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Titan-X line

A revolution has arrived in precision grinding applications.

The philosophy of **Titan-X line** revolves around innovation, technology, and excellence in the field of manufacturing and machining solutions.

The **Titan-X line** is the new line of vitrified CBN wheels that offers extraordinary versatility and resistance. A specially developed vitrified bond formulation has resulted in this unique product. These wheels offer outstanding wear resistance and a much longer profile holding than traditional wheels.
The **Titan-X** grinding wheels are ideal for working hard alloys, hardened and case-hardened steels, cast iron, and other complex metal alloys normally based on nickel, chromium, and molybdenum.

The **Titan-X line** is designed to offer superior performance in the grinding process with greater efficiency and accuracy, even in difficult working conditions, such as in plunge grinding processes.

With **Titan-X line** we are proud to be able to offer our customers an innovative, cutting-edge product that will help achieve production goals. These wheels are designed to reduce machining time and cost, as well as to provide a reliability grinding solution.

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The grinding wheels of the **Titan-X line** boast several unique and impressive features that set them apart from other products in their class.

High Efficiency: CBN is a super-hard material and is highly effective at removing excess material. CBN wheels can grind faster and with less pressure than traditional wheels, which results in faster grinding times and higher productivity.

Long life: CBN wheels have a long life compared to conventional abrasive wheels. They retain their shape and ability to remove material, even after prolonged use, which reduces the need for frequent dressing cycles and lowers overall grinding costs.

Versatility: CBN wheels can be used to grind a variety of materials including hardened steels, cast iron, and super alloys. They are also effective in grinding difficult-to-machine materials, such as nickel-based alloys.

Cool cutting: CBN wheels generate less heat during the grinding process, which reduces the risk of damage to the workpiece and extends the life of the wheel.

Low vibration: the use of CBN wheels results in less vibration during the grinding process, this reduces the risk of damage to the workpiece and improves the surface finish.

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Easy dressing: the Titan-X line wheels are designed to be dressed with or without the use of a rotary dressing disk, so a static diamond or CVD tool can also easily be used for the dressing operation.

Use: The Titan-X line wheels are specifically designed to operate at peripheral speeds like traditional wheels, maintaining their efficiency and performance; this allows them to generate less heat and friction during the grinding process, which can help reduce the risk of damage or distortion of the workpiece.

Savings: The Titan-X line wheels can also offer increased diamond tool life and increased operating efficiency, making them a convenient choice in many industrial grinding applications.

Machine: The Titan-X line grinding wheel does not require a high-speed spindle, You can use it with a common CNC grinding machine that has a standard spindle speed (35<50m/s).

Overall, the Titan-X line wheel line is designed to offer a low-cost, high-performance grinding solution. However, it is important to carefully evaluate the specific needs of your application and consult with our technical staff to determine the best approach to the wheel and application based on your needs, also they can provide specific information regarding the wheel's speed limitations and operating parameters.

The Titan-X line wheels can be designed for Surface, External grinding and ID (internal grinding), always consult our technical department to verify the feasibility or possible alternatives.

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External Grinding

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Surface Grinding

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ID Grinding

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Titan-X application

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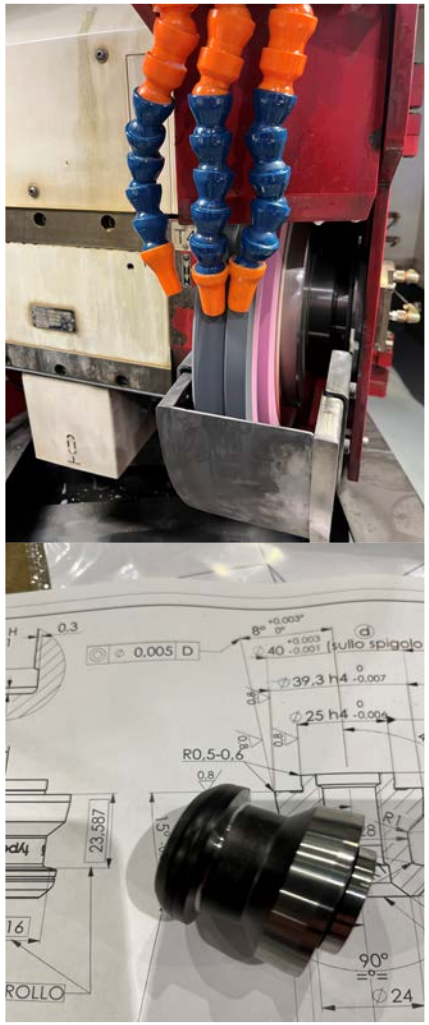
Titan-X line

External Grinding



Component profile

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External Grinding

STUDER S-41
DIAFORM CVD r=0,125 shank CM1
material 18NiCrMo5 COOTING HRC 63, Over diameter 0,4mm Ra=0,8 (required)

Wheel speed 40m/s
Component speed 200 RPM

Plunge Grinding, material ground x round of component 0,0034 mm

Dressing parameters= Wheel speed 40 m/s depth for pass 0,003 x 3 passes

Conventional wheel dress cycle 4 components

Titan X dress cycle 250 components
Final Ra= 0,16

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External Grinding

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Machine LIZZINI

Material 20MnCr5 HRC 63 tempered.
Over diameter 0,35mm Ra=0,4
Component speed 70 RPM

Titan-X 1SP1 500x140,2x10x203,2 B126
Wheel speed 37m/s

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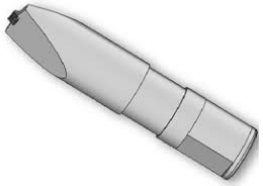
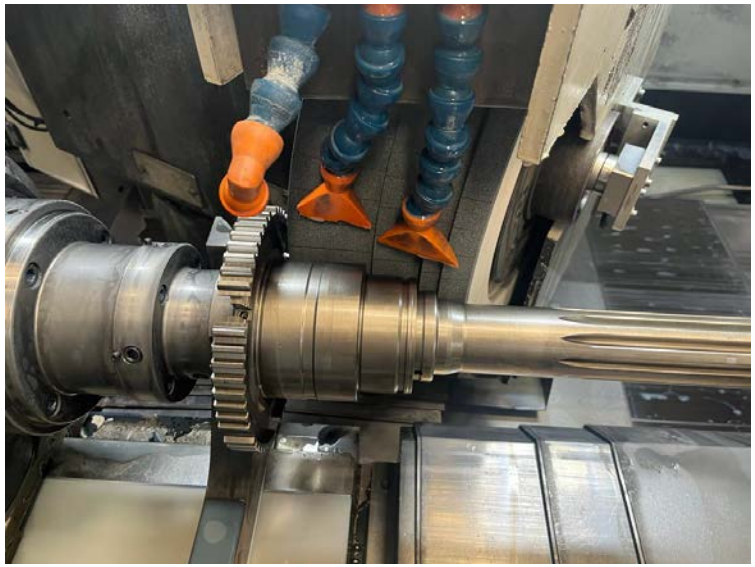
External Grinding

DIAFORM CVD r=0,125



Dressing parameters:
Wheel speed 37 m/s depth for pass 0,005 x 2 passes

Plunge Grinding, material ground x round of component 0,005 mm



Conventional wheel: dress cycle every 3 components.
grinding cycle 205 sec.

Titan X: dress cycle every 35 components.
grinding cycle 98 sec Final Ra= 0,3

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External Grinding

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Machine AZ

Component CRANKSHAFT
Over diameter 1,5mm Ra=0,4
HSB 207 -269

Titan-X 1LL1R 1800x110x5 H146
B126 Wheel speed 30m/s

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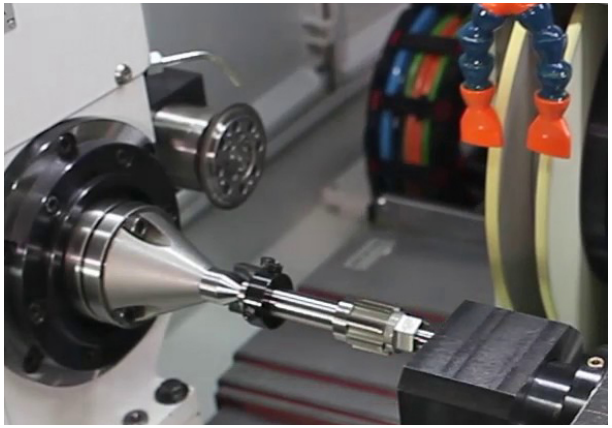
External Grinding



DOIMAK RER 500 SL Tap Grinding Machine

Lubricant oil – dressing by DIAMOND TOOL 1Ct CM

Dressing parameter Wheel 40 m/s - Diamond feed 800mm/min

Y 1A1 Titan X D=400 T=30 X=10 H=127 ceramic body ..B107 101519 CBN Light Vel. 40 m/s

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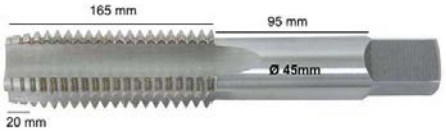
External Grinding

Tap Material= Temperate steel HRC 62



Wheel speed 40m/s tool rotation 4m/s RA= 0,18

Shank grinding D. 45mm L 95 mm over metal 0,4 mm

Cutting grinding D.45mm L 145 mm over metal 0,55 mm

Conical start 20 mm

Qty. 3

Shank OD grinding D. 10 mm L 80 mm over metal 0,55 mm

Cutting OD grinding D. 10 mm L 20 mm over metal 0,55 mm

Qty. 20

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External Grinding

Tap Material= Temperate steel HRC 62

Cutting OD grinding D.14mm L 25 mm over metal 0,5 mm

Qty. 100

Shank OD grinding D. 8 mm L 72 mm over metal 0,7 mm

Cutting OD grinding D. 8 mm L 18 mm over metal 0,7 mm

Qty. 50

At the end, we made the dressing operation: Nr. 2 pass depth 0,005mm feed 800 mm/min

The day after the customer ground taps diameters 8<16, and they dress the wheel every 14/16 hours.

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External Grinding

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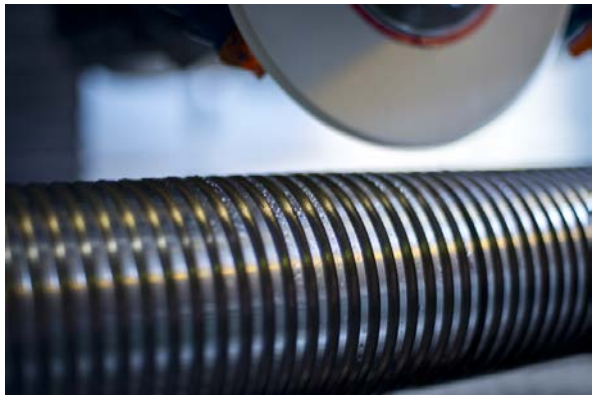
Machine TACCHELLA



Material: Broaches tools
Tempered Steel HRC 64
Over diameter 4mm Ra=0,8
Component dimensions:
D=219 L=1800 mm

Component speed RPM 35
Plunge Grinding, material ground x round of component 0,008 mm

Titan-X 1A1 600x50x10 H203,2
B126 Wheel speed 45m/s

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External Grinding

CVD BLADE

Dressing parameters:

Wheel speed 45 m/s depth for pass 0,004 x 3 passes

True feed 300 mm/min

Plunge Grinding= Titan-X material ground x round of component 0,008 mm
Conventional (Ceramic grit) material ground x round of component 0,004 mm

Titan X: reduce the cycle more then 40% per component

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Surface Grinding

Titan X 1A1 D=500 T=40 X=10 H=203,20 B126

Ceramic Body Vel. 50 m/s

Wheel speed 35m/sec

Dressing: multi-point diamond 0,005 x 2 pass

Material= **K720** Temperate steel HRC 60

Component dimensions = 200x80x30mm

Grinding area= 1700x500mm

Over material= 0,3 mm – 0,005 x pass

Table speed 400mm/min.

At the end of the work, the wheel consumption is equal to 0mm

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