

HIGH PERFORMANCE COATING EQUIPMENT

Multipurpose PVD Hard Coating Systems for Tooling Technologies

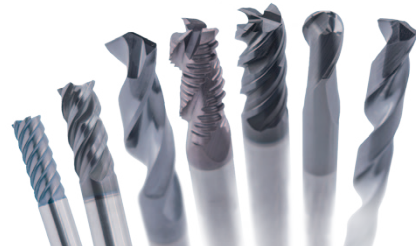
HIGH PERFORMANCE COATINGS



	MpC 500	MpC 600	MpC 1000	MpC 1500	MpC 2500
Usefull volume	Ø 350 x 500 mm	Ø 450 x 500 mm	Ø 650 x 500 mm	Ø 650 x 1140 mm	Ø 900 x 1140 mm
Load	150 kg	400 kg	1000 kg	1500 kg	3000 kg
QTY / batch End Mills Ø 10 x 70	360	576	864	1782	2376
Cycle time	3,5 h	3,5 h	4,5 h	6 h	7 h
# of sources*	1 to 3	2 or 4	4	6	6-8
Technology					
ARC	✓	✓	✓	✓	✓
ARC / Sputter hybrid		✓	✓		
Duplex (PN + Hard coating)	✓	✓	✓	✓	✓
Sputter	✓	✓	✓		

*depending on coating type and configuration

Coating Portfolio



		Main Properties	Micro Hardness HV 0,025	Friction Coeff	Max Service Temp. °C	Color
TiN	TiN	tough & multi purpose	2300	0,5	600	gold light
	TiN HP	higher toughness & hardness	2700	0,5	750	brown
TiCN	TiCN G	very hard & tough	3400	0,3	450	grey
	TiCN P	hard & very tough	3100	0,3	450	pink
	MpC C-Form	hard & lubricant	3100	0,17	450	anthracite
ZrN	ZrN	low sticking & chemical inert	2400	0,4	600	light yellow
	ZrCN	incr. hardness, low sticking & inert	2600	0,4	600	light brown
CrN	CrN	tough & chemical inert	2000	0,3	0,4	metal silver
AlTiN	ALTiN nano	oxidation resistant & hot hardness	3200	0,5	900	violet grey
	AlTiCN	low sticking	3200	0,5	800	dark grey
	GearCut	against crater wear	3200	0,5	900	dark grey
AlCrN based AlTiCrN	MpC+4	shock resistant & tough	3300	0,5	1000	anthracite
	MpC+4 G	lower thermal conductivity	3300	0,5	1100	grey
AlTiSiN	HardMill Plus	lowest thermal conductivity, hot hardness & oxidation resistant	3800	0,5	> 1100	green
	HardMill Micro		3800	0,4	> 1100	brown
	HardDrill		3800	0,5	> 1100	dark brown
	HardGearCut		3800	0,5	> 1100	brown
Nanocomposite Micro Alloyed	Micral 5	thermal stable, against cold welding	3300	0,5	1100	purple
	Micral 5 micro	thermal stable, against cold welding	3300	0,5	1100	dark grey
	Micral Cast	high oxidation resistant & low thermal conductivity	3800	0,5	> 1100	dark brown
	Micral Titan Plus	very tough & heat resistant	3500	0,5	1100	blue
ta-C	Ta:C	high wear resistance, very low friction, chemical inert	> 5500	0,1	500	rainbow <-> grey