



# RSG

TECH SOLUTIONS

SALES & SERVICE PARTNER INDIA



GEAR CUTTING TOOL | SERVICE CENTER | PRODUCTIVITY IMPROVEMENT  
GEAR MACHINERY | GEAR CUTTING OIL | GEAR BLANK



# RSG

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SALES & SERVICE PARTNER INDIA

5  Years of  
Engineering  
Excellence

  
**cti**  
Finest Gear Tools





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# CAPITAL TOOL INDUSTRIES

CTI was founded in 1966 with a vision to produce high precision Gear Cutting Tools. From the small beginning, 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 methods.

Capital Tool Industries is Asia's Premier manufacturers & Exporters of Gear Cutting Tools having more than 50 years of expertise in this field.

We are already exporting our products to more than 35 countries including U.S.A., Germany, Italy, Australia, South Africa, France, Canada etc. We are importing all our Raw Material from Foreign countries which enables us to maintain the quality and performance of our tools.

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/manufacture allows rapid assessment of individual cutting requirements and ideal optimization of all variables for maximum cutter effectiveness.



# RSG TECH SOLUTIONS



## CTI has Collaborated with RSG Tech Solutions for Sales & Services India Operations.

RSG Tech Solutions is the first organization in India to provide End-to-End Gear cutting solutions, consistently delivering products and services ranging from best-in-class Gear Cutting Tools and Oils in a variety of sizes and quality.

We are the authorized dealers of the leading products of the Industry. We provide a complete range of products and services like Gear Cutting Tools, Gear Cutting Oils, Solutions for Productivity Improvement by technical expertise and Service station for Re-sharpening, Re-work and Coating of Tools with pick-up and drop services. We cater to all kinds of clients: manufacturers, traders, corporate and retail customers.

All products under these brands are designed and manufactured using the best grade raw material and innovative technology in adherence to international quality standards under the supervision of quality controllers at our vendor's end. We test our product range on various quality parameters to ensure high performance at users end.





# 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 (24mm to 360mm diameter )

**DP**

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

# STRAIGHT AND INVOLUTE SPLINE HOBS



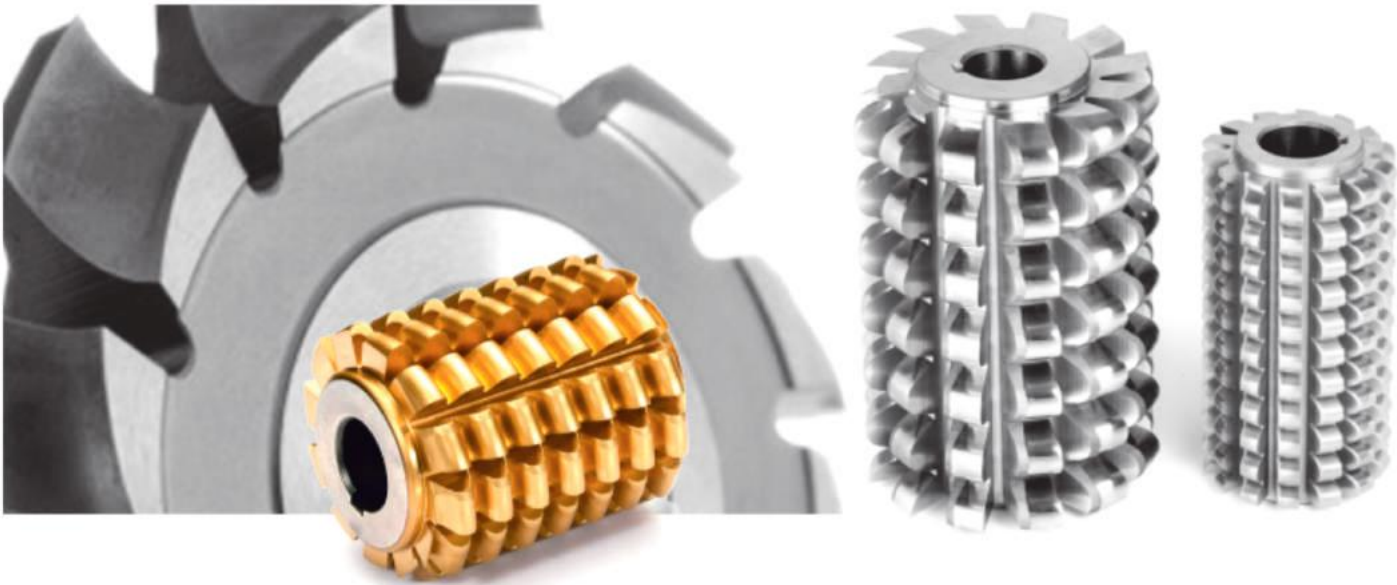
Spline Hobs are supplied for generating parallel or angular splines, straight or helical splines with profile modifications like semi topping, undercutting, shoulder clearance, etc.

Involute Spline Hobs as per DIN 5480, 5481 & 5482, NFE 22 141, ANSI B92.1

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

For Power take off shafts- DIN 9611.

# CHAIN SPROCKET & 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

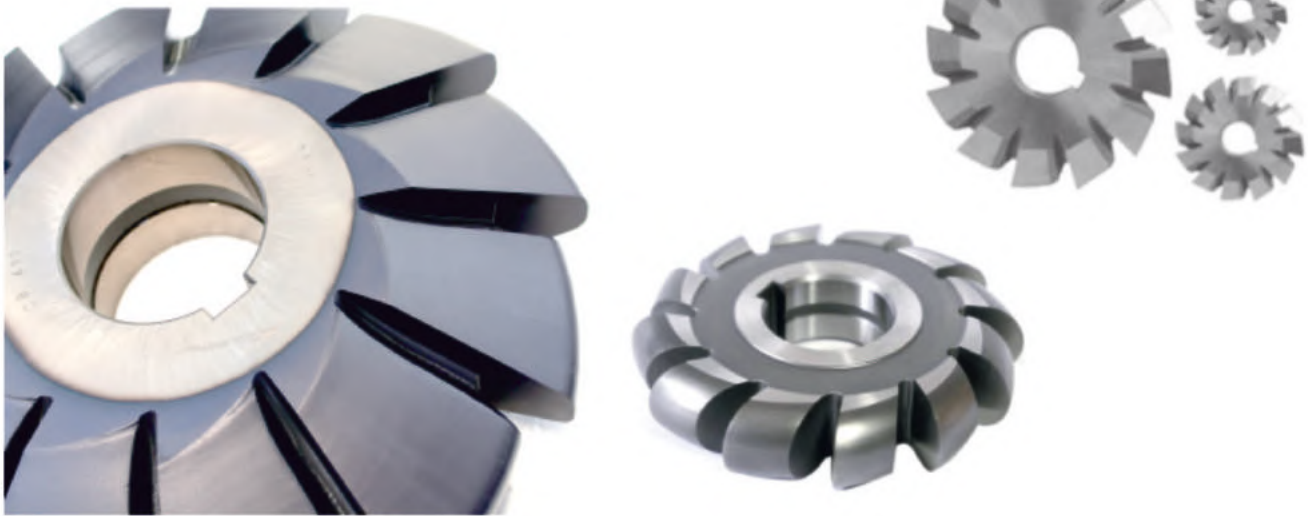


Worm Gear Hobs are supplied for Flank Forms ZN, ZA, ZL, ZK, ZC upto a lead angle of 45 degrees. These Hobs can be hollow type or integral shank type depending upon strength constraints.

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

# INVOLUTE GEAR CUTTERS

## MILLING 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.

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.

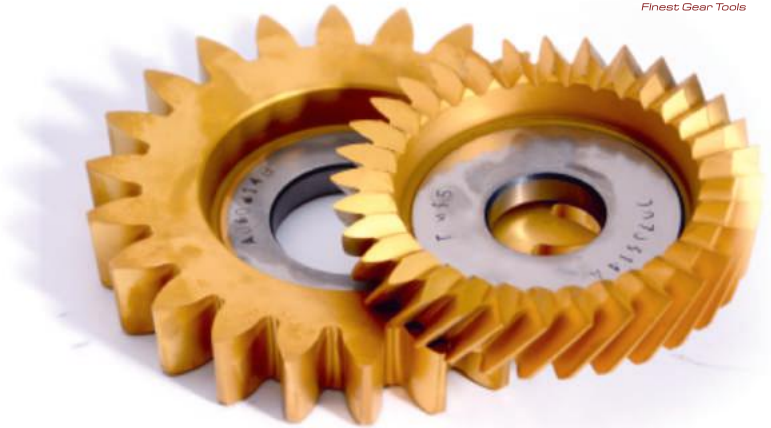
Whether standard or custom non-standard we have a solution for everything. We manufacture tooth-form cutters, spline milling cutters and thread-milling cutters to print.



# PRECISION GEAR CUTTING TOOLS



## 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:

Shank type | Disc Type | Deep Counter Bore Hub 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

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

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

## GEAR 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.

**Material:** M2, ASP 2023 and ASP 2030.

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

# SPLINE 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.**

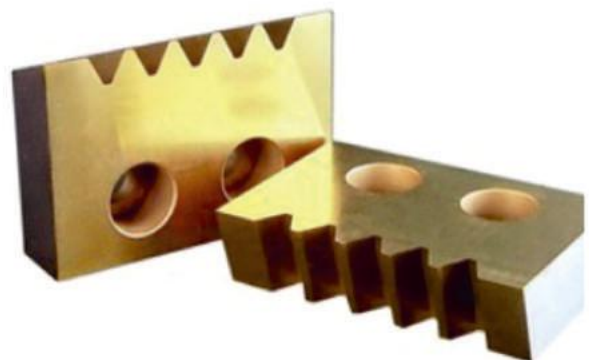
## STRAIGHT AND SPIRAL BEVEL BLADES BEVEL BLADES

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

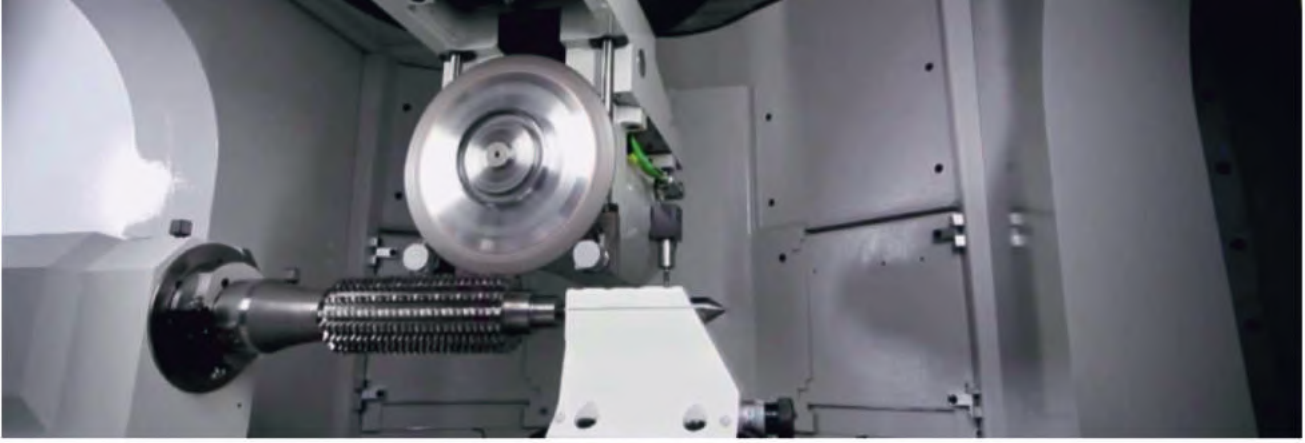
- Blades suitable for Hardac / Helixfrom / Ritgac / Wedgac / Roughac / standard bodies
- Blades for roughing and finishing cutters with diameters from 5"- 20"
- Crown wheel roughing/finishing cutters
- Pinion roughing / finishing cutters
- Solid cutters from diameters 1"- 8"
- Roughing cutters for bevel gears & bevel pinion suitable for Revacycle & Revex machine

## RACK TYPE CUTTERS

CTI manufactures high quality Sunderland 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 Planing Machines are widely used by the clients.



- From 0.5 module to 36 module and equivalent - DP's Cp's
- Full range of Cutters including: Spurs, Pregrind Protuberance, Involute & Straight sided Splines, Chain Sprockets, Serrations, Timing Belt Pulley Cutters
- Double Helical Cutters up to 1DP (26 MOD)
- Any non standard pitches or pressure angles - Special profiles calculated to customers requirements



## SERVICE CENTER

**"A sharp cutting tool is a necessity"**

Re-Sharpener of Tools: Reduce new Cutting Tool cost by up to 80%

You can reduce your new cutting tool cost up to 85% by having us sharpen your dull cutting tools. The average tool can be resharpened 5-10 times.

**Re-sharpening and Re-coating services available for:**

- |            |                   |                  |                   |
|------------|-------------------|------------------|-------------------|
| 1)Hobs     | 2)Milling Cutters | 3)Shaper Cutters | 4)Shaving Cutters |
| 5)Broaches | 6)Master Gears    | 7)Rack Cutters   | 8)Blades          |

The cost-effectiveness of a tool increases systematically with the number of times it is re-sharpened. It's a good thing that you simply don't have to worry about it because the RSG technical customer service visits you regularly, receives the tools you need sharpened and returns them sharpened to manufacturer standards quickly and reliably.

We use CNC grinding machines to restore tools to their original sharpened condition, performance, and quality and use advanced coatings from Oerlikon Balzers to improve tool performance of the tool after re-sharpening.

Unlike factory-bought tools, we can custom grind your tools with clearance to fit your specific type of material, giving you longer life and higher productivity at substantial savings over new tool cost.

## RE-WORK OF TOOLS

Why buy new tool when you have scrap in your rack..We bring scrap to Live with the heart called Re-work..

Rework on the cutter can be done by doing some profile modifications like protuberance and semi topping. It can be also done by converting the cutter into some another form as per the client's demand.

## COATING

RSG offers a complete range of high-performance Coatings in our Tools.

We use advanced coatings from Oerlikon Balzers to improve tool performance of the tool after re-sharpening.

### COATING TYPES

- 1.TiN
- 2.TiCN
- 3.TiAlN
- 4.AICrN

These coatings help in increasing the tool life by 3 to 8 times and decreasing the cycle time. We can have your re-sharpened tools coated for longer life.





# PRODUCTIVITY IMPROVEMENT

**RSG Tech Solutions**-Increase in Productivity up to 10% using Export quality Gear Tools & Suggestions for Machine Health and process improvements by our Technical consultant Methodology for Productivity Improvement using 4M chart; specific to Gear Cutting & related operations

## Results achieved for Productivity improvement by using 4M Techniques

### (A) Productivity Improvements

- 1) "Gear Hobbing/Shaping/Shaving Machine and fixture parameters" correction as per checklist to improve efficiency and achieve Max. permissible speeds and feed rates. (Infeed, Vertical Tangential feed) Productivity improvement-10 %
- 2) Component set up change time reduction on Gear hobbing machine with ring loader.. From 12 hours to 4 hours..By kitting of ring loader hangers, machine change gears, and Hand tools.
- 3) Component set up change time reduction on Gear Shaving machine ..from 8 hours to 2 hours.. By preparation of templates and setting blocks for adjustments taking more time.

### (B) Rejection & rework reduction, Tool breakage/Fixture damage

- 1) First Piece approval record-During component set-up change- Rework/Rejection reduction
- 2) Cross Functional Team members from Production, Maintenance and Quality; Why-why analysis for major rework, rejection on Driveshaft helical gear, Main shaft spline milling, Differential Hypoid gear patch mark and bevel gear warranty problem. Rejection reduction- 50%
- 3) Rejection and heavy damage to Machine/Fixture during tool change/Set-up change- Meticulous activity chart to ensure proper torque application for tool, change gears and positioning of hob arbour support. Incidences reduced drastically.

## 4M CHART FOR PRODUCTIVITY

### Man

- Operator's attention on quality of component produced.
- Tool/Set-up change instructions displayed on machine.
- Tool breakage & Rejection/Rework reduction -Ideas.
- Short Training on Gear cutting process and New type of M/C.

### Method

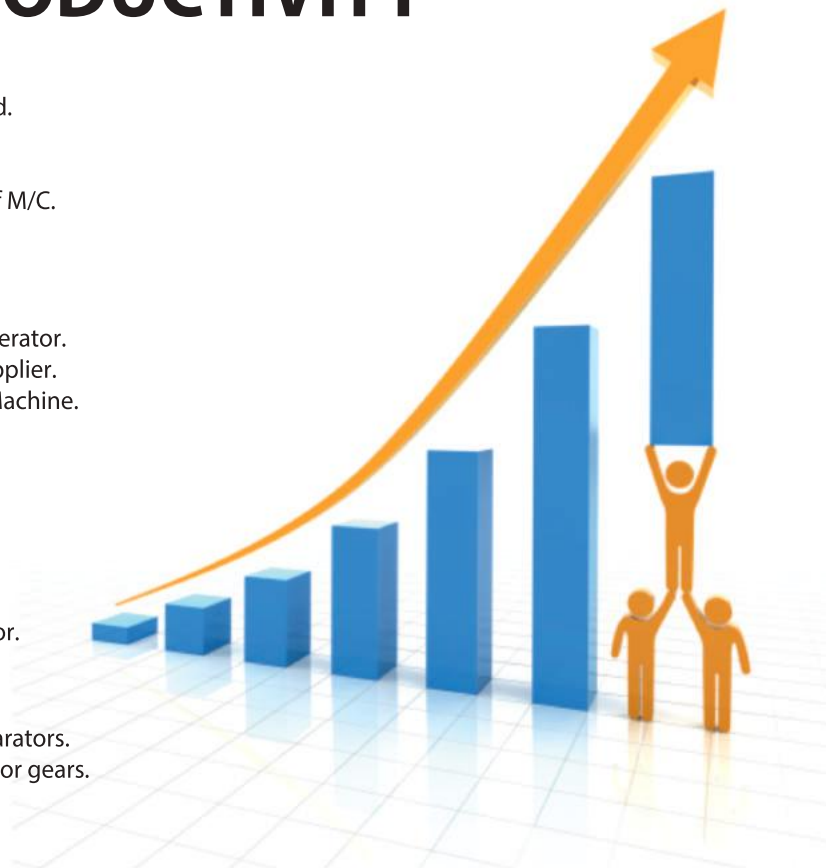
- First piece checking report after comp. Setting change.
- Mistakes avoiding ideas -production & Maintenance operator.
- Preventive Maintenance of Machine as per Machine supplier.
- Cutting tool change after No. of jobs To be written on Machine.

### Machine

- Listing of the Machine problems.
- Cleaning/Leakage repair/ Lubrication by operator.
- Machine correction as per check list.
- Fixture numbering and repair.
- Component easy loading/unloading ideas from operator.

### Material

- Racks and trolleys of components- plastic/wooden separators.
- Only plastic bins with plastic partitions for small blanks or gears.



# GEAR CUTTING OIL

RSG Tech Solutions is a leading provider of specialised industry offerings with a wide range of Lubricants, Oils, Greases & other speciality products. We are dedicated to consistently providing products that deliver stellar quality and comply with statutory requirements in the Automotive and Industrial Lubricants domain. Due to the effective application of effective system and our enduring perusal of conformity, we and our products have rapidly grown and set a high benchmark in the industry.

## PRODUCTS UNDER

### INDUSTRIAL LUBRICANTS

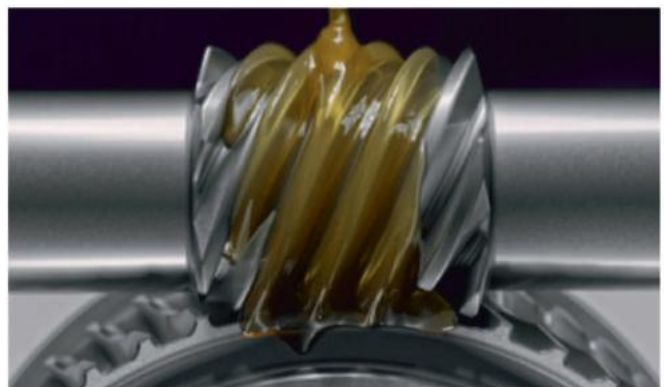
- Gear Oils
- Thermic Fluids
- Quenching Oils
- Rust Preventive Fluids
- Vacuum Oils
- Hydraulic Oils
- Soluble Cutting Oils
- Refrigeration Oils
- Machine Tool Way Oils
- Gun Drilling Oils
- Turbine Oils
- Neat Ctilthig Oils
- Textile Oils

### GREASES

- Multipurpose Greases
- Wheel Bearing Greases
- Moly Greases
- High temperature Greases
- Chassis Greases
- Extreme Pressure Greases

### SPECIALITY PRODUCTS

- Semi-Sync lietic Cutting Oils
- Shuttering Oils
- Printing Machine Oils
- Synthetic Thermic Fluid
- Screw Compressor Oils
- Mist Lubrication Oils








# GEAR MACHINERY

**RSG Tech Solutions** deals with all new and old Gear manufacturing machinery as per the customer's requirement and at competitive rates.

Gear manufacturing machines are used to cut, form, and finish gear teeth. A wide variety of methods has been and continues to be employed to make gear teeth.

The production process required for gear manufacturing covers a lot of ground, but general examples which can be given include cutting of materials with cutting machines, processing of materials with lathes, cutting of cylindrical gear teeth with hobbing machines, cutting of internal gear teeth with gear shapers, finishing with Gear Shaving machines, cutting of rack teeth with rack panels, milling, deburring, and blackening, etc.

# GEAR BLANK



Gear Blanks are the input for gear manufacturing process. Before hobbling, broaching, and other heat treatment processes of Gear manufacturing process, Gear blanks are developed. It is very commonly said and understood that the quality of gear depends highly on forgings or forged gear blanks.

RSG Tech Solutions supplies quality gear blanks as per customer specification and standards. There are many Gear blank suppliers in India, China and many other countries at very competitive rates.

GEAR BLANK being the First step in Quality Gear manufacturing, following factors are critically checked by us before hand.

1. Raw material virginity.
2. Robust, stable and documented manufacturing process.
3. Quality plan viz. In process Inspection, Pre-delivery inspection and record keeping.
4. Process capability of machine tools manufacturing the blanks for "Critical to Quality Parameter" e.g. Bore size, Resting face squareness with bore, Resting surface flatness & surface finish.
5. Mistake proofing ideas implemented for Quality sustenance.
6. Logistics within the Manufacturing plant, Oil coating & packaging while dispatching to Customer.



# SOME OF OUR CLIENTS

 <p>DAVID BROWN SANTASALO</p>	 <p>ESCORTS</p>	 <p>VE COMMERCIAL</p>
 <p>RING PLUS AQUA</p>	 <p>HIM TEKNOFORGE</p>	 <p>BHARAT FORGE</p>
 <p>RADHEYA GROUP</p>	 <p>JAGADAMBA AUTO COMPONENTS</p>	 <p>SHANTHI GEAR</p>
 <p>SYNNOVA</p>	 <p>AVTEC</p>	 <p>SADHU</p>
 <p>TIMKEN WORLD</p>	 <p>L &amp; T</p>	 <p>HOFMANN ENGINEERING</p>
 <p>LINAMAR</p>	 <p>INDSUR</p>	 <p>GEAR TECH ENGINEERS</p>



# RSG

## TECH SOLUTIONS

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