



## INDIA

### Capital Tool Industries

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## USA

### Capital Gear Tools LLC

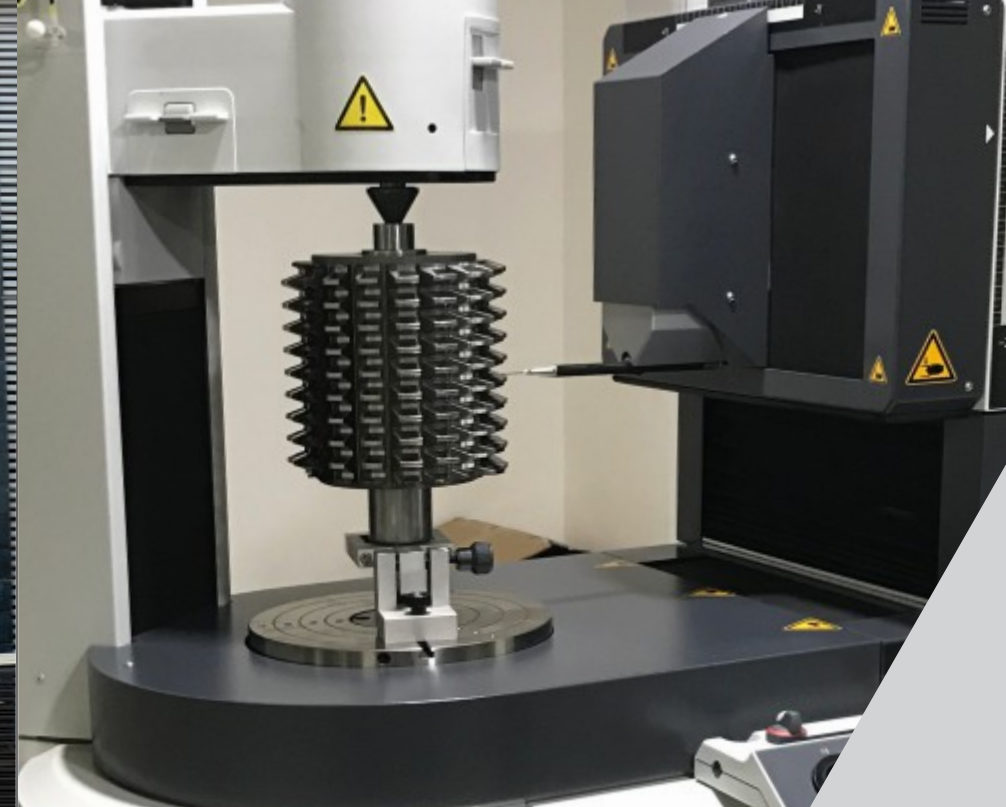
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## EXPERIENCE

Capital Tool Industries was founded in 1996 with a vision in production of high precision Gear Cutting Tools. CTI has developed into a leading manufacturer in the gear tool industry. Investments combined with experience have enabled us to become independent in creating state-of-the-art CNC machinery infrastructure and in finding innovative production.

Our dedicated engineers for custom designed gear cutting tools and the best quality for the best price makes us the best worldwide partner for effective and efficient gear cutting tool solutions.

Gear cutting tool design and production requires much specialized knowledge, which has been acquired and refined over generations. Computer aided design and manufacture allows rapid assesment of individual cutting requirements and ideal optimization of all variables for maximum cutter effectiveness.

## TECHNOLOGY

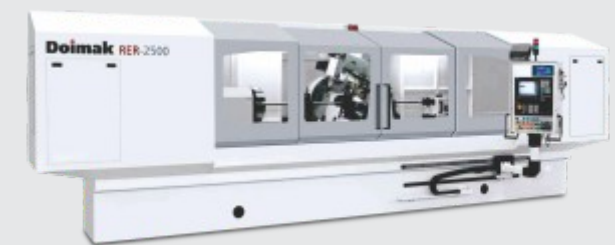
CTI uses only the highest quality raw materials and manufacturing equipment to ensure the longest possible tool life. We control every process in our own facility which ensures the quality and trustworthiness in each step of the production of our precision tools. We have our own heat treatment followed by our CNC relief and other grinders. These features allow us to keep our delivery commitments and reduce lead times.

CTI is an ISO 9001 certified company and each tool produced is inspected on our Klingelnberg dimensional control machines and supplied with all quality control reports.

In addition to tooling, CTI also offers complete range of high performance coatings on our tools like :-

- TiN • TiCN • TiAlN • AlCrN

These coatings helps in inceasing the tool life by 3 to 8 times and decreasing the cycle times. We also offer Re-sharpening services for all types of Hobs and Shaving Cutters.





## GEAR HOBS

CTI produces ultra precision hobs for cutting Spur and Helical Gears of maximum accuracy.

Each tool is designed to meet specification with any type of profile modification like protuberance, chamfering, topping and tip relief.

Hobs are supplied in single or multistarts in class AA, A and B as per DIN 3968.

MODULE : 0.1 to 40

DP : 120 DP to 0.7 (0.75" to 15" diameter)

## STRAIGHT AND INVOLUTE SPLINE HOBS

Spline Hobs are supplied for generating parallel or angular splines, straight or helical splines with profile modifications like semi topping, undercutting, shoulder clearance, etc.

Involute Spline Hobs as per DIN 5480, 5481 & 5482, NFEB22 141, ANSI B92.1

Parallel Spline Hobs with or without lugs, semi-topping and shoulder clearance.

For Power take off shafts- DIN 9611.



## CHAIN SPROCKET AND TIMING PULLEY HOBS

Roller Chain Sprocket Hobs are supplied as per ANSI, BS, IS or any other standards or with non-standard forms. These hobs are offered with ground or unground profiles and topping or non-topping designs.

Timing Belt Pulley Hobs are made to cut various types of Timing Pulleys like

- Syncroflex
- UNIROYAL, Powergrip
- HTD -According to DIN 7721, ISO 52

## WORM GEAR HOBS

Worm Gear Hobs are supplied for Flank Forms ZN, ZA, ZL, ZK, ZC upto a lead angle of 45 degrees. These Hobs can be hollow type or integral shank type depending upon strength constraints.

Tangential, radial, topping or non-topping hobs and special reaming type finishing hobs are also offered.



## SHAVING CUTTERS



Gear Shaving Cutters are precision ground for finishing pre-hobbed or pre-shaped gears.

All tools are supplied with inspection and lead test charts.

Types : Conventional, diagonal & underpass

Range :  
0.8-8 Module and 30-3 DP  
170 mm to 260 mm PCD.

Profiles : Standard Involute, Tip Relief , Profile and Lead Crowning, Special profiles as per customer's requirement.

Material :  
M2, ASP 2023 and ASP 2030

## GEAR SHAPER CUTTERS

CTI designs and manufactures spur and helical gear shaper cutters to produce all types of internal and external Gears, Splines, Sprockets and Timing Pulleys. Custom made shaping cutters to cut pre shaved and pre ground gears with profile modifications like protuberance and semi topping can be supplied.

Shaper cutters can be supplied in following types :

- Disc Type
- Deep Counter Bore Hub Type
- Shank Type

The above cutters are available in the following range of dimensions and specifications :

Module : 0.5 to 20 Module

DP : 50 to 1.25 DP

Max Diameter : 300mm (12")

Accuracy : AA, A and B as per DIN 1829

Material : High Speed Steel grade M35 , M4, ASP 2030 and ASP 2052

Coatings : TiN, TiCN, TiAlN to enhance tool life upto 10 times.





## BLADES

### **Crown Wheel -Roughing / Finishing Blades Pinion - Roughing/ Finishing Blades (Concave & Convex)**

Blades suitable for hardac/helixform/ ridgac/ wedgac/ roughac/standard bodies  
Blades for roughing and finishing cutters with diameters from 5"-20" Crown wheel  
roughing / finishing cutters Pinion roughing / finishing cutters Solid cutters from  
diameters 1" -8" Roughing cutters for bevel gears & bevel pinion suitable for Revacycle  
& Revex machine

### **CURVEX TYPE BLADES (L.H & R. H)**

Suitable for WMW Spiral Bevel Gear Machines  
From Dia 75mm -300mm (in sets)

### **SPIROMATIC BLADES**

From Dia. 70mm to 108mm suitable for Oerlikon Spiral Gear Machines  
MATERIAL : HSS M2, ASP 2030, 2023 ETC.  
Further we also manufacture Konvoid Blades, Coniflex Cutters and WMW ZFTK  
machines and all types of Gleason machines.

## RACK TYPE CUTTERS



CTI manufacture high quality Sundeland and Maag Rack Type Cutters to the clients. These cutters are manufactured using high-grade HSS raw material as well as employing the most modern facilities. Cutters for MAAG, Sunderland and other Gear Planning Machines are widely used by clients.

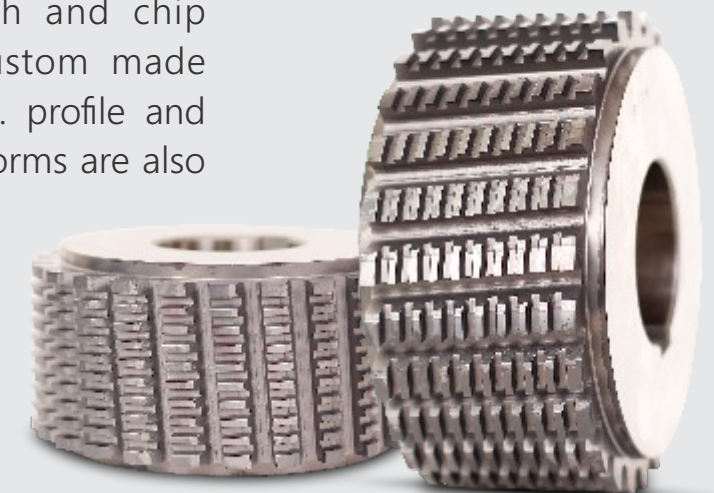
Double Helical Cutters up to 1DP (26MOD)

Any non standard pitches or pressure angles - Special profiles calculated to customers requirements

## RACK MILLING CUTTER

CTI manufactures high precision rack milling cutters for automotive and truck steering applications. These cutters are supplied upto 15 degree spiral gash and with chip breakers for better finish and chip clearance. These cutters are also custom made according to customer's requirements. profile and lead crownings in convex or concave forms are also possible.

<b>Module</b>	0.5 to 6.0 Module
<b>Length</b>	length upto 300 mm
<b>Accuracy</b>	Class AAA, AA and A





## MILLING CUTTER

### INVOLUTE GEAR CUTTERS

Single Gear Cutters - from 0.1 to 55 Module, 120 to 0.5 DP for specific number of teeth or in sets of 8 cutters.

When ordering single gear cutters, the cutter number or the number of teeth to be cut must be specified.

Stepped Up Gear Roughing Cutters are available in Alternating Plain and Serrated form for faster roughing of large gears.

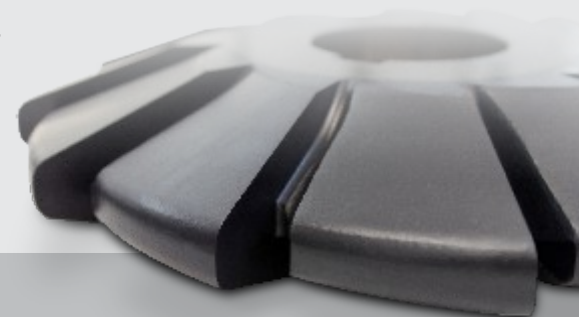
### FORM MILLING CUTTERS

CTI produces form milling tools for all types of applications based on customers specifications.

Whether standard or custom non-standard we have a solution for everything. We manufacture tooth-form cutters, spline milling cutters and thread-milling cutters to print.

Spline Milling Cutters for Straight and Involute Splines with / without lugs.

Sprocket Cutters designed for cutting sprocket teeth of roller-chain wheels according to BS, ASA and DIN standards.



## BROACHES

We are fully equipped to manufacture both standard and special Broaches in either push or pull styles, including all types of round broaches, Spline broaches, keyway broaches, internal hole and surface broaches.

Broaches are made to suit component specifications, customer's machine and holder details.

Different internal profiles are undertaken for manufacture like:

Splines-involute , parallel and trapezoidal

Serrations

Round

Hexagonal

Rectangular

Ratchet etc.

