



**ABRASIVE SOLUTIONS
FOR GEAR GRINDING**

History of CUMI

Carborundum Universal Limited (CUMI), founded in 1954 and part of the Murugappa Group, is a global leader in materials science and engineering. Rooted in India, CUMI combines a deep understanding of both domestic and global markets. From mining to manufacturing, the company delivers integrated solutions in abrasives, ceramics, electro minerals, refractories, and energy storage. With over 5,500 employees and a presence across six continents, CUMI proudly exports to over 50 countries, serving diverse industries, including automotive, steel, power, and aerospace.



Verticals of CUMI



Electro Minerals



Abrasives



Refractories



Ceramics

Presence in

06

Continents

10,000+

Stock-Keeping Units

Sold in over

50

Countries

04

Business
Verticals



2nd Largest
producer of Silicon
Carbide worldwide

One of the Largest
producers of the
full range of
Electrominerals
worldwide

One of the
Market Leaders in
abrasives, in India
and Russia

World's
2nd Largest
player in metallised
cylinders

07

Decades in
Business

10,000+

Stock-Keeping Units

40+

Presence in
Countries

1 Million+

Happy Clients

DSIR

Certified R&D centres

ISO

Certified
Mfg. Locations

CUMI Abrasives

With over 70 years of experience and a global reach, we're committed to building strong customer relationships. We measure our success by how well we help your business grow, and we're here to provide the best abrasive solutions with top-tier service. By understanding your challenges, we create solutions that fit your specific needs. Through value chain integration, CUMI has developed into a company that oversees the entire process from material-to-delivery.



Global Presence

"CUMI's global expansion drives innovation across industries, no matter the geography!"



Manufacturing Facility
 Marketing Office

Strategic Business Units
 Subs via CIL (CUMI International Limited)
 Direct Subs

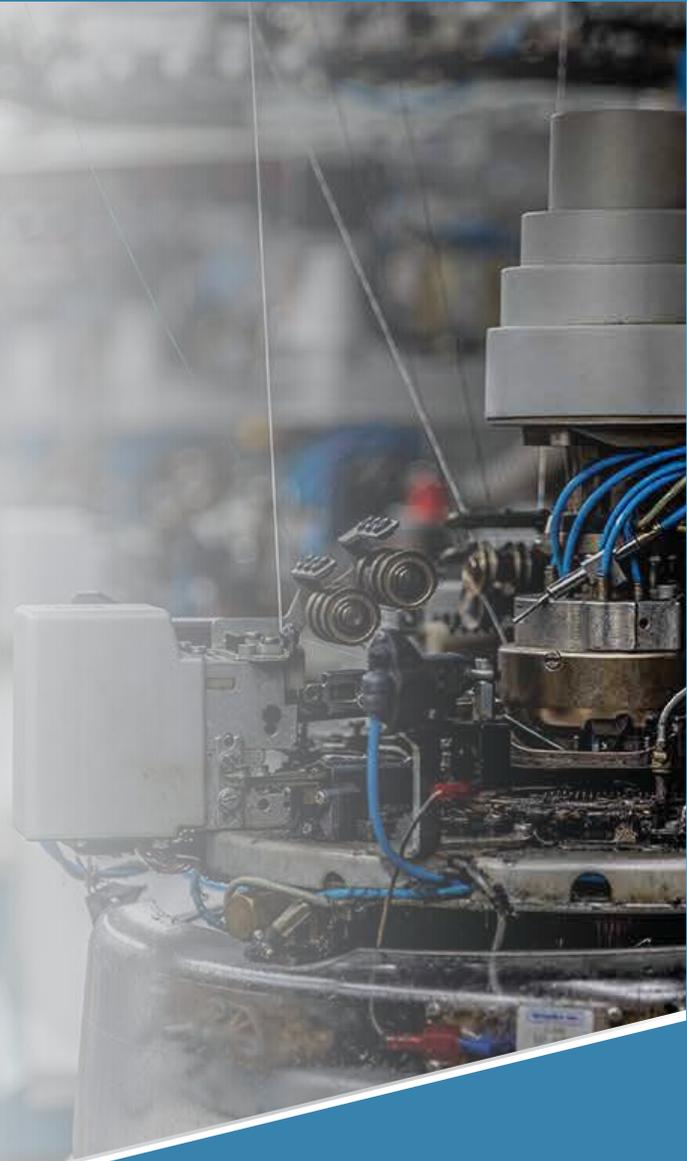
JVs
 Associates

CUMI's Manufacturing Capabilities and R&D

CUMI Abrasives operates ten advanced manufacturing facilities in strategic locations such as Sriperumbudur, Thiruvottriyur, Maraimalainagar, Roorkee, and Hosur, as well as globally. This extensive footprint enables a deep understanding of domestic and international markets, ensuring high-quality, tailored solutions. With a comprehensive range of bonded and coated abrasives, CUMI integrates advanced technology and innovative processes to deliver unmatched precision and reliability.

Its Surface Technology Centre drives innovation through precision grinding simulations, rapid prototyping, and real-time testing, ensuring first-time-right solutions with exceptional accuracy and efficiency.

CUMI's commitment to excellence in manufacturing, combined with continuous investment in research and development, positions the company as a leader in the global abrasives market.



Integrated Grinding Solutions

Grinding Wheels

CUMI offers a diverse range of Grinding Wheels for each application.



Metal Working Fluids

CUMI offers a diverse range of Grinding Solutions tailored for Bearing Applications. CUMI solutions are engineered to reduce tool wear, enhance surface finish quality, and provide lower CPC.



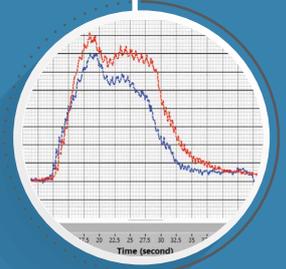
Diamond Dressers

High-performance diamond dressers deliver precise contouring and efficient dressing for optimal surface quality in the gear industry.



Process Optimization

As a part of Integrated Grinding Solutions for Gear Industries CUMI also provides Services in terms of Process optimisation and monitoring the health of Grinding process.



Precision Redefined:

Precision gear grinding is the key to achieving superior gear performance. We specialize in delivering high-quality gear grinding solutions with our advanced grinding wheels, designed for efficiency, durability, and precision.





CUMI Profile Gear Grinding Wheels

Features & Benefits



Reduced dressing depth and frequency leading to extended wheel life



Higher dresser life



Superior profile retention

Diameter Range

80 - 450 mm

Grit Range

46 - 80

Hardness Range

G - J

Wheel Speed

35, 50, 63 m/s

Bonds

Krystal, Magnum

Structure

8 - 28



CUMI Profile Gear Grinding Wheels are designed for precision and reliability in modern gear manufacturing. They ensure tight tolerances, superior gear accuracy, and excellent surface finish. Each tooth flank is ground individually, making them ideal for high-module gears like in windmills and industrial gearboxes, especially in batch production.

Common Machines: Gleason-Pfauter, Samputensili, Höfler, Niles

GOOD

Gear Module - upto 5 M
3CSA601 G13 VC600

Gear Module - 6 - 8 M
3CSA601 G18 VC600

Gear Module - Above 8 M
3CSA601 G20 VC600

BETTER

Gear Module - upto 5 M
72CSA801 G18 VC600

Gear Module - 6 - 8 M
72CSA801 G20 VC600

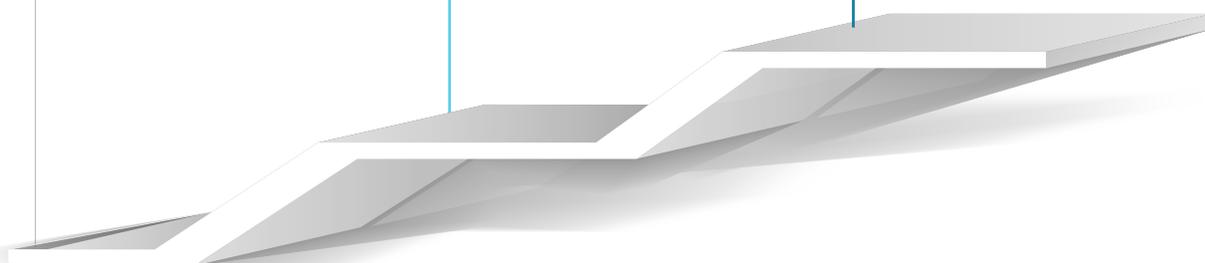
Gear Module - 8 M
72CSA801 G28 VC600

BEST

Gear Module - upto 5 M
73CN801 G18 VC600

Gear Module - 6 - 8 M
72CN801 G20 VC600

Gear Module - 8 M
72CN801 G28 VC600





CUMI Generative Gear Grinding Wheels (Conventional Process)

Features & Benefits



Advanced conventional grains for low speed (m/s)



Faster grinding cycles to boost productivity



Cost-efficient performance with consistent grinding quality

Diameter Range

350 - 450 mm

Grit Range

60 - 120

Hardness Range

I - K

Wheel Speed

Upto 45 m/s

Bonds

V677, V736, V600

Structure

10 - 12



CUMI's Generative Gear Grinding Wheel delivers precise tooth profiles, consistent dimensions, and superior surface finishes. Optimized for conventional processes, it excels on manual and semi-automatic machines with skilled operator input. Ideal for small batches and custom production, it ensures accuracy and achieves DIN Class 8 quality.

Common Machines: Reishauer, Kapp

GOOD

Gear Module - upto 5 M

RA120 I12 V736

Gear Module - 1.75 - 2.25M

SA100 I7 V677

Gear Module - 2.5 - 4M

SA80 K5 V677

Gear Module - Above 4.25M

SA80 K5 V677

BEST

Gear Module - upto 5 M

1CUMISA120 V736

1CSA120 V736

Gear Module - 1.75 - 2.25M

3CUMISA100 I12 V736

3CSA100 I12 V736

Gear Module - 2.5 - 4M

3CUMISA80 I12 V736

3CSA80 I12 V736

Gear Module - Above 4.25M

3CUMISA80 J12 V736

3CSA80 J12 V736



CUMI Generative Gear Grinding Wheels (CNC Process)

Features & Benefits



Low DIN class to achieve good surface finish



Faster grinding cycles to boost productivity



Cost-efficient performance with consistent grinding quality

Diameter Range

90 - 350 mm

Grit Range

80 - 120

Hardness Range

I - J

Wheel Speed

63, 80 m/s

Bonds

V736, V600

Structure

10 - 12



CUMI Generative Gear Grinding Wheels provide accurate tooth profiles, uniform dimensions, and high-surface finishes. For CNC operation, they are durable, efficient, and have long life making them ideal for both small-scale and high-volume gear production with premium abrasives.

Common Machines: Reishauer, Kapp, Nidec, Samputensili, Klingelnberg, Liebherr

GOOD

Gear Module - upto 1.5 M
24R120 I12 V736

Gear Module - 1.75 - 2.25 M
24R100 J12 V736

Gear Module - 2.5 - 4 M
24R80 J12 V736

Gear Module - 4.25 M
24R80 J12 V736

BETTER

Gear Module - upto 1.5 M
3CSA120 I12 V736
3CSA120 I12 V600

Gear Module - 1.75 - 2.25 M
3CSA100 J12 V736
3CSA100 J12 V600

Gear Module - 2.5 - 4 M
3CSA80 J12 V736
3CSA80 J12 V600

Gear Module - 4.25 M
3CSA80 J12 V736
3CSA80 J12 V600

BEST

Gear Module - upto 1.5 M
2CN120 I12 V736

Gear Module - 1.75 - 2.25 M
2CN100 J12 V736

Gear Module - 2.5 - 4 M
2CN80 J12 V736

Gear Module - 4.25 M
2CN80 J12 V736



CUMI Bevel Grinding Wheels

Features & Benefits



Controlled wear ensures longevity and consistency



Microcrystalline grains ensure high stock removal, reduced cutting energy and self-sharpening



Advanced bond improves adhesion, cooling, and wheel life

Diameter Range

80 - 500 mm

Grit Range

60 - 120

Hardness Range

I - K

Wheel Speed

35, 50 m/s

Bonds

Krystal

Structure

6 - 8



CUMI Bevel Grinding Wheels are engineered to surpass the demands of precision bevel gear and pinion grinding. With superior material removal, precise profile accuracy, and extended wheel life, they ensure unwavering performance and reliability. Delivering a flawless surface finish, they maximize both productivity with every grind.

Common Machines: Gleason, Samputensili, Höfler, Niles

GOOD

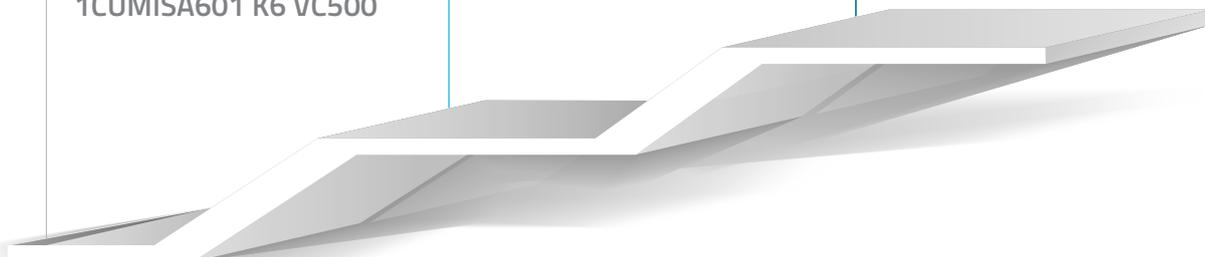
1CUMISA601 K6 VC500

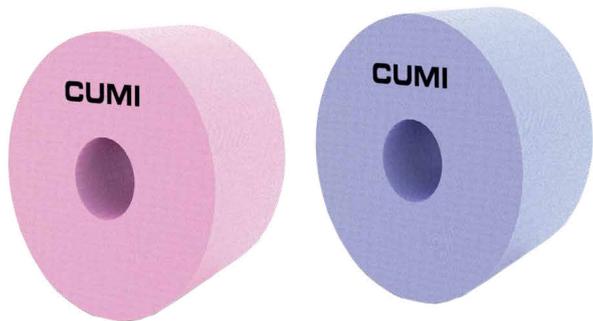
BETTER

3CUMISA601 J7 VC500

BEST

5CUMISA601 J7 VC500





CUMI Internal Grinding Wheels

Features & Benefits



Lower Grinding Cost



Visual Finish better



Lower Cycle time

Diameter Range

10-110 mm

Grit Range

80 to 120

Hardness Range

J to M

Wheel Speed

60-80 m/s

Bonds

Vitrified



CUMI Internal Grinding Wheels offer accuracy and reliability in important gear production. Engineered to avoid glazing, rubbing, and grain breakage, they effectively minimize taper, chatter, size variation, and surface finish defects, ensuring superior performance, consistency, and efficiency in every grinding operation.

Common Machines: Jung, Izumi, Bryant, Nova

GOOD

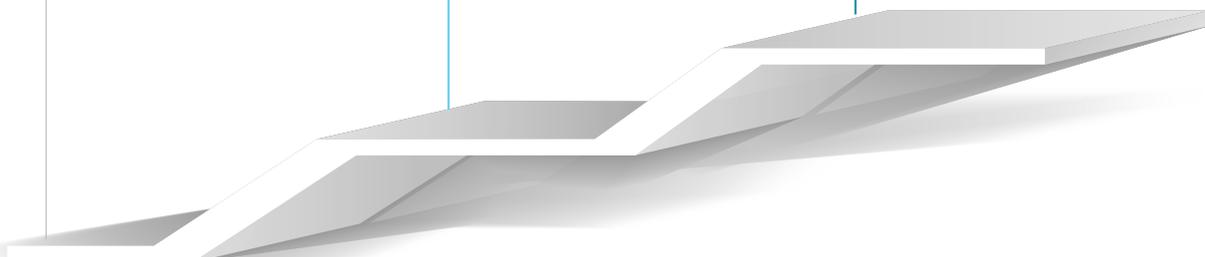
SA80 J7 TDV144

BETTER

55A80 J7 VC500

BEST

3CSA80 J6 VC500





CUMI Shaving Cutter Grinding Wheels

Features & Benefits



High accuracy and consistency finishing



Maintains the precise geometry



Extended tool life

Diameter Range

500 - 762 mm

Grit Range

100 - 150

Hardness Range

G - J

Wheel Speed

35, 50 m/s

Structure

5 - 15



CUMI Shaving Cutter Grinding Wheels are designed for exceptional stock removal, restoring cutting edges to perfect sharpness. By ensuring consistent gear quality, extending tool life, and enhancing productivity, they offer the ultimate solution for precision gear finishing.

Common Machines: Hurth, Mitsubishi

GOOD

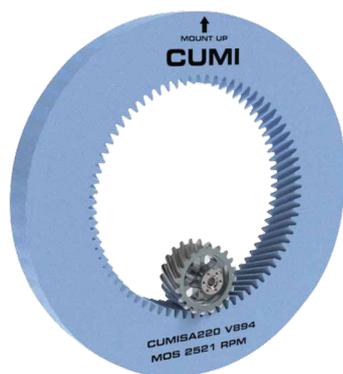
RA120 G6 TDV155

BETTER

RA120 G10 VC500

BEST

53A120 G15 VCA2



CUMI Honing Wheels

Features & Benefits



Advanced crystalline grains for superior grinding



Faster grinding cycles to boost productivity



Cost-efficient performance with consistent grinding quality

Diameter Range

80 - 400 mm

Grit Range

120 - 220

Hardness Range

M - P

Wheel Speed

35, 50 m/s

Bonds

Krystal

Structure

4 - 8



CUMI Honing Wheels offers excellent gear finishing through precise vitrified bonding and permit controlled stock removal up to 0.1 mm. They reduce NVH, improve pitting resistance, and provide an outstanding surface finish of 0.15 Ra, making them ideal for high-precision, low-noise, and high-power-density gear applications.

Common Machines: *Prawema, Fassler*

TYPE	Specification
Vitrified Honing	5CSA220 M8 V500
Epoxy Resin Honing	CUMISA180 E895



Metal Working Fluids



CUMI offers a diverse range of Metal Working Fluids (MWF), designed specifically for metal-cutting operations. These coolants reduce tool wear, increase surface finish quality, and offer cost-effective solutions. They are formulated with safe, physiologically harmless additives that enhance tool performance by minimizing friction and deformation.

Operation	Product type	Product
Blanking	Water soluble	CUMI CHEMSOL 829HM/CUMI MUNTZOL 119/ CUMISTAR 306
Honing/ Lapping	Neat oil	CUMINEAT 5/ CUMI HON
Milling/ Turning/Skiving	Neat oil	CUMI OIL 308 /CUMINEAT HSG 14
Milling/ Turning/Skiving	Water soluble	CUMI CHEMSOL 829HM/CUMI MUNTZOL 119
Broaching	Neat oil	CUMI BROACH
Hobbing	Neat oil	CUMI HOB CLF 32
Grinding	Water Soluble	CUMI FERRO 216 ADVANCE/CUMI FERRO 216 CUMICHEM SOL 829HM/ CUMI MICRO S930
Grinding	Neat oil	CUMI OIL 308 /CUMINEAT HSG 14
Parts Cleaning	Water soluble Parts cleaner	CIMCLEAN PC 230/ CUMICLEAN CWF 242

Diamond Dressers

Wendt India Limited, a JV between Carborundum Universal and Wendt GmbH, specializes in Super Abrasives, including Diamond and CBN grinding wheels, special-purpose grinding machines, and tools. Their precision-engineered dressing rolls cater to all gear grinding applications.

Diamond dressers, manufactured using the reverse infiltration method, deliver exceptional accuracy, durability, and efficiency. Designed for high-precision tolerance levels, they enable shorter manufacturing cycles, ensuring reliability in demanding applications. Wendt's solutions optimize performance for the gear industry with unmatched consistency and quality.



Advantages



Best-in-class precision with profile accuracy up to 2 microns



Expertise in dressing complex and intricate profiles



Controlled diamond grit exposure for free-cutting performance



Superior form holding for consistent results

Process Optimization

CUMI's application engineers deploy the innovative Grind Trak device to monitor Grinding Cycles. This advanced instrument tracks the complete grinding performance, providing smart insights.

- It helps to optimize the grinding process for improved efficiency and precision.
- Helps in identifying the most appropriate product offerings.

GRINDTRAK - ONE DEVICE, MULTIPLE SOLUTIONS.

Grind Trak provides you with insights to optimise the grinding process with data for improved decision-making.



OBJECTIVE:

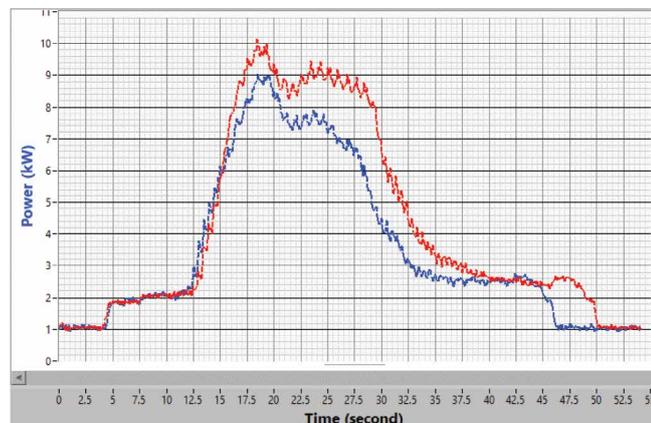
Cycle time reduction

TRIALS:

Higher feed rates with existing stock removal with progressive cutting action

RESULT:

Reduced cycle time by 10% with lower power drawn



Materializing the focus on 3E - Energy, Engineering & Environment by continuously improving our products and processes

At CUMI, our vision of "Making A Material Difference" drives our commitment to creating impactful material science solutions that enhance millions of lives across diverse industries. Our research and product design focus on sustainability—achieving more with less, extending product life cycles, improving efficiencies, reducing costs, and minimizing environmental impact.





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