

Advanced Engineering

micro**EndMill** **PN** Coating

MMC Hitachi Tool

No. 443.2

EPHPB/EPHPR-PN

Epoch High Precision Ball/Radius PaNacea

For Tool Steels and Hardened Steels up to 55HRC
Micro Grain Solid Carbide End Mill

EPHPR-PN

- Radius type
- Diameter : 0.2mm-4mm
- L/D : max. 12xD
(D1 l_n = 12mm)
- Total : 47 items
- Tolerance CR: +/- 0.003mm

In total **101 Items**

EPHPB-PN

- Ball nose type
- Diameter : 0.1mm-4mm
- L/D : max. 13xD
(D1 l_n = 13mm)
- Total : 54 items
- Tolerance R : +/- 0.003mm

MICRO EndMill
Micro Grain Carbide End Mills · Nano PVD Coated

μm

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



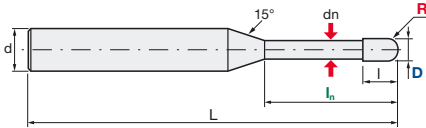
Ultra Micro Grain Solid Carbide End Mill

EPHPB-PN | Epoch High Precision Ball PaNacea

HPC High Precision
Micro Grain
PA Nacea Coating
Rake Angle Positive
HRC 55
No. of Teeth 2

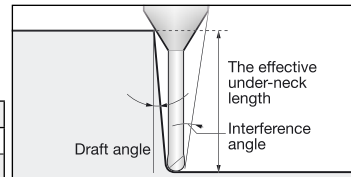


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Carbide	PN	Rake Angle
Micro Grain	PaNacea Coating	Positive

Helix angle	30°
R	± 0.003 mm
d	h4



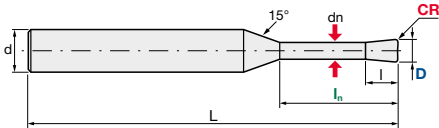
Size											Actual Effective Length in Incline angles				
ID Code	Item Code	Z	D	R	In	l	dn	L _s	L	d	0.5°	1°	1.5°	2°	3°
EP1462	EPHPB-2001-0.2-PN	2	0.1	0.05	0.2	0.08	0.08	33.8	45		0.24	0.25	0.25	0.26	0.28
EP1463	EPHPB-2001-0.3-PN				0.3						0.34	0.35	0.36	0.38	0.40
EP1464	EPHPB-2001-0.5-PN				0.5						0.55	0.57	0.59	0.61	0.65
EP1465	EPHPB-2002-0.5-PN		0.2	0.1	0.5	0.15	0.17	38.1			0.57	0.58	0.60	0.62	0.66
EP1466	EPHPB-2002-1-PN				1						1.08	1.12	1.15	1.19	1.28
EP1467	EPHPB-2002-1.5-PN				1.5						1.60	1.65	1.71	1.77	1.91
EP1468	EPHPB-2003-0.5-PN		0.3	0.15	0.5	0.25	0.27	38.8			0.56	0.58	0.60	0.61	0.65
EP1469	EPHPB-2003-1-PN				1						1.08	1.11	1.15	1.19	1.27
EP1470	EPHPB-2004-1-PN				1						1.08	1.11	1.14	1.18	1.26
EP1471	EPHPB-2004-2-PN		0.4	0.2	2	0.3	0.37	37.5			2.11	2.18	2.25	2.33	2.50
EP1472	EPHPB-2004-3-PN				3						3.15	3.25	3.36	3.48	3.75
EP1473	EPHPB-2005-1-PN				1						1.08	1.11	1.14	1.17	1.25
EP1474	EPHPB-2005-2-PN	0.5	0.25	2	0.35	0.47	36.7	2.11	2.18	2.25	2.32	2.49			
EP1475	EPHPB-2005-3-PN			3				3.15	3.25	3.36	3.47	3.73			
EP1476	EPHPB-2005-4-PN			4				4.18	4.32	4.46	4.62	4.98			
EP1477	EPHPB-2005-6-PN			6				6.25	6.46	6.68	6.92	7.46			
EP1478	EPHPB-2006-2-PN			2				2.11	2.17	2.24	2.31	2.48			
EP1479	EPHPB-2006-3-PN	0.6	0.3	3	0.4	0.57	36.9	3.14	3.24	3.35	3.46	3.72			
EP1480	EPHPB-2006-4-PN			4				4.18	4.31	4.46	4.61	4.97			
EP1481	EPHPB-2006-6-PN			6				6.24	6.45	6.67	6.91	7.45			
EP1482	EPHPB-2006-8-PN			8				8.31	8.59	8.89	9.21	9.94			
EP1483	EPHPB-2008-2-PN			2				2.11	2.17	2.23	2.30	2.46			
EP1484	EPHPB-2008-4-PN	0.8	0.4	4	0.5	0.77	36.2	4.17	4.31	4.45	4.60	4.94			
EP1485	EPHPB-2008-6-PN			6				6.24	6.45	6.66	6.90	7.43			
EP1486	EPHPB-2008-8-PN			8				8.31	8.58	8.88	9.20	9.92			
EP1487	EPHPB-2008-10-PN			10				10.38	10.72	11.10	11.50	12.40			
EP1488	EPHPB-2010-2-PN			2				2.12	2.18	2.24	2.31	2.46			
EP1489	EPHPB-2010-4-PN	1	0.5	4	0.8	0.96	36.6	4.19	4.32	4.46	4.61	4.94			
EP1490	EPHPB-2010-6-PN			6				6.26	6.46	6.67	6.91	7.43			
EP1491	EPHPB-2010-8-PN			8				8.32	8.60	8.89	9.21	9.91			
EP1492	EPHPB-2010-10-PN			10				10.39	10.74	11.11	11.51	12.40			
EP1493	EPHPB-2010-12-PN			12				12.46	12.88	13.32	13.81	14.89			
EP1494	EPHPB-2015-4-PN	1.5	0.75	4	1.35	1.45	37.5	4.20	4.32	4.45	4.59	4.91			
EP1495	EPHPB-2015-8-PN			8				8.34	8.60	8.88	9.19	9.88			
EP1496	EPHPB-2015-12-PN			12				12.47	12.88	13.32	13.79	14.85			
EP1497	EPHPB-2015-16-PN			16				16.60	17.16	17.75	18.39	19.82			
EP1498	EPHPB-2015-20-PN			20				20.74	21.44	22.18	22.99	24.80			
EP1499	EPHPB-2020-4-PN	2	1	4	1.7	1.95	38.4	4.19	4.30	4.42	4.55	4.85			
EP1500	EPHPB-2020-6-PN			6				6.26	6.44	6.64	6.85	7.33			
EP1501	EPHPB-2020-8-PN			8				8.33	8.58	8.86	9.15	9.82			
EP1502	EPHPB-2020-10-PN			10				10.39	10.72	11.07	11.45	12.31			
EP1503	EPHPB-2020-12-PN			12				12.46	12.86	13.29	13.75	14.79			
EP1504	EPHPB-2020-16-PN	1.5	0.75	16	1.35	1.45	31.4	16.60	17.14	17.72	18.35	19.76			
EP1505	EPHPB-2020-20-PN			20				20.73	21.42	22.16	22.95	24.74			
EP1506	EPHPB-2020-25-PN			25				25.90	26.77	27.70	28.70	30.95			
EP1507	EPHPB-2030-8-PN	3	1.5	8	2.5	2.9	41.2	8.41	8.65	8.91	9.19	9.82			
EP1508	EPHPB-2030-12-PN			12				12.54	12.93	13.34	13.79	14.79			
EP1509	EPHPB-2030-16-PN			16				16.68	17.21	17.77	18.39	19.76			
EP1510	EPHPB-2030-20-PN			20				20.81	21.48	22.21	22.99	24.73			
EP1511	EPHPB-2030-25-PN			25				25.98	26.83	27.75	28.74	-			
EP1512	EPHPB-2040-10-PN	4	2	10	3	3.9	55	10.46	10.75	11.07	11.41	12.18			
EP1513	EPHPB-2040-20-PN			20				20.79	21.45	22.15	22.91	-			
EP1514	EPHPB-2040-30-PN			30				31.13	32.15	33.24	-	-			
EP1515	EPHPB-2040-40-PN			40				41.47	42.84	-	-	-			

Ultra Micro Grain Solid Carbide End Mill

EPHPR-PN | Epoch High Precision Radius PaNacea

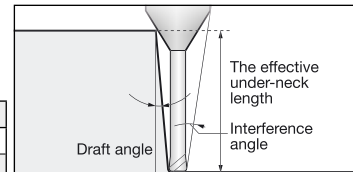


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Carbide	PN	Rake Angle
Micro Grain	PaNacea Coating	Positive

Helix angle	30°
CR	± 0.003 mm
d	h4



Size		Z	D	CR	In	l	dn	L _s	L	d
EP1516	EPHPR-2002-0.5-005-PN	2	0.2	0.05	0.5	0.15	0.17	38.6	50	6
EP1517	EPHPR-2002-1-005-PN				1			38.1		
EP1518	EPHPR-2003-1-005-PN		0.3		0.25	0.27	38.3			
EP1519	EPHPR-2003-2-005-PN						2	37.3		
EP1520	EPHPR-2004-1-01-PN		0.4		0.3	0.37	38.5			
EP1521	EPHPR-2004-2-01-PN						2	37.5		
EP1522	EPHPR-2005-1-01-PN		0.5	0.35	0.47	38.7				
EP1523	EPHPR-2005-2-01-PN					2	37.7			
EP1524	EPHPR-2005-3-01-PN					3	36.7			
EP1525	EPHPR-2006-2-01-PN		0.6	0.4	0.57	37.9				
EP1526	EPHPR-2006-4-01-PN					4	35.9			
EP1527	EPHPR-2006-6-01-PN					6	33.9			
EP1528	EPHPR-2008-2-01-PN		0.8	0.5	0.77	38.2				
EP1529	EPHPR-2008-4-01-PN					4	36.2			
EP1530	EPHPR-2008-6-01-PN					6	34.2			
EP1531	EPHPR-2010-2-02-PN		1	0.8	0.95	38.6				
EP1532	EPHPR-2010-4-02-PN					4	36.6			
EP1533	EPHPR-2010-6-02-PN					6	34.6			
EP1534	EPHPR-2010-8-02-PN					8	32.6			
EP1535	EPHPR-2010-10-02-PN					10	30.6			
EP1536	EPHPR-2010-12-02-PN					12	33.6			
EP1537	EPHPR-2015-4-02-PN		1.5	1.35	1.45	37.5				
EP1538	EPHPR-2015-8-02-PN					8	33.5			
EP1539	EPHPR-2015-12-02-PN					12	34.5			
EP1540	EPHPR-2015-16-02-PN		2	1.7	1.95	30.5				
EP1541	EPHPR-2020-4-02-PN					4	38.4			
EP1542	EPHPR-2020-8-02-PN					8	34.4			
EP1543	EPHPR-2020-12-02-PN					12	35.4			
EP1544	EPHPR-2020-16-02-PN					16	31.4			
EP1545	EPHPR-2020-20-02-PN					20	32.4			
EP1546	EPHPR-2020-8-05-PN		3	2.5	2.9	34.4				
EP1547	EPHPR-2020-12-05-PN					8	35.4			
EP1548	EPHPR-2020-16-05-PN	12				31.4				
EP1549	EPHPR-2020-20-05-PN	16				32.4				
EP1550	EPHPR-2030-8-02-PN	8				41.2				
EP1551	EPHPR-2030-12-02-PN	12				42.2				
EP1552	EPHPR-2030-16-02-PN	0.2	2.5	2.9	38.2					
EP1553	EPHPR-2030-20-02-PN				16	39.2				
EP1554	EPHPR-2030-30-02-PN				20	39.2				
EP1555	EPHPR-2030-8-05-PN	0.5	3.5	3.8	41.2					
EP1556	EPHPR-2030-12-05-PN				8	41.2				
EP1557	EPHPR-2030-16-05-PN				12	42.2				
EP1558	EPHPR-2030-20-05-PN				16	38.2				
EP1559	EPHPR-2030-30-05-PN				20	39.2				
EP1560	EPHPR-2040-12-05-PN				4	3.5	3.8	39.2		
EP1561	EPHPR-2040-24-05-PN	24	43.9							
EP1562	EPHPR-2040-36-05-PN	36	41.9							

Actual Effective Length in Incline angles					
0.5°	1°	1.5°	2°	3°	
0.57	0.59	0.61	0.63	0.67	
1.08	1.12	1.16	1.20	1.30	
1.08	1.12	1.16	1.20	1.30	
2.12	2.19	2.27	2.35	2.54	
1.08	1.12	1.15	1.19	1.28	
2.12	2.19	2.26	2.34	2.53	
1.08	1.12	1.15	1.19	1.28	
2.12	2.19	2.26	2.34	2.53	
3.15	3.26	3.37	3.49	3.77	
2.12	2.19	2.26	2.34	2.53	
4.18	4.33	4.48	4.64	5.01	
6.25	6.47	6.70	6.94	7.50	
2.12	2.19	2.26	2.34	2.53	
4.18	4.33	4.48	4.64	5.01	
6.25	6.47	6.70	6.94	7.50	
2.15	2.22	2.29	2.37	2.55	
4.22	4.36	4.51	4.67	5.04	
6.29	6.50	6.73	6.97	7.52	
8.35	8.64	8.94	9.27	10.01	
10.42	10.78	11.16	11.57	12.50	
12.49	12.92	13.38	13.87	14.98	
4.22	4.36	4.51	4.67	5.04	
8.35	8.64	8.94	9.27	10.01	
12.49	12.92	13.38	13.87	14.98	
16.62	17.20	17.81	18.47	19.95	
4.22	4.36	4.51	4.67	5.04	
8.35	8.64	8.94	9.27	10.01	
12.49	12.92	13.38	13.87	14.98	
16.62	17.20	17.81	18.47	19.95	
20.76	21.47	22.24	23.07	24.93	
8.34	8.62	8.91	9.23	9.94	
12.48	12.90	13.34	13.83	14.91	
16.61	17.18	17.78	18.43	19.88	
20.75	21.45	22.21	23.03	24.86	
8.45	8.74	9.05	9.38	10.12	
12.59	13.02	13.48	13.98	15.10	
16.72	17.30	17.91	18.58	20.07	
20.85	21.57	22.35	23.18	25.04	
31.19	32.27	33.43	34.68	-	
8.44	8.72	9.01	9.33	10.05	
12.58	13.00	13.45	13.93	15.03	
16.71	17.27	17.88	18.53	20.00	
20.84	21.55	22.31	23.13	24.97	
31.18	32.25	33.40	34.63	-	
12.77	13.20	13.65	14.15	15.26	
25.17	26.03	26.95	27.95	-	
37.58	38.87	-	-	-	

Always up to date: Please check our P50 QuickFinder



Product Range

Solid Carbide End Mills



Indexable Milling Tools



WHNSB Drills



Milling Chucks



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