COATINGS FOR ULTIMATE PUNCH LIFE

Commitment to Superior Coatings

Coating technology can boost tooling performance to levels far beyond that of untreated tool steels. For years, Impax Tooling Solutions has been a leader in providing innovative coatings engineered to help stampers achieve higher levels of performance. We were the first and only punch manufacturer to bring coatings in-house, allowing us to control the process and shorten the lead-time.

Optima® was our first proprietary coating developed in our state-of-the-art coating facility and it has set the industry standard for many years. We have continued to expand our offerings by adding and improving coatings so we can offer you the very latest in coating solutions.

Expert Consultation

Our team of sales engineers, designers, and sales desk representatives are focused on providing solutions tailored to your specific needs. We are here to work with you to create the perfect combination of tool steel, coatings and surface finishes for your application. Whether your challenge is piercing modern high strength steels, reduced or eliminated stock lubrication, or just a high volume job, we have a solution for you.

You can rely on our many years of experience to help you select the proper coating to improve tool life and reduce downtime, and ultimately lower your costs.
**OPTIMA®**

Our most popular coating for piercing, blanking and trimming in a variety of applications.

- Increased wear resistance
- Improved surface finish
- Greater resistance to corner breakdown
- Much harder than traditional TiCN

Hardness = 3500 HV  Coefficient of Friction = 0.3

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**OPTIMAX**

A multi layer coating, with a base of Optima and a second layer of molybdenum disulfide. OptimaX works well in materials prone to galling, such as aluminum, and in applications where part lubrication has been reduced or eliminated.

- Increased wear resistance
- Improved surface finish
- Added lubricity for reduced galling
- Greater resistance to corner breakdown

Hardness = 2000 HV  Coefficient of Friction = 0.05

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**TiCrN**

A nano layer coating that is suitable for piercing and especially for high pressure forming applications.

- Very high hardness
- Low friction resulting in galling resistance

Hardness = 4000 HV  Coefficient of Friction = 0.4

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**WEARBEATER**

Our first and original PVD coating and is commonly used for piercing, blanking and forming applications in softer materials such as mild steel, galvanized, and aluminum.

- Reduced galling on galvanized and soft materials
- Increased tool life by at least 3-7 times over non-coated punches
- Increased hardness and lubricity
- Bright gold color for easier visual identification

Hardness = 2900 HV  Coefficient of Friction = 0.40
**FOR YOUR APPLICATIONS**

**AlCrN**
AlCrN uses a Chromium composition compared to the Titanium in TiAlN / AITiN, resulting in a much tougher coating with added wear resistance, which makes it well-suited for high impact applications. AlCrN is not recommended for aluminum applications.

- **Improved wear resistance**
- **Hardness = 3200 HV**
- **Coefficient of Friction = 0.60**

**TiZrN**
Typical applications include piercing and forming of non-ferrous materials, including aluminum, copper and brass.

- **Improved wear resistance**
- **Added toughness**
- **Hardness = 3500 HV**
- **Coefficient of Friction = 0.55**

**TiAlN (AITiN)**
Both TiAlN and AITiN perform best in high-heat applications such as stainless, high strength steel, or ultra-high strength steels. At higher surface temperatures aluminum oxide is formed, enhancing the coating’s performance. These coatings are not recommended for aluminum.

- **Exceptionally hard coating**
- **Hardness = 4500 HV**
- **Coefficient of Friction = 0.55.**

**FORTE™**
This is a proprietary multi-layer nano coating that is a great alternative to a Chemical Vapor Deposition (CVD) coating. Forte is applied at a lower temperature than CVD coatings, resulting in no dimensional changes. This coating is a good choice for high-pressure applications and punching and forming for high and low alloy steel in all thicknesses.

- **Reduced tooling downtimes**
- **Superior punch wear and edge breakdown performance**
- **Polished steels retain full surface quality**
- **Reduced galling**
- **Excellent coating adhesion**
- **Hardness = 3500 HV**
- **Coefficient of Friction = 0.20**
Quality Tooling

No matter how exceptional a coating is you need to pair it with a high-quality punch to achieve superior results. Coatings work best with a higher quality surface finish and back taper, which is standard on all of our punches. At Impax Tooling Solutions, you can count on us for precision tooling made with the very highest-quality tool steel, including our proprietary Ultima™ M4 – the best combination of toughness and wear-resistance in the industry.

Get More From Your Tooling With Coating Technology From Impax Tooling Solutions.

With longer tool life, more hits between sharpening and less galling, Impax Tooling Solutions coatings reduce your downtime and improve your stamping performance.