



Tools Lasting Longer.



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PVD COATING SERVICE

AlTiN - Aluminum Titanium Nitride

TiN - Titanium Nitride

TiCN - Titanium Carbonitride

ZrN - Zirconium Nitride

CrN - Chromium Nitride

TiAlN - Titanium Aluminum Nitride

AlCrN - Aluminum Chromium Nitride

AlTiCrN - Aluminum Titanium Chromium Nitride



Each coating task, each material has its own specific needs and requirements. The coating must meet these needs and requirements to be able to **add outstanding value to your tools.**

PVD coatings are commonly used to improve the life and productivity of production saving companies millions and billions of dollars through out the United States. The use of PVD coatings on cutting tools saves money in different ways.

To begin with, PVD coated tools can be run faster reducing cycle times and enabling the production of more components in less time. Fluids cost companies today a good proportion of their total production costs. High performance machining including dry machining involve extremely high temperatures at the cutting edge, PVD coatings such as AlTiN have unbelievable thermal strength, hot hardness and rust resistance as well. PVD coatings can therefore be run dry or with very limited amount of cutting fluid and save the company in the long run.

AlTiN - Aluminum Titanium Nitride
AlTiN coating is consider a high performance coating specially in carbide/HSS cutting tools, intended for high heated material as well as dry cutting applications. The coating is black-violet in color.

TiN - Titanium Nitride
This is the most universal coating in uses. TiN is outstanding for wear resistance it also reduces friction and resists rust from developing. Mainly used as a general-purpose coating, coating is gold in color.

TiCN - Titanium Carbonitride
TiCN coating was ideally made and to resist machining hard applications. For heavy-duty operations TiCN is highly recommended. The coating is reddish brown in color.

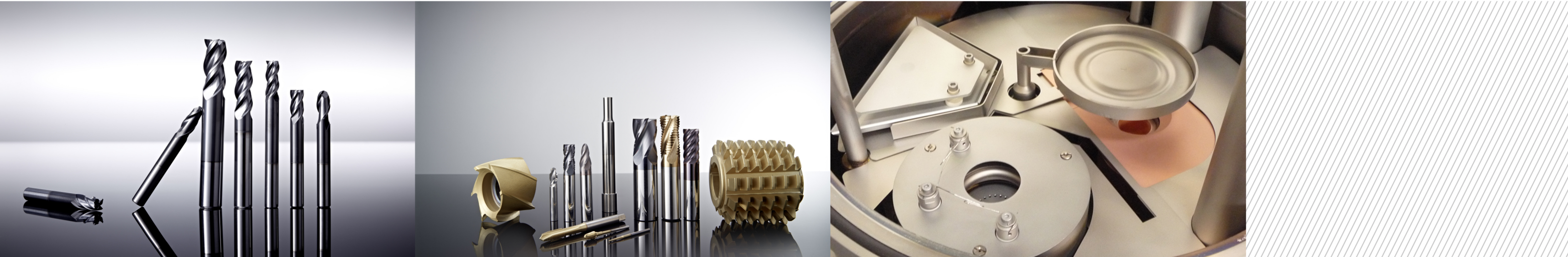
ZrN - Zirconium Nitride
Zirconium Nitride coating works well with Aluminum and non-ferrous materials, ZrN has a unique capacity to reduce the build-up edge on cutting tools. ZrN is also appropriate for machining Titanium, Alloys, Nickel, Brass, Copper, Cast Iron and Zinc.

CrN - Chromium Nitride
Chromium Nitride coating is a specialty that has the ability to undergo conditions under high loads, and its low outstanding stress enables it to have the greatest adhesion. Recommended applications are Injection Molding, Carbon Steels, Aluminum, Aluminized or Zinc Coated Steels, Brass, Copper and 300 Series Stainless Steels.

TiAlN - Titanium Aluminum Nitride
Tintanium Aluminum Nitride coating is recommended for applications where heat resistance and extra hardness is required for abrasive materials. This coating is primarily selected for carbide tooling where little to no coolant is being used. This coating is ideally made for abrasive and difficult-to-machine materials such as tool steels, and nickel alloys.

AlCrN - Aluminum Chromium Nitride
Aluminum Chromium Nitride is an outstanding and extraordinary wear resistance under extreme mechanical stress. This coating is recommended in the use of machining such as gear cutting tools, inserts, some punching and die cast.

TiAlCrN - Titanium Aluminum Chromium Nitride
Aluminum Titanium Chromium Nitride is very similar to AlCrN with an extra push, it is an excellent when comes to wear resistance under excessive mechanical stress. This coating is recommended in the use of machining such as gear cutting tools, inserts, some punching and die cast.



Properties and Applications

PVD Coating	AlTiN	TiN	TiCN	ZrN	CrN	TiAlN	AlCrN	TiAlCrN
	Aluminum Titanium Nitride	Titanium nitride	Titanium Carbonitride	Zirconium Nitride	Chromium Nitride	Titanium Aluminum Nitride	Aluminum Chromium Nitride	Titanium Aluminum Chromium Nitride
Hardness [HV]	3400	2350	3800	3900	2100	3450	3200	3100
Color								
	Violet-Black	Gold	Reddish Brown	Brass Color	Metallic Grey	Reddish-Violet	Bright Grey	Dark Grey
Technology	Arc	Arc	Arc	Arc	Arc	Arc	Arc	Arc
Friction Coefficient	0.6 ± 0.1	0.5 ± 0.1	0.2 ± 0.02	0.5 ± 0.02	0.4 ± 0.02	0.5 ± 0.02	0.3 ± 0.05	0.5 ± 0.05
Thickness (Microns)	1 - 3	2 - 4	2 - 4	1 - 4	2 - 5	1 - 4	1 - 4	1 - 4
Maximum Temp.	850°F 450°C	1000°F 530°C	750°F 400°C	1000°F 530°C	1000°F 530°C	800°F 425°C	1000°F 530°C	900°F 480°C

Re-sharpening Services

We at AC Coating offer a re-sharpening and re-coating service for cutting tools. We have the abilities to achieve the same performance as new-coated tools. Our resharpener services include the following but are not limited to:

- End Mill
- Ball Nose End Mills
- End Mills with special radius
- Drills
- Special Step Drills
- Milling Cutters
- Reamers
- Tapered Tools
- Taps