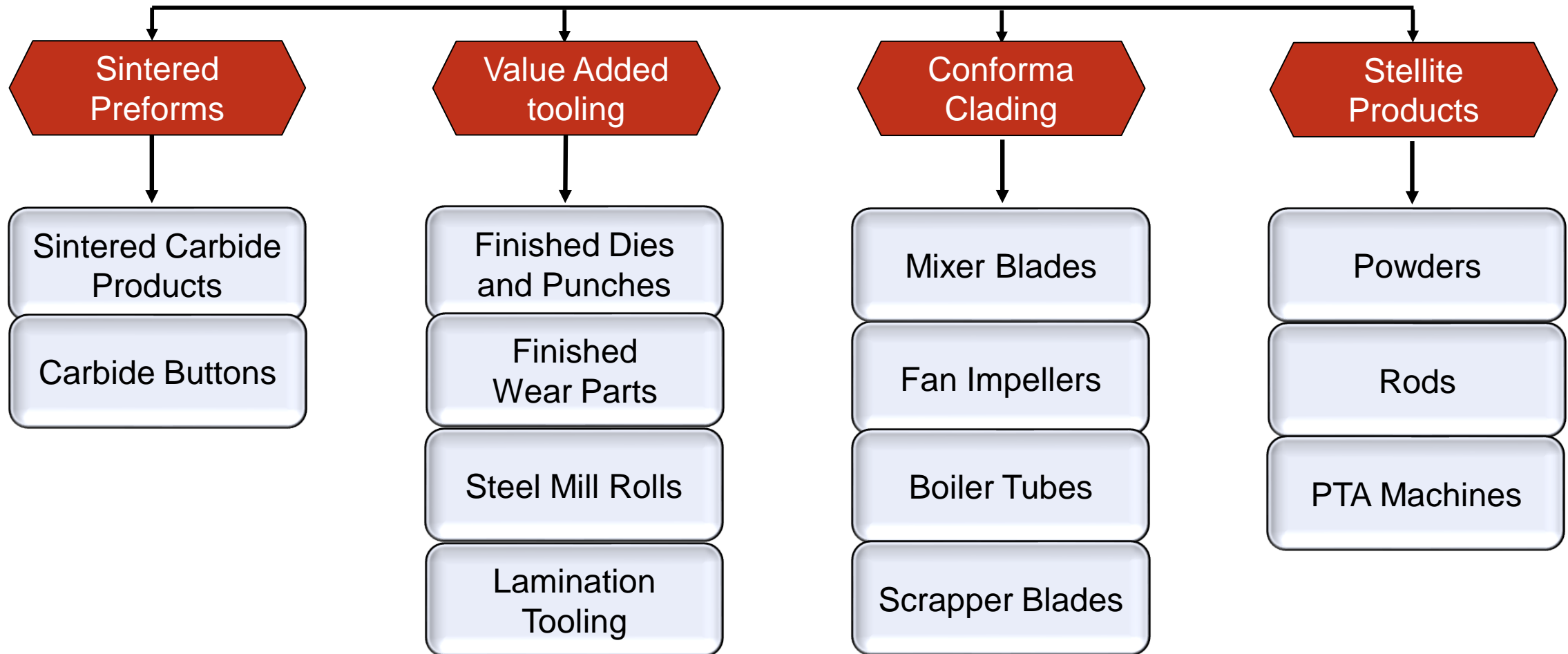


Major Industries Served



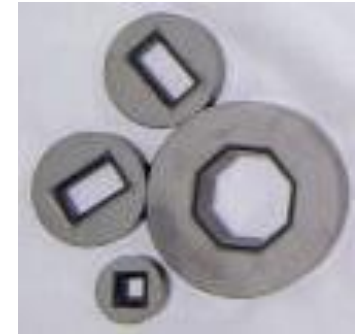
Business Portfolio



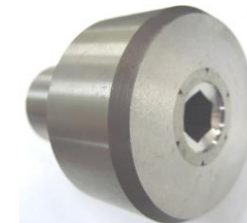
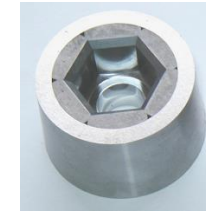
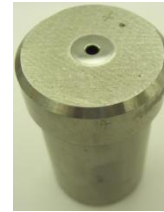
Sintered Preforms



- Near net shaped parts
- Optimum grinding allowance
- Supplied in different carbide grades to meet the specific applications
- Standard Wire, Bar and Tube drawing Nibs
- Standard Carbide pellets for cold heading



Fastener Tooling



Proven carbide tooling with the industry best grade carbide to suit specific need of the application for optimum performance.

Heading die, Reducing die, Trap extrusion die, Split Hex die and punch, solid carbide punches for extrusion and piercing.

Bearing Tooling



- Wear parts to hold the carbide in place while turning and grinding the races.
- Advanced wear resistant material to withstand all type of wear.
- Precision ground to meet the stringent specification.

- Forming tools for ball heading, races, roller, cages and covers
- Sheet metal tools for needle cages, cups and other parts

Tooling for Auto Components



- Developed carbide tooling for the cold forged Auto components
- Hot forging dies for Auto valves
- Cold forging dies and punches for Spark plugs, Core poles, Ball joints, Spline shafts, Transmission Chains and other components

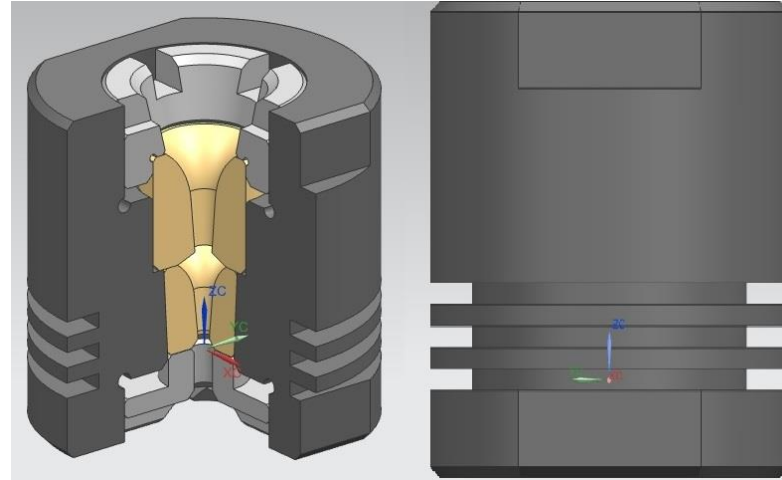
Powder Compaction Dies for Auto Components



- Established carbide tooling for Powder compaction application
- Unique processes
- Precision parts / surface finish

New !!

Pressure Die – Wire Drawing



- Kennametal Made Pressure Die is in use with High Speed Wire Drawing Machine and also with conventional machine.
- K313 – 6% submicron grade has proven better performance.

New !!

Carbide Tipped Punches



- Kennametal Tipped Carbide Punches finds its application in piercing and coining operation at various product range.
- Designed with patented technology with advanced carbide grade.

New !!

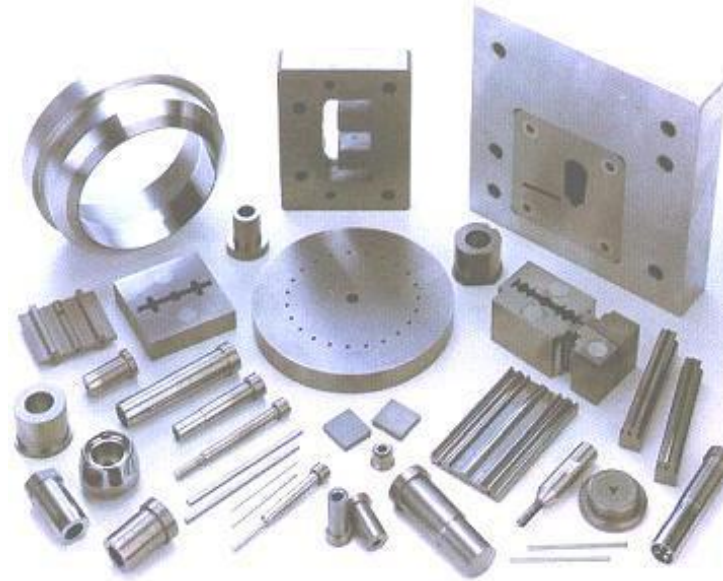
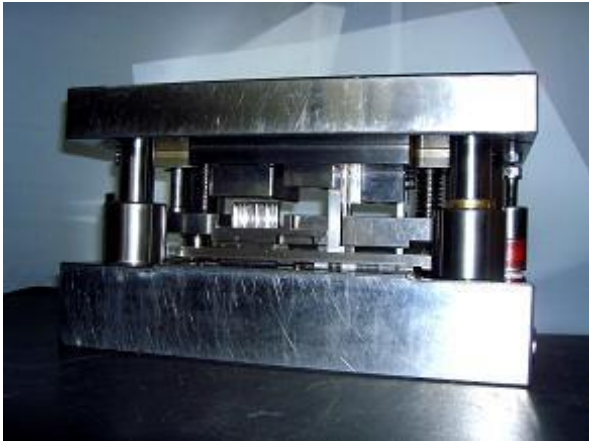
Battery Tooling



- Most of the components in the battery are metal component formed by metal forming process using high speed and fully automated machines
- Kennametal Carbide tooling are designed and manufactured to specific operation for maximum productivity

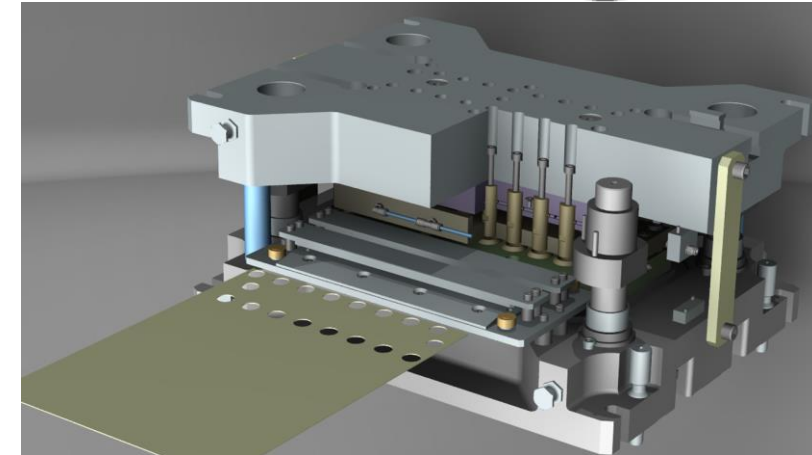
- Jacket Blanking tool
- +ve & -Ve Cap tools
- Zinc Can extrusion dies
- Wear parts

Press tools and Tool Elements for Sheet metal



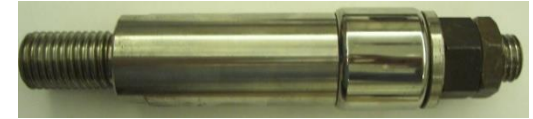
New !!

- Proven EDM friendly carbide grade
- Manufactured with high precision to maintain close tolerance
- Very high service life and industry accepted product for high speed stampings



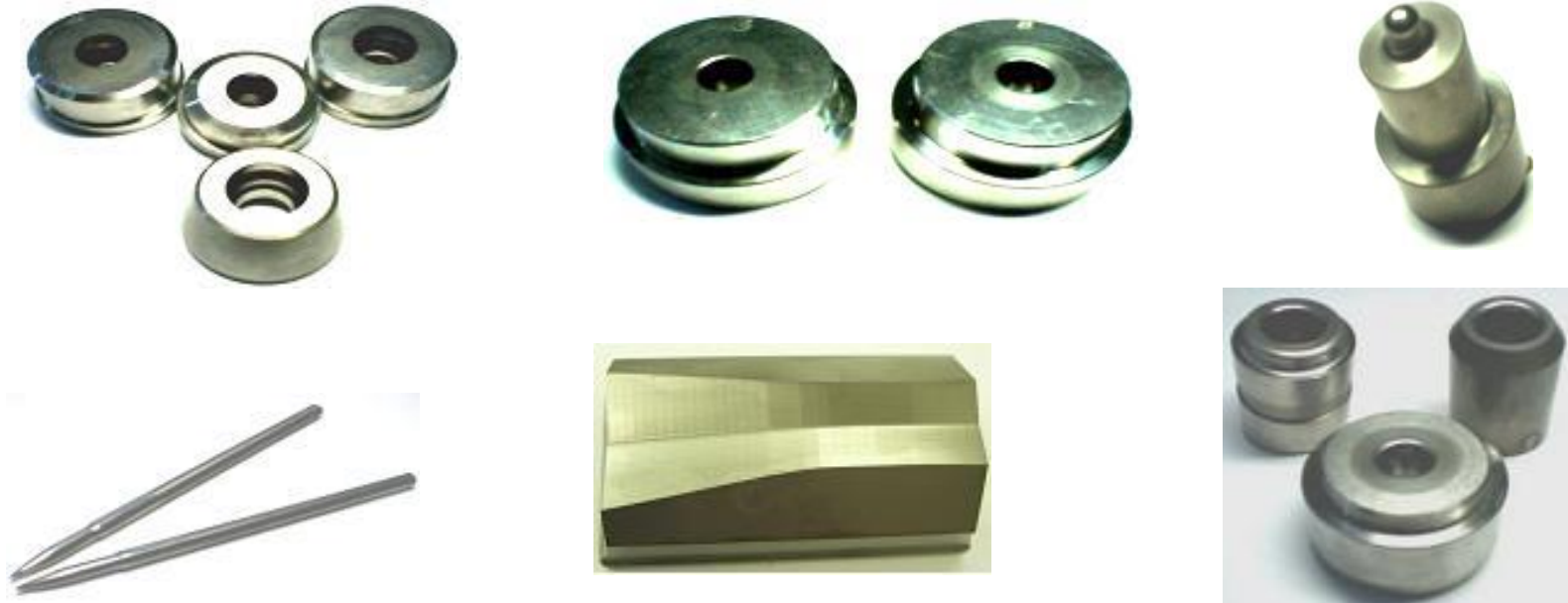
Modular Concept –
Quick Change, improved productivity

Steel Processing



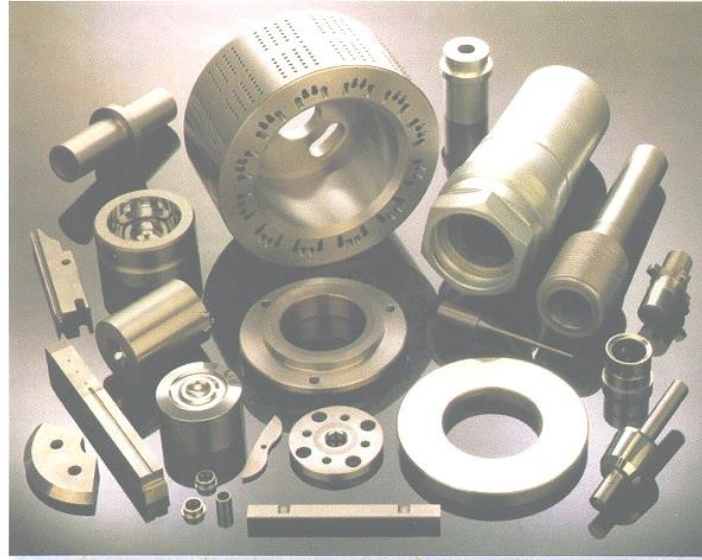
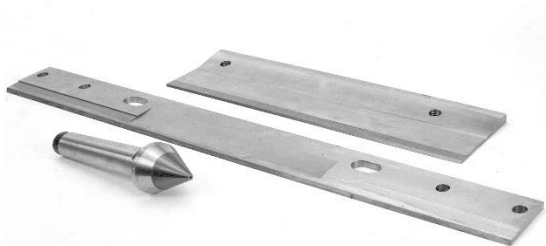
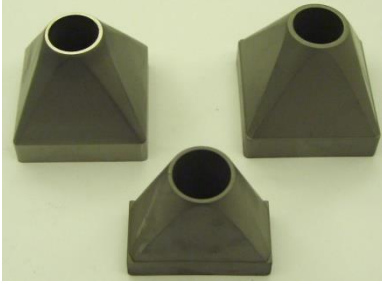
- Tungsten carbide Rolls and wear parts to meet all the process requirements during steel manufacturing
- For wire, bar and Tube or Sheet

Defense



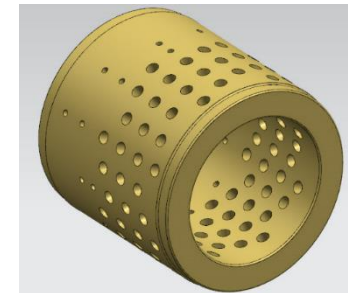
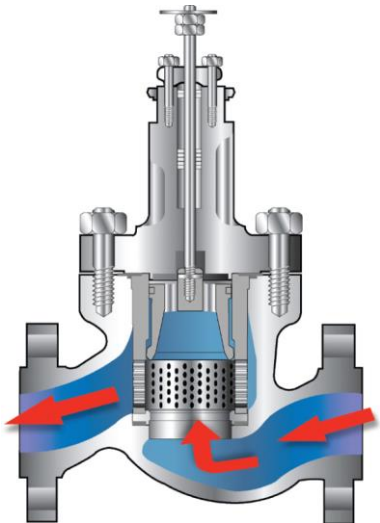
- Forming tools with Advanced wear resistant material for small, medium and large ammunitions
- Designed and developed to meet the critical operations and specification
- Increase productivity with consistent product quality are the key factors in Kennametal tooling

Wear Parts



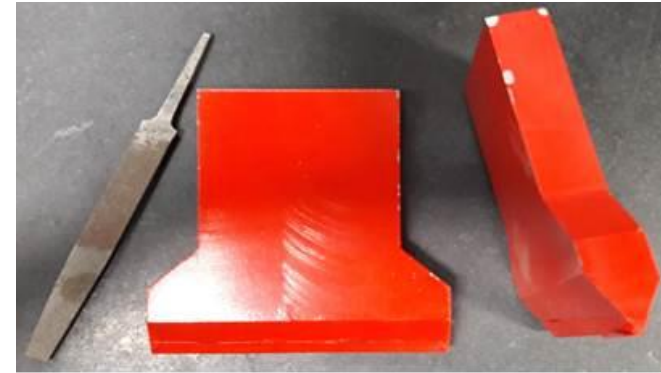
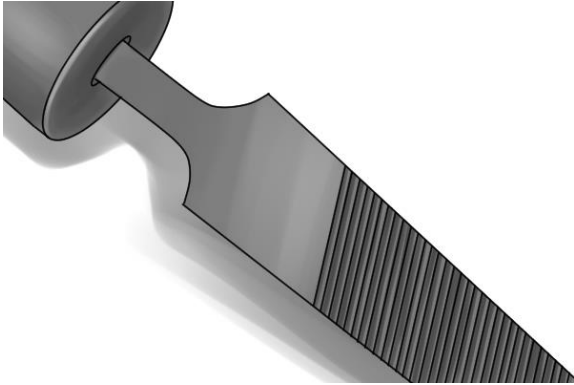
- Wear parts for every wear applications with right selection of carbide grade and the best carbide insert fixing

Tungsten Carbide Flow Control Parts – Oil & Gas



- Special carbide parts for severe service control valves
- Unique Manufacturing Processes and carbide grade
- High precision wear parts

Carbide Chisels

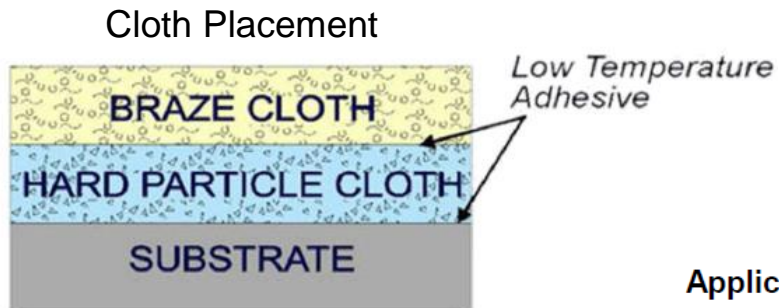


- Carbide chisels for chiseling Engineering Files
- Have established an unique carbide grade for the application

New !!

Conforma Cladding Technology

- Provide wear solution through cladding process
- Base metal is wrapped with carbide cloth and brazing material, sintered in the furnace to obtain a metallurgical bonding between base metal and cloth



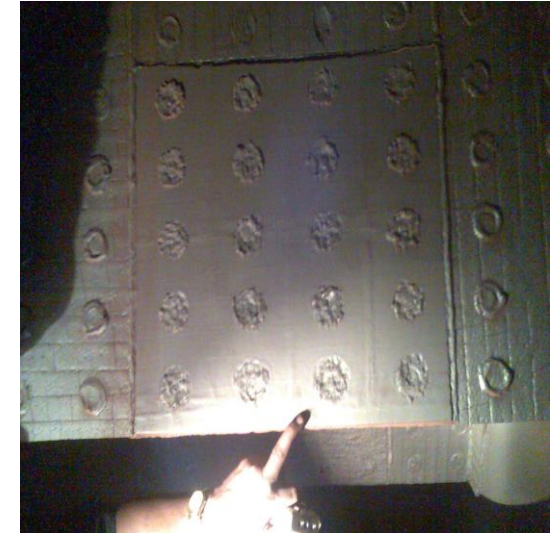
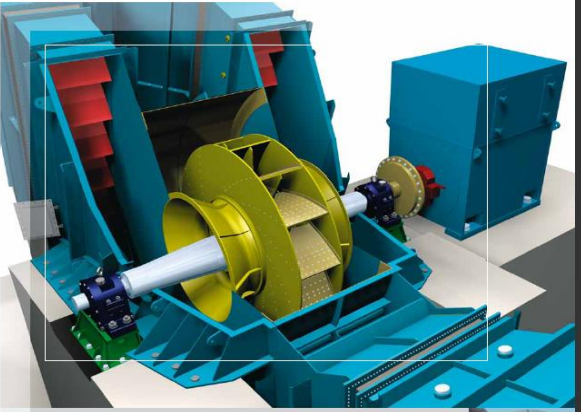
Applications

- Multi modes of failure – Erosion, Abrasion, Corrosion, Impact and High Temperature
- Complex Geometries
- Carbon steels, alloy steels, most stainless steels, and select castings
- High maintenance / replacement costs
- Critical Equipment
- Geometry retention
- Weight considerations / restrictions



Cladded Impellers & Liners

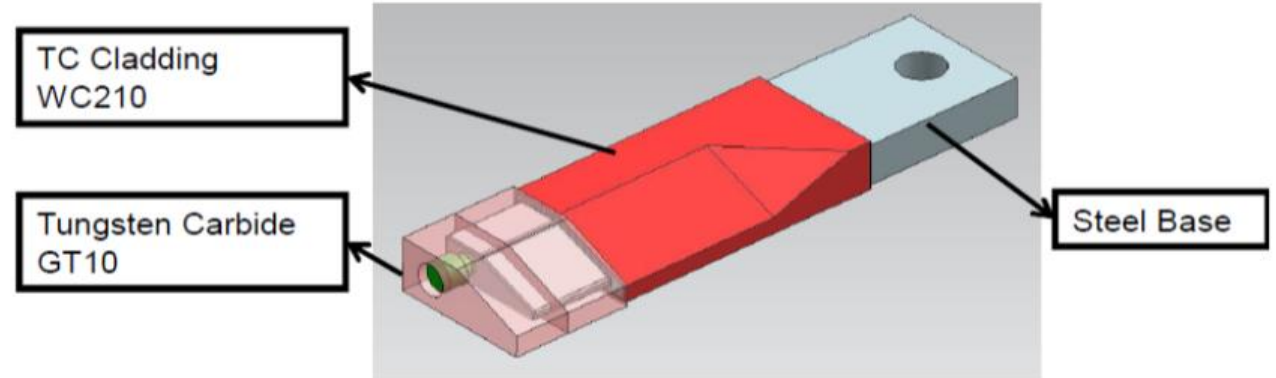
STEEL FAN AND MOTOR



- Patented technology designed to operate in severe operating conditions of Pallet & Sinter plants in steel industry.



Cladded Mixer Blades & Sleeves



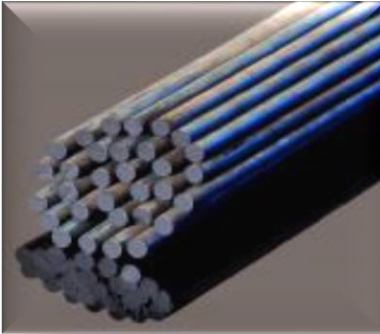
- Unique hybrid design of carbide & cladding for improved life in severe conditions.



Stellite Products

Hardfacing Processes

TIG WELDING/OXY-ACETYLENE PROCESS



Main Benefits :

- Manual operation.
- Can be mechanized.
- Low dilution.

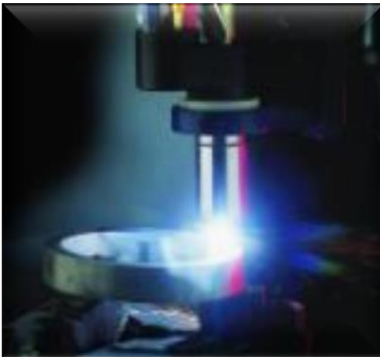
PLASMA SPRAYING



Main Benefits :

- Operates in several environments.
- Ideal for high melting point materials.

PTA PROCESS



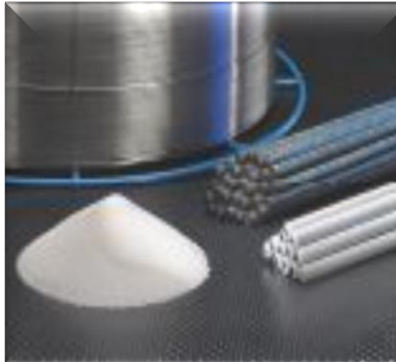
Main Benefits :

- Can be highly automated.
- Low dilution.
- Very wide range of Hard facing materials.

CONSUMABLES

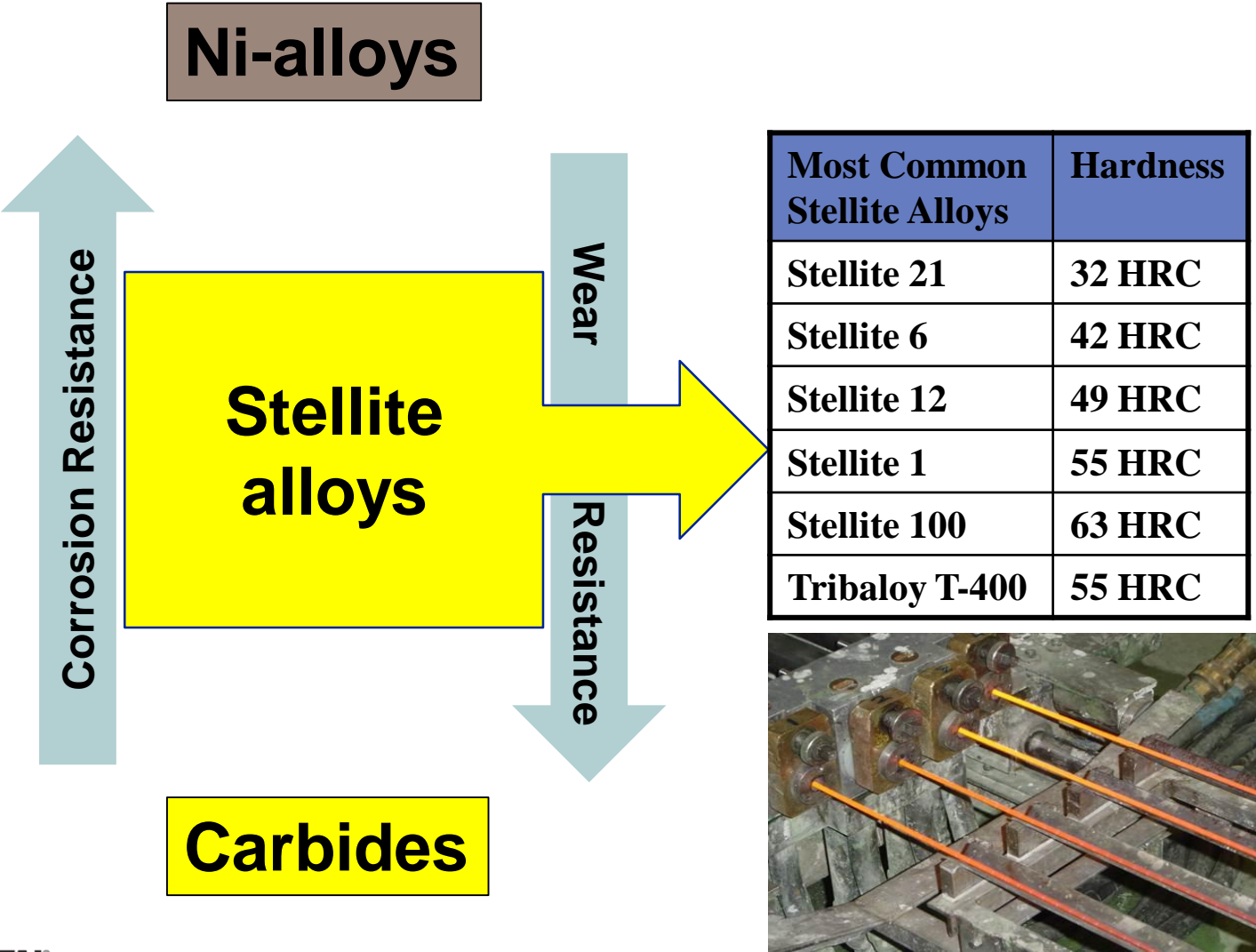
Main Benefits :

- Flexible.
- Low cost.
- Mobile.
- Ideal for repairs.

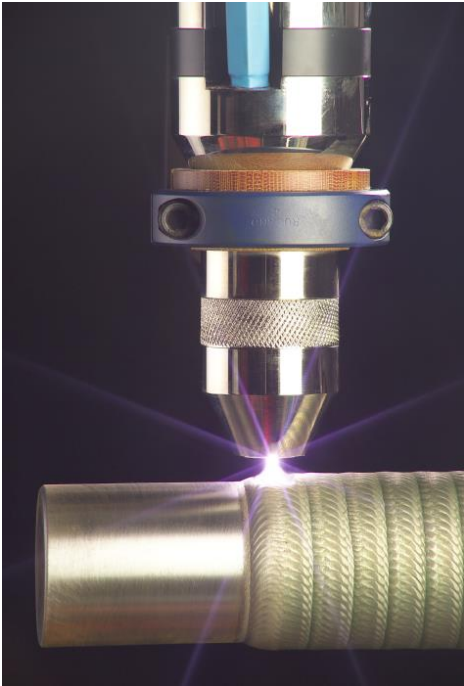


Stellite Products

Stellite for “Wear + Corrosion+ High Temperature”



Stellite Products



Plasma Transferred Arc Welding



- Can be Automated and integrated with Robo
- Customized design as per components
- Ideal for mass production welding with high level of quality and low dilutions.

Stellite Products

Automotive Engine Valves





That's **Different Thinking.** That's **Kennametal.**