palbit
CUTTING TOOLS SOLUTIONS

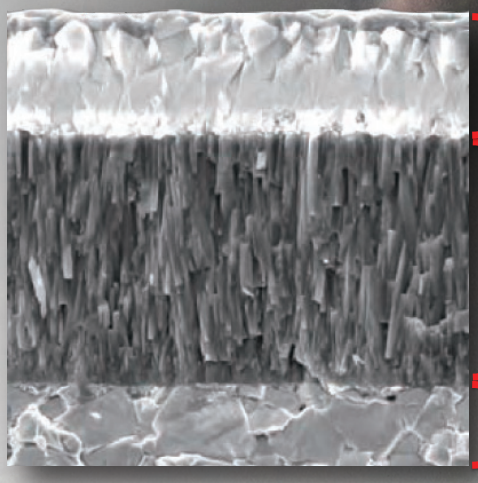
New PalTech Grades

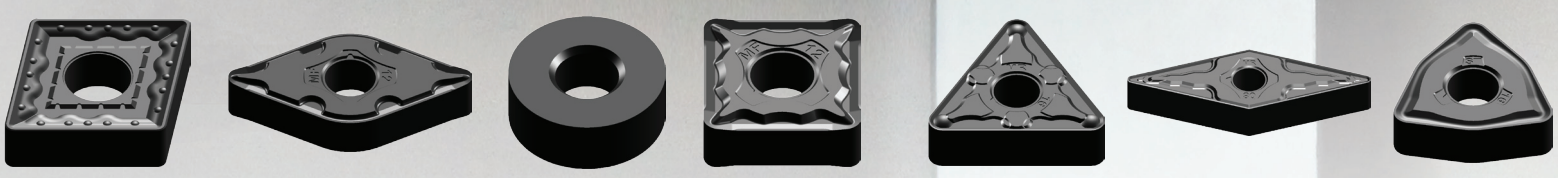
PH5... series

New grades for efficient turning of steels and cast irons.

- *Higher cutting speeds*
- *Longer tool life and a wide application range*

Special designed substrates combined with a fibrous nano structured super smooth coating of Ti(C,N) and controlled crystal growth Al_2O_3 that provides a superior fracture and wear resistance.





New PH5... series

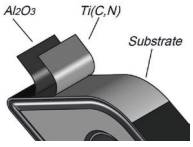
New Medium Temperature CVD technology grades for efficient turning of steels and cast irons.

palbit® CUTTING TOOLS SOLUTIONS

Grades Description

PH5115

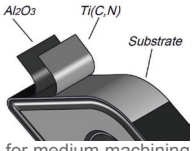
(P01-P30)
(K10-K25)



Medium temperature CVD coating with α-Al_2O_3. Carbide grade with a gradient layer close to the surface. Suitable for medium to high cutting speeds on steels, cast steels & cast irons.

PH5125

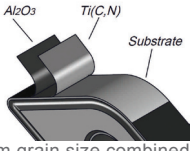
(P10-P35)



Carbide grade suitable for medium machining of steels & cast steels at medium cutting speeds. The substrate is suitable for the adhesion of the Alumina coating (α-Al_2O_3) medium temperature - CVD, improving the tool life.

PH5740

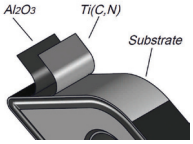
(P25-P45)
(K20-K40)



Substrate with medium grain size combined with a medium temperature CVD coating. Suitable for roughing to heavy roughing operations with interrupted cuts at low to medium cutting speeds.

PH5705

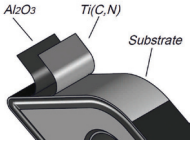
(K05-K15)



Substrate grade with a very good wear resistance combined with the MT-CVD coating allow to work at medium to high cutting speeds at stable conditions. Recommended for turning of grey cast irons (GCI) or hardened steels.

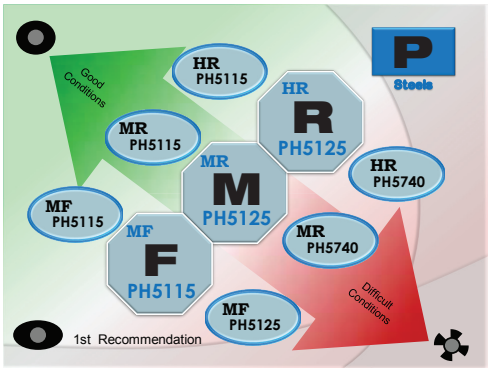
PH5320

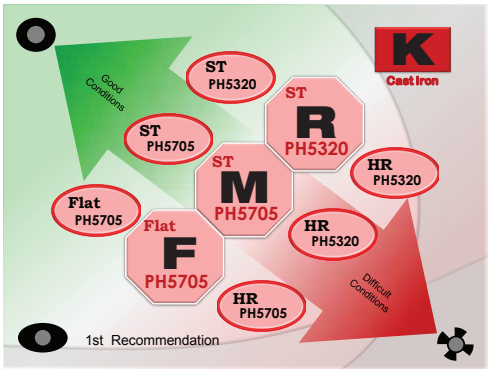
(K10-K25)



Medium temperature CVD coating (α-Al_2O_3) combined with a hard substrate make it capable of withstanding interrupted conditions. Recommended as general choice for roughing of all cast irons at low to medium cutting speeds.

Recommended Cutting Conditions & Aplication Range





Cutting conditions

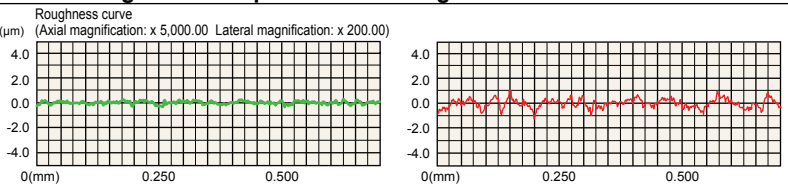
Stable cutting	• Continuous cutting • Constant depth of cutting
General cutting	
Unstable cutting	• Interrupted cutting • Irregular depth of cutting

Cutting area

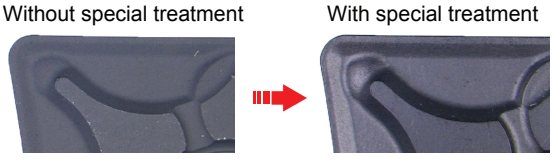
F	Finishing Operations	(a_p ≤ 1,5mm)
M	Medium Operations	(a_p = 1,5—5,0mm)
R	Heavy Operations	(a_p ≥ 5,0mm)

Surface Roughness & Special Treatment

Surface roughness comparison of coatings



Advantage of the special surface treatment



Cutting Speed (m/min)

ISO	MATERIAL	HB (Brinell)	MT-CVD Coating ← Wear Resistance — Toughness →														
		Grade	PH5115			PH5125			PH5740			PH5705			PH5320		
		fn (mm/rot)	0.2	0.4	0.8	0.2	0.4	0.8	0.2	0.4	0.8	0.2	0.4	0.8	0.2	0.4	0.8
P	Unalloyed steel	125-220	250-350	180-270	170-200	200-295	170-240	150-200	180-270	150-220	130-180	-	-	-	-	-	-
	Low-alloyed steel	220-280	190-250	170-230	140-180	170-230	140-210	120-190	150-210	120-190	100-170	-	-	-	-	-	-
	High-alloy steel	280-380	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			0.2	0.4	0.6	0.2	0.4	0.6	0.2	0.4	0.6	0.2	0.4	0.6	0.2	0.4	0.6
K	Malleable cast iron	130-230	120-240	100-190	80-175	-	-	-	110-200	100-185	80-170	160-330	140-250	120-185	150-300	130-210	110-180
	Grey cast iron	180-245	170-250	140-200	120-185	-	-	-	150-200	140-190	110-180	220-350	190-280	150-260	200-300	170-250	150-200
	Nodular cast iron	160-250	110-200	95-180	80-175	-	-	-	110-190	95-175	80-160	150-250	135-215	120-190	140-220	125-200	110-180