Cast iron machining market is seeking higher performance in machining gray cast iron and ductile cast iron (spheroidal graphite cast iron). Unpredictable tool failures and shorter tool life, however, are rising issues in machining interrupted and unstable cast surface, challenging us to seamlessly endeavor for improvements in machining stability. With the introduction of new materials like compacted graphite iron (CGI) and austempered ductile iron (ADI) in the market, machinists are further requiring a progress in machining performance and stability.

"Tungaloy has a solution to these demands: T515, our new CVD-coated grade for cast iron turning."

This multi-purpose grade is a mix of a dedicated carbide substrate, a new coating technology, and Tungaloy’s own PremiumTec post surface treatment technology, allowing it to cover a wide range of cast iron turning. T515 performs best particularly in turning cast iron at high speed, exhibiting excellent stability and performance.
A thick alumina (Al₂O₃) layer for superb wear resistance in high speed machining.

T515 has an alumina (Al₂O₃) layer twice the thickness of conventional grades. This provides improved wear resistance during turning even in a high speed range of up to 400 m/min, exhibiting excellent turning performance. T515 is unmatched in the conventional low to medium speed range as well, with the wear resistance and stability beyond competition!

"PremiumTec: the post surface treatment technology to improve chipping and peel-off resistance for high machining stability!"

Made for high-speed

One step further in coating technology

Combined with a dedicated carbide substrate and new coating technology, T515 has improved the adhesion strength between the substrate and coating layers. PremiumTec, Tungaloy’s original technology enhanced the smoothness on the coating surface in tandem. With its outstanding chipping and peel-off resistances, T515 is a first-rate solution for a vast range of cast iron turning applications, covering low to high speed ranges and continuous to interrupted cuts.

"PremiumTec: the post surface treatment technology to improve chipping and peel-off resistance for high machining stability!"

- Smooth surface reduces chipping and build-up edge!
- Excellent wear resistance in high-speed cutting!
- Incredible chipping and fracture resistance!

PremiumTec technology improves surface quality
Al₂O₃ layer is 1.7 thicker than the conventional coatings
Enhanced adhesion between coating and substrate for maximum toughness

TungTech "T515: The New CVD Coated Grade for Cast Iron Turning"
**APPLICATION AREA**

T515 achieves stable, long tool life in both continuous and interrupted machining!

<table>
<thead>
<tr>
<th>APPLICATION AREA</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIGH CUTTING SPEED</td>
</tr>
<tr>
<td>CONTINUOUS MACHINING MODE INTERRUPTED</td>
</tr>
</tbody>
</table>

- T5105
- T515
- T5115
- T5125
CASE STORY: AUTOMOTIVE INDUSTRY

The customer was experiencing short tool life and unexpected tool failures caused by chipping during high speed machining of ductile cast iron components, resulting in increased machine downtime and a pile of scraps. Tungaloy, in response to the customer’s request for stability and productivity increase, suggested T515 for this solution.

Part name: Disc-plate  
Material: Ductile cast iron  
T515:  
  Toolholder: AWLN2525M08-A  
  Insert: WNMG080408 T515  

Cutting conditions:  
  \( V_c = 330 \text{ m/min (1.083 sfm)} \)  
  \( f = 0.4 \text{ mm/rev (0.016 ipr)} \)  
  \( \text{doc} = 0.5 \text{ mm (0.020")} \)  

Machine: Horizontal MC  
Coolant: Wet

Result: T515 offers a stable machining even in the high speed range of 330 m/min and has extended the tool life by 2.5 times of a conventional grade, in which chipping often led to tool fractures resulting in short life. Tool replacements have also decreased due to longer tool life, improving the customer’s economy.

"T515 is Tungaloy’s new CVD grade for high speed machining cast iron. A high reliability solution for boosting productivity."

TYPICAL PARTS:

- Fly wheel
- Brake disc
- Differential case
- Pulley

"T515: The New CVD Coated Grade for Cast Iron Turning"