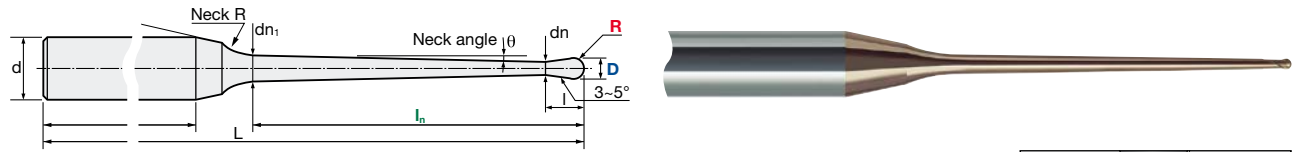


**EPDBP** | Epoch Deep Ball Pencil Neck

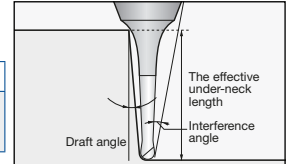
<b>V max</b> High Speed	<b>▽▽</b> Semi-Finishing	<b>▽▽▽</b> Finishing	<b>HRC</b> 69	<b>Rib. Miniature</b>	<b>No. of Teeth</b> 2
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※ Back Draft is not available for Diameters 4–6mm

<b>Carbide</b> Micro Grain	<b>TH45+</b> Nano-PVD Coating	<b>Rake Angle</b> Negative
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Helix Angle	R Tol. [mm]	d Tol.
<b>30°</b>	<b>R0.1~R0.2: +/-0.003</b> <b>R0.3~R1.5: +/-0.005</b>	<b>h5</b>

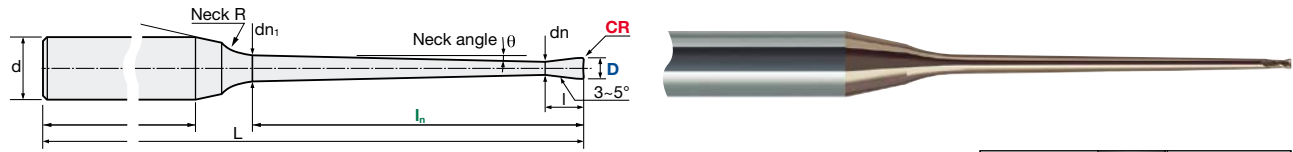


ID Code	Item Code	Z	Size										Actual Effective Length in Incline angles				
			D	R	I <sub>n</sub>	Neck angle θ	l	dn	dn <sub>1</sub>	Neck R	L	d	0.5°	1°	2°	3°	
EP469	EPDBP-2002-1-04	2	0.2	0.1	1	0.4	0.15	0.17	0.182	10	50	4	1.55	1.72	2.03	2.31	
EP470	EPDBP-2002-1.5-04				1.5								0.189	2.06	2.28	2.64	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	7	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	0.4	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										



**EPDRP** | Epoch Deep Radius Pencil Neck

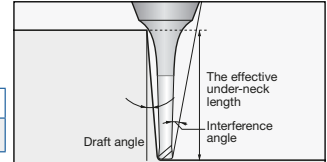
<b>V max</b> High Speed	<b>▽▽▽</b> Finishing	<b>HRC</b> 69	<b>Rib. Miniature</b>	<b>No. of Teeth</b> 2
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※ Back Draft is not available for Diameters 4–6mm

<b>Carbide</b> Micro Grain	<b>TH45+</b> Nano-PVD Coating	<b>Rake Angle</b> Negative
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Helix Angle	R Tol. [mm]	D Tol. [mm]	d Tol.
<b>30°</b>	<b>+/- 0.005</b>	<b>0/-0.015</b>	<b>h5</b>

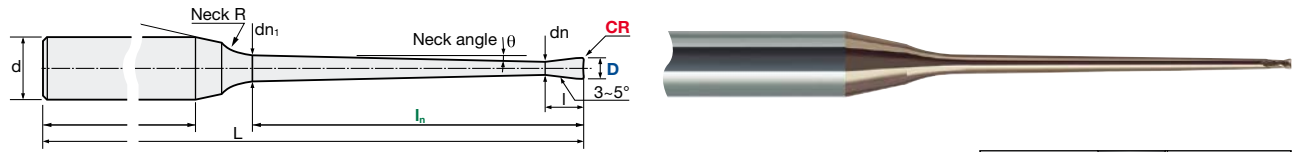


Size													Actual Effective Length in Incline angles				
ID Code	Item Code	Z	D	CR	I <sub>n</sub>	Neck angle θ	l	dn	dn <sub>1</sub>	Neck R	L	d	0°	0.5°	1°	2°	3°
EP437	EPDRP-2002-2-09005	2	0.2	0.05	2	0.9	0.15	0.17	0.228	10	50	4	1.10	2.34	2.82	3.44	3.93
EP438	EPDRP-2004-4-0901		0.4	4	0.3		0.37	0.486	1.25				2.69	4.90	5.74	6.37	
EP439	EPDRP-2004-5-0901		0.5		5		0.3	0.518	1.25				2.69	5.92	6.87	7.55	
EP440	EPDRP-2005-5-0901				8		0.35	0.47	0.710				1.30	2.81	5.93	6.88	7.55
EP441	EPDRP-2005-8-0901		10	0.35	0.47		0.710	1.30	2.81				9.00	10.21	11.02		
EP442	EPDRP-2005-10-0901		0.6	12	0.4		0.57	0.934	1.30				2.81	11.04	12.40	13.28	
EP443	EPDRP-2006-12-0901			15	0.4		0.57	1.029	1.35				2.92	13.08	14.57	15.52	
EP444	EPDRP-2006-15-0901		0.8	6	0.4		0.5	0.847	1.35				2.92	16.14	17.81	18.84	
EP445	EPDRP-2008-6-0402			12	0.5		0.77	1.131	2.64				6.68	7.16	7.82	8.34	
EP446	EPDRP-2008-12-0902		8	0.4	1.041		1.131	1.45	3.02				13.08	14.57	15.51		
EP447	EPDRP-2010-8-0402		1	10	1.229	7	55	5.09	8.87	9.39	10.11	10.66					
EP448	EPDRP-2010-10-0902			15	0.8	0.94	1.386	2.70	5.84	11.24	12.48	13.34					
EP449	EPDRP-2010-15-0902			20	0.8	0.94	1.543	10	60	2.70	5.84	16.32	17.88	18.88			
EP450	EPDRP-2010-20-0902			25	0.8	0.94	1.700	10	65	2.70	5.84	21.39	23.21	24.78			
EP451	EPDRP-2010-25-0902			30	0.8	0.94	1.700	70	2.70	5.84	26.46	28.51	30.93				
EP452	EPDRP-2010-30-0902			35	0.8	0.94	1.857	7	75	2.70	5.84	31.53	33.78	37.07			
EP453	EPDRP-2010-35-0902			15	1.35	1.42	2.015	80	2.70	5.84	36.59	39.03	43.22				
EP454	EPDRP-2015-15-0902			25	1.35	1.42	1.849	60	3.89	8.51	16.47	17.95	18.93				
EP455	EPDRP-2015-25-0902			30	1.35	1.42	2.163	70	3.89	8.51	26.60	28.57	31.04				
EP456	EPDRP-2015-30-0902			35	1.35	1.42	2.320	75	3.89	8.51	31.66	33.83	37.19				
EP457	EPDRP-2020-30-0902	2	30	0.9	2.809	70	4.24	9.30	31.69	33.84	37.22						
EP458	EPDRP-2020-30-0905		0.5	0.9	2.809	70	4.24	9.30	31.66	33.82	37.13						
EP459	EPDRP-2020-40-0902		0.2	1.7	1.92	3.123	80	4.24	9.30	41.80	44.66	x					
EP460	EPDRP-2020-40-0905		0.5	1.7	1.92	3.123	80	4.24	9.30	41.77	44.60	x					
EP461	EPDRP-2020-50-0902		0.2	1.7	1.92	3.438	90	4.24	9.30	51.90	55.74	x					
EP462	EPDRP-2020-50-0905		0.5	1.7	1.92	3.438	90	4.24	9.30	51.87	55.68	x					
EP463	EPDRP-2030-40-0902		0.2	2.5	2.86	4.038	80	6.95	15.40	42.04	x	x					
EP464	EPDRP-2030-40-0905		0.5	2.5	2.86	4.038	80	6.95	15.02	42.01	x	x					
EP465	EPDRP-2030-50-0902		0.2	2.5	2.86	4.352	90	6.95	15.40	52.13	x	x					
EP466	EPDRP-2030-50-0905		0.5	2.5	2.86	4.352	90	6.95	15.02	52.10	x	x					
EP467	EPDRP-2030-60-0902	0.2	2.5	2.86	4.667	100	6.95	15.40	62.21	x	x						
EP468	EPDRP-2030-60-0905	0.5	2.5	2.86	4.667	100	6.95	15.02	62.19	x	x						



**EPDRP** | Epoch Deep Radius Pencil Neck

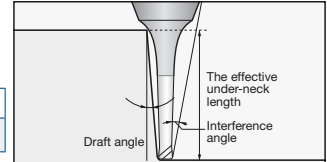
<b>V max</b> High Speed	<b>▽▽▽</b> Finishing	<b>HRC</b> 69	<b>Rib. Miniature</b>	<b>No. of Teeth</b> 2
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※ Back Draft is not available for Diameters 4–6mm

<b>Carbide</b> Micro Grain	<b>TH45+</b> Nano-PVD Coating	<b>Rake Angle</b> Negative
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Helix Angle	R Tol. [mm]	D Tol. [mm]	d Tol.
<b>30°</b>	<b>+/- 0.005</b>	<b>0/-0.015</b>	<b>h5</b>



Size													Actual Effective Length in Incline angles															
ID Code	Item Code	Z	D	CR	I <sub>n</sub>	Neck angle θ	l	dn	dn <sub>1</sub>	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	5.74	6.37												
EP439	EPDRP-2004-5-0901		0.5		5		0.3	0.518	1.25				2.69	5.92	6.87	7.55												
EP440	EPDRP-2005-5-0901				8		0.35	0.47	0.710				1.30	2.81	5.93	6.88	7.55											
EP441	EPDRP-2005-8-0901		10	0.35	0.47		0.710	1.30	2.81				9.00	10.21	11.02													
EP442	EPDRP-2005-10-0901		12	0.4	0.57		0.934	1.30	2.81				11.04	12.40	13.28													
EP443	EPDRP-2006-12-0901		15	0.4	0.57		1.029	1.35	2.92				13.08	14.57	15.52													
EP444	EPDRP-2006-15-0901		0.6	6	0.5		0.847	1.35	2.92				16.14	17.81	18.84													
EP445	EPDRP-2008-6-0402			12	0.4		0.5	0.77	1.35				2.92	7.16	7.82	8.34												
EP446	EPDRP-2008-12-0902		8	0.4	0.5		0.77	1.45	3.02				13.08	14.57	15.51													
EP447	EPDRP-2010-8-0402		10	0.4	0.5	0.77	1.041	5.09	8.87	9.39	10.11	10.66																
EP448	EPDRP-2010-10-0902		12	0.4	0.5	0.77	1.229	2.70	5.84	11.24	12.48	13.34																
EP449	EPDRP-2010-15-0902		15	1	0.2	0.9	0.8	0.94	1.543	10	60	6	8	2.70	5.84	16.32	17.88	18.88										
EP450	EPDRP-2010-20-0902		20											2.70	5.84	21.39	23.21	24.78										
EP451	EPDRP-2010-25-0902		25											2.70	5.84	26.46	28.51	30.93										
EP452	EPDRP-2010-30-0902		30											2.70	5.84	31.53	33.78	37.07										
EP453	EPDRP-2010-35-0902		35											2.70	5.84	36.59	39.03	43.22										
EP454	EPDRP-2015-15-0902		15											1.5	0.2	0.9	1.35	1.42	2.163	7	75	6	9	3.89	8.51	16.47	17.95	18.93
EP455	EPDRP-2015-25-0902		25																					3.89	8.51	26.60	28.57	31.04
EP456	EPDRP-2015-30-0902		30																					3.89	8.51	31.66	33.83	37.19
EP457	EPDRP-2020-30-0902	30	4.24																					9.30	31.69	33.84	37.22	
EP458	EPDRP-2020-30-0905	0.5	4.24																					8.93	31.66	33.82	37.13	
EP459	EPDRP-2020-40-0902	0.2	4.24	9.30	41.80	44.66	x																					
EP460	EPDRP-2020-40-0905	0.5	4.24	8.93	41.77	44.60	x																					
EP461	EPDRP-2020-50-0902	0.2	4.24	9.30	51.90	55.74	x																					
EP462	EPDRP-2020-50-0905	0.5	4.24	8.93	51.87	55.68	x																					
EP463	EPDRP-2030-40-0902	0.2	6.95	15.40	42.04	x	x																					
EP464	EPDRP-2030-40-0905	0.5	6.95	15.02	42.01	x	x																					
EP465	EPDRP-2030-50-0902	0.2	6.95	15.40	52.13	x	x																					
EP466	EPDRP-2030-50-0905	0.5	6.95	15.02	52.10	x	x																					
EP467	EPDRP-2030-60-0902	0.2	6.95	15.40	62.21	x	x																					
EP468	EPDRP-2030-60-0905	0.5	6.95	15.02	62.19	x	x																					