Recommended Cutting Conditions

High efficiency cuttiing condition | High accuracy cuttiing condition

Please refer to P.25
about high accuracy cutting conditions

Epoch Deep Square Evolution EPDSE-PN EPDSE-ATH

Recommended range			PN series												ATH series
Work material			1		2		3		4		5		6		
			Coppers		Carbon steels, Alloy steels		Stainless steels, Tool steels		Pre-hardened steels		Hardened steels		Hardened steels		
					(180～250HB)		(25～35HRC)		(35～45HRC)		(45～55HRC)		(55～65HRC)		
Ratio to standard depth of cut			120%		100%		90%		70%		50%		45%		
Tool dia. DC (mm)	Under neck length LU (mm)	ap (mm)	Revolution n min-1	Feed rate vf mm/min	Revolution n min-1	Feed rate vf mm/min	Revolution n min-1	Feed rate vf mm/min	Revolution n min-1	Feed rate vf mm/min	Revolution n min-1	Feed rate vf mm/min	Revolution n min-1	Feed rate vf mm/min
0.1	0.3	0.006	50,000	500	50,000	500	50,000	475	48,600	348	42,750	255	40,050	208
	0.5	0.004	50,000	500	50,000	500	50,000	475	48,600	348	42,750	255	40,050	208
	1	0.003	50,000	455	50,000	455	48,600	430	43,700	315	38,500	232	36,050	187
0.2	0.5	0.02	50,000	708	45,000	638	40,500	574	38,250	403	33,750	301	31,500	242
	1	0.014	50,000	708	45,000	638	40,500	574	38,250	403	33,750	301	31,500	242
	1.5	0.008	48,600	630	40,500	525	36,450	472	34,425	362	30,375	271	28,350	218
	2	0.005	43,200	504	36,000	420	32,400	378	30,600	286	27,000	214	25,200	172
	3	0.003	43,200	454	36,000	378	32,400	340	30,600	257	27,000	193	25,200	155
0.3	1	0.021	48,000	680	40,000	567	36,000	510	34,000	358	30,000	267	28,000	216
	1.5	0.021	48,000	680	40,000	567	36,000	510	34,000	358	30,000	267	28,000	216
	2	0.012	43,200	560	36,000	467	32,400	420	30,600	322	27,000	241	25,200	194
	2.5	0.01	43,200	560	36,000	467	32,400	420	30,600	322	27,000	241	25,200	194
	3	0.008	43,200	560	36,000	467	32,400	420	30,600	322	27,000	241	25,200	194
0.4	1	0.04	38,400	847	32,000	706	28,800	635	27,200	446	24,000	333	22,400	268
	1.5	0.028	38,400	847	32,000	706	28,800	635	27,200	446	24,000	333	22,400	268
	2	0.028	38,400	847	32,000	706	28,800	635	27,200	446	24,000	333	22,400	268
	2.5	0.022	34,560	697	28,800	581	25,920	523	24,480	401	21,600	299	20,160	241
	3	0.016	34,560	697	28,800	581	25,920	523	24,480	401	21,600	299	20,160	241
	3.5	0.012	34,560	697	28,800	581	25,920	523	24,480	401	21,600	299	20,160	241
	4	0.01	34,560	697	28,800	581	25,920	523	24,480	401	21,600	299	20,160	241
	5	0.01	30,720	542	25,600	452	23,040	406	21,760	260	19,200	230	17,920	181
	6	0.006	30,720	542	25,600	452	23,040	406	21,760	260	19,200	230	17,920	181
	8	0.003	26,880	413	22,400	344	20,160	310	19,040	200	16,800	172	15,680	131
	10	0.002	23,040	304	19,200	253	17,280	228	16,320	147	14,400	127	13,440	96
0.5	1	0.05	38,400	847	32,000	706	28,800	635	27,200	535	24,000	333	22,400	268
	1.5	0.05	38,400	847	32,000	706	28,800	635	27,200	535	24,000	333	22,400	268
	2	0.035	38,400	847	32,000	706	28,800	635	27,200	535	24,000	333	22,400	268
	2.5	0.03	34,560	697	28,800	581	25,920	523	24,480	441	21,600	299	20,160	241
	3	0.02	34,560	697	28,800	581	25,920	523	24,480	441	21,600	299	20,160	241
	4	0.02	34,560	697	28,800	581	25,920	523	24,480	401	21,600	299	20,160	241
	5	0.013	34,560	697	28,800	581	25,920	523	24,480	401	21,600	299	20,160	241
	6	0.013	30,720	542	25,600	452	23,040	406	21,760	260	19,200	230	17,920	181
	8	0.008	30,720	464	25,600	387	23,040	348	21,760	247	19,200	194	17,920	147
	10	0.004	26,880	360	22,400	300	20,160	270	19,040	174	16,800	150	15,680	114
0.6	2	0.042	38,400	1,210	32,000	1,008	28,800	907	27,200	636	24,000	475	22,400	383
	3	0.035	34,560	995	28,800	829	25,920	746	24,480	573	21,600	428	20,160	345
	4	0.024	34,560	995	28,800	829	25,920	746	24,480	573	21,600	428	20,160	345
	5	0.02	34,560	995	28,800	829	25,920	746	24,480	573	21,600	428	20,160	345
	6	0.015	34,560	995	28,800	829	25,920	746	24,480	573	21,600	428	20,160	345
	7	0.015	30,720	859	25,600	716	23,040	644	21,760	494	19,200	369	17,920	298
	8	0.015	30,720	774	25,600	645	23,040	581	21,760	372	19,200	328	17,920	258
	9	0.012	30,720	774	25,600	645	23,040	581	21,760	372	19,200	328	17,920	258
	10	0.009	30,720	774	25,600	645	23,040	581	21,760	372	19,200	328	17,920	258
0.7	2	0.07	38,400	1,210	32,000	1,008	28,800	907	27,200	636	24,000	475	22,400	384
	4	0.049	34,560	995	28,800	829	25,920	746	24,480	573	21,600	428	20,160	345
	6	0.018	34,560	995	28,800	829	25,920	746	24,480	573	21,600	428	20,160	345
	8	0.018	30,720	774	25,600	645	23,040	581	21,760	372	19,200	328	17,920	258
	10	0.018	30,720	774	25,600	645	23,040	581	21,760	372	19,200	328	17,920	258

【Note】 Please refer to P.24

Recommended range			PN series / ATH series											
Work material			1		2		3		4		5		6	
			Coppers		Carbon steels, Alloy steels (180～250HB)		Stainless steels, Tool steels (25～35HRC)		Pre-hardened steels (35～45HRC)		Hardened steels (45～55HRC)		Hardened steels (55～65HRC)	
Ratio to standard depth of cut			120%		100%		90%		70%		50%		45%	
Tool dia. DC (mm)	Under neck length LU (mm)	ap (mm)	Revolution n min-1	Feed rate vf mm/min	Revolution n min-1	Feed rate vf mm/min	Revolution n min-1	Feed rate vf mm/min	Revolution n min-1	Feed rate vf mm/min	Revolution n min-1	Feed rate vf mm/min	Revolution n min-1	Feed rate vf mm/min
0.8	2	0.08	38,400	1,210	32,000	1,008	28,800	907	27,200	780	24,000	688	22,400	422
	4	0.056	38,400	1,210	32,000	1,008	28,800	907	27,200	780	24,000	688	22,400	422
	6	0.032	34,560	995	28,800	829	25,920	746	24,480	678	24,000	665	20,160	379
	8	0.02	34,560	995	28,800	829	25,920	746	24,480	573	21,600	428	20,160	345
	10	0.02	30,720	774	25,600	645	23,040	581	21,760	372	19,200	328	17,920	258
	12	0.012	30,720	774	25,600	645	23,040	581	21,760	372	19,200	328	17,920	258
0.9	2	0.09	38,400	1,326	32,000	1,205	28,800	1,085	27,200	833	24,000	674	22,400	502
	4	0.063	38,400	1,326	32,000	1,205	28,800	1,085	27,200	833	24,000	674	22,400	502
	6	0.036	34,560	1094	28,800	994	25,920	895	24,480	687	21,600	556	20,160	414
	8	0.023	34,560	1094	28,800	911	25,920	820	24,480	630	21,600	513	20,160	379
	10	0.023	30,720	774	25,600	645	23,040	581	21,760	372	19,200	328	17,920	258
	12	0.023	30,720	774	25,600	645	23,040	581	21,760	372	19,200	328	17,920	258
1	2	0.1	34,560	1,628	28,800	1,356	25,920	1,220	24,480	1,150	22,930	1,008	20,160	846
	3	0.085	34,560	1,628	28,800	1,356	25,920	1,220	24,480	1,150	22,930	1,008	20,160	846
	4	0.07	34,560	1,628	28,800	1,356	25,920	1,220	24,480	1,077	22,930	963	20,160	766
	5	0.055	34,560	1,628	28,800	1,356	25,920	1,220	24,480	1,028	22,930	871	20,160	685
	6	0.04	31,104	1,344	25,920	1,120	23,328	1,008	22,032	903	20,700	745	18,144	465
	7	0.04	31,104	1,344	25,920	1,120	23,328	1,008	22,032	837	20,700	703	18,144	465
	8	0.04	31,104	1,344	25,920	1,120	23,328	1,008	22,032	837	20,700	622	18,144	465
	9	0.033	31,104	1,344	25,920	1,120	23,328	1,008	22,032	773	19,440	577	18,144	465
	10	0.025	31,104	1,344	25,920	1,120	23,328	1,008	22,032	773	19,440	577	18,144	465
	12	0.025	27,648	1,045	23,040	871	20,736	784	19,584	502	17,280	443	16,128	348
	14	0.025	27,648	1,045	23,040	871	20,736	784	19,584	502	17,280	443	16,128	348
	16	0.015	27,648	896	23,040	746	20,736	672	19,584	476	17,280	373	16,128	283
	20	0.01	24,828	732	20,690	610	22,345	549	17,587	348	15,518	305	14,483	226
	25	0.005	21,000	569	17,500	474	18,900	427	14,875	270	13,125	237	12,250	175
1.2	4	0.09	30,720	1,452	25,600	1,210	23,040	1,089	21,760	870	19,200	570	17,920	460
	6	0.084	30,720	1,452	25,600	1,210	23,040	1,089	21,760	870	19,200	570	17,920	460
	8	0.048	27,648	1,194	23,040	995	20,736	896	19,584	783	17,280	513	16,128	414
	10	0.03	27,648	1,194	23,040	995	20,736	896	19,584	744	17,280	513	16,128	414
	12	0.03	27,648	1,194	23,040	995	20,736	896	19,584	687	17,280	513	16,128	414
	16	0.02	24,576	1,061	20,480	884	18,432	796	17,408	611	15,360	456	14,336	368
1.4	6	0.1	26,880	1,270	22,400	1,058	20,160	953	19,040	668	16,800	499	15,680	403
	12	0.035	24,192	1,045	20,160	871	18,144	784	17,136	601	15,120	449	14,112	362
1.5	4	0.11	26,880	1,397	22,400	1,163	20,160	1048	19,040	801	16,800	648	15,680	482
	6	0.11	26,880	1,397	22,400	1,163	20,160	1048	19,040	801	16,800	623	15,680	482
	8	0.08	24,192	1,149	20,160	958	18,144	940	17,136	721	15,120	538	14,112	416
	10	0.06	24,192	1,149	20,160	871	18,144	862	17,136	721	15,120	538	14,112	416
	12	0.06	24,192	1,045	20,160	871	18,144	784	17,136	721	15,120	449	14,112	362
	14	0.038	24,192	1,045	20,160	871	18,144	784	17,136	721	15,120	449	14,112	362
	16	0.038	21,504	813	17,920	677	16,128	610	15,232	391	13,440	345	12,544	271
	18	0.038	21,504	813	17,920	677	16,128	610	15,232	391	13,440	345	12,544	271
	20	0.038	21,504	813	17,920	677	16,128	610	15,232	391	13,440	345	12,544	271
	25	0.023	16,128	523	13,440	435	12,096	392	11,424	278	10,080	218	9,408	165
	30	0.015	13,440	355	11,200	296	12,096	266	9,520	178	8,400	139	7,840	112
	35	0.01	13,440	355	11,200	296	12,096	266	9,520	178	8,400	139	7,840	112
	40	0.005	10,752	190	8,960	158	8,064	142	7,616	95	6,720	74	6,272	60
1.6	6	0.11	24,960	1,310	20,800	1,201	18,720	1,130	17,680	759	15,600	566	14,560	456
	8	0.11	24,960	1,310	20,800	1,201	18,720	983	17,680	690	15,600	566	14,560	456
1.8	6	0.13	24,960	1,310	20,800	1,201	18,720	1,179	17,680	759	15,600	618	14,560	498
	8	0.13	24,960	1,310	20,800	1,201	18,720	1,081	17,680	690	15,600	618	14,560	498

【Note】 Please refer to P.24

Recommended Cutting Conditions

High efficiency cuttiing condition | High accuracy cuttiing condition

Please refer to P.25 about high accuracy cutting conditions

Epoch Deep Square Evolution EPDSE-PN EPDSE-ATH

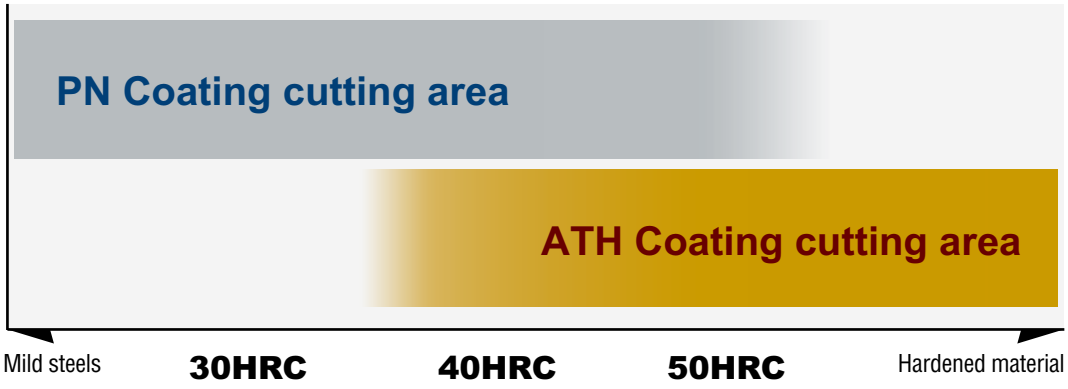
Recommended range			PN series / ATH series											
Work material			1 Coppers		2 Carbon steels, Alloy steels (180～250HB)		3 Stainless steels, Tool steels (25～35HRC)		4 Pre-hardened steels (35～45HRC)		5 Hardened steels (45～55HRC)		6 Hardened steels (55～65HRC)	
Ratio to standard depth of cut			120%		100%		90%		70%		50%		45%	
Tool dia. DC (mm)	Under neck length LU (mm)	a_p (mm)	Revolution n min^{-1}	Feed rate v_f mm/min	Revolution n min^{-1}	Feed rate v_f mm/min	Revolution n min^{-1}	Feed rate v_f mm/min	Revolution n min^{-1}	Feed rate v_f mm/min	Revolution n min^{-1}	Feed rate v_f mm/min	Revolution n min^{-1}	Feed rate v_f mm/min
2	4	0.2	20,160	1,397	16,800	1,174	15,120	1,048	14,280	734	12,600	548	11,760	443
	6	0.2	20,160	1,397	16,800	1,174	15,120	1,048	14,280	734	12,600	548	11,760	443
	8	0.14	20,160	1,397	16,800	1,174	15,120	1,048	14,280	734	12,600	548	11,760	443
	10	0.14	20,160	1,397	16,800	1,174	15,120	1,048	14,280	734	12,600	548	11,760	443
	12	0.1	18,144	1,149	15,120	958	13,608	862	12,852	661	11,340	493	10,584	398
	14	0.08	18,144	1,149	15,120	958	13,608	862	12,852	661	11,340	493	10,584	362
	16	0.08	18,144	1,045	15,120	914	13,608	862	12,852	601	11,340	449	10,584	362
	18	0.05	18,144	1,045	15,120	914	13,608	862	12,852	601	11,340	449	10,584	362
	20	0.05	18,144	1,045	15,120	871	13,608	784	12,852	601	11,340	449	10,584	362
	25	0.05	16,128	813	13,440	677	12,096	610	11,424	391	10,080	345	9,408	271
	30	0.03	16,128	813	13,440	677	12,096	610	11,424	391	10,080	345	9,408	271
	35	0.02	14,112	583	11,760	486	10,584	437	9,996	282	8,820	228	8,232	185
	40	0.01	14,112	583	11,760	486	10,584	437	9,996	282	8,820	228	8,232	185
	50	0.005	12,096	355	10,080	296	9,072	266	8,568	172	7,560	139	7,056	112
2.5	8	0.18	17,280	1,497	14,400	1,247	12,960	1,123	12,240	787	10,800	642	10,080	474
	12	0.18	17,280	1,260	14,400	1,247	12,960	1,123	12,240	716	10,800	588	10,080	431
	16	0.1	15,552	1,120	12,960	1,073	11,664	966	11,016	644	9,720	529	9,072	388
	20	0.1	15,552	1,120	12,960	933	11,664	840	11,016	644	9,720	529	9,072	388
	30	0.06	13,824	870	11,520	725	10,368	653	9,792	435	8,640	341	8,064	276
	40	0.03	12,096	625	10,080	521	9,072	469	8,568	313	7,560	245	7,056	198
	50	0.01	12,096	625	10,080	521	9,072	469	8,568	313	7,560	245	7,056	198
3	8	0.3	15,360	1,331	12,800	1,108	11,520	997	10,880	699	10,600	570	8,960	422
	12	0.21	15,360	1,331	12,800	1,108	11,520	997	10,880	699	10,600	570	8,960	422
	16	0.15	13,824	1,144	11,520	994	10,368	820	9,792	630	9,450	513	8,064	379
	20	0.12	13,824	995	11,520	911	10,368	820	9,792	630	9,450	513	8,064	379
	25	0.08	13,824	995	11,520	911	10,368	820	9,792	630	9,450	513	8,064	379
	30	0.08	13,824	995	11,520	829	10,368	746	9,792	630	9,450	513	8,064	347
	40	0.05	12,288	884	10,240	737	9,216	663	8,704	509	7,680	380	7,168	307
	50	0.02	10,752	556	8,960	463	8,064	417	7,616	278	6,720	218	6,272	176
4	12	0.4	11,500	2,300	9,400	1,880	8,460	1,524	7,990	1,358	7,050	902	6,580	728
	16	0.28	11,500	2,300	9,400	1,880	8,460	1,524	7,990	1,358	7,050	902	6,580	728
	20	0.28	10,350	2,070	8,460	1,692	7,614	1,371	7,191	1,222	6,345	812	5,922	655
	25	0.16	10,350	1,863	8,460	1,524	7,614	1,233	7,191	1,100	6,345	812	5,922	655
	30	0.16	10,350	1,863	8,460	1,524	7,614	1,233	7,191	1,100	6,345	812	5,922	655
	35	0.1	9,137	1,645	7,614	1,371	6,853	1,110	6,472	990	5,711	731	5,330	589
	40	0.1	9,137	1,645	7,614	1,371	6,853	1,110	6,472	990	5,711	731	5,330	589
	50	0.06	7,896	1,128	6,580	940	5,922	846	5,593	658	4,935	442	4,606	357
5	20	0.3	9,014	1,802	7,512	1,652	6,761	1,487	6,385	1,051	5,634	706	5,258	571
	25	0.3	8,112	1,621	6,760	1,351	6,084	1,216	5,746	946	5,070	635	4,732	513
	30	0.2	8,112	1,461	6,760	1,217	6,084	1,094	5,746	851	5,070	573	4,732	462
	40	0.15	7,301	1,315	6,084	1,096	5,476	986	5,171	767	4,563	515	4,259	416
	50	0.1	7,301	1,315	6,084	1,096	5,476	986	5,171	767	4,563	515	4,259	416
6	20	0.5	7,418	1,629	6,182	1,481	5,564	1,333	5,255	1,036	4,637	766	4,327	562
	30	0.4	6,744	1,480	5,620	1,346	5,058	1,212	4,777	942	4,215	696	3,934	511
	40	0.3	6,744	1,332	5,620	1,109	5,058	998	4,777	847	4,215	625	3,934	459
	50	0.2	6,000	1,090	5,000	986	4,500	887	4,250	690	3,750	515	3,500	379

※a_p is shown as the criteria for Group 2 workpieces. For other groups, adjust the cutting depth according to the cutting depth factors in the above table.

【Note】
① PN coating is less electro conductive. Therefore, electric transmitted measuring systems may not work.
② Use the appropriate coolant for the work material and machining shape.
③ These Recommended Cutting Conditions indicate only the rule of a thumb for the cutting conditions. In actual machining, the condition should be adjusted according to the machining shape, purpose and the machine type.
④ If the rpm of the machine is low, lower the feed rate also to put the rpm and feed rate in the same ratio.

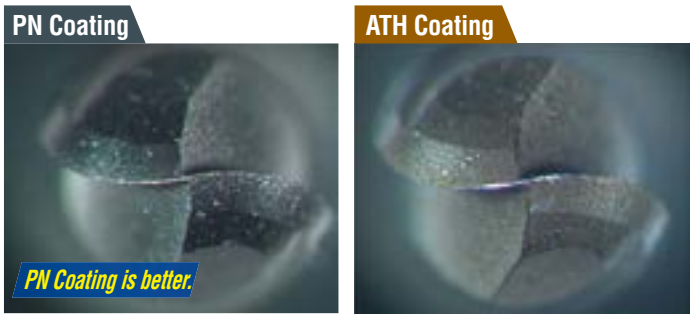
2 types of coatings to handle a variety of work materials.

Recommended machining areas for each coating



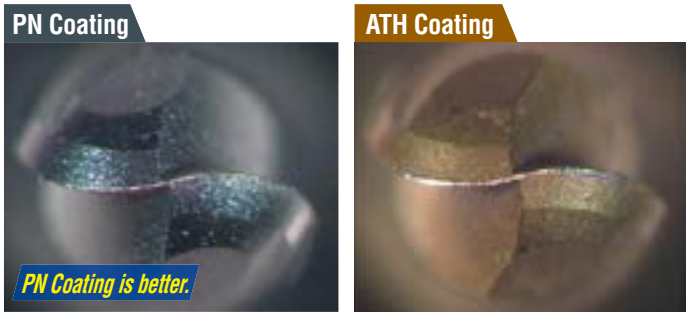
Cutting Data 1

Work material : **SCM440Ⓗ 30HRC**
Holder : HSK-F63
Tool dia. : R0.5×Under neck 6㎜
Coolant : Air-blow
n=28,000min^{-1} (v_c=88m/min)
v_f=1,200mm/min (f_z=0.02mm/t)
a_p=0.036mm a_e=0.108mm OH=18mm
Cutting length 10m



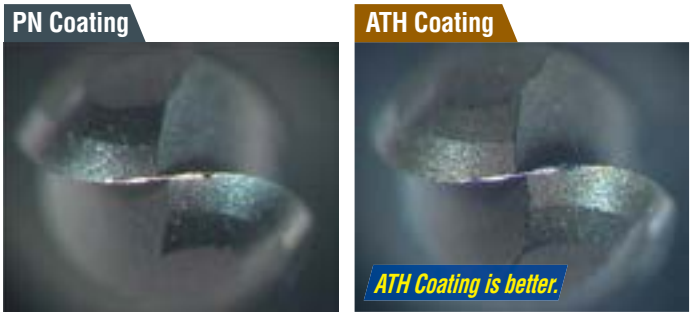
Cutting Data 2

Work material : **HPM-MAGIC 40HRC**
Holder : HSK-F63
Tool dia. : R0.5×Under neck10㎜
Coolant : Air-blow
n=24,300min^{-1} (v_c=76m/min)
v_f=900mm/min (f_z=0.018mm/t)
a_p=0.04mm Cutting reciprocating slot.
OH=18mm



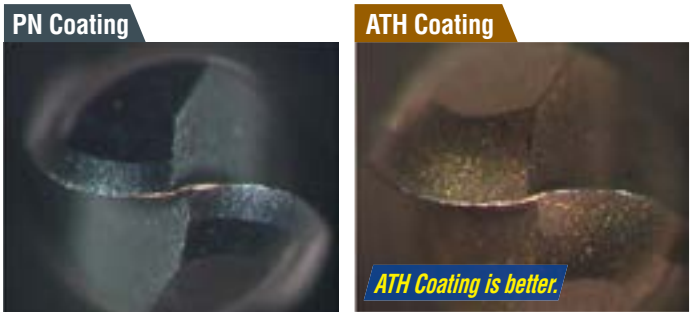
Cutting Data 3

Work material : **DACⒽ 45HRC**
Holder : HSK-F63
Tool dia. : R0.5×Under neck 6㎜
Coolant : Air-blow
n=27,540min^{-1} (v_c=86m/min)
v_f=1,115mm/min (f_z=0.02mm/t)
a_p=0.032mm a_e=0.096mm OH=18mm
Cutting length 10m



Cutting Data 4

Work material : **HPM38 52HRC**
Holder : HSK-F63
Tool dia. : R0.5×Under neck10㎜
Coolant : Air-blow
n=24,300min^{-1} (v_c=76m/min)
v_f=919mm/min (f_z=0.018mm/t)
a_p=0.016mm OH=18mm
Cutting length 20m



Enables high-accuracy stable machining with excellent surface quality.

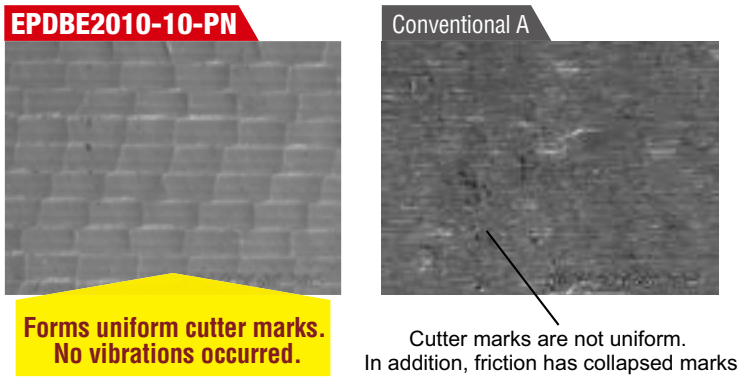
EPDBE-PN

PN Coating

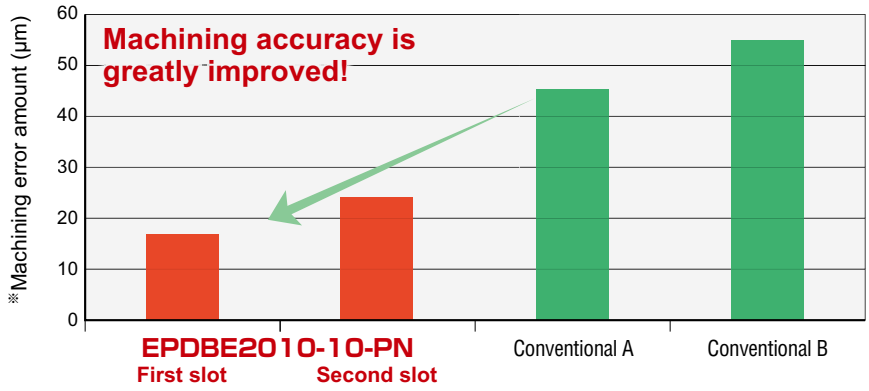
Technical Data SCM440Ⓗ 33HRC rib slot evaluation

Tool : EPDBE2010-10-PN (R0.5 Under neck10mm)

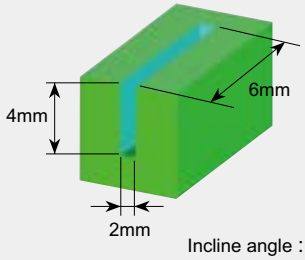
★This is amazing! Point 1 Uniformity of machined surface



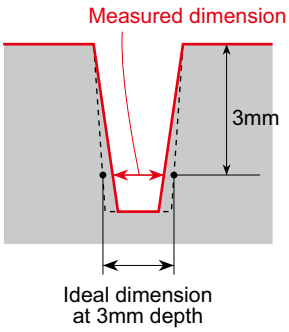
★This is amazing! Point 2 Low deflection provides improved machining accuracy!



Rib slot evaluation

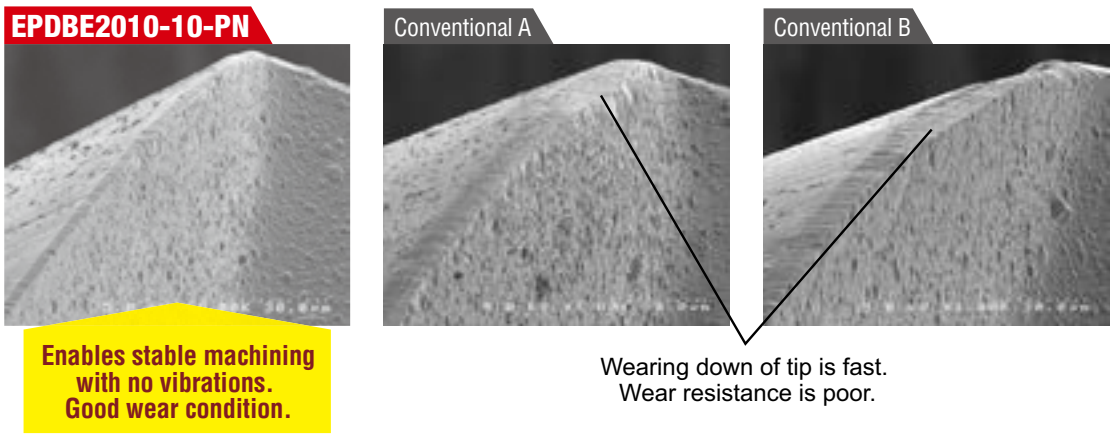


Work material : SCM440Ⓗ 33HRC
Holder : HSK-F63
Coolant : Wet
n=16,000min^{-1} (v_c=50m/min)
v_f=1,000mm/min (f_z=0.03mm/t)
$a_p \times a_e$=0.02mm×0.04mm



※Machining error amount::
(Ideal dimension)-(Measured dimension after cutting)

★This is amazing! Point 3 Long life: Wear resistance plus good chipping resistance



Rely on ATH Coating for stable machining of even high-hardness materials!

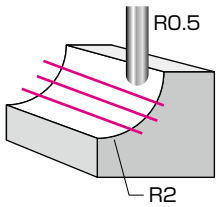
EPDBE-ATH

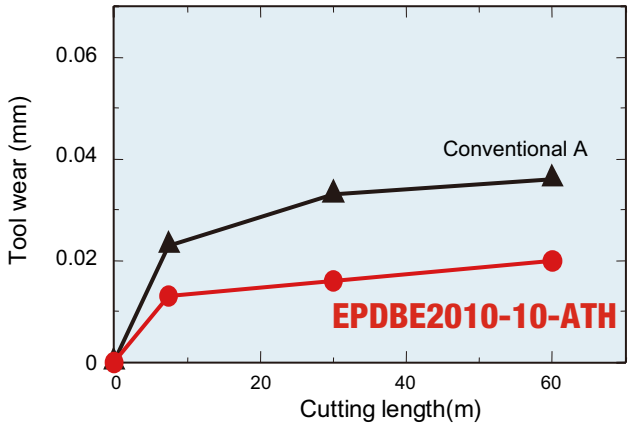
ATHCoating

Technical Data

Tool：EPDBE2010-10-ATH (R0.5 Under neck10mm)

★This is amazing! Point 1 **Wear condition is stable. No chipping even on high-hardness materials.**

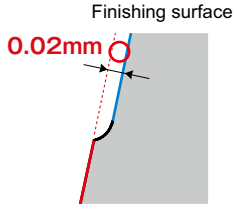
Machining shape	Cutting condition	EPDBE2010-10-ATH	Conventional
	Work material : **SLDⒽ 60HRC** Holder : HSK-F63 Coolant：Air Blow n=10,000min^{-1} (v_c=31.4m/min) v_f=800mm/min (f_z=0.04mm/t) a_p×a_e=0.02mm×0.02mm	 Stable wear condition from chisel to outer perimeter	 Chipping occurred

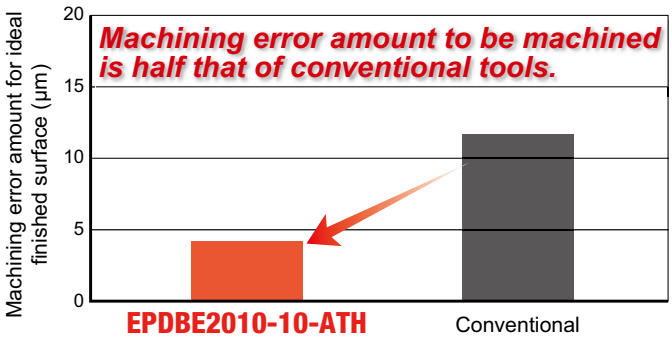


Technical Data

Tool：EPDBE2010-10-ATH (R0.5 Under neck10mm)

★This is amazing! Point 2 **High accuracy achieved due to little deflection.**

Machining shape	Cutting condition
	Work material : **SUS420J2Ⓗ 52HRC** Holder: HSK-F63 Coolant：Air Blow n=16,000min^{-1} (v_c=50m/min) v_f=1,000mm/min (f_z=0.03mm/t) a_p×a_e=0.02mm×0.02mm

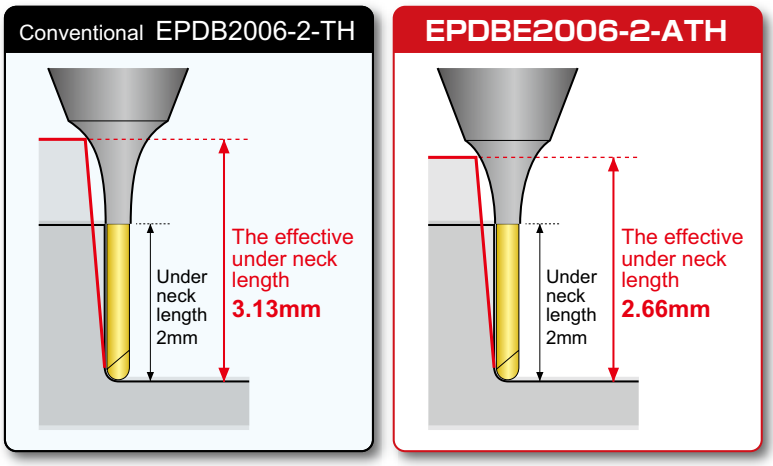


Periphery helix angle is strong, improving cutting performance.

Tool interference check, Re-grinding

Example of difference in neck interference area

Difference in interference area for R=0.3 x Under neck length=2mm
(Figures show a slope angle of 1°.)



When a conventional product and new product with R=0.3 x Under neck length=2mm are compared for a surface with a 1° slope angle, the conventional EPDB2006-2-TH has an effective under neck length of 3.13mm, but for the new EPDBE2006-2-ATH, the effective under neck length is 2.66mm.

The improved neck shape used in these new products results in a different interference area than the EPDB and EPDS conventional models.

For checking interference:

Re-grinding compatibility range table

Item code	Product name	Tool dia. (mm)	Shape	Re-grinding compatibility range (mm)	
				Outer dia.	End
EPDBE-PN	Epoch Deep Ball Evolution (PN Coating)	0.1～6		N/A	1～6
EPDBE-ATH	Epoch Deep Ball Evolution (ATH Coating)	0.1～6		N/A	1～6
EPDSE-PN	Epoch Deep Square Evolution (PN Coating)	0.1～6		6	2～6
EPDSE-ATH	Epoch Deep Square Evolution (ATH Coating)	0.1～6		6	2～6

【Note】Contact our sales office regarding whether or not regrinding is possible for tools where Under neck length/Tool diameter is 10 or greater.

MOLDINO

The Edge To Innovation

The diagrams and table data are examples of test results, and are not guaranteed values.
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⚠ 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) 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 thelocal laws and regulations regarding prevention of hazards due to specified chemical substances.

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Printed in JAPAN

2022-12(K)
2012-8:FP