	1060	0.040	130	2920	0.069	600
14	2050	0.062	380	1360	0.053	220	910	0.047	130	2500	0.081	600	
16	1790	0.071	380	1190	0.061	220	800	0.053	130	2190	0.093	610	
18	1590	0.079	380	1060	0.067	210	710	0.059	130	1950	0.103	600	
20	1430	0.086	370	960	0.073	210	640	0.064	120	1750	0.112	590	

< D3 mm: ae = 0.1D

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

CUTTING PARAMETERS

MDTAWSH3

	Material Group ISO 513	P1 P2 K1			P3 P4 M1 M2 K2			P5 M3 K3			N1 N2 N3 N4		
	Hardness/Rm	< 700 N/mm ²			700-1000 N/mm ²			< 40 HRC					
	ap x ae	0.5D x D			0.5D x D			0.5D x D			0.5D x D		
	Vc (m/min)	80-100			50-70			30-50			80-120		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
	3	9550	0.011	320	6370	0.009	180	4250	0.008	110	10620	0.014	460
	4	7170	0.014	310	4780	0.012	170	3180	0.011	100	7960	0.019	440
	5	5730	0.018	300	3820	0.015	170	2550	0.013	100	6370	0.023	440
	6	4780	0.021	300	3180	0.018	170	2120	0.016	100	5310	0.027	430
	8	3580	0.028	300	2390	0.023	170	1590	0.021	100	3980	0.036	430
	10	2870	0.035	300	1910	0.030	170	1270	0.026	100	3180	0.046	440
	12	2390	0.044	320	1590	0.037	180	1060	0.033	100	2650	0.057	450
	14	2050	0.052	320	1360	0.044	180	910	0.039	110	2270	0.067	460
16	1790	0.059	320	1190	0.050	180	800	0.045	110	1990	0.077	460	
18	1590	0.066	310	1060	0.056	180	710	0.050	110	1770	0.086	460	
20	1430	0.072	310	960	0.061	180	640	0.054	100	1590	0.093	440	

	Material Group ISO 513	P1 P2 K1			P3 P4 M1 M2 K2			P5 M3 K3			N1 N2 N3 N4		
	Hardness/Rm	< 700 N/mm ²			700-1000 N/mm ²			< 40 HRC					
	ap x ae	1.5D x 0.3D			1.5D x 0.3D			1.5D x 0.3D			1.5D x 0.3D		
	Vc (m/min)	90-110			60-80			40-60			110-120		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
	3	10620	0.013	420	7430	0.011	250	5310	0.010	160	12740	0.017	660
	4	7960	0.017	410	5570	0.015	240	3980	0.013	150	9550	0.022	640
	5	6370	0.021	400	4460	0.018	240	3180	0.016	150	7640	0.027	630
	6	5310	0.025	400	3720	0.021	240	2650	0.019	150	6370	0.033	620
	8	3980	0.033	390	2790	0.028	230	1990	0.025	150	4780	0.043	620
	10	3180	0.042	400	2230	0.036	240	1590	0.032	150	3820	0.055	630
	12	2650	0.053	420	1860	0.045	250	1330	0.040	160	3180	0.069	650
	14	2270	0.062	420	1590	0.053	250	1140	0.047	160	2730	0.081	660
16	1990	0.071	430	1390	0.061	250	1000	0.053	160	2390	0.093	660	
18	1770	0.079	420	1240	0.067	250	880	0.059	160	2120	0.103	650	
20	1590	0.086	410	1110	0.073	240	800	0.064	150	1910	0.112	640	

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

CUTTING PARAMETERS

MDTACS4

	Material Group ISO 513	P1 P2 K1			P3 P4 M1 M2 K2			P5 M3 K3			N1 N2 N3 N4		
	Hardness/Rm	< 700 N/mm ²			700-1000 N/mm ²			< 40 HRC					
	ap x ae	1.5D x 0.2D			1.5D x 0.2D			1.5D x 0.2D			1.5D x 0.2D		
	Vc (m/min)	80-100			50-70			30-50			100-120		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
1	28660	0.004	400	19110	0.003	230	12740	0.003	130	35030	0.005	640	
2	14330	0.007	400	9550	0.006	230	6370	0.005	130	17520	0.009	640	
3	9550	0.010	380	6370	0.009	220	4250	0.008	130	11680	0.013	610	
4	7170	0.013	370	4780	0.011	210	3180	0.010	120	8760	0.017	590	
5	5730	0.016	370	3820	0.014	210	2550	0.012	120	7010	0.021	580	
6	4780	0.019	360	3180	0.016	210	2120	0.014	120	5840	0.025	580	
8	3580	0.025	360	2390	0.021	200	1590	0.019	120	4380	0.033	570	
10	2870	0.032	370	1910	0.027	210	1270	0.024	120	3500	0.042	580	
12	2390	0.040	380	1590	0.034	220	1060	0.030	130	2920	0.052	610	
14	2050	0.047	390	1360	0.040	220	910	0.035	130	2500	0.061	610	
16	1790	0.054	390	1190	0.046	220	800	0.041	130	2190	0.070	610	
18	1590	0.060	380	1060	0.051	220	710	0.045	130	1950	0.078	610	
20	1430	0.065	370	960	0.055	210	640	0.049	120	1750	0.085	590	

< D3 mm: ae = 0.1D

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

CUTTING PARAMETERS

MDTA410

	Material Group ISO 513	P1 P2 K1			P3 P4 M1 M2 K2			P5 M3 K3			N1 N2 N3 N4		
	Hardness/Rm	< 700 N/mm ²			700-1000 N/mm ²			< 40 HRC					
	ap x ae	1.5D x 0.1D			1.5D x 0.1D			1.5D x 0.1D			1.5D x 0.1D		
	Vc (m/min)	70-90			45-65			30-50			80-120		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
	3	8490	0.009	310	5840	0.008	180	4250	0.007	110	10620	0.012	500
	4	6370	0.012	300	4380	0.010	170	3180	0.009	110	7960	0.015	480
	5	5100	0.014	290	3500	0.012	170	2550	0.011	110	6370	0.019	480
	6	4250	0.017	290	2920	0.015	170	2120	0.013	110	5310	0.022	470
	8	3180	0.023	290	2190	0.019	170	1590	0.017	110	3980	0.029	470
10	2550	0.029	290	1750	0.024	170	1270	0.022	110	3180	0.037	480	
12	2120	0.036	310	1460	0.031	180	1060	0.027	110	2650	0.047	500	
14	1820	0.042	310	1250	0.036	180	910	0.032	110	2270	0.055	500	
16	1590	0.048	310	1090	0.041	180	800	0.036	120	1990	0.062	500	

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

CUTTING PARAMETERS

MDCL4

	Material Group ISO 513	P1 P2 K1			P3 P4 M1 M2 K2			P5 M3 K3			N1 N2 N3 N4		
	Hardness/Rm	< 700 N/mm ²			700-1000 N/mm ²			< 40 HRC					
	ap x ae	1.5D x 0.1D			1.5D x 0.1D			1.5D x 0.1D			1.5D x 0.1D		
	Vc (m/min)	40-50			25-35			20-30			60-80		
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
	3	4780	0.008	150	3180	0.007	90	2650	0.006	60	7430	0.009	260
	4	3580	0.010	150	2390	0.009	80	1990	0.008	60	5570	0.011	260
	5	2870	0.013	150	1910	0.011	80	1590	0.010	60	4460	0.014	250
	6	2390	0.015	150	1590	0.013	80	1330	0.011	60	3720	0.017	250
	8	1790	0.020	140	1190	0.017	80	1000	0.015	60	2790	0.026	290
	10	1430	0.026	150	960	0.022	80	800	0.019	60	2230	0.033	300
	12	1190	0.032	150	800	0.027	90	660	0.024	60	1860	0.042	310
	14	1020	0.038	150	680	0.032	90	570	0.028	60	1590	0.049	310
16	900	0.043	160	600	0.037	90	500	0.032	60	1390	0.056	310	
20	720	0.052	150	480	0.044	80	400	0.039	60	1110	0.068	300	

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

MDTAUPR

	Material Group ISO 513	P1 P2 K1			P3 P4 M1 M2 K2			P5 M3 K3					
	Hardness/Rm	< 700 N/mm ²			700-1000 N/mm ²			< 40 HRC					
	ap x ae	0.5D x D			0.5D x D			0.5D x D					
	Vc (m/min)	80-100			50-70			30-50					
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)			
	6	4780	0.030	430	3180	0.026	240	2120	0.023	140			
	8	3580	0.045	480	2390	0.038	270	1590	0.034	160			
	10	2870	0.055	630	1910	0.047	360	1270	0.041	210			
	12	2390	0.065	620	1590	0.055	350	1060	0.049	210			
	14	2050	0.075	620	1360	0.064	350	910	0.056	200			
16	1790	0.085	610	1190	0.072	340	800	0.064	200				
20	1430	0.100	570	960	0.085	330	640	0.075	190				

D6-8: Z3
D10-20: Z4

	Material Group ISO 513	P1 P2 K1			P3 P4 M1 M2 K2			P5 M3 K3					
	Hardness/Rm	< 700 N/mm ²			700-1000 N/mm ²			< 40 HRC					
	ap x ae	1.5D x 0.3D			1.5D x 0.3D			1.5D x 0.3D					
	Vc (m/min)	80-100			50-70			30-50					
	D (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)			
	6	4780	0.040	570	3180	0.034	320	2120	0.030	190			
	8	3580	0.055	590	2390	0.047	340	1590	0.041	200			
	10	2870	0.065	750	1910	0.055	420	1270	0.049	250			
	12	2390	0.080	760	1590	0.068	430	1060	0.060	250			
	14	2050	0.090	740	1360	0.077	420	910	0.068	250			
16	1790	0.100	720	1190	0.085	400	800	0.075	240				
20	1430	0.120	690	960	0.102	390	640	0.090	230				

D6-8: Z3
D10-20: Z4

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

CUTTING PARAMETERS

MDTACSB2

	Material Group ISO 513	P1 P2 K1			P3 P4 M1 M2 K2			P5 M3 K3			N1 N2 N3 N4			
	Hardness/Rm	< 700 N/mm ²			700-1000 N/mm ²			< 40 HRC						
	ap x ae	0.1D x 0.1D			0.1D x 0.1D			0.1D x 0.1D			0.1D x 0.1D			
	Vc (m/min)	80-100			60-80			40-60			110-130			
	D (mm)	D (eff.) (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
	1	0.60	28660	0.030	1720	22290	0.023	1000	15920	0.021	670	38220	0.036	2750
	2	1.20	14330	0.040	1150	11150	0.030	670	7960	0.028	450	19110	0.048	1830
	3	1.80	9550	0.050	960	7430	0.038	560	5310	0.035	370	12740	0.060	1530
	4	2.40	7170	0.060	860	5570	0.045	500	3980	0.042	330	9550	0.072	1380
	5	3.00	5730	0.070	800	4460	0.053	470	3180	0.049	310	7640	0.084	1280
6	3.60	4780	0.080	760	3720	0.060	450	2650	0.056	300	6370	0.096	1220	
8	4.80	3580	0.090	640	2790	0.068	380	1990	0.063	250	4780	0.108	1030	
10	6.00	2870	0.105	600	2230	0.079	350	1590	0.074	230	3820	0.126	960	
12	7.20	2390	0.120	570	1860	0.090	330	1330	0.084	220	3180	0.144	920	

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

CUTTING PARAMETERS

MDTA250

	Material Group ISO 513		P1 P2 K1			P3 P4 M1 M2 K2			P5 M3 K3			N1 N2 N3 N4		
	Hardness/Rm		< 700 N/mm ²			700-1000 N/mm ²			< 40 HRC					
	ap x ae		0.1D x 0.1D			0.1D x 0.1D			0.1D x 0.1D			0.1D x 0.1D		
	Vc (m/min)		70-90			50-70			40-50			100-120		
	D (mm)	D (eff.) (mm)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)	n (rpm)	fz (mm/z)	Vf (mm/min)
	3	1.80	8490	0.045	760	6370	0.034	430	4780	0.032	300	11680	0.054	1260
	4	2.40	6370	0.054	690	4780	0.041	390	3580	0.038	270	8760	0.065	1140
	5	3.00	5100	0.063	640	3820	0.047	360	2870	0.044	250	7010	0.076	1060
6	3.60	4250	0.072	610	3180	0.054	340	2390	0.050	240	5840	0.086	1010	
8	4.80	3180	0.081	520	2390	0.061	290	1790	0.057	200	4380	0.097	850	
10	6.00	2550	0.095	480	1910	0.071	270	1430	0.066	190	3500	0.113	790	
12	7.20	2120	0.108	460	1590	0.081	260	1190	0.076	180	2920	0.130	760	

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