### Carmex Product Lines 2024-25





The optimal tools for your industry™

#### **Company Profile**



Established in North America in 2004, Carmex Precision Tools, LLC, is located in a custom-designed facility in Hartford, Wisconsin. The North American headquarters offers improved service to customers and distributors through an expanded inventory and order processing area to speed deliveries, a conference and training module, and expanded space for applications engineers and administration. Improved inventory control and data systems support our increased growth in the Carmex product lines and sales in the North American market.

Included here is a brief introduction to the ever-growing Carmex family of general and specialty tooling. For a more complete description, please consult the Carmex product catalog on our website **www.carmexusa.com** or contact your Carmex representative. In addition to our available tooling, we will be pleased to work with you on developing individual solutions to your manufacturing needs.

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## **Turning Tools**

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#### **Tools & Holders**



Laydown threading & grooving holders & inserts



Vertical threading holders & inserts



Mini Tools boring, grooving, threading, back turning



Polygon - quick change



Jet holder for threading & grooving

#### **Insert Grades**



**BMA** - General purpose for all materials up to 45Rc



**BLU** - Triple-layer Nano coating designed for Stainless Steels, Titanium, and Cast Iron



**HBA** - Multi-layer Nano coating for high-temperature Nickel alloys & hardened materials up to 62Rc

#### Type - K Sintered



**KMR** - High wear resistance for medium to high cutting conditions



**KBL** - High toughness and wear resistance for medium to high cutting conditions

#### **DLC - Diamond Like Coating**



Grade DLC-I - non-ferrous, super alloys

Grade DLC-2 - sintered steel up to 72 HRc, chilled cast iron

## Swiss Style Machining

Carmex offers tools for all operations on your Swiss lathes including:

- Front Turning
- Back Turning
- Boring
- Grooving
- Face Grooving
- Chamfering
- Single-point Threading
- Thread Whirling
- Parting





## **Tiny Tools**

#### **CBR** for boring and profiling

- A combination of **MTR** and **MPR** for boring and profiling
- Incorporates advanced chip breaker
- Internal coolant capability speeds chip evacuation
- New **TNX** grade ideal for stainless steels and super alloys

#### **CMR** multi-tasking tool

- Single tool for drilling, boring, facing, and chamfering
- Eliminates the need for pilot hole
- Features thru coolant and advanced chip breaker improving chip evacuation
- New **BMK** grade is ideal for stainless steel and high-temp alloys
- Shortens setups & cycle times

#### **HK-Broaching Tools for Hexagon Keys**

- Can be loaded in the turret or on the spindle
- Ideal for small diameter broaching down to .050" minimum hole diameter
- **BMK** grade-**PVD** triple coated for high performance



## **Tiny Tools**

Boring



Profiling & Boring





Chamfering & Boring







#### Face Grooving



## Swiss Line

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Polygon Swiss turning, grooving, threading, back turning



#### Swiss Line turning, grooving, threading,



G4 Four cutting edges turning insert and



MT-solid carbide thread mill for most applicatio



MTB-solid thread mill with through-coolant

The second secon

MTZ- solid thread mill with radial coolant



MTQ-extended reach solid carbide thread mills



# CIM Page 7

#### The Carmex CIM

- Saves money by eliminating multiple toolholders
- Delivers coolant through the holder and tool to the tool tip
- Maintains the initial setting for maximum accuracy and repeatability



#### Quick Change Polygon Toolholders For 3 cutting edges Swiss Line inserts type 19, 20 mm and G6

- External toolholders with internal coolant bore
- ISO standard (26623) compliant for toolholding systems

## **Thread Whirling Tools**



- Single pass working ability reduces machining time and increases productivity
- A high accuracy holder-insert system, along with special cutting edge geometry, delivers a high quality surface finish
- Multi-Insert holders decrease cycle time and increase tool life

## Diamond PCD, CVD-T, and PCBN Tiny Tools with diamond cutting edge

Carmex wide range of Tiny Tools now includes CBN and CVD tipped bars for boring and profiling.

- CBN tools are used for hard turning of grey cast iron, steels up to 72 HRc, sintered carbide, and Nickel based super alloys.
- The CVD-T (Thick film diamond) bars deliver multiple benefits when machining long-chipping aluminum and magnesium alloys, high-silica aluminum, precious metal alloys, plastics and abrasive fillers, tungsten carbide, and ceramic green compacts.

#### **Features:**

- Internal through coolant to the cutting edge
- Suitable for continuous or interrupted cuts
- Bore diameter 3.1 mm and larger
- For use with the standard SIM toolholders



## **Diamond Turning Inserts**



#### **Diamond PCD, CVD-T, and PCBN turning inserts**

For Hard Machining Applications

- PCD inserts excel in the machining of non-ferrous materials.
- CVD-T is designed for machining aluminum and magnesium alloys, high-silicon aluminum, precious metal alloys, plastics with abrasive fillers, tungsten carbide, and ceramic green compacts.
- **PCBN** inserts deliver excellent surface finish in materials including hardened and heat-treated steels, high speed steel (HSS), high alloyed steels, super Ni based alloys, grey cast iron, ductile, and graphite.
- Available in both one and two cutting edge configurations, Carmex diamond inserts deliver both higher performance and longer tool life.



#### **DLC (Diamond Like Coating)**

A multi-layered coating for a diamond-like finish on tools with complicated geometries

#### DLC-I:

- For "lightweight" non-ferrous materials with no iron base inside
- Used with glass and carbon fiber composites, hybrid materials, super alloys, and Ni-based materials, thermoplastics, ceramics, and aluminum (high Si)
- Uses have multiple applications in aviation, automotive, medical, and other industries

#### DLC-2:

- For hard materials and castings
- Sintered steels >62HRc and up to 72HRc
- Cast iron GG and GGG

## Standard Thread Mills Carbide All Sizes

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**FMTZ & FT** - Solid and thru coolant, right hand cut with left hand helix stainless, super alloys up to 55 HRc

For internal threads

## **NEW** from Carmex

# For optimum **thread milling**, **Start at the TOP!**

**New** Carmex FMTZ and FT solid carbide thread mills perform right-hand cutting with left-hand helix and enter the material at the **upper point** of the cutting edge for smoother cutting and reduced cutting forces.

- Sizes range from 1/4-20 1-8 UN M6.0  $\times$  1.0 to M12  $\times$  1.75 ISO
- The FMTZ is equipped with radial coolant holes
- The FT thread mill offers more flutes for increased productivity
- High productivity through significant shorter cycle time
- For both right-hand and left-hand threads
- Lower tool vibrations and high surface finish



Reinforced geometry, ultra-fine carbide grade (K20) and **New Generation** PVD coating deliver high precision with minimum run out.

- The holder's back adjusting screw (stopper) allows for precise control of tool overhang and provides excellent support during cutting operation
- Drills hole depth up to 5xDC
- Can be used for countersinking and chamfering of an existing hole
- Excellent edge quality and high surface finish provides excellent chip evacuation



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## Indexable Thread Mills



**Slim MT**-High performance indexable thread mills



**SR** - Straight flute indexable thread mills



**SLE -**Shell mill for external thread milling



**SRH** - Helical flute indexable thread mills



**CMT** - Single point indexable thread mills



**CMT** - Disc cutter thread/groove/chamfer



#### D Thread -

Long reach single point indexable thread mills



Modular thread milling system

## **New CR-Supercut Taps**





#### High performance in on-machine and manual applications

Designed for long lasting tool life and durability

## SuperCut Barrel End Mills



## SuperCut Barrel End Mills are used for 3D profiling on multi-axis machining centers to shape molds, turbine blades, medical parts, and other complex parts

- Can be used for semi-finish or finishing for high surface quality
- Shape allows a longer contact area with the workpiece for higher productivity than ball nose
- Available with CR3 or CR7 ultra fine grades with Carmex unique multi-layer coatings
- Available now with thru coolant

## Supercut Solid Carbide End Mills

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**High Performance Solid Carbide End-Mills** 



High Performance Solid Carbide End-Mills for Aluminum Machining



**Multi-Function Milling Tools (MF)** 



**Solid Carbide Roughers** 



Indexable CMT Roughers and Finishers



**CR-Supercut High Feed End-Mills** 



Solid Carbide Chamfering & Filleting End-Mills



**Diamond Ball nose End-Mills** 



## **Gear Mills**

Carmex Gear Milling line is based on standard or special toolholders

and custom made inserts according to the customer's application,

for maximum flexibility and short delivery time. All tool profiles are fully ground and highly accurate.

#### **High Flexibility**

- Same tool can be used for different gear sizes and profiles
- Variety of production options on advanced machining center multi-task machines and 5 axis machines
- In most cases, the components can be machined with just one setup

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## Shell Mill

#### Mini-MTI

- Solid carbide tool for high rigidity and stability
- For small and medium profiles
- 3 to 6 cutting edges
- Large range of carbide grades

#### СМТ

- Vertical gear milling cutters with indexable inserts
- 3 to 4 cutting edges
- Standard steel or carbide CMT toolholders
- With internal coolant









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