

Advanced Engineering

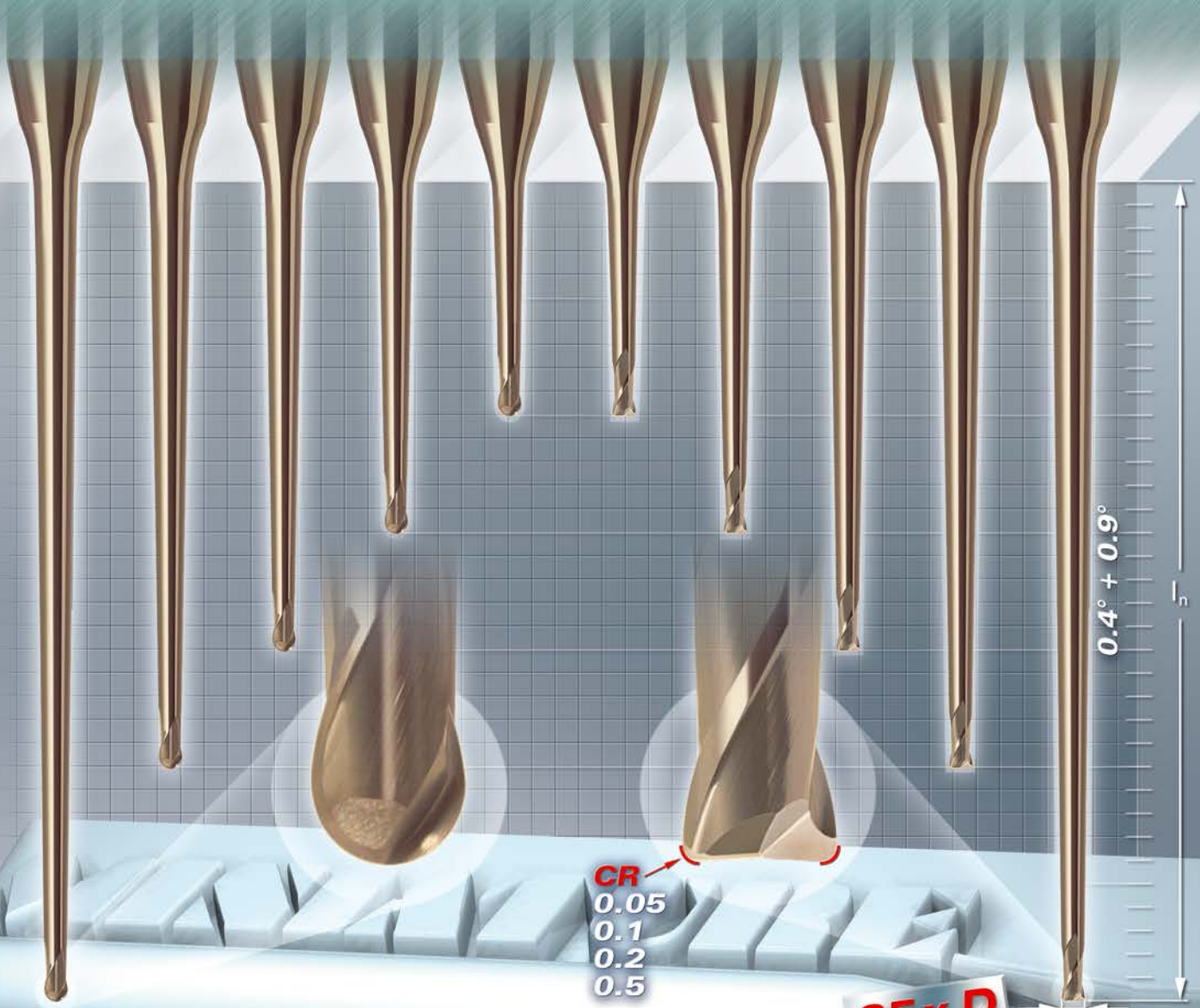
MINIATURE

Nano-PVD Coating
TH45+

MMC Hitachi Tool

No. 413.4

EPDBP Epoch Deep Ball Pencil Neck
EPDRP Epoch Deep Radius Pencil Neck
High Speed Deep Precision Machining ~ HRC70



Carbide End Mills - Nano PVD Coated

MMC Hitachi Tool Engineering Europe GmbH
www.high-speed-cutting.com



High Speed Deep Precision Machining

EPDBP | Epoch Deep Ball Pencil Neck

V max
High Speed

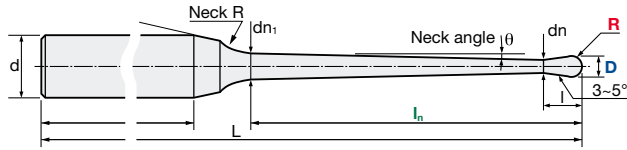
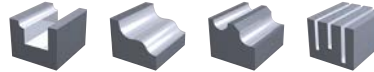
▽▽
Semi-Finishing

▽▽▽
Finishing

HRC
70

▮
Rib. Miniature

No. of Teeth
2



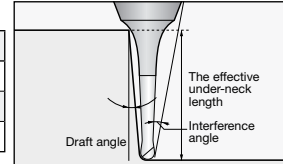
※ Back Draft is not available for Diameters 4-6mm

Carbide
Micro Grain

TH45+
Nano-PVD Coating

Rake Angle
Positive

Helix angle	30°
R	± 0.005 mm
D	(0/-0.01 mm)
d	h5

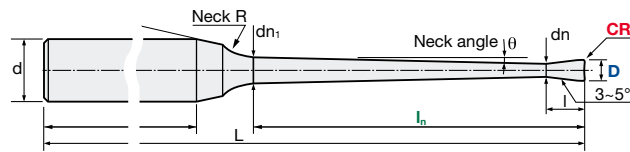


ID Code	Item Code	Z	Size										Actual Effective Length in Incline angles				
			D	R	ln	Neck angle θ	l	dn	dn1	Neck R	L	d	0.5°	1°	2°	3°	
EP469	EPDBP-2002-1-04	2	0.2	0.1	1	0.4	0.15	0.17	0.182	10	50	4	1.55	1.72	2.03	2.31	
EP470	EPDBP-2002-1.5-04				1.5								0.189	2.06	2.28	2.64	2.97
EP471	EPDBP-2002-2-09				2								0.228	-	2.81	3.42	3.92
EP472	EPDBP-2002-2.5-09				2.5								0.244	-	3.32	4.01	4.54
EP473	EPDBP-2004-2-04		0.4	0.2	2	0.4	0.3	0.37	0.394	10	50	4	2.57	2.82	3.23	3.57	
EP474	EPDBP-2004-3-04				3								0.408	3.60	3.92	4.40	4.80
EP475	EPDBP-2004-4-09				4								0.486	-	4.87	5.72	6.34
EP476	EPDBP-2004-5-09				5								0.518	-	5.90	6.85	7.53
EP477	EPDBP-2006-2-04		0.6	0.3	2	0.4	0.4	0.57	0.592	7	55	4	2.42	2.59	2.85	3.08	
EP478	EPDBP-2006-4-04				4								0.620	4.62	5.00	5.54	5.98
EP479	EPDBP-2006-6-09				6								0.746	-	6.92	7.96	8.68
EP480	EPDBP-2006-8-09				8								0.809	-	8.96	10.18	10.98
EP481	EPDBP-2006-10-09		0.8	0.4	10	0.9	0.5	0.77	0.872	10	50	4	-	11.01	12.37	13.25	
EP482	EPDBP-2006-12-09				12								0.934	10	13.05	14.54	15.49
EP483	EPDBP-2006-15-09				15								1.029	-	16.10	17.78	18.81
EP484	EPDBP-2008-4-04				4								0.819	4.61	4.99	5.53	5.97
EP485	EPDBP-2008-6-04		6	0.847	6.66	7.14	7.79	8.30									
EP486	EPDBP-2008-8-09		8	1.006	-	8.96	10.17	10.97									
EP487	EPDBP-2008-12-09		12	1.131	-	13.04	14.54	15.48									
EP488	EPDBP-2008-16-09		16	1.257	-	17.12	18.85	19.90									
EP489	EPDBP-2010-6-04		1	0.5	6	0.4	0.8	0.94	1.013	10	50	4	6.82	7.24	7.85	8.34	
EP490	EPDBP-2010-8-04				8								1.041	8.85	9.36	10.07	10.62
EP491	EPDBP-2010-10-09				10								1.229	-	11.20	12.44	13.28
EP492	EPDBP-2010-15-09				15								1.386	-	16.28	17.84	18.84
EP493	EPDBP-2010-20-09		20	1.543	-	21.35	23.18	24.68									
EP494	EPDBP-2010-25-09		25	1.700	-	26.42	28.48	30.83									
EP495	EPDBP-2010-30-09		30	1.857	-	31.49	33.75	36.98									
EP496	EPDBP-2010-35-09		35	2.015	-	36.55	39.00	43.12									
EP497	EPDBP-2015-8-04	1.5	0.75	8	0.4	1.35	1.42	1.513	10	55	4	8.95	9.41	10.09	10.62		
EP498	EPDBP-2015-10-04			10								1.541	10.97	11.52	12.28	12.90	
EP499	EPDBP-2015-12-04			12								1.569	13.00	13.62	14.45	15.47	
EP500	EPDBP-2015-15-09			15								1.849	-	16.40	17.88	18.86	
EP501	EPDBP-2015-20-09	20	2.006	-	21.47	23.21	24.72										
EP502	EPDBP-2015-30-09	30	2.320	-	31.59	33.78	37.01										
EP503	EPDBP-2020-8-04	2	1	8	0.9	1.7	1.92	2.008	7	50	4	8.70	9.03	9.50	10.27		
EP504	EPDBP-2020-12-04			12								2.064	13.00	13.61	14.43	15.40	
EP505	EPDBP-2020-16-04			16								2.120	17.05	17.79	18.74	20.54	
EP506	EPDBP-2020-20-09			20								2.495	-	21.48	23.20	24.68	
EP507	EPDBP-2020-25-09	25	2.652	-	26.54	28.50	30.82										
EP508	EPDBP-2020-30-09	30	2.809	-	31.60	33.77	36.97										
EP509	EPDBP-2020-35-09	35	2.966	-	36.66	39.02	x										
EP510	EPDBP-2020-40-09	40	3.123	-	41.72	44.50	x										
EP511	EPDBP-2020-50-09	50	3.438	-	51.82	55.58	x										
EP512	EPDBP-2030-8-04	3	1.5	8	0.4	2.5	2.86	2.937	10	50	4	8.87	9.13	9.55	10.33		
EP513	EPDBP-2030-16-04			16								3.048	17.25	17.89	18.79	20.60	
EP514	EPDBP-2030-20-04			20								3.104	21.29	22.04	23.34	25.74	
EP515	EPDBP-2030-30-09			30								3.724	-	31.82	33.84	x	
EP516	EPDBP-2030-40-09	40	4.038	-	41.92	x	x										
EP517	EPDBP-2030-50-09	50	4.352	-	52.01	x	x										
EP518	EPDBP-2030-60-09	60	4.667	-	62.10	x	x										

High Speed Deep Precision Machining

EPDRP | Epoch Deep Radius Pencil Neck

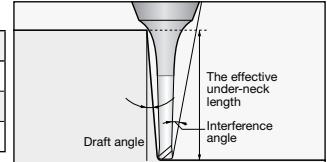
V max High Speed	▽▽▽ Finishing	HRC 70	Rib. Miniature	No. of Teeth 2
----------------------------	-------------------------	------------------	-----------------------	--------------------------



※ Back Draft is not available for Diameters 4–6mm

Carbide Micro Grain	TH45+ Nano-PVD Coating	Rake Angle Positive
-------------------------------	----------------------------------	-------------------------------

Helix angle	30°
CR	0.005 mm
D	(0/-0.01 mm)
d	h5



Size													Actual Effective Length in Incline angles				
ID Code	Item Code	Z	D	CR	I _n	Neck angle θ	l	dn	dn ₁	Neck R	L	d	0°	0.5°	1°	2°	3°
EP437	EPDRP-2002-2-09005	2	0.2	0.05	2	0.9	0.15	0.17	0.228	10	50	4	1.10	2.34	2.82	3.44	3.93
EP438	EPDRP-2004-4-0901		0.4	4	0.3								0.37	0.486	1.25	2.69	4.90
EP439	EPDRP-2004-5-0901		0.5				5	0.3	0.518						1.25	2.69	5.92
EP440	EPDRP-2005-5-0901				0.6								8	0.35	0.47	0.710	1.30
EP441	EPDRP-2005-8-0901		0.6	10			0.4	0.57	0.934								1.30
EP442	EPDRP-2005-10-0901				0.8								12	0.5	0.77	1.029	1.30
EP443	EPDRP-2006-12-0901		0.8	15			0.5	0.77	0.847								1.35
EP444	EPDRP-2006-15-0901				0.8								6	0.4	0.5	0.77	1.35
EP445	EPDRP-2008-6-0402		0.8	12			0.9	0.5	0.77								1.64
EP446	EPDRP-2008-12-0902				0.8								8	0.4	0.5	0.77	1.45
EP447	EPDRP-2010-8-0402		1	10		0.4	0.8	0.94	5.09	8.87	9.39	10.11					10.66
EP448	EPDRP-2010-10-0902				1				15	0.4	0.8	0.94	2.70	5.84	11.24	12.48	13.34
EP449	EPDRP-2010-15-0902		1	20		0.4	0.8	0.94					2.70	5.84	16.32	17.88	18.88
EP450	EPDRP-2010-20-0902				1				25	0.4	0.8	0.94	2.70	5.84	23.39	23.21	24.78
EP451	EPDRP-2010-25-0902		1	30		0.4	0.8	0.94					2.70	5.84	26.46	28.51	30.93
EP452	EPDRP-2010-30-0902				1				35	0.4	0.8	0.94	2.70	5.84	31.53	33.78	37.07
EP453	EPDRP-2010-35-0902		1.5	15		0.4	1.35	1.42					2.70	5.84	36.59	39.03	43.22
EP454	EPDRP-2015-15-0902				1.5				25	0.4	1.35	1.42	3.89	8.51	16.47	17.95	18.93
EP455	EPDRP-2015-25-0902		1.5	30		0.4	1.35	1.42					3.89	8.51	26.60	28.57	31.04
EP456	EPDRP-2015-30-0902				1.5				30	0.4	1.35	1.42	3.89	8.51	31.66	33.83	37.19
EP457	EPDRP-2020-30-0902	2	15	0.4		1.7	1.92	4.24					9.30	31.69	33.84	37.22	
EP458	EPDRP-2020-30-0905				2			25	0.4	1.7	1.92	4.24	9.30	31.66	33.82	37.13	
EP459	EPDRP-2020-40-0902	2	40	0.4		1.7	1.92					4.24	9.30	41.80	44.66	x	
EP460	EPDRP-2020-40-0905				2			50	0.4	1.7	1.92	4.24	9.30	41.77	44.60	x	
EP461	EPDRP-2020-50-0902	2	50	0.4		1.7	1.92					4.24	9.30	51.90	55.74	x	
EP462	EPDRP-2020-50-0905				2			50	0.4	1.7	1.92	4.24	9.30	51.87	55.68	x	
EP463	EPDRP-2030-40-0902	3	40	0.4		2.5	2.86					6.95	15.40	42.04	x	x	
EP464	EPDRP-2030-40-0905				3			40	0.4	2.5	2.86	6.95	15.40	42.01	x	x	
EP465	EPDRP-2030-50-0902	3	50	0.4		2.5	2.86					6.95	15.40	52.13	x	x	
EP466	EPDRP-2030-50-0905				3			50	0.4	2.5	2.86	6.95	15.40	52.10	x	x	
EP467	EPDRP-2030-60-0902	3	60	0.4		2.5	2.86					6.95	15.40	62.21	x	x	
EP468	EPDRP-2030-60-0905				3			60	0.4	2.5	2.86	6.95	15.40	62.19	x	x	

Always up to date: Please check our P50 QuickFinder



www.mmc-hitachitool-eu.com/quickfinder

Product Range

Solid Carbide End Mills



Indexable Milling Tools



WHNSB Drills



Milling Chucks



Distributed by:

MMC Hitachi 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@mmc-hitachitool-eu.com · Internet www.mmc-hitachitool-eu.com
© 2015 by MMC Hitachi Tool Engineering Europe GmbH · 4th Edition · Printed in Germany