Primus Coating

HP Dura

www.primuscoating.com

HP Dura

Suitable in a wide range of materials and machining application

HP Dura has excellent lubricity and wear resistance to suit a wide range of milling applications. Ideal for machining steels and non-ferrous materials up to 50 HRC.

Composition	Color	Structure	Hardness (GPa)	Thickness (μm)	Oxidation Temperature (°C)	Coefficient of Friction	Surface Roughness (Ra)	Properties	Application
AlCr Based	Dark Grey	Multilayer	38 GPa	2 ~ 3 μm*	1,100°C	0.33	0.10 ~0.25	High temperature oxidation resistance. Good for machining high hardness materials.	High efficiency milling, high speed machining for gear generation, dry/wet machining.

* Thickness for rotative cutting tools. For other types of tools where the thickness is different, please consult our sales department or sales@primuscoating.com

P	H				M	K	N			S			-
Carbon Steel Alloy Steel Pre-Hardened Steel Tool Steel	Pre-Hardened Steel Hardened Steel				Stainless Steel	Cast Iron Ductile Cast Iron	Copper Alloy	Aluminum Alloy	Plastic	Titanium Alloy	Heat Resistant Alloys	Inconel®	Graphite
~40 HRC	~45 HRC	~55 HRC	~60 HRC	~65 HRC	~35 HRC	~350 HB							
◎	◎	○			◎	◎		○		○	○		

◎ Excelent ○ Good

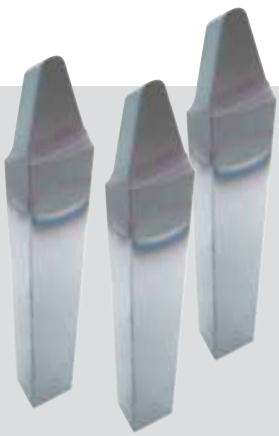
Wear and damage after milling 84m linear

HP Dura

TiAlN coating

The wear pattern differs from conventional coating. When cutting carbon steel and alloyed steel the cutting edge wear with **HP Dura** coating is very minimal, resulting in superior wear resistance!

HP Dura is ideal for dry cutting in gear generation processes



Test Data

Hob Cutter: Cutting SCM420

Test 1

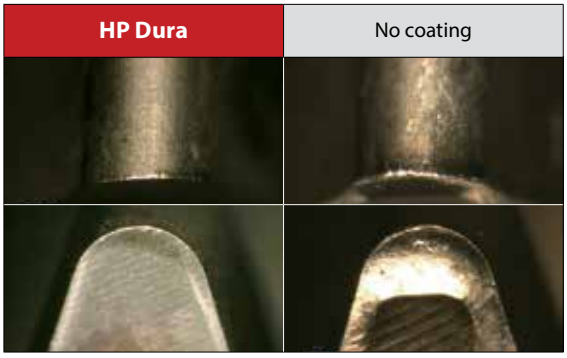
Tool	**Hob Cutter m6×PA20°PSP RH-1**
Coolant	**Water soluble**

Process	Cutting data	TiN	HP Dura	Efficiency
Roughing	**Cutting Speed (m/min)**	100	130	**130%**
	Feed (mm/rev)	2	2	
Finishing	**Cutting Speed (m/min)**	200	250	**125%**
	Feed (mm/rev)	3.5	3.5	

Test 2

Tool	**Hob Cutter m2.5×PA20°**

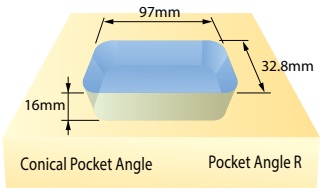
Wear after milling 108 pieces

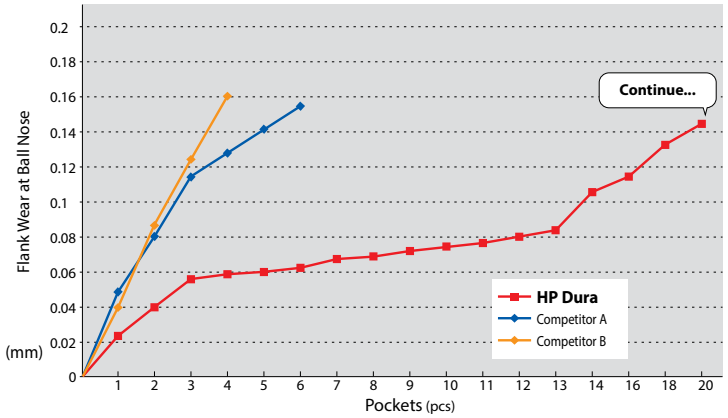


Provides three times longer life in wet and dry machining

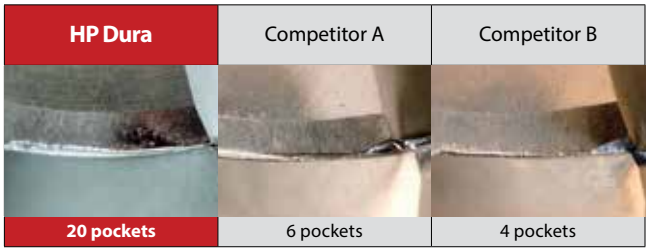
Dry milling

Tool	**Ball nose endmill R5×18**
Work Material	**S50C**
Cutting Speed	**200m/min (6,366min^{-1})**
Feed	**1,604mm/min (0.126mm/t)**
Milling Process	**Pocket milling**
Depth Cut	**a_p = 1mm P_f = 2mm**
Length	**4D**
Coolant	**Air blow**
Machine	**Vertical machining center**



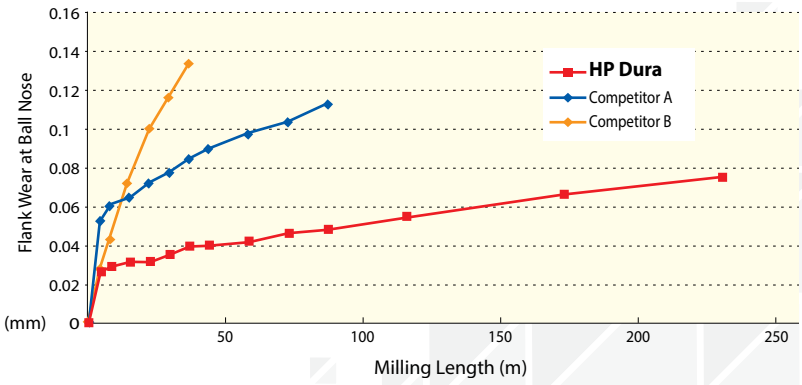


After pocket milling

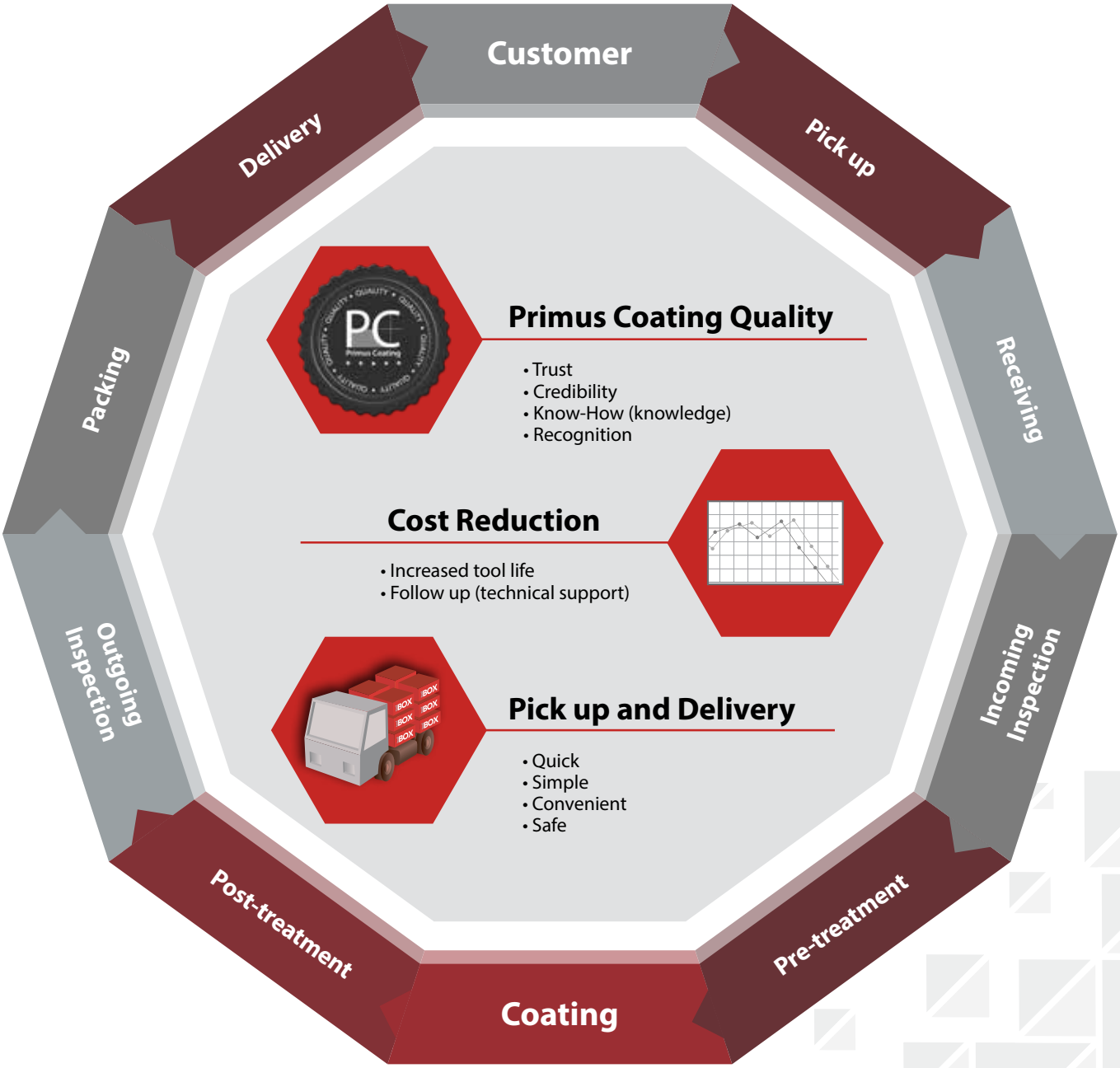


Coolant milling

Tool	**Ball nose endmill R5×18**
Work Material	**S50C**
Cutting Speed	**199.7m/min (10,600min^{-1})**
Feed	**2,570mm/min (0.121mm/t)**
Milling Process	**Profile milling**
Depth Cut	**a_p = 0.3mm P_f = 0.6mm**
Coolant	**Water soluble (emulsion)**
Machine	**Vertical machining center**



Primus Coating´s Business Excellence



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