



VP2003

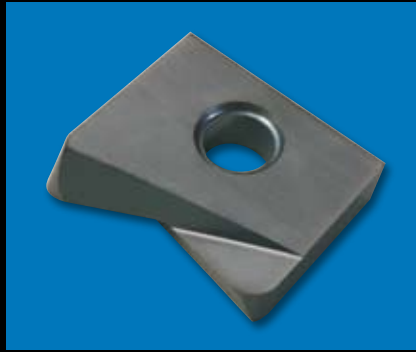
Milling grade
submicrograin

Safety

Grade VP2003



➤ PPH Insert



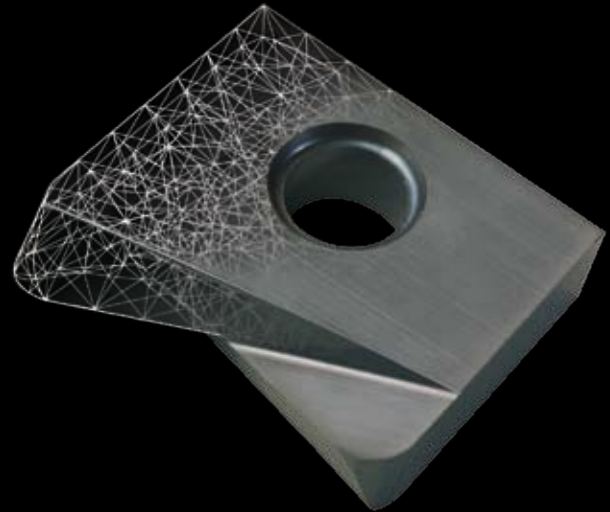
➤ PPHT Insert



➤ TORO-SAF Insert

Submicrograin milling grade

- Grade VP2003 is a high performance grade specifically designed for the mould industry. It covers both semi-finishing and finishing applications for hardened steels and cast iron.
- Combined with a highly heat-resistant AlTiN-based coating, its high-tech substrate can also cover the machining of composite materials for which it complements PCD grades.



High-performance grade specifically designed for the mould industry

■ **Microstructure of grade VP 2003:**



Coating: AlTiN

Single-layer PVD coating 4 microns thick. High impact resistance combined with a higher thermal barrier than other grades.

Substrate:

Consisting of sintered carbide grains of very homogeneous size (less than one micron).
Binder: Cobalt (7 %).
Hardness: 2000 Hv.

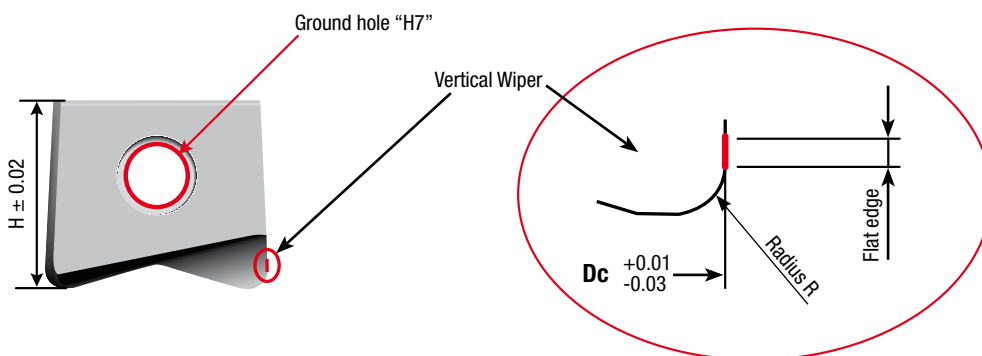
■ **Cutting data:**

➤ **Cutting speed depending on the material hardness**

MPa	1000	1090	1280	1480	1780	1870	2060	2420	2570	2890
HB	300	330	370	430	495	520	560	-	-	-
HRC	31	35	40	45	50	52	55	60	62	65

Material	a_p, a_e (mm)	Cutting speed on D eff. in material (m/min)										
P Annealed steels (300 - 375 HB)	0.1D	280	→		220	-	-	-	-	-	-	
K Cast iron	0.10D	-	240	→					130	-	-	-
H Hardened steels (45 - 55 HRC)	0.05D	-	-	-	200	→			150	-	-	-
H Hardened steels (55 - 65 HRC)	0.02D	-	-	-	-	-	-	-	135	→		60

■ **PPHT/A2 inserts with wiper edge:**



➤ **Value of flat edge depending on radius**

R (in mm)	0.3	0.4/0.5	0.8	1/1.3	1.5/1.6/2	3	4	5
Flat edge ± 0.1 (in mm)	0.15	0.2	0.3	0.5	0.8	1	1.2	1.5

■ Program:

➤ PPH inserts (2-insert package)

Product code	Stock
PPH-0600-CL1 2003	✓
PPH-0800-CL1 2003	✓
PPH-1000-CL1 2003	✓
PPH-1200-CL1 2003	✓
PPH-1400-CL1 2003	☐
PPH-1600-CL1 2003	✓
PPH-2000-CL1 2003	✓
PPH-2500 CL1 2003	✓
PPH-3000-CL1 2003	☐
PPH-3200-CL1 2003	✓
PPH-4000-CL1 2003	☐

➤ TORO-SAF inserts

Product code	Stock	Replaces
RDHW 05 01 MO EN-91 2003	✓	-
RDHW 07 T1 MO EN-91 2003	✓	-
RDHW 07 02 MO EN-91 2003	✓	-
RDHW 08 T2 MO EN-91 2003	✓	-
RDMW 10 03 MO SN-F6 2003	✓	RDMW 1003 MO SN-F6 5005
RDHW 10 03 MO EN-F6-91 2003	✓	-
RDMW 12 T3 MO SN-F6 2003	✓	RDMW 12T3 MO SN-F6 5005
RDHW 12 T3 MO EN-F6-91 2003	✓	-
RDMW 16 04 MO SN-F6 2003	✓	-

➤ PPHT inserts (2-insert package)

Product code	Stock	Replaces
PPHT-0800-03/A2 2003	☐	PPHT-0800-03/A1 KL05
PPHT-0800-04/A2 2003	☐	PPHT-0800-04/A1 KL05
PPHT-0800-05/A2 2003	✓	PPHT-0800-05/A1 KL05
PPHT-0800-10/A2 2003	✓	New
PPHT-1000-05/A2 2003	✓	New
PPHT-1000-08/A2 2003	✓	PPHT-1000-08/A1 KL05
PPHT-1000-10/A2 2003	✓	New
PPHT-1000-15/A2 2003	☐	PPHT-1000-15/A1 KL05
PPHT-1200-05/A2 2003	✓	New
PPHT-1200-10/A2 2003	✓	PPHT-1200-10/A1 KL05
PPHT-1200-15/A2 2003	✓	PPHT-1200-15/A1 KL05
PPHT-1200-20/A2 2003	✓	PPHT-1200-20/A1 KL05
PPHT-1600-10/A2 2003	✓	PPHT-1600-10/A1 KL05
PPHT-1600-13/A2 2003	✓	PPHT-1600-13/A1 KL05
PPHT-1600-20/A2 2003	✓	PPHT-1600-20/A1 KL05
PPHT-1600-30/A2 2003	✓	PPHT-1600-30/A1 KL05
PPHT-2000-10/A2 2003	☐	PPHT-2000-10/A1 KL05
PPHT-2000-16/A2 2003	✓	PPHT-2000-16/A1 KL05
PPHT-2000-30/A2 2003	✓	New
PPHT-2000-40/A2 2003	✓	PPHT-2000-40/A1 KL05
PPHT-2500-20/A2 2003	☐	PPHT-2500-20/A1 KL05

✓: Standard held in stock

☐: Standard not held in stock

SAFETY SAS

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