

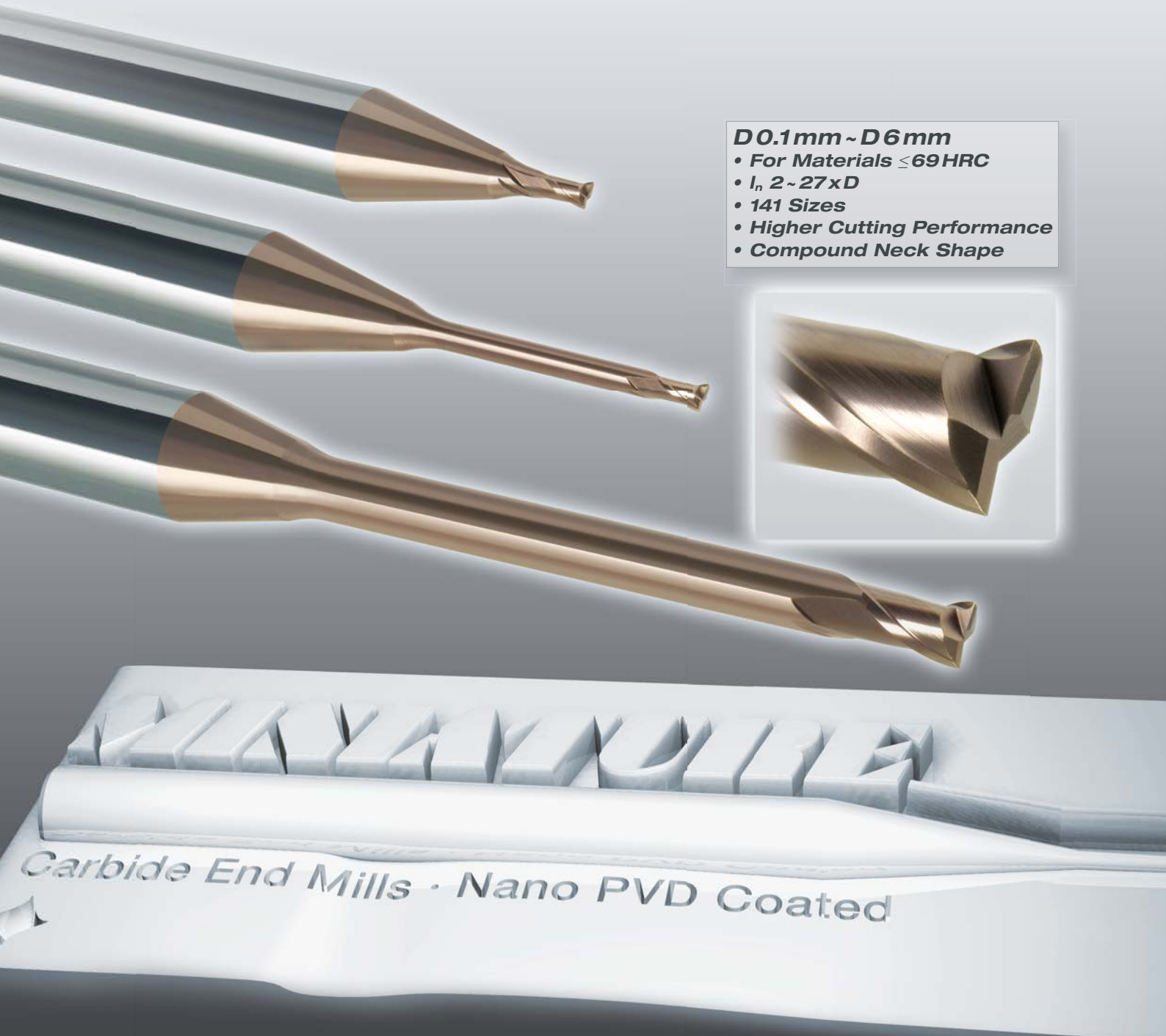
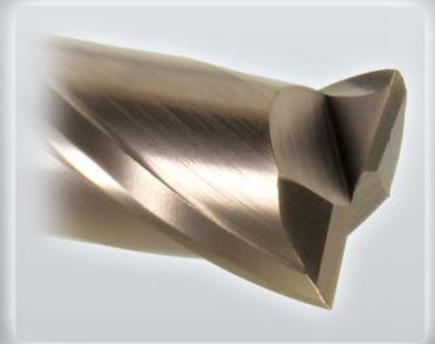
EPDSE

Epoch Deep Square Evolution

High Efficiency & High Precision Deep Milling

D0.1mm ~ D6mm

- For Materials $\leq 69\text{HRC}$
- L_n 2~27xD
- 141 Sizes
- Higher Cutting Performance
- Compound Neck Shape



Carbide End Mills · Nano PVD Coated



EPDSE-ATH | Epoch Deep Square Evolution ATH

Size										Actual Effective Length in Incline angles					
ID Code	Item Code	Z	D	I _n	I	dn	L	d	Neck R	0.5°	1°	1.5°	2°	3°	
EP1117	EPDSE-2007-2-ATH	2	0.7	2	1.05	0.67	50	4	4	2.54	2.7	2.84	2.96	3.19	
EP1118	EPDSE-2007-4-ATH			4						4.66	4.89	5.07	5.24	5.53	
EP1119	EPDSE-2007-6-ATH			6						6.76	7.04	7.26	7.45	8.05	
EP1120	EPDSE-2007-8-ATH			8						8.85	9.17	9.42	9.65	10.71	
EP1121	EPDSE-2007-10-ATH			10						10.93	11.28	11.56	12.05	13.36	
EP1122	EPDSE-2008-4-ATH		0.8		4	1.2	0.77			50	4.66	4.89	5.07	5.24	5.53
EP1123	EPDSE-2008-6-ATH				6						6.76	7.04	7.26	7.45	8.05
EP1124	EPDSE-2008-8-ATH				8						8.85	9.17	9.42	9.65	10.71
EP1125	EPDSE-2008-10-ATH				10						10.93	11.28	11.56	12.05	13.36
EP1126	EPDSE-2008-12-ATH				12						13	13.38	13.76	14.44	16.02
EP1127	EPDSE-2009-6-ATH		0.9		6	1.35	0.86			50	6.79	7.06	7.28	7.47	8.08
EP1128	EPDSE-2009-8-ATH				8						8.87	9.18	9.43	9.68	10.74
EP1129	EPDSE-2009-10-ATH				10						10.95	11.3	11.57	12.07	13.39
EP1130	EPDSE-2009-12-ATH				12						13.02	13.4	13.79	14.47	16.05
EP1131	EPDSE-2010-2-ATH				1							2	1.5	0.96	50
EP1132	EPDSE-2010-3-ATH		3	3.64		3.82	3.99			4.13		4.39			
EP1133	EPDSE-2010-4-ATH		4	4.69		4.91	5.09			5.26		5.54			
EP1134	EPDSE-2010-5-ATH		5	5.74		5.99	6.19			6.37		6.76			
EP1135	EPDSE-2010-6-ATH		6	6.79		7.06	7.28			7.47		8.08			
EP1136	EPDSE-2010-7-ATH		7	7.83		8.12	8.36			8.56		9.41			
EP1137	EPDSE-2010-8-ATH		8	8.87		9.18	9.43			9.68		10.74			
EP1138	EPDSE-2010-9-ATH		9	9.91		10.24	10.5			10.88		12.07			
EP1139	EPDSE-2010-10-ATH		10	10.95		11.3	11.57			12.07		13.39			
EP1140	EPDSE-2010-12-ATH		12	13.02		13.4	13.79			14.47		16.05			
EP1141	EPDSE-2010-14-ATH		14	55		15.09	15.49			16.07		16.86			18.7
EP1142	EPDSE-2010-16-ATH		16	60		17.15	17.58			18.35		19.25			21.36
EP1143	EPDSE-2010-20-ATH		20	65		21.26	21.89			22.91		24.04			26.66
EP1144	EPDSE-2010-25-ATH		25			26.39	27.33			28.61		30.02			x
EP1145	EPDSE-2012-6-ATH		1.2		6	1.8	1.15			50	6.81	7.08	7.29	7.48	8.11
EP1146	EPDSE-2012-8-ATH				8						8.9	9.2	9.45	9.71	10.77
EP1147	EPDSE-2012-10-ATH	10			10.97			11.31	11.58		12.1	13.42			
EP1148	EPDSE-2012-12-ATH	12			55			13.04	13.41		13.82	14.49	16.08		
EP1149	EPDSE-2012-16-ATH	16						17.16	17.59		18.38	19.28	21.39		
EP1150	EPDSE-2014-6-ATH	1.4		6	2.1	1.34	50	6.84	7.09	7.31	7.5	8.15			
EP1151	EPDSE-2014-12-ATH			12			55	13.06	13.43	13.84	14.52	16.11			
EP1152	EPDSE-2015-4-ATH	1.5		4	2.25	1.44	50	4.75	4.95	5.13	5.29	5.57			
EP1153	EPDSE-2015-6-ATH			6				6.84	7.09	7.31	7.5	8.15			
EP1154	EPDSE-2015-8-ATH			8				8.92	9.22	9.46	9.74	10.8			
EP1155	EPDSE-2015-10-ATH			10				10.99	11.33	11.59	12.13	13.45			
EP1156	EPDSE-2015-12-ATH			12				13.06	13.43	13.84	14.52	16.11			
EP1157	EPDSE-2015-14-ATH			14			55	15.12	15.52	16.12	16.92	18.76			
EP1158	EPDSE-2015-16-ATH			16			60	17.18	17.6	18.4	19.31	21.42			
EP1159	EPDSE-2015-18-ATH			18				19.24	19.76	20.69	21.7	x			
EP1160	EPDSE-2015-20-ATH			20			65	21.29	21.94	22.97	24.1	x			
EP1161	EPDSE-2015-25-ATH			25			70	26.42	27.39	28.67	30.08	x			
EP1162	EPDSE-2015-30-ATH			30			75	31.53	32.83	34.37	x	x			
EP1163	EPDSE-2015-35-ATH			35			80	36.64	38.28	40.07	x	x			
EP1164	EPDSE-2015-40-ATH			40				41.85	43.73	45.78	x	x			
EP1165	EPDSE-2016-6-ATH	1.6		6	2.4	1.54	50	6.84	7.09	7.31	7.5	8.15			
EP1166	EPDSE-2016-8-ATH			8				8.92	9.22	9.46	9.74	10.8			
EP1167	EPDSE-2018-6-ATH	1.8		6	2.7	1.73		6.86	7.11	7.32	7.51	8.18			
EP1168	EPDSE-2018-8-ATH			8				8.94	9.23	9.47	9.76	10.83			
EP1169	EPDSE-2020-4-ATH	2		4	3	1.92		4.8	5	5.17	5.32	5.59			
EP1170	EPDSE-2020-6-ATH			6				6.88	7.13	7.34	7.52	8.21			
EP1171	EPDSE-2020-8-ATH			8				8.96	9.25	9.49	9.79	10.86			
EP1172	EPDSE-2020-10-ATH			10				11.03	11.35	11.62	12.19	13.52			
EP1173	EPDSE-2020-12-ATH			12				13.1	13.45	13.9	14.58	16.17			
EP1174	EPDSE-2020-14-ATH			14			55			15.16	15.54	16.18	16.97	18.83	
EP1175	EPDSE-2020-16-ATH			16						17.21	17.63	18.46	19.37	x	

D 2 -
D 6

EPDSE-ATH | Epoch Deep Square Evolution ATH

Size										Actual Effective Length in Incline angles								
ID Code	Item Code	Z	D	I _n	l	dn	L	d	Neck R	0.5°	1°	1.5°	2°	3°				
EP1176	EPDSE-2020-18-ATH	2	2	18	3	1.92	60	4		19.27	19.81	20.74	21.76	x				
EP1177	EPDSE-2020-20-ATH			20						21.32	21.99	23.02	24.15	x				
EP1178	EPDSE-2020-25-ATH			25			65			26.44	27.44	28.72	x	x				
EP1179	EPDSE-2020-30-ATH			30			70			31.55	32.88	34.42	x	x				
EP1180	EPDSE-2020-35-ATH			35			75			36.69	38.33	x	x	x				
EP1181	EPDSE-2020-40-ATH			40			80			41.9	43.78	x	x	x				
EP1182	EPDSE-2020-50-ATH			50			90			52.33	54.67	x	x	x				
EP1183	EPDSE-2025-8-ATH		2.5	3.75	8	2.4	50			6		9	9.28	9.51	9.85	10.93		
EP1184	EPDSE-2025-12-ATH				12		55					13.13	13.48	13.95	14.64	x		
EP1185	EPDSE-2025-16-ATH				16		60					17.25	17.68	18.51	19.42	x		
EP1186	EPDSE-2025-20-ATH				20		70					21.35	22.04	23.07	x	x		
EP1187	EPDSE-2025-30-ATH				30		80					31.58	32.94	x	x	x		
EP1188	EPDSE-2025-40-ATH				40		90					41.95	x	x	x	x		
EP1189	EPDSE-2025-50-ATH				50		100					52.38	x	x	x	x		
EP1190	EPDSE-2030-8-ATH		3	4.5	8	2.88	55			6		9.04	9.31	9.54	9.91	10.99		
EP1191	EPDSE-2030-12-ATH				12		60					13.16	13.5	14	14.69	16.3		
EP1192	EPDSE-2030-16-ATH				16		65					17.28	17.73	18.57	19.48	21.61		
EP1193	EPDSE-2030-20-ATH				20		70					21.38	22.09	23.13	24.26	26.91		
EP1194	EPDSE-2030-25-ATH				25		75					26.49	27.54	28.83	30.25	x		
EP1195	EPDSE-2030-30-ATH				30		80					31.6	32.99	34.53	36.23	x		
EP1196	EPDSE-2030-40-ATH				40		90					42	43.88	45.94	x	x		
EP1197	EPDSE-2030-50-ATH		4	6	50	100	52.43			54.78		x	x	x				
EP1198	EPDSE-2040-12-ATH				12	3.85	60			13.21		13.54	14.08	14.78	16.39			
EP1199	EPDSE-2040-16-ATH				16		70			17.32		17.81	18.65	19.56	x			
EP1200	EPDSE-2040-20-ATH	20			80		21.42	22.17	23.21	24.35		x						
EP1201	EPDSE-2040-25-ATH	25			90		26.53	27.62	28.91	x		x						
EP1202	EPDSE-2040-30-ATH	30			100		31.65	33.06	34.61	x		x						
EP1203	EPDSE-2040-35-ATH	35			6			36.86	38.51	x		x	x					
EP1204	EPDSE-2040-40-ATH	40	42.08	43.96				x	x	x								
EP1205	EPDSE-2040-50-ATH	50	52.5	54.85				x	x	x								
EP1206	EPDSE-2050-20-ATH	5	20	7.5				4.85	70	21.42		22.17	x	x	x			
EP1207	EPDSE-2050-25-ATH		25		80	26.53	27.62		x	x	x							
EP1208	EPDSE-2050-30-ATH		30		90	31.65	x		x	x	x							
EP1209	EPDSE-2050-40-ATH		40		100	42.08	x		x	x	x							
EP1210	EPDSE-2050-50-ATH		50		9				52.5	x	x	x	x					
EP1211	EPDSE-2060-20-ATH	6	9	20	5.85	70	-	x	x	x	x	x						
EP1212	EPDSE-2060-30-ATH			30		80		x	x	x	x							
EP1213	EPDSE-2060-40-ATH			40		90		x	x	x	x							
EP1214	EPDSE-2060-50-ATH			50		100		x	x	x	x							

Cutting Conditions | Schnittwerte | Condizioni di taglio | Condiciones de Corte | Conditions de coupe | Valores de corte:

High Precision
Finishing



Page 12–17

High Efficient
Roughing



Page 6–11

High Efficient Roughing
(Rib Applications)



Page 18–23

EPDSE-ATH | Recommended Cutting Conditions

RECOMMENDED CUTTING CONDITIONS

1. Use a highly rigid and accurate machine as possible.
2. These conditions are for general guidance; in actual machining conditions adjust the parameters according to your actual machine and work-piece conditions.
3. If the rpm available is lower than recommended please reduce the feed rate to the same ratio.

EMPFOHLENE SCHNITTBEDINGUNGEN

1. Benutzen Sie für die Bearbeitung jeweils die Maschine mit der höchsten Genauigkeit und der höchsten Stabilität.
2. Die angegebenen Schnittwerte stellen eine generelle Empfehlung dar. Die Werte sollten immer an die jeweilige Bearbeitung, deren Form und die verwendete Maschine angepasst werden.
3. Ist die Ihnen verfügbare Drehzahl niedriger als der in der Tabelle angegebene Wert, sollte der Vorschub im gleichen Verhältnis reduziert werden.

CONDIZIONI DI TAGLIO RACCOMANDATE

1. Usate centri di lavoro più precisi e rigidi possibile
2. Le condizioni di taglio sono valori generali. Per ottimizzare il processo di lavoro rispettate le geometrie dello stampo e la macchina disponibile.
3. Quando I giri della macchina disponibili sono più bassi rispetto al valore espresso regulate l'avanzamento con lo stesso rapporto.

CONDICIONES DE CORTE RECOMENDADAS


1. Utilizar la máquina más rígida y precisa posible.
2. Las condiciones de corte de la tabla son una orientación general. Para un trabajo específico hay que ajustar las condiciones en función de la geometría de la pieza, el resultado esperado y el tipo de máquina que vamos a utilizar.
3. Si las rpm máximas de la maquina son inferiores, hay que ajustar el avance en proporción a las mismas.


CONDITIONS DE COUPE RECOMMANDÉES


1. Utiliser une machine aussi rigide et fiable que possible.
2. Ces conditions sont indicatives : en utilisation, ajuster les conditions en fonction de la machine et de la pièce usinée.
3. Si la rotation possible est inférieure à celle recommandée, ajuster l'avance dans la même proportion.


CONDIÇÕES DE CORTE RECOMENDADAS


1. Use uma máquina rígida e o mais precisa possível.
2. Estas condições são para orientação geral, em condições de maquinação real ajustar os parâmetros de acordo com a sua máquina e com as condições das peças a maquinar.
3. Se o número de rotações disponível na máquina for menor do que o recomendado por favor reduza avanço na mesma proporção.


 A modification of the cutting conditions is possible at following rules: Rotation (n/r.p.m.) and feed (V_f) increasing in same ratio, but feed per tooth (f_z) should be kept.

 Die Modifizierung der Schnittwerte ist nach folgender Regel möglich: Umdrehung (n) und Vorschub (V_f) im gleichen Verhältnis steigern, jedoch den Vorschub pro Zahn (f_z) beibehalten.


 E' possibile modificare le condizioni di taglio seguendo le seguenti regole: aumentare rotazione (n/r.p.m.) ed avanzamento con la stessa proporzione mantenendo fisso l'avanzamento al dente f_z

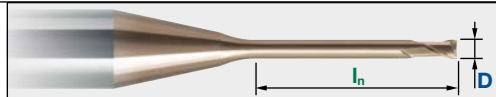
 Modificar las condiciones de corte es posible si respetamos la siguiente regla: Las revoluciones (rpm) y el avance (V_f) se pueden incrementar o reducir en igual proporción, manteniendo el avance por diente (f_z).

 Il est possible de modifier les paramètres de coupe en suivant la règle suivante : Rotation (n/r.p.m.) et avance (V_f) augmentées du même ratio, cependant, l'avance par dent (f_z) doit être conservée à l'identique.

 A modificação das condições de corte é possível nas seguintes regras: Rotação (n/ r.p.m) e avanço (V_f) incrementar na mesma proporção, mas o avanço por dente (f_z) deve ser mantido.

EPDSE-ATH | High Efficiency Cutting Conditions


	Workpiece Material		I						II					
			Carbon Steels, Alloy Steels (180~250HB)						Tool Steels (25~35HRC)					
	D	I _n	a _p mm	a _e mm	n min ⁻¹	f _t mm/t	V _r mm/min	a _p mm	a _e mm	n min ⁻¹	f _t mm/t	V _r mm/min		
	0.1	0.3	0.006	0.05	51,500	0.011	1,133	0.005	0.05	46,350	0.011	1,020		
		0.5	0.004	0.05	51,500	0.011	1,133	0.004	0.05	46,350	0.011	1,020		
		1	0.003	0.05	49,440	0.010	989	0.003	0.05	44,496	0.010	890		
	0.2	0.5	0.02	0.1	46,350	0.016	1,483	0.018	0.1	41,715	0.016	1,335		
		1	0.014	0.1	46,350	0.016	1,483	0.013	0.1	41,715	0.016	1,335		
		1.5	0.008	0.1	41,715	0.014	1,168	0.007	0.1	37,544	0.014	1,051		
		2	0.005	0.1	37,080	0.013	949	0.005	0.1	33,372	0.013	854		
		3	0.003	0.1	37,080	0.011	831	0.003	0.1	33,372	0.011	748		
	0.3	1	0.021	0.15	41,200	0.016	1,318	0.019	0.15	37,080	0.016	1,187		
		1.5	0.021	0.15	41,200	0.016	1,318	0.019	0.15	37,080	0.016	1,187		
		2	0.012	0.15	37,080	0.014	1,038	0.011	0.15	33,372	0.014	934		
		2.5	0.01	0.15	37,080	0.014	1,038	0.009	0.15	33,372	0.014	934		
		3	0.008	0.15	37,080	0.014	1,038	0.007	0.15	33,372	0.014	934		
	0.4	1	0.04	0.2	32,960	0.021	1,384	0.036	0.2	29,664	0.021	1,246		
		1.5	0.028	0.2	32,960	0.021	1,384	0.025	0.2	29,664	0.021	1,246		
		2	0.028	0.2	32,960	0.021	1,384	0.025	0.2	29,664	0.021	1,246		
		2.5	0.022	0.2	29,664	0.019	1,127	0.020	0.2	26,698	0.019	1,015		
		3	0.016	0.2	29,664	0.019	1,127	0.014	0.2	26,698	0.019	1,015		
		3.5	0.012	0.2	29,664	0.019	1,127	0.011	0.2	26,698	0.019	1,015		
		4	0.01	0.2	29,664	0.019	1,127	0.009	0.2	26,698	0.019	1,015		
		5	0.01	0.2	26,368	0.017	897	0.009	0.2	23,731	0.017	807		
		6	0.006	0.2	26,368	0.017	897	0.005	0.2	23,731	0.017	807		
		8	0.003	0.2	23,072	0.015	692	0.003	0.2	20,765	0.015	623		
	0.5	10	0.002	0.2	19,776	0.012	471	0.002	0.2	17,798	0.012	424		
		1	0.05	0.25	32,960	0.021	1,384	0.045	0.25	29,664	0.021	1,246		
		1.5	0.05	0.25	32,960	0.021	1,384	0.045	0.25	29,664	0.021	1,246		
		2	0.035	0.25	32,960	0.021	1,384	0.032	0.25	29,664	0.021	1,246		
		2.5	0.03	0.25	29,664	0.021	1,246	0.027	0.25	26,698	0.021	1,121		
		3	0.02	0.25	29,664	0.019	1,127	0.018	0.25	26,698	0.019	1,015		
		4	0.02	0.25	29,664	0.019	1,127	0.018	0.25	26,698	0.019	1,015		
		5	0.013	0.25	29,664	0.019	1,127	0.012	0.25	26,698	0.019	1,015		
		6	0.013	0.25	26,368	0.017	897	0.012	0.25	23,731	0.017	807		
		8	0.008	0.25	26,368	0.017	897	0.007	0.25	23,731	0.017	807		
	0.6	10	0.004	0.25	23,072	0.015	692	0.004	0.25	20,765	0.015	623		
		2	0.042	0.3	32,960	0.026	1,714	0.038	0.3	29,664	0.026	1,543		
		3	0.035	0.3	29,664	0.024	1,424	0.032	0.3	26,698	0.024	1,281		
		4	0.024	0.3	29,664	0.024	1,424	0.022	0.3	26,698	0.024	1,281		
		5	0.02	0.3	29,664	0.024	1,424	0.018	0.3	26,698	0.024	1,281		
		6	0.015	0.3	29,664	0.024	1,424	0.014	0.3	26,698	0.024	1,281		
		7	0.015	0.3	26,368	0.021	1,107	0.014	0.3	23,731	0.021	997		
		8	0.015	0.3	26,368	0.021	1,107	0.014	0.3	23,731	0.021	997		
	0.7	9	0.012	0.3	26,368	0.021	1,107	0.011	0.3	23,731	0.021	997		
		10	0.009	0.3	26,368	0.021	1,107	0.008	0.3	23,731	0.021	997		
		2	0.07	0.35	32,960	0.027	1,780	0.063	0.35	29,664	0.027	1,602		
		4	0.049	0.35	29,664	0.024	1,424	0.044	0.35	26,698	0.024	1,281		
		6	0.018	0.35	29,664	0.024	1,424	0.016	0.35	26,698	0.024	1,281		
	0.8	8	0.018	0.35	26,368	0.021	1,107	0.016	0.35	23,731	0.021	997		
		10	0.018	0.35	26,368	0.021	1,107	0.016	0.35	23,731	0.021	997		
		4	0.056	0.4	32,960	0.026	1,714	0.050	0.4	29,664	0.026	1,543		
		6	0.032	0.4	29,664	0.024	1,424	0.029	0.4	26,698	0.024	1,281		
		8	0.02	0.4	29,664	0.024	1,424	0.018	0.4	26,698	0.024	1,281		
	0.9	10	0.02	0.4	26,368	0.021	1,107	0.018	0.4	23,731	0.021	997		
		12	0.012	0.4	26,368	0.021	1,107	0.011	0.4	23,731	0.021	997		
		6	0.036	0.45	29,664	0.024	1,424	0.032	0.45	26,698	0.024	1,281		
		8	0.023	0.45	29,664	0.024	1,424	0.021	0.45	26,698	0.024	1,281		
		10	0.023	0.45	26,368	0.021	1,107	0.021	0.45	23,731	0.021	997		
		12	0.023	0.45	26,368	0.021	1,107	0.021	0.45	23,731	0.021	997		



III					IV					V						
Tool Steels (35~45HRC)					Hardened Steels (45~55HRC)					Hardened Steels (55~70HRC)						
a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _r mm/min	a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _r mm/min	a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _r mm/min	D	l _n
0.004	0.05	43,775	0.009	770	0.003	0.05	38,625	0.008	595	0.002	0.05	36,050	0.007	476	0.1	0.3
0.003	0.05	43,775	0.009	770	0.002	0.05	38,625	0.008	595	0.002	0.05	36,050	0.007	476		0.5
0.002	0.05	42,024	0.008	672	0.002	0.05	37,080	0.007	519	0.001	0.05	34,608	0.006	415		1
0.014	0.1	39,398	0.013	1,009	0.010	0.1	34,763	0.011	779	0.008	0.1	32,445	0.010	623	0.2	0.5
0.010	0.1	39,398	0.013	1,009	0.007	0.1	34,763	0.011	779	0.006	0.1	32,445	0.010	623		1
0.006	0.1	35,458	0.011	794	0.004	0.1	31,286	0.010	613	0.003	0.1	29,201	0.008	491		1.5
0.004	0.1	31,518	0.010	645	0.003	0.1	27,810	0.009	498	0.002	0.1	25,956	0.008	399	0.3	2
0.002	0.1	31,518	0.009	565	0.002	0.1	27,810	0.008	436	0.001	0.1	25,956	0.007	349		3
0.015	0.15	35,020	0.013	897	0.011	0.15	30,900	0.011	692	0.008	0.15	28,840	0.010	554		1
0.015	0.15	35,020	0.013	897	0.011	0.15	30,900	0.011	692	0.008	0.15	28,840	0.010	554	0.4	1.5
0.008	0.15	31,518	0.011	706	0.006	0.15	27,810	0.010	545	0.005	0.15	25,956	0.008	436		2
0.007	0.15	31,518	0.011	706	0.005	0.15	27,810	0.010	545	0.004	0.15	25,956	0.008	436		2.5
0.006	0.15	31,518	0.011	706	0.004	0.15	27,810	0.010	545	0.003	0.15	25,956	0.008	436	0.5	3
0.028	0.2	28,016	0.017	941	0.020	0.2	24,720	0.015	727	0.016	0.2	23,072	0.013	581		1
0.020	0.2	28,016	0.017	941	0.014	0.2	24,720	0.015	727	0.011	0.2	23,072	0.013	581		1.5
0.020	0.2	28,016	0.017	941	0.014	0.2	24,720	0.015	727	0.011	0.2	23,072	0.013	581	0.6	2
0.015	0.2	25,214	0.015	767	0.011	0.2	22,248	0.013	592	0.009	0.2	20,765	0.011	473		2.5
0.011	0.2	25,214	0.015	767	0.008	0.2	22,248	0.013	592	0.006	0.2	20,765	0.011	473		3
0.008	0.2	25,214	0.015	767	0.006	0.2	22,248	0.013	592	0.005	0.2	20,765	0.011	473	0.7	3.5
0.007	0.2	25,214	0.015	767	0.005	0.2	22,248	0.013	592	0.004	0.2	20,765	0.011	473		4
0.007	0.2	22,413	0.014	610	0.005	0.2	19,776	0.012	471	0.004	0.2	18,458	0.010	377		5
0.004	0.2	22,413	0.014	610	0.003	0.2	19,776	0.012	471	0.002	0.2	18,458	0.010	377	0.8	6
0.002	0.2	19,611	0.012	471	0.002	0.2	17,304	0.011	363	0.001	0.2	16,150	0.009	291		8
0.001	0.2	16,810	0.010	320	0.001	0.2	14,832	0.008	247	0.001	0.2	13,843	0.007	198		10
0.035	0.25	28,016	0.017	941	0.025	0.25	24,720	0.015	727	0.020	0.25	23,072	0.013	581	0.9	1
0.035	0.25	28,016	0.017	941	0.025	0.25	24,720	0.015	727	0.020	0.25	23,072	0.013	581		1.5
0.025	0.25	28,016	0.017	941	0.018	0.25	24,720	0.015	727	0.014	0.25	23,072	0.013	581		2
0.021	0.25	25,214	0.017	847	0.015	0.25	22,248	0.015	654	0.012	0.25	20,765	0.013	523	1.0	2.5
0.014	0.25	25,214	0.015	767	0.010	0.25	22,248	0.013	592	0.008	0.25	20,765	0.011	473		3
0.014	0.25	25,214	0.015	767	0.010	0.25	22,248	0.013	592	0.008	0.25	20,765	0.011	473		4
0.009	0.25	25,214	0.015	767	0.007	0.25	22,248	0.013	592	0.005	0.25	20,765	0.011	473	1.1	5
0.009	0.25	22,413	0.014	610	0.007	0.25	19,776	0.012	471	0.005	0.25	18,458	0.010	377		6
0.006	0.25	22,413	0.014	610	0.004	0.25	19,776	0.012	471	0.003	0.25	18,458	0.010	377		8
0.003	0.25	19,611	0.012	471	0.002	0.25	17,304	0.011	363	0.002	0.25	16,150	0.009	291	1.2	10
0.029	0.3	28,016	0.021	1,165	0.021	0.3	24,720	0.018	900	0.017	0.3	23,072	0.016	720		2
0.025	0.3	25,214	0.019	968	0.018	0.3	22,248	0.017	748	0.014	0.3	20,765	0.014	598		3
0.017	0.3	25,214	0.019	968	0.012	0.3	22,248	0.017	748	0.010	0.3	20,765	0.014	598	1.3	4
0.014	0.3	25,214	0.019	968	0.010	0.3	22,248	0.017	748	0.008	0.3	20,765	0.014	598		5
0.011	0.3	25,214	0.019	968	0.008	0.3	22,248	0.017	748	0.006	0.3	20,765	0.014	598		6
0.011	0.3	22,413	0.017	753	0.008	0.3	19,776	0.015	581	0.006	0.3	18,458	0.013	465	1.4	7
0.011	0.3	22,413	0.017	753	0.008	0.3	19,776	0.015	581	0.006	0.3	18,458	0.013	465		8
0.008	0.3	22,413	0.017	753	0.006	0.3	19,776	0.015	581	0.005	0.3	18,458	0.013	465		9
0.006	0.3	22,413	0.017	753	0.005	0.3	19,776	0.015	581	0.004	0.3	18,458	0.013	465	1.5	10
0.049	0.35	28,016	0.022	1,210	0.035	0.35	24,720	0.019	934	0.028	0.35	23,072	0.016	748		2
0.034	0.35	25,214	0.019	968	0.025	0.35	22,248	0.017	748	0.020	0.35	20,765	0.014	598		4
0.013	0.35	25,214	0.019	968	0.009	0.35	22,248	0.017	748	0.007	0.35	20,765	0.014	598	1.6	6
0.013	0.35	22,413	0.017	753	0.009	0.35	19,776	0.015	581	0.007	0.35	18,458	0.013	465		8
0.013	0.35	22,413	0.017	753	0.009	0.35	19,776	0.015	581	0.007	0.35	18,458	0.013	465		10
0.039	0.4	28,016	0.021	1,165	0.028	0.4	24,720	0.018	900	0.022	0.4	23,072	0.016	720	1.7	4
0.022	0.4	25,214	0.019	968	0.016	0.4	22,248	0.017	748	0.013	0.4	20,765	0.014	598		6
0.014	0.4	25,214	0.019	968	0.010	0.4	22,248	0.017	748	0.008	0.4	20,765	0.014	598		8
0.014	0.4	22,413	0.017	753	0.010	0.4	19,776	0.015	581	0.008	0.4	18,458	0.013	465	1.8	10
0.008	0.4	22,413	0.017	753	0.006	0.4	19,776	0.015	581	0.005	0.4	18,458	0.013	465		12
0.025	0.45	25,214	0.019	968	0.018	0.45	22,248	0.017	748	0.014	0.45	20,765	0.014	598		6
0.016	0.45	25,214	0.019	968	0.012	0.45	22,248	0.017	748	0.009	0.45	20,765	0.014	598	1.9	8
0.016	0.45	22,413	0.017	753	0.012	0.45	19,776	0.015	581	0.009	0.45	18,458	0.013	465		10
0.016	0.45	22,413	0.017	753	0.012	0.45	19,776	0.015	581	0.009	0.45	18,458	0.013	465		12

D 1


EPDSE-ATH | High Efficiency Cutting Conditions

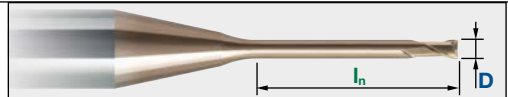
	Workpiece Material		I					II				
			Carbon Steels, Alloy Steels (180~250HB)					Tool Steels (25~35HRC)				
	D	l_n	a_p mm	a_e mm	n min^{-1}	f_z mm/t	V_t mm/min	a_p mm	a_e mm	n min^{-1}	f_z mm/t	V_t mm/min
	1	2	0.1	0.5	29,664	0.032	1,898	0.090	0.5	26,698	0.032	1,709
		3	0.085	0.5	29,664	0.032	1,898	0.077	0.5	26,698	0.032	1,709
		4	0.07	0.5	29,664	0.032	1,898	0.063	0.5	26,698	0.032	1,709
		5	0.055	0.5	29,664	0.032	1,898	0.050	0.5	26,698	0.032	1,709
		6	0.04	0.5	26,698	0.029	1,548	0.036	0.5	24,028	0.029	1,394
		7	0.04	0.5	26,698	0.029	1,548	0.036	0.5	24,028	0.029	1,394
		8	0.04	0.5	26,698	0.029	1,548	0.036	0.5	24,028	0.029	1,394
		9	0.033	0.5	26,698	0.029	1,548	0.030	0.5	24,028	0.029	1,394
		10	0.025	0.5	26,698	0.029	1,548	0.023	0.5	24,028	0.029	1,394
		12	0.025	0.5	23,731	0.025	1,187	0.023	0.5	21,358	0.025	1,068
		14	0.025	0.5	23,731	0.025	1,187	0.023	0.5	21,358	0.025	1,068
		16	0.015	0.5	23,731	0.022	1,044	0.014	0.5	21,358	0.022	940
		20	0.01	0.5	20,765	0.019	789	0.009	0.5	18,688	0.019	710
		25	0.005	0.5	17,304	0.016	554	0.005	0.5	15,574	0.016	498
	1.2	6	0.084	0.6	26,368	0.032	1,688	0.076	0.6	23,731	0.032	1,519
		8	0.048	0.6	23,731	0.029	1,376	0.043	0.6	21,358	0.029	1,239
		10	0.03	0.6	23,731	0.029	1,376	0.027	0.6	21,358	0.029	1,239
		12	0.03	0.6	23,731	0.029	1,376	0.027	0.6	21,358	0.029	1,239
		16	0.02	0.6	21,094	0.026	1,097	0.018	0.6	18,985	0.026	987
	1.4	6	0.1	0.7	23,072	0.032	1,477	0.090	0.7	20,765	0.032	1,329
		12	0.035	0.7	20,765	0.029	1,204	0.032	0.7	18,688	0.029	1,084
	1.5	4	0.11	0.75	23,072	0.032	1,477	0.099	0.75	20,765	0.032	1,329
		6	0.11	0.75	23,072	0.032	1,477	0.099	0.75	20,765	0.032	1,329
		8	0.08	0.75	20,765	0.029	1,204	0.072	0.75	18,688	0.029	1,084
		10	0.06	0.75	20,765	0.029	1,204	0.054	0.75	18,688	0.029	1,084
		12	0.06	0.75	20,765	0.029	1,204	0.054	0.75	18,688	0.029	1,084
		14	0.038	0.75	20,765	0.029	1,204	0.034	0.75	18,688	0.029	1,084
		16	0.038	0.75	18,458	0.025	923	0.034	0.75	16,612	0.025	831
		18	0.038	0.75	18,458	0.025	923	0.034	0.75	16,612	0.025	831
		20	0.038	0.75	18,458	0.025	923	0.034	0.75	16,612	0.025	831
		25	0.023	0.75	13,843	0.022	609	0.021	0.75	12,459	0.022	548
		30	0.015	0.75	11,536	0.018	415	0.014	0.75	10,382	0.018	374
		35	0.01	0.75	11,536	0.018	415	0.009	0.75	10,382	0.018	374
	1.6	40	0.005	0.75	9,229	0.014	258	0.005	0.75	8,306	0.014	233
		6	0.11	0.8	21,424	0.035	1,500	0.099	0.8	19,282	0.035	1,350
		8	0.11	0.8	21,424	0.035	1,500	0.099	0.8	19,282	0.035	1,350
	1.8	6	0.13	0.9	21,424	0.035	1,500	0.117	0.9	19,282	0.035	1,350
		8	0.13	0.9	21,424	0.035	1,500	0.117	0.9	19,282	0.035	1,350
	2	4	0.2	1	17,304	0.042	1,454	0.180	1	15,574	0.042	1,308
		6	0.2	1	17,304	0.042	1,454	0.180	1	15,574	0.042	1,308
		8	0.14	1	17,304	0.042	1,454	0.126	1	15,574	0.042	1,308
		10	0.14	1	17,304	0.042	1,454	0.126	1	15,574	0.042	1,308
		12	0.1	1	15,574	0.038	1,184	0.090	1	14,016	0.038	1,065
		14	0.08	1	15,574	0.038	1,184	0.072	1	14,016	0.038	1,065
		16	0.08	1	15,574	0.038	1,184	0.072	1	14,016	0.038	1,065
		18	0.05	1	15,574	0.038	1,184	0.045	1	14,016	0.038	1,065
		20	0.05	1	15,574	0.038	1,184	0.045	1	14,016	0.038	1,065
		25	0.05	1	13,843	0.034	941	0.045	1	12,459	0.034	847
		30	0.03	1	13,843	0.034	941	0.027	1	12,459	0.034	847
		35	0.02	1	12,113	0.030	727	0.018	1	10,902	0.030	654
		40	0.01	1	12,113	0.030	727	0.009	1	10,902	0.030	654
	2.5	50	0.005	1	10,382	0.026	540	0.005	1	9,344	0.026	486
		8	0.18	1.25	14,832	0.053	1,572	0.162	1.25	13,349	0.053	1,415
		12	0.18	1.25	14,832	0.053	1,572	0.162	1.25	13,349	0.053	1,415
		16	0.1	1.25	13,349	0.048	1,281	0.090	1.25	12,014	0.048	1,153
		20	0.1	1.25	13,349	0.048	1,281	0.090	1.25	12,014	0.048	1,153
		30	0.06	1.25	11,866	0.043	1,020	0.054	1.25	10,679	0.043	918
		40	0.03	1.25	10,382	0.038	789	0.027	1.25	9,344	0.038	710
		50	0.01	1.25	10,382	0.038	789	0.009	1.25	9,344	0.038	710



III					IV					V					D		I _n	
Tool Steels (35~45HRC)					Hardened Steels (45~55HRC)					Hardened Steels (55~70HRC)								
a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _f mm/min	a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _f mm/min	a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _f mm/min				
0.070	0.5	25,214	0.026	1,291	0.050	0.5	22,248	0.022	997	0.040	0.5	20,765	0.019	797	1		2	
0.060	0.5	25,214	0.026	1,291	0.043	0.5	22,248	0.022	997	0.034	0.5	20,765	0.019	797			3	
0.049	0.5	25,214	0.026	1,291	0.035	0.5	22,248	0.022	997	0.028	0.5	20,765	0.019	797			4	
0.039	0.5	25,214	0.026	1,291	0.028	0.5	22,248	0.022	997	0.022	0.5	20,765	0.019	797			5	
0.028	0.5	22,693	0.023	1,053	0.020	0.5	20,023	0.020	813	0.016	0.5	18,688	0.017	650			6	
0.028	0.5	22,693	0.023	1,053	0.020	0.5	20,023	0.020	813	0.016	0.5	18,688	0.017	650			7	
0.028	0.5	22,693	0.023	1,053	0.020	0.5	20,023	0.020	813	0.016	0.5	18,688	0.017	650			8	
0.023	0.5	22,693	0.023	1,053	0.017	0.5	20,023	0.020	813	0.013	0.5	18,688	0.017	650			9	
0.018	0.5	22,693	0.023	1,053	0.013	0.5	20,023	0.020	813	0.010	0.5	18,688	0.017	650			10	
0.018	0.5	20,172	0.020	807	0.013	0.5	17,798	0.018	623	0.010	0.5	16,612	0.015	498			12	
0.018	0.5	20,172	0.020	807	0.013	0.5	17,798	0.018	623	0.010	0.5	16,612	0.015	498			14	
0.011	0.5	20,172	0.018	710	0.008	0.5	17,798	0.015	548	0.006	0.5	16,612	0.013	439			16	
0.007	0.5	17,650	0.015	537	0.005	0.5	15,574	0.013	414	0.004	0.5	14,535	0.011	331			20	
0.004	0.5	14,708	0.013	377	0.003	0.5	12,978	0.011	291	0.002	0.5	12,113	0.010	233			25	
0.059	0.6	22,413	0.026	1,148	0.042	0.6	19,776	0.022	886	0.034	0.6	18,458	0.019	709	1.2		6	
0.034	0.6	20,172	0.023	936	0.024	0.6	17,798	0.020	723	0.019	0.6	16,612	0.017	578			8	
0.021	0.6	20,172	0.023	936	0.015	0.6	17,798	0.020	723	0.012	0.6	16,612	0.017	578			10	
0.021	0.6	20,172	0.023	936	0.015	0.6	17,798	0.020	723	0.012	0.6	16,612	0.017	578			12	
0.014	0.6	17,930	0.021	746	0.010	0.6	15,821	0.018	576	0.008	0.6	14,766	0.016	461	1.4		16	
0.070	0.7	19,611	0.026	1,004	0.050	0.7	17,304	0.022	775	0.040	0.7	16,150	0.019	620			6	
0.025	0.7	17,650	0.023	819	0.018	0.7	15,574	0.020	632	0.014	0.7	14,535	0.017	506	1.5		12	
0.077	0.75	19,611	0.026	1,004	0.055	0.75	17,304	0.022	775	0.044	0.75	16,150	0.019	620			4	
0.077	0.75	19,611	0.026	1,004	0.055	0.75	17,304	0.022	775	0.044	0.75	16,150	0.019	620			6	
0.056	0.75	17,650	0.023	819	0.040	0.75	15,574	0.020	632	0.032	0.75	14,535	0.017	506			8	
0.042	0.75	17,650	0.023	819	0.030	0.75	15,574	0.020	632	0.024	0.75	14,535	0.017	506			10	
0.042	0.75	17,650	0.023	819	0.030	0.75	15,574	0.020	632	0.024	0.75	14,535	0.017	506			12	
0.027	0.75	17,650	0.023	819	0.019	0.75	15,574	0.020	632	0.015	0.75	14,535	0.017	506			14	
0.027	0.75	15,689	0.020	628	0.019	0.75	13,843	0.018	485	0.015	0.75	12,920	0.015	388			16	
0.027	0.75	15,689	0.020	628	0.019	0.75	13,843	0.018	485	0.015	0.75	12,920	0.015	388			18	
0.027	0.75	15,689	0.020	628	0.019	0.75	13,843	0.018	485	0.015	0.75	12,920	0.015	388			20	
0.016	0.75	11,767	0.018	414	0.012	0.75	10,382	0.015	320	0.009	0.75	9,690	0.013	256			25	
0.011	0.75	9,806	0.014	282	0.008	0.75	8,652	0.013	218	0.006	0.75	8,075	0.011	174			30	
0.007	0.75	9,806	0.014	282	0.005	0.75	8,652	0.013	218	0.004	0.75	8,075	0.011	174			35	
0.004	0.75	7,844	0.011	176	0.003	0.75	6,922	0.010	136	0.002	0.75	6,460	0.008	109			40	
0.077	0.8	18,210	0.028	1,020	0.055	0.8	16,068	0.025	787	0.044	0.8	14,997	0.021	630	1.6		6	
0.077	0.8	18,210	0.028	1,020	0.055	0.8	16,068	0.025	787	0.044	0.8	14,997	0.021	630			8	
0.091	0.9	18,210	0.028	1,020	0.065	0.9	16,068	0.025	787	0.052	0.9	14,997	0.021	630	1.8		6	
0.091	0.9	18,210	0.028	1,020	0.065	0.9	16,068	0.025	787	0.052	0.9	14,997	0.021	630			8	
0.140	1	14,708	0.034	988	0.100	1	12,978	0.029	763	0.080	1	12,113	0.025	610	2		4	
0.140	1	14,708	0.034	988	0.100	1	12,978	0.029	763	0.080	1	12,113	0.025	610			6	
0.098	1	14,708	0.034	988	0.070	1	12,978	0.029	763	0.056	1	12,113	0.025	610			8	
0.098	1	14,708	0.034	988	0.070	1	12,978	0.029	763	0.056	1	12,113	0.025	610			10	
0.070	1	13,238	0.030	805	0.050	1	11,680	0.027	621	0.040	1	10,902	0.023	497			12	
0.056	1	13,238	0.030	805	0.040	1	11,680	0.027	621	0.032	1	10,902	0.023	497			14	
0.056	1	13,238	0.030	805	0.040	1	11,680	0.027	621	0.032	1	10,902	0.023	497			16	
0.035	1	13,238	0.030	805	0.025	1	11,680	0.027	621	0.020	1	10,902	0.023	497			18	
0.035	1	13,238	0.030	805	0.025	1	11,680	0.027	621	0.020	1	10,902	0.023	497			20	
0.035	1	11,767	0.027	640	0.025	1	10,382	0.024	494	0.020	1	9,690	0.020	395			25	
0.021	1	11,767	0.027	640	0.015	1	10,382	0.024	494	0.012	1	9,690	0.020	395			30	
0.014	1	10,296	0.024	494	0.010	1	9,085	0.021	382	0.008	1	8,479	0.018	305			35	
0.007	1	10,296	0.024	494	0.005	1	9,085	0.021	382	0.004	1	8,479	0.018	305			40	
0.004	1	8,825	0.021	367	0.003	1	7,787	0.018	283	0.002	1	7,268	0.016	227			50	
0.126	1.25	12,607	0.042	1,069	0.090	1.25	11,124	0.037	825	0.072	1.25	10,382	0.032	660	2.5		8	
0.126	1.25	12,607	0.042	1,069	0.090	1.25	11,124	0.037	825	0.072	1.25	10,382	0.032	660			12	
0.070	1.25	11,346	0.038	871	0.050	1.25	10,012	0.034	673	0.040	1.25	9,344	0.029	538			16	
0.070	1.25	11,346	0.038	871	0.050	1.25	10,012	0.034	673	0.040	1.25	9,344	0.029	538			20	
0.042	1.25	10,086	0.034	694	0.030	1.25	8,899	0.030	536	0.024	1.25	8,306	0.026	429			30	
0.021	1.25	8,825	0.030	537	0.015	1.25	7,787	0.027	414	0.012	1.25	7,268	0.023	331			40	
0.007	1.25	8,825	0.030	537	0.005	1.25	7,787	0.027	414	0.004	1.25	7,268	0.023	331	50			

EPDSE-ATH | High Efficiency Cutting Conditions


	Workpiece Material		I					II				
			Carbon Steels, Alloy Steels (180~250HB)					Tool Steels (25~35HRC)				
	D	I _n	a _p mm	a _e mm	n min ⁻¹	f _t mm/t	V _r mm/min	a _p mm	a _e mm	n min ⁻¹	f _t mm/t	V _r mm/min
 High Efficient	3	8	0.3	1.5	13,184	0.053	1,398	0.270	1.5	11,866	0.053	1,258
		12	0.21	1.5	13,184	0.053	1,398	0.189	1.5	11,866	0.053	1,258
		16	0.15	1.5	11,866	0.048	1,139	0.135	1.5	10,679	0.048	1,025
		20	0.12	1.5	11,866	0.048	1,139	0.108	1.5	10,679	0.048	1,025
		25	0.08	1.5	11,866	0.048	1,139	0.072	1.5	10,679	0.048	1,025
		30	0.08	1.5	11,866	0.048	1,139	0.072	1.5	10,679	0.048	1,025
		40	0.05	1.5	10,547	0.043	907	0.045	1.5	9,492	0.043	816
		50	0.02	1.5	9,167	0.037	678	0.018	1.5	8,250	0.037	611
	4	12	0.4	2	9,682	0.071	1,375	0.360	2	8,714	0.071	1,237
		16	0.28	2	9,682	0.071	1,375	0.252	2	8,714	0.071	1,237
		20	0.28	2	8,714	0.071	1,237	0.252	2	7,842	0.071	1,114
		25	0.16	2	8,714	0.064	1,115	0.144	2	7,842	0.064	1,004
		30	0.16	2	8,714	0.064	1,115	0.144	2	7,842	0.064	1,004
		35	0.1	2	7,842	0.064	1,004	0.090	2	7,058	0.064	903
		40	0.1	2	7,842	0.064	1,004	0.090	2	7,058	0.064	903
		50	0.06	2	6,777	0.050	678	0.054	2	6,100	0.050	610
	5	20	0.3	2.5	7,737	0.071	1,099	0.270	2.5	6,964	0.071	989
		25	0.3	2.5	6,963	0.064	891	0.270	2.5	6,267	0.064	802
		30	0.2	2.5	6,963	0.064	891	0.180	2.5	6,267	0.064	802
		40	0.15	2.5	6,267	0.064	802	0.135	2.5	5,640	0.064	722
	6	50	0.1	2.5	6,267	0.050	627	0.090	2.5	5,640	0.050	564
		20	0.5	3	6,367	0.079	1,006	0.450	3	5,731	0.079	905
		30	0.4	3	5,789	0.079	915	0.360	3	5,210	0.079	823
		40	0.3	3	5,789	0.071	822	0.270	3	5,210	0.071	740
		50	0.2	3	5,150	0.064	659	0.180	3	4,635	0.064	593





III Tool Steels (35~45HRC)					IV Hardened Steels (45~55HRC)					V Hardened Steels (55~70HRC)					D	l _n
a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _f mm/min	a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _f mm/min	a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _f mm/min		
0.210	1.5	11,206	0.042	950	0.150	1.5	9,888	0.037	734	0.120	1.5	9,229	0.032	587	3	8
0.147	1.5	11,206	0.042	950	0.105	1.5	9,888	0.037	734	0.084	1.5	9,229	0.032	587		12
0.105	1.5	10,086	0.038	775	0.075	1.5	8,899	0.034	598	0.060	1.5	8,306	0.029	478		16
0.084	1.5	10,086	0.038	775	0.060	1.5	8,899	0.034	598	0.048	1.5	8,306	0.029	478		20
0.056	1.5	10,086	0.038	775	0.040	1.5	8,899	0.034	598	0.032	1.5	8,306	0.029	478		25
0.056	1.5	10,086	0.038	775	0.040	1.5	8,899	0.034	598	0.032	1.5	8,306	0.029	478		30
0.035	1.5	8,965	0.034	617	0.025	1.5	7,910	0.030	476	0.020	1.5	7,383	0.026	381		40
0.014	1.5	7,792	0.030	461	0.010	1.5	6,875	0.026	356	0.008	1.5	6,417	0.022	285		50
0.280	2	8,230	0.057	935	0.200	2	7,262	0.050	722	0.160	2	6,777	0.043	577	4	12
0.196	2	8,230	0.057	935	0.140	2	7,262	0.050	722	0.112	2	6,777	0.043	577		16
0.196	2	7,407	0.057	841	0.140	2	6,535	0.050	650	0.112	2	6,100	0.043	520		20
0.112	2	7,407	0.051	758	0.080	2	6,535	0.045	586	0.064	2	6,100	0.038	468		25
0.112	2	7,407	0.051	758	0.080	2	6,535	0.045	586	0.064	2	6,100	0.038	468		30
0.070	2	6,666	0.051	683	0.050	2	5,882	0.045	527	0.040	2	5,490	0.038	422		35
0.070	2	6,666	0.051	683	0.050	2	5,882	0.045	527	0.040	2	5,490	0.038	422		40
0.042	2	5,761	0.040	461	0.030	2	5,083	0.035	356	0.024	2	4,744	0.030	285		50
0.210	2.5	6,577	0.057	747	0.150	2.5	5,803	0.050	577	0.120	2.5	5,416	0.043	461	5	20
0.210	2.5	5,918	0.051	606	0.150	2.5	5,222	0.045	468	0.120	2.5	4,874	0.038	374		25
0.140	2.5	5,918	0.051	606	0.100	2.5	5,222	0.045	468	0.080	2.5	4,874	0.038	374		30
0.105	2.5	5,327	0.051	545	0.075	2.5	4,700	0.045	421	0.060	2.5	4,387	0.038	337		40
0.070	2.5	5,327	0.040	426	0.050	2.5	4,700	0.035	329	0.040	2.5	4,387	0.030	263		50
0.350	3	5,412	0.063	684	0.250	3	4,776	0.055	528	0.200	3	4,457	0.047	423	6	20
0.280	3	4,920	0.063	622	0.200	3	4,341	0.055	480	0.160	3	4,052	0.047	384		30
0.210	3	4,920	0.057	559	0.150	3	4,341	0.050	432	0.120	3	4,052	0.043	345		40
0.140	3	4,378	0.051	448	0.100	3	3,863	0.045	346	0.080	3	3,605	0.038	277		50


EPDSE-ATH | High Precision Cutting Conditions


	Workpiece Material		I					II				
			Carbon Steels, Alloy Steels (180~250HB)					Tool Steels (25~35HRC)				
	D	I _n	a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _f mm/min	a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _f mm/min
	0.1	0.3	0.006	0.01	51,500	0.009	906	0.005	0.01	46,350	0.009	816
		0.5	0.004	0.01	51,500	0.009	906	0.004	0.01	46,350	0.009	816
		1	0.003	0.01	49,440	0.008	791	0.003	0.01	44,496	0.008	712
	0.2	0.5	0.02	0.02	46,350	0.013	1,187	0.018	0.02	41,715	0.013	1,068
		1	0.014	0.02	46,350	0.013	1,187	0.013	0.02	41,715	0.013	1,068
		1.5	0.008	0.02	41,715	0.011	934	0.007	0.02	37,544	0.011	841
		2	0.005	0.02	37,080	0.010	759	0.005	0.02	33,372	0.010	683
		3	0.003	0.02	37,080	0.009	664	0.003	0.02	33,372	0.009	598
	0.3	1	0.021	0.03	41,200	0.013	1,055	0.019	0.03	37,080	0.013	949
		1.5	0.021	0.03	41,200	0.013	1,055	0.019	0.03	37,080	0.013	949
		2	0.012	0.03	37,080	0.011	831	0.011	0.03	33,372	0.011	748
		2.5	0.01	0.03	37,080	0.011	831	0.009	0.03	33,372	0.011	748
		3	0.008	0.03	37,080	0.011	831	0.007	0.03	33,372	0.011	748
	0.4	1	0.04	0.04	32,960	0.017	1,107	0.036	0.04	29,664	0.017	997
		1.5	0.028	0.04	32,960	0.017	1,107	0.025	0.04	29,664	0.017	997
		2	0.028	0.04	32,960	0.017	1,107	0.025	0.04	29,664	0.017	997
		2.5	0.022	0.04	29,664	0.015	902	0.020	0.04	26,698	0.015	812
		3	0.016	0.04	29,664	0.015	902	0.014	0.04	26,698	0.015	812
		3.5	0.012	0.04	29,664	0.015	902	0.011	0.04	26,698	0.015	812
		4	0.01	0.04	29,664	0.015	902	0.009	0.04	26,698	0.015	812
		5	0.01	0.04	26,368	0.014	717	0.009	0.04	23,731	0.014	645
		6	0.006	0.04	26,368	0.014	717	0.005	0.04	23,731	0.014	645
		8	0.003	0.04	23,072	0.012	554	0.003	0.04	20,765	0.012	498
	0.5	10	0.002	0.04	19,776	0.010	377	0.002	0.04	17,798	0.010	339
		1	0.05	0.05	32,960	0.017	1,107	0.045	0.05	29,664	0.017	997
		1.5	0.05	0.05	32,960	0.017	1,107	0.045	0.05	29,664	0.017	997
		2	0.035	0.05	32,960	0.017	1,107	0.032	0.05	29,664	0.017	997
		2.5	0.03	0.05	29,664	0.017	997	0.027	0.05	26,698	0.017	897
		3	0.02	0.05	29,664	0.015	902	0.018	0.05	26,698	0.015	812
		4	0.02	0.05	29,664	0.015	902	0.018	0.05	26,698	0.015	812
		5	0.013	0.05	29,664	0.015	902	0.012	0.05	26,698	0.015	812
		6	0.013	0.05	26,368	0.014	717	0.012	0.05	23,731	0.014	645
		8	0.008	0.05	26,368	0.014	717	0.007	0.05	23,731	0.014	645
	0.6	10	0.004	0.05	23,072	0.012	554	0.004	0.05	20,765	0.012	498
		2	0.042	0.06	32,960	0.021	1,371	0.038	0.06	29,664	0.021	1,234
		3	0.035	0.06	29,664	0.019	1,139	0.032	0.06	26,698	0.019	1,025
		4	0.024	0.06	29,664	0.019	1,139	0.022	0.06	26,698	0.019	1,025
		5	0.02	0.06	29,664	0.019	1,139	0.018	0.06	26,698	0.019	1,025
		6	0.015	0.06	29,664	0.019	1,139	0.014	0.06	26,698	0.019	1,025
		7	0.015	0.06	26,368	0.017	886	0.014	0.06	23,731	0.017	797
		8	0.015	0.06	26,368	0.017	886	0.014	0.06	23,731	0.017	797
		9	0.012	0.06	26,368	0.017	886	0.011	0.06	23,731	0.017	797
		10	0.009	0.06	26,368	0.017	886	0.008	0.06	23,731	0.017	797
	0.7	2	0.07	0.07	32,960	0.022	1,424	0.063	0.07	29,664	0.022	1,281
		4	0.049	0.07	29,664	0.019	1,139	0.044	0.07	26,698	0.019	1,025
		6	0.018	0.07	29,664	0.019	1,139	0.016	0.07	26,698	0.019	1,025
		8	0.018	0.07	26,368	0.017	886	0.016	0.07	23,731	0.017	797
		10	0.018	0.07	26,368	0.017	886	0.016	0.07	23,731	0.017	797
	0.8	4	0.056	0.08	32,960	0.021	1,371	0.050	0.08	29,664	0.021	1,234
		6	0.032	0.08	29,664	0.019	1,139	0.029	0.08	26,698	0.019	1,025
		8	0.02	0.08	29,664	0.019	1,139	0.018	0.08	26,698	0.019	1,025
		10	0.02	0.08	26,368	0.017	886	0.018	0.08	23,731	0.017	797
		12	0.012	0.08	26,368	0.017	886	0.011	0.08	23,731	0.017	797
	0.9	6	0.036	0.09	29,664	0.019	1,139	0.032	0.09	26,698	0.019	1,025
		8	0.023	0.09	29,664	0.019	1,139	0.021	0.09	26,698	0.019	1,025
		10	0.023	0.09	26,368	0.017	886	0.021	0.09	23,731	0.017	797
		12	0.023	0.09	26,368	0.017	886	0.021	0.09	23,731	0.017	797


 **Note:** For finishing and precise tool definition for the CAM system please download DXF data (QuickFinder), or contact your local MOLDINO Tool staff for more details.

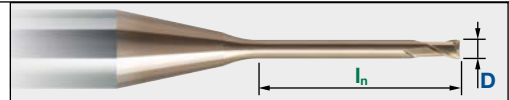
 **Nota:** Per lavorazioni di finitura e per una precisa e corretta definizione del profilo dell'utensile per l'utilizzo CAM si prega di richiedere file DXF tramite QuickFinder o rivolgendosi al personale MOLDINO Tool.

 **Remarque :** Pour les opérations de finition et une définition précise de l'outil dans votre système FAO, demandez nous le fichier DXF des outils, téléchargez les via notre logiciel QuickFinder, ou contactez votre interlocuteur commercial pour plus de détails.

 **Achtung:** Bitte laden Sie sich für die Schlichtbearbeitung und die präzise Definition der Werkzeuge die DXF Daten herunter (QuickFinder) oder wenden Sie sich an Ihren MOLDINO Anwendungstechniker.

 **Nota:** En procesos de acabado y para una más precisa definición de la herramienta en el sistema de CAM por favor solicite los ficheros DXF (QuickFinder), o póngase en contacto con MOLDINO Tool para obtener más detalles.

 **Nota:** Para o acabamento e precisão assim como melhor definição da ferramenta para o sistema CAM por favor solicitar dados DXF (QuickFinder), ou entre em contato com sua equipe de ferramentas MOLDINO local para obter mais detalhes.



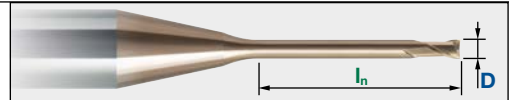
III Tool Steels (35~45HRC)						IV Hardened Steels (45~55HRC)					V Hardened Steels (55~70HRC)					D	l _n
a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _t mm/min		a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _t mm/min	a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _t mm/min		
0.004	0.01	43,775	0.007	616		0.003	0.01	38,625	0.006	476	0.002	0.01	36,050	0.005	381	0.1	0.3
0.003	0.01	43,775	0.007	616		0.002	0.01	38,625	0.006	476	0.002	0.01	36,050	0.005	381		0.5
0.002	0.01	42,024	0.006	538		0.002	0.01	37,080	0.006	415	0.001	0.01	34,608	0.005	332		1
0.014	0.02	39,398	0.010	807		0.010	0.02	34,763	0.009	623	0.008	0.02	32,445	0.008	498	0.2	0.5
0.010	0.02	39,398	0.010	807		0.007	0.02	34,763	0.009	623	0.006	0.02	32,445	0.008	498		1
0.006	0.02	35,458	0.009	635		0.004	0.02	31,286	0.008	491	0.003	0.02	29,201	0.007	392		1.5
0.004	0.02	31,518	0.008	516		0.003	0.02	27,810	0.007	399	0.002	0.02	25,956	0.006	319	0.3	2
0.002	0.02	31,518	0.007	452		0.002	0.02	27,810	0.006	349	0.001	0.02	25,956	0.005	279		3
0.015	0.03	35,020	0.010	717		0.011	0.03	30,900	0.009	554	0.008	0.03	28,840	0.008	443		1
0.015	0.03	35,020	0.010	717		0.011	0.03	30,900	0.009	554	0.008	0.03	28,840	0.008	443	0.4	1.5
0.008	0.03	31,518	0.009	565		0.006	0.03	27,810	0.008	436	0.005	0.03	25,956	0.007	349		2
0.007	0.03	31,518	0.009	565		0.005	0.03	27,810	0.008	436	0.004	0.03	25,956	0.007	349		2.5
0.006	0.03	31,518	0.009	565		0.004	0.03	27,810	0.008	436	0.003	0.03	25,956	0.007	349	0.5	3
0.028	0.04	28,016	0.013	753		0.020	0.04	24,720	0.012	581	0.016	0.04	23,072	0.010	465		1
0.020	0.04	28,016	0.013	753		0.014	0.04	24,720	0.012	581	0.011	0.04	23,072	0.010	465		1.5
0.020	0.04	28,016	0.013	753		0.014	0.04	24,720	0.012	581	0.011	0.04	23,072	0.010	465	0.6	2
0.015	0.04	25,214	0.012	613		0.011	0.04	22,248	0.011	473	0.009	0.04	20,765	0.009	379		2.5
0.011	0.04	25,214	0.012	613		0.008	0.04	22,248	0.011	473	0.006	0.04	20,765	0.009	379		3
0.008	0.04	25,214	0.012	613		0.006	0.04	22,248	0.011	473	0.005	0.04	20,765	0.009	379	0.7	3.5
0.007	0.04	25,214	0.012	613		0.005	0.04	22,248	0.011	473	0.004	0.04	20,765	0.009	379		4
0.007	0.04	22,413	0.011	488		0.005	0.04	19,776	0.010	377	0.004	0.04	18,458	0.008	301		5
0.004	0.04	22,413	0.011	488		0.003	0.04	19,776	0.010	377	0.002	0.04	18,458	0.008	301	0.8	6
0.002	0.04	19,611	0.010	377		0.002	0.04	17,304	0.008	291	0.001	0.04	16,150	0.007	233		8
0.001	0.04	16,810	0.008	256		0.001	0.04	14,832	0.007	198	0.001	0.04	13,843	0.006	158		10
0.035	0.05	28,016	0.013	753		0.025	0.05	24,720	0.012	581	0.020	0.05	23,072	0.010	465	0.9	1
0.035	0.05	28,016	0.013	753		0.025	0.05	24,720	0.012	581	0.020	0.05	23,072	0.010	465		1.5
0.025	0.05	28,016	0.013	753		0.018	0.05	24,720	0.012	581	0.014	0.05	23,072	0.010	465		2
0.021	0.05	25,214	0.013	678		0.015	0.05	22,248	0.012	523	0.012	0.05	20,765	0.010	419	1.0	2.5
0.014	0.05	25,214	0.012	613		0.010	0.05	22,248	0.011	473	0.008	0.05	20,765	0.009	379		3
0.014	0.05	25,214	0.012	613		0.010	0.05	22,248	0.011	473	0.008	0.05	20,765	0.009	379		4
0.009	0.05	25,214	0.012	613		0.007	0.05	22,248	0.011	473	0.005	0.05	20,765	0.009	379	1.1	5
0.009	0.05	22,413	0.011	488		0.007	0.05	19,776	0.010	377	0.005	0.05	18,458	0.008	301		6
0.006	0.05	22,413	0.011	488		0.004	0.05	19,776	0.010	377	0.003	0.05	18,458	0.008	301		8
0.003	0.05	19,611	0.010	377		0.002	0.05	17,304	0.008	291	0.002	0.05	16,150	0.007	233	1.2	10
0.029	0.06	28,016	0.017	932		0.021	0.06	24,720	0.015	720	0.017	0.06	23,072	0.012	576		2
0.025	0.06	25,214	0.015	775		0.018	0.06	22,248	0.013	598	0.014	0.06	20,765	0.012	478		3
0.017	0.06	25,214	0.015	775		0.012	0.06	22,248	0.013	598	0.010	0.06	20,765	0.012	478	1.3	4
0.014	0.06	25,214	0.015	775		0.010	0.06	22,248	0.013	598	0.008	0.06	20,765	0.012	478		5
0.011	0.06	25,214	0.015	775		0.008	0.06	22,248	0.013	598	0.006	0.06	20,765	0.012	478		6
0.011	0.06	22,413	0.013	602		0.008	0.06	19,776	0.012	465	0.006	0.06	18,458	0.010	372	1.4	7
0.011	0.06	22,413	0.013	602		0.008	0.06	19,776	0.012	465	0.006	0.06	18,458	0.010	372		8
0.008	0.06	22,413	0.013	602		0.006	0.06	19,776	0.012	465	0.005	0.06	18,458	0.010	372		9
0.006	0.06	22,413	0.013	602		0.005	0.06	19,776	0.012	465	0.004	0.06	18,458	0.010	372	1.5	10
0.049	0.07	28,016	0.017	968		0.035	0.07	24,720	0.015	748	0.028	0.07	23,072	0.013	598		2
0.034	0.07	25,214	0.015	775		0.025	0.07	22,248	0.013	598	0.020	0.07	20,765	0.012	478	1.6	4
0.013	0.07	25,214	0.015	775		0.009	0.07	22,248	0.013	598	0.007	0.07	20,765	0.012	478		6
0.013	0.07	22,413	0.013	602		0.009	0.07	19,776	0.012	465	0.007	0.07	18,458	0.010	372		8
0.013	0.07	22,413	0.013	602		0.009	0.07	19,776	0.012	465	0.007	0.07	18,458	0.010	372	1.7	10
0.039	0.08	28,016	0.017	932		0.028	0.08	24,720	0.015	720	0.022	0.08	23,072	0.012	576		4
0.022	0.08	25,214	0.015	775		0.016	0.08	22,248	0.013	598	0.013	0.08	20,765	0.012	478		6
0.014	0.08	25,214	0.015	775		0.010	0.08	22,248	0.013	598	0.008	0.08	20,765	0.012	478	1.8	8
0.014	0.08	22,413	0.013	602		0.010	0.08	19,776	0.012	465	0.008	0.08	18,458	0.010	372		10
0.008	0.08	22,413	0.013	602		0.006	0.08	19,776	0.012	465	0.005	0.08	18,458	0.010	372		12
0.025	0.09	25,214	0.015	775		0.018	0.09	22,248	0.013	598	0.014	0.09	20,765	0.012	478	1.9	6
0.016	0.09	25,214	0.015	775		0.012	0.09	22,248	0.013	598	0.009	0.09	20,765	0.012	478		8
0.016	0.09	22,413	0.013	602		0.012	0.09	19,776	0.012	465	0.009	0.09	18,458	0.010	372		10
0.016	0.09	22,413	0.013	602		0.012	0.09	19,776	0.012	465	0.009	0.09	18,458	0.010	372	2.0	12



EPDSE-ATH | High Precision Cutting Conditions

D	I _n	I						II					
		Carbon Steels, Alloy Steels (180~250HB)						Tool Steels (25~35HRC)					
		a _p mm	a _e mm	n min ⁻¹	f _t mm/t	V _r mm/min	a _p mm	a _e mm	n min ⁻¹	f _t mm/t	V _r mm/min		
1	2	0.1	0.1	29,664	0.026	1,519	0.090	0.1	26,698	0.026	1,367		
	3	0.085	0.1	29,664	0.026	1,519	0.077	0.1	26,698	0.026	1,367		
	4	0.07	0.1	29,664	0.026	1,519	0.063	0.1	26,698	0.026	1,367		
	5	0.055	0.1	29,664	0.026	1,519	0.050	0.1	26,698	0.026	1,367		
	6	0.04	0.1	26,698	0.023	1,239	0.036	0.1	24,028	0.023	1,115		
	7	0.04	0.1	26,698	0.023	1,239	0.036	0.1	24,028	0.023	1,115		
	8	0.04	0.1	26,698	0.023	1,239	0.036	0.1	24,028	0.023	1,115		
	9	0.033	0.1	26,698	0.023	1,239	0.030	0.1	24,028	0.023	1,115		
	10	0.025	0.1	26,698	0.023	1,239	0.023	0.1	24,028	0.023	1,115		
	12	0.025	0.1	23,731	0.020	949	0.023	0.1	21,358	0.020	854		
	14	0.025	0.1	23,731	0.020	949	0.023	0.1	21,358	0.020	854		
	16	0.015	0.1	23,731	0.018	835	0.014	0.1	21,358	0.018	752		
	20	0.01	0.1	20,765	0.015	631	0.009	0.1	18,688	0.015	568		
	25	0.005	0.1	17,304	0.013	443	0.005	0.1	15,574	0.013	399		
1.2	6	0.084	0.12	26,368	0.026	1,350	0.076	0.12	23,731	0.026	1,215		
	8	0.048	0.12	23,731	0.023	1,101	0.043	0.12	21,358	0.023	991		
	10	0.03	0.12	23,731	0.023	1,101	0.027	0.12	21,358	0.023	991		
	12	0.03	0.12	23,731	0.023	1,101	0.027	0.12	21,358	0.023	991		
	16	0.02	0.12	21,094	0.021	878	0.018	0.12	18,985	0.021	790		
1.4	6	0.1	0.14	23,072	0.026	1,181	0.090	0.14	20,765	0.026	1,063		
	12	0.035	0.14	20,765	0.023	963	0.032	0.14	18,688	0.023	867		
1.5	4	0.11	0.15	23,072	0.026	1,181	0.099	0.15	20,765	0.026	1,063		
	6	0.11	0.15	23,072	0.026	1,181	0.099	0.15	20,765	0.026	1,063		
	8	0.08	0.15	20,765	0.023	963	0.072	0.15	18,688	0.023	867		
	10	0.06	0.15	20,765	0.023	963	0.054	0.15	18,688	0.023	867		
	12	0.06	0.15	20,765	0.023	963	0.054	0.15	18,688	0.023	867		
	14	0.038	0.15	20,765	0.023	963	0.034	0.15	18,688	0.023	867		
	16	0.038	0.15	18,458	0.020	738	0.034	0.15	16,612	0.020	664		
	18	0.038	0.15	18,458	0.020	738	0.034	0.15	16,612	0.020	664		
	20	0.038	0.15	18,458	0.020	738	0.034	0.15	16,612	0.020	664		
	25	0.023	0.15	13,843	0.018	487	0.021	0.15	12,459	0.018	439		
	30	0.015	0.15	11,536	0.014	332	0.014	0.15	10,382	0.014	299		
1.6	35	0.01	0.15	11,536	0.014	332	0.009	0.15	10,382	0.014	299		
	40	0.005	0.15	9,229	0.011	207	0.005	0.15	8,306	0.011	186		
	6	0.11	0.16	21,424	0.028	1,200	0.099	0.16	19,282	0.028	1,080		
	8	0.11	0.16	21,424	0.028	1,200	0.099	0.16	19,282	0.028	1,080		
	10	0.13	0.18	21,424	0.028	1,200	0.117	0.18	19,282	0.028	1,080		
1.8	6	0.13	0.18	21,424	0.028	1,200	0.117	0.18	19,282	0.028	1,080		
	8	0.13	0.18	21,424	0.028	1,200	0.117	0.18	19,282	0.028	1,080		
2	4	0.2	0.2	17,304	0.034	1,163	0.180	0.2	15,574	0.034	1,047		
	6	0.2	0.2	17,304	0.034	1,163	0.180	0.2	15,574	0.034	1,047		
	8	0.14	0.2	17,304	0.034	1,163	0.126	0.2	15,574	0.034	1,047		
	10	0.14	0.2	17,304	0.034	1,163	0.126	0.2	15,574	0.034	1,047		
	12	0.1	0.2	15,574	0.030	947	0.090	0.2	14,016	0.030	852		
	14	0.08	0.2	15,574	0.030	947	0.072	0.2	14,016	0.030	852		
	16	0.08	0.2	15,574	0.030	947	0.072	0.2	14,016	0.030	852		
	18	0.05	0.2	15,574	0.030	947	0.045	0.2	14,016	0.030	852		
	20	0.05	0.2	15,574	0.030	947	0.045	0.2	14,016	0.030	852		
	25	0.05	0.2	13,843	0.027	753	0.045	0.2	12,459	0.027	678		
	30	0.03	0.2	13,843	0.027	753	0.027	0.2	12,459	0.027	678		
	35	0.02	0.2	12,113	0.024	581	0.018	0.2	10,902	0.024	523		
	40	0.01	0.2	12,113	0.024	581	0.009	0.2	10,902	0.024	523		
	50	0.005	0.2	10,382	0.021	432	0.005	0.2	9,344	0.021	389		
2.5	8	0.18	0.25	14,832	0.042	1,258	0.162	0.25	13,349	0.042	1,132		
	12	0.18	0.25	14,832	0.042	1,258	0.162	0.25	13,349	0.042	1,132		
	16	0.1	0.25	13,349	0.038	1,025	0.090	0.25	12,014	0.038	923		
	20	0.1	0.25	13,349	0.038	1,025	0.090	0.25	12,014	0.038	923		
	30	0.06	0.25	11,866	0.034	816	0.054	0.25	10,679	0.034	735		
	40	0.03	0.25	10,382	0.030	631	0.027	0.25	9,344	0.030	568		
	50	0.01	0.25	10,382	0.030	631	0.009	0.25	9,344	0.030	568		




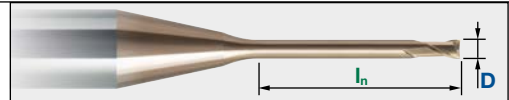


III Tool Steels (35~45HRC)					IV Hardened Steels (45~55HRC)					V Hardened Steels (55~70HRC)					D	L _n
a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _t mm/min	a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _t mm/min	a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _t mm/min		
0.070	0.1	25,214	0.020	1,033	0.050	0.1	22,248	0.018	797	0.040	0.1	20,765	0.015	638	1	2
0.060	0.1	25,214	0.020	1,033	0.043	0.1	22,248	0.018	797	0.034	0.1	20,765	0.015	638		3
0.049	0.1	25,214	0.020	1,033	0.035	0.1	22,248	0.018	797	0.028	0.1	20,765	0.015	638		4
0.039	0.1	25,214	0.020	1,033	0.028	0.1	22,248	0.018	797	0.022	0.1	20,765	0.015	638		5
0.028	0.1	22,693	0.019	842	0.020	0.1	20,023	0.016	650	0.016	0.1	18,688	0.014	520		6
0.028	0.1	22,693	0.019	842	0.020	0.1	20,023	0.016	650	0.016	0.1	18,688	0.014	520		7
0.028	0.1	22,693	0.019	842	0.020	0.1	20,023	0.016	650	0.016	0.1	18,688	0.014	520		8
0.023	0.1	22,693	0.019	842	0.017	0.1	20,023	0.016	650	0.013	0.1	18,688	0.014	520		9
0.018	0.1	22,693	0.019	842	0.013	0.1	20,023	0.016	650	0.010	0.1	18,688	0.014	520		10
0.018	0.1	20,172	0.016	645	0.013	0.1	17,798	0.014	498	0.010	0.1	16,612	0.012	399		12
0.018	0.1	20,172	0.016	645	0.013	0.1	17,798	0.014	498	0.010	0.1	16,612	0.012	399		14
0.011	0.1	20,172	0.014	568	0.008	0.1	17,798	0.012	439	0.006	0.1	16,612	0.011	351		16
0.007	0.1	17,650	0.012	429	0.005	0.1	15,574	0.011	331	0.004	0.1	14,535	0.009	265		20
0.004	0.1	14,708	0.010	301	0.003	0.1	12,978	0.009	233	0.002	0.1	12,113	0.008	186		25
0.059	0.12	22,413	0.020	918	0.042	0.12	19,776	0.018	709	0.034	0.12	18,458	0.015	567	1.2	6
0.034	0.12	20,172	0.019	749	0.024	0.12	17,798	0.016	578	0.019	0.12	16,612	0.014	462		8
0.021	0.12	20,172	0.019	749	0.015	0.12	17,798	0.016	578	0.012	0.12	16,612	0.014	462		10
0.021	0.12	20,172	0.019	749	0.015	0.12	17,798	0.016	578	0.012	0.12	16,612	0.014	462		12
0.014	0.12	17,930	0.017	597	0.010	0.12	15,821	0.015	461	0.008	0.12	14,766	0.012	369	1.4	16
0.070	0.14	19,611	0.020	803	0.050	0.14	17,304	0.018	620	0.040	0.14	16,150	0.015	496		6
0.025	0.14	17,650	0.019	655	0.018	0.14	15,574	0.016	506	0.014	0.14	14,535	0.014	405		12
0.077	0.15	19,611	0.020	803	0.055	0.15	17,304	0.018	620	0.044	0.15	16,150	0.015	496	1.5	4
0.077	0.15	19,611	0.020	803	0.055	0.15	17,304	0.018	620	0.044	0.15	16,150	0.015	496		6
0.056	0.15	17,650	0.019	655	0.040	0.15	15,574	0.016	506	0.032	0.15	14,535	0.014	405		8
0.042	0.15	17,650	0.019	655	0.030	0.15	15,574	0.016	506	0.024	0.15	14,535	0.014	405		10
0.042	0.15	17,650	0.019	655	0.030	0.15	15,574	0.016	506	0.024	0.15	14,535	0.014	405		12
0.027	0.15	17,650	0.019	655	0.019	0.15	15,574	0.016	506	0.015	0.15	14,535	0.014	405		14
0.027	0.15	15,689	0.016	502	0.019	0.15	13,843	0.014	388	0.015	0.15	12,920	0.012	310		16
0.027	0.15	15,689	0.016	502	0.019	0.15	13,843	0.014	388	0.015	0.15	12,920	0.012	310		18
0.027	0.15	15,689	0.016	502	0.019	0.15	13,843	0.014	388	0.015	0.15	12,920	0.012	310		20
0.016	0.15	11,767	0.014	331	0.012	0.15	10,382	0.012	256	0.009	0.15	9,690	0.011	205		25
0.011	0.15	9,806	0.012	226	0.008	0.15	8,652	0.010	174	0.006	0.15	8,075	0.009	140		30
0.007	0.15	9,806	0.012	226	0.005	0.15	8,652	0.010	174	0.004	0.15	8,075	0.009	140		35
0.004	0.15	7,844	0.009	141	0.003	0.15	6,922	0.008	109	0.002	0.15	6,460	0.007	87		40
0.077	0.16	18,210	0.022	816	0.055	0.16	16,068	0.020	630	0.044	0.16	14,997	0.017	504	1.6	6
0.077	0.16	18,210	0.022	816	0.055	0.16	16,068	0.020	630	0.044	0.16	14,997	0.017	504		8
0.091	0.18	18,210	0.022	816	0.065	0.18	16,068	0.020	630	0.052	0.18	14,997	0.017	504		6
0.091	0.18	18,210	0.022	816	0.065	0.18	16,068	0.020	630	0.052	0.18	14,997	0.017	504		8
0.140	0.2	14,708	0.027	791	0.100	0.2	12,978	0.024	610	0.080	0.2	12,113	0.020	488	2	4
0.140	0.2	14,708	0.027	791	0.100	0.2	12,978	0.024	610	0.080	0.2	12,113	0.020	488		6
0.098	0.2	14,708	0.027	791	0.070	0.2	12,978	0.024	610	0.056	0.2	12,113	0.020	488		8
0.098	0.2	14,708	0.027	791	0.070	0.2	12,978	0.024	610	0.056	0.2	12,113	0.020	488		10
0.070	0.2	13,238	0.024	644	0.050	0.2	11,680	0.021	497	0.040	0.2	10,902	0.018	398		12
0.056	0.2	13,238	0.024	644	0.040	0.2	11,680	0.021	497	0.032	0.2	10,902	0.018	398		14
0.056	0.2	13,238	0.024	644	0.040	0.2	11,680	0.021	497	0.032	0.2	10,902	0.018	398		16
0.035	0.2	13,238	0.024	644	0.025	0.2	11,680	0.021	497	0.020	0.2	10,902	0.018	398		18
0.035	0.2	13,238	0.024	644	0.025	0.2	11,680	0.021	497	0.020	0.2	10,902	0.018	398		20
0.035	0.2	11,767	0.022	512	0.025	0.2	10,382	0.019	395	0.020	0.2	9,690	0.016	316		25
0.021	0.2	11,767	0.022	512	0.015	0.2	10,382	0.019	395	0.012	0.2	9,690	0.016	316		30
0.014	0.2	10,296	0.019	395	0.010	0.2	9,085	0.017	305	0.008	0.2	8,479	0.014	244		35
0.007	0.2	10,296	0.019	395	0.005	0.2	9,085	0.017	305	0.004	0.2	8,479	0.014	244		40
0.004	0.2	8,825	0.017	294	0.003	0.2	7,787	0.015	227	0.002	0.2	7,268	0.012	181		50
0.126	0.25	12,607	0.034	855	0.090	0.25	11,124	0.030	660	0.072	0.25	10,382	0.025	528	2.5	8
0.126	0.25	12,607	0.034	855	0.090	0.25	11,124	0.030	660	0.072	0.25	10,382	0.025	528		12
0.070	0.25	11,346	0.031	697	0.050	0.25	10,012	0.027	538	0.040	0.25	9,344	0.023	431		16
0.070	0.25	11,346	0.031	697	0.050	0.25	10,012	0.027	538	0.040	0.25	9,344	0.023	431		20
0.042	0.25	10,086	0.028	555	0.030	0.25	8,899	0.024	429	0.024	0.25	8,306	0.021	343		30
0.021	0.25	8,825	0.024	429	0.015	0.25	7,787	0.021	331	0.012	0.25	7,268	0.018	265		40
0.007	0.25	8,825	0.024	429	0.005	0.25	7,787	0.021	331	0.004	0.25	7,268	0.018	265		50

D3


EPDSE-ATH | High Precision Cutting Conditions

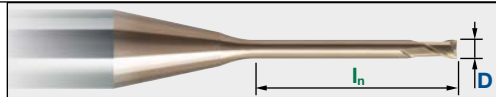
	Workpiece Material		I					II				
			Carbon Steels, Alloy Steels (180~250HB)					Tool Steels (25~35HRC)				
	D	I _n	a _p mm	a _e mm	n min ⁻¹	f _t mm/t	V _r mm/min	a _p mm	a _e mm	n min ⁻¹	f _t mm/t	V _r mm/min
	3	8	0.3	0.3	13,184	0.042	1,118	0.270	0.3	11,866	0.042	1,006
		12	0.21	0.3	13,184	0.042	1,118	0.189	0.3	11,866	0.042	1,006
		16	0.15	0.3	11,866	0.038	911	0.135	0.3	10,679	0.038	820
		20	0.12	0.3	11,866	0.038	911	0.108	0.3	10,679	0.038	820
		25	0.08	0.3	11,866	0.038	911	0.072	0.3	10,679	0.038	820
		30	0.08	0.3	11,866	0.038	911	0.072	0.3	10,679	0.038	820
		40	0.05	0.3	10,547	0.034	726	0.045	0.3	9,492	0.034	653
		50	0.02	0.3	9,167	0.030	543	0.018	0.3	8,250	0.030	488
	4	12	0.4	0.4	9,682	0.057	1,100	0.360	0.4	8,714	0.057	990
		16	0.28	0.4	9,682	0.057	1,100	0.252	0.4	8,714	0.057	990
		20	0.28	0.4	8,714	0.057	990	0.252	0.4	7,842	0.057	891
		25	0.16	0.4	8,714	0.051	892	0.144	0.4	7,842	0.051	803
		30	0.16	0.4	8,714	0.051	892	0.144	0.4	7,842	0.051	803
		35	0.1	0.4	7,842	0.051	803	0.090	0.4	7,058	0.051	723
		40	0.1	0.4	7,842	0.051	803	0.090	0.4	7,058	0.051	723
		50	0.06	0.4	6,777	0.040	542	0.054	0.4	6,100	0.040	488
	5	20	0.3	0.5	7,737	0.057	879	0.270	0.5	6,964	0.057	791
		25	0.3	0.5	6,963	0.051	713	0.270	0.5	6,267	0.051	642
		30	0.2	0.5	6,963	0.051	713	0.180	0.5	6,267	0.051	642
		40	0.15	0.5	6,267	0.051	642	0.135	0.5	5,640	0.051	578
		50	0.1	0.5	6,267	0.040	501	0.090	0.5	5,640	0.040	451
	6	20	0.5	0.6	6,367	0.063	805	0.450	0.6	5,731	0.063	724
		30	0.4	0.6	5,789	0.063	732	0.360	0.6	5,210	0.063	659
		40	0.3	0.6	5,789	0.057	658	0.270	0.6	5,210	0.057	592
		50	0.2	0.6	5,150	0.051	527	0.180	0.6	4,635	0.051	475



III Tool Steels (35~45HRC)						IV Hardened Steels (45~55HRC)					V Hardened Steels (55~70HRC)					D	l _n
a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _f mm/min		a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _f mm/min	a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _f mm/min		
0.210	0.3	11,206	0.034	760		0.150	0.3	9,888	0.030	587	0.120	0.3	9,229	0.025	470	3	8
0.147	0.3	11,206	0.034	760		0.105	0.3	9,888	0.030	587	0.084	0.3	9,229	0.025	470		12
0.105	0.3	10,086	0.031	620		0.075	0.3	8,899	0.027	478	0.060	0.3	8,306	0.023	383		16
0.084	0.3	10,086	0.031	620		0.060	0.3	8,899	0.027	478	0.048	0.3	8,306	0.023	383		20
0.056	0.3	10,086	0.031	620		0.040	0.3	8,899	0.027	478	0.032	0.3	8,306	0.023	383		25
0.056	0.3	10,086	0.031	620		0.040	0.3	8,899	0.027	478	0.032	0.3	8,306	0.023	383		30
0.035	0.3	8,965	0.028	493		0.025	0.3	7,910	0.024	381	0.020	0.3	7,383	0.021	305		40
0.014	0.3	7,792	0.024	369		0.010	0.3	6,875	0.021	285	0.008	0.3	6,417	0.018	228		50
0.280	0.4	8,230	0.045	748		0.200	0.4	7,262	0.040	577	0.160	0.4	6,777	0.034	462	4	12
0.196	0.4	8,230	0.045	748		0.140	0.4	7,262	0.040	577	0.112	0.4	6,777	0.034	462		16
0.196	0.4	7,407	0.045	673		0.140	0.4	6,535	0.040	520	0.112	0.4	6,100	0.034	416		20
0.112	0.4	7,407	0.041	607		0.080	0.4	6,535	0.036	468	0.064	0.4	6,100	0.031	375		25
0.112	0.4	7,407	0.041	607		0.080	0.4	6,535	0.036	468	0.064	0.4	6,100	0.031	375		30
0.070	0.4	6,666	0.041	546		0.050	0.4	5,882	0.036	422	0.040	0.4	5,490	0.031	337		35
0.070	0.4	6,666	0.041	546		0.050	0.4	5,882	0.036	422	0.040	0.4	5,490	0.031	337		40
0.042	0.4	5,761	0.032	369		0.030	0.4	5,083	0.028	285	0.024	0.4	4,744	0.024	228		50
0.210	0.5	6,577	0.045	598		0.150	0.5	5,803	0.040	461	0.120	0.5	5,416	0.034	369	5	20
0.210	0.5	5,918	0.041	485		0.150	0.5	5,222	0.036	374	0.120	0.5	4,874	0.031	299		25
0.140	0.5	5,918	0.041	485		0.100	0.5	5,222	0.036	374	0.080	0.5	4,874	0.031	299		30
0.105	0.5	5,327	0.041	436		0.075	0.5	4,700	0.036	337	0.060	0.5	4,387	0.031	270		40
0.070	0.5	5,327	0.032	341		0.050	0.5	4,700	0.028	263	0.040	0.5	4,387	0.024	211		50
0.350	0.6	5,412	0.051	547		0.250	0.6	4,776	0.044	423	0.200	0.6	4,457	0.038	338	6	20
0.280	0.6	4,920	0.051	498		0.200	0.6	4,341	0.044	384	0.160	0.6	4,052	0.038	307		30
0.210	0.6	4,920	0.045	447		0.150	0.6	4,341	0.040	345	0.120	0.6	4,052	0.034	276		40
0.140	0.6	4,378	0.041	359		0.100	0.6	3,863	0.036	277	0.080	0.6	3,605	0.031	221		50


EPDSE-ATH | High efficiency Cutting Conditions for Rib Application

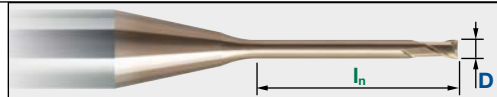
	Workpiece Material		I					II				
			Carbon Steels, Alloy Steels (180~250HB)					Tool Steels (25~35HRC)				
	D	l_n	a_p mm	a_e mm	n min ⁻¹	f_z mm/t	V_t mm/min	a_p mm	a_e mm	n min ⁻¹	f_z mm/t	V_t mm/min
	0.1	0.3	0.005	0.1	41,200	0.008	659	0.005	0.1	37,080	0.008	593
		0.5	0.003	0.1	41,200	0.008	659	0.003	0.1	37,080	0.008	593
		1	0.002	0.1	39,552	0.008	633	0.002	0.1	35,597	0.008	570
	0.2	0.5	0.015	0.2	37,080	0.012	890	0.014	0.2	33,372	0.012	801
		1	0.011	0.2	37,080	0.012	890	0.010	0.2	33,372	0.012	801
		1.5	0.006	0.2	33,372	0.011	734	0.005	0.2	30,035	0.011	661
		2	0.004	0.2	29,664	0.010	593	0.004	0.2	26,698	0.010	534
		3	0.002	0.2	29,664	0.008	475	0.002	0.2	26,698	0.008	427
	0.3	1	0.016	0.3	32,960	0.012	791	0.014	0.3	29,664	0.012	712
		1.5	0.016	0.3	32,960	0.012	791	0.014	0.3	29,664	0.012	712
		2	0.009	0.3	29,664	0.011	653	0.008	0.3	26,698	0.011	587
		2.5	0.008	0.3	29,664	0.011	653	0.007	0.3	26,698	0.011	587
		3	0.006	0.3	29,664	0.011	653	0.005	0.3	26,698	0.011	587
	0.4	1	0.03	0.4	26,368	0.016	844	0.027	0.4	23,731	0.016	759
		1.5	0.021	0.4	26,368	0.016	844	0.019	0.4	23,731	0.016	759
		2	0.021	0.4	26,368	0.016	844	0.019	0.4	23,731	0.016	759
		2.5	0.017	0.4	23,731	0.014	664	0.015	0.4	21,358	0.014	598
		3	0.012	0.4	23,731	0.014	664	0.011	0.4	21,358	0.014	598
		3.5	0.009	0.4	23,731	0.014	664	0.008	0.4	21,358	0.014	598
		4	0.008	0.4	23,731	0.014	664	0.007	0.4	21,358	0.014	598
		5	0.008	0.4	21,094	0.013	548	0.007	0.4	18,985	0.013	494
		6	0.005	0.4	21,094	0.013	548	0.005	0.4	18,985	0.013	494
		8	0.002	0.4	18,458	0.011	406	0.002	0.4	16,612	0.011	365
	0.5	10	0.002	0.4	15,821	0.009	285	0.002	0.4	14,239	0.009	256
		1	0.038	0.5	26,368	0.016	844	0.034	0.5	23,731	0.016	759
		1.5	0.038	0.5	26,368	0.016	844	0.034	0.5	23,731	0.016	759
		2	0.026	0.5	26,368	0.016	844	0.023	0.5	23,731	0.016	759
		2.5	0.023	0.5	23,731	0.016	759	0.021	0.5	21,358	0.016	683
		3	0.015	0.5	23,731	0.014	664	0.014	0.5	21,358	0.014	598
		4	0.015	0.5	23,731	0.014	664	0.014	0.5	21,358	0.014	598
		5	0.01	0.5	23,731	0.014	664	0.009	0.5	21,358	0.014	598
		6	0.01	0.5	21,094	0.013	548	0.009	0.5	18,985	0.013	494
		8	0.006	0.5	21,094	0.013	548	0.005	0.5	18,985	0.013	494
		10	0.003	0.5	18,458	0.011	406	0.003	0.5	16,612	0.011	365
	0.6	2	0.032	0.6	26,368	0.020	1,055	0.029	0.6	23,731	0.020	949
		3	0.026	0.6	23,731	0.018	854	0.023	0.6	21,358	0.018	769
		4	0.018	0.6	23,731	0.018	854	0.016	0.6	21,358	0.018	769
		5	0.015	0.6	23,731	0.018	854	0.014	0.6	21,358	0.018	769
		6	0.011	0.6	23,731	0.018	854	0.010	0.6	21,358	0.018	769
		7	0.011	0.6	21,094	0.016	675	0.010	0.6	18,985	0.016	608
		8	0.011	0.6	21,094	0.016	675	0.010	0.6	18,985	0.016	608
		9	0.009	0.6	21,094	0.016	675	0.008	0.6	18,985	0.016	608
		10	0.007	0.6	21,094	0.016	675	0.006	0.6	18,985	0.016	608
	0.7	2	0.053	0.7	26,368	0.020	1,055	0.048	0.7	23,731	0.020	949
		4	0.037	0.7	23,731	0.018	854	0.033	0.7	21,358	0.018	769
		6	0.014	0.7	23,731	0.018	854	0.013	0.7	21,358	0.018	769
		8	0.014	0.7	21,094	0.016	675	0.013	0.7	18,985	0.016	608
		10	0.014	0.7	21,094	0.016	675	0.013	0.7	18,985	0.016	608
	0.8	4	0.042	0.8	26,368	0.020	1,055	0.038	0.8	23,731	0.020	949
		6	0.024	0.8	23,731	0.018	854	0.022	0.8	21,358	0.018	769
		8	0.015	0.8	23,731	0.018	854	0.014	0.8	21,358	0.018	769
		10	0.015	0.8	21,094	0.016	675	0.014	0.8	18,985	0.016	608
		12	0.009	0.8	21,094	0.016	675	0.008	0.8	18,985	0.016	608
	0.9	6	0.027	0.9	23,731	0.018	854	0.024	0.9	21,358	0.018	769
		8	0.017	0.9	23,731	0.018	854	0.015	0.9	21,358	0.018	769
		10	0.017	0.9	21,094	0.016	675	0.015	0.9	18,985	0.016	608
		12	0.017	0.9	21,094	0.016	675	0.015	0.9	18,985	0.016	608



III					IV					V						
Tool Steels (35~45HRC)					Hardened Steels (45~55HRC)					Hardened Steels (55~70HRC)						
a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _r mm/min	a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _r mm/min	a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _r mm/min	D	l _n
0.004	0.1	35,020	0.006	448	0.003	0.1	30,900	0.006	346	0.002	0.1	28,840	0.005	277	0.1	0.3
0.002	0.1	35,020	0.006	448	0.002	0.1	30,900	0.006	346	0.001	0.1	28,840	0.005	277		0.5
0.001	0.1	33,619	0.006	430	0.001	0.1	29,664	0.006	332	0.001	0.1	27,686	0.005	266		1
0.011	0.2	31,518	0.010	605	0.008	0.2	27,810	0.008	467	0.006	0.2	25,956	0.007	374	0.2	0.5
0.008	0.2	31,518	0.010	605	0.006	0.2	27,810	0.008	467	0.004	0.2	25,956	0.007	374		1
0.004	0.2	28,366	0.009	499	0.003	0.2	25,029	0.008	385	0.002	0.2	23,360	0.007	308		1.5
0.003	0.2	25,214	0.008	403	0.002	0.2	22,248	0.007	311	0.002	0.2	20,765	0.006	249	0.3	2
0.001	0.2	25,214	0.006	323	0.001	0.2	22,248	0.006	249	0.001	0.2	20,765	0.005	199		3
0.011	0.3	28,016	0.010	538	0.008	0.3	24,720	0.008	415	0.006	0.3	23,072	0.007	332		1
0.011	0.3	28,016	0.010	538	0.008	0.3	24,720	0.008	415	0.006	0.3	23,072	0.007	332	0.4	1.5
0.006	0.3	25,214	0.009	444	0.005	0.3	22,248	0.008	343	0.004	0.3	20,765	0.007	274		2
0.006	0.3	25,214	0.009	444	0.004	0.3	22,248	0.008	343	0.003	0.3	20,765	0.007	274		2.5
0.004	0.3	25,214	0.009	444	0.003	0.3	22,248	0.008	343	0.002	0.3	20,765	0.007	274	0.5	3
0.021	0.4	22,413	0.013	574	0.015	0.4	19,776	0.011	443	0.012	0.4	18,458	0.010	354		1
0.015	0.4	22,413	0.013	574	0.011	0.4	19,776	0.011	443	0.008	0.4	18,458	0.010	354		1.5
0.015	0.4	22,413	0.013	574	0.011	0.4	19,776	0.011	443	0.008	0.4	18,458	0.010	354	0.6	2
0.012	0.4	20,172	0.011	452	0.009	0.4	17,798	0.010	349	0.007	0.4	16,612	0.008	279		2.5
0.008	0.4	20,172	0.011	452	0.006	0.4	17,798	0.010	349	0.005	0.4	16,612	0.008	279		3
0.006	0.4	20,172	0.011	452	0.005	0.4	17,798	0.010	349	0.004	0.4	16,612	0.008	279	0.7	3.5
0.006	0.4	20,172	0.011	452	0.004	0.4	17,798	0.010	349	0.003	0.4	16,612	0.008	279		4
0.006	0.4	17,930	0.010	373	0.004	0.4	15,821	0.009	288	0.003	0.4	14,766	0.008	230		5
0.004	0.4	17,930	0.010	373	0.003	0.4	15,821	0.009	288	0.002	0.4	14,766	0.008	230	0.8	6
0.001	0.4	15,689	0.009	276	0.001	0.4	13,843	0.008	213	0.001	0.4	12,920	0.007	171		8
0.001	0.4	13,448	0.007	194	0.001	0.4	11,866	0.006	150	0.001	0.4	11,075	0.005	120		10
0.027	0.5	22,413	0.013	574	0.019	0.5	19,776	0.011	443	0.015	0.5	18,458	0.010	354	0.9	1
0.027	0.5	22,413	0.013	574	0.019	0.5	19,776	0.011	443	0.015	0.5	18,458	0.010	354		1.5
0.018	0.5	22,413	0.013	574	0.013	0.5	19,776	0.011	443	0.010	0.5	18,458	0.010	354		2
0.016	0.5	20,172	0.013	516	0.012	0.5	17,798	0.011	399	0.009	0.5	16,612	0.010	319	1.0	2.5
0.011	0.5	20,172	0.011	452	0.008	0.5	17,798	0.010	349	0.006	0.5	16,612	0.008	279		3
0.011	0.5	20,172	0.011	452	0.008	0.5	17,798	0.010	349	0.006	0.5	16,612	0.008	279		4
0.007	0.5	20,172	0.011	452	0.005	0.5	17,798	0.010	349	0.004	0.5	16,612	0.008	279	1.1	5
0.007	0.5	17,930	0.010	373	0.005	0.5	15,821	0.009	288	0.004	0.5	14,766	0.008	230		6
0.004	0.5	17,930	0.010	373	0.003	0.5	15,821	0.009	288	0.002	0.5	14,766	0.008	230		8
0.002	0.5	15,689	0.009	276	0.002	0.5	13,843	0.008	213	0.001	0.5	12,920	0.007	171	1.2	10
0.022	0.6	22,413	0.016	717	0.016	0.6	19,776	0.014	554	0.013	0.6	18,458	0.012	443		2
0.018	0.6	20,172	0.014	581	0.013	0.6	17,798	0.013	449	0.010	0.6	16,612	0.011	359		3
0.013	0.6	20,172	0.014	581	0.009	0.6	17,798	0.013	449	0.007	0.6	16,612	0.011	359	1.3	4
0.011	0.6	20,172	0.014	581	0.008	0.6	17,798	0.013	449	0.006	0.6	16,612	0.011	359		5
0.008	0.6	20,172	0.014	581	0.006	0.6	17,798	0.013	449	0.004	0.6	16,612	0.011	359		6
0.008	0.6	17,930	0.013	459	0.006	0.6	15,821	0.011	354	0.004	0.6	14,766	0.010	284	1.4	7
0.008	0.6	17,930	0.013	459	0.006	0.6	15,821	0.011	354	0.004	0.6	14,766	0.010	284		8
0.006	0.6	17,930	0.013	459	0.005	0.6	15,821	0.011	354	0.004	0.6	14,766	0.010	284		9
0.005	0.6	17,930	0.013	459	0.004	0.6	15,821	0.011	354	0.003	0.6	14,766	0.010	284	1.5	10
0.037	0.7	22,413	0.016	717	0.027	0.7	19,776	0.014	554	0.021	0.7	18,458	0.012	443		2
0.026	0.7	20,172	0.014	581	0.019	0.7	17,798	0.013	449	0.015	0.7	16,612	0.011	359	1.6	4
0.010	0.7	20,172	0.014	581	0.007	0.7	17,798	0.013	449	0.006	0.7	16,612	0.011	359		6
0.010	0.7	17,930	0.013	459	0.007	0.7	15,821	0.011	354	0.006	0.7	14,766	0.010	284		8
0.010	0.7	17,930	0.013	459	0.007	0.7	15,821	0.011	354	0.006	0.7	14,766	0.010	284	1.7	10
0.029	0.8	22,413	0.016	717	0.021	0.8	19,776	0.014	554	0.017	0.8	18,458	0.012	443		4
0.017	0.8	20,172	0.014	581	0.012	0.8	17,798	0.013	449	0.010	0.8	16,612	0.011	359		6
0.011	0.8	20,172	0.014	581	0.008	0.8	17,798	0.013	449	0.006	0.8	16,612	0.011	359	1.8	8
0.011	0.8	17,930	0.013	459	0.008	0.8	15,821	0.011	354	0.006	0.8	14,766	0.010	284		10
0.006	0.8	17,930	0.013	459	0.005	0.8	15,821	0.011	354	0.004	0.8	14,766	0.010	284		12
0.019	0.9	20,172	0.014	581	0.014	0.9	17,798	0.013	449	0.011	0.9	16,612	0.011	359	1.9	6
0.012	0.9	20,172	0.014	581	0.009	0.9	17,798	0.013	449	0.007	0.9	16,612	0.011	359		8
0.012	0.9	17,930	0.013	459	0.009	0.9	15,821	0.011	354	0.007	0.9	14,766	0.010	284		10
0.012	0.9	17,930	0.013	459	0.009	0.9	15,821	0.011	354	0.007	0.9	14,766	0.010	284	2.0	12

EPDSE-ATH | High efficiency Cutting Conditions for Rib Application


	Workpiece Material		I					II				
			Carbon Steels, Alloy Steels (180~250HB)					Tool Steels (25~35HRC)				
	D	I _n	a _p mm	a _e mm	n min ⁻¹	f _t mm/t	V _r mm/min	a _p mm	a _e mm	n min ⁻¹	f _t mm/t	V _r mm/min
	1	2	0.075	1	23,731	0.024	1,139	0.068	1	21,358	0.024	1,025
		3	0.064	1	23,731	0.024	1,139	0.058	1	21,358	0.024	1,025
		4	0.053	1	23,731	0.024	1,139	0.048	1	21,358	0.024	1,025
		5	0.041	1	23,731	0.024	1,139	0.037	1	21,358	0.024	1,025
		6	0.03	1	21,358	0.022	940	0.027	1	19,222	0.022	846
		7	0.03	1	21,358	0.022	940	0.027	1	19,222	0.022	846
		8	0.03	1	21,358	0.022	940	0.027	1	19,222	0.022	846
		9	0.025	1	21,358	0.022	940	0.023	1	19,222	0.022	846
		10	0.019	1	21,358	0.022	940	0.017	1	19,222	0.022	846
		12	0.019	1	18,985	0.019	721	0.017	1	17,086	0.019	649
		14	0.019	1	18,985	0.019	721	0.017	1	17,086	0.019	649
		16	0.011	1	18,985	0.017	645	0.010	1	17,086	0.017	581
	1.2	20	0.008	1	16,612	0.014	465	0.007	1	14,951	0.014	419
		25	0.004	1	13,843	0.012	332	0.004	1	12,459	0.012	299
		6	0.063	1.2	21,094	0.024	1,013	0.057	1.2	18,985	0.024	911
		8	0.036	1.2	18,985	0.022	835	0.032	1.2	17,086	0.022	752
	1.4	10	0.023	1.2	18,985	0.022	835	0.021	1.2	17,086	0.022	752
		12	0.023	1.2	18,985	0.022	835	0.021	1.2	17,086	0.022	752
		16	0.015	1.2	16,876	0.020	675	0.014	1.2	15,188	0.020	608
		6	0.075	1.4	18,458	0.024	886	0.068	1.4	16,612	0.024	797
	1.5	12	0.026	1.4	16,612	0.022	731	0.023	1.4	14,951	0.022	658
		4	0.083	1.5	18,458	0.024	886	0.075	1.5	16,612	0.024	797
		6	0.083	1.5	18,458	0.024	886	0.075	1.5	16,612	0.024	797
		8	0.06	1.5	16,612	0.022	731	0.054	1.5	14,951	0.022	658
		10	0.045	1.5	16,612	0.022	731	0.041	1.5	14,951	0.022	658
		12	0.045	1.5	16,612	0.022	731	0.041	1.5	14,951	0.022	658
		14	0.029	1.5	16,612	0.022	731	0.026	1.5	14,951	0.022	658
		16	0.029	1.5	14,766	0.019	561	0.026	1.5	13,289	0.019	505
		18	0.029	1.5	14,766	0.019	561	0.026	1.5	13,289	0.019	505
		20	0.029	1.5	14,766	0.019	561	0.026	1.5	13,289	0.019	505
		25	0.017	1.5	11,075	0.017	377	0.015	1.5	9,967	0.017	339
		30	0.011	1.5	9,229	0.014	258	0.010	1.5	8,306	0.014	233
	1.6	35	0.008	1.5	9,229	0.014	258	0.007	1.5	8,306	0.014	233
		40	0.004	1.5	7,383	0.011	162	0.004	1.5	6,645	0.011	146
		6	0.083	1.6	17,139	0.026	891	0.075	1.6	15,425	0.026	802
		8	0.083	1.6	17,139	0.026	891	0.075	1.6	15,425	0.026	802
	1.8	6	0.098	1.8	17,139	0.026	891	0.088	1.8	15,425	0.026	802
		8	0.098	1.8	17,139	0.026	891	0.088	1.8	15,425	0.026	802
	2	4	0.15	2	13,843	0.032	886	0.135	2	12,459	0.032	797
		6	0.15	2	13,843	0.032	886	0.135	2	12,459	0.032	797
		8	0.105	2	13,843	0.032	886	0.095	2	12,459	0.032	797
		10	0.105	2	13,843	0.032	886	0.095	2	12,459	0.032	797
		12	0.075	2	12,459	0.029	723	0.068	2	11,213	0.029	650
		14	0.06	2	12,459	0.029	723	0.054	2	11,213	0.029	650
		16	0.06	2	12,459	0.029	723	0.054	2	11,213	0.029	650
		18	0.038	2	12,459	0.029	723	0.034	2	11,213	0.029	650
		20	0.038	2	12,459	0.029	723	0.034	2	11,213	0.029	650
		25	0.038	2	11,075	0.026	576	0.034	2	9,967	0.026	518
		30	0.023	2	11,075	0.026	576	0.021	2	9,967	0.026	518
		35	0.015	2	9,690	0.023	446	0.014	2	8,721	0.023	401
	2.5	40	0.008	2	9,690	0.023	446	0.007	2	8,721	0.023	401
		50	0.004	2	8,306	0.020	332	0.004	2	7,475	0.020	299
		8	0.135	2.5	11,866	0.040	949	0.122	2.5	10,679	0.040	854
		12	0.135	2.5	11,866	0.040	949	0.122	2.5	10,679	0.040	854
		16	0.075	2.5	10,679	0.036	769	0.068	2.5	9,611	0.036	692
		20	0.075	2.5	10,679	0.036	769	0.068	2.5	9,611	0.036	692
		30	0.045	2.5	9,492	0.032	608	0.041	2.5	8,543	0.032	547
		40	0.023	2.5	8,306	0.029	482	0.021	2.5	7,475	0.029	434
		50	0.008	2.5	8,306	0.029	482	0.007	2.5	7,475	0.029	434

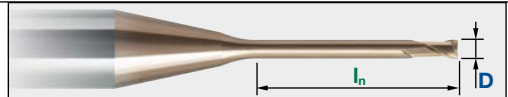


III					IV					V						
Tool Steels (35~45HRC)					Hardened Steels (45~55HRC)					Hardened Steels (55~70HRC)						
a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _r mm/min	a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _r mm/min	a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _r mm/min	D	l _n
0.053	1	20,172	0.019	775	0.038	1	17,798	0.017	598	0.030	1	16,612	0.014	478	1	2
0.045	1	20,172	0.019	775	0.032	1	17,798	0.017	598	0.026	1	16,612	0.014	478		3
0.037	1	20,172	0.019	775	0.027	1	17,798	0.017	598	0.021	1	16,612	0.014	478		4
0.029	1	20,172	0.019	775	0.021	1	17,798	0.017	598	0.016	1	16,612	0.014	478		5
0.021	1	18,154	0.018	639	0.015	1	16,019	0.015	493	0.012	1	14,951	0.013	395		6
0.021	1	18,154	0.018	639	0.015	1	16,019	0.015	493	0.012	1	14,951	0.013	395		7
0.021	1	18,154	0.018	639	0.015	1	16,019	0.015	493	0.012	1	14,951	0.013	395		8
0.018	1	18,154	0.018	639	0.013	1	16,019	0.015	493	0.010	1	14,951	0.013	395		9
0.013	1	18,154	0.018	639	0.010	1	16,019	0.015	493	0.008	1	14,951	0.013	395		10
0.013	1	16,137	0.015	491	0.010	1	14,239	0.013	379	0.008	1	13,289	0.011	303		12
0.013	1	16,137	0.015	491	0.010	1	14,239	0.013	379	0.008	1	13,289	0.011	303		14
0.008	1	16,137	0.014	439	0.006	1	14,239	0.012	339	0.004	1	13,289	0.010	271		16
0.006	1	14,120	0.011	316	0.004	1	12,459	0.010	244	0.003	1	11,628	0.008	195		20
0.003	1	11,767	0.010	226	0.002	1	10,382	0.008	174	0.002	1	9,690	0.007	140		25
0.044	1.2	17,930	0.019	689	0.032	1.2	15,821	0.017	532	0.025	1.2	14,766	0.014	425	1.2	6
0.025	1.2	16,137	0.018	568	0.018	1.2	14,239	0.015	439	0.014	1.2	13,289	0.013	351		8
0.016	1.2	16,137	0.018	568	0.012	1.2	14,239	0.015	439	0.009	1.2	13,289	0.013	351		10
0.016	1.2	16,137	0.018	568	0.012	1.2	14,239	0.015	439	0.009	1.2	13,289	0.013	351		12
0.011	1.2	14,344	0.016	459	0.008	1.2	12,657	0.014	354	0.006	1.2	11,813	0.012	284	1.4	16
0.053	1.4	15,689	0.019	602	0.038	1.4	13,843	0.017	465	0.030	1.4	12,920	0.014	372		6
0.018	1.4	14,120	0.018	497	0.013	1.4	12,459	0.015	384	0.010	1.4	11,628	0.013	307	1.5	12
0.058	1.5	15,689	0.019	602	0.042	1.5	13,843	0.017	465	0.033	1.4	12,920	0.014	372		4
0.058	1.5	15,689	0.019	602	0.042	1.5	13,843	0.017	465	0.033	1.4	12,920	0.014	372		6
0.042	1.5	14,120	0.018	497	0.030	1.5	12,459	0.015	384	0.024	1.5	11,628	0.013	307		8
0.032	1.5	14,120	0.018	497	0.023	1.5	12,459	0.015	384	0.018	1.5	11,628	0.013	307		10
0.032	1.5	14,120	0.018	497	0.023	1.5	12,459	0.015	384	0.018	1.5	11,628	0.013	307		12
0.020	1.5	14,120	0.018	497	0.015	1.5	12,459	0.015	384	0.012	1.5	11,628	0.013	307		14
0.020	1.5	12,551	0.015	382	0.015	1.5	11,075	0.013	295	0.012	1.5	10,336	0.011	236		16
0.020	1.5	12,551	0.015	382	0.015	1.5	11,075	0.013	295	0.012	1.5	10,336	0.011	236		18
0.020	1.5	12,551	0.015	382	0.015	1.5	11,075	0.013	295	0.012	1.5	10,336	0.011	236		20
0.012	1.5	9,413	0.014	256	0.009	1.5	8,306	0.012	198	0.007	1.5	7,752	0.010	158		25
0.008	1.5	7,844	0.011	176	0.006	1.5	6,922	0.010	136	0.004	1.5	6,460	0.008	109		30
0.006	1.5	7,844	0.011	176	0.004	1.5	6,922	0.010	136	0.003	1.5	6,460	0.008	109		35
0.003	1.5	6,276	0.009	110	0.002	1.5	5,537	0.008	85	0.002	1.5	5,168	0.007	68		40
0.058	1.6	14,568	0.021	606	0.042	1.6	12,854	0.018	468	0.033	1.5	11,997	0.016	374	1.6	6
0.058	1.6	14,568	0.021	606	0.042	1.6	12,854	0.018	468	0.033	1.5	11,997	0.016	374		8
0.069	1.8	14,568	0.021	606	0.049	1.8	12,854	0.018	468	0.039	1.6	11,997	0.016	374	1.8	6
0.069	1.8	14,568	0.021	606	0.049	1.8	12,854	0.018	468	0.039	1.6	11,997	0.016	374		8
0.105	2	11,767	0.026	602	0.075	2	10,382	0.022	465	0.060	1.6	9,690	0.019	372	2	4
0.105	2	11,767	0.026	602	0.075	2	10,382	0.022	465	0.060	1.6	9,690	0.019	372		6
0.074	2	11,767	0.026	602	0.053	2	10,382	0.022	465	0.042	1.8	9,690	0.019	372		8
0.074	2	11,767	0.026	602	0.053	2	10,382	0.022	465	0.042	1.8	9,690	0.019	372		10
0.053	2	10,590	0.023	491	0.038	2	9,344	0.020	379	0.030	1.8	8,721	0.017	303		12
0.042	2	10,590	0.023	491	0.030	2	9,344	0.020	379	0.024	1.8	8,721	0.017	303		14
0.042	2	10,590	0.023	491	0.030	2	9,344	0.020	379	0.024	2	8,721	0.017	303		16
0.027	2	10,590	0.023	491	0.019	2	9,344	0.020	379	0.015	2	8,721	0.017	303		18
0.027	2	10,590	0.023	491	0.019	2	9,344	0.020	379	0.015	2	8,721	0.017	303		20
0.027	2	9,413	0.021	392	0.019	2	8,306	0.018	302	0.015	2	7,752	0.016	242		25
0.016	2	9,413	0.021	392	0.012	2	8,306	0.018	302	0.009	2	7,752	0.016	242		30
0.011	2	8,237	0.018	303	0.008	2	7,268	0.016	234	0.006	2	6,783	0.014	187		35
0.006	2	8,237	0.018	303	0.004	2	7,268	0.016	234	0.003	2	6,783	0.014	187		40
0.003	2	7,060	0.016	226	0.002	2	6,229	0.014	174	0.002	2	5,814	0.012	140		50
0.095	2.5	10,086	0.032	645	0.068	2.5	8,899	0.028	498	0.054	2	8,306	0.024	399	2.5	8
0.095	2.5	10,086	0.032	645	0.068	2.5	8,899	0.028	498	0.054	2	8,306	0.024	399		12
0.053	2.5	9,077	0.029	523	0.038	2.5	8,009	0.025	404	0.030	2	7,475	0.022	323		16
0.053	2.5	9,077	0.029	523	0.038	2.5	8,009	0.025	404	0.030	2	7,475	0.022	323		20
0.032	2.5	8,069	0.026	413	0.023	2.5	7,119	0.022	319	0.018	2	6,645	0.019	255		30
0.016	2.5	7,060	0.023	328	0.012	2.5	6,229	0.020	253	0.009	2	5,814	0.017	202		40
0.006	2.5	7,060	0.023	328	0.004	2.5	6,229	0.020	253	0.003	2.5	5,814	0.017	202	50	

D3

EPDSE-ATH | High efficiency Cutting Conditions for Rib Application

	Workpiece Material		I					II				
			Carbon Steels, Alloy Steels (180~250HB)					Tool Steels (25~35HRC)				
	D	l_n	a_p mm	a_e mm	n min ⁻¹	f_z mm/t	V_f mm/min	a_p mm	a_e mm	n min ⁻¹	f_z mm/t	V_f mm/min
 High Efficient	3	8	0.225	3	10,547	0.040	844	0.203	3	9,492	0.040	759
		12	0.158	3	10,547	0.040	844	0.142	3	9,492	0.040	759
		16	0.113	3	9,492	0.036	683	0.102	3	8,543	0.036	615
		20	0.09	3	9,492	0.036	683	0.081	3	8,543	0.036	615
		25	0.06	3	9,492	0.036	683	0.054	3	8,543	0.036	615
		30	0.06	3	9,492	0.036	683	0.054	3	8,543	0.036	615
		40	0.038	3	8,438	0.032	540	0.034	3	7,594	0.032	486
		50	0.015	3	7,334	0.028	411	0.014	3	6,600	0.028	370
	4	12	0.3	4	7,746	0.053	821	0.270	4	6,971	0.053	739
		16	0.21	4	7,746	0.053	821	0.189	4	6,971	0.053	739
		20	0.21	4	6,971	0.053	739	0.189	4	6,274	0.053	665
		25	0.12	4	6,971	0.048	669	0.108	4	6,274	0.048	602
		30	0.12	4	6,971	0.048	669	0.108	4	6,274	0.048	602
		35	0.075	4	6,274	0.048	602	0.068	4	5,647	0.048	542
		40	0.075	4	6,274	0.048	602	0.068	4	5,647	0.048	542
		50	0.045	4	5,422	0.038	412	0.041	4	4,880	0.038	371
	5	20	0.225	5	6,190	0.053	656	0.203	5	5,571	0.053	591
		25	0.225	5	5,570	0.048	535	0.203	5	5,013	0.048	481
		30	0.15	5	5,570	0.048	535	0.135	5	5,013	0.048	481
		40	0.113	5	5,013	0.048	481	0.102	5	4,512	0.048	433
	6	50	0.075	5	5,013	0.038	381	0.068	5	4,512	0.038	343
		20	0.375	6	5,094	0.059	601	0.338	6	4,585	0.059	541
		30	0.3	6	4,631	0.059	546	0.270	6	4,168	0.059	492
		40	0.225	6	4,631	0.053	491	0.203	6	4,168	0.053	442
		50	0.15	6	4,120	0.048	396	0.135	6	3,708	0.048	356



III Tool Steels (35~45HRC)					IV Hardened Steels (45~55HRC)					V Hardened Steels (55~70HRC)					D	l _n
a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _f mm/min	a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _f mm/min	a _p mm	a _e mm	n min ⁻¹	f _z mm/t	V _f mm/min		
0.158	3	8,965	0.032	574	0.113	3	7,910	0.028	443	0.090	2.5	7,383	0.024	354	3	8
0.111	3	8,965	0.032	574	0.079	3	7,910	0.028	443	0.063	2.5	7,383	0.024	354		12
0.079	3	8,069	0.029	465	0.057	3	7,119	0.025	359	0.045	2.5	6,645	0.022	287		16
0.063	3	8,069	0.029	465	0.045	3	7,119	0.025	359	0.036	2.5	6,645	0.022	287		20
0.042	3	8,069	0.029	465	0.030	3	7,119	0.025	359	0.024	2.5	6,645	0.022	287		25
0.042	3	8,069	0.029	465	0.030	3	7,119	0.025	359	0.024	2.5	6,645	0.022	287		30
0.027	3	7,172	0.026	367	0.019	3	6,328	0.022	284	0.015	3	5,906	0.019	227		40
0.011	3	6,234	0.022	279	0.008	3	5,500	0.020	216	0.006	3	5,134	0.017	172		50
0.210	4	6,584	0.042	558	0.150	4	5,809	0.037	431	0.120	3	5,422	0.032	345	4	12
0.147	4	6,584	0.042	558	0.105	4	5,809	0.037	431	0.084	3	5,422	0.032	345		16
0.147	4	5,925	0.042	502	0.105	4	5,228	0.037	388	0.084	3	4,880	0.032	310		20
0.084	4	5,925	0.038	455	0.060	4	5,228	0.034	351	0.048	3	4,880	0.029	281		25
0.084	4	5,925	0.038	455	0.060	4	5,228	0.034	351	0.048	3	4,880	0.029	281		30
0.053	4	5,333	0.038	410	0.038	4	4,705	0.034	316	0.030	3	4,392	0.029	253		35
0.053	4	5,333	0.038	410	0.038	4	4,705	0.034	316	0.030	4	4,392	0.029	253		40
0.032	4	4,609	0.030	280	0.023	4	4,066	0.027	216	0.018	4	3,795	0.023	173		50
0.158	5	5,261	0.042	446	0.113	5	4,642	0.037	344	0.090	4	4,333	0.032	276	5	20
0.158	5	4,735	0.038	364	0.113	5	4,178	0.034	281	0.090	4	3,899	0.029	225		25
0.105	5	4,735	0.038	364	0.075	5	4,178	0.034	281	0.060	4	3,899	0.029	225		30
0.079	5	4,261	0.038	327	0.057	5	3,760	0.034	253	0.045	4	3,509	0.029	202		40
0.053	5	4,261	0.030	259	0.038	5	3,760	0.027	200	0.030	4	3,509	0.023	160	6	50
0.263	6	4,330	0.047	409	0.188	6	3,820	0.041	316	0.150	4	3,566	0.035	252		20
0.210	6	3,936	0.047	372	0.150	6	3,473	0.041	287	0.120	5	3,242	0.035	230		30
0.158	6	3,936	0.042	334	0.113	6	3,473	0.037	258	0.090	5	3,242	0.032	206		40
0.105	6	3,502	0.038	269	0.075	6	3,090	0.034	208	0.060	5	2,884	0.029	166		50

Always up to date: Please check our P50 QuickFinder



Attentions on Safety

1. Cautions regarding handling

- (1) When removing the tool from its case (packaging), be careful that the tool does not pop out or is dropped. Be particularly careful regarding contact with the tool flutes.
- (2) When handling tools with sharp cutting flutes, be careful not to touch the cutting flutes directly with your bare hands.

2. Cautions regarding mounting

- (1) Before use, check the outside appearance of the tool for scratches, cracks, etc. and that it is firmly mounted in the collet chuck, etc.
- (2) When preparing for use, be sure that the inserts are firmly mounted in place and that they are firmly mounted on the arbor, etc.
- (3) If abnormal chattering, etc. occurs during use, stop the machine immediately and remove the cause of the chattering.

3. Cautions during use

- (1) Before use, confirm the dimensions and direction of rotation of the tool and milling work material.
- (2) The numerical values in the standard cutting conditions table should be used as criteria when starting new work. The cutting conditions should be adjusted as appropriate when the cutting depth is large, the rigidity of the machine being used is low, or according to the conditions of the work material.
- (3) Cutting tools are made of a hard material. During use, they may break and fly off. In addition, cutting chips may also fly off. Since there is a danger of injury to workers, fire, or eye damage from such flying pieces, a safety cover should be attached when work is performed and safety equipment such as safety goggles should be worn to create a safe environment for work.
- (4) There is a risk of fire or inflammation due to sparks, heat due to breakage, and cutting chips. Do not use where there is a risk of fire or explosion. Please caution of fire while using oil base coolant, fire prevention is necessary.
- (5) Do not use the tool for any purpose other than that for which it is intended.

4. Cautions regarding regrinding

- (1) If regrinding is not performed at the proper time, there is a risk of the tool breaking. Replace the tool with one in good condition, or perform regrinding.
- (2) Grinding dust will be created when regrinding a tool. When regrinding, be sure to attach a safety cover over the work area and wear safety clothes such as safety goggles, etc.
- (3) This product contains the specified chemical substance cobalt and its inorganic compounds. When performing regrinding or similar processing, be sure to handle the processing in accordance with the local laws and regulations regarding prevention of hazards due to specified chemical substances.

“MOLDINO” is a registered trademark of MOLDINO Tool Engineering, Ltd. in Japan.

Specifications for the products listed in this catalog are subject to change without notice due to replacement or modification.

MOLDINO Tool Engineering Europe GmbH

Itterpark 12 · 40724 Hilden · Germany · Phone +49 (0) 21 03-24 82-0 · Fax +49 (0) 21 03-24 82-30
E-Mail info@moldino.eu · Internet www.moldino.eu
© 2020 by MOLDINO Tool Engineering Europe GmbH · 2nd Edition · Printed in Germany